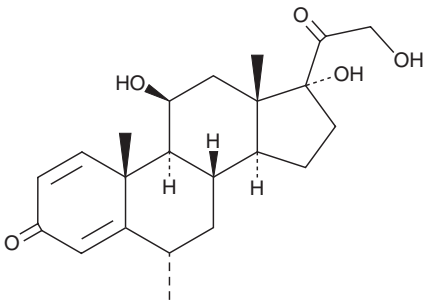
PRODUCT INFORMATION

Methylprednisolone

Item No. 15013

CAS Registry No.:	83-43-2
Formal Name:	11β,17,21-trihydroxy-6α-methyl-pregna-1,4-diene-3,20-dione
Synonyms:	6α-Methylprednisolone, NSC 19987, U-7532
MF:	$C_{22}H_{30}O_5$
FW:	374.5
Purity:	≥98%
UV/Vis.:	λ_{max}: 243 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

Methylprednisolone is supplied as a crystalline solid. A stock solution may be made by dissolving the methylprednisolone in the solvent of choice. Methylprednisolone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of methylprednisolone in ethanol is approximately 5 mg/ml and approximately 20 mg/ml in DMSO and DMF.

Methylprednisolone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, methylprednisolone should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Methylprednisolone has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Methylprednisolone is a synthetic glucocorticoid, an agonist of glucocorticoid and mineralocorticoid receptors, and an active metabolite of the prodrug 6α-methylprednisolone 21-hemisuccinate (MPS; Item Nos. 11800 | 35742).[1] It transactivates glucocorticoid and mineralocorticoid receptors in a reporter assay using CV-1 cells (EC_{50}s = 2.92 and 2.31 nM for the human receptors, respectively). Methylprednisolone (40 mg/kg) reduces endotoxin-induced complement activation in rabbits.[2] It induces T cell apoptosis and reduces the number of T cell spinal cord infiltrates in a rat model of experimental autoimmune encephalomyelitis (EAE) when administered at a dose of 50 mg/kg.[3] It decreases the number of reactive spinal astrocytes, improves proprioceptive limb placing and coordination, and reduces spinal edema and the number of spinal necrotic cells in a rat model of spinal crush injury.[4] Formulations containing methylprednisolone have been used in the treatment of immune and autoimmune disorders, such as rheumatoid arthritis, systemic lupus erythematosus, psoriasis, corneal ulcers, ulcerative colitis, and allergies, among others.

References

1. Grossmann, C., Scholz, T., Rochel, M., *et al*. *Eur. J. Endocrinol.* **151(3)**, 397-406 (2004).
2. Bult, H., Herman, A.G., and Rampart, M. *Br. J. Pharmacol.* **84(2)**, 317-327 (1985).
3. Schmidt, J., Gold, R., Schönrock, L., *et al*. *Brain* **123(Pt 7)**, 1431-1441 (2000).
4. Jiang, S., Khan, M.I., Middlemiss, P.J., *et al*. *Int. J. Immunopathol. Pharmacol.* **17(3)**, 353-366 (2004).

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