TNP-470

Cat. No.: HY-101932  
CAS No.: 129298-91-5  
Molecular Formula: C₁₉H₂₈ClNO₆  
Molecular Weight: 401.88

Target: Others  
Pathway: Others  
Storage: -20°C, stored under nitrogen  
* In solvent: -80°C, 6 months; -20°C, 1 month (stored under nitrogen)

**BIOLOGICAL ACTIVITY**

<table>
<thead>
<tr>
<th>Description</th>
<th>TNP-470 is a methionine aminopeptidase-2 inhibitor and also an angiogenesis inhibitor.</th>
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<tbody>
<tr>
<td>IC₅₀ &amp; Target</td>
<td>methionine aminopeptidase-2[¹], angiogenesis[²]</td>
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<td>In Vitro</td>
<td>No significant difference of apoptotic cell numbers is observed between cells treated with TNP-470 and the controls. The IC₅₀s of TNP-470 are 16.86±0.9 µg/mL, 3.16±0.6 µg/mL and 1.78±0.8 µg/mL for KKU-M213 cells at 24, 48 and 72 h, respectively. The results show that TNP-470 significantly reduces the number of migrated cells and invaded cells as compared with the vehicle treated group. TNP-470 decreases the migrated cells of KKU-M213 to 26% and of KKU-M214 to 11% (P&lt;0.01). Similarly, TNP-470 also significantly affects cell invasion, the number of invaded cells is reduced to 25% in KKU-M213 (P&lt;0.01) and to 15% in KKU-M214 (P&lt;0.01). The relative expressions of MMP2, MMP9 and c-MYC in TNP-470 treated cells are significantly suppressed compared to the vehicle treated cells[¹].</td>
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| In Vivo | Treatment with TNP-470 attenuates (P<0.05) liver lipid accumulation compared to high fat fed (HFF) mice. By day 5, TNP-470 treated mice consume significantly less grams of high fat food than vehicle treated HFF mice. By day 15 of treatment, TNP-470 mice are consuming an equivalent number of calories to that of chow fed mice, despite the provision of high fat diet. Treatment with TNP-470 increases (P<0.05) expression of adipose tissue LPL mRNA, compare to chow-fed and high-fat fed controls. TNP-470 decreases energy intake and increases energy expenditure [²]. |

**PROTOCOL**

| Cell Assay [¹] | MTT assays are applied to test cell viability. In brief, 3×10³ cells per well are seeded in a 96-well plate and incubated with various concentration of TNP-470 for 24, 48, and 72 h at 37°C, 5% CO₂. For comparison, cells cultured in the absence of TNP-470 are used as a control. After an incubation period, 10 µL MTT (0.5 mg/mL final concentration) is added to each well. After 4 h of additional incubation, 100 µL of 0.01 N HCl in isopropanol is added to dissolve the crystals. Absorption at 570 nm is determined by ELISA plate reader[¹]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| Animal Administration [²] | Individually housed, 4 wk old male C57BL/6 mice are used in this study. After a 1 wk acclimation period, mice are randomly allocated to receive either standard chow diet or high-fat diet for 6.5 wk. Throughout the high-fat feeding... |
period the mice are treated with TNP-470 at a dose of 20 mg/kg body weight, injected subcutaneously every other
day (TNP; n=7) or a vehicle injection of an equivalent volume (HFF controls; n=7). Vehicle injections contain 3%
ethanol in phosphate-buffered saline. Chow-fed control mice (chow; n=8) are sham injected. Mice are fed ad libitum
with food replaced every 2 or 3 days. Body weights are collected three times per week. After 6.5 wk of feeding,
animals are fasted for 16-h and sacrificed. Final body, liver, and epididymal adipose tissue weights are measured.
Liver and adipose tissue samples are frozen in liquid nitrogen and stored at -80°C for subsequent analysis[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Kidoikhammouan S, et al. TNP-470, a methionine aminopeptidase-2 inhibitor, inhibits cell proliferation, migration and invasion of human