Gfi1b controls integrin signaling-dependent cytoskeleton dynamics and organization in megakaryocytes

Mice with megakaryocyte-specific Gfi1b deletion
- macrothrombocytopenic phenotype
- megakaryocytic dysplasia reminiscent of GFI1B-related thrombocytopenias

Gfi1b-null megakaryocytes

Early stages of Mk maturation
- megakaryocyte proliferation ↑
- affected ploidy
- no responsiveness towards integrin signaling
- no ability to spread and reorganize their cytoskeleton

Gfi1b controls Mk polyploidization and motility through the inhibition of PAK activity

Later stages of Mk maturation
- unable to form proplatelets (independent of integrin)
- microtubule defect due to an almost complete absence of α-tubulin

Gfi1b controls Mk cytoskeleton organization and platelet formation via the loss of α-tubulin

Beauchemin et al., Haematologica, 2017