Perspective

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Quarterly Photodynamic Therapy for Prevention of Nonmelanoma Skin Cancer

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Description

Present study aimed to prepare, identify and computational analysis antioxidative peptides from lumbricus protein, meanwhile to investigate their bioavailability and preventive effects against oxidative stress-related diseases, namely UV-B radiation-induced skin damaged. Antioxidative peptides from lumbricus protein hydrolyzed by alcalase reached the highest scavenging activity and chelating activity with the EC50 values of respectively. Additionally, UV-B radiation-induced skin damaged mice model showed that skin catalase and glutathione were enhanced, while malondialdehyde was decreased by LPs significantly. LPs could inhibit skin oxidative stress via regulating the expression and distribution of B-cell lymphoma. Moreover, eighty peptides were identified in LPs, peptides such as PGAGAVY and KDLY showed the lowest binding energies with ABTS, and their binding affinities were confirmed by molecular docking. At the concentration, the scavenging activity of PGAGAVY and KDLY reached and respectively, which were better than that of LPs. Overall, these findings provide a new perspective for Lumbricus antioxidative peptides as natural antioxidants. Bacterial Cellulose (BC) is a biopolymer with and biocompatibility becoming one of the most suitable delivery systems of plant phenolic compounds. Some of these compounds are well known antioxidants capable of inducing photoprotection. Hence, the association between BC and plant phenolics may be an innovative solution for preventing skin damage caused by UV radiation.

Skin Phenolics

Despite this promising application, many challenges are related to the development and dermatological use of BC-loaded with plant phenolics. The present review addresses the factors that influence the biosorption of plant phenolic compounds by BC and the role of phenolic compounds in prevention of UV-induced skin damage. This review further elaborates on the delivery mechanisms and additional benefits (antioxidant, antimicrobial, healing, and anti-aging) of the BC-phenolics complex. Overall, the comprehension of the intrinsic mechanisms of plant phenolics biosorption and release by BC, associated with advances in the use of new cellulose sources complexed with phenolics, may improve product formulations for dermatological use and stimulate the development of biopolymers with high biological activity. Developing a dual-function skin-stretching device is beneficial for skin mechanotransduction analysis and wound healing applications. In this study, a dual-function skin-stretching device was designed based on Three-Dimensional (3D) printing, which can be fixed on rat skin for skin stretching and tension-relieving tests. During the skin stretching assay, a piece of skin was pulled outward by applying a mechanical load, the magnitude of which could be studied by force analysis. In the tension-relieving assay, skin wound edges could be pulled to the opposite side to accelerate wound closure. The skin-stretching device could exert forces of varying magnitudes on the skin, leading to variations in the histological features of the skin epithelium. Western blot indicated that the protein levels of the mechanosensitive molecule Yes-Associated Protein (YAP) were positively associated with the mechanical strength exerted on the skin. The tension-relieving assay demonstrated that the scores and cross-sectional size of skin scars decreased by fixing the skin-stretching device to the skin. Collectively, we developed a skin-stretching device that could potentially exert a dual force on rat skin, providing a potential method to analyze the molecular mechanism of mechanotransduction during stretch-induced skin growth and promote skin wound healing with a minor scar. We propose a classification and discuss the pathophysiology, clinical findings, and treatments and prevention of the occupational skin hazards COVID-19 poses to HCPs. The multivariate pattern of occupational skin diseases during the COVID-19 pandemic can be classified into four subgroups: Mechanical skin injury, moisture-associated skin damage, contact reactions, and exacerbation of preexisting dermatoses. The clinical pattern is versatile, and the most affected skin sites were the ones in contact with the protective equipment.

Malignant Protective

Dermatologists should recognize the plethora of HCPs' occupational skin reactions that are occurring during the COVID-19 pandemic and implement treatment and preventive strategies. Consumption of inorganic arsenic above the safe level may lead to many diseases including cancers of skin. It is known that carcinogenicity of is mediated through generation of excessive reactive oxygen species and polyphenols present in Black Tea Extract (BTE) ameliorate the deleterious effect. Epigenetics also plays vital roles in carcinogenesis. The aim of this paper is to study the influence of on epigenetics and the modulatory effect of BTE. Male Swiss albino mice were divided

into three groups, control, administered and BTE administered. Group developed invasive Squamous Cell Carcinoma (SCC) of the skin after 330 days, while only hyperplasic and dysplastic changes were observed in group. Expression levels of histone methylation, acetylation marks and several histone methylases, demethylases and acetylases due to were studied; most aberrant expression levels due to were modulated by BTE. JARID1B, a histone demethylase implicated as one of the markers in SCC and a therapeutic target gets upregulated by, but is not influenced by BTE. However, SCC is prevented by BTE. Upregulation of JARID1B by represses H3K4me3; BTE upregulates H3K4me3 without influencing JARID1B expression level. It is known that theaflavin compounds in BTE are transported to the nucleus and interact with histone proteins. *In-silico* findings in this paper hint that theaflavin compounds present in BTE are very good inhibitors of and BTE inhibits its demethylating activity. BTE reverses the epigenetic alterations caused by, thus aids in prevention of SCC. Cancer is a leading cause of death globally and the second cause of death in developed countries. Having a rising incidence, skin cancer is the most prevalent cancer in Iran. Long-term UV radiations, particularly during childhood and adolescence, is a major cause of skin cancers. The theory of planned behavior as the most precise indicator of behavior, contains motivational factors affecting behavior. This theory has been successful in predicting factors related to chronic diseases, especially cancer. As this model was successful in assessing sun-protective behaviors in previous studies, this study was designed to figure out how a theory-based educational intervention can affect the skin cancer prevention practices of Iranian female high school students.