

## Basic fibroblast growth factor affects the expression of angiogenin and cell proliferation in A375 human melanoma cells

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### ABSTRACT

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**Aims and background.** Human malignant melanoma is a very aggressive and highly angiogenesis-dependent tumor. Basic fibroblast growth factor and angiogenin are the potentially important angiogenic factors for melanoma progression and metastasis. Many studies have mainly focused on how they induce angiogenesis. In the present study, we investigated the effects of basic fibroblast growth factor on the expression of angiogenin and melanoma cell growth.

**Methods and study design.** Angiogenin mRNA and protein expression were investigated by means of semi-quantitative reverse transcriptase polymerase chain reaction assay and western blotting. We analyzed cell proliferation using MTT, flow cytometry and soft agar assay. Immunofluorescence staining was applied to investigate co-localization and nuclear translocation.

**Results.** We found that basic fibroblast growth factor negatively affected the expression of angiogenin in A375 cells. The result showed that down-regulation of basic fibroblast growth factor induced decreased cell proliferation of A375 cells, and in basic fibroblast growth factor up-regulated cells, cell proliferation was increased. We demonstrated that basic fibroblast growth factor protein was co-localized with angiogenin and that it underwent nuclear translocation in A375 cells.

**Conclusion.** These findings suggest that there is a cooperation mechanism between basic fibroblast growth factor and angiogenin in A375 cells, and the cooperation mechanism affects the progress of tumor cell proliferation and angiogenesis. Free full text available at [www.tumorionline.it](http://www.tumorionline.it)

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**Key words:** A375 cells, bFGF, angiogenin, cell proliferation, protein expression.

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