Shedding of microparticles by myofibroblasts as mediator of cellular cross-talk during normal wound healing

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Résumé en anglais	Interactions between cells are a crucial mechanism to correctly heal a wounded tissue. Myofibroblasts have a central role during healing but their means to communicate with other cells is unknown. Microparticles (MP) have demonstrated a potential role as mediators of cellular interactions during various diseases. We have analyzed the production of MP by normal (Wmyo) and pathological (hypertrophic scar, Hmyo) myofibroblasts and human dermal fibroblasts (Fb) when treated with serum or plasma as examples of body fluids. We have shown that the presence of these body fluids induced a very significant increase in MP production by Wmyo while no MP production was denoted for Hmyo and Fb. These effects were at least due to thermally sensitive protein(s) with a molecular mass >30 kDa. Furthermore, the increase in MP production was not linked to an increase in apoptotic Wmyo. MP characterization showed that VEGF and FGF2 were present in MP and that endothelial and (myo)fibroblast cell growth can be stimulated by MP treatment. We postulated that MP production by myofibroblasts could modulate mesenchymal cell growth and angiogenesis during normal healing.
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