Print Date: Nov 3rd 2021

Certificate of Analysis

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Product Name: **Orexin B (human)** **Catalog No.: 1456** **Batch No.: 13**

CAS Number: 205640-91-1

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{123}H_{212}N_{44}O_{35}S$

Batch Molecular Weight: 2899.36

Physical Appearance: White lyophilised solid

Net Peptide Content: 79%

Counter Ion: TFA

Solubility: Soluble to 1 mg/ml in water

Storage: Store at -20°C

Peptide Sequence: Arg-Ser-Gly-Pro-Pro-Gly-Leu-Gln-Gly-Arg-Leu-Gln-Arg-Leu-Leu-Gln-Ala-Ser-Gly-Asn-His-Ala-Ala-Gly-Ile-Leu-Thr-Met-NH_2

2. ANALYTICAL DATA

HPLC: Shows 96.1% purity

Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid	Theoretical	Actual	Amino Acid	Theoretical	Actual
Ala	3.00	2.93	Lys		
Arg	3.00	3.00	Met	1.00	0.99
Asx	1.00	1.04	Phe		
Cys			Pro	2.00	2.01
Glx	3.00	3.06	Ser	2.00	1.53
Gly	5.00	4.95	Thr	1.00	0.91
His	1.00	1.02	Trp		
Ile	1.00	1.00	Tyr		
Leu	5.00	4.99	Val		

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

Product Information

Product Name: **Orexin B (human)** **Catalog No.: 1456** **Batch No.: 13**

CAS Number: 205640-91-1

Description:

Orexin B (human) is an endogenous agonist at orexin receptors (K_i values are 420 and 36 nM for OX_1 and OX_2 receptors, respectively). Stimulates feeding following central administration and may be involved in the control of sleep-wake cycle and other hypothalamic functions. Also neuroprotective for dopaminergic neurons in rat midbrain cultures.

Physical and Chemical Properties:

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Arg-Ser-Gly-Pro-Pro-Gly-Leu-Gln-Gly-Arg-Leu-Gln-Arg-Leu-Leu-Gln-Ala-Ser-Gly-Asn-His-Ala-Ala-Gly-Ile-Leu-Thr-Met-NH_2

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.

Net Peptide Content: 79% (Remaining weight made up of counterions and residual water).

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 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:

Guerreiro *et al* (2015) The sleep-modulating peptide orexin-B protects midbrain DA neurons from degeneration, alone or in cooperation with nicotine. Mol.Pharmacol. ***87*** 525. PMID: 25552485.

Kilduff and Peyron (2000) The hypocretin/orexin ligand-receptor system: implications for sleep and sleep disorders. TiNS ***23*** 359. PMID: 10906799.

Smart (1999) Orexins: a new family of neuropeptides. Br.J.Anaesth. ***83*** 695. PMID: 10690128.