Prinomastat

**Cat. No.** HY-12170

**CAS No.** 192329-42-3

**Molecular Formula** $C_{18}H_{21}N_{3}O_{5}S_{2}$

**Molecular Weight** 423.51

**Target** MMP; Apoptosis

**Pathway** Metabolic Enzyme/Protease; Apoptosis

**Storage**
- Powder: -20°C for 3 years, 4°C for 2 years
- In solvent: -80°C for 6 months, -20°C for 1 month

**BIOLOGICAL ACTIVITY**

**Description**
Prinomastat (AG3340) is a broad spectrum, potent, orally active metalloproteinase (MMP) inhibitor with $IC_{50}$s of 79, 6.3 and 5.0 nM for MMP-1, MMP-3 and MMP-9, respectively. Prinomastat inhibits MMP-2, MMP-3 and MMP-9 with $K_i$s of 0.05 nM, 0.3 nM and 0.26 nM, respectively. Prinomastat crosses blood-brain barrier. Antitumor activity\(^1\)\(^2\)\(^3\)\(^4\).

**IC\(_{50}\) & Target**

<table>
<thead>
<tr>
<th>Target</th>
<th>MMP-9 $IC_{50}$</th>
<th>MMP-9 $K_i$</th>
<th>MMP-2 $K_i$</th>
<th>MMP-1 $IC_{50}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMP-9</td>
<td>5 nM</td>
<td>0.26 nM</td>
<td>0.05 nM</td>
<td>79 nM</td>
</tr>
<tr>
<td>MMP-3</td>
<td>6.3 nM</td>
<td>0.3 nM</td>
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**In Vitro**
Prinomastat (AG3340; 0.1-1 µg/mL; 4 days; C57MG/Wnt1 cells) inhibits Wnt1-induced MMP-3 production. Reversal of Wnt1-induced EMT and β-catenin transcriptional activity by Prinomastat\(^1\).

Co-culture of L/Wnt3a cells and CT7 cells increases the Topflash activity in CT7 cells, and co-culturing both L/Wnt3a cells and MMP-3 overexpressing C57MG cells with CT7 cells increases the Topflash luciferase activity in CT7 cells beyond the level observed with L/Wnt3a cells, and these effects are all suppressed by Prinomastat (AG3340)\(^1\).

Inhibition of entry of C57MG/Wnt1 cells into S phase by Prinomastat corresponds to a decrease in expression of cyclin D1 and Erk1/2 phosphorylation. The effect of Prinomastat on Wnt1-induced migration is then examined using an in vitro wound assay. As anticipated, the migration of C57MG/Wnt1 cells is increased by 1.8-fold when compared with C57MG cells.

**Western Blot Analysis**\(^1\)

<table>
<thead>
<tr>
<th>Cell Line</th>
<th>C57MG/Wnt1 cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentration</td>
<td>0.1 µg/mL, 1 µg/mL</td>
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<tr>
<td>Incubation Time</td>
<td>4 days</td>
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<tr>
<td>Result</td>
<td>A significant decrease in MMP-3 promoter activity in C57MG/Wnt1 cells.</td>
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</table>

**In Vivo**
In a human fibrosarcoma mouse model (HT1080), the mice are treated therapeutically for 14-16 days with 50 mg/kg/day ip daily starting day 3 to 6 after tumour inoculation. Prinomastat is well tolerated by the animals, and there are no signs of
weight loss or other adverse effects. Prinomastat has good tumour growth inhibition, with a short T₁/₂ of 1.6 hours[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES


