This could have important implications in the development of non-specifically stimulated by any of the synthesized peptides. We synthesized five peptides on human polymorphonuclear leukocytes (PMNLs) of elderly and of atherosclerotic patients.

**Differential effects of various synthesized elastin peptides on human polymorphonuclear leukocytes (PMNLs) of elderly and of atherosclerotic patients**


It is well known that kappa elastin has various biological effects on PMNL stimulation. Our aim was to study whether the effects of synthesized elastin peptides are identical on PMNLs of young, elderly and atherosclerotic subjects.

We synthesized five peptides. The results obtained indicate that in contrast to the effects on PMNLs of young subjects, in PMNLs of elderly and atherosclerotic subjects (a) all elastin peptides had practically the same effects on the parameters studied (free radicals, proteases, intracellular free calcium mobilization) and (b) the most effective in intracellular free calcium mobilization seemed to be a hexapeptide differing completely from the commercial one (VGVAPG); (c) the most pronounced effects of the peptides were seen in the stimulation of free radical production. We conclude that in the case of PMNLs of elderly and patients with atherosclerosis the size nor the composition seem to be important. The PMNLs are non-specifically stimulated by any of the synthesized peptides. This could have important implications in the development of atherosclerosis through the loss of cell surface receptor specificity to defined peptides.

**Alteration of the transformation of normal human monocytes to lipid-engorged foam cells by benzyltetrahydroisoquinolines**

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This investigation studied the influence of some benzyltetrahydroisoquinoline derivatives as monomers (IQs) or dimers (BBIQs) on the effects of some immuno-viral factors and oxidatively modified LDL on the transformation of normal human monocytes (HMN) in culture to lipid-engorged foam cells.

Earlier this year I reported [1] that 24 IQs and BBIQs can suppress the action and generation of IL-1β and TNF-α in HMN. In the present work, two human cell lines were used: HMN and human endothelial cells (HEC). The processes of transforming HMN to foam cells involved (a) treatment with the culture supernatant of normal total HMNs pre-treated with phorbol esters, e.g. TPA; (b) treatment with LPS, Staphylococcus enterotoxin or heat-killed formalin-fixed S. aureus, followed by treatment with culture supernatants of HMN treated with inactivated CMV or EBV; (c) co-cultivation with HEC pre-treated with LPS for 18 h; (d) exposure to oxidatively modified LDL followed by phosphoethanolaminase activators.

HMN pre-treated with IQs or BBIQs did not respond to the processes of transformation to foam cells. Cycloheximide reduced the effect of LPS-cultivation with LPS-activated HEC in IQ- or BBIQ-unreated HMN. These results point to the value of the IQ and BBIQ compounds in altering the processes involved in foam cell formation from HMN.


**Estrogens promote the clearance of desialylated LDL by receptor-mediated transcytosis**

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Estrogens reduce serum cholesterol levels through increased hepatic LDL receptors and clearance of LDL from the circulation. Estrogens also induce a transcytic pathway in hepatic parenchymal cells that shunts plasma lipoproteins from the plasma to bile. In contrast to the LDL receptor-dependent pathway the transcytic pathway transports undegraded apolipoprotein B to bile.

Our studies have characterized the capacity as well as ligand and receptor specificity of the transcytic pathway in 17α-ethinylestradiol (EE)-treated rats. After bile duct cannulation radiolabeled ligands were administered to control and EE-rats via the hepatic portal vein. Analysis of the bile fractions demonstrated a 5-fold increase in the rate of accumulation of unmetabolized asialofetuin (ASF) and LDL. EE did not increase the biliary appearance of dimeric IgA, insulin and several other ligands. Density gradient analysis demonstrated that LDL from the bile of EE-treated rats, but not control animals, contained unmetabolized apolipoprotein B and was identical in density and cholesterol ester composition to the injected human LDL. The EE-induced transcytosis of LDL was completely inhibited by excess ASF and desialylation of LDL increased transcytosis 2-fold, which suggests involvement of the hepatic asialoglycoprotein receptor. In 72 h the EE-induced pathway removed 30% of the total plasma cholesteryl linolate. In rats, conversion of LDL to bile acids is reported to be 55%.

Plasma estrogen levels as low as 2.2 nM (EE) or 9 nM (β-EE) significantly reduced plasma cholesterol levels and stimulated transcytosis to bile. Thus the EE-induced pathway functions at physiological estrogen concentrations and may specifically reduce the plasma levels of atherogenic desialylated LDL. This pathway could explain the anti-atherogenic effects of estrogens in pre- and postmenopausal women receiving estrogen replacement therapy.

**Effect of Solcoseryl on the atherosclerotic rabbit model in which the left carotid artery is cuffed**


Endothelial cell injury is a primary event of atherosclerosis, and narrowing the carotid artery of a rabbit by using a cuff produces a model of atherosclerosis. We investigated the arterial intimal lesion after narrowing by polyethylene tube as well as the effect of Solcoseryl on the consequent process of intimal thickening.

20 male Japanese white rabbits were used. The left carotid artery in each was wrapped and narrowed by polyethylene tubing (2.15 mm diameter, 150 mm long). After operation the rabbits were divided into (a) a Solcoseryl-treated group (Solcoseryl injected, 2 ml/kg iv., three times weekly) and (b) controls (isotonic saline injected similarly) and (c) co-cultivation with HEC pre-treated with LPS for 18 h; (d) exposure to oxidatively modified LDL followed by phosphoethanolaminase activators.

HMN pre-treated with IQs or BBIQs did not respond to the processes of transformation to foam cells. Cycloheximide reduced the effect of LPS-cultivation with LPS-activated HEC in IQ- or BBIQ-unreated HMN. These results point to the value of the IQ and BBIQ compounds in altering the processes involved in foam cell formation from HMN.

23 Estrogens promote the clearance of desialylated LDL by receptor-mediated transcytosis

24 Effect of Solcoseryl on the atherosclerotic rabbit model in which the left carotid artery is cuffed

25 Palmity acid (16:0) causes massive, but reversible, morphologic changes in Caco-2 cells


Caco-2 cells, an in vitro model for the human intestinal cell, were...