



Improving Cardiovascular Health by Reducing Hyperlipidemia

Using MTP inhibitors as therapeutics without the damaging effects of fatty liver

At proper levels, lipids perform important functions in your body, but can cause health problems if they are present in excess. The term hyperlipidemia means high lipid levels and includes several conditions, but it usually means that you have high cholesterol and high triglyceride levels.



Hyperlipidemia can speed up a process called atherosclerosis, or hardening of the arteries. Atherosclerosis increases your risk of heart disease, stroke, and other vascular diseases.

Several drug companies have developed inhibitors for Microsomal Triglyceride Transfer Protein (MTP), which is involved in the transfer of four major lipid classes (free cholesterol, phospholipids, triglycerides and cholesterol esters),

as potential therapeutics for hyperlipidemia. While MTP inhibitors block hepatic lipoprotein secretion and decrease plasma lipid levels, they also cause fatty liver development. Thus, although MTP inhibitors are effective against hyperlipidemia (a major cause of heart disease), because they cause fatty liver development they are not safe or useful.

Dr. Roger Davis at SDSU's BioScience Center has identified a series of proteins that when co-regulated with MTP, block the secretion of lipoproteins from the liver without allowing accumulation of lipoprotein in the liver itself. Using mouse models that have the production of relevant proteins genetically deleted in conjunction with MTP inhibitors, Dr. Davis has demonstrated that plasma lipid levels are reduced without the generation of fatty liver.

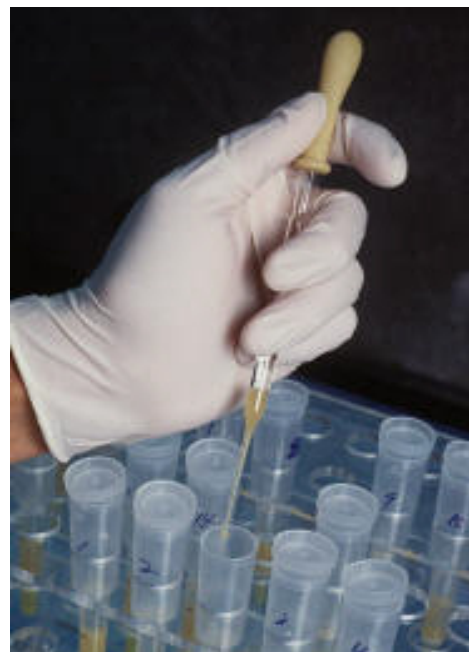
Dr. Davis is continuing research to optimize the efficacy and safety of therapeutic compounds that co-inhibit MTP and the relevant proteins that prevent the generation of fatty liver.

Benefits

- Allows safe and effective use of MTP inhibitors
- Decreases hyperlipidemia
- Improves cardiovascular health
- Improves liver health and function

Applications

- Hyperlipidemia therapeutics



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