



EUROPEAN MEDICINES AGENCY  
SCIENCE MEDICINES HEALTH

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Committee for Orphan Medicinal Products

## Public summary of opinion on orphan designation

### Sodium benzoate for the treatment of ornithine translocase deficiency

On 29 August 2016, orphan designation (EU/3/16/1730) was granted by the European Commission to Lucane Pharma SA, France, for sodium benzoate for the treatment of ornithine translocase deficiency.

#### What is ornithine translocase deficiency?

Ornithine translocase deficiency is one of the inherited disorders known as 'urea-cycle disorders', which cause ammonia to accumulate in the blood. Patients with ornithine translocase deficiency lack ornithine translocase, a protein needed to get rid of excess nitrogen. In the absence of this protein, excess nitrogen accumulates in the body in the form of ammonia, which can be harmful at high levels, especially to the brain. Symptoms of the disease may appear during adulthood and include lethargy (lack of energy), vomiting, loss of appetite, seizures (fits) and coma.

Ornithine translocase deficiency is a life-threatening and long-term debilitating condition disease that leads to mental disability and is associated with poor overall survival.

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

At the time of designation, ornithine translocase deficiency affected less than 0.1 in 10,000 people in the European Union (EU). This was equivalent to a total of fewer than 5,000 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, Ravicti (glycerol phenylbutyrate) was authorised in the EU to treat ornithine translocase deficiency. Patients were also advised to control their dietary intake of proteins, which are rich in nitrogen, to reduce the amount of ammonia formed in the body.

The sponsor has provided sufficient information to show that this medicine might be of significant benefit for patients with ornithine translocase deficiency because the medicine could be potentially

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\*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).



used together with the currently authorised product. 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?**

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 ornithine translocase deficiency had been started. The sponsor presented data from the published literature on the use of sodium benzoate in urea cycle disorders.

At the time of submission, sodium benzoate was not authorised anywhere in the EU for ornithine translocase deficiency 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.

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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<sup>1</sup>, Norwegian and Icelandic

Language	Active ingredient	Indication
English	Sodium benzoate	Treatment of ornithine translocase deficiency
Bulgarian	Натриев бензоат	Лечение на орнитин транслоказна недостатъчност
Croatian	Natrijev benzoat	Liječenje nedostatka ornitinske translokaze
Czech	Benzoát sodný	Léčba deficitu translokázy ornitinu
Danish	Natriumbenzoat	Behandling af ornitintranslocase mangel
Dutch	Natriumbenzoat	Behandeling van ornithinetranslocase deficiëntie
Estonian	Naatriumbenzoat	Ornitiini translokaasi puudulikkuse ravi
Finnish	Natriumbensoaatti	Ornitiinitranslokaasin puutoksen hoito
French	Benzoate de sodium	Traitement du déficit en ornithine translocase
German	Natriumbenzoat	Behandlung eines Ornithin-Translokase Mangels
Greek	Βενζοϊκό νάτριο	Θεραπεία της ανεπάρκειας της τρανσλοκάσης της ορνιθίνης,
Hungarian	Nátrium benzoát	Ornithinhordozó elégtelenség
Italian	Benzoato di sodio	Tattamento della sindrome da carenza di ornitina-translocasi
Latvian	Nātrijs benzoāts	Ornitīna translokāzes deficīta ārstēšana
Lithuanian	Natrio benzoatas	Ornitino translokazės stokos gydymas
Maltese	Sodium benzoate	Kura ta' nuqqas ta' ornithine translocase
Polish	Benzoetan sodu	Leczenie niedoboru translokazy ornitynowej
Portuguese	Benzoato de sódio	Tratamento da deficiência de ornitina translocase
Romanian	Benzoat de sodiu	Tratamentul deficienței de ornitin translocază
Slovak	Benzoan sodný	Liečba nedostatku ornitíntranslokázy
Slovenian	Natrijev benzoat	Zdravljenje pomanjkanja ornitinske translokaze
Spanish	Benzoato de sodio	Tratamiento de la deficiencia de ornitina translocasa
Swedish	Natriumbenzoat	Behandling av ornitintranslokasbrist
Norwegian	Natriumbenzoat	Behandling av ornitin translokasemangel
Icelandic	Natríumbenzóat	Meðferð á ornithín translókasa skorti

<sup>1</sup> At the time of designation