## SURF4

Surfeit locus protein 4 (SURF4) functions as a cargo receptor that is capable of transporting newly formed proteins from the lumen of the endoplasmic reticulum into vesicles and Golgi apparatus. However, the role of SURF4 in the central nervous system remains unclear. Hu et al. investigated the role of SURF4 and its underlying mechanisms in cerebral ischemia-reperfusion injury in rats, and whether it can be used effectively for novel therapeutic intervention. They also examined whether transcranial direct current stimulation (tDCS) can exert a neuroprotective effect via SURF4-dependent signaling. Following cerebral I/R injury in rats, a significant increase was observed in the expression of SURF4. In both I/R injury and oxygen-glucose deprivation (OGD) insult, suppressing the expression of SURF4 demonstrated a neuroprotective effect, while overexpression of SURF4 resulted in increased neuronal death. They further showed that the levels of nerve growth factor precursor (proNGF), p75 neurotrophin receptor (p75NTR), sortilin, and PTEN were increased following cerebral I/R injury and that SURF4 acted through the PTEN/proNGF signal pathway to regulate neuronal viability. They demonstrated that tDCS treatment reduced SURF4 expression and decreased the infarct volume after cerebral I/R injury. Together, this study indicates that SURF4 plays a critical role in ischemic neuronal injury and may serve as a molecular target for the development of therapeutic strategies in acute ischemic stroke<sup>1)</sup>

## 1)

Hu W, Kong X, Cui Y, Wang H, Gao J, Wang X, Chen S, Li X, Li S, Che F, Wan Q. Surfeit Locus Protein 4 as a Novel Target for Therapeutic Intervention in Cerebral Ischemia-Reperfusion Injury. Mol Neurobiol. 2023 Oct 16. doi: 10.1007/s12035-023-03687-z. Epub ahead of print. PMID: 37843800.

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