Product Data Sheet

Chemical Properties

Product Name: **VE-821**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cas No.</strong></td>
<td>1232410-49-9</td>
</tr>
<tr>
<td><strong>M.Wt.</strong></td>
<td>368.41</td>
</tr>
<tr>
<td><strong>Formula</strong></td>
<td>C18H16N4O3S</td>
</tr>
<tr>
<td><strong>Chemical Name</strong></td>
<td>2-(aminomethyl)-6-[4,6-diamino-3-[4-amino-3,5-dihydroxy-6-(hydroxymethyl)oxan-2-yl]oxy-2-hydroxycyclohexyl]oxyxane-3,4,5-triol; sulfuric acid</td>
</tr>
<tr>
<td><strong>Canonical SMILES</strong></td>
<td>CS(=O)(=O)C1=CC=C(C=C1)C2=CN=C(C(=N2)C(=O)NC3=CC=CC=C3)N</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>&gt;62.5mg/mL in DMSO</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>Store at -20°C</td>
</tr>
<tr>
<td><strong>General tips</strong></td>
<td>For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.</td>
</tr>
</tbody>
</table>
| **Shopping Condition** | Evaluation sample solution: ship with blue ice  
All other available size: ship with RT, or blue ice upon request |

Biological Activity

**Targets:** ATM/ATR

**Pathways:** Cell Cycle/Checkpoint >> ATM/ATR

**Description:**

VE-821 is a potent, highly-selective, and ATP-competitive DNA damage response (DDR) kinase ATR inhibitor with Ki value of 13nM. VE-821 specifically inhibits ATR, revealing low cross-reactivity against the mammalian target of rapamycin (mTOR), DNA-dependent protein kinase (DNA-PK), phosphoinositol 3-kinase-γ (PI3K) and the related PIKKs ATM [1]. HL-60 cells treated with VE-821 (10μM) showed reduction of phosphorylation of Chk1 (Ser 345), inhibition of cell growth, and a radiosensitizing effect after Gamma-ray irradiation [2].
VE-821 has also been demonstrated to down-regulate the phosphorylated Chk1 (Ser 345) but it does not inhibit the phosphorylation of Chk2 (Thr68) and ATM (Ser1981) in pancreatic cancer cell lines, including PSN-1 and MiaPaCa-2 cells that are treated with gemcitabine or radiation. VE-821 combined with gemcitabine (a nucleoside analog) has caused a remarkable increase of cytotoxic effect of gemcitabine against hypoxia [3].

Reference:

Protocol

Cell experiment:

Cell lines       HFL1 cells; HCT116 cancer cells; H23 cancer cell line.

Preparation method  The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37°C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Reacting conditions  10 μM; 24, 48 or 96 h.

Applications  HFL1 cells were pretreated with 10 μM VE-821 or DMSO before addition of 200 μM cisplatin (Cis), 1 μM gemcitabine (Gem), 100 μM etoposide (Etop) or 5 Gy ionizing radiation (IR). VE-821 blocks Chk1 Ser345 phosphorylation under all conditions and inhibits H2AX phosphorylation in treatment with cisplatin and gemcitabine. In the H23 cancer cell line, VE-821 shows marked synergy with cisplatin in growth arrest.

Reference:
Treatment of VE-821 inhibits Chk1 phosphorylation

Treatment of VE-821 decreases cell viability

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Short-term storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

ApexBio Technology

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