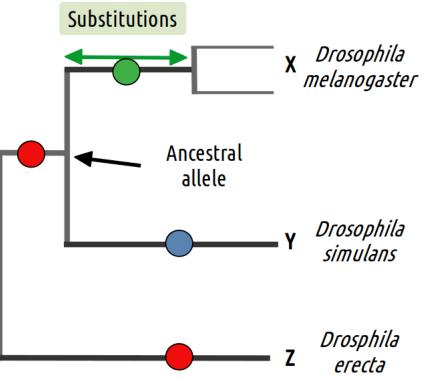


A

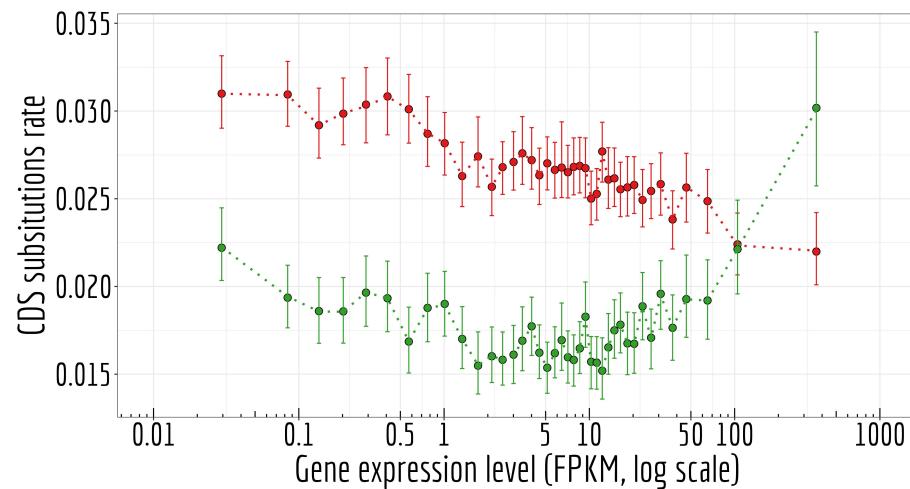
We defined the ancestral allele invoking at most one substitution event to explain the observation on the three species

- 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

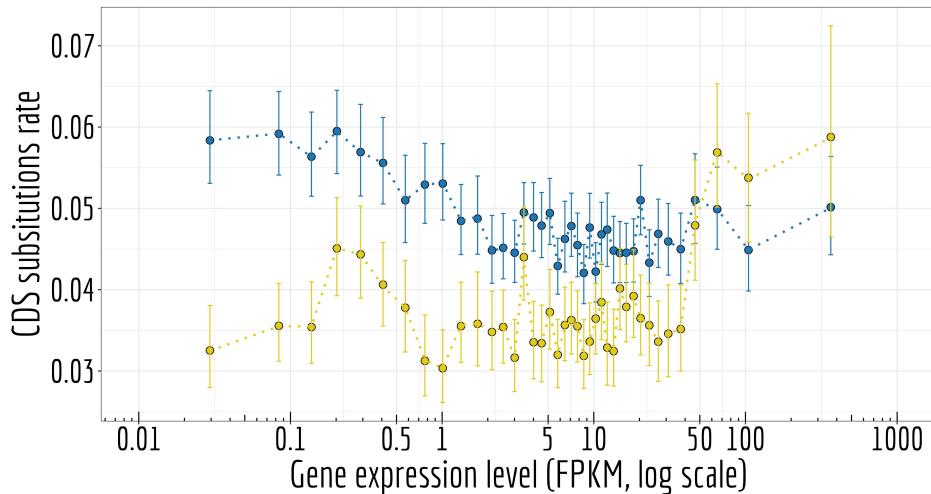
POC for non ambiguous amino acid

● non-POC → POC ● POC → non-POC

**C**

Wobble G:U for ambiguous duets

- watson-crick (NNC) → wobble (NNT)
- wobble (NNT) → watson-crick (NNC)

**D**

Wobble I:C

- watson-crick (NNT) → wobble (NNC)
- wobble (NNC) → watson-crick (NNT)

