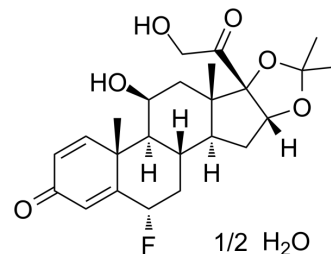


Flunisolide hemihydrate

Cat. No.:	HY-B1121A
CAS No.:	77326-96-6
Molecular Formula:	C ₂₄ H ₃₃ FO ₇
Molecular Weight:	443.51
Target:	Glucocorticoid Receptor; Apoptosis
Pathway:	Immunology/Inflammation; Vitamin D Related/Nuclear Receptor; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Flunisolide hemihydrate is a corticosteroid, which is an orally active glucocorticoid receptor activator with anti-inflammatory activity. Flunisolide hemihydrate can induce eosinophil apoptosis, and is used for the research of asthma or rhinitis, and inflammation ^{[1][2]} .								
In Vitro	<p>Flunisolide hemihydrate (0.1-10 μM, 1 h) inhibits lung fibroblast (Isolated from lung) activation^[1].</p> <p>Flunisolide hemihydrate (10 μM, 24 h) reduces MMP-9, TIMP-1, TGF-β and fibronectin release by sputum cells (isolated from mild to moderate asthmatics), and induces sputum eosinophil apoptosis^[2].</p> <p>Flunisolide hemihydrate (0.1-10 μM μM, 24 h) effectively inhibits ICAM-1 expression and GM-CSF and IL-5 release induced by TNF-alpha in BEAS-2B cells^[3].</p> <p>Flunisolide hemihydrate (115 μM, 0-3 h) can be transported in a polarized way in the apical (ap) to basolateral (bl) direction in Calu-3 cells and is demonstrated to be ATP-dependent^[4].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Apoptosis Analysis^[2]</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Cell Line:</td> <td>Eosinophil</td> </tr> <tr> <td>Concentration:</td> <td>10 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 h</td> </tr> <tr> <td>Result:</td> <td>Induced sputum eosinophil apoptosis.</td> </tr> </table>	Cell Line:	Eosinophil	Concentration:	10 μM	Incubation Time:	24 h	Result:	Induced sputum eosinophil apoptosis.
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In Vivo	<p>Flunisolide hemihydrate (Intranasal administration, 0.3-10 μg/mouse, daily, from days 21-27) inhibits lung inflammation, fibrosis, and airway hyper-reactivity, also improves clearance of silica particles from the lungs in silicotic mice^[1].</p> <p>Flunisolide hemihydrate (Intranasal administration, 0.3-10 μg/mouse, daily, from days 21-27) inhibits silica-induced macrophage and myofibroblast accumulation in the lung tissue^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Animal Model:</td> <td>Male Swiss Webster mice (instilled, intranasally, with crystalline silica, 10 mg/50 μL, particle size 0.5-10 μm)^[1]</td> </tr> <tr> <td>Dosage:</td> <td>0.3-10 μg/mouse, daily, from days 21-27</td> </tr> </table>	Animal Model:	Male Swiss Webster mice (instilled, intranasally, with crystalline silica, 10 mg/50 μL, particle size 0.5-10 μm) ^[1]	Dosage:	0.3-10 μg/mouse, daily, from days 21-27				
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Administration:	Intranasal administration
Result:	Reduced both granulomatous response, collagen deposition, concerning granuloma formation caused by silica particles. Reduced the number of F4/80 and α -SMA positive cells.

CUSTOMER VALIDATION

- Drug Test Anal. 2020 Aug 27.

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REFERENCES

- [1]. Tatiana Paula Teixeira Ferreira, et al. Intranasal Flunisolide Suppresses Pathological Alterations Caused by Silica Particles in the Lungs of Mice. *Front Endocrinol (Lausanne)*. 2020 Jun 17;11:388.
- [2]. M Profita, et al. In vitro effects of flunisolide on MMP-9, TIMP-1, fibronectin, TGF-beta1 release and apoptosis in sputum cells freshly isolated from mild to moderate asthmatics. *Allergy*. 2004 Sep;59(9):927-32.
- [3]. S Boero, et al. Modulation by flunisolide of tumor necrosis factor-alpha-induced stimulation of airway epithelial cell activities related to eosinophil inflammation. *J Asthma*. 2010 May;47(4):381-7.
- [4]. B I Florea, et al. Evidence of P-glycoprotein mediated apical to basolateral transport of flunisolide in human broncho-tracheal epithelial cells (Calu-3). *Br J Pharmacol*. 2001 Dec;134(7):1555-63.

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

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