عنوان مقاله:

miR-۴۵۱ Up-regulation, Induce Erythroid Differentiation of CD۱۳۳+cells Independent of Cytokine Cocktails

محل انتشار:

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خلاصه مقاله:

Objective(s): Erythropoiesis is regulated by some extrinsic and intrinsic factors as microRNAs (miRNAs). miRNAs are endogenously small non-coding regulatory RNAs which play vital roles in the variety of cellular fate, critical processes; growth, apoptosis, metabolism, survival of the cells and specially differentiation. Several miRNAs such as miR-۱۶ and miR-۴۵۱ have been shown to be correlated with erythroid differentiation. Taking into account the importance of miRNAs in cellular differentiation, the goal of the present study was to examine the role of miRNAs in hematopoietic stem cells (HSC) differentiation into the erythroid cells in the absence of growth factors and stimulatory cytokines.
Materials and Methods: CD۱۳۳+ stem cells were infected with lentiviruses containing miR-۴۵۱/miR-۱۶ precursor sequence, erythroid differentiation was evaluated using RT-PCR for hemoglobin chains and surface antigens, also by banzidine staining. Results: MiR-۴۵۱up-regulation, but not miR-۱۶, could induce α, β and γ-globin expression in CD۱۳۳+ cells and have strong correlation with appearance of CD۷۱ and CD۲۳۵a markers in these cells. Moreover,

miR-۴۵۱ up-regulation increases the banzidine positive cells to ~ %۴۰. Conclusion: Our results provide strong evidence that miR-۴۵۱ up-regulation strongly induces erythroid differentiation and maturation of CD۱۳۳+ stem cells. Hence, this method may provide a useful technique for the production of artificial blood RBC and be used as a new strategy for .gene therapy of hemoglobinopathies, such as β-thalassemias and sickle cell anemia

کلمات کلیدی:
Erythropoiesis CD۱۳۳+ microRNA miR-۴۵۱ miR-۱۶

لینک ثابت مقاله در پایگاه سیویلیکا: