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Public summary of opinion on orphan designation

Equine immunoglobulin F(ab')$_2$ fragments targeting Shiga toxin for the prevention of haemolytic uraemic syndrome

On 25 May 2018, orphan designation (EU/3/18/2021) was granted by the European Commission to Chemo Research S.L., Spain, for equine immunoglobulin F(ab')$_2$ fragments targeting Shiga toxin (also known as NEAST) for the prevention of haemolytic uraemic syndrome.

What is haemolytic uraemic syndrome?

Haemolytic uraemic syndrome (HUS) is a disorder characterised by three main signs: haemolysis (destruction of red blood cells), thrombocytopenia (a decrease in the number of platelets, components that help the blood to clot) and kidney failure. HUS can lead to formation of blood clots that damage small vessels supplying the organs and may cause problems in the brain and nervous system, and damage to other organs such as the heart and gut.

HUS is often associated with bacterial infections that produce a toxin called Shiga toxin and over-activate the complement system, part of the immune system. This damages the lining of the blood vessels, triggering the symptoms of the disease. Infection-associated HUS usually occurs in children, and is most often caught through an infected food source.

HUS is a long-lasting and life-threatening disease mainly because of the risk of kidney failure and complications affecting the brain and other organs.

What is the estimated number of patients at risk of developing the condition?

At the time of designation, the number of patients at risk of HUS was estimated to be approximately 0.2 people in 10,000 in the European Union (EU). This was equivalent to a total of around 10,000 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).

[*]Disclaimer: For the purpose of the designation, the number of patients at risk of developing 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 517,400,000 (Eurostat 2018).

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What methods of prevention are available?

At the time of designation no satisfactory methods of prevention for HUS were authorised in the EU. The medicine Soliris was authorised to treat patients who developed certain (atypical) forms of the condition, while patients who developed infection-related HUS were managed with supportive treatment. Transfusions of red blood cells and platelets were given as needed, as well as medicines to manage complications such as seizures (fits). Dialysis (a blood clearance technique) was used if the disease progressed to kidney failure. Some patients needed a kidney transplant.

How is this medicine expected to work?

The medicine contains fragments of an antibody (a type of protein) obtained from horses that have been immunised against Shiga toxin. Shiga toxin is a substance produced by bacteria that cause infection-related HUS and is thought to be linked to the development of the condition. When the fragments of antibody are given to a patient thought to be at risk of developing HUS, they attach to any Shiga toxin present and stop it from acting. This is expected to prevent the overactivity of the complement system and damage to blood vessels that leads to HUS.

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 HUS had been started.

At the time of submission, the medicine was not authorised anywhere in the EU for HUS 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 April 2018 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[1], Norwegian and Icelandic

Language	Active ingredient	Indication
English	Equine immunoglobulin $F(ab')_2$ fragments targeting Shiga toxin	Prevention of haemolytic uraemic syndrome
Bulgarian	Фрагменти от конски имуноглобулин $F(ab')_2$, насочени към Shiga токсин	Превенция на хемолитично-уремичен синдром
Croatian	Fragmenti konjskog imunoglobulina $F(ab')_2$ koji su usmjereni na Shiga toksin	Prevencija hemolitičnog uremijskog sindroma
Czech	Fragmenty koňského imunoglobulinu $F(ab')_2$ zaměřené na Shiga toxin	Prevence hemolyticko-uremického syndromu
Danish	Hesteimmunoglobulin $F(ab')_2$-fragmenter rettet mod Shiga-toksin	Forebyggelse af hæmolytisk uræmisk syndrom
Dutch	Equine immunoglobuline $F(ab')_2$ fragmenten gericht tegen Shiga-toxine	Preventie van hemolytisch uremisch syndroom
Estonian	Shiga toksiini vastased hobuse immuunglobuliini $F(ab')_2$ fragmendid	Hemolüütilis-ureemilise sündroomi ennetamine
Finnish	Hevosen immunoglobuliini $F(ab')_2$-fragmentit, jotka kohdistuvat Shiga-toksiinin	Hemolyyttis-ureemisen oireyhtymän ennaltaehkäisy
French	Fragments $F(ab')_2$ d'immunoglobuline équine ciblant la toxine Shiga	Prevention du syndrome hémolytique et urémique
German	Equine Immunglobulin $F(ab')_2$ Fragmente die auf Shiga Toxin abzielen	Prävention des hämolytisch-urämischen Syndroms
Greek	Θραύσματα $F(ab')_2$ ανοσοσφαιρίνης ιπποειδών που στοχεύουν την τοξίνη Shiga	Πρόληψη του αιμολυτικού ουραιμικού συνδρόμου
Hungarian	A Shiga toxint célzó ló immunglobulin $F(ab')_2$ fragmensei	Hemolitikus urémiás szindróma megelőzésére
Italian	Frammenti di immunoglobulina $F(ab')_2$ equini che legano la tossina Shiga	Prevenzione della síndrome emolitico-uremica
Latvian	Zirgu imūnglobulīna $F(ab')_2$ fragmenti, kas vērsti pret Šigas toksīnu	Hemolītiski urēmiskā sindroma ārstēšanai
Lithuanian	Arklių imunoglobulino $F(ab')_2$ fragmentai, nukreipti į Shiga toksiną	Hemolizinio ureminio sindromo prevencijai
Maltese	Fragmenti tal-immunoglobulina ekwina $F(ab')_2$ li jimmiraw it-tossina Shiga	Prevenzjoni tas-sindrome uraemiku emolitiku
Polish	Fragmenty $F(ab')_2$ immunoglobuliny końskiej skierowane przeciwko toksynie Shiga	Zapobieganie zespolowi hemolityczno-mocznicowemu
Portuguese	Fragmentos de $F(ab')_2$ da imunoglobulina equina direcionado para a toxina shiga	Prevenção da síndrome hemolítica urémica
Romanian	Fragmente de imunoglobulină $F(ab')_2$ ecvină îndreptată impotriva toxinei Shiga	Prevenţia sindromului hemolitico uremic
Slovak	Fragmenty konského imunoglobulínu $F(ab')_2$ zamerané na Shiga toxín	Hemolyticko-uremický syndróm

[1] At the time of designation

Language	Active ingredient	Indication
Slovenian	$F(ab')_2$ fragmenti konjskega imunoglobulina proti šiga toksinu	Preprečevanje hemolitičnega uremičnega sindroma
Spanish	Fracción $F(ab')_2$ de Inmunoglobulina equina hiperinmune anti Shiga Toxina	Prevencion del síndrome urémico hemolítico
Swedish	Hästimmunoglobulin $F(ab')_2$-fragment riktade mot Shigatoxin	Förebyggande av hemolytiskt uremiskt syndrom
Norwegian	Immunglobulin $F(ab')_2$-fragmenter fra hest rettet mot Shigatoksin	Forebygging av hemolytisk-uremisk syndrom
Icelandic	Hesta immúnóglóbúlín $F(ab')_2$ brot sem beinist gegn Shiga eitri	Forvörn gegn blóðlýsu-þvageitrunarheilkenni