

# Certificate of Analysis

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**Product Name:** MNI-caged-L-glutamate

**Catalog No.:** 1490

**Batch No.:** 59

**CAS Number:** 295325-62-1

**IUPAC Name:** (S)- $\alpha$ -Amino-2,3-dihydro-4-methoxy-7-nitro- $\delta$ -oxo-1*H*-indole-1-pentanoic acid

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>14</sub>H<sub>17</sub>N<sub>3</sub>O<sub>6</sub>·<sup>3</sup>/<sub>4</sub>H<sub>2</sub>O

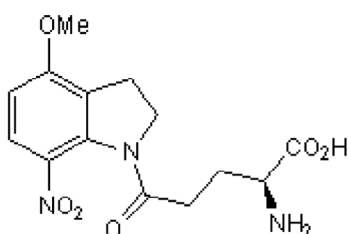
**Batch Molecular Weight:** 336.81

**Physical Appearance:** Yellow solid

**Solubility:** water to 50 mM

**Storage:** Store at -20°C

**Batch Molecular Structure:**



## 2. ANALYTICAL DATA

**HPLC:** Shows 99.8% purity

**<sup>1</sup>H NMR:** Consistent with structure

**Mass Spectrum:** Consistent with structure

**Optical Rotation:** [ $\alpha$ ]<sub>D</sub> = -6 (Concentration = 1, Solvent = Water)

**Microanalysis:**

Carbon Hydrogen Nitrogen

Theoretical 49.92 5.54 12.48

Found 49.38 5.11 12.01

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

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**Description:**

MNI-caged-L-glutamate is a form of glutamate linked to a photo-protecting group, 4-methoxy-7-nitroindolyl (MNI); it rapidly and efficiently releases L-glutamate (Cat. No. 0218) by photolysis (300 - 380 nm excitation) with a quantum yield in the 0.065-0.085 range. It is also suitable for use with two-photon uncaging microscopy (cross-section of 0.06 GM at 730 nm). MNI-caged-L-glutamate is optically compatible with other chromophores used for fluorescence imaging, such as GFP, YFP and most Ca<sup>2+</sup> dyes. MNI-caged-L-glutamate is 2.5-fold more efficient at releasing L-glutamate than NI-caged L-glutamate. MNI-caged-L-glutamate is water-soluble, st... Please see product specific page on [www.tocris.com](http://www.tocris.com) for full description.

**Physical and Chemical Properties:**

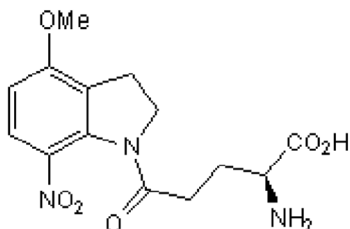
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Batch Molecular Weight: 336.81

Physical Appearance: Yellow solid

**Minimum Purity:** ≥99%

**Batch Molecular Structure:**



**References:**

**Ellis-Davies** (2019) Two-Photon Uncaging of Glutamate Front Synaptic Neurosci. **10** 48. PMID: 30687075.

**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.

**Maier et al** (2005) Comparative analysis of inhibitory effects of caged ligands for the NMDA receptor. J.Neurosci.Methods **142** 1. PMID: 15652611.

**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

**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.

**Licensing Information:**

Sold under license from the Medical Research Council

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