



EUROPEAN MEDICINES AGENCY  
SCIENCE MEDICINES HEALTH

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Committee for Orphan Medicinal Products

## Public summary of opinion on orphan designation

### 3-(5-Amino-2-methyl-4-oxoquinazolin-3(4H)-yl)piperidine-2,6-dione hydrochloride for the treatment of diffuse large B-cell lymphoma

On 27 June 2016, orphan designation (EU/3/16/1672) was granted by the European Commission to Celgene Europe Limited, United Kingdom, for 3-(5-amino-2-methyl-4-oxoquinazolin-3(4H)-yl)piperidine-2,6-dione hydrochloride (also known as CC-122) for the treatment of diffuse large B-cell lymphoma.

#### What is diffuse large B-cell lymphoma?

Diffuse large B-cell lymphoma is a type of blood cancer and the most common form of a group of blood cancers known as non-Hodgkin lymphomas.

Diffuse large B-cell lymphoma affects a type of white blood cell called B lymphocytes, or B cells. In patients with this cancer, the B cells multiply too quickly and live for too long, so there are too many of them in the lymph nodes. The first sign of the disease is usually a lump in the neck, under the arm or in the groin area, which is caused by an enlarged lymph node. Patients with diffuse large B-cell lymphoma may also have fever, tiredness, night sweats or weight loss that have no obvious cause.

Although some people with diffuse large B-cell lymphoma can be cured, it remains a serious and life-threatening disease, particularly when the disease is diagnosed late or has come back after initial treatment.

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

At the time of designation, diffuse large B-cell lymphoma affected approximately 4.3 in 10,000 people in the European Union (EU). This was equivalent to a total of around 221,000 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).

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\*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 513,700,000 (Eurostat 2016).



## What treatments are available?

At the time of designation, several medicines were authorised for the treatment of diffuse large B-cell lymphoma in the EU. The main treatment was chemotherapy (medicines to treat cancer) usually in combination with other medicines called monoclonal antibodies and sometimes in combination with radiotherapy (treatment with radiation). Autologous haematopoietic (blood) stem-cell transplantation was also used in patients at risk of the disease coming back after treatment. This is a complex procedure where patients receive their own stem cells to help restore the bone marrow.

The sponsor has provided sufficient information to show that this medicine might be of significant benefit for patients with diffuse large B-cell lymphoma based on preliminary results in patients who did not respond to or whose disease came back after previous treatment and who responded to this medicine. 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?

The medicine acts on the immune system (the body's natural defences). It is expected to work by promoting the breakdown of two proteins called Aiolos and Ikaros that are thought to be involved in the abnormal development of B cells in diffuse large B-cell lymphoma. The breakdown of these two proteins is thought to result in apoptosis (death) of the cancerous B cells. This is expected to slow down the growth of the cancer.

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

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

At the time of submission of the application for orphan designation, clinical trials with the medicine in patients with diffuse large B-cell lymphoma were ongoing.

At the time of submission, this medicine was not authorised anywhere in the EU for diffuse large B-cell lymphoma 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 19 May 2016 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:

Contact details of the current sponsor for this orphan designation can be found on EMA website, on the medicine's [rare disease designations page](#).

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<sup>1</sup>, Norwegian and Icelandic

Language	Active ingredient	Indication
English	3-(5-amino-2-methyl-4-oxoquinazolin-3(4H)-yl)piperidine-2,6-dione hydrochloride	Treatment of diffuse large B-cell lymphoma
Bulgarian	3-(5-амино-2-метил-4-оксоквиназолин-3(4H)-ил)пиперидин-2,6-дион хидрохлорид	Лечение на дифузен В-едроклетъчен лимфом
Croatian	3-(5-amino-2-metil-4-oksokinazolin-3(4H)-il)piperidin-2,6-dion hidroklorid	Liječenje difuznog limfoma velikih B-stanica
Czech	3-(5-amino-2-methyl-4-oxochinazolin-3(4H)-yl)piperidin-2,6-dion hydrochlorid	Léčba velkobuněčného difuzního B-lymfomu
Danish	3-(5-amino-2-methyl-4-oxoquinazolin-3(4H)-yl)piperidin-2,6-dionhydrochlorid	Behandling af diffust storcellet B-celle lymfom
Dutch	3-(5-amino-2-methyl-4-oxochinazoline-3(4H)-yl)piperidine-2,6-dionhydrochloride	Behandeling van diffuus grootcellig B-cel-lymfoom
Estonian	3-(5-amino-2-metüül-4-oksokinasoliin-3(4H)-üül)piperidiin-2,6-dioon vesinikkloriid	Diffuusse suure B-rakulise lümfoomi ravi
Finnish	3-(5-amino-2-metyyli-4-oksokinasoliini-3(4H)-yyli)piperidiini-2,6-dionihydrokloridi	Diffuusin suurisoluisen B-solulymfooman hoito
French	Chlorhydrate de 3-(5-amino-2-méthyl-4-oxoquinazoline-3(4H)-yl)pipéridine-2,6-dione	Traitement du lymphome diffus à grandes cellules B
German	3-(5-Amino-2-methyl-4-oxoquinazolin-3(4H)-yl)piperidin-2,6-dion-Hydrochlorid	Behandlung des diffusen großzelligen B-Zell-Lymphoms
Greek	Υδροχλωρική 3-(5-αμινο-2-μεθυλο-4-οξοκιναζολινο-3(4H)-υλο)πιπεριδινο-2,6-διόνη	Θεραπεία του διάχυτου μεγαλοκυτταρικού λεμφώματος Β-κυττάρου (DLBCL)
Hungarian	3-(5-amino-2-metil-4-oxokinazolin-3(4H)-il)piperidin-2,6-dion-hidroklorid	Diffúz nagy B-sejtes lymphoma kezelése
Italian	3-(5-amino-2-metil-4-oxochinazolin-3(4H)-il)piperidina-2,6-dione cloridrato	Terapia del Linfoma non-Hodgkin diffuso a grandi cellule di tipo B (DLBCL)
Latvian	3-(5-amino-2-metil-4-oksohinazolīn-3(4H)-il)piperidīn-2,6-diona hidrohlorīds	Difūzas lielo B šūnu limfomas ārstēšana
Lithuanian	3-(5-amino-2-metil-4-oksokvinazolin-3(4H)-il)piperidin-2,6-diono hidrokloridas	Difuzinės stambiujų B ląstelių limfomos gydymas
Maltese	3-(5-amino-2-methyl-4-oxoquinazolin-3(4H)-yl)piperidine-2,6-dione hydrochloride	Kura tal-limfoma tač-ċelluli tat-tip B kbar mxerrda
Polish	3-(5-amino-2-metylo-4-oksochinazolino-3(4H)-yl)piperidyno-2,6-dionu chlorowodorek	Leczenie rozlanego chłoniaka z dużych limfocytów B
Portuguese	Cloridrato de 3-(5-amino-2-metil-4-oxoquinazolina-3(4H)-il)piperidina-2,6-diona	Tratamento do linfoma difuso de grandes células B
Romanian	Clorhidrat de 3-(5-amino-2-metil-4-oxochinazolin-3(4H)-il)piperidin-2,6-dionă	Tratamentul limfomului difuz cu celule B mari

<sup>1</sup> At the time of designation

Language	Active ingredient	Indication
Slovak	3-(5-amino-2-metyl-4-oxochinazolín-3(4H)-yl)piperidín-2,6-dión hydrochlorid	Liečba difúzneho veľkobunkového lymfómu z buniek B
Slovenian	3-(5-amino-2-metil-4-oksokinazolin-3(4H)-il)piperidin-2,6-dion hidroklorid	Zdravljenje razširjenega limfoma velikih B celic
Spanish	Clorhidrato de 3-(5-amino-2-metil-4-oxoquinazolin-3(4H)-il)piperidina-2,6-diona	Tratamiento del linfoma difuso de células B grandes
Swedish	3-(5-amino-2-metyl-4-oxokinazolin-3(4H)-yl)piperidin-2,6-dion-hydroklorid	Behandling av diffusa storcelliga B-cells lymfom
Norwegian	3-(5-amino-2-metyl-4-oksokinazolin-3(4H)-yl)piperidin-2,6-dionhydroklorid	Behandling av diffus storcellet B-celle lymfom
Icelandic	3-(5-amínó-2-metýl-4-oxókínasólín-3(4H)-ýl)píperidín-2,6-díón hýdróklóríð	Til meðferðar á dreifðu stórfrumu B frumu eitlakrabbameini