IRA4-IN-1

Cat. No.: HY-101922
CAS No.: 1820787-94-7
Molecular Formula: C₁₉H₂₃N₅O
Molecular Weight: 337.42
Target: IRAK
Pathway: Immunology/Inflammation; Protein Tyrosine Kinase/RTK
Storage:
- Powder
  - -20°C: 3 years
  - 4°C: 2 years
- In solvent
  - -80°C: 6 months
  - -20°C: 1 month
Solubility: DMSO
* "<1 mg/mL" means slightly soluble or insoluble. "≥" means soluble, but saturation unknown.

**PREPARING STOCK SOLUTIONS**

<table>
<thead>
<tr>
<th>Volume</th>
<th>Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 mM</td>
<td></td>
<td>2.9637 mL</td>
<td>14.8183 mL</td>
<td>29.6367 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td>0.5927 mL</td>
<td>2.9637 mL</td>
<td>5.9273 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td>0.2964 mL</td>
<td>1.4818 mL</td>
<td>2.9637 mL</td>
</tr>
</tbody>
</table>

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

**BIOLOGICAL ACTIVITY**

**Description**
IRA4-IN-1 is an interleukin-1 receptor associated kinase 4 (IRA4) inhibitor with an IC₅₀ of 7 nM.

**IC₅₀ & Target**
IC₅₀: 7 nM (IRA4)[1]

**In Vitro**
The in vitro metabolic stability profiles of IRA4-IN-1 (Compound 23) is measured, with EC₅₀ of 2300 nM for the rat whole blood (RWB) [1].

**In Vivo**
Oral pharmacokinetic studies of IRA4-IN-1 (Compound 23) show it to have high bioavailability of 73% and low plasma clearance(Clₚ=22 mL/min/kg) leading to a reasonable half-life of 1.3 h[1].

**PROTOCOL**

**Animal**
Rats[1]
In the TLR driven in vivo model, female Lewis rats are dosed with either vehicle or IRAK4-IN-1 (Compound 23; 3, 10, 30, and 100 mg/kg; p.o.) dosed at 1 h prior to stimulation with Resiquimod, R848 (5 mg/kg, IP). At 1.5 h post R848 stimulation, blood samples are obtained from the animals and cytokine levels are measured.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES