

Certificate of Analysis

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Product Name: CTOP
CAS Number: 103429-31-8

Catalog No.: 1578 **Batch No.:** 15

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₅₀H₆₇N₁₁O₁₁S₂
Batch Molecular Weight: 1062.28
Physical Appearance: White lyophilised solid
Counter Ion: TFA
Solubility: Soluble to 1 mg/ml in water
Storage: Store at -20°C
Peptide Sequence: $\overbrace{\text{D-Phe-Cys-Tyr-D-Trp-Orn-Thr-Pen-Thr-NH}_2}$

2. ANALYTICAL DATA

HPLC: Shows 98.5% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical		Actual		Amino Acid Theoretical		Actual	
Ala				Lys			
Arg				Met			
Asx				Phe	1.00		1.03
Cys	1.00		Detected	Pro			
Glx				Ser			
Gly				Thr	2.00		1.22
His				Trp	1.00		Detected
Ile				Tyr	1.00		0.97
Leu				Val			

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

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CAS Number: 103429-31-8

Description:

CTOP is a potent and selective μ opioid receptor antagonist (K_i values are 0.96 and >10,000 nM for μ and δ receptors respectively). Causes behavioral effects on central administration in vivo. Also increases K^+ currents in rat locus ceruleus neurons in vitro via a μ receptor independent mechanism.

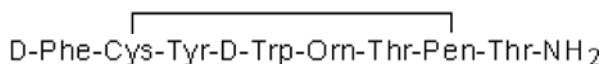
Physical and Chemical Properties:

Batch Molecular Formula: $C_{50}H_{67}N_{11}O_{11}S_2$

Batch Molecular Weight: 1062.28

Physical Appearance: White lyophilised solid

Peptide Sequence:



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 μ m filter to remove potential bacterial contamination whenever possible.

References:

Chieng et al (1996) The μ -opioid receptor antagonist D-Phe-Cys-Tyr-D-Trp-Orn-Thr-Pen-Thr-NH₂ (CTOP) [but not D-Phe-Cys-Tyr-D-Trp-Arg-Thr-Pen-Thr-NH₂ (CTAP)] produces a no Mol.Pharmacol. **50** 650. PMID: 8794906.

Badiani et al (1995) Intra-VTA injections of the mu-opioid antagonist CTOP enhance locomotor activity. Brain Res. **690** 112. PMID: 7496796.

Hawkins et al (1989) [³H]-[H-D-Phe-Cys-Tyr-D-Trp-Orn-Thr-Pen-Thr-NH₂] ([³H]CTOP), a potent and highly selective peptide for mu opioid receptors in rat brain. J.Pharmacol.Exp.Ther. **248** 73. PMID: 2563293.

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