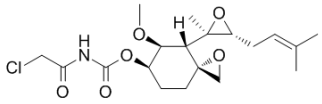
TNP-470

Cat. No.:	HY-101932
CAS No.:	129298-91-5
Molecular Formula:	$C_{19}H_{28}ClNO_6$
Molecular Weight:	401.88
Target:	Aminopeptidase
Pathway:	Metabolic Enzyme/Protease
Storage:	-20°C, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



BIOLOGICAL ACTIVITY

Description	TNP-470 is a methionine aminopeptidase-2 inhibitor and also an angiogenesis inhibitor.
IC_{50} & Target	methionine aminopeptidase-2[1], angiogenesis[2]
In Vitro	No significant difference of apoptotic cell numbers is observed between cells treated with TNP-470 and the controls. The IC_{50}s 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 compare with the vehicle treated group. TNP-470 decreases the migrated cells of KKU-M213 to 26% and of KKU-M214 to 11% (P<0.01). Similarly, TNP-470 also significantly affects cell invasion, the number of invaded cells is reduced to 25% in KKU-M213 (P<0.01) and to 15% in KKU-M214 (P<0.01). The relative expressions of MMP2, MMP9 and c-MYC in TNP-470 treated cells are significantly suppressed compare to the vehicle treated cells[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Treatment with TNP-470 attenuates (P<0.05) liver lipid accumulation compare 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]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	MTT assays are applied to test cell viability. In brief, 3×10^3 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% CO_2. 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 cholangiocarcinoma cells in vitro. Asian Pac J Cancer Prev. 2012;13 Suppl:155-60.

[2]. White HM, et al. The angiogenic inhibitor TNP-470 decreases caloric intake and weight gain in high-fat fed mice. Obesity (Silver Spring). 2012 Oct;20(10):2003-9.

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