

Evaluation of colon cancer morphology:

A comparison between conventional formalin and novel PAXgene Tissue fixation by an international ring trial

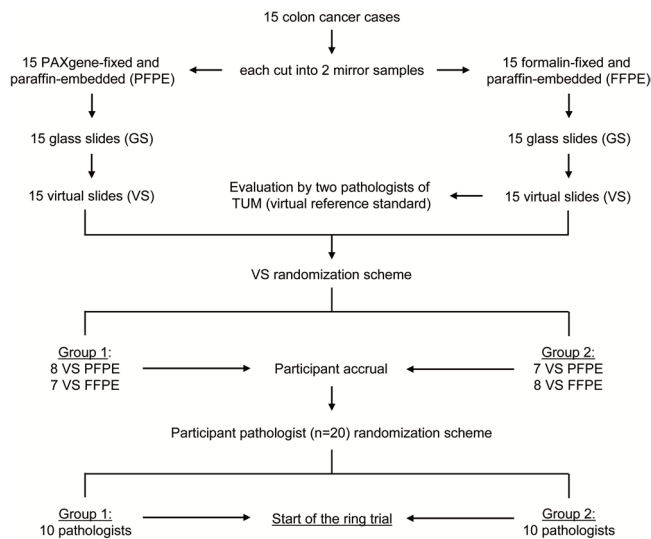
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Aims

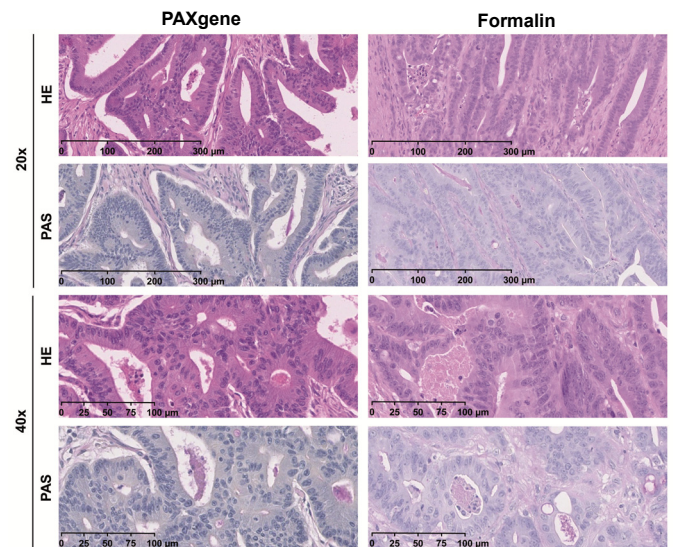
Molecular pathology requires high quality tissue samples which allow simultaneous molecular and histopathological analyses. As the suitability of the PAXgene Tissue preservation technology for molecular analyses is well known, the aim of our study was to evaluate the quality of histo- and cytomorphological features of PAXgene-fixed specimens and the suitability for histomorphological classification in comparison to formalin fixation.

Study design / Virtual microscopy

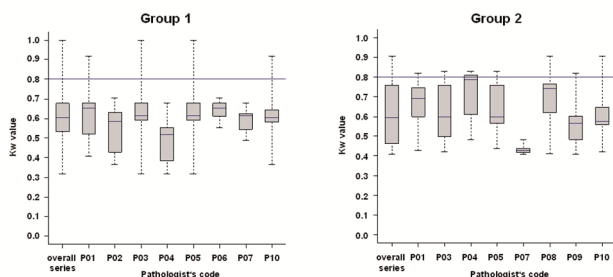


Method + Results

Example for overall morphology



Inter-observer reproducibility



- Reproducibility with regard to **grading** between both fixation methods was rather satisfactory ($k_w = 0.73$, 95%CI: 0.41-0.94)
 - With a higher agreement between the reference evaluation and the PFPE samples ($k_w = 0.86$, 95%CI: 0.67-1.00)
- Independent from preservation method, **inter-observer reproducibility** was not completely satisfactory ($k_w = 0.60$)
- **Histomorphological quality parameters** were scored equal or better for PFPE than for FFPE samples
 - For example, overall quality and nuclear features, especially the detection of mitosis, were judged significantly better for PFPE cases
 - In contrast, significant **retraction artefacts** were observed more frequently in PFPE samples

Conclusion

In conclusion, our findings suggest that the PAXgene Tissue System leads to **excellent preservation of histomorphology and nuclear features** of colon cancer tissue and **allows routine morphological diagnosis**.

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References

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