

## Special Issue

# Transplant Immunology in Allogeneic Hematopoietic Stem Cell Transplantation

### Message from the Guest Editors

Allogeneic hematopoietic cell transplantation (allo-HCT) is a potentially curative therapy for hematological malignancies. However, severe life-threatening acute GVHD remains a major obstacle that affects over half of allo-HCT recipients. The pathophysiology of acute GVHD is complex, but it is well established that allo-reactive donor T lymphocytes play an important role in mediating GVHD. In addition, tissue-specific mechanisms such as tissue tolerance are increasingly recognized as important components of GVHD pathogenesis. Recently, the gut microbiome and its metabolites were shown to be important for promoting tissue homeostasis and regeneration. While GVHD is a major obstacle to allo-HCT, relapse remains the number one cause of mortality following allo-HCT for malignant disorders. The graft-versus-tumor (GVT) effect helps to prevent relapse, but this effect is tightly linked to GVHD such that GVHD treatment and prophylaxis regimens often come at the cost of increased relapse. Therefore, it is critical to find ways of treating GVHD that also preserve GVT. In this Special Issue, recent advances in the basic and clinical science of GVT and GVHD are reviewed.

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