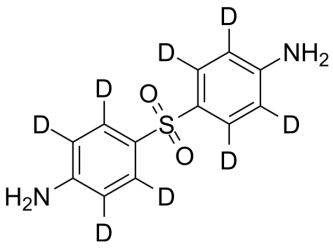
Dapsone-d8

Cat. No.:	HY-B0688S
CAS No.:	557794-38-4
Molecular Formula:	$C_{12}H_4D_8N_2O_2S$
Molecular Weight:	256.35
Target:	Antibiotic; Parasite; Bacterial; Reactive Oxygen Species
Pathway:	Anti-infection; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



BIOLOGICAL ACTIVITY

Description	Dapsone D8 (4,4'-Diaminodiphenyl sulfone D8) is a deuterium labeled Dapsone. Dapsone is an orally active and blood-brain penetrant sulfonamide antibiotic with antibacterial, antigenic and anti-inflammatory activities[1]. Dapsone exerts effective antileprosy activity and inhibits folate synthesis in cell extracts of M. leprae. Dapsone can be used as an anticonvulsant and also in the research of skin and glioblastoma diseases[2][3][4][5].
In Vitro	Dapsone (0.06 mM; 30 min) suppresses intra- and extracellular production of superoxide (O_2^-) and elastase release triggered by N-Formyl-Met-Leu-Phe (HY-P0224) (1 μM) and physiological agonist C5a (100 nM), but not by Phorbol 12-myristate 13-acetate (HY-18739) (100 nM)[5]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Dapsone (5 mg/kg; i.p.; single dose) shows neuroprotective effects and substantially improves memory acquisition in Scopolamine (HY-N0296)-induced memory impairment in mice[6]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Scopolamine-induced memory impairment model in mice[6]
Dosage:	0.1, 0.3, 1, 5, and 10 mg/kg; 1 mg/kg for Scopolamine
Administration:	Intraperitoneal injection; single dose
Result:	Improved memory acquisition.

REFERENCES

[1]. Wozel G, et al. Dapsone in dermatology and beyond. Arch Dermatol Res. 2014 Mar;306(2):103-24.

[2]. Noroozi N, et al. Protective Effects of Dapsone on Scopolamine-Induced Memory Impairment in Mice: Involvement of Nitric Oxide Pathway. Dement Geriatr Cogn Dis Extra. 2022 Mar 24;12(1):43-50.

[3]. Y I Zhu, et al. Dapsone and sulfones in dermatology: overview and update. J Am Acad Dermatol

[4]. Dapsone. Drug.com

[5]. D Voeller, et al. Interaction of Pneumocystis carinii dihydropteroate synthase with sulfonamides and diaminodiphenyl sulfone (dapsone).J Infect Dis. 1994 Feb;169(2):456-9.

[6]. Esther Moreno, et al. Evaluation of Skin Permeation and Retention of Topical Dapsone in Murine Cutaneous Leishmaniasis Lesions.Pharmaceutics. 2019 Nov 13;11(11):607.

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