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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Antisense oligonucleotide 5'-d[P-Thio] (CCCTG CTCCC CCCTG GCTCC)-3' for the treatment of acute myeloid leukaemia

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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.	

On 3 November 2006, orphan designation (EU/3/06/416) was granted by the European Commission to CanReg (Europe) Limited, Ireland, for antisense oligonucleotide 5'-d[P-Thio] (CCCTG CTCCC CCCTG GCTCC)-3' for the treatment of acute myeloid leukaemia.

The sponsorship was transferred to EleosInc Limited, United Kingdom, in May 2007.

What is acute myeloid leukaemia?

Leukaemia is a cancer of the blood-forming cells that starts in the bone marrow (the spongy tissue inside the large bones of the body) and spreads into the blood. Myeloid cells include cells that develop into granulocytes (certain cells that are part of the body's natural defence system, the immune system) and platelets (components that help the blood clotting). Acute leukaemia is fast growing; the cells don't stop dividing when normal cells would. General signs and symptoms of leukaemia include fatigue, weakness, weight loss, fever and loss of appetite. Symptoms specific to acute myeloid leukaemia are caused by a shortage of normal healthy blood cells, and include easily bruising or bleeding (result of platelet deficiency), shortness of breath, paleness, or fatigue (result of anaemia, shortage of red blood cells), recurrent minor infections or poor healing of minor cuts (due to inadequate supply of normal immune cells). Acute myeloid leukaemia is life-threatening, in particular due to high mortality for patients who do not achieve an initial complete remission.

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

At the time of designation, acute myeloid leukaemia affected approximately 1 in 10,000 people in the European Union (EU). This was equivalent to a total of around 47,000 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?

Treatment for leukaemia is complex, and depends on a number of factors including the type of leukaemia, the extent of the disease and whether the leukaemia has been treated before. It also depends on the age, the symptoms, and the general health of the patient. The primary treatment of acute myeloid leukaemia is chemotherapy (using drugs to kill cancer cells). Several products were authorised for the condition in the Community at the time of submission of the application for orphan drug designation.

Satisfactory argumentation has been submitted by the sponsor to justify the assumption that antisense oligonucleotide 5'-d[P-Thio] (CCCTG CTCCC CCCTG GCTCC)-3' might be of potential significant benefit for the treatment of acute myeloid leukaemia, mainly because it may be used in combination with other treatments and it may improve the long-term outcome of the patients. This 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?

An antisense oligonucleotide is a fragment of modified DNA (the genetic material), designed to be stable and bind to a specific gene to inhibit its expression (decrease the production of the protein that the gene regulates). Antisense oligonucleotide 5'-d[P-Thio] (CCCTG CTCCC CCCTG GCTCC)-3' binds to a gene that regulates a protein called p53. This protein is very important for the cells' natural ability to repair themselves from damage. According to the sponsor, antisense oligonucleotide 5'-d[P-Thio] (CCCTG CTCCC CCCTG GCTCC)-3' will by decreasing the production of p53 in tumour cells thus make them more susceptible to be destroyed by the damage that chemotherapy drugs causes.

What is the stage of development of this medicine?

The effects of antisense oligonucleotide 5'-d[P-Thio] (CCCTG CTCCC CCCTG GCTCC)-3' were evaluated in experimental models.

At the time of submission of the application for orphan designation, clinical trials in patients with acute myeloid leukaemia were ongoing.

Antisense oligonucleotide 5'-d[P-Thio] (CCCTG CTCCC CCCTG GCTCC)-3' was not authorised anywhere worldwide for the treatment of acute myeloid leukaemia, at the time of submission.

Orphan designation of antisense oligonucleotide 5'-d[P-Thio] (CCCTG CTCCC CCCTG GCTCC)-3' was granted in the United States for acute myelogenous leukaemia.

*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).

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 4 October 2006 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:

EleosInc Limited
199 Bishopsgate
London EC2M 3UT
United Kingdom
Tel. +44 (0)20 7588 0800
Fax +44 (0)20 7588 0555
E-mail: Dreardan@EleosInc.com

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	Antisense oligonucleotide 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Treatment of acute myeloid leukaemia
Bulgarian	Антисенс олигонуклеотид 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Лечение на остра миелоидна левкемия
Czech	Antisense oligonukleotid 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Behandling af akut myeloid leukæmi
Danish	Antisense-oligonucleotide 5'-d[PTHi](CCCTG CTCCC CCCTG GCTCC)-3'	Behandeling van acute myeloïde leukemie
Dutch	Antisense oligonukleotiid 5'-d[P-Tio](CCCTG CTCCC CCCTG GCTCC)-3'	Akuutse müeloidse leukeemia ravi
Estonian	Antisense oligonucleotide 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Treatment of acute myeloid leukaemia
Finnish	Antisense-oligonukleotidi 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Akuutin myelooisen leukemian hoito
French	Oligonucléotide antisens 5'-d [P-Thio] (CCCTG CTCCC CCCTG GCTCC)-3'	Traitement de la leucémie aiguë myéloïde
German	Antisense-Oligonukleotid 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Behandlung der akuten myeloischen Leukämie
Greek	Ολιγονουκλωτεΐδια συμπληρωματικού γενετικού υλικού [P- θείο] (CCCTG CTCCC CCCTG GCTCC)-3'	Θεραπεία της οξείας μυελοειδούς λευχαιμίας
Hungarian	Antisens oligonukleotid 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Akut myeloid leukaemia kezelése
Italian	Oligonucleotide antisenso 5'-d[P-Tio](CCCTG CTCCC CCCTG GCTCC)-3'	Trattamento della leucemia mieloide acuta
Latvian	Antisense oligonukleotīds 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Akūtas mieloleikozes ārstēšana
Lithuanian	Nekoduojančios DNR sekos oligonukleotidas 5'-d[P-Tio](CCCTG CTCCC CCCTG GCTCC)-3'	Ūmios mieloleukozės gydymas
Maltese	Antisense oligonucleotide 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Kura tal-lewkimja mjelojda akuta
Polish	Odwrotny Ooligonukleotyd antysensowy 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Leczenie ostrej białaczki szpikowej
Portuguese	Oligonucleótido anti-sentido 5'-d[P-Tio](CCCTG CTCCC CCCTG GCTCC)-3'	Tratamento da leucemia mielóide aguda
Romanian	Oligonucleotid antisens 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Tratamentul leucemiei mieloide acute
Slovak	Antisense oligonukleotid 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Liečba akútnej myeloickej leukémie

¹ At the time of transfer of sponsorship

Language	Active Ingredient	Indication
Slovenian	Protismerni oligonukleotid 5'-d[P-tio](CCCTG CTCCC CCCTG GCTCC)-3'	Zdravljenje akutne mieloične levkemije
Spanish	Oligonucleótido antisentido 5'-d[P-Tio](CCCTG CTCCC CCCTG GCTCC)-3'	Tratamiento de la leucemia mieloide aguda
Swedish	Antisens oligonukleotid 5'-d[P-Thio](CCCTG CTCCC CCCTG GCTCC)-3'	Behandling av akut myeloisk leukemi
Norwegian	Antisens oligonukleotid 5'-d[P-Tio](CCCTG CTCCC CCCTG GCTCC)-3'	Behandling av akutt myelogen leukemi
Icelandic	Andþáttar fákirni 5'-d[P-Þíó](CCCTG CTCCC CCCTG GCTCC)-3'	Meðferð við bráðu kyrningahvítblæði