Optical Properties of Human Skin Around Biological Active Points

Isabel Delgadillo-Holtfort [C, S]
Departamento de Ingeniería Física, Universidad de Guanajuato, Campus León, Leon, Guanajuato, México

Raquel Huerta-Franco
Departamento de Ciencias Aplicadas al Trabajo, Universidad de Guanajuato, Campus León, Leon, Guanajuato, México

Miguel Vargas-Luna and Erick Perez-Alday
Departamento de Ingeniería Física, Universidad de Guanajuato, Campus León, Leon, Guanajuato, México

The physical parameter for the so-called Biologically Active Points most documented in the literature is the electrical impedance. These points seem to have higher electrical conductance than their surrounding points. The stimulation of these points up to now is performed not only mechanically and electrically but also optically (laser acupuncture). As far as we know, few references about optical properties of BAPs have been published in the scientific literature. Using the optoacoustic technique we evaluated some skin points along the PC acupuncture meridian in the forearm region around PC5 and PC6. Each measurement was performed at 0.5 cm intervals from the wrist to complete 21 measurements (10 cm), using a Q switch NdYAG laser of 1064 nm wavelength, 5 Hz repetition rate, 9 ns pulse duration and below the international safety limits for IR radiation for human tissues. The results were compared with those from a similar "line" parallel to the meridian, one centimeter toward the internal part of the forearm. We find a slight relative increment in absorption around one meridian region that could be associated with an acupuncture point but the same case is found in the non-meridian skin line not associated with any acupuncture structures. Taking into account the normal variability of the skin absorption and dispersion, we cannot conclude that such points are optically special.