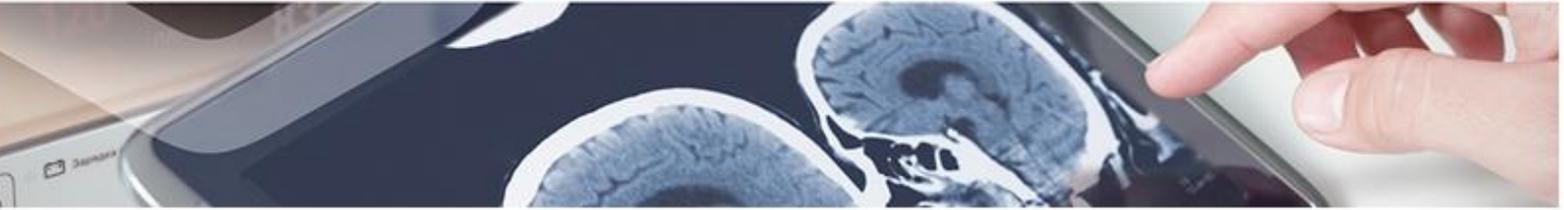




Therapy

Decellularized sclerocorneal limbus

A research group from Andalusian Public Health System, in collaboration with the University of Granada, has developed a decellularized sclerocorneal limbus that can be recellularized with autologous cells for the treatment of limbar regurgitation and other corneal epitheliopathies.



Description

Limbar insufficiency (IL) is defined as an inability of limbal stem cells to regenerate the corneal epithelium, manifesting itself in the form of hyperemia, discomfort, shooting pain, photophobia, and even visual deficit. This disease can occur due to a limbal cell deficit caused by external factors or by absence or damage in the niche of these cells, common causes being: ocular caustication, autoimmune processes and various pathologies of the ocular surface. In unilateral total ILs, in which the adelpic eye has been shown to be healthy, the limbal autograft with or without ex vivo cell expansion is the optimal option, provided the patient is willing to allow surgery to remove part of the limbus sclerocorneal of his only healthy eye, something that is not frequent. If IL is bilateral, due to the impossibility of carrying out autologous cell transplantation, allogeneic transplantation from a cadaveric donor is used. The main disadvantage is immunological rejection, which requires lifelong immunosuppression and the difficulty of maintaining the viability of these cells. In the longer series, cadaveric allogeneic transplants do not have a survival of more than 5 years. Therefore, there is a need to find a substitute that has a similar anatomy, composition and structure, that does not give immunogenicity or rejection problems and that can provide cells with the potential to regenerate said corneal epithelium. In this context, our researchers have designed a possible treatment through the use of the sclerocorneal limbus of a cadaveric donor. After subjecting it to a decellularization process and a subsequent in vivo culture of mesenchymal cells or any other type of cell of interest, we can obtain, in addition to the treatment for this type of eye disease, a scaffold that can potentially be used as a factor release system cell phones and / or drugs. Said artificial limbus presents an anatomy, composition and structure identical to the original, since it is the decellularized limbus, but it does not present immunogenicity since it does not present donor cells



Advantages

1. It is obtained from leftover tissue from keratoplasties or cadavers without the need to generate it through tissue engineering.
2. Anatomy, composition and structure identical to the original.
3. Method to obtain a fully decellularized human limbus, which means avoiding immunological rejection.
4. The recellularization process can be carried out with any cell type, but especially with corneal stromal cells (keratocytes), connective tissue cells (fibroblasts), stem cells, or any of their combinations.
5. Potential use as a delivery system for cellular factors or drugs.



Intellectual property

Technology covered by a European patent application which will be extended to PCT.



Aims

Looking for a partner interested in a license and/ or a collaboration agreement to develop and exploit this asset.



Clasificación

Area: Therapy
Pathology: Ophthalmology