bio-techne
TOCRIS

Print Date: Feb 23rd 2024

Certificate of Analysis

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Product Name: **(±)-Anatoxin A fumarate** **Catalog No.: 0789** **Batch No.: 9**

CAS Number: 1219922-30-1

IUPAC Name: (±)-2-Acetyl-9-aza bicyclo[4.2.1]non-2-ene fumarate

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{10}H_{15}NO.C_4H_4O_4$

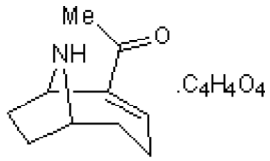
Batch Molecular Weight: 281.31

Physical Appearance: Light brown solid

Solubility: water to 100 mM

Storage: Store at +4°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 98.0% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

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

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CAS Number: 1219922-30-1

IUPAC Name: (±)-2-Acetyl-9-aza bicyclo[4.2.1]non-2-ene fumarate

Description:

(±)-Anatoxin A fumarate is a potent nicotinic agonist (K_i values are 1.25 and 1840 nM for α4β2 and α7 nicotinic receptors respectively). (±)-Anatoxin A fumarate stimulates [^{3}H]-dopamine release from rat striatal synaptosomes (EC_{50} = 136 nM). (±)-Anatoxin A fumarate induces apoptosis in rat thymocytes and Vero cells by generation of reactive oxygen species and caspase activation.

Physical and Chemical Properties:

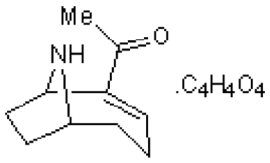
Batch Molecular Formula: $C_{10}H_{15}NO.C_4H_4O_4$

Batch Molecular Weight: 281.31

Physical Appearance: Light brown solid

Minimum Purity: ≥96%

Batch Molecular Structure:



Storage: Store at +4°C

Solubility & Usage Info:

water to 100 mM

POTENT NICOTINIC AGONIST - TREAT AS EXTREMELY TOXIC 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.

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).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Campos *et al* (2007) *In vivo* neurochemical characterization of Anatoxin-a evoked dopamine release from striatum. J.Neural Transm. ***114*** 173. PMID: 16897603.

Lakshmana Rao *et al* (2002) Involvement of caspase and reactive oxygen species in cyanobacterial toxin anatoxin-a-induced cytotoxicity and apoptosis in rat thymocytes and Vero cells. Arch.Toxicol. ***76*** 227. PMID: 12029386.

Sharples *et al* (2000) UB-165 implicates α4β2 nAChR in striatal DA release. J.Neurosci. ***20*** 2783. PMID: 10751429.