NS-398

Cat. No.: HY-13913
CAS No.: 123653-11-2
Molecular Formula: C₁₃H₁₈N₂O₅S
Molecular Weight: 314.36
Target: COX
Pathway: Immunology/Inflammation
Storage:
- Powder: -20°C for 3 years, 4°C for 2 years
- In solvent: -80°C for 6 months, -20°C for 1 month

Solvent & Solubility

In Vitro
DMSO : 9 mg/mL (28.63 mM; Need ultrasonic and warming)

Preparing Stock Solutions

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Solvent Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>3.1811 mL</td>
<td>15.9053 mL</td>
<td>31.8107 mL</td>
<td></td>
</tr>
<tr>
<td>5 mM</td>
<td>0.6362 mL</td>
<td>3.1811 mL</td>
<td>6.3621 mL</td>
<td></td>
</tr>
<tr>
<td>10 mM</td>
<td>0.3181 mL</td>
<td>1.5905 mL</td>
<td>3.1811 mL</td>
<td></td>
</tr>
</tbody>
</table>

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

BIOLOGICAL ACTIVITY

Description
NS-398 is a non-steroidal anti-inflammatory agent with analgesic and antipyretic effects, and selectively inhibits prostaglandin G/H synthase 2/cyclooxygenase 2 (COX-2) activity, with an IC₅₀ of 3.8 μM, and has no effect on COX-1 at 100 μM.

IC₅₀ & Target
COX-2
3.8 μM (IC₅₀)

In Vitro
NS-398 is a non-steroidal anti-inflammatory agent, selectively inhibits prostaglandin G/H synthase/cyclooxygenase (COX-2) activity, with an IC₅₀ of 3.8 μM, and has no effect on COX-1 at 100 μM[1]. NS-398 weakly inhibits PG endoperoxide synthase activity from sheep seminal vesicle microsomes (IC₅₀, 11 μM)[2].

In Vivo
NS-398 (0.5-10 mg/kg, p.o.) dose-dependently inhibits paw edema in rats, with an ED₃₀ of 1.14 mg/kg, shows therapeutic effects on adjuvant arthritis (ED₃₀, 4.69 mg/kg), exhibits dose-dependent analgesic activity (ED₅₀, 1.65 mg/kg), and has antipyretic effect (ED₅₀, 1.84 mg/kg) in rats. In mice, NS-398 suppresses writhing reactions induced...
by acetic acid with an ED$_{50}$ of 8.2 mg/kg$^2$.

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**PROTOCOL**

<table>
<thead>
<tr>
<th>Animal Administration $^2$</th>
<th>Mice$^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Briefly, male ddy mice weighing about 30 g are used. The writhing syndrome is induced by injecting 0.75% of acetic acid, intraperitoneally. Ten minutes later, the number of writhings are counted for the next 10 min. <strong>NS-398</strong> is administered orally 30 min prior to the injection. The analgesic effect is expressed as % of inhibition, compared with the vehicle-treated control$^2$.</td>
<td></td>
</tr>
</tbody>
</table>

| Rats$^2$ |
| Briefly, male Lewis rats weighing about 160 g are used. Arthritis is induced by injecting 0.1 mL of 0.7% Mycobacterium tuberculosis-liquid paraffin into the left hind paw. On day 15, the rats are grouped according to the degree of secondary lesions in the right hind paw. **NS-398** is administered orally once daily from days 15 to 18. Foot volume is measured on day 19. Relative edema volume (REV) is calculated for each animal$^2$. |
| MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

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**REFERENCES**
