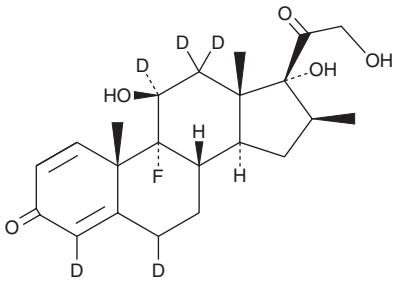
PRODUCT INFORMATION

Betamethasone-d_5

Item No. 39560

CAS Registry No.:	2244574-92-1
Formal Name:	9-fluoro-11,17,21-trihydroxy-16-methyl-pregna-1,4-diene-3,20-dione-4,6,11,12,12-d_5
Synonym:	β-Methasone-d_5
MF:	$C_{22}H_{24}D_5FO_5$
FW:	397.5
Chemical Purity:	≥90% (Betamethasone)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_5); ≤1% d_0
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Betamethasone-d_5 is intended for use as an internal standard for the quantification of betamethasone (Item No. 20363) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Betamethasone-d_5 is supplied as a solid. A stock solution may be made by dissolving the betamethasone-d_5 in the solvent of choice, which should be purged with an inert gas. Betamethasone-d_5 is soluble in methanol and DMSO.

Description

Betamethasone is a synthetic corticosteroid.[1] *In vivo*, betamethasone (5 mg/kg) reduces bronchoalveolar lavage fluid (BALF) matrix metalloproteinase-2 (MMP-2) and MMP-9 activities, TNF-α levels, and neutrophil number in a mouse model of LPS-induced lung injury. Prenatal administration of betamethasone (0.1 mg/kg) improves neonatal lung function but decreases hippocampal and corpus callosum neuron density and induces motor function deficits in a rabbit model of late preterm birth.[2] It also extends gestational length in a rat model of preterm labor induced by high mobility group protein B1 (HMGB1).[3] Formulations containing betamethasone have been used in the treatment of inflammatory skin conditions and prenatally to promote fetal lung maturation.

References

1. Corbel, M., Lagente, V., Théret, N., *et al.* Comparative effects of betamethasone, cyclosporin and nedocromil sodium in acute pulmonary inflammation and metalloproteinase activities in bronchoalveolar lavage fluid from mice exposed to lipopolysaccharide. *Pulm. Pharmacol. Ther.* **12(3)**, 165-171 (1999).
2. van der Merwe, J., van der Veeken, L., Inversetti, A., *et al.* Neurocognitive sequelae of antenatal corticosteroids in a late preterm rabbit model. *Am. J. Obstet. Gynecol.* **226(6)**, 850.e1-850.e21 (2022).
3. Galaz, J., Romero, R., Arenas-Hernandez, M., *et al.* Betamethasone as a potential treatment for preterm birth associated with sterile intra-amniotic inflammation: A murine study. *J. Perinat. Med.* **49(7)**, 897-906 (2021).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM