

**Product Name:** PA Nic

**Catalog No.:** 6700

**Batch No.:** 1

**IUPAC Name:** (1*s*,2*s*)-1-((7-(Bis(carboxymethyl)amino)-2-oxo-2*H*-chromen-4-yl)methyl)-1-methyl-2-(pyridin-3-yl)pyrrolidin-1-ium ditrifluoroacetate

**1. PHYSICAL AND CHEMICAL PROPERTIES**

**Batch Molecular Formula:** C<sub>24</sub>H<sub>26</sub>N<sub>3</sub>O<sub>6</sub>·C<sub>2</sub>F<sub>3</sub>O<sub>2</sub>·C<sub>2</sub>HF<sub>3</sub>O<sub>2</sub>

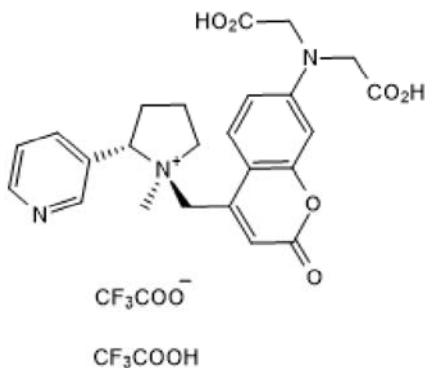
**Batch Molecular Weight:** 679.52

**Physical Appearance:** Yellow solid

**Solubility:** water to 25 mM  
DMSO to 25 mM

**Storage:** Store at -20°C

**Batch Molecular Structure:**



**2. ANALYTICAL DATA**

**HPLC:** Shows 98.3% purity

**<sup>1</sup>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

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**Description:**

PA Nic is a coumarin-caged nicotine. Releases nicotine when exposed to 390 ± 10 nm wavelength light (λ<sub>max</sub> = 404 nm). Suitable for two-photon uncaging at <900 nm (Maximum two-photon cross-section at 810 nm). Extinction coefficient (ε) 17,400 M<sup>-1</sup>cm<sup>-1</sup>. Evokes nicotinic currents in mouse brain slices under one and two-photon activation conditions.

**Physical and Chemical Properties:**

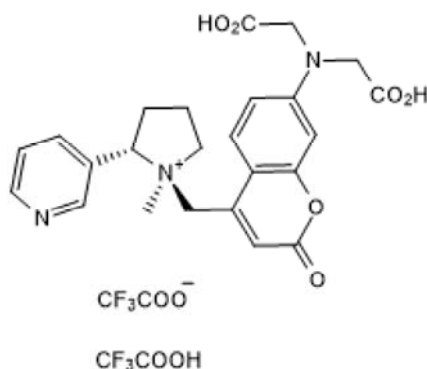
Batch Molecular Formula: C<sub>24</sub>H<sub>26</sub>N<sub>3</sub>O<sub>6</sub>.C<sub>2</sub>F<sub>3</sub>O<sub>2</sub>.C<sub>2</sub>HF<sub>3</sub>O<sub>2</sub>

Batch Molecular Weight: 679.52

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 25 mM

DMSO to 25 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.

**References:**

**Arvin et al** (2019) Probing nicotinic acetylcholine receptor function in mouse brain slices via laser flash photolysis of photoactivatable nicotine. *J.Vis.Exp.* **143** e58873. PMID: 30735191.

**Banala et al** (2018) Photoactivatable drugs for nicotinic optopharmacology. *Nat.Methods* **15** 347. PMID: 29578537.

**Yan et al** (2018) Nicotinic cholinergic receptors in VTA glutamate neurons modulate excitatory transmission. *Cell Rep.* **23** 2236. PMID: 29791835.

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