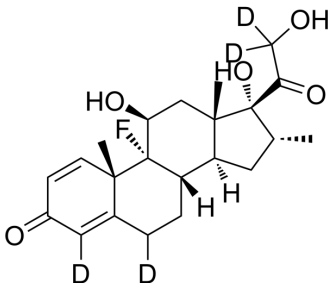
Dexamethasone-d_4

Cat. No.:	HY-14648S2
CAS No.:	2305607-27-4
Molecular Formula:	$C_{22}H_{25}D_4FO_5$
Molecular Weight:	396.49
Target:	Glucocorticoid Receptor; Bacterial; Autophagy; SARS-CoV; Complement System; Mitophagy; Antibiotic; Isotope-Labeled Compounds
Pathway:	Immunology/Inflammation; Vitamin D Related/Nuclear Receptor; Anti-infection; Autophagy; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Dexamethasone-d_4 is deuterium labeled Dexamethasone. Dexamethasone (Hexadecadrol) is a glucocorticoid receptor agonist. Dexamethasone also significantly decreases CD11b, CD18, and CD62L expression on neutrophils, and CD11b and CD18 expression on monocytes. Dexamethasone is highly effective in the control of COVID-19 infection. Dexamethasone inhibits production of exosomes containing inflammatory microRNA-155 in lipopolysaccharide-induced macrophage inflammatory responses.
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;53(2):211-216.

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[3]. Ballabh P, et al. Neutrophil and monocyte adhesion molecules in bronchopulmonary dysplasia, and effects of corticosteroids. Arch Dis Child Fetal Neonatal Ed. 2004 Jan;89(1):F76-83.

[4]. Heidi Ledford. et al. Coronavirus Breakthrough: Dexamethasone Is First Drug Shown to Save Lives. Nature. 2020 Jun 16.

[5]. LaLone CA, et al. Effects of a glucocorticoid receptor agonist, Dexamethasone, on fathead minnow reproduction, growth, and development. Environ Toxicol Chem. 2012 Mar;31(3):611-22.

[6]. Rocksén D, et al. Differential anti-inflammatory and anti-oxidative effects of Dexamethasone and N-acetylcysteine in endotoxin-induced lung inflammation. Clin Exp Immunol. 2000 Nov;122(2):249-56

[7]. Roussel D, et al. Dexamethasone treatment specifically increases the basal proton conductance of rat liver mitochondria. FEBS Lett. 2003 Apr 24;541(1-3):75-9.

[8]. Yun Chen, et al. Glucocorticoids inhibit production of exosomes containing inflammatory microRNA-155 in lipopolysaccharide-induced macrophage inflammatory responses. Int J Clin Exp Pathol 2018;11(7):3391-3397.

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