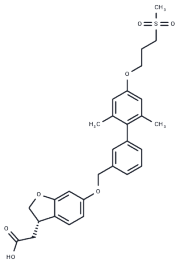
Data Sheet (Cat.No.T2351)

TargetMol

Fasiglifam

Chemical Properties



CAS No. : 1000413-72-8

Formula: C29H32O7S

Molecular Weight: 524.63

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	Fasiglifam (TAK875) is a potent, selective and orally bioavailable GPR40 agonist.
Targets(IC50)	GPCR
In vitro	Fasiglifam(0.01-10 μM) produces a concentration-dependent increase in intracellular IP production in CHO-hGPR40, with EC50 of 0.072 μM.Fasiglifam(0.1-10 μM) dose-dependently augments intracellular IP production in CHO cells[1]. Fasiglifam(3-30 μM) concentration-dependently augments [Ca2+]i. In the presence of 10 mM glucose, Fasiglifam(0.001-10 μM) dose-dependently stimulats insulin secretion from INS-1 833/15 cells[2].
In vivo	Fasiglifam(10 mg/kg, p.o.) increases plasma insulin levels in ZDF rats. Fasiglifam(30 mg/kg, p.o.) improves fasting hyperglycemia without affecting fasting normoglycemia. Fasiglifamat 30 mg/kg, which is a 3- to 10-fold higher dose compared with the dose that improved glucose tolerance in diabetic rats, does not alter fasting glucose levels in SD rats with normal glucose homeostasis. Likewise, Fasiglifamdoes not significantly alter insulin secretion in SD rats with normal fasting glucose levels [1].
Kinase Assay	INS-1 832/13 cells are suspended in RPMI medium containing 11 mM glucose and the supplements described above. These cells are seeded at a density of 2×104?cells/well in a 96-well black plate coated with poly-D-lysine, and 1% BSA and 0.1% DMSO alone (control), palmitic acid (62.5, 125, 250, 500, and 1000 μM), oleic acid (62.5, 125, 250, 500, and 1000 μM), or TAK-875 (6.25, 12.5, 25, 50, and 100 μM) is added to the plate with 1% BSA and 0.1% DMSO, followed by culture for 72 h. After the culture, caspase 3/7 activity is measured with the Apo-one homogeneous caspase 3/7 assay according to the manufacturer's instructions. Fluorescence intensity is measured at an excitation of 485 nm and an emission at 535 nm.
Cell Research	TAK-875 is dissolved in 1% BSA and 0.1% DMSO.? INS-1 832/13 cells are suspended in RPMI medium and seeded in a 96-well plate at a density of 2×104 cells/well; 1% BSA and 0.1% DMSO alone (control), palmitic acid (10, 100, and 1000 μM), oleic acid (10, 100, and 1000 μM), or TAK-875 (1, 10, and 100 μM) is added to the plate. After 72-h culture, medium is discarded, and cells are preincubated for 2 h with KRBH containing 1 mM glucose and 0.2% BSA at 37°C. After discarding of the preincubation buffer, KRBH containing 1 or 20 mM glucose and 0.2% BSA is added, and the plate is further incubated for 2 h. The insulin concentration in the supernatant is measured as described

Cell Research	above. To measure intracellular insulin content, INS-1 832/13 cells are exposed to 1% BSA and 0.1% DMSO alone (control), palmitic acid (1000 μM), oleic acid (1000 μM), or TAK-875 (100 μM) with 1% BSA and 0.1% DMSO. After incubation, cells are washed once with phosphate-buffered saline, and acid-ethanol solution is added to each well, followed by sonication on ice. Intracellular insulin is extracted by overnight incubation at ?30°C, followed by separation of supernatant by centrifugation at 12,000 rpm×5 min at 4°C.

Solubility Information

Solubility	DMSO: 150 mg/mL (285.92 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: 2 mg/mL (3.81 mM),Sonication is recommended. 10% DMSO+90% Saline: 10 mg/mL (19.06 mM),Suspension. *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	1.9061 mL	9.5305 mL	19.0611 mL
5 mM	0.3812 mL	1.9061 mL	3.8122 mL
10 mM	0.1906 mL	0.9531 mL	1.9061 mL
50 mM	0.0381 mL	0.1906 mL	0.3812 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

Tsujihata Y,et al. TAK-875, an orally available G protein-coupled receptor 40/free fatty acid receptor 1 agonist, enhances glucose-dependent insulin secretion and improves both postprandial and fasting hyperglycemia in type 2 diabetic rats.J Pharmacol Exp

Yoshiyuki Tsujihata, et al. TAK-875, an Orally Available GPR40/FFA1 Agonist Enhances Glucose-Dependent Insulin Secretion and Improves Both Postprandial and Fasting Hyperglycemia in Type 2 Diabetic Rats. JPET July 13, 2011

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