

Certificate of Analysis

www.tocris.com

Product Name: Kainic acid (synthetic)

Catalog No.: 7065

Batch No.: 5

CAS Number: 487-79-6

IUPAC Name: (2S,3S,4S)-Carboxy-4-(1-methylethenyl)-3-pyrrolidineacetic acid

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₀H₁₅NO₄· $\frac{1}{4}$ H₂O

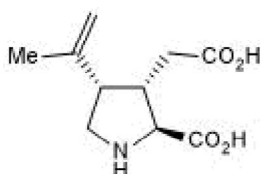
Batch Molecular Weight: 217.73

Physical Appearance: White solid

Solubility: water to 25 mM

Storage: Store at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 98.3% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Optical Rotation: [α]_D = -15.4 (Concentration = 1, Solvent = Water)

Microanalysis:

Carbon Hydrogen Nitrogen

Theoretical 55.16 7.18 6.43

Found 54.4 7.2 6.16

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

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Description:

Kainic acid, also known as kainate, is a selective agonist of kainate ionotropic glutamate receptors ($EC_{50} = 0.6 \mu\text{M} - 7.4 \mu\text{M}$) and a partial agonist at AMPA receptors ($EC_{50} = 31 \mu\text{M} - 170 \mu\text{M}$). Kainic acid is used to model epilepsy in vivo and to study the mechanisms of neurodegeneration and neurocytosis induced by excess stimulation by kainic acid. Kainate is shown to be involved in amyloidogenic processing of amyloid precursor protein and A β peptides in Alzheimer's. Synthetic version of Kainic acid (Cat. No. 0222) Related compounds include the kainate receptor agonist Domoic acid (Cat. No. 0269) and the antagon... Please see product specific page on www.tocris.com for full description.

Physical and Chemical Properties:

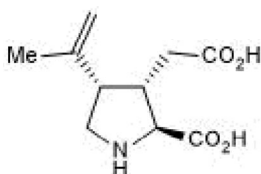
Batch Molecular Formula: $\text{C}_{10}\text{H}_{15}\text{NO}_4 \cdot \frac{1}{4}\text{H}_2\text{O}$

Batch Molecular Weight: 217.73

Physical Appearance: White solid

Minimum Purity: $\geq 98\%$

Batch Molecular Structure:



References:

Watkins & Evans (1981) Excitatory amino acid transmitters. *Annu.Rev.Pharmacol.Toxicol.* **21** 165. PMID: 6112965.

Watkins (1978) Excitatory amino acids. Kainic acid as a Tool in Neurobiology. Edited by E (37).

Storage: Store at RT

Solubility & Usage Info:

water to 25 mM

When purchased as a 1mg unit, 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.

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