

Imidazoleacetic acid

Chemical Properties

CAS No. :	645-65-8
Formula:	C ₅ H ₆ N ₂ O ₂
Molecular Weight:	126.11
Storage:	Keep away from moisture, Keep away from direct sunlight Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>

Biological Description

Description	Imidazoleacetic acid (Imidazolyl-4-acetic acid) is a blood-brain barrier-permeable full agonist of the GABAA receptor. Imidazoleacetic acid is generated through histamine oxidation in the mouse brain and exerts multiple neurochemical and behavioral effects. Imidazoleacetic acid induces centrally mediated responses including analgesia, sedation, hypnosis, and reductions in blood pressure, body temperature, isolation-induced aggression, and motor activity. Imidazoleacetic acid is valuable for neuropharmacology and neurotransmitter signaling investigations involving histaminergic and GABAergic pathways.
Targets(IC50)	GABA Receptor
In vitro	<p>Imidazoleacetic acid has agonist activity at human GABAC rho 1 receptor expressed in HEK293 cells by FMP assay with EC50 value of 13 μM[1].</p> <p>Imidazoleacetic acid has agonist activity at GABA alpha-1-beta-2-gamma-2 receptor expressed in HEK293 cells by Whole-cell patch-clamp technique with EC50 value of 138 μM[1].</p> <p>Imidazoleacetic acid has agonist activity at rat GABA alpha-1-T1295-beta-2-gamma-2 receptor mutant expressed in HEK293 cells by Whole-cell patch-clamp technique with EC50 value of 20 μM[1].</p> <p>Imidazoleacetic acid has agonist activity at rat GABA alpha-1-T1295-beta-2-gamma-2 receptor mutant expressed in HEK293 cells by Whole-cell patch-clamp technique with EC50 value of 5.5 μM[1].</p> <p>Imidazoleacetic acid has agonist activity on human Gamma-aminobutyric acid A receptor alpha-3-beta-3-gamma-2 expressed in Xenopus oocytes with EC50 value of 300 μM[2]. Imidazoleacetic acid has effective agonist dose for human Gamma-aminobutyric acid A receptor alpha-1-beta-3-gamma-2 expressed in Xenopus oocytes with EC50 value of 310 μM[2].</p> <p>Imidazoleacetic acid has effective agonist dose for human Gamma-aminobutyric acid A receptor alpha-5-beta-3-gamma-2 expressed in Xenopus oocytes with EC50 value of 420 μM[2].</p> <p>Imidazoleacetic acid has agonist activity on human Gamma-aminobutyric acid A receptor alpha-2-beta-3-gamma-2 expressed in Xenopus oocytes with EC50 value of 600 μM[2].</p>

Solubility Information

Solubility	DMSO: 6.66 mg/mL (52.81 mM), Sonication is recommended. H ₂ O: Soluble (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	7.9296 mL	39.6479 mL	79.2959 mL
5 mM	1.5859 mL	7.9296 mL	15.8592 mL
10 mM	0.793 mL	3.9648 mL	7.9296 mL
50 mM	0.1586 mL	0.793 mL	1.5859 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

Prell GD, et al. Imidazoleacetic acid-ribotide: an endogenous ligand that stimulates imidazol(in)e receptors. *Proc Natl Acad Sci U S A*. 2004 Sep 14;101(37):13677-82.

Madsen C, et al. 5-Substituted imidazole-4-acetic acid analogues: synthesis, modeling, and pharmacological characterization of a series of novel gamma-aminobutyric acid(C) receptor agonists. *J Med Chem*. 2007 Aug 23;50(17):4147-61.

Ebert B, et al. Bioisosteric determinants for subtype selectivity of ligands for heteromeric GABA(A) receptors. *Bioorg Med Chem Lett*. 2001 Jun 18;11(12):1573-7.

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