Small Molecules

Dexamethasone

Glucocorticoid pathway activator;
Activates glucocorticoid receptor

Catalog # 72092

500 mg

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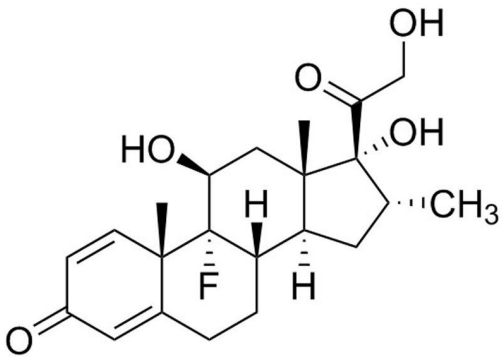
Product Description

Dexamethasone is a synthetic glucocorticoid, similar to the natural glucocorticoid hydrocortisone. Dexamethasone has an increased affinity for glucocorticoid receptors when compared to the natural hydrocortisone ligand (Kd = 5 nM versus 17 nM; Mulatero et al.).

Molecular Name:	Dexamethasone
Alternative Names:	MK 125; NSC 34521
CAS Number:	50-02-2
Chemical Formula:	$C_{22}H_{29}FO_5$
Molecular Weight:	392.5 g/mol
Purity:	≥ 98%
Chemical Name:	9-fluoro-11b,17a,21-trihydroxy-16-methyl-pregna-1,4-diene-3,20-dione
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 75 mM · Absolute ethanol ≤ 7.5 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 10 mg in 2.55 mL of fresh DMSO. Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application. Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

REPROGRAMMING
· Promotes transdifferentiation of hepatocytes from mouse pancreatic cells (Shen et al.).
DIFFERENTIATION
· Promotes osteogenic, adipogenic, and chondrogenic differentiation of human mesenchymal cells (Jaiswal et al.; Mackay et al.; Pittenger et al.).
· Promotes osteogenic, adipogenic, and chondrogenic differentiation of mouse mesenchymal cells (Tropel et al.).
· Promotes differentiation of mature hepatocytes from mouse and human embryonic stem (ES) cells (Cai et al.; Kubo et al.).
· Promotes maturation of fetal mouse hepatocytes (Kamiya et al.).

References

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Mackay AM et al. (1998) Chondrogenic differentiation of cultured human mesenchymal stem cells from marrow. Tissue Eng 4(4): 415–28.
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Tropel P et al. (2004) Isolation and characterisation of mesenchymal stem cells from adult mouse bone marrow. Exp Cell Res 295(2): 395–406.

Related Small Molecules

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).