Supplemental material

Sato et al., https://doi.org/10.1085/jgp.201912327

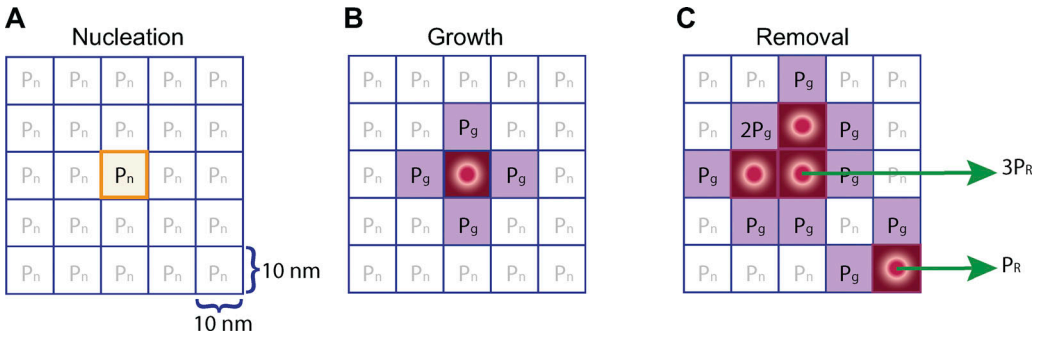
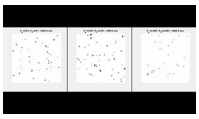
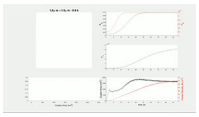


Figure S1. **In silico stochastic self-assembly model. (A)** Nucleation process. Channels are inserted into the grid randomly with nucleation probability P_n at each time step. 1 represents occupied grid sites. **(B)** If a nucleating channel exists, channels are randomly inserted into any one of the four available grid sites immediately adjacent to the nucleating channel with growth probability P_g at each time step. **(C)** After that, the growth probability of a cluster is P_g × the number of available neighbors. Clusters are randomly removed with the removal probability (P_R × the number of channels).

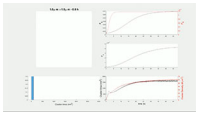
Video 1. **Nucleation, cluster growth, and removal of clusters in the stochastic self-assembly model.** This movie shows nucleation, cluster growth, and removal of clusters in the simulation. Small squares represent ion channels. Black squares are nucleating channels. The total simulation length is 160 steps. See the main text and Fig S1 for more details.



Video 2. **The effects of varied P_g and P_R values on channel and cluster dwell times.** In these simulations, P_g:P_R = 1:1. The cluster dwell time becomes longer as P_g and P_R become smaller. Left: P_g = P_R = 0.01. Center: P_g = P_R = 0.001. Right: P_g = P_R = 0.0001.



Video 3. **Simulated clusters for $Ca_V1.2$.** This is the movie of Fig. 10. See Fig. 10 and the main text for more details.



Video 4. **Simulated clusters for TRPV4.** This is the movie of Fig. 11. See Fig. 11 and the main text for more details.