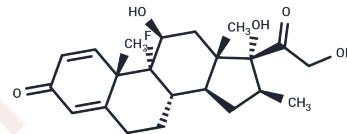


Betamethasone

Chemical Properties

CAS No. :	378-44-9
Formula:	C ₂₂ H ₂₉ FO ₅
Molecular Weight:	392.46
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



Biological Description

Description	Betamethasone (NSC-39470), a glucocorticoid steroid, has immunosuppressive and anti-inflammatory properties.
Targets(IC50)	Apoptosis, Glucocorticoid Receptor
In vitro	Betamethasone has a specific affinity for type II glucocorticoid receptors which are present in most brain regions. [1]
In vivo	Betamethasone has direct vasoconstrictor effects on peripheral femoral resistance vessels in late gestation fetal sheep. Betamethasone exposure decreases cerebral blood flow (CBF) in all brain regions measured except the hippocampus after 24 hours of infusion in sheep. [1] Betamethasone reduces the activation of NF-kappaB and elevation of TNFalpha and IL-1beta, and induces the expression of IL-10 in the brain, all of which correlate with the changes of pain thresholds in rats. [2] Betamethasone exposure reduces synaptophysin-LI in the frontal neocortex, caudate putamen and hippocampus by 46.9%, 41.0% and 55.4%, respectively, that is not accompanied by irreversible neuronal damage in the fetal sheep brain. [3] Betamethasone modestly increases cytidyltransferase (CT) mRNA, but does not alter the levels of immunoreactive enzyme in adult rat lung. Betamethasone decreases the activities of the sphingomyelin hydrolases: acid sphingomyelinase by 33% and of alkaline ceramidase by 21%. [4] Betamethasone injected at the time of nerve injury partially inhibits the development of neuropathic hyperalgesia and reduces the subsequent elevated levels of pro-inflammatory cytokines in the brain of rats, while stimulating the expression of the anti-inflammatory cytokine IL-10. [5]

Solubility Information

Solubility	Ethanol: 10 mg/mL (25.48 mM), Sonication is recommended. DMSO: 73 mg/mL (186.01 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (5.1 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may</i>

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In vivo Formulation	<i>vary and should be modified based on specific experimental conditions.</i>
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.548 mL	12.7402 mL	25.4803 mL
5 mM	0.5096 mL	2.548 mL	5.0961 mL
10 mM	0.2548 mL	1.274 mL	2.548 mL
50 mM	0.051 mL	0.2548 mL	0.5096 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

- Schwab M, et al. J Physiol,2000, 528(Pt 3), 619-632.
- Xie W, et al. Ann Clin Lab Sci,2006, 36(1), 39-46.
- Antonow-Schlorke I, et al. Neurosci Lett,2001, 297(3), 147-150.
- Mallampalli RK, et al. Biochem J,1996, 318 (Pt 1), 333-341.
- Xie W, et al. Neurosci Lett,2006, 393(2-3), 255-259.

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