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TOCRIS

Print Date: Apr 24th 2025

Certificate of Analysis

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Product Name: **M40** **Catalog No.: 3425** **Batch No.: 8**

CAS Number: 143896-17-7

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{94}H_{145}N_{23}O_{24}$

Batch Molecular Weight: 1981.33

Physical Appearance: White lyophilised solid

Counter Ion: TFA

Solubility: Soluble to 1 mg/ml in water

Storage: Store at -20°C

Peptide Sequence: Gly-Trp-Thr-Leu-Asn-Ser-Ala-Gly-Tyr-Leu-Leu-Gly-Pro-Pro-Pro-Ala-Leu-Ala-Leu-Ala-NH_2

2. ANALYTICAL DATA

HPLC: Shows 97.8% purity

Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid	Theoretical	Actual	Amino Acid	Theoretical	Actual
Ala	4.00	4.01	Lys		
Arg			Met		
Asx	1.00	0.99	Phe		
Cys			Pro	3.00	3.05
Glx			Ser	1.00	0.71
Gly	3.00	2.96	Thr	1.00	0.86
His			Trp	1.00	0.45
Ile			Tyr	1.00	0.98
Leu	5.00	5.01	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

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Description:

M40 is a potent, non-selective galanin receptor antagonist (K_i values are 1.82 and 5.1 nM at GAL_1 and GAL_2 respectively) that inhibits galanin (1-29) (Cat. No. 2696) binding in rat brain in vitro (IC_{50} = 3 - 15 nM). Attenuates the antidepressant effects of fluoxetine (Cat. No. 0927) and blocks galanin-induced food intake in vivo. Also exhibits weak partial agonist activity at peripheral GAL_2 receptors at doses > 100 nM.

Physical and Chemical Properties:

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Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 1 mg/ml in water

This product is supplied in lyophilized form. It may appear as a solid, gel or film and 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 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:

Lu *et al* (2005) A role for galanin in antidepressant actions with a focus on the dorsal raphe nucleus. Proc.Natl.Acad.Sci.USA ***102*** 874.

Yuan *et al* (2002) Gastric effects of galanin and its interaction with leptin on brainstem neuronal activity. J.Pharm.Exp.Ther. ***301*** 488.

Bartfai *et al* (1993) Galanin-receptor ligand M40 peptide distinguishes between putative galanin-receptor subtypes. Proc.Natl.Acad.Sci.USA ***90*** 11287.