

# Macrophage Infiltration

**Stroke** is a significant cardiovascular disease that influences the health of human beings all over the world, especially the elderly population. It is reported that the **blood-brain barrier** (BBB) can be easily destroyed by **stroke**, which is one of the main factors responsible for **macrophage** infiltration and central nervous **inflammation**.

Zang et al. reported the protective effects of Trelagliptin against BBB injury and macrophage infiltration. The results indicate that the infarction volume, the neurological score, and macrophage infiltration staining with **CD68** were increased in **middle cerebral artery occlusion** (MCAO) mice but significantly reversed by treatment with Trelagliptin. Additionally, Trelagliptin reduced the permeability of the BBB by increasing the expression of the tight junction **zonula occludens protein-1** (ZO-1) in the cerebral cortex. In an in vitro hypoxia model of endothelial cells, the increased migration of macrophages, enlarged permeability of endothelial monolayer, downregulation of **ZO-1**, and elevated expression level of **CXCL1** by hypoxic conditions were all reversed by treatment with Trelagliptin in a dose-dependent manner. The results demonstrate that Trelagliptin might mitigate macrophage infiltration by preventing the breakdown of the blood-brain barrier in the brains of MCAO mice <sup>1)</sup>.

<sup>1)</sup>

Zang L, Yang B, Zhang M, Cui J, Ma X, Wei L. **Trelagliptin Mitigates Macrophage Infiltration** by Preventing the Breakdown of the **Blood-Brain Barrier** in the Brain of **Middle Cerebral Artery Occlusion** Mice. Chem Res Toxicol. 2021 Mar 17. doi: 10.1021/acs.chemrestox.0c00323. Epub ahead of print. PMID: 33728903.

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