

Certificate of Analysis

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Product Name: [D-Arg¹,D-Phe⁵,D-Trp^{7,9},Leu¹¹]-Substance P

Catalog No.: 1946

Batch No.: 4

CAS Number: 96736-12-8

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula:	C ₇₉ H ₁₀₉ N ₁₉ O ₁₂
Batch Molecular Weight:	1516.85
Physical Appearance:	White lyophilised solid
Net Peptide Content:	72.8%
Counter Ion:	TFA salt
Solubility:	Soluble to 1 mg/ml in water
Storage:	Desiccate at -20°C
Peptide Sequence:	D-Arg-Pro-Lys-Pro-D-Phe-Gln-D-Trp- Phe-D-Trp-Leu-Leu-NH ₂

2. ANALYTICAL DATA

HPLC:	Shows 96.8% purity
Mass Spectrum:	Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical Actual			Amino Acid Theoretical Actual		
Ala			Lys	1.00	1.03
Arg	1.00	1.03	Met		
Asx			Phe	2.00	1.99
Cys			Pro	2.00	1.97
Glx	1.00	0.85	Ser		
Gly			Thr		
His			Trp		
Ile			Tyr		
Leu	2.00	1.98	Val		

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

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Description:

Broad spectrum neuropeptide antagonist/inverse agonist. Potent full inverse agonist for the ghrelin receptor (EC₅₀ = 5.2 nM); diminishes constitutive ghrelin receptor signaling. Also antagonist at tachykinin, bradykinin, CCK and bombesin receptors. Induces apoptosis and inhibits cancer cell growth in vitro.

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Physical Appearance: White lyophilised solid

Peptide Sequence:D-Arg-Pro-Lys-Pro-D-Phe-Gln-D-Trp-
Phe-D-Trp-Leu-Leu-NH₂**Storage:** Desiccate 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: 72.8% (Remaining weight made up of counterions and residual water).**Counter Ion:** TFA salt**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:

Reeve and Bleehen (1994) [D-Arg¹, D-Phe⁵, D-Trp^{7,9}, Leu¹¹] Substance P induces apoptosis in lung cancer cells in vitro. *Biochem.Biophys.Res.Commun.* **199** 1313. PMID: 7511895.

Jarpe et al (1998) [D-Arg¹, D-Phe⁵, D-Trp^{7,9}, Leu¹¹] Substance P acts as a biased agonist toward neuropeptide and chemokine receptors. *J.Biol.Chem.* **273** 3097. PMID: 9446627.

Holst et al (2003) High constitutive signaling of the ghrelin receptor - identification of a potent inverse agonist. *Mol.Endocrinol.* **17** 2201. PMID: 12907757.

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