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SZABO-SCANDIC Handels GmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

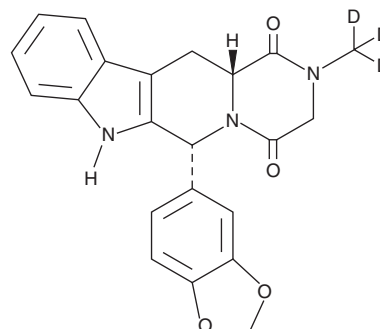
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PRODUCT INFORMATION



Tadalafil-d₃ 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-d₃)-pyrazino[1',2':1,6]pyrido[3,4-b]indole-1,4-dione
MF: C₂₂H₁₆D₃N₃O₄
FW: 392.4
Chemical Purity: ≥98% (Tadalafil)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
Supplied as: A 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

Tadalafil-d₃ 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-d₃ is supplied as a solid. A stock solution may be made by dissolving the tadalafil-d₃ in the solvent of choice. Tadalafil-d₃ is soluble in organic solvents such as methanol and DMSO, which should be purged with an inert gas.

Description

Tadalafil-d₃ is intended for use as an internal standard for the quantification of tadalafil (Item No. 14024) by GC- or LC-MS. 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.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