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Pharmacologic Mobilization of Endogenous Stem Cells: Clinical Opportunities in Organ Transplantation

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Liver transplant has become life-saving therapy for thousands of patients with end stage liver disease in the United States, but chronic rejection and the toxicities of immunosuppression remain significant obstacles to the further expansion of this modality and "transplant tolerance" remains a central goal in the field. So we and others are looking for alternative post-transplant strategies. We set out to 'engineer' repopulation after transplantation in a strain combination [dark agouti (DA) to Lewis green fluorescent protein+ (LEW GFP+)] which rejects liver grafts strongly, a model that more closely resembles the situation in humans. Our central finding is purposeful manipulation of the immune response with low dose immunosuppression and liberation of stem cells for a very short period after transplantation results in long-term transplant acceptance by two mechanisms: transforming the liver (donor) to self (host) phenotype, and auto-suppression of the specific allograft response.

Biography

Zhaoli Sun, MD, Ph.D., Associate Professor of Surgery, Director of Transplant Biology Research Center, Johns Hopkins University School of Medicine. As a NIH funded investigator, Dr. Sun has more than 10 years experience in liver transplant biology and published a number of findings in Gastroenterology, Hepatology, Am J Transplant and Liver Transplant. His current research focused on generation of immunologic tolerance in organ transplant model via stem cell mobilization.