

Certificate of Analysis

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Product Name: Orexin B (human)

Catalog No.: 1456

Batch No.: 18

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 |
| Counter Ion: | Trifluoroacetate |
| 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 96.6% purity |
| Mass Spectrum: | Consistent with structure |

3. AMINO ACID ANALYSIS DATA

| Amino Acid Theoretical | | Actual | Amino Acid Theoretical | | Actual |
|------------------------|------|--------|------------------------|------|--------|
| Ala | 3.00 | 2.94 | Lys | | |
| Arg | 3.00 | 3.01 | Met | 1.00 | 1.00 |
| Asx | 1.00 | 1.02 | Phe | | |
| Cys | | | Pro | 2.00 | 2.03 |
| Glx | 3.00 | 3.08 | Ser | 2.00 | 1.34 |
| Gly | 5.00 | 5.03 | Thr | 1.00 | 0.84 |
| His | 1.00 | 1.01 | Trp | | |
| Ile | 1.00 | 1.00 | Tyr | | |
| Leu | 5.00 | 4.89 | Val | | |

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

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Product Name: Orexin B (human)

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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:

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

Batch Molecular Weight: 2899.36

Physical Appearance: White lyophilised solid

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-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: Trifluoroacetate

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:

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.

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