

Contrasting effects of sn-1,2-dioctanoyl glycerol as compared to other protein kinase C activators in adrenal glomerulosa cells

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Angiotensin II acts on adrenal glomerulosa cells to induce the phospholipase C-mediated generation of inositol trisphosphate and sn-1,2-diacylglycerol as the major products of inositol phospholipid breakdown. This last product is known to activate protein kinase C, but its role in the action of angiotensin II on steroidogenesis has not been defined. We report herein that, in bovine adrenal glomerulosa cells, protein kinase C activators, such as phorbol 12,13-dibutyrate, 12-O-tetradecanoylphorbol-13-acetate, mezerein and sn 1,2 oleoyl acetoyleglycerol, each failed to increase steroidogenesis. These results contrast with our recent report on the enhancement of aldosterone output by sn-1,2-dioctanoylglycerol (DiC8) [J. Steroid Biochem. 35 (1990) 19-33]. In addition, the difference between DiC8 and the other protein kinase activators was also observed in the pattern of ⁸⁶Rb efflux from preloaded glomerulosa cells; only DiC8 mimicked the effect of angiotensin II on ion fluxes. Furthermore, st