CRISPR/Cas9

The CRISPR/Cas9 system derived from bacterial adaptive immune systems is one of the most powerful genome editing technology. It is an RNA-guided genome editing tool that consists of a Cas9 nuclease and a single-guide RNA (sgRNA). By base-pairing with a DNA target sequence, the sgRNA enables Cas9 to recognize and cut a specific target DNA sequence, generating double strand breaks (DSBs) that trigger cell repair mechanisms and mutations at or near the DSBs sites. CRISPR/Cas9 technology has been studied extensively and its application has been expanded from the modification of the gene in cells to organisms. The potential role of CRISPR/Cas9 in gene therapy has made it to become one of the hottest pots in cancer treatment. Different concepts of CRISPR/Cas9-mediated cancer therapy, including tumor-related genes manipulating, tumor immunotherapy, tumor research modelling and anti-cancer drug resistance overcoming are established in various cancer types.

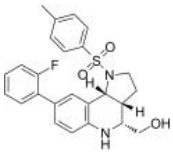
The greatest advantages of the CRISPR-Cas9 system are its simplicity and wide applicability in genome manipulations of almost all biological systems tested to date, including cell lines, stem cells, yeasts, worms, insects, rodents, and mammals. For a targetable DNA site, only a corresponding 20 nucleotide gRNA is needed to guide the CRISPR-Cas9 to cut the target DNA at the desired location. The repair of the broken DNA ends occurs either through NHEJ to generate indels, which has been used to generate random genomic mutations or through HDR in the presence of donor oligonucleotides or DNA fragments containing homologous sequences flanking the DSB sites to generate precise site-directed nucleotide or large gene replacements, leading to generation of targeted gene mutations or corrections.

CRISPR/Cas9 Inhibitors, Agonists & Activators

BRD0539

Cat. No.: HY-136251

BRD0539 is a cell-permeable and non-toxic inhibitor of **CRISPR-Cas9**. BRD0539 inhibits Streptococcus pyogenes Cas9 (**SpCas9**) (apparent IC_{50}=22 μM) in an in vitro DNA cleavage assay.



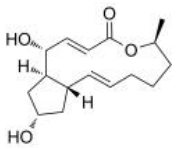
Purity: >98%
Clinical Data: No Development Reported
Size: 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

Brefeldin A

(BFA; Cyanein; Decumbin)

Cat. No.: HY-16592

Brefeldin A (BFA) is a lactone antibiotic and a specific inhibitor of **protein trafficking**. Brefeldin A blocks the transport of secreted and membrane proteins from endoplasmic reticulum to Golgi apparatus. Brefeldin A is also an **autophagy** and **mitophagy** inhibitor.

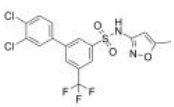


Purity: 99.87%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

Cas9-IN-1

Cat. No.: HY-144118

Cas9-IN-1 is a potent **Cas9** inhibitor (IC_{50}=7.02 μM), acting by binding to apo-Cas9 to prevent Cas9:gRNA complex formation.

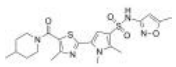


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

Cas9-IN-2

Cat. No.: HY-144119

Cas9-IN-2 is a potent **Cas9** inhibitor (IC_{50}=246 μM), Cas9-IN-2 acts by binding to apo-Cas9 to prevent Cas9:gRNA complex formation, which can potentially be applied to modulate and control Cas9 activity in various applications.

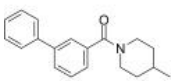


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

Cas9-IN-3

Cat. No.: HY-145692

Cas9-IN-3 is a potent **Cas9** inhibitor (IC_{50}=28 μM). CRISPR/Cas systems have revolutionized gene editing in various species.

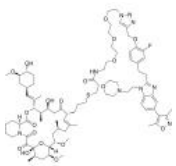


Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

CEM114

Cat. No.: HY-136572

CEM114 is an effective chemical **epigenetic** modifier (CEM) that recruits endogenous chromatin machinery through CRISPR-Cas9 systems.



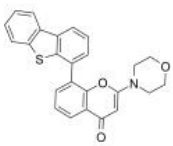
Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

KU-57788

(NU7441)

Cat. No.: HY-11006

KU-57788 (NU7441) is a highly potent and selective **DNA-PK** inhibitor with an IC_{50} of 14 nM. KU-57788 is an NHEJ pathway inhibitor. KU-57788 also inhibits PI3K and mTOR with IC_{50}s of 5.0 and 1.7 μM, respectively.

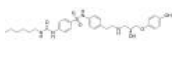


Purity: 99.35%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

L755507

Cat. No.: HY-19334

L755507 is a potent, selective agonist of β_3-**AR** with an IC_{50} of 35 nM. L755507 enhances the homology-directed repair (HDR)-mediated genome editing in CRISPR/Cas9 nickase system.



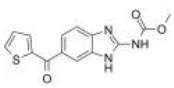
Purity: 98.33%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg

Nocodazole

(Oncodazole; R17934)

Cat. No.: HY-13520

Nocodazole (Oncodazole) is a rapidly-reversible inhibitor of **microtubule**. Nocodazole binds to β-tubulin and disrupts microtubule assembly/disassembly dynamics, which prevents mitosis and induces apoptosis in tumor cells.

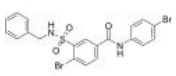


Purity: 99.66%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 10 mg, 50 mg, 100 mg

RS-1

Cat. No.: HY-19793

RS-1 is a **RAD51** activator, and also increases **CRISPR/Cas9**-mediated knock-in efficiencies.



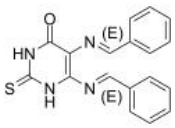
Purity: 98.95%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

Tel: 609-228-6898 Fax: 609-228-5909 Email: sales@MedChemExpress.com

SCR7

Cat. No.: HY-12742

SCR7 is an unstable form that can be autocyclized into a stable form SCR7 pyrazine. SCR7 pyrazine is a **DNA ligase IV** inhibitor that blocks **nonhomologous end-joining (NHEJ)** in a ligase IV-dependent manner.

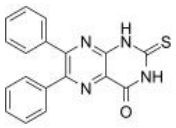


Purity: 98.22%
Clinical Data: No Development Reported
Size: 5 mg

SCR7 pyrazine

Cat. No.: HY-107845

SCR7 pyrazine is a **DNA ligase IV** inhibitor that blocks **nonhomologous end-joining (NHEJ)** in a ligase IV-dependent manner. SCR7 pyrazine is also a **CRISPR/Cas9** enhancer which increases the efficiency of Cas9-mediated homology-directed repair (HDR).



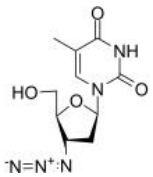
Purity: 98.70%
Clinical Data: No Development Reported
Size: 10 mM × 1 mL, 5 mg, 10 mg, 25 mg, 50 mg

Zidovudine

(Azidothymidine; AZT; ZDV)

Cat. No.: HY-17413

Zidovudine is a nucleoside reverse transcriptase inhibitor (**NRTI**), widely used to treat HIV infection. Zidovudine increases CRISPR/Cas9-mediated editing frequency.



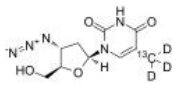
Purity: 99.82%
Clinical Data: Launched
Size: 10 mM × 1 mL, 100 mg, 500 mg

Zidovudine-13C,d3

(Azidothymidine-13C,d3; AZT-13C,d3; ZDV-13C,d3)

Cat. No.: HY-17413S1

Zidovudine-13C,d3 is the 13C- and deuterium labeled. Zidovudine is a nucleoside reverse transcriptase inhibitor (NRTI), widely used to treat HIV infection. Zidovudine increases CRISPR/Cas9-mediated editing frequency.



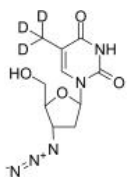
Purity: >98%
Clinical Data: No Development Reported
Size: 1 mg, 5 mg

Zidovudine-d3

(Azidothymidine-d3; AZT-d3; ZDV-d3)

Cat. No.: HY-17413S

Zidovudine-d3 (Azidothymidine-d3) is the deuterium labeled Zidovudine. Zidovudine is a nucleoside reverse transcriptase inhibitor (**NRTI**), widely used to treat HIV infection. Zidovudine increases CRISPR/Cas9-mediated editing frequency.



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