3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

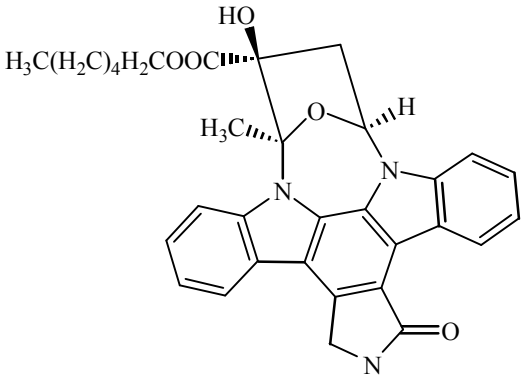
Product Information

KT 5720

Catalog Number **K3761**
Storage Temperature –20 °C

CAS RN 108068-98-0

Product Description
Molecular Formula: $C_{32}H_{31}N_3O_5$
Molecular Weight: 537.61



cAMP-dependent protein kinase (PKA) is a serine-threonine kinase that is an important enzyme in the signaling pathway of the second messenger cyclic adenosine 3′,5′-monophosphate (cAMP). Through phosphorylation of target proteins, PKA controls many biochemical events in the cell including regulation of metabolism, ion transport, and gene transcription. The PKA holoenzyme is composed of two regulatory and two catalytic subunits. When cAMP binds to the regulatory subunits, the catalytic subunits dissociate from the holoenzyme complex and become constitutively active. Several human PKA subunits have been characterized at the cDNA level.[1]

KT 5720 is a hexylester derivative of K-252a that is a potent and selective inhibitor of PKA.[2] KT 5720 has been used in many studies to characterize the role of PKA in various cellular and physiological events.

For example, PKA activators suppress lectin-induced apoptosis of human leukemia HL-60 cells. The subsequent addition of KT 5720 reversed this suppression.[3] In a second study, treatment of renal cells with cAMP ameliorated free radical-induced renal cell injury. KT 5720 blocked the modulating effect of cAMP.[4]

In experiments on memory development, hippocampal infusion of a dose of KT 5720 that inhibited PKA activity by 90% at various times post-training disrupted the formation of either long-term or short-term memory in a time-dependent manner.[5]

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
KT 5720 is soluble in methanol at 5 mg/ml.

Storage/Stability
Store the product desiccated at –20 °C protected from light.

References
1. Casey, M., et al., Mutations in the protein kinase A R1alpha regulatory subunit cause familial cardiac myxomas and Carney complex. J. Clin. Invest., **106**, R31-R38 (2000).
2. Huang, Y.Y., et al., Both protein kinase A and mitogen-activated protein kinase are required in the amygdala for the macromolecular synthesis-dependent late phase of long-term potentiation. J. Neurosci., 20, 6317-6325 (2000).
3. Pae, H.O., et al., Protein kinase A or C modulates the apoptosis induced by lectin II isolated from Korean mistletoe, *Viscum album var. Coloratum*, in the human leukemic HL-60 cells. Immunopharmacol. Immunotoxicol., **22**, 279-295 (2000).
4. Kohda, Y., and Gemba, M., Modulation by cyclic AMP and phorbol myristate acetate of cephaloridine-induced injury in rat renal cortical slices. J. Pharmacol., **85**, 54-59 (2001).
5. Vianna, M.R., et al., Intrahippocampal infusion of an inhibitor of protein kinase A separates short- from long-term memory. Behav. Pharmacol., **10**, 223-227 (1999).

AH,RC,KAA,MAM 12/10-1