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Public summary of opinion on orphan designation

(4-{(2S,4S)-4-ethoxy-1-[(5-methoxy-7-methyl-1H-indol-4-yl)methyl]piperidin-2-yl}benzoic acid-hydrogen chloride(1/1)) for treatment of C3 glomerulopathy

On 14 December 2018, orphan designation (EU/3/18/2104) was granted by the European Commission to Novartis Europharm Limited, Ireland, for (4-{(2S,4S)-4-ethoxy-1-[(5-methoxy-7-methyl-1H-indol-4-yl)methyl]piperidin-2-yl}benzoic acid-hydrogen chloride(1/1)) (also known as LNP023) for treatment of C3 glomerulopathy.

What is C3 glomerulopathy?

C3 glomerulopathy is a condition in which a protein of the immune system (the body's natural defences) known as C3 builds up in the kidneys, damaging them and impairing their function.

Patients with C3 glomerulopathy usually have signs of kidney problems, such as blood or protein in urine, high blood pressure, blurred vision and swelling in the hands and feet.

C3 glomerulopathy is life threatening and debilitating in the long term because it can lead to kidney failure.

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

At the time of designation, C3 glomerulopathy affected approximately 1.2 in 10,000 people in the European Union (EU). This was equivalent to a total of 62,000 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 orphan designation, no satisfactory treatments were authorised in the EU for C3 glomerulopathy. Because the disease involves the body's immune system, immunosuppressant medicines (that reduce the activity of the immune system) were usually used. Other treatments

*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 517,400,000 (Eurostat 2018).

included plasmapheresis (a procedure to remove unwanted substances from plasma, the liquid part of the blood), infusion of healthy plasma, and medicines to reduce blood pressure and protein in the urine. Some patients developing end-stage kidney disease received dialysis and kidney transplantation.

How is this medicine expected to work?

The damaging build-up of the C3 protein in kidneys of patients with C3 glomerulopathy mostly results from overactivity of an enzyme called C3 convertase. This medicine blocks another protein called factor B, which is involved in the production of C3 convertase. By blocking factor B and hence production of C3 convertase, the medicine is expected to reduce the build-up of the C3 protein and relieve the 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, no clinical trials with the medicine in patients with C3 glomerulopathy had been started.

At the time of submission, the medicine was not authorised anywhere in the EU for C3 glomerulopathy 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 8 November 2018 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 [the EMA website](#).

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	(4-{ (2S,4S)-4-ethoxy-1-[(5-methoxy-7-methyl-1H-indol-4-yl)methyl]piperidin-2-yl}benzoic acid-hydrogen chloride(1/1))	Treatment of C3 glomerulopathy
Bulgarian	(4-{ (2S,4S)-4-етокси-1-[(5-метокси-7-метил-1H-индол-4-ил)метил]пиперидин-2-ил}бензоена киселина-солна киселина(1/1))	Лечение на C3 гломерулопатия
Croatian	(4-{ (2S,4S)-4-etoksi-1-[(5-metoksi-7-metil-1H-indol-4-il)metil]piperidin-2-il}benzojeva kiselina-klorovodik(1/1))	Liječenje C3 glomerulopatije
Czech	Hydrochlorid kyseliny 4-{ (2S,4S)-4-Ethoxy-1-[(5-methoxy-7-methyl-1H-indol-4-yl)methyl]piperidin-2-yl}benzoové (1/1)	Léčba C3 glomerulopatie
Danish	(4-{ (2S,4S)-4-ethoxy-1-[(5-methoxy-7-methyl-1H-indol-4-yl)methyl]piperidin-2-yl}benzoesyre-saltsyre(1/1))	Behandling af C3 glomerulopati
Dutch	(4-{ (2S,4S)-4-Ethoxy-1-[(5-methoxy-7-methyl-1H-indol-4-yl)methyl]piperidine-2-yl}benzoëzuur-waterstof chloride(1/1))	Behandeling van C3 glomerulopathie
Estonian	(4-{ (2S,4S)-4-etoksü-1-[(5-metoksü-7-metüül-1H-indool-4-üül)metüül]piperidiin-2-üül}bensoehappe vesinikkloriid (1/1))	C3 glomerulopaatia ravi
Finnish	(4-{ (2S,4S)-4-etoksi-1-[(5-metoksi-7-metyyli-1H-indoli-4-yl)metyyli]piperidiini-2-yl}bentsoehappo-hydrogeenikloridi (1/1))	C3 glomerulopatian hoito
French	(4-{ (2S,4S)-4-Ethoxy-1-[(5-méthoxy-7-méthyl-1H-indol-4-yl)méthyl]pipéridine-2-yl}acide benzoïque-chlorure d'hydrogène(1/1))	Traitement de la glomérulopathie à dépôts de C3
German	(4-{ (2S,4S)-4-Ethoxy-1-[(5-Methoxy-7-Methyl-1H-Indol-4-yl)methyl]Piperidin-2-yl}Benzoessäurehydrogenchlorid (1/1))	Behandlung von C3 Glomerulopathie
Greek	(4-{ (2S,4S)-4-Αιθοξύ-1-[(5-μεθοξύ-7-μεθυλ-1H-ινδολ-4-υλ)μέθυλ]πιπεριδίνη-2-υλ}βενζοϊκό οξύ-υδροχλώριο(1/1))	Θεραπεία της C3 σπειραματοπάθειας
Hungarian	4-{ (2S,4S)-4-Etoxi-1-[(7-metil-5-metoxi-1H-indol-4-il)metil]piperidin-2-il}benzoesav— (hidrogén-klorid) (1/1)	C3 glomerulopátia kezelése
Italian	(4-{ (2S,4S)-4-etossi-1-[(5-metossi-7-metil-1H-indol-4-yl)metil]piperidina-2-yl}acido benzoico-idrogeno cloruro (1/1))	Trattamento della glomerulopatia C3
Latvian	(4-{ (2S,4S)-4-etoksi-1-[(5-metoksi-7-metil-1H-indol-4-il)metil]piperidīn-2-il}benzorskābe - hlorūdeņradis(1/1))	C3 glomerulopātijas ārstēšana

¹ At the time of designation

Language	Active ingredient	Indication
Lithuanian	(4-{ (2 <i>S</i> ,4 <i>S</i>)-4-etoksi-1-[(5-metoksi-7-metil-1 <i>H</i> -indol-4-il)metil]piperidin-2-il}benzenkarboksirūgšties-vandenilio chloridas (1/1))	C3 glomerulopatijos gydymas
Maltese	(4-{ (2 <i>S</i> ,4 <i>S</i>)-4-Ethoxy-1-[(5-methoxy-7-methyl-1 <i>H</i> -indol-4-yl)methyl]piperidin-2-yl}benzoic acid-hydrogen chloride(1/1))	Kura tal-glomerulopatija C3
Polish	4-{ (2 <i>S</i> , 4 <i>S</i>)-4-etoksy-1-[(5-metoksy-7-metylo-1 <i>H</i> -indol-4-ilo) metylo] piperidyn-2-ylo} benzoesowy kwas solny (1/1))	Leczenie glomerulopatii C3
Portuguese	Ácido (4-{ (2 <i>S</i> ,4 <i>S</i>)-4-etoxi-1-[(5-metoxi-7-metil-1 <i>H</i> -indol-4-il)metil]piperidin-2-il} benzóico – cloreto de hidrogénio (1/1))	Tratamento da glomerulopatia por C3
Romanian	Acid (4-{ (2 <i>S</i> ,4 <i>S</i>)-4-etoxi-1-[(5-metoxi-7-metil-1 <i>H</i> -indol-4-il)metil]piperidin-2-il} benzoic-acid clorhidric (1/1))	Tratamentul glomerulopatiei C3
Slovak	hydrochlorid kyseliny 4-{ (2 <i>S</i> ,4 <i>S</i>)-4-Etoxy-1-[(5-metoxi-7-metyl-1 <i>H</i> -indol-4-yl)metyl]piperidin-2-yl} benzoovej (1/1)	Liečba C3 glomerulopatie
Slovenian	(4-{ (2 <i>S</i> ,4 <i>S</i>)-4-etoksi-1-[(5-metoksi-7-metil-1 <i>H</i> -indol-4-il)metil]piperidin-2-il}benzojska kislina-vodikov klorid(1/1))	Zdravljenje C3 glomerulopatije
Spanish	(4-{ (2 <i>S</i> ,4 <i>S</i>)-4-Etoxi-1-[(5-metoxi-7-metil-1 <i>H</i> -indol-4-yl)metil]piperidin-2-il} ácido benzoico-cloruro de hidrógeno(1/1))	Tratamiento de la glomerulopatía C3
Swedish	(4-{ (2 <i>S</i> ,4 <i>S</i>)-4-Etoxi-1-[(5-metoxi-7-metyl-1 <i>H</i> -indol-4-yl)metyl]piperidin-2-yl} bensoesyra-väteklorid(1/1))	Behandling av C3-glomerulopati
Norwegian	(4-{ (2 <i>S</i> ,4 <i>S</i>)-4-etoksy-1-[(5-metoksy-7-metyl-1 <i>H</i> -indol-4-yl)metyl]piperidin-2-yl} benzosyre-hydrogenklorid (1/1))	Behandling av C3-glomerulopati
Icelandic	(4-{ (2 <i>S</i> ,4 <i>S</i>)-4-Etoxý-1-[(5-metoxý-7-metýl-1 <i>H</i> -indól-4-ýl)metýl]piperidín-2-ýl}bensósýru-hydrógenklóríð (1/1))	Meðferð við C3 glomerulopathy