

Certificate of Analysis

Product Name: Nefiracetam

Catalog No.: 2851

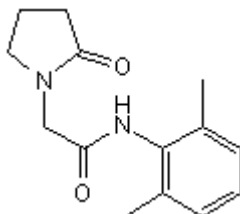
Batch No.: 1

CAS Number: 77191-36-7

IUPAC Name: *N*-(2,6-Dimethylphenyl)-2-oxo-1-pyrrolidineacetamide

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₄H₁₈N₂O₂
Batch Molecular Weight: 246.3
Physical Appearance: White crystalline solid
Solubility: DMSO to 100 mM
ethanol to 100 mM
Storage: Store at RT
Batch Molecular Structure:



2. ANALYTICAL DATA

Melting Point: Between 152 - 153°C
HPLC: Shows >99.9% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure

	Carbon Hydrogen Nitrogen		
	Carbon	Hydrogen	Nitrogen
Theoretical	68.27	7.37	11.37
Found	68.31	7.4	11.37

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

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IUPAC Name: *N*-(2,6-Dimethylphenyl)-2-oxo-1-pyrrolidineacetamide

Description:

Cognitive enhancer that displays various pharmacological effects. Activates L/N-type calcium channels, cholinergic, monoaminergic and GABAergic systems. Displays potent neuroprotective action in the retinal ischemia-reperfusion model in vivo.

Physical and Chemical Properties:

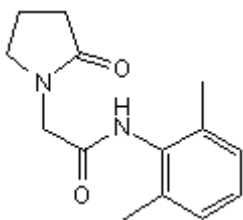
Batch Molecular Formula: C₁₄H₁₈N₂O₂

Batch Molecular Weight: 246.3

Physical Appearance: White crystalline solid

Minimum Purity: >99%

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

DMSO to 100 mM
ethanol to 100 mM

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. Our standard recommendations are:

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:

Narahashi et al (2004) Mechanisms of action of cognitive enhancers on neuroreceptors. *Biol.Pharm.Bull.* **27** 1701. PMID: 15516710.

Ueda et al (2004) The cognitive-enhancer nefiracetam inhibits both necrosis and apoptosis in retinal ischemic models in vitro and in vivo. *J.Pharmacol.Exp.Ther.* **309** 200. PMID: 14718588.

Kitano et al (2005) Effects of nefiracetam, a novel pyrrolidone-type nootropic agent, on the amygdala-kindled seizures in rats. *Epilepsia* **46** 1561. PMID: 16190926.

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