

## FFN 102 mesylate

### Chemical Properties

CAS No. : 1883548-92-2

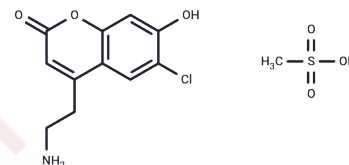
Formula: C<sub>12</sub>H<sub>14</sub>ClNO<sub>6</sub>S

Molecular Weight: 335.76

Keep away from direct sunlight

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



### Biological Description

Description	FFN 102 mesylate is a pH responsive fluorescent false neurotransmitter (FFN), a selective dopamine transporter (DAT) and VMAT2 substrate. Exhibits no significant binding to a panel of 38 CNS receptors, including dopamine and serotonin receptors. Inhibits dopamine uptake. Excitation maxima are 340 nm at pH 5 and 370 nm at pH 7.5. Emission maximum is 435 nm at both pH 5 and 7.5. FFN 102 mesylate is a Ph-responsive fluorescent pseudoneurotransmitter (FFN) that acts as a substrate for selective dopamine transporters (DAT) and VMAT2.
Targets(IC50)	Others
In vitro	The absorption spectra of FFN102 exhibited pH dependence: the absorption maximum shifts toward 331 nm at lower pH values and to 371 nm at higher pH values, corresponding to the protonated and deprotonated forms, respectively [1].
Cell Research	<p>I. Monitoring of neuronal electrical activity</p> <ol style="list-style-type: none"> <li>Material preparation                     <ol style="list-style-type: none"> <li>FFN 102 mesylate solution: Dissolve FFN 102 mesylate in an appropriate amount of DMSO or other suitable solvent, usually at a concentration of 1-10 μM.</li> <li>Neuron sample: Cultured neuronal cells, or sliced neural tissue.</li> <li>Culture medium or experimental buffer: Usually use a culture medium suitable for neurons (such as DMEM) or an appropriate physiological buffer.</li> </ol> </li> <li>Experimental steps                     <ol style="list-style-type: none"> <li>Cell treatment: Incorporate FFN 102 mesylate into cultured neuronal cells or slices, usually for 30 minutes to 1 hour.</li> <li>Fluorescence imaging: Use a fluorescence microscope or imaging device with an excitation wavelength of 450 nm and an emission wavelength of 510-550 nm to observe the fluorescence signal.</li> <li>Electrical activity detection: Monitor the electrical activity of neurons by changes in fluorescence signals and analyze its changes in different potential states.</li> </ol> </li> </ol> <p>II. pH-dependent fluorescence</p> <ol style="list-style-type: none"> <li>Experimental steps                     <ol style="list-style-type: none"> <li>Incubate FFN 102 mesylate under different pH conditions.</li> <li>Use a fluorescence spectrometer to record the response of its fluorescence intensity to pH changes.</li> <li>Quantify the pH changes inside and outside the cell based on the changes in the</li> </ol> </li> </ol>

## A DRUG SCREENING EXPERT

Cell Research	fluorescence signal. III. Neurotransmitter release study 1. Apply stimulation to neurons to induce neurotransmitter release. 2. Use FFN 102 mesylate to detect the release of neurotransmitters and observe the fluorescence changes.  The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.
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### Solubility Information

Solubility	DMSO: 45 mg/mL (134.02 mM), Sonication is recommended. H2O: 6 mg/mL (17.87 mM), Sonication is recommended. ( $< 1$ mg/ml refers to the product slightly soluble or insoluble)
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### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.9783 mL	14.8916 mL	29.7832 mL
5 mM	0.5957 mL	2.9783 mL	5.9566 mL
10 mM	0.2978 mL	1.4892 mL	2.9783 mL
50 mM	0.0596 mL	0.2978 mL	0.5957 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Lee M, et al. Development of pH-responsive fluorescent false neurotransmitters. *J Am Chem Soc.* 2010 Jul 7;132(26):8828-30.

Meszaros J, et al. Evoked transients of pH-sensitive fluorescent false neurotransmitter reveal dopamine hot spots in the globus pallidus. *Elife.* 2018 Dec 19;7:e42383.

Pereira DB, et al. Fluorescent false neurotransmitter reveals functionally silent dopamine vesicle clusters in the striatum. *Nat Neurosci.* 2016 Apr;19(4):578-86.

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