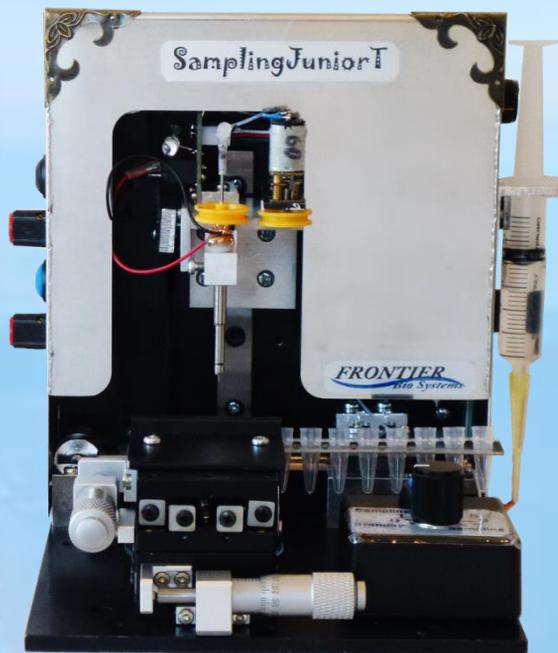


Micro-Biopsy System

Sampling Junior



Sampling Junior is an automated microdissection system. It is mounted on a digital microscope. It can be configured on any inverted microscope as well. Sampling Junior can collect many microdissections from various biological and medical specimens automatically. As the sampling process is fully automated, it is not necessary to adjust the sampling parameters. You move the target point to the marker position on the microscope image. Then just press the sampling button. A hollow collection needle goes down to collect a microdissection from the target position by punching with a rotating hollow collection needle. The microdissection is recovered in a collection tube automatically. Then the collection needle is washed for the next sampling. The collected microdissections can be used for spatial analysis of gene and/or protein expressions in tissue

Specifications

- Sampling Junior includes a mechanical unit having two actuators, a control unit, a digital microscope(option), and a computer(option).
- Rotating hollow collection needle: 0.12mm i.d.
- Collection speed 20 sec/collection
- Position accuracy : 0.015mm
- Weight: 2.6kg(mechanical unit) 2.2kg(digital microscope system)
- Size(HxWxDmm) : SamplingJunior 160x180x200,
digital microscope system 210x250x200

Frontier BioSystems, Inc.

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Applications

Site specific gene expression analysis of mouse brain

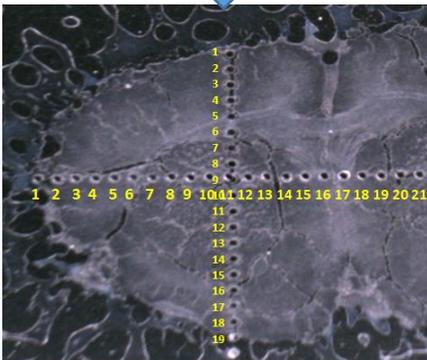
Specimen: frozen mouse brain slice



Sampling Junior on a digital microscope



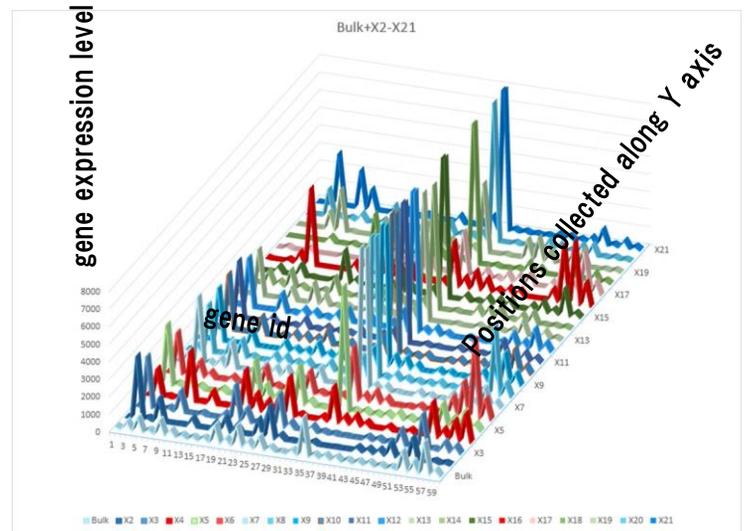
Hollow collection needle: 0.12mm



Microscope image of sliced mouse brain after collecting microdissections

mRNA extraction from microdissections for producing cDNAs

Gene expression analysis by whole mRNA sequencing



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.

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