
Product Data Sheet

Product Name: Ritonavir-13C,d3

Cat. No.: GC64331

Chemical Properties

Cas. No. 155213-67-5

Formula C₃₆H₄₅D₃N₆O₅S₂

M.Wt 724.96

Solubility DMSO : 25 mg/mL (34.68 mM; Need ultrasonic) 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

Ritonavir-13C,d3 (ABT 538-13C,d3) is the 13C- and deuterium labeled Ritonavir. Ritonavir (ABT 538) is an inhibitor of HIV protease used to treat HIV infection and AIDS. Ritonavir is also a SARS-CoV 3CLpro inhibitor with an IC₅₀ of 1.61 μM.

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1].

- [1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother.* 2019;53(2):211-216. [2]. Eagling VA, et al. Differential inhibition of cytochrome P450 isoforms by the protease inhibitors, ritonavir, saquinavir and indinavir. *Br J Clin Pharmacol.* 1997 Aug;44(2):190-4. [3]. Kumar GN, et al. Cytochrome P450-mediated metabolism of the HIV-1 protease inhibitor ritonavir (ABT-538) in human liver microsomes. *J Pharmacol Exp Ther.* 1996 Apr;277(1):423-31. [4]. Weichold FF, et al. HIV-1 protease inhibitor ritonavir modulates susceptibility to apoptosis of uninfected T cells. *J Hum Virol.* 1999 Sep-Oct;2(5):261-9. [5]. Drewe J, et al. HIV protease inhibitor ritonavir: a more potent inhibitor of P-

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

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glycoprotein than the cyclosporine analog SDZ PSC 833. *Biochem Pharmacol.* 1999 May 15;57(10):1147-52.

[6]. Kumar GN, et al. Potent inhibition of the cytochrome P-450 3A-mediated human liver microsomal metabolism of a novel HIV protease inhibitor by ritonavir: A positive drug-drug interaction. *Drug Metab Dispos.* 1999 Aug;27(8):902-8.

[7]. Qi Sun, et al. Bardoxolone and bardoxolone methyl, two Nrf2 activators in clinical trials, inhibit SARS-CoV-2 replication and its 3C-like protease. *Signal Transduct Target Ther.* 2021 May 29;6(1):212.

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