3 October 2014
EMA/COMP/366/2004 Rev.3
Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Recombinant human interleukin-21 for the treatment of renal cell carcinoma

First publication	1 October 2004
Rev.1: transfer of sponsorship	12 November 2009
Rev.2: transfer of sponsorship	25 February 2013
Rev.3: withdrawal from the Community Register	3 October 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.	

Please note that this product was withdrawn from the Community Register of designated Orphan Medicinal Products in June 2014 on request of the Sponsor.

On 2 September 2004, orphan designation (EU/3/04/226/) was granted by the European Commission to Novo Nordisk, Denmark, for recombinant human interleukin-21 for the treatment of renal cell carcinoma for the treatment of renal cell carcinoma.

The sponsorship was transferred to Quintiles Limited, United Kindom, in October 2009 and to Bristol-Myers Squibb International Corporation, Belgium, in October 2012.

What is renal cell carcinoma?

Renal cell carcinoma (also called cancer of the kidney or renal adenocarcinoma) is a disease in which cancer (malignant) cells are found in certain tissues of the kidney. Inside each kidney are tiny tubules that filter and clean the blood, taking out waste products, and making urine. Renal cell carcinoma is a cancer of the lining of the tubules in the kidney. Renal cell carcinoma accounts for approximately 85% of all kidney cancers. Signs of cancer are difficult to detect in early stages of the disease, and about half of the patients are diagnosed when the disease has spread around the kidney or to distant parts of the body. Surgery is a common treatment of renal cell cancer, and allows taking out the cancer in an operation, although the cancer may appear again. Renal cell carcinoma is life-threatening.

30 Churchill Place ● Canary Wharf ● London E14 5EU ● United Kingdom
Telephone +44 (0)20 3660 6000 **Facsimile** +44 (0)20 3660 5555
Send a question via our website www.ema.europa.eu/contact

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

At the time of designation, renal cell carcinoma affected approximately 3 in 10,000 people in the European Union (EU). This was equivalent to a total of around 139,000 people*, and was 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).

What treatments are available?

There are treatments for most patients with renal cell cancer. These may include surgery (taking out the cancer in an operation), chemotherapy (using drugs to kill cancer cells), radiation therapy (using high-dose x-rays or other high-energy rays to kill cancer cells), hormone therapy (using hormones to stop cancer cells from growing), and biological therapy (using the body's immune system to fight cancer). The primary therapies for advanced cancer are biologic agents, such as interleukin-2 and interferon-α. Other anticancer agents had also been authorised in the Community for treatment of renal cell carcinoma at the time of submission of the application for orphan designation.

Satisfactory argumentation has been submitted by the sponsor to justify the assumption that recombinant human interleukin-21 might be of potential significant benefit for the treatment of renal cell carcinoma. The 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?

Interleukin 21 belongs to a group of small proteins, the so-called cytokines. It is released by particular cells and has specific effects on cell-cell interaction. It also influences the behaviour of cells by binding to a specific receptor (proteins found on the surface of the cell, on which only a specific protein can bind in order to activate certain biologic reactions of that cell). Certain types of white blood cells, such as lymphocytes, carry this specific interleukin 21 receptor on their surface. These types of white blood cells seem to play a role in the control and destruction of cancer cells as part of the body's defence mechanism (immune system). By binding to these cells, it is thought that recombinant human interleukin-21 may help the body's immune system to kill the cancer cells.

What is the stage of development of this medicine?

The evaluation of the effects of recombinant human interleukin-21 in experimental models is ongoing.

At the time of submission of the application for orphan designation, no clinical trials in patients with renal cell carcinoma were initiated.

Recombinant human interleukin-21 was not marketed anywhere worldwide for treatment of renal cell carcinoma or 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 22 July 2004 recommending the granting of this designation.

* 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 464,200,000 (Eurostat 2004).

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:

Bristol-Myers Squibb International Corporation
Parc de l'Alliance
Avenue de Finlande 8
1420 Braine l'Alleud
Belgium
Tel. +32 2 352 7611
Fax +32 2 352 7300
E-mail: medicalinfo.belgium@bms.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 languages[1], Norwegian and Icelandic

Language	Active Ingredient	Indication
English	Recombinant human interleukin-21	Treatment of renal cell carcinoma
Bulgarian	Рекомбинантен човешки интерлевкин-21	Бъбречно-клетъчен карцином
Czech	Rekombinantní humánní interleukin-21	Léčba renálního karcinomu
Danish	Rekombinant human interleukin-21	Behandling af renalcellekarcinom
Dutch	Recombinant humaan interleukine-21	Behandeling van renaal celcarcinoom
Estonian	Rekombinantne humaaninterleukiin-21	Neerukartsinoomi ravi
Finnish	Rekombinantti ihmisinterleukiini-21	Munuaissolukarsinooman hoito
French	Interleukine 21 humaine recombinante	Traitement du carcinome rénal
German	Rekombinantes humanes Interleukin 21	Behandlung von Nierenzellkarzinom
Greek	Ανασυνδυασμένη ανθρώπινη ιντερλευκίνη-21	Θεραπεία του νεφροκυτταρικού καρκινώματος.
Hungarian	Rekombináns humán interleukin-21.	Vesesejtes carcinoma kezelése
Italian	Interleuchina-21 ricombinante umana	Trattamento del carcinoma a cellule renali
Latvian	Rekombinants cilvēka interleikīns-21	Nieru karcinomas ārtēšana
Lithuanian	Rekombinantinis žmogaus interleukinas-21	Inkstų ląstelių karcinomos gydymas
Maltese	Recombinant human interleukin-21	Treatment of renal cell carcinoma
Polish	Rekombinowana, ludzka, interleukina - 21	Leczenie raka nerki
Portuguese	Interleucina-21 recombinante humana	Tratamento do carcinoma das células renais
Romanian	Interlukina-21 umană recombinantă	Tratamentul carcinomului celular renal
Slovak	Rekombinantný ľudský interleukín-21	Liečba karcinómu obličky
Slovenian	Rekombinantni humani interlevkin-21	Zdravljenje karcinoma ledvičnih celic
Spanish	Interleukina-21 recombinante humana	Tratamiento del carcinoma de células renales
Swedish	Rekombinant humant interleukin-21	Behandling av njurcellskarcinom
Norwegian	Rekombinant humant interleukin-21	Behandling av nyrecellekarsinom
Icelandic	Raðbrigða interleukin-21 manna	Meðferð á nýrnafrumukrabbameini

[1] At the time of transfer of sponsorship