

Product Data Sheet

Product Name: Acitretin-d3

Cat. No.: GC45762

Chemical Properties

Cas. No. N/A

SMILES CC1=C(OC([2H])([2H])[2H])C=C(C)C(/C=C/C(C)=C/C=C/C(C)=C/C(O)=O)=C1C

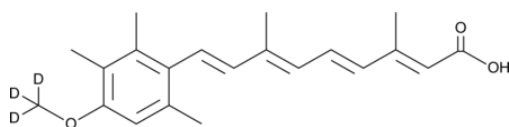
Formula C₂₁H₂₃D₃O₃ M.Wt 329.5

Solubility Soluble in DMSO Storage Store at -20°C

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.

Structure



Background

Acitretin-d3 is intended for use as an internal standard for the quantification of acitretin by GC- or LC-MS. Acitretin is a retinoid and an active metabolite of the retinoid etretinate that has antiproliferative activities.^{1,2} It binds to cellular retinoic acid binding protein I (CRABP-I) and CRABP-II (K_ds = 3 and 15 nM, respectively, for the mouse recombinant proteins) but has low affinity for human recombinant retinoic acid receptor-retinoid X receptor (RAR-RXR) heterocomplexes.^{3,4} Acitretin inhibits proliferation (IC₅₀ = 6.6 μM) and suppresses TNF-α- and IFN-γ-induced protein levels of STAT1, NF-κB, and RANTES in HaCaT keratinocytes when used at concentrations up to 50 μM.⁵ It inhibits proliferation of HL-60, SCC-4, SCC-15, and A431, but not MCF-7, cancer cells, when used at a concentration of 30 μM.¹ Acitretin (20 μg per mouse) decreases the severity of psoriatic-like skin lesions in K14-VEGF transgenic mice.² Formulations containing acitretin have been used in the treatment of psoriasis.

[1. Frey, J.R., Peck, R., and Bollag, W. Antiproliferative activity of retinoids, interferon α and their combination in five human transformed cell lines. *Cancer Lett.* 57(3), 223-227 (1991).] [2. An, J., Zhang, D., Wu, J., et al. The acitretin and methotrexate combination therapy for psoriasis vulgaris

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

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achieves higher effectiveness and less liver fibrosis. Pharmacol. Res. 121, 158-168 (2017).|3. Norris, A.W., Cheng, L., Giguère, V., et al. Measurement of subnanomolar retinoic acid binding affinities for cellular retinoic acid binding proteins by fluorometric titration. Biochim. Biophys. Acta. 1209(1), 10-18 (1994).|4. Tian, K., Norris, A.W., Lin, C.L., et al. The isolation and characterization of purified heterocomplexes of recombinant retinoic acid receptor and retinoid X receptor ligand binding domains. Biochemistry 36(19), 5669-5676 (1997).|5. Zhang, M., Zhu, L., Feng, Y., et al. Effects of acitretin on proliferative inhibition and RANTES production of HaCaT cells. Arch. Dermatol. Res. 300(10), 575-581 (2008).

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