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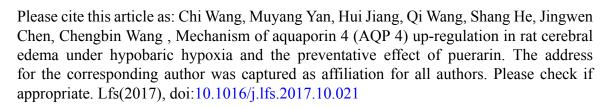
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Title page

Title:

Mechanism of aquaporin 4 (AQP 4) up-regulation in rat cerebral edema under hypobaric hypoxia and the preventative effect of puerarin

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Abstract

Aim

We aim to investigate the mechanism of aquaporin 4 (AQP 4) up-regulation during high-altitude cerebral edema (HACE) in rats under hypobaric hypoxia and preventative effect of puerarin.

Methods

Rats were exposed to a hypobaric chamber with or without the preventative treatment of puerarin or dexamethasone. Morriz water maze was used to evaluate the spatial memory injury. HE staining and W/D ratio were used to evaluate edema injury. Rat astrocytes and microglia were co-cultured under the condition of hypoxia with the administration of p38 inhibitor, NF- κ B inhibitor or puerarin. Interleukin 6 (IL-6) and tumor necrosis factor α (TNF α) of cortex and culture supernatant were measured with ELISA. AQP4, phosphorylation of MAPKs, NF- κ B pathway of cortex and astrocytes were measured by Western blot.

Key findings

Weakened spatial memory and cerebral edema were observed after hypobaric hypoxia

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