

AZD4547

## Chemical Properties

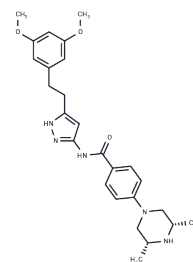
CAS No. : 1035270-39-3

Formula: C<sub>26</sub>H<sub>33</sub>N<sub>5</sub>O<sub>3</sub>

Molecular Weight: 463.57

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year



## Biological Description

Description	AZD4547 is an FGFR family inhibitor. AZD4547 selectively inhibits FGFR1 phosphorylation and suppresses cancer cell proliferation through inhibition of FGFR1 signaling, and is able to act on FGFR1 (IC <sub>50</sub> :0.2 nM), FGFR2 (IC <sub>50</sub> :2.5 nM), FGFR3 (IC <sub>50</sub> :1.8 nM) and FGFR4 (IC <sub>50</sub> :165 nM). IC <sub>50</sub> :165 nM).[2]
Targets(IC <sub>50</sub> )	FGFR,VEGFR
In vitro	<p><b>METHODS:</b> NRK-52E cells were pretreated with 2.5, 5, 10, and 20 μM AZD4547 for 1 hour, and then exposed to 0.5 μg/mL LPS for the specified time, and the effect of AZD4547 on LPS-induced inflammation defects in NRK-52E cells was observed.</p> <p><b>RESULTS</b> AZD4547 significantly inhibited cell proliferation in NRK-52E cells at a concentration of 20 μM. [2]</p> <p><b>METHODS:</b> NRK-52E cells were pretreated with 10 μM AZD4547 for 1 hour and then exposed to 0.5 μg/mL LPS for the indicated time. The levels of proinflammatory factors in NRK-52E cells were studied.</p> <p><b>RESULTS</b> AZD4547 attenuated LPS-induced inflammatory factors by reducing the TAK1/NF-κB signaling pathway in NRK-52E cells. [2]</p>
In vivo	<p><b>METHODS:</b> C57BL/6 mice were treated with LPS (15 mg/kg, intraperitoneal injection) and AZD4547 (40 mg/kg gavage 1 hour before LPS treatment) to investigate the renal protective effect of AZD4547 in LPS-induced acute kidney injury. Expression of the pro-apoptotic gene Bax and the anti-apoptotic gene Bcl-2 was measured to investigate whether the effect of AZD4547 on preserving renal function in AKI is mediated by regulating apoptosis.</p> <p><b>RESULTS</b> AZD4547 prevented LPS-related renal dysfunction, apoptosis, and renal inflammation in mice. [1]</p>
Kinase Assay	Cells were treated with AZD4547 or control for 3 hours at 37°C and then stimulated with 10 ng/mL aFGF/bFGF and 10 μg/mL heparin for 20 minutes. Western blotting was conducted with standard SDS-PAGE procedures and antibody incubation carried out overnight at 4°C. Secondary antibodies were applied and immunoreactive proteins visualized with Chemiluminescence substrate according to the manufacturer's instructions [1].
Cell Research	Cell lines were incubated with fixed concentrations of AZD4547 for 72 hours. For fluorescence-activated cell sorting (FACS), cells were fixed with 70% ethanol and then incubated with propidium iodide/RNase A labeling solution. Cell-cycle profiles were assessed with a FACSCalibur instrument and CellQuest analysis software. For apoptotic

analysis, cells and media were gently harvested and centrifuged, followed by washing of cell pellets. Cells were then processed for Annexin V-fluorescein isothiocyanate (FITC) staining and propidium iodide uptake according to the manufacturer's instructions. The proportion of cells staining positive for Annexin V were then assessed with a FACSCalibur instrument and quadrant sorting was done by CellQuest analysis software [1].

Animal Research	Tumor xenografts were established by s.c. injection into the left flank with 0.1 mL tumor cells ( $1 \times 10^6$ for LoVo, $1 \times 10^7$ for HCT-15, and $1 \times 10^7$ for Calu-6) or 0.2 mL ( $2 \times 10^7$ for KMS11 and KG1a) mixed 1:1 with Matrigel, with the exception of LoVo and HCT-15, which did not include Matrigel. Mice were randomized into control and treatment groups when tumors reached the determined size of more than 0.2 cm <sup>3</sup> . Tumor volume (measured by caliper), animal body weight, and tumor condition were recorded twice weekly for the duration of the study. Tumor volume was calculated as described previously [1].
-----------------	--

### Solubility Information

Solubility	DMSO: 50 mg/mL (107.86 mM), Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), H <sub>2</sub> O: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/mL refers to the product slightly soluble or insoluble)
------------	--

### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1572 mL	10.7859 mL	21.5717 mL
5 mM	0.4314 mL	2.1572 mL	4.3143 mL
10 mM	0.2157 mL	1.0786 mL	2.1572 mL
50 mM	0.0431 mL	0.2157 mL	0.4314 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

### Reference

- Gavine PR, et al. AZD4547: an orally bioavailable, potent, and selective inhibitor of the fibroblast growth factor receptor tyrosine kinase family. *Cancer Res.* 2012 Apr 15;72(8):2045-56.
- Yang Y L, Cao L B, He W R, et al. Endocytosis triggers V-ATPase-SYK-mediated priming of cGAS activation and innate immune response. *Proceedings of the National Academy of Sciences.* 2022, 119(43): e2207280119.
- Pu X, Ye Q, Cai J, et al. Typing FGFR2 translocation determines the response to targeted therapy of intrahepatic cholangiocarcinomas. *Cell death & disease.* 2021 Mar 11;12(3):256. doi: 10.1038/s41419-021-03548-4.
- Chen X, et al. AZD4547 Attenuates Lipopolysaccharide-Induced Acute Kidney Injury by Inhibiting Inflammation: The Role of FGFR1 in Renal Tubular Epithelial Cells. *Drug Des Devel Ther.* 2020 Feb 26;14:833-844.
- Zhang J, et al. Translating the therapeutic potential of AZD4547 in FGFR1-amplified non-small cell lung cancer through the use of patient-derived tumor xenograft models. *Clin Cancer Res.* 2012 Dec 15;18(24):6658-67.
- Feng Y, Zhang D, He G, et al. AZD4547 and the Alleviation of Hepatoma Cell Sorafenib Resistance via the Promotion of Autophagy. *Anti-Cancer Agents in Medicinal Chemistry (Formerly Current Medicinal Chemistry-Anti-Cancer Agents).* 2022, 22(18): 3107-3113.
- Feng Y, et al. AZD4547 and the Alleviation of Hepatoma Cell Sorafenib Resistance via the Promotion of Autophagy. *Anticancer Agents Med Chem.* 2022;22(18):3107-3113.

**Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins**

This product is for Research Use Only· Not for Human or Veterinary or Therapeutic Use

Tel:781-999-4286    E\_mail:info@targetmol.com    Address:36 Washington Street,Wellesley Hills,MA 02481