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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

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|---|---|
| **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

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|---|---|
| **Molecular Weight** | 2012.34 |
| **Chemical structure** |  |
| **Molecular Formula** | $C_{96}H_{142}N_{26}O_{22}$ |
| **Sequence (one letter)** | YAPLPRWSGPIGVSWGLR |
| **CAS Number** | 1270083-24-3 |
| **PubChem identifier** | 91826106 |
| **SMILES** | 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]7CCCN7C(=O)[C@H](C)NC(=O)[C@H](CC8=CC=C(C=C8)O)N |
| **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