Synopsis of Original Research Paper

Reconstitution of skin using bone marrow-derived cells

Nam-ho Huh

Department of Cell Biology, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences

Recently we demonstrated the participation of whole bone marrow cells from adult mice in the reconstitution of skin including the epidermis and hair follicles (Kataoka et al., Am J Pathol 163:1227-1231, 2003). To get an insight into cell populations that give rise to the epithelial components of the reconstituted skin, we fractionated bone marrow cells derived from green fluorescent protein-transgenic mice by density gradient. Unexpectedly, we found that a substantial amount of mononucleated cells (~30%) was recovered in the pellet fraction and that the cells in the pellet fraction preferentially differentiated into epithelial components of skin than the cells in the mononuclear cell fraction. The pellet fraction contained more CD45-negative (thus uncommitted to the hematopoietic cell lineage) cells than the mononuclear cell fraction. These results indicate that the density gradient fractionation results in significant loss of specific progenitor cells into the usually discarded pellet fraction.