bio-techne
TOCRIS

Print Date: Mar 19th 2025

Certificate of Analysis

www.tocris.com

Product Name: **DMNPE-4 AM-caged-calcium** **Catalog No.: 5948** **Batch No.: 1**

CAS Number: 2253744-58-8

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

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{34}H_{47}N_3O_{22}$

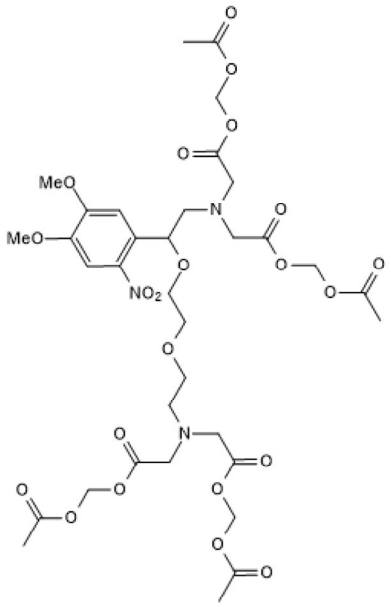
Batch Molecular Weight: 849.74

Physical Appearance: Yellow oil

Solubility: DMSO to 100 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.4 (Neat EtOAc)

HPLC: Shows 94.6% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

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

bio-techne.com
info@bio-techne.com
techsupport@bio-techne.com

North America
Tel: (800) 343 7475

China
info.cn@bio-techne.com
Tel: +86 (21) 52380373

Europe Middle East Africa
Tel: +44 (0)1235 529449

Rest of World
www.tocris.com/distributors
Tel:+1 612 379 2956

Product Name: DMNPE-4 AM-caged-calcium **Catalog No.: 5948** **Batch No.: 1**

CAS Number: 2253744-58-8

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

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:

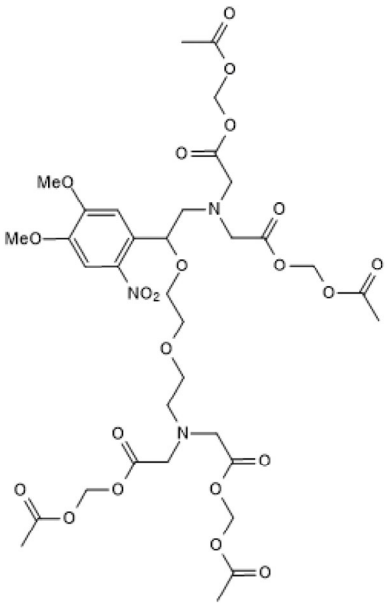
Batch Molecular Formula: $C_{34}H_{47}N_3O_{22}$

Batch Molecular Weight: 849.74

Physical Appearance: Yellow oil

Minimum Purity: ≥95%

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.

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