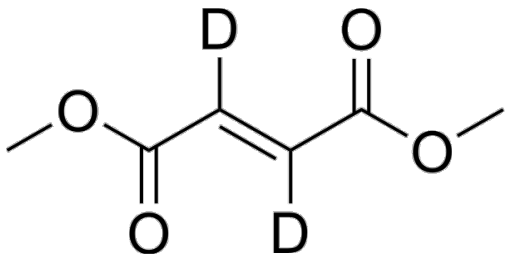
Product Data Sheet

Product Name: Dimethyl fumarate-d2
Cat. No.: GC74090

Chemical Properties

Cas. No.	23057-98-9		
Formula	$C_6H_6D_2O_4$	M.Wt	146.14
Solubility		Storage	-20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			



Background

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

for multiple sclerosis research[2][3].

Stable heavy isotopes of drogen, 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].

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. Dimetl 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. Dimetl 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 15187(10):5015-25.
[4]. Jing X, et al. Dimetl 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 12286:131-40
[5]. Xin Xie, et al. Dimetl fumarate induces necroptosis in colon cancer cells through GSH depletion/ROS increase/MAPKs activation pathway. Br J Pharmacol. 2015 Aug172(15):3929-43.