Special Issue

Advances in Hematopoietic Stem Cell Research and Therapeutic Strategies for Thalassemia

Message from the Guest Editors

Thalassemia is one of the most common genetic disorders globally, resulting from defects in hemoglobin production. It is associated with significant morbidity and mortality. In severe cases, regular blood transfusions combined with iron chelation therapy remain the standard treatment to manage the disease and prevent organ damage. Allogeneic Hematopoietic Stem Cell Transplantation (Allo-HSCT) remains the only curative approach currently available for Thalassemia. However, its widespread use is limited by several challenges, including transplantation-related mortality (TRM), graft vs. host disease (GvHD), graft failure, high cost, and limited availability of suitable HLA-matched related donors. In the proposed Special Issue, we expect the following aspects to be covered:

- Recent advancements in allogeneic hematopoietic stem cell transplantation to cure Thalassemia.
- Autologous hematopoietic stem cell transplantation combined with gene therapy and gene editing to correct Thalassemia.
- Emerging insights into niche-HSC crosstalk within the Bone Marrow microenvironment to enhance the clinical outcome of HSCT.

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