Interference with c-maf Function in Multiple Myeloma Retards Tumor Adherence and Progression and Decreases Expression of Integrin beta7, C-C Chemokine Receptor 1, and Cyclin D2

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Technology description

Summary

Multiple myeloma (MM) is an incurable malignancy of the plasma cell that accounts for 20% of all hematologic malignancies. It has been shown that there are recurrent genetic lesions associated with the disease. One of the recurrent lesions, occurring in approximately 5-10% of the cases, is a translocation involving the c-maf gene which results in overexpression of the c-maf gene.

Unexpectedly, the inventors have found that overexpression of the c-maf gene is more frequent than the occurrence of the genetic lesion, with approximately 50 % of MM samples showing overexpression of c-maf . Additionally, the inventors have shown that the interference with c-maf function markedly decreases expression of integrin beta7, C-C chemokine receptor1, and cyclin D2. The inventors have also demonstrated that decreased expression of integrin beta7 markedly decreases the ability of tumor cells to bind to bone marrow stroma and that the proliferation of myeloma cells was slowed significantly by the inhibition of c-maf expression. Therefore, c-maf appears to play a central role in regulating the proliferation and survival of tumor cells in MM.

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