

DRUG REPURPOSING FOR ATHEROSCLEROSIS TREATMENT

DESCRIPTION OF THE TECHNOLOGY

Atherosclerosis is the most common cause of cardiovascular disease (CVD) and is the leading cause of death in Western societies. Atherosclerosis is a chronic inflammatory disease that has its origin in a deficient resolution of the inflammatory process.

Atheroma plaque can become unstable or vulnerable, releasing fragments into the bloodstream that can lead to a severe prognostic cardiovascular episode such as myocardial infarction or stroke.

Currently, there is no effective medication that acts directly against the instability of vulnerable plaque, although there are treatments that control the risk factors that promote its progression, so indirectly stabilizing the plaque. As a result, it is common for patients to end up suffering cardiovascular events, even though these factors are controlled, which highlights the need to act directly on the plaque in order to stabilize it and prevent its detachment.

To fill this gap, anti-inflammatory therapies have emerged as novel and promising drug alternatives in the treatment of CVD, especially in syndromes that include vulnerable plaque and recurrence of acute events. These therapies, currently in the clinical research phase, include, among others, canakinumab or low-dose methotrexate. These therapies, aimed primarily at inhibiting the inflammatory response, have a high cost and risk of cancelling the individual's global immune response. Therefore, it is necessary to develop new therapies aimed at modulating inflammation in cardiovascular disease.

Our innovative approach is based on the use of palbociclib and other P15/P16 agonists for the treatment of atherosclerosis. These drugs would act as stabilisers of atheroma plaque through a new mechanism of action based on immune system modulation.

MARKET APPLICATION SECTORS

Pharmaceutical companies interested in drug repurposing for atherosclerosis and vulnerable plaque disease.

In addition, this new mechanism of action opens the door to the use of these drugs in other chronic inflammatory diseases, such as hepatic steatosis, DMT2 or dyslipidaemia.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

- Our technology is based on a marketed drug with an effective dose significantly lower than approved dose, minimizing its toxicity.
- According with regulators, no more preclinical development is needed to start a clinical trial.
- Patient target very well defined.

CURRENT STATE OF DEVELOPMENT

Ready to start a phase-I clinical trial.

Our results have been validated in human cells and murine models of cardiovascular disease.

INTELLECTUAL PROPERTY RIGHTS

A European patent application has been filed related to this technology.

COLABORATION SOUGHT

- Pharmaceutical companies interested in drug repurposing (licensees of our technology or sponsors of a clinical trial for this new indication).
- Pharmaceutical companies interested in research collaborations related to inflammation and atherosclerosis. Specially, inflammation-related mechanism of action of palbociclib and other P15/P16 inhibitors.

CONTACT

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