

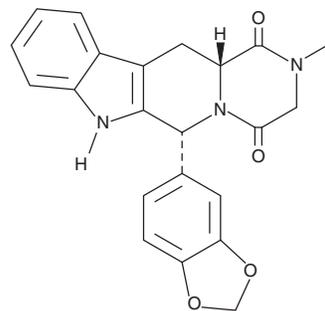
PRODUCT INFORMATION



Tadalafil

Item No. 14024

CAS Registry No.: 171596-29-5
Formal Name: (6R)-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12aR-hexahydro-2-methyl-pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione
MF: C₂₂H₁₉N₃O₄
FW: 389.4
Purity: ≥98%
UV/Vis.: λ_{max}: 221, 284, 292 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

Tadalafil is supplied as a crystalline solid. A stock solution may be made by dissolving the tadalafil in the solvent of choice, which should be purged with an inert gas. Tadalafil is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of tadalafil in these solvents is approximately 20 and 25 mg/ml, respectively.

Tadalafil is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, tadalafil should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Tadalafil 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

Tadalafil is a potent inhibitor of phosphodiesterase 5 (PDE5; IC₅₀ = 1.2 nM).¹ It is selective for PDE5 over PDE1-4 and 7-10 (IC₅₀s = 9.2-280 μM), however, it does also inhibit PDE11 (IC₅₀ = 11 nM). *In vivo*, tadalafil (10 mg/kg) decreases production of the proinflammatory cytokines TNF-α, IL-1β, and IL-6 and improves renal function in a rat model of ischemia/reperfusion injury.² It also reduces development of tobacco smoke-induced emphysema and pulmonary hypertension in mice.³ Formulations containing tadalafil have been used to treat erectile dysfunction, pulmonary arterial hypertension, and lower urinary tract dysfunction.

References

1. Card, G.L., England, B.P., Suzuki, Y., *et al.* Structural basis for the activity of drugs that inhibit phosphodiesterases. *Structure* **12(12)**, 2233-2247 (2004).
2. Medeiros, V.d.F.L.P., Azevedo, Í., M., Carvalho, M.D.F., *et al.* The renoprotective effect of oral tadalafil pretreatment on ischemia/reperfusion injury in rats. *Acta. Cir. Bras.* **32(2)**, 90-97 (2017).
3. Seimetz, M., Parajuli, N., Pichl, A., *et al.* Cigarette smoke-induced emphysema and pulmonary hypertension can be prevented by phosphodiesterase 4 and 5 inhibition in mice. *PLoS One* **10(6)**, e0129327 (2015).

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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM