ABSTRACT

Optical Properties of Psoriatic Epidermis

S. R. UTZ

Institute of Rural Hygiene, Saratov, Russia

We have performed in vitro measurements of diffuse reflectance (R) and total transmittance (T) coefficients (covered wavelengths from 240 to 400 nm) of the upper epidermis layers, obtained by means of a cyanoacrylate skin surface stripping technique. A commercially-available spectrophotometer (Cary 2415) with integrating spheres was used. The linear absorption and scattering coefficients of the samples were reconstructed from R and T measurements using 4-flux Kubelka-Munk theory. The optical properties of epidermis from patients in different stages of psoriasis vulgaris (PV, $n = 12$) and from normal individuals (N, $n = 15$) with no personal or family history of psoriasis were investigated. The results of in vitro measuring for R and T are given in the table.

λ, nm		260	280	300	320	340	360	380
R, %	N	5.5	4.7	5.6	7.5	8.2	9.0	10
	PV	9.8	10	10.2	13.5	14	14.2	15
T, %	N	38	35	46.6	58.4	62.1	67.4	74
	PV	27	24.5	54.8	81.5	78.3	80	80

The differences in optical properties of normal and psoriatic epidermis can be used to diagnose skin pathology and to develop new photo- and photochemotherapy techniques.

 ISSN 0365-8341