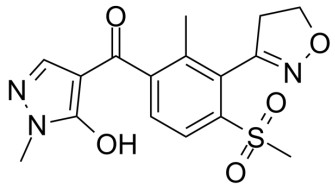
Topramezone

Cat. No.:	HY-144900
CAS No.:	210631-68-8
Molecular Formula:	$C_{16}H_{17}N_3O_5S$
Molecular Weight:	363.39
Target:	Reactive Oxygen Species
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Topramezone is a potent 4-hydroxyphenylpyruvate dioxygenase (4-HPPD) inhibitor. Topramezone is a herbicide, used for the post-emergence control of broadleaf and grass weeds in corn[1].
In Vitro	Topramezone (5, 10, 20, 30, 45 mg/L; 24-96 h) inhibits algal (C. vulgaris) growth by triggering oxidative stress, damaging cell morphology and photosynthetic activity during the exposure[1]. Topramezone (20 mg/L; 24, 48, 72 and 96 h) disrupts the photosynthetic system, by decreasing the content of photosynthetic pigments, and induces ROS (oxidative stress) with an increase of MDA in a time-dependent manner[1]. Topramezone (20 mg/L; 96 h) compromises the integrity of the cells, damages chloroplasts and membranes in algal cells and triggers apoptosis[1]. Topramezone (0.1 nM-0.1 mM; 30 min) exhibits selectivity and inhibits 4-HPPD (recombinant enzyme protein) activity in vitro, with IC50s of 15 nM (Setaria faberi), 23 nM (Arabidopsis thaliana), and 180 nM (Corn)[2]. topramezone (foliar-applied; containing [14C]topramezone of 0.29 μg; 24 and 48 h) is metabolized faster in corn than in the weeds[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Zhao F, et al. Evaluation of the toxicity of herbicide topramezone to Chlorella vulgaris: Oxidative stress, cell morphology and photosynthetic activity. Ecotoxicol Environ Saf. 2017 Sep. 143:129-135.

[2]. Grossmann K, et al. On the mechanism of action and selectivity of the corn herbicide topramezone: a new inhibitor of 4-hydroxyphenylpyruvate dioxygenase. Pest Manag Sci. 2007 May. 63(5):429-39.

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