

# Edible Fat Blends for Lowering LDL Cholesterol Levels in Blood: Novel Interesterified Fats that Incorporate Myristic Acid into the Sn-2 Position of Triglycerides

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## Technology description

Novel fat blends containing dietary saturated fatty acids (i.e. myristic acid and/or lauric acid) and linoleic acid (C18:2) for use in food products to promote heart health by lowering LDL cholesterol levels in blood

Dietary fats are important for maintaining good health. Clinical studies have established a link between the types of fatty acids consumed in diets with the levels of high density lipoprotein (HDL) and low density lipoprotein (LDL) cholesterol found in blood. HDL is considered to be the "good" cholesterol while LDL is often referred to as the "bad" cholesterol where higher levels of total serum cholesterol and LDL are associated with higher incidence of cardiovascular diseases (e.g. heart attacks or strokes). Most experts now agree ingestion of saturated fatty acids (SFAs) (e.g. myristic, lauric, palmitic and stearic fatty acids) raise LDL and total cholesterol levels in blood while ingestion of polyunsaturated fatty acids (PUFAs) (e.g. linoleic acid) lowers those levels. Monounsaturated fatty acids (MUFAs) are more neutral in their effects.

The current opportunity available for licensing is the use of a balanced blend of dietary SFAs (i.e. myristic acid and/or lauric acid; formed either naturally or by enzymatic and chemical interesterification) combined with linoleic acid (C18:2) at specific concentrations in commercial food preparations. Since our bodies cannot produce linoleic acid, this essential PUFA must be provided in healthy diets or else some vital functions could be compromised (blood clotting, wound healing and inflammation). Furthermore, our balanced blended fat mixtures containing linoleic acid at 10-35% promote healthy blood lipoprotein profiles via lowering LDL cholesterol, raising HDL cholesterol and decreasing triglyceride levels.

The edible blended fat compositions covered by our patent claims are palatable ingredients for use in human, domestic pet and livestock food products and can be marketed to promote optimal health and reduce risks of cardiovascular disease when consumed consistently over a period of weeks. Potential commercial uses in food product manufacturing including cooking oils, spreads, margarines, shortenings, condiments (salad dressings, mayonnaises, barbecue sauces), baked goods (bread; tortilla; pastry; cake; cookie; bars) and dairy products (milk; yogurt; cheese).

## Other

Invention is a blended dietary fat product containing:

10 to 35% by weight linoleic acid;

15 to 55% by weight SFAs; and

At least 10% by weight MUFAs

Modulates the harmful effects of SFAs found in hard fats having a Mettler drop point higher than palm kernel oil (shea butter; soy bean oil; palm midfraction; palm oil; palm stearin; natural high-stearic fat; fully-hydrogenated vegetable oil)

## Advantages

Formulation versatility allows for products commercialized in solid or liquid formulations

Consistent consumption over time reduces one's risk of developing coronary heart disease by:

Increase HDL levels

Decreasing LDL levels

Lowering total serum cholesterol

Improving fasting glucose levels

Decreasing serum triglyceride levels

## Institution

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