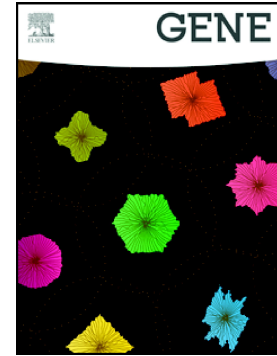


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High-efficiency production of bioactive oleosin-basic fibroblast growth factor in *A. thaliana* and evaluation of wound healing

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**Abstract:** Basic fibroblast growth factor (bFGF) is a member of the fibroblast growth factors family. It is a highly specific mitogenic factor for many cell types, as though it be involved in wound repair, angiogenesis, nerve nutrition and embryonic development etc. Oil bodies have been applied for medicine, foodstuff and industry field. The heterogonous proteins expressed in oil bodies have distinct advantages, such as less purification steps and low costs. In this study, bFGF was expressed in *A.thaliana* seeds using oleosin fusion technology. The pOTB-bFGF vector contained an oleosin-bFGF fusion gene and a glufosinate resistance gene for selection. Transgenic *A.thaliana* lines were obtained by the floral dip method and protein expression was identified by SDS-PAGE and western blotting in transgenic *A.thaliana* lines. Moreover, MTT assays showed that the oil bodies expressed oleosin-bFGF fusion protein had a remarkable proliferation effect on NIH/3T3 cells and animal experiments showed that it could effectively decrease wound size and accelerate granulation tissue maturation. In conclusion, this may be a better method of producing oleosin-bFGF fusion protein to meet the increasing demand in its pharmacological application.

**Keywords:** Basic fibroblast growth factor. Oil body. *A.thaliana*. Wound-healing

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