

Certificate of Analysis

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Product Name: DMNPE-4 AM-caged-calcium

Catalog No.: 5948

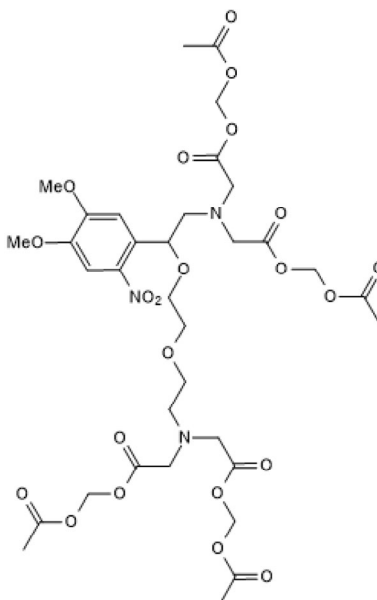
Batch No.: 2

CAS Number: 2253744-58-8

IUPAC Name: *Bis*(acetoxymethyl) 3,12-*bis*(2-(acetoxymethoxy)-2-oxoethyl)-5-(4,5-dimethoxy-2-nitrophenyl)-6,9-dioxo-3,12-diazatetradecane-1,14-dioate

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₃₄H₄₇N₃O₂₂
Batch Molecular Weight: 849.74
Physical Appearance: Yellow oil
Solubility: DMSO to 100 mM
Storage: Store at -20°C
Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 92.7% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure

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

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Description:

DMNPE-4 AM-caged-calcium is a calcium cage. In the presence of calcium, the compound will chelate and cage calcium (K_d values are 48 and 19 nM at pH 7.2 and 7.4, respectively; K_d after uncaging = 2 mM). DMNPE-4 AM-caged-calcium is selective for Ca^{2+} over Mg^{2+} (K_d = 10 mM). Rapid and efficient calcium release occurs upon photolysis at 350 nm. It can also be used for two-photon uncaging. Extinction coefficient of 5120 M⁻¹ cm⁻¹, quantum yield 0.09. Cell permeable.

Physical and Chemical Properties:

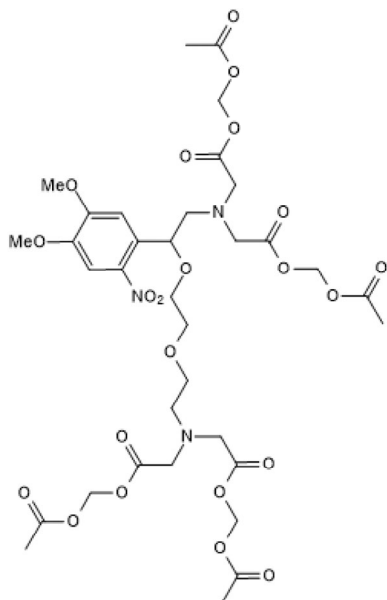
Batch Molecular Formula: C₃₄H₄₇N₃O₂₂

Batch Molecular Weight: 849.74

Physical Appearance: Yellow oil

Minimum Purity: ≥90%

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:

DMSO 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. *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.

References:

Wang *et al* (2015) Spontaneous activity of cochlear hair cells triggered by fluid secretion mechanism in adjacent support cells *Cell* **163** 1348. PMID: 26627734.

Gordon *et al* (2008) Brain metabolism dictates the polarity of astrocyte control over arterioles. *Nature* **456** 745. PMID: 18971930.

Ellis-Davies *et al* (2006) Tuning caged calcium: photolabile analogues of EGTA with improved optical and chelation properties. *Cell Calcium* **39** 75. PMID: 16303177.

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