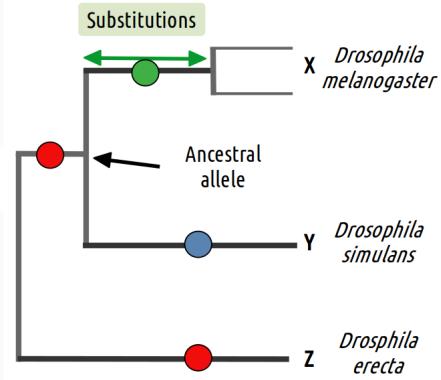


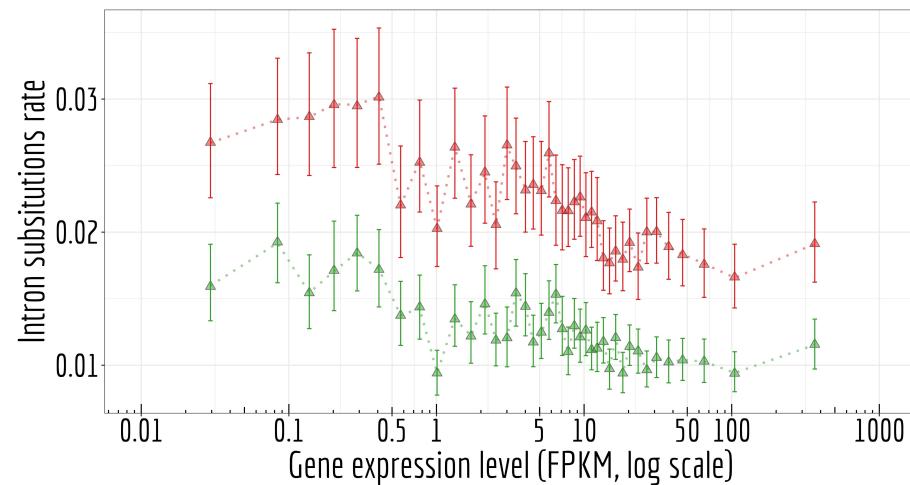
A

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**

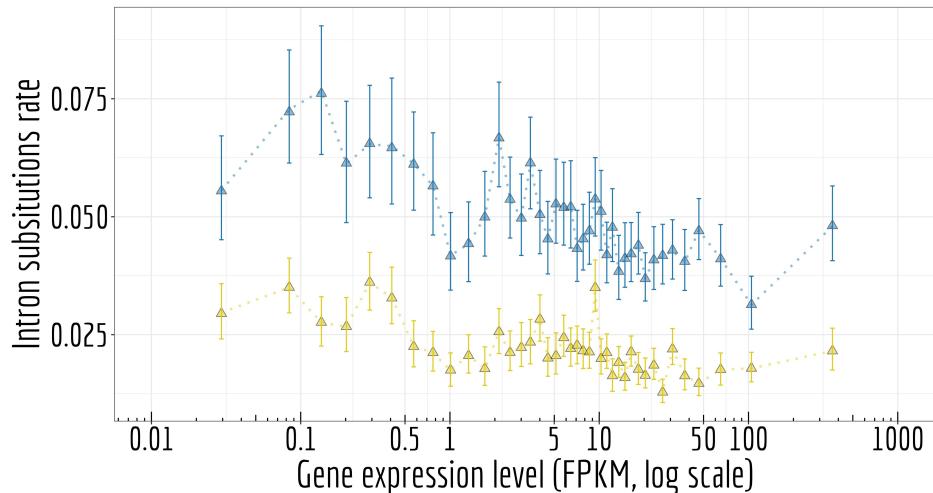
B

POC for non ambiguous amino acid

● non-POC \rightarrow POC ● POC \rightarrow non-POC
**C**

Wobble G:U for ambiguous duets

- watson-crick (NNC) \rightarrow wobble (NNT)
- wobble (NNT) \rightarrow watson-crick (NNC)

**D**

Wobble I:C

- watson-crick (NNT) \rightarrow wobble (NNC)
- wobble (NNC) \rightarrow watson-crick (NNT)

