Supporting Information: The mobility of two kinase domains in the *Escherichia coli* chemoreceptor array varies with signaling state

Ariane Briegel[1], Peter Ames[2], James C. Gumbart[3], Catherine M. Oikonomou[4], John S. Parkinson[2] and Grant J. Jensen [1,4*]

Table S1 Strains used in the study

strain	relevant genotype[a]	references	
		tsr	***cheA***
UU2564	*tsr-E304Q/E493Q [QQQQ] cheA*$^{+}$ *Δ(tar-cheB)4346*	this work	wild-type
UU2567	*Δ(tar-cheZ)4211 (tsr)Δ5547*	this work	
UU2618	*tsr+ [QEQE] cheA*$^{+}$ *Δ(tar-cheB)4346*	wild-type	wild-type
UU2619	*tsr-Q297E/Q311E [EEEE] cheA*$^{+}$ *Δ(tar-cheB)4346*	this work	wild-type
UU2735	*tsr-P221D [QEQE] cheA*$^{+}$ *Δ(tar-cheB)4346*	(Zhou et al., 2009)	wild-type
UU2736	*tsr-G235E [QEQE] cheA*$^{+}$ *Δ(tar-cheB)4346*	(Ames et al., 2008)	wild-type
UU2737	*tsr-I241E [QEQE] cheA*$^{+}$ *Δ(tar-cheB)4346*	(Ames et al., 2008)	wild-type
UU2744	*tsr-A413T [QEQE] cheA*$^{+}$ *Δ(tar-cheB)4346*	this work	wild-type
UU2801	*tsr-P221D [QEQE] (cheA)Δ7-247 [Δ(P1-P2)] Δ(tar-cheB)4346*	(Zhou et al., 2009)	(Garzon & Parkinson, 1996)
UU2803	*tsr-A413T [QEQE] (cheA)Δ7-247 [Δ(P1-P2)] Δ(tar-cheB)4346*	this work	(Garzon & Parkinson, 1996)
UU2804	*tsr-A413T [QEQE] (cheA)Δ150-247ΩPA1 [Δ(P2)] Δ(tar-cheB)4346*	this work	(Jahreis et al., 2004)

[a] All strains carried the following markers in common: (*aer*)*Δ1* (*trg*)*Δ4543 ygjG::Gm.*

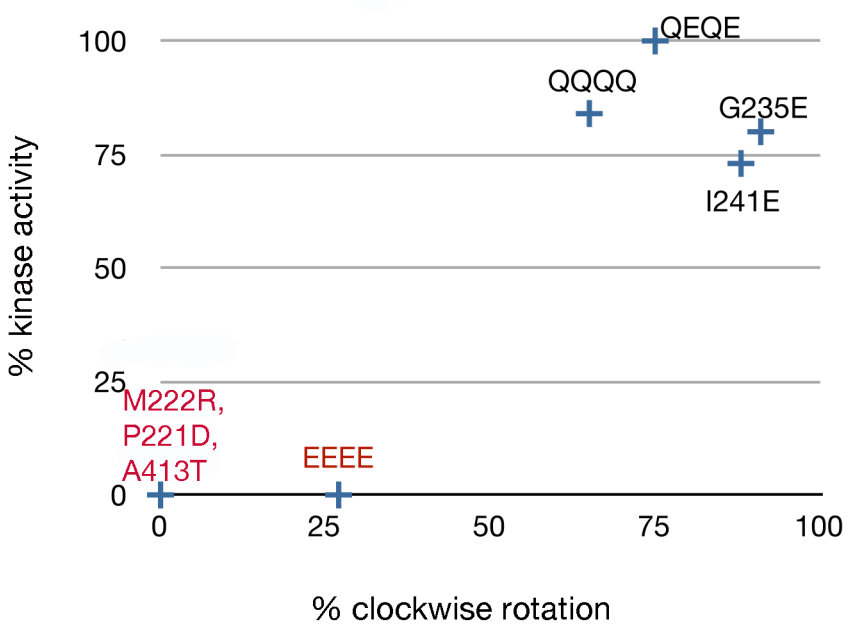
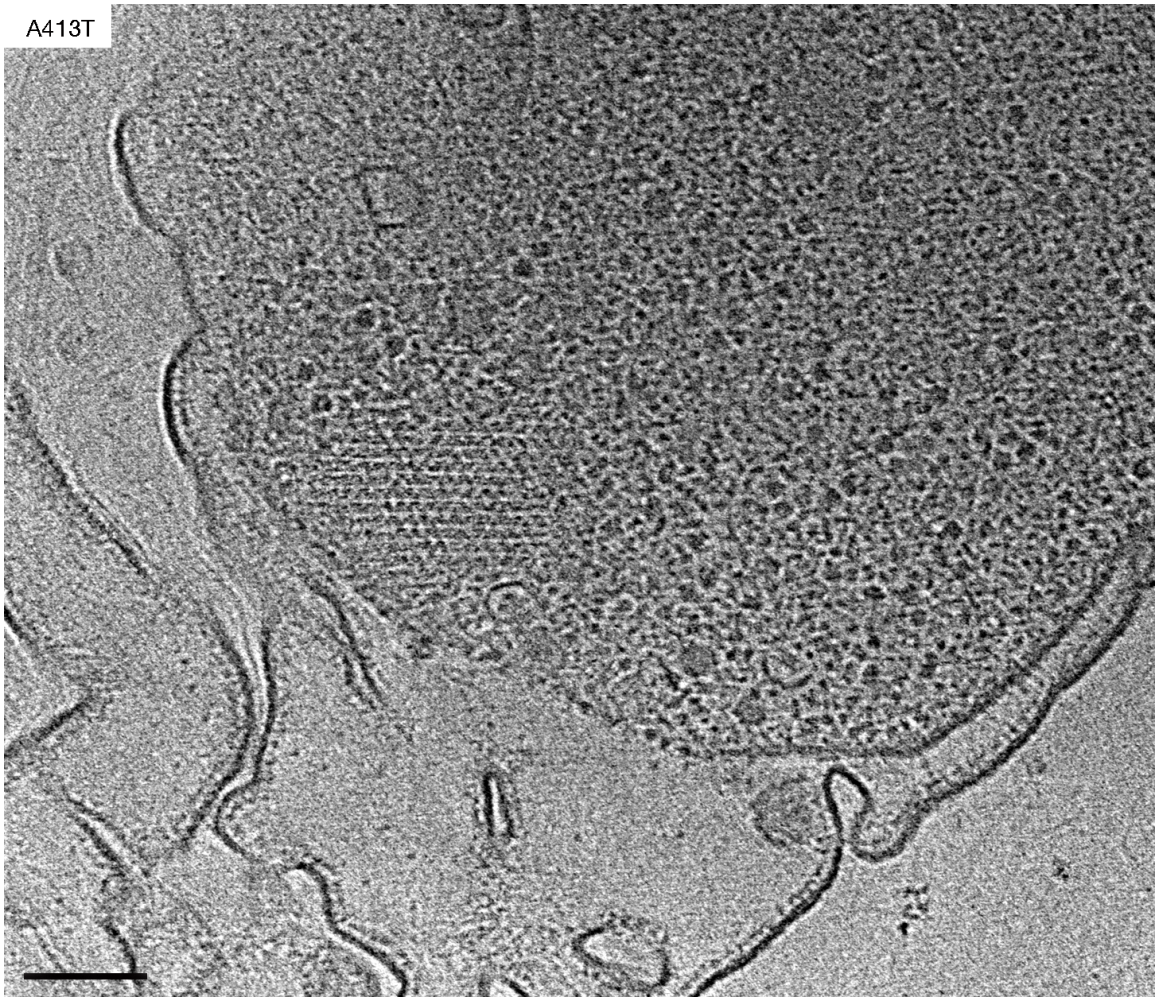
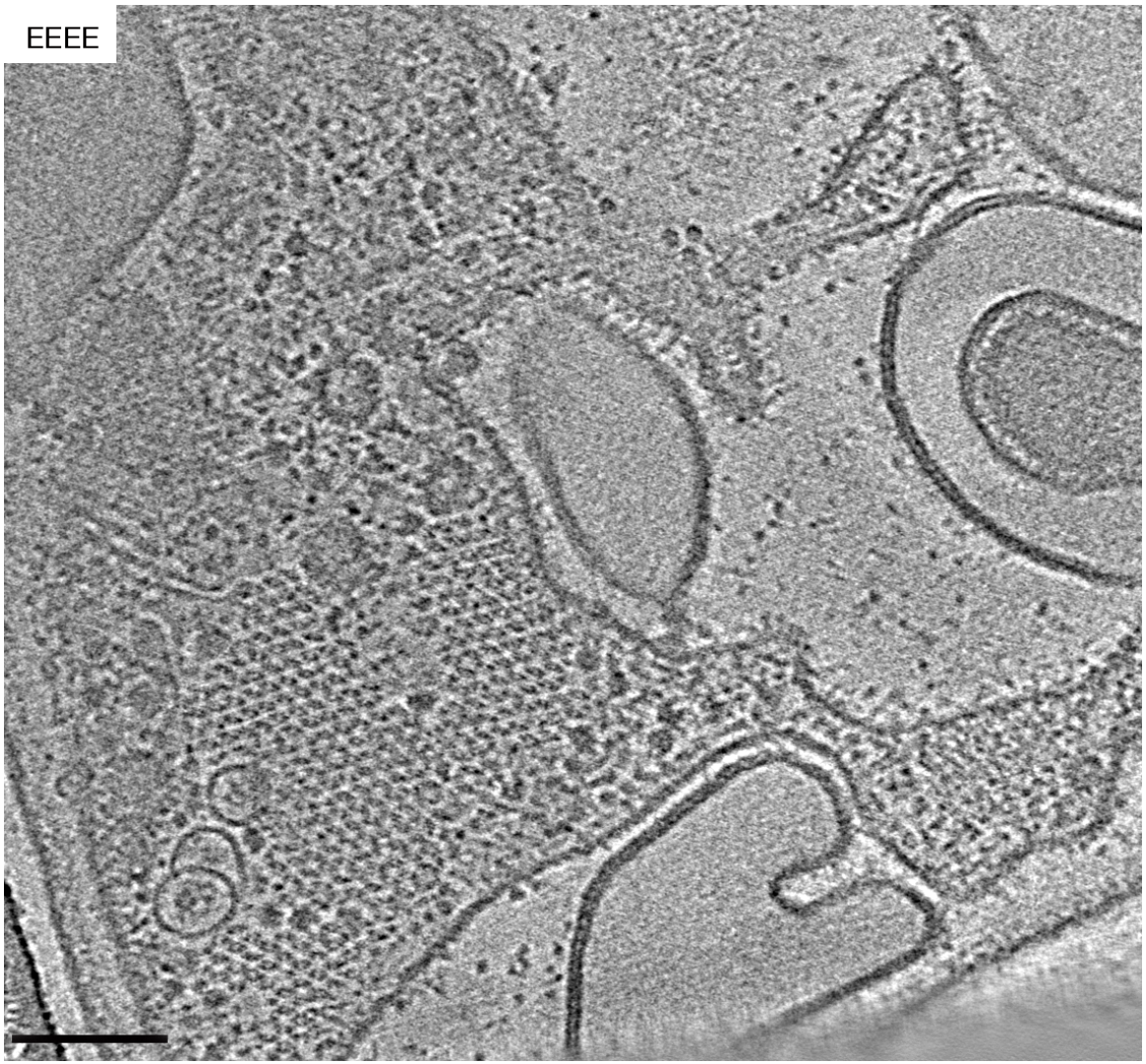


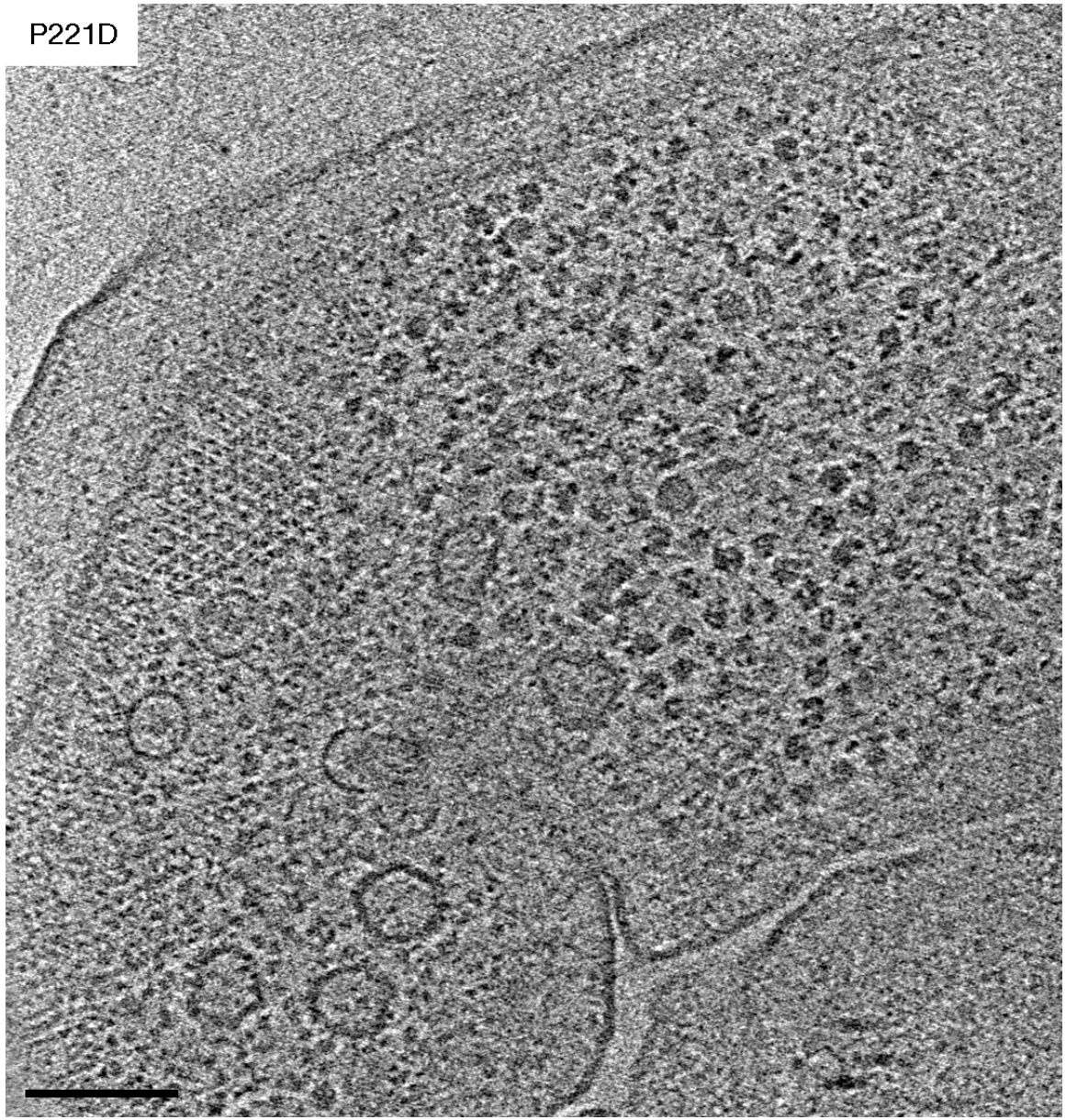
Fig. S1 Correlation of *in vivo* kinase activity and direction of flagellar rotation in mutant receptor strains.

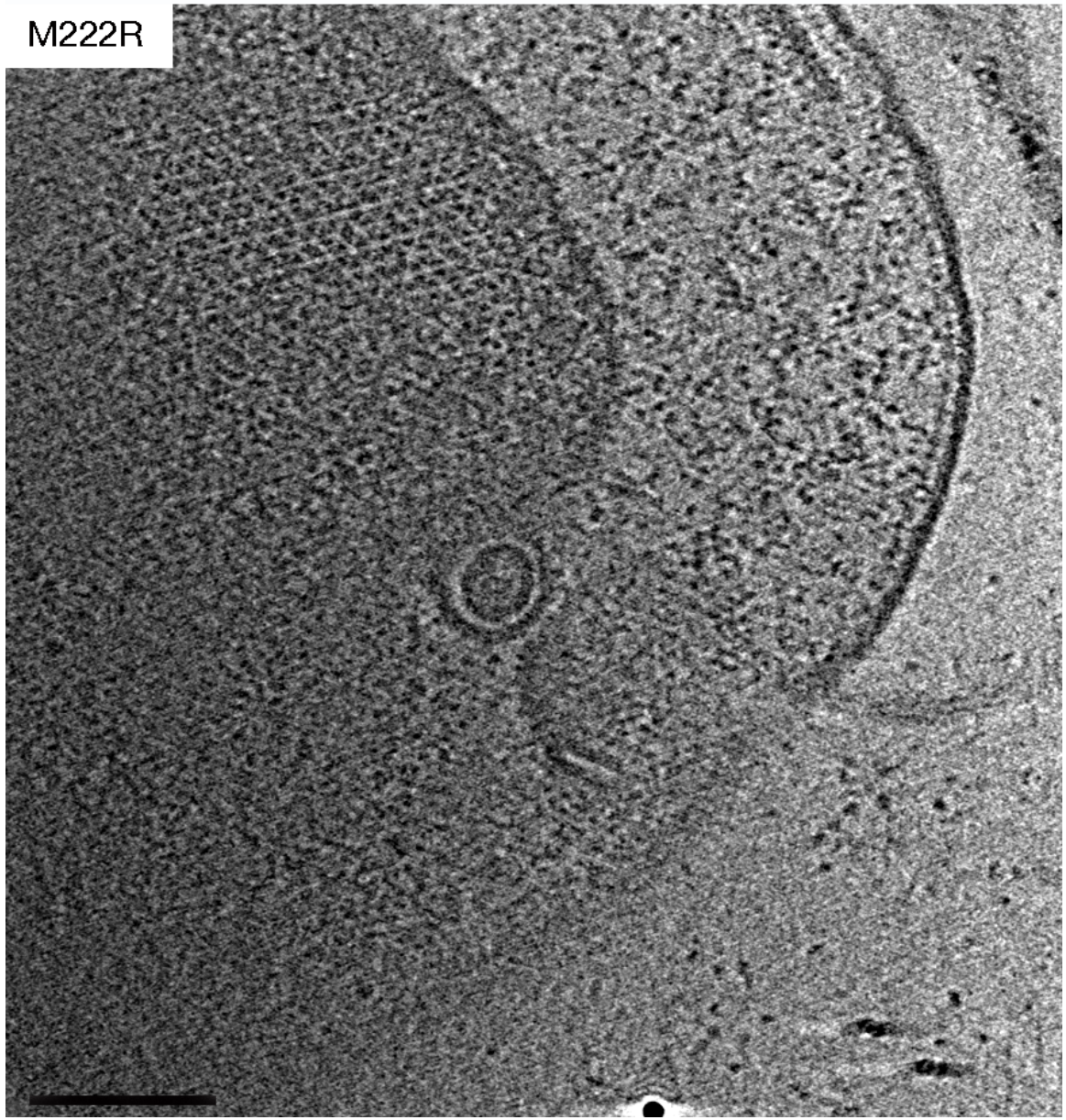
The plot shows the kinase activities and flagellar rotation behaviors of the various mutant receptor strains listed in Tables 1 and S1. The four receptor mutants with red labels were classified as kinase-inactive; the four with black labels were classified as kinase-active.

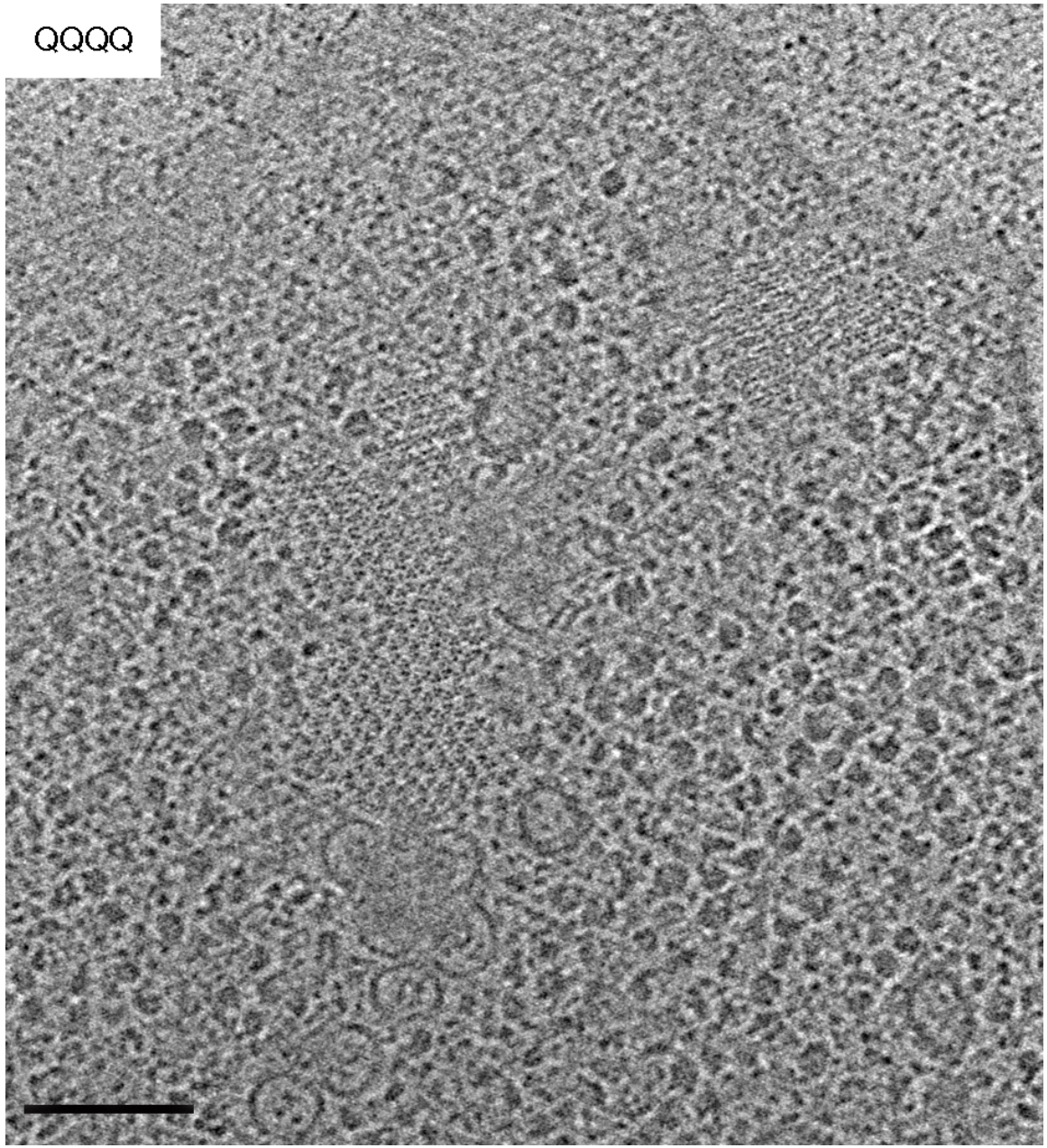
Fig. S2 Representative array patches from the receptor mutants used in this study.




EEEE


P221D


M222R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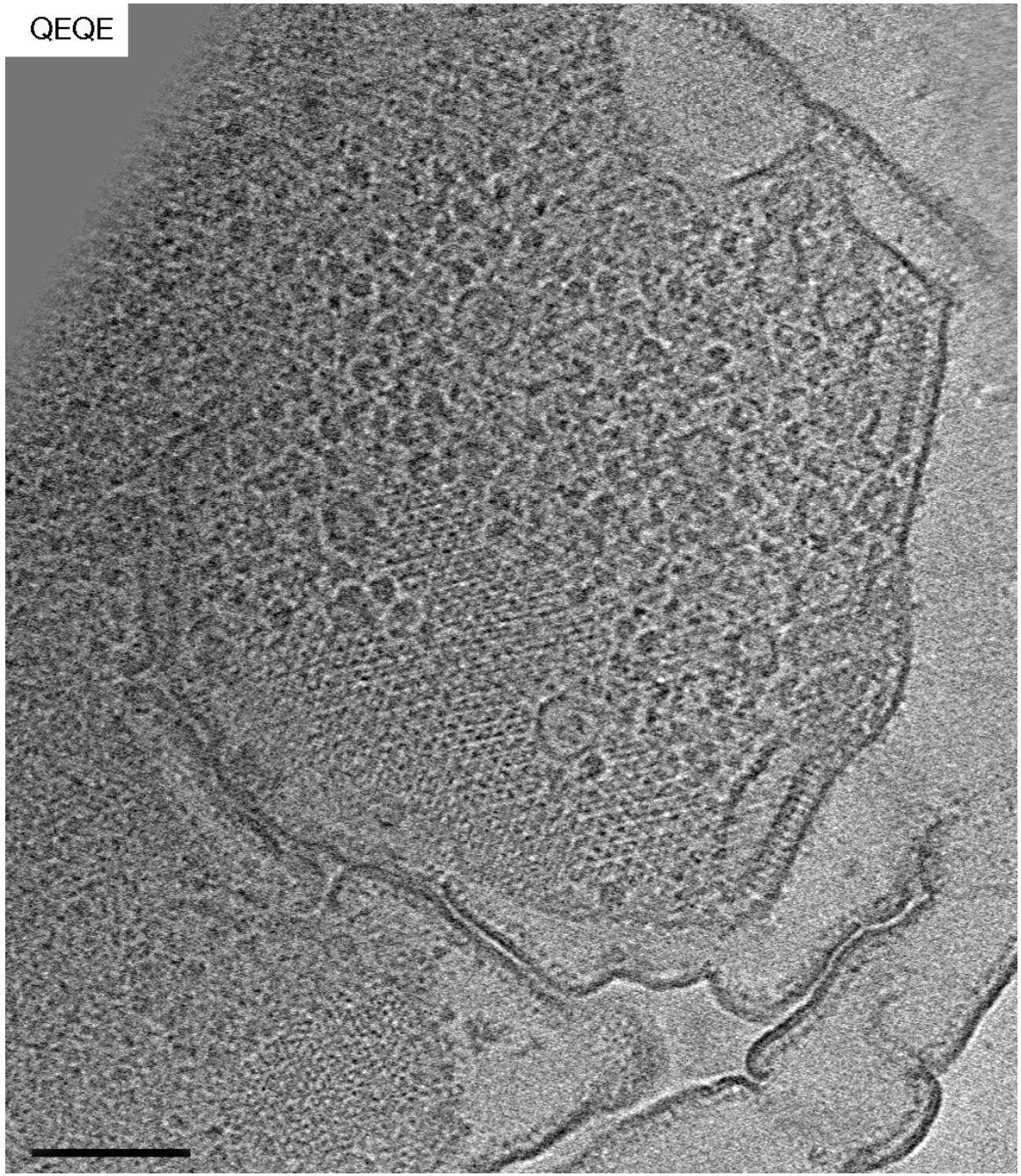
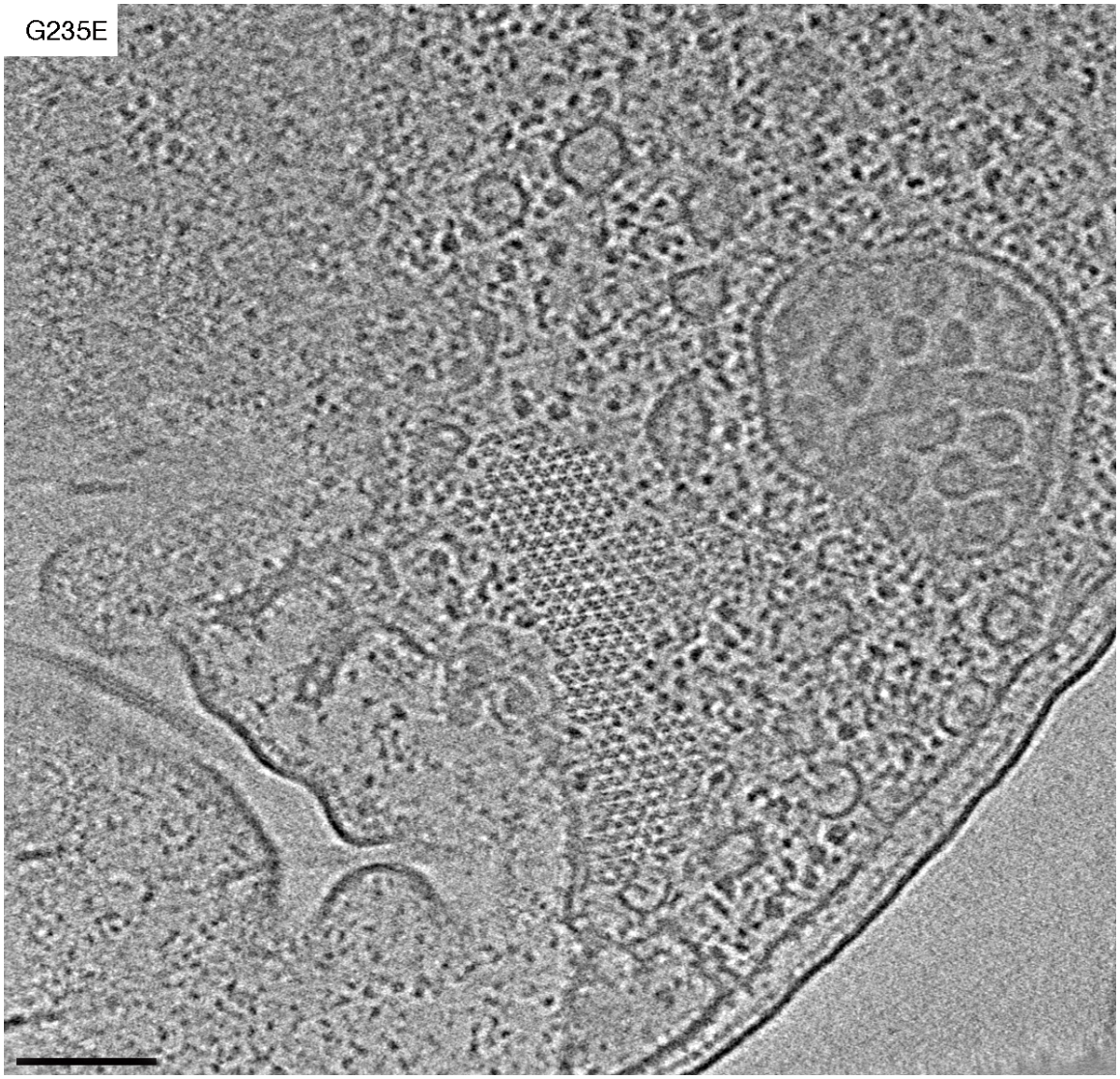
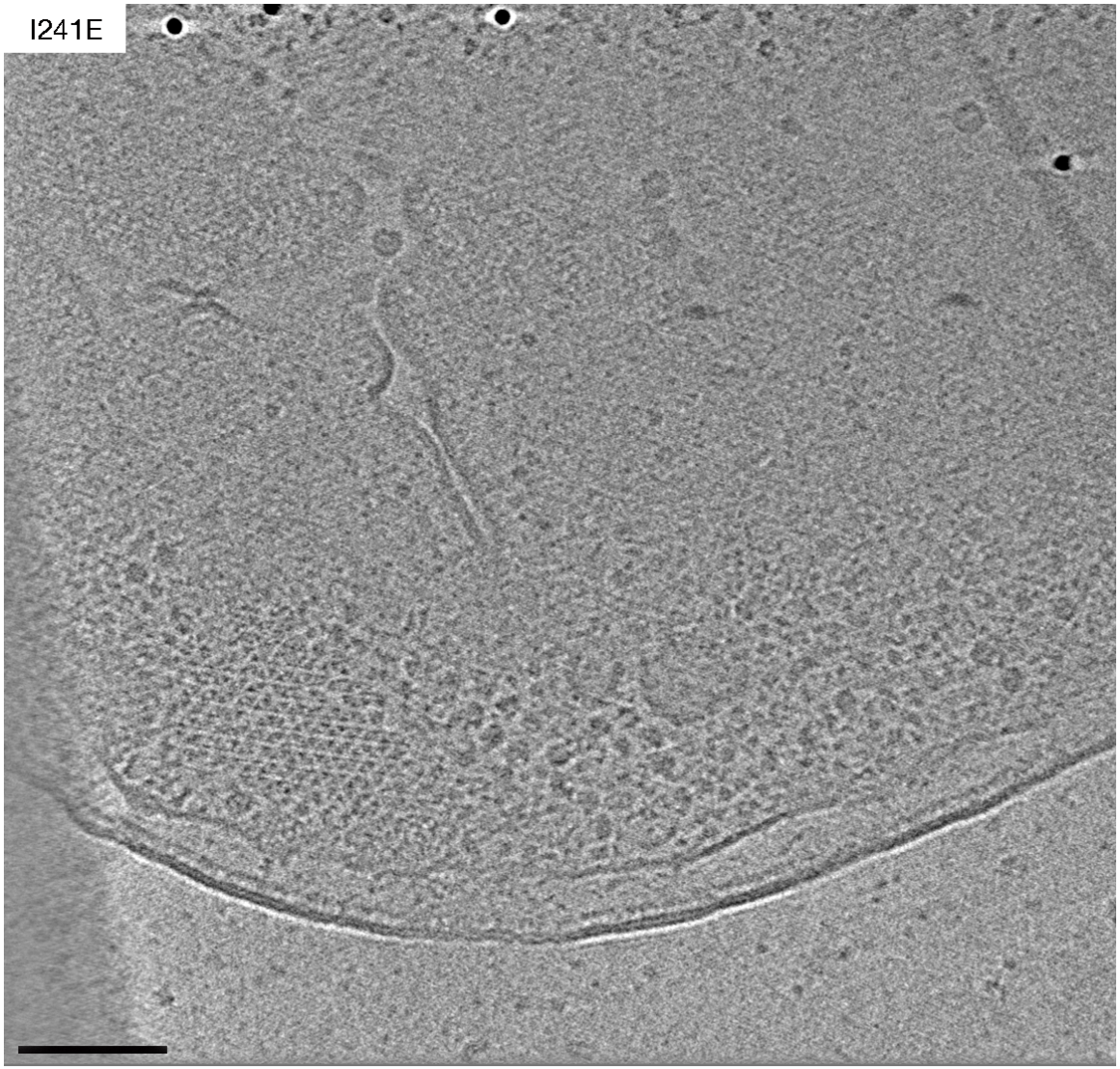

QEQE


G235E


I241E