Product Data Sheet

Product Name: Vandetanib trifluoroacetate
Cat. No.: GC37886

Chemical Properties

Cas. No.	338992-53-3		
SMILES	FC1=CC(Br)=CC=C1NC2=NC=NC3=CC(OCC4CCN(CC4)C)=C(C=C23)OC.O=C(O)C(F)(F)F		
Formula	$C_{24}H_{25}BrF_4N_4O_4$	M.Wt	589.38
Solubility	Soluble in DMSO	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	Vandetanib trifluoroacetate		

Protocol

Cell experiment:	Growth inhibition is measured by a modified MTT assay. Briefly, the cells are plated on 96-well plates at a density of 2000 cells per well and exposed to each gefitinib or vandetanib for 72 h. Each assay is performed in triplicate. The 50% inhibitory concentration (IC50) of each drug is determined as the mean±standard deviation (SD).

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Animal experiment:

One million H1650 cells or H1650/PTEN cells (H1650 cells with a transfected PTEN gene) are injected subcutaneously into the backs of each mouse. On 10th day after injection, mice are randomLy assigned to three groups, which receive either vehicle, vandetanib (15 mg/kg/day), or gefitinib (15 mg/kg/day). Vehicle, vandetanib, and gefitinib are administered once per day p.o., five times per week. Tumor volume (width×width×length/2) and body weight are determined periodically. Tumor volumes are expressed as mean±SD. Differences in tumor volume are evaluated using Student's t-test.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

References:

[1]. Wedge SR, et al. ZD6474 inhibits vascular endothelial growth factor signaling, angiogenesis, and tumor growth following oral administration. Cancer Res. 2002 Aug 15;62(16):4645-55.
[2]. Hegedus C, et al. Interaction of the EGFR inhibitors gefitinib, vandetanib, pelitinib and neratinib with the ABCG2 multidrug transporter: implications for the emergence and reversal of cancer drug resistance. Biochem Pharmacol. 2012 Aug 1;84(3):260-7.
[3]. Takeda H, et al. Vandetanib is effective in EGFR-mutant lung cancer cells with PTEN deficiency. Exp Cell Res. 2013 Feb 15;319(4):417-23.
[4]. Inoue K, et al. Vandetanib, an inhibitor of VEGF receptor-2 and EGF receptor, suppresses tumor development and improves prognosis of liver cancer in mice. Clin Cancer Res. 2012 Jul 15;18(14):3924-33.

Background

Product Data Sheet

Vandetanib is a multi-kinase inhibitor that inhibits VEGFR2, VEGFR3, VEGFR1, EGFR, PDGFRβ, Tie-2, and FGFR1 in cell-free assays (IC_{50}s = 40, 110, 1,600, 500, 1,100, 2,500, and 3,600 nM, respectively).[1,2] It also binds to 142 additional kinases in a panel of 442 kinases (K_ds = 4.6-7,900 nM). Vandetanib (1 and 2.5 ?M) induces apoptosis and cell cycle arrest at the G_0/G_1 phase in GEO colon and OVCAR-3 ovarian cancer cells.[3] It inhibits proliferation of HAK1-B, KYN-2, and Huh7 hepatocarcinoma cells, as well as human umbilical vein endothelial cells (HUVECs), with IC_{50} values of 10, 8.1, 9.4, and 7.1 ?M, respectively.[4] Vandetanib (200 mg/kg) increases survival and decreases tumor angiogenesis and VEGFR2 levels in a D54MG glioblastoma mouse xenograft model.[5] It reduces tumor growth in a variety of mouse xenograft models, including lung, colon, and breast cancer models, when administered at doses of 25, 50, and 100 mg/kg per day.[1] Formulations containing vandetanib have been used in the treatment of medullary thyroid cancer.

1.Wedge, S.R., Ogilvie, D.J., Dukes, M., et al.ZD6474 inhibits vascular endothelial growth factor signaling, angiogenesis, and tumor growth following oral administrationCancer Res.62(16)4645-4655(2002) 2.Davis, M.I., Hunt, J.P., Herrgard, S., et al.Comprehensive analysis of kinase inhibitor selectivityNat. Biotechnol.29(11)1046-1051(2011) 3.Ciardiello, F., Caputo, R., Damiano, V., et al.Antitumor effects of ZD6474, a small molecule vascular endothelial growth factor receptor tyrosine kinase inhibitor, with additional activity against epidermal growth factor receptor tyrosine kinaseClin. Cancer Res.9(4)1546-1556(2003) 4.Inoue, K., Torimura, T., Nakamura, T., et al.Vandetanib, an inhibitor of VEGF receptor-2 and EGF receptor, suppresses tumor development and improves prognosis of liver cancer in miceClin. Cancer Res.18(14)3924-3933(2012) 5.Rich, J.N., Sathornsumetee, S., Keir, S.T., et al.ZD6474, a novel tyrosine kinase inhibitor of vascular endothelial growth factor receptor and epidermal growth factor receptor, inhibits tumor growth of multiple nervous system tumorsClin. Cancer Res.11(22)8145-8157(2005)

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA