EverBio TECHNOLOGY

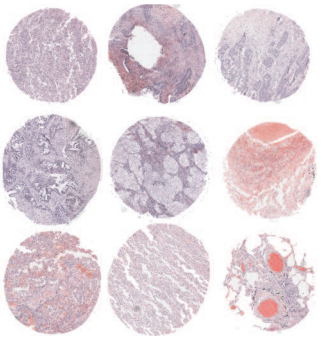
Molecular Pathology Laboratory Equipment

& Disposables

www.everbiotech.com

V2017JAN

Our History

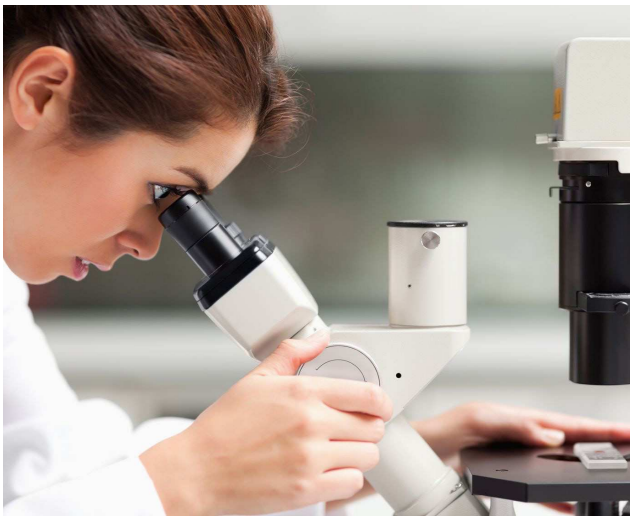


EverBio began in 2014, with the foundation of years of experience in manufacturing precision machinery in the field of fluidic control, thermal control, industrial automation and image processing. Understanding the urgent demands for developing innovative mechanism in order to shortening clinical research cycle, increasing throughput, improving yield rate, and reducing labor work, EverBio strives to enable the development of biomedical.engineering, including the applications of:

- cellar biology,
- molecular biology,
- microbiology,
- pathology,
- immunobiology,
- life science.

"Medical Research Through AdvancingInnovative Workflow and Image Mining"

After successfully developing high throughput liquid handling system, microfluidic dispensing system and automated RNA extraction system, we build one of the kind instruments in preparing Tissue MicroArray (TMA) paraffin block. Many major clinical research centers, such as bio-bank and tissue-bank centers, around the world is now equipped with this patented instrument in their core facilities.



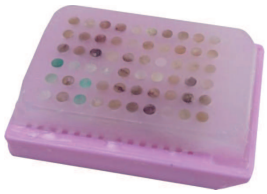
Our Mission

Providing health care service in early detection, follow-up, and treatment is extremely labour-intensive, especially after the implementation of the National Health Insurance (NHI) which causes widespread understaffing of medical professionals. The advent of computer-aided detection and diagnosis systems has brought the possibilities of reducing redundancy in routine checkup, and helps to provide second opinion in medical image diagnosis.

Emerging technologies developed over the decades in the field of electronics and Automated Optical Inspection, AOI, we work with the clinical researchers to transform their knowledge into computational algorithm that analyzes the data and quantifies the result objectively and consistently. Utilizing the power of general purpose processing unit (GPPU), computer software can process the image segmentation algorithm so rapidly that may take years to be done manually instead of minutes. Generating Big Data by the tremendous amount of visual data is crucial in precision medicine and personalized medicine.

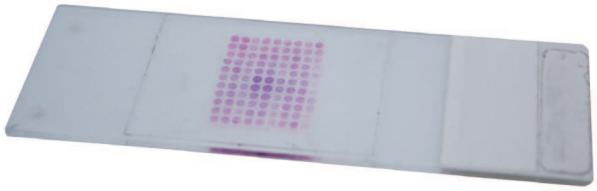
Tissue Microarray

"effective tool for high-throughput molecular analysis"



History

Techniques of embedding multiple tissues on the same block were first introduced by H. Battifora in 1986 using his so-called “multiumor (sausage) tissue block” and in 1990, the tissues are aligned in the form of array on “the checkerboard tissue block”. In 1998, J. Kononen and collaborators developed the technique of using metallic tubes to sample the tissues of regular size and shape in order to array them more densely and precisely. This novel technique of creating multi-tissue block is now called “Tissue MicroArray (TMA)”.



Procedure

The procedure for creating tissue microarray requires a blank paraffin block (so-called recipient block) to host the tissues in paraffin-embedded tissue block (so-called donor block) and two hollow needle sets of different sizes where the needle for retrieving tissue is slightly bigger than the one for creating holes on the blank block. In order to identify the tissue cores as small as 0.6 mm in diameter (so-called core size) from donor block prepared by clinical biopsies precisely, the staining was employed to the section of the donor block and manually annotated where the tumor is. After these tissue cores are inserted in a recipient block in the equally spaced pattern, the technician can then use microtome to section the block into 100-500 TMA slides depending on the thickness. These slides with tissue samples in microarray form can be used validation for discovering biomarkers for cancer by employing examination such as immunohistochemistry and fluorescent in situ hybridization.

Advantages of using TMA

Simultaneous analysis of very large numbers of specimens. Tissue microarrays provide high throughput data acquisition. For instance, if a tissue microarray block containing 1000 cores is cut 200 times, this allows for 200 000 individual assays.

Experimental uniformity. Tissue microarray allows the entire cohort to be analyzed in one batch on a single slide. Thus, variables such as antigen retrieval, temperature, incubation times, washing procedure, and reagent concentration are standardized for the entire cohort.

Decreased assay volume, time and cost. As only a very small amount of reagent (a few µL) is required to analyze an entire cohort, less laboratory personnel are required to perform the experiments.

AutoTiss Series

AutoTiss ONE
TMA-SEMI-AUTOMATIC

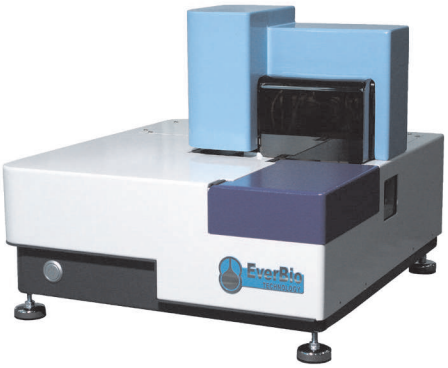
AuotTiss One is a compact, hand carry semi-automated tissue microarray (TMA) arrayer. A most cost-effiective upgrade kit for manual TMA puncher.

AutoTiss 10C
TMA-FULLY-AUTOMATIC

One of the most innovative invention. Compact and FULLY automated, tissue microarray (TMA) arrayer, which significantly helps the researchers to decrease the time and labor in creating blocks. It can hold up to 10 blocks at a time and five 0.6, 1.0, 1.5, 2.0, 2.5mm punchs sizes are available.

AutoTiss X
TMA-FULLY-AUTOMATIC

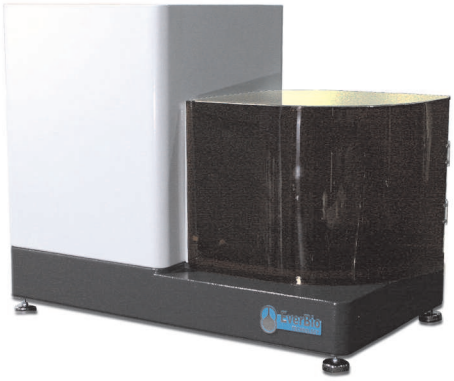
The smallest fully functioned and fully automated TMA, which is as flexible as semi-automatic AutoTiss One using interchangeable adapters. Together with AutoTiss Loader, donor capacity will never be the issue for high-throughput process.



AutoTiss Loader
TMA-BLOCK-LOADER

The unique designed loader can stack up cassette trays when more capacity is needed.

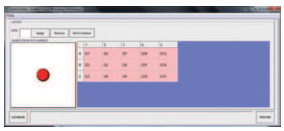
Each cassette tray can contain up to 12 cassettes and the maximum capacity for this compact loader is 84 cassettes. It is designed to connect to AutoTiss X for maximizing the throughput in processing TMA.

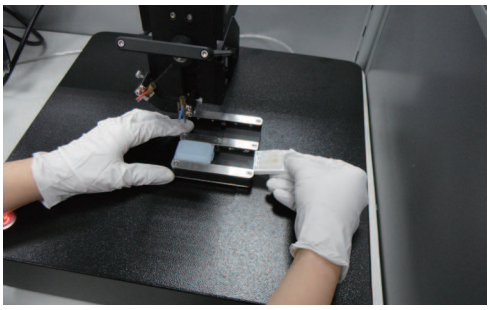


AutoTiss ONE

Part No. : TMA 001

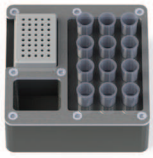
Semi-automatic TMA is a flexible system that constructs TMA block by extracting specimen on the holder in many forms. We can customize any holder and program the protocol to adapt your need.





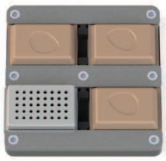
Adapters

TMA for Molecular Analysis:
transfering tissue from donor block or TMA block to 0.2 ml PCR tubes.



Adapt Different Tissue Processing Cassettes:
ie. Supamega is ideal for prostate, brain, breast tissue and eyes.

TMA for Donor Embedded in Standard Cassettes:
this is a standard holder for taking up to 3 donor blocks.



Specification

Capacity	1 donor block + 1 recipient block
Weight	12 KG
Dimension	W413 x D380 x H380mm
Operating Temperature	15~32 degree Celcius ambient
Puncher Size	0.6, 1.0, 1.5, 2.0, 2.5 mm
Speed	150 cores transferred per hour
Power Input	110V
Operating Humidity	20~80%
Max. Loading	XY 8Kg / Z 3Kg
Resolution	0.01mm / Axis
Repeatability	+/- 0.01mm / Axis
Motor System	Micro Step Servo Motor
Max. Speed	XY-100 (mm/sec)
Driving Method	XY-Screbal axis
Loading Method	Manual loading tray
Control Method	Computer Numerical Control
Merging Method	N/A
Selection Method	Visual selection
Lighting Method	N/A
Identification Method	N/A
Heating Method	N/A
Block Height Measurement	N/A

Feature

- Fully automatic planning. high throughput workflow
- Computer controlled. no more manual positioning
- Patent design graphical user interface for easy operation
- Automatic for fast and easy punch area selection
- Tissue database allow fast and easy tracking and maintenance

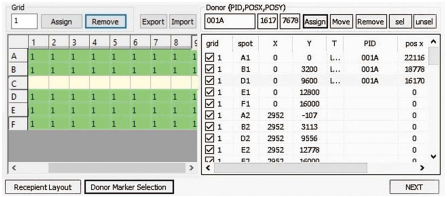
Software

Data Input	Tissue block information in excel format
Processing Workflow	Advance and easy punch area selection
Donor Selection	Manual Selection
Recipient Layout	Easy array programming with punch size selection and core annotation
Project Management	Import and export Tissue block Data files in Excel Format
	Export block image and array data
	Save workflow in file for repeat arraying

Medical research through advancing Innovative Workflow and Imaging Mining.

Data record

This automatic TMA is an instrument which extracts tissue from donor blocks and transplant them to recipient blocks according to the layout designed by the users. Integrated software allows user to import and export excel files including information of the samples and the recipient block, directly using database interface. These files keep track of the procedure that can also be used to repeat the process or to modify for correction.



AutoTiss 10C

Part No. : TMA-010

Consistency & Flexibility

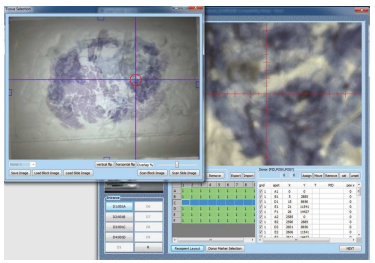
AutoTiss Designer is the software not only to operate the instrument, but also designed to facilitate and computerize the positioning by the definition of its grids, spot size, and spot spacing. AutoTiss allows both batch processing as well as manual processing for rework. On top of that, user can easily partition the array or composing array with various core sizes which makes this unique system more advanced than its peers. Our unique cassette adapter can hold any standard commercial blocks.

Quality & Durability

Utilizing patented coaxial puncher design, AutoTiss is equipped with mechanism for automatic puncher rotation, tissue/wax extraction and ejection. Coaxial puncher allows tight junction between donor and recipient for eliminating lost core. Our medical graded stainless needle is specially made for sharp thrust and long life. Even though the mechanical design is sophisticated, cleaning the unwanted wax and puncher maintenance can be done within seconds.

Accuracy

The paraffin block punching area is selected directly from the screen in the software with CCD vision system. Mark, edit and save punch coordinates using digitally captured image and software tools. Designer allows also importing patient data associated with the paraffin blocks and allows to integrate those data into the tissue array map you are creating. High resolution digital camera is used to take macroscopic picture for both donor and recipient blocks as reference image for accurate target selection and grid customization. Built-in laser height sensor allows system to adapt both recipient and donor blocks with different height to ensure all tissues are at the same height in the recipient block.



Capacity

Patented design block holder is a compact rotator for shortening travelling distance between donors and recipient, and yet allowing this bench-top unit to have a built-in heating system. Keeping wax warm is crucial for processing high-density block. Maximum number of cores is not limited, but suggested as follows:

0.6mm	20x30=600 cores
1.0mm	20x16=320 cores
1.5mm	18x12=240 cores
2.0mm	12x7=84 cores
2.5mm	7x5=35 cores

(max. 600 cores / block)

Tissue Micro-Arrayer
fully automated

Feature

- Fully automatic tissue arrayer with compact size
- Computer controlled with walkaway system, no more manual operation
- Graphical user friendly interface for easy operation
- Patented coaxial punch set and mechanism
- Patented CCD integration system for fast and easy punch area selection
- Block Database allow fast and easy tracking and maintain

Hardware

Actuator Type	Electromechanical
Repeatability	+/- 0.01 mm / Axis
Resolution	0.01mm / Axis
Motor System	Micro step motor
Loading Method	Rotary tray with universal loader
Control Method	PC with Win 7, 8, 10 operating system
Lighting Method	LED lighting
Camera System	High resolution CCD with auto focus module
Punching Method	Patented coaxial punch module
Tray Capacity	10 blocks per tray
Block Detection	Auto height detection sensor
Heating Mechanism	On/off Block Platen heater

Specification

Capacity	10 blocks with combination of 9 donor + 1 recipient blocks
Weight	45 KG
Dimension	W480 x D480 x H470mm
Operating Temperature	15~32 degree Celcius ambient
Puncher Size	0.6, 1.0, 1.5, 2.0, 2.5 mm coaxial stainless needle sets
Speed	150 cores transferred per hour
Power Input	110V
Operating Humidity	20~80%
Max. Loading	XY 8Kg / Z 3Kg
Resolution	0.01mm / Axis
Repeatability	+/- 0.01mm / Axis
Motor System	Micro Step Servo Motor
Max. Speed	XY-300-Z-100 (mm/sec)
Driving Method	XYZ-Screwbal axis
Loading Method	Rotation Tray with easy loading
Control Method	PC-based Computer Numerical Control (CNC)
Merging Method	13 Mega Pixel High resolution camera with auto focus
Selection Method	On screen viewing and selection
Lighting Method	LED ring light illumination
Identification Method	Barcode reader (optional)
Heating Method	Built-in heater block holder
Block Height Measurement	High precision laser height sensor

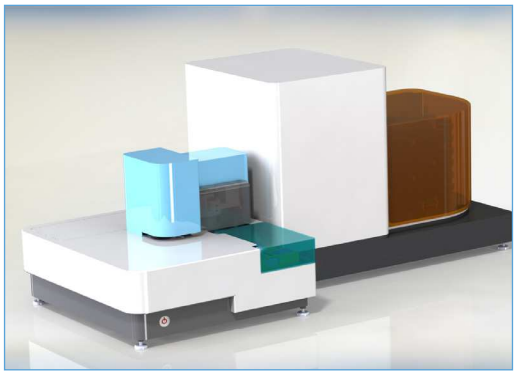
Software

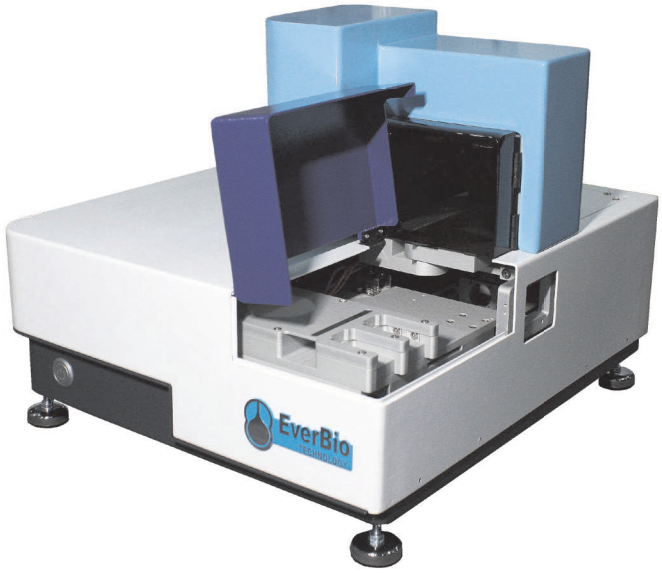
Data Input	Tissue block information in excel format
Processing Workflow	Advance and easy punch area selection
Donor Selection	Mark, edit and save punch coordinates using an on-screen display and sortware tools
Recipient Layout	Easy array programming with punch size selection and core annotation
Project Management	Import and export Tissue block Data files in Excel Format
	Export block image and array data
	Save workflow in file for repeat arraying

AutoTiss X

Part No. : TMA X01

Want a fully automated TMA? With budget concern? This most affordable unit gives you the opportunity to upgrade your manual or semi-auto TMA to have the highest donor capacity on the market by connecting it to AutoTiss Loader.





Feature

AutoTiss X is the smallest fully functioned and fully automated TMA, which is as flexible as semi-automatic AutoTiss ONE. Bearing the concept of interchangeable adapters similar to AutoTiss One, it allows user to have the following combinations:

- one recipient and three standard donors
- two recipients and two standard donors
- two recipients, one mega block and one standard donor

Specification

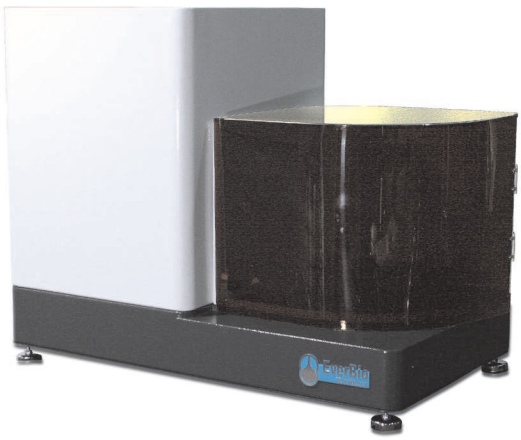
Capacity	As listed under feature description
Weight	25 KG
Dimension	W400 x D400 x H250mm
Operating Spec	Same as AutoTiss 10C
Software Spec	Same as AutoTiss 10C
Hardware Spec	Same as AutoTiss 10C

AutoTiss Loader

Part No. : TMA LDR01

Paraffin Block Loader

The unique designed loader can stack up cassette trays when more capacity is needed.
Each cassette tray can contain up to 12 cassettes and the maximum capacity for this compact loader is 84 cassettes. It is designed to connect to AutoTiss X for maximizing the throughput in processing TMA.



Specification

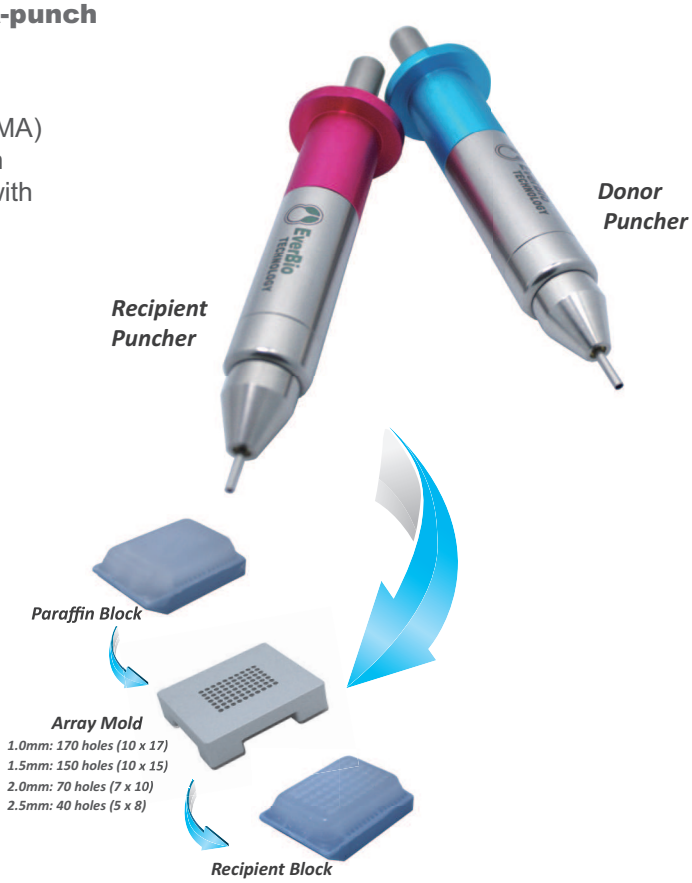
Capacity	12 to 84 blocks
Weight	min. 25 KG
Dimension	W580 x D350 x H480mm

EZpunch 1500

Part No. : TMA-punch

TMA-MANUAL PUNCHER

It is a compact, hand carry manual tissue microarray (TMA) arrayer. Durable and handy design with easy operation to make recipient block using “array mold” incorporate with changeable puncher needle sets for different core size.



Feature

- Manual tissue arrayer with compact size
- Durable and handy design with easy operation
- Adjustable needle cover for any punching depthOperation Temperature
- Patented coaxial punch set and mechanism

Specification

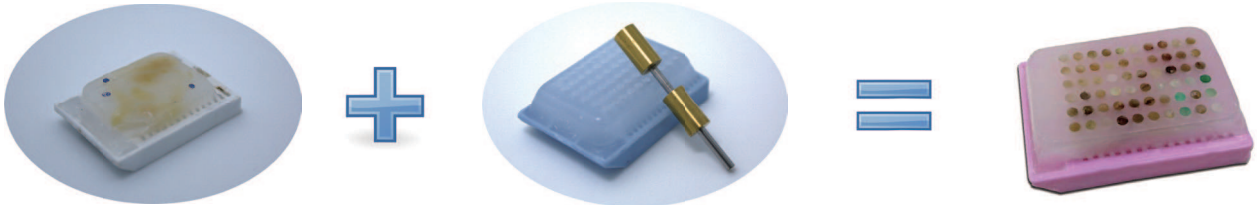
Operation Temperature	+15~+32 degree C
Operation Humidity	20~80% RH, non-condensing
Total Weight	160g per puncher
Dimensions	40 x 30 x 110 (WxDxH mm) per puncher
Puncher Size	1.0, 1.5, 2.0, 2.5 mm stainless needle sets
Package	red recipient and blue donor puncher

TMA DIY KIT

Part No. : DPK-20A

TMA-PREMADE BIOCK

EverBio provides most affortable DIY Kit for every researcher to construct TMA blocks manually using premade recipient block in various core sizes and formations.



Donor Block **Premade Recipient Block** **TMA Block**

Supplies & Service

Unique design Cassette

Part No. : SP-CAS-S

Various unique design of paraffin cassette to suit all kinds of use.

SP-CAS-S01

Large, Double Deep & Embedding Cassette

Large research processing cassette for sectioning large specimens. They are twice the depth of the regular cassette.

SP-CAS-S02

Corner Mesh (Hybrid Cassette)

Regular one-piece tissue slat molded hinge cassette, with mesh corner for small biopsies. Corner is fully contained for ultimate biopsy security. Use corner when needed, use main body for larger specimens.regular cassette.

SP-CAS-S03

Vortex™ Micro Cassette

Small biopsy cassette. Rounded Micro-Hole interior basket has no corners like traditional cassettes. Biopsies are easy to find after processing. Side-vents designed for enhanced infiltration.

SP-CAS-S04

Vortex™ Biopsy Cassette

Small biopsy cassette. One-piece frangible lid design. Rounded interior has no corners like traditional cassettes. Biopsies are easy to find after processing. Side-vents designed for enhanced infiltration.

SP-CAS-S05

Round Hole Processing Cassette

11 different stock colors, Custom colors available upon request. Cassettes are used with metal lids. All industry metal lids will fit. Plastic lids also available.

SP-CAS-S06

Tissue-Loc HistoScreen Chamber

A unique inner chamber lined with 'see-through' mesh for easy identification and specimen security. Designed to replace sponges, bags, and paper while keeping biopsy safe for processing.

SP-CAS-S07

Tissue-Loc HistoScreen cassette

A unique inner chamber lined with 'see-through' blue tinted mesh for easy identification and specimen security. Designed to replace sponges, bags, and paper while keeping biopsy safe for processing.

SP-CAS-S08

Biopsy Hole Cassette (Hinged)

Optimal printing and writing surface. Available in plastic tube (sleeve), loose and taped. Available in 11 colors.

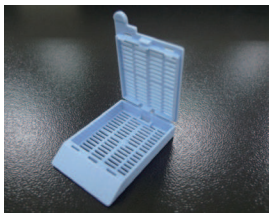
Standard Cassette

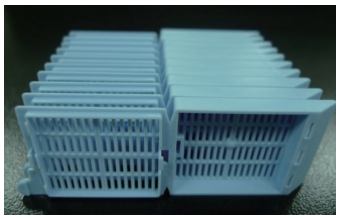
Part No. : SP-CAS

Paraffin block base cassette with storage lid.

Specification

Item comes in various color choices	* Blue * White * Pink * Green * Yellow

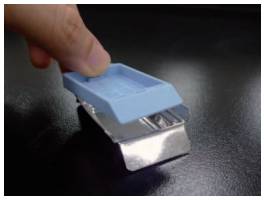




Mold

Stainless steel base mold to form a perfect paraffin block!

Part No. : SP-MOL



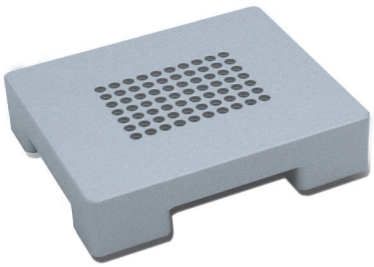
Specification

Material	Stainless Steel
Size	37x24x9mm

Array Mold

Part No. : SP-AMO

Convenient tool for TMA recipient block making and donor block transplanting. Making alignment of tissue tubes into recipient holes easier and more precise!



Specification

Material	Aluminum
Suitable Paraffin block size	37x24x9mm
Standard Size Choice	- 1.0mm : 170 holes (10 x 17) - 1.5mm : 150 holes (10 x 15) - 2.0mm : 70 holes (7 x 10) - 2.5mm : 40 holes (5 x 8)

PCR Block

Part No. : SP-PCRBK-010

This delicate tool is **designed to be used with AutoTiss 10C** for CMA (Cellular Microarray) as sample picker for nucleic acids (DNA and RNA) extraction and for protein isolation using appropriate fixative.

Tissue cores are extracted from precise area and dispensed into each vessel for further processing i.e. DNA, RNA, miRNA and protein extraction.

Parallel analysis on the same specimen can be carry out simultaneously.

Specification

- Material: Clear acrylic
- Suitable to fit in : AutoTiss 10C block holder
- Size: 41x28x14mm
- Vessel matrix: 3 x 4 = 12 vessels

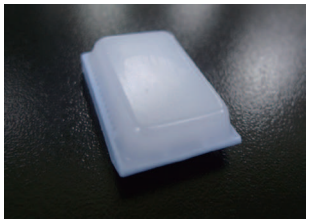
Clear Paraffin block

Part No. : SP-PAR-3724*9

Getting ready to do tissue microarray? EverBio's clear paraffin block helps you cutting down the preparation time of creating a clear recipient block.

Feature

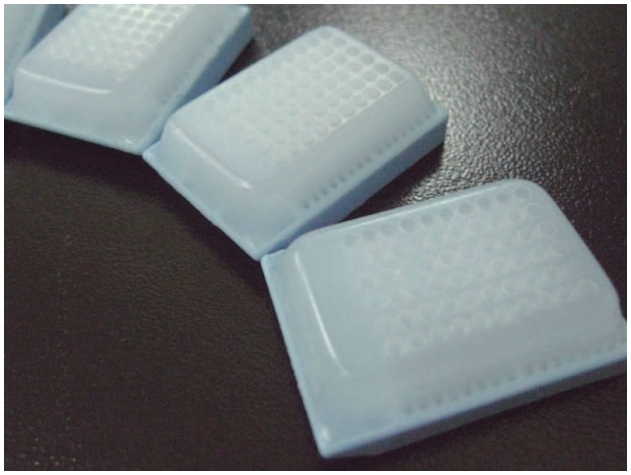
- Clear paraffin block made of Surgipath® Paraplast®.
- No layering or air bubble
- All sizes available (example block shown :37x24x9mm)
- 10pc / pack



Matrix block

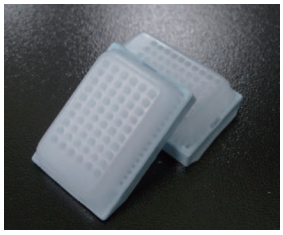
Part No. : SP-MAB-20-6*10

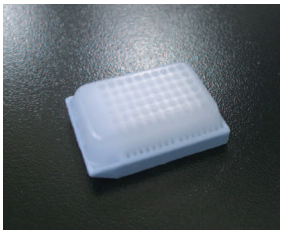
Ready to transplant tissue sample into TMA form? With EverBio's Matrix block to minimize the unnecessary time in punching holes!



Feature

- Clear paraffin block made of Surgipath® Paraplast®.
- No layering or air bubble
- Now Available 6 * 10 matrix layout (60 cores)
- 2.0mm Core size
- 10pc / pack

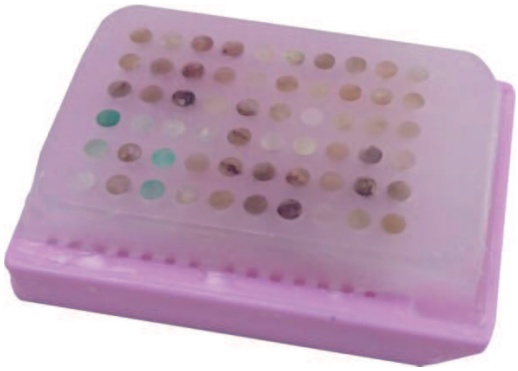


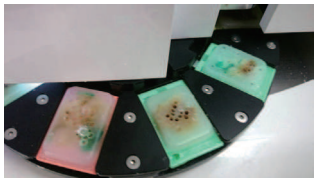


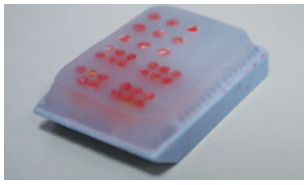
TMA Service

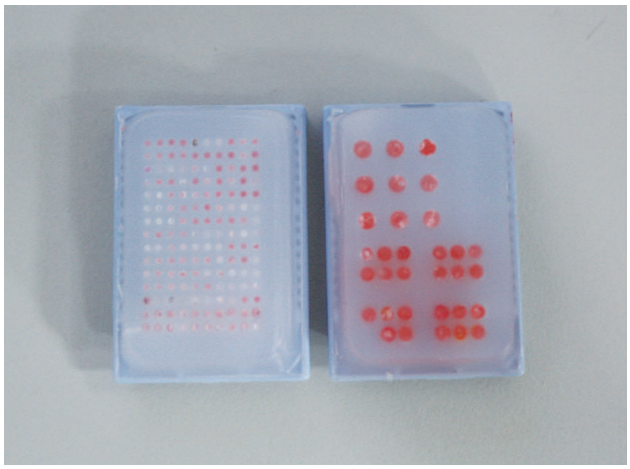
Part No. : SP-TMB

We provide customized recipient block. Simply send your own samples to us to and we will build Microarrays according to your needs. Hundreds of our customized TMAs have been used by various research centers. With our profound experience and fully automated facilities, we are proud and confident of being a provider of your high quality customized TMAs.









Specification

Diverse core diameters	0.6mm, 1.0mm, 1.5mm, 2.0mm.

Suggested maximum capacity	
0.6mm	20x30=600 cores
1.0mm	20x16=320 cores
1.5mm	18x12=240 cores
2.0mm	12x7=84 cores
2.5mm	7x5=35 cores

Contact for more information and pricing.

TRAMS

TMA RESOURCE & ANALYSIS MANAGEMENT SYSTEM

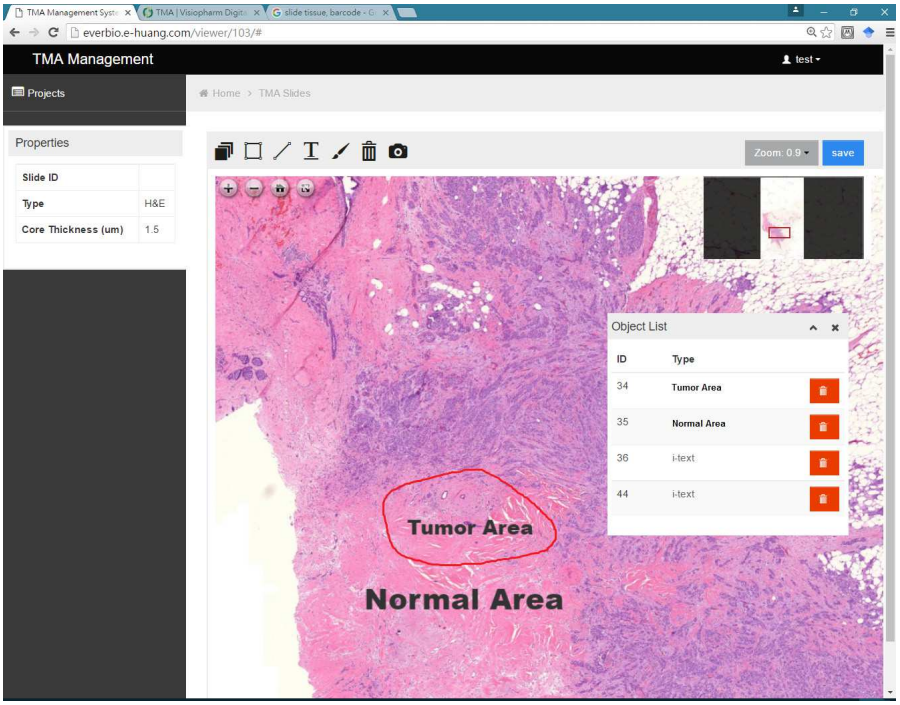
INNOVATIVE WORKFLOW FOR TMA

Features

Web-based system for information management and online collaboration between principal investigator, tissue bank and pathology lab.

- **Principal Investigator:** Create Project, Assign Task, Donor Tissue Request, TMA Design Interface
- **Tissue Bank:** Manage TMA Progress, Check In/Out the material and resource, Image Analysis Workstation, Upload TMA/Donor image, Database Management.
- **Pathology Lab:** Work by request, Annotation for Donor Selection, Collaboration in Image Analysis.

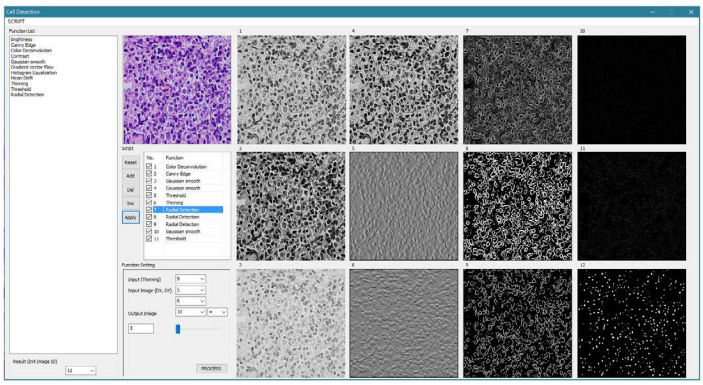
WEB-BASED RESOURCE & MANAGEMENT SYSTEM



IMAGING ANALYSIS

Features

Image processing workstation for discovering image features in digital pathology.

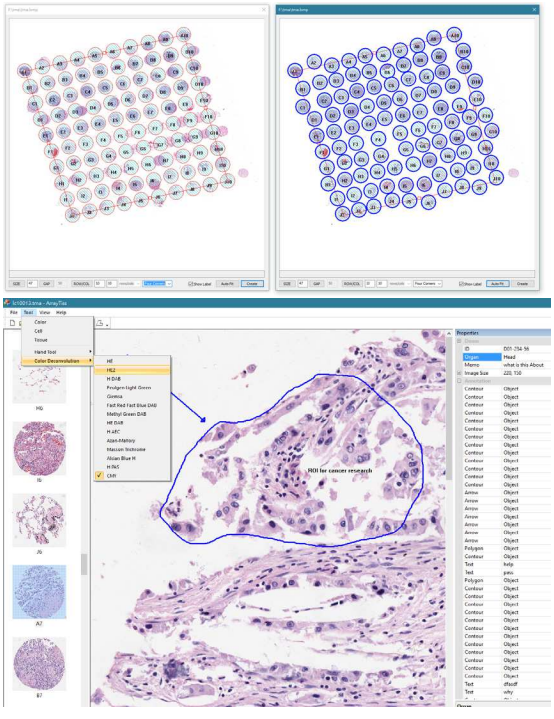


- **WYSIWG Interface:** Real time analysis for researcher with little image processing background.
- **Module-based Analysis:** Support user-defined module script for batch processing.
- **Quantitative Report:** All numerical data are kept in excel files for further analysis using statistical program.
  TRAMS Support: Link with image server and TRAMS for data query and report upload.

TMA-DEARRAY & ANNOTATION

Features

- **Image Import/Export:** Support image formats from most major image scanner.
- **DeArray TMA Grid:** Interactive semi-automated algorithm for de-arraying most difficult slide image.
- **Core Image Viewer:** View the core images and annotate with handy drawing tools.
- **TRAMS Support:** Upload de-arrayed core image to TRAMS image server for online browsing.



Cryotube with Unique ID

- ★ Human DNA, DNase, RNase, Pyrogen, ATP, PCR inhibitors free certified
- ★ Sterile SAL10^{-6}
- ★ CE-IVD Marked
- ★ Certified IATA PI 650
- ★ Manufactured in Clean Room Class ISO 7 (UNI EN ISO 14644-1). Class 10000 (US FED STD 209E)
- ★ Working Temperature: up to -196°C in liquid nitrogen in gas phase
- ★ Tubes in Polypropylene / Caps in Polyethylene and TPV
- ★ Never repeating barcode!

Colour coded inserts are available to fit both internal and external caps for quick sample identification.

Innovative internal and external screw caps to provide a 100% leak-proof seal.

Produced from medical grade raw materials that will not discolour after re-sterilizing.

Printed graduations for accurate measurements

White writing surface for specimen identification

Datamatrix Code inserted in the bottom, sequential and corresponding to the "Code 128" on the tube body

The 2D code is automatically generated from the linear barcode during the manufacturing process Permanent laser etching system

Strick quality control, every tube is checked to ensure they meet exacting standards of reading

The insert is secured in place by the use of ultrasound to weld it into place

Star shaped top cavity is engineered for use with automatic decapping equipment or easy cap picker.

Slim profile external caps ensure better fit in standard racks and boxes available.

Vials and caps are autoclavable

Standard code 128 barcode on each vial includes human readable characters printed in both left and right hand orientation for easy readability by all users.

Locking Base features prevents tubes rotating within the rack/workstation during capping and decapping.

The base of the tube is provided with channels of evacuation of the cryogenic liquid that could possibly be rapped between the base of the tube and the 2D pad.

The innovative screw caps eliminate leakage and contamination. Both internal and external screw caps are co-molded with a thermoplastic elastomer (TPV) layer and are 95kPa certified to provide a 100% leak-proof seal. This proprietary molding process eliminated the risk of contamination associated with brands that use separate o-rings.

MADE IN ITALY

Cryotubes 1D External cap

Sterile, DNase, RNase, Human DNA, ATP, Pyrogen free

1,2 ml | 2 ml | 2 ml | 3 ml | 4 ml | 5 ml

Cryotubes 1D Internal cap

Sterile, DNase, RNase, Human DNA, ATP, Pyrogen free

1,2 ml | 2 ml | 2 ml | 4 ml | 4 ml | 5 ml | 5 ml

Vial Picker

Writing Cap Disks

Cryotubes 2D External cap

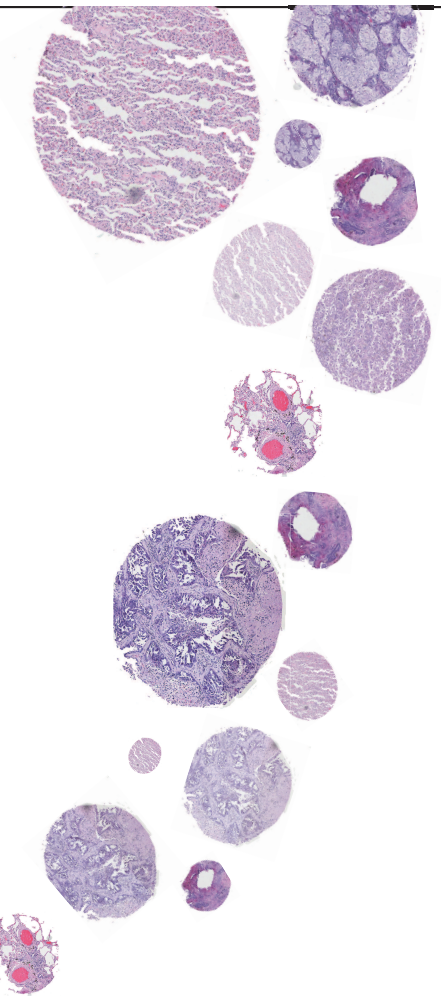
Sterile, DNase, RNase, Human DNA, ATP, Pyrogen free

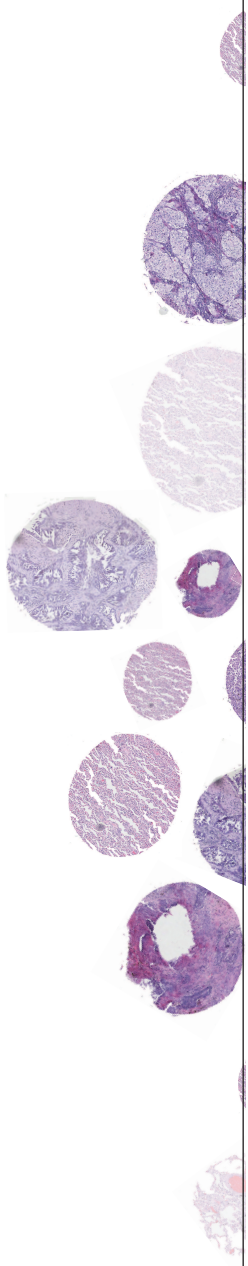
2 ml | 5 ml

Cryotubes 2D Internal cap

Sterile, DNase, RNase, Human DNA, ATP, Pyrogen free

2 ml | 5 ml





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