

Lactisole

Chemical Properties

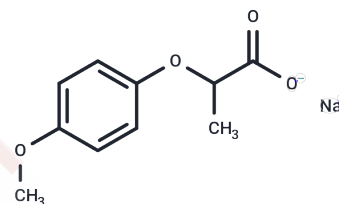
CAS No. : 150436-68-3

Formula: C₁₀H₁₁NaO₄

Molecular Weight: 218.18

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	Lactisole (na-PMP) is an inhibitor of the glucose-sensing receptor
Targets(IC50)	Taste receptor
In vitro	In MIN6 cells, in a dose-dependent manner, lactisole inhibited insulin secretion induced by sweeteners, acesulfame-K, sucralose and glycyrrhizin. The IC ₅₀ was ~ 4 mmol/L. Lactisole attenuated the elevation of cytoplasmic Ca ²⁺ concentration ([Ca ²⁺] _c) evoked by sucralose and acesulfame-K but did not affect the elevation of intracellular cAMP concentration ([cAMP] _c) induced by these sweeteners. Lactisole also inhibited the action of glucose in MIN6 cells. Thus, lactisole significantly reduced elevations of intracellular [NADH] and intracellular [ATP] induced by glucose, and also inhibited glucose-induced insulin secretion[1].

Solubility Information

Solubility	Ethanol: 1 mg/mL (4.58 mM),Sonication is recommended. DMSO: 45 mg/mL (206.25 mM),Sonication is recommended. DMF: 20 mg/mL (91.67 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (9.17 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.5834 mL	22.9169 mL	45.8337 mL
5 mM	0.9167 mL	4.5834 mL	9.1667 mL
10 mM	0.4583 mL	2.2917 mL	4.5834 mL
50 mM	0.0917 mL	0.4583 mL	0.9167 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

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- Hamano, K., Nakagawa, Y., Ohtsu, Y., et al. Lactisole inhibits the glucose-sensing receptor T1R3 expressed in mouse pancreatic β -cells. *Journal of Endocrinology* 226(1), 57-66 (2015).
- Shim, J., Son, H.J., Kim, Y., et al. Modulation of sweet taste by umami compounds via sweet taste receptor subunit hT1R2. *PLoS One* 10(4), (2015).
- Ohtsu, Y., Nakagawa, Y., Nagasawa, M., et al. Diverse signaling systems activated by the sweet taste receptor in human GLP-1-secreting cells. *Molecular and Cellular Endocrinology* 394(1-2), 70-79 (2014).
- Sato, S., Hokari, R., Kurihara, C., et al. Dietary lipids and sweeteners regulate glucagon-like peptide-2 secretion. *Am. J. Physiol Gastrointest. Liver Physiol.* 304(8), 304-308 (2013).

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