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摘要:

目的: 利用基因工程技术制备SDF-1与hGM-CSF的融合蛋白(SDF-1 γ /rhGM-CSF), 研究该融合蛋白对肿瘤患者造血和免疫功能的增强作用。方法: 构建表达SDF-1 γ /rhGM-CSF融合蛋白的pPIC9k-SDF1-rhGM-CSF1质粒, 转染酵母菌, 诱导SDF-1 γ /rhGM-CSF融合蛋白的表达, Western blotting鉴定SDF-1 γ /rhGM-CSF融合蛋白的表达。集落形成实验观察SDF-1 γ /rhGM-CSF对骨髓细胞集落形成的影响, 趋化实验检测其对未成熟树突状细胞(dendritic cell, DC)的趋化作用。结果: 成功构建pPIC9k-SDF1-rhGM-CSF1质粒, 高表达SDF-1 γ /rhGM-CSF融合蛋白, 分子量约为25 000, 并可被GM-CSF特异性抗体所识别。SDF-1 γ /rhGM-CSF融合蛋白能显著刺激骨髓细胞的集落形成, 其效果强于GM-CSF ($P < 0.05$)。与SDF-1相比, SDF-1 γ /rhGM-CSF融合蛋白可更有效地趋化未成熟DC ($P < 0.05$)。结论: SDF-1 γ /rhGM-CSF融合蛋白可有效促进骨髓细胞的集落形成, 趋化未成熟DC, 有促进肿瘤化疗患者造血和免疫功能恢复的潜在临床应用前景。

关键词: [SDF-1](#) [GM-CSF](#) [融合蛋白](#) [肿瘤](#) [造血](#) [免疫](#) [趋化](#)

Preparation of SDF-1 γ /rhGM-CSF fusion protein and its chemotactic effect [Download Fulltext](#)

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Abstract:

Objective: To prepare the fusion protein of SDF-1 and rhGM-CSF (SDF-1 γ /rhGM-CSF) by genetic engineering technology, and investigate its hematopoietic and immune promotion functions in tumor patients. Methods: The expression vector for SDF-1 γ /rhGM-CSF fusion protein, pPIC9k-SDF1-rhGM-CSF1, was constructed and the protein expression was induced by yeast transfection. SDF-1 γ /rhGM-CSF fusion protein was further identified by Western blotting analysis. Colony-formation assay and chemoattract assay were used to study the roles of the prepared fusion protein in stimulating bone marrow cell colony-formation and in chemoattracting immature dendritic cells. Results: SDF-1 γ /rhGM-CSF fusion gene vector, pPIC9k-SDF1-rhGM-CSF1, was successfully constructed and expressed high level of SDF-1 γ /rhGM-CSF fusion gene. The molecular weight of the expressed protein was about 25 000 and was recognized by GM-CSF specific antibody. The fusion protein had a stronger effect in stimulating bone marrow cell colony-formation than GM-CSF ($P < 0.05$) and in chemoattracting immature dendritic cells than SDF-1 ($P < 0.05$). Conclusion: SDF-1 γ /rhGM-CSF fusion protein can promote bone marrow cell colony-formation and chemoattraction of immature dendritic cells, which might be used for promoting hematopoiesis and immune function of tumor patients after chemotherapy.

Keywords: [SDF-1](#) [GM-CSF](#) [fusion protein](#) [tumor](#) [hematopoiesis](#) [immunity](#) [chemotaxis](#)

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