



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Glutathione for the treatment of cystic fibrosis

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Disclaimer Please note that revisions to the Public Summary of Opinion are purely administrative updates. Therefore, the scientific content of the document reflects the outcome of the Committee for Orphan Medicinal Products (COMP) at the time of designation and is not updated after first publication.	

Please note that this product was withdrawn from the Community Register of designated Orphan Medicinal Products in June 2014 on request of the Sponsor.

On 11 April 2006, orphan designation (EU/3/06/361) was granted by the European Commission to Mukoviszidose e.V., Germany, for glutathione for the treatment of cystic fibrosis.

What is cystic fibrosis?

Cystic fibrosis is a hereditary (genetic) disease that affects the production of secretions (such as mucus) from the glands in the body. It affects the lungs and the digestive system (gut) in particular. Cystic fibrosis is caused by abnormalities in a gene called 'cystic fibrosis transmembrane conductance regulator' (CFTR). The CFTR gene is responsible for the production of CFTR, a protein that regulates the production of mucus and digestive juices by acting as a chloride ion channel to allow proper movement of salt and water in and out of certain cells in the lungs and other tissues. In patients with cystic fibrosis, there is an overproduction of mucus in the lungs and a reduced production of digestive juices from the pancreas (an organ near the stomach). This leads to long-term infection and inflammation of the lungs and problems with the digestion and absorption of food resulting in poor growth.

Cystic fibrosis is a long lasting and life-threatening disease.



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

At the time of designation, cystic fibrosis affected approximately 1.3 in 10,000 people in the European Union (EU). This was equivalent to a total of around 61,000 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 submission of the application for orphan drug designation, lung infection and inflammation in cystic fibrosis were mainly treated with physiotherapy and antibiotics. Other medicines used to treat the lung disease included bronchodilators (medicines that help to open up the airways in the lungs) and mucolytics (medicines that help dissolve the mucus in the lungs). In addition, patients are often given other types of medicine such as pancreatic enzymes (substances that help to digest and absorb food) and food supplements. They are also advised to exercise and to undergo physiotherapy.

Satisfactory argumentation has been submitted to justify the assumption that the glutathione administered by inhalation could be of potential significant benefit for the treatment of cystic fibrosis because it could improve the long-term outcome of the condition. The assumption will have to be confirmed at the time of marketing authorisation. This will be necessary to maintain the orphan status.

How is this medicine expected to work?

Glutathione is a substance that can protect cells against toxins such as free radicals. It is usually present at very high concentration in the thin layer of fluid surrounding the cells of the lung (epithelial lining fluid). In patients with cystic fibrosis the levels of glutathione in the lung drop. This medicinal product is expected to increase the levels of glutathione. This is believed to reduce inflammation and help maintain normal composition of mucus. This way it is expected to relieve the symptoms of the patients.

What is the stage of development of this medicine?

The effects of glutathione have been evaluated in experimental models.

At the time of submission of the application for orphan designation, clinical trials in patients with cystic fibrosis were ongoing.

Glutathione was not authorised anywhere in the world for cystic fibrosis or designated as orphan medicinal product elsewhere for this condition, at the time of submission.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 8 March 2006 recommending the granting of this designation.

*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 25), Norway, Iceland and Liechtenstein. At the time of designation, this represented a population of 468,900,000 (Eurostat 2006).

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:

Mukoviszidose e.V.
In den Dauen 6
53117 Bonn
Germany
Tel. +49 22 89 87800
Fax +49 22 89 878077
E-mail: info@mukoviszidose-ev.de

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	Glutathione	Treatment of cystic fibrosis
Czech	Glutathione	Léčba cystické fibrózy
Danish	Glutathion	Behandling af cystisk fibrose
Dutch	Glutathione	Behandeling van cystische fibrose
Estonian	Glutatioon	Tsüstilise fibroosi ravi
Finnish	Glutathioni	Kystisen fibroosin hoito
French	Glutathione	Traitement de la mucoviscidose
German	Glutathion	Behandlung der zystischen Fibrose
Greek	Γλουταθειόνη	Θεραπεία της κυστικής ίνωσης
Hungarian	Glutathion	Cisztikus fibrózis kezelése
Italian	Glutathione	Trattamento della fibrosi cistica
Latvian	Glutathions	Cistiskās fibrozēs ārstēšana
Lithuanian	Glutathionas	Cistinės fibrozės gydymas
Polish	Glutathion	Leczenie zwłóknienia torbielowatego
Portuguese	Glutatião	Tratamento da fibrose quística
Slovak	Glutathión	Terapia cystickej fibrózy
Slovenian	Glutathion	Zdravljenje cistične fibroze
Spanish	Glutathion	Tratamiento de la fibrosis quística
Swedish	Glutathion	Behandling av cystisk fibros
Norwegian	Glutathion	Behandling av cystisk fibrose
Icelandic	Glútaþíón	Meðferð við slímseigjusjúkdómi

¹ At the time of designation