European Medicines Agency
Pre-authorisation Evaluation of Medicines for Human Use

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Please note that this product was withdrawn from the Community Register of designated Orphan Medicinal Products in March 2009 on request of the Sponsor.

Committee for Orphan Medicinal Products

Public summary of positive opinion for orphan designation of acetylcysteine for the treatment of idiopathic pulmonary fibrosis

On 26 January 2005, orphan designation (EU/3/04/259) was granted by the European Commission to Zambon Group S.p.A, Italy, for acetylcysteine for the treatment of idiopathic pulmonary fibrosis.

What is idiopathic pulmonary fibrosis?
Fibrosis is the formation of scar tissue as part of the natural repair process of the body following tissue damage. Idiopathic pulmonary fibrosis consists of a chronic inflammation (a response of the body to the injury caused to the tissue) and progressive formation of fibrous tissue in the walls of the small chambers containing air in the lungs (alveoli). Since the injury causing these changes is unknown, it is called idiopathic. The progressive formation of scars impairs the normal functions of lung tissue, which are to enable exchange of oxygen and carbon dioxide between air and blood. The symptoms developed are persistent cough, progressive severe shortness of breath and recurrent lung infections. Idiopathic pulmonary fibrosis is a chronically debilitating and life threatening disease due to the progression of symptoms, severe respiratory complications and short life expectancy.

What is the estimated number of patients affected by the condition*?
At the time of designation, idiopathic pulmonary fibrosis affected between 0.6 and 2.4 in 10,000 people in the European Union (EU)*. This is equivalent to a total of between 28,000 and 110,000 people, and is below the threshold for orphan designation, which is 5 people in 10,000. This is based on the information provided by the sponsor and knowledge of the Committee for Orphan Medicinal Products (COMP).

What treatments are available?
No satisfactory methods exist that were authorised at the time of application. Only symptomatic treatments to reduce the inflammation were used (corticosteroids and medicinal products that suppress the immune system) or for some patients lung transplantation was performed.

How is this medicine expected to work?
Scar formation (fibrosis) is regulated by several substances produced in the body during the inflammation that precedes fibrosis. Although the exact mechanism of scar formation (fibrosis) in idiopathic pulmonary fibrosis is not well understood, some substances such as free radicals (a chemically active molecular fragment which can damage the large molecules within cells) might play a role in the scar formation. Another substance, the so-called reduced glutathione, act against those

*Disclaimer: For the purpose of the designation, the number of patients affected by the condition is estimated and assessed based on data from the European Union (EU 25), Norway, Iceland and Lichtenstein. This represents a population of 459,700,000 (Eurostat 2004).

7 Westferry Circus, Canary Wharf, London, E14 4HB, UK
Tel. (44-20) 74 18 84 00 Fax (44-20) 75 23 70 40
E-mail: orphandrugs@emea.europa.eu http://www.emea.europa.eu

free radicals. Acetylcysteine might stimulate the synthesis of reduced glutathione and thereby might help to prevent the formation of the fibrosis.

What is the stage of development of this medicine?
The effects of acetylcysteine were evaluated in experimental models.
At the time of submission of the application for orphan designation, clinical trials in patients with idiopathic pulmonary fibrosis were completed.

Acetylcysteine was not marketed anywhere worldwide for the treatment of idiopathic pulmonary fibrosis or designated as orphan medicinal product elsewhere for this condition, at the time of submission.

According to Regulation (EC) No 141/2000 of 16 December 1999, the Committee for Orphan Medicinal Products (COMP) adopted on 8 December 2004 a positive opinion recommending the grant of the above-mentioned 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 Community) 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:
Zambon Group SpA
Via Lillo del Duca, 10
I-091 Bresso, Milan
Italy
Telephone: +39 02 66 52 41
Telefax: +39 02 66 50 14 92

Patients' association contact point: Not available

Translations of the active ingredient and indication in all EU languages and Norwegian and Icelandic

Language	Active Ingredient	Indication
English	Acetylcysteine	Treatment of idiopathic pulmonary fibrosis
Czech	Acetylcystein	Léčba idiopatické plicní fibrózy
Danish	Acetylcystein	Behandling af idiopatisk lungefibrose
Dutch	Acetylcysteïne	Behandeling van idiopathische longfibrose
Estonian	Atsetüültsüsteiin	Idiopaatilise kopsufibroosi ravi
Finnish	Asetyylikysteiini	Idiopaattisen keuhkofibroosin hoito
French	Acétylcystéine	Traitement de la fibrose pulmonaire idiopathique
German	Acetylcystein	Behandlung von idiopathischer Lungenfibrose
Greek	Ακετυλο-κυστεϊνη	Θεραπεία της ιδιοπαθούς πνευμονικής ίνωσης
Hungarian	Acetilcisztein	Idiopathiás tüdőfibrózis kezelése
Italian	Acetilcisteina	Trattamento della fibrosi polmonare idiopatica
Latvian	Acetilcisteīns	Idiopātiskās plaušu fibrozes ārstēšana
Lithuanian	Acetilcisteinas	Idiopatinės plaučių fibrozės gydymas
Polish	Acetylocysteina	Leczenie idiopatycznego zwłóknienia płuc
Portuguese	Acetilcisteína	Tratamento da fibrose pulmonar idiopática
Slovak	Acetylcysteín	Liečba idiopatickej pľúcnej fibrózy
Slovenian	Acetilcistein	Zdravljenje idiopatske pljučne fibroze
Spanish	Acetilcisteína	Tratamiento de la fibrosis pulmonar idiopática
Swedish	Acetylcystein	Behandling av idiopatisk lungfibros
Norwegian	Acetylcystein	Behandling av idiopatisk lungefibrose
Icelandic	Acetýlcystín	Meðferð sjálfvakinnar bandvefsmyndunar í lungum