



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

2-(2-chlorobenzylidene)hydrazinecarboximidamide acetate for the treatment of Charcot-Marie-Tooth disease

On 14 December 2015, orphan designation (EU/3/15/1598) was granted by the European Commission to InFlectis BioScience, France, for 2-(2-chlorobenzylidene)hydrazinecarboximidamide acetate (also known as IFB-088) for the treatment of Charcot-Marie-Tooth disease.

What is Charcot-Marie-Tooth disease?

Charcot-Marie-Tooth disease is a group of inherited disorders of the peripheral nerves (the nerves outside the brain and spinal cord). The symptoms include muscle weakness, tremor and sensory loss (numbness, tingling, burning sensation), and usually first appear in the first or second decade of life.

The disease can be caused by many different mutations (changes) in the genes responsible for producing proteins that are essential for the structure and function of the peripheral nerves. Because of these mutations, the structure and function of peripheral nerves is abnormal and this leads to problems in the transmission of nerve signals.

Charcot-Marie-Tooth disease is a long-term debilitating disease because the progressive deterioration of nerves leads to disability and reduced quality of life.

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

At the time of designation, Charcot-Marie-Tooth disease affected less than 2.6 in 10,000 people in the European Union (EU). This was equivalent to a total of fewer than 133,000 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).



What treatments are available?

At the time of designation, no satisfactory methods were authorised in the EU for the treatment of Charcot-Marie-Tooth disease. Supportive treatments were available such as pain medications, physical therapy and corrective surgery.

How is this medicine expected to work?

Some nerves are surrounded by a myelin sheath that facilitates transmission of nerve signals. In some forms of Charcot-Marie-Tooth disease, the proteins involved in the structure and function of the myelin sheath around peripheral nerves do not fold properly and accumulate in cells. This medicine is expected to work by slowing down the production of these proteins, which is expected to allow them to fold properly. This would allow the correct formation of the myelin sheath, improving the transmission of nerve signals.

What is the stage of development of this medicine?

The effects of this 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 Charcot-Marie-Tooth disease had been started.

At the time of submission, the medicine was not authorised anywhere in the EU for Charcot-Marie-Tooth disease 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 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 languages¹, Norwegian and Icelandic

Language	Active ingredient	Indication
English	2-(2-chlorobenzylidene)hydrazinecarboximidamide acetate	Treatment of Charcot-Marie-Tooth disease
Bulgarian	2-(2-хлоробензилиден)хидразинкарбоксимидамид ацетат	Лечение на болест на Шарко-Мари-Тут
Croatian	2-(2-klorbenziliden)hidrazinkarboksimidamidacetat	Liječenje Charcot-Marie-Tothove bolesti
Czech	2-(2-chlorbenzyliden)hydrazinecarboximidamide acetátu	Léčba Charcot-Marie-Tooth choroby
Danish	2-(2-chlorobenzyliden)hydrazincarboximidamid acetat	Behandling af Charcot-Marie-Tooth sygdom
Dutch	2-(2-chlorobenzylidene)hydrazinecarboximidamide acetaat	Behandeling van Ziekte van Charcot-Marie-Tooth
Estonian	2-(2-Klorobensülideen)hüdrasiinkarboksimiidamiid atsetaat	Charcot-Marie-Toothi haiguse ravi
Finnish	2-(2-klooribentsylideeni)hydratsiinikarboksimiidamidin asetaatti	Charcot-Marie-Toothin taudin hoito
French	2-(2-chlorobenzylidène)acétate d'hydrazinecarboximidamide	Traitement de la maladie de Charcot-Marie-Tooth
German	2-(2-Chlorbenzyliden)hydrazincarboximidamid-Acetat	Behandlung des Morbus Charcot-Marie-Tooth
Greek	2-(2-χλωροβενζυλιδενο) οξεική υδραζινοκαρβοξυμιδαμιδη	Θεραπεία της περονιαίας μυϊκής ατροφίας
Hungarian	2-(2-klór-benzilidén)hidrazinkarboxamid acetát	Charcot-Marie-Tooth-betegség kezelésé
Italian	2-(2-clorobenzilidene)acetato hydrazinecarboximidamide	Trattamento della malattia di Charcot-Marie-Tooth
Latvian	2-(2-hlorbenzilidēn)hidrazīnkarboksimidamīda acetāts	Charcot-Marie-Tooth slimības (jeb iedzīmtas neiralģiskās amiotrofijas) ārstēšana
Lithuanian	2-(2-chlorbenziliden)hidrazinkarboksimidamido acetatas	Šarko–Mari–Tuto ligos gydymas
Maltese	2-(2-chlorobenzylidene)hydrazinecarboximidamide acetate	Kura tal-marda ta' Charcot-Marie-Tooth
Polish	2-(2-chlorobenzylideno)octan hydrazynocarboksymidamid	Leczenie choroby Charcota, Mariego i Tootha

¹ At the time of designation

Language	Active ingredient	Indication
Portuguese	Acetato de 2-(2-clorobenzilideno) hidrazina carboximidamida	Tratamento da doença de Charcot-Marie-Tooth
Romanian	Acetat de 2-(2-clorbenziliden) hidrazincarboximidamidă	Tratamentul bolii Charcot-Marie-Tooth
Slovak	2-(2-chlorbenzyliden)hydrazinecarboximidamide acetát	Liečba Charcotovej-Marieovej-Toothovej choroby
Slovenian	2-(2-klorobenziliden)hidrazinkarboksimidamid acetat	Zdravljenje Charcot-Marie-Toothove bolezni
Spanish	2-(2-clorobenciliden)hidrazinocarboximidoamida	Tratamiento de la enfermedad de Charcot-Marie-Tooth
Swedish	2-(2-klorbensyliden)hydrazinkarboximidamid acetat	Behandling av Charcot-Marie-Tooths sjukdom
Norwegian	2-(2-klorbenzyliden)hydrazinecarboximidamide acetat	Behandling av Charcot-Marie-Tooths sykdom
Icelandic	2-(2-klóróbenzyliden)hydrazinkarboximíðamíð asetat	Meðferð við Charcot-Marie-Tooth sjúkdómi