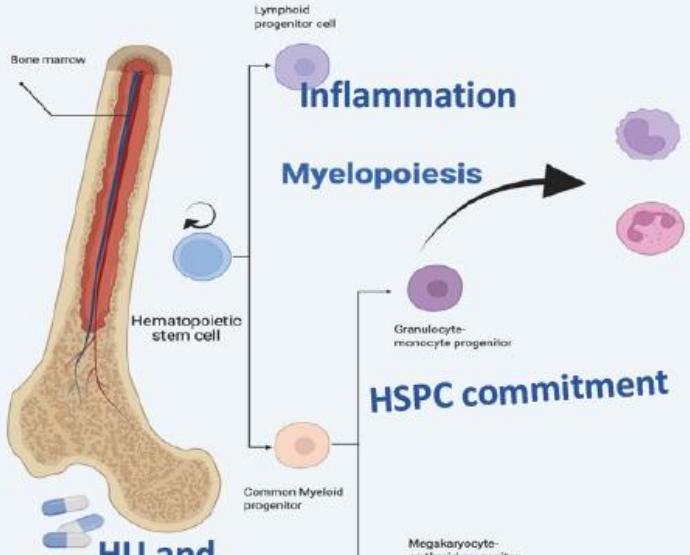
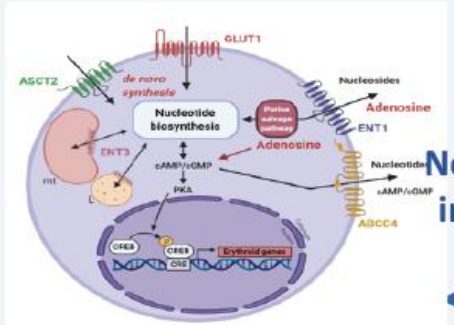
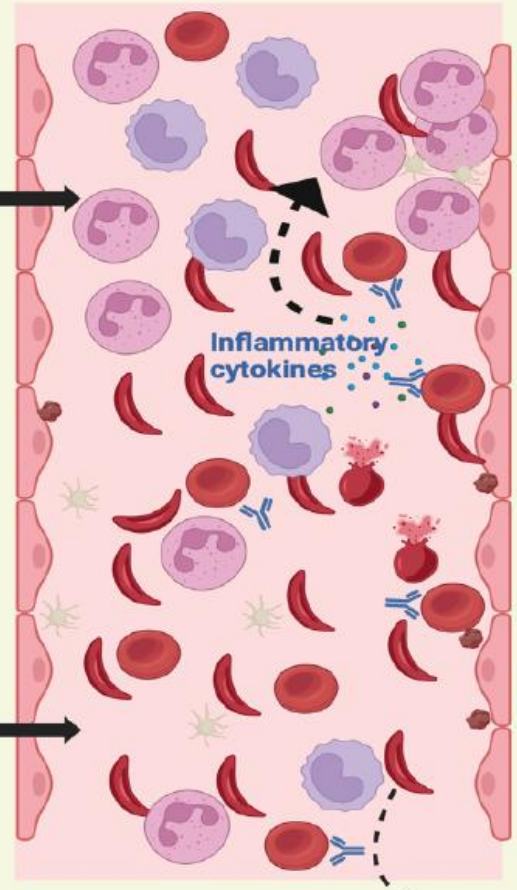
Axis.1. Genetic and metabolite regulation of normal and SCD hematopoiesis





Novel metabolite pathways in erythropoiesis and HbF induction

Axis.2. Infammatory processes in vaso-occlusion, endothelium and splenic dysfunction in SCD



VOC process (MPs, PLTs, and PMNs)

Endothelium activation by MPs

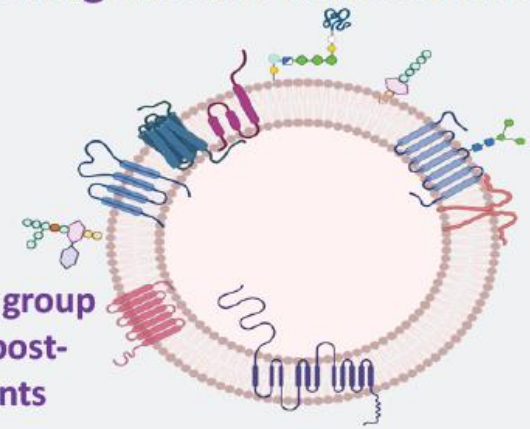
Enhanced erythrophagocytosis

Splenic immune cells

Spleen dysfunction

Null phenotypes of metabolite transporters

Axis.3. Biology of Blood group antigens and transfusion safety

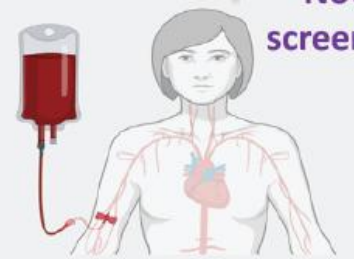


Role of new blood group antigens in SCD post-transfusion events

Immunohematologic safety of transfusion

New blood group antigens/systems

Novel genomic screening approach



Patients with rare blood phenotype

Blood group antigen function