

Table 1: Values for minimum of PMF (U_{eq}) between F-actins at different charge of lysozyme mutants (q_{lys}) and salt concentration (c). The gray cells correspond to the simulations without minimum in the PMF diagram.

$U_{eq}(k_B T)$	lys3	lys4	lys5	lys6	lys7	lys8	lys9	lys10	lys11
0.0 mM	-0.2	-0.8	-2.1	-2.9	-7.1	-8.5	-12.8	-14.6	-10.1
2.5 mM	0.4	0.2	-2.3	-0.1	-4.5	-5.1	-10.4	-11.9	-9.6
5.0 mM	0.3	-0.3	-0.7	-1.6	-1.6	-7.3	-5.6	-6.3	-8.0
7.5 mM	0.4	-0.4	-0.5	-2.1	-3.1	-8.5	-7.5	-3.7	-11.3
10.0 mM	0.2	0.5	2.2	0.5	-1.3	-5.5	-7.8	-8.1	-8.7
50.0 mM	0.5	0.3	0.5	-0.2	-0.4	0.1	-4.8	-1.1	-3.7

Table 2: Values for equilibrium distance (D_{eq}) between neighbor F-actins at different charge of lysozyme mutants (q_{lys}) and salt concentration (c). The gray cells correspond to the simulations without minimum in the PMF diagram.

$D_{eq}(\text{\AA})$	lys3	lys4	lys5	lys6	lys7	lys8	lys9	lys10	lys11
0.0 mM	134.0	132.0	106.0	104.0	100.0	92.0	92.0	92.0	92.0
2.5 mM	140.0	140.0	120.0	104.0	100.0	96.0	92.0	96.0	92.0
5.0 mM	134.0	132.0	134.0	104.0	100.0	100.0	96.0	96.0	88.0
7.5 mM	140.0	132.0	116.0	100.0	100.0	100.0	92.0	92.0	92.0
10.0 mM	140.0	140.0	140.0	140.0	100.0	96.0	92.0	92.0	92.0
50.0 mM	140.0	140.0	140.0	132.0	104.0	140.0	92.0	104.0	92.0

Table 3: Values for the box lengths in different simulations.

Simulation	$D_{act-act}(\text{\AA})$	$L_x(\text{\AA})$	$L_y(\text{\AA})$
PMF calculation (fig. 2)	60 – 140	580.0	542.5
Dist., 7 F-actins, Lys +3e (fig. 5)	134	568.0	532.1
Dist., 7 F-actins, Lys +5e (fig. 5)	106	512.0	483.6
Dist., 7 F-actins, Lys +7e (fig. 5)	100	500.0	473.2
Dist., 7 F-actins, Lys +9e (fig. 5)	92	484.0	459.3
Dist., 19 F-actins, Lys +7e (fig. 7)	100	700.0	646.4
Dist., 19 F-actins, Lys +9e (fig. 7)	92	668.0	618.7

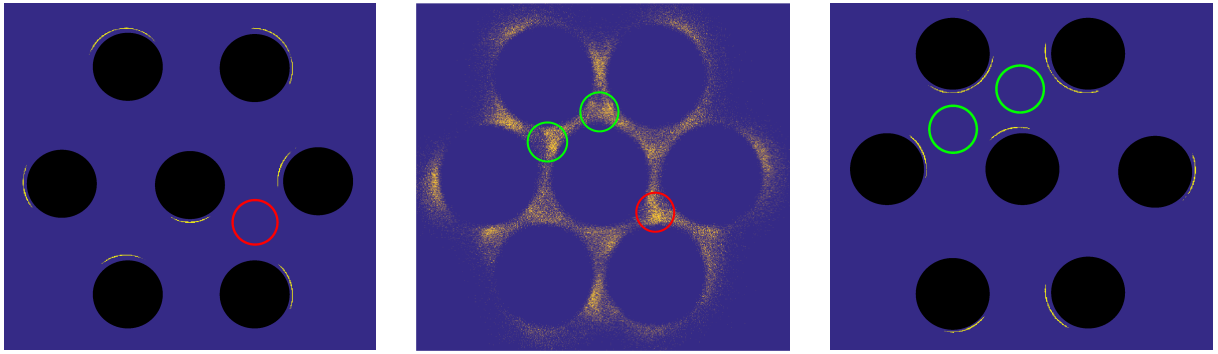


Figure 1: Density distribution of 7th (left) and 8th (right) sdls along F-actins and wild-type lysozyme (middle) in the layer sandwiched between them averaged over 1000 snapshots.