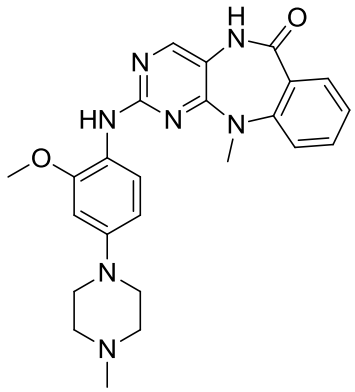
ACK1 inhibitor (B19)



Chemical Formula: $C_{24}H_{27}N_7O_2$
Molecular Weight: 445.52

Category	Parameter	Description
Compound	Name	ACK1 inhibitor (B19)
	Citation	*Chem. Biol.* **2011**, *18*, 868-879.
	Chemical descriptors	O=C1C2=C(C=CC=C2)N(C)C3=NC(NC4=C(OC)C=C(N5CCN(C)CC5)C=C4)=NC=C3N1
	Chemical name	2-((2-methoxy-4-(4-methylpiperazin-1-yl)phenyl)amino)-11-methyl-5H-benzo[e]pyrimido[5,4-b][1,4]diazepin-6(11H)-one
	Availability	
In vitro profiling	Target (potency)	**ACK1** (15 nM K_d in Ambit binding assay, 35.4 nM IC_{50} in Invitrogen kinase assay)
	Target (potency)	**BRK** (37 nM K_d in Ambit binding assay, 47 nM IC_{50} in Invitrogen kinase assay) **CSF1R** (330 nM K_d in Ambit binding assay, 428 nM IC_{50} in Invitrogen kinase assay) **DCAMKL1** (280 nM K_d in Ambit binding assay) **DCAMKL2** (690 nM K_d in Ambit binding assay, 3200 nM IC_{50} in Invitrogen kinase assay) **FRK** (96 nM K_d in Ambit binding assay, 264 nM IC_{50} in Invitrogen kinase assay) **GAK** (270 nM K_d in Ambit binding assay) **TNK1** (110 nM K_d in Ambit binding 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	B19 inhibited kinase activity of ACK1 by monitoring EGF-induced autophosphorylation in HEK293 cell at 2 µM. B19 completely inhibited lung cancer cell A549 growth at 10 µM.
	Validation of cellular specificity	
Pharmacodynamics		

Pharmacokinetics	$T_{1/2}$ = 1.28 hours, CL = 135 (mL/min/Kg), Vss = 8.42 (L/Kg), F = 47%
Synthetic scheme