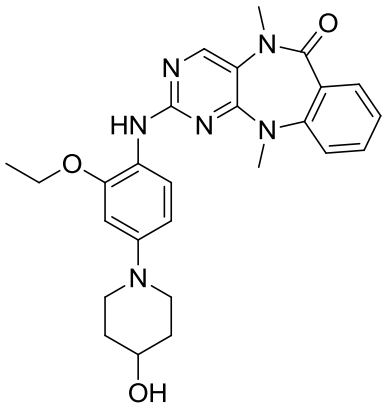
BMK1/Erk5 inhibitor (XMD8-92)



Chemical Formula: $C_{26}H_{30}N_6O_3$
Molecular Weight: 474.55

Category	Parameter	Description
Compound	Name	BMK1/Erk5 inhibitor (XMD8-92)
	Citation	*Cancer Cell,* **2010***, 18,* 258-267.
	Chemical descriptors	CN(C1=CN=C(NC2=C(OCC)C=C(N3CCC(O)CC3)C=C2)N=C1N(C)C4=C5C=CC=C4)C5=O
	Chemical name	2-((2-ethoxy-4-(4-hydroxypiperidin-1-yl)phenyl)amino)-5,11-dimethyl-5H-benzo[e]pyrimido[5,4-b][1,4]diazepin-6(11H)-one
	Availability	Tocris Bioscience http://www.tocris.com/dispprod.php?ItemId=282866
In vitro profiling	Target (potency)	**BMK1** (80 nM K_d in Ambit binding assay, 1.5 µM IC_{50} in ActivX KiNativ assay)
	Target (potency)	**DCAMKL1** (97 nM K_d in Ambit binding assay) **DCAMKL2** (190 nM K_d in Ambit binding assay) **TNK1** (890 nM K_d in Ambit binding assay, 10 µM IC_{50} in ActivX KiNativ assay) **PLK4** (600 nM K_d in Ambit binding assay, no inhibitory effect at 10 µM in *in vitro* kinase assay)
	Selectivity	
	Potential reactivity	None to our knowledge
	SAR	
	Mechanism of inhibition	ATP-competitive
	Structure of target-probe complex	
Cellular profiling	Validation of cellular target	XMD8-92 dose-dependently inhibited MAPK7 autophosphorylation induced by EGF in HeLa cells with IC50 of 0.24±0.04 µM. Compound phenotypes were compared to literature. The cellular effects were correlated with *in vitro* biochemical activities.
	Validation of cellular specificity	

Pharmacodynamics	
Pharmacokinetics	$T_{1/2}$ = 2.0 hours, CL = 25.5 (mL/min/Kg), Vss = 3.4 (L/Kg), F = 69%
Synthetic scheme