

# Interplay of cytoskeletal activity and lipid phase stability in dynamic protein recruitment and clustering

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**Movie S1.** The transient trapping of proteins in clusters can be observed in the sequence of snapshots corresponding to a simulated membrane of  $1 \mu\text{m}^2$  containing 50 nucleating active inclusions X (red) and 1000 diffusing P proteins (blue) in a lipid media (color code as in Fig. 5). The model parameters are  $\tau=0.5$  s,  $\lambda=3$ , and  $\alpha=0.5$ . The sequence covers 5 s of simulation. Inclusions attract and trap nearby mobile proteins, thus forming a nanocluster until the inclusion detaches from the membrane. When this happens, the nanocluster breaks up, proteins are dispersed, and another cluster is formed elsewhere at a new attachment point.