Product Data Sheet

Chemical Properties

- **Product Name:** VE-822
- **Cas No.:** 1232416-25-9
- **M.Wt:** 463.55
- **Formula:** C24H25N5O3S
- **Chemical Name:** 3-[3-[4-(methylaminomethyl)phenyl]-1,2-oxazol-5-yl]-5-(4-propan-2-ylsulfonylphenyl)pyrazin-2-amine
- **Canonical SMILES:** CC(C)S(=O)(=O)C1=CC=C(C=C1)C2=CN=C(C(=N2)C3=CC(=NO3)C4=CC=C(C=C4)CNC)N
- **Solubility:** >50.0mg/mL in DMSO
- **Storage:** Store at -20°C
- **General tips:** 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.
- **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:** DNA Damage/DNA Repair >> ATM/ATR
- **Description:**
  VE-822 is an ATR inhibitor with an IC50 value of 0.019 μM. It is a close analog of VE-821 with a marked increase in potency against ATR. Radiation (XRT) and chemotherapy induce chromosomal DNA lesions resulting in activation of the ataxia telangiectasiamutated (ATM) and ATM-Rad3-related (ATR) protein kinases in response to double-strand DNA breaks (DSBs) and replication stress, respectively. Defects in the DNA damage...
response (DDR) such as ATM and p53 deletion/mutation are common in human tumors and occur in up to 70% of patients with PDAC. They might lead to a differential response in DNA repair signaling between normal and tumor cells that could be exploited to increase killing of Radiation (XRT) and chemotherapy induce chromosomal DNA lesions.

In irradiated cancer cells, VE-822 decreased checkpoints of cell-cycle, decreased homologous recombination and increased persistent DNA damage. VE-822 decreased survival of pancreatic cancer cells but not normal cells in response to XRT or gemcitabine. VE-822 markedly prolonged growth delay of pancreatic cancer xenografts after XRT and gemcitabine-based chemoradiation without augmenting normal cell or tissue toxicity.

**Reference:**

**Protocol**

**Cell experiment:**

<table>
<thead>
<tr>
<th>Cell lines</th>
<th>Pancreatic ductal adenocarcinoma cell (PDAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation method</td>
<td>Limited solubility. 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.</td>
</tr>
<tr>
<td>Reacting conditions</td>
<td>1-2 h</td>
</tr>
<tr>
<td>Applications</td>
<td>VE-822 decreases survival of irradiated p53-mutant and K-Ras mutant PDACs. Combination of VE-822 and gemcitabine reduces survival B2–3-fold and significantly more after chemoradiotherapy. In addition, VE-822 increases radiation-induced residual gH2AX and 53BP1 foci and decreases Rad51 foci after radiation.</td>
</tr>
</tbody>
</table>

**Animal experiment [3]:**

<table>
<thead>
<tr>
<th>Animal models</th>
<th>Female Balb/c nude mice, pancreatic cancer xenografts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosage form</td>
<td>Oral gavage, 60 mg/kg</td>
</tr>
<tr>
<td>Applications</td>
<td>VE-822 inhibits phospho-Ser-345-Chk1 following treatment of DNA-damaging agents. Combination of VE-822 and radiation significantly prolongs the tumor growth delay compared with the radiation alone. Furthermore, tumor growth delay is substantially longer in the combination group of VE-822+gemcitabine+radiation compared with the combination group of gemcitabine+radiation.</td>
</tr>
<tr>
<td>Preparation method</td>
<td>10% Vitamin E d-alpha tocopheryl polyethylene glycol 1000 succinate</td>
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<tr>
<td>Other notes</td>
<td>Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.</td>
</tr>
</tbody>
</table>

**Reference:**

**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.