

**A**

Sln1_AP_Sln1; ! Hot1-{P}
Sln1_PT_Ypd1
Ypd1_PT_Ssk1
Ssk1_ppi_Ssk2; x Ssk1-{P}
Ssk2_P+_Pbs2; ! Ssk1-Ssk2
Pbs2_P+_Hog1; ! Pbs2-{P}
Hog1_P+_Hot1; ! Hog1-{P}
PPase_P-_Ssk1
PPase_P-_Pbs2
PPase_P-_Hog1
PPase_P-_Hot1

**B**

$$\begin{aligned}
Sln1-\{P\} &= Sln1\_AP\_Sln1 \vee \neg Sln1\_PT\_Ypd1 \wedge Sln1-\{P\} \\
Ssk1-\{P\} &= Ypd1\_PT\_Ssk1 \vee \neg PPase\_P\_Ssk1 \wedge Ssk1-\{P\} \\
Hot1-\{P\} &= Hog1\_P\_+_Hot1 \vee \neg PPase\_P\_Hot1 \wedge Hot1-\{P\} \\
Hog1-\{P\} &= Pbs2\_P\_+_Hog1 \vee \neg PPase\_P\_Hog1 \wedge Hog1-\{P\} \\
Ypd1-\{P\} &= Sln1\_PT\_Ypd1 \vee \neg Ypd1\_PT\_Ssk1 \wedge Ypd1-\{P\} \\
Pbs2-\{P\} &= Ssk2\_P\_+_Pbs2 \vee \neg PPase\_P\_Pbs2 \wedge Pbs2-\{P\} \\
Ssk1-Ssk2 &= Ssk1\_ppi\_Ssk2
\end{aligned}$$

**C**

$$\begin{aligned}
Hog1\_P\_+_Hot1 &= Hog1 \wedge Hot1 \wedge Hog1-\{P\} \\
Ssk1\_ppi\_Ssk2 &= Ssk1 \wedge Ssk2 \wedge \neg Ssk1-\{P\} \\
PPase\_P\_Hot1 &= PPase \wedge Hot1 \wedge Hot1-\{P\} \\
PPase\_P\_Pbs2 &= PPase \wedge Pbs2 \wedge Pbs2-\{P\} \\
PPase\_P\_Ssk1 &= PPase \wedge Ssk1 \wedge Ssk1-\{P\} \\
PPase\_P\_Hog1 &= PPase \wedge Hog1 \wedge Hog1-\{P\} \\
Ypd1\_PT\_Ssk1 &= Ypd1 \wedge Ssk1 \wedge Ypd1-\{P\} \\
Pbs2\_P\_+_Hog1 &= Pbs2 \wedge Hog1 \wedge Pbs2-\{P\} \\
Sln1\_PT\_Ypd1 &= Sln1 \wedge Ypd1 \wedge Sln1-\{P\} \\
Ssk2\_P\_+_Pbs2 &= Ssk2 \wedge Pbs2 \wedge Ssk1-Ssk2 \\
Sln1\_AP\_Sln1 &= Sln1 \wedge Sln1 \wedge Hot1-\{P\}
\end{aligned}$$

**Table S1**