**Product Name:** Tipifarnib (Zarnestra)

**Cas No.:** 192185-72-1

**M.Wt:** 489.4

**Formula:** C27H22Cl2N4O

**Synonyms:** Zarnestra, R115777, R-115777, IND 58359

**Chemical Name:** 6-[(R)-amino-(4-chlorophenyl)-(3-methylimidazol-4-yl)methyl]-4-(3-chlorophenyl)-1-methylquinolin-2-one

**Canonical SMILES:** CN1C=NC1C(C2=CC=C(C=C2)Cl)(C3=CC4=C(C=C3)N(C(=O)C=C4C5=CC(=CC=C5)Cl)C)N

**Solubility:** >8.2mg/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:** ATPase

**Pathways:** Membrane Transporter/Ion Channel >> ATPase

**Description:**
Tipifarnib (also known as Zarnestra or R115777), an orally bioavailable quinolone analog of imidazole heterocyclics, is a potent and specific nonpeptidomimetic competitive inhibitor of farnesyltransferase (FTase), an enzyme mediating post-translational farnesylation of multiple protein substrates involved in tumor cell proliferation. It has demonstrated inhibition of growth and proliferation of a broad range of human tumor models (either wild-type or mutated RAS) via
cytostatic rather than cytotoxic activity both in vitro and in vivo. It cell-type dependently induces apoptosis in some neoplastic cell lineages other than acute myeloid leukemia (AML), including multiple myeloma (MM) cell lines and MM cultures from patients.

Reference:


Protocol

Cell experiment:

<table>
<thead>
<tr>
<th>Cell lines</th>
<th>Human leukemia cell line THP-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation method</td>
<td>The solubility of this compound in DMSO is &gt;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.</td>
</tr>
<tr>
<td>Reacting conditions</td>
<td>100 ng/ml LPS plus 2 μM tipifarnib. 6 time points (0, 10, 20, 30, 40 and 50h)</td>
</tr>
<tr>
<td>Applications</td>
<td>Tipifarnib showed significant inhibition of the cytokine/ MMP-9 production as early as 20 h for MCP-1 and IL-6 and 30 h for IL-1β and MMP-9. Tipifarnib showed no significant inhibition of IL-8 production.</td>
</tr>
</tbody>
</table>

Animal experiment [3]:

<table>
<thead>
<tr>
<th>Animal models</th>
<th>Female BALB/c mice (6–7 weeks old)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosage form</td>
<td>Tipifarnib was dissolved in 20% cyclodextran, and 50 mg/kg was orally administered to mice at 24, 17, and 1 h before intraperitoneal injection of 20 μg of LPS per mouse, 1 mg/kg.</td>
</tr>
</tbody>
</table>
Applications
After treatment of 2h, tipifarnib significantly inhibited LPS-induced TNF-α production and inhibited 50% of MIP-1α and MCP-1 production. After 3h, tipifarnib inhibited about 50% of IL-6 production and almost complete inhibition of IL-1β production.

IL12-p40 and -p70 induction by LPS was also inhibited by tipifarnib at 3 h, whereas IL-10 was not significantly changed at both time points. No effects of tipifarnib on LPS-induced KC were observed, consistent with in vitro results for IL-8.

Other notes
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.

Reference:

Product Validation
Tipifarnib decreases Casapase-12 level. It also decreases full length PARP1 and increases cleaved PARP1 level.

Tipifarnib promotes Ca2+ elevation.

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.