

COENZYME Q10 IN MEDICINES AND COSMETICS

Ait Assila Nour Alimane

Scientific supervisor: Krasilnikova O.A.

National University of Pharmacy, Kharkiv, Ukraine

nourfrance97@gmail.com

Introduction. Coenzyme Q (CoQ) is a lipid-soluble vitamin-like compound composed of quinone with a benzene ring and a hydrophobic tail, CoQ10 is a ubiquitous factor present in cell membranes and mitochondria. Coenzyme Q is well defined as a crucial component of the oxidation phosphorylation process in mitochondria which converts the energy in carbohydrates and fatty acids into ATP to drive cellular machinery and synthesis. Its levels are high in organs with high metabolism such as the heart, kidneys, and liver because it acts as an energy transfer molecule

Aim. The aim of this investigation is to analyze coenzyme Q10 deficiency states and coenzyme Q10 application in medicine and cosmetics.

Materials and methods. Special scientific literature was analyzed, in particular, review and practical articles.

Results and discussion. Deficiency states are induced by impaired CoQ10 synthesis due to nutritional deficiencies, a genetic or acquired defect in coenzyme Q10 synthesis or utilization, increased tissue needs resulting from a particular illness, CoQ10 levels decline with advancing age. Since we have the biggest amount of mitochondria located in cardiac muscular cells CoQ10 improves cardiovascular function via: enhanced energy production, improved contractility of cardiac muscle, potent antioxidant activity. The intake of CoQ10 as supplement reduces congestive heart failure symptoms and may help with all aspects of heart health such as atrial fibrillation, myocardial infarction, heart attacks and strokes. CoQ10 helps reduce blood pressure, the CoQ10 supplement improved blood vessel health by about 42%, it prevents blood clot formation. Also it is used in cosmetics: as an antioxidant, neutralizing free radicals and keeping cells healthy (anti-aging benefit); gives skin the energy needed for natural repair and regeneration; reduces sun damage; supports the production of collagen and elastin; reduces the emergence of fine lines and wrinkles; prevents hyperpigmentation and dark spots.

Conclusions. Coenzyme Q10 has roles throughout the entire body as an antioxidant and is indispensable for our body's energy production. CoQ10 is an ideal dietary supplement. It is contained in some foods, its dosage in blood is feasible, and its deficiency is associated with some diseases, while its supplementation tends to restore a physiological condition.