HepaRegeniX GmbH achieves successful proof of efficacy in acute liver disease models for selected MKK4 inhibitors

Preclinical data indicate unique liver disease treatment potential as demonstrated by strong liver regeneration and significant reduction in steatosis plus inhibition of apoptosis

Tubingen (Germany), July 07, 2020 – HepaRegeniX GmbH, a preclinical stage company developing novel therapies for the treatment of acute and chronic liver diseases, announced today successful proof of efficacy for MKK4 inhibitors in several acute liver disease models. Underlying preclinical data showed strong inhibition of apoptosis in a standard CCl4-induced murine liver failure model upon treatment with several small molecule inhibitors targeting MKK4 (Mitogen-Activated Protein (MAP) Kinase 4). Likewise, pronounced anti-steatotic effects were observed for those compounds in a proprietary alcohol-induced steatosis model in collaboration with the University Hospital of Tübingen (Germany).

Further, positive effects on liver regeneration by administration of MKK4 inhibitors on partial hepatectomy in mice were observed. In collaboration with the Mayo Clinic (Rochester, MN, USA) these effects were confirmed in non-rodent large animal species models. Together with Prof. Scott Nyberg, three intravenous administrations of an MKK4 inhibitor before, during and after 80% resection of pig liver led to a significantly increased regenerative capacity of the remnant organ. These findings point to the great potential of MKK4 inhibitors in liver regeneration.

Scott L. Nyberg, MD, PhD, Professor of Surgery and Biomedical Engineering at Mayo Clinic in Rochester, MN, USA, said "Acute liver failure after major resection of the liver is a devastating condition with a high mortality rate. In the absence of therapeutic options, I am pleased to witness the remarkable effect of MKK4 inhibitors in enhancing the regeneration capacity of the liver after 80% hepatectomy in our non-rodent model. This illustrates a role for MKK4 as a key regulator of regeneration in severely diseased livers."

Dr. Michael Lutz, CEO of HepaRegeniX, added: "We are exicted about the successful achievement of excellent efficacy data for our novel therapeutic target, MKK4 in acute liver diseases with several molecules having the potential to enter into clinical development in the near future. Whilst positive effects on steatosis and apoptosis have been seen with other therapies, MKK4 inhibition seems to provide unique additional benefits through its strong liver regeneration potential. Such features could be beneficial for late stage liver diseases such as cirrhosis, alcoholic hepatitis or complications related to liver resection following hepatectomy for liver cancer or post-liver transplantations."

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About HepaRegeniX GmbH
Since its inception in 2017, HepaRegeniX has successfully discovered and developed several preclinical drug candidates for the treatment of acute and chronic liver diseases based on a novel proprietary molecular target Mitogen-Activated Protein (MAP) Kinase 4. MKK4 is a key regulator of liver regeneration and suppression of MKK4 unlocks the regenerative capacity of hepatocytes even in severely diseased livers. This new and unique therapeutic concept for the treatment of liver diseases was discovered by Prof. Lars Zender and his research group at the University Hospital Tubingen, Germany. Investors in HepaRegeniX include the Boehringer Ingelheim Venture Fund (BIVF), Novo Holdings A/S, Coparion, High-Tech Gruenderfonds and Ascenion GmbH.