High-Throughput Cell Viability Workflows: Erythrosin B as a Safer Alternative to Trypan Blue

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Method

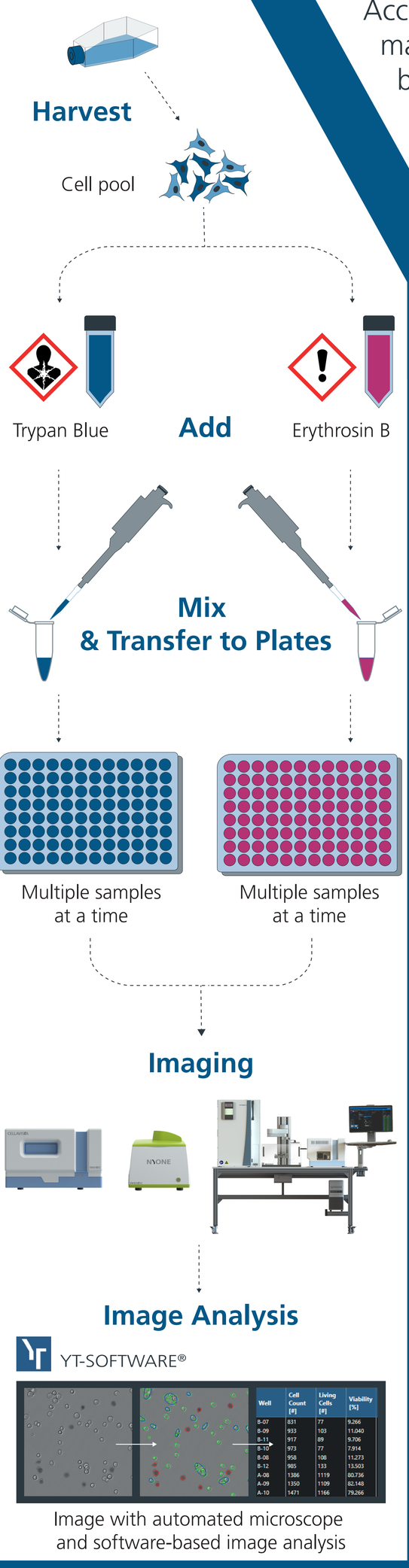
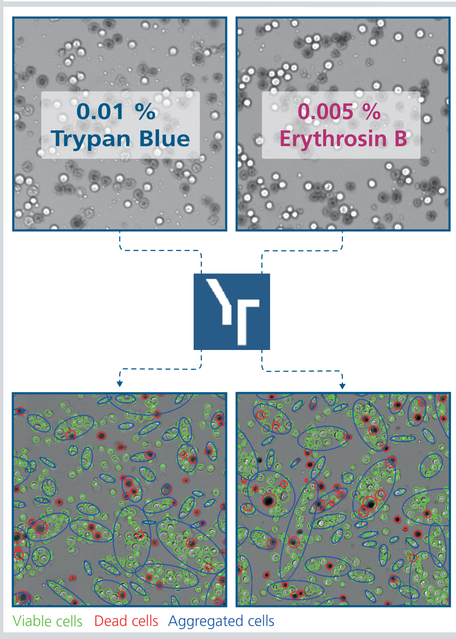


Image with automated microscope and software-based image analysis

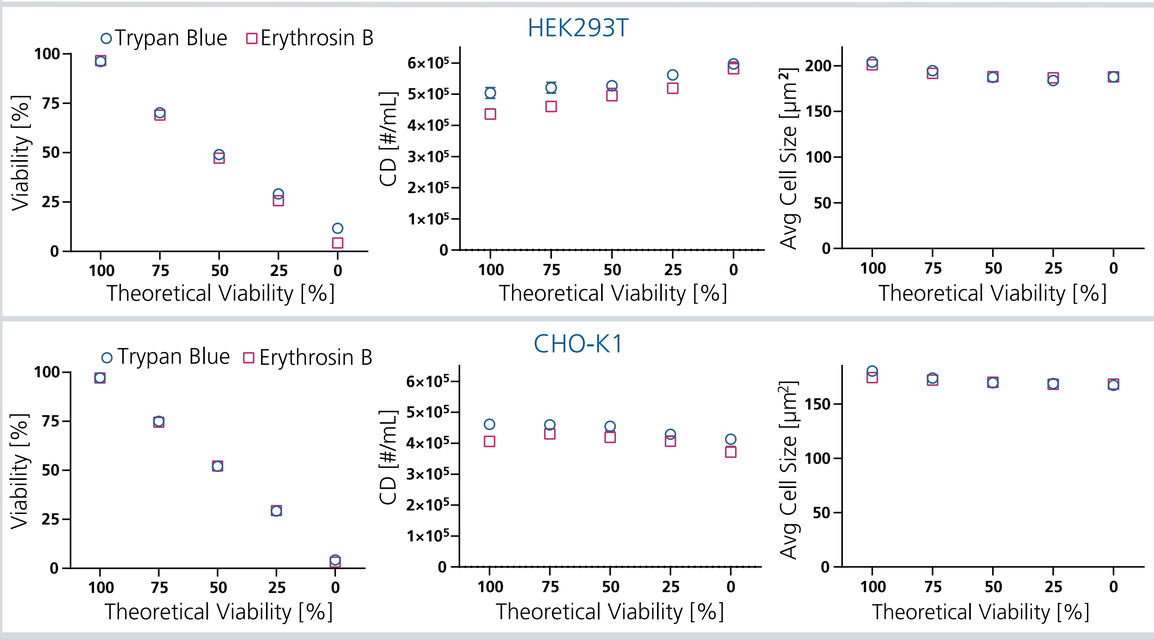
Introduction

Accurate cell counting and viability analysis are fundamental to drug screening, disease modeling, therapeutic manufacturing, and bioproduction. The standard dye for distinguishing live and dead cells has been trypan blue for a long time. However, its suspected carcinogenicity and incompatibility with autoclaving pose significant safety and operational challenges especially for the work with genetically modified organisms (GMOs). We explored erythrosin B, a red dye commonly used as a food coloring and biological stain, as a comparable but safer alternative.

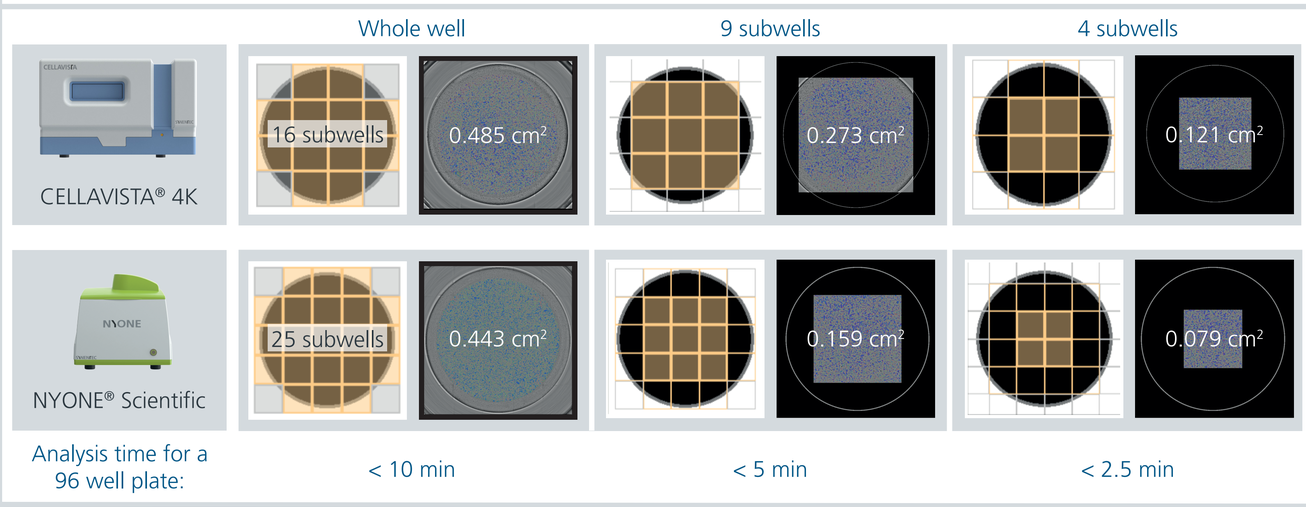
Image Analysis



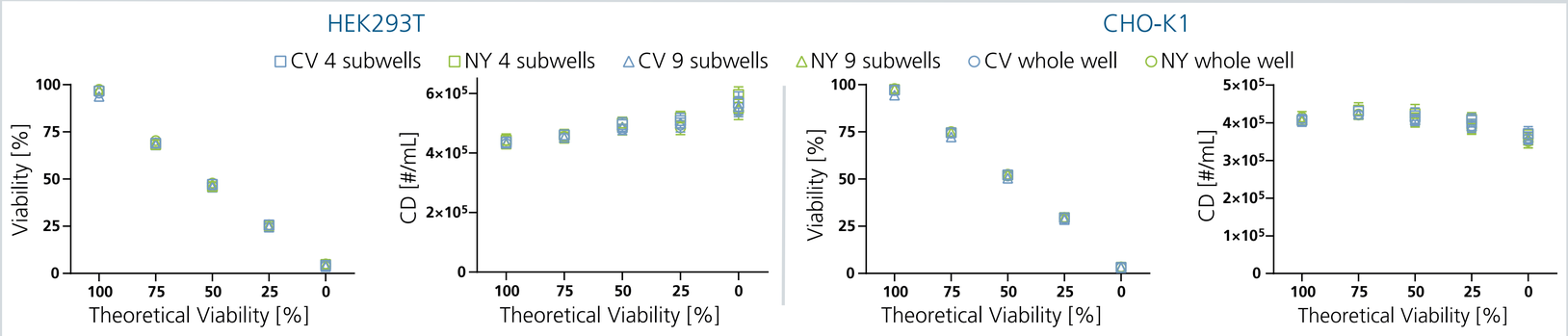
Trypan Blue versus Erythrosin B



Optimizing the Assay for Speed and Data Storage



Assay reproducibility, measurement time, and data storage are critical factors in high-throughput analysis. Our YT-SOFTWARE® allows users to selectively image specific well areas, significantly reducing measurement time and data storage demands while ensuring consistent data accuracy across different devices.



Viable and serum-starved CHO-K1 or HEK293T cells were seeded into a 96-well plate, stained with 0.005% erythrosin B, and immediately imaged using CELLAVISTA® 4K (CV) or NYONE® Scientific (NY) with three subwell selection settings. Images were analyzed with YT-SOFTWARE®. Mean ± SD from 5 technical replicates.

Benefits

- With our optical flexibility, easily change from your existing trypan blue staining protocol.
- Reduce risks and increase safety during handling and disposal of your reagents.
- Count your GMOs and autoclave them afterwards.
- Analyze 96 samples in less than five minutes.

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