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PRODUCT INFORMATION



KN-93 (phosphate)

Item No. 21472

CAS Registry No.: 1188890-41-6
Formal Name: N-[2-[[[(E)-3-(4-chlorophenyl)-2-propen-1-yl]methylamino]methyl]phenyl]-N-(2-hydroxyethyl)-4-methoxybenzenesulfonamide, monophosphate

MF: C₂₆H₂₉ClN₂O₄S • H₃PO₄

FW: 599.0

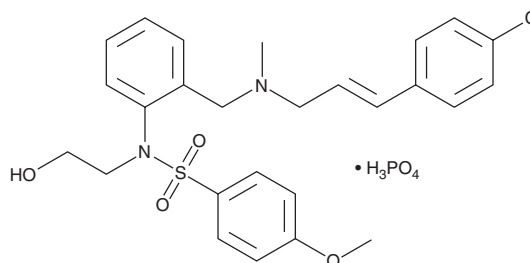
Purity: ≥98%

UV/Vis.: λ_{max}: 252 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly



Laboratory Procedures

KN-93 (phosphate) is supplied as a crystalline solid. A stock solution may be made by dissolving the KN-93 (phosphate) in the solvent of choice. KN-93 (phosphate) is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of KN-93 (phosphate) in these solvents is approximately 30 and 25 mg/ml, respectively. KN-93 (phosphate) is also sparingly soluble in ethanol.

KN-93 (phosphate) is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

KN-93 (phosphate) is a potent and selective inhibitor of Ca²⁺/calmodulin-dependent kinase II (CaMKII) (K_i = 370 nM), inhibiting both the α- and β-subunits of CaMKII.¹ It does not have significant effects on cAMP-dependent protein kinase, Ca²⁺/phospholipid-dependent protein kinase, myosin light chain kinase, or Ca²⁺ phosphodiesterase activity. It inhibits histamine-induced aminopyrine uptake in parietal cells (IC₅₀ = 300 nM).² KN-93 can block voltage-gated potassium (K_v) channels when applied extracellularly, independent of its CaMKII action.³ More recently, KN-93 has been used to implicate roles for CaMKII in Ca²⁺-induced Ca²⁺ release in cardiac myocytes, constitutive phosphorylation of 5-lipoxygenase in 3T3 cells, and Ca²⁺-dependent activation of HIF-1α in colon cancer cells.⁴⁻⁶

References

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2. Mamiya, N., Goldenring, J.R., Tsunoda, Y., *et al.* Biochem. Biophys. Res. Commun. **195(2)**, 608-615 (1993).
3. Rezazadeh, S., Claydon, T.W. and Fedida, D.J. Pharmacol. Exp. Ther. **317(1)**, 292-299 (2006).
4. Oestreich, E.A., Malik, S., Goonasekera, S.A., *et al.* J. Biol. Chem. **284(3)**, 1514-1522 (2009).
5. Flamand, N., Luo, M., Peters-Golden, M., *et al.* J. Biol. Chem. **284(1)**, 306-313 (2009).
6. Riganti, C., Doublier, S., Viariso, D., *et al.* Br. J. Pharmacol. **156**, 1054-1066 (2009).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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