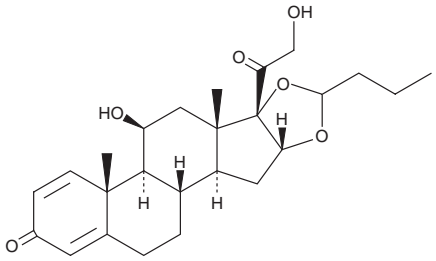
PRODUCT INFORMATION

Budesonide

Item No. 15407

CAS Registry No.:	51333-22-3
Formal Name:	16α,17-[butylidenebis(oxy)]-11β,21-dihydroxy-pregna-1,4-diene-3,20-dione
MF:	$C_{25}H_{34}O_6$
FW:	430.5
Purity:	≥95%
UV/Vis.:	λ_{max}: 243 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Budesonide is supplied as a crystalline solid. A stock solution may be made by dissolving the budesonide in the solvent of choice, which should be purged with an inert gas. Budesonide is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of budesonide in these solvents is approximately 10, 25, 20 mg/ml, respectively.

Budesonide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, budesonide should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Budesonide has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Budesonide is a glucocorticoid and an agonist of glucocorticoid receptors (EC_{50} = 45.7 pM in a transactivation assay).[1] It is selective for glucocorticoid over mineralocorticoid receptors (EC_{50} = 7,620 pM). Budesonide inhibits LPS-induced TNF-α release from human peripheral blood mononuclear cells (PBMCs; IC_{50} = 0.96 nM).[2] It reduces levels of IL-1β and eotaxin in the lungs and the number of eosinophils and neutrophils in bronchoalveolar lavage fluid (BALF) in a rat model of ovalbumin-induced airway inflammation when administered at a dose of 3 mg/kg.[3] Intracolonic administration of budesonide decreases colon wet weight and colonic myeloperoxidase (MPO) activity in a rat model of oxazolone-induced colitis.[4] Formulations containing budesonide have been used in the treatment of Crohn's disease, ulcerative colitis, allergic rhinitis, and asthma.

References

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2. Millan, D.S., Ballard, S.A., Chunn, S., *et al.* Design and synthesis of long acting inhaled corticosteroids for the treatment of asthma. *Bioorg. Med. Chem. Lett.* **21(19)**, 5826-5830 (2011).
2. Birrell, M.A., Hardaker, E., Wong, S., *et al.* IκB kinase-2 inhibitor blocks inflammation in human airway smooth muscle and a rat model of asthma. *Am. J. Respir. Crit. Care Med.* **172(8)**, 962-971 (2005).
4. Ekström, G.M. Oxazolone-induced colitis in rats: effects of budesonide, cyclosporin A, and 5-aminosalicylic acid. *Scand. J. Gastroenterol.* **33(2)**, 174-179 (1998).

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