



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Desipramine chlorhydrate for the treatment of Rett syndrome

On 12 June 2009, orphan designation (EU/3/09/643) was granted by the European Commission to Targeon SAS, France, for desipramine chlorhydrate for the treatment of Rett syndrome.

What is Rett syndrome?

Rett syndrome is a genetic disease that is caused by abnormalities in the MECP2 gene, which has important information for the normal functioning of nerve cells. This gene is in the X chromosome, one of the two chromosomes (X and Y) that determine the gender. Rett syndrome almost exclusively affects girls (XX). Boys (XY) have only one X chromosome and if affected they usually don't survive until birth. Although the disease is genetic, most girls affected (over 95%) do not inherit it from their parents.

Girls with Rett syndrome have severe mental retardation, which first appears between six and 18 months of age. Other symptoms include difficulty breathing, irregular heartbeat, a gradual loss of the ability to move, feeding difficulties, sleeping problems, constipation, repetitive hand movements and seizures (fits).

Rett syndrome is a seriously debilitating and life-threatening disease mainly because of problems with breathing and the heart rhythm.

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

At the time of designation, Rett syndrome affected approximately 0.4 in 10,000 people in the European Union (EU)*. This is equivalent to a total of 20,000 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).

* 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 27), Norway, Iceland and Liechtenstein. This represents a population of 504,800,000 (Eurostat 2009).



What treatments are available?

At the time of designation, no satisfactory methods were authorised in the EU for treating Rett syndrome. Girls with the disease were given physiotherapy, speech therapy and nutritional support to help relieve the symptoms of the disease. Medicines to control seizures were also used, as well as laxatives and painkillers.

How is this medicine expected to work?

Desipramine chlorhydrate has been used in the treatment of depression since the 1960s. In Rett syndrome, the medicine is expected to treat breathing problems.

Girls with Rett syndrome tend to have low levels of norepinephrine, a substance in the brain and spinal cord that helps maintain a normal breathing rhythm. Desipramine chlorhydrate is a 'norepinephrine re-uptake inhibitor'. This means that it works by increasing the levels of norepinephrine in the spaces between nerve cells in the brain and spinal cord. This is expected to restore normal breathing rhythm in girls with Rett syndrome.

What is the stage of development of this medicine?

The effects of desipramine chlorhydrate have been evaluated in experimental models.

At the time of submission of the application for orphan designation, a clinical trial in girls with Rett syndrome was ongoing.

At the time of submission, desipramine chlorhydrate was not authorised anywhere in the EU for Rett syndrome or designated as 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 5 May 2009 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:

Targeon SAS
65 rue Rambuteau
75004 Paris
France
Telephone: + 33 1 53 73 15 64
Telefax: + 33 1 53 73 15 64

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	Desipramine hydrochloride	Treatment of Rett syndrome
Bulgarian	Дезипрамин хлорхидрат	Лечение на Синдром на Rett
Czech	Desipramin, hydrochlorid	Léčba Rett-syndromu
Danish	Desipraminhydroklorid	Behandling af Rett syndrom
Dutch	Desipramine hydrochloride	Behandeling van het Syndroom van Rett
Estonian	Desipramiin, hüdrokloriid	Rett' sündroomi ravi.
Finnish	Desipramiini, hydrokloridi	Rettin oireyhtymän hoito
French	Chlorhydrate de désipramine	Traitement du syndrome de Rett
German	Desipramin-hydrochlorid	Behandlung des Rett-Syndroms
Greek	Δεσιπραμίνη, υδροχλωρική	θεραπεία του Σύνδρομου Rett
Hungarian	Dezipramin hidroklorid	Rett szindróma kezelése
Italian	Desipramina cloridrato	Trattamento della sindrome di Rett
Latvian	Dezipramīna hidrohlorīds	Retta sindroma terapija
Lithuanian	Dezipramino hidrochloridas	Rett'o sindromo gydymas
Maltese	Desipramine hydrochloride	Kura tas-sindrome ta' Rett
Polish	Dezypramina, chlorowodorek	Leczenie zespołu Retta
Portuguese	<u>Cloridrato de</u> desipramina	Tratamento do síndrome de Rett
Romanian	Clorhidrat de desipramină	Tratamentul sindromului Rett
Slovak	Hydrochlorid desipramínu,	Liečba Rettovho syndrómu
Slovenian	Dezipramin, hidroklorid	Zdravljenje Rettovega sindroma
Spanish	Clorhidrato de desipramina	Tratamiento del síndrome de Rett
Swedish	Desipramin hydroklorid	Behandling av Rett syndrom
Norwegian	Desipraminhydroklorid	Behandling av Retts syndrom
Icelandic	Desipramín hýdróklóríð	Meðferð á Rett heilkenni

¹ At the time of designation