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A direct high-throughput In Cell-ELISA for measuring infectivity of cytopathic and non-cytopathic bovine viral diarrhoea virus strains applied to the assessment of antiviral activity

Running title: In Cell-ELISA to evaluate antiviral activity

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Declaration of interest: none.

Highlights

- A high-throughput In-Cell ELISA assay was set up to measure viral infectivity
- A non-structural protein is detected directly in the culture plate
- Each result is normalized to the total number of cells in the culture
- The NS3 In Cell-ELISA was applied to cytopathic and non-cytopathic BVDV strains
- Antiviral activity against cytopathic (CP) and non-CP BVDV strains was assessed

Summary

Low-cost high-throughput methods applicable to any virus strain are required for screening antiviral compounds against multiple field strains. Colorimetric cell-viability assays are used for this purpose as long as the viruses are cytopathic (CP) in cell culture. However, bovine viral diarrhoea virus (BVDV) strains circulating in the field are mostly non-cytopathic (NCP). An In Cell-

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