

H-Y antigen binding B cells develop in male recipients of female hematopoietic cells and associate with chronic graft vs host disease

Hematopoietic Cell Transplantation cures many patients with blood cancers when the donor's immune system eradicates cancer as being foreign. Unfortunately the donor's immune response frequently attacks the recipient's normal tissues. This complication known as chronic Graft versus Host Disease (cGVHD) may require lifelong immune suppression.

Stanford researchers have developed a high-dimension flow cytometry assay for detecting anti DBY-2 B cells and potentially predicting cGVHD. The researchers observed that slightly over half (57%) of male patients receiving hematopoietic stem cells from a female donor have circulating donor B cells that express the B-cell receptor specific for DBY-2. Nearly all of the patients with DBY-2 cells developed cGVHD while less than 50% of those without DBY-2 specific B cells developed cGVHD. Using the high-dimension flow cytometry assay may allow for early detection of these allogeneic B cells and prediction of cGVHD development.

Applications

- The prospective monitoring of anti-DBY-2 B cells may direct a more effective schedule for alloreactive B-cell depletion therapy toward a goal of cGVHD prevention.

Advantages

- Provides a mechanistic explanation for the moderate efficacy of in vivo B-cell depletion in treating cGVHD

Publications

- B. Sahaf, Y. Yang, S. Arai, Leonard A. Herzenberg, Leonore A. Herzenberg and D.B. Miklos. "[H-y antigen-binding B cells develop in male recipients of female hematopoietic cells and associate with chronic graft vs. host disease](#)" *PNAS* February 19, 2013.

Patents

- Published Application: [20140212378](#)
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