A Vaccine Targeting ANGPTL3 for Reduction of Triglycerides

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Technology description

A vaccine approach to target ANGPTL3 for reducing triglycerides in order to prevent cardiovascular diseases and other diseases that are associated with hypertriglyceridemia.
Using a virus-like particle (VLP) based vaccine platform, this vaccine can induce strong antibody responses against ANGPTL3 and reduce triglyceride levels in animal models.

Background

Triglycerides (TGs) are a type of fat found in the blood. Elevated serum triglycerides are a major risk factor for atherosclerosis, the narrowing of arteries with the buildup of fatty plaques that may lead to heart attack, stroke, peripheral artery disease and other cardiovascular conditions. Plasma TGs are metabolized by the enzyme lipoprotein lipase (LPL), which catalyzes the hydrolysis of TGs into free fatty acids, which are either re-esterified for storage or oxidized for fuel. The secreted protein angiopoietin-like 3 (ANGPTL3) and its relatives regulate LPL activity by binding and inactivating this enzyme. Inhibition of ANGPTL3 can dramatically reduce TG levels.

Technology Description

Researchers at the University of New Mexico and the National Institutes of Health (NIH) have developed a vaccine approach to target ANGPTL3 for reducing triglycerides in order to prevent cardiovascular diseases and other diseases that are associated with hypertriglyceridemia. Using a virus-like particle (VLP) based vaccine platform, this vaccine can induce strong antibody responses against ANGPTL3 and reduce triglyceride levels in animal models.

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Application area

Vaccines for reducing triglycerides
Utilizes virus-like particles to dramatically increase immunogenicity
Elicits strong antibody responses against a self-antigen involved in a common chronic disease
Applications for treating high triglyceride levels which may lead to a variety of cardiovascular diseases such as heart attack, stroke, high blood pressure, congestive heart failure, peripheral artery disease, and pancreatitis

Institution

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