

International Conference and Exhibition on

# NANOMEDICINE AND DRUG DELIVERY

May 29-31, 2017 Osaka, Japan

## Ultrasound microbubbles: Unique vehicles for targeted delivery of therapeutic molecules

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The development of ultrasound contrast agents containing encapsulated microbubbles has increased the possibilities not only for diagnostic imaging, but also for therapeutic applications. Microbubbles have been shown to be able to carry drugs and genes, and destruction of the microbubbles by targeted ultrasound results in local release of their therapeutic contents. Furthermore, ligands as well as nanoparticles can be attached to microbubbles so that they can be targeted to a specific target tissue or even target cells. In this presentation, recent advances of ultrasound microbubbles as vehicles for delivery of therapeutic molecules will be highlighted. After adding antagomiR to positively charged microbubbles, microbubble-antagomiR complexes are formed.

### Biography

René J P Musters received a Master's degree in Molecular Cell Biology & Electron Microscopy at the Utrecht University in 1990, where he also completed his PhD in 1994 (Thesis: Ischemia and Phospholipid Reorganization in the Sarcolemma). After his first Post-doc position at the Department of Physiology at the ICaR-VU in Amsterdam (1994-1998), he specialized further in setting-up translational research in the Field of Cardiac Adaptation at the Cardiovascular Research Laboratory (Department of Surgery) at the University of Colorado Health Sciences Center (UCHSC) in Denver (CO, USA). He returned to Amsterdam in 2000 where he was appointed as Assistant Professor at the Department of Physiology of the VU University Medical Center in 2001. In 2002, he set-up the ICaR-VU 3D live-cell imaging facility at the Department of Physiology and continued to set-up multiple lines of translational research in collaboration with several clinical and pre-clinical departments and research groups. In 2016, he became Head of the Advanced Microscopy core facility in O<sub>2</sub> (AO<sub>2</sub>M) at VU University Medical Center.

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