The endogenous apolipoprotein A-I enhances the uptake of oxidated Low Density Lipoprotein by macrophages

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Introduction

Apolipoprotein A-I (ApoA-I) is the main structural and functional protein component of high-density lipoprotein. Recently we found the moderate expression of endogenous apoA-I in human monocytes and macrophages and showed the anti-inflammatory activity of endogenous ApoA-I in macrophages. The homogeneous population of monocytes divides to the ApoA-I-rich and ApoA-I-poor macrophages during the differentiation. The functions of macrophagal ApoA-I in the development of atherosclerotic lesions are still unknown. Here we show the participation of macrophagal ApoA-I in the uptake of oxidized Low Density Lipoprotein (oxLDL) and study the ApoA-I gene regulation in macrophages by oxLDL.

The oxLDL uptake is by ApoA-I rich macrophages. Confocal microscopy

mLDL ApoA-I DAPI

The knockdown ApoA-I, ABCA-1 leads to a decrease scavenger receptor LOX-1

The role of signaling cascades in ApoA-I mediated upregulation LOX-1 gene in human macrophages. RT-PCR.

Conclusions

The endogenous ApoA-I in macrophages enhances oxLDL uptake through the induction of scavenger receptor LOX1 gene.