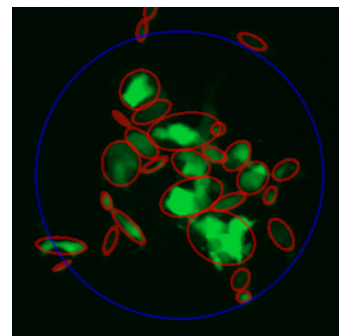


Fluorescent Cluster Diffusion

GENERAL PURPOSE

The Fluorescent Cluster Diffusion operator is a special variant of the Nuclei Count Operator using one fluorescence channel only. It detects stained cell nuclei or cell area (red) as well as the colonies they may form (blue). The main results are the number of cells and cell colonies detected in the images, the average number of cells per colony and the colony quality, i.e. the percentage of the detected cell area of a colony. Low quality corresponds to scattered, high quality to compact cell distribution.



RESULT TABLE

Nuclei Count	Number of all detected fluorescent objects per well
Colony Count	Number of determined colonies per well
Avg Nucleus Size	Average size of a cell nucleus/fluorescent object in μm^2
Sum of Nuclei Sizes	Total area of all detected objects in μm^2
Nuclei in Colonies	Number of all detected objects in colonies
Avg Nuclei in Colonies	Average number of detected nuclei/objects per colony
Avg Fluorescence Intensity BC	Average intensity of an object over background level
Avg Cell Distance	Average object distance in a colony
Avg Colony Quality	Average Quality of the colonies per well (low quality corresponds to scattered, high quality to compact cell distribution)

EXAMPLE

This example shows eGFP marked viral foci/plaques in a layer of adherent cells. In this application the Fluorescent Cluster Diffusion operator searches for fluorescent spots (red marked) (here: infected cells) and combines them to a cluster (blue marked). This enables in this case to analyze the mobility of different virus mutants, independent of the initial virus dose (MOI, Multiplicity of Infection).

The left image shows an overlay of the fluorescence channel with its detection, the right image an additional brightfield channel.

