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## **Cosmeceutical based nanotechnology: the beauty from nature**

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Cosmeceuticals from natural products or herbal cosmetics has become the most topic of interest in nowadays cosmetic trend, as they are natural, safe and free from all the harmful synthetic chemicals. Many naturally available herbs serves as active ingredients in different uses for skincare, haircare and antioxidant formulation. However, the application of phytochemical extracts in cosmeceutical products is still challenging due to their stabilities as well as their abilities for skin adsorption and penetration. To address these challenges and to overcome a skin barrier, nanotechnology have been widely applied.

In our Nano-cosmeceutical laboratory, the main focuses are based on the implication of nanotechnology and delivery system in novel cosmeceutical products, especially from Thai medicinal herbs. The expertise also includes an in vitro and cell-based assays for the investigation of bioactivities as well as cosmeceutical efficacies of the extracts for anti-oxidation, anti-ageing, anti-acne, anti-septic, anti-inflammatory, and whitening prior to technology transfer and commercialization.

This current talk gives a brief overview of importance of nanotechnology in cosmeceutical products. It also covers different types of nanoencapsulation systems and carriers in present products including the development of lipid-based nanoparticles such as liposome, noisome, and nanostructured lipid carriers (NLCs). The investigation of bioactivity, biocompatibility and cytotoxicity of these carriers using cell-based assay will be addressed. Finally, our ongoing research on applications of these carrier in cosmeceutical formulation will be also highlighted.

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