

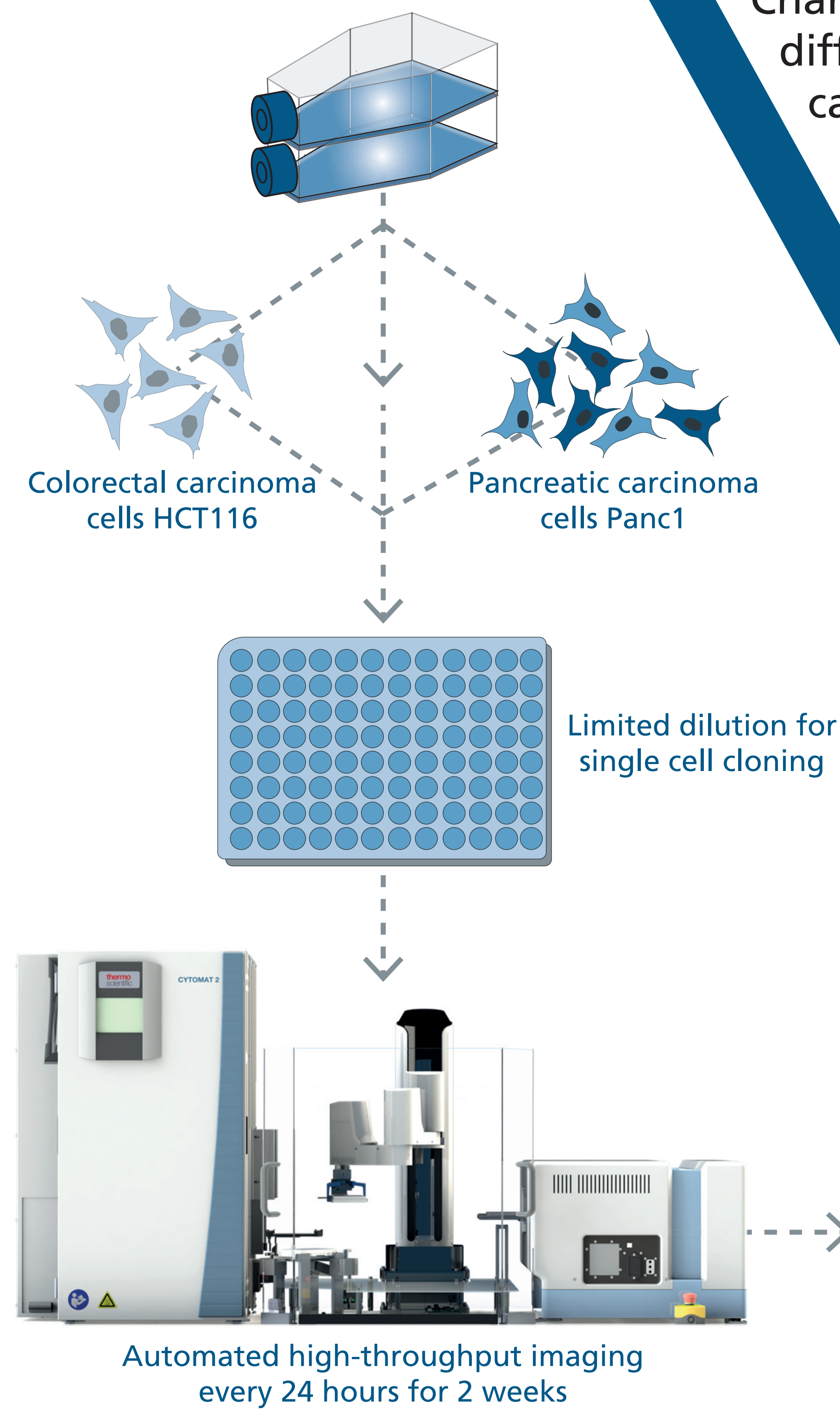
## Automated Classification of Single Cell Colonies into Holo-, Mero- and Paraclones using CELLAVISTA® and YT-SOFTWARE®

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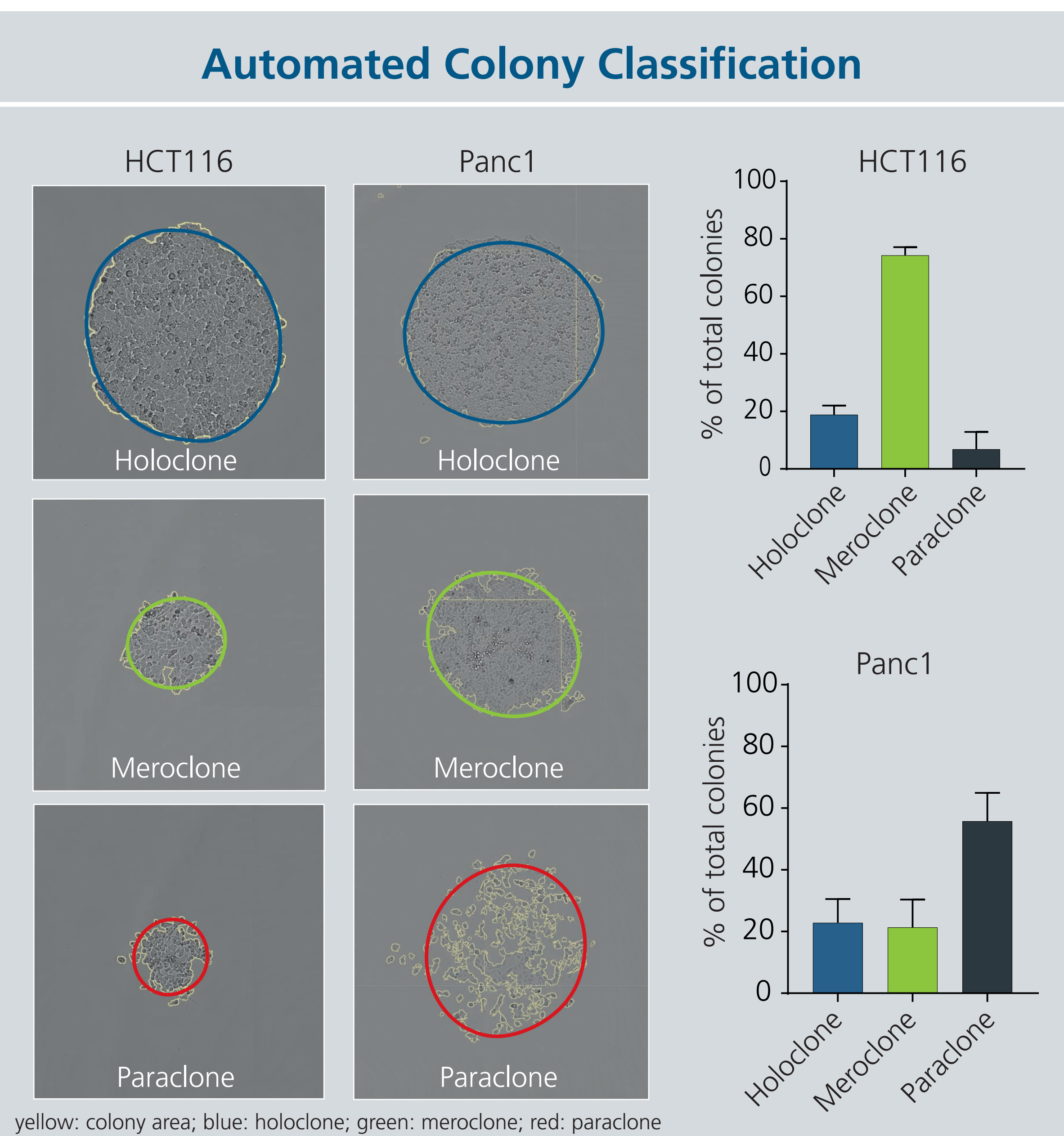
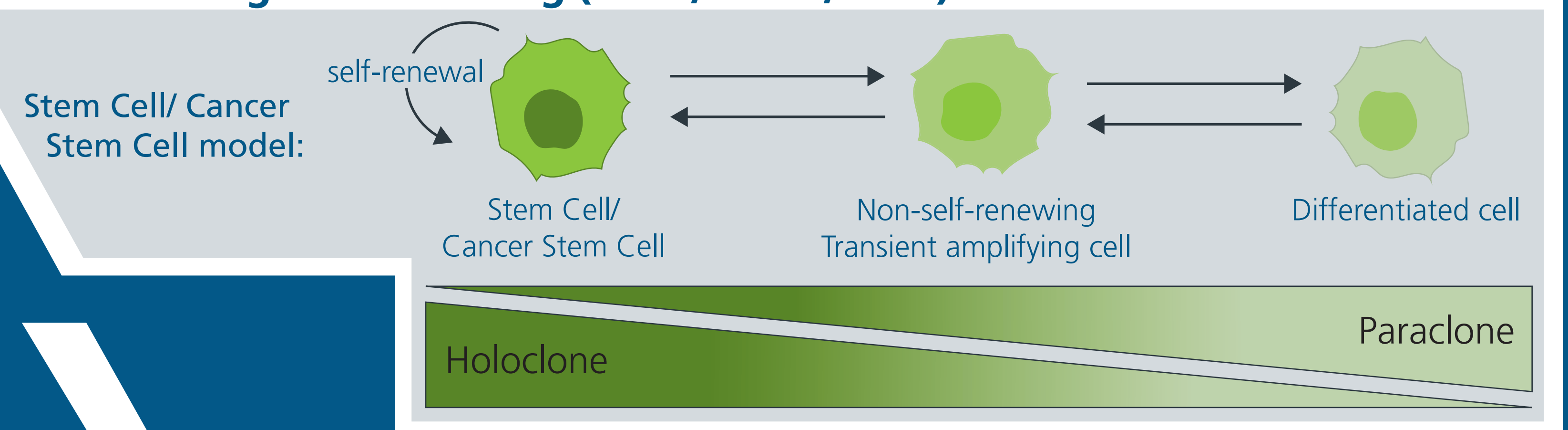
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### Method & Results

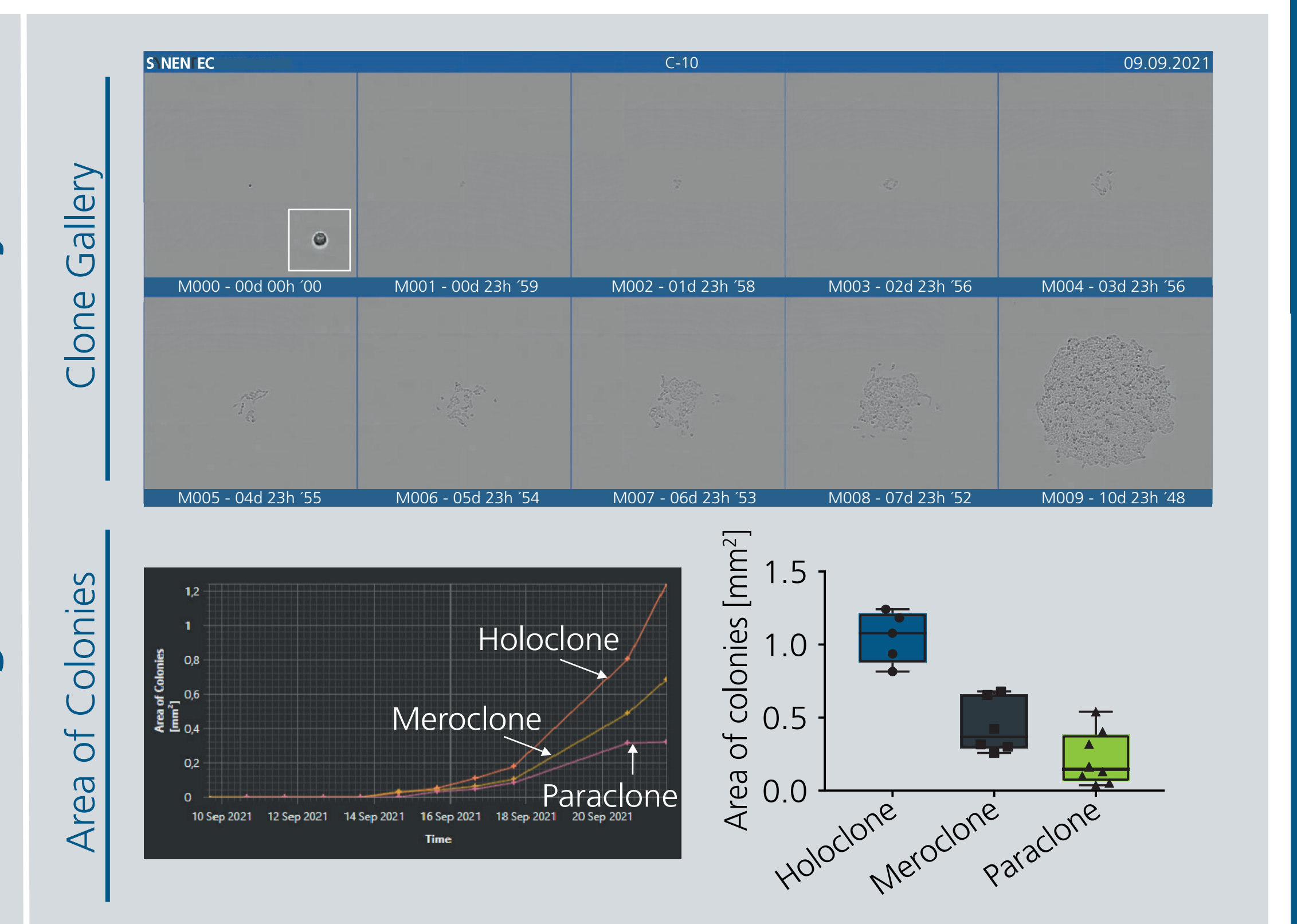


### Introduction

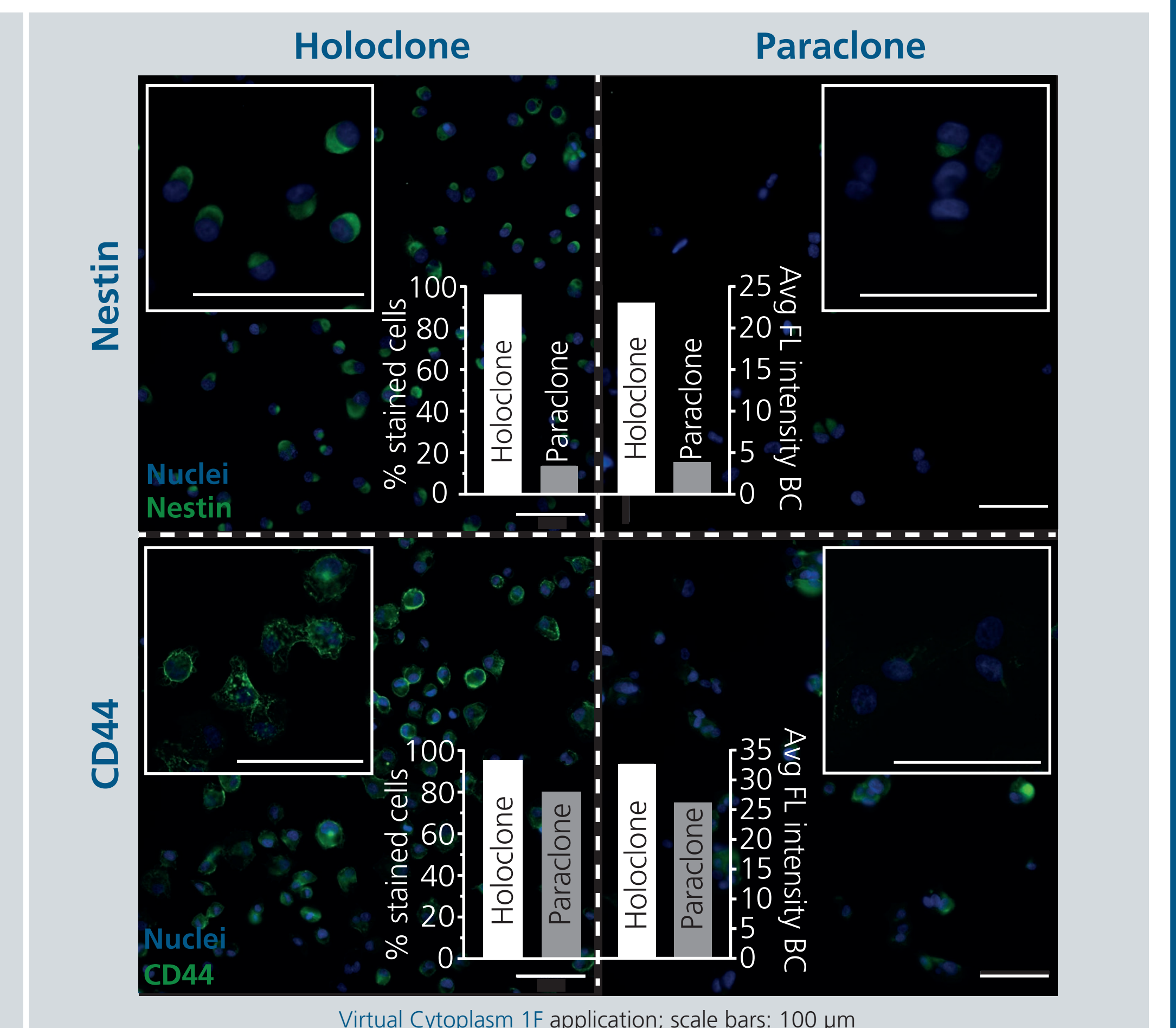
Characterization and analysis of (cancer) stem cells have become an emerging tool in different research fields. When seeded as single cells *in vitro*, epidermal cells or various cancer cells give rise to three types of colonies termed holo-clones, mero-clones and para-clones. These clones are distinguished by colony formation assays, in which the clones are fixed, stained and manually evaluated under a user-dependent microscope. This assay does commonly not consider mono-clonality, it is time-consuming, and requires training and experience. Therefore, we aimed to automate this assay. For this purpose, we performed single cell cloning experiments of pancreatic and colorectal cancer cells and automatically monitored colony growth over-time using CELLAVISTA®, YT-SOFTWARE® and our automation system. Afterwards, colonies were classified into three colony types by the image analysis application **Single Cell Cloning (Holo, Mero, Para)** of YT-SOFTWARE®.



### Monitoring of Panc1 Colony Growth



### Immunofluorescence Stainings of Panc1 Holo- and Paraclones



### Seed cells, start automation, walk away, get results

- Automation system conveniently images over time
- YT-SOFTWARE® proves mono-clonality of the cells
- Image processing precisely detects and classifies colonies of different size and shape
- Method reduces hands-on time and allows high-throughput



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