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# DATASHEET

## Dexamethasone (water-soluble)

### Product overview

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

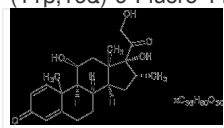
### Biological Data

<b>Biological description</b>	<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 <a href="#">ascorbic acid</a> and <math>\beta</math>-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-<math>\beta</math>-cyclodextrin).</p> <p>Recently investigated as part of COVID-19 compound repurposing.</p> <p>Apoptosis inducer.</p> <p><a href="#">Dexamethasone</a> free base also available.</p>
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### Solubility & Handling

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

### Chemical Data

<b>Chemical name</b>	(11 $\beta$ ,16 $\alpha$ )-9-Fluoro-11,17,21-trihydroxy-16-methyl-pregna-1,4-diene-3,20-dione
<b>Chemical structure</b>	 The chemical structure of Dexamethasone is shown as a steroid nucleus with a fluorine atom at C-9, hydroxyl groups at C-11, C-17, and C-21, a methyl group at C-16, and ketone groups at C-3 and C-20.
<b>Molecular Formula</b>	C <sub>22</sub> H <sub>29</sub> FO <sub>5</sub> ·xC <sub>36</sub> H <sub>60</sub> O <sub>30</sub>
<b>CAS Number</b>	50-02-2
<b>PubChem identifier</b>	71308592

<b>SMILES</b>	<chem>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(OC(O2)C(C8O)O)CO)CO)CO)CO)CO)O)O</chem>
<b>InChi</b>	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
<b>InChiKey</b>	XEJNDGTUKUMQNG-ARJMFYCQSA-N
<b>MDL number</b>	MFCD00064136
<b>Appearance</b>	White to off-white solid
<b>Formulation</b>	Approximately 65 mg dexamethasone per gm. Balance 2-hydroxypropyl-β-cyclodextrin.

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## 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](#)

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