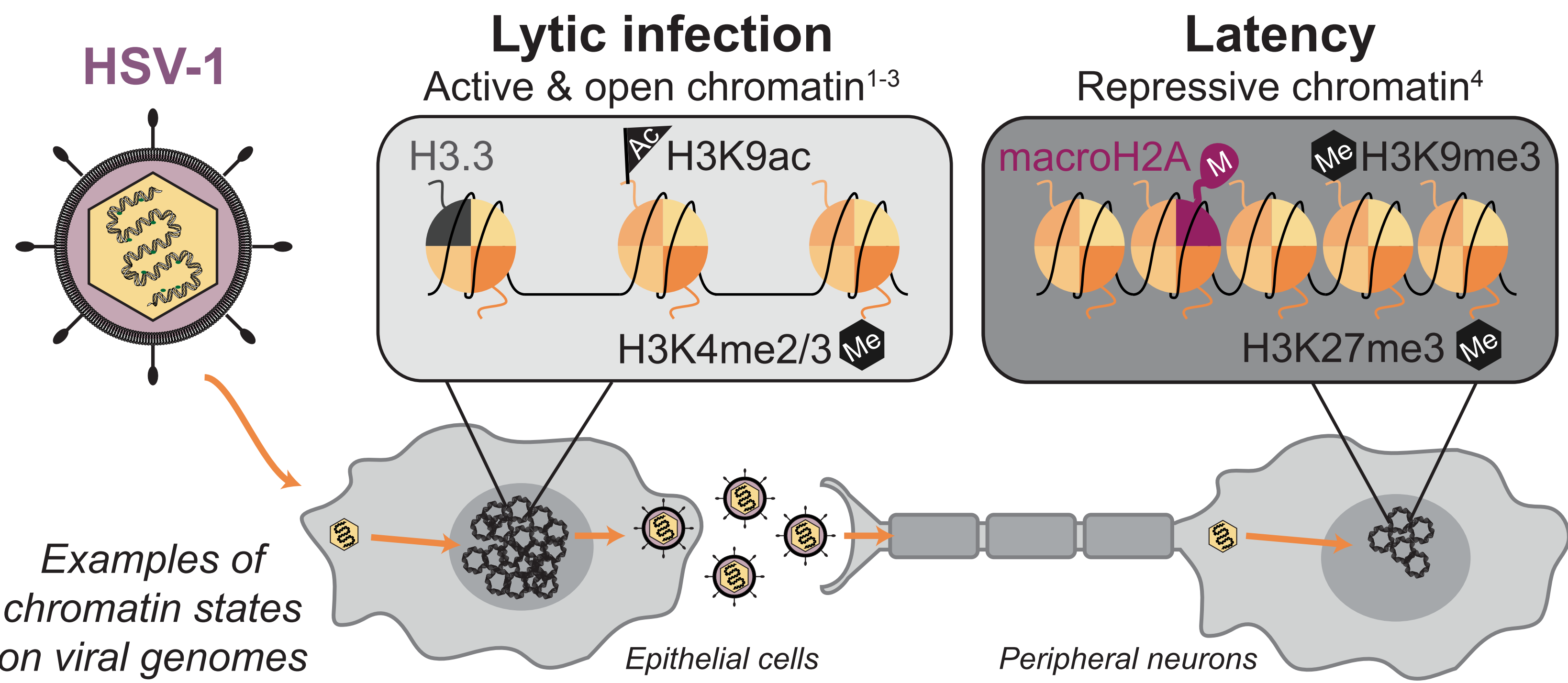


# The function of histone variant macroH2A1 during HSV-1 infection

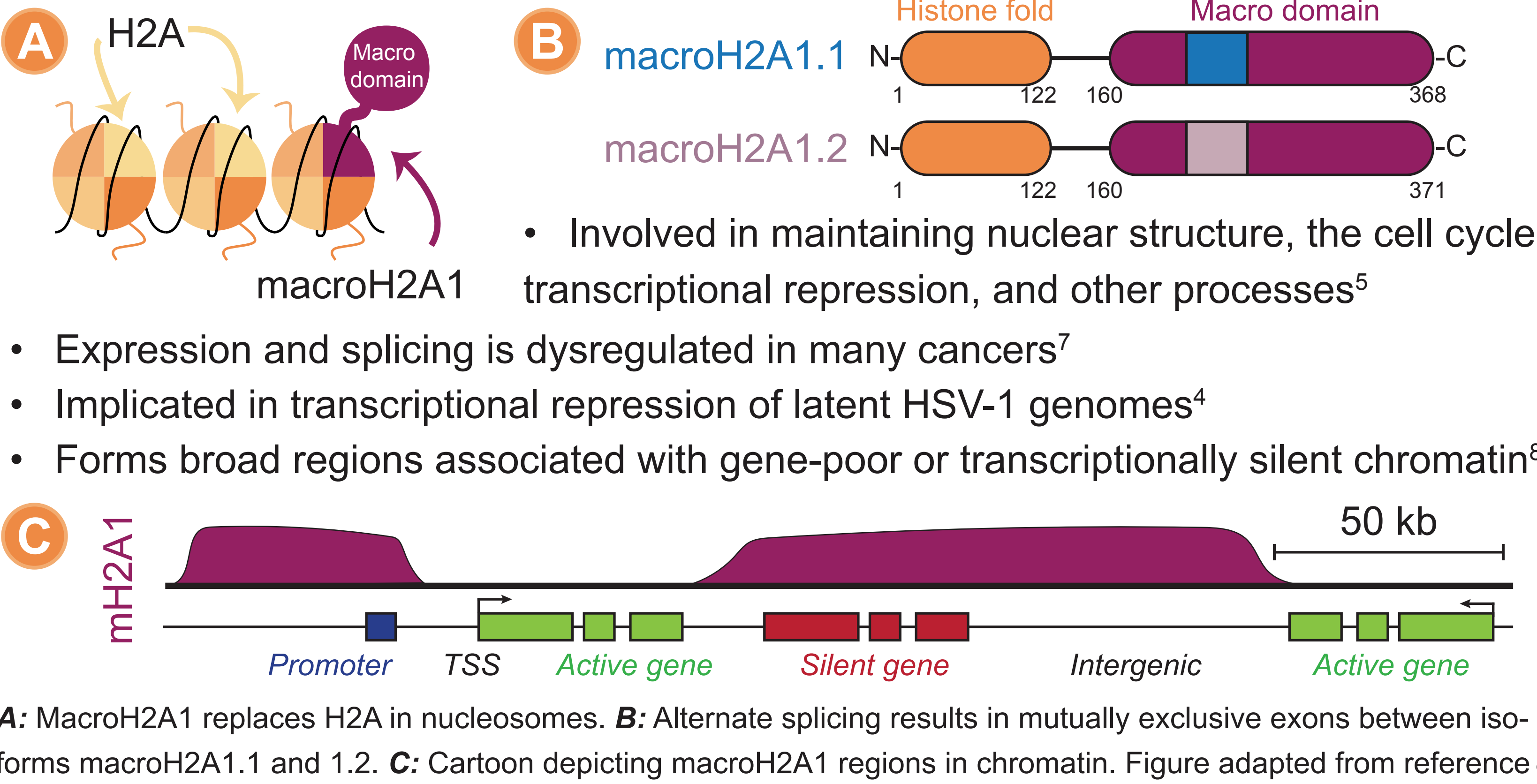
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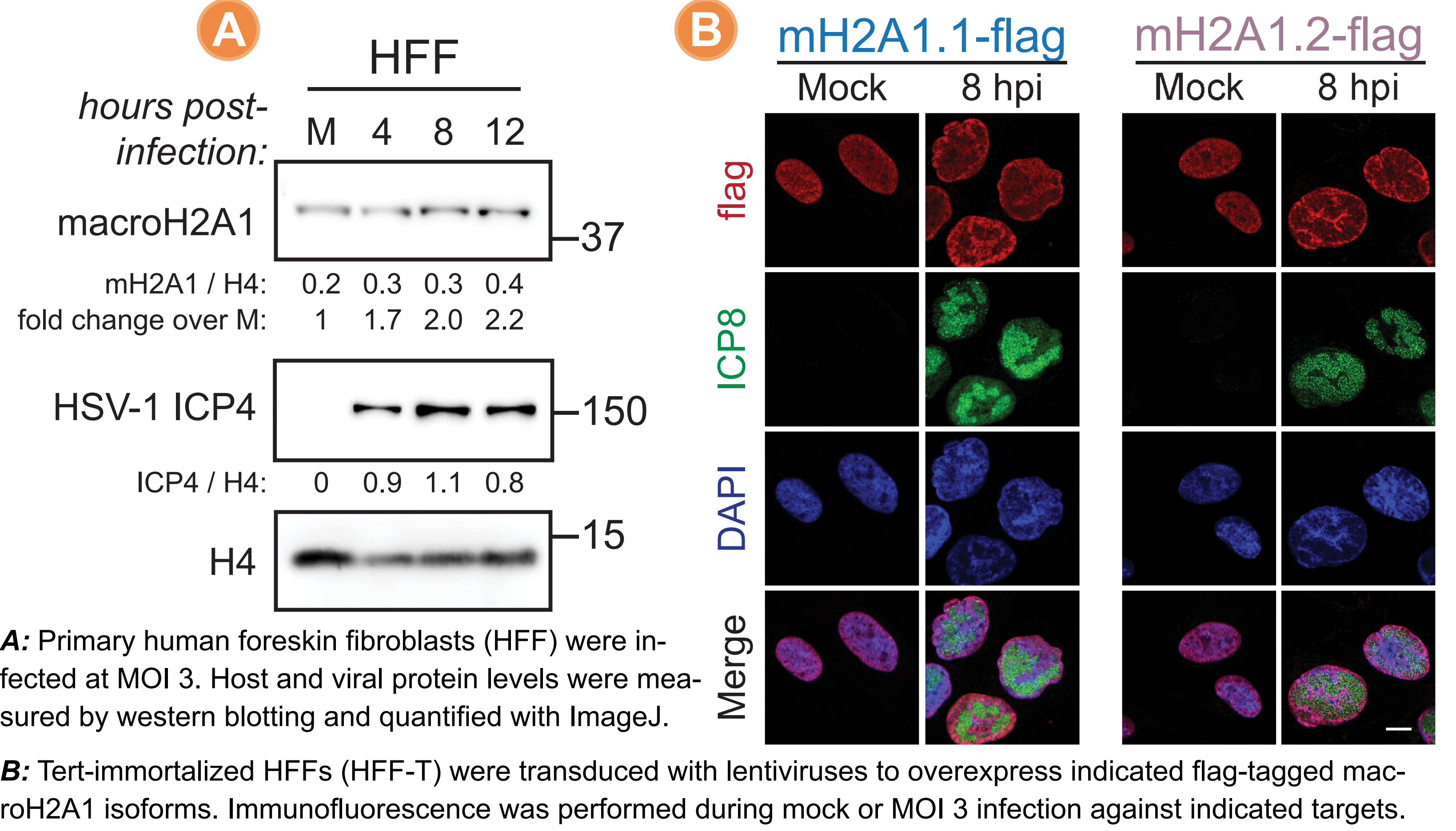
## 1. Herpes simplex virus hijacks host chromatin factors to facilitate infection and persistence



## 2. MacroH2A1 is an enigmatic variant of H2A

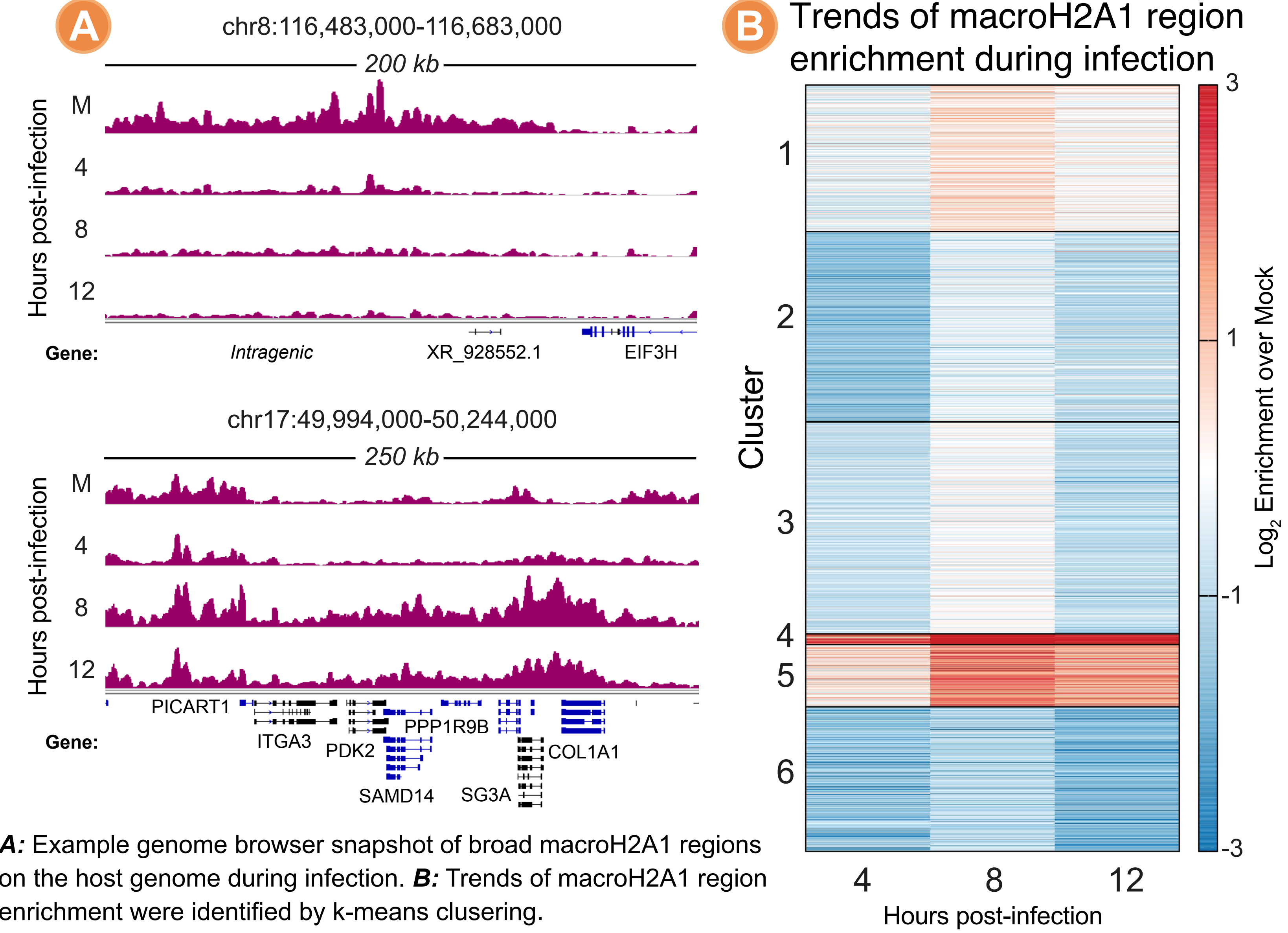


## 3. MacroH2A1 protein levels and localization are disrupted during lytic HSV-1 infection

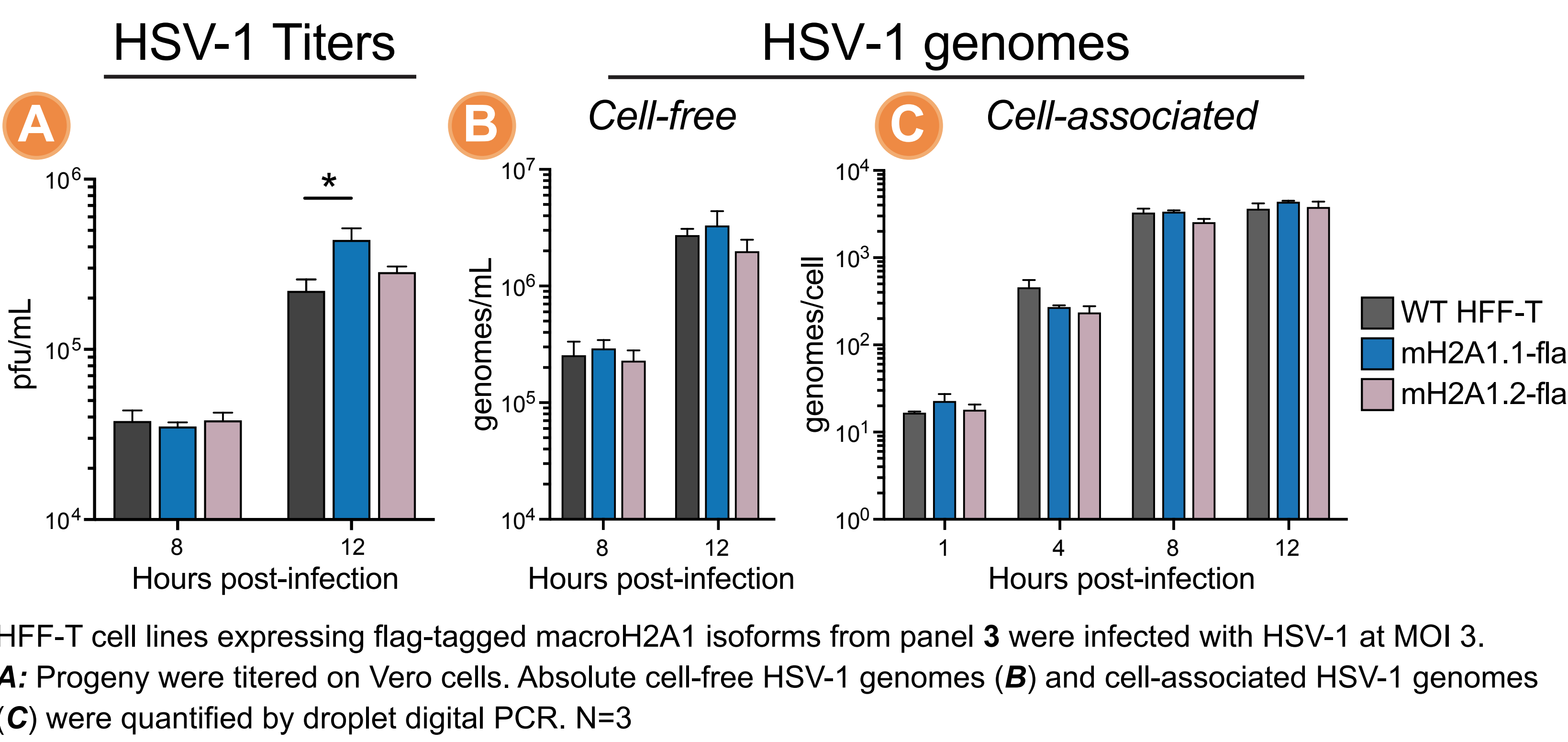


## Hypothesis: macroH2A1 promotes HSV-1 lytic infection by reorganizing host chromatin

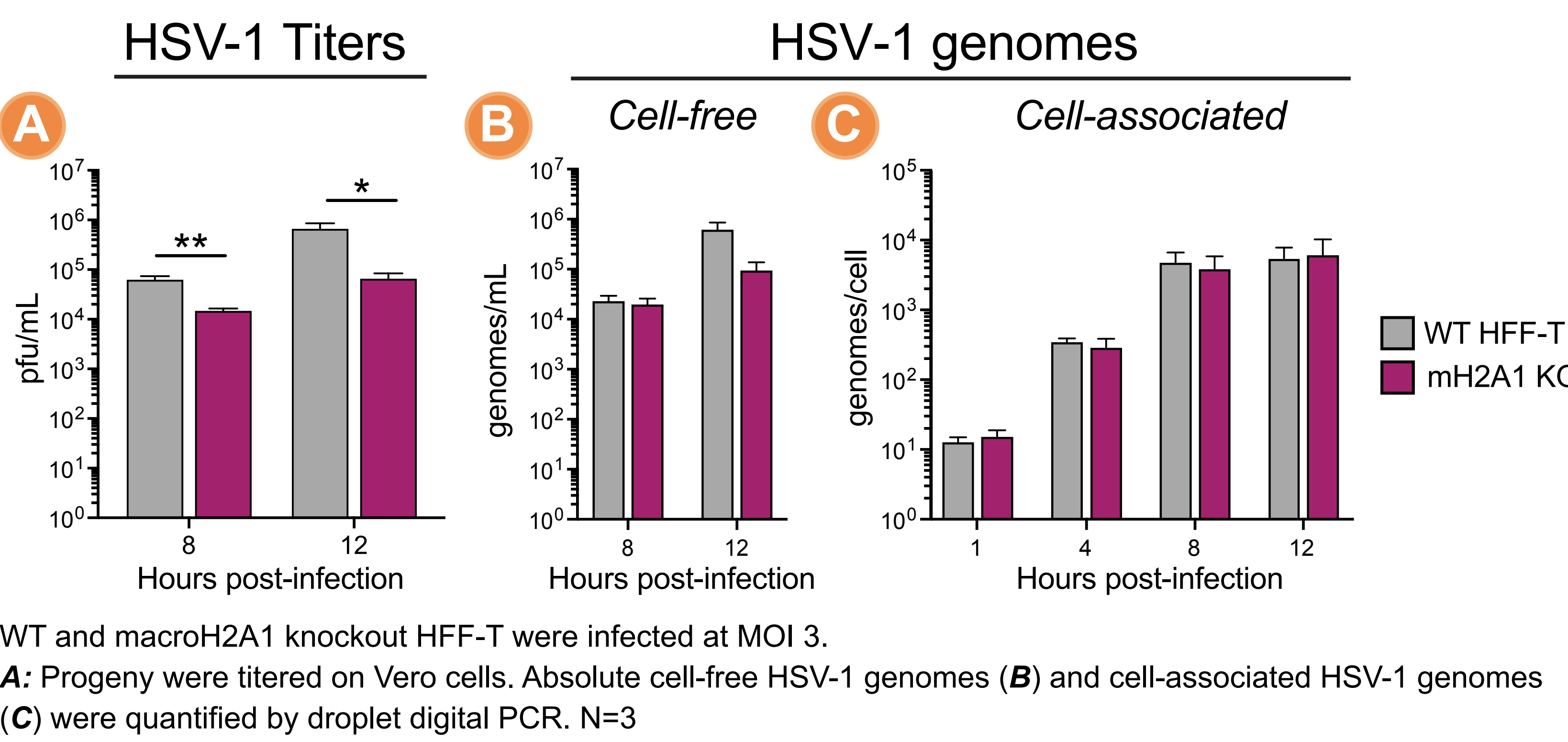
## 4. Broad macroH2A1 regions in chromatin are dynamic during infection



## 5. MacroH2A1 overexpression enhances viral progeny production but not replication



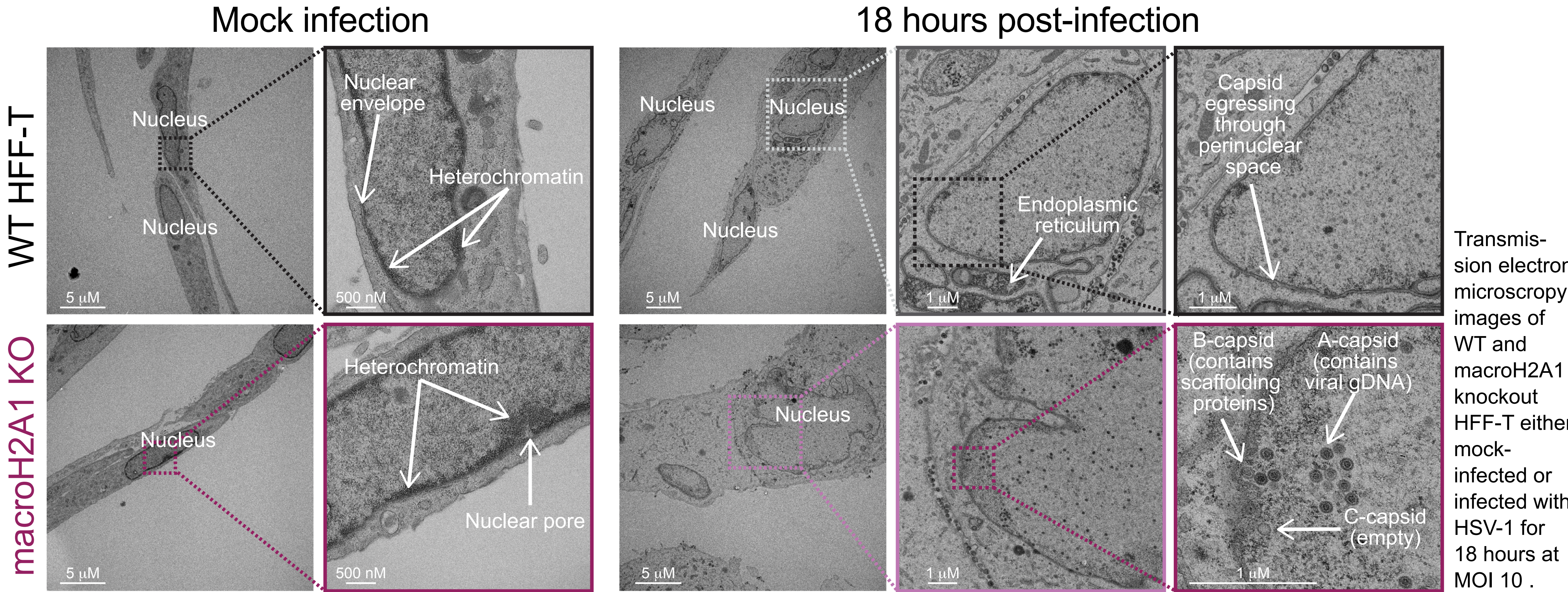
## 6. MacroH2A1 knockout results in defective progeny production



## 7. MacroH2A1 loss may impact nuclear size and lead to a defect in HSV-1 nuclear egress

Current questions:

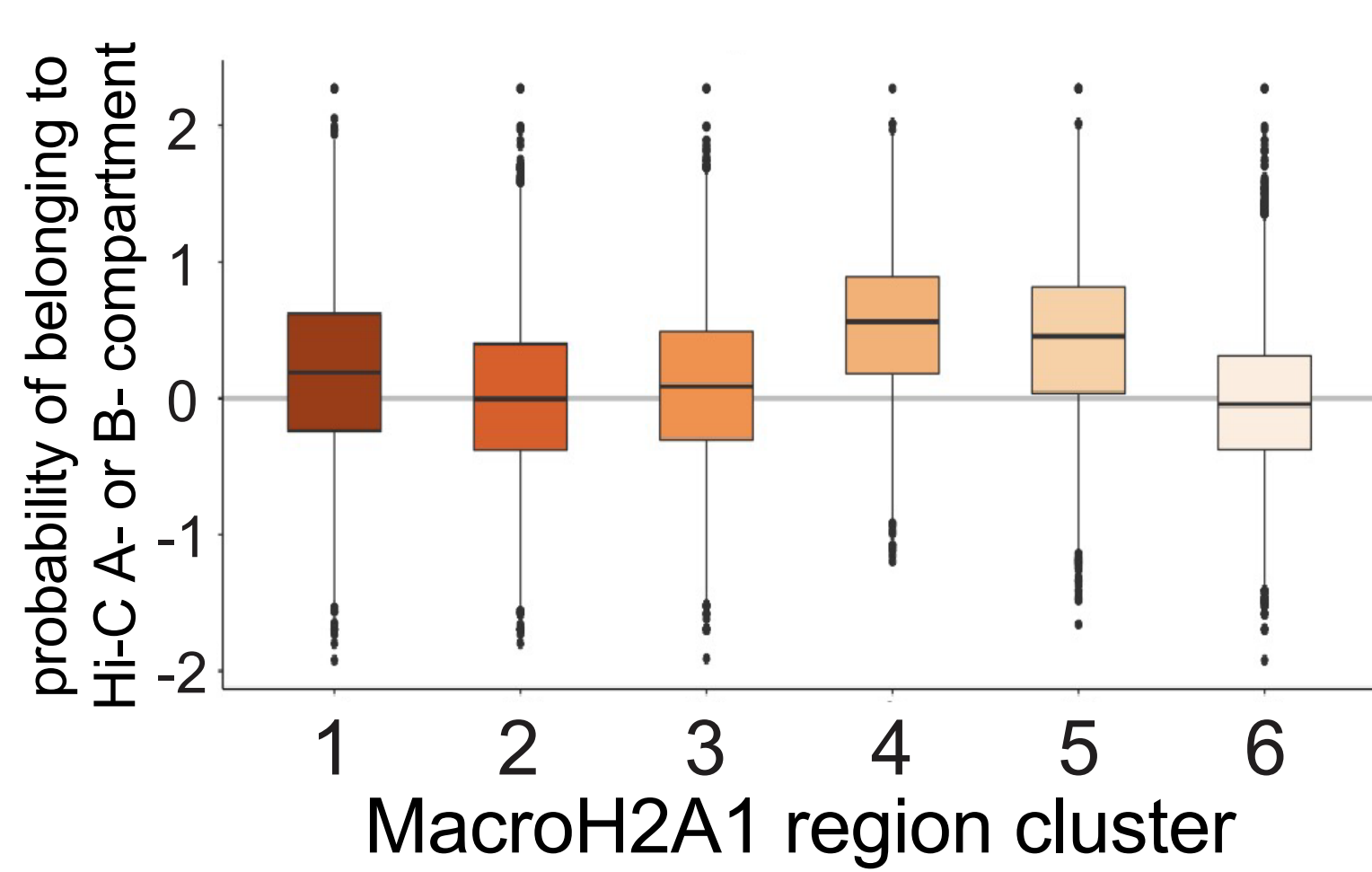
- 1) How does nuclear size differ between WT and macroH2A1 KO cells?
- 2) How does number of capsids per  $\mu\text{m}^2$  nucleus differ between cell types?
- 3) How many A, B or C capsids are in each nucleus? How does this proportion differ between cell types?



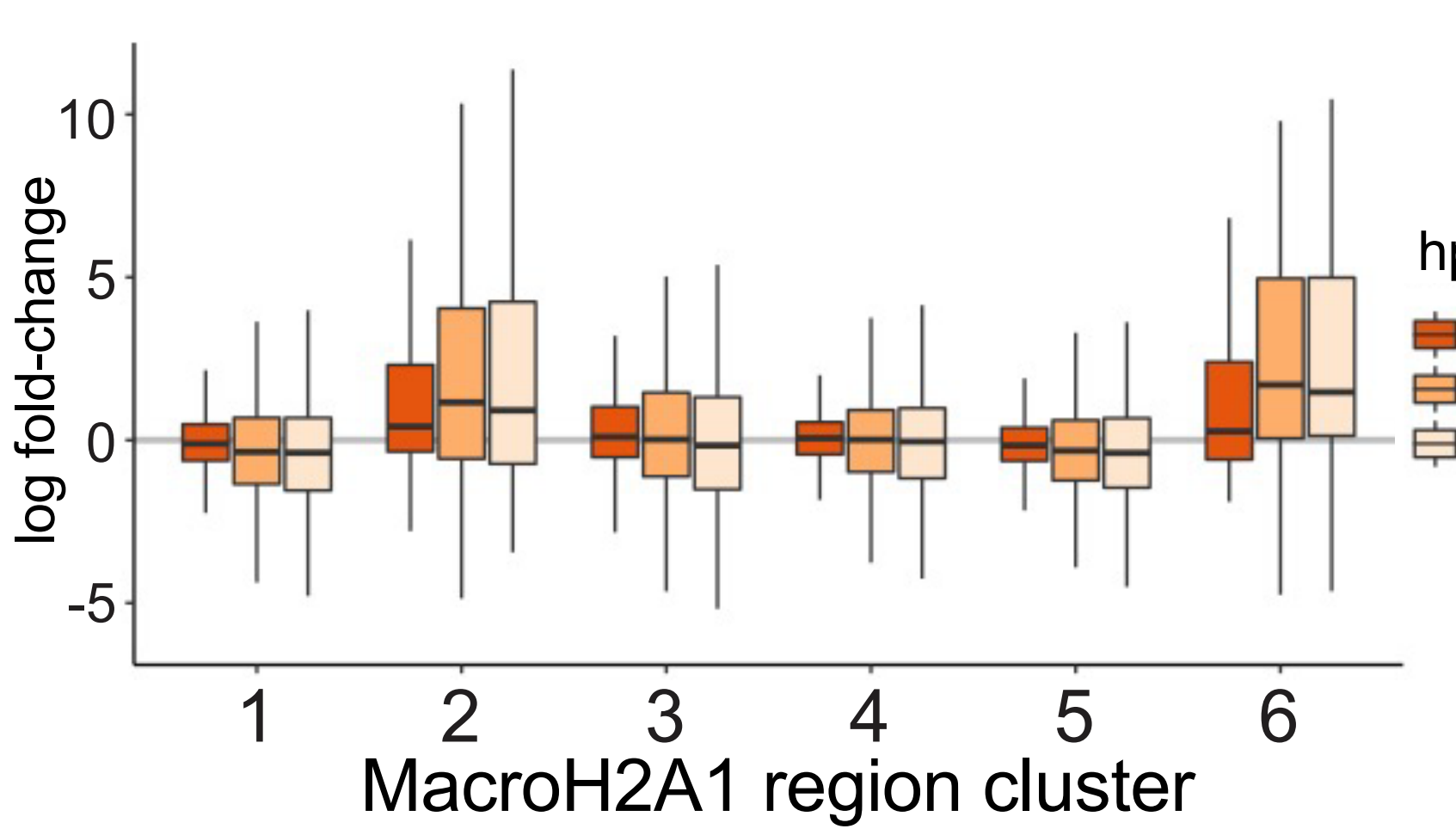
## 8. Future directions

**Working model:** MacroH2A1 maintains nuclear structure during infection and loss of macroH2A1 negatively impacts HSV-1 egress

1) Do macroH2A1 regions correlate more with eu- or heterochromatin?



2) How do macroH2A1 regions impact host gene expression during infection?



## 8. References & Acknowledgements

**References:**

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