

ATHEROSCLEROSIS: MOLECULAR MECHANISMS, CURRENT/EMERGING THERAPIES, AND THE POTENTIAL OF NUTRACEUTICALS AS PREVENTATIVE/THERAPEUTIC AGENTS FOR THIS DISEASE

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Atherosclerosis, an inflammatory disorder of the vasculature and the underlying cause of myocardial infarction and cerebrovascular accidents, is responsible for more global deaths than any other disease. Although some reduction in morbidity and mortality from atherosclerosis and its complications has been achieved recently by lifestyle changes and pharmaceutical intervention, this is expected to reverse in the future because of global increase in risk factors such as obesity and diabetes. Current pharmaceutical therapies against atherosclerosis are associated with considerable residual risk for cardiovascular disease together with other issues such as side effects and patient-dependent efficacy. In addition, pharmaceutical agents against many promising targets have proved disappointing at the clinical level. It is therefore essential that the molecular basis of atherosclerosis is fully understood and new therapeutic/preventative agents or targets are identified. The major focus of research in my laboratory is to understand the molecular mechanisms underlying the impact of inflammation and factors involved in orchestrating the inflammatory response, such as cytokines, on atherosclerosis with emphasis on macrophages, which are involved in all stages of the disease, together with the actions of preventative/therapeutic agents. Our research has particularly provided novel insights into the mechanisms underlying the actions of cytokines and nutraceuticals. This presentation will discuss the molecular basis of atherosclerosis and opportunities for drug discovery, current therapies against the disease and their limitations, emerging therapies targeting lipid metabolism and the inflammatory response, and the potential of nutraceuticals as preventative/therapeutic agents.

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