Supplementary Materials

Discovery of Novel Dual Extracellular Regulated Protein Kinases (ERK) and Phosphoinositide 3-Kinase (PI3K) Inhibitors as A Promising Strategy for Cancer Therapy

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(Supporting Information)

¹ H and ¹³ C-NMR spectra of compounds 16a~16d	S2S5
¹ H and ¹³ C-NMR spectra of compounds 24	-S6
¹ H and ¹³ C-NMR spectra of compounds 32a~32m	-S7–S19
Dose-inhibition response curves of compounds 32a, 32d, 32g, 32l, BVD-523 and GDC	2-0980
	·S20–S21

Compound 16a



¹C-NMR spectra of compound **16a**

Compound 16b





Compound 16c



Compound 16d





¹³C-NMR spectra of compound 24

Compound 32a





















Compound 32f



¹³C-NMR spectra of compound **32f**





Compound 32h



Compound 32i



¹³C-NMR spectra of compound **32i**

Compound 32j



250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 δ (13C-NMR spectra of compound 32j

Compound 32k



250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 δ(13C)/ppm

Compound 321





Compound 32m



250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 δ (13C-NMR spectra of compound **32m**



HEC1B IC₅₀=2.272μM



Η Ε C 1 B IC ₅₀ = 18.02 μ M



Η C T 1 1 6 IC ₅₀ = 1.945 μ M









HEC1B IC ₅₀=0.2295μM



HCT116 IC₅₀=0.7225μM





Figure S1. Dose-inhibition response curves of compounds 32a, 32d, 32g, 32l, BVD-523 and GDC-0980.