# AZD1656

**Cat. No.:** HY-15675

**CAS No.:** 919783-22-5

**Molecular Formula:** $C_{24}H_{26}N_6O_5$

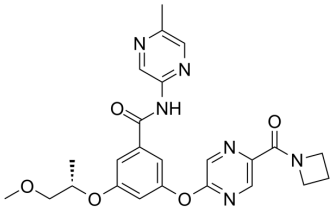
**Molecular Weight:** 478.5

**Target:** Glucokinase

**Pathway:** Metabolic Enzyme/Protease

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 6 months |
| | -20°C | 1 month |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 250 mg/mL (522.47 mM; Need ultrasonic)

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 2.0899 mL | 10.4493 mL | 20.8986 mL |
| 5 mM | 0.4180 mL | 2.0899 mL | 4.1797 mL |
| 10 mM | 0.2090 mL | 1.0449 mL | 2.0899 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (4.35 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.35 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.35 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

AZD1656 is a potent, selective and orally active glucokinase activator with an $EC_{50}$ of 60 nM. AZD1656 has the potential for type 2 diabetes research[1][2][3].

**$IC_{50}$ & Target**

EC50: 60 nM (Glucokinase)[2]

**In Vivo**

AZD1656 (0-9 mg/kg; oral gavage; daily; for 8 weeks; C57BL/6 mice) treatment shows lowered blood glucose and glucose excursion and raised insulin. Liver mRNA levels for various ChREBP target genes including carbohydrate response element

binding protein beta isoform (ChREBP-β), G6pc, Pklr, Acly, Acac and Gpd2 are increased by AZD1656[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| Animal Model: | C57BL/6 mice[1] |
| Dosage: | 0 mg/kg, 2 mg/kg, 4.5 mg/kg, 9 mg/kg |
| Administration: | Oral gavage; daily; for 8 weeks |
| Result: | Administered 2 hours before the oral glucose tolerance test, lowered blood glucose and glucose excursion and raised insulin. |

## REFERENCES


[1]. Brian E Ford, et al. Chronic glucokinase activator treatment activates liver Carbohydrate response element binding protein and improves hepatocyte ATP homeostasis during substrate challenge. Diabetes Obes Metab. 2020 Jun 10.

[2]. Medicinal Chemistry, et al. Design and Development of the Glucokinase Activator AZD1656. Complete Accounts of Integrated Drug Discovery and Development: Recent Examples from the Pharmaceutical Industry Volume 1, 185-220.

[3]. Terri Mitchard, et al. The novel use of a heterozygous knockout mouse for embryofetal development assessment of a glucokinase activator. Birth Defects Res B Dev Reprod Toxicol. 2014 Apr;101(2):152-61.





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