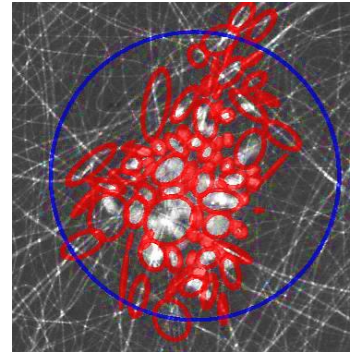


Nuclei Colony Count

General Purpose

The Nuclei Colony Count operator is a one-channel fluorescence application. It is a special variant of the Nuclei Count Operator. The aim of the analysis is to identify colored clusters on a grid. For this purpose, the original "Nuclei Count" recognition algorithm was supplemented with functions that were precisely adapted to the situation shown in the example images (on the right). The colonies are additionally determined for the recognized cell nuclei (red) and marked as colony blob (blue) in the evaluation dialog. This image processing operator can also be used with any distinct fluorescent object that can be combined into a cluster (colony).



Short Note
SN-F104-XVII-02

Result Table (extract)

- | | |
|---|--|
| • <i>Nuclei Count [#]</i> | <i>Sum of all detected cell nuclei</i> |
| • <i>Colony Count [#]</i> | <i>Sum of determined colonies</i> |
| • <i>Avg Nucleus Size [μm^2]</i> | <i>Average size of a cell nucleus</i> |
| • <i>Sum of Nuclei Sizes [μm^2]</i> | <i>Total area of all detected cell nuclei</i> |
| • <i>Avg Nucleus Fluorescence Intensity BC</i> | <i>Average fluorescence intensity of a nucleus over background level</i> |

Example

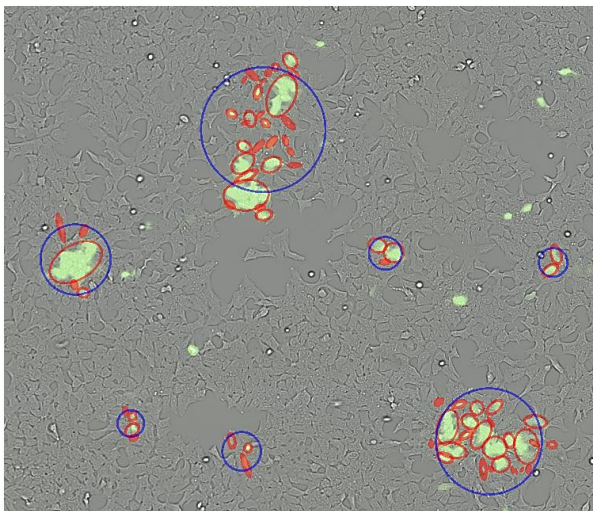


Fig. 1: This image shows eGFP marked viral foci/plaques in a layer of adherent cells.

In this application the Nuclei Colony Count 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).

This image shows very well the potential of this operator- not only to search for fluorescent nuclei but also detecting many kinds of distinct, fluorescent objects.