

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

## 1. NAME OF THE MEDICINAL PRODUCT

Resolor 1 mg film-coated tablets.

## 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each film-coated tablet contains 1 mg prucalopride (as succinate).

Excipients with known effect: Each film-coated tablet contains 142.5 mg lactose (as monohydrate).

For the full list of excipients, see section 6.1.

## 3. PHARMACEUTICAL FORM

Film-coated tablet (tablet).

White to off-white, round, biconvex tablets marked "PRU 1" on one side.

## 4. CLINICAL PARTICULARS

### 4.1 Therapeutic indications

Resolor is indicated for symptomatic treatment of chronic constipation in adults in whom laxatives fail to provide adequate relief.

### 4.2 Posology and method of administration

#### Posology

*Adults:* 2 mg once daily with or without food, at any time of the day.

Due to the specific mode of action of prucalopride (stimulation of propulsive motility), exceeding the daily dose of 2 mg is not expected to increase efficacy.

If the intake of once daily prucalopride is not effective after 4 weeks of treatment, the patient should be re-examined and the benefit of continuing treatment reconsidered.

The efficacy of prucalopride has been established in double-blind, placebo-controlled studies for up to 3 months. Efficacy beyond three months has not been demonstrated in placebo-controlled studies (see Section 5.1). In case of prolonged treatment, the benefit should be reassessed at regular intervals.

#### Special populations

*Older people (>65 years):* Start with 1 mg once daily (see section 5.2); if needed the dose can be increased to 2 mg once daily.

*Patients with renal impairment:* The dose for patients with severe renal impairment (GFR <30 ml/min/1.73 m<sup>2</sup>) is 1 mg once daily (see sections 4.3 and 5.2). No dose adjustment is required for patients with mild to moderate renal impairment.

*Patients with hepatic impairment:* Patients with severe hepatic impairment (Child-Pugh class C) start with 1 mg once daily which may be increased to 2 mg if required to improve efficacy and if the 1 mg dose is well tolerated (see sections 4.4 and 5.2). No dose adjustment is required for patients with mild to moderate hepatic impairment.

*Paediatric population:* Resolor should not be used in children and adolescents younger than 18 years (see section 5.1).

#### Method of administration

Oral use

### **4.3 Contraindications**

- Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.
- Renal impairment requiring dialysis.
- Intestinal perforation or obstruction due to structural or functional disorder of the gut wall, obstructive ileus, severe inflammatory conditions of the intestinal tract, such as Crohn's disease, and ulcerative colitis and toxic megacolon/megarectum.

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

Renal excretion is the main route of elimination of prucalopride (see section 5.2). A dose of 1 mg is recommended in subjects with severe renal impairment (see section 4.2).

Caution should be exercised when prescribing Resolor to patients with severe hepatic impairment (Child-Pugh class C) due to limited data in patients with severe hepatic impairment (see section 4.2).

There is limited information on the safety and efficacy of Resolor for use in patients with severe and clinically unstable concomitant disease (e.g. cardiovascular or lung disease, neurological or psychiatric disorders, cancer or AIDS and other endocrine disorders). Caution should be exercised when prescribing Resolor to patients with these conditions especially when used in patients with a history of arrhythmias or ischaemic cardiovascular disease.

In case of severe diarrhoea, the efficacy of oral contraceptives may be reduced and the use of an additional contraceptive method is recommended to prevent possible failure of oral contraception (see the prescribing information of the oral contraceptive).

The tablets contain lactose. Patients with rare hereditary problems of galactose intolerance, total lactase deficiency or glucose-galactose malabsorption should not take this medicine.

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

Prucalopride has a low pharmacokinetic interaction potential. It is extensively excreted unchanged in urine (approximately 60% of the dose) and *in vitro* metabolism is very slow.

Prucalopride did not inhibit specific CYP450 activities in *in vitro* studies in human liver microsomes at therapeutically relevant concentrations.

Although prucalopride may be a weak substrate for P-glycoprotein (P-gp), it is not an inhibitor of P-gp at clinically relevant concentrations.

#### Effects of prucalopride on pharmacokinetics of other medicinal products

A 30% increase in plasma concentrations of erythromycin was found during prucalopride co-administration. The mechanism for this interaction is not clear.

Prucalopride had no clinically relevant effects on the pharmacokinetics of warfarin, digoxin, alcohol, paroxetine or oral contraceptives.

#### Effects of other medicinal products on pharmacokinetics of prucalopride

Ketoconazole (200 mg twice daily), a potent inhibitor of CYP3A4 and of P-gp, increased the systemic exposure to prucalopride by approximately 40%. This effect is too small to be clinically relevant.

Interactions of similar magnitude may be expected with other potent inhibitors of P-gp such as verapamil, cyclosporine A and quinidine.

Therapeutic doses of probenecid, cimetidine, erythromycin and paroxetine did not affect the pharmacokinetics of prucalopride.

#### **4.6 Fertility, pregnancy and lactation**

##### Women of childbearing potential

Women of childbearing potential have to use effective contraception during treatment with prucalopride

##### Pregnancy

There is a limited amount of data from the use of prucalopride in pregnant women. Cases of spontaneous abortion have been observed during clinical studies, although, in the presence of other risk factors, the relationship to prucalopride is unknown. Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity (including pregnancy, embryonal/foetal development, parturition or postnatal development) (see section 5.3). Resolor is not recommended during pregnancy and in women of childbearing potential not using contraception.

##### Breast-feeding

A human study has shown that prucalopride is excreted in breast milk. At therapeutic doses of Resolor, no effects on breast-fed newborns/infants are anticipated. In the absence of human data in women who actively breast-fed while taking Resolor, a decision should be made whether to discontinue breast-feeding or to discontinue Resolor therapy taking into account the benefit of breast-feeding for the child and the benefit of therapy for the woman.

##### Fertility

Animal studies indicate that there is no effect on male or female fertility.

#### **4.7 Effects on ability to drive and use machines**

Resolor may have a minor influence on the ability to drive and use machines, since dizziness and fatigue have been observed in clinical studies, particularly during the first day of treatment (see section 4.8).

#### **4.8 Undesirable effects**

##### Summary of the safety profile

In an integrated analysis of 17 double-blind placebo-controlled studies, Resolor was given orally to approximately 3,300 patients with chronic constipation. Of these, over 1,500 patients received Resolor at the recommended dose of 2 mg per day, while approximately 1,360 patients were treated with 4 mg prucalopride daily. The most frequently reported adverse reactions associated with Resolor 2 mg therapy are headache (17.8%) and gastrointestinal symptoms (abdominal pain (13.7%), nausea (13.7%) and diarrhoea (12.0%)). The adverse reactions occur predominantly at the start of therapy and usually disappear within a few days with continued treatment. Other adverse reactions have been reported occasionally. The majority of adverse events were mild to moderate in intensity.

##### Tabulated list of adverse reactions

The following adverse reactions were reported in controlled clinical studies at the recommended dose of 2 mg with frequencies corresponding to very common ( $\geq 1/10$ ), common ( $\geq 1/100$  to  $< 1/10$ ), uncommon ( $\geq 1/1,000$  to  $< 1/100$ ), rare ( $\geq 1/10,000$  to  $< 1/1,000$ ), very rare ( $< 1/10,000$ ) and not known (cannot be estimated from the available data). Within each frequency grouping, undesirable effects are presented in order of decreasing seriousness. Frequencies are calculated based on the integrated analysis of 17 double-blind placebo-controlled clinical studies.

<b>Table 1: Adverse Drug Reactions (ADRs) Associated with Resolor</b>		
<b>System/Organ Class</b>	<b>Incidence Category</b>	<b>Adverse Drug Reaction</b>
Metabolism and nutrition disorders	Common	Decreased appetite
Nervous system disorders	Very common	Headache
	Common	Dizziness
	Uncommon	Tremors, migraine
Cardiac disorders	Uncommon	Palpitations
Ear and labyrinth disorders	Uncommon	Vertigo
Gastrointestinal disorders	Very common	Nausea, diarrhoea, abdominal pain
	Common	Vomiting, dyspepsia, flatulence, gastrointestinal sounds abnormal
	Uncommon	Rectal haemorrhage
Renal and urinary disorders	Uncommon	Pollakiuria
General disorders and administration site conditions	Common	Fatigue
	Uncommon	Pyrexia, malaise

#### Description of selected adverse reactions

After the first day of treatment, the most common adverse reactions were reported in similar frequencies (incidence no more than 1% different between prucalopride and placebo) during Resolor therapy as during placebo, with the exception of nausea and diarrhoea that still occurred more frequently during Resolor therapy, but less pronounced (differences in incidence between Resolor and placebo of 1.3% and 3.4%, respectively).

Palpitations were reported in 0.7% of the placebo patients, 0.9% of the 1 mg prucalopride patients, 0.9% of the 2 mg prucalopride patients and 1.9% of the 4 mg prucalopride patients. The majority of patients continued using prucalopride. As with any new symptom, patients should discuss the new onset of palpitations with their physician.

#### 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**

In a study in healthy volunteers, treatment with prucalopride was well tolerated when given in an up-titrating scheme up to 20 mg once daily (10 times the recommended therapeutic dose). An overdose may result in symptoms resulting from an exaggeration of prucalopride's known pharmacodynamic effects and include headache, nausea and diarrhoea. Specific treatment is not available for Resolor overdose. Should an overdose occur, the patient should be treated symptomatically and supportive measures instituted, as required. Extensive fluid loss by diarrhoea or vomiting may require correction of electrolyte disturbances.

## 5. PHARMACOLOGICAL PROPERTIES

### 5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Other drugs for constipation, ATC code: A06AX05.

#### Mechanism of action

Prucalopride is a dihydrobenzofurancarboxamide with gastrointestinal prokinetic activities. Prucalopride is a selective, high affinity serotonin (5-HT<sub>4</sub>) receptor agonist, which is likely to explain its prokinetic effects. *In vitro*, only at concentrations exceeding its 5-HT<sub>4</sub> receptor affinity by at least 150-fold, affinity for other receptors was detected. In rats, prucalopride *in vivo*, at doses above 5 mg/kg (at and above 30-70 times the clinical exposure), induced hyperprolactinaemia caused by an antagonistic action at the D2 receptor.

In dogs, prucalopride alters colonic motility patterns via serotonin 5-HT<sub>4</sub> receptor stimulation: it stimulates proximal colonic motility, enhances gastroduodenal motility and accelerates delayed gastric emptying. Furthermore, giant migrating contractions are induced by prucalopride. These are equivalent to the colonic mass movements in humans, and provide the main propulsive force to defaecation. In dogs, the effects observed in the gastrointestinal tract are sensitive to blockade with selective 5-HT<sub>4</sub> receptor antagonists illustrating that the observed effects are exerted via selective action on 5-HT<sub>4</sub> receptors.

These pharmacodynamic effects of prucalopride have been confirmed in human subjects with chronic constipation using manometry in an open-label, randomised, crossover, reader-blinded study investigating the effect of prucalopride 2 mg and an osmotic laxative on colon motility as determined by the number of colonic high-amplitude propagating contractions (HAPCs, also known as giant migrating contractions). Compared with a constipation treatment working through osmotic action, prokinetic stimulation with prucalopride increased colonic motility as measured by the number of HAPCs during the first 12 hours after intake of the investigational product. The clinical significance or benefit of this mechanism of action when compared with other laxatives has not been investigated.

#### Clinical efficacy and safety

##### Adult population

The efficacy of Resolor was established in three multicentre, randomised, double-blind, 12-week placebo-controlled studies in subjects with chronic constipation (n=1,279 on Resolor, 1,124 females, 155 males). The Resolor doses studied in each of these three studies included 2 mg and 4 mg once daily. The primary efficacy endpoint was the proportion (%) of subjects that reached normalisation of bowel movements defined as an average of three or more spontaneous, complete bowel movements (SCBM) per week over the 12-week treatment period.

The proportion of female patients in whom laxatives fail to provide adequate relief treated with the recommended dose of 2 mg Resolor (n=458) that reached an average of  $\geq 3$  SCBM per week was 31.0% (week 4) and 24.7% (week 12), versus 8.6% (week 4) and 9.2% (week 12) on placebo. A clinically meaningful improvement of  $\geq 1$  SCBM per week, the most important secondary efficacy endpoint, was achieved in 51.0% (week 4) and 44.2% (week 12) treated with 2 mg Resolor versus 21.7% (week 4) and 22.6% (week 12) of placebo patients.

The effect of Resolor on spontaneous bowel movements (SBM) also proved to be statistically superior to placebo for the portion of patients that had an increase of  $\geq 1$  SBM/week over the 12-week treatment period. At week 12, 68.3% of patients treated with 2 mg prucalopride had an average increase of  $\geq 1$  SBM/week versus 37.0% of placebo patients (p<0.001 vs placebo).

In all three studies, treatment with Resolor also resulted in significant improvements in a validated and disease specific set of symptom measures (PAC-SYM), including abdominal (bloating, discomfort, pain and cramps), stool (incomplete bowel movements, false alarm, straining, too hard, too small) and

rectal symptoms (painful bowel movements, burning, bleeding/tearing), determined at week 4 and week 12. At week 4, the proportion of patients with an improvement of  $\geq 1$  versus baseline in the PAC-SYM abdominal, stool, and rectal symptom subscales was 41.3%, 41.6%, and 31.3% respectively in patients treated with prucalopride 2 mg compared with 26.9%, 24.4% and 22.9% in patients on placebo. Similar results were observed at Week 12: 43.4%, 42.9%, and 31.7% respectively in 2 mg Resolor patients versus 26.9%, 27.2%, and 23.4% in placebo patients ( $p < 0.001$  vs placebo).

A significant benefit on a number of Quality of Life measures, such as degree of satisfaction with treatment and with bowel habits, physical and psychosocial discomfort and worries and concerns, was also observed at both the 4 and 12 week assessment time points. At Week 4, the proportion of patients with an improvement of  $\geq 1$  versus baseline in the Patient Assessment of Constipation-Quality of Life satisfaction subscale (PAC-QOL) was 47.7% in patients treated with Resolor 2 mg compared with 20.2% in patients on placebo. Similar results were observed at Week 12: 46.9% in 2 mg Resolor patients versus 19.0% in placebo patients ( $p < 0.001$  vs placebo).

In addition, the efficacy, safety and tolerability of Resolor in male patients with chronic constipation were evaluated in a 12-week, multi-centre, randomised, double-blind, placebo-controlled study (N=370). The primary endpoint of the study was met: a statistically significantly higher percentage of subjects in the Resolor group (37.9%) had an average of  $\geq 3$  SCBMs/week compared with subjects in the placebo treatment group (17.7%) ( $p < 0.0001$ ) over the 12-week double-blind treatment period. The safety profile of Resolor was consistent with that seen in female patients.

#### Long-term study

The efficacy and safety of Resolor in patients (aged  $\geq 18$  or older) with chronic constipation, were evaluated in a 24 week multicentre, randomised, double-blind, placebo controlled study (N=361). The proportion of patients with an average weekly frequency of  $\geq 3$  Spontaneous Complete Bowel Movements (SCBMs) per week (i.e., responders) over the 24-week double-blind treatment phase was not statistically different ( $p = 0.367$ ) between the Resolor (25.1%) and placebo (20.7%) treatment groups. The difference between treatment groups in the average weekly frequency of  $\geq 3$  SCBMs per week was not statistically significant over Weeks 1-12 which is inconsistent with the 5 other multicentre, randomised, double-blind, 12-week placebo controlled studies demonstrating efficacy at this timepoint in adult patients. The study is therefore considered to be inconclusive with respect to efficacy. However, the totality of the data including the other double-blind placebo controlled 12 week studies support the efficacy of Resolor. The safety profile of prucalopride in this 24 week study was consistent with that seen in the previous 12 week studies.

Resolor has been shown not to cause rebound phenomena, nor to induce dependency.

#### TQT study

A thorough QT study was performed to evaluate the effects of Resolor on the QT interval at therapeutic (2 mg) and suprathreshold doses (10 mg) and compared with the effects of placebo and a positive control. This study did not show significant differences between Resolor and placebo at either dose, based on mean QT measurements and outlier analysis. This confirmed the results of two placebo controlled QT studies. In double-blind clinical studies, the incidence of QT-related adverse events and ventricular arrhythmias was low and comparable to placebo.

#### Paediatric population

The efficacy and safety of Resolor in paediatric patients (aged 6 months to 18 years) with functional constipation, were evaluated in an 8-week double-blind, placebo-controlled trial (N=213), followed by a 16 week open-label comparator-controlled (Polyethylene glycol 4000) study of up to 24 weeks (N=197). The starting dose administered was 0.04 mg/kg/day titrated between 0.02 and 0.06 mg/kg/day (to a maximum of 2 mg daily) for children weighing  $\leq 50$  kg given as an oral solution of Resolor or matching placebo. Children weighing  $> 50$  kg received 2 mg/day Resolor tablets or matching placebo.

Response to the treatment was defined as having an average of  $\geq 3$  spontaneous bowel movements (SBMs) per week and an average number of faecal incontinence episodes of  $\leq 1$  per 2 weeks. The

results of the study showed no difference in efficacy between Resolor and placebo with response rates of 17% and 17.8% respectively ( $P=0.9002$ ). Resolor was generally well tolerated. The incidence of subjects with at least 1 treatment-emergent adverse event (TEAE) was similar between the Resolor treatment group (69.8%) and the placebo treatment group (60.7%). Overall, the safety profile of Resolor in children was the same as in adults.

## 5.2 Pharmacokinetic properties

### Absorption

Prucalopride is rapidly absorbed; after a single oral dose of 2 mg in healthy subjects,  $C_{max}$  was attained in 2-3 hours. The absolute oral bioavailability is >90%. Concomitant intake of food does not influence the oral bioavailability of prucalopride.

### Distribution

Prucalopride is extensively distributed, and has a steady-state volume of distribution ( $V_{d_{ss}}$ ) of 567 litres. The plasma protein binding of prucalopride is about 30%.

### Biotransformation

Metabolism is not the major route of elimination of prucalopride. *In vitro*, human liver metabolism is very slow and only minor amounts of metabolites are found. In an oral dose study with radiolabelled prucalopride in man, small amounts of seven metabolites were recovered in urine and faeces. The quantitatively most important metabolite in excreta, R107504, accounted for 3.2% and 3.1% of the dose in urine and faeces, respectively. Other metabolites identified and quantified in urine and faeces were R084536 (formed by N-dealkylation) accounting for 3% of the dose and products of hydroxylation (3% of the dose) and N-oxidation (2% of the dose). Unchanged active substance made up about 92-94% of the total radioactivity in plasma. R107504, R084536 and R104065 (formed by O-demethylation) were identified as minor plasma metabolites.

### Elimination

A large fraction of the active substance is excreted unchanged (60-65% of the administered dose in urine and about 5% in faeces). Renal excretion of unchanged prucalopride involves both passive filtration and active secretion. The plasma clearance of prucalopride averages 317 ml/min. Its terminal half-life is about one day. Steady-state is reached within three to four days. On once daily treatment with 2 mg prucalopride, steady-state plasma concentrations fluctuate between trough and peak values of 2.5 and 7 ng/ml, respectively. The accumulation ratio after once daily dosing ranged from 1.9 to 2.3. The pharmacokinetics of prucalopride is dose-proportional within and beyond the therapeutic range (tested up to 20 mg). Prucalopride o.d. displays time-independent kinetics during prolonged treatment.

### Special populations

#### Population pharmacokinetics

A population pharmacokinetic analysis showed that the apparent total clearance of prucalopride was correlated with creatinine clearance, but that age, body weight, sex or race had no influence.

#### Older people

After once daily dosing of 1 mg, peak plasma concentrations and AUC of prucalopride in older people were 26% to 28% higher than in young adults. This effect can be attributed to a diminished renal function in older people.

#### Renal impairment

Compared to subjects with normal renal function, plasma concentrations of prucalopride after a single 2 mg dose were on average 25% and 51% higher in subjects with mild ( $Cl_{CR}$  50-79 ml/min) and moderate ( $Cl_{CR}$  25-49 ml/min) renal impairment, respectively. In subjects with severe renal impairment ( $Cl_{CR} \leq 24$  ml/min), plasma concentrations were 2.3 times the levels in healthy subjects (see section 4.2 and 4.4).

### Hepatic impairment

Non-renal elimination contributes to about 35% of total elimination. In a small pharmacokinetic study, the  $C_{max}$  and AUC of prucalopride were, on average, 10-20% higher in patients with moderate to severe hepatic impairment compared with healthy subjects (see sections 4.2 and 4.4).

### **5.3 Preclinical safety data**

Non-clinical data reveal no special hazard for humans based on conventional studies of safety pharmacology, repeated dose toxicity, genotoxicity, carcinogenic potential, and toxicity to reproduction and development. An extended series of safety pharmacology studies with special emphasis on cardiovascular parameters showed no relevant changes in haemodynamic and ECG derived parameters (QTc) with the exception of a modest increase in heart rate and blood pressure observed in anaesthetised pigs after intravenous administration, and an increase in blood pressure in conscious dogs after bolus intravenous administration, which was not observed either in anaesthetised dogs or after oral administration in dogs reaching similar plasma levels. A subcutaneous neonatal/juvenile toxicity study performed in rats 7-55 days of age resulted in a NOAEL of 10 mg/kg/day. The  $AUC_{0-24h}$  exposure ratios at the NOAEL versus human children (dosed at approximately 0.04 mg/kg daily) ranged between 21 and 71 providing adequate safety margins for the clinical dose.

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

#### Tablet core

Lactose monohydrate  
Microcrystalline cellulose  
Colloidal silicon dioxide  
Magnesium stearate

#### Tablet coating

Hypromellose  
Lactose monohydrate  
Triacetin  
Titanium dioxide (E171)  
Macrogol

### **6.2 Incompatibilities**

Not applicable.

### **6.3 Shelf life**

4 years.

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

Store in the original blister in order to protect from moisture.

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

Aluminium/aluminium perforated unit dose blisters (calendar marked) containing 7 tablets. Each pack contains 7 x 1, 14 x 1, 28 x 1 or 84 x 1 film-coated tablet.

Not all pack sizes may be marketed.

## **6.6 Special precautions for disposal**

No special requirements.

## **7. MARKETING AUTHORISATION HOLDER**

Takeda Pharmaceuticals International AG Ireland Branch  
Block 2 Miesian Plaza  
50-58 Baggot Street Lower  
Dublin 2  
D02 HW68  
Ireland  
medinfoEMEA@takeda.com

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

EU/1/09/581/001 (28 tablets)  
EU/1/09/581/003 (7 tablets)  
EU/1/09/581/005 (14 tablets)  
EU/1/09/581/007 (84 tablets)

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

Date of first authorisation: 15 October 2009  
Date of latest renewal: 06 June 2014

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

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

## 1. NAME OF THE MEDICINAL PRODUCT

Resolor 2 mg film-coated tablets

## 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each film-coated tablet contains 2 mg prucalopride (as succinate).

Excipients with known effect:

Each film-coated tablet contains 156.75 mg lactose (as monohydrate).

For the full list of excipients, see section 6.1.

## 3. PHARMACEUTICAL FORM

Film-coated tablet (tablet).

Pink, round, biconvex tablets marked "PRU 2" on one side.

## 4. CLINICAL PARTICULARS

### 4.1 Therapeutic indications

Resolor is indicated for symptomatic treatment of chronic constipation in adults in whom laxatives fail to provide adequate relief.

### 4.2 Posology and method of administration

#### Posology

*Adults:* 2 mg once daily with or without food, at any time of day.

Due to the specific mode of action of prucalopride (stimulation of propulsive motility), exceeding the daily dose of 2 mg is not expected to increase efficacy.

If the intake of once daily prucalopride is not effective after 4 weeks of treatment, the patient should be re-examined and the benefit of continuing treatment reconsidered.

The efficacy of prucalopride has been established in double-blind, placebo-controlled studies for up to 3 months. Efficacy beyond three months has not been demonstrated in placebo-controlled studies (see Section 5.1). In case of prolonged treatment, the benefit should be reassessed at regular intervals.

#### Special populations

*Older people (>65 years):* Start with 1 mg once daily (see section 5.2); if needed the dose can be increased to 2 mg once daily.

*Patients with renal impairment:* The dose for patients with severe renal impairment (GFR <30 ml/min/1.73 m<sup>2</sup>) is 1 mg once daily (see sections 4.3 and 5.2). No dose adjustment is required for patients with mild to moderate renal impairment.

*Patients with hepatic impairment:* Patients with severe hepatic impairment (Child-Pugh class C) start with 1 mg once daily which may be increased to 2 mg if required to improve efficacy and if the 1 mg dose is well tolerated (see sections 4.4 and 5.2). No dose adjustment is required for patients with mild to moderate hepatic impairment.

*Paediatric population:* Resolor should not be used in children and adolescents younger than 18 years (see section 5.1).

## Method of administration

Oral use

### **4.3 Contraindications**

- Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.
- Renal impairment requiring dialysis.
- Intestinal perforation or obstruction due to structural or functional disorder of the gut wall, obstructive ileus, severe inflammatory conditions of the intestinal tract, such as Crohn's disease, and ulcerative colitis and toxic megacolon/megarectum.

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Renal excretion is the main route of elimination of prucalopride (see section 5.2). A dose of 1 mg is recommended in subjects with severe renal impairment (see section 4.2).

Caution should be exercised when prescribing Resolor to patients with severe hepatic impairment (Child-Pugh class C) due to limited data in patients with severe hepatic impairment (see section 4.2).

There is limited information on the safety and efficacy of Resolor for use in patients with severe and clinically unstable concomitant disease (e.g. cardiovascular or lung disease, neurological or psychiatric disorders, cancer or AIDS and other endocrine disorders). Caution should be exercised when prescribing Resolor to patients with these conditions especially when used in patients with a history of arrhythmias or ischaemic cardiovascular disease.

In case of severe diarrhoea, the efficacy of oral contraceptives may be reduced and the use of an additional contraceptive method is recommended to prevent possible failure of oral contraception (see the prescribing information of the oral contraceptive).

The tablets contain lactose. Patients with rare hereditary problems of galactose intolerance, total lactase deficiency or glucose-galactose malabsorption should not take this medicine.

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

Prucalopride has a low pharmacokinetic interaction potential. It is extensively excreted unchanged in urine (approximately 60% of the dose) and *in vitro* metabolism is very slow.

Prucalopride did not inhibit specific CYP450 activities in *in vitro* studies in human liver microsomes at therapeutically relevant concentrations.

Although prucalopride may be a weak substrate for P-glycoprotein (P-gp), it is not an inhibitor of P-gp at clinically relevant concentrations.

#### Effects of prucalopride on pharmacokinetics of other medicinal products

A 30% increase in plasma concentrations of erythromycin was found during prucalopride co-administration. The mechanism for this interaction is not clear.

Prucalopride had no clinically relevant effects on the pharmacokinetics of warfarin, digoxin, alcohol, paroxetine or oral contraceptives.

#### Effects of other medicinal products on pharmacokinetics of prucalopride

Ketoconazole (200 mg twice daily), a potent inhibitor of CYP3A4 and of P-gp, increased the systemic exposure to prucalopride by approximately 40%. This effect is too small to be clinically relevant. Interactions of similar magnitude may be expected with other potent inhibitors of P-gp such as verapamil, cyclosporine A and quinidine.

Therapeutic doses of probenecid, cimetidine, erythromycin and paroxetine did not affect the pharmacokinetics of prucalopride.

#### **4.6 Fertility, pregnancy and lactation**

##### Women of childbearing potential

Women of childbearing potential have to use effective contraception during treatment with prucalopride

##### Pregnancy

There is a limited amount of data from the use of prucalopride in pregnant women. Cases of spontaneous abortion have been observed during clinical studies, although, in the presence of other risk factors, the relationship to prucalopride is unknown. Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity (including pregnancy, embryonal/foetal development, parturition or postnatal development) (see section 5.3). Resolor is not recommended during pregnancy and in women of childbearing potential not using contraception.

##### Breast-feeding

A human study has shown that prucalopride is excreted in breast milk. At therapeutic doses of Resolor, no effects on breast-fed newborns/infants are anticipated. In the absence of human data in women who actively breast-fed while taking Resolor, a decision should be made whether to discontinue breast-feeding or to discontinue Resolor therapy taking into account the benefit of breast-feeding for the child and the benefit of therapy for the woman.

##### Fertility

Animal studies indicate that there is no effect on male or female fertility.

#### **4.7 Effects on ability to drive and use machines**

Resolor may have a minor influence on the ability to drive and use machines, since dizziness and fatigue have been observed in clinical studies, particularly during the first day of treatment (see section 4.8).

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In an integrated analysis of 17 double-blind placebo-controlled studies, Resolor was given orally to approximately 3,300 patients with chronic constipation. Of these, over 1,500 patients received Resolor at the recommended dose of 2 mg per day, while approximately 1,360 patients were treated with 4 mg prucalopride daily. The most frequently reported adverse reactions associated with Resolor 2 mg therapy are headache (17.8%) and gastrointestinal symptoms (abdominal pain (13.7%), nausea (13.7%) and diarrhoea (12.0%)). The adverse reactions occur predominantly at the start of therapy and usually disappear within a few days with continued treatment. Other adverse reactions have been reported occasionally. The majority of adverse events were mild to moderate in intensity.

##### Tabulated list of adverse reactions

The following adverse reactions were reported in controlled clinical studies at the recommended dose of 2 mg with frequencies corresponding to very common ( $\geq 1/10$ ), common ( $\geq 1/100$  to  $< 1/10$ ), uncommon ( $\geq 1/1,000$  to  $< 1/100$ ), rare ( $\geq 1/10,000$  to  $< 1/1,000$ ) and very rare ( $< 1/10,000$ ) and not known (cannot be estimated from available data). Within each frequency grouping, undesirable effects are presented in order of decreasing seriousness. Frequencies are calculated based on the integrated analysis of 17 double-blind placebo-controlled clinical studies.

<b>Table 1: Adverse Drug Reactions (ADRs) Associated with Resolor</b>		
<b>System/Organ Class</b>	<b>Incidence Category</b>	<b>Adverse Drug Reaction</b>
Metabolism and nutrition disorders	Common	Decreased appetite
Nervous system disorders	Very common	Headache
	Common	Dizziness
	Uncommon	Tremors, migraine
Cardiac disorders	Uncommon	Palpitations
Ear and labyrinth disorders	Uncommon	Vertigo
Gastrointestinal disorders	Very common	Nausea, diarrhoea, abdominal pain
	Common	Vomiting, dyspepsia, flatulence, gastrointestinal sounds abnormal
	Uncommon	Rectal haemorrhage
Renal and urinary disorders	Uncommon	Pollakiuria
General disorders and administration site conditions	Common	Fatigue
	Uncommon	Pyrexia, malaise

#### Description of selected adverse reactions

After the first day of treatment, the most common adverse reactions were reported in similar frequencies (incidence no more than 1% different between prucalopride and placebo) during Resolor therapy as during placebo, with the exception of nausea and diarrhoea that still occurred more frequently during Resolor therapy, but less pronounced (differences in incidence between Resolor and placebo of 1.3% and 3.4%, respectively).

Palpitations were reported in 0.7% of the placebo patients, 0.9% of the 1 mg prucalopride patients, 0.9% of the 2 mg prucalopride patients and 1.9% of the 4 mg prucalopride patients. The majority of patients continued using prucalopride. As with any new symptom, patients should discuss the new onset of palpitations with their physician.

#### 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**

In a study in healthy volunteers, treatment with prucalopride was well tolerated when given in an up-titrating scheme up to 20 mg once daily (10 times the recommended therapeutic dose). An overdose may result in symptoms resulting from an exaggeration of prucalopride's known pharmacodynamic effects and include headache, nausea and diarrhoea. Specific treatment is not available for Resolor overdose. Should an overdose occur, the patient should be treated symptomatically and supportive measures instituted, as required. Extensive fluid loss by diarrhoea or vomiting may require correction of electrolyte disturbances.

## 5. PHARMACOLOGICAL PROPERTIES

### 5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Other drugs for constipation, ATC code: A06AX05.

#### Mechanism of action

Prucalopride is a dihydrobenzofurancarboxamide with gastrointestinal prokinetic activities. Prucalopride is a selective, high affinity serotonin (5-HT<sub>4</sub>) receptor agonist, which is likely to explain its prokinetic effects. *In vitro*, only at concentrations exceeding its 5-HT<sub>4</sub> receptor affinity by at least 150-fold, affinity for other receptors was detected. In rats, prucalopride *in vivo*, at doses above 5 mg/kg (at and above 30-70 times the clinical exposure), induced hyperprolactinaemia caused by an antagonistic action at the D2 receptor.

In dogs, prucalopride alters colonic motility patterns via serotonin 5-HT<sub>4</sub> receptor stimulation: it stimulates proximal colonic motility, enhances gastroduodenal motility and accelerates delayed gastric emptying. Furthermore, giant migrating contractions are induced by prucalopride. These are equivalent to the colonic mass movements in humans, and provide the main propulsive force to defaecation. In dogs, the effects observed in the gastrointestinal tract are sensitive to blockade with selective 5-HT<sub>4</sub> receptor antagonists illustrating that the observed effects are exerted via selective action on 5-HT<sub>4</sub> receptors.

These pharmacodynamic effects of prucalopride have been confirmed in human subjects with chronic constipation using manometry in an open-label, randomised, crossover, reader-blinded study investigating the effect of prucalopride 2 mg and an osmotic laxative on colon motility as determined by the number of colonic high-amplitude propagating contractions (HAPCs, also known as giant migrating contractions). Compared with a constipation treatment working through osmotic action, prokinetic stimulation with prucalopride increased colonic motility as measured by the number of HAPCs during the first 12 hours after intake of the investigational product. The clinical significance or benefit of this mechanism of action when compared with other laxatives has not been investigated.

#### Clinical efficacy and safety

##### Adult population

The efficacy of Resolor was established in three multicentre, randomised, double-blind, 12-week placebo-controlled studies in subjects with chronic constipation (n=1,279 on Resolor, 1,124 females, 155 males). The Resolor doses studied in each of these three studies included 2 mg and 4 mg once daily. The primary efficacy endpoint was the proportion (%) of subjects that reached normalisation of bowel movements defined as an average of three or more spontaneous, complete bowel movements (SCBM) per week over the 12-week treatment period.

The proportion of female patients in whom laxatives fail to provide adequate relief treated with the recommended dose of 2 mg Resolor (n=458) that reached an average of  $\geq 3$  SCBM per week was 31.0% (week 4) and 24.7% (week 12), versus 8.6% (week 4) and 9.2% (week 12) on placebo. A clinically meaningful improvement of  $\geq 1$  SCBM per week, the most important secondary efficacy endpoint, was achieved in 51.0% (week 4) and 44.2% (week 12) treated with 2 mg Resolor versus 21.7% (week 4) and 22.6% (week 12) of placebo patients.

The effect of Resolor on spontaneous bowel movements (SBM) also proved to be statistically superior to placebo for the portion of patients that had an increase of  $\geq 1$  SBM/week over the 12-week treatment period. At week 12, 68.3% of patients treated with 2 mg Resolor had an average increase of  $\geq 1$  SBM/week versus 37.0% of placebo patients (p<0.001 vs placebo).

In all three studies, treatment with Resolor also resulted in significant improvements in a validated and disease specific set of symptom measures (PAC-SYM), including abdominal (bloating, discomfort, pain and cramps), stool (incomplete bowel movements, false alarm, straining, too hard, too small) and

rectal symptoms (painful bowel movements, burning, bleeding/tearing), determined at week 4 and week 12. At week 4, the proportion of patients with an improvement of  $\geq 1$  versus baseline in the PAC-SYM abdominal, stool, and rectal symptom subscales was 41.3%, 41.6%, and 31.3% respectively in patients treated with Resolor 2 mg compared with 26.9%, 24.4% and 22.9% in patients on placebo. Similar results were observed at Week 12: 43.4%, 42.9%, and 31.7% respectively in 2 mg Resolor patients versus 26.9%, 27.2%, and 23.4% in placebo patients ( $p < 0.001$  vs placebo).

A significant benefit on a number of Quality of Life measures, such as degree of satisfaction with treatment and with bowel habits, physical and psychosocial discomfort and worries and concerns, was also observed at both the 4 and 12 week assessment time points. At Week 4, the proportion of patients with an improvement of  $\geq 1$  versus baseline in the Patient Assessment of Constipation-Quality of Life satisfaction subscale (PAC-QOL) was 47.7% in patients treated with Resolor 2 mg compared with 20.2% in patients on placebo. Similar results were observed at Week 12: 46.9% in 2 mg Resolor patients versus 19.0% in placebo patients ( $p < 0.001$  vs placebo).

In addition, the efficacy, safety and tolerability of Resolor in male patients with chronic constipation were evaluated in a 12-week, multi-centre, randomised, double-blind, placebo-controlled study (N=370). The primary endpoint of the study was met: a statistically significantly higher percentage of subjects in the Resolor group (37.9%) had an average of  $\geq 3$  SCBMs/week compared with subjects in the placebo treatment group (17.7%) ( $p < 0.0001$ ) over the 12-week double-blind treatment period. The safety profile of Resolor was consistent with that seen in female patients.

#### Long-term study

The efficacy and safety of Resolor in patients (aged  $\geq 18$  or older) with chronic constipation, were evaluated in a 24 week multicentre, randomised, double-blind, placebo controlled study (N=361). The proportion of patients with an average weekly frequency of  $\geq 3$  Spontaneous Complete Bowel Movements (SCBMs) per week (i.e., responders) over the 24-week double-blind treatment phase was not statistically different ( $p = 0.367$ ) between the prucalopride (25.1%) and placebo (20.7%) treatment groups. The difference between treatment groups in the average weekly frequency of  $\geq 3$  SCBMs per week was not statistically significant over Weeks 1-12 which is inconsistent with the 5 other multicentre, randomised, double-blind, 12-week placebo controlled studies demonstrating efficacy at this timepoint in adult patients. The study is therefore considered to be inconclusive with respect to efficacy. However, the totality of the data including the other double-blind placebo controlled 12 week studies support the efficacy of Resolor. The safety profile of Resolor in this 24 week study was consistent with that seen in the previous 12 week studies.

Resolor has been shown not to cause rebound phenomena, nor to induce dependency.

#### TQT study

A thorough QT study was performed to evaluate the effects of Resolor on the QT interval at therapeutic (2 mg) and suprathreshold doses (10 mg) and compared with the effects of placebo and a positive control. This study did not show significant differences between Resolor and placebo at either dose, based on mean QT measurements and outlier analysis. This confirmed the results of two placebo controlled QT studies. In double-blind clinical studies, the incidence of QT-related adverse events and ventricular arrhythmias was low and comparable to placebo.

#### Paediatric population

The efficacy and safety of Resolor in paediatric patients (aged 6 months to 18 years) with functional constipation, were evaluated in an 8-week double-blind, placebo-controlled trial (N=213), followed by a 16 week open-label comparator-controlled (Polyethylene glycol 4000) study of up to 24 weeks (N=197). The starting dose administered was 0.04 mg/kg/day titrated between 0.02 and 0.06 mg/kg/day (to a maximum of 2 mg daily) for children weighing  $\leq 50$  kg given as an oral solution of Resolor or matching placebo. Children weighing  $> 50$  kg received 2 mg/day Resolor tablets or matching placebo.

Response to the treatment was defined as having an average of  $\geq 3$  spontaneous bowel movements (SBMs) per week and an average number of faecal incontinence episodes of  $\leq 1$  per 2 weeks. The

results of the study showed no difference in efficacy between Resolor and placebo with response rates of 17% and 17.8% respectively ( $P=0.9002$ ). Resolor was generally well tolerated. The incidence of subjects with at least 1 treatment-emergent adverse event (TEAE) was similar between the Resolor treatment group (69.8%) and the placebo treatment group (60.7%). Overall, the safety profile of Resolor in children was the same as in adults.

## 5.2 Pharmacokinetic properties

### Absorption

Prucalopride is rapidly absorbed; after a single oral dose of 2 mg in healthy subjects,  $C_{max}$  was attained in 2-3 hours. The absolute oral bioavailability is >90%. Concomitant intake of food does not influence the oral bioavailability of prucalopride.

### Distribution

Prucalopride is extensively distributed, and has a steady-state volume of distribution ( $V_{d_{ss}}$ ) of 567 litres. The plasma protein binding of prucalopride is about 30%.

### Biotransformation

Metabolism is not the major route of elimination of prucalopride. *In vitro*, human liver metabolism is very slow and only minor amounts of metabolites are found. In an oral dose study with radiolabelled prucalopride in man, small amounts of seven metabolites were recovered in urine and faeces. The quantitatively most important metabolite in excreta, R107504, accounted for 3.2% and 3.1% of the dose in urine and faeces, respectively. Other metabolites identified and quantified in urine and faeces were R084536 (formed by N-dealkylation) accounting for 3% of the dose and products of hydroxylation (3% of the dose) and N-oxidation (2% of the dose). Unchanged active substance made up about 92-94% of the total radioactivity in plasma. R107504, R084536 and R104065 (formed by O-demethylation) were identified as minor plasma metabolites.

### Elimination

A large fraction of the active substance is excreted unchanged (60-65% of the administered dose in urine and about 5% in faeces). Renal excretion of unchanged prucalopride involves both passive filtration and active secretion. The plasma clearance of prucalopride averages 317 ml/min. Its terminal half-life is about one day. Steady-state is reached within three to four days. On once daily treatment with 2 mg prucalopride, steady-state plasma concentrations fluctuate between trough and peak values of 2.5 and 7 ng/ml, respectively. The accumulation ratio after once daily dosing ranged from 1.9 to 2.3. The pharmacokinetics of prucalopride is dose-proportional within and beyond the therapeutic range (tested up to 20 mg). Prucalopride o.d. displays time-independent kinetics during prolonged treatment.

### Special populations

#### Population pharmacokinetics

A population pharmacokinetic analysis showed that the apparent total clearance of prucalopride was correlated with creatinine clearance, but that age, body weight, sex or race had no influence.

#### Older people

After once daily dosing of 1 mg, peak plasma concentrations and AUC of prucalopride in older people were 26% to 28% higher than in young adults. This effect can be attributed to a diminished renal function in older people.

#### Renal impairment

Compared to subjects with normal renal function, plasma concentrations of prucalopride after a single 2 mg dose were on average 25% and 51% higher in subjects with mild ( $Cl_{CR}$  50-79 ml/min) and moderate ( $Cl_{CR}$  25-49 ml/min) renal impairment, respectively. In subjects with severe renal impairment ( $Cl_{CR} \leq 24$  ml/min), plasma concentrations were 2.3 times the levels in healthy subjects (see section 4.2 and 4.4).

### Hepatic impairment

Non-renal elimination contributes to about 35% of total elimination. In a small pharmacokinetic study, the  $C_{max}$  and AUC of prucalopride were, on average, 10-20% higher in patients with moderate to severe hepatic impairment compared with healthy subjects (see sections 4.2 and 4.4).

### **5.3 Preclinical safety data**

Non-clinical data reveal no special hazard for humans based on conventional studies of safety pharmacology, repeated dose toxicity, genotoxicity, carcinogenic potential, and toxicity to reproduction and development. An extended series of safety pharmacology studies with special emphasis on cardiovascular parameters showed no relevant changes in haemodynamic and ECG derived parameters (QTc) with the exception of a modest increase in heart rate and blood pressure observed in anaesthetised pigs after intravenous administration, and an increase in blood pressure in conscious dogs after bolus intravenous administration, which was not observed either in anaesthetised dogs or after oral administration in dogs reaching similar plasma levels. A subcutaneous neonatal/juvenile toxicity study performed in rats 7-55 days of age resulted in a NOAEL of 10 mg/kg/day. The  $AUC_{0-24h}$  exposure ratios at the NOAEL versus human children (dosed at approximately 0.04 mg/kg daily) ranged between 21 and 71 providing adequate safety margins for the clinical dose.

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

#### Tablet core

Lactose monohydrate  
Microcrystalline cellulose  
Colloidal silicon dioxide  
Magnesium stearate

#### Tablet coating

Hypromellose  
Lactose monohydrate  
Triacetin  
Titanium dioxide (E171)  
Macrogol  
Iron oxide red (E172)  
Iron oxide yellow (E172)  
Indigo carmine aluminium lake (E132)

### **6.2 Incompatibilities**

Not applicable.

### **6.3 Shelf life**

4 years.

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

Store in the original blister in order to protect from moisture.

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

Aluminium/aluminium perforated unit dose blisters (calendar marked) containing 7 tablets. Each pack contains 7 x 1, 14 x 1, 28 x 1 or 84 x 1 film-coated tablet.

Not all pack sizes may be marketed.

## **6.6 Special precautions for disposal**

No special requirements.

## **7. MARKETING AUTHORISATION HOLDER**

Takeda Pharmaceuticals International AG Ireland Branch  
Block 2 Miesian Plaza  
50-58 Baggot Street Lower  
Dublin 2  
D02 HW68  
Ireland  
medinfoEMEA@takeda.com

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

EU/1/09/581/002 (28 tablets)  
EU/1/09/581/004 (7 tablets)  
EU/1/09/581/006 (14 tablets)  
EU/1/09/581/008 (84 tablets)

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

Date of first authorisation: 15 October 2009  
Date of latest renewal: 06 June 2014

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

Detailed information on this medicinal product 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(s) responsible for batch release

Sanico N.V.  
Veedijk 59  
B-2300 Turnhout  
Belgium

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

Medicinal product subject to medical prescription.

## **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 shall be submitted annually until renewal.

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**

**CARTON**

**1. NAME OF THE MEDICINAL PRODUCT**

Resolor 1 mg film-coated tablets  
prucalopride

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

Each film-coated tablet contains 1 mg prucalopride (as succinate)

**3. LIST OF EXCIPIENTS**

Contains lactose. See leaflet for further information.

**4. PHARMACEUTICAL FORM AND CONTENTS**

7 x 1 film-coated tablets  
14 x 1 film-coated tablets  
28 x 1 film-coated tablets  
84 x 1 film-coated tablets

**5. METHOD AND ROUTE(S) 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 blister 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**

Takeda Pharmaceuticals International AG Ireland Branch  
Block 2 Miesian Plaza  
50-58 Baggot Street Lower  
Dublin 2  
D02 HW68  
Ireland

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

EU/1/09/581/003 (7 tablets)  
EU/1/09/581/005 (14 tablets)  
EU/1/09/581/001 (28 tablets)  
EU/1/09/581/007 (84 tablets)

**13. BATCH NUMBER**

Lot

**14. GENERAL CLASSIFICATION FOR SUPPLY**

Medicinal product subject to medical prescription.

**15. INSTRUCTIONS ON USE**

**16. INFORMATION IN BRAILLE**

Resolor 1 mg

**17. UNIQUE IDENTIFIER – 2D BARCODE**

2D barcode carrying the unique identifier included.

**18. UNIQUE IDENTIFIER - HUMAN READABLE DATA**

PC  
SN  
NN

**PARTICULARS TO APPEAR ON THE OUTER PACKAGING**

**CARTON**

**1. NAME OF THE MEDICINAL PRODUCT**

Resolor 2 mg film-coated tablets  
prucalopride

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

Each film-coated tablet contains 2 mg prucalopride (as succinate)

**3. LIST OF EXCIPIENTS**

Contains lactose. See leaflet for further information.

**4. PHARMACEUTICAL FORM AND CONTENTS**

7 x 1 film-coated tablets  
14 x 1 film-coated tablets  
28 x 1 film-coated tablets  
84 x 1 film-coated tablets

**5. METHOD AND ROUTE(S) OF ADMINISTRATION**

Oral use.  
Read the package leaflet before 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 blister 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**

Takeda Pharmaceuticals International AG Ireland Branch  
Block 2 Miesian Plaza  
50-58 Baggot Street Lower  
Dublin 2  
D02 HW68  
Ireland

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

EU/1/09/581/004 (7 tablets)  
EU/1/09/581/006 (14 tablets)  
EU/1/09/581/002 (28 tablets)  
EU/1/09/581/008 (84 tablets)

**13. BATCH NUMBER**

Lot

**14. GENERAL CLASSIFICATION FOR SUPPLY**

Medicinal product subject to medical prescription.

**15. INSTRUCTIONS ON USE**

**16. INFORMATION IN BRAILLE**

Resolor 2 mg

**17. UNIQUE IDENTIFIER – 2D BARCODE**

2D barcode carrying the unique identifier included.

**18. UNIQUE IDENTIFIER - HUMAN READABLE DATA**

PC  
SN  
NN

**MINIMUM PARTICULARS TO APPEAR ON BLISTERS OR STRIPS**

**BLISTER**

**1. NAME OF THE MEDICINAL PRODUCT**

Resolor 1 mg tablets  
prucalopride

**2. NAME OF THE MARKETING AUTHORISATION HOLDER**

Takeda Pharmaceuticals International AG Ireland Branch

**3. EXPIRY DATE**

EXP:

**4. BATCH NUMBER**

Lot:

**5. OTHER**

Mon Tue Wed Thu Fri Sat Sun

**MINIMUM PARTICULARS TO APPEAR ON BLISTERS OR STRIPS**

**BLISTER**

**1. NAME OF THE MEDICINAL PRODUCT**

Resolor 2 mg tablets  
prucalopride

**2. NAME OF THE MARKETING AUTHORISATION HOLDER**

Takeda Pharmaceuticals International AG Ireland Branch

**3. EXPIRY DATE**

EXP:

**4. BATCH NUMBER**

Lot:

**5. OTHER**

Mon Tue Wed Thu Fri Sat Sun

**B. PACKAGE LEAFLET**

## Package leaflet: Information for the user

### Resolor 1 mg film-coated tablets Resolor 2 mg film-coated tablets prucalopride

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

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

Resolor contains the active substance prucalopride.

Resolor belongs to a group of gut motility enhancing medicines (gastrointestinal prokinetics). It acts on the muscle wall of the gut, helping to restore the normal functioning of the bowel. Resolor is used for the treatment of chronic constipation in adults in whom laxatives do not work well enough.

Not for use in children and adolescents younger than 18 years.

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

##### **Do not take Resolor:**

- if you are allergic to prucalopride or any of the other ingredients of this medicine (listed in section 6).
- if you are on renal dialysis,
- if you suffer from perforation or obstruction of the gut wall, severe inflammation of the intestinal tract, such as Crohn's disease, ulcerative colitis or toxic megacolon/megarectum.

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

Talk to your doctor before taking Resolor.

Take special care with Resolor and tell your doctor if you:

- suffer from severe kidney disease,
- suffer from severe liver disease,
- are currently under supervision by a doctor for a serious medical problem such as lung or heart disease, nervous system or mental health problems, cancer, AIDS or a hormonal disorder.

If you have very bad diarrhoea, the contraceptive pill may not work properly and the use of an extra method of contraception is recommended. See the instructions in the patient leaflet of the contraceptive pill you are taking.

**Other medicines and Resolor**

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

**Resolor with food and drink**

Resolor can be taken with or without food and drinks, at any time of the day.

**Pregnancy and breast-feeding**

Resolor is not recommended for use during pregnancy.

- Tell your doctor if you are pregnant or planning to become pregnant.
- Use a reliable method of contraception while you're taking Resolor, to prevent pregnancy.
- If you do become pregnant during treatment with Resolor, tell your doctor.

When breast-feeding, prucalopride can pass into breast milk. Breast-feeding is not recommended during treatment with Resolor. Talk to your doctor about this.

Ask your doctor for advice before taking any medicine.

**Driving and using machines**

Resolor is unlikely to affect your ability to drive or use machines. However, sometimes Resolor may cause dizziness and tiredness, especially on the first day of treatment, and this may have an effect on driving and use of machines.

**Resolor contains lactose**

If you have been told by your doctor that you have an intolerance to some sugars, contact your doctor before taking this medicine.

**3. How to take Resolor**

Always take this medicine exactly as described in this leaflet or as your doctor has told you. Check with your doctor or pharmacist if you are not sure. Take Resolor every day for as long as your doctor prescribes it.

The doctor may want to reassess your condition and the benefit of continued treatment after the first 4 weeks and thereafter at regular intervals.

The usual dose of Resolor for most patients is one 2 mg tablet once a day.

If you are older than 65 years or have severe liver disease, the starting dose is one 1 mg tablet once a day, which your doctor may increase to 2 mg once a day if needed.

Your doctor may also recommend a lower dose of one 1 mg tablet daily if you have severe kidney disease.

Taking a higher dose than recommended will not make the product work better.

Resolor is only for adults and should not be taken by children and adolescents up to 18 years.

**If you take more Resolor than you should**

It is important to keep to the dose as prescribed by your doctor. If you have taken more Resolor than you should, it is possible that you will get diarrhoea, headache and/or nausea. In case of diarrhoea, make sure that you drink enough water.

**If you forget to take Resolor**

Do not take a double dose to make up for a forgotten tablet. Just take your next dose at the usual time.

### **If you stop taking Resolor**

If you stop taking Resolor, your constipation symptoms may come back again.

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

## **4. Possible side effects**

Like all medicines, this medicine can cause side effects, although not everybody gets them. The side effects mostly occur at the start of treatment and usually disappear within a few days with continued treatment.

The following side effects have been reported very commonly (may affect more than 1 in 10 people): headache, feeling sick, diarrhoea and abdominal pain.

The following side effects have been reported commonly (may affect up to 1 in 10 people): decreased appetite, dizziness, vomiting, disturbed digestion (dyspepsia), windiness, abnormal bowel sounds, tiredness.

The following uncommon side effects have also been seen (may affect up to 1 in 100 people): tremors, pounding heart, rectal bleeding, increase in frequency of passing urine (pollakiuria), fever and feeling unwell. If pounding heart occurs, please tell your doctor.

### **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 Resolor**

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 blister and carton after EXP. The expiry date refers to the last day of that month.

Store in the original blister package in order to protect from moisture.

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 Resolor contains**

The active substance is prucalopride.

One film-coated tablet of Resolor 1 mg contains 1 mg prucalopride (as succinate).

One film-coated tablet of Resolor 2 mg contains 2 mg prucalopride (as succinate).

The other ingredients are:

Lactose monohydrate (see section 2), microcrystalline cellulose, colloidal silicon dioxide, magnesium stearate, hypromellose, triacetin, titanium dioxide (E171), macrogol. The 2 mg tablet also contains iron oxide red (E172), iron oxide yellow (E172), indigo carmine aluminium lake (E132).

**What Resolor looks like and contents of the pack**

Resolor 1 mg film-coated tablets are white to off-white round shaped tablets marked “PRU 1” on one side.

Resolor 2 mg film-coated tablets are pink round shaped tablets marked “PRU 2” on one side.

Resolor is provided in aluminium/aluminium perforated unit dose blister (calendar marked) containing 7 tablets. Each pack contains 7x1, 14x1, 28x1 or 84x1 film-coated tablets.

Not all pack sizes may be marketed in your country.

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