

METHOD FOR THE TREATMENT OF ISCHEMIC STROKE

The present invention refers to Heme-Regulated Inhibitor (HRI) Kinase agonists or activators, or pharmaceutical compositions comprising thereof, for use in a method for the treatment of ischemic stroke or for use as an acute neuroprotective agent

Research goal

The global burden of neurological disorders is increasing yearly worldwide, with latest data showing that stroke is the leading neurological cause of death and disability by far. Ischemic stroke induces acute CNS damage and profound neuronal loss, which triggers an intense cellular outcome: stress in the endoplasmic reticulum (ER) due to the accumulation of misfolded/unfolded proteins in the organelle.

Problem to solve

Unfortunately, there are no current reliable treatments promoting acute neuroprotection following a stroke. Therefore, there is an unmet medical need to discover new targets and treatments that provide neuroprotection to damaged neurons immediately after this type of acute CNS injury.

The HRI kinase belongs to a family of kinases that phosphorylate the eukaryotic initiation factor 2 alpha (eIF2 α), playing a key role in regulating protein synthesis in response to various cellular stresses, making it a highly feasible target to promote neuroprotection following acute ischemic damage.

Innovative Aspects

Preliminary in vitro data show that a temporary-guided activation of HRI by the HRI Kinase agonist or activator BTdCPU allows a longer UPR/ISR-like metabolic state that helps neurons to overcome cellular damage after oxygen-glucose deprivation (OGD, in vitro stroke model).

Furthermore, in vivo preliminary studies in a mouse model of ischemic stroke revealed that the BTdCPU dose of 10 mg/kg induced lower lesion volumes and best scores in motor analysis than controls. Overall, these results support a beneficial impact of activating the HRI kinase following acute ischemic CNS damage.

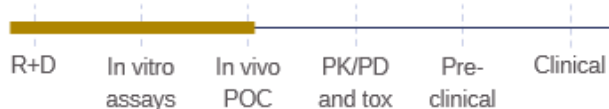
Market opportunity

BTdCPU, or pharmaceutical compositions comprising thereof, for use in a method for the treatment of ischemic stroke or for use as a neuroprotective agent.

Intellectual Property:

- Priority European patent application filed (September 19, 2024) **EP24383003.1**
- PCT/EP2025/076244

Development stage:



Available for: *Licensing, co-development*

Aims

Looking for a partner interested in a license and/or a collaboration agreement to develop and exploit this asset.

Contact details