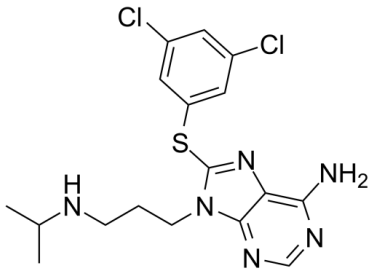
Data Sheet

Product Name:	PU-WS13
Cat. No.:	CS-4953
CAS No.:	1454619-14-7
Molecular Formula:	C17H20Cl2N6S
Molecular Weight:	411.35
Target:	HSP
Pathway:	Cell Cycle/DNA Damage; Metabolic Enzyme/Protease
Solubility:	DMSO : ≥ 40 mg/mL (97.24 mM)



BIOLOGICAL ACTIVITY:

PU-WS13 is a selective **Grp94** inhibitor, with an **EC_{50}** of 0.22 μM. IC50 & Target: EC50: 0.22 μM (Grp94), 7.3 μM (Trap-1), 27.3 μM (Hsp90α), 41.8 μM (Hsp90β)[1] **In Vitro:** PU-WS13 is a Grp94 inhibitor, with an EC_{50} of 0.22 μM. PU-WS13 also slightly suppresses Hsp90α, Hsp90β and Trap-1, with EC_{50}s of 27.3, 41.8 and 7.3 μM, respectively. PU-WS13 (2.5-20 μM) shows no toxicity on two nonmalignant cell lines. PU-WS13 (15 μM) disrupts the circular architecture of HER2 at the plasma membrane of SKBr3 cells mediated through Grp94. PU-WS13 inhibits Grp94, and the inhibition induces apoptosis in and reduce the viability of HER2 overexpressing breast cancer cells[1].

PROTOCOL (Extracted from published papers and Only for reference)

Kinase Assay: [1]The Hsp90 FP competition assays are carried out in black 96-well micro-plates in a total volume of 100 μL in each well. A stock of 10 μM cy3B-GM and PU-FITC3 is prepared in DMSO and diluted with Felts buffer (20 mM Hepes (K), pH 7.3, 50 mM KCl, 2 mM DTT, 5 mM $MgCl_2$, 20 mM Na_2MoO_4 and 0.01% NP40 with 0.1 mg/mL BGG). To each well is added the fluorescent dye-labeled **Hsp90 ligand** (6 nM cy3B-GM for Hsp90α, Hsp90β and Grp94 and 3 nM PU-FITC3 for Trap-1), protein (**10 nM Hsp90α, 10 nM Hsp90β, 10 nM Grp94, 30 nM Trap-1**) and tested inhibitor (**including PU-WS13, initial stock in DMSO**) in a final volume of 100 μL Felts buffer. Compounds are added in duplicate or triplicate wells. For each assay, background wells (buffer only), tracer controls (free, fluorescent dye-labeled Hsp90 ligand only) and bound controls (fluorescent dye-labeled Hsp90 ligand in the presence of protein) are included on each assay plate. The assay plate is incubated on a shaker at 4°C for 24 h, and the FP values (in mP) are measured. The fraction of fluorescent dye-labeled Hsp90 ligand bound to Hsp90 is correlated to the mP value and plotted against values of competitor concentrations. The inhibitor concentration at which 50% of bound fluorescent dye-labeled Hsp90 ligand is displaced is obtained by fitting the data. For cy3B-GM, an excitation filter at 530 nm and an emission filter at 580 nm are used with a dichroic mirror of 561 nm. For PU-FITC3, an excitation filter at 485 nm and an emission filter at 530 nm are used with a dichroic mirror of 505 nm. All of the experimental data are analyzed, and binding affinity values are given as relative binding affinity values (EC_{50}, concentration at which 50% of fluorescent ligand is competed off by compound)[1]. **Cell Assay:** [1]Cells are treated for **72 h** with **inhibitors (including PU-WS13)** or transfected with Grp94 siRNA or control siRNA, and their viability is assessed using CellTiter-Glo luminescent Cell Viability Assay. The method determines the number of viable cells in culture based on quantification of the ATP present, which signals the presence of metabolically active cells[1].

References:

[1]. Patel PD, et al. Paralog-selective Hsp90 inhibitors define tumor-specific regulation of HER2. Nat Chem Biol. 2013 Nov;9(11):677-684.

CAIndexNames:

9H-Purine-9-propanamine, 6-amino-8-[(3,5-dichlorophenyl)thio]-N-(1-methylethyl)-

SMILES:

CC(NCCCN1C(SC2=CC(Cl)=CC(Cl)=C2)=NC3=C(N)N=CN=C13)C

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

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