TOCRIS
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Print Date: Jan 13th 2022

Certificate of Analysis

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Product Name: **Ritonavir** **Catalog No.: 5856** **Batch No.: 1**

CAS Number: 155213-67-5

IUPAC Name: 5-Thiazolylmethyl (3*S*,4*S*,6*S*,9*S*)-4-hydroxy-12-methyl-9-(1-methylethyl)-13-[2-(1-methylethyl)-4-thiazolyl]-8,11-dioxo-3,6-bis(phenylmethyl)-2,7,10,12-tetraazatridecanoate

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{37}H_{48}N_6O_5S_2$

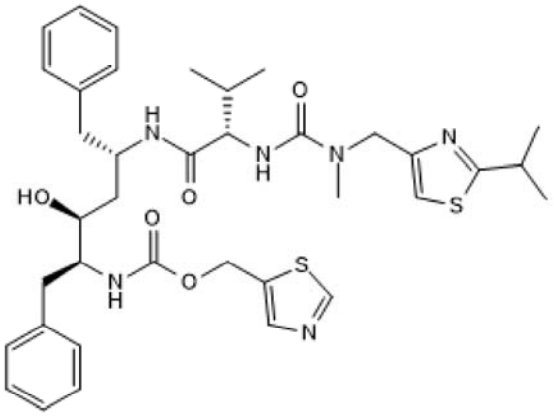
Batch Molecular Weight: 720.94

Physical Appearance: White solid

Solubility: DMSO to 20 mM with gentle warming
ethanol to 10 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.6% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	61.64	6.71	11.66
Found	62	6.76	11.54

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Product Information

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Description:

Ritonavir is a HIV-1 and HIV-2 protease inhibitor (EC_{50} values are 0.022-0.13 and 0.16 µM, respectively). Blocks the metabolism of protease inhibitors by liver enzyme cytochrome P450-3A4 (CYP3A4). Orally bioavailable. When used in combination with lopinavir, improves outcome in an animal model of MERS-CoV infection.

Physical and Chemical Properties:

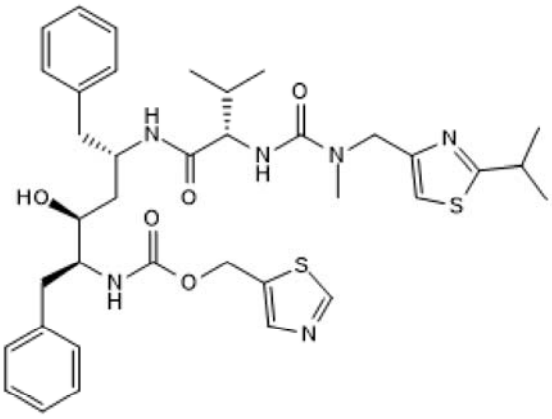
Batch Molecular Formula: $C_{37}H_{48}N_6O_5S_2$

Batch Molecular Weight: 720.94

Physical Appearance: White solid

Minimum Purity: ≥98%

Batch Molecular Structure:



Storage: Store at -20°C

Solubility & Usage Info:

DMSO to 20 mM with gentle warming
ethanol to 10 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Chan *et al* (2015) Treatment with Lopinavir/Ritonavir or Interferon-β1b improves outcome of MERS-CoV infection in a nonhuman primate model of common marmoset. J.Infect.Dis. ***12*** 1904. PMID: 26198719.

Zeldin *et al* (2004) Pharmacological and therapeutic properties of ritonavir-boosted protease inhibitor therapy in HIV-infected patients. J.Antimicrob.Chemother. ***53*** 4. PMID: 14657084.

Kempf *et al* (1998) Discovery of ritonavir, a potent inhibitor of HIV protease with high oral bioavailability and clinical efficacy. J.Med.Chem. ***41*** 602. PMID: 9484509.

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