Down-regulation of Kaiso and p120ctn in K562 cells inhibited the hematopoietic differentiation

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**Background:** There is consistent evidence of the role of Kaiso and its involvement in human tumorigenesis but there is no evidence about its role in hematopoietic differentiation and in the establishment of chronic myeloid leukemia (CML).

**Aims:** We used, normal K562 cell line, established from a CML patient in blast crisis to investigate the contribution of Kaiso to the cell differentiation status of the blast crisis of CML (CML-BP).

**Methods:** Quantitation of Kaiso, P120ctn, c-MYB, c-EBPα, Gata-2, PU-1, RNA transcripts was carried out by real time PCR (QRT-PCR). To knock-down either Kaiso or p120ctn alone or in combination, we employed siRNA.

**Results:** It was previously shown that Wnt11 can modulate hematopoietic stem cell diversification, and in our laboratory, knock-down of either Kaiso or p120ctn alone or in combination led to a significant reduction by 80% in Wnt11 expression. Our next aim was investigate how loss of Kaiso and p120ctn, by siRNA, affected the cell differentiation status of CML-BP. We quantified the levels of hematopoietic differentiation genes: C/EBPα, c-Myb, GATA-2, PU.1, by QRT-PCR analysis. The knock-down of Kaiso alone or Kaiso/p120ctn double knock-down, increased c-Myb by 65% and decreased PU-1, C/EBPα and Gata-2 by 66%, 80% and 50% respectively, when compared to scrambled knock-down cells. The knock-down of p120ctn alone decreased PU1 and Gata-2 by 57% and 51% respectively when compared to scrambled knock-down cells.

**Conclusion:** This leads us to think that the effect of knock-down Kaiso and p120ctn, inhibits cell differentiation in CML-BP.

Conflict of interest statement: None declared.

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