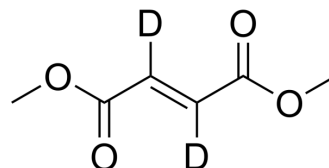


Dimethyl fumarate-d₂

Cat. No.:	HY-17363S1
CAS No.:	23057-98-9
Molecular Formula:	C ₆ H ₆ D ₂ O ₄
Molecular Weight:	146.14
Target:	Autophagy; HIV; Keap1-Nrf2; Endogenous Metabolite; Reactive Oxygen Species
Pathway:	Autophagy; Anti-infection; NF-κB; Metabolic Enzyme/Protease; Immunology/Inflammation
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Dimethyl fumarate-d₂ is the deuterium labeled Dimethyl fumarate[1]. Dimethyl fumarate (DMF) is an orally active and brain-penetrant Nrf2 activator and induces upregulation of antioxidant gene expression. Dimethyl fumarate induces necroptosis in colon cancer cells through GSH depletion/ROS increase/MAPKs activation pathway, and also induces cell autophagy. Dimethyl fumarate can be used for multiple sclerosis research[2][3].

In Vitro

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs^[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother.* 2019 Feb;53(2):211-216.
- [2]. Peng H, et al. Dimethyl fumarate inhibits dendritic cell maturation via nuclear factor κB (NF-κB) and extracellular signal-regulated kinase 1 and 2 (ERK1/2) and mitogen stress-activated kinase 1 (MSK1) signaling. *J Biol Chem.* 2012 Aug 10;287(33):28017-26.
- [3]. Cross SA, et al. Dimethyl fumarate, an immune modulator and inducer of the antioxidant response, suppresses HIV replication and macrophage-mediated neurotoxicity: a novel candidate for HIV neuroprotection. *J Immunol.* 2011 Nov 15;187(10):5015-25.
- [4]. Jing X, et al. Dimethyl fumarate attenuates 6-OHDA-induced neurotoxicity in SH-SY5Y cells and in animal model of Parkinson's disease by enhancing Nrf2 activity. *Neuroscience.* 2015 Feb 12;286:131-40.
- [5]. Xin Xie, et al. Dimethyl fumarate induces necroptosis in colon cancer cells through GSH depletion/ROS increase/MAPKs activation pathway. *Br J Pharmacol.* 2015 Aug;172(15):3929-43.

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

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