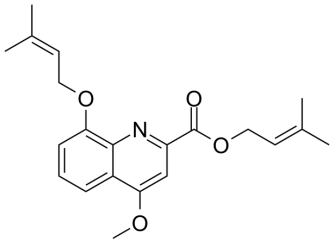
Ppc-1

Cat. No.:	HY-117843
CAS No.:	1245818-17-0
Molecular Formula:	$C_{21}H_{25}NO_4$
Molecular Weight:	355.43
Target:	Mitochondrial Metabolism; Interleukin Related; Bacterial
Pathway:	Metabolic Enzyme/Protease; Immunology/Inflammation; Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Ppc-1 is a mitochondrial uncoupler. Ppc-1 enhances mitochondrial oxygen consumption without adverse effects on ATP production. Ppc-1 is a cell-permeate interleukin-2 (IL-2) inhibitor. Ppc-1 inhibits the Gram-negative periodontopathogen ***Porphyromonas gingivalis***. Ppc-1 has anti-obesity, antibacterial and anti-inflammatory activities[1][2][3][4].
IC_{50} & Target	IL-2
In Vitro	Ppc-1 treatment (0-10 μM; 24 hours; Jurkat cells) significant inhibits IL-2 production in Jurkat cells with an IC_{50} of 4 μM[2]. Ppc-1 (compound 6) has antiproliferative activities in K562 human leukemia, Hela cervical carcinoma, and 3T3-L1 mouse embryonic fibroblast cells. Ppc-1 shows about 50% inhibition at 15 μM in all cell lines. Ppc-1 inhibits the growth of K562 cells with an EC_{50} of 13 μM[3].Using the U937-3xκB-LUC human monocytic cell line, Ppc-1 dose-dependently inhibits the lipopolysaccharide-induced NF-κB activation[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Ppc-1 (0-10 mg /kg; Intraperitoneal injection; once a week; for 8 weeks; female ICR mice) treatment suppresses weight gain with no abnormal effects on liver or kidney tissues, and no evidence of tumor formation[1]. Serum fatty acid levels are significantly elevated in mice treated with Ppc-1, while body fat content remained low. After a single administration, Ppc-1 distributes into various tissues of individual animals at low levels. Ppc-1 stimulates adipocytes in culture to release fatty acids, which might explain the elevated serum fatty acids in Ppc-1-treated mice[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female ICR mice[1]
Dosage:	0 mg /kg , 0.16 mg /kg, 0.8 mg /kg, 4 mg /kg, and 10 mg /kg
Administration:	Intraperitoneal injection; once a week; for 8 weeks
Result:	Suppresseed weight gain in animals.

REFERENCES

[1]. Suzuki T, et al. Weight loss by Ppc-1, a novel small molecule mitochondrial uncoupler derived from slime mold. PLoS One. 2015 Feb 10;10(2):e0117088.

[2]. Ogura M, et al. Prenylated quinolinecarboxylic acid derivative suppresses immune response through inhibition of PAK2. Biochem Pharmacol. 2016 Apr 1;105:55-65.

[3]. Haruhisa Kikuchi a, et al. Novel prenylated and geranylated aromatic compounds isolated from Polysphondylium cellular slime molds. Tetrahedron 66 (2010) 6000-6007.

[4]. Azelmat J, et al. Antibacterial and Anti-inflammatory Activities of Ppc-1, Active Principle of the Cellular Slime Mold Polysphondylium pseudo-candidum. Med Chem. 2015;11(7):666-9.

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