Selective inhibitor of Ca\(^{2+}\)-calmodulin-dependent protein kinase kinase (K\(_i\) = 80 and 15 ng/ml for inhibition of CaM-KK\(\alpha\) and CaM-KK\(\beta\) respectively).\(^1\) Binds to the ATP-binding site.\(^2\) Displays > 80-fold selectivity over CaMK1, CaMK2, CaMK4, MLCK, PKC, PKA and p42 MAPK. Important tool for probing distinct CaMK pathways in LTP.\(^3\) Reduces starvation-induced autophagosomal membrane formation.\(^4\) Reverses age-associated decline in bone mass.\(^5\) Stimulates osteoblast formation, inhibits osteoclast differentiation.\(^6\)

1) Tokumitsu, et al. (2002), STO-609, a Specific Inhibitor of the Ca\(^{2+}\)/Calmodulin-dependent Protein Kinase Kinase. J. Biol. Chem. 277 15813
4) Pfisterer, et al. (2011) Ca\(^{2+}\)/calmodulin –dependent kinase (CaMK) signaling via CaMK1 and AMP-activated protein kinase contributes to the regulation of WIPI-1 at the onset of autophagy Mol. Pharmacol. 80 1066
5) Pritchard et al. (2015) Inhibition of CaMKK2 reverese age-associated decline in bone mass; Bone, 75 120
6) Cary, et al. (2013) Inhibition of Ca\(^{2+}\)/Calmodulin-dependent protein kinase kinase 2 stimulates osteoblast formation and inhibits osteoclast differentiation. J. Bone Miner. Res. 28 1599
7) Matsukawa et al. (2017) Upregulation of skeletal muscle PGC-1α through the elevation of cyclic AMP levels by Cyanidin-3-glucoside enhances exercise performance; Sci. Rep. 7 44799 [Focus Citation]

**PHYSICAL DATA**

Molecular Weight: 374.35
Molecular Formula: C\(_{19}\)H\(_{10}\)N\(_2\)O\(_3\)·CH\(_3\)COOH
Purity: >98% by TLC
NMR: (Conforms)
Solubility: DMSO (up to 10 mg/ml)
Physical Description: Yellow solid
Storage and Stability: Store as supplied at room temperature for up to 2 years from the date of purchase. Protect from exposure to moisture. Solutions in DMSO may be stored at -20°C for up to 3 months.

Materials provided by Focus Biomolecules are for laboratory research use only and are not intended for human or veterinary applications.

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