For Research Use Only

AZD-8055

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Catalog Number: CM05220

产品信息

Catalog Number:
CM05220

CAS号:
1009298-09-2

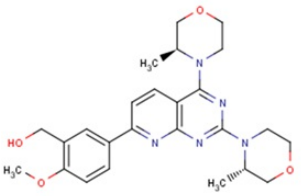
分子式:
$C_{25}H_{31}N_5O_4$

主要靶点:
Autophagy|mTOR|Apoptosis

主要通路:
凋亡|PI3K/Akt/mTOR 信号通路|自噬

分子量:
465.54

溶解度:
Ethanol:3 mg/mL (6.44 mM);
DMSO:45 mg/mL (96.66 mM);
H2O:< 1 mg/mL (insoluble or slightly soluble);



靶点活性

mTOR:0.8 nM (MDA-MB-468 cells)

体外活性

AZD8055 inhibits the phosphorylation of mTORC1 substrates p70S6K and 4E-BP1 as well as phosphorylation of the mTORC2 substrate AKT and downstream proteins. The rapamycin-resistant T37/46 phosphorylation sites on 4E-BP1 were fully inhibited by AZD8055, resulting in significant inhibition of cap-dependent translation. In vitro, AZD8055 potently inhibits proliferation and induces autophagy in H838 and A549 cells [1]. In vitro, the median relative IC50 for AZD8055 against the PPTP cell lines was 24.7?nM. Relative I/O values >0% were observed in 8 cell lines and 15 cell lines showed Relative I/O values ranging from -4.7 to -92.2% [2].

体内活性

In vivo, AZD8055 induces a dose-dependent pharmacodynamic effect on phosphorylated S6 and phosphorylated AKT at plasma concentrations leading to tumor growth inhibition [1]. AZD8055 administration could significantly decrease the IL-1β and TNF-α concentrations. Rats subjected to SAH + vehicle group demonstrated histological evidence of apoptosis compared with the sham group. The group treated with AZD8055 demonstrated a significant decrease in apoptosis ratio in the rat brain sample. In addition, in SAH group, the number of fluoro-jade B-positive cells clearly increased compared with the sham group. And the number of fluoro-jade B-positive cells decreased significantly in the SAH + rapamycin group and SAH + AZD8055 group [3].

动物实验

Tumor cells (10^6 for U87-MG, 5 × 10^6 for A549) were injected s.c. in a volume of 0.1 mL, and mice were randomized into control and treatment groups when tumor size reached 0.2 cm^3. AZD8055 was formulated in 30% (w/v) captisol (pH 3.0). The control group received the vehicle only. Tumor volumes (measured by caliper), animal body weight, and tumor condition were recorded twice weekly for the duration of the study. The tumor volume was calculated (taking length to be the longest diameter across the tumor and width to be the corresponding perpendicular diameter) using the following formula: (length × width) × √(length × width) × (π/6) [1].

细胞实验

For growth inhibition and acridine staining, cells were exposed to increasing concentrations of AZD8055 for 72 to 96 h and stained for cell nuclei (0.03 mg/mL Hoechst 33342) and acidic vesicles (1 μg/mL acridine orange). Images were captured at 450 and 536 nm on an ArrayScan II platform, and the percentage of acidic vesicles and the number of cells were quantified. For LC3 assessment, cells were exposed to e64d/pepstatin (10 μg/mL) for 30 to 90 min before incubation with AZD8055. Cells were lysed on ice and analyzed by immunoblotting [1].

储存

Powder: -20°C for 3 years | In solvent: -80°C for 1 year | Shipping with blue ice.