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EMA/COMP/652847/2014
Committee for Orphan Medicinal Products

# Public summary of opinion on orphan designation

## Diaspirin cross-linked haemoglobin for the treatment of hepatocellular carcinoma

On 19 November 2014, orphan designation (EU/3/14/1378) was granted by the European Commission to New B Innovation (UK) Limited, United Kingdom, for diaspirin cross-linked haemoglobin for the treatment of hepatocellular carcinoma.

### What is hepatocellular carcinoma?

Hepatocellular carcinoma is a primary cancer of the liver (a cancer that starts in the liver, rather than one that has spread to the liver from elsewhere in the body). It is more common in men than in women, and occurs mostly in people who have scarring of the liver (cirrhosis) or after infection with the hepatitis B or C viruses. Symptoms of the disease include pain and swelling in the abdomen, weight loss, weakness, loss of appetite and nausea (feeling sick).

Hepatocellular carcinoma is a serious and life-threatening illness that is associated with poor overall survival.

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

At the time of designation, hepatocellular carcinoma affected approximately 1 in 10,000 people in the European Union (EU). This was equivalent to a total of around 51,000 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?

At the time of designation, some patients with early stage hepatocellular carcinoma were treated with surgery to remove part of the liver. Chemotherapy (medicines to treat cancer) was generally used after surgery or on its own if surgery was not possible or the disease had spread to other parts of the

[*]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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body (metastatic disease). Nexavar (sorafenib) was authorised in the EU for use in hepatocellular carcinoma.

The sponsor has provided sufficient information to show that diaspirin cross-linked haemoglobin might be of significant benefit for patients with hepatocellular carcinoma because early studies in experimental models show that it may improve survival and reduce the risk of metastasis (cancer that has spread from another part of the body) when used in addition to the currently authorised medicine Nexavar. This assumption 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?

Because of the irregular growth of blood vessels in cancers, some parts of the cancer have low levels of oxygen (hypoxia), which is thought to make cancer cells grow slower and become resistant to cancer treatments.

This medicine contains haemoglobin, the protein in red blood cells that carries oxygen around the body. It is expected to reach hypoxic cancer cells and to deliver oxygen to them. Since hypoxic cells are unable to cope with large amounts of oxygen, the increased oxygen levels are expected to lead to death of the cancer cells, thus slowing down the growth of the cancer.

## What is the stage of development of this medicine?

The effects of the medicine have been evaluated in experimental models.

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

At the time of submission, the medicine was not authorised anywhere in the EU for hepatocellular carcinoma 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.

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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 | Diaspirin cross-linked haemoglobin | Treatment of hepatocellular carcinoma |
| Bulgarian | Хемоглобин свързан с диаспирин | Лечение на хепатоцелуларен карцином |
| Croatian | Hemoglobin unakrsno povezan s diaspirinom | Liječenje hepatocelularnog karcinoma |
| Czech | Diaspirin vázaný na hemoglobin | Léčba hepatocelulárního karcinomu |
| Danish | Diaspirin krydsbundet hæmoglobin | Behandling af hepatocellulært karcinom |
| Dutch | Diaspirine kruis-gebonden hemoglobine | Behandeling van hepatocellulair carcinoom |
| Estonian | Diaspiriiniga ristühendatud hemoglobiin | Hepatotsellulaarse kartsinoomi ravi |
| Finnish | Diaspiriini ristiyhdistetty hemoglobiini | Hepatosellulaarisen karsinooman hoito |
| French | Hémoglobine réticulée par diaspirine | Traitement du cancer hépatocellulaire |
| German | Diaspirin vernetztes Hämoglobin | Behandlung des Leberzellkarzinoms |
| Greek | Αιμοσφαιρίνη διασυνδεμένη με διασπιρίνη | Θεραπεία του ηπατοκυτταρικού καρκινώματος |
| Hungarian | Diaszpirin-térhálós hemoglobin | Hepatocelluláris carcinoma kezelése |
| Italian | Emoglobina cross-legata alla disapirina | Trattamento del carcinoma epatocellulare |
| Latvian | Diaspirīna šķērseniski-saistīts hemoglobīns | Hepatocellulāras karcinomas ārstēšana |
| Lithuanian | Su hemoglobinu sujungtas diaspirinas | Hepatoceliulinės karcinomos gydymas |
| Maltese | Emoglobina b'rabta inkroċjata ma' diaspirin | Kura tal-karċinoma epatoċellulari |
| Polish | Hemoglobina usieciowana kwasem dwusalicylowym | Leczenie raka wątrobowokomórkowego |
| Portuguese | Diaspirina ligada à hemoglobina | Tratamento do carcinoma hepatocelular |
| Romanian | Hemoglobină cuplată cu diaspirină | Tratamentul carcinomului hepatocelular |
| Slovak | Hemoglobín viazaný diaspirínom | Liečba hepatocelulárneho karcinómu |
| Slovenian | Diaspirin povezan s hemoglobinom | Zdravljenje hepatocelularnega karcinoma |
| Spanish | Hemoglobina reticulado por diaspirina | Tratamiento del carcinoma hepatocelular |
| Swedish | Diaspirin krosslänkad hemoglobin | Behandling av hepatocellulärt karcinom |
| Norwegian | Diaspirin kryssbundet til haemoglobin | Behandling av hepatocellulært karsinom |
| Icelandic | Díaspírín kross-tengdur blóðrauði | Meðferð við lifrarfrumukrabbameini |

[1] At the time of designation