



MILESTONE

H E L P I N G
P A T I E N T S



Histology Goes Green

Milestone products for a safer,
environmental-friendly histology laboratory

www.milestonemed.com

| Our challenge

Milestone is striving to improve the laboratory work environment by developing safer and greener reagents and accessories. Through to our line of products important steps in the histological specimens preparation, such as fixation, decalcification and processing, can be dramatically shortened in time by improving the instrumentation power-saving features. Great attention is also given to the development of reagents, with the goal to eliminate operators exposure to toxic reagents such as xylene and formaldehyde, for a safer laboratory environment.

| FIXATION

FineFIX

| PROCESSING

JFC, Rack Cleaning Solution

| TRANSPORTATION AND STORAGE

Vacuum Bags, Synergy KIT

| DECALCIFICATION

MoL-DECALCIFIER

| FROZEN SECTION

MCC

FineFIX. THE FORMALIN SUBSTITUTE

The ideal fixative should present a low level of toxicity, produce optimal H&E, IHC and histochemical staining and allow recovery of DNA, RNA, and protein for molecular analysis. FineFIX is a patented formalin-free, water-based concentrate. When diluted with ethanol, its formulation of low toxicity additives overcomes the drawbacks commonly associated with the use of pure ethanol or ethanol based fixatives, e.g., significant tissue shrinkage, vacuolization and pyknotic nuclei. FineFIX also provides optimal preservation of tissue antigens, nuclear and cytoplasmic morphology and reduced lysis of red blood cells with preservation of the cytoplasmic membranes. FineFIX working solution is prepared by mixing 1 part of FineFIX concentrated to 3 parts of ethanol (99%). The ethanol concentration in the working solution of FineFIX is approximately 70%. This concentration was found to produce good histology and to allow optimal recovery of DNA/RNA and proteins, sufficient for several downstream molecular analyses ⁽¹⁾⁽²⁾.



| The benefits of FineFIX in the grossing room

- Simultaneous specimen fixation, dehydration and fat extraction while immersed in FineFIX.
- Macro firming of specimens allows pathologists to easily palpate, dissect and cut thinner representative blocks.
- Elimination of the slimy feel and consistency of fatty specimens for a rapid, easy clean up.
- More “real-life” color compared to “grayish” appearance of formalin fixed specimens.
- Easy detection of lymph nodes: an easy gray-white contrast following FineFIX fixation.

 Available in 1 Gal or 4x1 Gal Cases

⁽¹⁾ Gillespie JW, Best CJM, et al. Evaluation of non-formalin tissue for fixation for molecular profiling studies. *Am J Pathol* 2002; 160: 449-457.

⁽²⁾ A Novel fixative improves opportunities of nucleic acids and proteomic analysis in human archive's tissues. (Giorgio Stanta et al. - *Diagn. Mol. Pathol.* 2006 June 15(2): 115-23.

JFC. THE HIGH PERFORMANCE XYLENE-FREE PROCESSING SOLUTION

The JFC Solution is an innovative patented solution composed of a mixture of ethanol, isopropanol and a long-chain hydrocarbon. Under the influence of microwaves this solution becomes highly effective in the extraction of water and lipids from biological tissue, in a single step, without the need for further dehydration or clearing. The miscibility of the three components of the JFC Solution lets the performance of dehydration and clearing to take place in a single step, dehydration and clearing, thus representing a significant advantage over the conventional processing method. The action of the mixture can be explained by the polarity of the molecules. In general, for an optimal extraction, the polarity of the solvent should be similar to that of the impurity you want to remove. In histoprocessing such impurities are generally water and lipids. The isopropanol, a polar molecule, contributes to dehydration and also improves the extraction of non polar fatty. Ethanol, also a polar molecule, primarily serves to dehydrate. The action of both alcohols will be highly efficient under the stimulation of microwaves. The third component of the JFC Solution, an organic solvent, is chemically inert, and not polar. Although it has relatively low affinity with fats in normal conditions, its clearing activity is highly reinforced by the action of the microwaves on ethanol and isopropanol.



 Available in 1 Gal or 4x1 Gal Cases

Rack Cleaning Solution. THE XYLENE SUBSTITUTE

Rack Cleaning Solution is a solvent, consisting of iso-paraffins and replaces xylene both in the clearing and mounting process. Moreover, it can be used for cleaning paraffin contaminated items, for example in the Milestone HistosMATE module. When heated this solution becomes highly effective in extracting lipids from biological tissue. Rack Cleaning Solution is an almost odorless, non-carcinogenic solvent and has fat and paraffin dissolving properties. Rack Cleaning Solution formulation of low toxicity overcomes the drawbacks commonly associated with xylene, a hazardous product for the human nervous system. Rack Cleaning Solution also provides optimal preservation of fat cell; structure, nuclear, and cytoplasmic morphology.



 Available in 1 Gal or 4x1 Gal Cases

VACUUM BAGS. VACUUM BAGS FOR FORMALIN-FREE SURGERY SUITES

Standup vacuum bags for both TissueSAFE and SealSAFE specimen management systems provide an innovative barrier against infective agents, undesired smells and toxic formalin fumes! Milestone bags make tissue transportation and storage effective and safe, at a fraction of the space compared to standard containers.

- Dual thermal sealing, ensures secure containment of specimens and fixative
- Pleated base adds stability to filled bags
- Re-sealable up to four times, economic reuse for additional specimen access
- Made of dioxine-free plastic, Milestone bags make their disposal environmental friendly
- Provides visibility to archived case/patient information, making retrieval quick and easy



Features

- Double layered PA/PE, 135 microns in thickness guarantees greater mechanical flexibility and resistance to perforation. Available in five different dimensions, suitable for all kind of specimens.
- Three sealing areas and cutting lines marked for multiple reuse
- Sealable document pouch provides security for patient information
- Automatically printed adhesive label contains: ID, date, time, specimen and fixative weight
- Self standing expanding base

Available in **different sizes** to suit individual requirements

Synergy KIT. KITS FOR PROCESSING PLUS AUTO-EMBEDDING IN ONE STEP

The joint effort of Milestone and Klinipath created Synergy, a revolutionary method (patent n. EP 2 439 510 A1) to automatically embed tissues as part of the processing protocols. This method is applied to Milestone's rapid tissue processors Pathos DELTA and LOGOS. Through dedicated rack and consumables, the same tissue processor unit can simultaneously achieve processing and automatic embedding. All range of tissues and dimensions can be processed and embedded with this method.



DELTA Synergy rack



LOGOS Synergy rack



Molds and Pads



*Consumables Package
(1360 Molds, 1400 Pads)*

Available in **different packages** to suit individual requirements

MoL-DECALCIFIER. EDTA BASED DECALCIFIFYING SOLUTION

For faster decalcification time, the process with EDTA is best carried out at a pH value of 7.2-7.4. Milestone has developed an innovative, pure EDTA solution, based on a stoichiometric mixture of bibasic or tribasic EDTA to reach this pH value without the addition of an acid/base buffer. The combination of increased temperature, stirring and the MoL-DECALCIFIER, during the decalcification phase allows fixation, decalcification and processing of bone marrows within 48 hours.

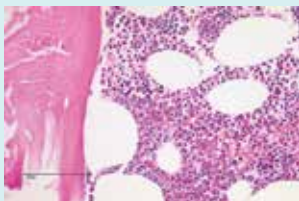


Optimized molecular results

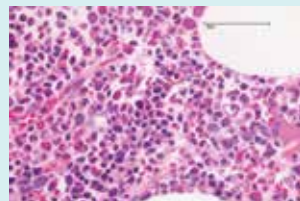
A presentation* during the "First Symposium on Pre-analytic of Pathological Specimens - Berlin March 2013" reported the first results on H&E, IHC, FISH and molecular using the Milestone decalcifying solution MoL-DECALCIFIER on bone marrow trephine biopsies.

Available in 1 GAL jug

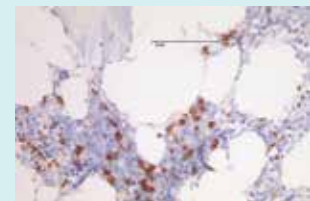
► H&E and IHC CD 138



H&E MoL-DECALCIFIER



H&E MoL-DECALCIFIER

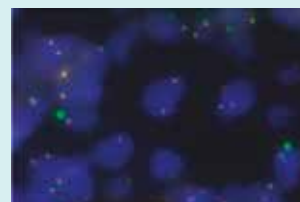


CD138 MoL-DECALCIFIER

► FISH (BCL6 Break Apart Probe, Abbott)



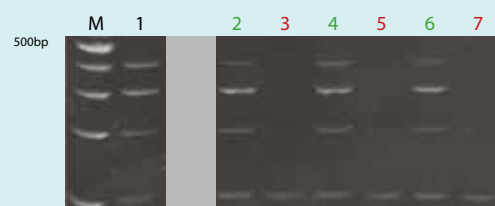
Conventional



MoL-DECALCIFIER

► Quality control-PCR

Control multiplex-PCR: amplification of different-sized genomic segments (100, 200, 300, 400 bp) harboring single-copy genes (Biomed-2).



M: size standard
1: Tonsil conventional
2, 4, 6: MoL-DECALCIFIER
3, 5, 7: Conventional

*Bone marrow work-up, Ioannis Anagnostopoulos Institute for Pathology Charité – Campus Mitte, Berlin Germany.

MCC. OPTIMIZED CRYOEMBEDDING COMPOUND

| The perfect cryoembedding composition for the PrestoCHILL system

- MCC is a proprietary formulation of glycols and resins specifically developed for optimal support during cryotomy of dissected tissues down to -40°C .
- Being water soluble, MCC doesn't leave residue on slides, eliminating non specific background staining. Additionally, MCC will not dull microtome knives.

 Available in 125 ml squeeze bottles, case of 12 bottles



About Milestone

Milestone was founded in 1988 as a company specialized in advanced microwave instrumentation for analytical and organic chemistry labs. We are an industry leader in this field, with a worldwide installation base of over 20,000 systems in large and small research institutions, universities and industrial laboratories. Milestone offers different solutions to simplify all processes; starting from the specimens' arrival to the lab, dealing with accessioning and documentation, passing through frozen sections for urgent biopsies, decalcification of bone marrow, tissue processing and finally, storage.

With the Milestone's Lean Approach you will be able to:

- Maximize the value of your procedure
- Minimize the necessary steps
- Eliminate unnecessary processes

Headquarters

MILESTONE Srl
Via Fatebenefratelli, 1/5
24010 Sorisole (BG) - Italy
Tel: +39 035 4128264
Fax: +39 035 575498
email: marketing@milestonemedsrl.com

US Operations

MILESTONE MEDICAL TECHNOLOGIES, INC.
6475 Technology Avenue
Suite F, Kalamazoo, MI 49009 - USA
Tel: 269-488-4950 - Toll-free: 866-995-5300
Fax: 269-488-4949
email: info@milestonemed.com