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## Graft-versus-Host disease:

Allogeneic stem cell transplantation is a key therapeutic option for individuals with leukemia, multiple myeloma, and some types of lymphoma. Following ablation of the patients hematopoietic system by either irradiation or chemotherapy, a stem cell transfer can be performed in order to restore the individuals immune system. Typically, the stem cells are sourced from an allogeneic donor who will be partially mismatched for human leukocyte antigens (HLA). As a consequence of these genetic differences, the allografted cells can recognize the host as 'foreign' and mount an immune response against it causing potentially fatal inflammation. This is referred to as Graft-versus-Host disease, and can manifest as idiopathic pneumonia syndrome (IPS). Patients with IPS present with increased inflammatory infiltrates airways, associated with impaired lung function which can be fatal. This disease can be modeled preclinically by allogeneic stem cell transplantation in mice, where IPS develops as noted by inflammation, loss of lung function and increased morbidity and mortality. Utilizing this model one can test the efficacy of novel therapeutics that can act to reduce Graft-versus-Host disease and consequently protection against the inflammatory sequelae associated with IPS.

## Experimental readouts:

- Quantification and characterisation of airway infiltrating cell types
- Histology; disease severity score
- Measurement of chemokine and cytokine proteins in tissue
- Quantitative PCR of chemokine and cytokine mRNA levels in tissue
- Lung function

## Duration:

7-42 days dependent upon experimental model and readouts

### Service Package I

- Administration of test compounds
- Initiation of GvH disease model
- Disease severity score

### Service Package II

- Measurement of lung function

### Service Package III

- Histological analysis of lung tissue
- Tissue cytokine and chemokine analysis
- Lymphocyte effector function analysis