



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

5(S)-(2'-hydroxy ethoxy)-20(S)-camptothecin for the treatment of osteosarcoma

On 8 June 2007, orphan designation (EU/3/07/450) was granted by the European Commission to ClinTec International Ltd, United Kingdom, for 5(S)-(2'-hydroxy ethoxy)-20(S)-camptothecin for the treatment of osteosarcoma.

The sponsorship was transferred to Dr Reddy's Laboratories (UK) Limited, United Kingdom, in September 2010.

What is osteosarcoma?

Tumours that begin in the bone tissue are known as primary bone tumours. Osteosarcoma is the most common type of primary bone tumour and occurs mainly during childhood and adolescence. It derives from the primitive bone-forming cells, the so-called mesenchymal stem-cells or osteoblasts. Osteosarcoma can develop in any bone in the body. Most often it starts in the bones around the knee joint or in the upper or lower leg next to the knee in the area of bone with the fastest growth. They can also arise in the upper arm close to the shoulder. Osteosarcoma is a serious and potentially life-threatening condition.

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

At the time of designation, osteosarcoma affected not more than 2.5 in 10,000 people in the European Union (EU)*. This is equivalent to a total of around 125,000 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 the knowledge of the Committee for Orphan Medicinal Products (COMP).

What treatments are available?

Surgery is currently the therapy of choice for early stage osteosarcomas. The primary aim of the treatment is a complete surgical resection of the tumour. However, the disease usually reappears in

*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 27), Norway, Iceland and Lichtenstein. This represents a population of 498,000,000 (Eurostat 2006). This estimate is based on available information and calculations presented by the sponsor at the time of the application.



more than 80% of patients. The addition of chemotherapy (using drugs to kill cancer cells) before or after the operation, improves the outcome of the patients. Several products for treatment of osteosarcoma 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 that 5(S)-(2'-hydroxy ethoxy)-20(S)-camptothecin might be of potential significant benefit for the treatment of osteosarcoma, because of its new mechanism of action. 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?

5(S)-(2'-hydroxy ethoxy)-20(S)-camptothecin is a derivative (a modified version) of a molecule found naturally in a Chinese tree called *Camptotheca acuminata*. In the body, it binds to a large enzyme (a protein that speeds up the conversion of certain substances into other substances) called topoisomerase I. This enzyme is necessary for cells when they are growing and when they are making copies of their genetic material (DNA), something that cancer cells do much more often than normal cells. 5(S)-(2'-hydroxy ethoxy)-20(S)-camptothecin acts by inhibiting topoisomerase I, thus hindering the growth of cancer cells and potentially contributing to the destruction of the osteosarcoma tumours.

What is the stage of development of this medicine?

The effects of 5(S)-(2'-hydroxy ethoxy)-20(S)-camptothecin were evaluated in experimental models.

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

5(S)-(2'-hydroxy ethoxy)-20(S)-camptothecin was not authorised anywhere worldwide for the treatment of osteosarcoma nor designated as orphan medicinal product elsewhere for this condition, at the time of submission.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 12 April 2007 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:

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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 languages¹, Norwegian and Icelandic

Language	Active Ingredient	Indication
English	5(S)-(2'-hydroxy ethoxy)-20(S)-camptothecin	Treatment of osteosarcoma
Bulgarian	5(S)-(2'-хидрокси етокси)-20(S) – камптотецин	Лечение на остеосарком
Czech	5(S)-(2'-hydroxy ethoxy)-20(S)-kamptotecin	Léčba osteosarkomu
Danish	5(S)-(2'-hydroxy ethoxy)-20(S)-camptothecin	Behandling af osteosarcoma
Dutch	5(S)-(2'-hydroxy ethoxy)-20(S)-camptothecine	Behandeling van osteosarcoma
Estonian	5(S)-(2'-hydroxy ethoxy)-20(S)-camptothecin	Osteosarkoomi ravi
Finnish	5(S)-(2'-hydroksi etoksi)-20(S)-kamptotekiini	Osteosarkoman hoito
French	5(S)-(2'-hydroxy ethoxy)-20(S)-camptothécine	Traitement des ostéosarcomes
German	5(S)-(2'-hydroxy ethoxy)-20(S)-Camptothecin	Behandlung von Osteosarkomen
Greek	5(S)-(2'-υδροξύ αιθόξυ)-20(S)-καμπτοθεσίνη	Θεραπεία του οστεοσαρκώματος
Hungarian	5(S)-(2'- hidroxi etoxi)-20(S)-camptothecin	Osteosarcoma kezelése
Italian	5(S)-(2'-idrossi-etossi)-20(S)-camptotecina	Trattamento dell'osteosarcoma
Latvian	5(S)-(2'-hidroksi etoksi)-20(S)-kamptoteciņš	Osteosarkomas ārstēšana
Lithuanian	5(S)-(2'-hidroksi etoksi)-20(S)-kamptotecinas	Osteosarkomos gydymas
Maltese	5(S)-(2'-hydroxy ethoxy)-20(S)-Camptothecin	Kura ta' l-osteosarkoma
Polish	5(S)-(2'-hydroksy etoksy)-20(S) kamptoteczyna	Leczenie mięsaka kościopochodnego
Portuguese	5(S)-(2'-hidroxietóxi)-20(S)-camptothecin	Tratamento do osteosarcoma
Romanian	5(S)-(2'-hidroxi etoxi)-20(S)-camptotecin	Tratamentul osteosarcomului
Slovak	5(S)-(2'-hydroxyetoxy)-20(S)-kamptotecín	Liečba osteosarkómu
Slovenian	5(S)-(2'-hydroxy ethoxy)-20(S)-camptothecin	Zdravljenje osteosarkoma
Spanish	5(S)-(2'-hidroxi etoxi)-20(S)-camptotecina	Tratamiento del osteosarcoma

¹ At the time of designation

Language	Active Ingredient	Indication
Swedish	5(S)-(2'-hydroxy etoxy)-20(S)-camptothecin	Behandling av osteosarkom
Norwegian	5 (S)-(2'-hydroksy etoksy)-20(S)-Camptotecin	Behandling av osteosarkom
Icelandic	5(S)-(2'-hýdroxý ethoxý)-20(S)-Camptothecín	Meðferð við beinsarkmeini