

# PRODUCT INFORMATION



## Ritonavir-d<sub>6</sub> 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<sub>6</sub>)thiazol-4-yl)methyl)ureido)butanamido)-1,6-diphenylhexan-2-yl)carbamate

**MF:** C<sub>37</sub>H<sub>42</sub>D<sub>6</sub>N<sub>6</sub>O<sub>5</sub>S<sub>2</sub>  
**FW:** 727.0

**Chemical Purity:** ≥98% (Ritonavir)

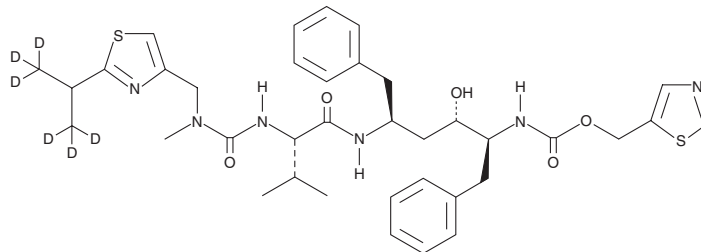
### Deuterium

**Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>6</sub>); ≤1% d<sub>0</sub>

**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<sub>6</sub> 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<sub>6</sub> is supplied as a solid. A stock solution may be made by dissolving the ritonavir-d<sub>6</sub> in the solvent of choice, which should be purged with an inert gas. Ritonavir-d<sub>6</sub> is slightly soluble in chloroform, DMSO, and methanol.

## Description

Ritonavir is an HIV protease inhibitor.<sup>1</sup> It inhibits recombinant HIV-1 protease by 79% when used at a concentration of 0.5 nM. It inhibits HIV-1<sub>3B</sub>-induced cell death in MT-4 human T cell leukemia cells (EC<sub>50</sub> = 25 nM) as well as cell death induced by HIV-1<sub>LAI</sub>, HIV-2<sub>ROD</sub>, and HIV-2<sub>EHO</sub> in human MT-2 cells (IC<sub>50</sub>s = 0.045, 0.13, and 0.24 μM, respectively).<sup>1,2</sup> Ritonavir also inhibits the cytochrome P450 (CYP) isoform CYP3A (IC<sub>50</sub> = 0.14 μM).<sup>3</sup> 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.<sup>4</sup> 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).

### 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.

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