

PRODUCT INFORMATION



Remdesivir

Item No. 30354

CAS Registry No.: 1809249-37-3
Formal Name: N-[(S)-hydroxyphenoxyphosphinyl]-L-alanine, 2-ethylbutyl ester, 6-ester with 2-C-(4-aminopyrrolo[2,1-f][1,2,4]triazin-7-yl)-2,5-anhydro-D-altroneitrile

Synonym: GS-5734

MF: C₂₇H₃₅N₆O₈P

FW: 602.6

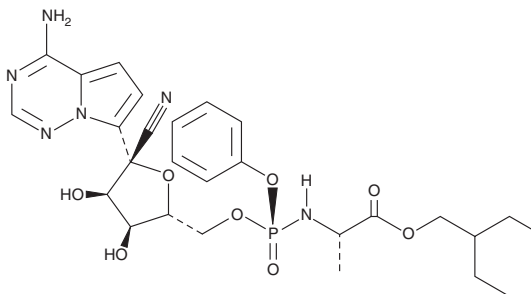
Purity: ≥98%

UV/Vis.: λ_{max}: 246 nm

Supplied as: A crystalline 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

Remdesivir is supplied as a crystalline solid. A stock solution may be made by dissolving the remdesivir in the solvent of choice, which should be purged with an inert gas. Remdesivir is soluble in the organic solvent DMSO.

Description

Remdesivir is a prodrug form of the antiviral nucleotide analog GS-443902.¹⁻³ Upon entry into cells, remdesivir is metabolized into the intermediate metabolite GS-441524 (Item No. 30469), which is then further metabolized to the active nucleotide triphosphate GS-443902 that induces RNA chain termination and inhibits viral polymerases.⁴ Remdesivir reduces viral titers in primary human airway epithelial (HAE) cells infected with Middle East respiratory syndrome coronavirus (MERS-CoV) or severe acute respiratory syndrome CoV (SARS-CoV; EC₅₀S = 0.074 and 0.069 μM, respectively). It reduces infectious virus production in SARS-CoV-2-infected HAE cells (EC₅₀ = 10 nM).⁵ *In vivo*, remdesivir (25 and 50 mg/kg) reduces lung viral titers and prevents weight loss in a mouse model of SARS-CoV infection.² Remdesivir (25 mg/kg) also reduces lung viral titers and lung hemorrhage and improves pulmonary function in mice infected with a chimeric SARS-CoV encoding the SARS-CoV-2 RNA-dependent RNA polymerase (RdRp).⁵ Formulations containing remdesivir have been used in the treatment of COVID-19.

References

1. Agostini, M.L., Andres, E.L., Sims, A.C., *et al.* Coronavirus susceptibility to the antiviral remdesivir (GS-5734) is mediated by the viral polymerase and the proofreading exoribonuclease. *mBio* **9**(2), e00221-18 (2018).
2. Sheahan, T.P., Sims, A.C., Graham, R.L., *et al.* Broad-spectrum antiviral GS-5734 inhibits both epidemic and zoonotic coronaviruses. *Sci. Transl. Med.* **9**(396), eaal3653 (2017).
3. Cox, R.M., Wolf, J.D., Lieber, C.M., *et al.* Oral prodrug of remdesivir parent GS-441524 is efficacious against SARS-CoV-2 in ferrets. *Nat. Commun.* **12**(1), 6415 (2021).
4. Eastman, R.T., Roth, J.S., Brimacombe, K.R., *et al.* Remdesivir: A review of its discovery and development leading to emergency use authorization for treatment of COVID-19. *ACS Cent. Sci.* **6**(5), 672-683 (2020).
5. Pruijssers, A.J., George, A.S., Schäfer, A., *et al.* Remdesivir inhibits SARS-CoV-2 in human lung cells and chimeric SARS-CoV expressing the SARS-CoV-2 RNA polymerase in mice. *Cell Rep.* **32**(3), 107940 (2020).

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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