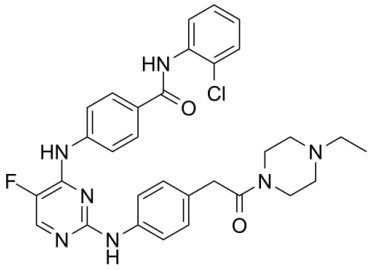
Data Sheet

Product Name:	TCS7010
Cat. No.:	CS-0011
CAS No.:	1158838-45-9
Molecular Formula:	C31H31ClFN7O2
Molecular Weight:	588.08
Target:	Apoptosis; Aurora Kinase
Pathway:	Apoptosis; Cell Cycle/DNA Damage; Epigenetics
Solubility:	H2O : < 0.1 mg/mL (insoluble); DMSO : ≥ 100 mg/mL (170.04 mM)



BIOLOGICAL ACTIVITY:

TCS7010 is a potent and highly selective **Aurora A** inhibitor with with an **IC_{50}** of 3.4 nM. IC50 & Target: IC50: 3.4 nM (Aurora A), 3.4 μM (Aurora B)[1] **In Vitro:** TCS7010 is exceptionally selective Aurora A inhibitors. TCS7010 is an useful tool compounds for investigating the cellular role of Aurora A kinases without the complication of also inhibiting Aurora B[1].

PROTOCOL (Extracted from published papers and Only for reference)

Kinase assay [1] The E161T Aurora B and T217E Aurora A variants were prepared from wildtype, full-length, N-terminally Flag-tagged coding sequences cloned into pET-21a by standard Kunkel mutagenesis. All constructs were sequence verified. Mutants and the corresponding wild-type control proteins were expressed in E. coli BL21-DE3 pLysS-Rosetta and purified. The complex of TPX2 and Aurora A was prepared by cloning of a GST fusion of TPX2 residues 2-43 behind a second T7-lac promoter into the pET21 Aurora A construct described above. The linker between GST and the TPX2 sequence included a tobacco etch virus protease site. The complex was expressed in E.coli BL21-DE3 pLysS-Rosetta 2 at 37°C byinduction with 1 mM isopropyl-β-D-1-thiogalactopyranoside (IPTG). Cell assay [1] Cells were harvested after 3 h. Cell lysates were prepared by suspension in 50 mM Tris, pH 8, 0.4 M NaCl, 1 mM EDTA, 5 mM _-mercaptoethanol (BME), 5% glycerol (buffer A) and passage through a microfluidizer. The soluble fraction was loaded onto glutathione Sepharose 4B, and the column was washed with buffer A. Aurora A complex and excess GSTTPX2 were eluted with 10 mM glutathione in buffer A. Protein was loaded onto anti-Flag M2 agarose equilibrated in 20 mM HEPES, pH 7.2, 0.4 M NaCl, 5 mM BME, 20% glycerol (buffer B). After being washed, the complex was eluted with 100 μg/mL Flag peptide in buffer B. Final purification was achieved by passage through a HiLoad Superdex 16/60 S-200 column equilibrated in buffer B. Note that we eventually chose not to cleave the TPX2 peptide from the GST fusion partner. We observed that the TPX2 fragment stained quite poorly on gels, and we could not be certain that it was still present in the complex at stoichiometric levels after TEV protease cleavage.

References:

[1]. Aliagas-Martin I, Burdick D, Corson L, Dotson J, Drummond J, Fields C, Huang OW, Hunsaker T, Kleinheinz T, Krueger E, Liang J, Moffat J, Phillips G, Pulk R, Rawson TE, Ultsch M, Walker L, Wiesmann C, Zhang B, Zhu BY, Cochran AG.A class of 2,4-bisanilinopyrimidine Aurora A inhibitors with unusually high selectivity against Aurora B.J Med Chem. 2009 May 28;52(10):3300-7.

CAIndexNames:

Benzamide, N-(2-chlorophenyl)-4-[[2-[[4-[2-(4-ethyl-1-piperazinyl)-2-oxoethyl]phenyl]amino]-5-fluoro-4-pyrimidinyl]amino]-

SMILES:

O=C(C1=CC=C(C=C1)NC2=C(F)C=NC(NC3=CC=C(C=C3)CC(N4CCN(CC4)CC)=O)=N2)NC5=CC=CC=C5Cl

Caution: Product has not been fully validated for medical applications. For research use only.

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