



Catalog Number:	MC11011	Product Type:	Small Molecule
Bio-Activity:	RAGE antagonist; Neuroprotectant	CAS #:	945714-67-0
Research Categories:	Neuroscience, cellular stress	Chemical Name:	4-Chloro-N-cyclohexyl-N-(phenylmethyl)benzamide
Solubility:	Soluble in DMSO (up to 30 mg/ml) or in Ethanol (up to 25 mg/ml)	Molecular Formula:	C ₂₀ H ₂₂ ClNO
Purity:	> 98%	Molecular Weight:	327.1
Format:	Powder	Ship Temp:	Ambient
Storage:	-20°C		

Application Notes

Description/Data:

FPS-ZM1 is a receptor for Advanced Glycation End products (RAGE) inhibitor (IC₅₀ = 0.6 μM). It decreases the amount of Aβ by binding to the V domain of RAGE. It also blocks multiple mechanisms of Aβ₄₀- and Aβ₄₂-induced cellular stress in RAGE-expressing brain endothelium, neurons, and microglia *in vitro* and *in vivo* (1,2). FPS-ZM1 has also shown the ability to cross the BBB. In a rat model, it was able to cross the blood-brain barrier and cause white matter fiber damage (3). FPS-ZM1 inhibition of RAGE was able to ameliorate inflammatory damage after acute intracerebral hemorrhage via downstream blockade of high mobility box-1 (HMGB1) signaling (4). Lastly, it also plays a role in breast cancer cell invasion and metastasis, impairing it (5).

References:

- 1) Deans et al. (2012), A multimodal RAGE-specific inhibitor reduces amyloid β-mediated brain disorder in a mouse model of Alzheimer disease; *J.Clin.Invest.* 122 1377
- 2) Hong et al. (2016), Effects of RAGE-Specific Inhibitor FPS-ZM1 on Amyloid-β Metabolism and AGEs-Induced Inflammation and Oxidative Stress in Rat Hippocampus; *Neurochem.Res.* 41 1192
- 3) Yang et al. (2015), Receptor for advanced glycation end-product antagonist reduces blood-brain barrier damage after intracerebral hemorrhage; *Stroke* 46 1328

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4) Li et al. (2015), Blockade of high mobility box-1 signaling via the receptor for advanced end-products ameliorates inflammatory damage after acute intracerebral hemorrhage; *Neurosci.Lett.* 609 109

5) Kwak et al. (2017), Targeting of RAGE-ligand signaling impairs breast cancer cell invasion and metastasis; *Oncogene* 36 1559

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