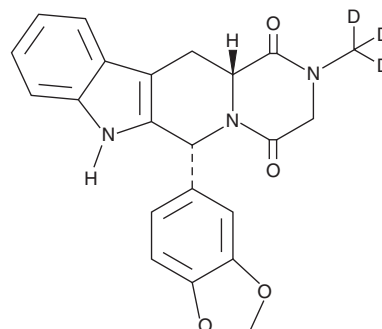


# PRODUCT INFORMATION



## Tadalafil-d<sub>3</sub> Item No. 25030

**CAS Registry No.:** 960226-55-5  
**Formal Name:** (6R,12aR)-6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-(methyl-d<sub>3</sub>)-pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione  
**MF:** C<sub>22</sub>H<sub>16</sub>D<sub>3</sub>N<sub>3</sub>O<sub>4</sub>  
**FW:** 392.4  
**Chemical Purity:** ≥98% (Tadalafil)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>3</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

Tadalafil-d<sub>3</sub> is intended for use as an internal standard for the quantification of tadalafil (Item No. 14024) 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).

Tadalafil-d<sub>3</sub> is supplied as a solid. A stock solution may be made by dissolving the tadalafil-d<sub>3</sub> in the solvent of choice, which should be purged with an inert gas. Tadalafil-d<sub>3</sub> is soluble in methanol and DMSO.

### Description

Tadalafil is a potent inhibitor of phosphodiesterase 5 (PDE5; IC<sub>50</sub> = 1.2 nM).<sup>1</sup> It is selective for PDE5 over PDE1-4 and 7-10 (IC<sub>50</sub>s = 9.2-280 μM), however, it does also inhibit PDE11 (IC<sub>50</sub> = 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.<sup>2</sup> It also reduces development of tobacco smoke-induced emphysema and pulmonary hypertension in mice.<sup>3</sup> 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.F., Azevedo, Í.M., Carvalho, M.D., *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](http://WWW.CAYMANCHEM.COM)