

# Certificate of Analysis

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**Product Name:** NAS-181

**Catalog No.:** 1413

**Batch No.:** 6

**CAS Number:** 1217474-40-2

**IUPAC Name:** (2*R*)-2-[[[3-(4-Morpholinylmethyl)-2*H*-1-benzopyran-8-yl]oxy]methyl]morpholine dimethanesulfonate

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>19</sub>H<sub>26</sub>N<sub>2</sub>O<sub>4</sub>·2CH<sub>3</sub>SO<sub>3</sub>H·H<sub>2</sub>O

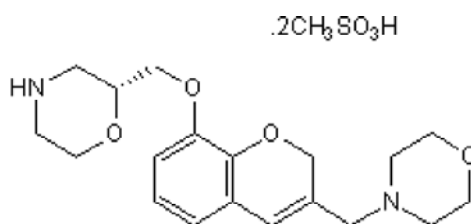
**Batch Molecular Weight:** 556.65

**Physical Appearance:** Beige solid

**Solubility:** water to 100 mM  
DMSO to 100 mM

**Storage:** Store at -20°C

**Batch Molecular Structure:**



## 2. ANALYTICAL DATA

**HPLC:** Shows 97.0% purity

**<sup>1</sup>H NMR:** Consistent with structure

**Mass Spectrum:** Consistent with structure

**Optical Rotation:** [α]<sub>D</sub> = -4.5 (Concentration = 1.1, Solvent = Methanol)

**Microanalysis:**

Carbon Hydrogen Nitrogen

Theoretical	45.31	6.52	5.03
Found	45.22	6.54	5.07

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

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## Product Information

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CAS Number: 1217474-40-2

IUPAC Name: (2R)-2-[[[3-(4-Morpholinylmethyl)-2H-1-benzopyran-8-yl]oxy]methyl]morpholine dimethanesulfonate

### Description:

Potent, selective antagonist at the rat 5-HT<sub>1B</sub> receptor ( $K_i$  = 47 nM). Increases synthesis and metabolism of 5-HT in the brain following systemic administration and improves passive avoidance retention performance in vivo. Increases subthalamic nucleus-triggered complex EPSCs and burst firing in SNr GABA neurons

### Physical and Chemical Properties:

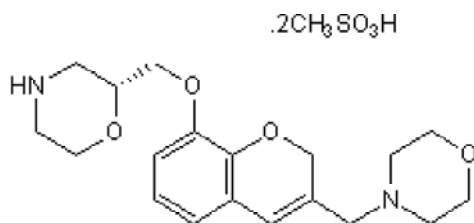
Batch Molecular Formula: C<sub>19</sub>H<sub>26</sub>N<sub>2</sub>O<sub>4</sub>·2CH<sub>3</sub>SO<sub>3</sub>H·H<sub>2</sub>O

Batch Molecular Weight: 556.65

Physical Appearance: Beige solid

**Minimum Purity:** ≥97%

### Batch Molecular Structure:



**Storage:** Store at -20°C. This product is packaged under an inert atmosphere.

### Solubility & Usage Info:

water to 100 mM

DMSO to 100 mM

CAUTION - This product is hygroscopic and we recommend that it is desiccated upon arrival. Solutions should be made up as soon as the vial is opened.

### 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:

**Ding et al** (2013) Presynaptic serotonergic gating of the subthalamonigral glutamatergic projection. *J.Neurosci.* **33** 4875. PMID: 23486958.

**Eriksson et al** (2008) Blockade of 5-HT<sub>1B</sub> receptors facilitates contextual aversive learning in mice by disinhibition of cholinergic and glutamatergic neurotransmission. *Neuropharmacology* **54** 1041. PMID: 18394658.

**Stenfors et al** (2000) Enhanced 5-HT metabolism and synthesis rate by the new selective 5-HT<sub>1B</sub> receptor antagonist, NAS-181 in the rat brain. *Neuropharmacology* **39** 553. PMID: 10728876.

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