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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Adeno-associated viral vector serotype rh10 containing the human factor IX gene for the treatment of haemophilia B

On 14 December 2015, orphan designation (EU/3/15/1599) was granted by the European Commission to Pharma Gateway AB, Sweden, for adeno-associated viral vector serotype rh10 containing the human factor IX gene for the treatment of haemophilia B.

What is haemophilia B?

Haemophilia B is an inherited bleeding disorder that is caused by the lack of factor IX, which is one of the proteins involved in the blood coagulation (clotting) process. Patients with haemophilia B are more prone to bleeding than normal and have poor wound healing after injury or surgery. Bleeding can also happen within muscles or the spaces in the joints, such as the elbows, knees and ankles. This can lead to permanent injury if it happens repeatedly.

Haemophilia B is a life-long debilitating disease that may be life threatening because it can lead to bleeding in the brain and spinal cord and from the throat and the gut.

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

At the time of designation, haemophilia B affected approximately 0.2 in 10,000 people in the European Union (EU). This was equivalent to a total of around 10,000 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).

What treatments are available?

At the time of designation, medicines containing factor IX were authorised in the EU for the treatment of haemophilia B, to replace the missing protein. However, not all patients with haemophilia B could benefit from these medicines because the immune system (the body's natural defences) can produce 'inhibitors' (antibodies) against factor IX and thereby stop the factor IX medicine from working. In

*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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these cases, other treatments needed to be used, such as factor VIIa (the activated form of factor VII, another protein involved in blood clotting), either alone or as part of a combination treatment.

The sponsor has provided sufficient information to show that this medicine might be of significant benefit for patients with haemophilia B. Early studies in experimental models showed that treatment with the medicine resulted in sustained production by the body of factor IX and restoration of its activity. 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?

The medicine is made of a virus that has been modified to contain the gene for factor IX, which is lacking in patients with haemophilia B. After being given once to the patient as an injection into a vein, the virus is expected to carry the factor-IX gene into the liver cells, enabling them to produce the missing factor IX for a long period. This is expected to control the bleeding disorder.

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 haemophilia B had been started.

At the time of submission, the medicine was not authorised anywhere in the EU for haemophilia B. Orphan designation of the medicine had been granted in the United States for haemophilia B.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 12 November 2015 recommending the granting of this designation.

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:

Contact details of the current sponsor for this orphan designation can be found on EMA website, on the medicine's rare disease designations page.

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 rh10 containing the human factor IX gene	Treatment of haemophilia B
Bulgarian	Адено-свързан вирусен вектор серотип rh10, съдържащ ген на човешкия фактор IX	Лечение на хемофилия B
Croatian	Adeno-povezani virusni vektor serotipa rh10 koji sadrži ljudski gen za faktor IX	Liječenje hemofilije B
Czech	Sérotyp rh10 adeno-asociovaný virový vektor obsahující gen pro humánní faktor IX	Léčba hemofilie B
Danish	Adenoassocieret viral vektor serotype rh10 indeholdende det humane faktor IX-gen	Behandling af hæmofili B
Dutch	Adeno-geassocieerde virale vector, serotype rh10, welke het humaan factor IX gen bevat	Behandeling van hemofilie B
Estonian	Inimese IX faktori geeni sisaldav adenoviirusega assotsieerunud viirusvektor serotüüp rh10	Hemofiilia B ravi
Finnish	AAV-vektori, serotyyppi rh10, joka sisältää ihmisen hyytymistekijä IX-geenin	Hemofilia B:n hoito
French	Vecteur viral adéno-associé de sérotype rh10 contenant le gène du facteur IX humain	Traitement de l'hémophilie B
German	Adeno-assoziierter viraler Vektor Serotyp rh10, der das humane Faktor-IX-Gen enthält	Behandlung der Hämophilie B
Greek	Αδενο-σχετιζόμενος ιικός φορέας ορότυπου rh10 που περιέχει το ανθρώπινο γονίδιο για τον παράγοντα IX	Θεραπεία της αιμορροφιλίας B
Hungarian	Humán faktor IX gént tartalmazó rh10-es szerotípusú adenoasszociált vírus vektor	B típusú hemofília kezelése
Italian	Vettore virale adeno-associato del serotipo rh10 contenente il gene del fattore IX umano	Trattamento dell'emofilia B
Latvian	Adeno-asociētā vīrusa rh10. serotipa vektors, kas satur cilvēka IX asinsreces faktora gēnu	B tipa hemofilijas ārstēšana
Lithuanian	Adenoasocijuoto viruso vektoriaus rh10 serotipas, turintis žmogaus IX faktoriaus geną	Hemofilijos B gydymas
Maltese	Vettur imnissel mill-adenovirus tas-serotip rh10 li fih il-ġene għall- fattur IX uman	Kura ta' l-emofilja B
Polish	Wektor adenowirusowy serotypu rh10 zawierający gen ludzkiego czynnika IX	Leczenie hemofilii B
Portuguese	Vetor viral adeno-associado de serotipo rh10 contendo o gene do factor IX humano	Tratamento da hemofilia B
Romanian	Vector viral adeno-asociat de serotip rh10 care conţine gena factorului IX uman	Tratamentul hemofiliei B
Slovak	Adeno-asociovaný vírusový vektor sérotypu rh10 obsahujúci gén ľudského faktora IX	Liečba hemofílie B

[1] At the time of designation

Language	Active ingredient	Indication
Slovenian	Adeno-pridruženi virusni vektor serotipa rh10, ki vsebuje gen humanega faktorja IX	Zdravljenje hemofilije B
Spanish	Vector víral adenoasociado del serotipo rh10 que contiene el gen del factor IX humano	Tratamiento de la hemofilia B
Swedish	Adenoassocierad virusvektor serotyp rh10 innehållande genen för human faktor IX	Behandling av hemofili B
Norwegian	Adenoassosiert virusvektor serotype rh10 som inneholder genet for human faktor IX	Behandling av hemofili B
Icelandic	Adenó-tengd veiruferja af sermisgerð rh10 sem inniheldur manna erfðavísi fyrir storkuþátt IX	Meðferð við dreyrasýki B