8 January 2018
EMA/693845/2017

Public summary of opinion on orphan designation

(R)-troloxamide quinone for the treatment of amyotrophic lateral sclerosis

On 12 October 2017, orphan designation (EU/3/17/1934) was granted by the European Commission to Edison Orphan Pharma BV, the Netherlands, for (R)-troloxamide quinone (also known as EPI-589) 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, causing loss of muscle function and paralysis. The exact causes are unknown but are believed to include genetic and environmental factors. The symptoms of ALS depend on which muscles weaken first, and include loss of balance, loss of control of hand and arm movement, and 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 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 from respiratory failure.

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

At the time of designation, ALS affected approximately 1 in 10,000 people in the European Union (EU). This was equivalent to a total of around 52,000 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, riluzole was authorised in the EU to treat ALS. Patients also received supportive treatment to relieve the symptoms of the disease, such as physiotherapy and breathing support.

The sponsor has provided sufficient information to show that the medicine might be of significant benefit for patients with ALS. Laboratory studies showed that the medicine reduced the decline in the

[*]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 515,700,000 (Eurostat 2017).

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ability to move compared with the currently authorised treatment riluzole. 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?

In patients with ALS, toxic molecules containing oxygen are produced in the nervous system which damage cells (known as 'oxidative stress') and lead to their death.

The medicine is expected to increase reserves of antioxidant molecules, which prevent cell damage and death caused by oxygen-containing molecules. This is expected to improve the symptoms of ALS.

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 or designated as an orphan medicinal product elsewhere for this condition.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 5 October 2017 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:

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	(R)-troloxamide quinone	Treatment of amyotrophic lateral sclerosis
Bulgarian	(R)-тролоксамид хинон	Лечение на амиотрофична латерална склероза
Croatian	(R)-troloksamid kinon	Liječenje amiotrofične lateralne skleroze
Czech	(R)-troloxamid chinonu	Léčba amyotrofické laterální sklerózy (ALS)
Danish	(R)-troloxamidquinon	Behandling af amyotrofisk lateralsklerose
Dutch	(R)-troloxamide-quinone	Behandeling van amyotrofe lateraalsclerose
Estonian	(R)-troloksamiidkinoon	Amüotroofilise lateraalskleroosi ravi
Finnish	(R)-troloksamidi kinoni	Amyotrofisen lateraaliskleroosin hoito
French	(R)-troloxamide quinone	Traitement de la sclérose latérale amyotrophique
German	(R)-Troloxamidchinon	Behandlung der amyotrophen Lateralsklerose
Greek	(R)-τρολοξαμιδική κινόνη	Θεραπεία πλάγιας μυοατροφικής σκλήρυνσης
Hungarian	(R)-troloxamid-kinon	Amyotrophiás lateral sclerosis kezelése
Italian	(R)-troloxamide chinone	Trattamento della sclerosi laterale amiotrofica
Latvian	(R)-troloksamīda hinons	Amiotrofiskās laterālās sklerozes ārstēšana
Lithuanian	(R)-troloksamido chinonas	Šoninės amiotrofinės sklerozės gydymas
Maltese	(R)-trolossamidu kinon	Kura tas-sklerosi laterali amjotrofika
Polish	(R)-troloksamid kwasu chinonowego	Leczenie stwardnienia bocznego zanikowego
Portuguese	(R)-troloxamida quinona	Tratamento da esclerose lateral amiotrófica
Romanian	(R)-troloxamidă chinonă	Tratamentul sclerozei laterale amiotrofice
Slovak	(R)-troloxamid chinónu	Liečba amyotrofickej laterálnej sklerózy
Slovenian	(R)-troloksamid kinon	Zdravljenje amiotrofične lateralne skleroze
Spanish	(R)- troloxamida quinona	Tratamiento de la esclerosis lateral amiotrófica
Swedish	(R)-troloxamidkinon	Behandling av amyotrofisk lateralskleros
Norwegian	(R)-troloksamidkinon	Behandling av amyotrofisk lateralsklerose
Icelandic	(R)-tróloxamíð kínón	Meðferð við blandaðri hreyfitaugahrörnun

[1] At the time of designation