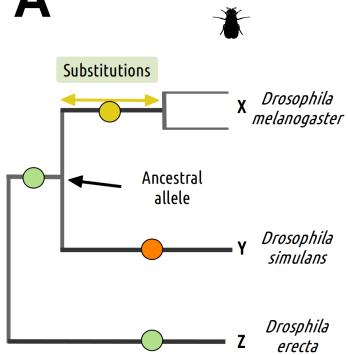


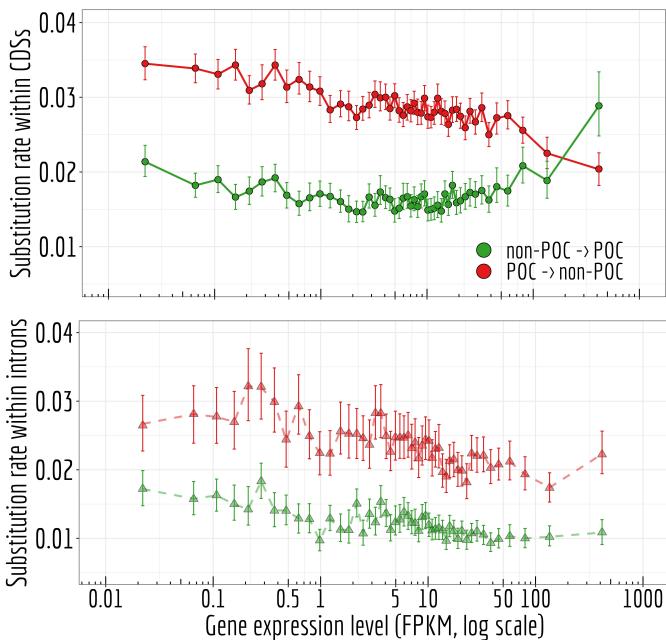
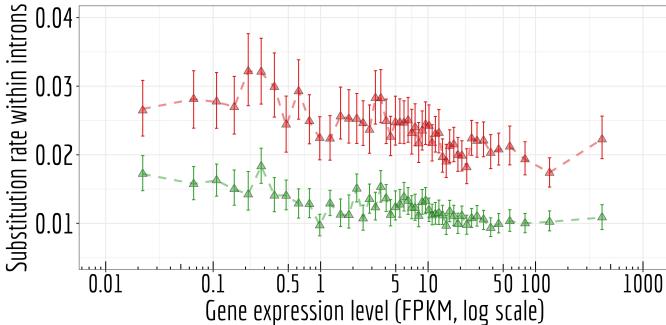
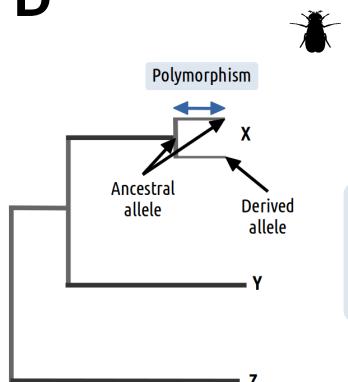
**A**

We defined the ancestral allele invoking at most one substitution event to explain the observation on the three species

If  $X = Y$  or  $X = Z \rightarrow$  ancestral = X (i.e. no substitution)

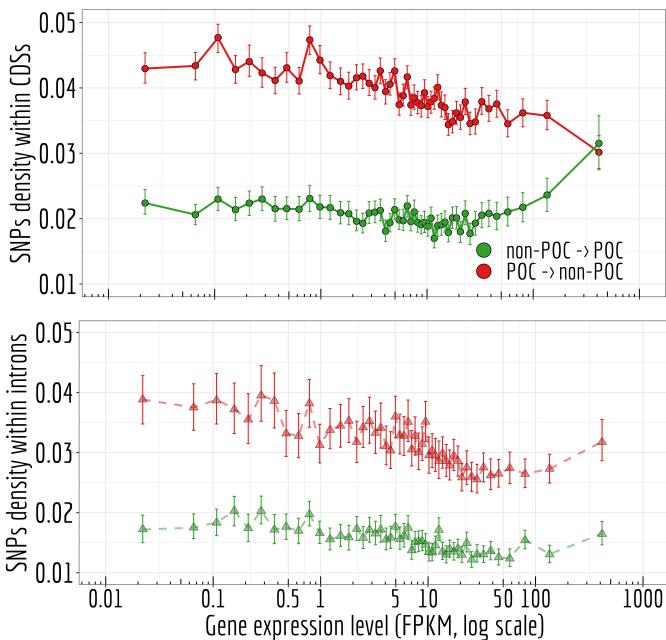
If  $Y = Z$  and  $Y \neq X \rightarrow$  ancestral = Y (i.e. substitution  $Y \rightarrow X$ )

Else  $\rightarrow$  ancestral = Undefined

**B****C****D**

For polymorphic sites with less than 181 genotyped individuals Undefined

SNP polarization with est-sfs based on Derived Allele frequency spectrum and outgroup species

**E****F**