

Vascular biology and disease: Lipid metabolism, atherosclerosis, and coagulation

Lipid metabolism is fundamentally related to the development and clinical outcome of atherosclerosis and the initiation of coagulation under pathological conditions.

Rupture of an atherosclerotic plaque associated with partial or complete thrombotic vessel occlusion is the cause of ischemic syndromes.

Plaques with increased lipid content appear more prone to rupture, particularly when the lipid pool is localized eccentrically within the intima.

Exposure of collagen, lipids, and smooth muscle cells after plaque rupture leads to the activation of platelets and the coagulation cascade. The resulting thrombus may lead to marked reduction in myocardial perfusion and the development of an unstable coronary syndrome, or it may become organized and incorporated into the diseased vessel, thus contributing to the progression of atherosclerosis.

Therapeutic interventions aimed at counteracting the process of atherosclerosis by interfering with pathways of lipid metabolism are encouraging. Just to mention cholesterol reduction and the enhancement of protective lipids, such as high density lipoprotein.

American Diagnostica GmbH extends its product line with special **ELISA tests for Lipoprotein research:**

- **Pre- β 1-high density lipoprotein (pre- β 1-HDL):**
predictor of atherosclerosis
- **Lecithin-Cholesterol Acyltransferase (LCAT):**
central mediator in HDL metabolism
- **Cholesteryl Ester Transfer Protein (CETP):**
key enzyme in cholesterol metabolism
- **Lipoprotein lipase (LPL):**
rate-limiting enzyme for hydrolysis of triglyceride-rich lipoproteins
- **Malondialdehyde-modified Low-Density Lipoprotein (MDA-LDL):**
risk factor for atherosclerosis
- **LDL receptor relative with 11 ligand-binding repeats (LR11):**
biomarker for Alzheimer's disease

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