Guanylate Cyclase

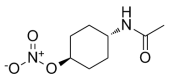
Guanylatecyclase (guanylylcyclase, GC) is a lyase enzyme. Guanylylcyclase is often part of the G protein signaling cascade that is activated by low intracellular calcium levels and inhibited by high intracellular calcium levels. In response to calcium levels, guanylylcyclase synthesizes cGMP from GTP. cGMP keeps cGMP-gated channels open, allowing for the entry of calcium into the cell. The guanylylcyclase activity is modulated by the calcium-binding guanylylcyclase activating proteins (GCAP1 and GCAP2). A key mechanism by which Ca^{2+} modulates phototransduction in rods involves the synthesis of cGMP by guanylylcyclase (GC), regulated by a pair of Ca^{2+}-binding GuanylylCyclase Activating Proteins (GCAP1 and GCAP2).

The second messenger cyclic guanosine monophosphate (cGMP) is generated by the heterodimeric α/β-heme protein soluble guanylatecyclase (sGC) upon activation by its endogenous ligand nitric oxide (NO). NO binds to the reduced prosthetic heme group bound to the β subunit. cGMP is a key mediator of the cardiovascular system and its effects lead to vasodilation, inhibition of smooth muscle proliferation, blockade of leukocyte infiltration and inhibition of platelet aggregation. Impairment of the cytoprotective NO/sGC/cGMP-signalling pathway is associated with the development of serious cardiovascular diseases such as hypertension or heart failure.

(4-Acetamidocyclohexyl) nitrate

(BM121307) Cat. No.: HY-100295

(4-Acetamidocyclohexyl) nitrate (BM121307) is a **guanylate cyclase** activator.

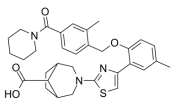


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

(Rac)-BI 703704

Cat. No.: HY-117962

(Rac)-BI 703704 is a potent **soluble guanylyl cyclase (sGC)** activator. (Rac)-BI 703704 reduces progression of renal damage in the ZSF1 rat, and highlight the potential of sGC activation as an effective therapy for diabetic nephropathy.

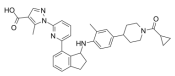


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

(Rac)-MGV354

Cat. No.: HY-117917

(Rac)-MGV354 is the racemate of MGV354. MGV354 is a soluble guanylate cyclase (sGC) activator with EC_{50}s of <0.5 nM, and 5 nM in CHO and GTM-3 E cells, respectively.

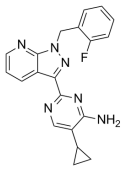


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

BAY 41-2272

Cat. No.: HY-12376

BAY 41-2272 is a soluble guanylate cyclases (sGC) activator.

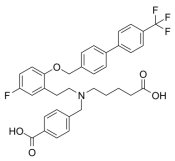


Purity: 99.97%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

BAY 60-2770

Cat. No.: HY-113926

BAY 60-2770 is a potent, selective, and orally active **soluble guanylyl cyclase (sGC)** activator. BAY 60-2770 increases the activity of sGC in a nitric oxide-independent manner. BAY 60-2770 shows antifibrotic effect.

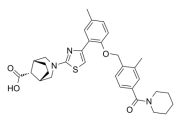


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

BI 703704

Cat. No.: HY-117962A

BI 703704 is a potent **soluble guanylate cyclase (sGC)** activator. BI 703704 inhibits the progression of diabetic nephropathy in the ZSF1 rat.

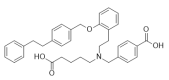


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

Cinaciguat

(BAY 58-2667) Cat. No.: HY-14181

Cinaciguat is an activator of **guanylate cyclase (sGC)**, and used for acute decompensated heart failure.

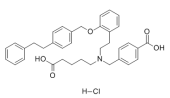


Purity: 99.40%
Clinical Data: Phase 2
Size: 10 mM × 1 mL, 2 mg, 5 mg, 10 mg, 50 mg

Cinaciguat hydrochloride

(BAY 58-2667 hydrochloride) Cat. No.: HY-14181A

Cinaciguat hydrochloride is a potent soluble **guanylate cyclase** (**GC**) activator with EC_{50} of 15 nM in platelets.

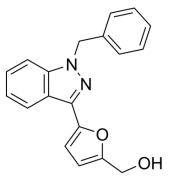


Purity: 99.64%
Clinical Data: Phase 2
Size: 10 mM × 1 mL, 2 mg, 5 mg, 10 mg, 50 mg

Lificiguat

(YC-1) Cat. No.: HY-14927

Lificiguat binds to the β subunit of **soluble guanylyl cyclase**(**sGC**) with K_d of 0.6-1.1 μM in the presence of CO.

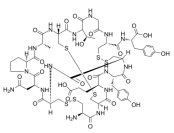


Purity: 99.83%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg, 200 mg

Linaclotide

Cat. No.: HY-17584

Linaclotide is a potent and selective **guanylate cyclase C** agonist; developed for the treatment of constipation-predominant irritable bowel syndrome (IBS-C) and chronic constipation.

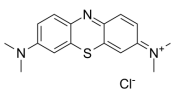


Purity: 98.18%
Clinical Data: Launched
Size: 10 mM × 1 mL, 5 mg, 10 mg

Methylene Blue

(Basic Blue 9; Methylthioninium chloride; CI-52015) Cat. No.: HY-14536

Methylene blue (Basic Blue 9) is a **guanylyl cyclase (sGC)**, **monoamine oxidase A (MAO-A)** and **NO synthase (NOS)** inhibitor. Methylene blue is a vasopressor and is often used as a dye in several medical procedures.

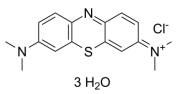


Purity: >98.0%
Clinical Data: Launched
Size: 100 mg, 500 mg

Methylene blue trihydrate

(C.I. Basic Blue 9 trihydrate) Cat. No.: HY-B1359

Methylene blue trihydrate (C.I. Basic Blue 9 trihydrate) is a **guanylyl cyclase (sGC)**, **monoamine oxidase A (MAO-A)** and **NO synthase (NOS)** inhibitor. Methylene blue trihydrate is a vasopressor and is often used as a dye in several medical procedures.

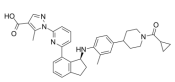


Purity: >97.0%
Clinical Data: Launched
Size: 10 mM × 1 mL, 500 mg, 1 g

MGV354

Cat. No.: HY-111516

MGV354 is a **soluble guanylate cyclase** (**sGC**) activator with **EC_{50}**s of <0.5 nM, and 5 nM in CHO and GTM-3 E cells, respectively.

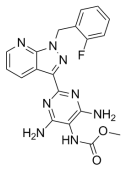


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

Nelociguat

(BAY60-4552) Cat. No.: HY-78237

Nelociguat (BAY60-4552) is a nitric oxide sensitive soluble guanylate cyclase stimulator.

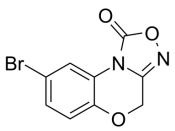


Purity: 99.73%
Clinical Data: Phase 2
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg, 200 mg

NS-2028

Cat. No.: HY-12379

NS-2028 is a highly selective soluble Guanylyl Cyclase (sGC) inhibitor with **IC_{50}** values of 30 nM and 200 nM for basal and NO-stimulated enzyme activity.

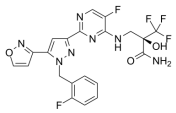


Purity: 99.91%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

Olinciguat

(IW-1701) Cat. No.: HY-109066

Olinciguat (IW-1701) is an oral **guanylate cyclase** (sGC) stimulator with concentration-dependent stimulation of sGC in purified rat and human enzyme assays and a whole cell assay.

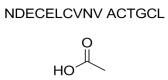


Purity: 98.44%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 20 mg

Plecanatide acetate

Cat. No.: HY-108741A

Plecanatide acetate is a **guanylate cyclase-C (GC-C) receptor** agonist, with an **EC_{50}** of 190 nM in T84 cells. Plecanatide acetate shows anti-inflammatory activity in models of murine colitis.

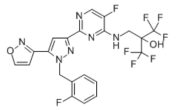


Purity: 99.26%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg

Praliciguat

(IW-1973) Cat. No.: HY-109039

Praliciguat (IW-1973) is a potent and orally active **soluble guanylate cyclase** stimulator, enhances NO signaling, acts as a vasodilator. Praliciguat (IW-1973) stimulates sGC in HEK-293 cells with an **EC_{50}** of 197 nM.

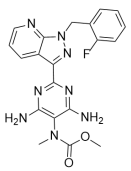


Purity: >98%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 50 mg, 100 mg

Riociguat

(BAY 632521) Cat. No.: HY-14779

Riociguat is an oral stimulator of soluble guanylate cyclase (**sGC**) used in the treatment of pulmonary hypertension.

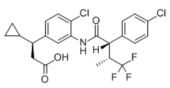


Purity: 99.58%
Clinical Data: Launched
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg, 200 mg

Runcaciguat

Cat. No.: HY-109136

Runcaciguat is an orally active stimulator of **soluble guanylate cyclase**, and is used in the research of cardiovascular and renal diseases combined with selective partial adenosine A1 receptor agonists.

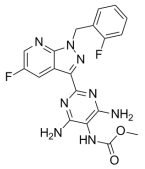


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

Vericiguat

(BAY1021189) **Cat. No.:** HY-16774

Vericiguat (BAY1021189) is a potent, orally available and soluble **guanylate cyclase** stimulator.



Purity: 99.09%
Clinical Data: Phase 3
Size: 10 mM × 1 mL, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg