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DATASHEET

Dexamethasone

Product overview

Name	Dexamethasone
Cat No	HB2521
Alternative names	Dex
Biological action	Agonist
Purity	>98%
Description	Anti-inflammatory synthetic glucocorticoid. Induces hMSC differentiation. Apoptosis inducer.

Images

Biological Data

Biological description

Synthetic glucocorticoid. Differentiates mesenchymal stem cells (MSCs) into adipogenic, chondrogenic and osteogenic lineages.

Commonly used with ascorbic acid and β-Gly for osteogenic differentiation of stem cells.

Also shows potent anti-inflammatory and immunospressant effects. Active *in vivo*.

Recently investigated as part of COVID-19 compound repurposing.

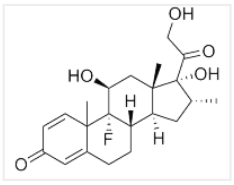
Apoptosis inducer.

Water soluble dexamethasone also available.

Solubility & Handling

Storage instructions	-20°C (protect from light)
Solubility overview	Soluble in DSMO (100mM)
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	(11β,16α)-9-Fluoro-11,17,21-trihydroxy-16-methyl-pregna-1,4-diene-3,20-dione
Molecular Weight	392.47
Chemical structure	
Molecular Formula	$C_{22}H_{29}FO_5$
CAS Number	50-02-2
PubChem identifier	5743
SMILES	C[C@@H]1C[C@H]2[C@@H]3CCC4=CC(=O)C=C[C@@]4([C@]3([C@H](C[C@@]2([C@]1(C(=O)CO)O)C)O)F)C
InChi	InChI=1S/C22H29FO5/c1-12-8-16-15-5-4-13-9-14(25)6-7-19(13,2)21(15,23)17(26)10-20(16,3)22(12,28)18(27)11-24/h6-7,9,12,15-17,24,26,28H,4-5,8,10-11H2,1-3H3/t12-,15+,16+,17+,19+,20+,21+,22+/m1/s1
InChiKey	UREBDLICKHMUKA-CXSFZGCWSA-N
MDL number	MFCD00064136

References

Dexamethasone alleviates tumor-associated brain damage and angiogenesis.

Fan Z *et al* (2014) PLoS One 9(4)
PubMedID 24714627

Glucocorticoid receptor antagonism by cyproterone acetate and RU486.

Honer C *et al* (2003) Mol Pharmacol 63(5)
PubMedID 12695529

Short bouts of mechanical loading are as effective as dexamethasone at inducing matrix production by human bone marrow mesenchymal stem cell.

Sittichokechaiwut A *et al* (2010) Eur Cell Mater 20
PubMedID 20648425