



Precision Cryoembedding System

Frozen Sections Become a Work of Art!

Leica
MICROSYSTEMS

Precision Cryoembedding System

Easily achieve proper specimen orientation and perfect embedding with the unique Precision Cryoembedding System. The Precision System was developed by American pathologist, Dr. Stephen Peters, to expedite and improve frozen sections and shorten the learning process for pathology residents. The system's individual components can be used in a variety of embedding procedures to perfectly embed and properly orient almost any type of specimen. The process is comfortably performed inside the cryostat using stainless steel well bars, chucks, and freezing blocks. Since the Precision Cryoembedding System's components are stored at cold temperatures, most specimens freeze in 20 to 60 seconds, depending upon their size and the selected freezing technique. This significantly reduces turn-around time. And, your well-oriented, flat specimens will be conserved during the trimming process! What else could you ask for?

The Precision Cryoembedding System consists of:

- 3 well bars in 3 sizes (18, 24 and 30 mm)
- 6 small stages (chucks)
- 4 large stages (chucks)
- 4 over-stage heat extractors
- 1 storage bin for stages
- 16 dispensing slides
- 1 cutting board/freezing griddle
- 1 elevated heat extractor
- 1 pair of angled embedding forceps and accessories



Cryoembedding components in the Leica CM1850 cryochamber



Precision cryoembedding accessories



Face Down Cryoembedding

Perfect, Flat Orientation

Any specimen, whether it is single or multiple pieces; large or minute; solid or liquid, can be embedded flat and in a single plane.

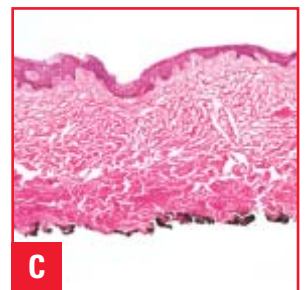
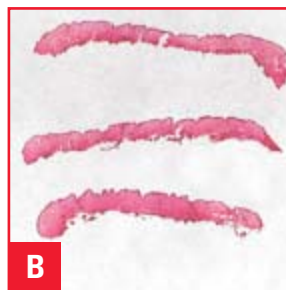
Technique

1. Precisely orient the specimen(s), face down, on a thin plastic dispensing slide.
2. Touch the edge of a specimen to the cold base of the embedding well and gently withdraw the dispensing slide while positioning the specimen. Repeat as necessary.
3. Slightly overfill the well with embedding medium.
4. Place a chuck over the well.
5. Place an over-chuck freezing block over the stem of the chuck.
6. Remove freezing block and tap the chuck stem when freezing is complete (usually 20 to 60 seconds) to remove the embedded block from the embedding well.



The Results

- A:** Trimmed block
B: Stained section on slide
C: Photomicrograph



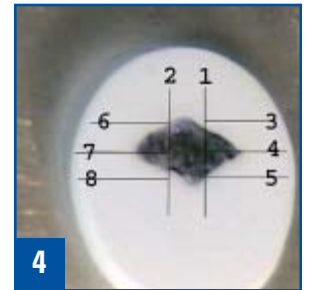
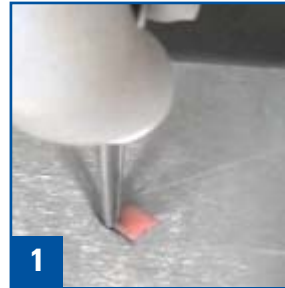
Frozen Block Cryoembedding

Precise, On-edge Orientation

Specimens are embedded and frozen in their entirety, then mapped and cut into firm, flat pieces. The still frozen, flat pieces are then embedded on edge. This technique is perfect for flimsy, tubular, curled, or angular specimens and it is particularly useful for margin resections.

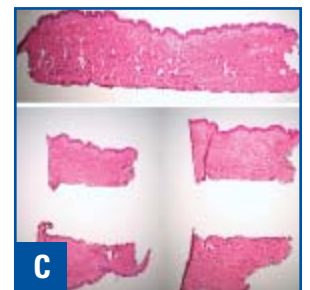
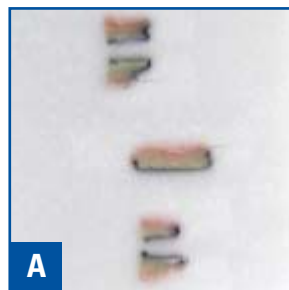
Technique

1. Place the specimen face down on the freezing griddle.
2. Cover the specimen with a layer of embedding medium.
3. Cover the specimen with the appropriate elevated freezing block.
4. When completely frozen, map the specimen.
5. Cut the embedded block into pieces on the cold cutting board, keeping pieces cold on the adjacent metal surface. (The main photo, #5 to the left, shows the central section while the inset shows a longitudinal margin.)
6. Place the cut pieces face down (pieces are face up in the inset photo #6) in the embedding well and freeze using the procedure described under Face Down Cryoembedding.



The Results

- A:** Trimmed block
B: Stained section on slide
C: Photomicrograph
(sections repositioned in photograph)



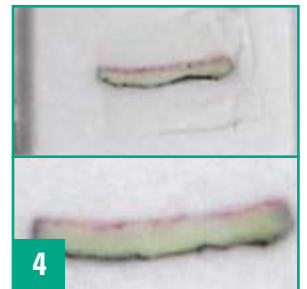
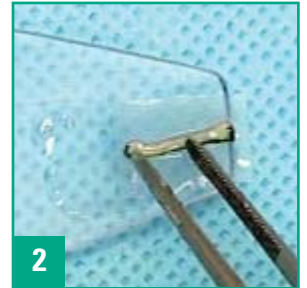
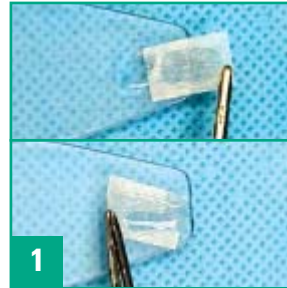
Paper Cryoembedding

Proper Positioning of Difficult Specimens

This technique is used to maintain the orientation of delicate or flimsy specimens or to arrange multiple specimens so they will remain in the same plane for sectioning.

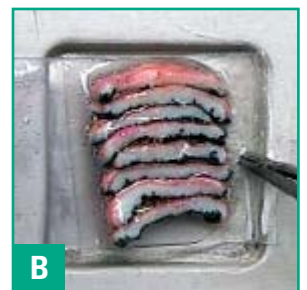
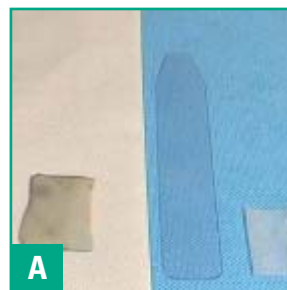
Technique

1. Soak a small piece of lens paper in embedding medium and flatten it to the dispensing slide.
2. Place the specimen(s) on the lens paper and orient appropriately. Allow an end of the paper to overhang the edge of the dispensing slide.
3. Touch the lens paper to the cold floor of the embedding well and gently pull the dispensing slide away. The specimen will remain correctly positioned on the lens paper.
4. Trim through the paper on the trimming portion of the blade and then move to a clean, sharp portion to section the specimen. (Untrimmed block in upper portion of photo #4, trimmed block in lower portion.)



The Results

- A:** Large undissected specimen, dispensing slide and lens paper
- B:** Specimen dissected with inked border
- C:** Embedded block
- D:** Stained sections on slide



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