

Skin remodeling during pregnancy

Fumiko Toyoshima

Medical Research Laboratory, Institute of Integrated Research, Science Tokyo

During pregnancy, the mother's abdominal skin expands rapidly as the fetus grows. Disruption of this mechanism is expected to induce skin diseases such as stretch marks, but the control mechanism has remained largely unexplored. We have previously found that in the abdominal skin of pregnant mice, cells with high proliferative potential appear in the epidermal basal layer. This population of cells is induced by secretory signals from the dermis. In this study, we show that dermal fibroblasts induce remodeling of extracellular matrix to increase the dermal stiffness, which is necessary for epidermal proliferation. In addition, fibroblasts transduce the stiffened matrix signal into the chemical signal via the mechano-sensing transcription factor YAP, leading to epidermal proliferation during pregnancy.