Mouse Pathology Core

Preparation of Blood Smears

Procedure
Put 5 microliters of blood near the label end of a microscope slide. Place the end of a second slide on the middle of the glass of the slide with blood. Angle the second slide so that it is angled over the drop of blood. Drag the second slide so that it touches the drop of blood and causes the drop of blood to spread, but don't drag the second slide all the way past the blood drop. Now slide the second slide away from the label end of the first slide leaving a blood smear behind. The angle of the second slide and the rate at which you slide this slide impact the quality of the blood smear. Anemia makes it more difficult to prepare a good blood smear.

[I use Fisher Premium Microscope Slides-Superfrost (I use Superfrost-Plus for cytospins but not for blood and bone marrow smears)]. (I have a fan that blows air gently over the slides so the cells dry quickly, this improves the morphology).

Preparation of Bone Marrow Smears

Harvest marrow (I use cold HBSS without calcium or magnesium) by flushing into 6 cm sterile petri plate on ice.

Put 10 microliters of blood near the label end of a microscope slide [I use Fisher Premium Microscope Slides-Superfrost (I use Superfrost-Plus for cytospins but not for blood and bone marrow smears)].

With a new pipette tip, pick up a marrow particle and place in blood on slide.

Carefully cover with another slide so that the label ends of both slides stick out.

Smoothly draw the slides apart and allow bone marrow smear to dry (I have a fan that blows air gently over the slides so the cells dry quickly, this improves the morphology).

Note 1: Bits of bone spoil the process. You can try to pick out the bony bit or just try again with a new piece of marrow.
Note 2: Watching a hematologist or laboratorian prepare aspirate smears of human bone marrow may be helpful.