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Supplementary Materials for

A highly conserved 3_{10} helix within the kinesin motor domain is critical for kinesin function and human health

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Fig. S1.

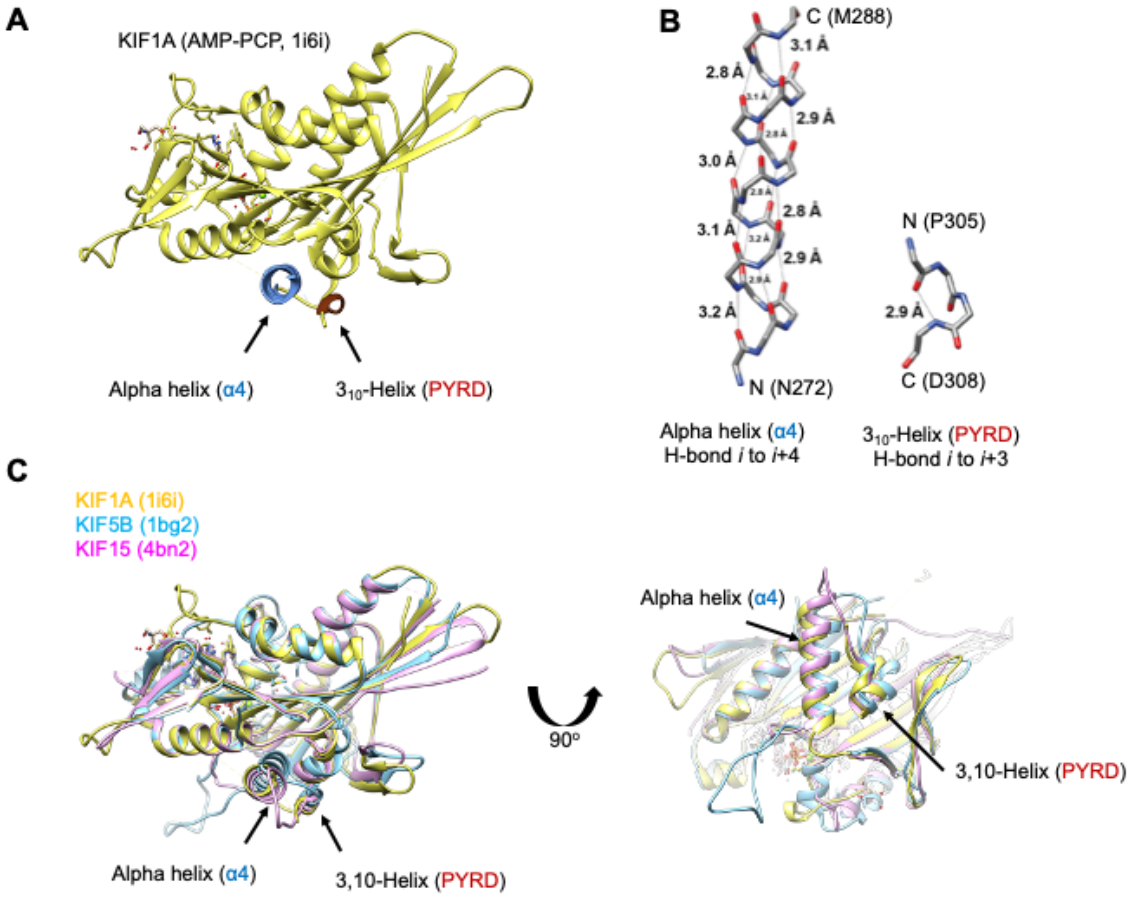

Figure S1. Characterization of the 3_{10}-helix within the kinesin motor domain. (A) Highlight of an α-helix (α4) and the 3_{10}-helix within the KIF1A motor domain. Note the tighter winding that is characteristic of a 3_{10}-helix (*22, 23*). **(B)** Hydrogen bonding analysis of the α4 and 3_{10}-helices from KIF1A showing the characteristic i+3 hydrogen bonding pattern for 3_{10}-helices (*22, 23*). Side chains are removed for clarity. **(C)** Structural alignment of motor domains from three different kinesin family members, KIF1A, KIF5B, and KIF15. Note that all three members contain a 3_{10}-helix. KIF15 contains a cysteine instead of a proline at the N-terminus of the helix. Nonetheless, the structure still folds into a 3_{10}-helix, indicating structural conservation and significance of this fold. See also the alignment in Fig. 2C.