

A Method in Improving Survival and Expansion of Hematopoietic Stem Cells (Yeda)

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[Idit Shachar](#), Biology, Immunology

Summary

hematopoietic cells. HSCs have the capacity to both self-renew and to differentiate, and they migrate from the bone marrow to the blood upon demand. Since HSCs can differentiate to a variety of cell types, including immune system cells, they have a huge therapeutic potential. Indeed, bone marrow transplantation is a common practice to treat a variety of diseases, such as cancers and autoimmune disorders. The research team of Prof. Shachar discovered that by manipulating two proteins they could improve the properties of HSCs. These modified HSCs exhibit increased survival, renewal, and migratory capacities, making the present technology a potent therapeutic tool for patients in need.

Applications

Increase HSC survival and renewal - while reserving their ability to differentiate to different cell lineages. **Improved therapy** - for conditions that require high HSC function, such as bone marrow transplantation. **Better mobility** - improved exit of HSC from bone marrow to the blood.

Technology's Essence

Prof. Shachar and her team discovered a new role for two proteins in HSC by using a variety of in vitro and in vivo models. Inhibiting these molecules resulted in improved renewal, survival, and motility of HSC. Additional details with regard to this technology can be obtained based on a non-disclosure agreement (NDA).

Contact for more information:

Yael Klionsky , Licensing Officer, +972-8-9344374

Yeda Research and Development Co. Ltd. - Technology Transfer from the Weizmann Institute. P.O. Box 95, Rehovot, 76100, Israel. Tel: +972-8-947-0617