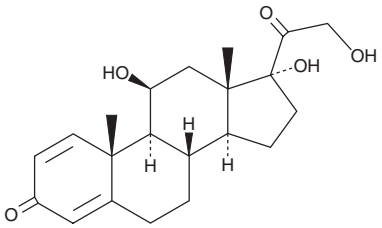
PRODUCT INFORMATION

Prednisolone

Item No. 20866

CAS Registry No.:	50-24-8
Formal Name:	11β,17,21-trihydroxy-pregna-1,4-diene-3,20-dione
Synonyms:	NSC 9120, NSC 9900
MF:	$C_{21}H_{28}O_5$
FW:	360.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 242 nm
Supplied as:	A crystalline 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 is supplied as a crystalline solid. A stock solution may be made by dissolving the prednisolone in the solvent of choice. Prednisolone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of prednisolone in these solvents is approximately 30 mg/ml.

Prednisolone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, prednisolone should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Prednisolone has a solubility of approximately 0.2 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

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**, 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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