Product Data Sheet

Product Name: Idescarpin
Cat. No.: GC81839

Chemical Properties

Cas. No.	188557-53-1		
Formula	$C_{20}H_{24}O_{11}$	M.Wt	440.4
Solubility		Storage	Store at -20°C, protect from light
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			

Background

Idescarpin is a phenolic glycoside compound isolated from Idesia polycarpa and exhibits an extremely bitter taste. Idescarpin possesses significant anti-inflammatory, antioxidant, and potent anti-adipogenic activities. Idescarpin reduces melanin biosynthesis by inhibiting tyrosinase activity. Idescarpin is applicable to research on obesity and type 2 diabetes, as well as related studies in food and cosmetics [1] [2] [3].

In Vitro, Idescarpin (25-50 μM; 8 days) significantly reduces lipid droplet formation and inhibits preadipocyte-to-adipocyte differentiation in mouse preadipocytes (3T3-L1)[2]. Idescarpin (25-50 μM;

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4-8 days) significantly inhibits C/EBPα protein and mRNA expression in mouse preadipocytes (3T3-L1), downregulates the mRNA expression of adipogenesis-related genes (SREBP1c, SCD-1, FAS), but upregulates PPARγ protein and mRNA expression[2]. Idescarpin (2-10 μg/mL; 24 h) is a key substance in the anti-inflammatory activity of defatted Idesia polycarpa extract, showing a negative correlation with inflammatory mediators (NO, iNOS, TNF-α, IL-6, ROS) and a positive correlation with CAT activity in LPS -stimulated RAW 264.7 cells[1]. Idescarpin is predicted to activate 7 human bitter taste receptors (hTAS2R1, hTAS2R5, hTAS2R14, hTAS2R16, hTAS2R39, hTAS2R41, hTAS2R43), with activation probabilities ranging from 51.08% to 69.31%.

References:

[1]. WANG X, et al. A comprehensive study of defatted Idesia polycarpa fruit: Phenolic profile and its relation with anti-inflammatory activity in seed, pulp, and whole fruit. Food Chemistry, 2022, 386: 132785.
[2]. Lee M, et al. Anti-adipogenic activity of compounds isolated from Idesia polycarpa on 3T3-L1 cells. Bioorg Med Chem Lett. 2013 Jun 1;23(11):3170-4.
[3]. Xiang X, et al. Characterization of key bitter compounds in Idesia polycarpa var. vestita Diels fruit by sensory-guided fractionation. Food chemistry. 2024 May 01;439:138103.

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