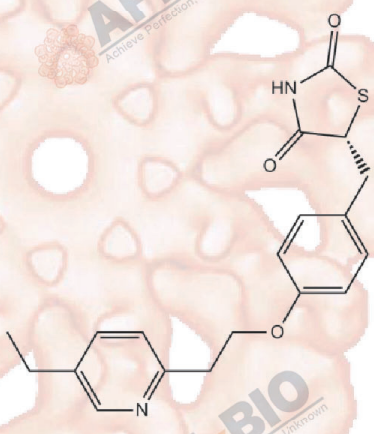
Product Data Sheet

Pioglitazone

Cat. No.: B2117
CAS No.: 111025-46-8
Formula: C19H20N2O3S
M.Wt: 356.44
Synonyms:
Target: Metabolism
Pathway: PPAR
Storage: Store at -20°C



Solvent & Solubility

insoluble in H2O; insoluble in EtOH; ≥14.3 mg/mL in DMSO

In Vitro — Preparing Stock Solutions

Mass / Solvent / Concentration	1mg	5mg	10mg
1 mM	2.8055 mL	14.0276 mL	28.0552 mL
5 mM	0.5611 mL	2.8055 mL	5.6110 mL
10 mM	0.2806 mL	1.4028 mL	2.8055 mL

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

Biological Activity

Shortsummary	PPAR agonist
IC_{50} & Target	

In Vitro

Cell Viability Assay

Cell Line:	HIT-T15(a pancreatic beta cell line)
Preparation method:	The solubility of this compound in DMSO is >14.3mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37°C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
Reacting conditions:	0.5 or 1 μmol/l for 5 days

	Applications:	AGEs (Advanced Glycation End-Products)-induced beta cell necrosis was completely abrogated by adding Pioglitazone to the AGEs culture medium. Pioglitazone was able to counteract AGE-induced pancreatic beta cell death and dysfunction (Adding 1 μmol/l, but not 0.5 of Pioglitazone). Taken together, pioglitazone improved insulin secretory capacity, preserving beta cell mass and islet structure and protecting beta cells from oxidative stress, as well as, improving beta cell function.
In Vivo	**Animal experiment**	
	Animal models:	Eight-week-old male C57/Bl6 mice
	Dosage form:	20 mg/kg per day
	Applications:	Mice treated with pioglitazone were partially protected from MPTP (1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine)-induced decrease of striatal dopamine concentrations at 7 days and a lower activation of microglia and less GFAP(glial fibrillary acidic protein)-positive cells in both striatum and SNpc after two and five injections of MPTP. Thus, treatment with pioglitazone completely protected TH-positive cells from MPTP toxicity in this chronic model of PD (Parkinson's disease). In mice treated with pioglitazone, there were a reduced activation of microglia, reduced induction of NOS (NO synthase)-positive cells and less glial fibrillary acidic protein positive cells in both striatum and substantia nigra pars compacta. In addition, treatment with pioglitazone almost completely blocked staining of TH-positive neurons for nitrotyrosine, a marker of NO (nitric oxide)-mediated cell damage.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

See more customer validations on www.apexbt.com.

References

[1]. Puddu A, et al. Pioglitazone attenuates the detrimental effects of advanced glycation end-products in the pancreatic beta cell line HIT-T15. Regul Pept. 2012 Aug 20;177(1-3):79-84.

[2]. Dehmer T1, Heneka MT, et al. Protection by pioglitazone in the MPTP model of Parkinson's disease correlates with I kappa B alpha induction and block of NF kappa B and iNOS activation. J Neurochem. 2004 Jan;88(2):494-501.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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