

## Nanostructured TiO<sub>2</sub> and organic sunscreens for higher UV-blocking ability

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Usage of single inorganic sun-blocking products is less harmful than use of organic sun-blocking products due to allergic reaction and penetration of organic sun-blocking materials into the skin. However, inorganic sun-blocking products could not screen UVA efficiently, thus, skin problems caused by UVA such as DNA damages, premature aging, collagen destruction, darkening, etc.

For this reason, there have been many reports on development or modification of sun blocking materials, which could block both UVA and UVB effectively. In this study, disordered mesoporous TiO<sub>2</sub> spheres were incorporated with Tinosorb S, which is an organic sun-blocking material. In the UV-visible diffuse reflectance spectroscopy, the light blocking ability of x-TS/DMT were compared indirectly by means of their area below the spectra. TS/DMT showed absorption edge red-shifted, while the physically mixed TS+ DMT powder did not exhibit any absorption edge shifted.