学 位 論 文 の 要 旨

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主論文の題名

Role of Periostin in Early Brain Injury After Subarachnoid Hemorrhage in Mice

主論文の要旨

This study first demonstrated that the expression of periostin was upregulated in cerebral cortex after experimental subarachnoid hemorrhage (SAH) and was responsible for early brain injury (EBI). Anti-periostin antibody effectively suppressed periostin expression in the capillary endothelial cells and prevented EBI as evaluated by neuroscore, brain edema and blood-brain barrier (BBB) permeability. The mechanisms studies showed that blockage of periostin expression effectively prevented post-SAH EBI by downregulating matrix metalloproteinase (MMP)-9 expression and preserving zona occludens (ZO)-1 expression associated with the inactivation of p38 and extracellular signal-related kinase (ERK)1/2. Meanwhile, we also found the interaction of periostin with tenascin-C (TNC), which is another mediator of BBB disruption after SAH. We speculated that periostin and TNC may form a positive feedback mechanism to aggravate BBB disruption and provide a new insight for the future research.