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エイジングケア 2007—シミ・シワの皮膚科学から化粧品開発まで—

光学測定を利用した最近の皮膚計測技術

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Recent Techniques for Skin Measurement Using Optical Methods

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Abstract

Many bioengineering techniques to elucidate the characteristics of the skin have been reported until now. They are measurement of water content of stratum corneum, skin surface contour, TEWL, skin color, blood flow, sebum secretion rate, mechanical property, and so on. Newly developed instruments in this decade have noticeable technical feature to adopt various optical methods. Optics is intrinsic subject in applied physics, however, applied to dermatological science through the developments of powerful laser as light source and new device or system. I describe a few bio-microscopes having new optical techniques, which can examine the inside of the skin *in vivo* and be applied for efficacy tests of cosmetics or pharmaceuticals. They are *in vivo* confocal laser microscope, OCT (optical coherence tomography), *in vivo* confocal Raman microscope, multi photon microscope, and SHG (second harmonic generation) microscope.

Key words: *in vivo* confocal laser microscope, OCT (optical coherence tomography), *in vivo* confocal Raman microscope, multi photon microscope, SHG (second harmonic generation) microscope.