22 June 2017
EMA/274810/2017

Public summary of opinion on orphan designation

Chimeric locked nucleic acid deoxynucleoside phosphorothioate-linked oligonucleotide inhibitor directed against microRNA-155-5p for the treatment of cutaneous T-cell lymphoma

On 22 May 2017, orphan designation (EU/3/17/1872) was granted by the European Commission to Miragen Therapeutics Europe Ltd, United Kingdom, for chimeric locked nucleic acid deoxynucleoside phosphorothioate-linked oligonucleotide inhibitor directed against microRNA-155-5p (also known as MRG-106) for the treatment of cutaneous T-cell lymphoma.

What is cutaneous T-cell lymphoma?

Cutaneous T-cell lymphoma (CTCL) is a cancer of the T lymphocytes (T cells), a type of white blood cell. The cancerous T cells appear in the skin, causing lesions (rashes, plaques and tumours) which can be itchy and painful.

CTCL usually happens in people aged between 40 and 60 years. In many cases, patients survive a long time with the disease; however, in some cases the disease can be serious and life threatening because it can develop into more aggressive forms of cancer and may have a large impact on quality of life, particularly because the skin lesions can cause disfigurement.

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

At the time of designation, CTCL affected approximately 2.6 in 10,000 people in the European Union (EU). This was equivalent to a total of around 134,000 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, several products were authorised for the treatment of CTCL in the EU. Treatments for CTCL can be divided into topical (applied directly to the skin) and systemic (affecting the whole body):

*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 515,700,000 (Eurostat 2017).

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

- topical treatments included topical corticosteroids, the topical cancer medicine carmustine and ultraviolet light;
- systemic treatments included cytotoxic medicines (medicines that kill cells that are dividing, such as cancer cells) and interferon alfa (a medicine that helps the immune system to fight against the cancer cells).

The sponsor has provided sufficient information to show that the medicine might be of significant benefit for patients with CTCL because early studies indicate that it may reduce skin tumour size when used together with other treatments. 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?

This medicine is expected to work by blocking a molecule called 'microRNA-155-5p'. Studies have found that microRNA-155-5p is present in high levels inside CTCL cells, where it is thought to regulate their growth and survival. By blocking microRNA-155-5-p, the medicine is expected to reduce growth of CTCL cells, relieving symptoms of the disease.

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, clinical trials with the medicine including patients with CTCL were ongoing.

At the time of submission, the medicine was not authorised anywhere in the EU for CTCL 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 11 April 2017 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:

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[1], Norwegian and Icelandic

Language	Active ingredient	Indication
English	Chimeric locked nucleic acid deoxynucleoside phosphorothioate-linked oligonucleotide inhibitor directed against microRNA-155-5p	Treatment of cutaneous T-cell lymphoma
Bulgarian	Инхибитор с химерна олигонуклеотидна молекула с дезоксинуклеотиди със "заключена" конформация и фосфоротиоатен край, насочен срещу микроРНК -155-5p	Лечение на кожен Т-клетъчен лимфом
Croatian	Kimerični oligonukleotidni inhibitor sastavljen od blokirane nukleinske kiseline i deoksinukleozida povezanog fosforotioatom usmjeren protiv mikroRNK-155-5p	Liječenje kožnog limfoma T-stanica
Czech	Inhibitor chimerického oligonukleotidu tvořeného deoxynukleosidfosforothioáty cílený proti microRNA -155-5p	Léčba kožního T-lymfomu
Danish	Kimerisk låst nukleinsyre desoxynukleosidphosphorthioat-bundet oligonukleotidhæmmer rettet mod miroRNA -155-5p	Behandling af kutant T-celle-lymfom
Dutch	Chimeer versloten nucleïnezuur-desoxynucleosidefosforothioaat-gelinkte oligonucleotideremmer, gericht tegen micro-RNA -155-5p	Behandeling van cutaan T-cel-lymfoom
Estonian	Kimäärse lukustatud nukleiinhappe deoksünukelosiidfosforotioaadiga seotud oligonukleotiidi inhibiitor mikroRNA-155-5p vastu	Kutaanse T-rakulise lümfoomi ravi
Finnish	MikroRNA-155-5p:tä vastaan suunnattu kimeerinen, lukittu nukleiinihappo–deoksinukleosidi-fosforotioaattiin kiinnittynyt oligonukleotidi-inhibiittori	Ihon T-solulymfooman hoito
French	Inhibiteur oligonucléotidique chimérique constitué d'acide nucléique bloqué et de désoxynucléoside liés par une liaison phosphorothioate et dirigé contre le microARN-155-5p	Traitement des lymphomes cutanés à cellules T
German	Chimäres Locked Nucleic Acid-Desoxynukleosid Phosphorothioat verknüpfter Oligonukleotid-Inhibitor gegen mikroRNA-155-5p	Behandlung von kutanem T-Zell-Lymphom
Greek	Ολιγονουκλεοτιδικός αναστολέας συνδεδεμένος σε χιμαιρικό *κλειδωμένο νουκλεικό οξύ*-φωσφοροθειοϊκό δεοξυνουκλεοζίτη έναντι του microRNA-155-5p	Θεραπεία του δερματικού λεμφώματος Τ-κυττάρων

[1] At the time of designation

Language	Active ingredient	Indication
Hungarian	Kiméra jellegű zárt nukleinsav–deoxinukleozid-foszforotioát-kapcsolt oligonukleotid inhibitor 1555p mikroRNS ellen	Kután T-sejtes lymphoma kezelése
Italian	Inibitore oligonucleotidico chimerico costituito da acido nucleico bloccato e deossinucleoside legati con legame fosforotioato, diretto contro il microRNA-155-5p	Trattamento del linfoma cutaneo a cellule T
Latvian	Ar fosfortiotātu saistīts slēgtas nukleīnskābes-dezoksinukleozīda himērisks oligonukleotīds, kas vērsts pret mikroRNS-155-5p	Ādas T-šūnu limfomas ārstēšana
Lithuanian	Su apsaugota nukleorūgštimi ir deoksinukleozido fosforotioatu sujungtas chimerinis oligonukleotidas, kuris yra mikroRNR-155-5p inhibitorius	Odos T ląstelių limfomos gydymas
Maltese	Inibitur ta' oligonukleotur marbut ma' fosforotijoat deossinukleosur tal-aċidu nuklejku magħluq kimeriku mmirat kontra microRNA-155-5p	Kura tal-limfoma taċ-ċelluli tat-tip T tal-ġilda
Polish	Inhibitorowy chimeryczny oligonukleotyd zablokowanego kwasu nukleinowego połączony wiązaniem deoksynukleozydowo-fosforotionianowym skierowany przeciwko mikroRNA-155-5p	Leczenie chłoniaka skórnego T-komórkowego
Portuguese	Inibidor do oligonucleótido quimérico constituído por ácido nucleico bloqueado ligado ao desoxinucleósido fosforotioato e dirigido contra o microARN -155-5p	Tratamento do linfoma cutâneo de células T
Romanian	Inhibitor oligonucleotidic chimeric constituit din acid nucleic blocat–şi deoxinucleozide legate prin legături de tipfosforotioat îndreptat împotriva microARN -155-5p	Tratamentul limfomului cutanat cu celule T
Slovak	Inhibítor chimerického oligonukleotidu, obsahujúceho LNA a deoxynukleozid s fosfotioátovými väzbami, nasmerovaného proti microRNA -155-5p	Liečba kutánneho T-bunkového lymfómu
Slovenian	Himerni na zaklenjeno nukleinsko kislino-dezoksinukleozidni fosforotioat vezan oligonukleotidni zaviralec, usmerjen proti mikroRNK-155-5p	Zdravljenje kožnega T-celičnega limfoma
Spanish	Chimerinis, apsaugotas nukleorūgšties deoksinukleozido fosforotioatu, susietas oligonukleotido inhibitorius, nukreiptas prieš mikroRNR-155-5p	Tratamiento del linfoma cutáneo de células T
Swedish	Chimär låst nukleinsyra-deoxynukleosid fosforotioatkopplad oligonukleotidhämmare riktad mot mikroRNA-155-5p	Behandling av kutant T-cellslymfom

Language	Active ingredient	Indication
Norwegian	Kimær låst nukleinsyre–deoksynukleosid-fosforotioatlenket oligonukleotid-hemmer rettet mot mikroRNA -155-5p	Behandling av kutant T-cellelymfom
Icelandic	Blendings læstur kjarnsýru-deoxýnúkleósíðfosfórótíóat-tengdur ólígónúkleótíðhemill gegn míkróRNA -155-5p	Meðferð T-eitilfrumukrabbameins í húð