

Product Data Sheet

Product Name: Sildenafil-d3

Cat. No.: GC48078

Chemical Properties

Cas. No. 1126745-90-1

SMILES CCOC1=C(C(NC2=C3N(C)N=C2CCC)=NC3=O)C=C(C=C1)S(N4CCN(C([2H])([2H])[2H])CC4)(=O)=O

Formula C₂₂H₂₇D₃N₆O₄S

M.Wt 477.6

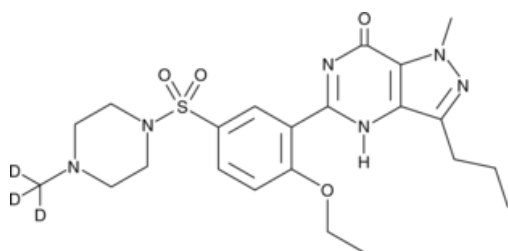
Solubility DMF: 5 mg/ml, DMSO: 10 mg/ml

Storage Store at -20°C, protect from light, stored under nitrogen

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

Sildenafil-d₃ is intended for use as an internal standard for the quantification of sildenafil by GC- or LC-MS. Sildenafil is a potent inhibitor of phosphodiesterase 5 (PDE5) with IC₅₀ values of 3.6 and 3 nM for PDE5 activity in isolated rabbit platelets and human corpus cavernosum, respectively.¹ It is selective for PDE5 over PDE1 and PDE3 (IC₅₀s = 0.26 and 65 μM, respectively). Sildenafil reverses glucose-induced decreases in angiotensin 1 (Ang1) expression and reduction of capillary-like tube formation by mouse dermal endothelial cells *in vitro* and increases the number of functional blood vessels and regional blood flow in the sciatic nerve in a *db/db* mouse model of diabetic peripheral neuropathy.² It increases the ratio of maximum intracavernosal pressure to mean arterial blood pressure (ICP/MAP), a measure of erectile function, in castrated rats when administered at a dose of

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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20 mg/kg per day.³ Sildenafil (0.5 mg/kg) also reduces cardiac arrest and resuscitation-induced increases in angiotensin II, angiotensin converting enzyme (ACE), ACE2, and various angiotensin receptors and increases survival in a porcine model of ischemia/reperfusion injury.⁴ Formulations containing sildenafil have been used in the treatment of erectile dysfunction, pulmonary arterial hypertension, and high-altitude pulmonary edema associated with altitude sickness.

1. Terrett, N.K., Bell, A.S., Brown, D., et al. Sildenafil (Viagra[®]), a potent and selective inhibitor of type 5 cGMP phosphodiesterase with utility for the treatment of male erectile dysfunction *Bioorganic & Medicinal Chemistry Letters* 6(15)1819-1824 (1996)
2. Wang, L., Chopp, M., Szalad, A., et al. Sildenafil ameliorates long term peripheral neuropathy in type II diabetic mice *PLoS One* 10(2)e0118134 (2015)
3. Mulhall, J.P., Verma, N., Deveci, S., et al. Sildenafil citrate improves erectile function after castration in a rat model *BJU Int.* 113(4)656-661 (2014)
4. Wang, G., Zhang, Q., Yuan, W., et al. Sildenafil protects against myocardial ischemia-reperfusion injury following cardiac arrest in a porcine model: Possible role of the renin-angiotensin system *Int. J. Mol. Sci.* 16(11)27015-27031 (2015)

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