产品名称：AMD 3465
产品别名：AMD 3465 hexahydrobromide； GENZ-644494 hexahydrobromide

生物活性：

Description	AMD 3465 hexahydrobromide (GENZ-644494 hexahydrobromide) is a potent antagonist of CXCR4, inhibits binding of 12G5 mAb and $CXCL12^{AF647}$ to CXCR4, with IC_{50}s of 0.75 nM and 18 nM in SupT1 cells; AMD 3465 also potently inhibits the replication of X4 HIV strains (IC_{50}: 1-10 nM), but has no effect on CCR5-using (R5) viruses.		
IC_{50} & Target	2G5 mAb-CXCR4	$CXCL12^{AF647}$-CXCR4	X4 HIV-1 (NL4.3)
	0.75 nM (IC_{50}, in SupT1 cells)	18 nM (IC_{50}, in SupT1 cells)	6.1 nM (IC_{50}, in MT-4 cells)
	X4 HIV-1 (RF)	X4 HIV-1 (HE)	X4 HIV-1 (III_B)
	7.4 nM (IC_{50}, in MT-4 cells)	9.8 nM (IC_{50}, in MT-4 cells)	12.3 nM (IC_{50}, in MT-4 cells)
	X4 HIV-1 ($NL4.3^{AMD3100}$)	HIV-2 (ROD)	HIV-2 (EHO)
	2822 nM (IC_{50}, in MT-4 cells)	12.3 nM (IC_{50}, in MT-4 cells)	12.3 nM (IC_{50}, in MT-4 cells)
In Vitro	AMD 3465 hexahydrobromide is a potent antagonist of CXCR4, inhibits binding of 12G5 mAb and $CXCL12^{AF647}$ to CXCR4, with IC_{50}s of 0.75 nM and 18 nM in SupT1 cells. AMD 3465 (50 nM) totally blocks CXCL12-induced calcium mobilization, with an IC_{50} of 17 nM, but shows no effect on the intracellular calcium fluxes elicited by the CCR5 ligands RANTES, LD78β and MIP-1β in U87.CD4.CCR5 cells. AMD 3465 also potently inhibits the replication of X4 HIV strains (IC_{50}: 1-10 nM), but has no effect on CCR5-using (R5) viruses. AMD3465 is cytotoxic to the X4 HIV-1 strains IIIB, NL4.3, RF and HE with an IC_{50} ranging from 6 to 12 nM. The IC_{50} for suppression of the HIV-2 strains ROD and EHO is 12.3 nM[1]. AMD 3465 inhibits CXCL-12-induced growth in U87 and Daoy cells. AMD 3465 treatment stimulates the phosphorylation of Erk1/2 in U87 and Daoy cells[2].		
In Vivo	AMD 3465 (2.5 mg/kg/d, s.c. for 5 weeks) significantly blocks the growth of U87 GBM and Daoy xenografts[2].		
Solvent&Solubility	***In Vitro:*** **H_2O : ≥ 38 mg/mL (42.41 mM)** * "≥" means soluble, but saturation unknown.		

	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	1.1160 mL	5.5799 mL	11.1598 mL
	5 mM	0.2232 mL	1.1160 mL	2.2320 mL
	10 mM	0.1116 mL	0.5580 mL	1.1160 mL

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

[1]. Hatse S, et al. AMD3465, a monomacrocyclic CXCR4 antagonist and potent HIV entry inhibitor. Biochem Pharmacol. 2005 Sep 1;70(5):752-61.

References	[2]. Yang L, et al. Blocking CXCR4-mediated cyclic AMP suppression inhibits brain tumor growth in vivo. Cancer Res. 2007 Jan 15;67(2):651-8.

实验参考：

Cell Assay	Following serum starvation for 24 h, astrocytes, granule cells, U87 cells, and Daoy cells are treated with 1 μg/mL CXCL12, 2.5 ng/mL AMD 3465, 200 μM rolipram, or 10 μM forskolin. Daoy and U87 cell growth in culture is measured by trypan blue exclusion after 24 and 48 h of treatment, respectively[2].
Animal Administration	Mice[2] Mice are imaged at least twice after implantation of cells to identify those with equivalent tumor growth rates. Two weeks after tumor cell implantation, cohorts of mice with approximately equivalent tumor bioluminescence are divided into equal control and treatment groups. Animals in AMD 3465 experiments receive s.c. osmotic pumps loaded with 10 mg/mL AMD 3465 in sterile PBS or PBS alone. The infusion rate is 0.25 μL/h (50 μg/d). For the experiments with rolipram or caffeine, mice in the treatment groups receive oral administration of rolipram (5 μg/g/d) or caffeine (100 μg/g/d). The concentration of drug in the water is determined from daily measurements of water consumption by each animal over the course of 7 days. Concentrations are adjusted based on water consumption to provide the prescribed dose[2].
References	[1]. Hatse S, et al. AMD3465, a monomacrocyclic CXCR4 antagonist and potent HIV entry inhibitor. Biochem Pharmacol. 2005 Sep 1;70(5):752-61. [2]. Yang L, et al. Blocking CXCR4-mediated cyclic AMP suppression inhibits brain tumor growth in vivo. Cancer Res. 2007 Jan 15;67(2):651-8.