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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Autologous CD34+ cells transfected with lentiviral vector containing the human arylsulfatase A cDNA for the treatment of metachromatic leukodystrophy

First publication	29 July 2008
Rev.1: sponsor's change of address	16 February 2010
Rev.2: sponsor's change of address	20 November 2013
Rev.3: transfer of sponsorship	3 March 2015
Disclaimer Please note that revisions to the Public Summary of Opinion are purely administrative updates. Therefore, the scientific content of the document reflects the outcome of the Committee for Orphan Medicinal Products (COMP) at the time of designation and is not updated after first publication.	

On 13 April 2007, orphan designation (EU/3/07/446) was granted by the European Commission to Fondazione Telethon, Italy, for autologous CD34+ cells transfected with lentiviral vector containing the human arylsulfatase A cDNA for the treatment of metachromatic leukodystrophy.

The sponsorship was transferred to GlaxoSmithKline Trading Services Limited, Ireland, in July 2014.

What is metachromatic leukodystrophy?

Metachromatic leukodystrophy is a chronic hereditary disease. It is caused by the lack of an enzyme (a protein that speeds up the conversion of certain substances into other substances) called arylsulfatase A. This causes a toxic accumulation of lipid compounds called sulfatides, particularly in the cells of the nervous system. The nervous system is progressively damaged resulting in symptoms such as walking difficulties, mental deterioration and other symptoms related to the impairment of the nervous system in the affected patients. The disease is chronically debilitating and life-threatening.

30 Churchill Place ● Canary Wharf ● London E14 5EU ● United Kingdom
Telephone +44 (0)20 3660 6000 **Facsimile** +44 (0)20 3660 5555
Send a question via our website www.ema.europa.eu/contact

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

At the time of designation, metachromatic leukodystrophy affected less than 0.5 in 10,000 people in the European Union (EU). This was equivalent to a total of fewer than 25,000 people[*], and is below the threshold 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?

No satisfactory methods exist that were authorised for the treatment of metachromatic leukodystrophy at the time of application. Only temporary symptomatic treatments were available. In a minority of cases, haematopoetic stem cell transplantation (bone marrow transplantation) has been used as treatment.

How is this medicine expected to work?

The treatment with autologous CD34+ cells transfected with lentiviral vector containing the human arylsulfatase A cDNA includes taking cells called CD34+ cells from the blood of the affected patient and introducing the gene for the lacking enzyme into these cells, outside of the body. To introduce the gene into the cells, a man-made virus (lentiviral vector) is used. The cells are then infused back into the patient, where they are expected to produce and replace the lacking enzyme arylsulfatase A. The replacement of the lacking enzyme is thought to reduce the accumulated sulfatides, thus relieving the symptoms.

What is the stage of development of this medicine?

At the time of submission of the application for orphan designation, the evaluation of the effects of autologous CD34+ cells transfected with lentiviral vector containing the human arylsulfatase A cDNA in experimental models was ongoing.

At the time of submission of the application for orphan designation, no clinical trials in patients with metachromatic leukodystrophy were initiated.

Autologous CD34+ cells transfected with lentiviral vector containing the human arylsulfatase A cDNA was not authorised anywhere worldwide for the treatment of metachromatic leukodystrophy or designated as orphan medicinal product elsewhere for this condition, at the time of submission.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 8 March 2007 recommending the granting of this designation.

[*]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 27), Norway, Iceland and Liechtenstein.
At the time of designation, this represented a population of 500,300,000 (Eurostat 2007).

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 European Union) 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:

GlaxoSmithKline Trading Services Limited
Currabinny
Carrigaline
County Cork
Ireland
Tel. +353 21 451 2212
http://ie.gsk.com/ie/contact-us

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	Autologous CD34+ cells transfected with lentiviral vector containing the human arylsulfatase A cDNA	Treatment of metachromatic leukodystrophy
Bulgarian	Автоложни CD34+ клетки трансфектирани с лентивирусен вектор, съдържащ сДНК за човешка арилсулфатаза А	Лечение на метахроматична левкодистрофия
Croatian	Autologne CD34+ stanice transficirane s lentivirusnim vektorom koji sadrži cDNA s humanom arilsulfatazom A	Liječenje metakromatske leukodistrofije
Czech	Autologní CD34+ buňky s lentivirálním vecktorem obsahující lidský arylsulfatase AcDNA	Léčba metachromatická leukodystrofie
Danish	Autologe CD34+ celler transfekterede med en lentiviral vector som indeholder humant arylsulfatase AcDNA	Behandling af metakromatisk leukodytrofi
Dutch	Autologe CD34+ cellen getransfecteerd met een lentivirale vector die het humane arylsulfatase cDNA bevat	Behandeling van metachromatische leukodystrophie
Estonian	Autoloogsed CD34+ rakud transfekteeritud Lentiviiruslik vektoriga, mis sisaldab arüülsulfataas A cDNA	Metakromaatilise leukotsütoosi ravi
Finnish	Autologisia CD34+ soluja, jotka ovat transfektoituja lentivirusvektorilla, joka sisältää ihmisen aryylisulfataasin cDNA:ta	Metakromaattisen leukodystrofian hoito
French	Cellules positives pour CD34 autologues transfectées avec un vecteur lentiviral contenant l'ADNc de l'arylsulfatase A humaine	Traitement de la leucodystrophie métachromatique
German	Autologe CD34+ Zellen transfiziert mit lentiviralen Vektoren, die humane Arylsulfatase A cDNA enthalten	Behandlung der Metachromatischen Leukodystrophie
Greek	Αυτόλογα κύτταρα CD34+ επιμολυσμένα με εφηλιδικό φορέα που περιέχει το cDNA ανθρώπινης αρυλσουλφατάσης Α	Θεραπεία μεταχρωματικής λευκοδυστροφίας
Hungarian	Arilszulfatáz cDNA horhozó autológ CD34+ sejtekkel egyesített Lenti vírus vektor	Metachromasiás leukodystrophia kezelése
Italian	Cellule CD34+ autologhe transfettate con vettore lentivirale contenente il cDNA codificante l'enzima umano arilsulfatasi A	Trattamento della leucodistrofia metacromatica
Latvian	Autologas CD34+ šunas ar ievadītu cilvēka arilsulfatāzi A cDNA saturošu lentiviralu vektoru	Metahromas leikodistrofijas ārstēšanai

[1] At the time of transfer of sponsorship

Language	Active Ingredient	Indication
Lithuanian	Autologinės CD34+ lastelės su įterptu lentivirusiniu vektoriumi, turinčiu žmogaus arilsulfatazės A kDNR	Metachrominės leukodistrofijos gydymas
Polish	Autologiczne komórki CD34+ transfekowane lentiwirusowym wektorem zawierającym cDNA ludzkiej arylosulfataza A	Leczenie zespołu leukodystrofii metachromatycznej
Portuguese	Células autólogas CD34+ transfectadas com um vector lentiviral que contém o cDNA arilsulfatase A humano	Tratamento da Leucodistrofia Metacromática
Romanian	Celule autologe CD34+ transfectate cu un vector lentiviral care conţine cADN arilsulfataza A umană	Tratamentul leucodistrofiei metacromatice
Slovak	Autológové CD34+ bunky transfektované s lentivírusovým vektorom, ktorý obsahuje cDNA ľudskej arylsulfatázy A	Liečba metachromatickej leukodystrofie
Slovenian	Avtologne CD34+ celice transficirane z lentivirusnim vektorjem ki vsebuje cDNK humane arilsulfataze A	Zdravljenje metakromatske levkodistrofije
Spanish	Células CD34+ autólogas transfectadas con un vector lentivírico que conteniene el ADNc de la arilsulfatasa A humana	Tratamiento de la leucodistrofia metacromática
Swedish	Autologa CD43+ celler transfekterade med lentivirusvektor innehåller humant arylsolfatase A cDNA	Behandling av metakromatisk leukodystrofi
Norwegian	Autologe CD34+ celler transfektert med lentiviral vektor som inneholder humant arylsulfatase A cDNA	Behandling av metachromatisk leukodystrofi
Icelandic	Genið fyrir manna arýlsúlfatasa A cDNA er flutt inn i CD34+ frumur sjúklingsins með lentiveiru genaferju	Meðferð metakrómatískri leukodystrófíu