Transcription & Translation

$$\begin{split} RNA_{pol} + g_{csgDEFG} \rightarrow RNA_{pol} + g_{csgDEFG} + mRNA_{DEFG} \\ mRNA_{DEFG} \rightarrow CsgD + CsgE + CsgF + CsgG \\ RNA_{pol} + g_{csgBA} + CsgD \rightarrow RNA_{pol} + g_{csgBA} + CsgD + mRNA_{BA} \\ mRNA_{BA} \rightarrow CsgA + CsgB \end{split}$$

Secretion, Nucleation, Polymerization

$$\varnothing \rightarrow SecYEG$$

$$CsgA + SecYEG \rightarrow SecYEG + CsgA_{per}$$

$$CsgB + SecYEG \rightarrow SecYEG + CsgB_{per}$$

$$CsgD + SecYEG \rightarrow SecYEG + CsgD_{per}$$

$$CsgE + SecYEG \rightarrow SecYEG + CsgE_{per}$$

$$CsgF + SecYEG \rightarrow SecYEG + CsgF_{per}$$

$$CsgG + SecYEG \rightarrow SecYEG + CsgG_{per}$$

$$CsgG + SecYEG \rightarrow SecYEG + CsgG_{per}$$

$$CsgG_{per} \rightarrow CsgG_{mem}$$

$$CsgF_{per} \rightarrow CsgF_{mem}$$

$$CsgF_{per} \rightarrow CsgF_{mem}$$

$$CsgE_{per} + CsgA_{per} \rightarrow CsgEA_{complex}$$

$$CsgG_{mem} + CsgEA_{complex} \rightarrow CsgG + CsgE_{per} + CsgA_{sec}$$

$$CsgG_{mem} + CsgF_{mem} + CsgB_{sur} + CsgA_{nuc}$$

$$CsgA_{nuc} + CsgA_{sec} \rightarrow CgA_{pol}$$

Degradation

 $\begin{array}{c} CsgB \rightarrow \varnothing \\ CsgA \rightarrow \varnothing \\ CsgD \rightarrow \varnothing \\ CsgE \rightarrow \varnothing \\ CsgF \rightarrow \varnothing \\ CsgG \rightarrow \varnothing \end{array}$