



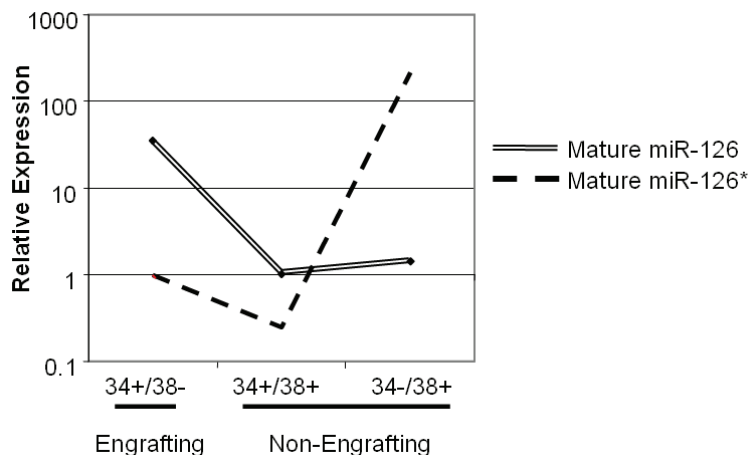
MicroRNA-126 for Enhancing Stem Cell Engraftment and Monitoring the Treatment of Acute Myeloid Leukemia

Overview of Technology:

Leukemia stem cells (LSCs) are a biologically distinct blast population positioned at the apex of the acute myeloid leukemia (AML) developmental hierarchy. A more complete understanding of the unique properties of LSCs is crucial for the identification of novel AML regulatory pathways and the subsequent development of innovative therapies that effectively target these cells in leukemia patients.

UHN researchers have identified a microRNA (miR-126) that has utility in monitoring the purification of acute myeloid leukemia (AML) stem cells. Similarly, it could be useful in the purification of normal hematopoietic stem cells. Stem cell enrichment has the potential to enhance the therapeutic use of bone marrow transplantation. Thus, miR-126 expression profiling could also be used in the diagnosis and treatment of AML by providing a novel biomarker for screening the bone marrow and peripheral blood of leukemia patients.

Figure: quantitative real time PCR validation of miR-126 qRT-PCR results showing that miR-126 is most highly expressed in the CD34+CD38- (LSC-enriched) engrafting fraction of a primary AML patient sample with miR-126* most highly expressed in the CD34-CD38+ non-engrafting fraction. Both miR-126 and miR-126* are embedded within intron 7 of the EGFL7 but have distinct sequences.



Patent:

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