Certificate of Analysis

Product Name: **MNI-caged-L-glutamate** **Catalog No.: 1490** **Batch No.: 51**

CAS Number: 295325-62-1

IUPAC Name: (*S*)-α-Amino-2,3-dihydro-4-methoxy-7-nitro-δ-oxo-1*H*-indole-1-pentanoic acid

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{14}H_{17}N_3O_6.¾H_2O$

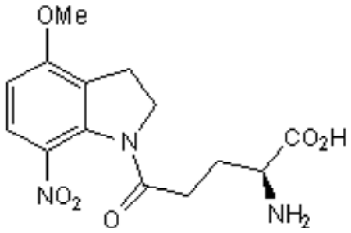
Batch Molecular Weight: 336.81

Physical Appearance: Yellow solid

Solubility: water to 50 mM with gentle warming
phosphate buffered saline to 50 mM
ethanol to 100 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.5 (Pyridine:Acetic acid:Water:Butanol [3:8:11:33])

HPLC: Shows 99.8% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Optical Rotation: $[\alpha]_D$ = -4 (Concentration = 1, Solvent = Water)

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	49.92	5.54	12.48
Found	49.9	5.38	12.53

Amino acid analysis (A24323): no free amino acids found

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Description:

MNI-caged glutamate that rapidly and efficiently releases glutamate (Cat. No. 0218) when photolysed (300 - 380 nm excitation). Water-soluble, highly resistant to hydrolysis, stable at neutral pH, and pharmacologically inactive at neuronal glutamate receptors (up to mM concentrations). 2.5-fold more efficient at releasing L-glutamate than NI-caged L-glutamate. View more information regarding MNI-caged-L-glutamate.

Physical and Chemical Properties:

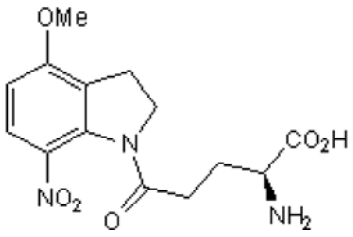
Batch Molecular Formula: $C_{14}H_{17}N_3O_6.¾H_2O$

Batch Molecular Weight: 336.81

Physical Appearance: Yellow solid

Minimum Purity: >98%

Batch Molecular Structure:



Storage: Store at -20°C

CAUTION - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

Solubility & Usage Info:

water to 50 mM with gentle warming
phosphate buffered saline to 50 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.

Licensing Information:

Sold under license from the Medical Research Council

References:

Palma-Cerda *et al* (2012) New caged neurotransmitter analogs selective for glutamate receptor sub-types based on methoxynitroindoline and nitrophenylethoxycarbonyl caging groups. Neuropharmacology. ***63*** 624. PMID: 22609535.

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Canepari *et al* (2001) Photochemical and pharmacological evaluation of 7-nitroindolinyl- and 4-methoxy-7-nitroindolinyl-amino acids as novel, fast caged neurotransmitters. J.Neurosci.Methods ***112*** 29. PMID: 11640955.

Matsuzaki *et al* (2001) Dendritic spine geometry is critical for AMPA receptor expression in hippocampal CA1 pyramidal neurons. Nat.Neurosci. ***4*** 1086. PMID: 11687814.

Papageorgiou and Corrie (2000) Effects of aromatic substitutions on the photocleavage of 1-acyl-7-nitroindolines. Tetrahedron ***56*** 8197.