



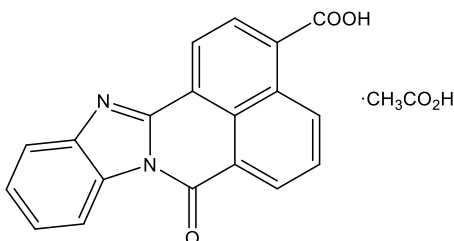
Catalog # 10-1036

STO-609

CAS# 1173022-21-3

7-Oxo-7H-benzimidazo[2,1-a]benz[de]isoquinoline-3-carboxylic acid acetate

Lot # L101231



Selective inhibitor of Ca²⁺-calmodulin-dependent protein kinase kinase (K_i = 80 and 15 ng/ml for inhibition of CaM-KK α and CaM-KK β 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 Ca²⁺/Calmodulin-dependent Protein Kinase Kinase*. J. Biol. Chem. **277** 15813
- 2) Tokumitsu, *et al.* (2003) *A single amino acid difference between alpha and beta Ca²⁺/calmodulin-dependent protein kinase kinase dictates sensitivity to the specific inhibitor, STO-609.* J. Biol. Chem. **278** 10908
- 3) Redondo, *et al.* (2010) *Synaptic tagging and capture: differential role of distinct calcium/calmodulin kinases in protein synthesis-dependent long-term potentiation*. J. Neurosci. **30** 4981
- 4) Pfisterer, *et al.* (2011) *Ca²⁺/calmodulin –dependent kinase (CaMK) signaling via CaMKI 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 reverse age-associated decline in bone mass*; Bone, **75** 120
- 6) Cary, *et al.* (2013) *Inhibition of Ca²⁺/Calmodulin-dependent protein kinase kinase 2 stimulates osteoblast formation and inhibits osteoclast differentiation*. J. Bone Miner. Res. **28** 1599
- 7) OMatsukawa *et al.* (2017) *Upregulation of skeletal muscle PGC-1 α 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: C₁₉H₁₀N₂O₃·CH₃COOH
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.