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## Immune modulation for Atherosclerosis- Potential therapeutic option for Cardiovascular diseases

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therosclerosis is a multi-factorial; chronic inflammatory disease initiated by lipid accumulation and immune response A and is characterized by intense inflammation, involving lymphocytes, monocytes and vascular cells. The accumulation of inflammatory cells and the soluble mediators lead to plaque instability and acute coronary syndrome one of the leading causes of global mortality. Current therapies target the risk factors which slow down the process of atherosclerosis and are estimated to prevent only 30% of clinical events, suggesting an urgent need for newer therapeutic strategies. It is now well established that atherosclerosis is an autoimmune disease initiated by modified lipids and stress proteins which induce a pro inflammatory adaptive response in the arteries. Immunotherapy for atherosclerosis is directed toward inducing tolerance to self-antigens mediated by protective antibodies or increasing the number of antigen-specific Treg cells, which can suppress the proatherogenic T-effector cells. Several studies have demonstrated effective early reduction of atherosclerosis in hyperlipidemic mouse models by inducing tolerance to modified lipids and peptides derived from apolipoprotein B (ApoB) 100, HSPs 60/65 and  $\beta$ 2-glycoprotein. We are developing a vaccine against atherosclerosis with a hypothesis that multiple antigens would confer better protection against a complex disease like atherosclerosis compared to single antigens and infection plays a very important role in the development of atherosclerosis. We have constructed a multi antigenic molecule expressing three peptides derived from ApoB100 (AA 688-707) hHSP60 (AA 153-163) a combination of MOMP (AA 66-73) and OMP 5, (AA 283-291) from Chlamydia pneumonia. The effect of restoring tolerance to these peptides in controlling atherosclerosis in mice and rabbit models will be discussed.

## **Biography**

Lakshmi Mundkur has completed his PhD in Immunology from Madurai Kamaraj University in 1995 and has worked with several leading pharmaceutical industries in the area of new drug development. She leads the Indian group of the "Atherovac"- A multi institutional consortium for the development of vaccine against atherosclerosis. She has published more than 30 papers in reputed journals and conferences and been serving as an Editorial Board Member of repute.

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