Disrupting the leukemia-meningeal adhesion in the central nervous system attenuates leukemia chemoresistance in acute lymphoblastic leukemia

1. Xenotransplanted mice
   - ALL cell lines
   - Leukemia cells reside in the meninges of the mouse CNS and associate with the meningeal cells

2. Co-culture experiments
   - ALL cell lines
   - Primary meningeal cells
   - Leukemia cells were significantly more resistant to cytarabine and methotrexate-induced apoptosis
   - Meningeal cells shift the apoptotic balance toward survival in leukemia cells
   - Meningeal cells increase leukemia quiescence
   - Chemoresistance is overcome by detaching the leukemia cells from the meninges

3. Co-culture adhesion assay to identify drugs that disrupt leukemia-meningeal adhesion
   - Me6TREN
   - hematopoietic stem cell mobilizing compound
   - Disrupts leukemia-meningeal adhesion in vitro and in vivo.
   - Enhances the efficacy of cytarabine in treating CNS leukemia in xenotransplanted mice

Jonart et al., Haematologica, 2017