Technology Offer by

Hessische Intellectual Property Organisation

Active ingredients for the treatment of lung in Idiopathic Pulmonary Fibrosis (IPF)

Correction of maladaptive ER-response, blockade of epithelial apoptosis Primary target molecules

DESCRIPTION OF TECHNOLOGY / PRODUCT

Patients with fibrosing pulmonary disease Idiopathic pulmonary fibrosis (IPF) show a pronounced maladaptive, i.e. to the programmed cell death leading ER response in the type II cells of the alveolar epithelium. An essential cause of this chronic maladaptive ER-stress response is the perturbed processing of the protein SP-B by minor expression or absence of the two proteases napsin A and cathepsin H in conjunction with an accumulation of unprocessed SP-B precursor protein (proSP-B).

Fotolia:
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The new therapeutic approach corrects this maladaptive ER-stress response and blocks the epithelial apoptosis. Primary target molecules are napsin A and cathepsin H. The therapeutically active agents bind Napsin A polypeptide or napsin A polynucleotide and / or cathepsin H polypeptide or cathepsin H polynucleotide either directly or influence them indirectly as transcription factors, which bind to the promoter sequence of napsin A and cathepsin H. Examples for this are Thyroid transcription factor 1 TTF1, Runt-related Transcription factor 1 and Homebox protein CD-X-1.

AT A GLANCE …

TECHNOLOGY FIELD / SCOPE OF APPLICATION

The new substances for the treatment of patients with sporadic idiopathic pulmonary fibrosis (IPF) are intended to effect the correct lysosomal processing of the surfactant protein B and / or the blockade of an epithelial maladaptative ER-stress response.

MARKET / BRANCH

- Medicine
- Pharmacy

USP

- Demand in the pharmaceutical industry
- First promising results

DEVELOPMENT STATUS

- ✓ Partially already available as effective substances and confirmed
- ✓ Partly still in the analysis phase
- ✓ Partly only theoretical performance, since no experiments are yet available

PATENT PORTFOLIO

Priority application filed on 12/20/2007 in Germany, pending/validated;

REFERENCE NO.: TM 261

SCOPE OF APPLICATION

Fibrosing pulmonary diseases associated with the apoptosis of alveolar epithelial cells, such as the sporadic idiopathic pulmonary fibrosis (IPF), family forms of IIP and certain memory diseases such as the Hermansky Pudlak syndrome or the Niemann-Pick diseases are treated.

ADVANTAGES COMPARED TO STATE OF THE ART

Idiopathic pulmonary fibrosis (IPF) accounts for about 20-30% of all interstitial pulmonary diseases (ILD) and is associated with a rapidly advancing course and a survival time of on average 3-5 years after diagnosis. It has one of the worst forecasts. The IPF does not respond to therapy with glucocorticoids, even in combination with immunosuppressive drugs, so the only effective therapeutic measure at present is lung transplantation.
A progressive change of the alveolar architecture and the exchange of the lung epithelium by fibrotic tissue lead to death after only a few years.

DEVELOPMENT STATUS

The specific substances are partly already present as active substances and confirmed, partly still in the analysis phase and in part they are only listed theoretically because there are no experiments yet.

MARKET POTENTIAL

Until 2020, a significant increase in death due to lung diseases is predicted, to approximately 11.9 million deaths worldwide. Globally, the lung diseases with regard to mortality, incidence, prevalence and costs are second (behind the cardiovascular diseases); in some countries (e.g. Great Britain), they are already the leading “killer”.
The total cost of treating lung diseases in Europe amount almost €102 billion. (Source: European Lung Foundation)

OFFER

On behalf of its shareholder Justus-Liebig-Universität Giessen, TransMIT GmbH is looking for cooperation partners or licensees.

A TECHNOLOGY OF

JUSTUS-LIEBIG-UNIVERSITÄT GIESSEN

REFERENCE NO.: TM 261

CONTACT:

TransMIT Gesellschaft für Technologietransfer mbH
Kerkrader Strasse 3
35394 Giessen
Germany
www.transmit.de
www.hipo-online.net

Contact person:

Niklas Günther, M.A.
Phone: +49 (0)641 94 36 4 – 53
Fax: +49 (0)641 94 36 – 55
E-Mail: niklas.guenther@transmit.de

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