# Product Data Sheet

Product Name: Spadin
Cat. No.: GC13353

## Chemical Properties

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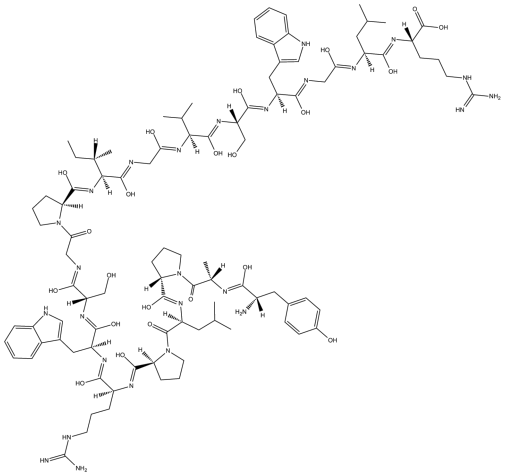
|---|---|
| Cas. No. | 1270083-24-3 |
| Chemical Name | (1Z,3S,4Z,7Z,9S,10Z,12S,13Z,15S,16Z,19Z,21S,22Z,24S)-15-((1H-indol-3-yl)methyl)-1-((S)-1-((6S,7Z,9S,10Z,12S,13Z)-9-((1H-indol-3-yl)methyl)-1-amino-6-((Z)-(((S)-1-((S)-2-((Z)-(((S)-1-((S)-2-((Z)-((S)-2-amino-1-hydroxy-3-(4-hydroxyphenyl)propylidene)amino)p |
| SMILES | CC[C@]([C@@](/N=C(O)/[C@]1([H])CCCN1C(C/N=C(O)/[C@](/N=C(O)/[C@](/N=C(O)/[C@](/N=C(O)/[C@]2([H])CCCN2C([C@](/N=C(O)/[C@]3([H])CCCN3C([C@](/N=C(O)/[C@](N)([H])CC4=CC=C(O)C=C4)([H])C)=O)([H])CC(C)C)=O)([H])CCCNC(N)=N)([H])CC5=CNC6=CC=CC=C56)([H])CO)=O)([H]) |

| | | | |
|---|---|---|---|
| Formula | $C_{96}H_{142}N_{26}O_{22}$ | M.Wt | 2012.32 |
| Solubility | Soluble to 2 mg/ml in Water | Storage | Store at -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



## Background

Spadin is a potent TREK-1 channel inhibitor with IC50 of 71nM. It is a secreted peptide derived from

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Spadin is a potent TREK-1 channel inhibitor with IC50 of 7 nM. It is a secreted peptide derived from the propeptide generated by the maturation of NTSR3/Sortilin. [1]

TREK-1, aka KCNK2, is a two-pore domain ion channel that involved in the passive transmembrane K+ transport. It is related to the ischemia, anesthesia and electrogenesis in the neurons. It also plays an important role in the pathophysiological process of depression and in the response to antidepressant. [1]

In TREK-1 transfected COS-7 cells, 100nM of spadin inhibited 63% of the TREK-1 current stimulated by arachidnice acid. Spadin also blocked the TREK-1 channels activity in CA3 hippocampal neurons on brain slices of wild-type mice. [1]

In behavioral tests that predicting an antidepressant response, spadin-treated mice displayed a resistance to depression. Mice treated with spadin for 4 days also exhibited a significant antidepressant effect as well as elevated hippocampal phosphorylation of CREB protein and neurogenesis. [2]

References:
1. Borsotto M, Veyssiere J, Moha Ou Maati H et al. Targeting two-pore domain K(+) channels TREK-1 and TASK-3 for the treatment of depression: a new therapeutic concept. Br J Pharmacol. 2015 Feb;172(3):771-84.
2. Mazella J, Pétrault O, Lucas G, et al. Spadin, a sortilin-derived peptide, targeting rodent TREK-1 channels: a new concept in the antidepressant drug design. PLoS Biol. 2010 Apr 13;8(4):e1000355.

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