Analyzing Cytotoxicity in a 2D and 3D Colorectal Cancer Model using an Automated High Content Imaging System

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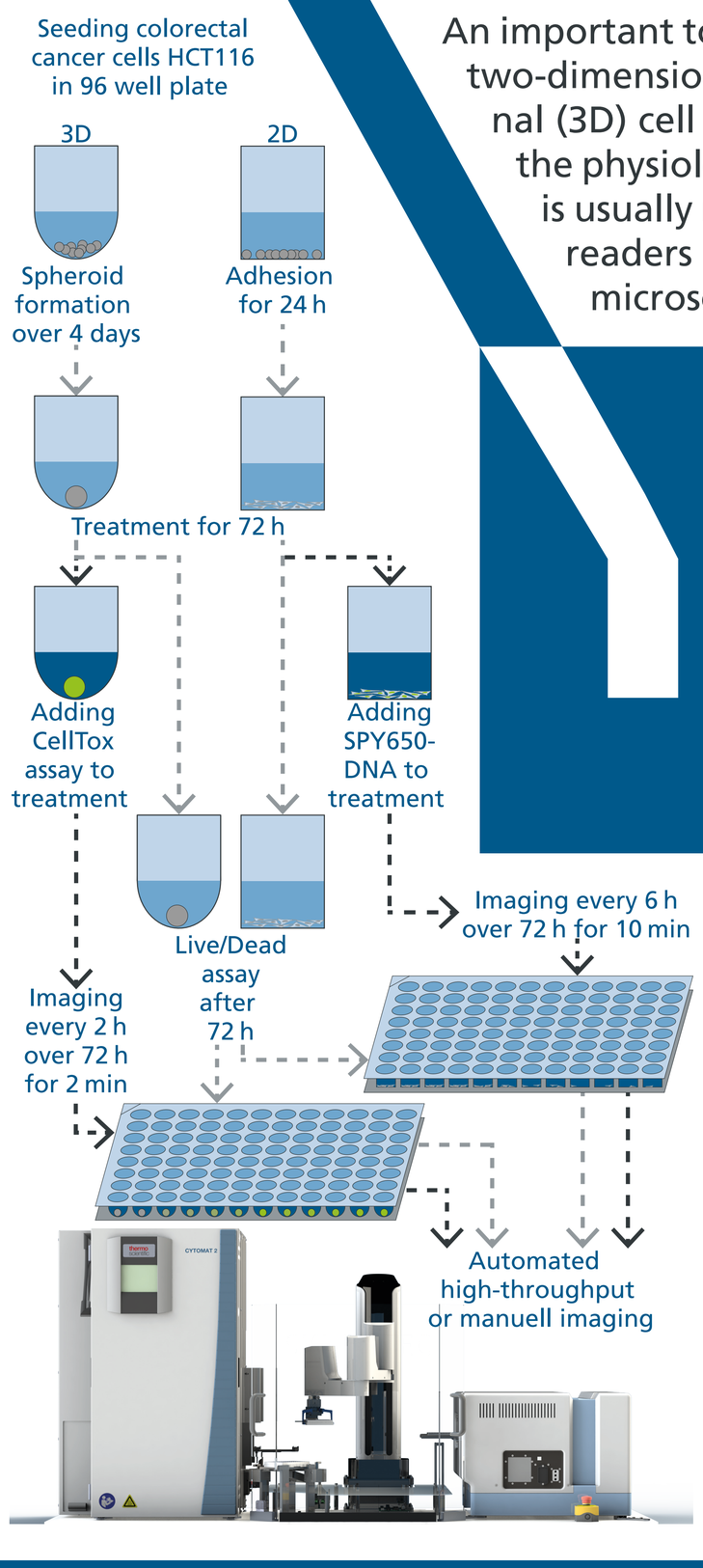
Method



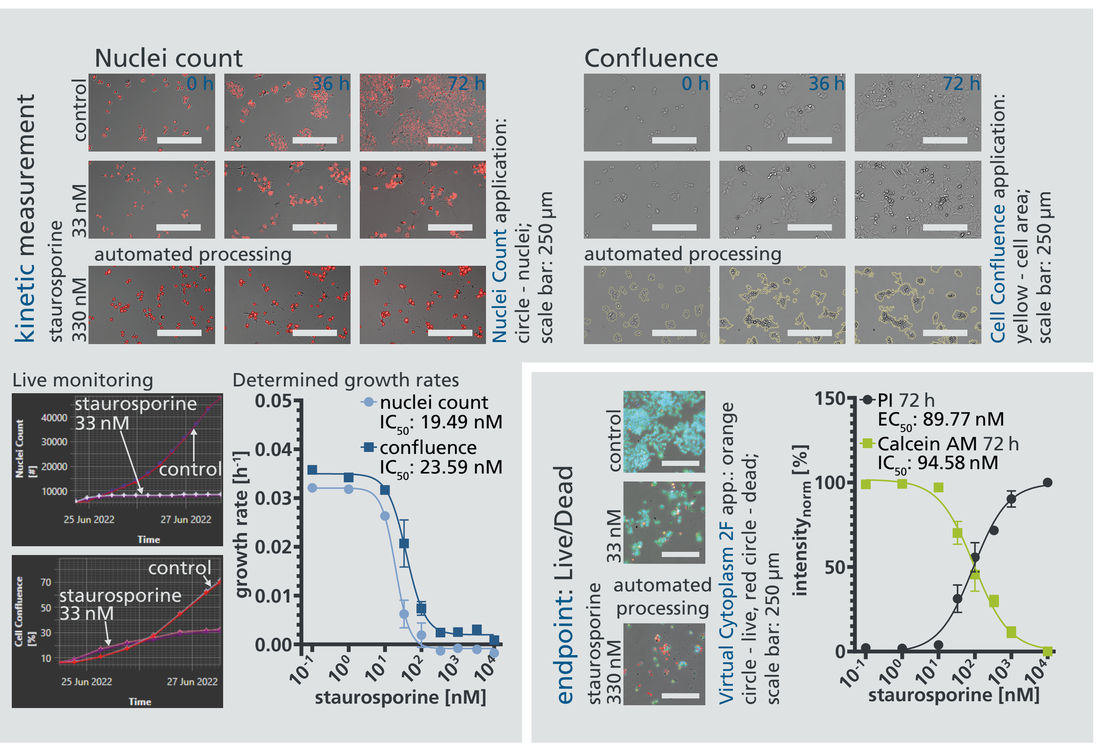
Introduction

An important tool in the field of cancer research and drug discovery is cell culture. Conventionally, two-dimensional (2D) cell culture models have been used, but in the last years, three-dimensional (3D) cell culture models like spheroids have gained more interest. 3D models better mimic the physiology of tissues and tumors, but the generation, application and evaluation of assays is usually more difficult. Therefore, either simple one-parameter endpoint assays using plate readers are used as a read-out for high-throughput screening. Or confocal or time-lapse microscopes are used for multi-parameter high content analysis.

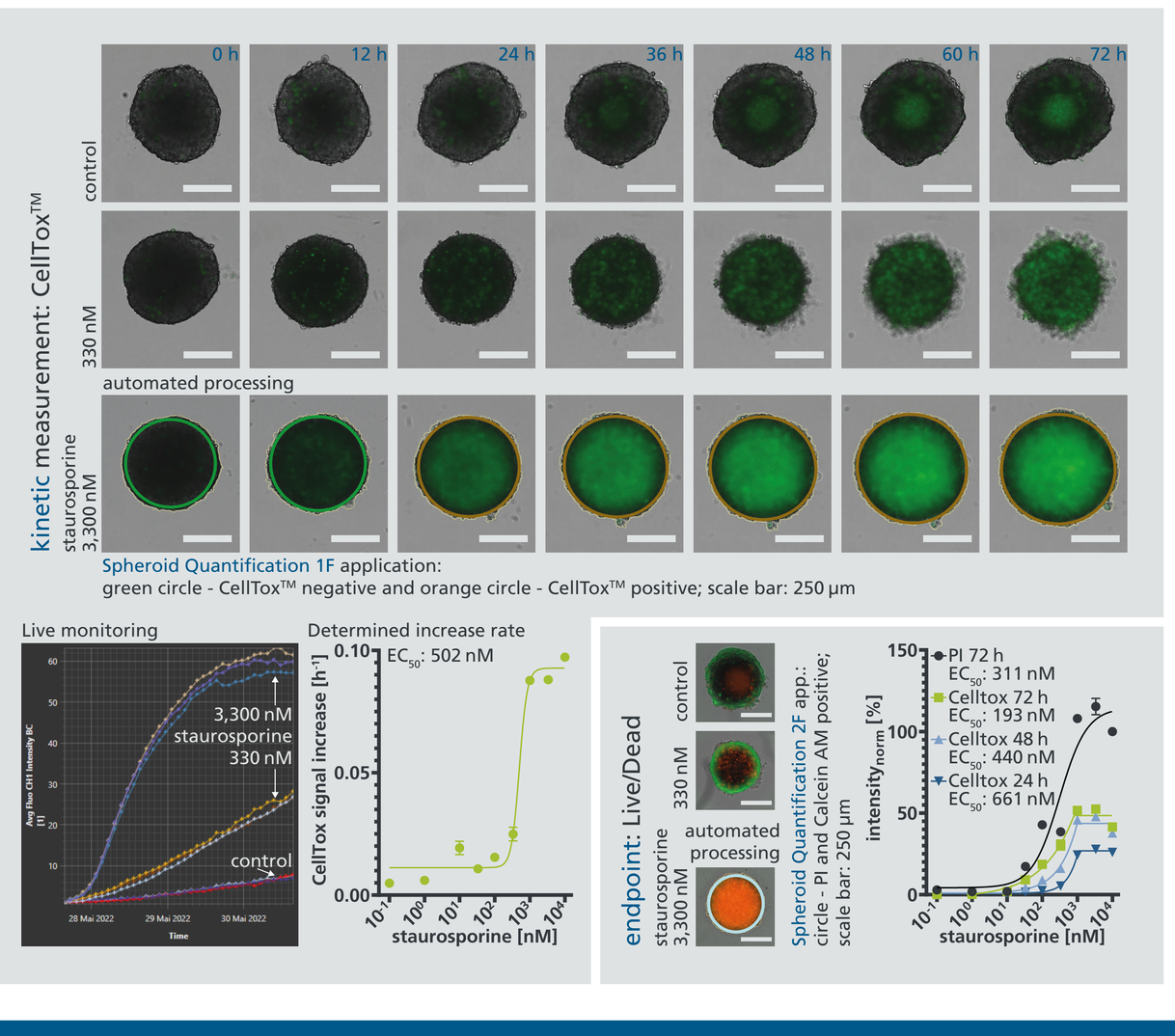
Here, we used SYNENTEC's automation system to analyze effects of the drug staurosporine in 2D and 3D cell models of colorectal cancer cells (HCT116) over time.

Results

2D measurement



3D measurement



3D and 2D analysis with our automation system:

- The system enables convenient and timesaving high-throughput imaging
- Cytotoxic effects can be monitored directly over time
- YT-SOFTWARE® analyzes many different parameters
- Time charts and heat maps provide a quick result overview
- Various assays can be performed
- 3D can be easily compared to 2D

Contact
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