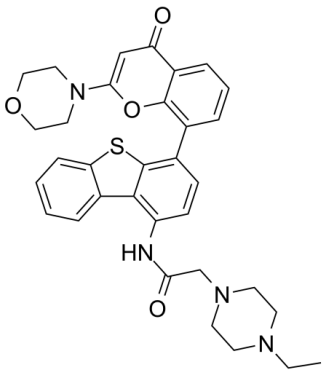
Data Sheet

Product Name:	KU-0060648
Cat. No.:	CS-0006884
CAS No.:	881375-00-4
Molecular Formula:	$C_{33}H_{34}N_4O_4S$
Molecular Weight:	582.71
Target:	DNA-PK; mTOR; PI3K
Pathway:	Cell Cycle/DNA Damage; PI3K/Akt/mTOR
Solubility:	DMSO : 2.78 mg/mL (4.77 mM; ultrasonic and warming and heat to 60°C)



BIOLOGICAL ACTIVITY:

KU-0060648 is a dual inhibitor of **PI3K** and **DNA-PK** with **IC_{50}**s of 4 nM, 0.5 nM, 0.1 nM, 0.594 nM and 8.6 nM for PI3Kα, PI3Kβ, PI3Kγ, PI3Kδ and DNA-PK, respectively[1]. **In Vitro:** KU-0060648 inhibits cellular DNA-PK auto-phosphorylation with IC_{50} values of 0.019 μM (MCF7 cells) and 0.17 μM (SW620 cells), and PI-3K-mediated AKT phosphorylation with IC_{50} values of 0.039 μM (MCF7 cells) and >10 μM (SW620 cells)[1].

KU-0060648 (30-500 nM; 72 hours) dose-dependently inhibits HepG2 cell proliferation, IC_{50}=134.32nM[2].

KU-0060648 (0.1-1 μM; 5 days) inhibits cell lines growth with GI_{50}s of 0.95 μM, 0.21 μM, 0.27 μM, 0.41 μM and 1 μM in SW620, LoVo, MCF7, T47D and MDA-MB-231 cells[1].

KU-0060648 (100-300 nM;12 hours) significantly inhibits activation of PI3K (p85 phosphorylation), AKT (Ser-473 and Thr-308 phosphorylations) and mTOR (p70S6K1 Thr-389 phosphorylation) in HepG2/Huh-7 lines and primary human HCC cells[2].

In Vivo: KU-0060648 (intraperitoneal injection; 10 and 50 mg/kg; once daily; daily for 21 days) dramatically inhibits HepG2 xenograft growth in nude mice, the tumor weights (at week 5) of KU-0060648 group mice are dramatically lighter than that of vehicle control mice and exert a dose-dependent effect in vivo[1].

References:

[1]. Munck JM, et al. Chemosensitization of cancer cells by KU-0060648, a dual inhibitor of DNA-PK and PI-3K. Mol Cancer Ther. 2012 Aug;11(8):1789-98.

[2]. Chen MB, et al. KU-0060648 inhibits hepatocellular carcinoma cells through DNA-PKcs-dependent and DNA-PKcs-independent mechanisms. Oncotarget. 2016 Mar 29;7(13):17047-59.

CAIndexNames:

2-(4-ethylpiperazin-1-yl)-N-(4-(2-morpholino-4-oxo-4H-chromen-8-yl)dibenzo[b,d]thiophen-1-yl)acetamide

SMILES:

O=C(NC1=C(C2=CC=CC=C2S3)C3=C(C4=C5C(C(C=C(N6CCOCC6)O5)=O)=CC=C4)C=C1)CN7CCN(CC)CC7

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

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