

Product Data Sheet

Product Name: Raspberry ketone (Frambione)

Cat. No.: GC31396

Chemical Properties

Cas. No. 5471-51-2

SMILES CC(CCC1=CC=C(O)C=C1)=O

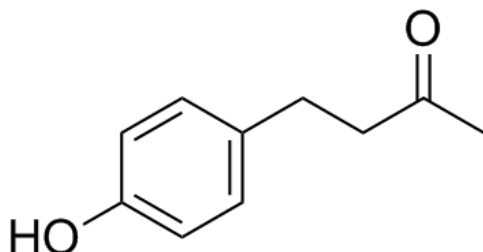
Formula $C_{10}H_{12}O_2$ M.Wt 164.2

Solubility DMSO: 100 mg/mL (609.01 mM) Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

Caution: Product has not been fully validated for medical applications. For research use only.

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Cell experiment: For the cytotoxicity study, 3T3-L1 pre-adipocytes are cultured and differentiated. After Raspberry ketone treatment for 4 d in DMEM containing 10% fetal bovine serum, the lactate dehydrogenase (LDH) concentration in the medium is immediately detected with the CytoTox 96 nonradioactive cytotoxicity assay kit[1].

Animal experiment: During the experimental period, the animal room holds four rats per cage, with free access to water and food, under conditions of temperature controlled at 20-26°C, humidity at 40-70%, and a 12/12-h day-night light cycle. Rats are fed with normal diet for 1 week and then randomly divided into five groups: normal control (NC) group (n=8) fed normal diet for 8 weeks, the model control (MC) group (n=8) fed high-fat diet (82% standard diet, 8.3% yolk powder, 9.0% lard, 0.5% cholesterol, and 0.2% sodium taurocholate), the Raspberry ketone low-dose (RKL) group (n=8), the Raspberry ketone middle-dose (RKM) group (n=8), and the Raspberry ketone high-dose (RKH) group (n=8). Rats are first fed with high-fat diet for 4 weeks, and then these rats are given intragastrically 0.5%, 1%, or 2% Raspberry ketone. The first two groups of rats are intragastrically administered salad oil at the same dose (2 mL/day per rat) once a day at 10:00 a.m., lasting for 4 weeks[2].

References:

- [1]. Park KS. Raspberry ketone, a naturally occurring phenolic compound, inhibits adipogenic and lipogenic gene expression in 3T3-L1 adipocytes. *Pharm Biol.* 2015 Jun;53(6):870-5.
- [2]. Wang L, et al. Raspberry ketone protects rats fed high-fat diets against nonalcoholic steatohepatitis. *J Med Food.* 2012 May;15(5):495-503.
- [3]. Khan V, et al. Raspberry ketone protects against isoproterenol-induced myocardial infarction in rats. *Life Sci.* 2018 Feb 1;194:205-212.

Background

Raspberry ketone is a major aromatic compound of red raspberry, widely used as a fragrance in

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cosmetics and as a flavoring agent in foodstuff; also shows PPAR- α agonistic activity.

Raspberry ketone (1, 10, 20, and 50 μ M) suppresses adipogenesis and lipid accumulation in 3T3-L1 pre-adipocytes. Raspberry ketone (10 μ M) significantly blocks C/EBP α , PPAR γ , and aP2 expression and increases the expression of ATGL and HSL, and CPT1B[1].

Raspberry ketone (0.5%, 1%, or 2%) increases the levels of total cholesterol (TC), triglycerides (TG), low-density lipoprotein cholesterol contents (LDL-C), ISI (insulin-sensitiv index), PPAR- α and LDLR, decreases the serum levels of AST (aspartate aminotransferase), ALT (alanine aminotransferase), ALP (alkaline phosphatase), IRI (insulin resistance index), GLU (glucose), INS (insulin-sensitiv index), LEP (leptin), and TNF- α in rats compared with a high-fat diet-induced NASH model. Raspberry ketone also causes increased SOD activities[2]. Raspberry ketone shows cardioprotective action against isoproterenol-induced myocardial infarction in rats, and the effects may be due to its PPAR- α agonistic activity[3].

[1]. Park KS. Raspberry ketone, a naturally occurring phenolic compound, inhibits adipogenic and lipogenic gene expression in 3T3-L1 adipocytes. Pharm Biol. 2015 Jun;53(6):870-5. [2]. Wang L, et al. Raspberry ketone protects rats fed high-fat diets against nonalcoholic steatohepatitis. J Med Food. 2012 May;15(5):495-503. [3]. Khan V, et al. Raspberry ketone protects against isoproterenol-induced myocardial infarction in rats. Life Sci. 2018 Feb 1;194:205-212.

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