Dihydroorotase Dehydrogenase

DHODH

Dihydroorotase dehydrogenase (DHODH) is an enzyme that in humans is encoded by the DHODH gene on chromosome 16. DHODH is an enzyme that localizes to the inner mitochondrial membrane. It is the fourth and rate limiting step of the de novo pyrimidine synthesis pathway, converting dihydroorotate (DHO) to orotate. Inhibition of dihydroorotase dehydrogenase (DHODH), a key enzyme in the de novo pyrimidine synthesis pathway, induces differentiation of diverse acute myeloid leukemia (AML) subtypes. Human dihydroorotase dehydrogenase (HsDHODH) is a key enzyme of pyrimidine de novo biosynthesis pathway. Inhibitors of DHODH are used to treat autoimmune diseases such as rheumatoid arthritis.
### Dihydroorotate Dehydrogenase Inhibitors

<table>
<thead>
<tr>
<th>Compound Name</th>
<th>Cat. No.</th>
<th>Purity</th>
<th>Clinical Data</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>(E/Z)-Ginkgolic acid C17:2</td>
<td>HY-N7961</td>
<td>&gt;98%</td>
<td>No Development Reported</td>
<td>1 mg, 5 mg</td>
</tr>
<tr>
<td>ASLAN003</td>
<td>HY-129239</td>
<td>99.95%</td>
<td>Phase 2</td>
<td>10 mM x 1 mL, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
</tr>
<tr>
<td>BAY-2402234</td>
<td>HY-112645</td>
<td>99.92%</td>
<td>Phase 1</td>
<td>10 mM x 1 mL, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
</tr>
<tr>
<td>Brequinar</td>
<td>HY-108325</td>
<td>99.75%</td>
<td>Phase 2</td>
<td>10 mM x 1 mL, 5 mg, 10 mg</td>
</tr>
<tr>
<td>DHODH-IN-11</td>
<td>HY-135675</td>
<td>99.94%</td>
<td>No Development Reported</td>
<td>5 mg, 10 mg, 25 mg, 50 mg, 100 mg</td>
</tr>
<tr>
<td>DSM265</td>
<td>HY-100184</td>
<td>99.72%</td>
<td>Phase 2</td>
<td>5 mg, 10 mg, 25 mg, 50 mg, 100 mg, 250 mg, 500 mg</td>
</tr>
<tr>
<td>hDHODH-IN-3</td>
<td>HY-135570</td>
<td>99.86%</td>
<td>No Development Reported</td>
<td>10 mM x 1 mL, 5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
<tr>
<td>hDHODH-IN-4</td>
<td>HY-128787</td>
<td>99.75%</td>
<td>No Development Reported</td>
<td>10 mM x 1 mL, 5 mg, 10 mg, 50 mg</td>
</tr>
<tr>
<td>Laflunimus</td>
<td>HY-101813</td>
<td>99.26%</td>
<td>No Development Reported</td>
<td>10 mM x 1 mL, 5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
<tr>
<td>ML390</td>
<td>HY-100688</td>
<td>98.77%</td>
<td>No Development Reported</td>
<td>10 mM x 1 mL, 5 mg, 10 mg, 50 mg, 100 mg</td>
</tr>
</tbody>
</table>

**Notes:**
- BAY-2402234 is a selective dihydroorotate dehydrogenase (DHODH) inhibitor for the treatment of myeloid malignancies.
- Brequinar (DUP785; NSC 368390) is a potent inhibitor of dihydroorotate dehydrogenase (DHODH) with an IC₅₀ of 5.2 nM for human DHODH. Brequinar inhibits protein synthesis via activation of AP-1 transcription factors.
- ASLAN003 inhibits protein synthesis via activation of AP-1 transcription factors.
- BAY-2402234 inhibits protein synthesis via activation of AP-1 transcription factors.
- ASLAN003 inhibits protein synthesis via activation of AP-1 transcription factors.
- BAY-2402234 inhibits protein synthesis via activation of AP-1 transcription factors.
- ASLAN003 inhibits protein synthesis via activation of AP-1 transcription factors.
PfDHODH-IN-2

- **Cat. No.**: HY-W078844
- PfDHODH-IN-2, a dihydrothiophenone derivative (Compound 11), is a potent *Plasmodium falciparum* dihydroorotate dehydrogenase (PfDHODH) inhibitor with an IC\(_{50}\) of 1.11 µM. PfDHODH-IN-2 acts as an antimalarial agent and can be used for the research of malaria.
- **Purity**: 99.83%
- **Clinical Data**: No Development Reported
- **Size**: 10 mM × 1 mL, 5 mg, 10 mg, 25 mg, 50 mg, 100 mg

Tenovin-1

- **Cat. No.**: HY-13423
- Tenovin-1, a p53 activator, protects p53 from MDM2-mediated degradation. Tenovin-1 acts through inhibition of the protein-deacetylating activities of SirT1 and SirT2. Tenovin-1 is also a dihydroorotate dehydrogenase (DHODH) inhibitor.
- **Purity**: 99.88%
- **Clinical Data**: No Development Reported
- **Size**: 10 mM × 1 mL, 50 mg, 100 mg

Tenovin-6

- **Cat. No.**: HY-15510
- Tenovin-6, an analog of Tenovin-1 (HY-13423), is an activator of p53 transcriptional activity. Tenovin-6 inhibits the protein deacetylase activities of purified human SIRT1, SIRT2, and SIRT3 with IC\(_{50}\)s of 21 µM, 10 µM, and 67 µM, respectively.
- **Purity**: 98.61%
- **Clinical Data**: No Development Reported
- **Size**: 10 mM × 1 mL, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg

Tenovin-6 Hydrochloride

- **Cat. No.**: HY-15510B
- Tenovin-6 Hydrochloride, an analog of Tenovin-1 (HY-13423), is an activator of p53 transcriptional activity.
- **Purity**: >98.0%
- **Clinical Data**: No Development Reported
- **Size**: 10 mM × 1 mL, 2 mg, 5 mg, 10 mg, 50 mg, 100 mg

Vidofludimus

- **Cat. No.**: HY-14908
- Vidofludimus(4SC-101; SC12267) is a novel immunosuppressive drug that inhibits DHODH; inhibits IL-17 secretion in vitro independently of effects on lymphocyte proliferation.
- **Purity**: 98.88%
- **Clinical Data**: Phase 2
- **Size**: 10 mM × 1 mL, 5 mg, 10 mg, 50 mg, 100 mg

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