



# CytoSMART® Automated Organoid Counter

## Automated organoid detection using image analysis

Count organoids fast and accurately without any user-dependency. The CytoSMART® Automated Organoid counter is a state-of-the-art software application that automatically detects organoids using bright-field image analysis. Next to the organoid count it will also determine the organoid sizes and size distribution.

### State-of-the-art machine learning algorithm for rapid organoid detection

Currently manual organoid counting is a routine procedure for many research laboratories, but it is time-consuming and user-dependent. Also the number of organoids does not tell you anything about the size and the size distribution of your organoids. To overcome these issues CytoSMART® has introduced an organoid counting application that is:

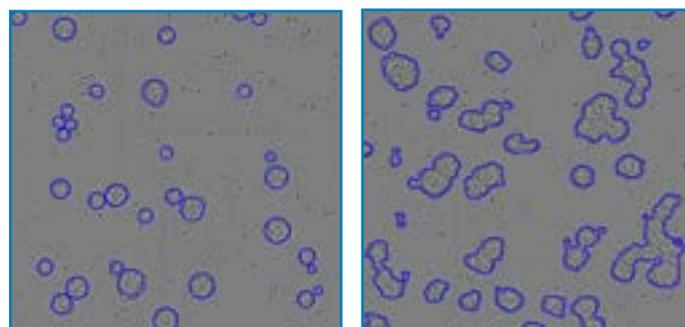
- **Accurate** – powered by artificial intelligence, all counts are performed using the same, objective algorithm
- **Cost-efficient** – the counter is compatible with a standard, reusable glass hemocytometer. No consumables required
- **Multi-informative** – besides the number of organoids, the counter will give you information regarding the size and size distribution

Different types of organoids vary in terms of their size and shape. Also the culture conditions can highly influence the morphology of your organoids. Based on the morphological differences between organoids, the CytoSMART® Automated Organoid Counting software currently consists of two different image analysis algorithms available for the analysis of your organoids.

### Compatible devices:

The organoid software is available for the following devices:

- Corning Cell Counter
- CytoSMART® Exact FL



**Figure 1.** The organoid counter software consists of two image analysis algorithms. One is specifically designed for detecting spherical organoids (left). The second one is optimized for analysis of irregularly-shaped organoids (right).

### Algorithm for spherical organoids

This algorithm is highly specific and accurate for the detection of spherical organoids as it is based on deep-learning. Next to this, there is clear contour division and easy separation of organoids, allowing you to analyze the organoids even at higher concentrations. The next advantage of the deep learning-based algorithm is the high sensitivity resulting in more optimal exclusion of debris.

### Algorithm for irregularly-shaped organoids

In addition to the algorithm for spherical organoids, the second algorithm is optimized for the detection and analysis of irregularly-shaped organoids. The algorithm detects the outlines of the organoids and determines the size based on this, resulting in highly-accurate organoid size measurements.



<https://cytosmart.com/products/organoid-counting>

\*Research use only. Not intended for diagnostic purposes.