

Method for Stimulating Metabolic Rate Increase in Overweight Patients and/or for Lowering Triglycerides

Published date: Sept. 15, 2009

Technology description

Introduction

The CDC (Center for Disease Control and Prevention) estimated that as many as 47 million Americans may exhibit a cluster of medical conditions termed metabolic syndrome. Metabolic syndrome encompasses several symptoms, namely obesity, hypertriglyceridemia, low high-density lipoprotein (HDL), high blood pressure and elevated fasting glucose. Research has suggested that having three or more of these “symptoms” increase a person’s risk for coronary heart disease (CHD). Although a “symptom” of metabolic syndrome, obesity itself is a major issue in America. To tackle obesity, an effective treatment has been to stimulate the metabolic rate in adipose tissue.

Because thyroid hormones exert a wide range of effects on lipid metabolism in adipose tissue including lipid mobilization, synthesis and degradation, the inventors currently think that reduction in triglycerides and cholesterol levels can occur if lipid degradation is faster than lipid synthesis. As a consequence, stored lipids are mobilized and lipid deposits are depleted as mitochondrial respiration is increased.

Invention

DIPTA (3, 5- diiodothyropropionic acid), a thyroid hormone analog, was initially described to treat congestive heart failure. Not only did it improve heart failure patients’ left ventricular function, but it was noted that after two to four weeks of administration, DIPTA also decreased cholesterol and triglyceride levels. Following this up, inventors at the UA have identified a beneficial effect when administering DIPTA (3, 5- diiodothyropropionic acid) to normal or overweight euthyroid (normal thyroid function) individuals. DIPTA significantly reduced total cholesterol, including low-density lipoprotein (LDL) cholesterol levels, stimulated weight loss and reduced triglyceride counts. It appears that the UA inventors have discovered a second indication; a feature of thyroid hormone analogs that have not yet been reported. Because DIPTA can also improve ventricular function, DIPTA could potentially be dually effective by playing a cardio-protective role in overweight patients as it promotes weight loss.

Keywords: hyperthyroidism, 3, 5- diiodothyropropionic acid (DITPA), obesity, cholesterol, LDL, HDL.

Advantages

- substance can be cardiac-protective and stimulate weight loss;
- reduces triglyceride levels;
- administered in any preparation - solid, capsule or implanted.

Institution

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