New therapeutic agent for treating chronic kidney disease

Therapeutic agent that prevents renal tubular cells from dying of apoptosis, which is induced by the toxicity of albuminuria. This agent is therefore useful for the prevention and/or treatment of chronic renal disease.

Description and essential characteristics

A therapeutic agent based on an RNA molecule that acts on the BASP1 (brain acid soluble protein 1) gene to prevent an increase in the expression of this gene or prevent its activity. Thus the agent protects renal tubular cells from dying of albuminuria-induced apoptosis and stops the progression of chronic renal disease.

In recent years, several studies have been published reporting that the inhibition of BASP1 gene prevents the apoptosis induced by high glucose and by deprivation of serum survival factors. Thanks to this invention, it has been discovered that the inhibition of BASP1 also prevents the apoptosis that is induced by albuminuria.

A method for screening large libraries of compounds to identify those that might be useful in treating chronic kidney disease has also been developed. The method is as follows:

a) incubate renal tubular cells in the presence of one of the compounds selected from the library of compounds;
b) determine whether BASP1 expression in renal tubular cells is less than BASP1 expression in a control sample, and
c) identify the compound chosen in step (a) as useful in the treatment of chronic renal disease when BASP1 expression in renal tubular cells is less than BASP1 expression in a control sample.

In vivo studies in rats with experimentally induced albuminuric nephropathy and *in vitro* studies on human renal samples from patients with membranous albuminuric nephropathy have confirmed the efficacy of this agent to silence or inactivate BASP1 gene and the consequent protection of renal proximal tubular cells against apoptosis induced by albuminuria.

Competitive advantages

The composition concerned prevents the progression of renal damage by preventing tubular injury due to albuminuria instead of directly preventing albuminuria, an approach that has not provided sufficiently satisfactory results thus far.

This composition is complementary to drugs commonly used in clinical practice and reduces residual albuminuria that persists after the use of angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARB), a problem not solved so far with current medicine.

Type of collaboration sought

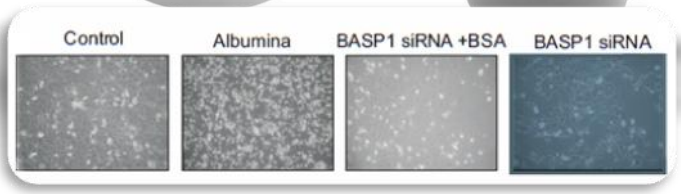
Cooperation is sought with any Party interested in partnering, licensing or investing in the technology, whether it be an investor to fund the project, a partner interested in getting involved in any of the various phases until its placement on the market, a patent licensee, etc. Organisations potentially interested in this technology are those devoted to the manufacture, commercialisation and/or distribution of pharmaceutical drug products; as well as universities, hospitals, research centres and all types of institutions engaged in kidney diseases diagnosis and treatment research.

Current stage of development

In vivo studies in animal models.

Current state of intellectual property

Spanish patent P201430081, granted in August 2016.
International patent application PCT/ES2015/070039.



Cells when treated with the therapeutic agent and with albumin show a healthy appearance.

For further information, please contact

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