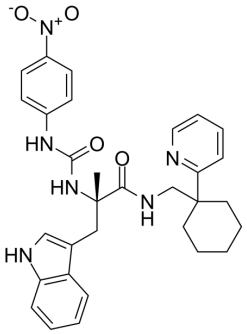
PD 168368

Cat. No.:	HY-116216
CAS No.:	204066-82-0
Molecular Formula:	$C_{31}H_{34}N_6O_4$
Molecular Weight:	554.64
Target:	Bombesin Receptor
Pathway:	GPCR/G Protein
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 30 mg/mL (54.09 mM; Need ultrasonic and warming)
DMF : 10 mg/mL (18.03 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8030 mL	9.0149 mL	18.0297 mL
	5 mM	0.3606 mL	1.8030 mL	3.6059 mL
	10 mM	0.1803 mL	0.9015 mL	1.8030 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

PD 168368 is a potent, competitive, and selective neuromedin B receptor (NMB-R) antagonist with the K_i of 15–45 nM[1]. PD 168368 is neuromedin B receptor (NMBR; IC_{50}=96 nM) / gastrin-releasing peptide receptor (GRPR IC_{50}=3500 nM) antagonist[2]. PD 168368 also is a mixed FPR1/FPR2/FPR3 agonist with EC_{50}s of 0.57, 0.24, and 2.7 nM, respectively[3].

In Vitro

PD 168368 (PD168368) is highly active and stimulated $[Ca^{2+}]_I$ release in human neutrophils with EC_{50} values in the nanomolar range[3].
PD 168368 (PD168368) suppresses migration and invasion of the human breast cancer cell line MDA-MB-231. PD 168368 reduces epithelial-mesenchymal transition (EMT) of breast cancer cells by E-cadherin upregulation and vimentin downregulation. PD 168368 (5 μM) inhibits migration and invasiveness in breast cancer cells[4].
PD 168368 (10 μM) suppresses the activation of mTOR/p70S6K/4EBP1 and AKT/GSK-3β pathways in breast cancer cells[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[4]

Cell Line:	Human breast cancer cell line MDA-MB-231

Concentration:	5 μM
Incubation Time:	24 hours
Result:	Clearly decreased the migratory ability of MDA-MB-231 cells in a Boyden chamber migration assay.

Cell Viability Assay[4]

Cell Line:	MDA-MB-231 cells
Concentration:	10 μM
Incubation Time:	0, 0.5, 1, 2, 4, 8, and 16 hours
Result:	Decreased phosphorylation levels of mTOR, p70S6K, 4EBP1, AKT and GSK-3β in a time-dependent manner.

In Vivo

PD 168368 (PD168368) potently inhibits in vivo metastasis of breast cancer. PD 168368 (1.2 mg/kg; intraperitoneal injection for 30 days) inhibits metastasis of breast cancer in mice[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female BALB/c-nude mice (age 8-10 weeks) bearing MDA-MB-231 xenograft model[4]
Dosage:	1.2 mg/kg
Administration:	Intraperitoneal injection for 30 days
Result:	No metastatic tumor nodules were observed in lungs of PD 168368-treated mice compared to PEG-injected mice.

REFERENCES

[1]. R R Ryan, et al. Comparative pharmacology of the nonpeptide neuromedin B receptor antagonist PD 168368. J Pharmacol Exp Ther. 1999 Sep;290(3):1202-11.

[2]. K Tokita, et al. Tyrosine 220 in the 5th transmembrane domain of the neuromedin B receptor is critical for the high selectivity of the peptoid antagonist PD168368. J Biol Chem. 2001 Jan 5;276(1):495-504.

[3]. Igor A Schepetkin, et al. Gastrin-releasing peptide/neuromedin B receptor antagonists PD176252, PD168368, and related analogs are potent agonists of human formyl-peptide receptors. Mol Pharmacol. 2011 Jan;79(1):77-90.

[4]. Hyun-Joo Park, et al. Neuromedin B receptor antagonism inhibits migration, invasion, and epithelial-mesenchymal transition of breast cancer cells. Int J Oncol. 2016 Sep;49(3):934-42.