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DATASHEET

Spadin

Product overview

Name	Spadin
Cat No	HB5438
Biological description	Potent TREK-1/ K2P2.1 potassium channel blocker ($IC_{50} = 71$ nM). Brain penetrant. Increases 5-HT neuron firing rate in the Dorsal Raphe Nucleus and shows fast-acting antidepressant effects. Also controls astrocytic passive conductance.
Biological action	Inhibitor
Purity	>95%
Description	Potent TREK-1/ K2P2.1 channel blocker. Shows fast-acting antidepressant effects.

Solubility & Handling

Storage instructions	-20 °C
Solubility overview	Soluble in water (1 mg/ml)
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

Chemical Data

Molecular Weight	2012.34
Chemical structure	
Molecular Formula	$C_{96}H_{142}N_{26}O_{22}$
Sequence (one letter)	YAPLPWWSGPIGVSWGLR
CAS Number	1270083-24-3
PubChem identifier	91826106
SMILES	<chem>CC[C@@H](C)[C@@H](C)(=O)NCC(=O)N[C@@H](C(C)C)C(=O)N[C@@H](CO)C(=O)N[C@@H](CC1=CNC2=CC=CC=C21)C(=O)NCC(=O)N[C@@H](CC(C)C)C(=O)N[C@@H](CCCNC(=N)N)C(=O)O)NC(=O)[C@@H]3CCCN3C(=O)CNC(=O)[C@@H](CO)NC(=O)[C@@H](CC4=CNC5=CC=CC=C54)NC(=O)[C@@H](CCCNC(=N)N)NC(=O)[C@@H]6CCCN6C(=O)[C@@H](CC(C)C)NC(=O)[C@@H]7CCC N7C(=O)[C@@H](C)NC(=O)[C@@H](CC8=CC=C(C=C8)O)N</chem>
InChiKey	WMSPWLIEKXALQP-WSSJNERPSA-N
Appearance	White solid

References

Spadin, a sortilin-derived peptide, targeting rodent TREK-1 channels: a new concept in the antidepressant drug design.

Mazella J et al (2010) PLoS biology 8

PubMedID [20405001](#)

Spadin as a new antidepressant: absence of TREK-1-related side effects.

Moha Ou Maati H et al (2012) Neuropharmacology 62

PubMedID [21807005](#)

Spadin Modulates Astrocytic Passive Conductance via Inhibition of TWIK-1/TREK-1 Heterodimeric Channels.

Bae Y et al (2020) International journal of molecular sciences 21

PubMedID

[33348878](#)

The peptidic antidepressant spadin interacts with prefrontal 5-HT(4) and mGluR(2) receptors in the control of serotonergic function.

Moha ou Maati H et al (2016) Brain structure & function 221

PubMedID

[25233810](#)
