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Cancer Immunol Immunother. 2011 Apr;60(4):479-85. Epub 2010 Dec 14.

Gc protein-derived macrophage-activating factor (GcMAF) stimulates cAMP formation in human mononuclear cells and inhibits angiogenesis in chick embryo chorionallantoic membrane assay.

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Abstract

The effects of Gc protein-derived macrophage-activating factor (GcMAF) have been studied in cancer and other conditions where angiogenesis is deregulated. In this study, we demonstrate for the first time that the mitogenic response of human peripheral blood mononuclear cells (PBMCs) to GcMAF was associated with 3'-5'-cyclic adenosine monophosphate (cAMP) formation. The effect was dose dependent, and maximal stimulation was achieved using 0.1 ng/ml. Heparin inhibited the stimulatory effect of GcMAF on PBMCs. In addition, we demonstrate that GcMAF (1 ng/ml) inhibited prostaglandin E(1)- and human breast cancer cell-stimulated angiogenesis in chick embryo chorionallantoic membrane (CAM) assay. Finally, we tested different GcMAF preparations on CAM, and the assay proved to be a reliable, reproducible and inexpensive method to determine the relative potencies of different preparations and their stability; we observed that storage at room temperature for 15 days decreased GcMAF potency by about 50%. These data could prove useful for upcoming clinical trials on GcMAF.

PMID: 21170647 [PubMed - indexed for MEDLINE]

+ Publication Types, MeSH Terms, Substances

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Related citations

Effects of vitamin D(3)-binding protein-derived macrophage activating : [J Natl Cancer Inst. 2002]

Preparation of Gc protein-derived macrophage activating factor (GcMAF) [Anticancer Res. 2002]

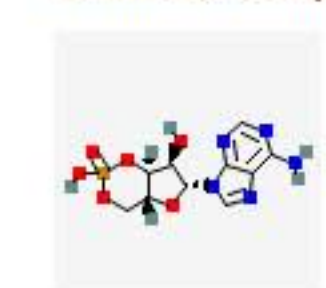
Effect of paricalcitol and GcMAF on angiogenesis and human periph [J Nephrol. 2011]

Review Gc protein (vitamin D-binding protein): Gc genotyping and GcMA [Anticancer Res. 2005]**Review** The chick embryo chorioallantoic membrane in the [Rom J Morphol Embryol. 2008]

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Chemical compound information



Cyclic AMP

MW: 329.20 g/mol

MF: C₁₀H₁₂N₅O₆P