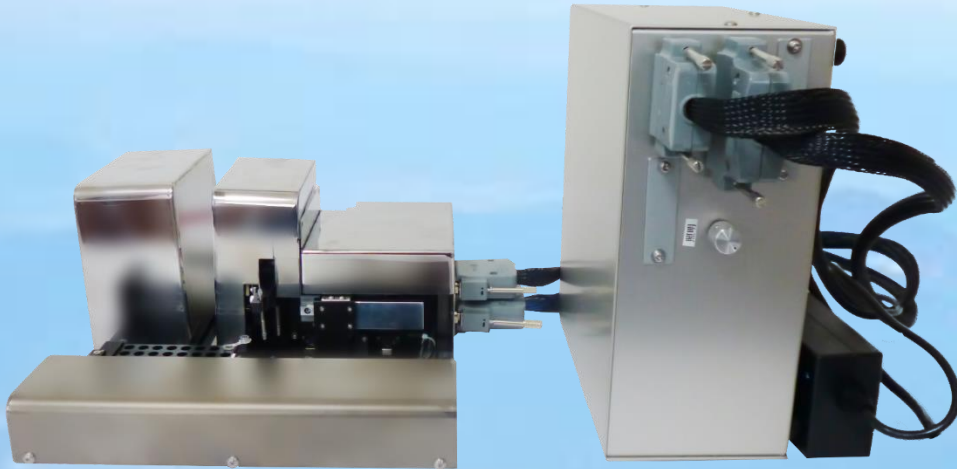


FBS-1000

Micro-Biopsy System for biological specimens



FBS-1000 is a fully automated microdissection collection system for scientific research. It can be configured on any inverted microscope. FBS-1000 can collect many microdissections from various biological as well as medical specimens repeatedly and automatically over observing the microscope images. The collected microdissections can be used for analyzing site specific gene and protein expressions to understand the biological characteristics of specimens.

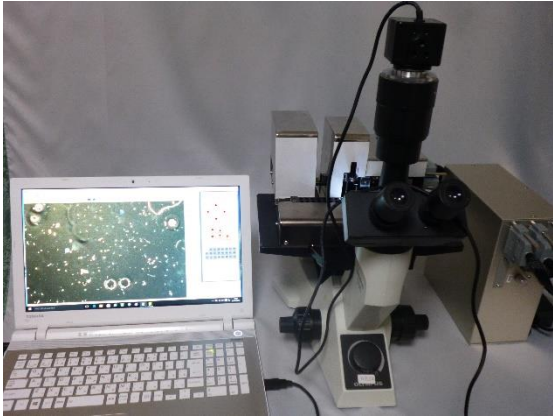
Specifications

- FBS-1000 includes a mechanical unit having three actuators, a control unit, CMOS camera(option), and a computer(option).
- Microdissections are automatically collected and recovered in reaction tubes by determining the target points on microscope images.
- The collection is carried out repeatedly in a short time by using a hollow punching needle of stainless which is washed before every punching automatically. (option:: spinning needle unit for a thick specimen)
- The typical inner diameter of a punching needle is 0.1mm.
- Collection speed : 10sec/collection
- Position accuracy : 0.01mm
- Weight: 3.2kg(control unit), 4.8kg(mechanical unit)
- Size(WxHxD) : 110x240x220mm(control unit), 250x130x250mm(mechanical unit)

Applications

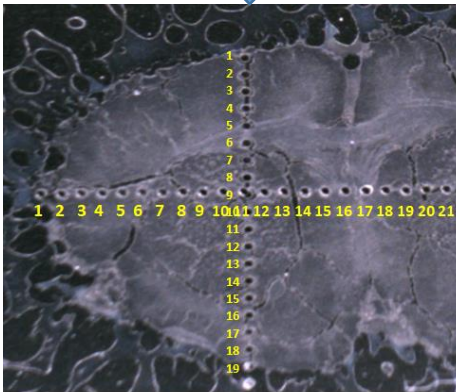
Site specific gene expression analysis of mouse brain

Specimen: frozen mouse brain slice



FBS-1000 mounted on an optical microscope

Punching needle: 0.1mm
Collecting pitch : 0.3mm
Collecting way; along X and Y axis



mRNA extraction from microdissections for producing cDNAs

Gene expression analysis by whole mRNA sequencing

Microscope image of sliced mouse brain after collecting microdissections

Gene expression levels change with collecting positions. Sometimes the site specific change is very large for some genes even if the collecting places are only 0.3mm apart. The changes give the important information on the fine structure as well as the condition of the specimen.

