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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Pro-Pro-Thr-Val-Pro-Thr-Arg for treatment of xeroderma pigmentosum

On 19 November 2014, orphan designation (EU/3/14/1375) was granted by the European Commission to Prof. Alain Taieb, France, for Pro-Pro-Thr-Val-Pro-Thr-Arg for the treatment of xeroderma pigmentosum.

What is xeroderma pigmentosum?

Xeroderma pigmentosum is an inherited skin disorder in which patients lack the ability to repair DNA damage caused by ultraviolet light.

Exposure to ultraviolet light and to toxic molecules formed inside the cells containing oxygen (reactive oxygen species or ROS) causes damage to DNA in the skin cells, but most people can repair the damage through a process known as 'nucleotide excision repair'. However, patients with xeroderma pigmentosum lack the enzymes required for excision repair and suffer significant skin damage when exposed to sunlight. Even a small amount of exposure can cause severe symptoms and these patients are at a very high risk of skin cancer.

Xeroderma pigmentosum is a long-term debilitating disease due to limitations in daytime activities and damage to the nervous system. It is also life threatening because patients are many times more likely than other people to get skin cancer.

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

At the time of designation, xeroderma pigmentosum 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).

*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 511,100,000 (Eurostat 2014).

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What treatments are available?

At the time of orphan designation, there were no satisfactory methods of treatment for patients with xeroderma pigmentosum.

How is this medicine expected to work?

Patients with xeroderma pigmentosum have a mutation (defect) in one of the genes (known as *XPC*) needed to make the enzymes for nucleotide excision repair that prevents the enzymes being produced. Studies in patients with a mutation in one of these genes have shown that an enzyme called NADPH oxidase-1, or NOX1, is then activated which leads to the production of ROS that in turn can lead to cancer.

This medicine is expected to block NOX-1 thereby reducing the amount of ROS produced which could potentially benefit patients with xeroderma pigmentosum, particularly in reducing the occurrence of skin cancer.

What is the stage of development of this medicine?

At the time of submission of the application for orphan designation, the evaluation of the effects of the medicine in experimental models was ongoing.

At the time of submission of the application for orphan designation, no clinical trials with the medicine in patients with xeroderma pigmentosum had been started.

At the time of submission, the medicine was not authorised anywhere in the EU for xeroderma pigmentosum 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 9 October 2014 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

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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[1], Norwegian and Icelandic

Language	Active ingredient	Indication
English	Pro-Pro-Thr-Val-Pro-Thr-Arg	Treatment of xeroderma pigmentosum
Bulgarian	Pro-Pro-Thr-Val-Pro-Thr-Arg	лечение на ксеродерма пигментозум
Croatian	Pro-Pro-Thr-Val-Pro-Thr-Arg	Liječenje kseroderme pigmentozum
Czech	Pro-Pro-Thr-Val-Pro-Thr-Arg	Léčba xeroderma pigmentosum
Danish	Pro-Pro-Thr-Val-Pro-Thr-Arg	Behandling af xeroderma pigmentosum
Dutch	Pro-Pro-Thr-Val-Pro-Thr-Arg	Behandeling van xeroderma pigmentosum
Estonian	Pro-Pro-Thr-Val-Pro-Thr-Arg	Xeroderma pigmentosumi ravi
Finnish	Pro-Pro-Thr-Val-Pro-Thr-Arg	Xeroderma pigmentosumin hoito
French	Pro-Pro-Thr-Val-Pro-Thr-Arg	Traitement du xeroderma pigmentosum
German	Pro-Pro-Thr-Val-Pro-Thr-Arg	Behandlung einer Xeroderma Pigmentosum
Greek	Pro-Pro-Thr-Val-Pro-Thr-Arg	θεραπεία της μελαγχρωματικής ξηροδερμίας
Hungarian	Pro-Pro-Thr-Val-Pro-Thr-Arg	Xeroderma pigmentosum-kezelése
Italian	Pro-Pro-Thr-Val-Pro-Thr-Arg	Trattamento dello xeroderma pigmentosum
Latvian	Pro-Pro-Thr-Val-Pro-Thr-Arg	*Xeroderma pigmentosum* ārstēšana
Lithuanian	Pro-Pro-Thr-Val-Pro-Thr-Arg	Pigmentinės kserodermos gydymas
Maltese	Pro-Pro-Thr-Val-Pro-Thr-Arg	Kura tal-xeroderma pigmentosum
Polish	Pro-Pro-Thr-Val-Pro-Thr-Arg	Leczenie skóry pergaminowej
Portuguese	Pro-Pro-Thr-Val-Pro-Thr-Arg	Tratamento de xeroderma pigmentoso
Romanian	Pro-Pro-Thr-Val-Pro-Thr-Arg	Tratamentul de xeroderma pigmentosum
Slovak	Pro-Pro-Thr-Val-Pro-Thr-Arg	Liečba xeroderma pigmentosum
Slovenian	Pro-Pro-Tre-Val-Pro-Tre-Arg	Zdravljenje pigmentozne kseroderme
Spanish	Pro-Pro-Thr-Val-Pro-Thr-Arg	Tratamiento de xeroderma pigmentoso
Swedish	Pro-Pro-Thr-Val-Pro-Thr-Arg	Behandling av xeroderma pigmentosum
Norwegian	Pro-Pro-Thr-Val-Pro-Thr-Arg	Behandling av xeroderma pigmentosum
Icelandic	Pró-Pró-Thr-Val-Pró-Thr-Arg	Meðferð á xeroderma pigmentosum

[1] At the time of designation