**C994 (Tacedinaline) Datasheet**

### Technical Data

<table>
<thead>
<tr>
<th>Molecular Weight (MW)</th>
<th>269.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula</td>
<td>C_{10}H_{14}N_{2}O_{2}</td>
</tr>
<tr>
<td>CAS No.</td>
<td>112522-64-2, 1299346-14-7 (HCl), 1353653-79-8 (TFA)</td>
</tr>
<tr>
<td>Synonyms</td>
<td>PD-123654</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solubility (25°C)</th>
<th>DMSO ≥54 mg/mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>&lt;1 mg/mL</td>
</tr>
<tr>
<td>Ethanol</td>
<td>&lt;1 mg/mL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Storage</th>
<th>2 years -20°C Powder</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 weeks 4°C in DMSO</td>
</tr>
<tr>
<td></td>
<td>6 months -80°C in DMSO</td>
</tr>
</tbody>
</table>

### Biological Activity

**Description**

C994 (Tacedinaline) is an anti-cancer drug which inhibits HDAC1 with IC50 of 0.57 μM.

**Targets**

HDAC1

**IC50**

0.57 μM \(^{[1]}\)

**In vitro**

C994 (< 160 mM) shows cytostatic effect with concomitant increase at G0/G1 phase, a reduction in S phase level and increased apoptosis in A549 and LX-1 cells. \(^{[2]}\) C994 inhibits growth of LNCaP cell with IC50 of 7.4 μM. \(^{[3]}\) C994 exerts activity against several tumor cell lines with greater cytotoxicity against the solid tumors relative to both the leukemia and normal fibroblast cell lines. \(^{[4]}\) C994 inhibits growth of rat leukemia BCLO cells with IC50 of 2.5 μM. \(^{[5]}\)

**In vivo**

C994 exerts demonstrated antitumor activity against several tumor models, including the chemoresistant mouse pancreatic ductal carcinoma as well as the human prostate tumor model LNCaP. \(^{[4]}\)

**Clinical Trials**

C994 is in Phase III clinical trial in patients with Lung Cancer

**Features**

- **Protocol (Only for Reference)**
  - **Cell Assay:** \(^{[3]}\)
    - **Cell Lines:** LNCaP cell lines
    - **Concentrations:** 2.5 μM
    - **Incubation Time:** 2-4 days
  - **Methods:** LNCaP cell lines are maintained in RPMI 1640 medium containing 10% fetal bovine serum, 1% penicillin and streptomycin, as the complete culture medium. Cells (2×10^4) are seeded in 24-well plates and incubated in a 5% CO2 incubator at 37 °C for 1 day. Cultures are treated with C994, alone and in combination on day 2 and 4. Cells are washed on day 2 and 4 and media are changed. Mitochondrial metabolism is measured as a marker for cell growth by adding 100 μL/well MTT (5 mg/mL in medium) with 2 hours incubation at 37 °C on Day 6. Crystals formed are dissolved in 500 μL of DMSO. The absorbance is determined using a microplate reader at 560 nm. The absorbance data are converted into cell proliferation percentage. Each assay is performed in triplicate.
  - **Animal Study:** \(^{[4]}\)
    - **Animal Models:** human prostate tumor model LNCaP
    - **Formulation:** 5% ethanol, 1% P.O.E. and 94% dH2O
    - **Doses:** 535 mg/kg
    - **Administration:** Administered via oral gavage

### References


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**NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE**

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