

Effect of Nanomaterials causing Nanotoxicity in Skin Cosmetics

Chintala Amala*

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Nanomaterials and nanoparticles with harmful chemicals are damaging the skin of people who are sensitive towards this cosmetic and such nano

cosmetics can lead to skin toxicity and this effect of toxicity with nano products are referred as nanotoxicity. These cosmetics can protect the skin from radiation and in the same case it leads to skin burns due to high dose of chemicals.

Key Words: *Nanomaterials, Nanoparticles, Nanotoxicity, Skin burns, Chemicals.*

INTRODUCTION

The present situation of all our entire world, humans are more prone to various skin disease with several skin products such as skin cosmetics. Mainly people with different age groups such as adults and young would like to express them self with a good and attractive manner this can boost up their confidence in presenting them self in a better way and people with any age group are trying to look attractive and would like to cover their age and for this purpose they are investing more money for buying a new different variety of cosmetics, especially women try to look more beautiful, young day by day than men. There are different varieties of cosmetic products launching every day in the global market with huge investments. Cosmetics are highly demandable with their brands and their quality and safety. In some cases, cosmetics may lead to skin toxicity [1].

Cosmeceuticals are the products, which hideaway between active pharmaceutical ingredient and cosmetics. It is exploited as cosmetics because it claims to affect appearance but also has a therapeutic effect. There is no classification of cosmeceuticals by the Food and Drug Administration, instead skin experts and professionals used this term to promote purchasing of cosmetic products especially antiaging and sunscreen products. A leading product from Cosmeceuticals are Nanocosmeceuticals [2-3].

Nanomaterials having one primary dimension of less than 100 nanometers, based on this Nanotechnology in recent trending world this development is very high and produces health and safety effects. A nanoparticle is a "particle having dimensions on the nanoscale," i.e., particle size below 100 nm. As per cosmetology, it is considered that smaller the particle size, more ready will be the absorption and efficient will be the damage repair [4]. Thus, the term was coined as "nanocosmeceuticals." Nanoparticles are divided into combustion-derived nanoparticles like diesel soot, these are manufactured as a carbon nanotube and these are naturally occurring from volcanic eruptions and atmospheric chemistry etc. Typical nanoparticles are some particles that are titanium dioxide, alumina, zinc oxide, carbon black, carbon nanotubes, and buckminsterfullerene [5].

A widely used Nanocosmeceuticals for skin purpose and for hair purpose and they are used in shampoos, conditioners, dandruff, hair damage, hair sprays, jells etc. This can also be used for nails, lip care products used in such conditions like wrinkles, photoaging, hyperpigmentation creams are widely used now a days [6]. Novel nanocarriers like liposomes, niosomes contain vitamins or antioxidants and carriers for unsaturated fatty acids, nanoemulsions such as conditioners or lotions, microemulsion, solid lipid nanoparticles, nanostructured lipid carrier, nanoparticles contains body firming lotion, toothpastes, soaps, face creams, bronzer, exfoliant scrub, eye liner, and styling gel, nanocapsule-based cosmetic product, nanocrystals,

dendrimers, fullerenes, nanosomes. and nanospheres have replaced the usage of conventional delivery system [7]. These nanocarriers have a great advantages of enhanced skin penetration, controlled and sustained drug release, site specific targeting, higher stability, and high entrapment efficiency.

Nanotoxicology is referred as toxicity of nanomaterials. Due to their quantum size effects a large surface area to volume ratio, nanomaterials have unique properties compared with their larger counterparts that affect their toxicity [8]. This toxicity may lead to inflammation, fibrosis, and carcinogenicity and produces some harmful effects on the skin and lead to skin cancer. This toxicity can also lead to damage some internal organs like lung tissues, blood brain barrier etc. In some cases, nanoparticles can be absorbed, swallowed, inhaled through skin can causes skin burn and medical care is compulsory and should be isolated [9-10].

CONCLUSION:

Nanocosmetics are safe and this product can be encouraged for sensitive skin and in some cases due to sever exposure of sun or due to some harmful rays can burn the skin and leads to toxicity. To avoid such harmful effects precautions should be taken to protect the skin and be protective from harmful radiation.

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*Department of Pharmacology, Gokaraju Rangaraju College of Pharmacy, India.

*Correspondence: Chintala Amala, Department of Pharmacology, Gokaraju Rangaraju College of Pharmacy, India. e-mail: amala.chintala@gmail.com

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