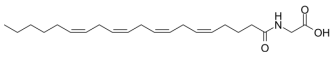
N-Arachidonylglycine

Cat. No.: HY-103332

CAS No.: 179113-91-8

Molecular Formula: $C_{22}H_{35}NO_3$

Molecular Weight: 361.52



Target: GlyT; Endogenous Metabolite

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling; Metabolic Enzyme/Protease

Storage: -20°C, stored under nitrogen

* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)

SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (276.61 mM; ultrasonic and warming and heat to 60°C)

Ethanol : 50 mg/mL (138.30 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	2.7661 mL	13.8305 mL	27.6610 mL
	5 mM	0.5532 mL	2.7661 mL	5.5322 mL
	10 mM	0.2766 mL	1.3830 mL	2.7661 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (6.92 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.92 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.92 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

N-Arachidonylglycine (NA-Gly), a carboxylic analog of the endocannabinoid anandamide (AEA), is a GPR18 agonist (EC_{50} = 44.5 nM). Unlike AEA, N-Arachidonylglycine has no activity at either CB1 or CB2 receptors. N-Arachidonylglycine inhibits GLYT2 (IC_{50} = 5.1 μM). N-Arachidonylglycine also is an effective activator of endometrial cell migration[1][2].

IC_{50} & Target

GlyT2

5.1 μM (IC_{50})

In Vitro

N-Arachidonylglycine (0.1 nM-100 μM; 5 min) drives MAPK activation in GPR18-transfected HEK293 cells[1].

N-Arachidonylglycine shows no activity at GLYT1 or GAT1 at concentrations up to 100 μm[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	HEK293-GPR18 cells
Concentration:	0.1 nM-100 μM
Incubation Time:	5 min
Result:	Drove MAPK activation.

In Vivo

N-Arachidonylglycine (10 mg/kg; oral) increases blood concentrations of anandamide 9-fold[3].

N-Arachidonylglycine (1.2 mg/kg; oral; once) results in a significant 70% reduction of peritoneal cells[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Rats[3]
Dosage:	10 mg/kg
Administration:	Oral
Result:	Inhibition of FAAH, causing a reduction in the hydrolytic cleavage of anandamid.

Animal Model:	Mouse (peritonitis model)[3]
Dosage:	1.2 mg/kg
Administration:	Oral; once
Result:	Resulted in a significant 70% reduction of peritoneal cells.

REFERENCES

[1]. McHugh D, et al. Δ(9) -Tetrahydrocannabinol and N-arachidonyl glycine are full agonists at GPR18 receptors and induce migration in human endometrial HEC-1B cells. Br J Pharmacol. 2012;165(8):2414-2424.

[2]. Edington AR, et al. Extracellular loops 2 and 4 of GLYT2 are required for N-arachidonylglycine inhibition of glycine transport. J Biol Chem. 2009;284(52):36424-36430.

[3]. Burstein SH. N-Acyl Amino Acids (Elmiric Acids): Endogenous Signaling Molecules with Therapeutic Potential. Mol Pharmacol. 2018;93(3):228-238.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA