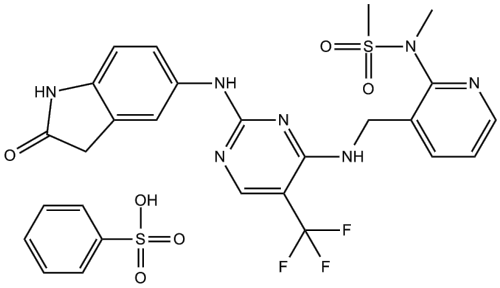
Product Data Sheet

Product Name: PF-00562271
Cat. No.: GC14767

Chemical Properties

Cas. No.	939791-38-5		
Chemical Name	benzenesulfonic acid;N-methyl-N-[3-[[[2-[(2-oxo-1,3-dihydroindol-5-yl)amino]-5-(trifluoromethyl)pyrimidin-4-yl]amino]methyl]pyridin-2-yl]methanesulfonamide		
SMILES	CN(C1=C(C=CC=N1)CNC2=NC(=NC=C2C(F)(F)F)NC3=CC4=C(C=C3)NC(=O)C4)S(=O)(=O)C.C1=CC=C(C=C1)S(=O)(=O)O		
Formula	$C_{21}H_{20}F_3N_7O_3S.C_6H_6O_3S$	M.Wt	665.66
Solubility	≥ 11.1mg/mL in DMSO with gentle warming	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C 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



Protocol

Cell experiment [1]:

Cell lines Squamous carcinoma cells

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Preparation method	The solubility of this compound in DMSO is > 10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
Reacting condition	1 μM, 48 hr
Applications	In squamous carcinoma cells, treatment of the FAK wt expressing cells with the FAK kinase inhibitor PF-562,271 resulted in a similar reduction in cell migration as seen in the FAK-/- cells. PF-562,271 dose-dependently inhibited FAK autophosphorylation on Y397. Treatment with PF-562,271 inhibited golgi orientation. PF-562,271 inhibited Pyk2 and Pyk2 autophosphorylation in PF-562,271 treated cells. Treatment of FAK wt cells with PF-562,271 dose-dependently inhibited cell proliferation. Treatment of FAK wt cells with PF-562,271 (0.25 μM) also resulted in a dose-dependent inhibition of colony formation. Treatment of cells with PF-562,271 in methylcellulose resulted in a small but significant reduction in the number of cells in S phase while the corresponding increase in G1 was not significant.

Animal experiment [2,3]:

Animal models	Mice bearing PC-3M, BT474, BxPc3, and LoVo tumors,
Dosage form	Oral gavage, 25 to 50 mg/kg, twice daily

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Application	In several human s.c. xenograft models, PF-562271 dose-dependently inhibited tumor growth, and produced maximum tumor inhibition for PC-3M, BT474, BxPc3, and LoVo ranging from 78% to 94% inhibition at doses of 25 to 50 mg/kg twice daily, without weight loss, morbidity, or death. PF-562271 (25 mg/kg by p.o.) significantly decreased tumor progression in both subcutaneous and bone metastasis PC3M-luc-C6 xenograft models.
Other notes	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

References:

[1]. Serrels A, McLeod K, Canel M, et al. The role of focal adhesion kinase catalytic activity on the proliferation and migration of squamous cell carcinoma cells[J]. International journal of cancer, 2012, 131(2): 287-297.

[2]. Roberts W G, Ung E, Whalen P, et al. Antitumor activity and pharmacology of a selective focal adhesion kinase inhibitor, PF-562,271[J]. Cancer research, 2008, 68(6): 1935-1944.

[3]. Roberts W G, Ung E, Whalen P, et al. Antitumor activity and pharmacology of a selective focal adhesion kinase inhibitor, PF-562,271[J]. Cancer research, 2008, 68(6): 1935-1944.

Background

PF-562271 is a potent, ATP-competitive and reversible inhibitor of both focal adhesion kinase (FAK), a non-receptor tyrosine kinase involved in a variety of cellular events, and proline-rich tyrosine kinase 2 (Pyk2), an FAK homolog containing 48% amino acid identity, with half maximal inhibitory concentration (IC50) of 1.5 nmol/L and 14 nmol/L respectively. As a potential therapeutic agent either alone or in combination with other agents for the treatment of cancer, PF-562271 has been reported to effectively inhibit the proliferation of tumors in both xenograft and transgenic mouse models, in which it dose-dependently inhibits FAK phosphorylation in tumor-bearing mice with half maximal effective concentration (EC50) of 93 ng/mL.

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References:

[1]Stokes JB, Adair SJ, Slack-Davis JK, Walters DM, Tilghman RW, Hershey ED, Lowrey B, Thomas KS, Bouton AH, Hwang RF, Stelow EB, Parsons JT, Bauer TW. Inhibition of focal adhesion kinase by PF-562,271 inhibits the growth and metastasis of pancreatic cancer concomitant with altering the tumor microenvironment. Mol Cancer Ther. 2011 Nov;10(11):2135-45. doi: 10.1158/1535-7163.MCT-11-0261. Epub 2011 Sep 8.

[2]Roberts WG, Ung E, Whalen P, Cooper B, Hulford C, Autry C, Richter D, Emerson E, Lin J, Kath J, Coleman K, Yao L, Martinez-Alsina L, Lorenzen M, Berliner M, Luzzio M, Patel N, Schmitt E, LaGreca S, Jani J, Wessel M, Marr E, Griffor M, Vajdos F. Antitumor activity and pharmacology of a selective focal adhesion kinase inhibitor, PF-562,271. Cancer Res. 2008 Mar 15;68(6):1935-44. doi: 10.1158/0008-5472.CAN-07-5155.

Caution: Product has not been fully validated for medical applications. For research use only.

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