**Product Data Sheet**

**Chemical Properties**

**Product Name:** IRAK-1-4 Inhibitor I  
**Cas No.:** 509093-47-4  
**M.Wt:** 395.41  
**Formula:** C20H21N5O4  
**Synonyms:** IRAK-1/4 Inhibitor I  
**Chemical Name:** N-[1-(2-morpholin-4-ylethyl)benzimidazo[2-yl]-3-nitrobenzamide  
**Canonical SMILES:** C1COCCN1CCN2C3=CC=CC3N=C2NC(=O)C4=CC(=CC=C4)[N+](=O)[O-]  
**Solubility:** $\geq 19.75$ mg/mL in DMSO, insoluble in EtOH, insoluble in H2O  
**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:** Tyrosine Kinase  
**Pathways:** IRAK  
**Description:**  
IRAK-1-4 Inhibitor I is an inhibitor of both IRAK-1 and IRAK-4 with IC50 values of 0.3μM and 0.2μM, respectively [1]. IL-1 receptor-associated kinases play important roles in signal transduction. There are totally four members of the IRAKs, they are IRAK-1, IRAK-2, IRAK-M and IRAK-4. IRAK-4 can activate NF-κB and MAPK pathways and it is shown that the inhibition of IRAK-4 can be an anti-inflammatory therapy. IRAK-1-4 Inhibitor I is an analog of an Initial IRAK-4 inhibitor hit, which is screened out...
from a small molecule library against IRAK-4. With the less basic N-ethylenemorpholine moiety, IRAK-1-4 Inhibitor I has a higher potency than other analogs. Additionally, it does not show any cytotoxicity in a 72 h proliferation assay in HeLa cells (ED50 > 30 μM) [1].

**Reference:**


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**Protocol**

**Cell experiment:**

<table>
<thead>
<tr>
<th>Cell lines</th>
<th>HeLa cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation method</td>
<td>Soluble in DMSO. 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>
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<tr>
<td>Reacting conditions</td>
<td>72 hrs</td>
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<td>Applications</td>
<td>In a 72-hr proliferation assay, IRAK-1-4 Inhibitor I did not show any cytotoxicity in HeLa cells (ED50 &gt; 30 μM). In addition, IRAK-1-4 Inhibitor I significantly inhibited IRAK-1 and IRAK-4 (IC50 = 0.3 μM and 0.2 μM, respectively).</td>
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</table>

**Reference:**


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**Product Citations**


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.