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TECHNOLOGY OPPORTUNITY

Single Chain Antibodies for in vivo pancreatic β cell imaging

Applications

Single chain antibodies specific for pancreatic beta (β) cells have been identified. In vitro data supports their high specificity and in vivo data shows their utility as imaging agents in a rat model. These antibodies would allow a longitudinal assessment of the β cell mass of the pancreas by PET for, example in a non-invasive manner.

Advantages

This single chain antibody portfolio offers

- high specificity for β cells
- superior resolution, differentiation of pancreatic compartments, and signal to noise ratio compared to currently developed radiolabeled agents targeting pancreatic receptors (R) (sulfonylurea R) and transporters for glucose (GLUT2) or vesicular monoamine (VMAT2)
- superior clearance from the vasculature towards the organ than previously reported full-size antibodies.

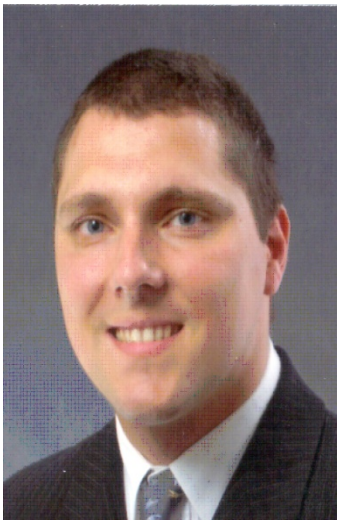
Market:

Because imaging technology is evolving, the market potential can only be estimated from various existing markets. Diabetes blood glucose self-monitoring is the largest market segment (44 %) of the North American patient monitoring industry revenues. With an estimated world prevalence of 4.2 % in 2012 the incidence of diabetes is continuously rising.

References

1. United States Provisional Patent Application.

The Inventor: Dr. Ralf Schirrmacher



Dr. Ralf Schirrmacher is an Associate Professor at the Department of Neurology and Neurosurgery of McGill University and a project director at the Lady Davis Institute for Medical Research. He has published 50 papers in well-known peer-reviewed journals during the last 10 years. His research focus is on the development of novel radiolabeling techniques for PET such as click-chemistry for C-11 and the SiFA technique for the easy introduction of fluorine-18 into complex bio-molecules. Most recently, ^{68}Ga radio-chemistry has been added as a new opportunity to label larger bio-molecules such as proteins in one step.

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