

Product Name: OD1

Catalog No.: 5941

Batch No.: 7

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₃₀₈H₄₆₆N₉₀O₉₅S₈

Batch Molecular Weight: 7206.1

Physical Appearance: White solid

Counter Ion: TFA

Solubility: Soluble to 1 mg/ml in water

Storage: Store at -20°C

Peptide Sequence:

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Gly-Val-Arg-Asp-Ala-Tyr-Ile-Ala-Asp-Asp-
Lys-Asn-Cys-Val-Tyr-Thr-Cys-Ala-Ser-Asn-
Gly-Tyr-Cys-Asn-Thr-Glu-Cys-Thr-Lys-Asn-
Gly-Ala-Glu-Ser-Gly-Tyr-Cys-Gln-Trp-Ile-
Gly-Arg-Tyr-Gly-Asn-Ala-Cys-Trp-Cys-Ile-
Lys-Leu-Pro-Asp-Glu-Val-Pro-Ile-Arg-Ile-
Pro-Gly-Lys-Cys-Arg-NH2

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2. ANALYTICAL DATA

HPLC: Shows 96.8% purity

Mass Spectrum: Consistent with structure

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

OD1 is a potent rat Na_v1.7, human Na_v1.4 and rat Na_v1.6 channel activator (EC₅₀ values are 7, 10 and 47 nM, respectively). Exhibits minimal activation at mammalian Na_v1.2, Na_v1.3 and Na_v1.5 (EC₅₀ values >3 μM). Inhibits fast inactivation on all channels. Increases peak currents at all voltages and stimulates a persistent Na⁺ current at hNa_v1.7 channel. Increases hyperpolarization at Na_v1.4 and Na_v1.6 channels. Induces spontaneous pain in vivo.

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Peptide Sequence:

Gly-Val-Arg-Asp-Ala-Tyr-Ile-Ala-Asp-Asp-

Lys-Asn-Cys-Val-Tyr-Thr-Cys-Ala-Ser-Asn-

Gly-Tyr-Cys-Asn-Thr-Glu-Cys-Thr-Lys-Asn-

Gly-Ala-Glu-Ser-Gly-Tyr-Cys-Gln-Trp-Ile-

Gly-Arg-Tyr-Gly-Asn-Ala-Cys-Trp-Cys-Ile-

Lys-Leu-Pro-Asp-Glu-Val-Pro-Ile-Arg-Ile-

Pro-Gly-Lys-Cys-Arg-NH₂

Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 1 mg/ml in water

This product is supplied as a lyophilized solid and may be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Counter Ion: TFA

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Peptides in solution are much less stable than in lyophilized form. This is especially true for peptides whose sequences contain amino acids such as Cys, Met, Trp, Asn, Gln, and N-terminal Glu.

Therefore we recommend storing peptides in solution for as short a time as possible. Avoid repeated freeze thaw cycles by dividing the peptide solution into aliquots and storing the aliquots at -20°C. Any portion of an aliquot unused after thawing should be discarded.

Peptides stored in solution can occasionally be susceptible to bacterial degradation. We recommend using sterile solutions or passing the peptide solution through a 0.2 μm filter to remove potential bacterial contamination whenever possible.

References:

Durek et al (2013) Chemical engineering and structural and pharmacological characterization of the α-scorpion toxin OD1. ACS Chem.Biol. **8** 1215. PMID: 23527544.

Maertens et al (2006) Potent modulation of the voltage-gated sodium channel Na_v1.7 by OD1, a toxin from the scorpion *Odonthobuthus doriae*. Mol.Pharmacol. **70** 405. PMID: 16641312.

Jalali et al (2005) OD1, the first toxin isolated from the venom of the scorpion *Odonthobuthus doriae* active on voltage-gated Na⁺ channels. FEBS Lett. **579** 4181. PMID: 16038905.

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bio-techne.com

info@bio-techne.com

techsupport@bio-techne.com

North America

Tel: (800) 343 7475

China

info.cn@bio-techne.com

Tel: +86 (21) 52380373

Europe Middle East Africa

Tel: +44 (0)1235 529449

Rest of World

www.tocris.com/distributors

Tel:+1 612 379 2956