

Apelin-13

Chemical Properties

CAS No.:	217082-58-1
Formula:	C69H111N23O16S
Molecular Weight:	1550.83
Appearance:	N/A
Storage:	0-4°C for short term (days to weeks), or -20°C for long term (months).

Biological Description

Description	Apelin-13 is an endogenous ligand of the APJ receptor. Apelin-13 could protect against apoptosis induced by ischemic/reperfusion (I/R).
In vitro	In cultured PC12 cells, the same protective effects were also observed. Silencing Nrf2 gene with its siRNA abolished the Apelin 13's prevention of I/R-induced PC12 cell injury, oxidative stress, and inflammation. Inhibition of AMPK by its siRNA decreased the level of Apelin 13-induced Nrf2 expression and diminished the protective effects of Apelin 13. The interplay relationship between GSK-3 β and Nrf2 was also verified with relative overexpression. Using selective inhibitors, we further identified the upstream of AMPK/GSK-3 β /Nrf2 is AR/G α /PLC/IP3/CaMKK.
In vivo	Apelin 13 treatment significantly reduced infarct size, improved neurological outcomes, decreased brain edema, and inhibited cell apoptosis, oxidative stress, and neuroinflammation after I/R. Apelin 13 significantly increased the expression of Nrf2 and the phosphorylation levels of AMPK and GSK-3 β .
Cell Research	For in vitro study, PC12 cells were used, protease inhibitors or siRNA were used. Protein levels were investigated by western blotting.
Animal Research	In vivo, the I/R model was induced and Apelin 13 was given intracerebroventricularly 15 min before reperfusion. The neurobehavioral scores, infarction volumes, and some cytokines in the brain were measured.

Solubility Information

Solubility	< 1 mg/ml refers to the product slightly soluble or insoluble
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.645 mL	3.224 mL	6.448 mL
5 mM	0.129 mL	0.645 mL	1.29 mL
10 mM	0.064 mL	0.322 mL	0.645 mL
50 mM	0.013 mL	0.064 mL	0.129 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 °C for 6 months; - 20 °C for 1 month. Please use it as soon as possible.

Reference

1. Duan J , Cui J , Yang Z , et al. Neuroprotective effect of Apelin 13 on ischemic stroke by activating AMPK/GSK-3 β /Nrf2 signaling[J]. Journal of Neuroinflammation, 2019, 16(1).

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