Solutions for quantifying cytopathic effects after viral infection in vitro

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Individual virological assays require a maximum of experience. For different experiments, we introduce an outstanding technology for evaluating them in a reliable way.

In viral infections in vitro, the cytopathic effect (CPE) occurs.

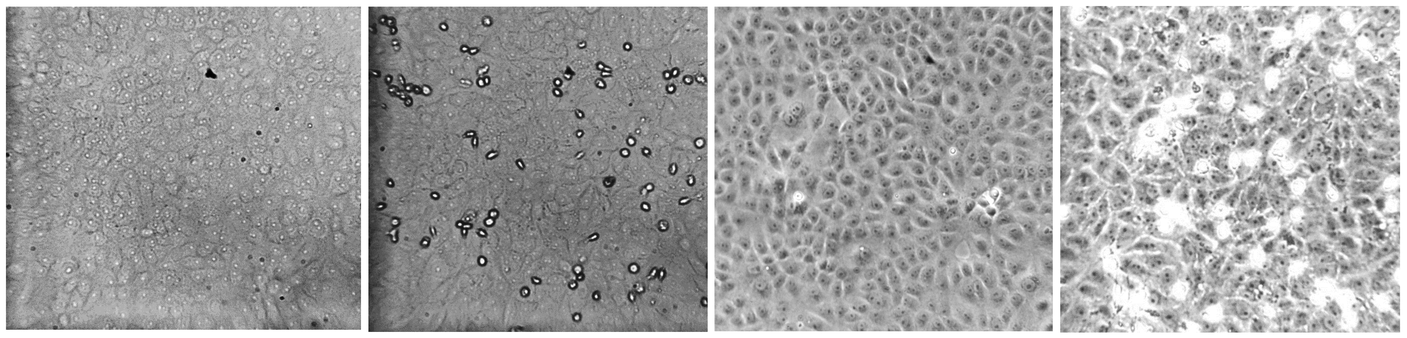

Fig.1 Examples of DMSO treated (B,D) or untreated cells (A,C), comparison of transmitted light (A,B) and phase contrast (C,D) in 10x magnification

In the beginning, only few cells show a CPE, which makes it different to estimate the success. Quanti-and qualification of CPE in stages 1-4 of cells can be helpful to assess the right timepoint for different approaches (Fig. 1).

With the AID multiSpot, an inverted microscope and a fluorescence EliSpot reader combined, the CPE can be monitored and quantified without cellular staining and w/o interrupting any experiment with liquid like medium (Fig. 2).

Further assays like plaque assays are performed in plates from 6-384 wells, stained either with colorings like crystal violet or, mostly in 96-well format, with fluorescent dyes. The reader type for these (and many more) applications is the vSpot spectrum (Fig.3).

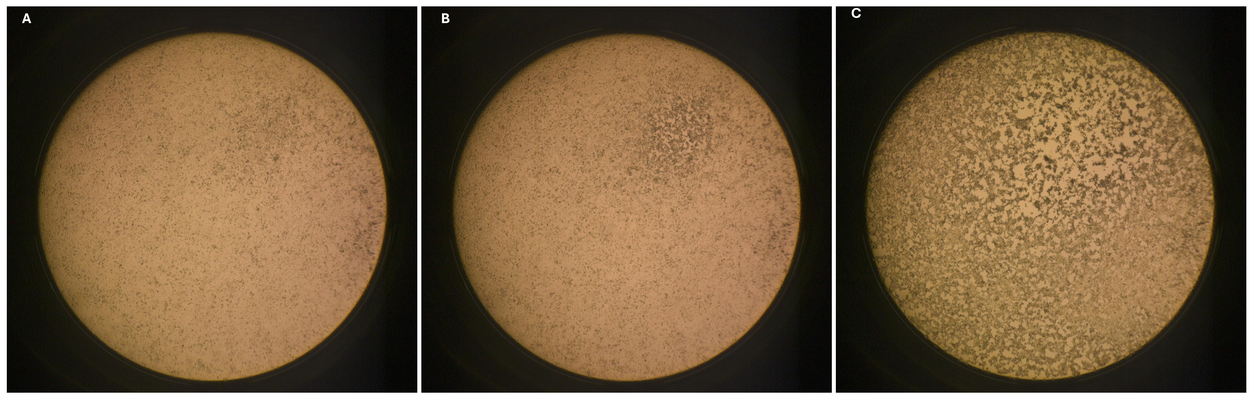

Fig.2 Dynamic measurement of vaccina infected cells on (A) day 9 (CPE 0), (B) day 10 (CPE 1) and (C) day 11 (CPE 4)

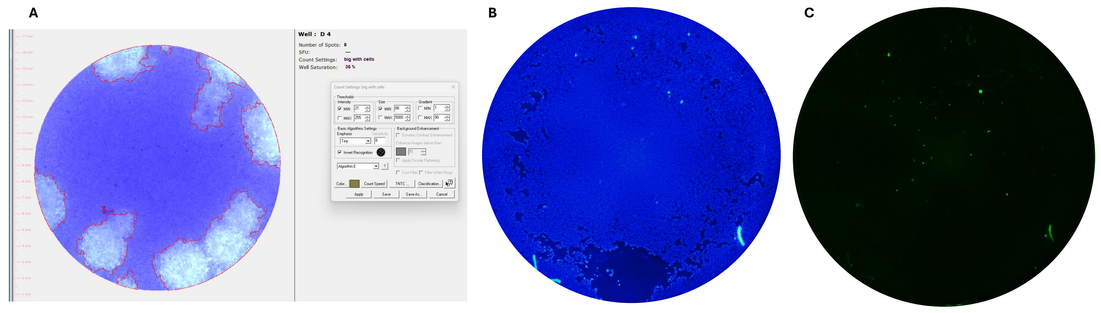

Fig.3 (A) viral plaque assay, well view, with counting dialogue example (red lines). (B) infected cells stained with DAPI and (C) GFP

We treated cells with DMSO (Fig.1) or virus (Fig. 2), measured the CPE or counted the plaques. As the multiSpot is automated, one well can be scanned that the whole well view is possible in magnifications from 4- to 20-fold. The vSpot is able to generate whole-well pictures from all plate formats due to its unique composition (Fig. 3)

These readers enable to quantify easily the CPE to get an overview of the whole wells that no important event is missed. This can be done in order to relate different treated cells and to make results between different experiments comparable.

Fig.4 The AID multiSpot with different examples

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