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138: Developing MRI Contrast Agents using HBV preS1 derived Peptides

Key Facts

- ✓ Almost 100% liver specificity, dose reduction goes along with increased specificity
- ✓ No enrichment in non liver tissue, early detection of metastasis in the liver
- ✓ Specific for differentiated (healthy) hepatocytes, early stage liver alterations can be visualized

The Technology

This new outstanding contrast agent relates to peptides derived from the preS domain of hepatitis B virus (HBV) which can be used as versatile vehicles for the specific delivery of a labelling compound to the liver, preferably to hepatocytes, in vitro as well as in vivo. These compounds can be applied for the diagnosis of a liver disease or for the monitoring of a treatment of such a liver disease or disorder.

Background

The liver is an important organ in the human body, which plays a major role in the metabolism and has a number of functions, including glycogen storage, decomposition of red blood cells, synthesis of plasma proteins and detoxification. There are many known liver diseases, such as: Hepatitis, Cirrhosis, Haemochromatosis, liver cancer and i.e. Wilson's disease among other hereditary liver diseases. For diagnosis of these diseases via tissue imaging (e.g. MRI) in principle four different classes of contrast agents can be distinguished, all of which are at least partly not hepatocyte-specific and thus only of limited value for high-resolution diagnostic imaging of this organ. The aim of the present invention was to overcome this limitation by providing new agents that specifically bind to the hepatocytes in the liver resulting in a significant improvement of high resolution MRI imaging of the liver.

Advantages

- ✓ 100% liver specificity
- ✓ no enrichment in non liver tissue
- ✓ specific for differentiated hepatocytes

Commercial Opportunity

The technology is available for in-licensing for development and commercialization of new improved contrast agents.

Inventors

Mehrle S., Urban S.

Intellectual Property

PCT/EP2012/052343

Reference:

Petersen J, Dandri M, Mier W, Lütgehetmann M, Volz T, von Weizsäcker F, Haberkorn U, Fischer L, Pollok JM, Erbes B, Seitz S, Urban S. Prevention of hepatitis B virus infection in vivo by entry inhibitors derived from the large envelope protein. Nat Biotechnol. 2008 Mar;26(3):335-41.

Contact:

technology transfer heidelberg GmbH
Im Neuenheimer Feld 672
D-69120 Heidelberg
Germany
Email: tt-team@med.uni-heidelberg.de

UniversitätsKlinikum Heidelberg