Supplementary Table 1

CCLE	CGP
Cell line selection and annotation	
Human cancer cell lines were obtained, cultured and processed from commercial vendors in the U.S., Germany, the U.K., Japan, Italy, and South Korea; small number of lines were obtained from academic labs. ”COSMIC-compatible anatomic and histologic annotations for the collection.	All cell lines were sourced from commercial vendors and annotated with COSMIC identifiers.
Growth medium	
All cell lines were cultured in RPMI or DMEM with 10% fetal bovine serum (FBS; Invitrogen)	Cells were grown in RPMI or DMEM/F12 medium supplemented with 5% FBS and penicillin/streptavidin
Exclude cross contamination and synonymous lines	
SNP fingerprint using Affymetrix SNP array 6.0 (20,000 randomly selected SNPs)	SNP fingerprinting using Sequenom (92 SNPs) and short tandem repeat (STR) analysis using AmpFlSTRIdentifiler, Applied Biosystems
Optimal cell number measurement	
Not specified	70% cell confluency/ensure reaching growth phase
Storage of compounds	
Compounds were dissolved in 90% DMSO/10% water at 2 mM and stored at -20°C until use	Compounds were stored as 10mM aliquots at -80°C, and were subjected to a maximum of five freeze-thaw cycles
Plating Cells	
Cell lines were dispensed into 1,536-well plates (optimized for tissue culture) with a final volume of 5 μL and a concentration of 250 cells per well	Cells were seeded in either 96-well or 384-well microplates
Drug concentration range	
Drugs serially diluted, concentration range of 2 mM to 636 nM	The range of concentrations selected for each compound was based on in vitro data of concentrations inhibiting relevant kinase activity and cell viability

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Colony formation assays	
Not specified	Yes
Adherent Cells	
12 to 24 hours after plating, 20 nL of each compound dilution-cell mix, were incubated for 72 to 84 hours	Adherent cell lines were plated 1 day before treatment with a 9-point twofold dilution series of compounds and assayed at a 72 hours time point
Suspension Cells	
Not specified	Suspension cell lines were treated with compound by following plating, incubated for 72 hours, and then stained with 55μg ml-1 resazurin (Sigma)
Viability assay	
Cell numbers were determined by measuring the amount of ATP per well using Cell Titer Glo (Promega)	Cells stained with 1μM of the fluorescent nucleic acid stain Syto60 (Invitrogen) for 1 hour
Use of controls	
Wells containing vehicle only or the positive control compound MG132 (a proteasome inhibitor toxic to most cell lines at 1μM) were also included	Sixteen (96-well format) or 42 (384-well) drug-free positive controls, 8 (96-well) or 32 (384-well) negative (no cells) controls
Assays reproducibility	
Compounds were tested in duplicate, occasionally, lines were assayed multiple times (weeks to months apart, data not shown)	Drug screening was performed at two sites using matched cell line collections (data available for Camptothecin, drugs number 1003 and 195)
Modelling of drug dose-response curve	
Decision tree methodology based on the NIH/NCGC assay guidelines	Bayesian sigmoid model
Statistic for drug sensitivity	
EC_{50}, IC_{50}, AUC, A_{max}	IC_{25}, IC_{50}, IC_{75}, IC_{90}, AUC