

# PRODUCT INFORMATION

## 6 $\alpha$ -Methylprednisolone 21-hemisuccinate

Item No. 11800

**CAS Registry No.:** 2921-57-5

**Formal Name:** 21-(3-carboxy-1-oxopropoxy)-11 $\beta$ ,17-dihydroxy-6 $\alpha$ -methyl-pregna-1,4-diene-3,20-dione

**Synonyms:** Methylprednisolone 21-succinate, MPS

**MF:** C<sub>26</sub>H<sub>34</sub>O<sub>8</sub>

**FW:** 474.6

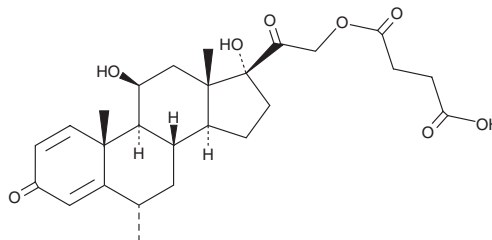
**Purity:**  $\geq 98\%$

**UV/Vis.:**  $\lambda_{\text{max}}$ : 243 nm

**Supplied as:** A crystalline solid

**Storage:** -20°C

**Stability:**  $\geq 4$  years



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

### Laboratory Procedures

6 $\alpha$ -Methylprednisolone 21-hemisuccinate is supplied as a crystalline solid. A stock solution may be made by dissolving the 6 $\alpha$ -methylprednisolone 21-hemisuccinate in the solvent of choice, which should be purged with an inert gas. 6 $\alpha$ -Methylprednisolone 21-hemisuccinate is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 6 $\alpha$ -methylprednisolone 21-hemisuccinate in these solvents is approximately 5 and 3 mg/ml, respectively.

6 $\alpha$ -Methylprednisolone 21-hemisuccinate is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 6 $\alpha$ -methylprednisolone 21-hemisuccinate should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 6 $\alpha$ -Methylprednisolone 21-hemisuccinate 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

6 $\alpha$ -Methylprednisolone 21-hemisuccinate is a prodrug form of the synthetic glucocorticoid methylprednisolone (Item No. 15013).<sup>1</sup> It is converted to methylprednisolone by carboxylesterase 2 (CES2).<sup>2</sup> Nanoliposomes containing 6 $\alpha$ -methylprednisolone 21-hemisuccinate decreases disease severity in a rat model of adjuvant-induced arthritis.<sup>3</sup> Formulations containing 6 $\alpha$ -methylprednisolone 21-hemisuccinate have been used as anti-inflammatory agents and immunosuppressants with indications in allergic reactions and dermatologic, renal, gastrointestinal, respiratory, and ophthalmic diseases, as well as endocrine, hematologic, and rheumatic disorders.

### References

1. Vree, T.B., Lagerwerf, A.J., Verwey-van Wissen, C.P., *et al.* High-performance liquid chromatography analysis, preliminary pharmacokinetics, metabolism and renal excretion of methylprednisolone with its C6 and C20 hydroxy metabolites in multiple sclerosis patients receiving high-dose pulse therapy. *J. Chromatogr. B* **732**, 337-348 (1999).
2. Hori, T., Jin, L., Fujii, A., *et al.* Dexamethasone-mediated transcriptional regulation of rat carboxylesterase 2 gene. *Xenobiotica* **42**(7), 614-623 (2012).
3. Avnir, Y., Ulmansky, R., Wasserman, V., *et al.* Amphipathic weak acid glucocorticoid prodrugs remote-loaded into sterically stabilized nanoliposomes evaluated in arthritic rats and in a Beagle dog: A novel approach to treating autoimmune arthritis. *Arthritis Rheum.* **58**(1), 119-129 (2008).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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