Summary of integrative structure determination of SH1-SH2 Cross-linked Myosin Subfragment-1 (S1) Reconstructed from Replica-derived Geometric Constraints (PDB ID: 9AB5 | pdb_00009ab5)

1. Model Composition	
1.1. Entry composition	- MYOSIN REGULATORY LIGHT CHAIN: chain(s) A [B] (156 residues) - MYOSIN ESSENTIAL LIGHT CHAIN: chain(s) B [C] (156 residues) - MYOSIN HEAVY CHAIN S-S CROSS-LINKED S1: chain(s) C [A] (835 residues)
1.2. Datasets used for modeling	- 2DEM class average, Not available: 10.1042/BJ20120412 - Experimental model, PDB: pdb_0000l12o - Other, Not available
2. Representation	
2.1. Number of representations	1
2.2. Scale	Atomic
2.3. Number of rigid and flexible segments	0, 3
3. Restraints	
3.1. Physical principles	Information about physical principles was not provided
3.2. Experimental data	- 1 unique EM2DRestraint: Number of micrographs: 29, Image resolution: 20.0 - 1 unique EM2DRestraint: Number of micrographs: 22, Image resolution: 20.0 - 1 unique EM2DRestraint: Number of micrographs: 17, Image resolution: 20.0 - 1 unique EM2DRestraint: Number of micrographs: 25, Image resolution: 20.0 - 1 unique EM2DRestraint: Number of micrographs: 48, Image resolution: 20.0 - 1 unique CrossLinkRestraint: CYS, 1 crosslinks
4. Validation	
4.2. Number of ensembles	0
4.3. Number of models in ensembles	Not applicable
4.4. Number of deposited models	1
4.5. Model precision	Not available
4.6. Data quality	Data quality has not been assessed

4.7. Model quality: assessment of atomic segments	- Clashscore: 58.59 - Ramachandran outliers: 67 - Sidechain outliers: 103
4.8. Fit to data used for modeling	Fit of model to information used to compute it has not been determined
4.9. Fit to data used for validation	Fit of model to information not used to compute it has not been determined
5. Methodology and Software	
1. *5.1. Method name*	Conformational identification
5.2. Method type	Similarity retrieval from known crystal-structure templates
5.3. Method description	Morphologically-processed, class-averaged freeze-replica images of the catalytic domain were compared against simulated template images generated from known myosin crystal structures (1L2O, 1DFL, 1B7T, 1DFK). The pPDM/C-K-cross-linked form (1L2O) gave the best match and was selected as the catalytic-domain configuration.
2. *5.1. Method name*	Atomic model building
5.2. Method type	Rigid-body repositioning of the catalytic domain and lever arm according to the measured view angles
5.3. Method description	The catalytic domain and lever arm of 1L2O were separated near the lever-arm root and independently repositioned according to the view angles determined for each module from the averaged replica images, producing a tentative atomic model of the disulfide-cross-linked myosin that satisfies all projected views.
3. *5.1. Method name*	Three-dimensional envelope reconstruction and fitting
5.2. Method type	Topography-based single-particle reconstruction and model fitting
5.3. Method description	The global 3-D surface envelope was reconstructed from the replica images by topography-based single-particle analysis, and the atomic model was fitted into the reconstructed shell, with the module view angles fixing the model orientation.
5.5. Software	- RasMol (version Not available) - UCSF ChimeraX (version 1.12)