Reseurchers at the University of South Florida have discovered that inhibition of SH2-containing inositol phosphatase (SHIP) ameliorates transplant rejection and stimulates hematopoiesis.

Tissue rejection or graft vs host disease (GVHD) is a significant concern in allogenic transplant medicine. GVHD is the major cause of treatment related mortality in transplant procedures. SHIP inhibition specifically works to target antigen presenting cells, thereby alleviating rejection.

Furthermore, hematopoiesis can be impaired due to disease, radiation, or chemotherapy. Inhibition of SHIP has been shown to stimulate hematopoiesis by increasing homing of stem cells to the periphery, and increasing megakaryocyte, granulocyte, neutrophil, and platelet production.

Potential Routes of Administration include:
(1) Interfering RNA
(2) Double stranded RNA or DNA
(3) Polynucleotides
(4) Ribozymes

Treatment for:
(1) Allogeneic transplantation of solid organs or bone marrow
(2) Enhancement of stem cell production
(3) Myelosuppression

ADVANTAGES:
- In vivo and in vitro preclinical data available
- SHIP Inhibition through a variety of delivery mechanisms
- Multiple therapeutic applications

Novel Therapeutic Target

Enhanced Engraftment and Survival in SHIP-Deficient Hosts Following Allogenic Bone Marrow Transplantation

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