Tissue Study: Floating and Mounting of Mouse Lung Sections Using the AquaroASM Automated Section Mounting System

The AquaroASM automated section mounting system interfaces with motorized microtomes and utilizes a gentle water stream to transfer paraffin-embedded sections from the microtome blade to slides. Sections are exposed to warm water for relaxing and de-wrinkling at a temperature and for an amount of time defined by the user. Users can also program the number of sections per slide, the location of section placement on the slide, and whether sections are mounted serially or with different levels on the same slide.

Picture 1: AquaroASM automated section mounting system

Materials & Methods

Mouse lung tissue was embedded in Leica Surgipath Paraplast Embedding Media. Prior to sectioning, the block was chilled in an ice slurry for 30 minutes. Sections were taken at 4µm thickness using an Encore Low Profile blade on a Leica RM2255 microtome with the cut speed set at 3, knife angle at 36-38°, and were mounted onto Premiere 7308W Charged White slides.

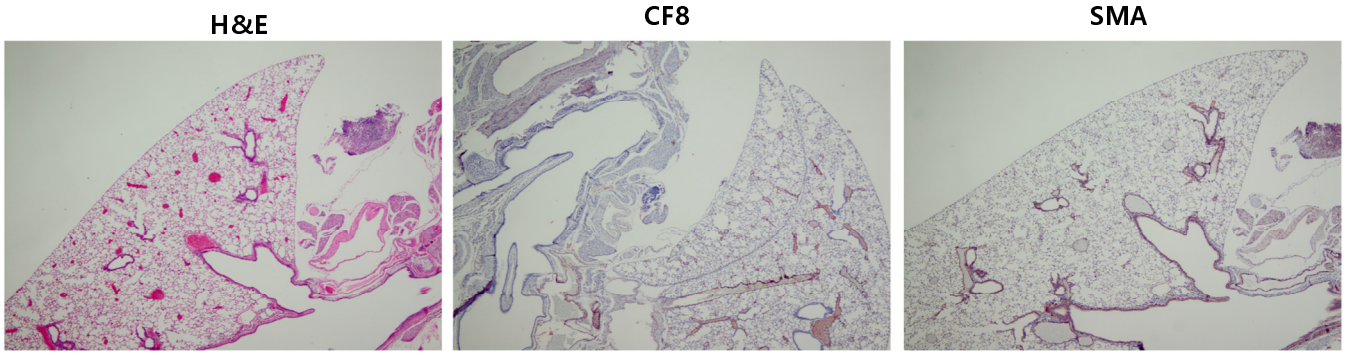
Dewrinkling temperature and time settings on the AquaroASM were varied from 50 to 60°C and 2 to 4 seconds. Mounted sections were placed in an oven at 56°C for approximately 30 – 60 minutes and stained with hematoxylin and eosin (H&E) or immunostained with antibodes against Coagulation Factor VIII (CF8) and Smooth Muscle Actin (SMA). Mounted section quality was observed at the time of mounting, after placement in the 56°C oven, and after staining to determine optimal de-wrinkling settings.

Results

Sections of mouse lung were dewrinkled and placed onto slides using the PaceSetter at the settings below*.

Hydration time	30 minutes
Sectioning speed	3
Section thickness	4 µm
Dewrinkling water temperature	58°C
Dewrinkling time	3 seconds

When exposed to 58°C water for 3 seconds, sections presented no evidence of wrinkling, tearing, bubbles, or other artifacts. Sections were stained with H&E, and for CF8, and SMA (below).



Picture 2: Mouse lung tissue, stained as indicated, 4X magnification

*Recommended settings only. Each laboratory should find program settings that obtain best results for their equipment, reagents, and tissues.