

BVS - 3266

Biospecimen Vacuum System



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

►► Introduction

- BVS - 3266 is an innovative vacuum system which solves the problem of eliminating formalin in the operating theatre and allows a controlled formalin-free transfer of biospecimens to the laboratory. Immediately after excision, specimens are transferred to an adjacent room where the TissueSAFE plus^{2,3} is installed. Tissue is placed into sterilized specimen bags and sealed under vacuum.
- The sealed specimen bag is then placed into a refrigerated transfer box at 4 °C.
- A dedicated data logger can be activated at the start of the shift and then placed into the transfer box to continuously monitor and document tissue temperature and transfer time from the surgery suite to the histology lab.
- Specimens arrive (as “fresh” to the laboratory), fixation procedures can now start under controlled conditions in the laboratory.

►► Benefits

- No formalin fumes.
- Original specimen colors are preserved.
- Specimens are held in “as fresh” conditions.
- Drying of tissues is eliminated.
- No spilling.
- Autolytic process is slowed down.

►► How to eliminate formalin in surgical suites



Activation of data logger

At the beginning of the shift activate (1) the data logger to continuously monitor time and temperature. Place data logger (2) in the transfer cart at 2-4 °C. Place bag with specimen in the chamber and close cover (3).

▶▶ Your choice of fixation protocols

Formalin fixation? Yes

Selected blocks are inserted in cassettes for fixation in formalin under controlled conditions (eg. FixSTATION)

Molecular studies? Yes

Specimen can be fixed in an ethanol based molecular fixative (eg. FineFIX).

Tissue banking? Yes

Selected blocks can be frozen for tissue banking.

Improved work conditions in grossing area

Upon arrival, bags are opened. Tissue colors are preserved in a life-like state, allowing better visualization. Specimens can be documented through a macro imaging system (MacroPATH pro-x). After grossing, archive tissue can be placed in the same specimen bag with formalin automatically added for storage purposes (SealSAFE).

▶▶ How to control fixation: start with fresh tissues in your lab!

Vacuum sealing of the specimens

Specimens are placed in single use special vacuum bags and vacuum sealed. Use the pre-printed note field or sealable document pouch to include patient data.



Full documenting of vacuum sealing

A label is printed with name of hospital
ID code of the specimen, date, time and
all relevant information.

The label is glued to the sealed bag.

Collecting specimens in the transfer cart

During the surgery hours, vacuum sealed specimens are collected



From the surgery suite to the histopathology lab

Three transfer modules are available:

1. Basic
2. Large volume with UPS power supply
3. For car transfer

Complete documentation

Download relevant specimen data (time/temperature), review case reconciliation, and print reports; all from the grossing station.



► **Optimal morphological preservation for up to 72 hours**

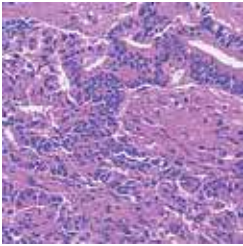
All tissues specimens.

All tissue types⁴ have been preserved under vacuum (colon, gall bladder, spleen, kidney, thyroid, breast etc...) for up to 48-72 hours with optimal histological preservation⁵.

Excellent H&E, HC, IHC, FISH staining properties.

Over a thousand cases, using vacuum preservation, were tracked at the Molinette University Hospital in Turin, Italy. Morphological preservation and immunohistochemical reactivity were excellent and no adverse effects from the process were noted.



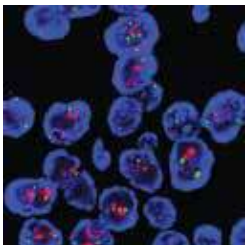
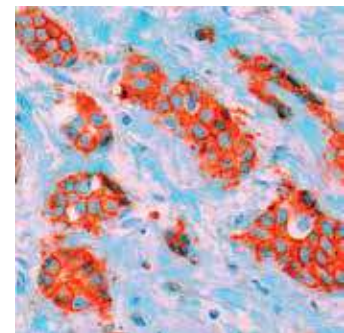


H&E

Adenocarcinoma of the colon. The specimen was kept under vacuum at 4°C for 48h, then routinely processed with formalin fixation and paraffin embedding. The structure is preserved and diagnosis is feasible. H&E x 150

IHC

Infiltrating ductal carcinoma of the breast. The tissue specimen, removed on Friday afternoon, was kept under vacuum at 4°C until Monday morning (64h), then routinely grossed, fixed and processed. The histological structure is well preserved. Staining for HER2 antigen shows a continuous membrane staining in >30% of cells (3+score).



FISH

Infiltrating ductal carcinoma of the breast. Tissue specimen kept (at the surgical theatre) for 64h under vacuum, at 4°C. Dual-color FISH demonstrates amplification of HER 2 gene (red signal).

►► Molecular studies. Biobanking.

The quality of RNA preservation is of course related to the time of processing, but even tissues kept under vacuum at 4°C for 48 hours provided nucleic acids of acceptable quality³.

This finding is in agreement with reports on the stability of RNA in non-fixed surgical specimens kept on ice⁴.

Colon mucosa either (A) frozen immediately after removal or (B) preserved under vacuum at 4°C for 48 h. (a) shows 1% denaturing agarose gel of total RNA running: the 18s band is visible and no degradation is appreciable. (b) represents RT-PCR products of cytokeratine 20mRNA of different bp number. The upper band (arrow) is related to a 716-bp product.

►► Benefits for all

Surgical theatre staff

- No more exposure to toxic formalin fumes.
- No more spilling.

Pathology laboratory staff

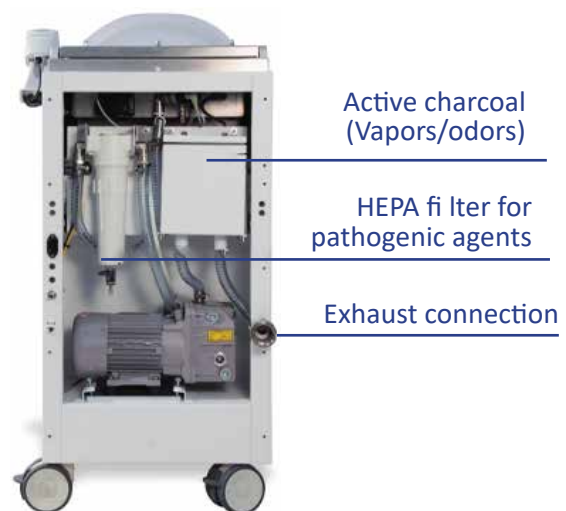
- Starting time and length of fixation controlled by the laboratory.
- No toxic fumes. No handling of heavy containers.
- Pre-excised colors are preserved. “Fresh-like” conditions.
- Optimization of antigen retrieval protocols based on laboratory controlled fixation data.
- Possibility for tissue banking.
- Processing with molecular fixatives.

Safety officer

- Compliance with regulatory safety guidelines.
- Reduction of workplace spills and associated costs and downtime.

Hospital administrator

- Elimination of environmental concerns.
- Dramatic reduction in formalin use and lower recycling costs.



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HPLC Servicing :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

Trainings :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

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Our Products & Technologies



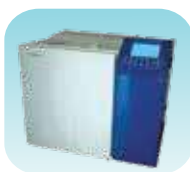
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Spectro 2080+
Double Beam



Infra FTIR



Optima Gas
Chromatograph
3007



Optima Gas
Chromatograph
2979 Plus



Flash
Chromatograph



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Spectrophotometer



Liquid Particle
Counter



Optical Emission
Spectrophotometer



DSC/TGA



Semi Auto Bio
Chemistry Analyzer



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Hematology
Analyzer



Micro Plate
Reader/Washer



URINOVA 2800
Urine Analyzer



Total Organic
Carbon 3800



Fully Automated
CLIA



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Laser Particle
Size Analyzer



Ion Chromatograph



Water purification
system

Regulatory compliances



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