

5th World Congress on **Cell & Stem Cell Research**

March 23-25, 2015 DoubleTree by Hilton Chicago - North Shore, USA

Increasing the engraftment capacity and function of hematopoietic stem cells after transplantation

Hanna Dobrowolska

Columbia University Medical Center, USA

Stem cells are the objects of scientific interest for many years. It is known that stem cells are the only cells in the body that can self-renew and differentiate into all type of the cells. Hematopoietic stem cells, which can be received from bone marrow, peripheral blood or cord blood, are used during auto- and allogenic transplantation in order for the reconstitution of bone marrow after myeloablative procedure. A lot of elements have an influence on the way of hematopoietic cells in preparation for transplantation, including conditions in which the cells are stored and prepared, knowledge and preferences of teams carrying out these activities. The protocols used for processing and storing stem/progenitor cells which are used as a transplant material are not unified around the world. Some factors like temperature, storage time and type of anticoagulants can have influence on preservations and cells' survival and as a consequence have an impact on their ability for engraftment. As the number of hematopoietic cells transplantation increase constantly every year, the aim of my work is to optimize the hematopoietic cells storage conditions which help to maximize the hematopoietic stem cells ability for homing and reconstructing hematopoiesis after transplantation.

Biography

Hanna Dobrowolska has completed her Ph.D. from Jagiellonian University, Cracow Poland and University of Louisville USA. She is the Associate Research Scientist in Columbia University USA. Her research interests focus hematopoietic stem cells and novel markers in the diagnosis and treatment of blood malignancies. The results of her work have been presented in numerous international meetings and published in recognized journals.

hmd2122@cumc.columbia.edu

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