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DESIALYLATED ATHEROGENIC LOW-DENSITY LIPOPROTEIN IN ATHEROSCLEROSIS

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Pathogenesis of atherosclerosis and the search for novel therapies and diagnostic markers remain major problems of modern medicine. Currently available therapeutic approaches are often not sufficiently effective, probably due to the complexity of the disease mechanisms. This review focuses on the evaluation of low-density lipoprotein (LDL) as risk factors of atherosclerosis. We summarize the current paradigm of LDL involvement in atherogenesis. We question the currently widely accepted hypothesis of the central role of oxidized LDL in atherogenesis and present an alternative concept of multiple modification of LDL that confers its pro-atherogenic properties. According to a series of studies conducted with blood serum and LDL from atherosclerotic patients, desialylation is one of the earliest if not the first atherogenic modification of LDL. Desialylation occurs in the bloodstream and is followed by a cascade of other modifications, including the reduction of LDL particle size and increase of its density, acquisition of negative electrical charge, oxidation and formation of highly atherogenic complexes. **This work was supported by the Russian Science Foundation (Grant # 18-15-00254).**

Biography

Alexander N. Orekhov has completed his PhD at the age of 29 years from Moscow State University and second doctoral degree (DSc) from Institute of Experimental Medicine (St. Petersburg). He is the head of laboratory of Institute of General Pathology and Pathophysiology. He has published more than 400 papers in reputed journals and has been serving as an editor-in-chief, guest editor and editorial board member of several biomedical journals.

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