

Marinobufagenin

Chemical Properties

CAS No.:	470-42-8
Formula:	C ₂₄ H ₃₂ O ₅
Molecular Weight:	400.51
Appearance:	N/A
Storage:	0-4°C for short term (days to weeks), or -20°C for long term (months).

Biological Description

Description	Marinobufagenin, a cardiotonic steroid, its increased concentrations are important in the cardiac disease and oxidant stress state seen with renal failure.
Targets(IC ₅₀)	EGFR: None ATPase: None
In vitro	In vivo studies were performed using the 5/6th nephrectomy model of experimental renal failure (PNx), MBG infusion (MBG), PNx after immunization against MBG, and concomitant PNx and adrenalectomy. Physiological measurements with a Millar catheter and immunohistochemistry were performed. In vitro studies were then pursued with cultured isolated cardiac fibroblasts. We observed that PNx and MBG increased MBG levels, blood pressure, heart size, impaired diastolic function, and caused cardiac fibrosis. PNx after immunization against MBG and concomitant PNx and adrenalectomy had similar blood pressure as PNx but less cardiac hypertrophy, diastolic dysfunction, and cardiac fibrosis. MBG induced increases in procollagen-1 expression by cultured cardiac fibroblasts at 1 nM concentration. These increases in procollagen expression were accompanied by increases in collagen translation and increases in procollagen-1 mRNA without any demonstrable increase in procollagen-1 protein stability. The stimulation of fibroblasts with MBG could be prevented by administration of inhibitors of tyrosine phosphorylation, Src activation, epidermal growth factor receptor transactivation, and N-acetyl cysteine.

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	2.497 mL	12.484 mL	24.968 mL
5 mM	0.499 mL	2.497 mL	4.994 mL
10 mM	0.25 mL	1.248 mL	2.497 mL
50 mM	0.05 mL	0.25 mL	0.499 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. Marinobufagenin stimulates fibroblast collagen production and causes fibrosis in experimental uremic cardiomyopathy. Hypertension. 2007 Jan;49(1):215-24.

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