The relationship between hemidesmosomes and focal contacts in stable and/or motile keratinocytes

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Communication between cells and the extracellular matrix (ECM) impacts the regulation of various cellular functions. The focal contacts (FCs) are highly dynamic adhesive devices in mesenchymal cells, while hemidesmosomes (HDs) had been believed to be stable anchoring structure in epithelial cells. However, recent studies showed that HDs are also dynamic. In addition to HDs, FCs also have been found to be in keratinocytes. However, there have no detailed studies focused on the relationship between HDs and FCs in stable and/or motile keratinocytes. In order to characterize them, we conducted the live cell imaging of stable and motile keratinocytes. We used dynamics of HDs probed with YFP-tagged β1 integrin and FCs probed with GFP or CFP-tagged actinin-1 under subconfluent, confluent, or wound culture conditions in live HaCat keratinocytes. Moreover, drugs which affect cytoskeletons for keratinocytes (nocodazole and cytochalasin D) were added onto the same culture conditions.