

Press Release

LDC and European-Canadian Consortium Attract €1.1 Million to Develop new Therapies Against Rare Disease ATD

January 08, 2019, Dortmund, Germany – The Lead Discovery Center (LDC) has teamed up with McGill University in Canada, Institut National de la Santé Et de la Recherche Médicale (INSERM) in France and Semmelweis University in Hungary to discover new approaches for the treatment of alpha-1 antitrypsin deficiency (ATD), a rare genetic disorder that lead to severe lung and liver diseases. The partners receive a total of €1.1 million in funding under the transnational E-Rare-3 programme on rare diseases.

ATD is caused by mutations of alpha1-antitrypsin (A1AT), an enzyme that is primarily produced in the liver and normally transported to the lung where it helps maintain organ health and function. Genetic alterations lead to misfolded proteins which can no longer be secreted. In the lung, the absence of functional A1AT can lead to critical disorders such as chronic obstructive pulmonary disease (COPD). In the liver, the accumulation of mutant A1AT can cause liver fibrosis, cirrhosis and subsequently hepatic failure. To date, there is no effective pharmacological treatment for ATD.

This project builds on ground-breaking results of project partner Eric Chevet and his team at INSERM y that provide a novel, highly promising target for ATD treatment. They have shown that the activation of a certain enzyme, IRE1, triggers the release of fully functional ZA1AT from the liver. ZA1AT is the most frequent mutant form of A1AT. The project partners will work together to identify and develop small molecules that can rescue active ZA1AT via IRE1-modulation. The objective is to establish a lead compound series with favourable drug-like properties and proof-of-concept in *in-vivo* models within three years.

The partnership builds on highly productive existing collaborations between the players and leverages their complementary strengths and capabilities. The teams of McGill University and INSERM contribute leading expertise in the underlying biology of protein misfolding diseases in general, and A1AT and IRE1 function in particular, while the teams of Semmelweis University and LDC bring in world-class medicinal chemistry know-how and infrastructure (incl. pharmacology), together with a proven track record in drug discovery from target level through to proof-of-concept. The project also gains support from leading clinicians and patient organizations committed to finding a cure for ATD and to improving the lives of people affected worldwide.

“This is a unique and truly powerful constellation,” says Bert Klebl, managing director of the LDC. “With our combined expertise and commitment, we are perfectly positioned to advance this project and make a difference to the lives of patients suffering from this rare and widely under-recognized disease.”

About the LDC

The Lead Discovery Center (LDC) was established in 2008 by the technology transfer organization Max Planck Innovation, as a novel approach to capitalize on the potential of excellent basic research for the discovery of new therapies for diseases with high medical need.

The LDC takes on promising early-stage projects from academia and transforms them into innovative pharmaceutical leads that reach initial proof-of-concept in animals. In close collaboration with high-profile partners from academia and industry, the LDC is building a strong and growing portfolio of small molecule leads with exceptional medical and commercial potential.

The LDC sustains a preferred partnership with the Max Planck Society and has formed alliances with AstraZeneca, Bayer, Boehringer Ingelheim, Merck KGaA, Daiichi-Sankyo, Grünenthal, Qurient, Johnson & Johnson Innovation and Roche as well as leading translational drug discovery centres around the globe.

Further information at: www.lead-discovery.de

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