## **Supplementary Table 1.**

|              | Strain | Engineered mutations                                  |
|--------------|--------|---|
| hrR3         | KOS    | 1. Wild type of both γ34.5 copies                     |
|              |        | 2. LacZ insertion in UL39 (ICP6-inactivation)         |
| rHSVQ        | F      | 1. Deletion of both γ34.5 copies                      |
|              |        | 2. GFP insertion in UL39 (ICP6-inactivation)          |
| rQnestin34.5 | F      | 1. Deletion of both γ34.5 copies                      |
|              |        | 2. Re-insertion of γ34.5 regulated by nestin promoter |
|              |        | 2. GFP insertion in UL39 (ICP6-inactivation)          |