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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Autologous bone marrow-derived mesenchymal stromal cells secreting neurotrophic factors for the treatment of amyotrophic lateral sclerosis

On 17 July 2013, orphan designation (EU/3/13/1148) was granted by the European Commission to Brainstorm Cell Therapeutics UK Ltd, United Kingdom, for autologous bone marrow-derived mesenchymal stromal cells secreting neurotrophic factors for the treatment of amyotrophic lateral sclerosis.

What is amyotrophic lateral sclerosis?

Amyotrophic lateral sclerosis (ALS) is a progressive disease of the nervous system, where nerve cells in the brain and spinal cord that control voluntary movement gradually deteriorate. This causes loss of muscle function and paralysis. The exact causes are unknown but are believed to include genetic and environmental factors. The symptoms of ALS vary depending on which muscles weaken first, and include loss of balance, loss of control of hand and arm movement, difficulty speaking, swallowing and breathing. ALS usually starts in mid-life and men are more likely to develop the disease than women.

ALS is a long-term debilitating and life-threatening disease because of the gradual loss of function and its paralysing effect on muscles used for breathing which usually leads to death due to respiratory failure.

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

At the time of designation, ALS affected approximately 0.7 in 10,000 people in the European Union (EU). This was equivalent to a total of around 35,000 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 27), Norway, Iceland and Liechtenstein. This represents a population of 509,000,000 (Eurostat 2013).

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What treatments are available?

At the time of designation, riluzole was authorised in the EU to treat ALS. Patients also received supportive treatment to temporarily relieve the symptoms of the disease, such as physiotherapy and speech therapy.

The sponsor has provided sufficient information to show that autologous bone marrow-derived mesenchymal stromal cells secreting neurotrophic factors might be of significant benefit for patients with ALS because early studies show that it might slow the progression of certain symptoms, as observed during the six months following treatment. 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 exact cause of the damage to nerves cells in ALS is unknown, but a possible cause could be the impairment of neurotrophic factors. Neurotrophic factors are proteins released by cells in the body that support the survival and development of nerve cells.

The medicine is developed from mesenchymal stromal cells (stem cells) isolated from the patient's own bone marrow. Stem cells can develop into different types of cell. When outside the body, the stem cells are manipulated so that they develop into cells that secrete neurotrophic factors. When transplanted back into the patient, they are expected to secrete neurotrophic factors which will reduce nerve damage and thereby improve the symptoms of the disease.

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, clinical trials with the medicine in patients with ALS were ongoing.

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

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 13 June 2013 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	Autologous bone marrow-derived mesenchymal stromal cells secreting neurotrophic factors	Treatment of amyotrophic lateral sclerosis
Bulgarian	Автоложни костно-мозъчни мезенхимни стромални клетки от фактори отделящи невротрофични фактори.	Лечение на остра лимфобластна левкемия
Czech	Mezenchymální stromálních buňkách autologní kostní dřeně secernující neurotrofické faktory	Léčba akutní lymfoblastické leukémie
Croatian	Autologne mezenhimalne stromalne stanice podrijetla iz koštane srži koje izlučuju neurotrofne faktore	Liječenje amiotrofične lateralne skleroze
Danish	Autolog knoglemarv-afledte mesenchymal Stromale celler, der secernerer Neurotrofiske faktorer	Behandling af akut lymfoblastær leukæmi
Dutch	Autologe beenmerg-afgeleide mesenchymale stromale cellen welke neurotrofe factoren secreteert	Behandeling van acute lymfoblastaire leukemie
Estonian	Autoloogsest luuüdist lähtunud mesenhümaalsed stroomarakud, mis eritavad sekretoorseid eritavate neurotroofseid faktoreid.	Ägeda lümfoblastilise leukeemia ravi
Finnish	Autologiset, luuytimestä peräisin olevat mesenkymaaliset stroomasolut, jotka erittävät hermokasvutekijöitä	Akuutin lymfoblastileukemian hoito
French	Cellules stromales dérivées de la moelle osseuse autologue sécrétant des facteurs neutophiques	Traitement de la leucémie lymphoblastique aiguë
German	Autologe, von Knochenmark abgeleitete mesenchymale Stromazellen, die neurotrophe Faktoren sezernieren	Behandlung der akuten lymphatischen Leukämie
Greek	Αυτόλογα μεσεγχυματικά στρωματικά κύτταρα που προέρχονται από το μυελό των οστών και εκκρίνουν νευροτροφικούς παράγοντες και	Θεραπεία της οξείας λεμφοβλαστικής λευχαιμίας
Hungarian	Neurotróp faktorokat szekretáló autológ csontvelő eredetű mesenchymális stroma sejtek	Akut lymphoblastos leukaemia kezelése
Italian	Osseo autologo derivate dal midollo mesenchimali stromali cellule che secernono fattori neurotrofici	Trattamento della leucemia linfoblastica acuta

[1] At the time of designation

Language	Active ingredient	Indication
Latvian	Neirotrofiskos faktorus sekretējošas autologo kaulu smadzeņu-izcelsmes mezenhimālo stromas šūnas	Akūtas limfoblastiskas leikozes ārstēšana
Lithuanian	Autologinės, iš kaulų čiulpų išskirtos, mezenchiminės stromos ląstelės, sekretuojančios neurotrofinius faktorius	Ūmios limfoblastinės leukemijos gydymas
Maltese	Ċelluli mesenkimali stromali imnissla minn mudullun awtologuż li jipproduċu fatturi newrotrofiċi	Kura tal-lewkimja limfoblastika akuta
Polish	Autologiczne mezenchymalne komórki zrębowe uzyskane ze szpiku wydzielające czynniki neurotroficzne	Leczenie ostrej białaczki limfoblastycznej
Portuguese	Células mesenquimais estromais autólogas derivadas da medula óssea secretoras de factores neurotróficos	Tratamento da leucémia linfoblástica aguda
Romanian	Celule stromale mezenchimale autologe derivate din maduva osoasa care secreta factorii neurotrofici	Tratamentul leucemiei limfoblastice acute
Slovak	Autológne mezenchymálne stromálne bunky pochádzajúce z kostnej drene vylučujúce neurotrofické faktory	Liečba akútnej lymfoblastickej leukémie
Slovenian	Avtologne mezenhimske stromalne celice kostnega mozga, ki izločajo nevrotrofični stromalni faktor	Zdravljenje akutne limfoblastne levkemije
Spanish	Células mesenquimales de estroma derivadas de médula ósea autóloga secretoras de factores neurotróficos	Tratamiento de la leucemia linfoblástica aguda
Swedish	Autologa mesenchymala stromaceller från benmärg som utsöndrar neurotrofiska faktorer	Behandling av akut lymfatisk leukemi
Norwegian	Autologe mesenkymale stromaceller fra beinmarg som utskiller neurotrofiske faktorer	Behandling av akutt lymfoblastisk leukemi
Icelandic	Samgena mesenkýmal strómal beinmergsfrumur sem seyta neurótróphic faktorum	Meðferð við bráðu eitilfrumuhvítblæði