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Press Release

Tübingen researchers identify key factor for stability of capillaries in the brain

Multinational team investigates brain capillary development in mice – the basis of human stroke research

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The brain needs a lot of oxygen - so every last corner of the brain's tissue is served by a dense network of fine blood vessels. When these capillaries are damaged by high blood pressure or age, doctors call the condition cerebral small vessel disease. They estimate this is the cause of around one in five strokes, and that the condition may also lead to certain forms of dementia.
Dr. Christine Weinl and Professor Alfred Nordheim of the University of Tübingen's Interfaculty Institute for Cell Biology, working with Salvador Castaneda and Professor Bernd Pichler of the Werner Siemens Imaging Center and other researchers from Germany, France and the United States, carried out analyses to find out how the brain's capillaries are developed and maintained at the molecular level. The researchers conducted experiments on genetically-modified mice and found that the serum response factor, which drives many other cell processes, is responsible for the stability and blood-brain barrier functions of the capillaries. This could provide clues for stroke research in humans. The study is published in the latest edition of *Proceedings of the National Academy of Sciences.*

Publication:
Christine Weinl, Salvador Castaneda Vega, Heidemarie Riehle, Christine Stritt, Carsten Calaminus, Hartwig Wolburg, Susanne Mauel, Angele Breithaupt, Achim D. Gruber, Bohdan Wasylyk, Eric N. Olson, Ralf H. Adams, Bernd J. Pichler, and Alfred Nordheim: Endothelial depletion of murine SRF/MRTF provokes intracerebral hemorrhagic stroke. *PNAS*, publication 27-31 July 2015, DOI: 10.1073/pnas.1509047112
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