



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Low molecular weight dextran sulfate for the prevention of graft rejection during pancreatic islet transplantation

On 9 October 2009, orphan designation (EU/3/09/669) was granted by the European Commission to TikoMed AB, Sweden, for low molecular weight dextran sulfate for the prevention of graft rejection during pancreatic islet transplantation.

What is graft rejection during pancreatic islet transplantation?

Pancreatic islet transplantation is the transplantation of 'islets' from the pancreas of a donor into a patient. Islets are clusters of cells in the pancreas that are responsible for producing insulin, a hormone that controls the level of glucose (sugar) in the blood. Once transplanted, the pancreatic islets find a blood supply and start to produce insulin.

Graft rejection during pancreatic islet transplantation is a problem that can occur during a pancreatic islet transplant, when the recipient's body rejects the transplanted islets (the 'graft'). Graft rejection is caused by the patient's immune system (the body's natural defences) recognising the transplanted graft as 'foreign'. This results in inflammation and damage to the pancreatic islets.

Pancreatic islet transplantation is used to treat patients who have a severe and life-threatening form of type 1 diabetes (a disease in which the pancreas cannot produce insulin). Graft rejection during pancreatic islet transplantation is a life-threatening condition because failure of transplantation due to graft rejection will expose the patients again to the life-threatening complications of type 1 diabetes.

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 graft rejection during pancreatic islet transplantation was estimated to be less than 0.1 people in 10,000 in the European Union (EU)*. This is equivalent to a total of fewer than 5,000 people, and is below the threshold for orphan designation,

* 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 27), Norway, Iceland and Liechtenstein. This represents a population of 504,800,000 (Eurostat 2009).



which is 5 people in 10,000. This is based on the information provided by the sponsor and knowledge of the Committee for Orphan Medicinal Products (COMP).

What methods of prevention are available?

At the time of submission of the application for orphan designation, several immunosuppressive medicines (medicines that reduce the activity of the immune system) were authorised in the EU to prevent rejection after organ transplantation. However, no satisfactory methods were authorised in the EU for the prevention of graft rejection during pancreatic islet transplantation.

How is this medicine expected to work?

Low molecular weight dextran sulfate is expected to work by blocking two processes that are involved in graft rejection: activation of the complement system and blood coagulation (clotting). The complement system is a group of proteins of the immune system that are involved in the inflammation process. In addition, blood coagulation may be triggered by the pancreatic islets during pancreatic islet transplantation and can be harmful to the transplanted graft. By blocking the complement system and blood coagulation, this medicine is expected to prevent the damage to the transplanted pancreatic islets as they are injected into the patient, reducing the risk of graft rejection.

What is the stage of development of this medicine?

The effects of low molecular weight dextran sulfate have been evaluated in experimental models.

At the time of submission of the application for orphan designation, clinical trials in patients undergoing pancreatic islet transplantation were ongoing.

At the time of submission, low molecular weight dextran sulfate was not authorised anywhere in the EU for the prevention of graft rejection during pancreatic islet transplantation 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 July 2009 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	Low molecular weight dextran sulfate	Prevention of graft rejection during pancreatic islet transplantation
Bulgarian	Декстран сулфат с ниско молекулярно тегло	За предотвратяване на отхвърляне на присадката при трансплантация на парче от панкреаса
Czech	Nízkomolekulární natrium-dextran-sulfát	Prevence rejekce štěpu během transplantace Langeransových ostrůvků pankreatu
Danish	Lavmolekylært dextransulfat	Forebyggelse af implantatafstødning ved transplantation af langerhanske øer
Dutch	Laag molecuulair gewicht dextraansulfaat	Preventie van transplantaatafstoting bij transplantatie van de eilandjes van Langerhans
Estonian	Madala molekulaarmassiga dekstraansulfaat	Implantaadi äratõuke vältimiseks pankrease rakkude siirdamisel
Finnish	Pienen molekyyllipainon dekstraanisulfaatti	Siirteen hylkimisen esto haiman osittaissiirrosta
French	Dextran sulfate de bas poids moléculaire	Prévention du rejet de greffe lors d'une transplantation d'îlots de Langerhans pancréatiques
German	Niedermolekulares Dextransulfat	Zur Prävention der Abstoßungsreaktion bei Inselzelltransplantationen
Greek	Θειική δεξτράνη χαμηλού μοριακού βάρους	Για την πρόληψη απόρριψης των μοσχευμάτων κατά τη μεταμόσχευση παγκρεατικών νησίδων
Hungarian	Alacsony molekulásúlyú dextrán-szulfát	Beültetési kilöködés megakadályozására hasnyálmirigy testecske transzplantációnál
Italian	Destrano solfato a basso peso molecolare	Prevenzione delle crisi di rigetto dopo trapianto di isole pancreatiche
Latvian	Mazas molekulmasas dekstrāna sulfāts	Transplantāta atgrūšanas novēršanai aizkuņģa dziedzera saliņu transplantācijas laikā
Lithuanian	Mažos molekulinės masės dekstrano sulfatas	Transplantato atmetimo reakcijos prevencija kasos salelių transplantacijos metu
Maltese	Dextran sulfate ta' piż molekulari baxx	Prevenzjoni ta' riġettar ta' l-organu waqt trapjant tal-islets tal-frixa
Polish	Siarczan dekstranu o niskim ciężarze cząsteczkowym	Zapobieganie odrzuceniu przeszczepu podczas transplantacji wysp trzustkowych
Portuguese	Sulfato de dextrano de baixo peso molecular	Prevenção da rejeição de enxertos no decurso de transplantes de ilhéus pancreáticos
Romanian	Dextran sulfat cu greutate moleculară mică	Prevenirea rejetului de grefă în cazul transplantului de celule insulare pancreatice
Slovak	Dextrán sulfát s nízkou molekulárnou hmotnosťou	Profylaxia odmietnutia štepů pri transplantácii Langerhansových ostrovčekov pankreasu
Slovenian	Dekstransulfat z majhno molekularno maso	Preprečevanje zavrnitve presadka med presajanjem pankreasnih otočkov

¹ At the time of designation

Language	Active ingredient	Indication
Spanish	Sulfato de dextrano de bajo peso molecular	Prevención del rechazo del injerto en el trasplante de islotes pancreáticos
Swedish	Lågmolekylärt dextransulfat	Förebyggande av avstötning vid transplantation av ö-celler från pancreas
Norwegian	Lavmolekylært dekstransulfat	Forebygging av transplantatrejeksjon ved transplantasjon av øyceller fra pankreas
Icelandic	Dextransúlfat með lítinn sameindamassa	Til að koma í veg fyrir höfnun græðlings við ígræðslu briseyja