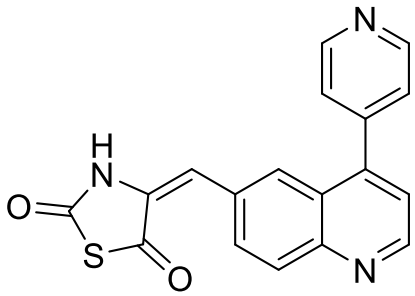
Product data sheet

MedKoo Cat#: 205739 Name: GSK1059615 CAS: 958852-01-1 Chemical Formula: $C_{18}H_{11}N_3O_2S$ Exact Mass: 333.0572 Molecular Weight: 333.36384	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
GSK1059615 is a phosphoinositide 3-kinase (PI3K) inhibitor with potential antineoplastic activity. PI3K inhibitor GSK1059615 inhibits PI3K in the PI3K/AKT kinase signaling pathway, which may trigger the translocation of cytosolic Bax to the mitochondrial outer membrane and an increase in mitochondrial membrane permeability, followed by apoptosis. Bax is a member of the proapoptotic Bcl-2 family of proteins. PIK3, an enzyme often overexpressed in cancer cells, plays a crucial role in tumor cell regulation and survival. Check for active clinical trials or closed clinical trials using this agent. (NCI Thesaurus).

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
TBD	TBD	TBD

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	3.00 mL	15.00 mL	30.00 mL
5 mM	0.60 mL	30.00 mL	6.00 mL
10 mM	0.30 mL	1.50 mL	3.00 mL
50 mM	0.06 mL	0.30 mL	0.60 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Xie J, Li Q, Ding X, Gao Y. GSK1059615 kills head and neck squamous cell carcinoma cells possibly via activating mitochondrial programmed necrosis pathway. Oncotarget. 2017 Feb 7;8(31):50814-50823. doi: 10.18632/oncotarget.15135. PMID: 28881606; PMCID: PMC5584207.

In vivo study

1. Xie J, Li Q, Ding X, Gao Y. GSK1059615 kills head and neck squamous cell carcinoma cells possibly via activating mitochondrial programmed necrosis pathway. Oncotarget. 2017 Feb 7;8(31):50814-50823. doi: 10.18632/oncotarget.15135. PMID: 28881606; PMCID: PMC5584207.

7. Bioactivity
Biological target:

GSK1059615 is a dual inhibitor of PI3Kα/β/δ/γ (reversible) and mTOR with IC50 of 0.4 nM/0.6 nM/2 nM/5 nM and 12 nM, respectively.

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In vitro activity

In the primary OCC cells (all four lines, “OCC1-4”), treatment with GSK1059615 (3 μM, 24h) also inhibited cell proliferation, which was again indicated by BrdU ELISA OD reduction (Figure 2E). Collectively, these results imply that GSK1059615 inhibits human HNSCC cell proliferation.

Reference: Oncotarget. 2017 Feb 7;8(31):50814-50823. https://pubmed.ncbi.nlm.nih.gov/28881606/

In vivo activity

As demonstrated, i.p. daily administration of GSK1059615 at 30 mg/kg significantly inhibited SCC-9 tumor growth in the nude mice (Figure 6A). Estimated tumor growth, expressed as mm3 per day, was also dramatically inhibited with GSK1059615 administration (Figure 6B). The weight of GSK1059615-treated tumors was also dramatically lighter than those of vehicle control tumors (Figure 6C). Significantly, as shown in Figure 6A-6C, co-administration of cyclosporin A (5 mg/kg, i.v., daily), the cyclophilin-D inhibitor, largely attenuated GSK1059615-induced anti-SCC-9 tumor activity. Thus, mPTP and programmed necrosis pathway may also be required for GSK1059615-induced anti-tumor activity in vivo. Notably, cyclosporin A alone failed to inhibit SCC-9 tumor growth in the mice (Figure 6A-6C). Importantly, the mice body weight was not significantly different between the groups (Figure 6D), suggesting that these mice were well-tolerated to the tested regimens. Together, GSK1059615 inhibits SCC-9 tumor growth in nude mice, and its anti-tumor activity in vivo is compromised with co-administration of cyclosporin A.

Reference: Oncotarget. 2017 Feb 7;8(31):50814-50823. https://pubmed.ncbi.nlm.nih.gov/28881606/