

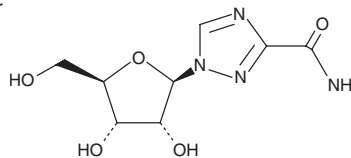
PRODUCT INFORMATION



Ribavirin

Item No. 16757

CAS Registry No.: 36791-04-5
Formal Name: 1-β-D-ribofuranosyl-1H-1,2,4-triazole-3-carboxamide
Synonym: NSC 163039
MF: C₈H₁₂N₄O₅
FW: 244.2
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Ribavirin is supplied as a crystalline solid. A stock solution may be made by dissolving the ribavirin in the solvent of choice. Ribavirin is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of ribavirin in these solvents is approximately 11 and 15 mg/ml, respectively.

Ribavirin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, ribavirin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Ribavirin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Ribavirin is an antiviral guanosine nucleoside analog.^{1,2} Upon entry into cells, ribavirin is metabolized to an active triphosphate form that induces viral RNA chain termination and inhibits viral polymerases. It reduces replication in a panel of seven RNA and four DNA viruses in Vero cells (EC₅₀s = 2-95 μg/ml).³ Ribavirin also reduces replication of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in Vero cells (EC₅₀ = 109.5 μM).⁴ Aerosol administration of ribavirin (30 mg/kg) reduces mortality in a mouse model of influenza A infection.⁵ Formulations containing ribavirin have been used in the treatment of respiratory syncytial virus (RSV), hepatitis C virus (HCV), and viral hemorrhagic fevers.

References

1. Gilbert, B.E. and Knight, V. Biochemistry and clinical applications of ribavirin. *Antimicrob. Agents Chemother.* **30(2)**, 201-205 (1986).
2. Gordon, C.J., Tchesnokov, E.P., Woolner, E., et al. Remdesivir is a direct-acting antiviral that inhibits RNA-dependent RNA polymerase from severe acute respiratory syndrome coronavirus 2 with high potency. *J. Biol. Chem.* **295(20)**, 6785-6797 (2020).
3. Kirsj, J.J., North, J.A., McKernan, P.A., et al. Broad-spectrum antiviral activity of 2-β-D-ribofuranosylselenazole-4-carboxamide, a new antiviral agent. *Antimicrob. Agents Chemother.* **24(3)**, 353-361 (1983).
4. Wang, M., Cao, R., Zhang, L., et al. Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro. *Cell Res.* **30(3)**, 269-271 (2020).
5. Wilson, S.Z., Knight, V., Wyde, P.R., et al. Amantadine and ribavirin aerosol treatment of influenza A and B infection in mice. *Antimicrob. Agents Chemother.* **17(4)**, 642-648 (1980).

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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