Adenylate Cyclase

Adenylyl cyclase

Adenylyl cyclases (ACs) are enzymes that catalyze the production of cyclic adenosine monophosphate (cAMP) from adenosine triphosphate (ATP). Adenylyl cyclases integrate positive and negative signals that act through G protein-coupled cell-surface receptors with other extracellular stimuli to finely regulate levels of cAMP within the cell. Humans express nine isoforms of membranous ACs and a soluble AC.

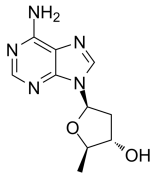
Based on regulatory properties, transmembrane ACs are classified into four groups: Group I: Ca^{2+}/calmodulin-stimulated AC1, AC3, AC8; Group II: Gβγ-stimulated and Ca^{2+}-insensitive AC2, AC4, AC7; Group III: Gαi/Ca^{2+}/PKA-inhibited AC5, AC6; Group IV: forskolin/Ca^{2+}/Gβγ-insensitive AC9. The soluble AC, unlike the transmembrane ACs, is insensitive to hormones, G proteins and forskolin, a diterpene extracted from the root of the plant Coleus forskohlii that directly activates all isoforms of transmembrane ACs except AC9.

Adenylate Cyclase Inhibitors, Antagonists & Activators

2',5'-Dideoxyadenosine

Cat. No.: HY-135878

2',5'-Dideoxyadenosine is a potent and non-competitive **adenylyl cyclase** inhibitor via binding the P-site with an IC_{50} of 3 μM . 2',5'-Dideoxyadenosine is a nucleoside analog and exerts a potent **antiadrenergic** action in heart.

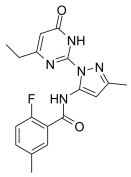


Purity: 99.86%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg, 250 mg

AC1-IN-1

Cat. No.: HY-145830

AC1-IN-1 is a potent and selective **Adenylyl cyclase type 1 (AC1)** inhibitor with an IC_{50} of 0.54 μM. AC1-IN-1 displays modest antiallodynic effects in a mouse model of inflammatory pain. AC1-IN-1 has CNS activity.

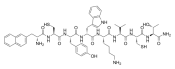


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

Angiopeptin

Cat. No.: HY-P2090

Angiopeptin, a cyclic octapeptide analogue of somatostatin, is a weak **sst_2/sst_5** receptor partial agonist with IC_{50} values of 0.26nM and 6.92nM, respectively.

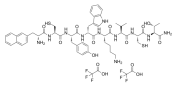


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

Angiopeptin TFA

Cat. No.: HY-P2090A

Angiopeptin TFA, a cyclic octapeptide analogue of somatostatin, is a weak **sst_2/sst_5** receptor partial agonist with IC_{50} values of 0.26nM and 6.92nM, respectively.

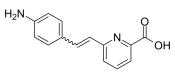


Purity: 99.16%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 25 mg

CB-7921220

Cat. No.: HY-101862

CB-7921220 is an **adenylate cyclase** inhibitor.

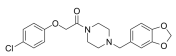


Purity: ≥98.0%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 2 mg, 5 mg, 10 mg, 25 mg, 50 mg

Fipexide

Cat. No.: HY-B1124

Fipexide, a parachloro-phenossiacetic acid derivative, is a nootropic drug. Fipexide reduces striatal **adenylate cyclase** activity. Fipexide has positive effect on cognitive performance by **dopaminergic** neurotransmission. Fipexide is used for senile dementia research.

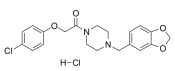


Purity: 99.99%
Clinical Data: Launched
Size: 10 mM × 1 mL, 100 mg

Fipexide hydrochloride

Cat. No.: HY-B1124A

Fipexide hydrochloride, a parachloro-phenossiacetic acid derivative, is a nootropic drug. Fipexide hydrochloride reduces striatal **adenylate cyclase** activity.



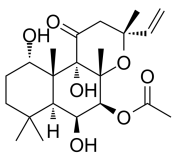
Purity: >98%
Clinical Data: Launched
Size: 1 mg, 5 mg

Forskolin

(Coleonol; Colforsin)

Cat. No.: HY-15371

Forskolin (Coleonol) is a potent **adenylate cyclase** activator with an IC_{50} of 41 nM and an EC_{50} of 0.5 μM for **type I adenylyl cyclase**. Forskolin is also an inducer of intracellular **cAMP** formation.



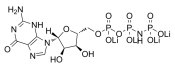
Purity: 99.82%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 10 mg, 50 mg, 100 mg, 200 mg

Guanylyl imidodiphosphate lithium

(Gpp(NH)p lithium)

Cat. No.: HY-137167

Guanylyl imidodiphosphate (Gpp(NH)p) lithium, a non-hydrolyzable GTP analogue, increases **adenylate cyclase** activity.

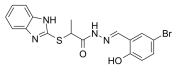


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

KH7

Cat. No.: HY-103194

KH7 is a **soluble adenylyl cyclase (sAC)**-specific inhibitor, with IC_{50}s of 3-10 μM toward both recombinant purified human sAC_t protein and heterologously expressed sACt in cellular assays. KH7 is also a **cAMP** inhibitor.

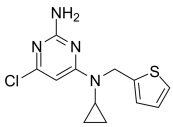


Purity: 98.19%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

LRE1

Cat. No.: HY-100524

LRE1 is a specific and allosteric inhibitor of soluble **adenylyl cyclase**.



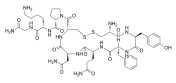
Purity: 99.59%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

Lysipressin

(Lysine vasopressin; [Lys8]-Vasopressin)

Cat. No.: HY-P0004

Lysipressin is Antidiuretic hormone that have been found in pigs and some marsupial families. Induces contraction of the rabbit urinary bladder smooth muscle, activate adenylate-cyclase.

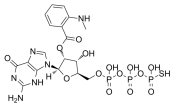


Purity: 99.76%
Clinical Data: Launched
Size: 10 mM × 1 mL, 2 mg, 5 mg, 10 mg, 50 mg

Mant-GTPγS

Cat. No.: HY-115748

Mant-GTPγS, a GTP mimetic, is a potent competitive **adenylyl cyclase (AC)** inhibitor. Mant-GTPγS is a potent **YdeH** inhibitor.



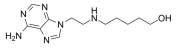
Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

NB001

(HTS 09836)

Cat. No.: HY-14425

NB001 (HTS 09836) is an **adenylcyclase 1 (AC1)** inhibitor which has effect on neural and non-neural pain by modulating AC1 activity.



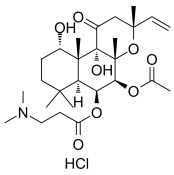
Purity: 98.21%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

NKH477

(Colforsin dapropate hydrochloride)

Cat. No.: HY-103193

NKH477 (Colforsin dapropate hydrochloride) directly activates the catalytic unit of **adenylate cyclase** and increases intracellular cAMP. NKH477 is a forskolin derivative that improves cardiac failure mainly through its beneficial effects on diastolic cardiac function.

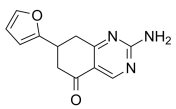


Purity: ≥98.0%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 25 mg, 50 mg

NKY80

Cat. No.: HY-103195

NKY80 is a potent, selective and non-competitive **adenylyl cyclase (AC)** type V isoform inhibitor with IC_{50}s of 8.3 μM, 132 μM and 1.7 mM for type V, Ⅲ and Ⅱ, respectively. NKY80 is a non-nucleoside quinazolinone and regulates the AC catalytic activity in heart and lung tissues.

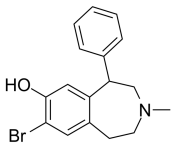


Purity: 99.77%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 10 mg, 25 mg, 50 mg, 100 mg

SKF-83566

Cat. No.: HY-103430A

SKF-83566 is a potent, blood-brain permeable and orally active **D1-like dopamine receptor (D1DR)** antagonist and a weaker competitive antagonist at the vascular 5-HT_2 receptor (K_i=11 nM).

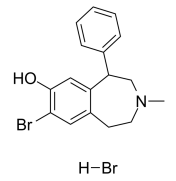


Purity: 99.86%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 25 mg

SKF-83566 hydrobromide

Cat. No.: HY-103430

SKF-83566 hydrobromide is a potent, blood-brain permeable and orally active **D1-like dopamine receptor (D1DR)** antagonist and a weaker competitive antagonist at the vascular 5-HT_2 receptor (K_i=11 nM).

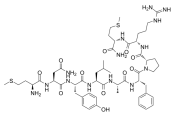


Purity: >98%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 25 mg

Small Cardioactive Peptide B (SCPB)

Cat. No.: HY-P1495

Small Cardioactive Peptide B (SCP_B), a neurally active peptide, stimulates **adenylate cyclase** activity in particulate fractions of both heart and gill tissues with EC_{50}s of 0.1 and 1.0 μM, respectively.

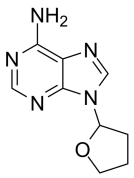


Purity: 98.10%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg, 10 mg

SQ22536

Cat. No.: HY-100396

SQ22536 is an effective **adenylate cyclase** (**AC**) inhibitor.

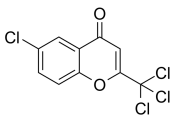


Purity: 98.41%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg, 200 mg

ST034307

Cat. No.: HY-101279

ST034307 is a potent and selective **adenylyl cyclase 1 (AC1)** inhibitor, with IC_{50} of 2.3 μM.

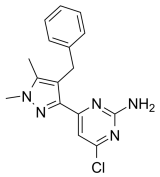


Purity: 95.15%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

TDI-10229

Cat. No.: HY-132298

TDI-10229 is a potent and orally bioavailable inhibitor of soluble adenylyl cyclase **(sAC, ADCY10)**.



Purity: 99.41%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

TIP 39, Tuberoinfundibular Neuropeptide

Cat. No.: HY-P1852

TIP 39, Tuberoinfundibular Neuropeptide is a neuropeptide and parathyroid hormone 2 receptor (PTH2R) agonist. TIP 39 is highly conserved among species. TIP39 from all species activates adenylyl cyclase and elevates intracellular calcium levels through parathyroid hormone 2 receptor (PTH2R).

Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg