# Product Data Sheet

Product Name: GSK2334470
Cat. No.: GC12275

## Chemical Properties

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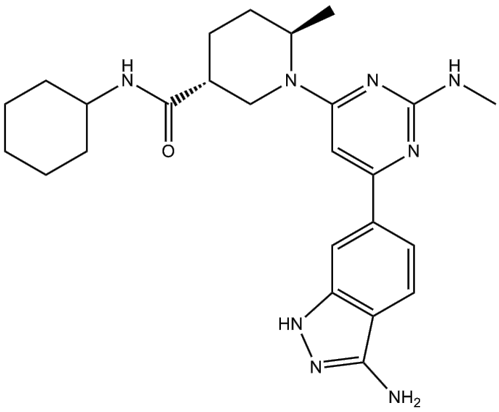
|---|---|---|---|
| Cas. No. | 1227911-45-6 | | |
| Chemical Name | (3S,6R)-1-[6-(3-amino-1H-indazol-6-yl)-2-(methylamino)pyrimidin-4-yl]-N-cyclohexyl-6-methylpiperidine-3-carboxamide | | |
| SMILES | CC1CCC(CN1C2=NC(=NC(=C2)C3=CC4=C(C=C3)C(=NN4)N)NC)C(=O)NC5CCCCC5 | | |
| Formula | $C_{25}H_{34}N_8O$ | M.Wt | 462.59 |
| Solubility | ≥ 46.3mg/mL in DMSO | Storage | Store at -20°C |
| General tips | For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months. | | |
| Shipping Condition | Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request. | | |

Structure




## Protocol

### Cell experiment [1]:

Cell lines U87 cells and fibroblasts

# Product Data Sheet

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|---|---|
| Preparation method | The solubility of this compound in DMSO is >23.2mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37°C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months. |
| Reacting condition | 3 μM, 1 μM |
| Applications | In U87 glioblastoma cells that lack PTEN expression, GSK2334470 (3μM) only partially inhibited Thr308 phosphorylation or Akt activation ~3-fold. GSK2334470 (1 μM) effectively inhibited SGK1 activity. In MEF (mouse embryonic fibroblast) cells, 1 μM GSK2334470 inhibited Akt Thr308 phosphorylation and activity, and also inhibited activation of S6K1 as well as SGK1. |

**Animal experiment [2]:**

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| Animal models | MM xenograft model established in immunodeficient mice |
| Dosage form | 5 days of GSK-470 (40 mg/kg/d), 5 days of PP242 (20 mg/kg/d), or 5 days of GSK-470 combined with PP242; intraperitoneal injection; once every day |
| Application | In multiple myeloma xenograft immunodeficient mice, compared with untreated mice, GSK-470 (GSK2334470) or PP242 produced a modest tumor volume reduction. Combination treatment with GSK-470 and PP242 significantly inhibited tumor growth. |
| Other notes | Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal. |

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

[1]. Najafov A, Sommer E, Axten J, et al. Characterization of GSK2334470, a novel and highly specific inhibitor of PDK1. Biochem. J, 2011, 433: 357-369.

[2]. Yang C, Huang X, Liu H, et al. PDK1 inhibitor GSK2334470 exerts antitumor activity in multiple myeloma and forms a novel multitargeted combination with dual mTORC1/C2 inhibitor PP242. Oncotarget. 2017 Jun 13;8(24):39185-39197.

## Background

GSK2334470 is a highly specific inhibitor of 3-phosphoinositide-dependent protein kinase 1(PDK1) with IC50 value of ~10nM [1].

GSK2334470 prevents PDK1 from activating full-length Akt1or mutant Akt1 lacking the PH domain. It also inhibits phosphorylation of the PDKtide peptide substrate. GSK2334470 shows no significant inhibitory effect on 93 other protein kinases (including 13 AGC-kinases) and 15 lipid kinases. GSK2334470 markedly inhibits the IGF1-induced T-loop phosphorylation of SGK1, SGK2 and SGK3 overexpressed in HEK293 cells. GSK2334470 is also reported to suppress the activity of S6K1. It inhibits the phosphorylation of both hydrophobic motif and T-loop of S6K1. To Akt1, GSK2334470 exerts same effects on the phosphorylation of T-loop but has no significant inhibition of hydrophobic motif phosphorylation. In PDK1K465E/K465E knock-in ES cells, GSK2334470 is more potent to inhibit Akt activation than in PDK1+/+ ES cells. Moreover, the inhibition of Akt activation shows to recede in U87 glioblastoma cells lack PTEN expression [1].

References:
[1] Najafov A, Sommer E, Axten J, et al. Characterization of GSK2334470, a novel and highly specific inhibitor of PDK1. Biochem. J, 2011, 433: 357-369.