SCR7

Cat. No.: HY-12742  
CAS No.: 1533426-72-0  
Molecular Formula: C₁₈H₁₄N₄OS  
Molecular Weight: 334.39  
Target: DNA/RNA Synthesis; CRISPR/Cas9; Apoptosis  
Pathway: Cell Cycle/DNA Damage; Apoptosis  
Storage: Powder -20°C 3 years  
4°C 2 years  
In solvent -80°C 6 months  
-20°C 1 month

SOLVENT & SOLUBILITY

In Vitro  
DMSO : ≥ 45 mg/mL (134.57 mM)  
* “≥” means soluble, but saturation unknown.

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td></td>
<td></td>
<td>2.9905 mL</td>
<td>14.9526 mL</td>
<td>29.9052 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td></td>
<td>0.5981 mL</td>
<td>2.9905 mL</td>
<td>5.9810 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td></td>
<td>0.2991 mL</td>
<td>1.4953 mL</td>
<td>2.9905 mL</td>
</tr>
</tbody>
</table>

Please refer to the solubility information to select the appropriate solvent.

In Vivo  
1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (7.48 mM); Clear solution

BIOLOGICAL ACTIVITY

Description  
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. SCR7 pyrazine is also a CRISPR/Cas9 enhancer which increases the efficiency of Cas9-mediated homology-directed repair (HDR). SCR7 pyrazine induces cell apoptosis and has anticancer activity[1][2].

IC₅₀ & Target  
DNA Ligase IV  
CRISPR/Cas9

In Vitro  
SCR7 (SCR7 pyrazine; 20-100 μM; 24 hours; MCF7 cells) treatment interferes with NHEJ in cells, leading to accumulation of unrepaired double-strand breaks (DSBs)[3].  
SCR7 (SCR7 pyrazine) treatment shows a dose-dependent decrease in cell proliferation with IC₅₀ values of 40 μM, 34
μM, 44 μM, 8.5 μM, 120 μM, 10 μM and 50 μM for MCF7, A549, HeLa, T47D, A2780, HT1080 and Nalm6 cells, respectively[1].

In MCF7 cells, SCR7 (SCR7 pyrazine; 20, 40 μM) treatment increases phosphorylation of ATM and activates p53, decreases MDM2, BCL2, resulting in activation of proapoptotic proteins, PUMA and BAX. And the shorter fragments of MCL1, PARP1, Caspase 3, and Caspase 9 cleavage are upregulated in a dose-dependent manner[1].

Western Blot Analysis[1]

<table>
<thead>
<tr>
<th>Cell Line:</th>
<th>MCF7 cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentration:</td>
<td>20 μM, 40 μM, 100 μM</td>
</tr>
<tr>
<td>Incubation Time:</td>
<td>24 hours</td>
</tr>
<tr>
<td>Result:</td>
<td>Showed an increase in levels of gH2AX foci and protein.</td>
</tr>
</tbody>
</table>

In Vivo

SCR7 (SCR7 pyrazine; 10 mg/kg; intraperitoneal injection; six doses; BALB/c mice) treatment significantly reduces breast adenocarcinoma-induced tumor and increases lifespan[1].

| Animal Model: | BALB/c mice injected with breast adenocarcinoma cells[1] |
| Dosage: | 10 mg/kg |
| Administration: | Intraperitoneal injection; on alternate days (0, 2, 4, 6, 8, and 10) |
| Result: | Significantly reduced breast adenocarcinoma-induced tumor and increased lifespan. |

REFERENCES


Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898  Fax: 609-228-5909  E-mail: tech@MedChemExpress.com  Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA  www.MedChemExpress.com