Product Data Sheet

Product Name: 5MPN
Cat. No.: GC63956

Chemical Properties

Cas. No.	47208-82-2		
Formula	C15H19N3O4	M.Wt	305.33
Solubility		Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	5MPN		

Background

5MPN is a first-in-class, potent, orally active and selective 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase 4 (PFKFB4) inhibitor. 5MPN appears to be a competitive inhibitor of the F6P binding site (Ki=8.6 μM). 5MPN does not inhibit PFK-1 or PFKFB3. 5MPN targets the sugar metabolism of tumors and suppresses proliferation of multiple human cancer cell lines[1].

5MPN (0~30 μM; 24 hours; H460 cells) inhibits the expression of PFKFB4[1]. 5MPN (0~50 μM; 0~72 hours; H460 NSCLC cells) first reduces the intracellular concentration of F2,6BP, glycolysis and ATP, which in turn results in a reduction in cell proliferation[1].5MPN (0 and 10 μM; 6, 12 and 24 hours; H460 cells) induces cells apoptosis[1].5MPN (0 and 10 μM; 6, 12 and 24 hours; H460 cells) arrests cell cycle progression[1].5MPN (0.1, 1 or 10 μM) significantly inhibits PFKFB4 activity. 5MPN (H460 cells) leads to a dose-dependent decrease in the intracellular F2,6BP concentration. 5MPN (0~30 μM; over 48 hours; H460, H1299, H441, H522 and A549 cells) makes a dose-dependent reduction in cells growth. 5MPN (0~30 μM; 24 hours; H460 cells) inhibits PFKFB4 expression causing the observed reduction in H460 cell proliferation. 5MPN causes a G1 arrest in LLC cells in vitro similar to H460 cells[1].

5MPN (120 mg/kg; p.o.) suppresses the growth of Lewis lung carcinomas (LLC) grown in

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syngeneic mice and H460 human lung adenocarcinoma xenografts grown in athymic mice without affecting body weight[1].5MPN causes a reduction in Ki67-positive cells in the LLC xenografts suggesting that 5MPN may be reducing cell cycle progression in vivo[1].

[1]. Chesney J, et al. Targeting the sugar metabolism of tumors with a first-in-class 6-phosphofructo-2-kinase (PFKFB4) inhibitor. Oncotarget. 2015;6(20):18001-18011.