

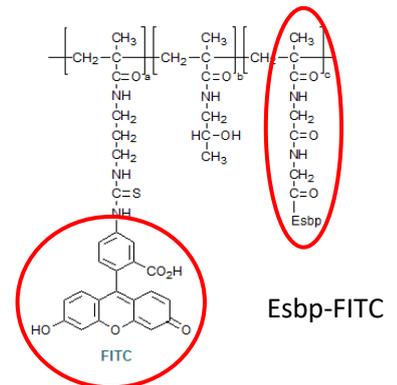
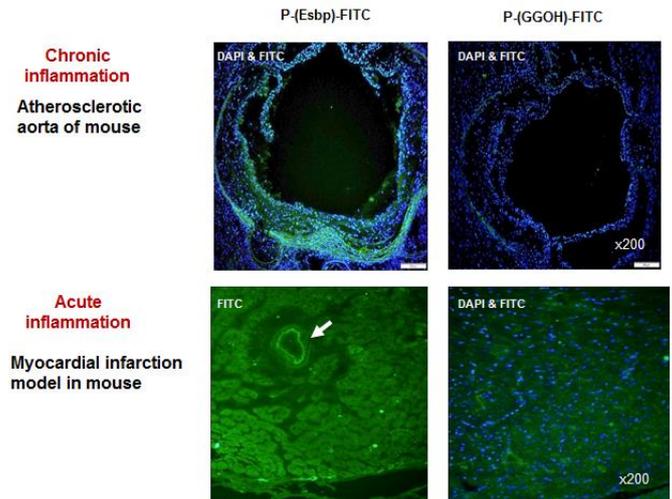
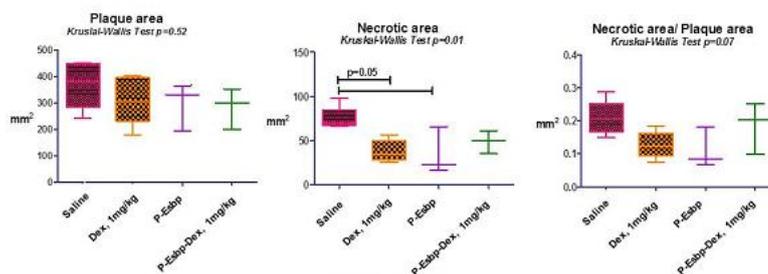
Targeting Inflamed Cardiovascular Tissue by E-selectin Targeted Copolymer

Atherosclerosis is characterized by acute and chronic vascular inflammation and leukocyte infiltration that result in plaque formation, instability, and rupture. E-selectin, an adhesion molecule expressed exclusively by vascular endothelial cells during inflammation and cancer is involved in the recruitment of leukocytes to the inflammation site causing the development and progression of atherosclerosis. Thus E-selectin is a highly potential therapeutic target for the prevention of atherosclerosis and stabilization of vulnerable plaque.

The Technology

We have developed a novel E-selectin-targeted polymer that can bind selectively and with high affinity to E-selectin and prevent inflammation and plaque progression without the need of an anti-inflammatory drug. Our data showed that the E-selectin-targeted polymer (P-ESBP) selectively targeted atherosclerotic lesions and reduced ascending aorta wall thickness. Furthermore, the addition of dexamethasone to the ESBP-polymer did not increase their therapeutic effect.

P-ESBP decrease the necrotic area of the plaque in ApoE^(-/-) mice after 4 weeks of treatment



Advantages

- E-selectin binding polymers target activated endothelium of atherosclerotic lesions
- ESBP-polymers reduce the thickness of ascending aorta walls and necrotic area of the plaques
- P-ESBP prevent cardiac remodeling and dysfunction
- Our findings suggest a novel nanomedicine-based strategy to treat atherosclerosis and vulnerable plaque.

Patent Status

Granted

Research Team

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Contact for Licensing and Investment Information

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