A PRODUCT FOR PREVENTING AND RECOVERING OXIDATIVE DAMAGE LIVING CELLS

Abstract

The oxidative stress is thought to be involved in development of many diseases and pathological conditions such as cancer, neurodegenerative diseases, cardiovascular diseases and aging.

Belongs to a group of plant pigments called flavonoids that give many fruits, flowers, and vegetables their colors, quercetin is an antioxidant.

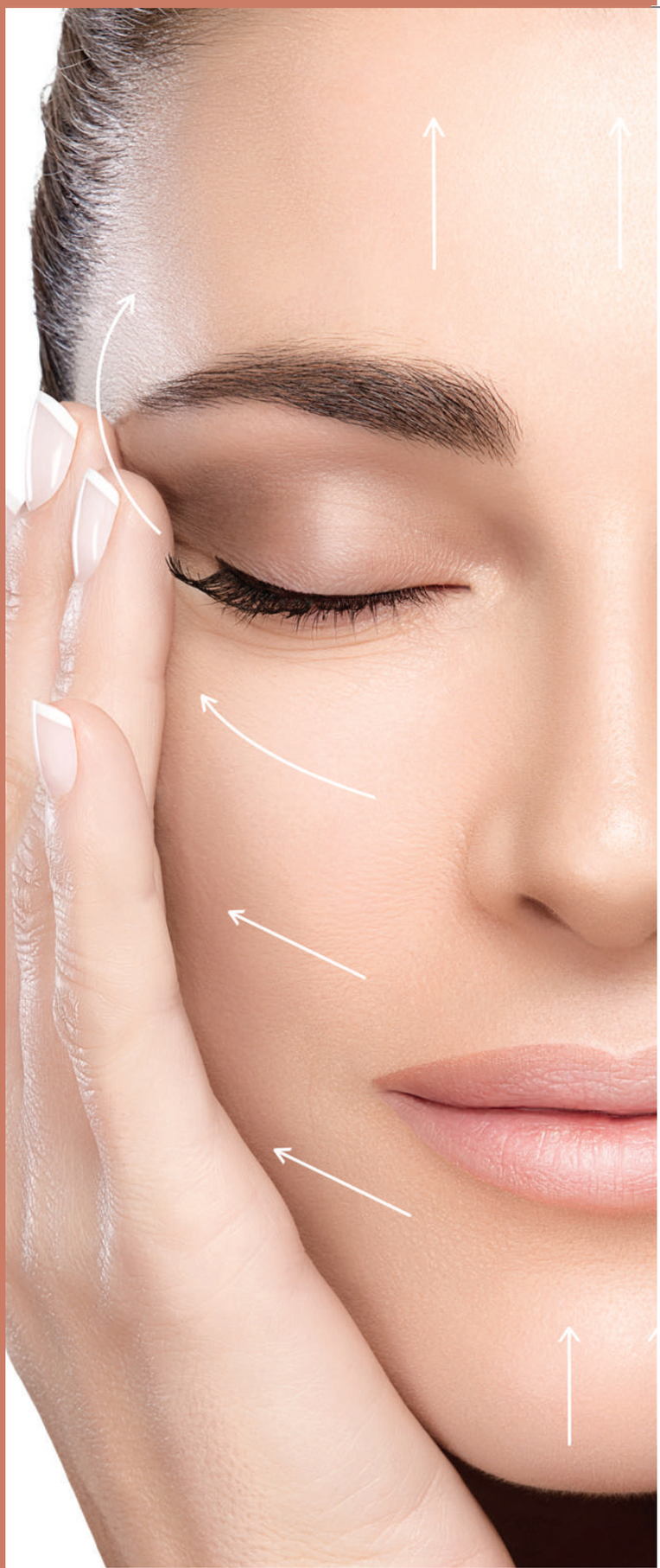
It scavenges particles in the body known as free radicals, which damage cell membranes, tamper with DNA, and even cause cell death. Antioxidants can neutralize free radicals. Utilizing the antioxidant features of the quercetin by loading it to a nanoparticle to increase the penetration level of the designated active ingredient in to the cell to overcome oxidative stress is the core goal of this technology.

Technology Overview

The aim of this technology is to maximize the antioxidant effect of quercetin for prevention or recovery of the oxidative stress in living cells. Another aim is to improve quercetin penetration into cells.

Technology Features And Specifications

With this novel technology quercetin is used as a antioxidant which is loaded TiO2 nanoparticles for preventing and recovering oxidative damage in living cells. Using of TiO2 nanoparticle increases quercetin penetration to the cell whereas its high biosafety, antibacterial and inert properties features. The encapsulated TiO2 nanoparticle provides surface modification before loading quercetin. Therefore, the efficiency of the invention increases because the nanoparticle has a more adhesive surface and so the antioxidant molecules are adhered to the surface of the nanoparticle.



CONTACT: INDUSTRY COLLABORATION AND TECHNOLOGY LICENSING OFFICE

0090 216 4839654

fml@sabanciuniv.edu

Sabancı Üniversitesi

Potential Applications

Quercetin loaded loaded TiO_2 nanoparticles can be utilized in several areas and products such as;

- Dermocosmetics; anti-aging skin care, wound healing, sun care.
- Medicine; chemotherapeutics in oncology, remedy of skin disorder such as psoriasis or atopic dermatitis in dermatology, as an anti-inflammatory in autoimmune and cardiovascular diseases
- Pharmacy; antioxidant supplementary

Customer Benefits

- Ensure safety against to toxicity
- More capacity for loading quercetin

Market Trends & Opportunities

Global demand for anti-aging market was valued at USD 140.3 billion in 2015, is expected to reach USD 216.52 billion in 2021 and is anticipated to grow at a CAGR of 7.5% between 2016 and 2021.

Anti-aging formulas and products are witnessing higher consumer penetration in countries having a majority of generation x and baby boomers population. Modern lifestyle is defined by the combination of appearance and sophistication. Individuals are more conscious about their looks, the trend is especially visible amongst the urbanites. Moreover, an ever-increasing size of the ageing populace across the globe has further fueled the demand for anti-aging products.