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ProductInformation

Decalcifying Solution-Lite

Product Number **D0818**
Store at Room Temperature

Product Description
Decalcifying Solution-Lite is designed to be a universal effective decalcifying agent. It is intended for the decalcification of routine, immunohistochemical and bone marrow core specimens. Decalcifying Solution-Lite has been tailored to suit your specific lab routine. It works equally well with all types of specimens in an easy to handle time frame.

Reagent
Decalcifying Solution-Lite is an aqueous solution of hydrochloric acid and proprietary compounds.

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

The combination of formalin and an acidic solution will form bis-chloromethyl ether, a potent carcinogen. Avoid the combination of formalin and Decalcifying Solution-Lite by always washing the specimens free of formalin before placing in Decalcifying Solution-Lite.

Decalcifying Solution-Lite will discolor and corrode most metals. Avoid exposure to metal cassettes, countertops and slide racks. When rinsing specimens, flush any Decalcifying Solution-Lite with running water to prevent damage to chrome plated plumbing fixtures.

Preparation Instructions
Ready to use. Some change of color or an increase in precipitate may occur after long periods of storage. Decalcifying Solution-Lite may be filtered if desired without altering its effectiveness.

Storage/Stability
Store tightly closed at room temperature. The solution has a pale brown color and a dark brown sediment may appear on standing. The sediment does not change the effectiveness of the solution, but it can be filtered out without loss of effectiveness.

Procedure

1. Specimens must be completely fixed prior to decalcification in Decalcifying Solution-Lite. Fixation has proven to be the most important step in the processing of tissue specimens. With the introduction of various unmasking procedures, longer fixation times should not interfer with immunohistochemical techniques.

2. Decalcifying Solution-Lite acts faster than most decal solutions. Use a 20:1 ration (v/v), or higher, of Decalcifying Solution-Lite to tissue. In most cases decalcification occurs in 6 hours or less. Overnight decalcifying should be avoided (exception – teeth and extremely dense bone can be decalcified overnight if monitored carefully). If specimen decalcification is incomplete at the end of the day, remove the tissue from the Decalcifying Solution-Lite. Rinse in tap water to remove residual solution, and place in 10% neutral buffered formalin until the decalcification procedure is to be resumed. Wash the tissue free of the formalin solution before the tissue is placed back in the Decalcifying Solution-Lite. When placing the specimen back into the Decalcifying Solution-Lite, frequent or mild agitation or swirling of the specimen in solution will augment even penetration and decrease the exposure time needed to complete the procedure.

3. Most mature bone sections of 1 cm size will decalcify in 6-8 hours. Smaller cancellous bone only requires 4-6 hours. Bone biopsies will decalcify in 20-60 minutes. Avoid overdecalcification on all specimens, as it will harden the tissue and create poor cellular detail and difficulty in determining the endpoint. If the decalcification is incomplete, the paraffin block may be placed in Decalcifying Solution-Lite for a quick surface decalcification. Time in Decalcifying Solution-Lite should not exceed 12-36 hours for most 1 cm mature bone sections, 6-18 hours for smaller cancellous bone or 2-15 hours for bone marrow biopsies. Overnight decalcification is recommended for mature bone, teeth and entire femur heads.

4. Determining the endpoint of decalcification can be determined with the following chemical test. Check specimen every 2 hours for mildly calcified specimens and every 12 hours for compact bone.
   a. Take 5 ml of Decalcifying Solution-Lite from the bottom of the decal container.
   b. To this, add 5 ml of 5% ammonium oxalate
   c. Add 5 ml of 5% ammonium hydroxide
   d. Let the solution set for 15 minutes.
   e. If precipitate forms, calcium (calcium oxalate) is present and decalcification is not complete.

5. If decalcification is complete, rinse well in running tap water. Paraffin process as normal.

Troubleshooting Notes

1. Decalcifying Solution-Lite is unique in its ability to work well within a routine working day. Careful monitoring should be employed to avoid over decalcification which will lead to the potential loss of basophilic properties. Decalcifying Solution-Lite will retain excellent nuclear staining, and immunohistochemical results.

2. Decalcifying Solution-Lite is corrosive on metal so all decalcifying must be performed in plastic (or glass) containers.

3. Tissues should be completely fixed before decalcification. Avoid the combination of formalin and Decalcifying Solution-Lite to prevent the formation of bis-chloromethy ether, a potent carcinogen. Prior fixation with formalin is permissible providing a brief washing occurs prior to decalcification.

4. Frequent mild agitation or swirling of the specimen in solution will enhance even penetration and decrease the exposure time of the tissue to the acid solution. This will also minimize over decalcification of the outer tissue or bone before sufficient core decalcifying is achieved. To avoid over-decalcification, check the specimen at regular intervals for endpoint. Check every 2 hours for mildly calcified specimens and every 12 hours for compact bone.

5. If a specimen is over decalcified, the nuclear staining can be improved by longer times in the hematoxylin or by neutralizing the deparaffinized tissue section with a saturated solution of lithium carbonate or a 4% sodium bicarbonate solution before staining in hematoxylin. The morphology of the tissue starts to be destroyed as soon as the specimens are completely decalcified and left in the acid solution.

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