Microparticles harboring sonic hedgehog: Role in angiogenesis regulation

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Résumé en anglais	Sonic Hedgehog (Shh) is a morphogen involved in embryonic development of nervous system. Also, it has been shown that recombinant Shh can modulate angiogenesis under ischemic conditions. However, angiogenic effects of endogenous Shh have not been completely elucidated. Using small membrane-derived vesicles expressing Shh (MPs^{Shh+}), we have shown that, although MPs^{Shh+} decrease endothelial cell proliferation and migration, they are able to favour angiogenesis through the increase of both endothelial cell adhesion and expression of pro-angiogenenic factors. Activation of proteins implicated in cell adhesion, such as Rho A, as well as upregulation of pro-angiogenic factors were sensitive to inhibition of Shh pathway. Although whole composition of MPs^{Shh+} needs to be characterized to understand potential effects of MPs^{Shh+}, these results highlight a new role of MPs^{Shh+} in vascular pathophysiology and may have significant implication for therapy in pathologies associated with altered angiogenesis in order to re-address angiogenic switch.
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