LJI Available Technologies

La Jolla Institute FOR IMMUNOLOGY | Life Without Disease. ®

Peptides for Preventing and Treating Atherosclerosis

Researchers at the La Jolla Institute for Immunology have identified novel epitopes, sub-sequences, portions, and modifications of ApoB100 that are useful for the treatment of adverse cardiovascular events, cardiovascular disease, atherosclerosis, and certain liver disorders.

Atherosclerosis is an inflammatory disease of the arterial wall characterized by monocytes entering the subendothelial space where they differentiate into macrophages and foam cells. Foam cell formation induced by oxidized low density lipoprotein leads to the induction of pro-inflammatory factors that initiate plaque formation and finally plaque rupture with serious clinical consequences like myocardial infarction or stroke. ApoB100 is an apolipoprotein that has been shown to be a component involved in the development of atherosclerosis and has previously been suggested as being an autoantigen relevant to atherosclerosis. However, the regions of ApoB100 that activate T cells via T cell receptors to induce inflammatory responses in atherosclerosis were previously unknown.

As such, researchers at LJI set out to discover the regions of ApoB100 that activate T cells to induce the inflammatory response seen in atherosclerosis. They did just that, identifying the antigenic peptides of ApoB100 that would be useful in a vaccine composition. Specifically, this vaccine composition could be useful in preventing, slowing, or reversing atherosclerosis.

ADVANTAGES:

- **Identifies the regions of ApoB100 that activate T cells to induce inflammatory response in atherosclerosis**
- **Novel epitopes useful in a vaccine composition to prevent, slow, or reverse atherosclerosis**

Novel T Cell Epitopes Against ApoB100 for Use in an Atherosclerosis Vaccine

Mean ± SEM
N = 8-9
* $P < 0.05$
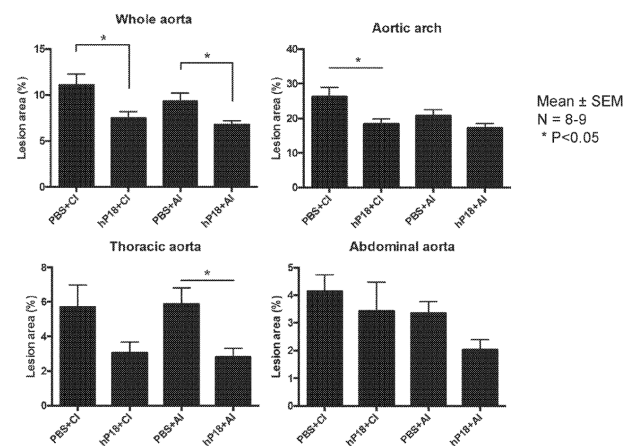
Reduction of aortic plaque lesion by one of the identified epitopes (hP18)

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