

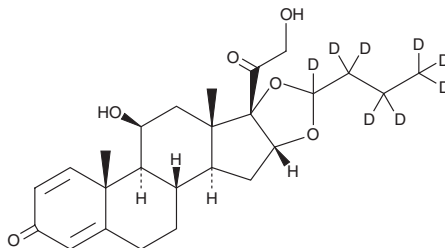
# PRODUCT INFORMATION



## Budesonide-d<sub>8</sub>

Item No. 30046

**CAS Registry No.:** 1105542-94-6  
**Formal Name:** (11β,16α)-16,17-[butylidene-1,2,2,3,3,4,4,4-d<sub>8</sub>-bis(oxy)]-11,21-dihydroxy-pregna-1,4-diene-3,20-dione  
**MF:** C<sub>25</sub>H<sub>26</sub>D<sub>8</sub>O<sub>6</sub>  
**FW:** 438.6  
**Chemical Purity:** ≥90% (Budesonide)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>8</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥2 years



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

### Laboratory Procedures

Budesonide-d<sub>8</sub> is intended for use as an internal standard for the quantification of budesonide (Item No. 15407) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Budesonide-d<sub>8</sub> is supplied as a solid. A stock solution may be made by dissolving the budesonide-d<sub>8</sub> in the solvent of choice, which should be purged with an inert gas. Budesonide-d<sub>8</sub> is slightly soluble in organic solvents such as DMSO and dichloromethane.

### Description

Budesonide is a glucocorticoid and an agonist of glucocorticoid receptors (EC<sub>50</sub> = 45.7 pM in a transactivation assay).<sup>1</sup> It is selective for glucocorticoid over mineralocorticoid receptors (EC<sub>50</sub> = 7,620 pM). Budesonide inhibits LPS-induced TNF-α release from human peripheral blood mononuclear cells (PBMCs; IC<sub>50</sub> = 0.96 nM).<sup>2</sup> 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.<sup>3</sup> Intracolonic administration of budesonide decreases colon wet weight and colonic myeloperoxidase (MPO) activity in a rat model of oxazolone-induced colitis.<sup>4</sup> Formulations containing budesonide have been used in the treatment of Crohn's disease, ulcerative colitis, allergic rhinitis, and asthma.

### References

1. Grossmann, C., Scholz, T., Rochel, M., *et al.* Transactivation via the human glucocorticoid and mineralocorticoid receptor by therapeutically used steroids in CV-1 cells: A comparison of their glucocorticoid and mineralocorticoid properties. *Eur. J. Endocrinol.* **151(3)**, 397-406 (2004).
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).
3. 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).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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