Product Data Sheet

Product Name: RVG Peptide (trifluoroacetate salt)
Cat. No.: GC92117

Chemical Properties

Cas. No.

Chemical Name: L-tyrosyl-L-threonyl-L-isoleucyl-L-tryptophyl-L-methionyl-L-prolyl-L-α-glutamyl-L-asparaginyl-L-prolyl-L-arginyl-L-prolylglycyl-L-threonyl-L-prolyl-L-cysteinyl-L-α-aspartyl-L-isoleucyl-L-phenylalanyl-L-threonyl-L-asparaginyl-L-seryl-L-arginylglycyl-L-lysyl-L-arginyl-L-alanyl-L-seryl-L-asparaginyl-glycine, trifluoroacetate salt

SMILES: O=C(N[C@]([C@H](O[H])C)([H])C(N[C@@](C(N[C@@H](CC1=CN([H])C2=C1C=CC=C2)C(N[C@@H](CCSC)C(N3CCC[C@H]3C(N[C@@H](CCC(O)=O)C(N[C@@H](CC(N[H])=O)C(N4CCC[C@H]4C(N[C@@H](CCC/N=C(N[H])/N)C(N5CCC[C@H]5C(NCC(N[C@]([C@H](O[H])C)([H])C(N6CCC[C@H]6C(N[C@@H](CS[H])C(N[C@@H](CC(O)=O)C(N[C@@](C(N[C@H](C(N[C@]([C@H](O[H])C)([H])C(N[C@@H](CC(N[H])=O)C(N[C@@H](CO[H])C(N[C@@H](CCC/N=C(N[H])/N)C(NCC(N[C@@H](CCCCN[H])C(N[C@@H](CCC/N=C(N[H])/N)C(N[C@H](C(N[C@@H](CO[H])C(N[C@@H](CC(N[H])=O)C(NCC(O)=O)=O)=O)=O)C)=O)=O)=O)=O)=O)=O)=O)=O)=O)=O)CC7=CC=CC=C7)=O)([H])[C@@H](C)CC)=O)=O)=O)=O)=O)=O)=O)=O)=O)=O)=O)=O)=O)=O)=O)=O)([H])[C@@H](C)CC)=O)[C@H](CC8=CC=C(O[H])C=C8)N[H].FC(F)(C(O)=O)F

Formula: $C_{141}H_{217}N_{43}O_{43}S_2$? XCF_3COOH M.Wt: 3266.6

Solubility: DMSO: Soluble: ≥10 mg/ml,PBS (pH 7.2): Soluble: ≥10 mg/ml Storage: -20°C

General tips: For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.

Shipping Condition: Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure:

H—Tyr—Thr—Ile—Trp—Met—Pro—Glu—Asn—Pro—Arg—
Pro—Gly—Thr—Pro—Cys—Asp—Ile—Phe—Thr—Asn—
Ser—Arg—Gly—Lys—Arg—Ala—Ser—Asn—Gly—OH
• XCF_3COOH

Caution: Product has not been fully validated for medical applications. For research use only.

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Background

Rabies virus glycoprotein (RVG) peptide is a nicotinic acetylcholine receptor (nAChR) antagonist (IC_{50} = 2.5 ?M for the human receptor). [1] Lipid nanoparticles (LNPs) conjugated to RVG peptide selectively traffic to the brain over the lungs and liver in rats.[2] LNPs conjugated to RVG peptide and encapsulating the iron chelator and prolyl hydroxylase inhibitor deferoxamine (DFO) reduce iron levels in the striatum and substantia nigra, as well as decrease levels of reactive oxygen species (ROS) and malondialdehyde (MDA) and increase levels of superoxide dismutase (SOD) in the substantia nigra in a mouse model of MPTP-induced Parkinson's disease. RVG-containing and DFO-encapsulating LNPs also increase the latency to fall in the rotarod test in the same model.

References:
[1]. Lentz, T.L., Hawrot, E., and Wilson, P.T.Synthetic peptides corresponding to sequences of snake venom neurotoxins and rabies virus glycoprotein bind to the nicotinic acetylcholine receptorProteins2(4)298-307(1987).
[2]. You, L., Wang, J., Liu, T., et al.Correction to targeted brain delivery of rabies virus glycoprotein 29-modified deferoxamine-loaded nanoparticles reverses functional deficits in Parkinsonian miceACS Nano16(11)19605(2022).