

Agrimonolide

Chemical Properties

CAS No.:	21499-24-1
Formula:	C ₁₈ H ₁₈ O ₅
Molecular Weight:	314.3
Appearance:	N/A
Storage:	0-4°C for short term (days to weeks), or -20°C for long term (months).

Biological Description

Description	Agrimonolide is a potential α 1 adrenergic receptor antagonist, it exerts anti-inflammatory activity, at least in part, via suppressing LPS-induced activation of JAK-STATs and p38 MAPKs signaling pathway. Agrimonolide and desmethylagrimonolide can effectively increase insulin-mediated glycogen level in hepatocytes, they may play an important role in regulating glucose metabolism in insulin-resistance HepG2 cells and could be developed as a promising natural material for diabetes prevention and treatment.
Targets(IC ₅₀)	Adrenergic Receptor: None COX: None IL Receptor: None JAK: None JNK: None NF- κ B: None NO: None NOS: None p38 MAPK: None STAT: None TNF- α : None
In vitro	The present study aims at investigating the effect of bioactive compounds isolated from AP on the improvement of insulin resistance, figuring out the mechanism in insulin-responsive cell lines. METHODS AND RESULTS: Five compounds were isolated from AP using column chromatography, including Agrimonolide (K1), desmethylAgrimonolide (K2), tormentic acid (K3), ursolic acid (K4), and quercetin (K5). Glucose metabolism was evaluated in insulin-resistant HepG2 cells. Ursolic acid had the strongest activity among all isolated compounds with the lowering value of 71.5% (1.24 mM glucose in DMEM) and 71.7% (1.23 mM) when compared to the control. K1 consisting of K2 effectively increased the insulin-mediated glycogen level in hepatocytes. At a concentration level of 20 μ M, K2 significantly elevated the hepatic glucokinase (GK) activity (3.2 U min ⁻¹ mg ⁻¹ protein), followed by K1 (3.0 U min ⁻¹ mg ⁻¹ protein). Both of them significantly increased ($p < 0.05$) the GK activity as compared to the control. On the same lines, K2 and K1 caused a significant reduction of the glucose-6-phosphatase (G6Pase) activity and a significant change in the phosphoenolpyruvate carboxykinase (PEPCK) activity. CONCLUSIONS: In summary, bioactive compounds in AP may play an important role in regulating the glucose metabolism in insulin-resistant HepG2 cells and could be developed as a promising natural material for diabetes prevention and treatment.

Solubility Information

Solubility	< 1 mg/ml refers to the product slightly soluble or insoluble
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.182 mL	15.908 mL	31.817 mL
5 mM	0.636 mL	3.182 mL	6.363 mL
10 mM	0.318 mL	1.591 mL	3.182 mL
50 mM	0.064 mL	0.318 mL	0.636 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 °C for 6 months; - 20 °C for 1 month. Please use it as soon as possible.

Reference

1. The potential beneficial effects of phenolic compounds isolated from *A. pilosa* Ledeb on insulin-resistant hepatic HepG2 cells. Food Funct. 2016 Oct 12;7(10):4400-4409.

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