



## Tissue-Tek AutoSection®

### Municipal Hospital Karlsruhe, Pathological Institute

**Interview with senior MTA, Ms. Olga Schwarz, Sakura Finetek Germany GmbH, by Christiane Kahnt**

#### The Pathological Institute in the Municipal Hospital Karlsruhe

Materials for sampling come to the Municipal Hospital Karlsruhe from various medical disciplines. The hospital also collaborates with external hospitals and General Practitioners. Samples include surgical preparations, specimen excisions and biopsies of organs and/or cell material. The work-up can also take place through molecular pathological sampling. "We focus not only on a wide range of services but also on fast, patient oriented 'just-in-time diagnostics'. For us, quality management is an important part of our business and our daily work. By using the latest techniques, and through constant review of our work processes and establishing a successful error free culture, we can realise optimum quality and thus patient safety," says Ms. Schwarz. In total, nine full-time and nine part-time employees work in the lab. Ms. Schwarz is a relatively new MTA with only a little experience in

pathology. Still, she has been able to claim her spot within the team and move forward.

#### Why did the Pathology Institute acquire the Sakura Tissue-Tek AutoSection®?

Since 2016, the institute has worked with Sakura Tissue-Tek Xpress® x120, the Tissue-Tek AutoTEC® a120 and the Tissue-Tek Paraform® cassette system. An extension of this system solution is the Tissue-Tek AutoSection. These instruments have been used in two areas at the Pathological Institute in Karlsruhe. First, to trim the Paraform Cassettes by using the programme that aligns the tissue block automatically. Second, to create tissue sections for immunohistochemistry use.

The Tissue-Tek AutoSection is a relief for us to use when cutting the paraform cassettes, as it automatically removes the plastic from the paraform cassettes. Once this is done, we can cut the tissue sections automatically. Furthermore, new employees who do not yet have any experience in pathology can immediately use the instrument.

Potential tissue loss is a challenge that we have to face every day. Our customers send us ever smaller biopsies, and some of them only include a very small amount of diagnostic tissue. A loss of tissue here would be fatal. To avoid this, we utilise the precise Tissue-Tek AutoSection. Another big advantage is the elimination of unnecessary blank spare tissue slides for additional staining; for example, for immunohistochemistry and molecular pathology. Any adjustment of the pre-cut tissue blocks is unnecessary.

With the Tissue-Tek AutoSection the tissue block is aligned automatically and we can cut the sections immediately. The Tissue-Tek AutoSection ensures a good and consistent quality of tissue sections, no matter which employee is sitting at the microtome. The Tissue-Tek AutoSection, blades and accompanying programs are one system solution from Sakura Finetek and help us to handle the laboratory routine work easier.

Each day, we use the Tissue-Tek AutoSection to cut approximately 600 - 800 tissue blocks. Patient safety and accumulated savings have completely justified our purchase of the Tissue-Tek AutoSection. A big advantage is the improvement of ergonomics when cutting. We used to use either a rotary microtome or sled microtome,

and the movements were always the same. This led the laboratory employees to suffer shoulder and back complaints. The fully automatic Tissue-Tek AutoSection has helped to improve the ergonomics and reduce shoulder and back discomfort. Previously, these complaints were the 'norm' for sick leave of the MTAs. Now, the number of sick days has decreased.

#### **How does the cutting quality in your lab compare after the purchase of the Tissue-Tek AutoSection?**

Thanks to the Tissue-Tek AutoSection, the cutting quality has increased enormously. The tissue sections now have a consistent slice thickness. The programs are pre-set, and each MTA can achieve equally good tissue sections. The instrument can now be used by anyone. Experience level does not matter anymore. Standardisation of the tissue sections was not always possible, but that is now a given. Moreover, the Tissue-Tek AutoSection procedures have become more efficient.

Cutting for immunohistochemistry tasks is faster, and the MTAs can trust that enough patient tissue will always be present in the tissue block. The AutoAlign™ function on the Tissue-Tek AutoSection allows for automatic alignment of the tissue block.



### **What kind of effects do the pathologists, doctors, etc. notice?**

There are many advantages to the Tissue-Tek AutoSection. There is less need to consult with the pathologists about the quality of the tissue sections. The workflow is optimised and requires fewer repetitions. In addition, our pathologists are confident that they will always get good sections, even if they have a very small amount of patient tissue to work with. We can connect directly to the interface to use the tissue block again, to re-cut without having to start all over again. It's easy: align the block and cut!

### **How has the purchase of the Tissue-Tek AutoSection and the training on the fully automatic Microtome changed your lab?**

Teaching and training new MTAs who have had no prior cutting experience is now easier. The work rosters are easier to fill because even new and inexperienced lab employees can be worked into the microtome routine faster. Success stories are recorded quickly. The fear of losing patient tissue is no longer stuck in the back of our minds as we have full confidence in the Tissue-Tek AutoSection.

Serial sectioning is also an instant success with the Tissue-Tek AutoSection. Still, it is important that the alignment plate stays clean. Any paraffin residue must be removed, otherwise the block will no longer align properly. Cleanliness must always be adhered to at every microtome. The blades, made specifically for the Tissue-Tek AutoSection, can be replaced quickly and easily to ensure that each block is cut to precision.

### **In which area of the lab do you benefit the most from the Tissue-Tek AutoSection?**

Time savings are particularly evident in the area of immunohistochemistry. Because the block will be cut directly, there are no delays in the laboratory process. At the Pathological Institute, we strive to cut continuous tissue sections for immunohistochemistry so that they can also be stained consistently. That makes sense: the cases are distributed faster to the pathologists, and the patients receive a faster diagnosis. "Just-in-time diagnostics" is the method used by Professor Rüdiger, Director of the Institute of Pathology.

Because the institute has a high standard when it comes to quality versus speed, customers agree to the just-in-time diagnostics. The customer receives his or her diagnosis at a well-defined time that fits optimally into his or her work processes.

At the institute, the MTAs work in immunohistochemistry with controls, which are performed on each slide. Both the tissue section and the control slide sections (TMA block = Tissue Micro Array) are cut on the Tissue-Tek AutoSection. The identically cut thicknesses comes into play and we maintain certainty that the operation on the slide is similar to the tissue section.

### **Is Digitisation a popular topic within your institute?**

Due to the upcoming digitisation of the Pathological Institute, the consistent quality of tissue sectioning is a guarantee for digital scanning and the subsequent digital findings. Here the tissue sections must be made accurately and without any creases. When we cut with the Tissue-Tek AutoSection, we achieve consistent, automated sectioning with no creases or cracks in the tissue.





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