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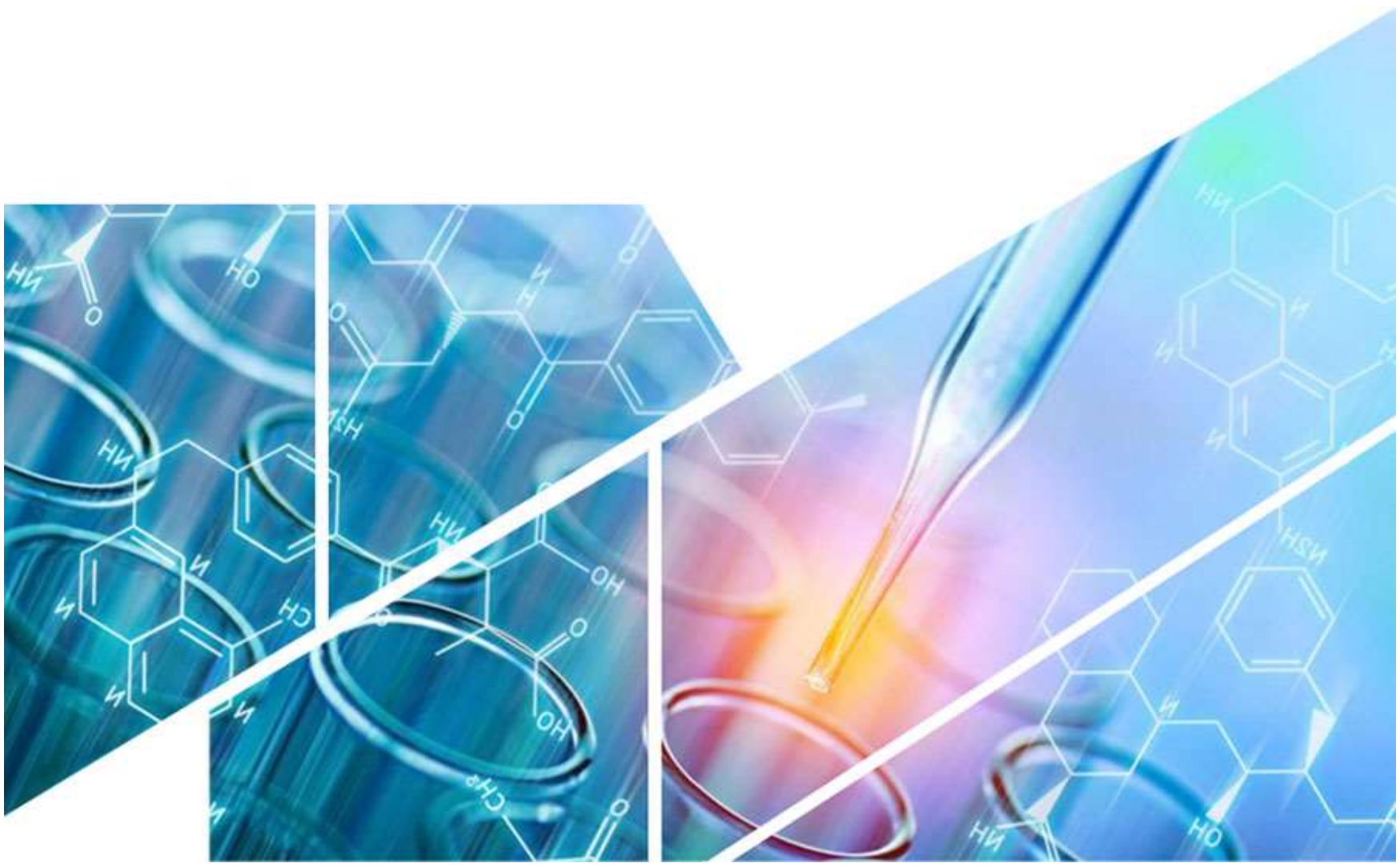
CaMK-II (Ca2+/calmodulin-dependent protein kinase II) Inhibitors (inhibitors, agonists and modulators)

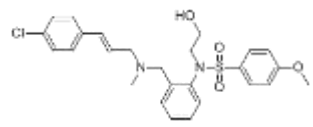


Ca2+/calmodulin-dependent protein kinase II (CaMK II) is a well-known CaM binding protein and an important enzyme in Ca2+ mediated signal transduction systems. CaMK II is also necessary for Ca2+ homeostasis and reuptake in cardiomyocytes, chloride transport in epithelia, positive T-cell selection, and CD8 T-cell activation. Misregulation of CaMKII is linked to Alzheimer's disease, Angelman syndrome, and heart arrhythmia.

KN 93 - CAS 1188890-40-5

Catalog Number:

Molecular Weight: 501.04 **Molecular Formula:** C26H29ClN2O4S

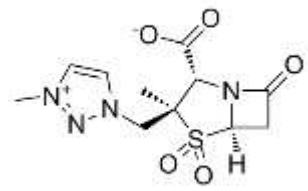


Description: KN 93 is an inhibitor of multifunctional Calmodulin-dependent protein kinase (CaMKII; Ki value 0.37 μM for inhibition of CaMKII phosphorylating activity). KN93 also affects CaV1.3 and CaV1.2 calcium channels in a CaMKII-independent manner.

MLCK inhibitor peptide 18 - CAS 224579-74-2

Catalog Number:

Molecular Weight: 1324.62 **Molecular Formula:** C60H105N23O11

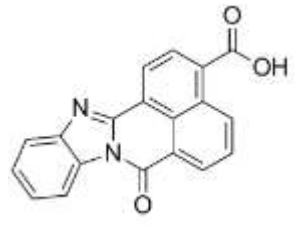


Description: A myosin light chain kinase (MLCK) inhibitor (IC50= 50 nM), and inhibits CaM kinase IIonly at 4000-fold higher concentrations.

STO-609 - CAS 52029-86-4

Catalog Number:

Molecular Weight: 314.29 **Molecular Formula:** C19H10N2O3

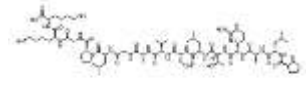


Description: STO-609, a naphthoyl fused benzimidazole cell-permeable compound, is a potent and ATP-competitive inhibitor of the Ca2+/Calmodulin-dependent protein kinase kinase (CaM-KK) (CaM-KKα: Ki = 0.21 μM; CaM-KKβ: Ki = 40 nM). It inhibits CaMKK α and CaMKK β activities, and also suppresses AMP-activated protein kinase phosphorylation via binding to the CaMKK catalytic domain.

Syntide 2 - CAS 108334-68-5

Catalog Number:

Molecular Weight: 1507.82 **Molecular Formula:** C68H122N20O18



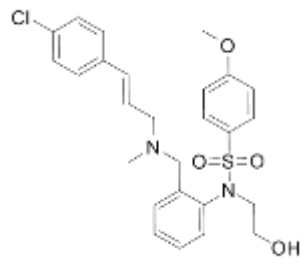
Description: Syntide 2, a synthetic peptide, is recognized as a substrate by Ca2+/calmodulin-dependent protein kinase II (CaMKII) (Ki= 12 μM) and protein kinase C (Km = 11 μM).

KN-93 - CAS 139298-40-1

Catalog Number: 139298-40-1

Molecular Weight: 501.04 **Molecular Formula:** C26H29ClN2O4S

Description: KN-93 is a selective Ca2+/calmodulin-dependent protein kinase II inhibitor, which has been implicated in the regulation of smooth muscle contractility.

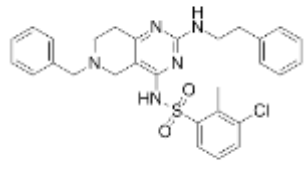


CaMKII-IN-1 - CAS 1208123-85-6

Catalog Number: 1208123-85-6

Molecular Weight: 548.1 **Molecular Formula:** C29H30ClN5O2S

Description: CaMKII-IN-1 is a potent and highly selective CaMKII inhibitor with IC50 of 63 nM; significantly high selectivity against CaMKIV, MLCK, p38a, Akt1, and PKC.

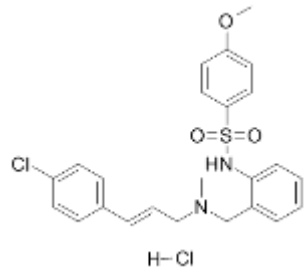


KN-92 hydrochloride - CAS 1431698-47-3

Catalog Number: 1431698-47-3

Molecular Weight: 493.45 **Molecular Formula:** C24H26Cl2N2O3S

Description: KN-92 is an inactive derivative of KN-93, the selective inhibitor of Ca2+/calmodulin-dependent kinase type II (CaMKII). At concentrations up to 25 μM, KN-92 is ineffective at inhibiting CaMKII or arresting cell growth of NIH 3T3 fibroblasts. It is intended to be used as a control compound in studies designed to elucidate the antagonist activities of KN-93.

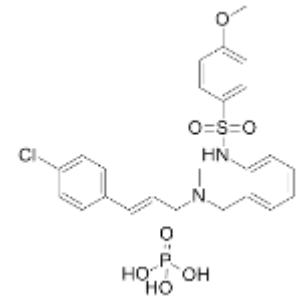


KN-92 phosphate - CAS 1135280-28-2

Catalog Number: 1135280-28-2

Molecular Weight: 554.98 **Molecular Formula:** C24H28ClN2O7PS

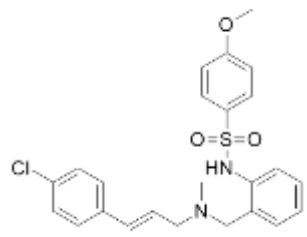
Description: KN-92 is an inactive analog of the CaM kinase II inhibitor KN 93.



KN-92 - CAS 176708-42-2

Catalog Number: 176708-42-2

Molecular Weight: 456.98 **Molecular Formula:** C24H25ClN2O3S



Description: KN-92 is intended to be used as a control compound in studies designed to elucidate the antagonist activities of KN-93. KN-93 inhibits histamine-induced aminopyrine uptake in parietal cells (IC50 = 300 nM). 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 cell.