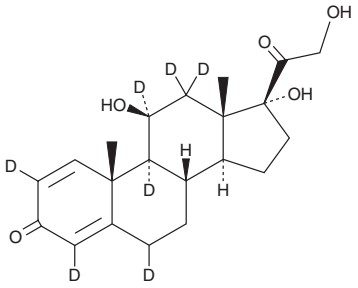
PRODUCT INFORMATION

Prednisolone-d_7

Item No. 35162

Formal Name:	11β,17,21-trihydroxy-pregna-1,4-diene-3,20-dione-2,4,6,9,11,12,12-d_7
MF:	$C_{21}H_{21}O_5D_7$
FW:	367.5
Chemical Purity:	≥95% (Prednisolone)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_7); ≤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

Prednisolone-d_7 is intended for use as an internal standard for the quantification of prednisolone (Item No. 20866) 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).

Prednisolone-d_7 is supplied as a solid. A stock solution may be made by dissolving the prednisolone-d_7 in the solvent of choice, which should be purged with an inert gas. Prednisolone-d_7 is soluble in acetonitrile, methanol, and DMSO.

Description

Prednisolone is a glucocorticoid and mineralocorticoid receptor agonist and an active metabolite of the prodrugs and synthetic glucocorticoids prednisolone phosphate (Item No. 15933) and prednisone (Item No. 20677).[1-3] It selectively binds to the glucocorticoid and mineralocorticoid receptors over the progesterone, androgen, and estrogen receptors (K_is = 2.4, 37, >5,000, 2,762, and >1,000 nM, respectively) and induces transactivation in reporter assays using CV-1 cells expressing the human glucocorticoid receptor or human mineralocorticoid receptor (EC_{50}s = 6.9 and 3.78 nM, respectively).[2,3] Prednisolone reduces pulmonary eosinophil infiltration in a rat model of sephadex-induced asthma (ED_{50} = 1.2 mg/kg).[2] Formulations containing prednisolone have been used as anti-inflammatory or immunosuppressive agents.

References

1. Frey, B.M., Seeberger, M., and Frey, F.J. Pharmacokinetics of 3 prednisolone prodrugs. Evidence of therapeutic inequivalence in renal transplant patients with rejection. *Transplantation* **39(3)**, 270-274 (1985).
2. Coghlan, M.J., Kym, P.R., Elmore, S.W., *et al.* Synthesis and characterization of non-steroidal ligands for the glucocorticoid receptor: Selective quinoline derivatives with prednisolone-equivalent functional activity. *J. Med. Chem.* **44(18)**, 2879-2885 (2001).
3. Grossmann, C., Scholz, T., Rochel, M., *et al.* Transactivation *via* the human glucocorticoid and mineralocorticoid receptor by therapeutically used steroids in CV-1 cells: A comparison of their glucocorticoid and mineralocorticoid properties. *Eur. J. Endocrinol.* **151(3)**, 397-406 (2004).

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