

**ANNEX I**  
**SUMMARY OF PRODUCT CHARACTERISTICS**

## 1. NAME OF THE MEDICINAL PRODUCT

INTELENCE 25 mg tablets

## 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each tablet contains 25 mg of etravirine.

Excipient with known effect: Each tablet contains 40 mg lactose.

For the full list of excipients, see section 6.1.

## 3. PHARMACEUTICAL FORM

Tablet

White to off-white, oval, scored tablet, debossed with “TMC” on one side.

The tablet can be divided into equal doses.

## 4. CLINICAL PARTICULARS

### 4.1 Therapeutic indications

INTELENCE, in combination with a boosted protease inhibitor and other antiretroviral medicinal products, is indicated for the treatment of human immunodeficiency virus type 1 (HIV-1) infection in antiretroviral treatment-experienced adult patients and in antiretroviral treatment-experienced paediatric patients from 6 years of age (see sections 4.4, 4.5 and 5.1).

The indication in adults is based on week 48 analyses from 2 Phase III trials in highly pre-treated patients where INTELENCE was investigated in combination with an optimised background regimen (OBR) which included darunavir/ritonavir. The indication in paediatric patients is based on 48-week analyses of a single-arm, Phase II trial in antiretroviral treatment-experienced paediatric patients (see section 5.1).

### 4.2 Posology and method of administration

Therapy should be initiated by a physician experienced in the management of HIV infection.

INTELENCE must always be given in combination with other antiretroviral medicinal products.

#### Posology

##### *Adults*

The recommended dose of INTELENCE for adults is 200 mg (two 100 mg tablets) taken orally twice daily (b.i.d.), following a meal (see section 5.2).

##### *Paediatric population (6 years to less than 18 years of age)*

The recommended dose of INTELENCE for paediatric patients (6 years to less than 18 years of age and weighing at least 16 kg) is based on body weight (see table below). INTELENCE tablet(s) should be taken orally, following a meal (see section 5.2).

<b>Recommended dose of INTELENCE for paediatric patients 6 years to less than 18 years of age</b>		
<b>Weight</b>	<b>Dose</b>	<b>Tablets</b>
≥ 16 to < 20 kg	100 mg b.i.d.	four 25 mg tablets twice daily or one 100 mg tablet twice daily

≥ 20 to < 25 kg	125 mg b.i.d.	five 25 mg tablets twice daily or one 100 mg tablet and one 25 mg tablet twice daily
≥ 25 to < 30 kg	150 mg b.i.d.	six 25 mg tablets twice daily or one 100 mg tablet and two 25 mg tablets twice daily
≥ 30 kg	200 mg b.i.d.	eight 25 mg tablets twice daily or two 100 mg tablets twice daily or one 200 mg tablet twice daily

#### Missed dose

If the patient misses a dose of INTELENCE within 6 hours of the time it is usually taken, the patient should take it following a meal as soon as possible and then take the next dose at the regularly scheduled time. If a patient misses a dose by more than 6 hours of the time it is usually taken, the patient should not take the missed dose and simply resume the usual dosing schedule.

#### *Elderly patients*

There is limited information regarding the use of INTELENCE in patients > 65 years of age (see section 5.2), therefore caution should be used in this population.

#### *Hepatic impairment*

No dose adjustment is suggested in patients with mild or moderate hepatic impairment (Child-Pugh Class A or B); INTELENCE should be used with caution in patients with moderate hepatic impairment. The pharmacokinetics of etravirine have not been studied in patients with severe hepatic impairment (Child-Pugh Class C). Therefore, INTELENCE is not recommended in patients with severe hepatic impairment (see sections 4.4 and 5.2).

#### *Renal impairment*

No dose adjustment is required in patients with renal impairment (see section 5.2).

#### *Paediatric population (less than 6 years of age)*

The safety and efficacy of INTELENCE in children less than 6 years of age or weighing less than 16 kg have not yet been established (see section 5.2). No data are available.

#### *Pregnancy and postpartum*

Based on limited data available, no dose adjustment is required during pregnancy and postpartum (see section 5.2).

#### Method of administration

Oral use.

Patients should be instructed to swallow the tablet(s) whole with a liquid such as water. Patients who are unable to swallow the tablet(s) whole may disperse the tablet(s) in a glass of water.

For instructions on dispersion of the medicinal product before administration, see section 6.6.

### **4.3 Contraindications**

Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.

### **4.4 Special warnings and precautions for use**

While effective viral suppression with antiretroviral therapy has been proven to substantially reduce the risk of sexual transmission, a residual risk cannot be excluded. Precautions to prevent transmission should be taken in accordance with national guidelines.

INTELENCE should optimally be combined with other antiretrovirals that exhibit activity against the patient's virus (see section 5.1).

A decreased virologic response to etravirine was observed in patients with viral strains harbouring 3 or more among the following mutations V90I, A98G, L100I, K101E/P, V106I, V179D/F, Y181C/I/V, and G190A/S (see section 5.1).

Conclusions regarding the relevance of particular mutations or mutational patterns are subject to change with additional data, and it is recommended to always consult current interpretation systems for analysing resistance test results.

No data other than drug-drug interaction data (see section 4.5) are available when etravirine is combined with raltegravir or maraviroc.

#### Severe cutaneous and hypersensitivity reactions

Severe cutaneous adverse drug reactions have been reported with INTELENCE; Stevens-Johnson Syndrome and erythema multiforme have been rarely (< 0.1%) reported. Treatment with INTELENCE should be discontinued if a severe cutaneous reaction develops.

The clinical data are limited and an increased risk of cutaneous reactions in patients with a history of NNRTI-associated cutaneous reactions cannot be excluded. Caution should be observed in such patients, especially in case of history of a severe cutaneous drug reaction.

Cases of severe hypersensitivity syndromes, including DRESS (Drug Rash with Eosinophilia and Systemic Symptoms) and TEN (toxic epidermal necrolysis), sometimes fatal, have been reported with the use of INTELENCE (see section 4.8). The DRESS syndrome is characterised by rash, fever, eosinophilia and systemic involvement (including, but not limited to, severe rash or rash accompanied by fever, general malaise, fatigue, muscle or joint aches, blisters, oral lesions, conjunctivitis, hepatitis and eosinophilia). Time to onset is usually around 3-6 weeks and the outcome in most cases is favourable upon discontinuation and after initiation of corticosteroid therapy.

Patients should be informed to seek medical advice if severe rash or hypersensitivity reactions occur. Patients who are diagnosed with a hypersensitivity reaction whilst on therapy must discontinue INTELENCE immediately.

Delay in stopping INTELENCE treatment after the onset of severe rash may result in a life-threatening reaction.

Patients who have stopped treatment due to hypersensitivity reactions should not restart therapy with INTELENCE.

#### Rash

Rash has been reported with INTELENCE. Most frequently, rash was mild to moderate, occurred in the second week of therapy, and was infrequent after week 4. Rash was mostly self-limiting and generally resolved within 1 to 2 weeks on continued therapy. When prescribing INTELENCE to females, prescribers should be aware that the incidence of rash was higher in females (see section 4.8).

#### Elderly

Experience in geriatric patients is limited: in the Phase III trials, 6 patients aged 65 years or older and 53 patients aged 56-64 years received INTELENCE. The type and incidence of adverse reactions in patients > 55 years of age were similar to the ones in younger patients (see sections 4.2 and 5.2).

#### Pregnancy

Given the increased etravirine exposure during pregnancy, caution should be applied for those pregnant patients that require concomitant medications or have comorbidities that may further increase etravirine exposure.

#### Patients with coexisting conditions

##### *Hepatic impairment*

Etravirine is primarily metabolised and eliminated by the liver and highly bound to plasma proteins. Effects on unbound exposure could be expected (has not been studied) and therefore caution is advised

in patients with moderate hepatic impairment. INTELENCE has not been studied in patients with severe hepatic impairment (Child-Pugh Class C) and its use is therefore not recommended in this group of patients (see sections 4.2 and 5.2).

#### *Co-infection with HBV (hepatitis B virus) or HCV (hepatitis C virus)*

Caution should be exercised in patients co-infected with hepatitis B or C virus due to the current limited data available. A potential increased risk of liver enzymes increase cannot be excluded.

#### *Weight and metabolic parameters*

An increase in weight and in levels of blood lipids and glucose may occur during antiretroviral therapy. Such changes may in part be linked to disease control and life style. For lipids, there is in some cases evidence for a treatment effect, while for weight gain there is no strong evidence relating this to any particular treatment. For monitoring of blood lipids and glucose reference is made to established HIV treatment guidelines. Lipid disorders should be managed as clinically appropriate.

#### Immune reconstitution syndrome

In HIV infected patients with severe immune deficiency at the time of initiation of CART, an inflammatory reaction to asymptomatic or residual opportunistic pathogens may arise and cause serious clinical conditions, or aggravation of symptoms. Typically, such reactions have been observed within the first weeks or months of initiation of CART. Relevant examples are cytomegalovirus retinitis, generalised and/or focal mycobacterial infections and *Pneumocystis jiroveci* pneumonia. Any inflammatory symptoms should be evaluated and treatment instituted when necessary.

Autoimmune disorders (such as Graves' disease) have also been reported to occur in the setting of immune reactivation; however, the reported time to onset is more variable and these events can occur many months after initiation of treatment (see section 4.8).

#### Osteonecrosis

Although the aetiology is considered to be multifactorial (including corticosteroid use, alcohol consumption, severe immunosuppression, higher body mass index), cases of osteonecrosis have been reported particularly in patients with advanced HIV disease and/or long-term exposure to CART. Patients should be advised to seek medical advice if they experience joint aches and pain, joint stiffness or difficulty in movement.

#### Interactions with medicinal products

It is not recommended to combine etravirine with tipranavir/ritonavir, due to a marked pharmacokinetic interaction (76% decrease of etravirine AUC) that could significantly impair the virologic response to etravirine.

For further information on interactions with medicinal products see section 4.5.

#### Lactose intolerance and lactase deficiency

Each tablet contains 40 mg of lactose. Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine.

### **4.5 Interaction with other medicinal products and other forms of interaction**

#### Medicinal products that affect etravirine exposure

Etravirine is metabolised by CYP3A4, CYP2C9 and CYP2C19 followed by glucuronidation of the metabolites by uridine diphosphate glucuronosyl transferase (UDPGT). Medicinal products that induce CYP3A4, CYP2C9 or CYP2C19 may increase the clearance of etravirine, resulting in lowered plasma concentrations of etravirine.

Co-administration of INTELENCE and medicinal products that inhibit CYP3A4, CYP2C9 or CYP2C19 may decrease the clearance of etravirine and may result in increased plasma concentrations of etravirine.

Medicinal products that are affected by the use of etravirine

Etravirine is a weak inducer of CYP3A4. Co-administration of INTELENCE with medicinal products primarily metabolised by CYP3A4 may result in decreased plasma concentrations of such medicinal products, which could decrease or shorten their therapeutic effects.

Etravirine is a weak inhibitor of CYP2C9 and CYP2C19. Etravirine is also a weak inhibitor of P-glycoprotein. Co-administration with medicinal products primarily metabolised by CYP2C9 or CYP2C19, or transported by P-glycoprotein, may result in increased plasma concentrations of such medicinal products, which could increase or prolong their therapeutic effect or alter their adverse events profile.

Known and theoretical interactions with selected antiretrovirals and non-antiretroviral medicinal products are listed in table 1.

Interaction table

Interactions between etravirine and co-administered medicinal products are listed in table 1 (increase is indicated as “↑”, decrease as “↓”, no change as “↔”, not done as “ND”, confidence interval as “CI”).

<b>Table 1: INTERACTIONS AND DOSE RECOMMENDATIONS WITH OTHER MEDICINAL PRODUCTS</b>		
<b>Medicinal products by therapeutic areas</b>	<b>Effects on drug levels Least Squares Mean Ratio (90% CI; 1.00 = No effect)</b>	<b>Recommendations concerning co-administration</b>
<b>ANTI-INFECTIVES</b>		
<b>Antiretrovirals</b>		
<i>NRTIs</i>		
Didanosine 400 mg once daily	<u>didanosine</u> AUC ↔ 0.99 (0.79-1.25) C <sub>min</sub> ND C <sub>max</sub> ↔ 0.91 (0.58-1.42) <u>etravirine</u> AUC ↔ 1.11 (0.99-1.25) C <sub>min</sub> ↔ 1.05 (0.93-1.18) C <sub>max</sub> ↔ 1.16 (1.02-1.32)	No significant effect on didanosine and etravirine PK parameters is seen. INTELENCE and didanosine can be used without dose adjustments.
Tenofovir disoproxil fumarate 300 mg once daily	<u>tenofovir</u> AUC ↔ 1.15 (1.09-1.21) C <sub>min</sub> ↑ 1.19 (1.13-1.26) C <sub>max</sub> ↑ 1.15 (1.04-1.27) <u>etravirine</u> AUC ↓ 0.81 (0.75-0.88) C <sub>min</sub> ↓ 0.82 (0.73-0.91) C <sub>max</sub> ↓ 0.81 (0.75-0.88)	No significant effect on tenofovir and etravirine PK parameters is seen. INTELENCE and tenofovir can be used without dose adjustments.
Other NRTIs	Not studied, but no interaction expected based on the primary renal elimination route for other NRTIs (e.g., abacavir, emtricitabine, lamivudine, stavudine and zidovudine).	Etravirine can be used with these NRTIs without dose adjustment.
<i>NNRTIs</i>		
Efavirenz Nevirapine Rilpivirine	Combining two NNRTIs has not been shown to be beneficial. Concomitant use of INTELENCE with efavirenz or nevirapine may cause a significant decrease in the plasma concentration of etravirine and loss of therapeutic effect of INTELENCE. Concomitant use of INTELENCE with rilpivirine may cause a decrease in the plasma concentration of rilpivirine and loss of therapeutic effect of rilpivirine.	It is not recommended to co-administer INTELENCE with other NNRTIs.

<i>HIV PIs - Unboosted (i.e. without co-administration of low-dose ritonavir)</i>		
Indinavir	Concomitant use of INTELENCE with indinavir may cause a significant decrease in the plasma concentration of indinavir and loss of therapeutic effect of indinavir.	It is not recommended to co-administer INTELENCE with indinavir.
Nelfinavir	Not studied. INTELENCE is expected to increase nelfinavir plasma concentrations.	It is not recommended to co-administer INTELENCE with nelfinavir.
<i>HIV PIs - Boosted (with low-dose ritonavir)</i>		
Atazanavir/ritonavir 300/100 mg once daily	<u>atazanavir</u> AUC ↓ 0.86 (0.79-0.93) C <sub>min</sub> ↓ 0.62 (0.55-0.71) C <sub>max</sub> ↔ 0.97 (0.89-1.05) <u>etravirine</u> AUC ↑ 1.30 (1.18-1.44) C <sub>min</sub> ↑ 1.26 (1.12-1.42) C <sub>max</sub> ↑ 1.30 (1.17-1.44)	INTELENCE and atazanavir/ritonavir can be used without dose adjustment.
Darunavir/ritonavir 600/100 mg twice daily	<u>darunavir</u> AUC ↔ 1.15 (1.05-1.26) C <sub>min</sub> ↔ 1.02 (0.90-1.17) C <sub>max</sub> ↔ 1.11 (1.01-1.22) <u>etravirine</u> AUC ↓ 0.63 (0.54-0.73) C <sub>min</sub> ↓ 0.51 (0.44-0.61) C <sub>max</sub> ↓ 0.68 (0.57-0.82)	INTELENCE and darunavir/ritonavir can be used without dose adjustments (see also section 5.1).
Fosamprenavir/ritonavir 700/100 mg twice daily	<u>amprenavir</u> AUC ↑ 1.69 (1.53-1.86) C <sub>min</sub> ↑ 1.77 (1.39-2.25) C <sub>max</sub> ↑ 1.62 (1.47-1.79) <u>etravirine</u> AUC ↔ <sup>a</sup> C <sub>min</sub> ↔ <sup>a</sup> C <sub>max</sub> ↔ <sup>a</sup>	Amprenavir/ritonavir and fosamprenavir/ritonavir may require dose reduction when co-administered with INTELENCE. Using the oral solution may be considered for dose reduction.
Lopinavir/ritonavir (tablet) 400/100 mg twice daily	<u>lopinavir</u> AUC ↔ 0.87 (0.83-0.92) C <sub>min</sub> ↓ 0.80 (0.73-0.88) C <sub>max</sub> ↔ 0.89 (0.82-0.96) <u>etravirine</u> AUC ↓ 0.65 (0.59-0.71) C <sub>min</sub> ↓ 0.55 (0.49-0.62) C <sub>max</sub> ↓ 0.70 (0.64-0.78)	INTELENCE and lopinavir/ritonavir can be used without dose adjustments.
Saquinavir/ritonavir 1,000/100 mg twice daily	<u>saquinavir</u> AUC ↔ 0.95 (0.64-1.42) C <sub>min</sub> ↓ 0.80 (0.46-1.38) C <sub>max</sub> ↔ 1.00 (0.70-1.42) <u>etravirine</u> AUC ↓ 0.67 (0.56-0.80) C <sub>min</sub> ↓ 0.71 (0.58-0.87) C <sub>max</sub> ↓ 0.63 (0.53-0.75)	INTELENCE and saquinavir/ritonavir can be used without dose adjustments.
Tipranavir/ritonavir 500/200 mg twice daily	<u>tipranavir</u> AUC ↑ 1.18 (1.03-1.36) C <sub>min</sub> ↑ 1.24 (0.96-1.59) C <sub>max</sub> ↑ 1.14 (1.02-1.27) <u>etravirine</u> AUC ↓ 0.24 (0.18-0.33) C <sub>min</sub> ↓ 0.18 (0.13-0.25) C <sub>max</sub> ↓ 0.29 (0.22-0.40)	It is not recommended to co-administer tipranavir/ritonavir and INTELENCE (see section 4.4).

<i>CCR5 Antagonists</i>		
<p>Maraviroc 300 mg twice daily</p> <p>Maraviroc/darunavir/ ritonavir 150/600/100 mg twice daily</p>	<p><u>maraviroc</u> AUC ↓ 0.47 (0.38-0.58) C<sub>min</sub> ↓ 0.61 (0.53-0.71) C<sub>max</sub> ↓ 0.40 (0.28-0.57)</p> <p><u>etravirine</u> AUC ↔ 1.06 (0.99-1.14) C<sub>min</sub> ↔ 1.08 (0.98-1.19) C<sub>max</sub> ↔ 1.05 (0.95-1.17)</p> <p><u>maraviroc*</u> AUC ↑ 3.10 (2.57-3.74) C<sub>min</sub> ↑ 5.27 (4.51-6.15) C<sub>max</sub> ↑ 1.77 (1.20-2.60) * compared to maraviroc 150 mg b.i.d.</p>	<p>The recommended dose for maraviroc when combined with INTELENCE in the presence of potent CYP3A inhibitors (e.g. boosted PIs) is 150 mg b.i.d. except for fosamprenavir/ritonavir (maraviroc dose 300 mg b.i.d.). No dose adjustment for INTELENCE is necessary. See also section 4.4.</p>
<i>Fusion Inhibitors</i>		
<p>Enfuvirtide 90 mg twice daily</p>	<p><u>etravirine*</u> AUC ↔<sup>a</sup> C<sub>0h</sub> ↔<sup>a</sup> Enfuvirtide concentrations not studied and no effect is expected. * based on population pharmacokinetic analyses</p>	<p>No interaction is expected for either INTELENCE or enfuvirtide when co-administered.</p>
<i>Integrase Strand Transfer Inhibitors</i>		
<p>Dolutegravir 50 mg once daily</p> <p>Dolutegravir + darunavir/ritonavir 50 mg once daily + 600/100 mg twice daily</p> <p>Dolutegravir + Lopinavir/ritonavir 50 mg once daily + 400/100 mg twice daily</p>	<p><u>dolutegravir</u> AUC ↓ 0.29 (0.26-0.34) C<sub>min</sub> ↓ 0.12 (0.09-0.16) C<sub>max</sub> ↓ 0.48 (0.43-0.54)</p> <p><u>etravirine</u> AUC ↔<sup>a</sup> C<sub>min</sub> ↔<sup>a</sup> C<sub>max</sub> ↔<sup>a</sup></p> <p><u>dolutegravir</u> AUC ↓ 0.75 (0.69-0.81) C<sub>min</sub> ↓ 0.63 (0.52-0.77) C<sub>max</sub> ↓ 0.88 (0.78-1.00)</p> <p><u>etravirine</u> AUC ↔<sup>a</sup> C<sub>min</sub> ↔<sup>a</sup> C<sub>max</sub> ↔<sup>a</sup></p> <p><u>dolutegravir</u> AUC ↔ 1.11 (1.02-1.20) C<sub>min</sub> ↑ 1.28 (1.13-1.45) C<sub>max</sub> ↔ 1.07 (1.02-1.13)</p> <p><u>etravirine</u> AUC ↔<sup>a</sup> C<sub>min</sub> ↔<sup>a</sup> C<sub>max</sub> ↔<sup>a</sup></p>	<p>Etravirine significantly reduced plasma concentrations of dolutegravir. The effect of etravirine on dolutegravir plasma concentrations was mitigated by co-administration of darunavir/ritonavir or lopinavir/ritonavir, and is expected to be mitigated by atazanavir/ritonavir.</p> <p>INTELENCE should only be used with dolutegravir when co-administered with atazanavir/ritonavir, darunavir/ritonavir, or lopinavir/ritonavir. This combination can be used without dose adjustment.</p>
<p>Raltegravir 400 mg twice daily</p>	<p><u>raltegravir</u> AUC ↓ 0.90 (0.68-1.18) C<sub>min</sub> ↓ 0.66 (0.34-1.26) C<sub>max</sub> ↓ 0.89 (0.68-1.15)</p> <p><u>etravirine</u> AUC ↔ 1.10 (1.03-1.16) C<sub>min</sub> ↔ 1.17 (1.10-1.26) C<sub>max</sub> ↔ 1.04 (0.97-1.12)</p>	<p>INTELENCE and raltegravir can be used without dose adjustments.</p>



<b>ANTIARRHYTHMICS</b>		
Digoxin 0.5 mg single dose	<u>digoxin</u> AUC ↑ 1.18 (0.90-1.56) C <sub>min</sub> ND C <sub>max</sub> ↑ 1.19 (0.96-1.49)	INTELENCE and digoxin can be used without dose adjustments. It is recommended that digoxin levels be monitored when digoxin is combined with INTELENCE.
Amiodarone Bepidil Disopyramide Flecainide Lidocaine (systemic) Mexiletine Propafenone Quinidine	Not studied. INTELENCE is expected to decrease plasma concentrations of these antiarrhythmics.	Caution is warranted and therapeutic concentration monitoring, if available, is recommended for antiarrhythmics when co-administered with INTELENCE.
<b>ANTIBIOTICS</b>		
Azithromycin	Not studied. Based on the biliary elimination pathway of azithromycin, no drug interactions are expected between azithromycin and INTELENCE.	INTELENCE and azithromycin can be used without dose adjustments.
Clarithromycin 500 mg twice daily	<u>clarithromycin</u> AUC ↓ 0.61 (0.53-0.69) C <sub>min</sub> ↓ 0.47 (0.38-0.57) C <sub>max</sub> ↓ 0.66 (0.57-0.77) <u>14-OH-clarithromycin</u> AUC ↑ 1.21 (1.05-1.39) C <sub>min</sub> ↔ 1.05 (0.90-1.22) C <sub>max</sub> ↑ 1.33 (1.13-1.56) <u>etravirine</u> AUC ↑ 1.42 (1.34-1.50) C <sub>min</sub> ↑ 1.46 (1.36-1.58) C <sub>max</sub> ↑ 1.46 (1.38-1.56)	Clarithromycin exposure was decreased by etravirine; however, concentrations of the active metabolite, 14-OH-clarithromycin, were increased. Because 14-OH-clarithromycin has reduced activity against <i>Mycobacterium avium</i> complex (MAC), overall activity against this pathogen may be altered; therefore alternatives to clarithromycin should be considered for the treatment of MAC.
<b>ANTICOAGULANTS</b>		
Warfarin	Not studied. INTELENCE is expected to increase plasma concentrations of warfarin.	It is recommended that the international normalised ratio (INR) be monitored when warfarin is combined with INTELENCE.
<b>ANTICONVULSANTS</b>		
Carbamazepine Phenobarbital Phenytoin	Not studied. Carbamazepine, phenobarbital and phenytoin are expected to decrease plasma concentrations of etravirine.	Combination not recommended.
<b>ANTIFUNGALS</b>		
Fluconazole 200 mg once in the morning	<u>fluconazole</u> AUC ↔ 0.94 (0.88-1.01) C <sub>min</sub> ↔ 0.91 (0.84-0.98) C <sub>max</sub> ↔ 0.92 (0.85-1.00) <u>etravirine</u> AUC ↑ 1.86 (1.73-2.00) C <sub>min</sub> ↑ 2.09 (1.90-2.31) C <sub>max</sub> ↑ 1.75 (1.60-1.91)	INTELENCE and fluconazole can be used without dose adjustments.

Itraconazole Ketoconazole Posaconazole	Not studied. <u>Posaconazole</u> , a potent inhibitor of CYP3A4, may increase plasma concentrations of etravirine. <u>Itraconazole</u> and <u>ketoconazole</u> are potent inhibitors as well as substrates of CYP3A4. Concomitant systemic use of itraconazole or ketoconazole and INTELENCE may increase plasma concentrations of etravirine. Simultaneously, plasma concentrations of itraconazole or ketoconazole may be decreased by INTELENCE.	INTELENCE and these antifungals can be used without dose adjustments.
Voriconazole 200 mg twice daily	<u>voriconazole</u> AUC ↑ 1.14 (0.88-1.47) C <sub>min</sub> ↑ 1.23 (0.87-1.75) C <sub>max</sub> ↓ 0.95 (0.75-1.21) <u>etravirine</u> AUC ↑ 1.36 (1.25-1.47) C <sub>min</sub> ↑ 1.52 (1.41-1.64) C <sub>max</sub> ↑ 1.26 (1.16-1.38)	INTELENCE and voriconazole can be used without dose adjustments.
<b>ANTIMALARIALS</b>		
Artemether/ Lumefantrine 80/480 mg, 6 doses at 0, 8, 24, 36, 48, and 60 hours	<u>artemether</u> AUC ↓ 0.62 (0.48-0.80) C <sub>min</sub> ↓ 0.82 (0.67-1.01) C <sub>max</sub> ↓ 0.72 (0.55-0.94) <u>dihydroartemisinin</u> AUC ↓ 0.85 (0.75-0.97) C <sub>min</sub> ↓ 0.83 (0.71-0.97) C <sub>max</sub> ↓ 0.84 (0.71-0.99) <u>lumefantrine</u> AUC ↓ 0.87 (0.77-0.98) C <sub>min</sub> ↔ 0.97 (0.83-1.15) C <sub>max</sub> ↔ 1.07 (0.94-1.23) <u>etravirine</u> AUC ↔ 1.10 (1.06-1.15) C <sub>min</sub> ↔ 1.08 (1.04-1.14) C <sub>max</sub> ↔ 1.11 (1.06-1.17)	Close monitoring of antimalarial response is warranted when co-administering INTELENCE and artemether/lumefantrine as a significant decrease in exposure of artemether and its active metabolite, dihydroartemisinin, may result in decreased antimalarial efficacy. No dose adjustment is needed for INTELENCE.
<b>ANTIMYCOBACTERIALS</b>		
Rifampicin Rifapentine	Not studied. Rifampicin and rifapentine are expected to decrease plasma concentrations of etravirine. INTELENCE should be used in combination with a boosted protease inhibitor (PI). Rifampicin is contraindicated in combination with boosted PIs.	Combination not recommended.

Rifabutin 300 mg once daily	<p>With an associated boosted PI: No interaction study has been performed. Based on historical data, a decrease in etravirine exposure may be expected whereas an increase in rifabutin exposure and especially in 25-O-desacetyl-rifabutin may be expected.</p> <p>With no associated boosted PI (out of the recommended indication for etravirine):</p> <p><u>rifabutin</u> AUC ↓ 0.83 (0.75-0.94) C<sub>min</sub> ↓ 0.76 (0.66-0.87) C<sub>max</sub> ↓ 0.90 (0.78-1.03)</p> <p><u>25-O-desacetyl-rifabutin</u> AUC ↓ 0.83 (0.74-0.92) C<sub>min</sub> ↓ 0.78 (0.70-0.87) C<sub>max</sub> ↓ 0.85 (0.72-1.00)</p> <p><u>etravirine</u> AUC ↓ 0.63 (0.54-0.74) C<sub>min</sub> ↓ 0.65 (0.56-0.74) C<sub>max</sub> ↓ 0.63 (0.53-0.74)</p>	<p>The combination of INTELENCE with a boosted PI and rifabutin should be used with caution due to the risk of decrease in etravirine exposure and the risk of increase in rifabutin and 25-O-desacetyl-rifabutin exposures.</p> <p>Close monitoring for virologic response and for rifabutin related adverse reactions is recommended. Please refer to the product information of the associated boosted PI for the dose adjustment of rifabutin to be used.</p>
<b>BENZODIAZEPINES</b>		
Diazepam	Not studied. Etravirine is expected to increase plasma concentrations of diazepam.	Alternatives to diazepam should be considered.
<b>CORTICOSTEROIDS</b>		
Dexamethasone (systemic)	Not studied. Dexamethasone is expected to decrease plasma concentrations of etravirine	Systemic dexamethasone should be used with caution or alternatives should be considered, particularly for chronic use.
<b>OESTROGEN-BASED CONTRACEPTIVES</b>		
Ethinylestradiol 0.035 mg once daily Norethindrone 1 mg once daily	<p><u>ethinylestradiol</u> AUC ↑ 1.22 (1.13-1.31) C<sub>min</sub> ↔ 1.09 (1.01-1.18) C<sub>max</sub> ↑ 1.33 (1.21-1.46)</p> <p><u>norethindrone</u> AUC ↔ 0.95 (0.90-0.99) C<sub>min</sub> ↓ 0.78 (0.68-0.90) C<sub>max</sub> ↔ 1.05 (0.98-1.12)</p> <p><u>etravirine</u> AUC ↔<sup>a</sup> C<sub>min</sub> ↔<sup>a</sup> C<sub>max</sub> ↔<sup>a</sup></p>	<p>The combination of oestrogen- and/or progesterone-based contraceptives and INTELENCE can be used without dose adjustment.</p>
<b>HEPATITIS C VIRUS (HCV) DIRECT-ACTING ANTIVIRALS</b>		
Ribavirin	Not studied, but no interaction expected based on the renal elimination pathway of ribavirin.	The combination of INTELENCE and ribavirin can be used without dose adjustments.

Boceprevir Boceprevir 800 mg 3 times daily + etravirine 200 mg every 12 hours	<u>boceprevir</u> AUC ↑ 1.10 (0.94-1.28) C <sub>max</sub> ↑ 1.10 (0.94-1.29) C <sub>min</sub> ↓ 0.88 (0.66-1.17) <u>etravirine</u> AUC ↓ 0.77 (0.66-0.91) C <sub>max</sub> ↓ 0.76 (0.68-0.85) C <sub>min</sub> ↓ 0.71 (0.54-0.95)	The clinical significance of the reductions in etravirine pharmacokinetic parameters and boceprevir C <sub>min</sub> in the setting of the combination therapy with HIV antiretroviral medicines which also affect the pharmacokinetics of etravirine and/or boceprevir has not been directly assessed. Increased clinical and laboratory monitoring for HIV and HCV suppression is recommended.
Telaprevir 750 mg every 8 hours	<u>telaprevir</u> AUC ↓ 0.84 (0.71-0.98) C <sub>max</sub> ↓ 0.90 (0.79-1.02) C <sub>min</sub> ↓ 0.75 (0.61-0.92) <u>etravirine</u> AUC ↔ 0.94 (0.85-1.04) C <sub>max</sub> ↔ 0.93 (0.84-1.03) C <sub>min</sub> ↔ 0.97 (0.86-1.10)	The combination of INTELENCE and telaprevir can be used without dose adjustments.
<b>HERBAL PRODUCTS</b>		
St John's wort ( <i>Hypericum perforatum</i> )	Not studied. St John's wort is expected to decrease the plasma concentrations of etravirine.	Combination not recommended.
<b>HMG CO-A REDUCTASE INHIBITORS</b>		
Atorvastatin 40 mg once daily	<u>atorvastatin</u> AUC ↓ 0.63 (0.58-0.68) C <sub>min</sub> ND C <sub>max</sub> ↑ 1.04 (0.84-1.30) <u>2-OH-atorvastatin</u> AUC ↑ 1.27 (1.19-1.36) C <sub>min</sub> ND C <sub>max</sub> ↑ 1.76 (1.60-1.94) <u>etravirine</u> AUC ↔ 1.02 (0.97-1.07) C <sub>min</sub> ↔ 1.10 (1.02-1.19) C <sub>max</sub> ↔ 0.97 (0.93-1.02)	The combination of INTELENCE and atorvastatin can be given without any dose adjustments, however, the dose of atorvastatin may need to be altered based on clinical response.
Fluvastatin Lovastatin Pravastatin Rosuvastatin Simvastatin	Not studied. No interaction between <u>pravastatin</u> and INTELENCE is expected. <u>Lovastatin</u> , <u>rosuvastatin</u> and <u>simvastatin</u> are CYP3A4 substrates and co-administration with INTELENCE may result in lower plasma concentrations of the HMG Co-A reductase inhibitor. <u>Fluvastatin</u> , and <u>rosuvastatin</u> are metabolised by CYP2C9 and co-administration with INTELENCE may result in higher plasma concentrations of the HMG Co-A reductase inhibitor.	Dose adjustments for these HMG Co-A reductase inhibitors may be necessary.
<b>H<sub>2</sub>-RECEPTOR ANTAGONISTS</b>		
Ranitidine 150 mg twice daily	<u>etravirine</u> AUC ↓ 0.86 (0.76-0.97) C <sub>min</sub> ND C <sub>max</sub> ↓ 0.94 (0.75-1.17)	INTELENCE can be co-administered with H <sub>2</sub> -receptor antagonists without dose adjustments.

<b>IMMUNOSUPPRESSANTS</b>		
Cyclosporin Sirolimus Tacrolimus	Not studied. Etravirine is expected to decrease plasma concentrations of cyclosporine, sirolimus and tacrolimus.	Co-administration with systemic immunosuppressants should be done with caution because plasma concentrations of cyclosporin, sirolimus and tacrolimus may be affected when co-administered with INTELENCE.
<b>NARCOTIC ANALGESICS</b>		
Methadone individual dose ranging from 60 mg to 130 mg once daily	<u>R(-) methadone</u> AUC ↔ 1.06 (0.99-1.13) C <sub>min</sub> ↔ 1.10 (1.02-1.19) C <sub>max</sub> ↔ 1.02 (0.96-1.09) <u>S(+)</u> methadone AUC ↔ 0.89 (0.82-0.96) C <sub>min</sub> ↔ 0.89 (0.81-0.98) C <sub>max</sub> ↔ 0.89 (0.83-0.97) <u>etravirine</u> AUC ↔ <sup>a</sup> C <sub>min</sub> ↔ <sup>a</sup> C <sub>max</sub> ↔ <sup>a</sup>	No changes in methadone dosage were required based on clinical status during or after the period of INTELENCE co-administration.
<b>PHOSPHODIESTERASE, TYPE 5 (PDE-5) INHIBITORS</b>		
Sildenafil 50 mg single dose Tadalafil Vardenafil	<u>sildenafil</u> AUC ↓ 0.43 (0.36-0.51) C <sub>min</sub> ND C <sub>max</sub> ↓ 0.55 (0.40-0.75) <u>N-desmethyl-sildenafil</u> AUC ↓ 0.59 (0.52-0.68) C <sub>min</sub> ND C <sub>max</sub> ↓ 0.75 (0.59-0.96)	Concomitant use of PDE-5 inhibitors with INTELENCE may require dose adjustment of the PDE-5 inhibitor to attain the desired clinical effect.
<b>PLATELET AGGREGGATION INHIBITORS</b>		
Clopidogrel	<i>In vitro</i> data show that etravirine has inhibitory properties on CYP2C19. It is therefore possible that etravirine may inhibit the metabolism of clopidogrel to its active metabolite by such inhibition of CYP2C19 <i>in vivo</i> . The clinical relevance of this interaction has not been demonstrated.	As a precaution it is recommended that concomitant use of etravirine and clopidogrel should be discouraged.
<b>PROTON PUMP INHIBITORS</b>		
Omeprazole 40 mg once daily	<u>etravirine</u> AUC ↑ 1.41 (1.22-1.62) C <sub>min</sub> ND C <sub>max</sub> ↑ 1.17 (0.96-1.43)	INTELENCE can be co-administered with proton pump inhibitors without dose adjustments.
<b>SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIS)</b>		
Paroxetine 20 mg once daily	<u>paroxetine</u> AUC ↔ 1.03 (0.90-1.18) C <sub>min</sub> ↓ 0.87 (0.75-1.02) C <sub>max</sub> ↔ 1.06 (0.95-1.20) <u>etravirine</u> AUC ↔ 1.01 (0.93-1.10) C <sub>min</sub> ↔ 1.07 (0.98-1.17) C <sub>max</sub> ↔ 1.05 (0.96-1.15)	INTELENCE can be co-administered with paroxetine without dose adjustments.

<sup>a</sup> Comparison based on historic control.

Note: In drug-drug interaction studies, different formulations and/or doses of etravirine were used which led to similar exposures and, therefore, interactions relevant for one formulation are relevant for the other.

### Paediatric population

Interaction studies have only been performed in adults.

## 4.6 Fertility, pregnancy and lactation

### Pregnancy

As a general rule, when deciding to use antiretroviral agents for the treatment of HIV infection in pregnant women, and consequently for reducing the risk of HIV vertical transmission to the newborn, the animal data as well as the clinical experience in pregnant women should be taken into account in order to characterise the safety for the foetus.

Placental transfer has been seen in pregnant rats, but it is not known whether placental transfer of INTELENCE also occurs in pregnant women. Studies in animals do not indicate direct or indirect harmful effects with respect to pregnancy, embryonal/foetal development, parturition or postnatal development (see section 5.3). Based on animal data the malformative risk is unlikely in humans. The clinical data do not raise safety concern but are very limited.

### Breast-feeding

It is not known whether etravirine is excreted in human milk. As a general rule, it is recommended that mothers infected by HIV do not breast-feed their babies under any circumstances in order to avoid transmission of HIV.

### Fertility

No human data on the effect of etravirine on fertility are available. In rats, there was no effect on mating or fertility with etravirine treatment (see section 5.3).

## 4.7 Effects on ability to drive and use machines

INTELENCE has no or negligible influence on the ability to drive and use machines. Adverse drug reactions such as somnolence and vertigo have been reported in INTELENCE treated subjects at incidences similar to placebo (see section 4.8). There is no evidence that INTELENCE may alter the patient's ability to drive and operate machines, however, the adverse drug reaction profile should be taken into account.

## 4.8 Undesirable effects

### Summary of the safety profile

The safety assessment is based on all data from 1,203 patients in the Phase III placebo-controlled trials DUET-1 and DUET-2 in antiretroviral treatment-experienced HIV-1 infected adult patients, 599 of whom received INTELENCE (200 mg b.i.d.) (see section 5.1). In these pooled trials, the median exposure for patients in the INTELENCE arm was 52.3 weeks.

The most frequently reported adverse drug reactions (ADRs) (incidence  $\geq 10\%$  in the INTELENCE arm) of all intensities occurring in the Phase III studies were rash (19.2% in the INTELENCE arm versus 10.9% in the placebo arm), diarrhoea (18.0% in the INTELENCE arm versus 23.5% in the placebo arm), nausea (14.9% in the INTELENCE arm versus 12.7% in the placebo arm) and headache (10.9% in the INTELENCE arm versus 12.7% in the placebo arm). The rates of discontinuation due to any adverse reaction were 7.2% in patients receiving INTELENCE and 5.6% in patients receiving placebo. The most common ADR leading to discontinuation was rash (2.2% in the INTELENCE arm versus 0% in the placebo arm).

Rash was most frequently mild to moderate, generally macular to maculopapular or erythematous, mostly occurred in the second week of therapy, and was infrequent after week 4. Rash was mostly self-limiting, and generally resolved within 1-2 weeks on continued therapy (see section 4.4). The incidence of rash was higher in women compared to men in the INTELENCE arm in the DUET trials (rash  $\geq$  grade 2 was reported in 9/60 [15.0%] women versus 51/539 [9.5%] men; discontinuations due to rash were reported in 3/60 [5.0%] women versus 10/539 [1.9%] men) (see section 4.4). There was no gender difference in severity or treatment discontinuation due to rash. The clinical data are limited and an increased risk of cutaneous reactions in patients with a history of NNRTI-associated cutaneous reaction cannot be excluded (see section 4.4).

Tabulated list of adverse reactions

ADRs of moderate intensity or greater ( $\geq$  grade 2) reported in patients treated with INTELENCE are summarised in table 2 (background regimen is indicated as “BR”). Laboratory abnormalities considered ADRs are included in a paragraph below table 2. The ADRs are listed by system organ class (SOC) and frequency. Within each frequency grouping, ADRs are presented in order of decreasing seriousness. Frequencies are defined as very common ( $\geq 1/10$ ), common ( $\geq 1/100$  to  $< 1/10$ ) and uncommon ( $\geq 1/1,000$  to  $< 1/100$ ). Rare and very rare ADRs cannot be detected based on the number of patients included in the DUET trials.

<b>Table 2: DUET-1 and DUET-2 trials</b>		
<b>System Organ Class (SOC)</b>	<b>Frequency Category</b>	<b>ADRs (INTELENCE + BR versus Placebo + BR)</b>
Blood and lymphatic system disorders	common	thrombocytopenia (1.3% vs 1.5%), anaemia (4.0% vs 3.8%)
Immune system disorders	uncommon	immune reconstitution syndrome (0.2% vs 0.3%), drug hypersensitivity (0.8% vs 1.2%)
Metabolism and nutrition disorders	common	diabetes mellitus (1.3% vs 0.2%), hyperglycaemia (1.5% vs 0.7%), hypercholesterolaemia (4.3% vs 3.6%), hypertriglyceridaemia (6.3% vs 4.3%), hyperlipidaemia (2.5% vs 1.3%)
	uncommon	anorexia (0.8% vs 1.5%), dyslipidaemia (0.8% vs 0.3%)
Psychiatric disorders	common	anxiety (1.7% vs 2.6%), insomnia (2.7% vs 2.8%)
	uncommon	confusional state (0.2% vs 0.2%), disorientation (0.2% vs 0.3%), nightmares (0.2% vs 0.2%), sleep disorders (0.5% vs 0.5%), nervousness (0.2% vs 0.3%), abnormal dreams (0.2% vs 0.2%)
Nervous system disorders	common	peripheral neuropathy (3.8% vs 2.0%), headache (3.0% vs 4.5%)
	uncommon	convulsion (0.5% vs 0.7%), syncope (0.3% vs 0.3%), amnesia (0.3% vs 0.5%), tremor (0.2% vs 0.3%), somnolence (0.7% vs 0.5%), paraesthesia (0.7% vs 0.7%), hypoesthesia (0.5% vs 0.2%), hypersomnia (0.2% vs 0%), disturbance in attention (0.2% vs 0.2%)
Eye disorders	uncommon	blurred vision (0.7% vs 0%)
Ear and labyrinth disorders	uncommon	vertigo (0.2% vs 0.5%)
Cardiac disorders	common	myocardial infarction (1.3% vs 0.3%)
	uncommon	atrial fibrillation (0.2% vs 0.2%), angina pectoris (0.5% vs 0.3%)
Vascular disorders	common	hypertension (3.2% vs 2.5%)
Respiratory, thoracic and mediastinal disorders	uncommon	bronchospasm (0.2% vs 0%), exertional dyspnoea (0.5% vs 0.5%)
Gastrointestinal disorders	common	gastroesophageal reflux disease (1.8% vs 1.0%), diarrhoea (7.0% vs 11.3%), vomiting (2.8% vs 2.8%), nausea (5.2% vs 4.8%), abdominal pain (3.5% vs 3.1%), flatulence (1.5% vs 1.0%), gastritis (1.5% vs 1.0%)
	uncommon	pancreatitis (0.7% vs 0.3%), haematemesis (0.2% vs 0%), stomatitis (0.2% vs 0.2%), constipation (0.3% vs 0.5%), abdominal distension (0.7% vs 1.0%), dry mouth (0.3% vs 0%), retching (0.2% vs 0%)
Hepatobiliary disorders	uncommon	hepatitis (0.2% vs 0.3%), hepatic steatosis (0.3% vs 0%), cytolytic hepatitis (0.3% vs 0%), hepatomegaly (0.5% vs 0.2%)
Skin and subcutaneous	very common	rash (10.0% vs 3.5%)

tissue disorders	common	night sweats (1.0% vs 1.0%)
	uncommon	swelling face (0.3% vs 0%), hyperhidrosis (0.5% vs 0.2%), prurigo (0.7% vs 0.5%), dry skin (0.3% vs 0.2%)
Renal and urinary disorders	common	renal failure (2.7% vs 2.0%)
Reproductive system and breast disorders	uncommon	gynaecomastia (0.2% vs 0%)
General disorders and administration site conditions	common	fatigue (3.5% vs 4.6%)
	uncommon	sluggishness (0.2% vs 0%)

Additional ADRs of at least moderate intensity observed in other trials were angioneurotic oedema, erythema multiforme and haemorrhagic stroke, each reported in no more than 0.5% of patients. Stevens-Johnson Syndrome (rare; < 0.1%) and toxic epidermal necrolysis (very rare; < 0.01%) have been reported during clinical development with INTELENCE.

#### *Laboratory abnormalities*

Treatment emergent clinical laboratory abnormalities (grade 3 or 4), considered ADRs, reported in  $\geq 2\%$  of patients in the INTELENCE arm versus the placebo arm, respectively, were increases in amylase (8.9% vs 9.4%), creatinine (2.0% vs 1.7%), lipase (3.4% vs 2.6%), total cholesterol (8.1% vs 5.3%), low density lipoprotein (LDL) (7.2% vs 6.6%), triglycerides (9.2% vs 5.8%), glucose (3.5% vs 2.4%), alanine aminotransferase (ALT) (3.7% vs 2.0%), aspartate amino transferase (AST) (3.2% vs 2.0%) and decreases in neutrophils (5.0% vs 7.4%) and white blood cell count (2.0% vs 4.3%).

#### Description of selected adverse reactions

##### *Metabolic parameters*

Weight and levels of blood lipids and glucose may increase during antiretroviral therapy (see section 4.4)

##### *Immune reconstitution syndrome*

In HIV infected patients with severe immune deficiency at the time of initiation of combination antiretroviral therapy (CART), an inflammatory reaction to asymptomatic or residual opportunistic infections may arise. Autoimmune disorders (such as Graves' disease) have also been reported; however, the reported time to onset is more variable and these events can occur many months after initiation of treatment (see section 4.4).

##### *Osteonecrosis*

Cases of osteonecrosis have been reported, particularly in patients with generally acknowledged risk factors, advanced HIV disease or long-term exposure to combination antiretroviral therapy. The frequency of this is unknown (see section 4.4).

#### Paediatric population (6 years to less than 18 years of age)

The safety assessment in children and adolescents is based on the week 48 analysis of the single-arm, Phase II PIANO trial in which 101 antiretroviral treatment-experienced HIV-1 infected paediatric patients, 6 years to less than 18 years of age and weighing at least 16 kg, received INTELENCE in combination with other antiretroviral agents (see section 5.1). The frequency, type and severity of adverse drug reactions in paediatric patients were comparable to those observed in adults. Rash was reported more frequently in female subjects than in male subjects (rash  $\geq$  grade 2 was reported in 13/64 [20.3%] females versus 2/37 [5.4%] males; discontinuations due to rash were reported in 4/64 [6.3%] females versus 0/37 [0%] males) (see section 4.4). Most often, rash was mild to moderate, of macular/papular type, and occurred in the second week of therapy. Rash was mostly self-limiting and generally resolved within 1 week on continued therapy.



### Other special populations

#### *Patients co-infected with hepatitis B and/or hepatitis C virus*

In the pooled analysis for DUET-1 and DUET-2, the incidence of hepatic events tended to be higher in co-infected subjects treated with INTELENCE compared to co-infected subjects in the placebo group. INTELENCE should be used with caution in these patients (see also sections 4.4 and 5.2).

### Adverse drug reactions identified through post marketing experience with INTELENCE

Hypersensitivity reactions, including DRESS, have been reported with INTELENCE. These hypersensitivity reactions were characterised by rash, fever and sometimes organ involvement (including, but not limited to, severe rash or rash accompanied by fever, general malaise, fatigue, muscle or joint aches, blisters, oral lesions, conjunctivitis, hepatitis and eosinophilia) (see section 4.4).

### Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via [the national reporting system listed in Appendix V](#).

## **4.9 Overdose**

There are no data with regard to symptomatic overdose with INTELENCE, but it is possible that the most frequent ADRs of INTELENCE, i.e. rash, diarrhoea, nausea, and headache would be the most common symptoms noted. There is no specific antidote for overdose with INTELENCE. Treatment of overdose with INTELENCE consists of general supportive measures including monitoring of vital signs and observation of the clinical status of the patient. If indicated, elimination of unabsorbed active substance is to be achieved by emesis. Administration of activated charcoal may also be used to aid in removal of unabsorbed active substance. Since etravirine is highly protein bound, dialysis is unlikely to result in significant removal of the active substance.

## **5. PHARMACOLOGICAL PROPERTIES**

### **5.1 Pharmacodynamic properties**

Pharmacotherapeutic group: Antivirals for systemic use, non-nucleoside reverse transcriptase inhibitors, ATC code: J05AG04.

#### Mechanism of action

Etravirine is an NNRTI of human immunodeficiency virus type 1 (HIV-1). Etravirine binds directly to reverse transcriptase (RT) and blocks the RNA-dependent and DNA-dependent DNA polymerase activities by causing a disruption of the enzyme's catalytic site.

#### Antiviral activity *in vitro*

Etravirine exhibits activity against wild type HIV-1 in T-cell lines and primary cells with median EC<sub>50</sub> values ranging from 0.9 to 5.5 nM. Etravirine demonstrates activity against HIV-1 group M (subtypes A, B, C, D, E, F, and G) and HIV-1 group O primary isolates with EC<sub>50</sub> values ranging from 0.3 to 1.7 nM and from 11.5 to 21.7 nM, respectively. Although etravirine demonstrates *in vitro* activity against wild type HIV-2 with median EC<sub>50</sub> values ranging from 5.7 to 7.2 µM, treatment of HIV-2 infection with etravirine is not recommended in the absence of clinical data. Etravirine retains activity against HIV-1 viral strains resistant to nucleoside reverse transcriptase and/or protease inhibitors. In addition, etravirine demonstrates a fold change (FC) in EC<sub>50</sub> ≤ 3 against 60% of 6,171 NNRTI-resistant clinical isolates.

#### Resistance

Etravirine efficacy in relation to NNRTI resistance at baseline has mainly been analysed with etravirine given in combination with darunavir/ritonavir (DUET-1 and DUET-2). Boosted protease inhibitors, like darunavir/ritonavir, show a higher barrier to resistance compared to other classes of

antiretrovirals. The breakpoints for reduced efficacy with etravirine (> 2 etravirine-associated mutations at baseline, see clinical results section) applies when etravirine is given in combination with a boosted protease inhibitor. This breakpoint might be lower in antiretroviral combination therapy not including a boosted protease inhibitor.

In the Phase III trials DUET-1 and DUET-2, mutations that developed most commonly in patients with virologic failure to the INTELENCE containing regimen were V108I, V179F, V179I, Y181C and Y181I, which usually emerged in a background of multiple other NNRTI resistance-associated mutations (RAMs). In all the other trials conducted with INTELENCE in HIV-1 infected patients, the following mutations emerged most commonly: L100I, E138G, V179F, V179I, Y181C and H221Y.

#### Cross-resistance

Following virologic failure of an etravirine-containing regimen it is not recommended to treat patients with efavirenz and/or nevirapine.

#### Clinical efficacy and safety

##### *Treatment-experienced adult patients*

##### Pivotal studies

The evidence of efficacy of INTELENCE is based on 48-week data from 2 Phase III trials DUET-1 and DUET-2. These trials were identical in design and similar efficacy for INTELENCE was seen in each trial. The results below are pooled data from the two trials.

##### Trial characteristics

- Design: randomised (1:1), double-blinded, placebo-controlled.
- Treatment: INTELENCE vs. placebo, in addition to a background regimen including darunavir/ritonavir (DRV/r), investigator-selected N(t)RTIs and optional enfuvirtide (ENF).
- Main inclusion criteria:
  - HIV-1 plasma viral load > 5,000 HIV-1 RNA copies/ml at screening
  - 1 or more NNRTI resistance-associated mutations (RAMs) at screening or from prior genotypic analysis (i.e., archived resistance)
  - 3 or more primary PI mutations at screening
  - on a stable antiretroviral regimen for at least 8 weeks.
- Stratification: Randomisation was stratified by the intended use of ENF in the BR, previous use of darunavir and screening viral load.
- Virologic response was defined as achieving a confirmed undetectable viral load (< 50 HIV-1 RNA copies/ml).

##### Summary of efficacy results

<b>Table 3: DUET-1 and DUET-2 pooled 48-week data</b>			
	INTELENCE + BR N = 599	Placebo + BR N = 604	Treatment difference (95% CI)
<i>Baseline characteristics</i>			
Median plasma HIV-1 RNA	4.8 log <sub>10</sub> copies/ml	4.8 log <sub>10</sub> copies/ml	
Median CD4 cell count	99 x 10 <sup>6</sup> cells/l	109 x 10 <sup>6</sup> cells/l	
<i>Outcomes</i>			
Confirmed undetectable viral load (< 50 HIV-1 RNA copies/ml) <sup>a</sup> n (%)			
Overall	363 (60.6%)	240 (39.7%)	20.9% (15.3%; 26.4%) <sup>d</sup>
<i>De novo</i> ENF	109 (71.2%)	93 (58.5%)	12.8% (2.3%; 23.2%) <sup>f</sup>
Not <i>de novo</i> ENF	254 (57.0%)	147 (33.0%)	23.9% (17.6%; 30.3%) <sup>f</sup>

< 400 HIV-1 RNA copies/ml <sup>a</sup> n (%)	428 (71.5%)	286 (47.4%)	24.1% (18.7%; 29.5%) <sup>d</sup>
HIV-1 RNA log <sub>10</sub> mean change from baseline (log <sub>10</sub> copies/ml) <sup>b</sup>	-2.25	-1.49	-0.6 (-0.8; -0.5) <sup>c</sup>
CD4 cell count mean change from baseline (x 10 <sup>6</sup> /l) <sup>b</sup>	+98.2	+72.9	24.4 (10.4; 38.5) <sup>c</sup>
Any AIDS defining illness and/or death n (%)	35 (5.8%)	59 (9.8%)	-3.9% (-6.9%; -0.9%) <sup>e</sup>

<sup>a</sup> Imputations according to the TLOVR algorithm (TLOVR = Time to Loss of Virologic Response).

<sup>b</sup> Non-completer is failure (NC = F) imputation.

<sup>c</sup> Treatment differences are based on Least Square Means from an ANCOVA model including the stratification factors. P-value < 0.0001 for mean decrease in HIV-1 RNA; P-value = 0.0006 for mean change in CD4 cell count.

<sup>d</sup> Confidence interval around observed difference of response rates; P-value < 0.0001 from logistic regression model, including stratification factors.

<sup>e</sup> Confidence interval around observed difference of response rates; P-value = 0.0408.

<sup>f</sup> Confidence interval around observed difference of response rates; P-value from CMH test controlling for stratification factors = 0.0199 for *de novo*, and < 0.0001 for not *de novo*.

Since there was a significant interaction effect between treatment and ENF, the primary analysis was done for 2 ENF strata (patients reusing or not using ENF versus patients using ENF *de novo*). The week 48 results from the pooled analysis of DUET-1 and DUET-2 demonstrated that the INTELENCE arm was superior to the placebo arm irrespective of whether ENF was used *de novo* (p = 0.0199) or not (p < 0.0001). Results of this analysis (week 48 data) by ENF stratum are shown in table 3.

Significantly fewer patients in the INTELENCE arm reached a clinical endpoint (AIDS-defining illness and/or death) as compared to the placebo arm (p = 0.0408).

A subgroup analysis of the virologic response (defined as a viral load < 50 HIV-1 RNA copies/ml) at week 48 by baseline viral load and baseline CD4 count (pooled DUET data) is presented in table 4.

Subgroups	Proportion of subjects with HIV-1 RNA < 50 copies/ml at week 48	
	INTELENCE + BR N = 599	Placebo + BR N = 604
Baseline HIV-1 RNA		
< 30,000 copies/ml	75.8%	55.7%
≥ 30,000 and < 100,000 copies/ml	61.2%	38.5%
≥ 100,000 copies/ml	49.1%	28.1%
Baseline CD4 count (x 10 <sup>6</sup> /l)		
< 50	45.1%	21.5%
≥ 50 and < 200	65.4%	47.6%
≥ 200 and < 350	73.9%	52.0%
≥ 350	72.4%	50.8%

Note: Imputations according to the TLOVR algorithm (TLOVR = Time to Loss of Virologic Response)

#### *Baseline genotype or phenotype and virologic outcome analyses*

In DUET-1 and DUET-2, the presence at baseline of 3 or more of the following mutations: V90I, A98G, L100I, K101E, K101P, V106I, V179D, V179F, Y181C, Y181I, Y181V, G190A and G190S, (INTELENCE RAMs) was associated with a decreased virologic response to INTELENCE (see table 5). These individual mutations occurred in the presence of other NNRTI RAMs. V179F was never present without Y181C.

Conclusions regarding the relevance of particular mutations or mutational patterns are subject to change with additional data, and it is recommended to always consult current interpretation systems for analysing resistance test results.

<b>Table 5: Proportion of subjects with &lt; 50 HIV-1 RNA copies/ml at week 48 by baseline number of INTELENCE RAMs in the non-viral failure excluded population of pooled DUET-1 and DUET-2 trials</b>		
Baseline number of INTELENCE RAMs*	Etravirine arms N = 549	
	Reused/not used ENF	<i>De novo</i> ENF
All ranges	63.3% (254/401)	78.4% (109/139)
0	74.1% (117/158)	91.3% (42/46)
1	61.3% (73/119)	80.4% (41/51)
2	64.1% (41/64)	66.7% (18/27)
≥ 3	38.3% (23/60)	53.3% (8/15)
	Placebo arms N = 569	
All ranges	37.1% (147/396)	64.1% (93/145)

\* INTELENCE RAMs = V90I, A98G, L100I, K101E/P, V106I, V179D/F, Y181C/I/V, G190A/S

Note: all patients in the DUET trials received a background regimen consisting of darunavir/rtv, investigator-selected NRTIs and optional enfuvirtide.

The presence of K103N alone, which was the most prevalent NNRTI mutation in DUET-1 and DUET-2 at baseline, was not identified as a mutation associated with resistance to INTELENCE. Furthermore, the presence of this mutation alone did not affect the response in the INTELENCE arm. Additional data is required to conclude on the influence of K103N when associated with other NNRTIs mutations.

Data from the DUET studies suggest that baseline fold change (FC) in EC<sub>50</sub> to etravirine was a predictive factor of virologic outcome, with gradually decreasing responses observed above FC 3 and FC 13.

FC subgroups are based on the select patient populations in DUET-1 and DUET-2 and are not meant to represent definitive clinical susceptibility breakpoints for INTELENCE.

#### *Exploratory head to head comparison with protease inhibitor in protease inhibitor naïve patients (trial TMC125-C227)*

TMC125-C227 was an exploratory, randomised, active-controlled open-label trial, which investigated the efficacy and safety of INTELENCE in a treatment regimen, which is not approved under the current indication. In the TMC125-C227 study, INTELENCE (N = 59) was administered with 2 investigator-selected NRTIs (i.e. without a ritonavir-boosted PI) and compared to an investigator-selected combination of a PI with 2 NRTIs (N = 57). The trial population included PI-naïve, NNRTI-experienced patients with evidence of NNRTI resistance.

At week 12, virologic response was greater in the control-PI arm (-2.2 log<sub>10</sub> copies/ml from baseline; n = 53) compared to the INTELENCE arm (-1.4 log<sub>10</sub> copies/ml from baseline; n = 40). This difference between treatment arms was statistically significant.

Based on these trial results, INTELENCE is not recommended for use in combination with N(t)RTIs only in patients who have experienced virological failure on an NNRTI- and N(t)RTI-containing regimen.

#### Paediatric population

##### *Treatment-experienced paediatric patients (6 years to less than 18 years of age)*

PIANO is a single-arm, Phase II trial evaluating the pharmacokinetics, safety, tolerability, and efficacy of INTELENCE in 101 antiretroviral treatment-experienced HIV-1 infected paediatric patients 6 years to less than 18 years of age and weighing at least 16 kg. The study enrolled patients on a stable but virologically failing antiretroviral treatment regimen, with a confirmed HIV-1 RNA plasma viral load ≥ 500 copies/ml. Sensitivity of the virus to INTELENCE at screening was required.

The median baseline plasma HIV-1 RNA was 3.9 log<sub>10</sub> copies/ml, and the median baseline CD4 cell count was 385 x 10<sup>6</sup> cells/l.

<b>Table 6: Virologic responses (ITT - TLOVR), change from baseline in log<sub>10</sub> viral load (NC = F), and change from baseline in CD4 percentage and cell count (NC = F) at week 24 in the TMC125-C213 and pooled DUET studies</b>				
<b>Study Age at screening Treatment group</b>	<b>TMC125-C213 6 to &lt; 12 years ETR N = 41</b>	<b>TMC125-C213 12 to &lt; 18 years ETR N = 60</b>	<b>TMC125-C213 6 to &lt; 18 years ETR N = 101</b>	<b>Pooled DUET Studies ≥ 18 years ETR N = 599</b>
<b>Virologic parameters</b>				
Viral load < 50 copies/ml at week 24, n (%)	24 (58.5)	28 (46.7)	52 (51.5)	363 (60.6)
Viral load < 400 copies/ml at week 24, n (%)	28 (68.3)	38 (63.3)	66 (65.3)	445 (74.3)
≥ 1 log <sub>10</sub> decrease from baseline at week 24, n (%)	26 (63.4)	38 (63.3)	64 (63.4)	475 (79.3)
Change from baseline in log <sub>10</sub> viral load (copies/ml) at week 24, mean (SE) and median (range)	-1.62 (0.21) -1.68 (-4.3; 0.9)	-1.44 (0.17) -1.68 (-4.0; 0.7)	-1.51 (0.13) -1.68 (-4.3; 0.9)	-2.37 (0.05) -2.78 (-4.6; 1.4)
<b>Immunologic parameters</b>				
Change from baseline in CD4 cell count (x 10 <sup>6</sup> cells/l), mean (SE) and median (range)	125 (33.0) 124 (-410; 718)	104 (17.5) 81 (-243; 472)	112 (16.9) 108 (-410; 718)	83.5 (3.64) 77.5 (-331; 517)
Change from baseline in CD4 percentage, median (range)	4% (-9; 20)	3% (-4; 14)	4% (-9; 20)	3% (-7; 23)

N = number of subjects with data; n = number of observations.

At week 48, 53.5% of all paediatric patients had a confirmed undetectable viral load < 50 HIV-1 RNA copies/ml according to the TLOVR algorithm. The proportion of paediatric patients with < 400 HIV-1 RNA copies/ml was 63.4%. The mean change in plasma HIV-1 RNA from baseline to week 48 was -1.53 log<sub>10</sub> copies/ml, and the mean CD4 cell count increase from baseline was 156 x 10<sup>6</sup> cells/l.

The European Medicines Agency has deferred the obligation to submit the results of studies with INTELENCE in one or more subsets of the paediatric population in human immunodeficiency virus infection, as per Paediatric Investigation Plan (PIP) decision in the granted indication (see section 4.2 for information on paediatric use).

### Pregnancy and postpartum

INTELENCE (200 mg b.i.d.), evaluated in combination with other antiretroviral medicinal products in a study of 15 pregnant women during the second and third trimesters of pregnancy and postpartum, demonstrated that exposure to total etravirine was generally higher during pregnancy compared with postpartum, and less so for unbound etravirine exposure (see section 5.2). There were no new clinically relevant safety findings in the mothers or in the newborns in this trial.

## **5.2 Pharmacokinetic properties**

The pharmacokinetic properties of etravirine have been evaluated in adult healthy subjects and in adult and paediatric treatment-experienced HIV-1 infected patients. Exposure to etravirine was lower (35-50%) in HIV-1 infected patients than in healthy subjects.

<b>Table 7: Population pharmacokinetic estimates of etravirine 200 mg b.i.d. in HIV-1 infected adult subjects (integrated data from Phase III trials at week 48)*</b>	
<b>Parameter</b>	<b>Etravirine 200 mg b.i.d. N = 575</b>
AUC <sub>12h</sub> (ng•h/ml)	

Geometric Mean ± Standard Deviation	4,522 ± 4,710
Median (Range)	4,380 (458 - 59,084)
C <sub>0h</sub> (ng/ml)	
Geometric Mean ± Standard Deviation	297 ± 391
Median (Range)	298 (2 - 4,852)

\* All HIV-1 infected subjects enrolled in Phase III clinical trials received darunavir/ritonavir 600/100 mg b.i.d. as part of their background regimen. Therefore, the pharmacokinetic parameter estimates shown in the table account for reductions in the pharmacokinetic parameters of etravirine due to co-administration of INTELENCE with darunavir/ritonavir.

Note: The median protein binding adjusted EC50 for MT4 cells infected with HIV-1/IIIB *in vitro* = 4 ng/ml.

### Absorption

An intravenous formulation of etravirine is unavailable, thus, the absolute bioavailability of etravirine is unknown. After oral administration with food, the maximum plasma concentration of etravirine is generally achieved within 4 hours.

In healthy subjects, the absorption of etravirine is not affected by co-administration of oral ranitidine or omeprazole, medicinal products that are known to increase gastric pH.

### Effect of food on absorption

The systemic exposure (AUC) to etravirine was decreased by about 50% when INTELENCE was administered under fasting conditions, as compared to administration following a meal. Therefore, INTELENCE should be taken following a meal.

### Distribution

Etravirine is approximately 99.9% bound to plasma proteins, primarily to albumin (99.6%) and  $\alpha_1$ -acid glycoprotein (97.66%-99.02%) *in vitro*. The distribution of etravirine into compartments other than plasma (e.g., cerebrospinal fluid, genital tract secretions) has not been evaluated in humans.

### Biotransformation

*In vitro* experiments with human liver microsomes (HLMs) indicate that etravirine primarily undergoes oxidative metabolism by the hepatic cytochrome CYP450 (CYP3A) system and, to a lesser extent, by the CYP2C family, followed by glucuronidation.

### Elimination

After administration of a radiolabeled <sup>14</sup>C-etravirine dose, 93.7% and 1.2% of the administered dose of <sup>14</sup>C-etravirine could be retrieved in faeces and urine, respectively. Unchanged etravirine accounted for 81.2% to 86.4% of the administered dose in faeces. Unchanged etravirine in faeces is likely to be unabsorbed drug. Unchanged etravirine was not detected in urine. The terminal elimination half-life of etravirine was approximately 30-40 hours.

### Special populations

#### *Paediatric population (6 years to less than 18 years of age)*

The pharmacokinetics of etravirine in 101 treatment-experienced HIV-1 infected paediatric patients, 6 years to less than 18 years of age and weighing at least 16 kg, showed that the administered weight-based dosages resulted in etravirine exposure comparable to that in adults receiving INTELENCE 200 mg b.i.d. (see sections 4.2 and 5.2) when administered at a dose corresponding to 5.2 mg/kg b.i.d. The population pharmacokinetic estimates for etravirine AUC<sub>12h</sub> and C<sub>0h</sub> are summarised in the table below.

<b>Table 8: Population pharmacokinetic estimates for etravirine (all doses combined) in treatment-experienced HIV-1 infected paediatric patients 6 years to less than 18 years of age (PIANO 48 week analysis)</b>	
Parameter	N = 101
AUC <sub>12h</sub> (ng•h/ml)	
Geometric Mean ± Standard Deviation	3,729 ± 4,305
Median (Range)	4,560 (62 - 28,865)
C <sub>0h</sub> (ng/ml)	

Geometric Mean ± Standard Deviation	205 ± 342
Median (Range)	287 (2 – 2,276)

#### *Paediatric population (less than 6 years of age)*

The pharmacokinetics of etravirine in paediatric patients less than 6 years of age are under investigation. There are insufficient data at this time to recommend a dose in paediatric patients less than 6 years of age or weighing less than 16 kg (see section 4.2).

#### *Elderly*

Population pharmacokinetic analysis in HIV infected patients showed that etravirine pharmacokinetics are not considerably different in the age range (18 to 77 years) evaluated, with 6 subjects aged 65 years or older (see sections 4.2 and 4.4).

#### *Gender*

No significant pharmacokinetic differences have been observed between males and females. A limited number of females were included in the studies.

#### *Race*

Population pharmacokinetic analysis of etravirine in HIV infected patients indicated no apparent difference in the exposure to etravirine between Caucasian, Hispanic and Black subjects. The pharmacokinetics in other races have not been sufficiently evaluated.

#### *Hepatic impairment*

Etravirine is primarily metabolised and eliminated by the liver. In a study comparing 8 patients with mild (Child-Pugh Class A) hepatic impairment to 8 matched controls and 8 patients with moderate (Child-Pugh Class B) hepatic impairment to 8 matched controls, the multiple dose pharmacokinetic disposition of etravirine was not altered in patients with mild to moderate hepatic impairment. However, unbound concentrations have not been assessed. Increased unbound exposure could be expected. No dose adjustment is suggested but caution is advised in patients with moderate hepatic impairment. INTELENCE has not been studied in patients with severe hepatic impairment (Child-Pugh Class C) and is therefore not recommended (see sections 4.2 and 4.4).

#### *Hepatitis B and/or hepatitis C virus co-infection*

Population pharmacokinetic analysis of the DUET-1 and DUET-2 trials showed reduced clearance (potentially leading to increased exposure and alteration of the safety profile) for INTELENCE in HIV-1 infected patients with hepatitis B and/or hepatitis C virus co-infection. In view of the limited data available in hepatitis B and/or C co-infected patients, particular caution should be paid when INTELENCE is used in these patients (see sections 4.4 and 4.8).

#### *Renal impairment*

The pharmacokinetics of etravirine have not been studied in patients with renal insufficiency. Results from a mass balance study with radioactive <sup>14</sup>C-etravirine showed that < 1.2% of the administered dose of etravirine is excreted in the urine. No unchanged drug was detected in urine so the impact of renal impairment on etravirine elimination is expected to be minimal. As etravirine is highly bound to plasma proteins, it is unlikely that it will be significantly removed by haemodialysis or peritoneal dialysis (see section 4.2).

#### *Pregnancy and postpartum*

Study TMC114HIV3015 evaluated etravirine 200 mg b.i.d. in combination with other antiretroviral medicinal products in 15 pregnant women during the second and third trimesters of pregnancy and postpartum. The total etravirine exposure after intake of etravirine 200 mg b.i.d. as part of an antiretroviral regimen was generally higher during pregnancy compared with postpartum (see Table 9). The differences were less pronounced for unbound etravirine exposure.

In women receiving etravirine 200 mg b.i.d., higher mean values for C<sub>max</sub>, AUC<sub>12h</sub> and C<sub>min</sub> were observed during pregnancy compared to postpartum. During the 2<sup>nd</sup> and 3<sup>rd</sup> trimester of pregnancy mean values of these parameters were comparable.

<b>Table 9: Pharmacokinetic results of total etravirine after administration of etravirine 200 mg b.i.d. as part of an antiretroviral regimen, during the 2<sup>nd</sup> trimester of pregnancy, the 3<sup>rd</sup> trimester of pregnancy, and postpartum.</b>			
<b>Pharmacokinetics of etravirine (mean ± SD, median)</b>	<b>etravirine 200 mg b.i.d. postpartum</b>	<b>etravirine 200 mg b.i.d. 2<sup>nd</sup> trimester</b>	<b>etravirine 200 mg b.i.d. 3<sup>rd</sup> trimester</b>
N	10	13	10 <sup>a</sup>
C <sub>min</sub> , ng/mL	269 ± 182 284	383 ± 210 346	349 ± 103 371
C <sub>max</sub> , ng/mL	569 ± 261 528	774 ± 300 828	785 ± 238 694
AUC <sub>12h</sub> , h*ng /mL	5004 ± 2521 5246	6617 ± 2766 6836	6846 ± 1482 6028

<sup>a</sup> n = 9 for AUC<sub>12h</sub>

Each subject served as her own control, and with an intra-individual comparison, the total etravirine C<sub>min</sub>, C<sub>max</sub> and AUC<sub>12h</sub> values were 1.2-, 1.4- and 1.4-fold higher, respectively, during the 2<sup>nd</sup> trimester of pregnancy as compared to postpartum, and 1.1-, 1.4- and 1.2-fold higher, respectively, based during the 3<sup>rd</sup> trimester of pregnancy as compared to postpartum.

### 5.3 Preclinical safety data

Animal toxicology studies have been conducted with etravirine in mice, rats, rabbits and dogs. In mice, the key target organs identified were the liver and the coagulation system. Haemorrhagic cardiomyopathy was only observed in male mice and was considered to be secondary to severe coagulopathy mediated via the vitamin K pathway. In the rat, the key target organs identified were the liver, the thyroid and the coagulation system. Exposure in mice was equivalent to human exposure while in rats it was below the clinical exposure at the recommended dose. In the dog, changes were observed in the liver and gall bladder at exposures approximately 8-fold higher than human exposure observed at the recommended dose (200 mg b.i.d.).

In a study conducted in rats, there were no effects on mating or fertility at exposure levels equivalent to those in humans at the clinically recommended dose. There was no teratogenicity with etravirine in rats and rabbits at exposures equivalent to those observed in humans at the recommended clinical dose. Etravirine had no effect on offspring development during lactation or post weaning at maternal exposures equivalent to those observed at the recommended clinical dose.

Etravirine was not carcinogenic in rats and in male mice. An increase in the incidences of hepatocellular adenomas and carcinomas were observed in female mice. The observed hepatocellular findings in female mice are generally considered to be rodent specific, associated with liver enzyme induction, and of limited relevance to humans. At the highest tested doses, the systemic exposures (based on AUC) to etravirine were 0.6-fold (mice) and between 0.2- and 0.7-fold (rats), relative to those observed in humans at the recommended therapeutic dose (200 mg b.i.d.).

*In vitro* and *in vivo* studies with etravirine revealed no evidence of a mutagenic potential.

## 6. PHARMACEUTICAL PARTICULARS

### 6.1 List of excipients

Hypromellose  
Microcrystalline cellulose  
Colloidal anhydrous silica  
Croscarmellose sodium  
Magnesium stearate  
Lactose monohydrate



## **6.2 Incompatibilities**

Not applicable.

## **6.3 Shelf life**

2 years if bottle is unopened.  
8 weeks after opening the bottle.

## **6.4 Special precautions for storage**

Store in the original bottle. Keep the bottle tightly closed in order to protect from moisture. Do not remove the desiccant pouches.

## **6.5 Nature and contents of container**

The bottle is a high-density polyethylene (HDPE) plastic bottle containing 120 tablets and 2 desiccant pouches, fitted with a polypropylene (PP) child resistant closure.  
Each carton contains one bottle.

## **6.6 Special precautions for disposal and other handling**

Patients who are unable to swallow the tablet(s) whole may disperse the tablet(s) in a glass of water. The patient should be instructed to do the following:

- place the tablet(s) in 5 ml (1 teaspoon) of water, or at least enough liquid to cover the medicine,
- stir well until the water looks milky;
- if desired, add more water or alternatively orange juice or milk (patients should not place the tablets in orange juice or milk without first adding water);
- drink it immediately;
- rinse the glass several times with water, orange juice, or milk and completely swallow the rinse each time to make sure the patient takes the entire dose.

The use of warm (> 40°C) or carbonated beverages should be avoided.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

## **7. MARKETING AUTHORISATION HOLDER**

Janssen-Cilag International NV  
Turnhoutseweg 30  
B-2340 Beerse  
Belgium

## **8. MARKETING AUTHORISATION NUMBER(S)**

EU/1/08/468/003

## **9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION**

Date of first authorisation: 28 August 2008  
Date of latest renewal: 28 August 2013

## **10. DATE OF REVISION OF THE TEXT**

Detailed information on this medicine is available on the website of the European Medicines Agency <http://www.ema.europa.eu/>.

## 1. NAME OF THE MEDICINAL PRODUCT

INTELENCE 100 mg tablets

## 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each tablet contains 100 mg of etravirine.

Excipient with known effect: Each tablet contains 160 mg lactose.

For the full list of excipients, see section 6.1.

## 3. PHARMACEUTICAL FORM

Tablet

White to off-white, oval tablet, debossed with “T125” on one side and “100” on the other side.

## 4. CLINICAL PARTICULARS

### 4.1 Therapeutic indications

INTELENCE, in combination with a boosted protease inhibitor and other antiretroviral medicinal products, is indicated for the treatment of human immunodeficiency virus type 1 (HIV-1) infection in antiretroviral treatment-experienced adult patients and in antiretroviral treatment-experienced paediatric patients from 6 years of age (see sections 4.4, 4.5 and 5.1).

The indication in adults is based on week 48 analyses from 2 Phase III trials in highly pre-treated patients where INTELENCE was investigated in combination with an optimised background regimen (OBR) which included darunavir/ritonavir. The indication in paediatric patients is based on 48-week analyses of a single-arm, Phase II trial in antiretroviral treatment-experienced paediatric patients (see section 5.1).

### 4.2 Posology and method of administration

Therapy should be initiated by a physician experienced in the management of HIV infection.

INTELENCE must always be given in combination with other antiretroviral medicinal products.

#### Posology

##### *Adults*

The recommended dose of INTELENCE for adults is 200 mg (two 100 mg tablets) taken orally twice daily (b.i.d.), following a meal (see section 5.2).

##### *Paediatric population (6 years to less than 18 years of age)*

The recommended dose of INTELENCE for paediatric patients (6 years to less than 18 years of age and weighing at least 16 kg) is based on body weight (see table below). INTELENCE tablet(s) should be taken orally, following a meal (see section 5.2).

<b>Recommended dose of INTELENCE for paediatric patients 6 years to less than 18 years of age</b>		
<b>Weight</b>	<b>Dose</b>	<b>Tablets</b>
≥ 16 to < 20 kg	100 mg b.i.d.	four 25 mg tablets twice daily or one 100 mg tablet twice daily

≥ 20 to < 25 kg	125 mg b.i.d.	five 25 mg tablets twice daily or one 100 mg tablet and one 25 mg tablet twice daily
≥ 25 to < 30 kg	150 mg b.i.d.	six 25 mg tablets twice daily or one 100 mg tablet and two 25 mg tablets twice daily
≥ 30 kg	200 mg b.i.d.	eight 25 mg tablets twice daily or two 100 mg tablets twice daily or one 200 mg tablet twice daily

#### Missed dose

If the patient misses a dose of INTELENCE within 6 hours of the time it is usually taken, the patient should take it following a meal as soon as possible and then take the next dose at the regularly scheduled time. If a patient misses a dose by more than 6 hours of the time it is usually taken, the patient should not take the missed dose and simply resume the usual dosing schedule.

#### *Elderly patients*

There is limited information regarding the use of INTELENCE in patients > 65 years of age (see section 5.2), therefore caution should be used in this population.

#### *Hepatic impairment*

No dose adjustment is suggested in patients with mild or moderate hepatic impairment (Child-Pugh Class A or B); INTELENCE should be used with caution in patients with moderate hepatic impairment. The pharmacokinetics of etravirine have not been studied in patients with severe hepatic impairment (Child-Pugh Class C). Therefore, INTELENCE is not recommended in patients with severe hepatic impairment (see sections 4.4 and 5.2).

#### *Renal impairment*

No dose adjustment is required in patients with renal impairment (see section 5.2).

#### *Paediatric population (less than 6 years of age)*

The safety and efficacy of INTELENCE in children less than 6 years of age or weighing less than 16 kg have not yet been established (see section 5.2). No data are available.

#### *Pregnancy and postpartum*

Based on limited data available, no dose adjustment is required during pregnancy and postpartum (see section 5.2).

#### Method of administration

Oral use.

Patients should be instructed to swallow the tablet(s) whole with a liquid such as water. Patients who are unable to swallow the tablet(s) whole may disperse the tablet(s) in a glass of water.

For instructions on dispersion of the medicinal product before administration, see section 6.6.

### **4.3 Contraindications**

Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.

### **4.4 Special warnings and precautions for use**

While effective viral suppression with antiretroviral therapy has been proven to substantially reduce the risk of sexual transmission, a residual risk cannot be excluded. Precautions to prevent transmission should be taken in accordance with national guidelines.

INTELENCE should optimally be combined with other antiretrovirals that exhibit activity against the patient's virus (see section 5.1).

A decreased virologic response to etravirine was observed in patients with viral strains harbouring 3 or more among the following mutations V90I, A98G, L100I, K101E/P, V106I, V179D/F, Y181C/I/V, and G190A/S (see section 5.1).

Conclusions regarding the relevance of particular mutations or mutational patterns are subject to change with additional data, and it is recommended to always consult current interpretation systems for analysing resistance test results.

No data other than drug-drug interaction data (see section 4.5) are available when etravirine is combined with raltegravir or maraviroc.

#### Severe cutaneous and hypersensitivity reactions

Severe cutaneous adverse drug reactions have been reported with INTELENCE; Stevens-Johnson Syndrome and erythema multiforme have been rarely (< 0.1%) reported. Treatment with INTELENCE should be discontinued if a severe cutaneous reaction develops.

The clinical data are limited and an increased risk of cutaneous reactions in patients with a history of NNRTI-associated cutaneous reactions cannot be excluded. Caution should be observed in such patients, especially in case of history of a severe cutaneous drug reaction.

Cases of severe hypersensitivity syndromes, including DRESS (Drug Rash with Eosinophilia and Systemic Symptoms) and TEN (toxic epidermal necrolysis), sometimes fatal, have been reported with the use of INTELENCE (see section 4.8). The DRESS syndrome is characterised by rash, fever, eosinophilia and systemic involvement (including, but not limited to, severe rash or rash accompanied by fever, general malaise, fatigue, muscle or joint aches, blisters, oral lesions, conjunctivitis, hepatitis and eosinophilia). Time to onset is usually around 3-6 weeks and the outcome in most cases is favourable upon discontinuation and after initiation of corticosteroid therapy.

Patients should be informed to seek medical advice if severe rash or hypersensitivity reactions occur. Patients who are diagnosed with a hypersensitivity reaction whilst on therapy must discontinue INTELENCE immediately.

Delay in stopping INTELENCE treatment after the onset of severe rash may result in a life-threatening reaction.

Patients who have stopped treatment due to hypersensitivity reactions should not restart therapy with INTELENCE.

#### Rash

Rash has been reported with INTELENCE. Most frequently, rash was mild to moderate, occurred in the second week of therapy, and was infrequent after week 4. Rash was mostly self-limiting and generally resolved within 1 to 2 weeks on continued therapy. When prescribing INTELENCE to females, prescribers should be aware that the incidence of rash was higher in females (see section 4.8).

#### Elderly

Experience in geriatric patients is limited: in the Phase III trials, 6 patients aged 65 years or older and 53 patients aged 56-64 years received INTELENCE. The type and incidence of adverse reactions in patients > 55 years of age were similar to the ones in younger patients (see sections 4.2 and 5.2).

#### Pregnancy

Given the increased etravirine exposure during pregnancy, caution should be applied for those pregnant patients that require concomitant medications or have comorbidities that may further increase etravirine exposure.

#### Patients with coexisting conditions

##### *Hepatic impairment*

Etravirine is primarily metabolised and eliminated by the liver and highly bound to plasma proteins. Effects on unbound exposure could be expected (has not been studied) and therefore caution is advised

in patients with moderate hepatic impairment. INTELENCE has not been studied in patients with severe hepatic impairment (Child-Pugh Class C) and its use is therefore not recommended in this group of patients (see sections 4.2 and 5.2).

#### *Co-infection with HBV (hepatitis B virus) or HCV (hepatitis C virus)*

Caution should be exercised in patients co-infected with hepatitis B or C virus due to the current limited data available. A potential increased risk of liver enzymes increase cannot be excluded.

#### *Weight and metabolic parameters*

An increase in weight and in levels of blood lipids and glucose may occur during antiretroviral therapy. Such changes may in part be linked to disease control and life style. For lipids, there is in some cases evidence for a treatment effect, while for weight gain there is no strong evidence relating this to any particular treatment. For monitoring of blood lipids and glucose reference is made to established HIV treatment guidelines. Lipid disorders should be managed as clinically appropriate.

#### Immune reconstitution syndrome

In HIV infected patients with severe immune deficiency at the time of initiation of CART, an inflammatory reaction to asymptomatic or residual opportunistic pathogens may arise and cause serious clinical conditions, or aggravation of symptoms. Typically, such reactions have been observed within the first weeks or months of initiation of CART. Relevant examples are cytomegalovirus retinitis, generalised and/or focal mycobacterial infections and *Pneumocystis jiroveci* pneumonia. Any inflammatory symptoms should be evaluated and treatment instituted when necessary.

Autoimmune disorders (such as Graves' disease) have also been reported to occur in the setting of immune reactivation; however, the reported time to onset is more variable and these events can occur many months after initiation of treatment (see section 4.8).

#### Osteonecrosis

Although the aetiology is considered to be multifactorial (including corticosteroid use, alcohol consumption, severe immunosuppression, higher body mass index), cases of osteonecrosis have been reported particularly in patients with advanced HIV disease and/or long-term exposure to CART. Patients should be advised to seek medical advice if they experience joint aches and pain, joint stiffness or difficulty in movement.

#### Interactions with medicinal products

It is not recommended to combine etravirine with tipranavir/ritonavir, due to a marked pharmacokinetic interaction (76% decrease of etravirine AUC) that could significantly impair the virologic response to etravirine.

For further information on interactions with medicinal products see section 4.5.

#### Lactose intolerance and lactase deficiency

Each tablet contains 160 mg of lactose. Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine.

### **4.5 Interaction with other medicinal products and other forms of interaction**

#### Medicinal products that affect etravirine exposure

Etravirine is metabolised by CYP3A4, CYP2C9 and CYP2C19 followed by glucuronidation of the metabolites by uridine diphosphate glucuronosyl transferase (UDPGT). Medicinal products that induce CYP3A4, CYP2C9 or CYP2C19 may increase the clearance of etravirine, resulting in lowered plasma concentrations of etravirine.

Co-administration of INTELENCE and medicinal products that inhibit CYP3A4, CYP2C9 or CYP2C19 may decrease the clearance of etravirine and may result in increased plasma concentrations of etravirine.

Medicinal products that are affected by the use of etravirine

Etravirine is a weak inducer of CYP3A4. Co-administration of INTELENCE with medicinal products primarily metabolised by CYP3A4 may result in decreased plasma concentrations of such medicinal products, which could decrease or shorten their therapeutic effects.

Etravirine is a weak inhibitor of CYP2C9 and CYP2C19. Etravirine is also a weak inhibitor of P-glycoprotein. Co-administration with medicinal products primarily metabolised by CYP2C9 or CYP2C19, or transported by P-glycoprotein, may result in increased plasma concentrations of such medicinal products, which could increase or prolong their therapeutic effect or alter their adverse events profile.

Known and theoretical interactions with selected antiretrovirals and non-antiretroviral medicinal products are listed in table 1.

Interaction table

Interactions between etravirine and co-administered medicinal products are listed in table 1 (increase is indicated as “↑”, decrease as “↓”, no change as “↔”, not done as “ND”, confidence interval as “CI”).

<b>Table 1: INTERACTIONS AND DOSE RECOMMENDATIONS WITH OTHER MEDICINAL PRODUCTS</b>		
<b>Medicinal products by therapeutic areas</b>	<b>Effects on drug levels Least Squares Mean Ratio (90% CI; 1.00 = No effect)</b>	<b>Recommendations concerning co-administration</b>
<b>ANTI-INFECTIVES</b>		
<b>Antiretrovirals</b>		
<i>NRTIs</i>		
Didanosine 400 mg once daily	<u>didanosine</u> AUC ↔ 0.99 (0.79-1.25) C <sub>min</sub> ND C <sub>max</sub> ↔ 0.91 (0.58-1.42) <u>etravirine</u> AUC ↔ 1.11 (0.99-1.25) C <sub>min</sub> ↔ 1.05 (0.93-1.18) C <sub>max</sub> ↔ 1.16 (1.02-1.32)	No significant effect on didanosine and etravirine PK parameters is seen. INTELENCE and didanosine can be used without dose adjustments.
Tenofovir disoproxil fumarate 300 mg once daily	<u>tenofovir</u> AUC ↔ 1.15 (1.09-1.21) C <sub>min</sub> ↑ 1.19 (1.13-1.26) C <sub>max</sub> ↑ 1.15 (1.04-1.27) <u>etravirine</u> AUC ↓ 0.81 (0.75-0.88) C <sub>min</sub> ↓ 0.82 (0.73-0.91) C <sub>max</sub> ↓ 0.81 (0.75-0.88)	No significant effect on tenofovir and etravirine PK parameters is seen. INTELENCE and tenofovir can be used without dose adjustments.
Other NRTIs	Not studied, but no interaction expected based on the primary renal elimination route for other NRTIs (e.g., abacavir, emtricitabine, lamivudine, stavudine and zidovudine).	Etravirine can be used with these NRTIs without dose adjustment.
<i>NNRTIs</i>		
Efavirenz Nevirapine Ralpivirine	Combining two NNRTIs has not been shown to be beneficial. Concomitant use of INTELENCE with efavirenz or nevirapine may cause a significant decrease in the plasma concentration of etravirine and loss of therapeutic effect of INTELENCE. Concomitant use of INTELENCE with rilpivirine may cause a decrease in the plasma concentration of rilpivirine and loss of therapeutic effect of rilpivirine.	It is not recommended to co-administer INTELENCE with other NNRTIs.

<i>HIV PIs - Unboosted (i.e. without co-administration of low-dose ritonavir)</i>		
Indinavir	Concomitant use of INTELENCE with indinavir may cause a significant decrease in the plasma concentration of indinavir and loss of therapeutic effect of indinavir.	It is not recommended to co-administer INTELENCE with indinavir.
Nelfinavir	Not studied. INTELENCE is expected to increase nelfinavir plasma concentrations.	It is not recommended to co-administer INTELENCE with nelfinavir.
<i>HIV PIs - Boosted (with low-dose ritonavir)</i>		
Atazanavir/ritonavir 300/100 mg once daily	<u>atazanavir</u> AUC ↓ 0.86 (0.79-0.93) C <sub>min</sub> ↓ 0.62 (0.55-0.71) C <sub>max</sub> ↔ 0.97 (0.89-1.05) <u>etravirine</u> AUC ↑ 1.30 (1.18-1.44) C <sub>min</sub> ↑ 1.26 (1.12-1.42) C <sub>max</sub> ↑ 1.30 (1.17-1.44)	INTELENCE and atazanavir/ritonavir can be used without dose adjustment.
Darunavir/ritonavir 600/100 mg twice daily	<u>darunavir</u> AUC ↔ 1.15 (1.05-1.26) C <sub>min</sub> ↔ 1.02 (0.90-1.17) C <sub>max</sub> ↔ 1.11 (1.01-1.22) <u>etravirine</u> AUC ↓ 0.63 (0.54-0.73) C <sub>min</sub> ↓ 0.51 (0.44-0.61) C <sub>max</sub> ↓ 0.68 (0.57-0.82)	INTELENCE and darunavir/ritonavir can be used without dose adjustments (see also section 5.1).
Fosamprenavir/ritonavir 700/100 mg twice daily	<u>amprenavir</u> AUC ↑ 1.69 (1.53-1.86) C <sub>min</sub> ↑ 1.77 (1.39-2.25) C <sub>max</sub> ↑ 1.62 (1.47-1.79) <u>etravirine</u> AUC ↔ <sup>a</sup> C <sub>min</sub> ↔ <sup>a</sup> C <sub>max</sub> ↔ <sup>a</sup>	Amprenavir/ritonavir and fosamprenavir/ritonavir may require dose reduction when co-administered with INTELENCE. Using the oral solution may be considered for dose reduction.
Lopinavir/ritonavir (tablet) 400/100 mg twice daily	<u>lopinavir</u> AUC ↔ 0.87 (0.83-0.92) C <sub>min</sub> ↓ 0.80 (0.73-0.88) C <sub>max</sub> ↔ 0.89 (0.82-0.96) <u>etravirine</u> AUC ↓ 0.65 (0.59-0.71) C <sub>min</sub> ↓ 0.55 (0.49-0.62) C <sub>max</sub> ↓ 0.70 (0.64-0.78)	INTELENCE and lopinavir/ritonavir can be used without dose adjustments.
Saquinavir/ritonavir 1,000/100 mg twice daily	<u>saquinavir</u> AUC ↔ 0.95 (0.64-1.42) C <sub>min</sub> ↓ 0.80 (0.46-1.38) C <sub>max</sub> ↔ 1.00 (0.70-1.42) <u>etravirine</u> AUC ↓ 0.67 (0.56-0.80) C <sub>min</sub> ↓ 0.71 (0.58-0.87) C <sub>max</sub> ↓ 0.63 (0.53-0.75)	INTELENCE and saquinavir/ritonavir can be used without dose adjustments.
Tipranavir/ritonavir 500/200 mg twice daily	<u>tipranavir</u> AUC ↑ 1.18 (1.03-1.36) C <sub>min</sub> ↑ 1.24 (0.96-1.59) C <sub>max</sub> ↑ 1.14 (1.02-1.27) <u>etravirine</u> AUC ↓ 0.24 (0.18-0.33) C <sub>min</sub> ↓ 0.18 (0.13-0.25) C <sub>max</sub> ↓ 0.29 (0.22-0.40)	It is not recommended to co-administer tipranavir/ritonavir and INTELENCE (see section 4.4).



<i>CCR5 Antagonists</i>		
<p>Maraviroc 300 mg twice daily</p> <p>Maraviroc/darunavir/ ritonavir 150/600/100 mg twice daily</p>	<p><u>maraviroc</u> AUC ↓ 0.47 (0.38-0.58) C<sub>min</sub> ↓ 0.61 (0.53-0.71) C<sub>max</sub> ↓ 0.40 (0.28-0.57)</p> <p><u>etravirine</u> AUC ↔ 1.06 (0.99-1.14) C<sub>min</sub> ↔ 1.08 (0.98-1.19) C<sub>max</sub> ↔ 1.05 (0.95-1.17)</p> <p><u>maraviroc*</u> AUC ↑ 3.10 (2.57-3.74) C<sub>min</sub> ↑ 5.27 (4.51-6.15) C<sub>max</sub> ↑ 1.77 (1.20-2.60) * compared to maraviroc 150 mg b.i.d.</p>	<p>The recommended dose for maraviroc when combined with INTELENCE in the presence of potent CYP3A inhibitors (e.g. boosted PIs) is 150 mg b.i.d. except for fosamprenavir/ritonavir (maraviroc dose 300 mg b.i.d.). No dose adjustment for INTELENCE is necessary. See also section 4.4.</p>
<i>Fusion Inhibitors</i>		
<p>Enfuvirtide 90 mg twice daily</p>	<p><u>etravirine*</u> AUC ↔<sup>a</sup> C<sub>0h</sub> ↔<sup>a</sup> Enfuvirtide concentrations not studied and no effect is expected. * based on population pharmacokinetic analyses</p>	<p>No interaction is expected for either INTELENCE or enfuvirtide when co-administered.</p>
<i>Integrase Strand Transfer Inhibitors</i>		
<p>Dolutegravir 50 mg once daily</p> <p>Dolutegravir + darunavir/ritonavir 50 mg once daily + 600/100 mg twice daily</p> <p>Dolutegravir + Lopinavir/ritonavir 50 mg once daily + 400/100 mg twice daily</p>	<p><u>dolutegravir</u> AUC ↓ 0.29 (0.26-0.34) C<sub>min</sub> ↓ 0.12 (0.09-0.16) C<sub>max</sub> ↓ 0.48 (0.43-0.54)</p> <p><u>etravirine</u> AUC ↔<sup>a</sup> C<sub>min</sub> ↔<sup>a</sup> C<sub>max</sub> ↔<sup>a</sup></p> <p><u>dolutegravir</u> AUC ↓ 0.75 (0.69-0.81) C<sub>min</sub> ↓ 0.63 (0.52-0.77) C<sub>max</sub> ↓ 0.88 (0.78-1.00)</p> <p><u>etravirine</u> AUC ↔<sup>a</sup> C<sub>min</sub> ↔<sup>a</sup> C<sub>max</sub> ↔<sup>a</sup></p> <p><u>dolutegravir</u> AUC ↔ 1.11 (1.02-1.20) C<sub>min</sub> ↑ 1.28 (1.13-1.45) C<sub>max</sub> ↔ 1.07 (1.02-1.13)</p> <p><u>etravirine</u> AUC ↔<sup>a</sup> C<sub>min</sub> ↔<sup>a</sup> C<sub>max</sub> ↔<sup>a</sup></p>	<p>Etravirine significantly reduced plasma concentrations of dolutegravir. The effect of etravirine on dolutegravir plasma concentrations was mitigated by co-administration of darunavir/ritonavir or lopinavir/ritonavir, and is expected to be mitigated by atazanavir/ritonavir.</p> <p>INTELENCE should only be used with dolutegravir when co-administered with atazanavir/ritonavir, darunavir/ritonavir, or lopinavir/ritonavir. This combination can be used without dose adjustment.</p>
<p>Raltegravir 400 mg twice daily</p>	<p><u>raltegravir</u> AUC ↓ 0.90 (0.68-1.18) C<sub>min</sub> ↓ 0.66 (0.34-1.26) C<sub>max</sub> ↓ 0.89 (0.68-1.15)</p> <p><u>etravirine</u> AUC ↔ 1.10 (1.03-1.16) C<sub>min</sub> ↔ 1.17 (1.10-1.26) C<sub>max</sub> ↔ 1.04 (0.97-1.12)</p>	<p>INTELENCE and raltegravir can be used without dose adjustments.</p>

<b>ANTIARRHYTHMICS</b>		
Digoxin 0.5 mg single dose	<u>digoxin</u> AUC ↑ 1.18 (0.90-1.56) C <sub>min</sub> ND C <sub>max</sub> ↑ 1.19 (0.96-1.49)	INTELENCE and digoxin can be used without dose adjustments. It is recommended that digoxin levels be monitored when digoxin is combined with INTELENCE.
Amiodarone Bepidil Disopyramide Flecainide Lidocaine (systemic) Mexiletine Propafenone Quinidine	Not studied. INTELENCE is expected to decrease plasma concentrations of these antiarrhythmics.	Caution is warranted and therapeutic concentration monitoring, if available, is recommended for antiarrhythmics when co-administered with INTELENCE.
<b>ANTIBIOTICS</b>		
Azithromycin	Not studied. Based on the biliary elimination pathway of azithromycin, no drug interactions are expected between azithromycin and INTELENCE.	INTELENCE and azithromycin can be used without dose adjustments.
Clarithromycin 500 mg twice daily	<u>clarithromycin</u> AUC ↓ 0.61 (0.53-0.69) C <sub>min</sub> ↓ 0.47 (0.38-0.57) C <sub>max</sub> ↓ 0.66 (0.57-0.77) <u>14-OH-clarithromycin</u> AUC ↑ 1.21 (1.05-1.39) C <sub>min</sub> ↔ 1.05 (0.90-1.22) C <sub>max</sub> ↑ 1.33 (1.13-1.56) <u>etravirine</u> AUC ↑ 1.42 (1.34-1.50) C <sub>min</sub> ↑ 1.46 (1.36-1.58) C <sub>max</sub> ↑ 1.46 (1.38-1.56)	Clarithromycin exposure was decreased by etravirine; however, concentrations of the active metabolite, 14-OH-clarithromycin, were increased. Because 14-OH-clarithromycin has reduced activity against <i>Mycobacterium avium</i> complex (MAC), overall activity against this pathogen may be altered; therefore alternatives to clarithromycin should be considered for the treatment of MAC.
<b>ANTICOAGULANTS</b>		
Warfarin	Not studied. INTELENCE is expected to increase plasma concentrations of warfarin.	It is recommended that the international normalised ratio (INR) be monitored when warfarin is combined with INTELENCE.
<b>ANTICONVULSANTS</b>		
Carbamazepine Phenobarbital Phenytoin	Not studied. Carbamazepine, phenobarbital and phenytoin are expected to decrease plasma concentrations of etravirine.	Combination not recommended.
<b>ANTIFUNGALS</b>		
Fluconazole 200 mg once in the morning	<u>fluconazole</u> AUC ↔ 0.94 (0.88-1.01) C <sub>min</sub> ↔ 0.91 (0.84-0.98) C <sub>max</sub> ↔ 0.92 (0.85-1.00) <u>etravirine</u> AUC ↑ 1.86 (1.73-2.00) C <sub>min</sub> ↑ 2.09 (1.90-2.31) C <sub>max</sub> ↑ 1.75 (1.60-1.91)	INTELENCE and fluconazole can be used without dose adjustments.

Itraconazole Ketoconazole Posaconazole	Not studied. <u>Posaconazole</u> , a potent inhibitor of CYP3A4, may increase plasma concentrations of etravirine. <u>Itraconazole</u> and <u>ketoconazole</u> are potent inhibitors as well as substrates of CYP3A4. Concomitant systemic use of itraconazole or ketoconazole and INTELENCE may increase plasma concentrations of etravirine. Simultaneously, plasma concentrations of itraconazole or ketoconazole may be decreased by INTELENCE.	INTELENCE and these antifungals can be used without dose adjustments.
Voriconazole 200 mg twice daily	<u>voriconazole</u> AUC ↑ 1.14 (0.88-1.47) C <sub>min</sub> ↑ 1.23 (0.87-1.75) C <sub>max</sub> ↓ 0.95 (0.75-1.21) <u>etravirine</u> AUC ↑ 1.36 (1.25-1.47) C <sub>min</sub> ↑ 1.52 (1.41-1.64) C <sub>max</sub> ↑ 1.26 (1.16-1.38)	INTELENCE and voriconazole can be used without dose adjustments.
<b>ANTIMALARIALS</b>		
Artemether/ Lumefantrine 80/480 mg, 6 doses at 0, 8, 24, 36, 48, and 60 hours	<u>artemether</u> AUC ↓ 0.62 (0.48-0.80) C <sub>min</sub> ↓ 0.82 (0.67-1.01) C <sub>max</sub> ↓ 0.72 (0.55-0.94) <u>dihydroartemisinin</u> AUC ↓ 0.85 (0.75-0.97) C <sub>min</sub> ↓ 0.83 (0.71-0.97) C <sub>max</sub> ↓ 0.84 (0.71-0.99) <u>lumefantrine</u> AUC ↓ 0.87 (0.77-0.98) C <sub>min</sub> ↔ 0.97 (0.83-1.15) C <sub>max</sub> ↔ 1.07 (0.94-1.23) <u>etravirine</u> AUC ↔ 1.10 (1.06-1.15) C <sub>min</sub> ↔ 1.08 (1.04-1.14) C <sub>max</sub> ↔ 1.11 (1.06-1.17)	Close monitoring of antimalarial response is warranted when co-administering INTELENCE and artemether/lumefantrine as a significant decrease in exposure of artemether and its active metabolite, dihydroartemisinin, may result in decreased antimalarial efficacy. No dose adjustment is needed for INTELENCE.
<b>ANTIMYCOBACTERIALS</b>		
Rifampicin Rifapentine	Not studied. Rifampicin and rifapentine are expected to decrease plasma concentrations of etravirine. INTELENCE should be used in combination with a boosted protease inhibitor (PI). Rifampicin is contraindicated in combination with boosted PIs.	Combination not recommended.

Rifabutin 300 mg once daily	<p>With an associated boosted PI: No interaction study has been performed. Based on historical data, a decrease in etravirine exposure may be expected whereas an increase in rifabutin exposure and especially in 25-O-desacetyl-rifabutin may be expected.</p> <p>With no associated boosted PI (out of the recommended indication for etravirine):</p> <p><u>rifabutin</u> AUC ↓ 0.83 (0.75-0.94) C<sub>min</sub> ↓ 0.76 (0.66-0.87) C<sub>max</sub> ↓ 0.90 (0.78-1.03)</p> <p><u>25-O-desacetyl-rifabutin</u> AUC ↓ 0.83 (0.74-0.92) C<sub>min</sub> ↓ 0.78 (0.70-0.87) C<sub>max</sub> ↓ 0.85 (0.72-1.00)</p> <p><u>etravirine</u> AUC ↓ 0.63 (0.54-0.74) C<sub>min</sub> ↓ 0.65 (0.56-0.74) C<sub>max</sub> ↓ 0.63 (0.53-0.74)</p>	<p>The combination of INTELENCE with a boosted PI and rifabutin should be used with caution due to the risk of decrease in etravirine exposure and the risk of increase in rifabutin and 25-O-desacetyl-rifabutin exposures.</p> <p>Close monitoring for virologic response and for rifabutin related adverse reactions is recommended. Please refer to the product information of the associated boosted PI for the dose adjustment of rifabutin to be used.</p>
<b>BENZODIAZEPINES</b>		
Diazepam	Not studied. Etravirine is expected to increase plasma concentrations of diazepam.	Alternatives to diazepam should be considered.
<b>CORTICOSTEROIDS</b>		
Dexamethasone (systemic)	Not studied. Dexamethasone is expected to decrease plasma concentrations of etravirine	Systemic dexamethasone should be used with caution or alternatives should be considered, particularly for chronic use.
<b>OESTROGEN-BASED CONTRACEPTIVES</b>		
Ethinylestradiol 0.035 mg once daily Norethindrone 1 mg once daily	<p><u>ethinylestradiol</u> AUC ↑ 1.22 (1.13-1.31) C<sub>min</sub> ↔ 1.09 (1.01-1.18) C<sub>max</sub> ↑ 1.33 (1.21-1.46)</p> <p><u>norethindrone</u> AUC ↔ 0.95 (0.90-0.99) C<sub>min</sub> ↓ 0.78 (0.68-0.90) C<sub>max</sub> ↔ 1.05 (0.98-1.12)</p> <p><u>etravirine</u> AUC ↔<sup>a</sup> C<sub>min</sub> ↔<sup>a</sup> C<sub>max</sub> ↔<sup>a</sup></p>	<p>The combination of oestrogen- and/or progesterone-based contraceptives and INTELENCE can be used without dose adjustment.</p>
<b>HEPATITIS C VIRUS (HCV) DIRECT-ACTING ANTIVIRALS</b>		
Ribavirin	Not studied, but no interaction expected based on the renal elimination pathway of ribavirin.	The combination of INTELENCE and ribavirin can be used without dose adjustments.

Boceprevir Boceprevir 800 mg 3 times daily + etravirine 200 mg every 12 hours	<u>boceprevir</u> AUC ↑ 1.10 (0.94-1.28) C <sub>max</sub> ↑ 1.10 (0.94-1.29) C <sub>min</sub> ↓ 0.88 (0.66-1.17) <u>etravirine</u> AUC ↓ 0.77 (0.66-0.91) C <sub>max</sub> ↓ 0.76 (0.68-0.85) C <sub>min</sub> ↓ 0.71 (0.54-0.95)	The clinical significance of the reductions in etravirine pharmacokinetic parameters and boceprevir C <sub>min</sub> in the setting of the combination therapy with HIV antiretroviral medicines which also affect the pharmacokinetics of etravirine and/or boceprevir has not been directly assessed. Increased clinical and laboratory monitoring for HIV and HCV suppression is recommended.
Telaprevir 750 mg every 8 hours	<u>telaprevir</u> AUC ↓ 0.84 (0.71-0.98) C <sub>max</sub> ↓ 0.90 (0.79-1.02) C <sub>min</sub> ↓ 0.75 (0.61-0.92) <u>etravirine</u> AUC ↔ 0.94 (0.85-1.04) C <sub>max</sub> ↔ 0.93 (0.84-1.03) C <sub>min</sub> ↔ 0.97 (0.86-1.10)	The combination of INTELENCE and telaprevir can be used without dose adjustments.
<b>HERBAL PRODUCTS</b>		
St John's wort ( <i>Hypericum perforatum</i> )	Not studied. St John's wort is expected to decrease the plasma concentrations of etravirine.	Combination not recommended.
<b>HMG CO-A REDUCTASE INHIBITORS</b>		
Atorvastatin 40 mg once daily	<u>atorvastatin</u> AUC ↓ 0.63 (0.58-0.68) C <sub>min</sub> ND C <sub>max</sub> ↑ 1.04 (0.84-1.30) <u>2-OH-atorvastatin</u> AUC ↑ 1.27 (1.19-1.36) C <sub>min</sub> ND C <sub>max</sub> ↑ 1.76 (1.60-1.94) <u>etravirine</u> AUC ↔ 1.02 (0.97-1.07) C <sub>min</sub> ↔ 1.10 (1.02-1.19) C <sub>max</sub> ↔ 0.97 (0.93-1.02)	The combination of INTELENCE and atorvastatin can be given without any dose adjustments, however, the dose of atorvastatin may need to be altered based on clinical response.
Fluvastatin Lovastatin Pravastatin Rosuvastatin Simvastatin	Not studied. No interaction between <u>pravastatin</u> and INTELENCE is expected. <u>Lovastatin</u> , <u>rosuvastatin</u> and <u>simvastatin</u> are CYP3A4 substrates and co-administration with INTELENCE may result in lower plasma concentrations of the HMG Co-A reductase inhibitor. <u>Fluvastatin</u> , and <u>rosuvastatin</u> are metabolised by CYP2C9 and co-administration with INTELENCE may result in higher plasma concentrations of the HMG Co-A reductase inhibitor.	Dose adjustments for these HMG Co-A reductase inhibitors may be necessary.
<b>H<sub>2</sub>-RECEPTOR ANTAGONISTS</b>		
Ranitidine 150 mg twice daily	<u>etravirine</u> AUC ↓ 0.86 (0.76-0.97) C <sub>min</sub> ND C <sub>max</sub> ↓ 0.94 (0.75-1.17)	INTELENCE can be co-administered with H <sub>2</sub> -receptor antagonists without dose adjustments.

<b>IMMUNOSUPPRESSANTS</b>		
Cyclosporin Sirolimus Tacrolimus	Not studied. Etravirine is expected to decrease plasma concentrations of cyclosporine, sirolimus and tacrolimus.	Co-administration with systemic immunosuppressants should be done with caution because plasma concentrations of cyclosporin, sirolimus and tacrolimus may be affected when co-administered with INTELENCE.
<b>NARCOTIC ANALGESICS</b>		
Methadone individual dose ranging from 60 mg to 130 mg once daily	<u>R(-) methadone</u> AUC ↔ 1.06 (0.99-1.13) C <sub>min</sub> ↔ 1.10 (1.02-1.19) C <sub>max</sub> ↔ 1.02 (0.96-1.09) <u>S(+)</u> methadone AUC ↔ 0.89 (0.82-0.96) C <sub>min</sub> ↔ 0.89 (0.81-0.98) C <sub>max</sub> ↔ 0.89 (0.83-0.97) <u>etravirine</u> AUC ↔ <sup>a</sup> C <sub>min</sub> ↔ <sup>a</sup> C <sub>max</sub> ↔ <sup>a</sup>	No changes in methadone dosage were required based on clinical status during or after the period of INTELENCE co-administration.
<b>PHOSPHODIESTERASE, TYPE 5 (PDE-5) INHIBITORS</b>		
Sildenafil 50 mg single dose Tadalafil Vardenafil	<u>sildenafil</u> AUC ↓ 0.43 (0.36-0.51) C <sub>min</sub> ND C <sub>max</sub> ↓ 0.55 (0.40-0.75) <u>N-desmethyl-sildenafil</u> AUC ↓ 0.59 (0.52-0.68) C <sub>min</sub> ND C <sub>max</sub> ↓ 0.75 (0.59-0.96)	Concomitant use of PDE-5 inhibitors with INTELENCE may require dose adjustment of the PDE-5 inhibitor to attain the desired clinical effect.
<b>PLATELET AGGREGGATION INHIBITORS</b>		
Clopidogrel	<i>In vitro</i> data show that etravirine has inhibitory properties on CYP2C19. It is therefore possible that etravirine may inhibit the metabolism of clopidogrel to its active metabolite by such inhibition of CYP2C19 <i>in vivo</i> . The clinical relevance of this interaction has not been demonstrated.	As a precaution it is recommended that concomitant use of etravirine and clopidogrel should be discouraged.
<b>PROTON PUMP INHIBITORS</b>		
Omeprazole 40 mg once daily	<u>etravirine</u> AUC ↑ 1.41 (1.22-1.62) C <sub>min</sub> ND C <sub>max</sub> ↑ 1.17 (0.96-1.43)	INTELENCE can be co-administered with proton pump inhibitors without dose adjustments.
<b>SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIS)</b>		
Paroxetine 20 mg once daily	<u>paroxetine</u> AUC ↔ 1.03 (0.90-1.18) C <sub>min</sub> ↓ 0.87 (0.75-1.02) C <sub>max</sub> ↔ 1.06 (0.95-1.20) <u>etravirine</u> AUC ↔ 1.01 (0.93-1.10) C <sub>min</sub> ↔ 1.07 (0.98-1.17) C <sub>max</sub> ↔ 1.05 (0.96-1.15)	INTELENCE can be co-administered with paroxetine without dose adjustments.

<sup>a</sup> Comparison based on historic control.

Note: In drug-drug interaction studies, different formulations and/or doses of etravirine were used which led to similar exposures and, therefore, interactions relevant for one formulation are relevant for the other.

### Paediatric population

Interaction studies have only been performed in adults.

## 4.6 Fertility, pregnancy and lactation

### Pregnancy

As a general rule, when deciding to use antiretroviral agents for the treatment of HIV infection in pregnant women, and consequently for reducing the risk of HIV vertical transmission to the newborn, the animal data as well as the clinical experience in pregnant women should be taken into account in order to characterise the safety for the foetus.

Placental transfer has been seen in pregnant rats, but it is not known whether placental transfer of INTELENCE also occurs in pregnant women. Studies in animals do not indicate direct or indirect harmful effects with respect to pregnancy, embryonal/foetal development, parturition or postnatal development (see section 5.3). Based on animal data the malformative risk is unlikely in humans. The clinical data do not raise safety concern but are very limited.

### Breast-feeding

It is not known whether etravirine is excreted in human milk. As a general rule, it is recommended that mothers infected by HIV do not breast-feed their babies under any circumstances in order to avoid transmission of HIV.

### Fertility

No human data on the effect of etravirine on fertility are available. In rats, there was no effect on mating or fertility with etravirine treatment (see section 5.3).

## 4.7 Effects on ability to drive and use machines

INTELENCE has no or negligible influence on the ability to drive and use machines. Adverse drug reactions such as somnolence and vertigo have been reported in INTELENCE treated subjects at incidences similar to placebo (see section 4.8). There is no evidence that INTELENCE may alter the patient's ability to drive and operate machines, however, the adverse drug reaction profile should be taken into account.

## 4.8 Undesirable effects

### Summary of the safety profile

The safety assessment is based on all data from 1,203 patients in the Phase III placebo-controlled trials DUET-1 and DUET-2 in antiretroviral treatment-experienced HIV-1 infected adult patients, 599 of whom received INTELENCE (200 mg b.i.d.) (see section 5.1). In these pooled trials, the median exposure for patients in the INTELENCE arm was 52.3 weeks.

The most frequently reported adverse drug reactions (ADRs) (incidence  $\geq$  10% in the INTELENCE arm) of all intensities occurring in the Phase III studies were rash (19.2% in the INTELENCE arm versus 10.9% in the placebo arm), diarrhoea (18.0% in the INTELENCE arm versus 23.5% in the placebo arm), nausea (14.9% in the INTELENCE arm versus 12.7% in the placebo arm) and headache (10.9% in the INTELENCE arm versus 12.7% in the placebo arm). The rates of discontinuation due to any adverse reaction were 7.2% in patients receiving INTELENCE and 5.6% in patients receiving placebo. The most common ADR leading to discontinuation was rash (2.2% in the INTELENCE arm versus 0% in the placebo arm).

Rash was most frequently mild to moderate, generally macular to maculopapular or erythematous, mostly occurred in the second week of therapy, and was infrequent after week 4. Rash was mostly self-limiting, and generally resolved within 1-2 weeks on continued therapy (see section 4.4). The incidence of rash was higher in women compared to men in the INTELENCE arm in the DUET trials (rash  $\geq$  grade 2 was reported in 9/60 [15.0%] women versus 51/539 [9.5%] men; discontinuations due to rash were reported in 3/60 [5.0%] women versus 10/539 [1.9%] men) (see section 4.4). There was no gender difference in severity or treatment discontinuation due to rash. The clinical data are limited and an increased risk of cutaneous reactions in patients with a history of NNRTI-associated cutaneous reaction cannot be excluded (see section 4.4).

Tabulated list of adverse reactions

ADRs of moderate intensity or greater ( $\geq$  grade 2) reported in patients treated with INTELENCE are summarised in table 2 (background regimen is indicated as “BR”). Laboratory abnormalities considered ADRs are included in a paragraph below table 2. The ADRs are listed by system organ class (SOC) and frequency. Within each frequency grouping, ADRs are presented in order of decreasing seriousness. Frequencies are defined as very common ( $\geq 1/10$ ), common ( $\geq 1/100$  to  $< 1/10$ ) and uncommon ( $\geq 1/1,000$  to  $< 1/100$ ). Rare and very rare ADRs cannot be detected based on the number of patients included in the DUET trials.

<b>Table 2: DUET-1 and DUET-2 trials</b>		
<b>System Organ Class (SOC)</b>	<b>Frequency Category</b>	<b>ADRs (INTELENCE + BR versus Placebo + BR)</b>
Blood and lymphatic system disorders	common	thrombocytopenia (1.3% vs 1.5%), anaemia (4.0% vs 3.8%)
Immune system disorders	uncommon	immune reconstitution syndrome (0.2% vs 0.3%), drug hypersensitivity (0.8% vs 1.2%)
Metabolism and nutrition disorders	common	diabetes mellitus (1.3% vs 0.2%), hyperglycaemia (1.5% vs 0.7%), hypercholesterolaemia (4.3% vs 3.6%), hypertriglyceridaemia (6.3% vs 4.3%), hyperlipidaemia (2.5% vs 1.3%)
	uncommon	anorexia (0.8% vs 1.5%), dyslipidaemia (0.8% vs 0.3%)
Psychiatric disorders	common	anxiety (1.7% vs 2.6%), insomnia (2.7% vs 2.8%)
	uncommon	confusional state (0.2% vs 0.2%), disorientation (0.2% vs 0.3%), nightmares (0.2% vs 0.2%), sleep disorders (0.5% vs 0.5%), nervousness (0.2% vs 0.3%), abnormal dreams (0.2% vs 0.2%)
Nervous system disorders	common	peripheral neuropathy (3.8% vs 2.0%), headache (3.0% vs 4.5%)
	uncommon	convulsion (0.5% vs 0.7%), syncope (0.3% vs 0.3%), amnesia (0.3% vs 0.5%), tremor (0.2% vs 0.3%), somnolence (0.7% vs 0.5%), paraesthesia (0.7% vs 0.7%), hypoaesthesia (0.5% vs 0.2%), hypersomnia (0.2% vs 0%), disturbance in attention (0.2% vs 0.2%)
Eye disorders	uncommon	blurred vision (0.7% vs 0%)
Ear and labyrinth disorders	uncommon	vertigo (0.2% vs 0.5%)
Cardiac disorders	common	myocardial infarction (1.3% vs 0.3%)
	uncommon	atrial fibrillation (0.2% vs 0.2%), angina pectoris (0.5% vs 0.3%)
Vascular disorders	common	hypertension (3.2% vs 2.5%)
Respiratory, thoracic and mediastinal disorders	uncommon	bronchospasm (0.2% vs 0%), exertional dyspnoea (0.5% vs 0.5%)
Gastrointestinal disorders	common	gastroesophageal reflux disease (1.8% vs 1.0%), diarrhoea (7.0% vs 11.3%), vomiting (2.8% vs 2.8%), nausea (5.2% vs 4.8%), abdominal pain (3.5% vs 3.1%), flatulence (1.5% vs 1.0%), gastritis (1.5% vs 1.0%)
	uncommon	pancreatitis (0.7% vs 0.3%), haematemesis (0.2% vs 0%), stomatitis (0.2% vs 0.2%), constipation (0.3% vs 0.5%), abdominal distension (0.7% vs 1.0%), dry mouth (0.3% vs 0%), retching (0.2% vs 0%)
Hepatobiliary disorders	uncommon	hepatitis (0.2% vs 0.3%), hepatic steatosis (0.3% vs 0%), cytolytic hepatitis (0.3% vs 0%), hepatomegaly (0.5% vs 0.2%)
Skin and subcutaneous	very common	rash (10.0% vs 3.5%)



tissue disorders	common	night sweats (1.0% vs 1.0%)
	uncommon	swelling face (0.3% vs 0%), hyperhidrosis (0.5% vs 0.2%), prurigo (0.7% vs 0.5%), dry skin (0.3% vs 0.2%)
Renal and urinary disorders	common	renal failure (2.7% vs 2.0%)
Reproductive system and breast disorders	uncommon	gynaecomastia (0.2% vs 0%)
General disorders and administration site conditions	common	fatigue (3.5% vs 4.6%)
	uncommon	sluggishness (0.2% vs 0%)

Additional ADRs of at least moderate intensity observed in other trials were angioneurotic oedema, erythema multiforme and haemorrhagic stroke, each reported in no more than 0.5% of patients. Stevens-Johnson Syndrome (rare; < 0.1%) and toxic epidermal necrolysis (very rare; < 0.01%) have been reported during clinical development with INTELENCE.

#### *Laboratory abnormalities*

Treatment emergent clinical laboratory abnormalities (grade 3 or 4), considered ADRs, reported in  $\geq 2\%$  of patients in the INTELENCE arm versus the placebo arm, respectively, were increases in amylase (8.9% vs 9.4%), creatinine (2.0% vs 1.7%), lipase (3.4% vs 2.6%), total cholesterol (8.1% vs 5.3%), low density lipoprotein (LDL) (7.2% vs 6.6%), triglycerides (9.2% vs 5.8%), glucose (3.5% vs 2.4%), alanine aminotransferase (ALT) (3.7% vs 2.0%), aspartate amino transferase (AST) (3.2% vs 2.0%) and decreases in neutrophils (5.0% vs 7.4%) and white blood cell count (2.0% vs 4.3%).

#### Description of selected adverse reactions

##### *Metabolic parameters*

Weight and levels of blood lipids and glucose may increase during antiretroviral therapy (see section 4.4)

##### *Immune reconstitution syndrome*

In HIV infected patients with severe immune deficiency at the time of initiation of combination antiretroviral therapy (CART), an inflammatory reaction to asymptomatic or residual opportunistic infections may arise. Autoimmune disorders (such as Graves' disease) have also been reported; however, the reported time to onset is more variable and these events can occur many months after initiation of treatment (see section 4.4).

##### *Osteonecrosis*

Cases of osteonecrosis have been reported, particularly in patients with generally acknowledged risk factors, advanced HIV disease or long-term exposure to combination antiretroviral therapy. The frequency of this is unknown (see section 4.4).

#### Paediatric population (6 years to less than 18 years of age)

The safety assessment in children and adolescents is based on the week 48 analysis of the single-arm, Phase II PIANO trial in which 101 antiretroviral treatment-experienced HIV-1 infected paediatric patients, 6 years to less than 18 years of age and weighing at least 16 kg, received INTELENCE in combination with other antiretroviral agents (see section 5.1). The frequency, type and severity of adverse drug reactions in paediatric patients were comparable to those observed in adults. Rash was reported more frequently in female subjects than in male subjects (rash  $\geq$  grade 2 was reported in 13/64 [20.3%] females versus 2/37 [5.4%] males; discontinuations due to rash were reported in 4/64 [6.3%] females versus 0/37 [0%] males) (see section 4.4). Most often, rash was mild to moderate, of macular/papular type, and occurred in the second week of therapy. Rash was mostly self-limiting and generally resolved within 1 week on continued therapy.

### Other special populations

#### *Patients co-infected with hepatitis B and/or hepatitis C virus*

In the pooled analysis for DUET-1 and DUET-2, the incidence of hepatic events tended to be higher in co-infected subjects treated with INTELENCE compared to co-infected subjects in the placebo group. INTELENCE should be used with caution in these patients (see also sections 4.4 and 5.2).

### Adverse drug reactions identified through post marketing experience with INTELENCE

Hypersensitivity reactions, including DRESS, have been reported with INTELENCE. These hypersensitivity reactions were characterised by rash, fever and sometimes organ involvement (including, but not limited to, severe rash or rash accompanied by fever, general malaise, fatigue, muscle or joint aches, blisters, oral lesions, conjunctivitis, hepatitis and eosinophilia) (see section 4.4).

### Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via [the national reporting system listed in Appendix V](#).

## **4.9 Overdose**

There are no data with regard to symptomatic overdose with INTELENCE, but it is possible that the most frequent ADRs of INTELENCE, i.e. rash, diarrhoea, nausea, and headache would be the most common symptoms noted. There is no specific antidote for overdose with INTELENCE. Treatment of overdose with INTELENCE consists of general supportive measures including monitoring of vital signs and observation of the clinical status of the patient. If indicated, elimination of unabsorbed active substance is to be achieved by emesis. Administration of activated charcoal may also be used to aid in removal of unabsorbed active substance. Since etravirine is highly protein bound, dialysis is unlikely to result in significant removal of the active substance.

## **5. PHARMACOLOGICAL PROPERTIES**

### **5.1 Pharmacodynamic properties**

Pharmacotherapeutic group: Antivirals for systemic use, non-nucleoside reverse transcriptase inhibitors, ATC code: J05AG04.

#### Mechanism of action

Etravirine is an NNRTI of human immunodeficiency virus type 1 (HIV-1). Etravirine binds directly to reverse transcriptase (RT) and blocks the RNA-dependent and DNA-dependent DNA polymerase activities by causing a disruption of the enzyme's catalytic site.

#### Antiviral activity *in vitro*

Etravirine exhibits activity against wild type HIV-1 in T-cell lines and primary cells with median EC<sub>50</sub> values ranging from 0.9 to 5.5 nM. Etravirine demonstrates activity against HIV-1 group M (subtypes A, B, C, D, E, F, and G) and HIV-1 group O primary isolates with EC<sub>50</sub> values ranging from 0.3 to 1.7 nM and from 11.5 to 21.7 nM, respectively. Although etravirine demonstrates *in vitro* activity against wild type HIV-2 with median EC<sub>50</sub> values ranging from 5.7 to 7.2 µM, treatment of HIV-2 infection with etravirine is not recommended in the absence of clinical data. Etravirine retains activity against HIV-1 viral strains resistant to nucleoside reverse transcriptase and/or protease inhibitors. In addition, etravirine demonstrates a fold change (FC) in EC<sub>50</sub> ≤ 3 against 60% of 6,171 NNRTI-resistant clinical isolates.

#### Resistance

Etravirine efficacy in relation to NNRTI resistance at baseline has mainly been analysed with etravirine given in combination with darunavir/ritonavir (DUET-1 and DUET-2). Boosted protease inhibitors, like darunavir/ritonavir, show a higher barrier to resistance compared to other classes of

antiretrovirals. The breakpoints for reduced efficacy with etravirine (> 2 etravirine-associated mutations at baseline, see clinical results section) applies when etravirine is given in combination with a boosted protease inhibitor. This breakpoint might be lower in antiretroviral combination therapy not including a boosted protease inhibitor.

In the Phase III trials DUET-1 and DUET-2, mutations that developed most commonly in patients with virologic failure to the INTELENCE containing regimen were V108I, V179F, V179I, Y181C and Y181I, which usually emerged in a background of multiple other NNRTI resistance-associated mutations (RAMs). In all the other trials conducted with INTELENCE in HIV-1 infected patients, the following mutations emerged most commonly: L100I, E138G, V179F, V179I, Y181C and H221Y.

#### Cross-resistance

Following virologic failure of an etravirine-containing regimen it is not recommended to treat patients with efavirenz and/or nevirapine.

#### Clinical efficacy and safety

##### *Treatment-experienced adult patients*

##### Pivotal studies

The evidence of efficacy of INTELENCE is based on 48-week data from 2 Phase III trials DUET-1 and DUET-2. These trials were identical in design and similar efficacy for INTELENCE was seen in each trial. The results below are pooled data from the two trials.

##### Trial characteristics

- Design: randomised (1:1), double-blinded, placebo-controlled.
- Treatment: INTELENCE vs. placebo, in addition to a background regimen including darunavir/ritonavir (DRV/r), investigator-selected N(t)RTIs and optional enfuvirtide (ENF).
- Main inclusion criteria:
  - HIV-1 plasma viral load > 5,000 HIV-1 RNA copies/ml at screening
  - 1 or more NNRTI resistance-associated mutations (RAMs) at screening or from prior genotypic analysis (i.e., archived resistance)
  - 3 or more primary PI mutations at screening
  - on a stable antiretroviral regimen for at least 8 weeks.
- Stratification: Randomisation was stratified by the intended use of ENF in the BR, previous use of darunavir and screening viral load.
- Virologic response was defined as achieving a confirmed undetectable viral load (< 50 HIV-1 RNA copies/ml).

##### Summary of efficacy results

<b>Table 3: DUET-1 and DUET-2 pooled 48-week data</b>			
	INTELENCE + BR N = 599	Placebo + BR N = 604	Treatment difference (95% CI)
<i>Baseline characteristics</i>			
Median plasma HIV-1 RNA	4.8 log <sub>10</sub> copies/ml	4.8 log <sub>10</sub> copies/ml	
Median CD4 cell count	99 x 10 <sup>6</sup> cells/l	109 x 10 <sup>6</sup> cells/l	
<i>Outcomes</i>			
Confirmed undetectable viral load (< 50 HIV-1 RNA copies/ml) <sup>a</sup> n (%)			
Overall	363 (60.6%)	240 (39.7%)	20.9% (15.3%; 26.4%) <sup>d</sup>
<i>De novo</i> ENF	109 (71.2%)	93 (58.5%)	12.8% (2.3%; 23.2%) <sup>f</sup>
Not <i>de novo</i> ENF	254 (57.0%)	147 (33.0%)	23.9% (17.6%; 30.3%) <sup>f</sup>

< 400 HIV-1 RNA copies/ml <sup>a</sup> n (%)	428 (71.5%)	286 (47.4%)	24.1% (18.7%; 29.5%) <sup>d</sup>
HIV-1 RNA log <sub>10</sub> mean change from baseline (log <sub>10</sub> copies/ml) <sup>b</sup>	-2.25	-1.49	-0.6 (-0.8; -0.5) <sup>c</sup>
CD4 cell count mean change from baseline (x 10 <sup>6</sup> /l) <sup>b</sup>	+98.2	+72.9	24.4 (10.4; 38.5) <sup>c</sup>
Any AIDS defining illness and/or death n (%)	35 (5.8%)	59 (9.8%)	-3.9% (-6.9%; -0.9%) <sup>e</sup>

<sup>a</sup> Imputations according to the TLOVR algorithm (TLOVR = Time to Loss of Virologic Response).

<sup>b</sup> Non-completer is failure (NC = F) imputation.

<sup>c</sup> Treatment differences are based on Least Square Means from an ANCOVA model including the stratification factors. P-value < 0.0001 for mean decrease in HIV-1 RNA; P-value = 0.0006 for mean change in CD4 cell count.

<sup>d</sup> Confidence interval around observed difference of response rates; P-value < 0.0001 from logistic regression model, including stratification factors.

<sup>e</sup> Confidence interval around observed difference of response rates; P-value = 0.0408.

<sup>f</sup> Confidence interval around observed difference of response rates; P-value from CMH test controlling for stratification factors = 0.0199 for *de novo*, and < 0.0001 for not *de novo*.

Since there was a significant interaction effect between treatment and ENF, the primary analysis was done for 2 ENF strata (patients reusing or not using ENF versus patients using ENF *de novo*). The week 48 results from the pooled analysis of DUET-1 and DUET-2 demonstrated that the INTELENCE arm was superior to the placebo arm irrespective of whether ENF was used *de novo* (p = 0.0199) or not (p < 0.0001). Results of this analysis (week 48 data) by ENF stratum are shown in table 3.

Significantly fewer patients in the INTELENCE arm reached a clinical endpoint (AIDS-defining illness and/or death) as compared to the placebo arm (p = 0.0408).

A subgroup analysis of the virologic response (defined as a viral load < 50 HIV-1 RNA copies/ml) at week 48 by baseline viral load and baseline CD4 count (pooled DUET data) is presented in table 4.

Subgroups	Proportion of subjects with HIV-1 RNA < 50 copies/ml at week 48	
	INTELENCE + BR N = 599	Placebo + BR N = 604
Baseline HIV-1 RNA		
< 30,000 copies/ml	75.8%	55.7%
≥ 30,000 and < 100,000 copies/ml	61.2%	38.5%
≥ 100,000 copies/ml	49.1%	28.1%
Baseline CD4 count (x 10 <sup>6</sup> /l)		
< 50	45.1%	21.5%
≥ 50 and < 200	65.4%	47.6%
≥ 200 and < 350	73.9%	52.0%
≥ 350	72.4%	50.8%

Note: Imputations according to the TLOVR algorithm (TLOVR = Time to Loss of Virologic Response)

#### *Baseline genotype or phenotype and virologic outcome analyses*

In DUET-1 and DUET-2, the presence at baseline of 3 or more of the following mutations: V90I, A98G, L100I, K101E, K101P, V106I, V179D, V179F, Y181C, Y181I, Y181V, G190A and G190S, (INTELENCE RAMs) was associated with a decreased virologic response to INTELENCE (see table 5). These individual mutations occurred in the presence of other NNRTI RAMs. V179F was never present without Y181C.

Conclusions regarding the relevance of particular mutations or mutational patterns are subject to change with additional data, and it is recommended to always consult current interpretation systems for analysing resistance test results.

<b>Table 5: Proportion of subjects with &lt; 50 HIV-1 RNA copies/ml at week 48 by baseline number of INTELENCE RAMs in the non-viral failure excluded population of pooled DUET-1 and DUET-2 trials</b>		
Baseline number of INTELENCE RAMs*	Etravirine arms N = 549	
	Reused/not used ENF	<i>De novo</i> ENF
All ranges	63.3% (254/401)	78.4% (109/139)
0	74.1% (117/158)	91.3% (42/46)
1	61.3% (73/119)	80.4% (41/51)
2	64.1% (41/64)	66.7% (18/27)
≥ 3	38.3% (23/60)	53.3% (8/15)
	Placebo arms N = 569	
All ranges	37.1% (147/396)	64.1% (93/145)

\* INTELENCE RAMs = V90I, A98G, L100I, K101E/P, V106I, V179D/F, Y181C/I/V, G190A/S

Note: all patients in the DUET trials received a background regimen consisting of darunavir/rtv, investigator-selected NRTIs and optional enfuvirtide.

The presence of K103N alone, which was the most prevalent NNRTI mutation in DUET-1 and DUET-2 at baseline, was not identified as a mutation associated with resistance to INTELENCE. Furthermore, the presence of this mutation alone did not affect the response in the INTELENCE arm. Additional data is required to conclude on the influence of K103N when associated with other NNRTIs mutations.

Data from the DUET studies suggest that baseline fold change (FC) in EC<sub>50</sub> to etravirine was a predictive factor of virologic outcome, with gradually decreasing responses observed above FC 3 and FC 13.

FC subgroups are based on the select patient populations in DUET-1 and DUET-2 and are not meant to represent definitive clinical susceptibility breakpoints for INTELENCE.

*Exploratory head to head comparison with protease inhibitor in protease inhibitor naïve patients (trial TMC125-C227)*

TMC125-C227 was an exploratory, randomised, active-controlled open-label trial, which investigated the efficacy and safety of INTELENCE in a treatment regimen, which is not approved under the current indication. In the TMC125-C227 study, INTELENCE (N = 59) was administered with 2 investigator-selected NRTIs (i.e. without a ritonavir-boosted PI) and compared to an investigator-selected combination of a PI with 2 NRTIs (N = 57). The trial population included PI-naïve, NNRTI-experienced patients with evidence of NNRTI resistance.

At week 12, virologic response was greater in the control-PI arm (-2.2 log<sub>10</sub> copies/ml from baseline; n = 53) compared to the INTELENCE arm (-1.4 log<sub>10</sub> copies/ml from baseline; n = 40). This difference between treatment arms was statistically significant.

Based on these trial results, INTELENCE is not recommended for use in combination with N(t)RTIs only in patients who have experienced virological failure on an NNRTI- and N(t)RTI-containing regimen.

Paediatric population

*Treatment-experienced paediatric patients (6 years to less than 18 years of age)*

PIANO is a single-arm, Phase II trial evaluating the pharmacokinetics, safety, tolerability, and efficacy of INTELENCE in 101 antiretroviral treatment-experienced HIV-1 infected paediatric patients 6 years to less than 18 years of age and weighing at least 16 kg. The study enrolled patients on a stable but virologically failing antiretroviral treatment regimen, with a confirmed HIV-1 RNA plasma viral load ≥ 500 copies/ml. Sensitivity of the virus to INTELENCE at screening was required.

The median baseline plasma HIV-1 RNA was 3.9 log<sub>10</sub> copies/ml, and the median baseline CD4 cell count was 385 x 10<sup>6</sup> cells/l.

<b>Table 6: Virologic responses (ITT - TLOVR), change from baseline in log<sub>10</sub> viral load (NC = F), and change from baseline in CD4 percentage and cell count (NC = F) at week 24 in the TMC125-C213 and pooled DUET studies</b>				
<b>Study</b> <b>Age at screening</b> <b>Treatment group</b>	<b>TMC125-C213</b> <b>6 to &lt; 12 years</b> <b>ETR</b> <b>N = 41</b>	<b>TMC125-C213</b> <b>12 to &lt; 18 years</b> <b>ETR</b> <b>N = 60</b>	<b>TMC125-C213</b> <b>6 to &lt; 18 years</b> <b>ETR</b> <b>N = 101</b>	<b>Pooled DUET</b> <b>Studies</b> <b>≥ 18 years</b> <b>ETR</b> <b>N = 599</b>
<b>Virologic parameters</b>				
Viral load < 50 copies/ml at week 24, n (%)	24 (58.5)	28 (46.7)	52 (51.5)	363 (60.6)
Viral load < 400 copies/ml at week 24, n (%)	28 (68.3)	38 (63.3)	66 (65.3)	445 (74.3)
≥ 1 log <sub>10</sub> decrease from baseline at week 24, n (%)	26 (63.4)	38 (63.3)	64 (63.4)	475 (79.3)
Change from baseline in log <sub>10</sub> viral load (copies/ml) at week 24, mean (SE) and median (range)	-1.62 (0.21) -1.68 (-4.3; 0.9)	-1.44 (0.17) -1.68 (-4.0; 0.7)	-1.51 (0.13) -1.68 (-4.3; 0.9)	-2.37 (0.05) -2.78 (-4.6; 1.4)
<b>Immunologic parameters</b>				
Change from baseline in CD4 cell count (x 10 <sup>6</sup> cells/l), mean (SE) and median (range)	125 (33.0) 124 (-410; 718)	104 (17.5) 81 (-243; 472)	112 (16.9) 108 (-410; 718)	83.5 (3.64) 77.5 (-331; 517)
Change from baseline in CD4 percentage, median (range)	4% (-9; 20)	3% (-4; 14)	4% (-9; 20)	3% (-7; 23)

N = number of subjects with data; n = number of observations.

At week 48, 53.5% of all paediatric patients had a confirmed undetectable viral load < 50 HIV-1 RNA copies/ml according to the TLOVR algorithm. The proportion of paediatric patients with < 400 HIV-1 RNA copies/ml was 63.4%. The mean change in plasma HIV-1 RNA from baseline to week 48 was -1.53 log<sub>10</sub> copies/ml, and the mean CD4 cell count increase from baseline was 156 x 10<sup>6</sup> cells/l.

The European Medicines Agency has deferred the obligation to submit the results of studies with INTELENCE in one or more subsets of the paediatric population in human immunodeficiency virus infection, as per Paediatric Investigation Plan (PIP) decision in the granted indication (see section 4.2 for information on paediatric use).

#### Pregnancy and postpartum

INTELENCE (200 mg b.i.d.), evaluated in combination with other antiretroviral medicinal products in a study of 15 pregnant women during the second and third trimesters of pregnancy and postpartum, demonstrated that exposure to total etravirine was generally higher during pregnancy compared with postpartum, and less so for unbound etravirine exposure (see section 5.2). There were no new clinically relevant safety findings in the mothers or in the newborns in this trial.

## **5.2 Pharmacokinetic properties**

The pharmacokinetic properties of etravirine have been evaluated in adult healthy subjects and in adult and paediatric treatment-experienced HIV-1 infected patients. Exposure to etravirine was lower (35-50%) in HIV-1 infected patients than in healthy subjects.

<b>Table 7: Population pharmacokinetic estimates of etravirine 200 mg b.i.d. in HIV-1 infected adult subjects (integrated data from Phase III trials at week 48)*</b>	
<b>Parameter</b>	<b>Etravirine 200 mg b.i.d. N = 575</b>
AUC <sub>12h</sub> (ng•h/ml)	
Geometric Mean ± Standard Deviation	4,522 ± 4,710
Median (Range)	4,380 (458 - 59,084)
C <sub>0h</sub> (ng/ml)	
Geometric Mean ± Standard Deviation	297 ± 391
Median (Range)	298 (2 - 4,852)

\* All HIV-1 infected subjects enrolled in Phase III clinical trials received darunavir/ritonavir 600/100 mg b.i.d. as part of their background regimen. Therefore, the pharmacokinetic parameter estimates shown in the table account for reductions in the pharmacokinetic parameters of etravirine due to co-administration of INTELENCE with darunavir/ritonavir.

Note: The median protein binding adjusted EC50 for MT4 cells infected with HIV-1/IIIB in vitro = 4 ng/ml.

### Absorption

An intravenous formulation of etravirine is unavailable, thus, the absolute bioavailability of etravirine is unknown. After oral administration with food, the maximum plasma concentration of etravirine is generally achieved within 4 hours.

In healthy subjects, the absorption of etravirine is not affected by co-administration of oral ranitidine or omeprazole, medicinal products that are known to increase gastric pH.

### Effect of food on absorption

The systemic exposure (AUC) to etravirine was decreased by about 50% when INTELENCE was administered under fasting conditions, as compared to administration following a meal. Therefore, INTELENCE should be taken following a meal.

### Distribution

Etravirine is approximately 99.9% bound to plasma proteins, primarily to albumin (99.6%) and  $\alpha_1$ -acid glycoprotein (97.66%-99.02%) *in vitro*. The distribution of etravirine into compartments other than plasma (e.g., cerebrospinal fluid, genital tract secretions) has not been evaluated in humans.

### Biotransformation

*In vitro* experiments with human liver microsomes (HLMs) indicate that etravirine primarily undergoes oxidative metabolism by the hepatic cytochrome CYP450 (CYP3A) system and, to a lesser extent, by the CYP2C family, followed by glucuronidation.

### Elimination

After administration of a radiolabeled <sup>14</sup>C-etravirine dose, 93.7% and 1.2% of the administered dose of <sup>14</sup>C-etravirine could be retrieved in faeces and urine, respectively. Unchanged etravirine accounted for 81.2% to 86.4% of the administered dose in faeces. Unchanged etravirine in faeces is likely to be unabsorbed drug. Unchanged etravirine was not detected in urine. The terminal elimination half-life of etravirine was approximately 30-40 hours.

### Special populations

#### *Paediatric population (6 years to less than 18 years of age)*

The pharmacokinetics of etravirine in 101 treatment-experienced HIV-1 infected paediatric patients, 6 years to less than 18 years of age and weighing at least 16 kg, showed that the administered weight-based dosages resulted in etravirine exposure comparable to that in adults receiving INTELENCE 200 mg b.i.d. (see sections 4.2 and 5.2) when administered at a dose corresponding to 5.2 mg/kg b.i.d. The population pharmacokinetic estimates for etravirine AUC<sub>12h</sub> and C<sub>0h</sub> are summarised in the table below.

<b>Table 8: Population pharmacokinetic estimates for etravirine (all doses combined) in treatment-experienced HIV-1 infected paediatric patients 6 years to less than 18 years of age (PIANO 48 week analysis)</b>	
Parameter	N = 101
AUC <sub>12h</sub> (ng•h/ml)	
Geometric Mean ± Standard Deviation	3,729 ± 4,305
Median (Range)	4,560 (62 - 28,865)
C <sub>0h</sub> (ng/ml)	
Geometric Mean ± Standard Deviation	205 ± 342
Median (Range)	287 (2 - 2,276)

#### *Paediatric population (less than 6 years of age)*

The pharmacokinetics of etravirine in paediatric patients less than 6 years of age are under investigation. There are insufficient data at this time to recommend a dose in paediatric patients less than 6 years of age or weighing less than 16 kg (see section 4.2).

#### *Elderly*

Population pharmacokinetic analysis in HIV infected patients showed that etravirine pharmacokinetics are not considerably different in the age range (18 to 77 years) evaluated, with 6 subjects aged 65 years or older (see sections 4.2 and 4.4).

#### *Gender*

No significant pharmacokinetic differences have been observed between males and females. A limited number of females were included in the studies.

#### *Race*

Population pharmacokinetic analysis of etravirine in HIV infected patients indicated no apparent difference in the exposure to etravirine between Caucasian, Hispanic and Black subjects. The pharmacokinetics in other races have not been sufficiently evaluated.

#### *Hepatic impairment*

Etravirine is primarily metabolised and eliminated by the liver. In a study comparing 8 patients with mild (Child-Pugh Class A) hepatic impairment to 8 matched controls and 8 patients with moderate (Child-Pugh Class B) hepatic impairment to 8 matched controls, the multiple dose pharmacokinetic disposition of etravirine was not altered in patients with mild to moderate hepatic impairment. However, unbound concentrations have not been assessed. Increased unbound exposure could be expected. No dose adjustment is suggested but caution is advised in patients with moderate hepatic impairment. INTELENCE has not been studied in patients with severe hepatic impairment (Child-Pugh Class C) and is therefore not recommended (see sections 4.2 and 4.4).

#### *Hepatitis B and/or hepatitis C virus co-infection*

Population pharmacokinetic analysis of the DUET-1 and DUET-2 trials showed reduced clearance (potentially leading to increased exposure and alteration of the safety profile) for INTELENCE in HIV-1 infected patients with hepatitis B and/or hepatitis C virus co-infection. In view of the limited data available in hepatitis B and/or C co-infected patients, particular caution should be paid when INTELENCE is used in these patients (see sections 4.4 and 4.8).

#### *Renal impairment*

The pharmacokinetics of etravirine have not been studied in patients with renal insufficiency. Results from a mass balance study with radioactive <sup>14</sup>C-etravirine showed that < 1.2% of the administered dose of etravirine is excreted in the urine. No unchanged drug was detected in urine so the impact of renal impairment on etravirine elimination is expected to be minimal. As etravirine is highly bound to plasma proteins, it is unlikely that it will be significantly removed by haemodialysis or peritoneal dialysis (see section 4.2).



### Pregnancy and postpartum

Study TMC114HIV3015 evaluated etravirine 200 mg b.i.d. in combination with other antiretroviral medicinal products in 15 pregnant women during the second and third trimesters of pregnancy and postpartum. The total etravirine exposure after intake of etravirine 200 mg b.i.d. as part of an antiretroviral regimen was generally higher during pregnancy compared with postpartum (see Table 9). The differences were less pronounced for unbound etravirine exposure.

In women receiving etravirine 200 mg b.i.d., higher mean values for  $C_{max}$ ,  $AUC_{12h}$  and  $C_{min}$  were observed during pregnancy compared to postpartum. During the 2<sup>nd</sup> and 3<sup>rd</sup> trimester of pregnancy mean values of these parameters were comparable.

Pharmacokinetics of etravirine (mean $\pm$ SD, median)	etravirine 200 mg b.i.d. postpartum	etravirine 200 mg b.i.d. 2 <sup>nd</sup> trimester	etravirine 200 mg b.i.d. 3 <sup>rd</sup> trimester
N	10	13	10 <sup>a</sup>
$C_{min}$ , ng/mL	269 $\pm$ 182 284	383 $\pm$ 210 346	349 $\pm$ 103 371
$C_{max}$ , ng/mL	569 $\pm$ 261 528	774 $\pm$ 300 828	785 $\pm$ 238 694
$AUC_{12h}$ , h*ng /mL	5004 $\pm$ 2521 5246	6617 $\pm$ 2766 6836	6846 $\pm$ 1482 6028

<sup>a</sup> n = 9 for  $AUC_{12h}$

Each subject served as her own control, and with an intra-individual comparison, the total etravirine  $C_{min}$ ,  $C_{max}$  and  $AUC_{12h}$  values were 1.2-, 1.4- and 1.4-fold higher, respectively, during the 2<sup>nd</sup> trimester of pregnancy as compared to postpartum, and 1.1-, 1.4- and 1.2-fold higher, respectively, based during the 3<sup>rd</sup> trimester of pregnancy as compared to postpartum.

### 5.3 Preclinical safety data

Animal toxicology studies have been conducted with etravirine in mice, rats, rabbits and dogs. In mice, the key target organs identified were the liver and the coagulation system. Haemorrhagic cardiomyopathy was only observed in male mice and was considered to be secondary to severe coagulopathy mediated via the vitamin K pathway. In the rat, the key target organs identified were the liver, the thyroid and the coagulation system. Exposure in mice was equivalent to human exposure while in rats it was below the clinical exposure at the recommended dose. In the dog, changes were observed in the liver and gall bladder at exposures approximately 8-fold higher than human exposure observed at the recommended dose (200 mg b.i.d.).

In a study conducted in rats, there were no effects on mating or fertility at exposure levels equivalent to those in humans at the clinically recommended dose. There was no teratogenicity with etravirine in rats and rabbits at exposures equivalent to those observed in humans at the recommended clinical dose. Etravirine had no effect on offspring development during lactation or post weaning at maternal exposures equivalent to those observed at the recommended clinical dose.

Etravirine was not carcinogenic in rats and in male mice. An increase in the incidences of hepatocellular adenomas and carcinomas were observed in female mice. The observed hepatocellular findings in female mice are generally considered to be rodent specific, associated with liver enzyme induction, and of limited relevance to humans. At the highest tested doses, the systemic exposures (based on AUC) to etravirine were 0.6-fold (mice) and between 0.2- and 0.7-fold (rats), relative to those observed in humans at the recommended therapeutic dose (200 mg b.i.d.).

*In vitro* and *in vivo* studies with etravirine revealed no evidence of a mutagenic potential.

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

Hypromellose  
Microcrystalline cellulose  
Colloidal anhydrous silica  
Croscarmellose sodium  
Magnesium stearate  
Lactose monohydrate

### **6.2 Incompatibilities**

Not applicable.

### **6.3 Shelf life**

2 years.

### **6.4 Special precautions for storage**

Store in the original bottle. Keep the bottle tightly closed in order to protect from moisture. Do not remove the desiccant pouches.

### **6.5 Nature and contents of container**

The bottle is a high-density polyethylene (HDPE) plastic bottle containing 120 tablets and 3 desiccant pouches, fitted with a polypropylene (PP) child resistant closure.  
Each carton contains one bottle.

### **6.6 Special precautions for disposal and other handling**

Patients who are unable to swallow the tablet(s) whole may disperse the tablet(s) in a glass of water. The patient should be instructed to do the following:

- place the tablet(s) in 5 ml (1 teaspoon) of water, or at least enough liquid to cover the medicine,
- stir well until the water looks milky;
- if desired, add more water or alternatively orange juice or milk (patients should not place the tablets in orange juice or milk without first adding water);
- drink it immediately;
- rinse the glass several times with water, orange juice, or milk and completely swallow the rinse each time to make sure the patient takes the entire dose.

The use of warm (> 40°C) or carbonated beverages should be avoided.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

## **7. MARKETING AUTHORISATION HOLDER**

Janssen-Cilag International NV  
Turnhoutseweg 30  
B-2340 Beerse  
Belgium

**8. MARKETING AUTHORISATION NUMBER(S)**

EU/1/08/468/001

**9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION**

Date of first authorisation: 28 August 2008

Date of latest renewal: 28 August 2013

**10. DATE OF REVISION OF THE TEXT**

Detailed information on this medicine is available on the website of the European Medicines Agency  
<http://www.ema.europa.eu/>.

## 1. NAME OF THE MEDICINAL PRODUCT

INTELENCE 200 mg tablets

## 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each tablet contains 200 mg of etravirine.

For the full list of excipients, see section 6.1.

## 3. PHARMACEUTICAL FORM

Tablet

White to off-white, biconvex, oblong tablet debossed with “T200” on one side.

## 4. CLINICAL PARTICULARS

### 4.1 Therapeutic indications

INTELENCE, in combination with a boosted protease inhibitor and other antiretroviral medicinal products, is indicated for the treatment of human immunodeficiency virus type 1 (HIV-1) infection in antiretroviral treatment-experienced adult patients and in antiretroviral treatment-experienced paediatric patients from 6 years of age (see sections 4.4, 4.5 and 5.1).

The indication in adults is based on week 48 analyses from 2 Phase III trials in highly pre-treated patients where INTELENCE was investigated in combination with an optimised background regimen (OBR) which included darunavir/ritonavir. The indication in paediatric patients is based on 48-week analyses of a single-arm, Phase II trial in antiretroviral treatment-experienced paediatric patients (see section 5.1).

### 4.2 Posology and method of administration

Therapy should be initiated by a physician experienced in the management of HIV infection.

INTELENCE must always be given in combination with other antiretroviral medicinal products.

#### Posology

##### *Adults*

The recommended dose of INTELENCE for adults is 200 mg (one 200 mg tablet) taken orally twice daily (b.i.d.), following a meal (see section 5.2).

##### *Paediatric population (6 years to less than 18 years of age)*

The recommended dose of INTELENCE for paediatric patients (6 years to less than 18 years of age and weighing at least 16 kg) is based on body weight (see table below). INTELENCE tablet(s) should be taken orally, following a meal (see section 5.2).

<b>Recommended dose of INTELENCE for paediatric patients 6 years to less than 18 years of age</b>		
<b>Weight</b>	<b>Dose</b>	<b>Tablets</b>
≥ 16 to < 20 kg	100 mg b.i.d.	four 25 mg tablets twice daily or one 100 mg tablet twice daily
≥ 20 to < 25 kg	125 mg b.i.d.	five 25 mg tablets twice daily or one 100 mg tablet and one 25 mg tablet twice daily

≥ 25 to < 30 kg	150 mg b.i.d.	six 25 mg tablets twice daily or one 100 mg tablet and two 25 mg tablets twice daily
≥ 30 kg	200 mg b.i.d.	eight 25 mg tablets twice daily or two 100 mg tablets twice daily or one 200 mg tablet twice daily

#### Missed dose

If the patient misses a dose of INTELENCE within 6 hours of the time it is usually taken, the patient should take it following a meal as soon as possible and then take the next dose at the regularly scheduled time. If a patient misses a dose by more than 6 hours of the time it is usually taken, the patient should not take the missed dose and simply resume the usual dosing schedule.

#### *Elderly patients*

There is limited information regarding the use of INTELENCE in patients > 65 years of age (see section 5.2), therefore caution should be used in this population.

#### *Hepatic impairment*

No dose adjustment is suggested in patients with mild or moderate hepatic impairment (Child-Pugh Class A or B); INTELENCE should be used with caution in patients with moderate hepatic impairment. The pharmacokinetics of etravirine have not been studied in patients with severe hepatic impairment (Child-Pugh Class C). Therefore, INTELENCE is not recommended in patients with severe hepatic impairment (see sections 4.4 and 5.2).

#### *Renal impairment*

No dose adjustment is required in patients with renal impairment (see section 5.2).

#### *Paediatric population (less than 6 years of age)*

The safety and efficacy of INTELENCE in children less than 6 years of age or weighing less than 16 kg have not yet been established (see section 5.2). No data are available.

#### *Pregnancy and postpartum*

Based on limited data available, no dose adjustment is required during pregnancy and postpartum (see section 5.2).

#### Method of administration

Oral use.

Patients should be instructed to swallow the tablet(s) whole with a liquid such as water. Patients who are unable to swallow the tablet(s) whole may disperse the tablet(s) in a glass of water.

For instructions on dispersion of the medicinal product before administration, see section 6.6.

### **4.3 Contraindications**

Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.

### **4.4 Special warnings and precautions for use**

While effective viral suppression with antiretroviral therapy has been proven to substantially reduce the risk of sexual transmission, a residual risk cannot be excluded. Precautions to prevent transmission should be taken in accordance with national guidelines.

INTELENCE should optimally be combined with other antiretrovirals that exhibit activity against the patient's virus (see section 5.1).

A decreased virologic response to etravirine was observed in patients with viral strains harbouring 3 or more among the following mutations V90I, A98G, L100I, K101E/P, V106I, V179D/F, Y181C/I/V, and G190A/S (see section 5.1).

Conclusions regarding the relevance of particular mutations or mutational patterns are subject to change with additional data, and it is recommended to always consult current interpretation systems for analysing resistance test results.

No data other than drug-drug interaction data (see section 4.5) are available when etravirine is combined with raltegravir or maraviroc.

#### Severe cutaneous and hypersensitivity reactions

Severe cutaneous adverse drug reactions have been reported with INTELENCE; Stevens-Johnson Syndrome and erythema multiforme have been rarely (< 0.1%) reported. Treatment with INTELENCE should be discontinued if a severe cutaneous reaction develops.

The clinical data are limited and an increased risk of cutaneous reactions in patients with a history of NNRTI-associated cutaneous reactions cannot be excluded. Caution should be observed in such patients, especially in case of history of a severe cutaneous drug reaction.

Cases of severe hypersensitivity syndromes, including DRESS (Drug Rash with Eosinophilia and Systemic Symptoms) and TEN (toxic epidermal necrolysis), sometimes fatal, have been reported with the use of INTELENCE (see section 4.8). The DRESS syndrome is characterised by rash, fever, eosinophilia and systemic involvement (including, but not limited to, severe rash or rash accompanied by fever, general malaise, fatigue, muscle or joint aches, blisters, oral lesions, conjunctivitis, hepatitis and eosinophilia). Time to onset is usually around 3-6 weeks and the outcome in most cases is favourable upon discontinuation and after initiation of corticosteroid therapy.

Patients should be informed to seek medical advice if severe rash or hypersensitivity reactions occur. Patients who are diagnosed with a hypersensitivity reaction whilst on therapy must discontinue INTELENCE immediately.

Delay in stopping INTELENCE treatment after the onset of severe rash may result in a life-threatening reaction.

Patients who have stopped treatment due to hypersensitivity reactions should not restart therapy with INTELENCE.

#### Rash

Rash has been reported with INTELENCE. Most frequently, rash was mild to moderate, occurred in the second week of therapy, and was infrequent after week 4. Rash was mostly self-limiting and generally resolved within 1 to 2 weeks on continued therapy. When prescribing INTELENCE to females, prescribers should be aware that the incidence of rash was higher in females (see section 4.8).

#### Elderly

Experience in geriatric patients is limited: in the Phase III trials, 6 patients aged 65 years or older and 53 patients aged 56-64 years received INTELENCE. The type and incidence of adverse reactions in patients > 55 years of age were similar to the ones in younger patients (see sections 4.2 and 5.2).

#### Pregnancy

Given the increased etravirine exposure during pregnancy, caution should be applied for those pregnant patients that require concomitant medications or have comorbidities that may further increase etravirine exposure.

#### Patients with coexisting conditions

##### *Hepatic impairment*

Etravirine is primarily metabolised and eliminated by the liver and highly bound to plasma proteins. Effects on unbound exposure could be expected (has not been studied) and therefore caution is advised in patients with moderate hepatic impairment. INTELENCE has not been studied in patients with severe hepatic impairment (Child-Pugh Class C) and its use is therefore not recommended in this group of patients (see sections 4.2 and 5.2).

#### *Co-infection with HBV (hepatitis B virus) or HCV (hepatitis C virus)*

Caution should be exercised in patients co-infected with hepatitis B or C virus due to the current limited data available. A potential increased risk of liver enzymes increase cannot be excluded.

#### *Weight and metabolic parameters*

An increase in weight and in levels of blood lipids and glucose may occur during antiretroviral therapy. Such changes may in part be linked to disease control and life style. For lipids, there is in some cases evidence for a treatment effect, while for weight gain there is no strong evidence relating this to any particular treatment. For monitoring of blood lipids and glucose reference is made to established HIV treatment guidelines. Lipid disorders should be managed as clinically appropriate.

#### Immune reconstitution syndrome

In HIV infected patients with severe immune deficiency at the time of initiation of CART, an inflammatory reaction to asymptomatic or residual opportunistic pathogens may arise and cause serious clinical conditions, or aggravation of symptoms. Typically, such reactions have been observed within the first weeks or months of initiation of CART. Relevant examples are cytomegalovirus retinitis, generalised and/or focal mycobacterial infections and *Pneumocystis jiroveci* pneumonia. Any inflammatory symptoms should be evaluated and treatment instituted when necessary.

Autoimmune disorders (such as Graves' disease) have also been reported to occur in the setting of immune reactivation; however, the reported time to onset is more variable and these events can occur many months after initiation of treatment (see section 4.8).

#### Osteonecrosis

Although the aetiology is considered to be multifactorial (including corticosteroid use, alcohol consumption, severe immunosuppression, higher body mass index), cases of osteonecrosis have been reported particularly in patients with advanced HIV disease and/or long-term exposure to CART. Patients should be advised to seek medical advice if they experience joint aches and pain, joint stiffness or difficulty in movement.

#### Interactions with medicinal products

It is not recommended to combine etravirine with tipranavir/ritonavir, due to a marked pharmacokinetic interaction (76% decrease of etravirine AUC) that could significantly impair the virologic response to etravirine.

For further information on interactions with medicinal products see section 4.5.

### **4.5 Interaction with other medicinal products and other forms of interaction**

#### Medicinal products that affect etravirine exposure

Etravirine is metabolised by CYP3A4, CYP2C9 and CYP2C19 followed by glucuronidation of the metabolites by uridine diphosphate glucuronosyl transferase (UDPGT). Medicinal products that induce CYP3A4, CYP2C9 or CYP2C19 may increase the clearance of etravirine, resulting in lowered plasma concentrations of etravirine.

Co-administration of INTELENCE and medicinal products that inhibit CYP3A4, CYP2C9 or CYP2C19 may decrease the clearance of etravirine and may result in increased plasma concentrations of etravirine.

#### Medicinal products that are affected by the use of etravirine

Etravirine is a weak inducer of CYP3A4. Co-administration of INTELENCE with medicinal products primarily metabolised by CYP3A4 may result in decreased plasma concentrations of such medicinal products, which could decrease or shorten their therapeutic effects.

Etravirine is a weak inhibitor of CYP2C9 and CYP2C19. Etravirine is also a weak inhibitor of P-glycoprotein. Co-administration with medicinal products primarily metabolised by CYP2C9 or CYP2C19, or transported by P-glycoprotein, may result in increased plasma concentrations of such medicinal products, which could increase or prolong their therapeutic effect or alter their adverse events profile.

Known and theoretical interactions with selected antiretrovirals and non-antiretroviral medicinal products are listed in table 1.

### Interaction table

Interactions between etravirine and co-administered medicinal products are listed in table 1 (increase is indicated as “↑”, decrease as “↓”, no change as “↔”, not done as “ND”, confidence interval as “CI”).

<b>Table 1: INTERACTIONS AND DOSE RECOMMENDATIONS WITH OTHER MEDICINAL PRODUCTS</b>		
<b>Medicinal products by therapeutic areas</b>	<b>Effects on drug levels Least Squares Mean Ratio (90% CI; 1.00 = No effect)</b>	<b>Recommendations concerning co-administration</b>
<b>ANTI-INFECTIVES</b>		
<b>Antiretrovirals</b>		
<i>NRTIs</i>		
Didanosine 400 mg once daily	<u>didanosine</u> AUC ↔ 0.99 (0.79-1.25) C <sub>min</sub> ND C <sub>max</sub> ↔ 0.91 (0.58-1.42) <u>etravirine</u> AUC ↔ 1.11 (0.99-1.25) C <sub>min</sub> ↔ 1.05 (0.93-1.18) C <sub>max</sub> ↔ 1.16 (1.02-1.32)	No significant effect on didanosine and etravirine PK parameters is seen. INTELENCE and didanosine can be used without dose adjustments.
Tenofovir disoproxil fumarate 300 mg once daily	<u>tenofovir</u> AUC ↔ 1.15 (1.09-1.21) C <sub>min</sub> ↑ 1.19 (1.13-1.26) C <sub>max</sub> ↑ 1.15 (1.04-1.27) <u>etravirine</u> AUC ↓ 0.81 (0.75-0.88) C <sub>min</sub> ↓ 0.82 (0.73-0.91) C <sub>max</sub> ↓ 0.81 (0.75-0.88)	No significant effect on tenofovir and etravirine PK parameters is seen. INTELENCE and tenofovir can be used without dose adjustments.
Other NRTIs	Not studied, but no interaction expected based on the primary renal elimination route for other NRTIs (e.g., abacavir, emtricitabine, lamivudine, stavudine and zidovudine).	Etravirine can be used with these NRTIs without dose adjustment.
<i>NNRTIs</i>		
Efavirenz Nevirapine Ralpivirine	Combining two NNRTIs has not been shown to be beneficial. Concomitant use of INTELENCE with efavirenz or nevirapine may cause a significant decrease in the plasma concentration of etravirine and loss of therapeutic effect of INTELENCE. Concomitant use of INTELENCE with ralpivirine may cause a decrease in the plasma concentration of ralpivirine and loss of therapeutic effect of ralpivirine.	It is not recommended to co-administer INTELENCE with other NNRTIs.
<i>HIV PIs - Unboosted (i.e. without co-administration of low-dose ritonavir)</i>		
Indinavir	Concomitant use of INTELENCE with indinavir may cause a significant decrease in the plasma concentration of indinavir and loss of therapeutic effect of indinavir.	It is not recommended to co-administer INTELENCE with indinavir.
Nelfinavir	Not studied. INTELENCE is expected to increase nelfinavir plasma concentrations.	It is not recommended to co-administer INTELENCE with nelfinavir.



<i>HIV PIs - Boosted (with low-dose ritonavir)</i>		
Atazanavir/ritonavir 300/100 mg once daily	<u>atazanavir</u> AUC ↓ 0.86 (0.79-0.93) C <sub>min</sub> ↓ 0.62 (0.55-0.71) C <sub>max</sub> ↔ 0.97 (0.89-1.05) <u>etravirine</u> AUC ↑ 1.30 (1.18-1.44) C <sub>min</sub> ↑ 1.26 (1.12-1.42) C <sub>max</sub> ↑ 1.30 (1.17-1.44)	INTELENCE and atazanavir/ritonavir can be used without dose adjustment.
Darunavir/ritonavir 600/100 mg twice daily	<u>darunavir</u> AUC ↔ 1.15 (1.05-1.26) C <sub>min</sub> ↔ 1.02 (0.90-1.17) C <sub>max</sub> ↔ 1.11 (1.01-1.22) <u>etravirine</u> AUC ↓ 0.63 (0.54-0.73) C <sub>min</sub> ↓ 0.51 (0.44-0.61) C <sub>max</sub> ↓ 0.68 (0.57-0.82)	INTELENCE and darunavir/ritonavir can be used without dose adjustments (see also section 5.1).
Fosamprenavir/ritonavir 700/100 mg twice daily	<u>amprenavir</u> AUC ↑ 1.69 (1.53-1.86) C <sub>min</sub> ↑ 1.77 (1.39-2.25) C <sub>max</sub> ↑ 1.62 (1.47-1.79) <u>etravirine</u> AUC ↔ <sup>a</sup> C <sub>min</sub> ↔ <sup>a</sup> C <sub>max</sub> ↔ <sup>a</sup>	Amprenavir/ritonavir and fosamprenavir/ritonavir may require dose reduction when co-administered with INTELENCE. Using the oral solution may be considered for dose reduction.
Lopinavir/ritonavir (tablet) 400/100 mg twice daily	<u>lopinavir</u> AUC ↔ 0.87 (0.83-0.92) C <sub>min</sub> ↓ 0.80 (0.73-0.88) C <sub>max</sub> ↔ 0.89 (0.82-0.96) <u>etravirine</u> AUC ↓ 0.65 (0.59-0.71) C <sub>min</sub> ↓ 0.55 (0.49-0.62) C <sub>max</sub> ↓ 0.70 (0.64-0.78)	INTELENCE and lopinavir/ritonavir can be used without dose adjustments.
Saquinavir/ritonavir 1,000/100 mg twice daily	<u>saquinavir</u> AUC ↔ 0.95 (0.64-1.42) C <sub>min</sub> ↓ 0.80 (0.46-1.38) C <sub>max</sub> ↔ 1.00 (0.70-1.42) <u>etravirine</u> AUC ↓ 0.67 (0.56-0.80) C <sub>min</sub> ↓ 0.71 (0.58-0.87) C <sub>max</sub> ↓ 0.63 (0.53-0.75)	INTELENCE and saquinavir/ritonavir can be used without dose adjustments.
Tipranavir/ritonavir 500/200 mg twice daily	<u>tipranavir</u> AUC ↑ 1.18 (1.03-1.36) C <sub>min</sub> ↑ 1.24 (0.96-1.59) C <sub>max</sub> ↑ 1.14 (1.02-1.27) <u>etravirine</u> AUC ↓ 0.24 (0.18-0.33) C <sub>min</sub> ↓ 0.18 (0.13-0.25) C <sub>max</sub> ↓ 0.29 (0.22-0.40)	It is not recommended to co-administer tipranavir/ritonavir and INTELENCE (see section 4.4).

<i>CCR5 Antagonists</i>		
<p>Maraviroc 300 mg twice daily</p> <p>Maraviroc/darunavir/ ritonavir 150/600/100 mg twice daily</p>	<p><u>maraviroc</u> AUC ↓ 0.47 (0.38-0.58) C<sub>min</sub> ↓ 0.61 (0.53-0.71) C<sub>max</sub> ↓ 0.40 (0.28-0.57)</p> <p><u>etravirine</u> AUC ↔ 1.06 (0.99-1.14) C<sub>min</sub> ↔ 1.08 (0.98-1.19) C<sub>max</sub> ↔ 1.05 (0.95-1.17)</p> <p><u>maraviroc*</u> AUC ↑ 3.10 (2.57-3.74) C<sub>min</sub> ↑ 5.27 (4.51-6.15) C<sub>max</sub> ↑ 1.77 (1.20-2.60) * compared to maraviroc 150 mg b.i.d.</p>	<p>The recommended dose for maraviroc when combined with INTELENCE in the presence of potent CYP3A inhibitors (e.g. boosted PIs) is 150 mg b.i.d. except for fosamprenavir/ritonavir (maraviroc dose 300 mg b.i.d.). No dose adjustment for INTELENCE is necessary. See also section 4.4.</p>
<i>Fusion Inhibitors</i>		
<p>Enfuvirtide 90 mg twice daily</p>	<p><u>etravirine*</u> AUC ↔<sup>a</sup> C<sub>0h</sub> ↔<sup>a</sup> Enfuvirtide concentrations not studied and no effect is expected. * based on population pharmacokinetic analyses</p>	<p>No interaction is expected for either INTELENCE or enfuvirtide when co-administered.</p>
<i>Integrase Strand Transfer Inhibitors</i>		
<p>Dolutegravir 50 mg once daily</p> <p>Dolutegravir + darunavir/ritonavir 50 mg once daily + 600/100 mg twice daily</p> <p>Dolutegravir + Lopinavir/ritonavir 50 mg once daily + 400/100 mg twice daily</p>	<p><u>dolutegravir</u> AUC ↓ 0.29 (0.26-0.34) C<sub>min</sub> ↓ 0.12 (0.09-0.16) C<sub>max</sub> ↓ 0.48 (0.43-0.54)</p> <p><u>etravirine</u> AUC ↔<sup>a</sup> C<sub>min</sub> ↔<sup>a</sup> C<sub>max</sub> ↔<sup>a</sup></p> <p><u>dolutegravir</u> AUC ↓ 0.75 (0.69-0.81) C<sub>min</sub> ↓ 0.63 (0.52-0.77) C<sub>max</sub> ↓ 0.88 (0.78-1.00)</p> <p><u>etravirine</u> AUC ↔<sup>a</sup> C<sub>min</sub> ↔<sup>a</sup> C<sub>max</sub> ↔<sup>a</sup></p> <p><u>dolutegravir</u> AUC ↔ 1.11 (1.02-1.20) C<sub>min</sub> ↑ 1.28 (1.13-1.45) C<sub>max</sub> ↔ 1.07 (1.02-1.13)</p> <p><u>etravirine</u> AUC ↔<sup>a</sup> C<sub>min</sub> ↔<sup>a</sup> C<sub>max</sub> ↔<sup>a</sup></p>	<p>Etravirine significantly reduced plasma concentrations of dolutegravir. The effect of etravirine on dolutegravir plasma concentrations was mitigated by co-administration of darunavir/ritonavir or lopinavir/ritonavir, and is expected to be mitigated by atazanavir/ritonavir.</p> <p>INTELENCE should only be used with dolutegravir when co-administered with atazanavir/ritonavir, darunavir/ritonavir, or lopinavir/ritonavir. This combination can be used without dose adjustment.</p>
<p>Raltegravir 400 mg twice daily</p>	<p><u>raltegravir</u> AUC ↓ 0.90 (0.68-1.18) C<sub>min</sub> ↓ 0.66 (0.34-1.26) C<sub>max</sub> ↓ 0.89 (0.68-1.15)</p> <p><u>etravirine</u> AUC ↔ 1.10 (1.03-1.16) C<sub>min</sub> ↔ 1.17 (1.10-1.26) C<sub>max</sub> ↔ 1.04 (0.97-1.12)</p>	<p>INTELENCE and raltegravir can be used without dose adjustments.</p>

<b>ANTIARRHYTHMICS</b>		
Digoxin 0.5 mg single dose	<u>digoxin</u> AUC ↑ 1.18 (0.90-1.56) C <sub>min</sub> ND C <sub>max</sub> ↑ 1.19 (0.96-1.49)	INTELENCE and digoxin can be used without dose adjustments. It is recommended that digoxin levels be monitored when digoxin is combined with INTELENCE.
Amiodarone Bepidil Disopyramide Flecainide Lidocaine (systemic) Mexiletine Propafenone Quinidine	Not studied. INTELENCE is expected to decrease plasma concentrations of these antiarrhythmics.	Caution is warranted and therapeutic concentration monitoring, if available, is recommended for antiarrhythmics when co-administered with INTELENCE.
<b>ANTIBIOTICS</b>		
Azithromycin	Not studied. Based on the biliary elimination pathway of azithromycin, no drug interactions are expected between azithromycin and INTELENCE.	INTELENCE and azithromycin can be used without dose adjustments.
Clarithromycin 500 mg twice daily	<u>clarithromycin</u> AUC ↓ 0.61 (0.53-0.69) C <sub>min</sub> ↓ 0.47 (0.38-0.57) C <sub>max</sub> ↓ 0.66 (0.57-0.77) <u>14-OH-clarithromycin</u> AUC ↑ 1.21 (1.05-1.39) C <sub>min</sub> ↔ 1.05 (0.90-1.22) C <sub>max</sub> ↑ 1.33 (1.13-1.56) <u>etravirine</u> AUC ↑ 1.42 (1.34-1.50) C <sub>min</sub> ↑ 1.46 (1.36-1.58) C <sub>max</sub> ↑ 1.46 (1.38-1.56)	Clarithromycin exposure was decreased by etravirine; however, concentrations of the active metabolite, 14-OH-clarithromycin, were increased. Because 14-OH-clarithromycin has reduced activity against <i>Mycobacterium avium</i> complex (MAC), overall activity against this pathogen may be altered; therefore alternatives to clarithromycin should be considered for the treatment of MAC.
<b>ANTICOAGULANTS</b>		
Warfarin	Not studied. INTELENCE is expected to increase plasma concentrations of warfarin.	It is recommended that the international normalised ratio (INR) be monitored when warfarin is combined with INTELENCE.
<b>ANTICONVULSANTS</b>		
Carbamazepine Phenobarbital Phenytoin	Not studied. Carbamazepine, phenobarbital and phenytoin are expected to decrease plasma concentrations of etravirine.	Combination not recommended.
<b>ANTIFUNGALS</b>		
Fluconazole 200 mg once in the morning	<u>fluconazole</u> AUC ↔ 0.94 (0.88-1.01) C <sub>min</sub> ↔ 0.91 (0.84-0.98) C <sub>max</sub> ↔ 0.92 (0.85-1.00) <u>etravirine</u> AUC ↑ 1.86 (1.73-2.00) C <sub>min</sub> ↑ 2.09 (1.90-2.31) C <sub>max</sub> ↑ 1.75 (1.60-1.91)	INTELENCE and fluconazole can be used without dose adjustments.

Itraconazole Ketoconazole Posaconazole	Not studied. <u>Posaconazole</u> , a potent inhibitor of CYP3A4, may increase plasma concentrations of etravirine. <u>Itraconazole</u> and <u>ketoconazole</u> are potent inhibitors as well as substrates of CYP3A4. Concomitant systemic use of itraconazole or ketoconazole and INTELENCE may increase plasma concentrations of etravirine. Simultaneously, plasma concentrations of itraconazole or ketoconazole may be decreased by INTELENCE.	INTELENCE and these antifungals can be used without dose adjustments.
Voriconazole 200 mg twice daily	<u>voriconazole</u> AUC ↑ 1.14 (0.88-1.47) C <sub>min</sub> ↑ 1.23 (0.87-1.75) C <sub>max</sub> ↓ 0.95 (0.75-1.21) <u>etravirine</u> AUC ↑ 1.36 (1.25-1.47) C <sub>min</sub> ↑ 1.52 (1.41-1.64) C <sub>max</sub> ↑ 1.26 (1.16-1.38)	INTELENCE and voriconazole can be used without dose adjustments.
<b>ANTIMALARIALS</b>		
Artemether/ Lumefantrine 80/480 mg, 6 doses at 0, 8, 24, 36, 48, and 60 hours	<u>artemether</u> AUC ↓ 0.62 (0.48-0.80) C <sub>min</sub> ↓ 0.82 (0.67-1.01) C <sub>max</sub> ↓ 0.72 (0.55-0.94) <u>dihydroartemisinin</u> AUC ↓ 0.85 (0.75-0.97) C <sub>min</sub> ↓ 0.83 (0.71-0.97) C <sub>max</sub> ↓ 0.84 (0.71-0.99) <u>lumefantrine</u> AUC ↓ 0.87 (0.77-0.98) C <sub>min</sub> ↔ 0.97 (0.83-1.15) C <sub>max</sub> ↔ 1.07 (0.94-1.23) <u>etravirine</u> AUC ↔ 1.10 (1.06-1.15) C <sub>min</sub> ↔ 1.08 (1.04-1.14) C <sub>max</sub> ↔ 1.11 (1.06-1.17)	Close monitoring of antimalarial response is warranted when co-administering INTELENCE and artemether/lumefantrine as a significant decrease in exposure of artemether and its active metabolite, dihydroartemisinin, may result in decreased antimalarial efficacy. No dose adjustment is needed for INTELENCE.
<b>ANTIMYCOBACTERIALS</b>		
Rifampicin Rifapentine	Not studied. Rifampicin and rifapentine are expected to decrease plasma concentrations of etravirine. INTELENCE should be used in combination with a boosted protease inhibitor (PI). Rifampicin is contraindicated in combination with boosted PIs.	Combination not recommended.

Rifabutin 300 mg once daily	<p>With an associated boosted PI: No interaction study has been performed. Based on historical data, a decrease in etravirine exposure may be expected whereas an increase in rifabutin exposure and especially in 25-O-desacetyl-rifabutin may be expected.</p> <p>With no associated boosted PI (out of the recommended indication for etravirine):</p> <p><u>rifabutin</u> AUC ↓ 0.83 (0.75-0.94) C<sub>min</sub> ↓ 0.76 (0.66-0.87) C<sub>max</sub> ↓ 0.90 (0.78-1.03)</p> <p><u>25-O-desacetyl-rifabutin</u> AUC ↓ 0.83 (0.74-0.92) C<sub>min</sub> ↓ 0.78 (0.70-0.87) C<sub>max</sub> ↓ 0.85 (0.72-1.00)</p> <p><u>etravirine</u> AUC ↓ 0.63 (0.54-0.74) C<sub>min</sub> ↓ 0.65 (0.56-0.74) C<sub>max</sub> ↓ 0.63 (0.53-0.74)</p>	<p>The combination of INTELENCE with a boosted PI and rifabutin should be used with caution due to the risk of decrease in etravirine exposure and the risk of increase in rifabutin and 25-O-desacetyl-rifabutin exposures.</p> <p>Close monitoring for virologic response and for rifabutin related adverse reactions is recommended. Please refer to the product information of the associated boosted PI for the dose adjustment of rifabutin to be used.</p>
<b>BENZODIAZEPINES</b>		
Diazepam	Not studied. Etravirine is expected to increase plasma concentrations of diazepam.	Alternatives to diazepam should be considered.
<b>CORTICOSTEROIDS</b>		
Dexamethasone (systemic)	Not studied. Dexamethasone is expected to decrease plasma concentrations of etravirine	Systemic dexamethasone should be used with caution or alternatives should be considered, particularly for chronic use.
<b>OESTROGEN-BASED CONTRACEPTIVES</b>		
Ethinylestradiol 0.035 mg once daily Norethindrone 1 mg once daily	<p><u>ethinylestradiol</u> AUC ↑ 1.22 (1.13-1.31) C<sub>min</sub> ↔ 1.09 (1.01-1.18) C<sub>max</sub> ↑ 1.33 (1.21-1.46)</p> <p><u>norethindrone</u> AUC ↔ 0.95 (0.90-0.99) C<sub>min</sub> ↓ 0.78 (0.68-0.90) C<sub>max</sub> ↔ 1.05 (0.98-1.12)</p> <p><u>etravirine</u> AUC ↔<sup>a</sup> C<sub>min</sub> ↔<sup>a</sup> C<sub>max</sub> ↔<sup>a</sup></p>	<p>The combination of oestrogen- and/or progesterone-based contraceptives and INTELENCE can be used without dose adjustment.</p>
<b>HEPATITIS C VIRUS (HCV) DIRECT-ACTING ANTIVIRALS</b>		
Ribavirin	Not studied, but no interaction expected based on the renal elimination pathway of ribavirin.	The combination of INTELENCE and ribavirin can be used without dose adjustments.

Boceprevir Boceprevir 800 mg 3 times daily + etravirine 200 mg every 12 hours	<u>boceprevir</u> AUC ↑ 1.10 (0.94-1.28) C <sub>max</sub> ↑ 1.10 (0.94-1.29) C <sub>min</sub> ↓ 0.88 (0.66-1.17) <u>etravirine</u> AUC ↓ 0.77 (0.66-0.91) C <sub>max</sub> ↓ 0.76 (0.68-0.85) C <sub>min</sub> ↓ 0.71 (0.54-0.95)	The clinical significance of the reductions in etravirine pharmacokinetic parameters and boceprevir C <sub>min</sub> in the setting of the combination therapy with HIV antiretroviral medicines which also affect the pharmacokinetics of etravirine and/or boceprevir has not been directly assessed. Increased clinical and laboratory monitoring for HIV and HCV suppression is recommended.
Telaprevir 750 mg every 8 hours	<u>telaprevir</u> AUC ↓ 0.84 (0.71-0.98) C <sub>max</sub> ↓ 0.90 (0.79-1.02) C <sub>min</sub> ↓ 0.75 (0.61-0.92) <u>etravirine</u> AUC ↔ 0.94 (0.85-1.04) C <sub>max</sub> ↔ 0.93 (0.84-1.03) C <sub>min</sub> ↔ 0.97 (0.86-1.10)	The combination of INTELENCE and telaprevir can be used without dose adjustments.
<b>HERBAL PRODUCTS</b>		
St John's wort ( <i>Hypericum perforatum</i> )	Not studied. St John's wort is expected to decrease the plasma concentrations of etravirine.	Combination not recommended.
<b>HMG CO-A REDUCTASE INHIBITORS</b>		
Atorvastatin 40 mg once daily	<u>atorvastatin</u> AUC ↓ 0.63 (0.58-0.68) C <sub>min</sub> ND C <sub>max</sub> ↑ 1.04 (0.84-1.30) <u>2-OH-atorvastatin</u> AUC ↑ 1.27 (1.19-1.36) C <sub>min</sub> ND C <sub>max</sub> ↑ 1.76 (1.60-1.94) <u>etravirine</u> AUC ↔ 1.02 (0.97-1.07) C <sub>min</sub> ↔ 1.10 (1.02-1.19) C <sub>max</sub> ↔ 0.97 (0.93-1.02)	The combination of INTELENCE and atorvastatin can be given without any dose adjustments, however, the dose of atorvastatin may need to be altered based on clinical response.
Fluvastatin Lovastatin Pravastatin Rosuvastatin Simvastatin	Not studied. No interaction between <u>pravastatin</u> and INTELENCE is expected. <u>Lovastatin</u> , <u>rosuvastatin</u> and <u>simvastatin</u> are CYP3A4 substrates and co-administration with INTELENCE may result in lower plasma concentrations of the HMG Co-A reductase inhibitor. <u>Fluvastatin</u> , and <u>rosuvastatin</u> are metabolised by CYP2C9 and co-administration with INTELENCE may result in higher plasma concentrations of the HMG Co-A reductase inhibitor.	Dose adjustments for these HMG Co-A reductase inhibitors may be necessary.
<b>H<sub>2</sub>-RECEPTOR ANTAGONISTS</b>		
Ranitidine 150 mg twice daily	<u>etravirine</u> AUC ↓ 0.86 (0.76-0.97) C <sub>min</sub> ND C <sub>max</sub> ↓ 0.94 (0.75-1.17)	INTELENCE can be co-administered with H <sub>2</sub> -receptor antagonists without dose adjustments.

<b>IMMUNOSUPPRESSANTS</b>		
Cyclosporin Sirolimus Tacrolimus	Not studied. Etravirine is expected to decrease plasma concentrations of cyclosporine, sirolimus and tacrolimus.	Co-administration with systemic immunosuppressants should be done with caution because plasma concentrations of cyclosporin, sirolimus and tacrolimus may be affected when co-administered with INTELENCE.
<b>NARCOTIC ANALGESICS</b>		
Methadone individual dose ranging from 60 mg to 130 mg once daily	<u>R(-) methadone</u> AUC ↔ 1.06 (0.99-1.13) C <sub>min</sub> ↔ 1.10 (1.02-1.19) C <sub>max</sub> ↔ 1.02 (0.96-1.09) <u>S(+)</u> methadone AUC ↔ 0.89 (0.82-0.96) C <sub>min</sub> ↔ 0.89 (0.81-0.98) C <sub>max</sub> ↔ 0.89 (0.83-0.97) <u>etravirine</u> AUC ↔ <sup>a</sup> C <sub>min</sub> ↔ <sup>a</sup> C <sub>max</sub> ↔ <sup>a</sup>	No changes in methadone dosage were required based on clinical status during or after the period of INTELENCE co-administration.
<b>PHOSPHODIESTERASE, TYPE 5 (PDE-5) INHIBITORS</b>		
Sildenafil 50 mg single dose Tadalafil Vardenafil	<u>sildenafil</u> AUC ↓ 0.43 (0.36-0.51) C <sub>min</sub> ND C <sub>max</sub> ↓ 0.55 (0.40-0.75) <u>N-desmethyl-sildenafil</u> AUC ↓ 0.59 (0.52-0.68) C <sub>min</sub> ND C <sub>max</sub> ↓ 0.75 (0.59-0.96)	Concomitant use of PDE-5 inhibitors with INTELENCE may require dose adjustment of the PDE-5 inhibitor to attain the desired clinical effect.
<b>PLATELET AGGREGGATION INHIBITORS</b>		
Clopidogrel	<i>In vitro</i> data show that etravirine has inhibitory properties on CYP2C19. It is therefore possible that etravirine may inhibit the metabolism of clopidogrel to its active metabolite by such inhibition of CYP2C19 <i>in vivo</i> . The clinical relevance of this interaction has not been demonstrated.	As a precaution it is recommended that concomitant use of etravirine and clopidogrel should be discouraged.
<b>PROTON PUMP INHIBITORS</b>		
Omeprazole 40 mg once daily	<u>etravirine</u> AUC ↑ 1.41 (1.22-1.62) C <sub>min</sub> ND C <sub>max</sub> ↑ 1.17 (0.96-1.43)	INTELENCE can be co-administered with proton pump inhibitors without dose adjustments.
<b>SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIS)</b>		
Paroxetine 20 mg once daily	<u>paroxetine</u> AUC ↔ 1.03 (0.90-1.18) C <sub>min</sub> ↓ 0.87 (0.75-1.02) C <sub>max</sub> ↔ 1.06 (0.95-1.20) <u>etravirine</u> AUC ↔ 1.01 (0.93-1.10) C <sub>min</sub> ↔ 1.07 (0.98-1.17) C <sub>max</sub> ↔ 1.05 (0.96-1.15)	INTELENCE can be co-administered with paroxetine without dose adjustments.

<sup>a</sup> Comparison based on historic control.

Note: In drug-drug interaction studies, different formulations and/or doses of etravirine were used which led to similar exposures and, therefore, interactions relevant for one formulation are relevant for the other.

### Paediatric population

Interaction studies have only been performed in adults.

## 4.6 Fertility, pregnancy and lactation

### Pregnancy

As a general rule, when deciding to use antiretroviral agents for the treatment of HIV infection in pregnant women, and consequently for reducing the risk of HIV vertical transmission to the newborn, the animal data as well as the clinical experience in pregnant women should be taken into account in order to characterise the safety for the foetus.

Placental transfer has been seen in pregnant rats, but it is not known whether placental transfer of INTELENCE also occurs in pregnant women. Studies in animals do not indicate direct or indirect harmful effects with respect to pregnancy, embryonal/foetal development, parturition or postnatal development (see section 5.3). Based on animal data the malformative risk is unlikely in humans. The clinical data do not raise safety concern but are very limited.

### Breast-feeding

It is not known whether etravirine is excreted in human milk. As a general rule, it is recommended that mothers infected by HIV do not breast-feed their babies under any circumstances in order to avoid transmission of HIV.

### Fertility

No human data on the effect of etravirine on fertility are available. In rats, there was no effect on mating or fertility with etravirine treatment (see section 5.3).

## 4.7 Effects on ability to drive and use machines

INTELENCE has no or negligible influence on the ability to drive and use machines. Adverse drug reactions such as somnolence and vertigo have been reported in INTELENCE treated subjects at incidences similar to placebo (see section 4.8). There is no evidence that INTELENCE may alter the patient's ability to drive and operate machines, however, the adverse drug reaction profile should be taken into account.

## 4.8 Undesirable effects

### Summary of the safety profile

The safety assessment is based on all data from 1,203 patients in the Phase III placebo-controlled trials DUET-1 and DUET-2 in antiretroviral treatment-experienced HIV-1 infected adult patients, 599 of whom received INTELENCE (200 mg b.i.d.) (see section 5.1). In these pooled trials, the median exposure for patients in the INTELENCE arm was 52.3 weeks.

The most frequently reported adverse drug reactions (ADRs) (incidence  $\geq 10\%$  in the INTELENCE arm) of all intensities occurring in the Phase III studies were rash (19.2% in the INTELENCE arm versus 10.9% in the placebo arm), diarrhoea (18.0% in the INTELENCE arm versus 23.5% in the placebo arm), nausea (14.9% in the INTELENCE arm versus 12.7% in the placebo arm) and headache (10.9% in the INTELENCE arm versus 12.7% in the placebo arm). The rates of discontinuation due to any adverse reaction were 7.2% in patients receiving INTELENCE and 5.6% in patients receiving placebo. The most common ADR leading to discontinuation was rash (2.2% in the INTELENCE arm versus 0% in the placebo arm).

Rash was most frequently mild to moderate, generally macular to maculopapular or erythematous, mostly occurred in the second week of therapy, and was infrequent after week 4. Rash was mostly self-limiting, and generally resolved within 1-2 weeks on continued therapy (see section 4.4). The incidence of rash was higher in women compared to men in the INTELENCE arm in the DUET trials (rash  $\geq$  grade 2 was reported in 9/60 [15.0%] women versus 51/539 [9.5%] men; discontinuations due to rash were reported in 3/60 [5.0%] women versus 10/539 [1.9%] men) (see section 4.4). There was no gender difference in severity or treatment discontinuation due to rash. The clinical data are limited and an increased risk of cutaneous reactions in patients with a history of NNRTI-associated cutaneous reaction cannot be excluded (see section 4.4).



Tabulated list of adverse reactions

ADRs of moderate intensity or greater ( $\geq$  grade 2) reported in patients treated with INTELENCE are summarised in table 2 (background regimen is indicated as “BR”). Laboratory abnormalities considered ADRs are included in a paragraph below table 2. The ADRs are listed by system organ class (SOC) and frequency. Within each frequency grouping, ADRs are presented in order of decreasing seriousness. Frequencies are defined as very common ( $\geq 1/10$ ), common ( $\geq 1/100$  to  $< 1/10$ ) and uncommon ( $\geq 1/1,000$  to  $< 1/100$ ). Rare and very rare ADRs cannot be detected based on the number of patients included in the DUET trials.

<b>Table 2: DUET-1 and DUET-2 trials</b>		
<b>System Organ Class (SOC)</b>	<b>Frequency Category</b>	<b>ADRs (INTELENCE + BR versus Placebo + BR)</b>
Blood and lymphatic system disorders	common	thrombocytopenia (1.3% vs 1.5%), anaemia (4.0% vs 3.8%)
Immune system disorders	uncommon	immune reconstitution syndrome (0.2% vs 0.3%), drug hypersensitivity (0.8% vs 1.2%)
Metabolism and nutrition disorders	common	diabetes mellitus (1.3% vs 0.2%), hyperglycaemia (1.5% vs 0.7%), hypercholesterolaemia (4.3% vs 3.6%), hypertriglyceridaemia (6.3% vs 4.3%), hyperlipidaemia (2.5% vs 1.3%)
	uncommon	anorexia (0.8% vs 1.5%), dyslipidaemia (0.8% vs 0.3%)
Psychiatric disorders	common	anxiety (1.7% vs 2.6%), insomnia (2.7% vs 2.8%)
	uncommon	confusional state (0.2% vs 0.2%), disorientation (0.2% vs 0.3%), nightmares (0.2% vs 0.2%), sleep disorders (0.5% vs 0.5%), nervousness (0.2% vs 0.3%), abnormal dreams (0.2% vs 0.2%)
Nervous system disorders	common	peripheral neuropathy (3.8% vs 2.0%), headache (3.0% vs 4.5%)
	uncommon	convulsion (0.5% vs 0.7%), syncope (0.3% vs 0.3%), amnesia (0.3% vs 0.5%), tremor (0.2% vs 0.3%), somnolence (0.7% vs 0.5%), paraesthesia (0.7% vs 0.7%), hypoesthesia (0.5% vs 0.2%), hypersomnia (0.2% vs 0%), disturbance in attention (0.2% vs 0.2%)
Eye disorders	uncommon	blurred vision (0.7% vs 0%)
Ear and labyrinth disorders	uncommon	vertigo (0.2% vs 0.5%)
Cardiac disorders	common	myocardial infarction (1.3% vs 0.3%)
	uncommon	atrial fibrillation (0.2% vs 0.2%), angina pectoris (0.5% vs 0.3%)
Vascular disorders	common	hypertension (3.2% vs 2.5%)
Respiratory, thoracic and mediastinal disorders	uncommon	bronchospasm (0.2% vs 0%), exertional dyspnoea (0.5% vs 0.5%)
Gastrointestinal disorders	common	gastroesophageal reflux disease (1.8% vs 1.0%), diarrhoea (7.0% vs 11.3%), vomiting (2.8% vs 2.8%), nausea (5.2% vs 4.8%), abdominal pain (3.5% vs 3.1%), flatulence (1.5% vs 1.0%), gastritis (1.5% vs 1.0%)
	uncommon	pancreatitis (0.7% vs 0.3%), haematemesis (0.2% vs 0%), stomatitis (0.2% vs 0.2%), constipation (0.3% vs 0.5%), abdominal distension (0.7% vs 1.0%), dry mouth (0.3% vs 0%), retching (0.2% vs 0%)
Hepatobiliary disorders	uncommon	hepatitis (0.2% vs 0.3%), hepatic steatosis (0.3% vs 0%), cytolytic hepatitis (0.3% vs 0%), hepatomegaly (0.5% vs 0.2%)
Skin and subcutaneous	very common	rash (10.0% vs 3.5%)

tissue disorders	common	night sweats (1.0% vs 1.0%)
	uncommon	swelling face (0.3% vs 0%), hyperhidrosis (0.5% vs 0.2%), prurigo (0.7% vs 0.5%), dry skin (0.3% vs 0.2%)
Renal and urinary disorders	common	renal failure (2.7% vs 2.0%)
Reproductive system and breast disorders	uncommon	gynaecomastia (0.2% vs 0%)
General disorders and administration site conditions	common	fatigue (3.5% vs 4.6%)
	uncommon	sluggishness (0.2% vs 0%)

Additional ADRs of at least moderate intensity observed in other trials were angioneurotic oedema, erythema multiforme and haemorrhagic stroke, each reported in no more than 0.5% of patients. Stevens-Johnson Syndrome (rare; < 0.1%) and toxic epidermal necrolysis (very rare; < 0.01%) have been reported during clinical development with INTELENCE.

#### *Laboratory abnormalities*

Treatment emergent clinical laboratory abnormalities (grade 3 or 4), considered ADRs, reported in  $\geq 2\%$  of patients in the INTELENCE arm versus the placebo arm, respectively, were increases in amylase (8.9% vs 9.4%), creatinine (2.0% vs 1.7%), lipase (3.4% vs 2.6%), total cholesterol (8.1% vs 5.3%), low density lipoprotein (LDL) (7.2% vs 6.6%), triglycerides (9.2% vs 5.8%), glucose (3.5% vs 2.4%), alanine aminotransferase (ALT) (3.7% vs 2.0%), aspartate amino transferase (AST) (3.2% vs 2.0%) and decreases in neutrophils (5.0% vs 7.4%) and white blood cell count (2.0% vs 4.3%).

#### Description of selected adverse reactions

##### *Metabolic parameters*

Weight and levels of blood lipids and glucose may increase during antiretroviral therapy (see section 4.4)

##### *Immune reconstitution syndrome*

In HIV infected patients with severe immune deficiency at the time of initiation of combination antiretroviral therapy (CART), an inflammatory reaction to asymptomatic or residual opportunistic infections may arise. Autoimmune disorders (such as Graves' disease) have also been reported; however, the reported time to onset is more variable and these events can occur many months after initiation of treatment (see section 4.4).

##### *Osteonecrosis*

Cases of osteonecrosis have been reported, particularly in patients with generally acknowledged risk factors, advanced HIV disease or long-term exposure to combination antiretroviral therapy. The frequency of this is unknown (see section 4.4).

#### Paediatric population (6 years to less than 18 years of age)

The safety assessment in children and adolescents is based on the week 48 analysis of the single-arm, Phase II PIANO trial in which 101 antiretroviral treatment-experienced HIV-1 infected paediatric patients, 6 years to less than 18 years of age and weighing at least 16 kg, received INTELENCE in combination with other antiretroviral agents (see section 5.1). The frequency, type and severity of adverse drug reactions in paediatric patients were comparable to those observed in adults. Rash was reported more frequently in female subjects than in male subjects (rash  $\geq$  grade 2 was reported in 13/64 [20.3%] females versus 2/37 [5.4%] males; discontinuations due to rash were reported in 4/64 [6.3%] females versus 0/37 [0%] males) (see section 4.4). Most often, rash was mild to moderate, of macular/papular type, and occurred in the second week of therapy. Rash was mostly self-limiting and generally resolved within 1 week on continued therapy.

### Other special populations

#### *Patients co-infected with hepatitis B and/or hepatitis C virus*

In the pooled analysis for DUET-1 and DUET-2, the incidence of hepatic events tended to be higher in co-infected subjects treated with INTELENCE compared to co-infected subjects in the placebo group. INTELENCE should be used with caution in these patients (see also sections 4.4 and 5.2).

### Adverse drug reactions identified through post marketing experience with INTELENCE

Hypersensitivity reactions, including DRESS, have been reported with INTELENCE. These hypersensitivity reactions were characterised by rash, fever and sometimes organ involvement (including, but not limited to, severe rash or rash accompanied by fever, general malaise, fatigue, muscle or joint aches, blisters, oral lesions, conjunctivitis, hepatitis and eosinophilia) (see section 4.4).

### Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via [the national reporting system listed in Appendix V](#).

## **4.9 Overdose**

There are no data with regard to symptomatic overdose with INTELENCE, but it is possible that the most frequent ADRs of INTELENCE, i.e. rash, diarrhoea, nausea, and headache would be the most common symptoms noted. There is no specific antidote for overdose with INTELENCE. Treatment of overdose with INTELENCE consists of general supportive measures including monitoring of vital signs and observation of the clinical status of the patient. If indicated, elimination of unabsorbed active substance is to be achieved by emesis. Administration of activated charcoal may also be used to aid in removal of unabsorbed active substance. Since etravirine is highly protein bound, dialysis is unlikely to result in significant removal of the active substance.

## **5. PHARMACOLOGICAL PROPERTIES**

### **5.1 Pharmacodynamic properties**

Pharmacotherapeutic group: Antivirals for systemic use, non-nucleoside reverse transcriptase inhibitors, ATC code: J05AG04.

#### Mechanism of action

Etravirine is an NNRTI of human immunodeficiency virus type 1 (HIV-1). Etravirine binds directly to reverse transcriptase (RT) and blocks the RNA-dependent and DNA-dependent DNA polymerase activities by causing a disruption of the enzyme's catalytic site.

#### Antiviral activity *in vitro*

Etravirine exhibits activity against wild type HIV-1 in T-cell lines and primary cells with median EC<sub>50</sub> values ranging from 0.9 to 5.5 nM. Etravirine demonstrates activity against HIV-1 group M (subtypes A, B, C, D, E, F, and G) and HIV-1 group O primary isolates with EC<sub>50</sub> values ranging from 0.3 to 1.7 nM and from 11.5 to 21.7 nM, respectively. Although etravirine demonstrates *in vitro* activity against wild type HIV-2 with median EC<sub>50</sub> values ranging from 5.7 to 7.2 µM, treatment of HIV-2 infection with etravirine is not recommended in the absence of clinical data. Etravirine retains activity against HIV-1 viral strains resistant to nucleoside reverse transcriptase and/or protease inhibitors. In addition, etravirine demonstrates a fold change (FC) in EC<sub>50</sub> ≤ 3 against 60% of 6,171 NNRTI-resistant clinical isolates.

#### Resistance

Etravirine efficacy in relation to NNRTI resistance at baseline has mainly been analysed with etravirine given in combination with darunavir/ritonavir (DUET-1 and DUET-2). Boosted protease inhibitors, like darunavir/ritonavir, show a higher barrier to resistance compared to other classes of

antiretrovirals. The breakpoints for reduced efficacy with etravirine (> 2 etravirine-associated mutations at baseline, see clinical results section) applies when etravirine is given in combination with a boosted protease inhibitor. This breakpoint might be lower in antiretroviral combination therapy not including a boosted protease inhibitor.

In the Phase III trials DUET-1 and DUET-2, mutations that developed most commonly in patients with virologic failure to the INTELENCE containing regimen were V108I, V179F, V179I, Y181C and Y181I, which usually emerged in a background of multiple other NNRTI resistance-associated mutations (RAMs). In all the other trials conducted with INTELENCE in HIV-1 infected patients, the following mutations emerged most commonly: L100I, E138G, V179F, V179I, Y181C and H221Y.

#### Cross-resistance

Following virologic failure of an etravirine-containing regimen it is not recommended to treat patients with efavirenz and/or nevirapine.

#### Clinical efficacy and safety

##### *Treatment-experienced adult patients*

##### Pivotal studies

The evidence of efficacy of INTELENCE is based on 48-week data from 2 Phase III trials DUET-1 and DUET-2. These trials were identical in design and similar efficacy for INTELENCE was seen in each trial. The results below are pooled data from the two trials.

##### Trial characteristics

- Design: randomised (1:1), double-blinded, placebo-controlled.
- Treatment: INTELENCE vs. placebo, in addition to a background regimen including darunavir/ritonavir (DRV/r), investigator-selected N(t)RTIs and optional enfuvirtide (ENF).
- Main inclusion criteria:
  - HIV-1 plasma viral load > 5,000 HIV-1 RNA copies/ml at screening
  - 1 or more NNRTI resistance-associated mutations (RAMs) at screening or from prior genotypic analysis (i.e., archived resistance)
  - 3 or more primary PI mutations at screening
  - on a stable antiretroviral regimen for at least 8 weeks.
- Stratification: Randomisation was stratified by the intended use of ENF in the BR, previous use of darunavir and screening viral load.
- Virologic response was defined as achieving a confirmed undetectable viral load (< 50 HIV-1 RNA copies/ml).

##### Summary of efficacy results

<b>Table 3: DUET-1 and DUET-2 pooled 48-week data</b>			
	INTELENCE + BR N = 599	Placebo + BR N = 604	Treatment difference (95% CI)
<i>Baseline characteristics</i>			
Median plasma HIV-1 RNA	4.8 log <sub>10</sub> copies/ml	4.8 log <sub>10</sub> copies/ml	
Median CD4 cell count	99 x 10 <sup>6</sup> cells/l	109 x 10 <sup>6</sup> cells/l	
<i>Outcomes</i>			
Confirmed undetectable viral load (< 50 HIV-1 RNA copies/ml) <sup>a</sup> n (%)			
Overall	363 (60.6%)	240 (39.7%)	20.9% (15.3%; 26.4%) <sup>d</sup>
<i>De novo</i> ENF	109 (71.2%)	93 (58.5%)	12.8% (2.3%; 23.2%) <sup>f</sup>
Not <i>de novo</i> ENF	254 (57.0%)	147 (33.0%)	23.9% (17.6%; 30.3%) <sup>f</sup>

< 400 HIV-1 RNA copies/ml <sup>a</sup> n (%)	428 (71.5%)	286 (47.4%)	24.1% (18.7%; 29.5%) <sup>d</sup>
HIV-1 RNA log <sub>10</sub> mean change from baseline (log <sub>10</sub> copies/ml) <sup>b</sup>	-2.25	-1.49	-0.6 (-0.8; -0.5) <sup>c</sup>
CD4 cell count mean change from baseline (x 10 <sup>6</sup> /l) <sup>b</sup>	+98.2	+72.9	24.4 (10.4; 38.5) <sup>c</sup>
Any AIDS defining illness and/or death n (%)	35 (5.8%)	59 (9.8%)	-3.9% (-6.9%; -0.9%) <sup>e</sup>

<sup>a</sup> Imputations according to the TLOVR algorithm (TLOVR = Time to Loss of Virologic Response).

<sup>b</sup> Non-completer is failure (NC = F) imputation.

<sup>c</sup> Treatment differences are based on Least Square Means from an ANCOVA model including the stratification factors. P-value < 0.0001 for mean decrease in HIV-1 RNA; P-value = 0.0006 for mean change in CD4 cell count.

<sup>d</sup> Confidence interval around observed difference of response rates; P-value < 0.0001 from logistic regression model, including stratification factors.

<sup>e</sup> Confidence interval around observed difference of response rates; P-value = 0.0408.

<sup>f</sup> Confidence interval around observed difference of response rates; P-value from CMH test controlling for stratification factors = 0.0199 for *de novo*, and < 0.0001 for not *de novo*.

Since there was a significant interaction effect between treatment and ENF, the primary analysis was done for 2 ENF strata (patients reusing or not using ENF versus patients using ENF *de novo*). The week 48 results from the pooled analysis of DUET-1 and DUET-2 demonstrated that the INTELENCE arm was superior to the placebo arm irrespective of whether ENF was used *de novo* (p = 0.0199) or not (p < 0.0001). Results of this analysis (week 48 data) by ENF stratum are shown in table 3.

Significantly fewer patients in the INTELENCE arm reached a clinical endpoint (AIDS-defining illness and/or death) as compared to the placebo arm (p = 0.0408).

A subgroup analysis of the virologic response (defined as a viral load < 50 HIV-1 RNA copies/ml) at week 48 by baseline viral load and baseline CD4 count (pooled DUET data) is presented in table 4.

Subgroups	Proportion of subjects with HIV-1 RNA < 50 copies/ml at week 48	
	INTELENCE + BR N = 599	Placebo + BR N = 604
Baseline HIV-1 RNA		
< 30,000 copies/ml	75.8%	55.7%
≥ 30,000 and < 100,000 copies/ml	61.2%	38.5%
≥ 100,000 copies/ml	49.1%	28.1%
Baseline CD4 count (x 10 <sup>6</sup> /l)		
< 50	45.1%	21.5%
≥ 50 and < 200	65.4%	47.6%
≥ 200 and < 350	73.9%	52.0%
≥ 350	72.4%	50.8%

Note: Imputations according to the TLOVR algorithm (TLOVR = Time to Loss of Virologic Response)

#### *Baseline genotype or phenotype and virologic outcome analyses*

In DUET-1 and DUET-2, the presence at baseline of 3 or more of the following mutations: V90I, A98G, L100I, K101E, K101P, V106I, V179D, V179F, Y181C, Y181I, Y181V, G190A and G190S, (INTELENCE RAMs) was associated with a decreased virologic response to INTELENCE (see table 5). These individual mutations occurred in the presence of other NNRTI RAMs. V179F was never present without Y181C.

Conclusions regarding the relevance of particular mutations or mutational patterns are subject to change with additional data, and it is recommended to always consult current interpretation systems for analysing resistance test results.

<b>Table 5: Proportion of subjects with &lt; 50 HIV-1 RNA copies/ml at week 48 by baseline number of INTELENCE RAMs in the non-viral failure excluded population of pooled DUET-1 and DUET-2 trials</b>		
Baseline number of INTELENCE RAMs*	Etravirine arms N = 549	
	Reused/not used ENF	<i>De novo</i> ENF
All ranges	63.3% (254/401)	78.4% (109/139)
0	74.1% (117/158)	91.3% (42/46)
1	61.3% (73/119)	80.4% (41/51)
2	64.1% (41/64)	66.7% (18/27)
≥ 3	38.3% (23/60)	53.3% (8/15)
	Placebo arms N = 569	
All ranges	37.1% (147/396)	64.1% (93/145)

\* INTELENCE RAMs = V90I, A98G, L100I, K101E/P, V106I, V179D/F, Y181C/I/V, G190A/S

Note: all patients in the DUET trials received a background regimen consisting of darunavir/rtv, investigator-selected NRTIs and optional enfuvirtide.

The presence of K103N alone, which was the most prevalent NNRTI mutation in DUET-1 and DUET-2 at baseline, was not identified as a mutation associated with resistance to INTELENCE. Furthermore, the presence of this mutation alone did not affect the response in the INTELENCE arm. Additional data is required to conclude on the influence of K103N when associated with other NNRTIs mutations.

Data from the DUET studies suggest that baseline fold change (FC) in EC<sub>50</sub> to etravirine was a predictive factor of virologic outcome, with gradually decreasing responses observed above FC 3 and FC 13.

FC subgroups are based on the select patient populations in DUET-1 and DUET-2 and are not meant to represent definitive clinical susceptibility breakpoints for INTELENCE.

#### *Exploratory head to head comparison with protease inhibitor in protease inhibitor naïve patients (trial TMC125-C227)*

TMC125-C227 was an exploratory, randomised, active-controlled open-label trial, which investigated the efficacy and safety of INTELENCE in a treatment regimen, which is not approved under the current indication. In the TMC125-C227 study, INTELENCE (N = 59) was administered with 2 investigator-selected NRTIs (i.e. without a ritonavir-boosted PI) and compared to an investigator-selected combination of a PI with 2 NRTIs (N = 57). The trial population included PI-naïve, NNRTI-experienced patients with evidence of NNRTI resistance.

At week 12, virologic response was greater in the control-PI arm (-2.2 log<sub>10</sub> copies/ml from baseline; n = 53) compared to the INTELENCE arm (-1.4 log<sub>10</sub> copies/ml from baseline; n = 40). This difference between treatment arms was statistically significant.

Based on these trial results, INTELENCE is not recommended for use in combination with N(t)RTIs only in patients who have experienced virological failure on an NNRTI- and N(t)RTI-containing regimen.

#### Paediatric population

##### *Treatment-experienced paediatric patients (6 years to less than 18 years of age)*

PIANO is a single-arm, Phase II trial evaluating the pharmacokinetics, safety, tolerability, and efficacy of INTELENCE in 101 antiretroviral treatment-experienced HIV-1 infected paediatric patients 6 years to less than 18 years of age and weighing at least 16 kg. The study enrolled patients on a stable but virologically failing antiretroviral treatment regimen, with a confirmed HIV-1 RNA plasma viral load ≥ 500 copies/ml. Sensitivity of the virus to INTELENCE at screening was required.

The median baseline plasma HIV-1 RNA was 3.9 log<sub>10</sub> copies/ml, and the median baseline CD4 cell count was 385 x 10<sup>6</sup> cells/l.

<b>Table 6: Virologic responses (ITT - TLOVR), change from baseline in log<sub>10</sub> viral load (NC = F), and change from baseline in CD4 percentage and cell count (NC = F) at week 24 in the TMC125-C213 and pooled DUET studies</b>				
<b>Study</b> <b>Age at screening</b> <b>Treatment group</b>	<b>TMC125-C213</b> <b>6 to &lt; 12 years</b> <b>ETR</b> <b>N = 41</b>	<b>TMC125-C213</b> <b>12 to &lt; 18 years</b> <b>ETR</b> <b>N = 60</b>	<b>TMC125-C213</b> <b>6 to &lt; 18 years</b> <b>ETR</b> <b>N = 101</b>	<b>Pooled DUET</b> <b>Studies</b> <b>≥ 18 years</b> <b>ETR</b> <b>N = 599</b>
<b>Virologic parameters</b>				
Viral load < 50 copies/ml at week 24, n (%)	24 (58.5)	28 (46.7)	52 (51.5)	363 (60.6)
Viral load < 400 copies/ml at week 24, n (%)	28 (68.3)	38 (63.3)	66 (65.3)	445 (74.3)
≥ 1 log <sub>10</sub> decrease from baseline at week 24, n (%)	26 (63.4)	38 (63.3)	64 (63.4)	475 (79.3)
Change from baseline in log <sub>10</sub> viral load (copies/ml) at week 24, mean (SE) and median (range)	-1.62 (0.21) -1.68 (-4.3; 0.9)	-1.44 (0.17) -1.68 (-4.0; 0.7)	-1.51 (0.13) -1.68 (-4.3; 0.9)	-2.37 (0.05) -2.78 (-4.6; 1.4)
<b>Immunologic parameters</b>				
Change from baseline in CD4 cell count (x 10 <sup>6</sup> cells/l), mean (SE) and median (range)	125 (33.0) 124 (-410; 718)	104 (17.5) 81 (-243; 472)	112 (16.9) 108 (-410; 718)	83.5 (3.64) 77.5 (-331; 517)
Change from baseline in CD4 percentage, median (range)	4% (-9; 20)	3% (-4; 14)	4% (-9; 20)	3% (-7; 23)

N = number of subjects with data; n = number of observations.

At week 48, 53.5% of all paediatric patients had a confirmed undetectable viral load < 50 HIV-1 RNA copies/ml according to the TLOVR algorithm. The proportion of paediatric patients with < 400 HIV-1 RNA copies/ml was 63.4%. The mean change in plasma HIV-1 RNA from baseline to week 48 was -1.53 log<sub>10</sub> copies/ml, and the mean CD4 cell count increase from baseline was 156 x 10<sup>6</sup> cells/l.

The European Medicines Agency has deferred the obligation to submit the results of studies with INTELENCE in one or more subsets of the paediatric population in human immunodeficiency virus infection, as per Paediatric Investigation Plan (PIP) decision in the granted indication (see section 4.2 for information on paediatric use).

### Pregnancy and postpartum

INTELENCE (200 mg b.i.d.), evaluated in combination with other antiretroviral medicinal products in a study of 15 pregnant women during the second and third trimesters of pregnancy and postpartum, demonstrated that exposure to total etravirine was generally higher during pregnancy compared with postpartum, and less so for unbound etravirine exposure (see section 5.2). There were no new clinically relevant safety findings in the mothers or in the newborns in this trial.

## **5.2 Pharmacokinetic properties**

The pharmacokinetic properties of etravirine have been evaluated in adult healthy subjects and in adult and paediatric treatment-experienced HIV-1 infected patients. Exposure to etravirine was lower (35-50%) in HIV-1 infected patients than in healthy subjects.

<b>Table 7: Population pharmacokinetic estimates of etravirine 200 mg b.i.d. in HIV-1 infected adult subjects (integrated data from Phase III trials at week 48)*</b>	
<b>Parameter</b>	<b>Etravirine 200 mg b.i.d. N = 575</b>
AUC <sub>12h</sub> (ng•h/ml)	
Geometric Mean ± Standard Deviation	4,522 ± 4,710
Median (Range)	4,380 (458 - 59,084)
C <sub>0h</sub> (ng/ml)	
Geometric Mean ± Standard Deviation	297 ± 391
Median (Range)	298 (2 - 4,852)

\* All HIV-1 infected subjects enrolled in Phase III clinical trials received darunavir/ritonavir 600/100 mg b.i.d. as part of their background regimen. Therefore, the pharmacokinetic parameter estimates shown in the table account for reductions in the pharmacokinetic parameters of etravirine due to co-administration of INTELENCE with darunavir/ritonavir.

Note: The median protein binding adjusted EC50 for MT4 cells infected with HIV-1/IIIB in vitro = 4 ng/ml.

### Absorption

An intravenous formulation of etravirine is unavailable, thus, the absolute bioavailability of etravirine is unknown. After oral administration with food, the maximum plasma concentration of etravirine is generally achieved within 4 hours.

In healthy subjects, the absorption of etravirine is not affected by co-administration of oral ranitidine or omeprazole, medicinal products that are known to increase gastric pH.

### Effect of food on absorption

The systemic exposure (AUC) to etravirine was decreased by about 50% when INTELENCE was administered under fasting conditions, as compared to administration following a meal. Therefore, INTELENCE should be taken following a meal.

### Distribution

Etravirine is approximately 99.9% bound to plasma proteins, primarily to albumin (99.6%) and  $\alpha$ 1-acid glycoprotein (97.66%-99.02%) *in vitro*. The distribution of etravirine into compartments other than plasma (e.g., cerebrospinal fluid, genital tract secretions) has not been evaluated in humans.

### Biotransformation

*In vitro* experiments with human liver microsomes (HLMs) indicate that etravirine primarily undergoes oxidative metabolism by the hepatic cytochrome CYP450 (CYP3A) system and, to a lesser extent, by the CYP2C family, followed by glucuronidation.

### Elimination

After administration of a radiolabeled <sup>14</sup>C-etravirine dose, 93.7% and 1.2% of the administered dose of <sup>14</sup>C-etravirine could be retrieved in faeces and urine, respectively. Unchanged etravirine accounted for 81.2% to 86.4% of the administered dose in faeces. Unchanged etravirine in faeces is likely to be unabsorbed drug. Unchanged etravirine was not detected in urine. The terminal elimination half-life of etravirine was approximately 30-40 hours.

### Special populations

#### *Paediatric population (6 years to less than 18 years of age)*

The pharmacokinetics of etravirine in 101 treatment-experienced HIV-1 infected paediatric patients, 6 years to less than 18 years of age and weighing at least 16 kg, showed that the administered weight-based dosages resulted in etravirine exposure comparable to that in adults receiving INTELENCE 200 mg b.i.d. (see sections 4.2 and 5.2) when administered at a dose corresponding to 5.2 mg/kg b.i.d. The population pharmacokinetic estimates for etravirine AUC<sub>12h</sub> and C<sub>0h</sub> are summarised in the table below.



<b>Table 8: Population pharmacokinetic estimates for etravirine (all doses combined) in treatment-experienced HIV-1 infected paediatric patients 6 years to less than 18 years of age (PIANO 48 week analysis)</b>	
Parameter	N = 101
AUC <sub>12h</sub> (ng•h/ml)	
Geometric Mean ± Standard Deviation	3,729 ± 4,305
Median (Range)	4,560 (62 – 28,865)
C <sub>0h</sub> (ng/ml)	
Geometric Mean ± Standard Deviation	205 ± 342
Median (Range)	287 (2 – 2,276)

#### *Paediatric population (less than 6 years of age)*

The pharmacokinetics of etravirine in paediatric patients less than 6 years of age are under investigation. There are insufficient data at this time to recommend a dose in paediatric patients less than 6 years of age or weighing less than 16 kg (see section 4.2).

#### *Elderly*

Population pharmacokinetic analysis in HIV infected patients showed that etravirine pharmacokinetics are not considerably different in the age range (18 to 77 years) evaluated, with 6 subjects aged 65 years or older (see sections 4.2 and 4.4).

#### *Gender*

No significant pharmacokinetic differences have been observed between males and females. A limited number of females were included in the studies.

#### *Race*

Population pharmacokinetic analysis of etravirine in HIV infected patients indicated no apparent difference in the exposure to etravirine between Caucasian, Hispanic and Black subjects. The pharmacokinetics in other races have not been sufficiently evaluated.

#### *Hepatic impairment*

Etravirine is primarily metabolised and eliminated by the liver. In a study comparing 8 patients with mild (Child-Pugh Class A) hepatic impairment to 8 matched controls and 8 patients with moderate (Child-Pugh Class B) hepatic impairment to 8 matched controls, the multiple dose pharmacokinetic disposition of etravirine was not altered in patients with mild to moderate hepatic impairment. However, unbound concentrations have not been assessed. Increased unbound exposure could be expected. No dose adjustment is suggested but caution is advised in patients with moderate hepatic impairment. INTELENCE has not been studied in patients with severe hepatic impairment (Child-Pugh Class C) and is therefore not recommended (see sections 4.2 and 4.4).

#### *Hepatitis B and/or hepatitis C virus co-infection*

Population pharmacokinetic analysis of the DUET-1 and DUET-2 trials showed reduced clearance (potentially leading to increased exposure and alteration of the safety profile) for INTELENCE in HIV-1 infected patients with hepatitis B and/or hepatitis C virus co-infection. In view of the limited data available in hepatitis B and/or C co-infected patients, particular caution should be paid when INTELENCE is used in these patients (see sections 4.4 and 4.8).

#### *Renal impairment*

The pharmacokinetics of etravirine have not been studied in patients with renal insufficiency. Results from a mass balance study with radioactive <sup>14</sup>C-etravirine showed that < 1.2% of the administered dose of etravirine is excreted in the urine. No unchanged drug was detected in urine so the impact of renal impairment on etravirine elimination is expected to be minimal. As etravirine is highly bound to plasma proteins, it is unlikely that it will be significantly removed by haemodialysis or peritoneal dialysis (see section 4.2).

### Pregnancy and postpartum

Study TMC114HIV3015 evaluated etravirine 200 mg b.i.d. in combination with other antiretroviral medicinal products in 15 pregnant women during the second and third trimesters of pregnancy and postpartum. The total etravirine exposure after intake of etravirine 200 mg b.i.d. as part of an antiretroviral regimen was generally higher during pregnancy compared with postpartum (see Table 9). The differences were less pronounced for unbound etravirine exposure.

In women receiving etravirine 200 mg b.i.d., higher mean values for  $C_{max}$ ,  $AUC_{12h}$  and  $C_{min}$  were observed during pregnancy compared to postpartum. During the 2<sup>nd</sup> and 3<sup>rd</sup> trimester of pregnancy mean values of these parameters were comparable.

<b>Pharmacokinetics of etravirine (mean ± SD, median)</b>	<b>etravirine 200 mg b.i.d. postpartum</b>	<b>etravirine 200 mg b.i.d. 2<sup>nd</sup> trimester</b>	<b>etravirine 200 mg b.i.d. 3<sup>rd</sup> trimester</b>
N	10	13	10 <sup>a</sup>
$C_{min}$ , ng/mL	269 ± 182 284	383 ± 210 346	349 ± 103 371
$C_{max}$ , ng/mL	569 ± 261 528	774 ± 300 828	785 ± 238 694
$AUC_{12h}$ , h*ng /mL	5004 ± 2521 5246	6617 ± 2766 6836	6846 ± 1482 6028

<sup>a</sup> n = 9 for  $AUC_{12h}$

Each subject served as her own control, and with an intra-individual comparison, the total etravirine  $C_{min}$ ,  $C_{max}$  and  $AUC_{12h}$  values were 1.2-, 1.4- and 1.4-fold higher, respectively, during the 2<sup>nd</sup> trimester of pregnancy as compared to postpartum, and 1.1-, 1.4- and 1.2-fold higher, respectively, based during the 3<sup>rd</sup> trimester of pregnancy as compared to postpartum.

### 5.3 Preclinical safety data

Animal toxicology studies have been conducted with etravirine in mice, rats, rabbits and dogs. In mice, the key target organs identified were the liver and the coagulation system. Haemorrhagic cardiomyopathy was only observed in male mice and was considered to be secondary to severe coagulopathy mediated via the vitamin K pathway. In the rat, the key target organs identified were the liver, the thyroid and the coagulation system. Exposure in mice was equivalent to human exposure while in rats it was below the clinical exposure at the recommended dose. In the dog, changes were observed in the liver and gall bladder at exposures approximately 8-fold higher than human exposure observed at the recommended dose (200 mg b.i.d.).

In a study conducted in rats, there were no effects on mating or fertility at exposure levels equivalent to those in humans at the clinically recommended dose. There was no teratogenicity with etravirine in rats and rabbits at exposures equivalent to those observed in humans at the recommended clinical dose. Etravirine had no effect on offspring development during lactation or post weaning at maternal exposures equivalent to those observed at the recommended clinical dose.

Etravirine was not carcinogenic in rats and in male mice. An increase in the incidences of hepatocellular adenomas and carcinomas were observed in female mice. The observed hepatocellular findings in female mice are generally considered to be rodent specific, associated with liver enzyme induction, and of limited relevance to humans. At the highest tested doses, the systemic exposures (based on AUC) to etravirine were 0.6-fold (mice) and between 0.2- and 0.7-fold (rats), relative to those observed in humans at the recommended therapeutic dose (200 mg b.i.d.).

*In vitro* and *in vivo* studies with etravirine revealed no evidence of a mutagenic potential.

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

Hypromellose  
Silicified microcrystalline cellulose  
Microcrystalline cellulose  
Colloidal anhydrous silica  
Croscarmellose sodium  
Magnesium stearate

### **6.2 Incompatibilities**

Not applicable.

### **6.3 Shelf life**

2 years if bottle is unopened.  
6 weeks after opening the bottle.

### **6.4 Special precautions for storage**

Store in the original bottle. Keep the bottle tightly closed in order to protect from moisture. Do not remove the desiccant pouches.

### **6.5 Nature and contents of container**

The bottle is a high-density polyethylene (HDPE) plastic bottle containing 60 tablets and 3 desiccant pouches, fitted with a polypropylene (PP) child resistant closure.  
Each carton contains one bottle.

### **6.6 Special precautions for disposal and other handling**

Patients who are unable to swallow the tablet(s) whole may disperse the tablet(s) in a glass of water. The patient should be instructed to do the following:

- place the tablet(s) in 5 ml (1 teaspoon) of water, or at least enough liquid to cover the medicine,
- stir well until the water looks milky;
- if desired, add more water or alternatively orange juice or milk (patients should not place the tablets in orange juice or milk without first adding water);
- drink it immediately;
- rinse the glass several times with water, orange juice, or milk and completely swallow the rinse each time to make sure the patient takes the entire dose.

The use of warm (> 40°C) or carbonated beverages should be avoided.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

## **7. MARKETING AUTHORISATION HOLDER**

Janssen-Cilag International NV  
Turnhoutseweg 30  
B-2340 Beerse  
Belgium

**8. MARKETING AUTHORISATION NUMBER(S)**

EU/1/08/468/002

**9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION**

Date of first authorisation: 28 August 2008

Date of latest renewal: 28 August 2013

**10. DATE OF REVISION OF THE TEXT**

Detailed information on this medicine is available on the website of the European Medicines Agency  
<http://www.ema.europa.eu/>.

## **ANNEX II**

- A. MANUFACTURER(S) RESPONSIBLE FOR BATCH RELEASE**
- B. CONDITIONS OR RESTRICTIONS REGARDING SUPPLY AND USE**
- C. OTHER CONDITIONS AND REQUIREMENTS OF THE MARKETING AUTHORISATION**
- D. CONDITIONS OR RESTRICTIONS WITH REGARD TO THE SAFE AND EFFECTIVE USE OF THE MEDICINAL PRODUCT**

## **A. MANUFACTURER(S) RESPONSIBLE FOR BATCH RELEASE**

Name and address of the manufacturer responsible for batch release

Janssen-Cilag SpA  
Via C. Janssen  
04100 Borgo San Michele  
Latina  
Italy

## **B. CONDITIONS OR RESTRICTIONS REGARDING SUPPLY AND USE**

Medicinal product subject to restricted medical prescription (See Annex I: Summary of Product Characteristics, section 4.2).

## **C. OTHER CONDITIONS AND REQUIREMENTS OF THE MARKETING AUTHORISATION**

### **• Periodic Safety Update Reports**

The marketing authorisation holder shall submit periodic safety update reports for this product in accordance with the requirements set out in the list of Union reference dates (EURD list) provided for under Article 107c(7) of Directive 2001/83/EC and published on the European medicines web-portal.

## **D. CONDITIONS OR RESTRICTIONS WITH REGARD TO THE SAFE AND EFFECTIVE USE OF THE MEDICINAL PRODUCT**

### **• Risk Management plan (RMP)**

The MAH shall perform the required pharmacovigilance activities and interventions detailed in the agreed RMP presented in Module 1.8.2. of the Marketing Authorisation and any agreed subsequent updates of the RMP.

An updated RMP should be submitted:

- At the request of the European Medicines Agency.
- Whenever the risk management system is modified, especially as the result of new information being received that may lead to a significant change to the benefit/risk profile or as the result of an important (pharmacovigilance or risk minimisation) milestone being reached.

If the dates for submission of a PSUR and the update of a RMP coincide, they can be submitted at the same time.

**ANNEX III**  
**LABELLING AND PACKAGE LEAFLET**

## **A. LABELLING**



**PARTICULARS TO APPEAR ON THE OUTER PACKAGING**

**OUTER CARTON**

**1. NAME OF THE MEDICINAL PRODUCT**

INTELENCE 25 mg tablets  
etravirine

**2. STATEMENT OF ACTIVE SUBSTANCE(S)**

Each tablet contains 25 mg etravirine.

**3. LIST OF EXCIPIENTS**

Contains lactose monohydrate.  
See leaflet for further information.

**4. PHARMACEUTICAL FORM AND CONTENTS**

120 tablets

**5. METHOD AND ROUTE OF ADMINISTRATION**

Read the package leaflet before use.  
Oral use

**6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN**

Keep out of the sight and reach of children.

**7. OTHER SPECIAL WARNING(S), IF NECESSARY**

**8. EXPIRY DATE**

EXP

**9. SPECIAL STORAGE CONDITIONS**

Store in the original bottle. Keep the bottle tightly closed in order to protect from moisture. Do not remove the desiccant pouches.

**10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE**

**11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER**

Janssen-Cilag International NV  
Turnhoutseweg 30  
B-2340 Beerse  
Belgium

**12. MARKETING AUTHORISATION NUMBER**

EU/1/08/468/003

**13. BATCH NUMBER**

Lot

**14. GENERAL CLASSIFICATION FOR SUPPLY**

Medicinal product subject to medical prescription.

**15. INSTRUCTIONS ON USE**

**16. INFORMATION IN BRAILLE**

intenance 25 mg

**PARTICULARS TO APPEAR ON THE IMMEDIATE PACKAGING**

**BOTTLE LABEL**

**1. NAME OF THE MEDICINAL PRODUCT**

INTELENCE 25 mg tablets  
etravirine

**2. STATEMENT OF ACTIVE SUBSTANCE(S)**

Each tablet contains 25 mg etravirine.

**3. LIST OF EXCIPIENTS**

Contains lactosemonohydrate.

**4. PHARMACEUTICAL FORM AND CONTENTS**

120 tablets

**5. METHOD AND ROUTE OF ADMINISTRATION**

Read the package leaflet before use.  
Oral use

**6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN**

Keep out of the sight and reach of children.

**7. OTHER SPECIAL WARNING(S), IF NECESSARY**

**8. EXPIRY DATE**

EXP

**9. SPECIAL STORAGE CONDITIONS**

Store in the original bottle. Keep the bottle tightly closed in order to protect from moisture.

**10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE**

**11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER**

Janssen-Cilag International NV  
Turnhoutseweg 30  
B-2340 Beerse  
Belgium

**12. MARKETING AUTHORISATION NUMBER**

EU/1/08/468/003

**13. BATCH NUMBER**

Lot

**14. GENERAL CLASSIFICATION FOR SUPPLY**

Medicinal product subject to medical prescription.

**15. INSTRUCTIONS ON USE**

**16. INFORMATION IN BRAILLE**

**PARTICULARS TO APPEAR ON THE OUTER PACKAGING**

**OUTER CARTON**

**1. NAME OF THE MEDICINAL PRODUCT**

INTELENCE 100 mg tablets  
etravirine

**2. STATEMENT OF ACTIVE SUBSTANCE(S)**

Each tablet contains 100 mg etravirine.

**3. LIST OF EXCIPIENTS**

Contains lactosemonohydrate.  
See leaflet for further information.

**4. PHARMACEUTICAL FORM AND CONTENTS**

120 tablets

**5. METHOD AND ROUTE OF ADMINISTRATION**

Read the package leaflet before use.  
Oral use

**6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN**

Keep out of the sight and reach of children.

**7. OTHER SPECIAL WARNING(S), IF NECESSARY**

**8. EXPIRY DATE**

EXP

**9. SPECIAL STORAGE CONDITIONS**

Store in the original bottle. Keep the bottle tightly closed in order to protect from moisture. Do not remove the desiccant pouches.

**10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE**

**11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER**

Janssen-Cilag International NV  
Turnhoutseweg 30  
B-2340 Beerse  
Belgium

**12. MARKETING AUTHORISATION NUMBER**

EU/1/08/468/001

**13. BATCH NUMBER**

Lot

**14. GENERAL CLASSIFICATION FOR SUPPLY**

Medicinal product subject to medical prescription.

**15. INSTRUCTIONS ON USE**

**16. INFORMATION IN BRAILLE**

intence 100 mg

**PARTICULARS TO APPEAR ON THE IMMEDIATE PACKAGING**

**BOTTLE LABEL**

**1. NAME OF THE MEDICINAL PRODUCT**

INTELENCE 100 mg tablets  
etravirine

**2. STATEMENT OF ACTIVE SUBSTANCE(S)**

Each tablet contains 100 mg etravirine.

**3. LIST OF EXCIPIENTS**

Contains lactosemonohydrate.

**4. PHARMACEUTICAL FORM AND CONTENTS**

120 tablets

**5. METHOD AND ROUTE OF ADMINISTRATION**

Read the package leaflet before use.  
Oral use

**6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN**

Keep out of the sight and reach of children.

**7. OTHER SPECIAL WARNING(S), IF NECESSARY**

**8. EXPIRY DATE**

EXP

**9. SPECIAL STORAGE CONDITIONS**

Store in the original bottle. Keep the bottle tightly closed in order to protect from moisture.

**10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE**

**11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER**

Janssen-Cilag International NV  
Turnhoutseweg 30  
B-2340 Beerse  
Belgium

**12. MARKETING AUTHORISATION NUMBER**

EU/1/08/468/001

**13. BATCH NUMBER**

Lot

**14. GENERAL CLASSIFICATION FOR SUPPLY**

Medicinal product subject to medical prescription.

**15. INSTRUCTIONS ON USE**

**16. INFORMATION IN BRAILLE**



**PARTICULARS TO APPEAR ON THE OUTER PACKAGING**

**OUTER CARTON**

**1. NAME OF THE MEDICINAL PRODUCT**

INTELENCE 200 mg tablets  
etravirine

**2. STATEMENT OF ACTIVE SUBSTANCE(S)**

Each tablet contains 200 mg etravirine.

**3. LIST OF EXCIPIENTS**

**4. PHARMACEUTICAL FORM AND CONTENTS**

60 tablets

**5. METHOD AND ROUTE OF ADMINISTRATION**

Read the package leaflet before use.  
Oral use

**6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN**

Keep out of the sight and reach of children.

**7. OTHER SPECIAL WARNING(S), IF NECESSARY**

**8. EXPIRY DATE**

EXP

**9. SPECIAL STORAGE CONDITIONS**

Store in the original bottle. Keep the bottle tightly closed in order to protect from moisture. Do not remove the desiccant pouches.

**10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE**

**11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER**

Janssen-Cilag International NV  
Turnhoutseweg 30  
B-2340 Beerse  
Belgium

**12. MARKETING AUTHORISATION NUMBER**

EU/1/08/468/002

**13. BATCH NUMBER**

Lot

**14. GENERAL CLASSIFICATION FOR SUPPLY**

Medicinal product subject to medical prescription.

**15. INSTRUCTIONS ON USE**

**16. INFORMATION IN BRAILLE**

intenance 200 mg

**PARTICULARS TO APPEAR ON THE IMMEDIATE PACKAGING**

**BOTTLE LABEL**

**1. NAME OF THE MEDICINAL PRODUCT**

INTELENCE 200 mg tablets  
etravirine

**2. STATEMENT OF ACTIVE SUBSTANCE(S)**

Each tablet contains 200 mg etravirine.

**3. LIST OF EXCIPIENTS**

**4. PHARMACEUTICAL FORM AND CONTENTS**

60 tablets

**5. METHOD AND ROUTE OF ADMINISTRATION**

Read the package leaflet before use.  
Oral use

**6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN**

Keep out of the sight and reach of children.

**7. OTHER SPECIAL WARNING(S), IF NECESSARY**

**8. EXPIRY DATE**

EXP

**9. SPECIAL STORAGE CONDITIONS**

Store in the original bottle. Keep the bottle tightly closed in order to protect from moisture.

**10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE**

**11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER**

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Turnhoutseweg 30  
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Belgium

**12. MARKETING AUTHORISATION NUMBER**

EU/1/08/468/002

**13. BATCH NUMBER**

Lot

**14. GENERAL CLASSIFICATION FOR SUPPLY**

Medicinal product subject to medical prescription.

**15. INSTRUCTIONS ON USE**

**16. INFORMATION IN BRAILLE**

**B. PACKAGE LEAFLET**

## **Package leaflet: Information for the user**

### **INTELENCE 25 mg tablets** etravirine

**Read all of this leaflet carefully before you start taking this medicine because it contains important information for you.**

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor or pharmacist.
- This medicine has been prescribed for you only. Do not pass it on to others. It may harm them, even if their signs of illness are the same as yours.
- If you get any side effects, talk to your doctor or pharmacist. This includes any possible side effects not listed in this leaflet. See section 4.

#### **What is in this leaflet**

1. What INTELENCE is and what it is used for
2. What you need to know before you take INTELENCE
3. How to take INTELENCE
4. Possible side effects
5. How to store INTELENCE
6. Contents of the pack and other information

#### **1. What INTELENCE is and what it is used for**

INTELENCE contains the active substance etravirine. INTELENCE belongs to a group of anti-HIV medicines called non-nucleoside reverse transcriptase inhibitors (NNRTIs).

INTELENCE is a medicine used for the treatment of Human Immunodeficiency Virus (HIV) infection. INTELENCE works by reducing the amount of HIV in your body. This will improve your immune system and reduces the risk of developing illnesses linked to HIV infection.

INTELENCE is used in combination with other anti-HIV medicines to treat adults and children 6 years of age and older who are infected by HIV and who have used other anti-HIV medicines before.

Your doctor will discuss with you which combination of medicines is best for you.

#### **2. What you need to know before you take INTELENCE**

##### **Do not take INTELENCE**

- if you are allergic to etravirine or any of the other ingredients of this medicine (listed in section 6).

##### **Warnings and precautions**

Talk to your doctor or pharmacist before taking INTELENCE.

INTELENCE is not a cure for HIV infection. It is part of a treatment reducing the amount of virus in the blood. You can still pass on HIV when taking this medicine, although the risk is lowered by effective antiretroviral therapy. Discuss with your physician the precautions needed to avoid infecting other people.

People taking INTELENCE may still develop infections or other illnesses associated with HIV infection. You must keep in regular contact with your doctor.

### Older people

INTELENCE has only been used in a limited number of patients of 65 years or older. If you belong to this age group, please discuss the use of INTELENCE with your doctor.

### Bone problems

Some patients taking combination antiretroviral therapy may develop a bone disease called osteonecrosis (death of bone tissue caused by loss of blood supply to the bone). The length of combination antiretroviral therapy, corticosteroid use, alcohol consumption, severe immunosuppression, higher body mass index, among others, may be some of the many risk factors for developing this disease. Signs of osteonecrosis are joint stiffness, aches and pains (especially of the hip, knee and shoulder) and difficulty in movement. If you notice any of these symptoms please inform your doctor.

### Tell your doctor about your situation

Make sure that you check the following points and tell your doctor if any of these apply to you.

- Tell your doctor if you develop a **rash**. If a rash occurs, it usually appears soon after anti-HIV treatment with INTELENCE is started and often disappears within 1 to 2 weeks, even with continued use of the medicine. Occasionally, during INTELENCE treatment, you can experience hypersensitivity reaction (allergic reaction including rash and fever but also swelling of the face, tongue or throat, difficulty in breathing or swallowing) which could be potentially life-threatening. Please contact your doctor immediately if you get a hypersensitivity reaction. Your doctor will advise you how to deal with your symptoms and whether INTELENCE must be stopped. If you have stopped treatment due to a hypersensitivity reaction, you should not restart therapy with INTELENCE.
- Tell your doctor if you have or have had **problems with your liver**, including hepatitis B and/or C. Your doctor may evaluate how severe your liver disease is before deciding if you can take INTELENCE.
- Tell your doctor immediately if you notice any **symptoms of infections**. In some patients with advanced HIV infection and a history of opportunistic infection, signs and symptoms of inflammation from previous infections may occur soon after anti-HIV treatment is started. It is believed that these symptoms are due to an improvement in the body's immune response, enabling the body to fight infections that may have been present with no obvious symptoms.
- In addition to the opportunistic infections, autoimmune disorders (a condition that occurs when the immune system attacks healthy body tissue) may also occur after you start taking medicines for the treatment of your HIV infection. Autoimmune disorders may occur many months after the start of treatment. If you notice any symptoms of infection or other symptoms such as muscle weakness, weakness beginning in the hands and feet and moving up towards the trunk of the body, palpitations, tremor or hyperactivity, please inform your doctor immediately to seek necessary treatment.

### **Children and adolescents**

Do not give this medicine to children less than 6 years of age or weighing less than 16 kg because the potential benefits and risks have not yet been established.

### **Other medicines and INTELENCE**

INTELENCE might interact with other medicines. Tell your doctor or pharmacist if you are taking, have recently taken, or might take any other medicines.

In most cases, INTELENCE can be combined with anti-HIV medicines belonging to another class. However, some combinations are not recommended. In other cases, increased monitoring and/or a change in the dose of the medicine may be needed. Therefore, always tell your doctor which other anti-HIV medicines you take. Furthermore, it is important that you carefully read the package leaflets that are provided with these medicines. Follow your doctor's instruction carefully on which medicines can be combined.

**It is not recommended to combine INTELENCE with any of the following medicines:**

- tipranavir/ritonavir (anti-HIV medicine)

- carbamazepine, phenobarbital, phenytoin (medicines to prevent seizures)
- rifampicin, because it is contraindicated with boosted protease inhibitors, and rifapentine (medicines to treat some infections such as tuberculosis)
- products that contain St John's wort (*Hypericum perforatum*) (a herbal product used for depression).

If you are taking any of these, ask your doctor for advice.

**The effects of INTELENCE or other medicines might be influenced** if you take INTELENCE together with any of the following medicines. Tell your doctor if you take:

- amiodarone, bepridil, digoxin, disopyramide, flecainide, lidocaine, mexiletine, propafenone and quinidine (medicines to treat certain heart disorders, e.g., abnormal heart beat)
- warfarin (a medicine used to reduce clotting of the blood). Your doctor will have to check your blood
- fluconazole, itraconazole, ketoconazole, posaconazole, voriconazole (medicines to treat fungal infections)
- clarithromycin, rifabutin (antibiotics)
- artemether/lumefantrine (a medicine to treat malaria)
- diazepam (medicines to treat trouble with sleeping and/or anxiety)
- dexamethasone (a corticosteroid used in a variety of conditions such as inflammation and allergic reactions)
- boceprevir (a medicine to treat hepatitis C virus infection)
- atorvastatin, fluvastatin, lovastatin, rosuvastatin, simvastatin (cholesterol-lowering medicines)
- cyclosporine, sirolimus, tacrolimus (immunosuppressants)
- sildenafil, vardenafil, tadalafil (medicines to treat erectile dysfunction and/or pulmonary arterial hypertension)
- clopidogrel (a medicine to prevent blood clots).

### **Pregnancy and breast-feeding**

Tell your doctor immediately if you are pregnant. Pregnant women should not take INTELENCE unless specifically directed by the doctor.

HIV infected mothers must not breast-feed, as there is a possibility of infecting the baby with HIV.

### **Driving and using machines**

Do not drive or operate machines if you feel sleepy or dizzy after taking your medicines.

### **INTELENCE contains lactose**

INTELENCE tablets contain lactose. If you have been told by your doctor that you have an intolerance to some sugars (lactose), contact your doctor before taking this medicine.

## **3. How to take INTELENCE**

Always take this medicine exactly as your doctor or pharmacist has told you. Check with your doctor or pharmacist if you are not sure.

### **Use in adults**

The recommended dose of INTELENCE is two tablets twice a day.

In the morning, take two 100 milligram INTELENCE tablets, following a meal.

In the evening, take two 100 milligram INTELENCE tablets, following a meal.

### **Use in children and adolescents 6 years of age and older and weighing at least 16 kg**

The doctor will work out the right dose based on the weight of the child.

The doctor will inform you exactly how much INTELENCE the child should take.

Do not stop administering INTELENCE without talking to the child's doctor.



The other HIV medicines used in combination with INTELENCE should be taken by the child as recommended by the child's doctor.

### **Instructions for taking INTELENCE for all patients**

It is important that you take INTELENCE following a meal. If you take INTELENCE on an empty stomach, only half the amount of INTELENCE is absorbed. Follow your doctor's advice on the type of meal you should be taking with INTELENCE.

Swallow the INTELENCE tablet(s) whole with a glass of water. Do not chew the tablet(s). The tablet can be divided into equal doses.

- If you are unable to swallow the INTELENCE tablet(s) whole, you may do the following:
  - place the tablet(s) in 5 ml (1 teaspoon) of water, or at least enough liquid to cover the medicine,
  - stir well until the water looks milky,
  - if desired, add more water or alternatively orange juice or milk (do not place the tablets in orange juice or milk without first adding water),
  - drink it immediately,
  - rinse the glass several times with water, orange juice, or milk and completely swallow the rinse each time to make sure you take the entire dose.
- Do not use warm (> 40°C) or carbonated beverages when taking INTELENCE tablet(s).

### **Removing the child resistant cap**



The plastic bottle comes with a child resistant cap and should be opened as follows:

- Push the plastic screw cap down while turning it counter clockwise.
- Remove the unscrewed cap.

### **If you take more INTELENCE than you should**

Contact your doctor or pharmacist immediately. The most frequent side effects of INTELENCE are rash, diarrhoea, nausea, and headache (see section '4. Possible side effects').

### **If you forget to take INTELENCE**

If you notice **within 6 hours of the time you usually take INTELENCE**, you must take the tablet(s) as soon as possible. Always take the tablet(s) following a meal. Then take the next dose as usual. If you notice **after 6 hours**, then skip the intake and take the next doses as usual. Do not take a double dose to make up for a forgotten dose.

### **Do not stop taking INTELENCE without talking to your doctor first**

HIV therapy may increase your sense of well-being. Even if you feel better, do not stop taking INTELENCE or your other anti-HIV medicines. Doing so could increase the risk of the virus developing resistance. Talk to your doctor first.

If you have any further questions on the use of this medicine, ask your doctor or pharmacist.

## **4. Possible side effects**

During HIV therapy there may be an increase in weight and in levels of blood lipids and glucose. This is partly linked to restored health and life style, and in the case of blood lipids sometimes to the HIV medicines themselves. Your doctor will test for these changes.

Like all medicines, this medicine can cause side effects, although not everybody gets them.

The frequency rate of the side effects associated with INTELENCE is given below.

Very common side effects (may affect more than 1 in 10 people)

- skin rash. The rash is usually mild to moderate. In rare instances, very serious rash has been reported which can be potentially life-threatening. It is therefore important to contact your doctor immediately if you develop a rash. Your doctor will advise you how to deal with your symptoms and whether INTELENCE must be stopped.

Common side effects (may affect up to 1 in 10 people)

- headache, tingling or pain in hands or feet, numbness, tiredness, sleeplessness, anxiety;
- diarrhoea, nausea, vomiting, heartburn, abdominal pain, inflammation of the stomach, flatulence;
- kidney failure, high blood pressure, heart attack, diabetes;
- night sweats.

Uncommon side effects (may affect up to 1 in 100 people)

- angina, irregular heart rhythm;
- loss of skin sensibility, drowsiness, trembling, fainting, sleepiness, loss of memory, seizures, stroke, disturbance in attention;
- blurred vision, dizziness, sluggishness;
- difficulty breathing;
- dry mouth, mouth inflammation, retching, constipation, distension of the abdomen, inflammation of the pancreas, vomiting blood, decrease of appetite;
- excessive sweating, itching, dry skin, swelling of the face and/or throat;
- allergic reactions (hypersensitivity), symptoms of infection (for example enlarged lymph nodes and fever);
- liver problems such as hepatitis;
- swelling of breasts in men;
- sleep disorders, abnormal dreams, confusion, disorientation, nervousness;

Not known (frequency cannot be estimated from the available data)

- severe hypersensitivity reactions characterised by rash accompanied by fever and organ inflammation such as hepatitis.

### **Reporting of side effects**

If you get any side effects, talk to your doctor or pharmacist. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the [national reporting system](#) listed in [Appendix V](#). By reporting side effects you can help provide more information on the safety of this medicine.

## **5. How to store INTELENCE**

Keep this medicine out of the sight and reach of children.

Do not use this medicine after the expiry date which is stated on the carton and on the bottle after EXP. The expiry date refers to the last day of that month.

INTELENCE tablets should be stored in the original bottle. Keep the bottle tightly closed in order to protect from moisture. The bottle contains 2 little pouches (desiccants) to keep the tablets dry. These pouches should stay in the bottle all the time and are not to be eaten.

Do not throw away any medicines via wastewater or household waste. Ask your pharmacist how to throw away medicines you no longer use. These measures will help protect the environment.

## **6. Contents of the pack and other information**

### **What INTELENCE contains**

- The active substance is etravirine. Each tablet of INTELENCE contains 25 mg of etravirine.

- The other ingredients are hypromellose, microcrystalline cellulose, colloidal anhydrous silica, croscarmellose sodium, magnesium stearate and lactose (as monohydrate).

### **What INTELENCE looks like and contents of the pack**

This medicinal product is presented as white to off-white, oval, scored tablet, with “TMC” on one side. The tablet can be divided into two equal doses.

A plastic bottle containing 120 tablets and 2 pouches to keep the tablets dry.

### **Marketing Authorisation Holder**

Janssen-Cilag International NV, Turnhoutseweg 30, B-2340 Beerse, Belgium

### **Manufacturer**

Janssen-Cilag SpA, Via C. Janssen, 04100 Borgo San Michele, Latina, Italy

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**This leaflet was last revised in {MM/YYYY}.**

Detailed information on this medicine is available on the European Medicines Agency web site:  
<http://www.ema.europa.eu/>.

## **Package leaflet: Information for the user**

### **INTELENCE 100 mg tablets** etravirine

**Read all of this leaflet carefully before you start taking this medicine because it contains important information for you.**

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor or pharmacist.
- This medicine has been prescribed for you only. Do not pass it on to others. It may harm them, even if their signs of illness are the same as yours.
- If you get any side effects, talk to your doctor or pharmacist. This includes any possible side effects not listed in this leaflet. See section 4.

#### **What is in this leaflet**

1. What INTELENCE is and what it is used for
2. What you need to know before you take INTELENCE
3. How to take INTELENCE
4. Possible side effects
5. How to store INTELENCE
6. Contents of the pack and other information

#### **1. What INTELENCE is and what it is used for**

INTELENCE contains the active substance etravirine. INTELENCE belongs to a group of anti-HIV medicines called non-nucleoside reverse transcriptase inhibitors (NNRTIs).

INTELENCE is a medicine used for the treatment of Human Immunodeficiency Virus (HIV) infection. INTELENCE works by reducing the amount of HIV in your body. This will improve your immune system and reduces the risk of developing illnesses linked to HIV infection.

INTELENCE is used in combination with other anti-HIV medicines to treat adults and children 6 years of age and older who are infected by HIV and who have used other anti-HIV medicines before.

Your doctor will discuss with you which combination of medicines is best for you.

#### **2. What you need to know before you take INTELENCE**

##### **Do not take INTELENCE**

- if you are allergic to etravirine or any of the other ingredients of this medicine (listed in section 6).

##### **Warnings and precautions**

Talk to your doctor or pharmacist before taking INTELENCE.

INTELENCE is not a cure for HIV infection. It is part of a treatment reducing the amount of virus in the blood. You can still pass on HIV when taking this medicine, although the risk is lowered by effective antiretroviral therapy. Discuss with your physician the precautions needed to avoid infecting other people.

People taking INTELENCE may still develop infections or other illnesses associated with HIV infection. You must keep in regular contact with your doctor.

### Older people

INTELENCE has only been used in a limited number of patients of 65 years or older. If you belong to this age group, please discuss the use of INTELENCE with your doctor.

### Bone problems

Some patients taking combination antiretroviral therapy may develop a bone disease called osteonecrosis (death of bone tissue caused by loss of blood supply to the bone). The length of combination antiretroviral therapy, corticosteroid use, alcohol consumption, severe immunosuppression, higher body mass index, among others, may be some of the many risk factors for developing this disease. Signs of osteonecrosis are joint stiffness, aches and pains (especially of the hip, knee and shoulder) and difficulty in movement. If you notice any of these symptoms please inform your doctor.

### Tell your doctor about your situation

Make sure that you check the following points and tell your doctor if any of these apply to you.

- Tell your doctor if you develop a **rash**. If a rash occurs, it usually appears soon after anti-HIV treatment with INTELENCE is started and often disappears within 1 to 2 weeks, even with continued use of the medicine. Occasionally, during INTELENCE treatment, you can experience hypersensitivity reaction (allergic reaction including rash and fever but also swelling of the face, tongue or throat, difficulty in breathing or swallowing) which could be potentially life-threatening. Please contact your doctor immediately if you get a hypersensitivity reaction. Your doctor will advise you how to deal with your symptoms and whether INTELENCE must be stopped. If you have stopped treatment due to a hypersensitivity reaction, you should not restart therapy with INTELENCE.
- Tell your doctor if you have or have had **problems with your liver**, including hepatitis B and/or C. Your doctor may evaluate how severe your liver disease is before deciding if you can take INTELENCE.
- Tell your doctor immediately if you notice any **symptoms of infections**. In some patients with advanced HIV infection and a history of opportunistic infection, signs and symptoms of inflammation from previous infections may occur soon after anti-HIV treatment is started. It is believed that these symptoms are due to an improvement in the body's immune response, enabling the body to fight infections that may have been present with no obvious symptoms.
- In addition to the opportunistic infections, autoimmune disorders (a condition that occurs when the immune system attacks healthy body tissue) may also occur after you start taking medicines for the treatment of your HIV infection. Autoimmune disorders may occur many months after the start of treatment. If you notice any symptoms of infection or other symptoms such as muscle weakness, weakness beginning in the hands and feet and moving up towards the trunk of the body, palpitations, tremor or hyperactivity, please inform your doctor immediately to seek necessary treatment.

### **Children and adolescents**

Do not give this medicine to children less than 6 years of age or weighing less than 16 kg because the potential benefits and risks have not yet been established.

### **Other medicines and INTELENCE**

INTELENCE might interact with other medicines. Tell your doctor or pharmacist if you are taking, have recently taken, or might take any other medicines.

In most cases, INTELENCE can be combined with anti-HIV medicines belonging to another class. However, some combinations are not recommended. In other cases, increased monitoring and/or a change in the dose of the medicine may be needed. Therefore, always tell your doctor which other anti-HIV medicines you take. Furthermore, it is important that you carefully read the package leaflets that are provided with these medicines. Follow your doctor's instruction carefully on which medicines can be combined.

### **It is not recommended to combine INTELENCE with any of the following medicines:**

- tipranavir/ritonavir (anti-HIV medicine)

- carbamazepine, phenobarbital, phenytoin (medicines to prevent seizures)
- rifampicin, because it is contraindicated with boosted protease inhibitors, and rifapentine (medicines to treat some infections such as tuberculosis)
- products that contain St John's wort (*Hypericum perforatum*) (a herbal product used for depression).

If you are taking any of these, ask your doctor for advice.

**The effects of INTELENCE or other medicines might be influenced** if you take INTELENCE together with any of the following medicines. Tell your doctor if you take:

- amiodarone, bepridil, digoxin, disopyramide, flecainide, lidocaine, mexiletine, propafenone and quinidine (medicines to treat certain heart disorders, e.g., abnormal heart beat)
- warfarin (a medicine used to reduce clotting of the blood). Your doctor will have to check your blood
- fluconazole, itraconazole, ketoconazole, posaconazole, voriconazole (medicines to treat fungal infections)
- clarithromycin, rifabutin (antibiotics)
- artemether/lumefantrine (a medicine to treat malaria)
- diazepam (medicines to treat trouble with sleeping and/or anxiety)
- dexamethasone (a corticosteroid used in a variety of conditions such as inflammation and allergic reactions)
- boceprevir (a medicine to treat hepatitis C virus infection)
- atorvastatin, fluvastatin, lovastatin, rosuvastatin, simvastatin (cholesterol-lowering medicines)
- cyclosporine, sirolimus, tacrolimus (immunosuppressants)
- sildenafil, vardenafil, tadalafil (medicines to treat erectile dysfunction and/or pulmonary arterial hypertension)
- clopidogrel (a medicine to prevent blood clots).

### **Pregnancy and breast-feeding**

Tell your doctor immediately if you are pregnant. Pregnant women should not take INTELENCE unless specifically directed by the doctor.

HIV infected mothers must not breast-feed, as there is a possibility of infecting the baby with HIV.

### **Driving and using machines**

Do not drive or operate machines if you feel sleepy or dizzy after taking your medicines.

### **INTELENCE contains lactose**

INTELENCE tablets contain lactose. If you have been told by your doctor that you have an intolerance to some sugars (lactose), contact your doctor before taking this medicine.

## **3. How to take INTELENCE**

Always take this medicine exactly as your doctor or pharmacist has told you. Check with your doctor or pharmacist if you are not sure.

### **Use in adults**

The recommended dose of INTELENCE is two tablets twice a day.

In the morning, take two 100 milligram INTELENCE tablets, following a meal.

In the evening, take two 100 milligram INTELENCE tablets, following a meal.

### **Use in children and adolescents 6 years of age and older and weighing at least 16 kg**

The doctor will work out the right dose based on the weight of the child.

The doctor will inform you exactly how much INTELENCE the child should take.

Do not stop administering INTELENCE without talking to the child's doctor.



The other HIV medicines used in combination with INTELENCE should be taken by the child as recommended by the child's doctor.

### **Instructions for taking INTELENCE for all patients**

It is important that you take INTELENCE following a meal. If you take INTELENCE on an empty stomach, only half the amount of INTELENCE is absorbed. Follow your doctor's advice on the type of meal you should be taking with INTELENCE.

Swallow the INTELENCE tablet(s) whole with a glass of water. Do not chew the tablet(s).

- If you are unable to swallow the INTELENCE tablet(s) whole, you may do the following:
  - place the tablet(s) in 5 ml (1 teaspoon) of water, or at least enough liquid to cover the medicine,
  - stir well until the water looks milky,
  - if desired, add more water or alternatively orange juice or milk (do not place the tablets in orange juice or milk without first adding water),
  - drink it immediately,
  - rinse the glass several times with water, orange juice, or milk and completely swallow the rinse each time to make sure you take the entire dose.
- Do not use warm (> 40°C) or carbonated beverages when taking INTELENCE tablet(s).

### **Removing the child resistant cap**



The plastic bottle comes with a child resistant cap and should be opened as follows:

- Push the plastic screw cap down while turning it counter clockwise.
- Remove the unscrewed cap.

### **If you take more INTELENCE than you should**

Contact your doctor or pharmacist immediately. The most frequent side effects of INTELENCE are rash, diarrhoea, nausea, and headache (see section '4. Possible side effects').

### **If you forget to take INTELENCE**

If you notice **within 6 hours of the time you usually take INTELENCE**, you must take the tablet(s) as soon as possible. Always take the tablet(s) following a meal. Then take the next dose as usual. If you notice **after 6 hours**, then skip the intake and take the next doses as usual. Do not take a double dose to make up for a forgotten dose.

### **Do not stop taking INTELENCE without talking to your doctor first**

HIV therapy may increase your sense of well-being. Even if you feel better, do not stop taking INTELENCE or your other anti-HIV medicines. Doing so could increase the risk of the virus developing resistance. Talk to your doctor first.

If you have any further questions on the use of this medicine, ask your doctor or pharmacist.

## **4. Possible side effects**

During HIV therapy there may be an increase in weight and in levels of blood lipids and glucose. This is partly linked to restored health and life style, and in the case of blood lipids sometimes to the HIV medicines themselves. Your doctor will test for these changes.

Like all medicines, this medicine can cause side effects, although not everybody gets them.

The frequency rate of the side effects associated with INTELENCE is given below.

Very common side effects (may affect more than 1 in 10 people)

- skin rash. The rash is usually mild to moderate. In rare instances, very serious rash has been reported which can be potentially life-threatening. It is therefore important to contact your doctor immediately if you develop a rash. Your doctor will advise you how to deal with your symptoms and whether INTELENCE must be stopped.

Common side effects (may affect up to 1 in 10 people)

- headache, tingling or pain in hands or feet, numbness, tiredness, sleeplessness, anxiety;
- diarrhoea, nausea, vomiting, heartburn, abdominal pain, inflammation of the stomach, flatulence;
- kidney failure, high blood pressure, heart attack, diabetes;
- night sweats.

Uncommon side effects (may affect up to 1 in 100 people)

- angina, irregular heart rhythm;
- loss of skin sensibility, drowsiness, trembling, fainting, sleepiness, loss of memory, seizures, stroke, disturbance in attention;
- blurred vision, dizziness, sluggishness;
- difficulty breathing;
- dry mouth, mouth inflammation, retching, constipation, distension of the abdomen, inflammation of the pancreas, vomiting blood, decrease of appetite;
- excessive sweating, itching, dry skin, swelling of the face and/or throat;
- allergic reactions (hypersensitivity), symptoms of infection (for example enlarged lymph nodes and fever);
- liver problems such as hepatitis;
- swelling of breasts in men;
- sleep disorders, abnormal dreams, confusion, disorientation, nervousness;

Not known (frequency cannot be estimated from the available data)

- severe hypersensitivity reactions characterised by rash accompanied by fever and organ inflammation such as hepatitis.

### **Reporting of side effects**

If you get any side effects, talk to your doctor or pharmacist. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the [national reporting system](#) listed in [Appendix V](#). By reporting side effects you can help provide more information on the safety of this medicine.

## **5. How to store INTELENCE**

Keep this medicine out of the sight and reach of children.

Do not use this medicine after the expiry date which is stated on the carton and on the bottle after EXP. The expiry date refers to the last day of that month.

INTELENCE tablets should be stored in the original bottle. Keep the bottle tightly closed in order to protect from moisture. The bottle contains 3 little pouches (desiccants) to keep the tablets dry. These pouches should stay in the bottle all the time and are not to be eaten.

Do not throw away any medicines via wastewater or household waste. Ask your pharmacist how to throw away medicines you no longer use. These measures will help protect the environment.

## **6. Contents of the pack and other information**

### **What INTELENCE contains**

- The active substance is etravirine. Each tablet of INTELENCE contains 100 mg of etravirine.

- The other ingredients are hypromellose, microcrystalline cellulose, colloidal anhydrous silica, croscarmellose sodium, magnesium stearate and lactose (as monohydrate).

### **What INTELENCE looks like and contents of the pack**

This medicinal product is presented as white to off-white, oval tablet, with “T125” on one side and “100” on the other side.

A plastic bottle containing 120 tablets and 3 pouches to keep the tablets dry.

### **Marketing Authorisation Holder**

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### **Manufacturer**

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Detailed information on this medicine is available on the European Medicines Agency web site:  
<http://www.ema.europa.eu/>.

## **Package leaflet: Information for the user**

### **INTELENCE 200 mg tablets** etravirine

**Read all of this leaflet carefully before you start taking this medicine because it contains important information for you.**

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor or pharmacist.
- This medicine has been prescribed for you only. Do not pass it on to others. It may harm them, even if their signs of illness are the same as yours.
- If you get any side effects, talk to your doctor or pharmacist. This includes any possible side effects not listed in this leaflet. See section 4.

#### **What is in this leaflet**

1. What INTELENCE is and what it is used for
2. What you need to know before you take INTELENCE
3. How to take INTELENCE
4. Possible side effects
5. How to store INTELENCE
6. Contents of the pack and other information

#### **1. What INTELENCE is and what it is used for**

INTELENCE contains the active substance etravirine. INTELENCE belongs to a group of anti-HIV medicines called non-nucleoside reverse transcriptase inhibitors (NNRTIs).

INTELENCE is a medicine used for the treatment of Human Immunodeficiency Virus (HIV) infection. INTELENCE works by reducing the amount of HIV in your body. This will improve your immune system and reduces the risk of developing illnesses linked to HIV infection.

INTELENCE is used in combination with other anti-HIV medicines to treat adults and children 6 years of age and older who are infected by HIV and who have used other anti-HIV medicines before.

Your doctor will discuss with you which combination of medicines is best for you.

#### **2. What you need to know before you take INTELENCE**

##### **Do not take INTELENCE**

- if you are allergic to etravirine or any of the other ingredients of this medicine (listed in section 6).

##### **Warnings and precautions**

Talk to your doctor or pharmacist before taking INTELENCE.

INTELENCE is not a cure for HIV infection. It is part of a treatment reducing the amount of virus in the blood. You can still pass on HIV when taking this medicine, although the risk is lowered by effective antiretroviral therapy. Discuss with your physician the precautions needed to avoid infecting other people.

People taking INTELENCE may still develop infections or other illnesses associated with HIV infection. You must keep in regular contact with your doctor.

### Older people

INTELENCE has only been used in a limited number of patients of 65 years or older. If you belong to this age group, please discuss the use of INTELENCE with your doctor.

### Bone problems

Some patients taking combination antiretroviral therapy may develop a bone disease called osteonecrosis (death of bone tissue caused by loss of blood supply to the bone). The length of combination antiretroviral therapy, corticosteroid use, alcohol consumption, severe immunosuppression, higher body mass index, among others, may be some of the many risk factors for developing this disease. Signs of osteonecrosis are joint stiffness, aches and pains (especially of the hip, knee and shoulder) and difficulty in movement. If you notice any of these symptoms please inform your doctor.

### Tell your doctor about your situation

Make sure that you check the following points and tell your doctor if any of these apply to you.

- Tell your doctor if you develop a **rash**. If a rash occurs, it usually appears soon after anti-HIV treatment with INTELENCE is started and often disappears within 1 to 2 weeks, even with continued use of the medicine. Occasionally, during INTELENCE treatment, you can experience hypersensitivity reaction (allergic reaction including rash and fever but also swelling of the face, tongue or throat, difficulty in breathing or swallowing) which could be potentially life-threatening. Please contact your doctor immediately if you get a hypersensitivity reaction. Your doctor will advise you how to deal with your symptoms and whether INTELENCE must be stopped. If you have stopped treatment due to a hypersensitivity reaction, you should not restart therapy with INTELENCE.
- Tell your doctor if you have or have had **problems with your liver**, including hepatitis B and/or C. Your doctor may evaluate how severe your liver disease is before deciding if you can take INTELENCE.
- Tell your doctor immediately if you notice any **symptoms of infections**. In some patients with advanced HIV infection and a history of opportunistic infection, signs and symptoms of inflammation from previous infections may occur soon after anti-HIV treatment is started. It is believed that these symptoms are due to an improvement in the body's immune response, enabling the body to fight infections that may have been present with no obvious symptoms.
- In addition to the opportunistic infections, autoimmune disorders (a condition that occurs when the immune system attacks healthy body tissue) may also occur after you start taking medicines for the treatment of your HIV infection. Autoimmune disorders may occur many months after the start of treatment. If you notice any symptoms of infection or other symptoms such as muscle weakness, weakness beginning in the hands and feet and moving up towards the trunk of the body, palpitations, tremor or hyperactivity, please inform your doctor immediately to seek necessary treatment.

### **Children and adolescents**

Do not give this medicine to children less than 6 years of age or weighing less than 16 kg because the potential benefits and risks have not yet been established.

### **Other medicines and INTELENCE**

INTELENCE might interact with other medicines. Tell your doctor or pharmacist if you are taking, have recently taken, or might take any other medicines.

In most cases, INTELENCE can be combined with anti-HIV medicines belonging to another class. However, some combinations are not recommended. In other cases, increased monitoring and/or a change in the dose of the medicine may be needed. Therefore, always tell your doctor which other anti-HIV medicines you take. Furthermore, it is important that you carefully read the package leaflets that are provided with these medicines. Follow your doctor's instruction carefully on which medicines can be combined.

### **It is not recommended to combine INTELENCE with any of the following medicines:**

- tipranavir/ritonavir (anti-HIV medicine)

- carbamazepine, phenobarbital, phenytoin (medicines to prevent seizures)
- rifampicin, because it is contraindicated with boosted protease inhibitors, and rifapentine (medicines to treat some infections such as tuberculosis)
- products that contain St John's wort (*Hypericum perforatum*) (a herbal product used for depression).

If you are taking any of these, ask your doctor for advice.

**The effects of INTELENCE or other medicines might be influenced** if you take INTELENCE together with any of the following medicines. Tell your doctor if you take:

- amiodarone, bepridil, digoxin, disopyramide, flecainide, lidocaine, mexiletine, propafenone and quinidine (medicines to treat certain heart disorders, e.g., abnormal heart beat)
- warfarin (a medicine used to reduce clotting of the blood). Your doctor will have to check your blood
- fluconazole, itraconazole, ketoconazole, posaconazole, voriconazole (medicines to treat fungal infections)
- clarithromycin, rifabutin (antibiotics)
- artemether/lumefantrine (a medicine to treat malaria)
- diazepam (medicines to treat trouble with sleeping and/or anxiety)
- dexamethasone (a corticosteroid used in a variety of conditions such as inflammation and allergic reactions)
- boceprevir (a medicine to treat hepatitis C virus infection)
- atorvastatin, fluvastatin, lovastatin, rosuvastatin, simvastatin (cholesterol-lowering medicines)
- cyclosporine, sirolimus, tacrolimus (immunosuppressants)
- sildenafil, vardenafil, tadalafil (medicines to treat erectile dysfunction and/or pulmonary arterial hypertension)
- clopidogrel (a medicine to prevent blood clots).

### **Pregnancy and breast-feeding**

Tell your doctor immediately if you are pregnant. Pregnant women should not take INTELENCE unless specifically directed by the doctor.

HIV infected mothers must not breast-feed, as there is a possibility of infecting the baby with HIV.

### **Driving and using machines**

Do not drive or operate machines if you feel sleepy or dizzy after taking your medicines.

## **3. How to take INTELENCE**

Always take this medicine exactly as your doctor or pharmacist has told you. Check with your doctor or pharmacist if you are not sure.

### **Use in adults**

The recommended dose of INTELENCE is one tablet twice a day.

In the morning, take one 200 milligram INTELENCE tablet, following a meal.

In the evening, take one 200 milligram INTELENCE tablet, following a meal.

### **Use in children and adolescents 6 years of age and older and weighing at least 16 kg**

The doctor will work out the right dose based on the weight of the child.

The doctor will inform you exactly how much INTELENCE the child should take.

Do not stop administering INTELENCE without talking to the child's doctor.

The other HIV medicines used in combination with INTELENCE should be taken by the child as recommended by the child's doctor.



### **Instructions for taking INTELENCE for all patients**

It is important that you take INTELENCE following a meal. If you take INTELENCE on an empty stomach, only half the amount of INTELENCE is absorbed. Follow your doctor's advice on the type of meal you should be taking with INTELENCE.

Swallow the INTELENCE tablet(s) whole with a glass of water. Do not chew the tablet(s).

- If you are unable to swallow the INTELENCE tablet(s) whole, you may do the following:
  - place the tablet(s) in 5 ml (1 teaspoon) of water, or at least enough liquid to cover the medicine,
  - stir well until the water looks milky,
  - if desired, add more water or alternatively orange juice or milk (do not place the tablets in orange juice or milk without first adding water),
  - drink it immediately,
  - rinse the glass several times with water, orange juice, or milk and completely swallow the rinse each time to make sure you take the entire dose.
- Do not use warm (> 40°C) or carbonated beverages when taking INTELENCE tablet(s).

### **Removing the child resistant cap**



The plastic bottle comes with a child resistant cap and should be opened as follows:

- Push the plastic screw cap down while turning it counter clockwise.
- Remove the unscrewed cap.

### **If you take more INTELENCE than you should**

Contact your doctor or pharmacist immediately. The most frequent side effects of INTELENCE are rash, diarrhoea, nausea, and headache (see section '4. Possible side effects').

### **If you forget to take INTELENCE**

If you notice **within 6 hours of the time you usually take INTELENCE**, you must take the tablet as soon as possible. Always take the tablet following a meal. Then take the next dose as usual. If you notice **after 6 hours**, then skip the intake and take the next doses as usual. Do not take a double dose to make up for a forgotten dose.

### **Do not stop taking INTELENCE without talking to your doctor first**

HIV therapy may increase your sense of well-being. Even if you feel better, do not stop taking INTELENCE or your other anti-HIV medicines. Doing so could increase the risk of the virus developing resistance. Talk to your doctor first.

If you have any further questions on the use of this medicine, ask your doctor or pharmacist.

## **4. Possible side effects**

During HIV therapy there may be an increase in weight and in levels of blood lipids and glucose. This is partly linked to restored health and life style, and in the case of blood lipids sometimes to the HIV medicines themselves. Your doctor will test for these changes.

Like all medicines, this medicine can cause side effects, although not everybody gets them.

The frequency rate of the side effects associated with INTELENCE is given below.

Very common side effects (may affect more than 1 in 10 people)

- skin rash. The rash is usually mild to moderate. In rare instances, very serious rash has been reported which can be potentially life-threatening. It is therefore important to contact your

doctor immediately if you develop a rash. Your doctor will advise you how to deal with your symptoms and whether INTELENCE must be stopped.

Common side effects (may affect up to 1 in 10 people)

- headache, tingling or pain in hands or feet, numbness, tiredness, sleeplessness, anxiety;
- diarrhoea, nausea, vomiting, heartburn, abdominal pain, inflammation of the stomach, flatulence;
- kidney failure, high blood pressure, heart attack, diabetes;
- night sweats.

Uncommon side effects (may affect up to 1 in 100 people)

- angina, irregular heart rhythm;
- loss of skin sensibility, drowsiness, trembling, fainting, sleepiness, loss of memory, seizures, stroke, disturbance in attention;
- blurred vision, dizziness, sluggishness;
- difficulty breathing;
- dry mouth, mouth inflammation, retching, constipation, distension of the abdomen, inflammation of the pancreas, vomiting blood, decrease of appetite;
- excessive sweating, itching, dry skin, swelling of the face and/or throat;
- allergic reactions (hypersensitivity), symptoms of infection (for example enlarged lymph nodes and fever);
- liver problems such as hepatitis;
- swelling of breasts in men;
- sleep disorders, abnormal dreams, confusion, disorientation, nervousness;

Not known (frequency cannot be estimated from the available data)

- severe hypersensitivity reactions characterised by rash accompanied by fever and organ inflammation such as hepatitis.

### **Reporting of side effects**

If you get any side effects, talk to your doctor or pharmacist. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the [national reporting system listed in Appendix V](#). By reporting side effects you can help provide more information on the safety of this medicine.

## **5. How to store INTELENCE**

Keep this medicine out of the sight and reach of children.

Do not use this medicine after the expiry date which is stated on the carton and on the bottle after EXP. The expiry date refers to the last day of that month.

INTELENCE tablets should be stored in the original bottle. Keep the bottle tightly closed in order to protect from moisture. The bottle contains 3 little pouches (desiccants) to keep the tablets dry. These pouches should stay in the bottle all the time and are not to be eaten.

Do not throw away any medicines via wastewater or household waste. Ask your pharmacist how to throw away medicines you no longer use. These measures will help protect the environment.

## **6. Contents of the pack and other information**

### **What INTELENCE contains**

- The active substance is etravirine. Each tablet of INTELENCE contains 200 mg of etravirine.
- The other ingredients are hypromellose, silicified microcrystalline cellulose, microcrystalline cellulose, colloidal anhydrous silica, croscarmellose sodium and magnesium stearate.

**What INTELENCE looks like and contents of the pack**

This medicinal product is presented as white to off-white, biconvex, oblong tablet with “T200” on one side.

A plastic bottle containing 60 tablets and 3 pouches to keep the tablets dry.

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