Product Data Sheet

Product Name: PKI 14-22 amide, myristoylated
Cat. No.: GC12321

Chemical Properties

Cas. No.	201422-03-9
Chemical Name	(S,Z)-N'1-((S,Z)-1-hydroxy-1-(((2S,3S)-1-hydroxy-1-imino-3-methylpentan-2-yl)imino)propan-2-yl)-2-((Z)-((2S,3Z,5S,6Z,9Z,11S,12Z,14S,15Z,18Z)-2,5,14-tris(3-guanidinopropyl)-1,4,7,10,13,16,19-heptahydroxy-11-((R)-1-hydroxyethyl)-3,6,9,12,15,18-hexaazadotria
SMILES	CCCCCCCCCCCCC/C(O)=N/C/C(O)=N/[C@@](/C(O)=N/[C@@](/C(O)=N/C/C(O)=N/[C@@](/C(O)=N/[C@@](/C(O)=N/[C@@](/C(O)=N/[C@@](/C(O)=N/[C@@](C(O)=N)([H])[C@@](CC)([H])C)([H])C)([H])CC(O)=N)([H])CCCNC(N)=N)([H])CCCNC(N)=N)([H])[C@@](O)([H])C)([H])CCCNC(N)=N
Formula	$C_{53}H_{100}N_{20}O_{12}$
M.Wt	1209.5
Solubility	Soluble to 1 mg/ml in DMSO
Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.
Structure	

Background

Myristoylated PKI (14-22) amide is an effective inhibitor of cAMP-dependent protein kinase (PKA) and blocks hyperalgesia produced by spinal administration of 8-bromo-cAMP. [1]

PKAs are the major mediators of cAMP signaling in eukaryotes. PKAs play an important role in several biological processes such as gene expression, apoptosis, tissue differentiation and cellular proliferation. PKAS play these functions through the phosphorylation of protein substrates at serine/threonine residues. [2]

PKAs play a key role in neutrophil phagocytosis. CAMP/PKAs regulate F-actin

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reorganization during receptor-mediated phagocytosis, particularly triggered by IgG-FcR interaction. Myristoylated PKI 14-22 amide reduced the IgG-mediated phagocytic response in a manner of dose-dependent. When the concentration is higher than 10 μM, PKI 14-22 amide can inhibit neutrophil adhesion, which make the phagocytosis measurements impossible to perform. [1]

Because the unregulated activity of PKA in mammalian cells has been implicated in the pathogenesis of several types of cancer, the development of PKI (14–22) amide has been pursued as a potential treatment for these types of cancer and many other diseases related with PKAs.[1,2]

References:
[1] Ydrenius L1, Majeed M, etal. , Activation of cAMP-dependent protein kinase is necessary for actin rearrangements in human neutrophils during phagocytosis. J Leukoc Biol. 2000 Apr;67(4):520-8.
[2] Swierczewski BE, Davies SJ. Developmental regulation of protein kinase A expression and activity in Schistosoma mansoni. Int J Parasitol. 2010 Jul;40(8):929-35.