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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Adeno-associated viral vector serotype 9 containing the human iduronate-2-sulfatase gene for the treatment of mucopolysaccharidosis type II (Hunter's syndrome)

On 10 August 2015, orphan designation (EU/3/15/1540) was granted by the European Commission to Laboratorios del Dr. Esteve, S.A., Spain, for adeno-associated viral vector serotype 9 containing the human iduronate-2-sulfatase gene for the treatment of mucopolysaccharidosis type II (Hunter's syndrome).

What is mucopolysaccharidosis type II (Hunter's syndrome)?

Mucopolysaccharidosis type II (also known as Hunter's syndrome) is an inherited disease that is caused by the lack of an enzyme called iduronate-2-sulfatase. This enzyme is needed to break down substances in the body called glycosaminoglycans (GAGs). Since patients with Hunter syndrome cannot break these substances down, the GAGs gradually build up in most of the organs in the body and damage them. This causes a wide range of symptoms, particularly difficulty breathing, difficulty walking and behavioural problems. Without treatment, these symptoms become more severe over time.

Mucopolysaccharidosis type II primarily affects male patients. It is a seriously debilitating and life-threatening disease that leads to mental disability and death during youth.

What is the estimated number of patients affected by the condition?

At the time of designation, mucopolysaccharidosis type II affected not more than 1 in 10,000 people in the European Union (EU). This was equivalent to a total of not more than 51,000 people*, and is below the ceiling for orphan designation, which is 5 people in 10,000. This is based on the information provided by the sponsor and the knowledge of the Committee for Orphan Medicinal Products (COMP).

*Disclaimer: For the purpose of the designation, the number of patients affected by the condition is estimated and assessed on the basis of data from the European Union (EU 28), Norway, Iceland and Liechtenstein. This represents a population of 512,900,000 (Eurostat 2015).

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What treatments are available?

At the time of designation, the medicine Elaprase (idursulfase) was authorised in the EU for the treatment of mucopolysaccharidosis type II. This is an enzyme replacement therapy which works by providing patients with the enzyme they are lacking. Some patients underwent transplantation to receive haematopoietic (blood) stem cells that are able to produce the missing enzyme.

The sponsor has provided sufficient information to show that the medicine 'adeno-associated viral vector serotype 9 containing the human iduronate-2-sulfatase gene' might be of significant benefit for patients with mucopolysaccharidosis type II because studies in experimental models indicate that it might improve the outcome of patients with this condition. This assumption will need to be confirmed at the time of marketing authorisation, in order to maintain the orphan status.

How is this medicine expected to work?

This medicine is made of a virus containing the gene for the iduronate-2-sulfatase enzyme, which is lacking in patients with mucopolysaccharidosis type II. When injected into the patient, the virus is expected to carry the gene into the body cells, enabling the cells to start producing the enzyme. As a result the cells will be able to break down the accumulated GAGs, thereby helping to relieve the symptoms of the disease.

The type of virus used in this medicine ('adeno-associated virus') does not cause disease in humans.

What is the stage of development of this medicine?

The effects of the medicine have been evaluated in experimental models.

At the time of submission of the application for orphan designation, no clinical trials with the medicine in patients with mucopolysaccharidosis type II had been started.

At the time of submission, the medicine was not authorised anywhere in the EU for mucopolysaccharidosis type II. It has since been designated as an orphan medicinal product in the United States for this condition.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 16 July 2015 recommending the granting of this designation.

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Opinions on orphan medicinal product designations are based on the following three criteria:

- the seriousness of the condition;
- the existence of alternative methods of diagnosis, prevention or treatment;
- either the rarity of the condition (affecting not more than 5 in 10,000 people in the EU) or insufficient returns on investment.

Designated orphan medicinal products are products that are still under investigation and are considered for orphan designation on the basis of potential activity. An orphan designation is not a marketing authorisation. As a consequence, demonstration of quality, safety and efficacy is necessary before a product can be granted a marketing authorisation.

For more information

Sponsor's contact details:

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For contact details of patients' organisations whose activities are targeted at rare diseases see:

- Orphanet, a database containing information on rare diseases, which includes a directory of patients' organisations registered in Europe;
- European Organisation for Rare Diseases (EURORDIS), a non-governmental alliance of patient organisations and individuals active in the field of rare diseases.

Translations of the active ingredient and indication in all official EU languages[1], Norwegian and Icelandic

Language	Active ingredient	Indication
English	Adeno-associated viral vector serotype 9 containing the human iduronate-2-sulfatase gene	Treatment of mucopolysaccharidosis type II (Hunter's syndrome)
Bulgarian	Аденосвързан вирусен вектор, серотип 9, носещ човешкия идуронат-2-сулфатаза ген	Лечение на мукополизахаридоза тип 2 (синдром на Hunter)
Croatian	Adeno-povezani virusni vektor serotipa 9 koji sadrži ljudski gen za iduronat-2-sulfatazu	Liječenje mukopolisaharidoze tipa II (Hunterov sindrom)
Czech	Vektor adeno-asociovaného viru sérotypu 9 exprimující humánní iduronát-2-sulfatázy gen	Léčba mukopolysacharidózy typ II(Hunter syndrom)
Danish	Adeno-associeret viral vektor serotype 9 indeholdende det humane iduronate-2-sulfatase gen	Behandling af mucopolysaccharidose type II (Hunterrs syndrom)
Dutch	Adeno-geassocieerde virusvector serotype 9 welke humaan iduronaat-2-sulfatase gen bevat	Behandeling van mucopolysaccharidose type II (Hunter's syndroom)
Estonian	Inimese iduronaat-2-sulfataasi geeni sisaldav adenoviirusega assotsieerunud viirusvektori serotüüp 9	2.tüüpi mukopolüsahharidoosi (Hunteri sündroom) ravi
Finnish	Serotyyppiä 9 oleva adenoassosioitu virusvektori, joka sisältää ihmisen iduronaatti-2-sulfataasin geenin	Tyypin II mukopolysakkaridoosin (Hunterin oireyhtymän) hoito
French	Vecteur viral adéno-associé de sérotype 9 portant le gène humain de l'iduronate-2-sulfatase	Traitement des mucopolysaccharidoses de type II (syndrome de Hunter)
German	Adeno-assoziierter Virusvektor Serotyp 9, der das humane Iduronat-2-Sulfatase Gen trägt	Behandlung der Mukopolysaccharidose Typ II (Hunter-Syndrom)
Greek	Αδενοσυσχετιζόμενος ιϊκός φορέας οροτύπου 9, ο οποίος περιέχει το γονίδιο για την ανθρώπινη σουλφατάση του 2-θειϊκού ιδουρονικού.	Θεραπεία της βλενοπολυσακχαρίδωσης τύπου II (σύνδρομο Hunter)
Hungarian	Humán iduronát-2-szulfatázt gént hordozó, 9-es szerotípusú adeno-asszociált vírusvektor	2-es típusú mucopolisaccharidosis (Hunter szindróma) kezelése
Italian	Vettore virale adeno-associato di sierotipo 9 recante il gene dell' iduronato-2-solfatasi umana	Trattamento della mucopolisaccaridosi tipo II (Sindrome di Hunter)

[1] At the time of designation

Language	Active ingredient	Indication
Latvian	Adeno-saistītā virālā vektora 9. serotips, kas satur cilvēka iduronāta-2-sulfatāzes gēnu	II. tipa mukopilisaharidozes (Hantera sindroma) ārstēšana
Lithuanian	Adeno-asocijuotasviruso vektoriaus 9 serotipas, pernešantis žmogaus iduronato-2-sulfatazėsgeną	Mukopolisacharidozės II tipo (*Hunter* sindromo) gydymas
Maltese	Vettur imnissel mill-adenovirus tas-serotip 9 li fih il-ġene iduronate-2-sulfatase uman	Kura tal-mukopolisakkaridoži tat-tip II (sindrome ta' Hunter)
Polish	wirusowy wektor AAV (adeno-associated virus)serotypu 9, zawierający gen ludzkiej 2-sulfatazy iduronianu.	Leczenie mukopolisacharydozy typu II (zespołu Hunter'a)
Portuguese	Vetor viral adeno-associado do serotipo 9 contendo o gene da iduronato–2 sulfatase humana.	Tratamento da mucopolissacaridose tipo II (syndrome de Hunter)
Romanian	Vector viral adeno-asociat de serotip 9 care conține gena iduronat-2-sulfatazei umane	Tratamentul mucopolizaharidozei tipeII (Sindrom Hunter)
Slovak	Vektor adenoasociovaného vírusu sérotypu 9 exprimujúci gén ľudskej iduronát-2-sulfatázy	Liečba mukopolysacharidózy typu II (Hunterov syndróm)
Slovenian	Adenovirusom pridruženi virusni vektor serotipa 9, ki vsebuje gen za humano iduronat-2-sulfatazo	Zdravljenje mukopolisaharidoze tipa II (Hunterjev sindrom)
Spanish	Vector viral adenoasociado del serotipo 9 que contiene el gen de la iduronato–2 sulfatasa humana	Tratamiento de la mucopolisacaridosis tipo II (sindrome de Hunter)
Swedish	Adenovirus-vektor serotyp 9 innehållande den mänskliga iduronat-2-sulfatas-genen	Behandling av mukopolysackaridos typ II (Hunters syndrom)
Norwegian	Adenorelatert virusvektor serotype 9 som inneholder genet for human iduronat-2-sulfatase	Behandling av mukopolysakkaridose type II (Hunters syndrom)
Icelandic	Adenótengd genaferja af sermisgerð 9 sem inniheldur manna ídúrónat-2-súlfatasa gen	Meðferð á múkópólýsakkharidósis gerð II (Hunters heilkenni)