

22 September 2016
EMA/COMP/494165/2016
Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Sodium benzoate for the treatment of lysinuric protein intolerance

On 29 August 2016, orphan designation (EU/3/16/1729) was granted by the European Commission to Lucane Pharma SA, France, for sodium benzoate for the treatment of lysinuric protein intolerance.

What is lysinuric protein intolerance?

Lysinuric protein intolerance is an inherited disorder caused by the body's inability to digest and use the amino acids lysine, ornithine and arginine, which are present in protein-rich foods. This can cause high levels of ammonia in the blood, which can be harmful. As a consequence, babies with the condition develop vomiting and diarrhoea after the introduction of protein-rich foods at weaning. Other symptoms include failure to thrive and symptoms caused by an excess of ammonia in the brain including lethargy, delayed development and abnormal behaviour.

Lysinuric protein intolerance is a life-threatening and long-term debilitating condition because the excess ammonia causes mental disability and other types of progressive damage to the brain and nerves.

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

At the time of designation, lysinuric protein intolerance affected approximately 0.5 in 10,000 people in the European Union (EU). This was equivalent to a total of around 26,000 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, there was no satisfactory treatment authorised in the EU for lysinuric protein intolerance. Patients were also advised to control their dietary intake of proteins.

*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 513,700,000 (Eurostat 2016).

How is this medicine expected to work?

Sodium benzoate has been used as an unlicensed treatment for hyperammonaemia (high levels of ammonia in the blood).

It works by combining with the amino acid glycine, which contains nitrogen, to form a substance that can be removed from the body by the kidneys. This allows the levels of nitrogen in the body to decrease, reducing the amount of ammonia produced and therefore the damage to the brain and other organs.

What is the stage of development of this medicine?

At the time of submission of the application for orphan designation, no clinical trials with sodium benzoate in patients with lysinuric protein intolerance had been started. The sponsor presented data from the published literature on the use of sodium benzoate in related disorders.

At the time of submission, sodium benzoate was not authorised anywhere in the EU for lysinuric protein intolerance 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 13 July 2016 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	Sodium benzoate	Treatment of lysinuric protein intolerance
Bulgarian	Натриев бензоат	Лечение на непоносимост към лизинуричен протеин
Croatian	Natrijev benzoat	Liječenje nepodnošenja lizinuričnog proteina
Czech	Benzoát sodný	Léčba intolerance lysurického proteinu
Danish	Natriumbenzoat	Behandling af lysinurisk proteinintolerans
Dutch	Natriumbenzoat	Behandeling van lysinurisch proteïne intolerantie
Estonian	Naatriumbensoaat	Lüsinuurilise valgu talumatuse ravi
Finnish	Natriumbensoaatti	Lysinurisen proteiini-intoleranssin hoito
French	Benzoate de sodium	Traitement de l'intolérance aux protéines avec lysinurie
German	Natriumbenzoat	Behandlung von lysinurischer Proteinintoleranz
Greek	Βενζοϊκό νάτριο	Θεραπεία της δυσανεξίας στη λυσινουρική πρωτεΐνη
Hungarian	Nátrium benzoát	Lyzinuriás fehérje intolerancia kezelése
Italian	Benzoato di sodio	Trattamento dell'intolleranza alle proteine con lisinuria
Latvian	Nātrija benzoāts	Proteīnu intolerances ar lizīnūriju ārstēšana
Lithuanian	Natrio benzoatas	Lizinurinio nepakantumo baltymui gydymas
Maltese	Sodium benzoate	Kura tal-intolleranza għall-proteina lisinurika
Polish	Benzoetan sodu	Leczenie lizynurycznej nietolerancji białka
Portuguese	Benzoato de sódio	Tratamento da intolerância às proteínas com lisinúria
Romanian	Benzoat de sodiu	Tratamentul intoleranței la proteine cu lizinurie
Slovak	Benzoan sodný	Liečba lyzínurickej proteínovej intolerancie
Slovenian	Natrijev benzoat	Zdravljenje lizinuručne proteinske intolerance
Spanish	Benzoato de sodio	Tratamiento de la intolerancia a la proteína lisinurica
Swedish	Natriumbenzoat	Behandling av lysinurisk proteinintolerans
Norwegian	Natriumbenzoat	Behandling av lysinurisk protein intoleranse
Icelandic	Natríumbenzóat	Meðferð á lýsínúrisku protein óþoli

¹ At the time of designation