# Exosomes produced by melanoma cells significantly influence the biological properties of normal and cancer-associated fibroblasts

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The incidence of cutaneous malignant melanoma is increasing worldwide. While the treatment of the initial stages of the disease is simple, the advanced disease frequently remains fatal despite novel therapeutic options. This urges for identification of novel therapeutic targets in melanoma. Similar to other types of tumors, the cancer microenvironment plays a prominent role and determines the biological properties of melanoma. Importantly, melanoma cell-produced exosomes represent an important tool of intercellular communication within this cancer ecosystem. We have focused on potential differences in the activity of exosomes produced by melanoma cells towards melanoma-associated fibroblasts and normal dermal fibroblasts. Cancer-associated fibroblasts were activated by the melanoma cell-produced exosomes significantly more than their normal counterparts, as assessed by increased transcription of genes for inflammation-supporting cytokines and chemokines, namely IL-6 or IL-8. We have observed that the response is dependent on the duration of the stimulus via exosomes and also on the quantity of exosomes. Our study demonstrates that melanoma-produced exosomes significantly stimulate the tumor-promoting proinflammatory activity of cancer-associated fibroblasts. This may represent a potential new target of oncologic therapy.