PRODUCT INFORMATION

Sildenafil Citrate
Item No. 14008

CAS Registry No.: 171599-83-0
Formal Name: 5-[2-ethoxy-5-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-1,6-dihydro-1-methyl-3-propyl-7H-pyrazolo[4,3-d]pyrimidin-7-one, 2-hydroxy-1,2,3-propanetricarboxylate
Synonyms: Apodefil, Tonafil, UK 92480
MF: C_{22}H_{30}N_{6}O_{4}\cdot C_{6}H_{8}O_{7}
FW: 666.7
Purity: ≥98%
UV/Vis.: λ_{max}^*: 214, 294 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

Sildenafil citrate is supplied as a crystalline solid. A stock solution may be made by dissolving the sildenafil citrate in the solvent of choice. Sildenafil citrate is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of sildenafil citrate in these solvents is approximately 14 and 10 mg/ml, respectively.

Description

Sildenafil is a potent inhibitor of phosphodiesterase 5 (PDE5) with IC_{50} values of 3.6 and 3 nM for PDE5 activity in isolated rabbit platelets and human corpus cavernosum, respectively. It is selective for PDE5 over PDE1 and PDE3 (IC_{50}s = 0.26 and 65 μM, respectively). Sildenafil reverses glucose-induced decreases in angiopoietin 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. 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 20 mg/kg per day. Sildenafil (0.5 mg/kg) also reduces cardiac arrest and resuscitation-induced increases in angiotensin II (Item No. 17150), angiotensin converting enzyme (ACE), ACE2, and various angiotensin receptors and increases survival in a porcine model of ischemia/reperfusion injury. Formulations containing sildenafil have been used in the treatment of erectile dysfunction, pulmonary arterial hypertension, and high-altitude pulmonary edema associated with altitude sickness.

References