

Abstract

Charles University in Prague, Faculty of Pharmacy in Hradec Králové
Department of biophysics and physical chemistry

Candidate: Mgr. Alžběta Lejsalová

Supervisor: Mgr. Monika Kuchařová, PhD.

Title of Thesis: Measurement of the skin mechanical properties after application of the anti-aging product

The maintenance of youthful skin appearance is strongly desired by the society nowadays. A lot of anti-aging strategies, agents and procedures have been already described but it is difficult to measure the effectiveness of these products and methods.

Viscoelastometer developed at the Faculty of Pharmacy in Hradec Králové offers a quick and painless measurement of basic mechanical parameters of the skin, stiffness and viscosity. Previous researches indicate that these parameters vary with age. The aim of this study was to determine the effect of anti-aging product on these mechanical parameters. Twenty volunteers (women aged 25 - 67 years) used the tested product Vichy Liftactiv Serum 10 twice a day for two months. During the experiment skin mechanical properties were measured at the application site and the obtained values were compared by the t-test.

The theoretical part is focused on characterizing the basic anatomical, physiological and biomechanical properties of the skin, describes the aging process and some rejuvenating methods. Experimental part summarizes the principles of the method employed and *in vivo* measurement of mechanical parameter's changes of the skin.