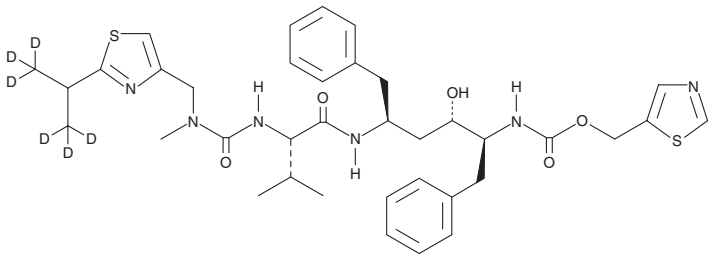
PRODUCT INFORMATION

Ritonavir-d_6

Item No. 25462

CAS Registry No.: 1217720-20-1
Formal Name: thiazol-5-ylmethyl ((2S,3S,5S)-3-hydroxy-5-((S)-3-methyl-2-(3-methyl-3-((2-(propan-2-yl-1,1,1,3,3,3-d_6)thiazol-4-yl)methyl)ureido)butanamido)-1,6-diphenylhexan-2-yl)carbamate
MF: $C_{37}H_{42}D_6N_6O_5S_2$
FW: 727.0
Chemical Purity: ≥98% (Ritonavir)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_6); ≤1% d_0
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

Ritonavir-d_6 is intended for use as an internal standard for the quantification of ritonavir (Item No. 13872) 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).

Ritonavir-d_6 is supplied as a solid. A stock solution may be made by dissolving the ritonavir-d_6 in the solvent of choice, which should be purged with an inert gas. Ritonavir-d_6 is slightly soluble in chloroform, DMSO, and methanol.

Description

Ritonavir is an HIV protease inhibitor.[1] It inhibits recombinant HIV-1 protease by 79% when used at a concentration of 0.5 nM. It inhibits HIV-1_{3B}-induced cell death in MT-4 human T cell leukemia cells (EC_{50} = 25 nM) as well as cell death induced by HIV-1_{LAI}, HIV-2_{ROD}, and HIV-2_{EHO} in human MT-2 cells (IC_{50}s = 0.045, 0.13, and 0.24 µM, respectively).[1,2] Ritonavir also inhibits the cytochrome P450 (CYP) isoform CYP3A (IC_{50} = 0.14 µM).[3] It inhibits CYP-mediated oxidative metabolism of the HIV protease inhibitors saquinavir (Item No. 9001893), indinavir (Item No. 15150), nelfinavir (Item No. 15144), and amprenavir (Item No. 15369) in rat and human liver microsomes in a concentration-dependent manner.[4] Ritonavir (10 mg/kg) also prevents decreases in plasma levels of these four compounds in rats. Formulations containing ritonavir have been used in the treatment of HIV-1 infection.

References

1. Kempf, D.J., Shan, H.L., Marsh, K.C., *et al. J. Med. Chem.* **41(4)**, 602-617 (1998).
2. Koh, Y., Nakata, H., Maeda, K., *et al. Antimicrob. Agents Chemother.* **47(10)**, 3123-3129 (2003).
3. Kumar, G.N., Dykstra, J., Roberts, E.M., *et al. Drug Metab. Dispos.* **27(8)**, 902-908 (1999).
4. Kempf, D.J., Marsh, K.C., Kumar, G., *et al. Antimicrob. Agents Chemother.* **41(3)**, 654-660 (1997).

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