Synopsis of Original Research Paper

Development of new methods to analyze stratum corneum barrier and tight junction barrier in the epidermis

Akiharu Kubo

Department of Dermatology, Keio University School of Medicine Center for Integrated Medical Research, Keio University School of Medicine

Skin is the structure that covers our body and protects it from not only the entry of pathogens or allergens but also from the leakage of water, solutes or nutrients. These outside-in and inside-out skin barrier functions are dependent on the epidermis, a stratified epithelial cellular sheet. Terminally differentiated cornified cellular sheets called stratum corneum (SC) constitute the outermost epidermal barrier in mammals. Beneath the SC, apical paracellular spaces of epidermal cells are sealed with tight junctions (TJs) that might limit paracellular leakage of water and electrolytes to maintain fluid homeostasis. Here we analyzed the barrier functions of the SC and TJs.