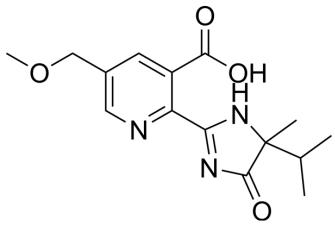
Imazamox

Cat. No.:	HY-100427
CAS No.:	114311-32-9
Molecular Formula:	$C_{15}H_{19}N_3O_4$
Molecular Weight:	305.33
Target:	Acetolactate Synthase (ALS)
Pathway:	Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 20 mg/mL (65.50 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.2751 mL	16.3757 mL	32.7515 mL
	5 mM	0.6550 mL	3.2751 mL	6.5503 mL
	10 mM	0.3275 mL	1.6376 mL	3.2751 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 mg/mL (6.55 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2 mg/mL (6.55 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2 mg/mL (6.55 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Imazamox (CL29926) is a systemic herbicide that inhibits the production of acetolactate synthase (ALS) in plants with high selectivity, high activity, safety and broadspectrum activity, which would then inhibit plant growth and ultimately lead to plant death[1][2].

In Vitro

Half-life of Imazamox in the soil ranges from 1 to 3 months exhibit low mammalian toxicity[1]. Plants are treated with Imazamox (250 μM) in the nutrient solution and harvested 7 days after. Imazamox is mainly accumulated in V. sativa, six fold higher than those detected in P.vulgaris[3].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Imazamox (12-36 mg/kg; intraperitoneal injection; for 24-72 hours; male Sprague-Dawley rats) treatment induces toxic effects in the liver and pancreas of Sprague Dawley rats. Necrotic and degenerative changes are detected in hepatocytes at the two highest doses. Imazamox treatment reduces the size of the β-islet cells, and also induces an elevation in serum glucose and calcium[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	50 male Sprague-Dawley rats (300 ± 10 g)[3]
Dosage:	12 mg/kg, 24 mg/kg and 36 mg/kg
Administration:	Intraperitoneal injection; for 24 hours, 48 hours or 72 hours
Result:	Induced toxic effects in the liver and pancreas.

REFERENCES

[1]. Wei J et al. Enantioselective Phytotoxicity of Imazamox Against Maize Seedlings. Bull Environ Contam Toxicol. 2016 Feb;96(2):242-7.

[2]. Imazamox Chemical Fact Sheet. Wisconsin Department of Natural Resources. DNR PUB-WT-974 2012.

[3]. García-Garijo A, et al. Metabolic responses in root nodules of Phaseolus vulgaris and Vicia sativa exposed to the imazamox herbicide. Pestic Biochem Physiol. 2014 May;111:19-23.

[4]. Sevim Ç, et al. An imazamox-based herbicide causes apoptotic changes in rat liver and pancreas. Toxicol Rep. 2018 Nov 19;6:42-50.

Caution: Product has not been fully validated for medical applications. For research use only.

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