Kouichi Nakagawa, J Clin Exp Dermatol Res 2014, 5:4
http://dx.doi.org/10.4172/2155-9554.S1.010

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference and Exhibition on
Cosmetology & Trichology
July 21-23, 2014 Hampton Inn Tropicana, Las Vegas, USA

Detection and analyses of structural changes of various stratum corneum

Kouichi Nakagawa
Hirosaki University, Japan

EPR (Electron Paramagnetic Resonance) spin-probe method along with spectral simulation was used to investigate structural changes of various stratum corneum (SC). The SC was stripped consecutively from one to three or four times using a glass plate coated with a cyanoacrylate resin. Aliphatic spin probes, 5-doxylstearic acid (5-DSA) and 3β-doxyl-5α-cholestane (CHL), were used to evaluate the SC ordering. EPR spectrum of 5-DSA incorporated in the SC demonstrated a characteristic peak for the first strip. A slow-tumbling simulation for 5-DSA showed clear differences in EPR intensities as well as ordering values (S0) of the SC for control and terpenes treated SC. In addition, a little, broad three-line pattern of 5-DSA in psoriasis vulgaris stratum corneum (pv-SC) was observed. The spectral pattern of pv-SC is quite different from those of control SC reported. The S0-values obtained for the pv-SC and the control were approximately 0.20 and 0.49, respectively. The statistical analysis suggests that the 0.20 value of pv-SC is significantly smaller than the 0.49 value of the control ($p<0.01$). The results suggest that the pv-SC is less rigid of the structure than that of the control SC, indicating irregular architecture of pv-SC. Therefore, the present EPR results can be useful for analyses of various SC.

Biography

Kouichi Nakagawa obtained his PhD from Boston University in 1989 and did postdoctoral researches at Northwestern University and University of Denver. Now, he is a Professor of Graduate School of Health Sciences at Hirosaki University. He has published more than 60 papers in international Journals and 8 book chapters, and serving on an editorial board member of Analytical Chemistry Insights.

nakagawa@cc.hirosaki-u.ac.jp