**Tacedinaline**

Cat. No.: HY-50934  
CAS No.: 112522-64-2  
Molecular Formula: C₁₅H₁₅N₃O₂  
Molecular Weight: 269.3  
Target: HDAC; Apoptosis  
Pathway: Cell Cycle/DNA Damage; Epigenetics; Apoptosis  
Storage: Powder -20°C 3 years  
4°C 2 years  
In solvent -80°C 6 months  
-20°C 1 month

**SOLVENT & SOLUBILITY**

**In Vitro**  
DMSO: ≥ 58 mg/mL (215.37 mM)  
*“≥” means soluble, but saturation unknown.*

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>3.7133 mL</td>
<td>18.5667 mL</td>
<td>37.1333 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.7427 mL</td>
<td>3.7133 mL</td>
<td>7.4267 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.3713 mL</td>
<td>1.8567 mL</td>
<td>3.7133 mL</td>
</tr>
</tbody>
</table>

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

**In Vivo**  
1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (9.28 mM); Clear solution

**BIOLOGICAL ACTIVITY**

**Description**
Tacedinaline (N-acetyldinaline) is an inhibitor of the histone deacetylase (HDAC) with IC₅₀s of 0.9, 0.9, 1.2 μM for recombinant HDAC 1, 2 and 3 respectively.

**IC₅₀ & Target**

<table>
<thead>
<tr>
<th></th>
<th>HD1</th>
<th>HD2</th>
<th>HD3</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC₅₀</td>
<td>0.9 μM (IC₅₀)</td>
<td>0.9 μM (IC₅₀)</td>
<td>1.2 μM (IC₅₀)</td>
</tr>
</tbody>
</table>

**In Vitro**
Tacedinaline (N-acetyldinaline) is a novel oral compound with a wide spectrum of antitumor activity in preclinical models. The mechanism of action may involve inhibition of histone deacetylation and cell cycle arrest. Tacedinaline (N-acetyldinaline) is combined with antineoplastic agents commonly used in non-small cell lung cancer cell line management, a marked synergism of action (R=1.8, R=1.5) is observed between Tacedinaline (N-acetyldinaline) (40 μM) and gemcitabine (0.01 μM) at 48 and 72 h of treatment[2]. Tacedinaline (N-acetyldinaline) inhibits mitogen-stimulated blood lymphocyte
proliferation with an IC50 value of 3 μM[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| In Vivo | Tacedinaline (CI-994) has activity against 8/8 solid tumors tested: pancreatic ductal adenocarcinoma #02 (4.7); pancreatic adenocarcinoma #03 (3.0; 1/6 cures); colon adenocarcinoma #38 (1.6); colon adenocarcinoma #51/A (1.1); mammary adenocarcinoma #25 (1.7); mammary adenocarcinoma #17/ADR (0.5); Dunning osteogenic sarcoma (4.0); and the human prostate carcinoma LNCaP (1.2). CI-994 is the acetylated metabolite of dinaline and has the same spectrum of activity in vivo as dinaline. It also behaves similarly in schedule comparison/toxicity trials[3]. Tacedinaline (CI-994) can effect lymphoid tissue in rats within 1 day of a single oral dose, that effects are generally reversible within 7 days[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

**PROTOCOL**

**Animal Administration [4]**

Rats: To characterize the effects of Tacedinaline (CI-994) on lymphoid tissue, male rats are administered single oral doses at 0 (vehicle control), 10, 23, and 45 mg/kg and killed up to 7 days after dosing for evaluation of white blood cell differentials, bone marrow differentials, lymphoid tissue weights, and selected histopathology of lymphoid tissue[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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**REFERENCES**


Caution: Product has not been fully validated for medical applications. For research use only.