

Hello Bio, Inc.
304 Wall St., Princeton, NJ 08540 USA

T. 609-683-7500
F. 609-228-4994

customercare-usa@hellobio.com



DATASHEET

Dexamethasone (water-soluble)

Product overview

Name	Dexamethasone (water-soluble)
Cat No	HB6020
Description	Synthetic glucocorticoid with potent anti-inflammatory actions. Induces hMSC differentiation. Water soluble and suitable for cell culture.
Biological action	Agonist
Purity	>98%

Biological Data

Biological description	<p>Synthetic glucocorticoid which shows potent anti-inflammatory and immunosuppressant effects.</p> <p>Induces differentiation of mesenchymal stem cells (hMSCs) into adipogenic, chondrogenic and osteogenic lineages.</p> <p>Commonly used with ascorbic acid and β-Gly for osteogenic differentiation of stem cells.</p> <p>This is a water soluble compound composed of a dexamethasone – Cyclodextrin complex (Approx. 65 mg dexamethasone per gm. Balance 2-hydroxypropyl-β-cyclodextrin).</p> <p>Recently investigated as part of COVID-19 compound repurposing.</p> <p>Dexamethasone free base also available.</p>
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Solubility & Handling

Storage instructions	-20 °C (protect from light)
Solubility overview	Soluble in water (100 mM)
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	(11 β ,16 α)-9-Fluoro-11,17,21-trihydroxy-16-methyl-pregna-1,4-diene-3,20-dione
Molecular Weight	6190.85
Chemical structure	<p>Molecular Formula: C₄₈H₇₆FO₁₀ Formula Weight: 1557.5143032</p>
CAS Number	50-02-2
PubChem identifier	71308592
SMILES	CC1CC2C3CCC4=CC(=O)C=CC4(C3C(CC2(C1C(=O)CO)C)O)C.C(C1C2C(C(C(O1)OC3C(OC(C(C3O)O)OC4C(OC(C(C4O)O)OC5C(OC(C(C5O)O)OC6C(OC(C(C6O)O)OC7C(OC(C(C7O)O)OC8C(

InChi	OC(O2)C(C8O)O)CO)CO)CO)CO)CO)CO)O)O)O InChI=1S/C42H70O35.C22H30O4/c43-1-8-29-15(50)22(57)36(64-8)72-30-9(2-44)66-38(24(59)17(30)52)74-32-11(4-46)68-40(26(61)19(32)54)76-34-13(6-48)70-42(28(63)21(34)56)77-35-14(7-49)69-41(27(62)20(35)55)75-33-12(5-47)67-39(25(60)18(33)53)73-31-10(3-45)65-37(71
InChiKey	XEJNDGTUKUMQNG-ARJMFYCQSA-N
MDL number	MFCD00064136
Appearance	White to off-white solid
Formulation	Approximately 65 mg dexamethasone per gm. Balance 2-hydroxypropyl-β-cyclodextrin.

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](#)
