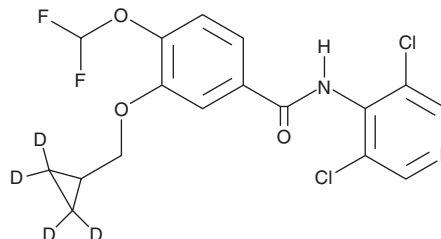


PRODUCT INFORMATION



Roflumilast-d₄ Item No. 18260

CAS Registry No.: 1398065-69-4
Formal Name: 3-((cyclopropyl-2,2,3,3-d₄)methoxy)-N-(3,5-dichloropyridin-4-yl)-4-(difluoromethoxy)benzamide
MF: C₁₇H₁₀Cl₂D₄F₂N₂O₃
FW: 407.2
Chemical Purity: ≥98% (Roflumilast)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
Supplied as: A 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

Roflumilast-d₄ is intended for use as an internal standard for the quantification of roflumilast (Item No. 15141) 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).

Roflumilast-d₄ is supplied as a solid. A stock solution may be made by dissolving the roflumilast-d₄ in the solvent of choice, which should be purged with an inert gas. Roflumilast-d₄ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of roflumilast-d₄ in these solvents is approximately 10, 20, and 30 mg/ml, respectively.

Description

Roflumilast is an inhibitor of phosphodiesterase 4 (PDE4; IC₅₀ = 0.8 nM).^[49692] It is selective for PDE4 over PDE1, -2, -3, and -5 (IC₅₀s = >10, >10, >10, and 8 μM, respectively). Roflumilast inhibits the production of leukotriene B₄ (LTB₄; Item No. 20110) induced by fMLP (Item No. 21495) in isolated human neutrophils with an IC₅₀ value of 2 nM. It reduces the proliferation of anti-CD3 and anti-CD28-stimulated isolated human CD4⁺ T cells (IC₃₀ = 7 nM). Roflumilast (5 mg/kg) prevents pulmonary inflammatory cell infiltration and emphysema in mice exposed to cigarette smoke.² Formulations containing roflumilast have been used in the treatment of chronic obstructive pulmonary disease (COPD).

References

1. Hatzelmann, A. and Schudt, C. Anti-inflammatory and immunomodulatory potential of the novel PDE4 inhibitor roflumilast in vitro. *J. Pharmacol. Exp. Ther.* **297(1)**, 267-279 (2001).
2. Young, A.N., Herrera, D., Huntsman, A.C., et al. Phyllanthusmin derivatives induce apoptosis and reduce tumor burden in high-grade serous ovarian cancer by late-stage autophagy inhibition. *Mol. Cancer Ther.* **17(10)**, 2123-2135 (2018).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/16/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM