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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Donor T lymphocytes depleted ex vivo of host alloreactive T cells using photodynamic treatment for the treatment of acute myeloid leukaemia

On 19 November 2014, orphan designation (EU/3/14/1356) was granted by the European Commission to Kiadis Pharma Netherlands B.V., the Netherlands, for donor T lymphocytes depleted ex vivo of host alloreactive T cells using photodynamic treatment for the treatment of acute myeloid leukaemia.

What is acute myeloid leukaemia?

Acute myeloid leukaemia (AML) is a cancer of the white blood cells (cells that fight against infections). In patients with AML, the bone marrow (the spongy tissue inside the large bones, where blood cells are produced) produces large numbers of abnormal, immature white blood cells. These abnormal cells quickly build up in large numbers in the bone marrow and are found in the blood.

AML is a long-term debilitating and life-threatening disease because these abnormal immature cells take the place of the normal blood cells, causing bleeding episodes, blood clots and reducing the patient's ability to fight infections.

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

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

Treatment for AML is complex and depends on a number of factors including the extent of the disease, whether it has been treated before, and the patient's age, symptoms and general state of health. At the time of designation, the main treatments for AML were chemotherapy (medicines to treat cancer) and haematopoietic (blood) stem-cell transplantation (a complex procedure where the patient receives

*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).



stem cells from a donor to help restore the bone marrow with healthy cells). However, a risk of this procedure is graft-versus-host disease, a potentially fatal complication in which the transplanted cells recognise the patient's cells as 'foreign' and attack them.

The sponsor has provided sufficient information to show that this medicine might be of significant benefit for patients with AML because early studies suggest that it might help rebuild the patient's immune system following a stem-cell transplant and may also help to fight the leukaemia cells. 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?

For many patients with AML who require haematopoietic stem-cell transplantation, it is often difficult to find a fully matched donor, which is important to reduce the risk of the transplanted cells attacking the patient's own cells.

This medicine is made of T cells, a type of white blood cell, extracted from a donor who is partly matched to the patient (e.g. a close relative). Before being injected into the patient, a specific group of T cells (known as alloreactive T cells) that is known to attack the patient's cells is first removed. The remaining T cells are then injected into the patient after the patient has received a haematopoietic stem-cell transplant depleted of T cells from the same partly matched donor. The injected T cells are expected to help early recovery of the patient's immune system without attacking the patient's own cells, and to help fight against the leukaemia cells.

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 AML were ongoing.

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

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	Donor T lymphocytes depleted ex vivo of host alloreactive T cells using photodynamic treatment	Treatment of acute myeloid leukaemia
Bulgarian	Донорски Т лимфоцити, освободени ex vivo от алореактивни към реципиента Т клетки с помощта на фотодинамично третиране	Лечение на остра миелоидна левкемия
Croatian	T limfociti davatelja na kojima je fotodinamičkim tretmanom ex vivo izvršena deplecija T stanica aloreaktivnih na primatelja	Liječenje akutne mijeloične leukemije
Czech	Dárcovské T lymfocyty po depleci ex vivo hostitelských aloreaktivních T buněk pomocí fotodynamické léčby	Léčba akutní myeloidní leukémie (AML)
Danish	Alloreaktive T celler rettet mod værten fjernes fra donorens T lymfocytter ex vivo ved brug af fotodynamisk behandling.	Behandling af akut myeloid leukæmi
Dutch	Donor T lymfocyten welke ex vivo zijn gedepleteerd van alloreactieve T cellen tegen de gastheer met gebruikmaking van fotodynamische behandeling	Behandeling van acute myeloïde leukemie
Estonian	Doonori T lümfotsüüdid, millest on ex vivo fotodünaamilise töötlemisega peremehe vastu suunatud alloreaktiivsed T rakud eemaldatud	Akuutse müeloidse leukeemia ravi
Finnish	Luovuttajan T lymfosyytit, joista isäntää vastaan kohdistetut alloreaktiiviset T solut on poistettu ex vivo fotodynaamisella hoidolla	Akuutin myelooisen leukemian hoito
French	Lymphocytes T de donneur obtenus après élimination des lymphocytes T alloréactifs dirigés contre le receveur par traitement photodynamique ex vivo	Traitement de la leucémie aiguë myéloïde
German	Spender T-Lymphozyten, bei denen ex-vivo mittels photodynamischer Therapie gegen den Empfänger alloreaktive T-Zellen entfernt wurden	Behandlung der akuten myeloischen Leukämie
Greek	Τ λεμφοκύτταρα δότη μετά από αφαίρεση ex vivo των αλλοαντιδραστικών Τ κυττάρων κατά του ξενιστή με χρήση φωτοδυναμικής θεραπείας	Θεραπεία της οξείας μυελοειδούς λευχαιμίας
Hungarian	A recipiensre alloreaktív T-sejtekől ex vivo, fotodinámiás kezeléssel mentesített donor T limfociták	Akut myeloid leukaemia kezelése
Italian	Linfociti T da donatore sottoposti a deplezione ex vivo delle cellule T alloreattive dirette contro l'ospite mediante trattamento fotodinamico	Trattamento della leucemia mieloide acuta
Latvian	Donora T limfocīti, kas ex vivo attīrīti no saimniekam aloreaktīvām T šūnām, izmantojot fotodinamisko metodi	Akūtas mieloleikozes ārstēšana
Lithuanian	Fotodinamine terapija nuo šeimininko aloreaktyvių T ląstelių ex vivo išvalyti donoro T limfocitai	Ūmios mieloleukozės gydymas

¹ At the time of designation

Language	Active ingredient	Indication
Maltese	Limfoċiti tat-tip T minn donatur li tneħħewlhom ċelloli alloreattivi tat-tip T b'mod ex vivo permezz ta' kura fotodinamika	Kura tal-lewkimja mjelojda akuta
Polish	Limfocyty T dawcy pozbawione limfocytów T alloreaktywnych wobec gospodarza uzyskane metodą fotodynamiczną w warunkach ex vivo	Leczenie ostrej białaczki szpikowej
Portuguese	Linfocitos T do dador com eliminação das células T aloreativas contra o hospedeiro, obtidos por tratamento fotodinâmico <i>ex vivo</i>	Tratamento da leucémia mielóide aguda
Romanian	Limfocite T de la donator obținute după eliminarea ex vivo a celulelor T aloreactive direcționate împotriva gazdei prin tratament fotodinamic	Tratamentul leucemiei mieloide acute
Slovak	Darcovské T lymfocyty zbavené pomocou fotodynamickej liečby ex vivo T buniek aloreaktívnych voči hostiteľovi	Liečba akútnej myeloickej leukémie
Slovenian	T limfociti, usmerjeni proti gostitelju, so ex vivo odstranjeni iz dajalčevih aloreaktivnih celic T z uporabo fotodinamične obdelave	Zdravljenje akutne mieloične levkemije
Spanish	Linfocitos T de donantes desprovistos ex vivo de las células T alorreactivas dirigidas contra el anfitrión por medio de tratamiento fotodinámico	Tratamiento de la leucemia mieloide aguda
Swedish	T lymfocyter från donator som har tömts ex vivo på patientinriktade alloreaktiva T celler med hjälp av fotodynamisk behandling	Behandling av akut myeloisk leukemi
Norwegian	Donor T lymfocytter der alloreaktive T celler rettet mot verten blir fjernet ex vivo ved hjelp av fotodynamisk behandling	Behandling av akutt myelogen leukemi
Icelandic	T eartilfrumur úr gjafa þar sem T frumum hýsils sem svara ósamgena áreiti hefur verið eytt ex vivo með ljóshrifameðferð	Meðferð við bráðu kyrningahvítblæði