



**Supplemental Fig. S3. Expression of *clag3.1* and *clag3.2* in subclones of isolate V033** (obtained from a volunteer infected with parasites of the NF54 line). Subclones were obtained by limiting dilution. Two out of nine subclones (5H and 7H) expressed *clag3.1* almost exclusively, whereas all other subclones likely originated from *clag3.2*-expressing single parasites. In the latter subclones, during the 3-4 weeks in culture elapsed between limiting dilution and transcriptional analysis parasites that spontaneously switched to *clag3.1* expression were progressively selected. This interpretation is based on the observation that in the NF54 genetic background parasites that express *clag3.1* are selected under culture conditions (Fig. 4C). The similar transcript levels of *clag3.1* and *clag3.2* observed in parasites from volunteer V033 (Fig. 4B) are consistent with the number of *clag3.1*-expressing subclones obtained (two out of nine) because *clag3.1* has a stronger promoter than *clag3.2* [1, 2], implying that similar transcript levels of *clag3.1* and *clag3.2* reflect a higher proportion of *clag3.2*-expressing parasites. Altogether, the transcriptional analysis of V033 subclones revealing two clearly distinct types of subclones suggests that the V033 isolate predominantly consists of a mixture of parasites expressing *clag3.1* and parasites expressing *clag3.2*, rather than a homogeneous population of parasites expressing the two genes simultaneously, but mutual exclusion is directly demonstrated only for parasites expressing *clag3.1*, and inferred for parasites expressing *clag3.2*. Transcript levels are normalized against *rhoph2*. Error bars are SD.

### References.

1. Crowley VM, Rovira-Graells N, de Pouplana LR, Cortés A. Heterochromatin formation in bistable chromatin domains controls the epigenetic repression of clonally variant *Plasmodium falciparum* genes linked to erythrocyte invasion. *Mol Microbiol* **2011**; 80:391-406.
2. Rovira-Graells N, Crowley VM, Bancells C, Mira-Martínez S, Ribas de Pouplana L, Cortés A. Deciphering the principles that govern mutually exclusive expression of *Plasmodium falciparum* *clag3* genes. *Nucleic Acids Res* **2015**; 43:8243-57.