Determination of the brain-blood partition coefficient for water in mice using MRI.

Cerebral blood flow (CBF) quantification is a valuable tool in stroke research. Mice are of special interest because of the potential of genetic engineering. Magnetic resonance imaging (MRI) provides repetitive, noninvasive CBF quantification. Many MRI techniques require the knowledge of the brain-blood partition coefficient (BBPC) for water. Adopting an MRI protocol described by Roberts et al (1996) in humans, we determined the BBPC for water in 129S6/SvEv mice from proton density measurements of brain and blood, calibrated with deuterium oxide/water phantoms. The average BBPC for water was 0.89 ± 0.03 mL/g, with little regional variation within the mouse brain.
TUM Einrichtung:
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