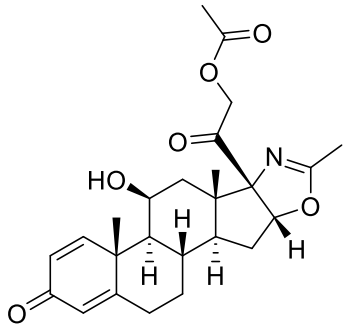
Product data sheet

MedKoo Cat#: 315341 Name: Deflazacort CAS#: 14484-47-0 Chemical Formula: $C_{25}H_{31}NO_6$ Exact Mass: 441.21514 Molecular Weight: 441.51674	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Deflazacort is a glucocorticoid used as an anti-inflammatory and immunosuppressant. It is sold in the United Kingdom by Shire under the trade name Calcort. in Brazil as Cortax, Decortil, and Deflanil, and in Honduras as Flezacor. It is not available in the United States. Deflazacort is a prodrug. Its potency is around 70Â–90% that of prednisone.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	73.0	165.34
Ethanol	7.00	15.85

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.26 mL	11.32 mL	22.65 mL
5 mM	0.45 mL	2.26 mL	4.53 mL
10 mM	0.23 mL	1.13 mL	2.26 mL
50 mM	0.05 mL	0.23 mL	0.45 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Langhoff E, Olgaard K. In vitro immunosuppressive potency of deflazacort, a new bone-sparing corticosteroid on T lymphocytes, NK and K cells. Br J Clin Pharmacol. 1986 Feb;21(2):125-9. doi: 10.1111/j.1365-2125.1986.tb05165.x. PMID: 3485440; PMCID: PMC1400905.
2. Chung H, Kang YS, Hwang CS, Moon IK, Yim CH, Choi KH, Han KO, Jang HC, Yoon HK, Han IK. Deflazacort increases osteoclast formation in mouse bone marrow culture and the ratio of RANKL/OPG mRNA expression in marrow stromal cells. J Korean Med Sci. 2001 Dec;16(6):769-73. doi: 10.3346/jkms.2001.16.6.769. PMID: 11748360; PMCID: PMC3054787.

In vivo study

1. Anderson JE, Weber M, Vargas C. Deflazacort increases laminin expression and myogenic repair, and induces early persistent functional gain in mdx mouse muscular dystrophy. Cell Transplant. 2000 Jul-Aug;9(4):551-64. doi: 10.1177/096368970000900411. PMID: 11038071.
2. Dubinin MV, Talanov EY, Tenkov KS, Starinets VS, Belosludtseva NV, Belosludtsev KN. The Effect of Deflazacort Treatment on the Functioning of Skeletal Muscle Mitochondria in Duchenne Muscular Dystrophy. Int J Mol Sci. 2020 Nov 19;21(22):8763. doi: 10.3390/ijms21228763. PMID: 33228255; PMCID: PMC7699511.

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7. Bioactivity

Biological target:

Deflazacort, a glucocorticoid, is an inactive prodrug and is converted rapidly to the active metabolite 21-desacetyldeflazacort. Deflazacort is used as an anti-inflammatory and immunosuppressant.

In vitro activity

Therefore, the present study was undertaken to test effects of deflazacort on osteoclast-like cell formation in mouse bone marrow cultures and on the regulation of osteoprotegerin (OPG) and its ligand (RANKL) mRNA expressions by RT-PCR in the ST2 marrow stromal cells. TRAP-positive mononuclear cells increased after the treatment of deflazacort at 10(-9) to 10(-7) M alone for 6 days in a dose-dependent manner. Number of TRAP-positive multi-nucleated cells (MNCs) increased significantly with combined treatment of deflazacort at 10(-7) M and 1,25-(OH)2D3 at 10(-9) M compared to that of cultures treated with 1,25-(OH)2D3 alone ($p<0.05$). Exposure to deflazacort at 10(-7) M in the presence of 1,25-(OH)2D3 at 10(-9) M in the last 3-day culture had greater stimulatory effect on osteoclast-like cell formation than that of the first 3-day culture did. Deflazacort at 10(-10) -10(-6) M downregulated OPG and upregulated RANKL in mRNA levels in a dose-dependent manner. These observations suggest that deflazacort stimulate osteoclast precursor in the absence of 1,25-(OH)2D3 and enhance differentiation of osteoclasts in the presence of 1,25-(OH)2D3.

Reference: J Korean Med Sci. 2001 Dec;16(6):769-73. https://pubmed.ncbi.nlm.nih.gov/11748360/

In vivo activity

The hypothesis that deflazacort improves muscle function and promotes repair by increasing myogenic cell proliferation and fiber differentiation was tested. Mdx mice (3.5 weeks old) were treated with deflazacort (1.2 mg/kg) or vehicle for 4 weeks. Peak grip strength increased 15% within 10 days of treatment, and was maintained up to 6 weeks after the end of treatment in a second experiment. Expression of CK MM in the regenerating TA rose from 46% to 55% of total CK activity after deflazacort treatment. Satellite cells were more numerous and appeared earlier on new fibers, in concert with a threefold increase in proliferation by myogenin+ (but not MyoD+) myoblasts. Alpha2-Laminin mRNA expression and protein increased 1.3-5.5-fold relative to MM CK in regenerating and dystrophic TA, respectively. These studies support the hypothesis that deflazacort promotes functional gains, myogenic differentiation, myoblast fusion, and laminin expression in regenerating dystrophic muscle.

Reference: Cell Transplant. Jul-Aug 2000;9(4):551-64. https://pubmed.ncbi.nlm.nih.gov/11038071/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.