

**Product Name:** EMPA

**Catalog No.:** 4558

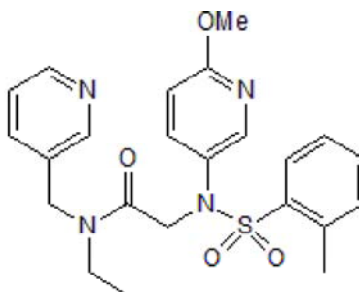
**Batch No.:** 2

CAS Number: 680590-49-2

IUPAC Name: *N*-Ethyl-2-[(6-methoxy-3-pyridinyl)[(2-methylphenyl)sulfonyl]amino]-*N*-(3-pyridinylmethyl)-acetamide

## 1. PHYSICAL AND CHEMICAL PROPERTIES

<b>Batch Molecular Formula:</b>	C <sub>23</sub> H <sub>26</sub> N <sub>4</sub> O <sub>4</sub> S
<b>Batch Molecular Weight:</b>	454.54
<b>Physical Appearance:</b>	Off White solid
<b>Solubility:</b>	DMSO to 100 mM ethanol to 50 mM
<b>Storage:</b>	Store at -20°C
<b>Batch Molecular Structure:</b>	



## 2. ANALYTICAL DATA

<b>TLC:</b>	R <sub>f</sub> = 0.5 (Dichloromethane:Methanol [9:1])
<b>HPLC:</b>	Shows 99.1% purity
<b><sup>1</sup>H NMR:</b>	Consistent with structure
<b>Mass Spectrum:</b>	Consistent with structure
<b>Microanalysis:</b>	
	Carbon Hydrogen Nitrogen
	Theoretical 60.77 5.77 12.33
	Found 60.43 5.86 12.14

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

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**Description:**

EMPA is a highly potent, selective OX<sub>2</sub> receptor antagonist (IC<sub>50</sub> values are 2.3 nM and 1900 nM for OX<sub>2</sub> and OX<sub>1</sub> respectively). Displays negligible or no inhibition of a panel of 80 receptors. Blocks orexin-B- and orexin-A-invoked calcium mobilization in hOX<sub>2</sub>-expressing CHO cells (IC<sub>50</sub> values are 7.9 nM and 8.8 nM respectively); reverses orexin-B-induced hyperlocomotion in mice. Brain penetrant.

**Physical and Chemical Properties:**

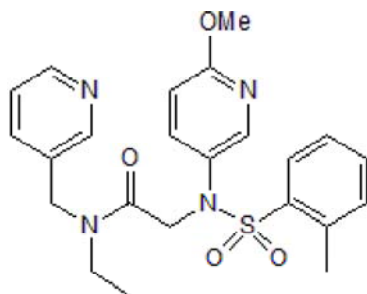
Batch Molecular Formula: C<sub>23</sub>H<sub>26</sub>N<sub>4</sub>O<sub>4</sub>S

Batch Molecular Weight: 454.54

Physical Appearance: Off White solid

**Minimum Purity:** ≥98%

**Batch Molecular Structure:**



**Storage:** Store at -20°C

**Solubility & Usage Info:**

DMSO to 100 mM

ethanol to 50 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:**

**Mochizuki *et al*** (2011) Orexin receptor 2 expression in the posterior hypothalamus rescues sleepiness in narcoleptic mice. *Proc.Natl.Acad.Sci.U.S.A* **108** 4471. PMID: 21368172.

**Malherbe *et al*** (2010) Mapping the binding pocket of dual antagonist almoxerant to human orexin 1 and orexin 2 receptors: comparison with the selective OX1 antagonist SB-674042 and the selective OX2 antagonist N-ethyl-2-[(6-methoxy-pyridin-3-yl)-(toluene-Mol.Pharmacol. **78** 81. PMID: 20404073.

**Malherbe *et al*** (2009) Biochemical and behavioural characterization of EMPA, a novel high-affinity, selective antagonist for the OX<sub>2</sub> receptor. *Br.J.Pharmacol.* **156** 1326. PMID: 19751316.

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