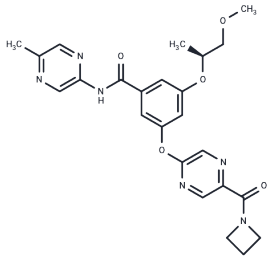
Data Sheet (Cat.No.T26712)

TargetMol

AZD-1656

Chemical Properties



CAS No. : 919783-22-5

Formula: C24H26N6O5

Molecular Weight: 478.5

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	AZD-1656 is a glucokinase activator (GKA) that can cause dose-limiting hypoglycemia in normal animals used in embryofetal development studies and type 2 diabetes.
Targets(IC50)	Glucokinase
In vivo	The gkdel/wt mouse was used as an alternative rodent strain for embryofetal development studies with AZD-1656. Heterozygous global knockout gkdel/wt females were dosed with 20, 50, or 130 mg/kg/day of AZD-1656 or vehicle for a minimum of 14 consecutive days before mating with wild-type males and throughout organogenesis. Maternal effects were confined to slightly reduced food consumption, reduced body weight gain, and the pharmacologic effect of decreased plasma glucose. Fetuses were genotyped. Fetal weights at the high dose were slightly reduced but there was no effect on fetal survival. There were two specificmajormalformations, omphalocele and right-sided aortic arch, with increased fetal incidence in mid- and high-dose fetuses (e.g., omphalocele fetal incidence of 0.6, 0.7, 4.6, and 2% across the dose groups) plus increased incidences of minor abnormalities and variants indicative of either delayed or disturbed development. Fetal weight and abnormalities were unaffected by fetal genotype. The fetal effects are considered hypoglycemia related. There was no effect on embryofetal survival in the gkdel/wt mouse at AZD-1656 exposures[1].

Solubility Information

Solubility	DMSO: 250 mg/mL (522.47 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5 mg/mL (10.45 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.0899 mL	10.4493 mL	20.8986 mL
5 mM	0.418 mL	2.0899 mL	4.1797 mL
10 mM	0.209 mL	1.0449 mL	2.0899 mL
50 mM	0.0418 mL	0.209 mL	0.418 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Krentz AJ, et al. Effect of exogenously administered glucagon versus spontaneous endogenous counter-regulation on glycaemic recovery from insulin-induced hypoglycaemia in patients with type 2 diabetes treated with a novel glucokinase activator, AZD1656, and metformin. Diabetes Obes Metab. 2014 Nov;16(11):1096-101.
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.
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.
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.