

Product Data Sheet

Product Name: Cortisone (17-Hydroxy-11-dehydrocorticosterone)

Cat. No.: GC33839

Chemical Properties

Cas. No. 53-06-5

SMILES C[C@@]1(C2)[C@](C(CO)=O)(O)CC[C@@]1([H])[C@]3([H])CCC4=CC(CC[C@]4(C)[C@@]3([H])C2=O)=O

Formula $C_{21}H_{28}O_5$ M.Wt 360.44

Solubility DMSO : 100 mg/mL (277.44 mM) Storage Store at RT

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

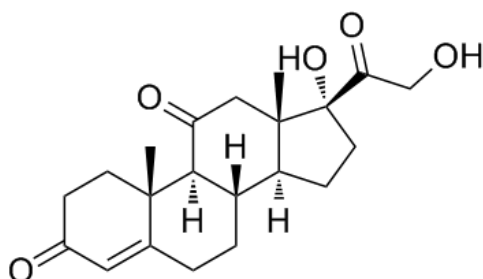
Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Structure



Protocol

Cell experiment [1]:	
Cell lines	MDA PCa 2b cells
Preparation Method	MDA PCa 2b cells were cultured in RPMI-1640 medium, supplemented with 5% charcoal-stripped fetal bovine serum at 37°C in an incubator with 5% CO ₂ . Cells (5×10 ⁴ /well) were seeded in 96-well plates, allowed to adhere overnight, and treated for 6 days at 37°C with different concentrations of Cortisone (0, 1, 10, and 100nM), the cell proliferation was tested.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Reaction Conditions	0, 1, 10, and 100nM; 6 days
Applications	Cortisone treatment stimulated MDA PCa 2b cell proliferation in a dose-dependent manner.
Animal experiment [2]:	
Animal models	Female C3HeB/FeJ mice
Preparation Method	Female C3HeB/FeJ mice (4 weeks old; 19-23g) were housed in SPF conditions with an automatic 12h/12h light-dark cycle at a constant temperature (21±1°C). To achieve an implantation of 3.0-3.5 log ₁₀ CFU in the lungs of a mouse, a primary <i>M. abscessus</i> culture at exponential phase, A _{600nm} of 1.00-1.20, was used to prepare a suspension by diluting to a calculated A _{600nm} of 0.1 in Middlebrook 7H9 broth prewarmed to 37°C. Infections were performed by aerosolizing 10ml of this suspension. The infection cycle comprised 15 minutes of pre-heat, 30 minutes of nebulization, 30 minutes of cloud decay, and 15 minutes of surface decontamination. A 200µl Cortisone (40mg/kg/day) was administered by subcutaneous injection in the dorsal abdominal flank using a 26-gauge syringe. Cortisone treatment began one week prior to infection and lasted for 4 weeks. <i>M. abscessus</i> lung burden in mice was measured.
Dosage form	40mg/kg/day; 4 weeks; s.c.
Applications	Cortisone treatment aggravated <i>M. abscessus</i> lung burden in mice.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

References:[1] Zhao X Y, Malloy P J, Krishnan A V, et al. Glucocorticoids can promote androgen-independent growth of prostate cancer cells through a mutated androgen receptor[J]. Nature medicine, 2000, 6(6): 703-706.[2] Maggioncalda E C, Story-Roller E, Mylius J, et al. A mouse model of pulmonary Mycobacteroides abscessus infection[J]. Scientific reports, 2020, 10(1): 3690.

Background

Cortisone (17-Hydroxy-11-dehydrocorticosterone) is an oxidized metabolite of Cortisol with anti-inflammatory properties^[1]. Cortisone suppresses intraocular inflammation by reducing inflammatory exudation and inhibiting proliferation of fibroblasts and formation of granulation tissue^[2]. Cortisone in saliva is a useful surrogate for circulating free cortisol in research and preclinical assessment and is a stress biomarker with high discriminatory power and significant correlations with subjective and autonomic stress measures^[3-4]. Cortisone has been widely used as an internal standard to optimize the parameters of chromatography and mass spectrometry analysis, facilitating the precise identification of Cortisone and related compounds in saliva and hair samples^[5].

In vitro, Cortisone (10nM) treatment for 6 days promoted cell growth and prostate-specific antigen (PSA) secretion in MDA PCa 2b cells^[6]. Treatment with 1nM Cortisone for 24 hours abolished the platelet-derived growth factor (PDGF)-induced expression of the VEGF gene and VEGF secretion in human vascular smooth muscle cells (hVSMCs)^[7].

In vivo, Cortisone treatment via subcutaneous injection at a dose of 40mg/kg/day for 4 weeks aggravated the *Mycobacteroides abscessus* infection in C3HeB/FeJ mice, and increased the bacterial load in the lungs of mice^[8]. Subcutaneous injection of Cortisone (5mg/day) for 8 days inhibited the growth of rats and caused weight loss^[9].

References:

- [1] Hillier S G. Diamonds are forever: the cortisone legacy[J]. Journal of Endocrinology, 2007, 195(1): 1-6.
- [2] Jonas J B, Hayler J K, Söfker A, et al. Intravitreal injection of crystalline cortisone as adjunctive treatment of proliferative diabetic retinopathy[J]. American journal of ophthalmology, 2001, 131(4): 468-471.
- [3] Perogamvros I, Keevil B G, Ray D W, et al. Salivary cortisone is a potential biomarker for serum

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

- free cortisol[J]. The Journal of Clinical Endocrinology & Metabolism, 2010, 95(11): 4951-4958.
- [4] Bae Y J, Reinelt J, Netto J, et al. Salivary cortisone, as a biomarker for psychosocial stress, is associated with state anxiety and heart rate[J]. Psychoneuroendocrinology, 2019, 101: 35-41.
- [5] Jones R L, Owen L J, Adaway J E, et al. Simultaneous analysis of cortisol and cortisone in saliva using XLC-MS/MS for fully automated online solid phase extraction[J]. Journal of Chromatography B, 2012, 881: 42-48.
- [6] Zhao X Y, Malloy P J, Krishnan A V, et al. Glucocorticoids can promote androgen-independent growth of prostate cancer cells through a mutated androgen receptor[J]. Nature medicine, 2000, 6(6): 703-706.
- [7] Nauck M, Karakiulakis G, Perruchoud A P, et al. Corticosteroids inhibit the expression of the vascular endothelial growth factor gene in human vascular smooth muscle cells[J]. European journal of pharmacology, 1998, 341(2-3): 309-315.
- [8] Maggioncalda E C, Story-Roller E, Mylius J, et al. A mouse model of pulmonary Mycobacteroides abscessus infection[J]. Scientific reports, 2020, 10(1): 3690.
- [9] Krieg Jr R J, Niimi K, Chan J C M, et al. Cortisone effects on growth, food efficiency, and in vitro growth hormone release[J]. Kidney international, 1991, 39(6): 1135-1139.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA