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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

16-base single-stranded PNA oligonucleotide linked to a 7-aminoacid peptide for the treatment of neuroblastoma

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Rev.1: sponsor's name change	24 March 2014

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 25 November 2009, orphan designation (EU/3/09/692) was granted by the European Commission to Biogenera srl, Italy, for 16-base single-stranded PNA oligonucleotide linked to a 7-aminoacid peptide for the treatment of neuroblastoma.

In February 2014, Biogenera srl changed name to Biogenera SpA.

What is neuroblastoma?

Neuroblastoma is a cancer of nerve cells in the abdomen (tummy) and manifests itself as a lump in the abdomen or around the spine. Symptoms may include weakness, bone pain, loss of appetite and fever. Neuroblastoma is the most common solid tumour outside the brain in children. It is often present at birth but is usually diagnosed later when the cancer has spread to other parts of the body and the child begins to show symptoms of the disease.

Neuroblastoma is a life-threatening disease of childhood that is associated with poor long-term survival.

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

At the time of designation, neuroblastoma affected less than 1 in 10,000 people in the European Union (EU). This was equivalent to a total of fewer than 50,000 people*, and is below the ceiling for orphan

*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.
At the time of designation, this represented a population of 504,800,000 (Eurostat 2009).

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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 designation, several medicines were authorised for the treatment of neuroblastoma in the EU. Treatments for neuroblastoma included surgery, radiotherapy (treatment with radiation) and chemotherapy (medicines to treat cancer).

The sponsor has provided sufficient information to show that 16-base single-stranded PNA oligonucleotide linked to a 7-aminoacid peptide might be of significant benefit for patients with neuroblastoma because it works in a different way to existing treatments, and early studies in experimental models indicate that it might be used in combination with existing treatments to improve the overall outcome of patients with this condition. These assumptions will need to be confirmed at the time of marketing authorisation, in order to maintain the orphan status.

How is this medicine expected to work?

16-Base single-stranded PNA oligonucleotide linked to a 7-aminoacid peptide is expected to work by attaching to and blocking the gene responsible for producing a protein called MYCN. This gene is involved in the growth, progression and spread of neuroblastomas that are particularly severe. By blocking the gene, the medicine blocks the production of the MYCN protein. This is expected to stop the neuroblastoma cells from growing and multiplying.

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 16-base single-stranded PNA oligonucleotide linked to a 7-aminoacid peptide in experimental models was ongoing.

At the time of submission of the application for orphan designation, no clinical trials with the designated product in patients with neuroblastoma had been started.

At the time of submission, 16-base single-stranded PNA oligonucleotide linked to a 7-aminoacid peptide was not authorised anywhere in the EU for neuroblastoma 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 7 October 2009 recommending the granting of this designation.

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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:

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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	16-base single-stranded PNA oligonucleotide linked to a 7-aminoacid peptide	Treatment of neuroblastoma
Bulgarian	Едноверижен Пептид Нуклеинова Киселина (PNA) олигонуклеотид от 16 бази, свързан с7 аминокиселинен пептид	Лечение на невробластом
Czech	Jednořetězcový PNA oligonukleotid o 16 bazích vázaný na 7 aminokyselinový peptid	Léčba neuroblastomu
Danish	16 baser enkeltstrenget PNA-oligonukleotid bundet til et 7 aminosyre peptid	Behandling af neuroblastom
Dutch	16-base enkelstrandig PNA oligonucleotide gelieerd aan een 7- aminozuren bevattend peptide	Behandeling van neuroblastoom
Estonian	16 alusega üheahelalise PNA oligonukleotiid, mis on seotud 7-aminohappe peptiidiga	Neuroblastoomi ravi
Finnish	16-emäksinen yksijuosteinen PNA-oligonukleotidi - 7 aminohappopeptidi	Neuroblastooman hoito
French	Oligonucléotide APN monobrin de 16 bases lié à un peptide de 7 aminoacides	Traitement du neuroblastome
German	16-Basen Einzelstrang PNA-Oligonukleotid gebunden an ein 7 Aminosäure Peptid	Behandlung des Neuroblastoms
Greek	Ολιγονουκλεοτίδιο μονής PNA αλύσου 16 βάσεων συζευγμένο με πεπτίδιο 7 αμινοξέων	Θεραπεία Νευροβλάστωματος
Hungarian	7 aminosavból álló peptidhez kapcsolt 16 bázisból álló, egyes szálú PNS oligonukleotid	Neuroblastoma kezelése
Italian	Oligonucleotide di PNA a catena singola di 16 basi connesso a oligopeptide di 7 aminoacidi	Trattamento del neuroblastoma
Latvian	16 bāzu vienpavediena PNS oligonukleotīds - 7 aminoskābju peptīds	Neiroblastomas ārstēšana
Lithuanian	16 bazių porų viengrandis PNR oligonukleotidas, prijungtas prie 7 aminorūgščių peptido	Neuroblastomos gydymas
Maltese	Oligonukleotide tal-PNA b'katina waħda ta' 16 il-bażi magħqud ma' peptidu b' 7 aċidi amminiċi	Kura tan-newroblastoma
Polish	16 zasadowy oligonukleotyd pojedynczego łańcucha PNA przyłączony do 7-aminokwasowego peptydu	Leczenie nerwiaka płodowego
Portuguese	Oligonucleótido de PNA monocatenado com 16 bases ligado a 7 aminoácido Peptídeo	Tratamento do neuroblastoma
Romanian	Oligonucleotid APN monocatenar format din 16 baze cuplat cu o peptidă formată din 7 aminoacizi	Tratamentul neuroblastomului
Slovak	Jednovláknový oligonukleotid PNA zložený zo 16 báz vo väzbe so 7-aminokyselinovým peptidom	Liečba neuroblastómu
Slovenian	16 bazni enoverižni PNK olugonukleotid – vezan na 7 aminokislinski peptid	Zdravljenje nevroendokrinega nevroblastoma

[1] At the time of designation

Language	Active ingredient	Indication
Spanish	Oligonucleótido monocatenario de ácido nucleico peptídico (PNA) compuesto por 16 bases ligado a un péptido de 7 aminoácidos	Tratamiento del neuroblastoma
Swedish	16-bas enkelsträngad PNA-oligonukleotid länkt med 7 aminosyra peptid	Behandling av neuroblastom
Norwegian	16-base enkelttrådig PNA-oligonukleotid koblet til et 7 aminosyre peptid	Behandling av neuroblastom
Icelandic	16 basa einþátta PNA- ólígónúkleótíð - 7 amínósýru peptíð	Meðferð við taugakímfrumuæxli