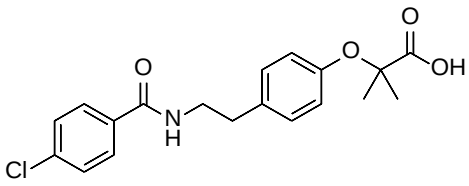
Product data sheet

MedKoo Cat#: 317323 Name: Bezafibrate CAS#: 41859-67-0 Chemical Formula: $C_{19}H_{20}ClNO_4$ Exact Mass: 361.1081 Molecular Weight: 361.82	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Bezafibrate is an agonist of peroxisome proliferator-activated receptor alpha (PPARalpha) with antilipidemic activity. Bezafibrate is a fibrate drug used for the treatment of hyperlipidaemia. Bezafibrate decreases triglyceride levels, increases high density lipoprotein cholesterol levels, and decreases total and low density lipoprotein cholesterol levels. It is commonly marketed as Bezalip.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	50.67	140.04
DMSO:PBS (pH 7.2)(1:1)	0.50	1.38
DMF	30.0	82.91
Ethanol	31.50	87.06

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.76 mL	13.82 mL	27.64 mL
5 mM	0.55 mL	2.76 mL	5.53 mL
10 mM	0.28 mL	1.38 mL	2.76 mL
50 mM	0.06 mL	0.28 mL	0.55 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Hara S, Takahashi T, Amita M, Igarashi H, Tsutsumi S, Kurachi H. Bezafibrate restores the inhibition of FSH-induced follicular development and steroidogenesis by tumor necrosis factor-alpha through peroxisome proliferator-activated receptor-gamma pathway in an in vitro mouse preantral follicle culture. Biol Reprod. 2011 Nov;85(5):895-906. doi: 10.1095/biolreprod.111.090738. Epub 2011 Jul 6. PMID: 21734263.

In vivo study

1. da Rosa-Junior NT, Parmeggiani B, da Rosa MS, Glänzel NM, de Moura Alvorcem L, Wajner M, Leipnitz G. Bezafibrate In Vivo Administration Prevents 3-Methylglutaric Acid-Induced Impairment of Redox Status, Mitochondrial Biogenesis, and Neural Injury in Brain of Developing Rats. Neurotox Res. 2019 May;35(4):809-822. doi: 10.1007/s12640-019-00019-9. Epub 2019 Mar 9. PMID: 30850947.

7. Bioactivity
Biological target:

Product data sheet

Bezafibrate is an agonist of PPAR, with EC50s of 50 μM, 60 μM, 20 μM for human PPARα, PPARγ and PPARδ, and 90 μM, 55 μM, 110 μM for murine PPARα, PPARγ and PPARδ, respectively.

In vitro activity

Whether bezafibrate treatment could rescue the inhibition of FSH (follicle-stimulating hormone) induced follicle development and steroidogenesis by TNF (tumor necrosis factor-alpha) was evaluated. Bezafibrate treatment rescued inhibition of follicle development, secretion of E2, and ovulation rate by TNF. As the protein expression of only PPARG was observed in mouse preantral follicles, it was examined whether bezafibrate could affect follicle development and steroidogenesis through PPARG pathways. Treatment with GW1929, a selective PPARG agonist, restored inhibition of FSH-induced follicle development and steroidogenesis by TNF, whereas treatment with GW9662, a selective PPARG antagonist, canceled the restorative effects of bezafibrate. Collectively, the results suggest that bezafibrate may directly exhibit a restorative effect on the inhibition of ovarian follicle development and steroidogenesis by TNF through the PPARG pathway.

Reference: Biol Reprod. 2011 Nov;85(5):895-906. https://academic.oup.com/biolreprod/article/85/5/895/2530504

In vivo activity

Whether a pre-treatment with the pan-peroxisome proliferator-activated receptor (PPAR) agonist bezafibrate could prevent the alterations caused by MGA (3-Methylglutaric acid) was evaluated. MGA provoked lipid peroxidation, increased heme oxygenase-1 content, and altered the activities of antioxidant enzymes, strongly suggestive of oxidative stress. MGA also impaired mitochondrial function and biogenesis by decreasing the activities of succinate dehydrogenase and various respiratory chain complexes, as well as the nuclear levels of PGC-1α and NT-PGC-1α, and cell content of Sirt1. AMPKα1 was further increased by MGA. Neural cell damage was also observed following the MGA administration, as verified by decreased Akt and synaptophysin content and reduced ERK phosphorylation, and by the increase of active caspase-3 and p38 and Tau phosphorylation. Importantly, bezafibrate prevented MGA-elicited toxic effects towards mitochondrial function, redox homeostasis, and neural cell injury, implying that this compound may be potentially used as an adjunct therapy for MGTA and HMGA and other disorders with mitochondrial dysfunction.

Reference: Neurotox Res. 2019 May;35(4):809-822. https://link.springer.com/article/10.1007%2Fs12640-019-00019-9

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.