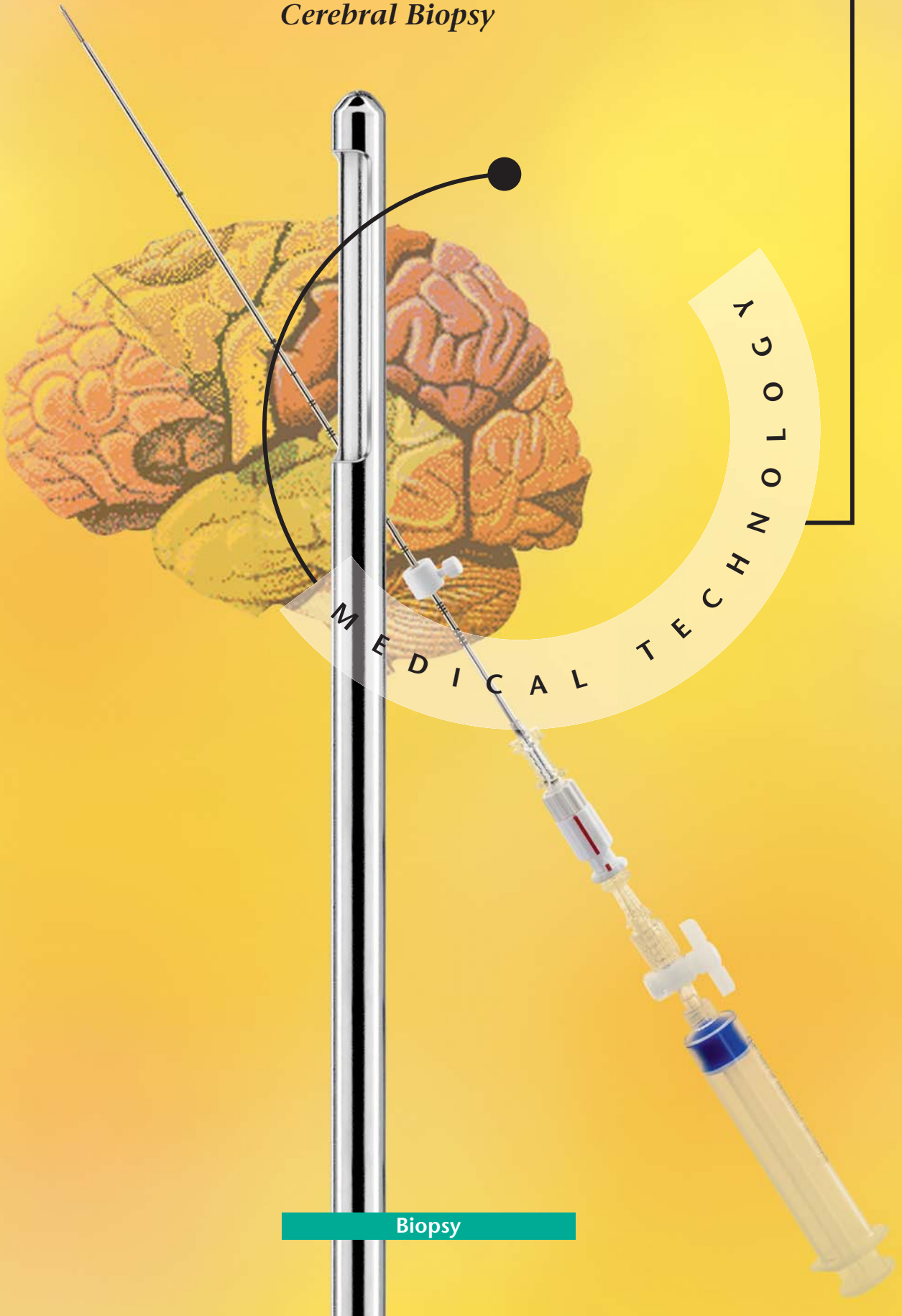


**PAJUNK®**

*BrainPro-  
Cerebral Biopsy*

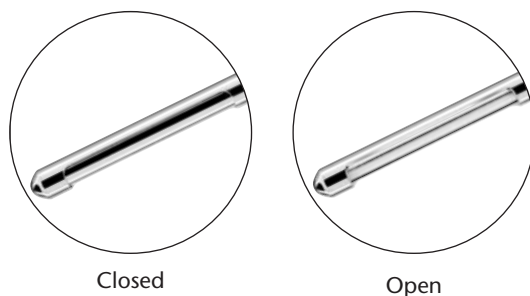


**Biopsy**

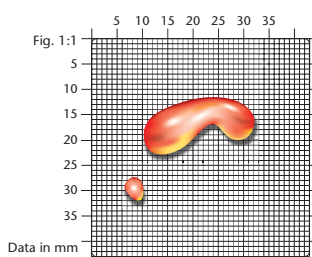
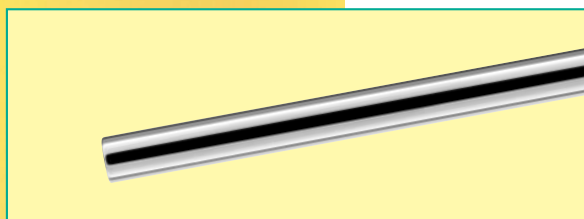
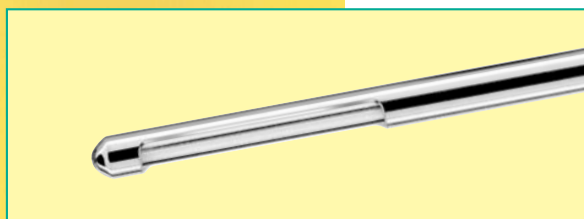
# Positioning and Tissue Extraction under Application of the Stereotaxic Technique

After the invasive fixation of the stereotaxic frame, a computed tomography is conducted using contrast medium. The CT-data set acquired thereby serves as the basis for the millimetre-precise calculation of an any desired point within the brain, whereas the

fixated frame serves as a reference for the target-point calculation. The target-points selected are defined by the x-, y-, z-coordinates.



To extract the biopsy material, the BrainPro puncture cannula is introduced with the chamber in open position. The depth marking at the shaft of the cannula thereby serves for the verification of the puncture depth, which is then secured by the depth stop.



The special construction of the cutting device of the BrainPro Biopsy Cannula permits the extraction of an optimal amount of biopsy material for histological examination.



red: Cannula is in open position



green: Cannula is in closed position

With the inner cannula of the BrainPro, which is rotatable by 180°, a tissue cylinder may now be abraded at the cannula tip under aspiration, and then removed.

The coloured marking at the connector thereby indicates the status of the cannula:

red = cannula is in open position

green = cannula is in closed position



BrainPro Cannula System



Lock system according to Merlo for multiple biopsy extractions



Simple determination of the puncture depth by means of depth stop and marking.

The extraction of tissue may be repeated several times, if required also under slight variation of the cannula position. A special ejection stylet can be used to release the biopsy material. In cases of larger cystic spatial requirements, the cyst may now be subsequently punctured and relieved under cannula control, or an additional microbiological sample may be taken.

# Biopsies under Open Magnetic Resonance Imaging (MRI)

With the aid of this method, the BrainPro biopsy cannula can be positioned exactly at the desired point after external localization of the process by way of a drill hole trepanation under local anaesthesia, and after renewed verification of the position, a biopsy sample may be gathered "online".

The advantages of this method in summary:

- Simple operative intervention under local anaesthesia
- Secure and firm affixation of the self-cutting guidance screw in the calotte
- "Online" positioning of the cannula with the aid of the monitor screen in the target area
- Secure anchoring in the calotte through self-cutting titanium thread
- Secure fixation of the cannula in the selected position
- Recovery of histology - samples by means of large tissue cylinder
- Safe hygiene and protection against prions thanks to comprehensive and completely disposable biopsy set

## Tissue extraction

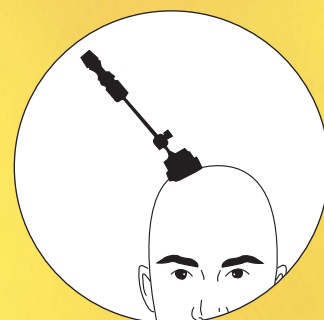
With the inner cannula of the BrainPro, which is rotatable by 180°, a tissue cylinder is now abraded at the cannula tip under aspiration, and then removed. The process may be repeated several times, if required also under slight variation of the cannula position.

A special ejection stylet can be used to the release the biopsy material. In cases of larger cystic spatial requirements, the cyst may now be subsequently punctured and relieved under cannula control, or an additional microbiological sample may be taken.



## Positioning and biopsy extraction under open MRI

The BrainPro-Access anchoring- and guidance instrument is firmly screwed into the calotte of the skull by means of the slightly conical and self-cutting titanium thread. The fastening screw ensures the absolutely slip-proof fixation of the puncture cannula in the desired orientation (pivoting range 50° in every direction).



The biopsy can be conducted under open MRI with this method.

BrainPro

## *Cannula Set for Stereotaxic Biopsy*

The BrainPro cannula system made by PAJUNK® has been especially developed for single or multiple extraction of brain tissue biopsies. The head of the patient is fastened and secured in

a stereotaxic frame. The use of the PAJUNK® biopsy cannulae also permits the gentle and safe extraction of subjacent tumour tissue.

The PAJUNK® BrainPro Biopsy Cannula Set is convincing with regard to handling, as well as through its functionality:

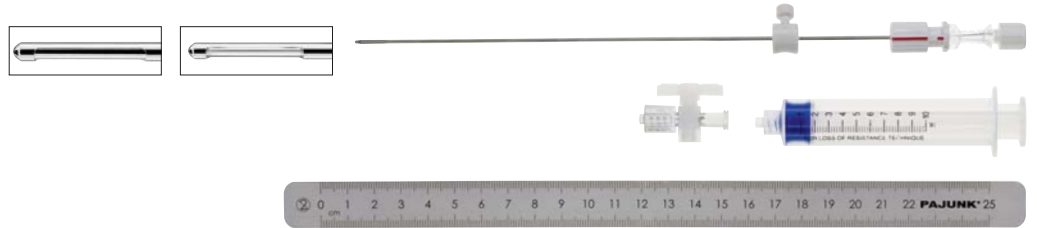
- Large tissue cylinder for the recovery of histology samples
- Cannula tip with a lateral opening for the incorporation of large biopsy material samples
- Simple determination of the puncture depth by means of depth stop
- Coloured marking at the connector indicates the status of the cannula  
red: cannula is in open position  
green: cannula is in closed position
- Sharp abscission of the tissue is ensured
- Sealed and complexly closed system ensures good vacuum and an excellent quality of the biopsy material
- Safe hygiene and protection against prions thanks to comprehensive and completely disposable biopsy set



## BrainPro Biopsy Cannula Set for stereotaxic brain biopsy

(for CT-controlled application) lateral opening 10 mm, rotatable, 10 ccm of vacuum syringe with stopcock, ruler 25 cm, sterile

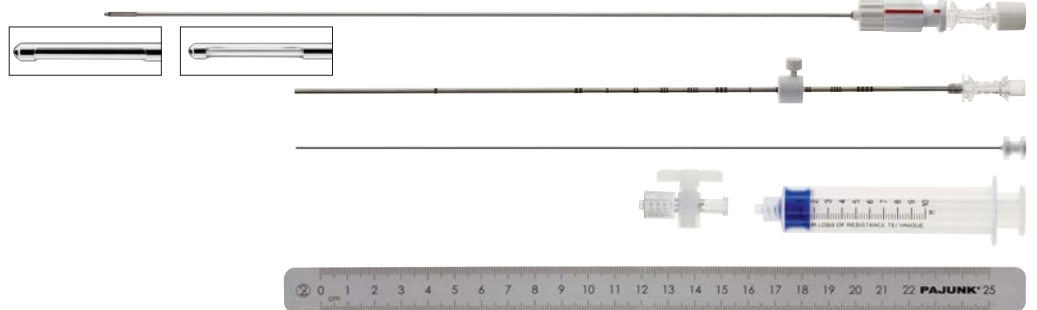
Product	Size	Item no.
BrainPro Biopsy Cannula Set for stereotaxic brain biopsy	Ø 1.8 x 250 mm	1153-2L250
BrainPro Biopsy Cannula Set for stereotaxic brain biopsy	Ø 1.8 x 200 mm	1153-2L200



## BrainPro Biopsy Cannula Set for stereotaxic brain biopsy acc. to Merlo

Guiding cannula Ø 2.3 x 230, graduated with stylet, bipartite biopsy cannula Ø 1.8 x 260 mm with lateral opening, 10 mm, rotatable, ejection stylet, 10 ccm vacuum syringe with stopcock, ruler 25 cm, sterile

Product	Size	Item no.
BrainPro Biopsy Cannula for stereotaxic brain biopsy	Ø 2.3 x 230 mm	1153-4L230



## BrainPro Titanium Biopsy Set for open MRI application

Bipartite biopsy cannula, ejection stylet, with lateral opening 10 mm, rotatable, 10 ccm vacuum syringe with stopcock, ruler 25 cm

Product	Size	Item no.
BrainPro Titanium Biopsy Set	Ø 1.8 x 110 mm	1153-3L110
BrainPro Titanium Biopsy Set	Ø 1.8 x 150 mm	1153-3L150



Anchoring- and guidance instrument for BrainPro brain biopsy cannulae with self-cutting titanium thread, sterile

Product	Item no.
BrainPro-Access Ø 11 mm for drill holes Ø 10 - Ø 12.5 mm	1153-90011
BrainPro-Access Ø 14 mm for drill holes Ø 14 - Ø 16 mm	1153-90014



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