POTASSIUM CHANNEL BLOCKERS FOR THE TREATMENT OF DISEASES RELATED TO INTIMAL HYPERPLASIA

This project aims at developing a therapeutic tool against intima hyperplasia using potassium channel blockers.

BACKGROUND

Intimal hyperplasia is a vascular structural change produced as a consequence of biological mechanisms in response to vascular injury, either of mechanical type, surgical, inflammatory or immunological.
This structural change consists in the thickening of the intimal layer, owed to an increase in the number of cells as well as an increase in the synthesis of extracellular matrix in which these cells are immersed. In last application, this process derives in a narrowing or stenosis of the vascular lumen.
Different pathologies, such as restenosis, late occlusion of by-pass, and post-transplant vasculopathy (lung, heart, kidney) are associated with intimal hyperplasia. The incidence and severity of these pathologies, raises the need to develop a tool that limits or prevents intimal hyperplasia and the clinical situations that derive from it, especially after percutaneous coronary intervention or transplant.

TECHNOLOGY DESCRIPTION

Researchers have discovered that voltage-activated potassium channel blockers significantly limit intimal hyperplasia.
The technology will be a therapeutic tool, possibly a dispenser device for implant that will release a potassium channel blocker, for the treatment of diseases related to intimal hyperplasia.

ADVANTAGES

- Selective blocking of potassium channels through the use of blocking agents.
- The clinical practice would benefit from the application of a preventive and/or therapeutic protocol against intimal hyperplasia.

CURRENT STAGE OF DEVELOPMENT

An in vivo murine model has been developed and the expression of potassium channels has been studied using different blocking agents.
Additional *in vivo* preclinical studies will be performed using murine and pig models.

GOAL

We are searching companies interested in the co-development of the technology and/or acquisition of the license.

PATENT

Patent was filed on October 2008.
PCT extension application number: PCT/EP2009/063099.
Applicants: Hospital Clínic of Barcelona and Universidad de Valladolid.
Already entered into national phases in US and Europe.

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