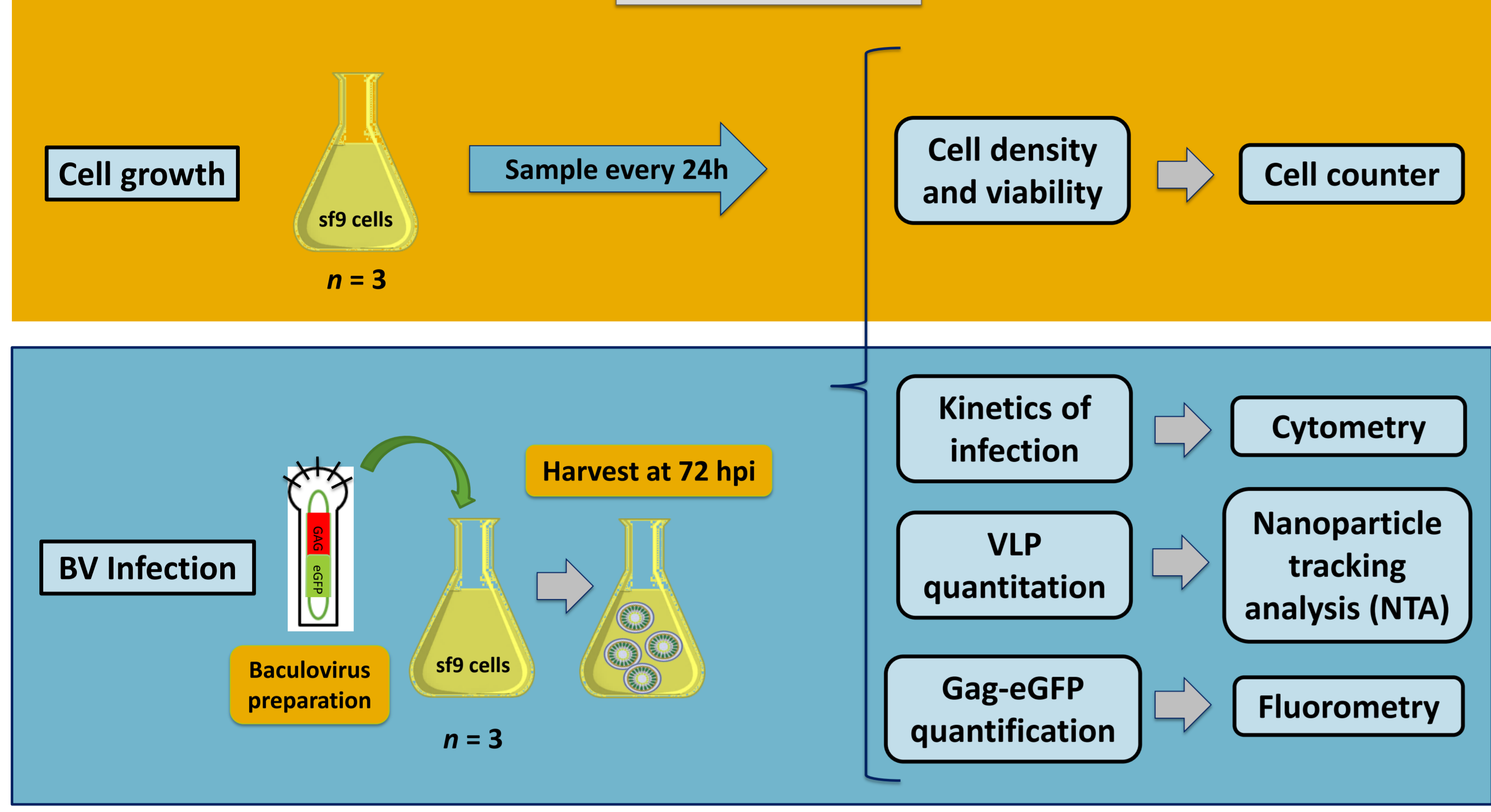


# STUDY OF r-INSULIN SUPPLEMENTATION IN EXPISF9 CELL CULTURES FOR CELL GROWTH AND BACULOVIRUS-DRIVEN HIV-1 VLP PRODUCTION

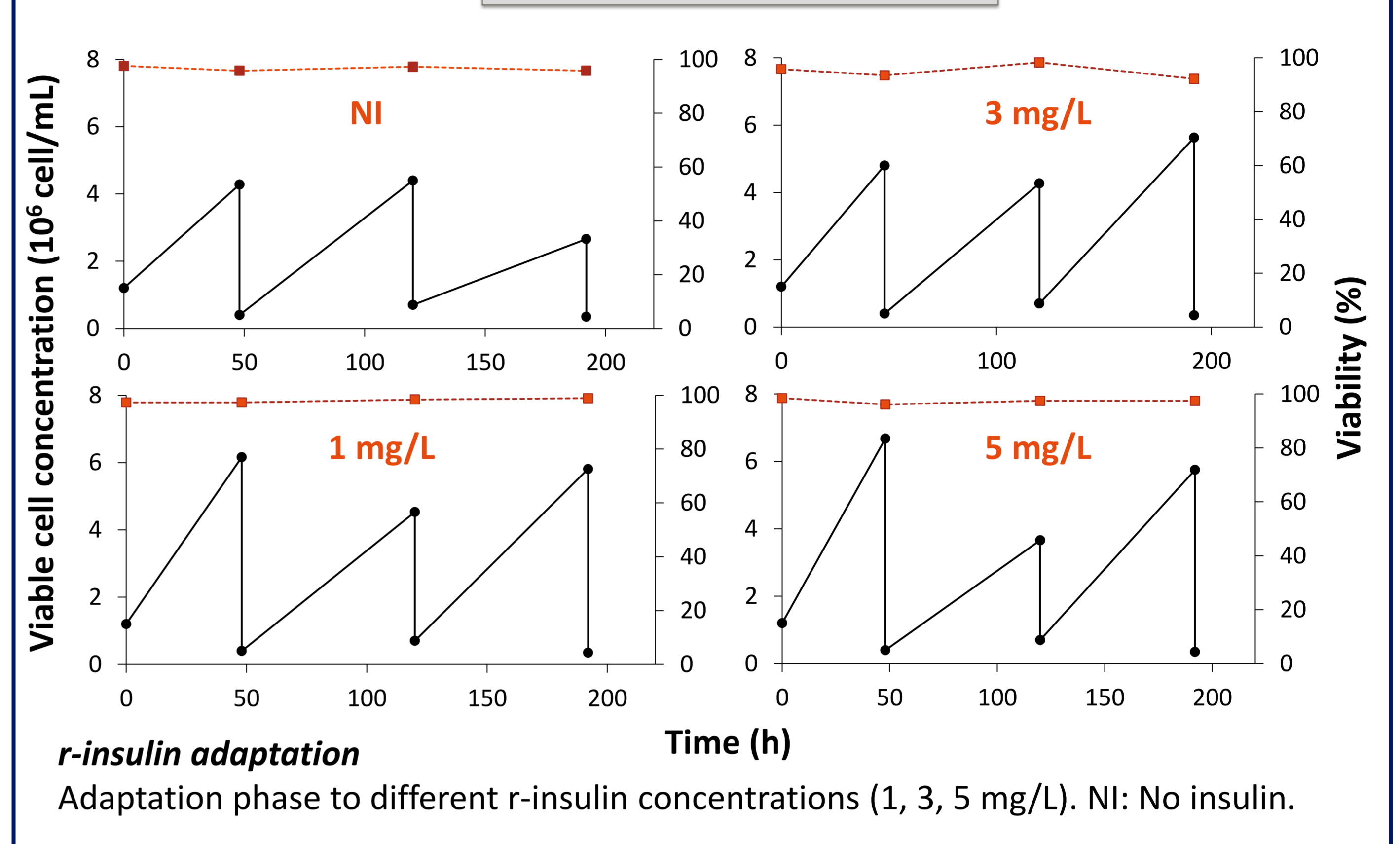
## OUTLINE

The aim of this study was to investigate the effect of r-insulin in Sf9 cell cultures growing in SF CD medium. An initial phase of adaptation to different r-insulin concentration was performed prior to experimentation. The first part focused on the evaluation of r-insulin as a supplement for cell growth and viability maintenance. In the second part, r-insulin was investigated as an enhancer for HIV-1 Gag VLP production through baculovirus infection (BV). The Gag gene was fused in frame to eGFP to ease process characterization and product quantification.

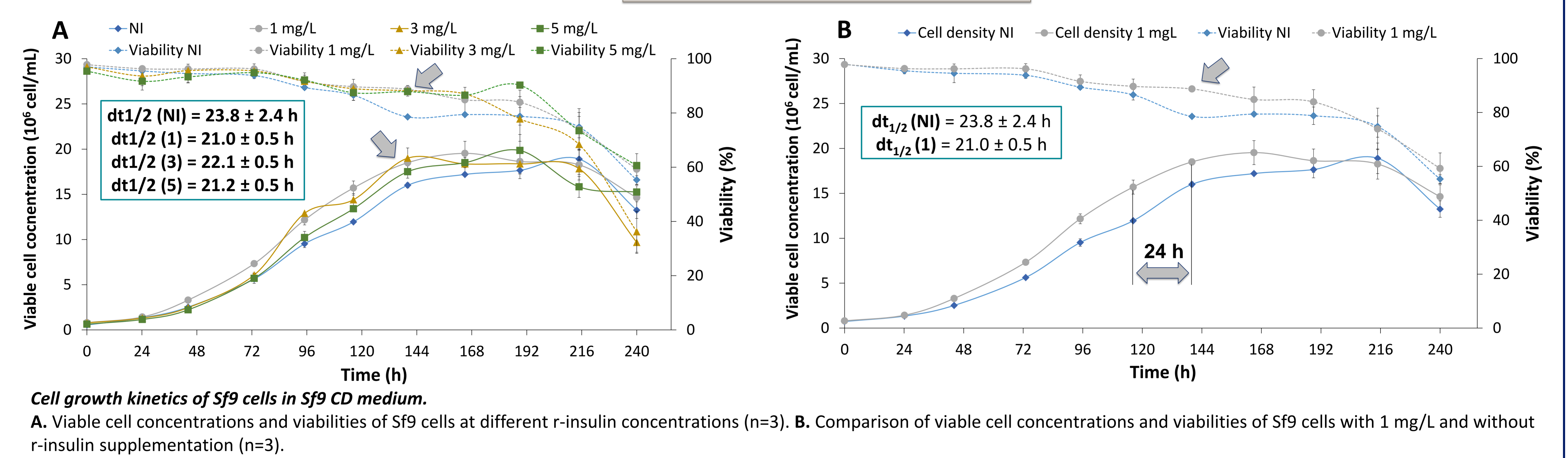
## METHODOLOGY



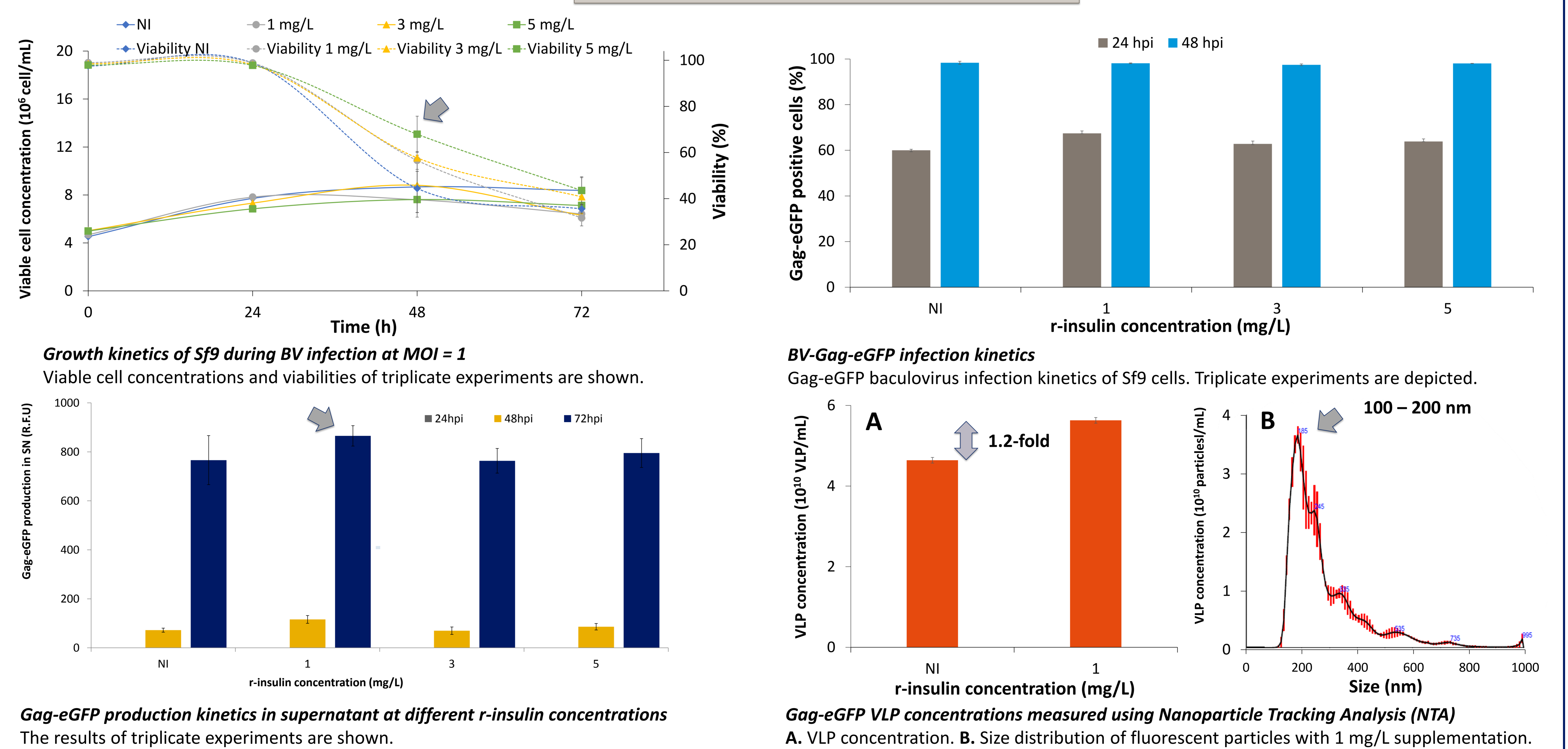
## r-INSULIN ADAPTATION PHASE



## r-INSULIN SUPPLEMENTATION OF SF9 CELLS



## r-INSULIN SUPPLEMENTATION IN BV-INFECTED SF9 CELLS



## CONCLUSIONS

- ✓ A 1.1-fold reduction in dt<sub>1/2</sub> was achieved with 1 mg/L r-insulin supplementation
- ✓ A 1.2-fold improvement in maximal viable cell concentration was obtained with 1 mg/L r-insulin
- ✓ A 1.2-fold increase in VLP production was attained with 1 mg/L r-insulin

## REFERENCES

Cervera, L. et al. *Journal of Biotechnology*.166, 152–165 (2013).  
Puente-Massaguer, E. et al. *Engineering in Life Sciences*. 1–13 (2019).

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