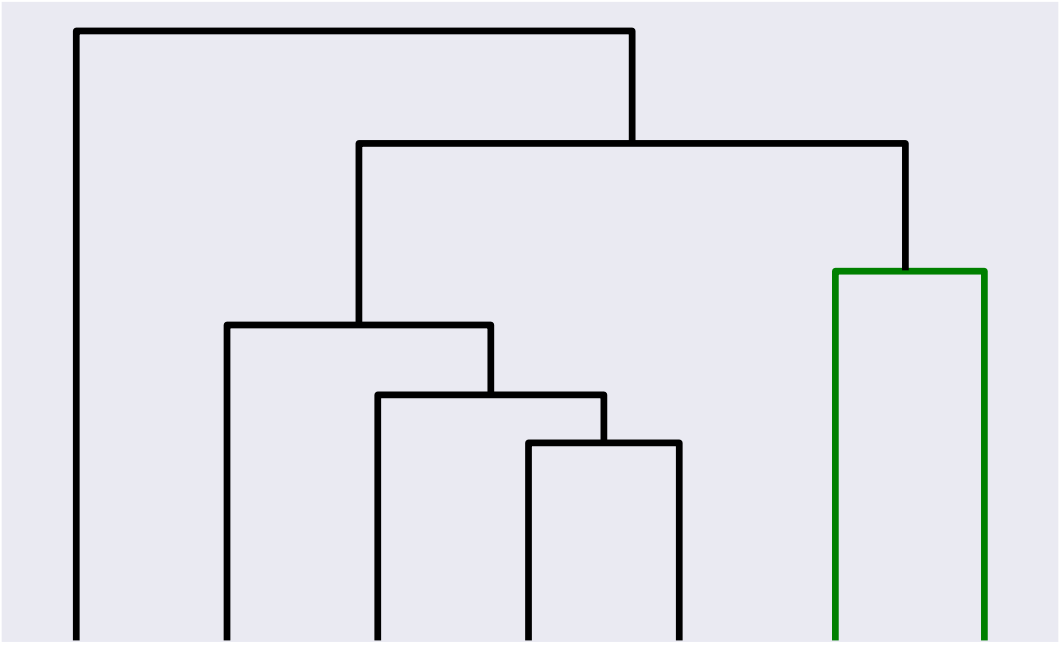
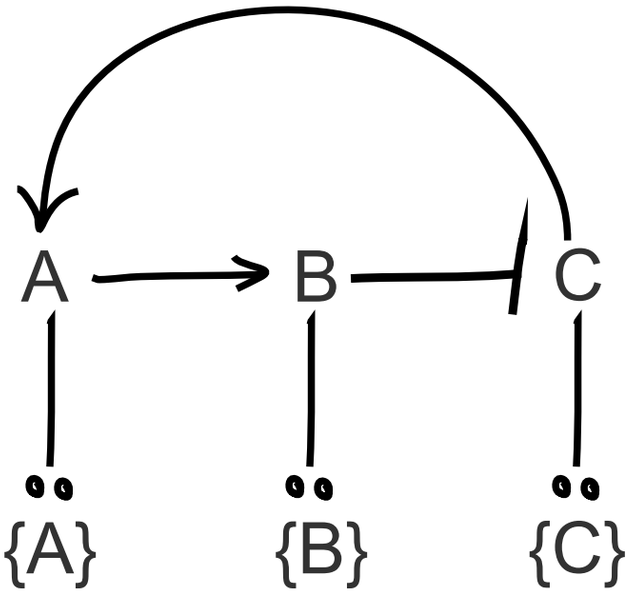
$$\vdash$$

$$:$$

$$\rightarrow$$

$$\rho$$


fog-2
vhl-1
egl-9; vhl-1
rhy-1
egl-9
hif-1
hif-1; egl-9



C^{-}: $\{A^0\}$, $\{B^0\}$, $\{C^0\}$

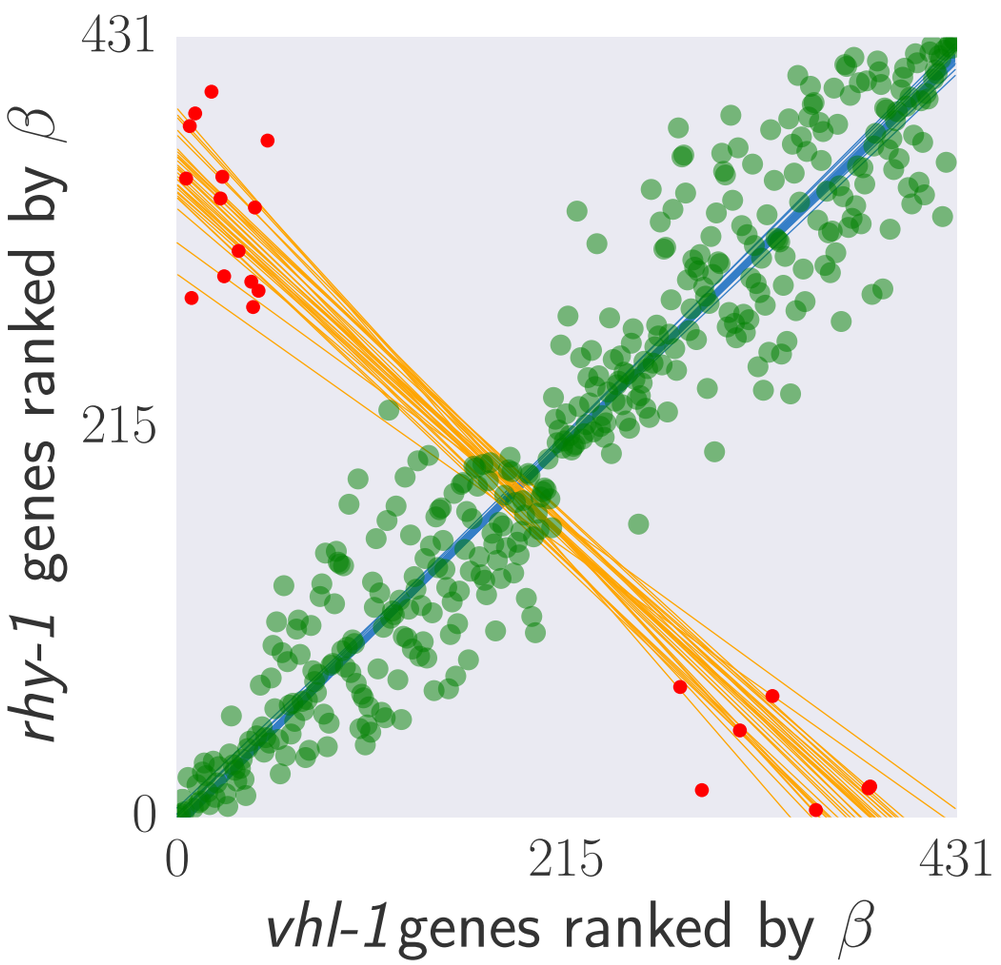
B^{-}: $\{A^2\}$, $\{B^0\}$, $\{C^2\}$

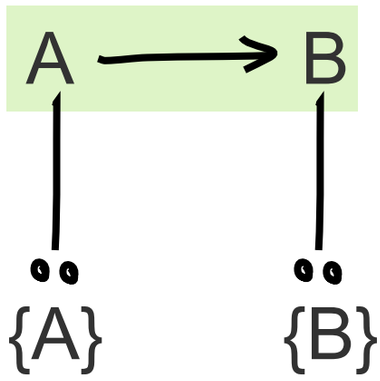
$\rho(C, B) = \text{corr}(\{B^0\},\{B^0\})$

$= 1$

$\rho(C, B) = \text{corr}(\{A^0\}\{A^2\};\{C^0\}\{C^2\})$

$= -1$

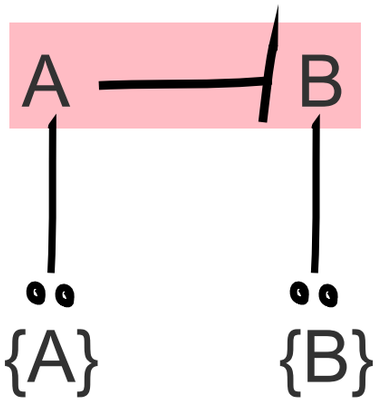




A^-: $\{A^0\}$, $\{B^0\}$

B^-: $\{A^1\}$, $\{B^0\}$

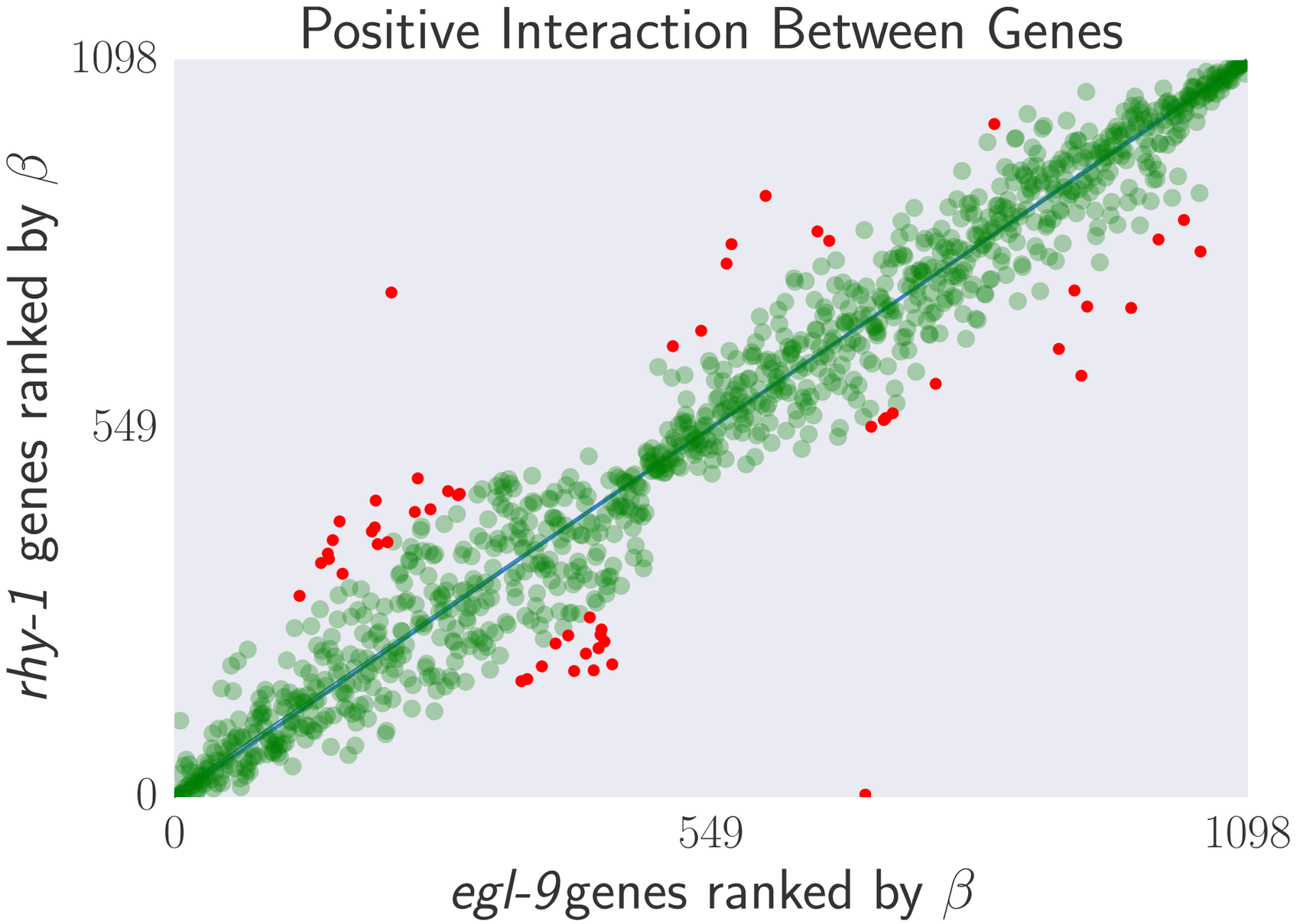
$\rho(A, B) = corr(\{B^0\}\{B^0\}) = 1$

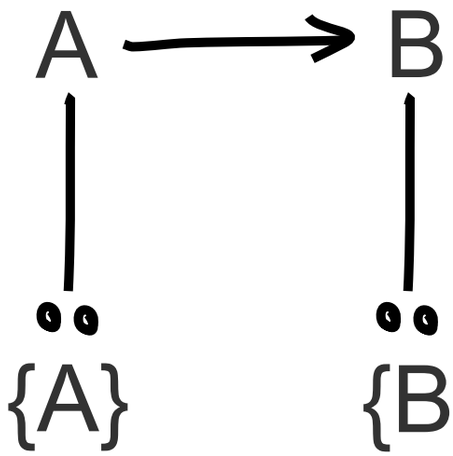


A^-: $\{A^0\}$, $\{B^2\}$

B^-: $\{A^1\}$, $\{B^0\}$

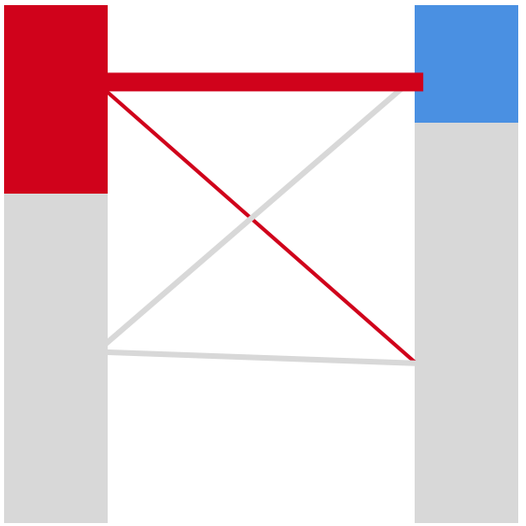
$\rho(A, B) = corr(\{B^2\}\{B^0\}) = -1$



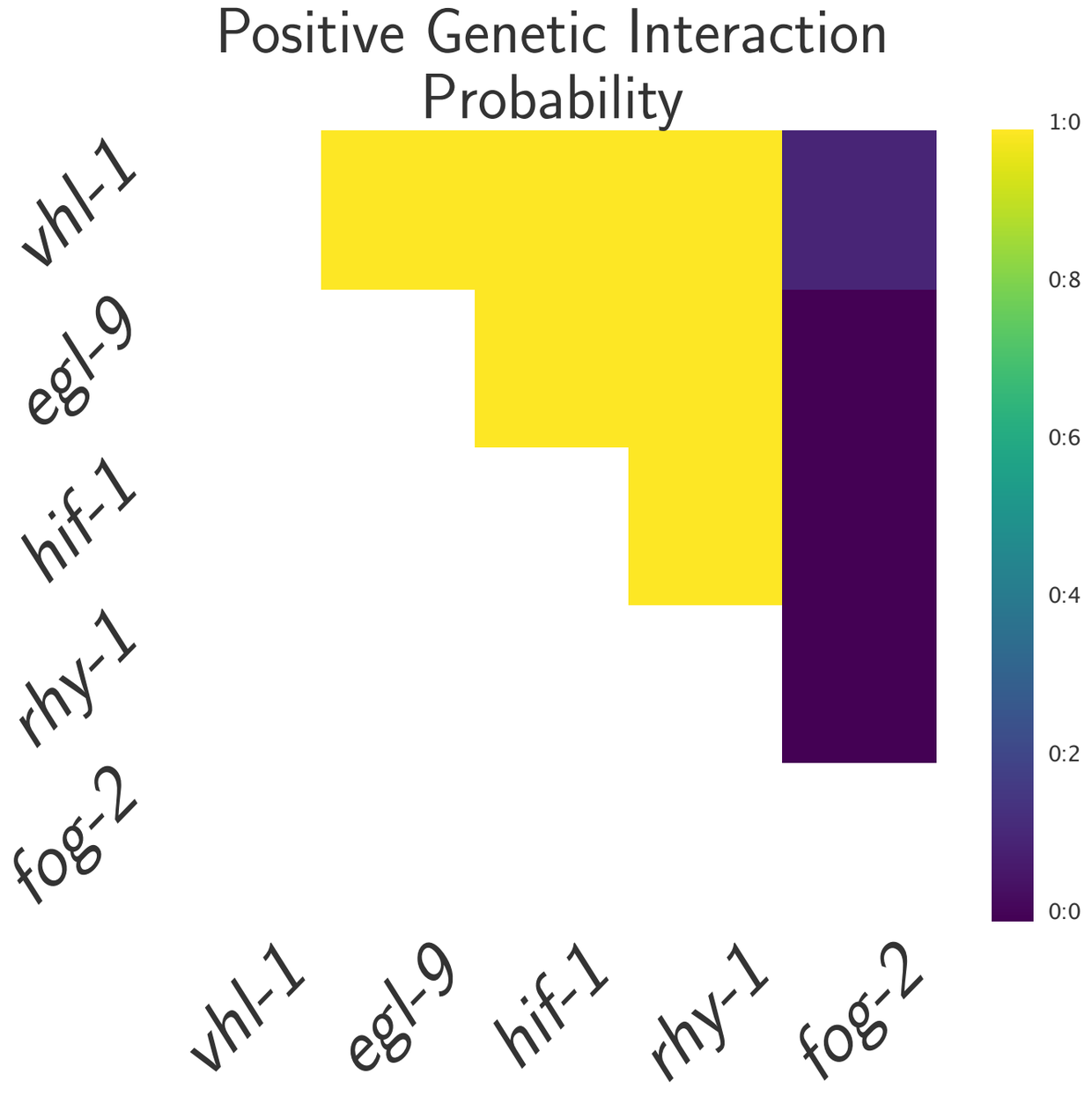


$\bar{A}$: $\{A^0\}$, $\{B^0\}$

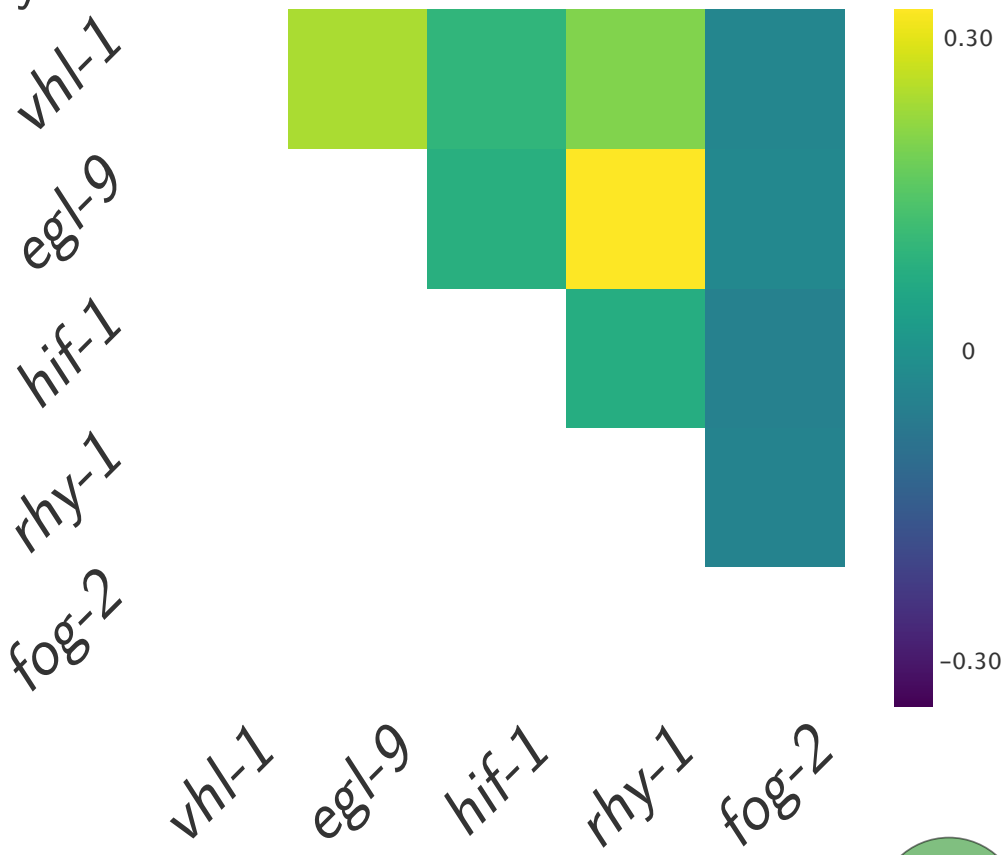
$\bar{B}$: $\{A^1\}$, $\{B^0\}$

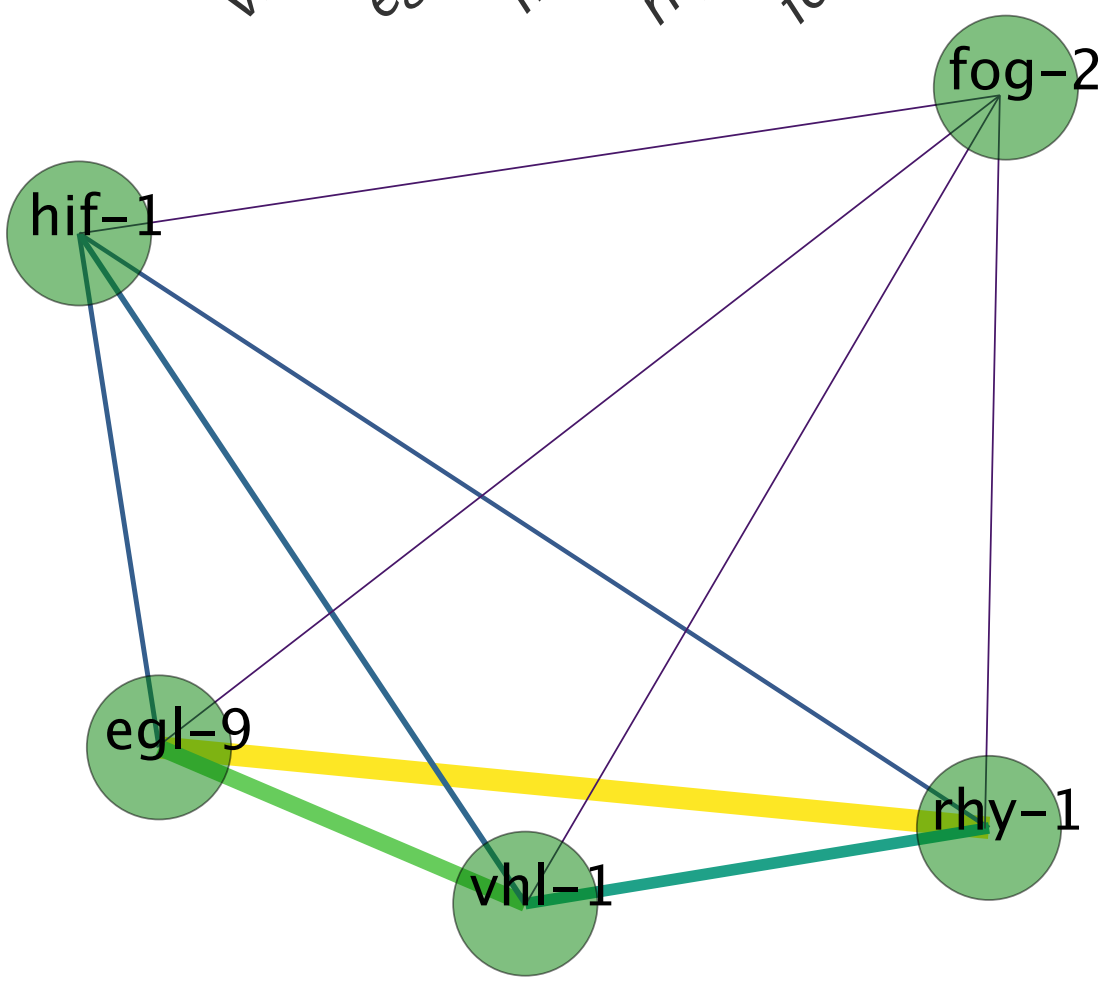


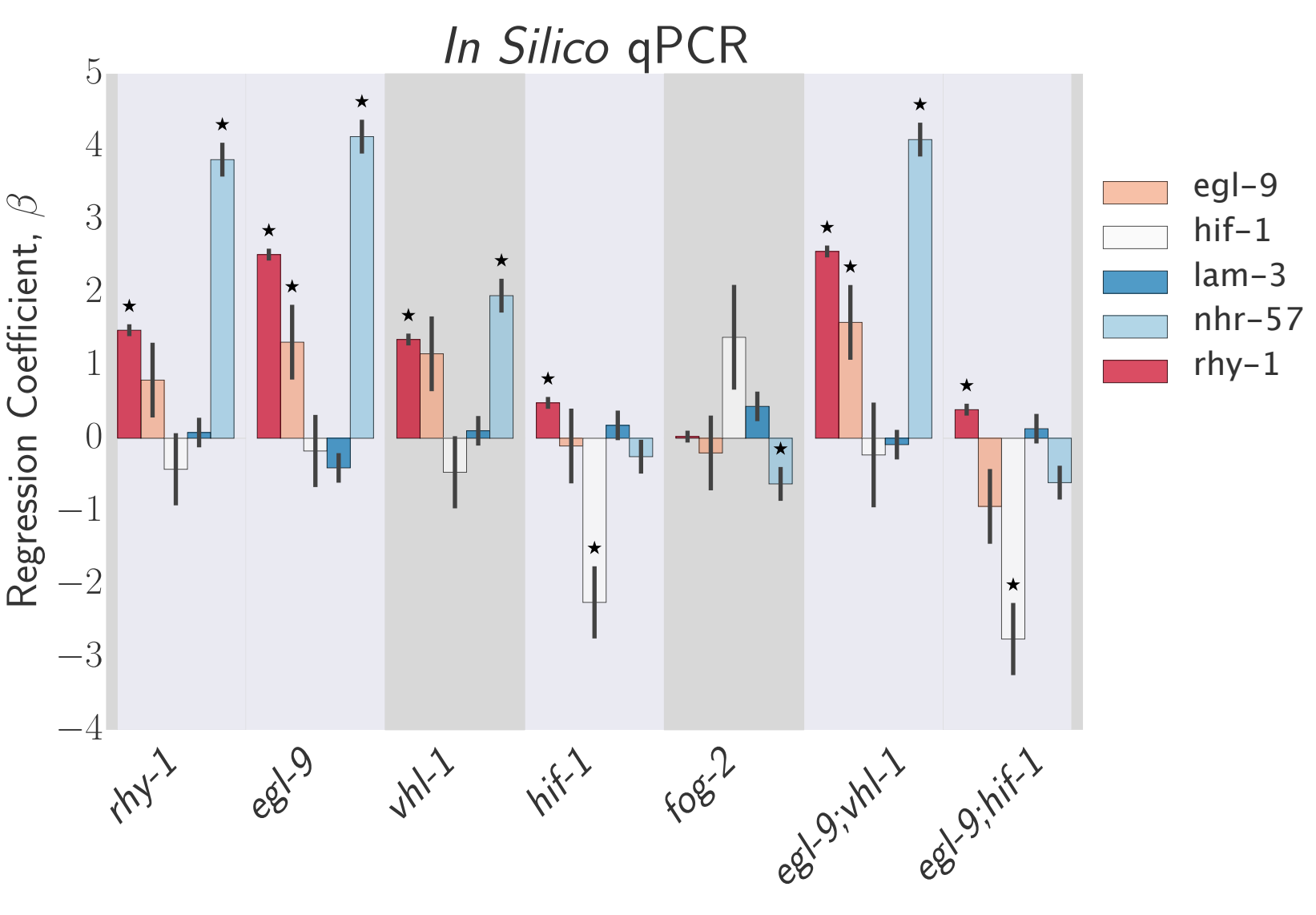
P(B was drawn from A)

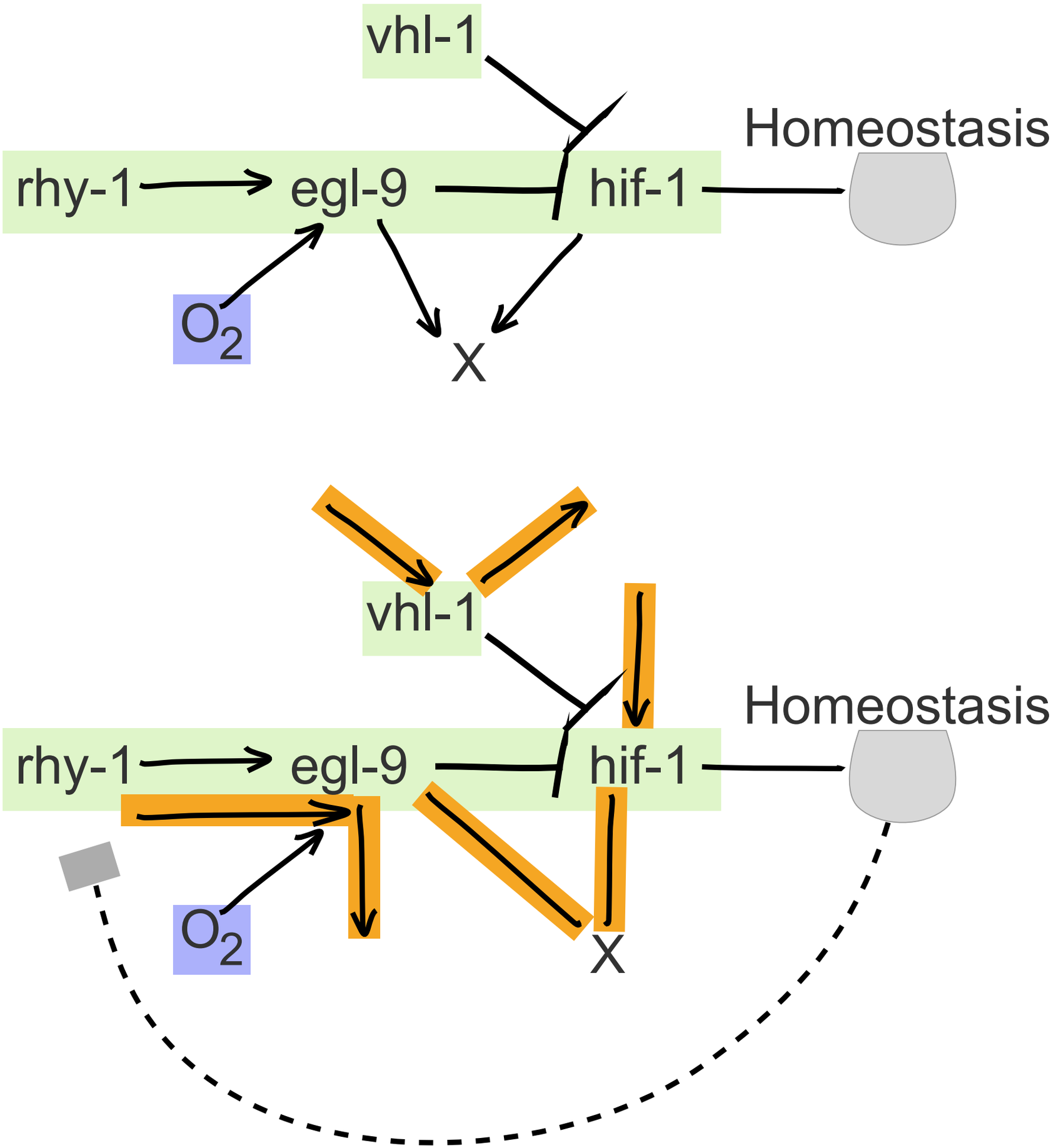


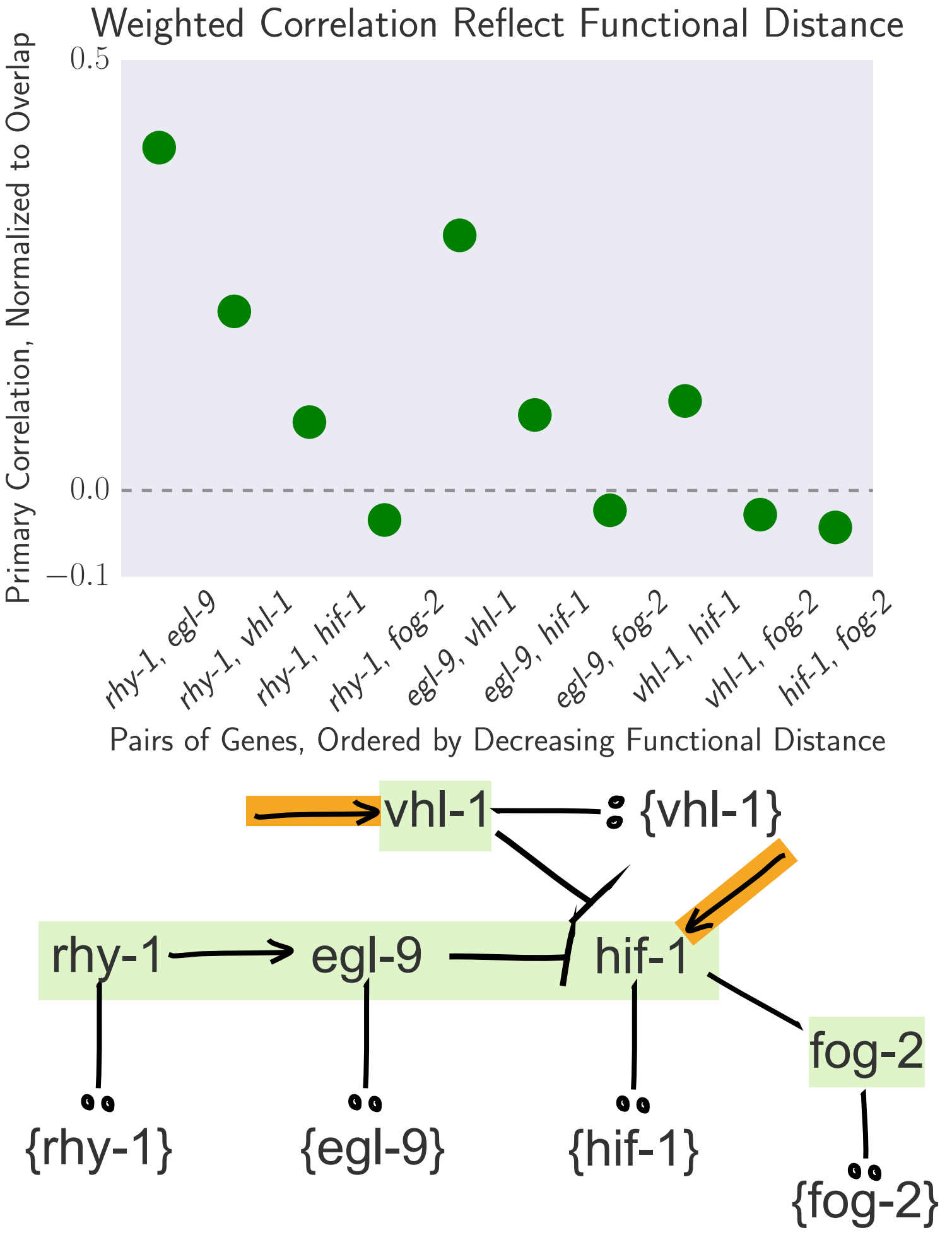
Robust Bayesian Correlations Predict Interaction Between Genes

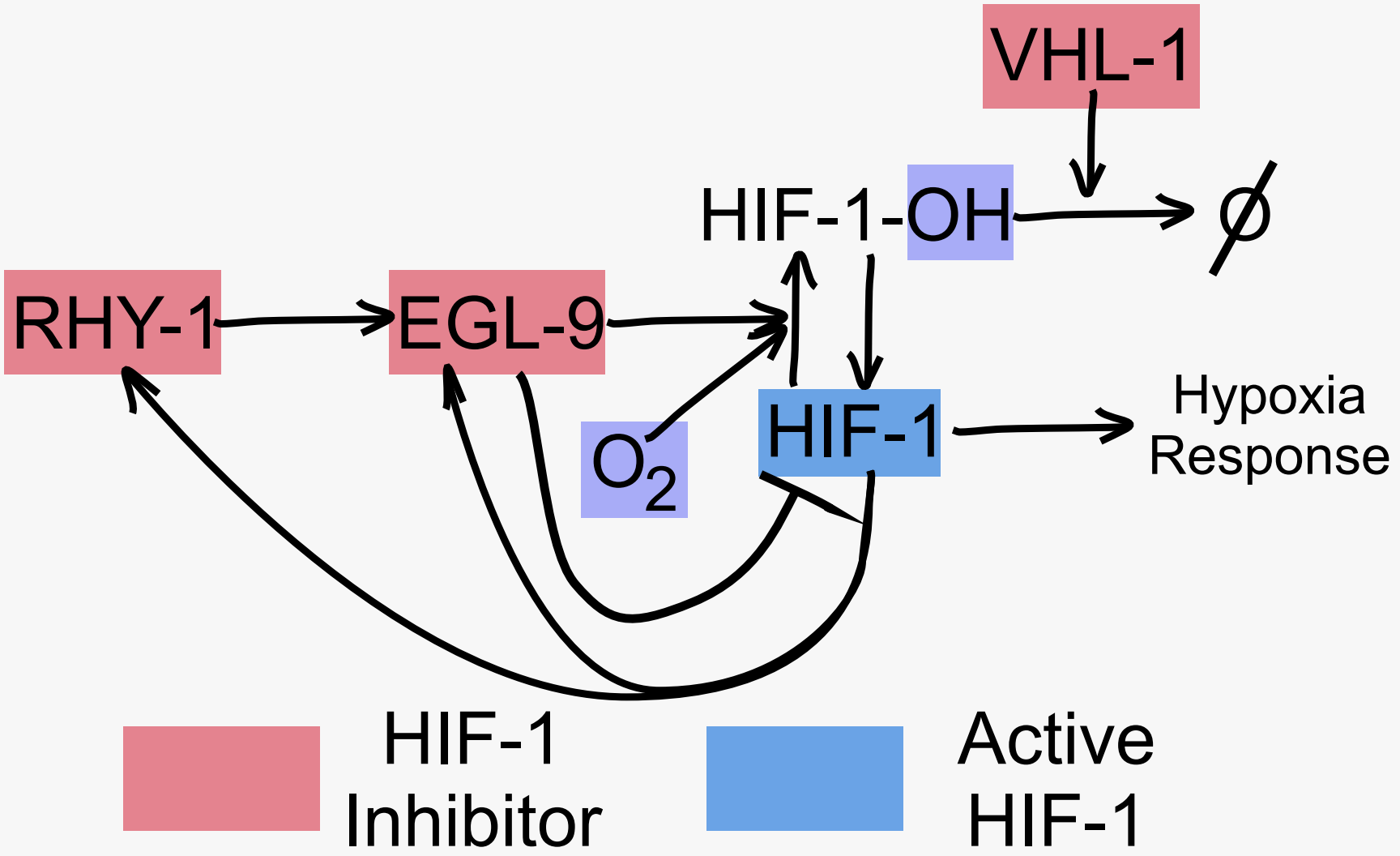





In Silico qPCR
Regression Coefficient, β
5
4
3
2
1
0
−1
−2
−3
−4
rhy-1
egl-9
vhl-1
hif-1
fog-2
egl-9;vhl-1
egl-9;hif-1
egl-9
hif-1
lam-3
nhr-57
rhy-1


vhl-1
Homeostasis
rhy-1
egl-9
hif-1
O2
X
vhl-1
Homeostasis
rhy-1
egl-9
hif-1
O2
X


Weighted Correlation Reflect Functional Distance
Primary Correlation, Normalized to Overlap
0.5
0.0
−0.1
rhy-1, egl-9
rhy-1, vhl-1
rhy-1, hif-1
rhy-1, fog-2
egl-9, vhl-1
egl-9, hif-1
egl-9, fog-2
vhl-1, hif-1
vhl-1, fog-2
hif-1, fog-2
Pairs of Genes, Ordered by Decreasing Functional Distance
vhl-1
{vhl-1}
rhy-1
egl-9
hif-1
fog-2
{rhy-1}
{egl-9}
{hif-1}
{fog-2}


VHL-1
HIF-1-OH
∅
RHY-1
EGL-9
O_2
HIF-1
Hypoxia Response
HIF-1 Inhibitor
Active HIF-1