TAT-CIRP

Cat. No.: HY-P5117

Molecular Formula: $C_{123}H_{206}N_{56}O_{33}$

Molecular Weight: 2997.31

Sequence: Tyr-Gly-Arg-Lys-Lys-Arg-Arg-Gln-Arg-Arg-Arg-Gly-Arg-Gly-Phe-Ser-Arg-Gly-Gly-Gly-Asp-Arg-Gly-Tyr-Gly-Gly

Sequence Shortening: YGRKKRRQRRRGRGFSRGGGDRGYGG

Target: Toll-like Receptor (TLR)

Pathway: Immunology/Inflammation

Storage: Sealed storage, away from moisture and light, under nitrogen

Powder	-80°C	2 years
	-20°C	1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen)

BIOLOGICAL ACTIVITY

Description

TAT-CIRP is a a small peptide, refers to Trans-trans-activating (Tat)-cold-inducible RNA binding protein. TAT-CIRP is an inhibitor of myeloid differentiation protein 2 (MD2). TAT-CIRP exhibits robust neuroprotection against ischemic and hemorrhagic stroke in mice[1].

In Vitro

TAT-CIRP (5 μM) alleviates apoptosis and necroptosis induced by NMDA stimulation (50 μM; 1 h), through a TLR4-independent pathway, in neuronal cells[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

TAT-CIRP (5-20mg/kg) alleviates brain damage after ischemic stroke in mice with middle cerebral artery (MCA) occlusion (MCAO). As for Tat, the cell membrane transduction domain of human immunodeficiency virus type 1, can be used as a control peptide[1].

TAT-CIRP (20 mg/kg; iv; single dose) can pass through the blood-brain barrier (BBB) in mice, with C_{max} value of 4762.6 μg/L, and half-life about 90 min[1].

TAT-CIRP (20 mg/kg, 100 mg/kg; iv; once daily for 7 days) induces little toxicity in mice, with safety profile[1].

TAT-CIRP reduces cerebral ischemic injury in rhesus monkey[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Middle cerebral artery (MCA) occlusion (MCAO) model in mouse[1]
Dosage:	5 mg/kg, 10 mg/kg, 20 mg/kg
Administration:	IV; single dose or once daily for 7 days
Result:	Resulted better neurological function at 28 days after brain hemorrhage than the mice that received saline. Did not induce elevation of any liver transaminases or biomarkers of renal dysfunction.

REFERENCES

[1]. Fang Z, et al. An MD2-perturbing peptide has therapeutic effects in rodent and rhesus monkey models of stroke. Sci Transl Med. 2021 Jun 9;13(597):eabb6716.

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