T-0156

Product Number T 8067
Storage Temperature 2-8 °C

Synonym: 2-(2-Methylpyridin-4-yl)methyl-4-(3,4,5-trimethoxyphenyl)-8-(pyrimidin-2-yl)methoxy-1,2-dihydro-1-oxo-2,7-naphthyridine-3-carboxylic acid methyl ester hydrochloride

Molecular Formula: C₃₁H₳N₅O₇·HCl
Molecular Weight: 620.07
Supplied as white solid.
Purity: 99% by HPLC.
Melting Point: 155-156.4 °C

T-0156, like the related compound T-1032, is a potent, inhibitor of cyclic GMP-specific phosphodiesterases PDE5 and PDE6. T-0156 specifically inhibited the hydrolysis of cyclic guanosine monophosphate (cGMP) by phosphodiesterase type 5, at low concentration (IC₅₀=0.23 nM), in a competitive manner. T-0156 also inhibited phosphodiesterase type 6 with IC₅₀ value of 56 nM, which was 240-fold higher than that for inhibition of phosphodiesterase type 5. T-0156 had low potencies against phosphodiesterase types 1, 2, 3, and 4 (IC₅₀>10 μM). In the isolated rabbit corpus cavernosum, T-0156 at 10 and 100 nM increased cGMP levels (100 nM T-0156-treated: 6.0+/−1.5 pmol/mg protein, vehicle-treated: 1.1+/−0.4 pmol/mg protein, P<0.05), causing relaxation of the tissue. T-0156 at 1 to 100 nM potentiates the electrical field stimulation-induced relaxation in the isolated rabbit corpus cavernosum in a concentration-dependent manner (100 nM T-0156The effects of intravenous T-0156 or sildenafil on the pelvic nerve stimulation-induced penile tumescence and light-adapted flicker stimulation-induced electroretinogram, parameters of which are reported to be indicators for inhibition of phosphodiesterase type 5 and type 6, respectively. Both compounds potentiate the penile tumescence in a dose-dependent manner. T-0156 at 10 μg/kg and sildenafil at 100 μg/kg showed almost the same potentiation percentage (181.5+/−31.1% and 190.0+/−37.9%) in spite of the plasma concentration of T-0156 being about five times lower than that of sildenafil (16.7+/−1.6 and 78.8+/−5.3 ng/ml), indicating that the effect of T-0156 on tumescence is more potent than that of sildenafil.

Preparation Instructions
T-0156 is soluble in DMSO at 17.3 mg/ml and insoluble in water.

Storage/Stability
Store at 2-8 °C.

References