

Description of Additional Supplementary Files

Title: Supplementary Movie 1

Description: Related to Fig. 3a. Averaged subtomograms in the EGTA+ATP and the Ca+ATP states were shown.

Title: Supplementary movie 2

Description: Movie representation of Fig. 4a. Composite maps in the EGTA+ATP and the Ca+ATP states, composed of one central F-actin (gray), four opposite-polarity F-actins (yellow), sixteen α -actinin monomers (orange and green). The α -actinin crystal structures (PDB 4D1E) were fitted into the α -actinin maps (red and green models).

Title: Supplementary movie 3

Description: Related to Fig. 4b. Movie representations of the first and the second eigenvectors. Gray, Central F-actin; yellow, opposite-polarity F-actin; orange, α -actinin dimer.

Title: Supplementary movie 4

Description: Related to Fig. 5. Morphing movies showing a trajectory between the F-actin-actinin models in EGTA+ATP and Ca+ATP states. Gray: F-actin; green and orange: α -actinin.

Title: Supplementary movie 5

Description: Related to Fig. 5. Morphing movies showing a trajectory between the α -actinin models in EGTA+ATP and Ca+ATP states. Green and orange: α -actinin.