

Product Data Sheet

Product Name: Imiquimod-d9

Cat. No.: GC47453

Chemical Properties

Cas. No. 2712126-48-0

SMILES NC1=NC2=C(C3=C1N=CN3C([2H])([2H])C(C([2H])([2H])[2H])([2H])C([2H])([2H])[2H])C=CC=C2

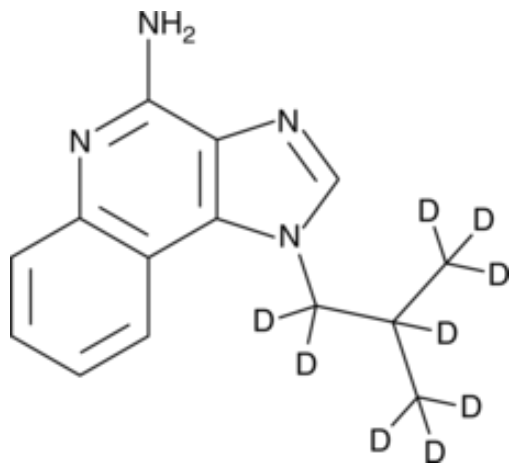
Formula C₁₄H₇D₉N₄ M.Wt 249.4

Solubility DMF: 1 mg/ml, DMSO: 1 mg/ml 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

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

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Imiquimod-dg is intended for use as an internal standard for the quantification of imiquimod by GC- or LC-MS. Imiquimod is an imidazoquinoline agonist of toll-like receptor 7 (TLR7; $EC_{50} = 2.12 \mu M$).¹ It increases TNF- α and IL-12 p40 production in IFN- γ -treated murine peritoneal macrophages in a concentration- and MyD88-dependent manner.² Topical application of imiquimod (30 μl of 5% cream) increases TNF and IFN levels at the application site in hairless mice.³ Imiquimod dose-dependently increases serum levels of IFN- α in mice when administered by gavage.⁴ It reduces tumor growth in an MC-26 model of murine colon cancer when administered at a dose of 30 mg/kg every three days. Imiquimod (5 mg/kg, intravaginally, twice daily) reduces vaginal viral titer and lesion formation in a guinea pig model of genital HSV-2 infection.⁵ Formulations containing imiquimod have been used in the treatment of actinic keratosis, superficial basal cell carcinoma, and external genital warts.

1.Shukla, N.M., Mallardi, S.S., Mutz, C.A., et al.Structure-activity relationships in human toll-like receptor 7-active imidazoquinoline analoguesJ. Med. Chem.53(11)4450-4465(2010) 2.Hemmi, H., Kaisho, T., Takeuchi, O., et al.Small anti-viral compounds activate immune cells via the TLR7 MyD88-dependent signaling pathwayNat. Immunol.3(2)196-200(2002) 3.Imbertson, L.M., Beaurline, J.M., Couture, A.M., et al.Cytokine induction in hairless mouse and rat skin after topical application of the immune response modifiers imiquimod and S-28463J. Invest. Dermatol.110(5)734-739(1998) 4.Sidky, Y.A., Borden, E.C., Weeks, C.E., et al.Inhibition of murine tumor growth by an interferon-inducing imidazoquinolinamineCancer Res.52(13)3528-3533(1992) 5.Harrison, C.J., Jenski, L.J., Voychehovski, T., et al.Modification of immunological responses and clinical disease during topical R-837 treatment of genital HSV-2 infectionAntiviral Res.10(4-5)209-223(1988)

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