

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

**Catalog No.:** 5785

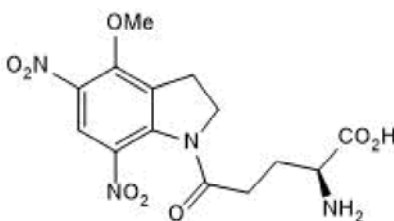
**Batch No.:** 3

CAS Number: 864085-92-7

IUPAC Name: (S)- $\alpha$ -Amino-2,3-dihydro-4-methoxy-5,7-dinitro- $\delta$ -oxo-1*H*-indole-1-pentanoic acid

**1. PHYSICAL AND CHEMICAL PROPERTIES**

**Batch Molecular Formula:** C<sub>14</sub>H<sub>16</sub>N<sub>4</sub>O<sub>8</sub>.0.5CF<sub>3</sub>CO<sub>2</sub>H.H<sub>2</sub>O  
**Batch Molecular Weight:** 443.32  
**Physical Appearance:** White solid  
**Solubility:** water to 10 mM with gentle warming  
DMSO to 50 mM  
**Storage:** Store at -20°C  
**Batch Molecular Structure:**



**2. ANALYTICAL DATA**

**TLC:** R<sub>f</sub> = 0.5 (Pyridine:Acetic acid:Water:Butanol [3:8:11:33])  
**HPLC:** Shows 98.3% purity  
**<sup>1</sup>H NMR:** Consistent with structure  
**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	40.64	4.21	12.64
Found	40.56	4.08	12.41

**Amino acid analysis (A25244):** no free amino acids found

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

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**Description:**

Rapidly and efficiently releases glutamate (Cat. No. 0218) when photolysed (350 - 365 nm excitation). Water soluble and stable at neutral pH, and pharmacologically inactive at neuronal glutamate receptors (up to 200  $\mu$ M). 5.5 times more photosensitive than MNI-caged L-glutamate (Cat. No. 1490). Laser activation of MDNI-glu evokes a rapid increase in intracellular Ca<sup>2+</sup> concentration in astrocytes.

**Physical and Chemical Properties:**

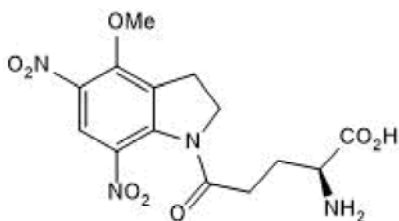
Batch Molecular Formula: C<sub>14</sub>H<sub>16</sub>N<sub>4</sub>O<sub>8</sub>.0.5CF<sub>3</sub>CO<sub>2</sub>H.H<sub>2</sub>O

Batch Molecular Weight: 443.32

Physical Appearance: White 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 10 mM with gentle warming

DMSO 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. 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.

**Other Information:**

As a result of the manufacturing process, this product contains some residual TFA. The amount of TFA is batch dependant and will appear in the batch molecular formula.

**References:**

**Popovic *et al*** (2015) Electrical behaviour of dendritic spines as revealed by voltage imaging. *Nat. Commun.* **6** 8436. PMID: 26436431.

**Fedoryak *et al*** (2005) Synthesis of a caged glutamate for efficient one- and two-photon photorelease on living cells. *Chem. Commun. (Camb.)* **7** 3664. PMID: 16027904.

**Papageorgiou *et al*** (2005) Synthetic and photochemical studies of substituted 1-acyl-7-nitroindolines. *Photochem. Photobiol. Sci.* **4** 887. PMID: 16252044 .

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