Hinge-linker elements in the AAA+ protein unfoldase ClpX mediate intersubunit communication, assembly, and mechanical activity

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Running Title: *Structural and functional roles of ClpX hinge-linkers*

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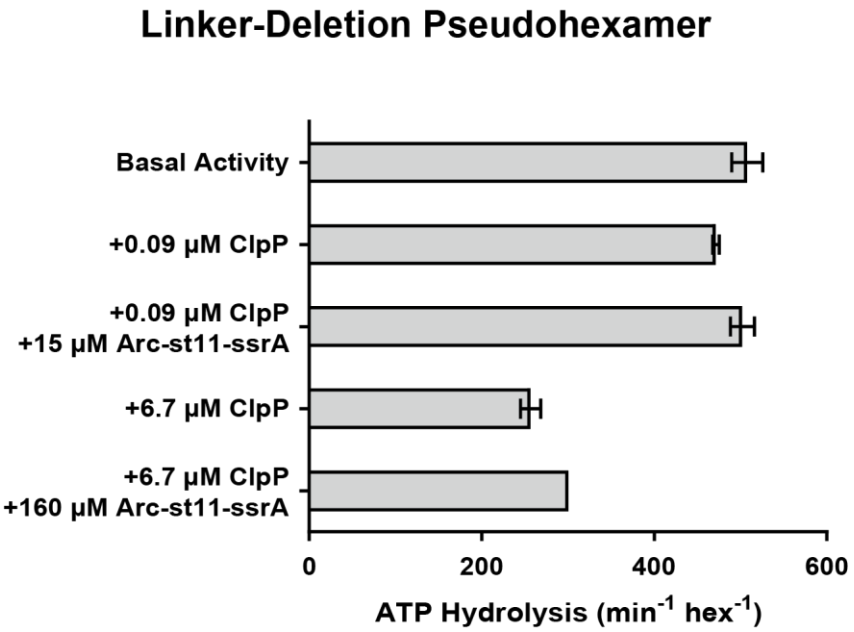
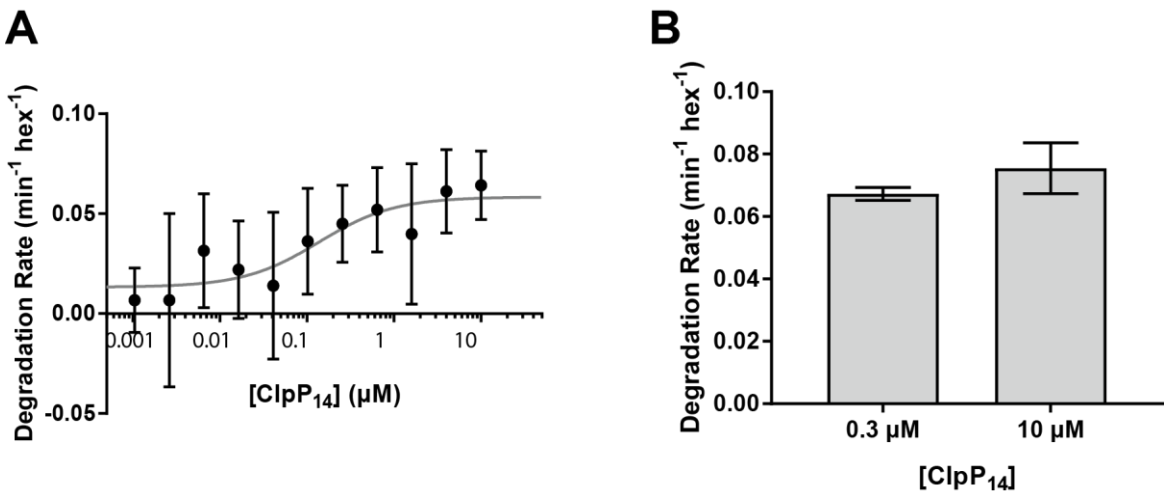
Supplementary Information

Supplementary Figure 1 – ATP hydrolysis by linker-deletion pseudohexamer at different concentrations of ClpP and Arc-st11-ssrA substrate

Supplementary Figure 2 – Effect of ClpP concentration on Arc-st11-ssrA degradation rate



Supplementary Figure 1 – ATP hydrolysis by linker-deletion pseudohexamer (0.03 μM) under the conditions used in Fig. 2B for wild-type and G12-insertion pseudohexamers (0.09 μM $ClpP_{14}$, 15 μM Arc-st11-ssrA monomeric) and for linker-deletion pseudohexamer (6.7 μM $ClpP_{14}$, 160 μM Arc-st11-ssrA monomeric). Experimental values are averages of three independent replicates ± SD.



Supplementary Figure 2 – Effect of ClpP concentration of Arc-st11-ssrA degradation rate. **(A)** Degradation of 15 μM Arc-st11-ssrA (monomeric) by 0.1 μM linker-deletion pseudohexamer in the presence of increasing amounts of $ClpP_{14}$. Experimental values are averages of three independent replicates ± SD. **(B)** Comparison of degradation rate of 15 μM Arc-st11-ssrA (monomeric) by 0.1 μM linker-deletion pseudohexamer in the presence of 0.3 μM or 10 μM $ClpP_{14}$. Experimental values are averages of three sets of three independent replicates ± SEM.