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Native skin fluorophores in young healthy adults

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Nowadays in vivo fluorescence spectroscopy finds application in characterization of specific fluorophores in biological sample and can also be applied in monitoring of human skin. It is known large number of fluorophores, which occur naturally in any biological tissue and are jointly responsible for the fluorescence properties of biological tissues. However human skin performs weak autofluorescence based on native fluorophores with different concentration and spatial distribution within the skin. The primary native fluorophores in human skin are: the aromatic amino acids tyrosine and tryptophan, pepsin digestible collagen cross-links (PDCCL), collagenase digestible collagen cross-links (CDCCL), elastin and porphyrins. The goal of this study is to monitor differences in skin fluorescence which are related to gender and to anatomical regions in young healthy individuals (aged 20-30). For this purpose, the Luminescence Spectrometer (Perkin Elmer LS 45) and quartz optical fiber (Remote Fiber Optic accessory, Perkin Elmer), were used. Three fluorescent bands were recognizable: 280/340 nm; 325/390 nm and 400/600 nm (excitation/emission wavelength). The main significant gender and regional differences were found in the amino acid wavelengths.

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