Integrative Structure Validation Report

October 28, 2026 - 02:58 PM PDT

The following software was used in the production of this report:

IHMValidation Version 3.4
Python-IHM Version 2.11
MolProbity Version 4.5.2
remolprobity Version 0.1.0
EMDB validation analysis Version 0.0.1.dev137
EMDB validation analysis Version 0.0.1.dev152
EMDB validation analysis Version 0.1.0.dev0 (fit to the map)
jqscore Version 0.2.0
Mol Version 4.18.0*

PDB ID	9AAV | pdb_00009aav
Structure Title	Integrative structure of the human nuclear pore complex nuclear basket
Structure Authors	Obarska-Kosinska, A.; Zhu, Y.; Geissler, K.; Rosenkranz, R.R.E.; Yokoyama, N.; Kreysing, J.P.; Xing, H.; Glushkova, D.; Kubanska, M.A.; Boehm, S.; Kraeusslich, H.G.; Turonova, B.; Liu, F.; Beck, M.
Deposited on	2026-09-22

This is a PDB-IHM Structure Validation Report.

We welcome your comments at helpdesk@pdb-ihm.org

A user guide is available at https://pdb-ihm.org/validation_help.html with specific help available everywhere you see the ? symbol.

List of references used to build this report is available here.

1. Overview

1.1. Summary

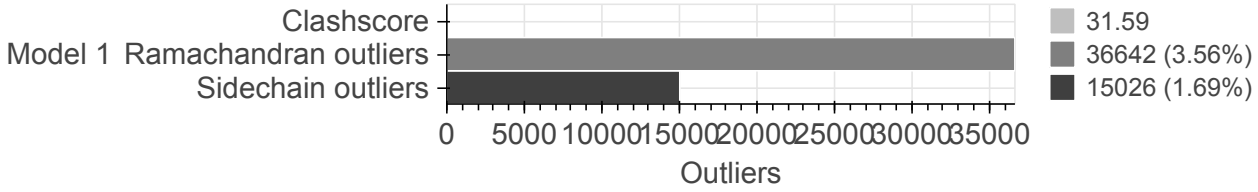
This entry consists of 1 model(s). A total of 45 dataset(s) were used to build this entry.

Name	Type	Count
3DEM volume	Experimental data	2
Crosslinking-MS data	Experimental data	3
De Novo model	Starting model	40

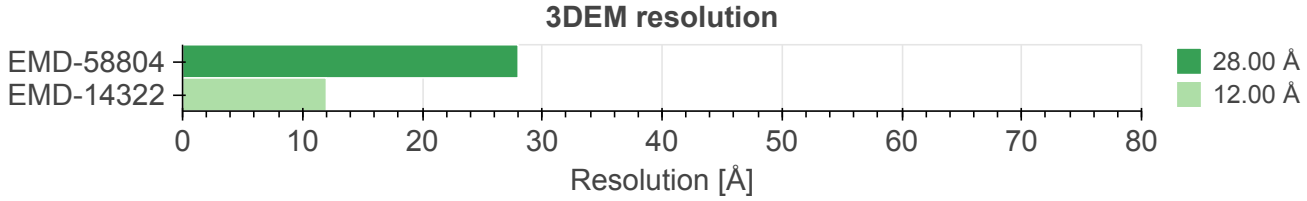
1.2. Overall quality

This validation report contains model quality assessments for all structures, data quality and fit to model assessments for SAS, crosslinking-MS and 3DEM datasets. Data quality and fit to model assessments for other datasets and model uncertainty are under development. Number of plots is limited to 256.

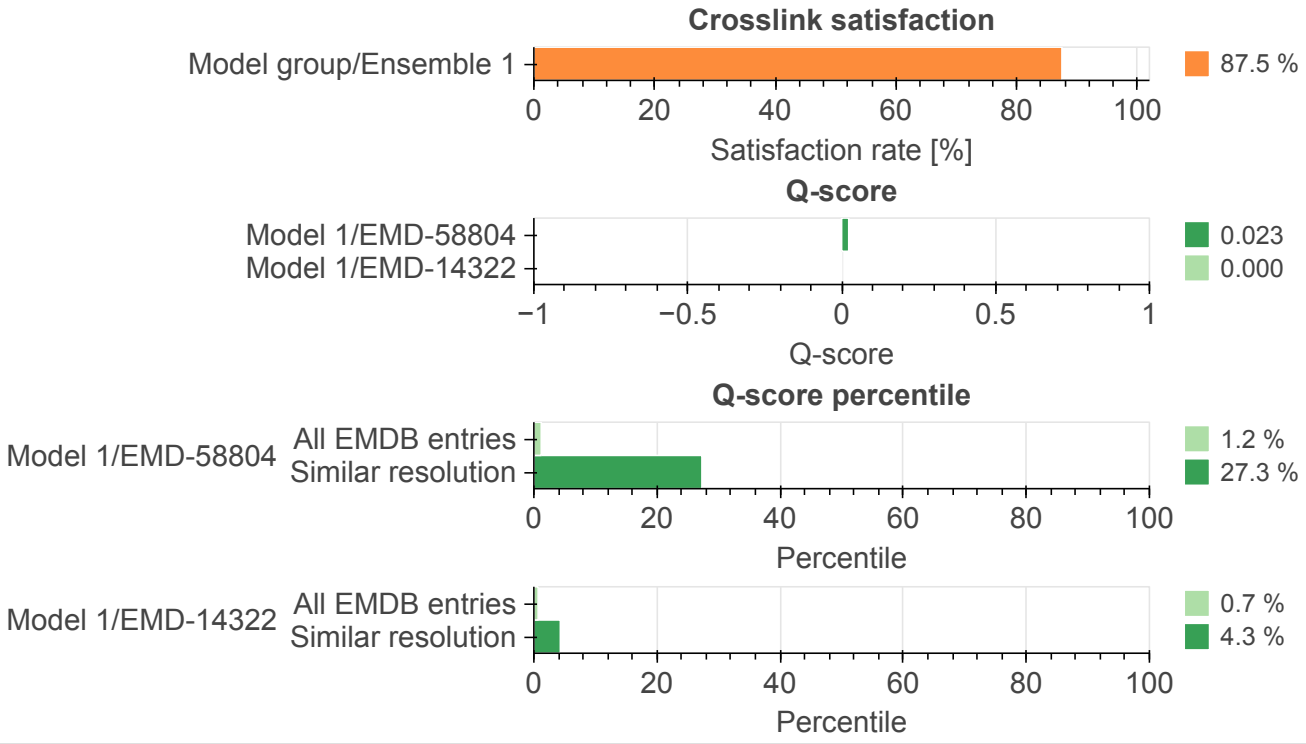
Model Quality: MolProbity Analysis



Data Quality



Fit to Data Used for Modeling



2. Model Details

2.1. Ensemble information

This entry consists of 0 distinct ensembles.

2.2. Representation

This entry has 1 representation(s).

ID	Model(s)	Entity ID	Molecule name	Chain(s) [auth]	Total residues	Rigid segments	Flexible segments	Model coverage/ Starting model coverage (%)	Scale
1	1	1	E3 SUMO-protein ligase RanBP2	A1, A2, A3, A4, A5, A6, A7, A8, B1, B2, B3, B4, B5, B6, B7, B8, C1, C2, C3, C4, C5, C6, C7, C8, D1, D2, D3, D4, D5, D6, D7, D8, E1, E2, E3, E4, E5, E6, E7, E8	3224	-	1-3224	100.00 / 100.00	Atomic

ID	Model(s)	Entity ID	Molecule name	Chain(s) [auth]	Total residues	Rigid segments	Flexible segments	Model coverage/ Starting model coverage (%)	Scale
1	1	2	Nuclear pore membrane glycoprotein 210	F1, F2, F3, F4, F5, F6, F7, F8, G1, G2, G3, G4, G5, G6, G7, G8, H1, H2, H3, H4, H5, H6, H7, H8, I1, I2, I3, I4, I5, I6, I7, I8, J1, J2, J3, J4, J5, J6, J7, J8, K1, K2, K3, K4, K5, K6, K7, K8, L1, L2, L3, L4, L5, L6, L7, L8, M1, M2, M3, M4, M5, M6, M7, M8	1887	-	1-1887	100.00 / 100.00	Atomic
1	1	3	Nuclear pore complex protein TPR	N1, N2, N3, N4, N5, N6, N7, N8, O1, O2, O3, O4, O5, O6, O7, O8, R1, R2, R3, R4, R5, R6, R7, R8, S1, S2, S3, S4, S5, S6, S7, S8	2363	-	1-2363	100.00 / 100.00	Atomic
1	1	4	ALADIN	P1, P2, P3, P4, P5, P6, P7, P8, Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8	546	-	1-546	100.00 / 100.00	Atomic
1	1	5	Germinal-center associated nuclear protein	T1, T2, T3, T4, T5, T6, T7, T8	1980	-	1-1980	100.00 / 100.00	Atomic
1	1	6	Nuclear pore complex protein Nup50	U1, U2, U3, U4, U5, U6, U7, U8, V1, V2, V3, V4, V5, V6, V7, V8, W1, W2, W3, W4, W5, W6, W7, W8, X1, X2, X3, X4, X5, X6, X7, X8, Y1, Y2, Y3, Y4, Y5, Y6, Y7, Y8, Z1, Z2, Z3, Z4, Z5, Z6, Z7, Z8	468	-	1-468	100.00 / 100.00	Atomic
1	1	7	Nuclear pore complex protein Nup93	AA1, AA2, AA3, AA4, AA5, AA6, AA7, AA8, BA1, BA2, BA3, BA4, BA5, BA6, BA7, BA8, CA1, CA2, CA3, CA4, CA5, CA6, CA7, CA8, DA1, DA2, DA3, DA4, DA5, DA6, DA7, DA8, EA1, EA2, EA3, EA4, EA5, EA6, EA7, EA8, FA1, FA2, FA3, FA4, FA5, FA6, FA7, FA8, GA1, GA2, GA3, GA4, GA5, GA6, GA7, GA8	819	-	1-819	100.00 / 100.00	Atomic

ID	Model(s)	Entity ID	Molecule name	Chain(s) [auth]	Total residues	Rigid segments	Flexible segments	Model coverage/ Starting model coverage (%)	Scale
1	1	13	Sphingomyelin phosphodiesterase 4	AB1, AB2, AB3, AB4, AB5, AB6, AB7, AB8, BB1, BB2, BB3, BB4, BB5, BB6, BB7, BB8	866	-	1-866	100.00 / 100.00	Atomic
1	1	21	Nuclear pore complex protein Nup153	AC1, AC2, AC3, AC4, AC5, AC6, AC7, AC8, BC1, BC2, BC3, BC4, BC5, BC6, BC7, BC8, CC1, CC2, CC3, CC4, CC5, CC6, CC7, CC8	1475	-	1-1475	100.00 / 100.00	Atomic
1	1	32	Nuclear pore complex protein Nup98	AD1, AD2, AD3, AD4, AD5, AD6, AD7, AD8, BD1, BD2, BD3, BD4, BD5, BD6, BD7, BD8, CD1, CD2, CD3, CD4, CD5, CD6, CD7, CD8, ZC1, ZC2, ZC3, ZC4, ZC5, ZC6, ZC7, ZC8	880	-	1-880	100.00 / 100.00	Atomic
1	1	39	Nuclear pore complex protein Nup43	AE1, AE2, AE3, AE4, AE5, AE6, AE7, AE8, BE1, BE2, BE3, BE4, BE5, BE6, BE7, BE8, CE1, CE2, CE3, CE4, CE5, CE6, CE7, CE8, ZD1, ZD2, ZD3, ZD4, ZD5, ZD6, ZD7, ZD8	380	-	1-380	100.00 / 100.00	Atomic
1	1	14	Nuclear pore complex protein Nup133	CB1, CB2, CB3, CB4, CB5, CB6, CB7, CB8, DB1, DB2, DB3, DB4, DB5, DB6, DB7, DB8, EB1, EB2, EB3, EB4, EB5, EB6, EB7, EB8, FB1, FB2, FB3, FB4, FB5, FB6, FB7, FB8	1156	-	1-1156	100.00 / 100.00	Atomic
1	1	22	Centrin-2	DC1, DC2, DC3, DC4, DC5, DC6, DC7, DC8	172	-	1-172	100.00 / 100.00	Atomic
1	1	33	Nuclear pore complex protein Nup214	DD1, DD2, DD3, DD4, DD5, DD6, DD7, DD8, ED1, ED2, ED3, ED4, ED5, ED6, ED7, ED8	2090	-	1-2090	100.00 / 100.00	Atomic
1	1	40	Nuclear pore complex protein ELYS	DE1, DE2, DE3, DE4, DE5, DE6, DE7, DE8, EE1, EE2, EE3, EE4, EE5, EE6, EE7, EE8	2266	-	1-2266	100.00 / 100.00	Atomic

ID	Model(s)	Entity ID	Molecule name	Chain(s) [auth]	Total residues	Rigid segments	Flexible segments	Model coverage/ Starting model coverage (%)	Scale
1	1	23	Transcription/export complex protein 2 homolog	EC1, EC2, EC3, EC4, EC5, EC6, EC7, EC8, FC1, FC2, FC3, FC4, FC5, FC6, FC7, FC8, GC1, GC2, GC3, GC4, GC5, GC6, GC7, GC8, HC1, HC2, HC3, HC4, HC5, HC6, HC7, HC8	101	-	1-101	100.00 / 100.00	Atomic
1	1	34	Nuclear envelope pore membrane protein POM 121	FD1, FD2, FD3, FD4, FD5, FD6, FD7, FD8, GD1, GD2, GD3, GD4, GD5, GD6, GD7, GD8	1249	-	1-1249	100.00 / 100.00	Atomic
1	1	15	Nuclear pore complex protein Nup107	GB1, GB2, GB3, GB4, GB5, GB6, GB7, GB8, HB1, HB2, HB3, HB4, HB5, HB6, HB7, HB8, IB1, IB2, IB3, IB4, IB5, IB6, IB7, IB8, JB1, JB2, JB3, JB4, JB5, JB6, JB7, JB8	925	-	1-925	100.00 / 100.00	Atomic
1	1	8	Nuclear pore complex protein Nup188	HA1, HA2, HA3, HA4, HA5, HA6, HA7, HA8, IA1, IA2, IA3, IA4, IA5, IA6, IA7, IA8	1749	-	1-1749	100.00 / 100.00	Atomic
1	1	35	Nuclear pore complex protein Nup62	HD1, HD2, HD3, HD4, HD5, HD6, HD7, HD8, ID1, ID2, ID3, ID4, ID5, ID6, ID7, ID8, JD1, JD2, JD3, JD4, JD5, JD6, JD7, JD8, KD1, KD2, KD3, KD4, KD5, KD6, KD7, KD8, LD1, LD2, LD3, LD4, LD5, LD6, LD7, LD8, MD1, MD2, MD3, MD4, MD5, MD6, MD7, MD8	522	-	1-522	100.00 / 100.00	Atomic
1	1	24	PCI domain-containing protein 2	IC1, IC2, IC3, IC4, IC5, IC6, IC7, IC8	399	-	1-399	100.00 / 100.00	Atomic

ID	Model(s)	Entity ID	Molecule name	Chain(s) [auth]	Total residues	Rigid segments	Flexible segments	Model coverage/ Starting model coverage (%)	Scale
1	1	9	Nuclear pore complex protein Nup205	JA1, JA2, JA3, JA4, JA5, JA6, JA7, JA8, KA1, KA2, KA3, KA4, KA5, KA6, KA7, KA8, LA1, LA2, LA3, LA4, LA5, LA6, LA7, LA8, MA1, MA2, MA3, MA4, MA5, MA6, MA7, MA8, NA1, NA2, NA3, NA4, NA5, NA6, NA7, NA8	2012	-	1-2012	100.00 / 100.00	Atomic
1	1	25	26S proteasome complex subunit SEM1	JC1, JC2, JC3, JC4, JC5, JC6, JC7, JC8	70	-	1-70	100.00 / 100.00	Atomic
1	1	16	Nuclear pore complex protein Nup96 (NUP96 part of NUP98-NUP96 precursor, P52948)	KB1, KB2, KB3, KB4, KB5, KB6, KB7, KB8, LB1, LB2, LB3, LB4, LB5, LB6, LB7, LB8, MB1, MB2, MB3, MB4, MB5, MB6, MB7, MB8, NB1, NB2, NB3, NB4, NB5, NB6, NB7, NB8	937	-	1-937	100.00 / 100.00	Atomic
1	1	26	Spliceosome RNA helicase DDX39B	KC1, KC2, KC3, KC4, KC5, KC6, KC7, KC8	428	-	1-428	100.00 / 100.00	Atomic
1	1	27	ATP-dependent RNA helicase DDX19B	LC1, LC2, LC3, LC4, LC5, LC6, LC7, LC8, OC1, OC2, OC3, OC4, OC5, OC6, OC7, OC8	479	-	1-479	100.00 / 100.00	Atomic
1	1	28	Nuclear pore complex protein GLE1	MC1, MC2, MC3, MC4, MC5, MC6, MC7, MC8, PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8	698	-	1-698	100.00 / 100.00	Atomic
1	1	29	Nuclear pore complex protein Nup42	NC1, NC2, NC3, NC4, NC5, NC6, NC7, NC8, QC1, QC2, QC3, QC4, QC5, QC6, QC7, QC8	423	-	1-423	100.00 / 100.00	Atomic
1	1	36	Protein SEC13 homolog	ND1, ND2, ND3, ND4, ND5, ND6, ND7, ND8, OD1, OD2, OD3, OD4, OD5, OD6, OD7, OD8, PD1, PD2, PD3, PD4, PD5, PD6, PD7, PD8, QD1, QD2, QD3, QD4, QD5, QD6, QD7, QD8	322	-	1-322	100.00 / 100.00	Atomic

ID	Model(s)	Entity ID	Molecule name	Chain(s) [auth]	Total residues	Rigid segments	Flexible segments	Model coverage/ Starting model coverage (%)	Scale
1	1	10	Nuclear pore complex protein Nup155	OA1, OA2, OA3, OA4, OA5, OA6, OA7, OA8, PA1, PA2, PA3, PA4, PA5, PA6, PA7, PA8, QA1, QA2, QA3, QA4, QA5, QA6, QA7, QA8, RA1, RA2, RA3, RA4, RA5, RA6, RA7, RA8, SA1, SA2, SA3, SA4, SA5, SA6, SA7, SA8, TA1, TA2, TA3, TA4, TA5, TA6, TA7, TA8	1391	-	1-1391	100.00 / 100.00	Atomic
1	1	17	Nuclear pore complex protein Nup160	OB1, OB2, OB3, OB4, OB5, OB6, OB7, OB8, PB1, PB2, PB3, PB4, PB5, PB6, PB7, PB8, QB1, QB2, QB3, QB4, QB5, QB6, QB7, QB8, RB1, RB2, RB3, RB4, RB5, RB6, RB7, RB8	1436	-	1-1436	100.00 / 100.00	Atomic
1	1	30	Nuclear pore complex protein Nup54	RC1, RC2, RC3, RC4, RC5, RC6, RC7, RC8, SC1, SC2, SC3, SC4, SC5, SC6, SC7, SC8, TC1, TC2, TC3, TC4, TC5, TC6, TC7, TC8, UC1, UC2, UC3, UC4, UC5, UC6, UC7, UC8	507	-	1-507	100.00 / 100.00	Atomic
1	1	37	Nucleoporin Seh1	RD1, RD2, RD3, RD4, RD5, RD6, RD7, RD8, SD1, SD2, SD3, SD4, SD5, SD6, SD7, SD8, TD1, TD2, TD3, TD4, TD5, TD6, TD7, TD8, UD1, UD2, UD3, UD4, UD5, UD6, UD7, UD8	360	-	1-360	100.00 / 100.00	Atomic
1	1	18	Nuclear pore complex protein Nup37	SB1, SB2, SB3, SB4, SB5, SB6, SB7, SB8, TB1, TB2, TB3, TB4, TB5, TB6, TB7, TB8, UB1, UB2, UB3, UB4, UB5, UB6, UB7, UB8, VB1, VB2, VB3, VB4, VB5, VB6, VB7, VB8	326	-	1-326	100.00 / 100.00	Atomic

ID	Model(s)	Entity ID	Molecule name	Chain(s) [auth]	Total residues	Rigid segments	Flexible segments	Model coverage/ Starting model coverage (%)	Scale
1	1	11	Nuclear envelope protein NDC1	UA1, UA2, UA3, UA4, UA5, UA6, UA7, UA8, VA1, VA2, VA3, VA4, VA5, VA6, VA7, VA8	674	-	1-674	100.00 / 100.00	Atomic
1	1	31	Nuclear pore complex protein Nup58	VC1, VC2, VC3, VC4, VC5, VC6, VC7, VC8, WC1, WC2, WC3, WC4, WC5, WC6, WC7, WC8, XC1, XC2, XC3, XC4, XC5, XC6, XC7, XC8, YC1, YC2, YC3, YC4, YC5, YC6, YC7, YC8	599	-	1-599	100.00 / 100.00	Atomic
1	1	38	Nuclear pore complex protein Nup85	VD1, VD2, VD3, VD4, VD5, VD6, VD7, VD8, WD1, WD2, WD3, WD4, WD5, WD6, WD7, WD8, XD1, XD2, XD3, XD4, XD5, XD6, XD7, XD8, YD1, YD2, YD3, YD4, YD5, YD6, YD7, YD8	656	-	1-656	100.00 / 100.00	Atomic
1	1	12	Nuclear pore complex protein Nup35	WA1, WA2, WA3, WA4, WA5, WA6, WA7, WA8, XA1, XA2, XA3, XA4, XA5, XA6, XA7, XA8, YA1, YA2, YA3, YA4, YA5, YA6, YA7, YA8, ZA1, ZA2, ZA3, ZA4, ZA5, ZA6, ZA7, ZA8	326	-	1-326	100.00 / 100.00	Atomic
1	1	19	Nuclear pore complex protein Nup88	WB1, WB2, WB3, WB4, WB5, WB6, WB7, WB8, XB1, XB2, XB3, XB4, XB5, XB6, XB7, XB8	741	-	1-741	100.00 / 100.00	Atomic
1	1	20	Transmembrane protein 209	YB1, YB2, YB3, YB4, YB5, YB6, YB7, YB8, ZB1, ZB2, ZB3, ZB4, ZB5, ZB6, ZB7, ZB8	561	-	1-561	100.00 / 100.00	Atomic

2.3. Datasets used for modeling

There are 45 unique datasets used to build the models in this entry.

ID	Dataset type	Database name	Data access code
1	3DEM volume	EMDB	EMD-58804

ID	Dataset type	Database name	Data access code
6	Crosslinking-MS data	PRIDE	PXD080872
7	Crosslinking-MS data	PRIDE	PXD081158
8	3DEM volume	EMDB	EMD-14322
9	Crosslinking-MS data	PRIDE	PXD081113
10	De Novo model	Not available	Not available
11	De Novo model	Not available	Not available
12	De Novo model	Not available	Not available
13	De Novo model	Not available	Not available
14	De Novo model	Not available	Not available
15	De Novo model	Not available	Not available
16	De Novo model	Not available	Not available
17	De Novo model	Not available	Not available
18	De Novo model	Not available	Not available
19	De Novo model	Not available	Not available
20	De Novo model	Not available	Not available
21	De Novo model	Not available	Not available
22	De Novo model	Not available	Not available
23	De Novo model	Not available	Not available
24	De Novo model	Not available	Not available
25	De Novo model	Not available	Not available
26	De Novo model	Not available	Not available
27	De Novo model	Not available	Not available
28	De Novo model	Not available	Not available
29	De Novo model	Not available	Not available
30	De Novo model	Not available	Not available
31	De Novo model	Not available	Not available
32	De Novo model	Not available	Not available
33	De Novo model	Not available	Not available
34	De Novo model	Not available	Not available
35	De Novo model	Not available	Not available
36	De Novo model	Not available	Not available
37	De Novo model	Not available	Not available
38	De Novo model	Not available	Not available
39	De Novo model	Not available	Not available
40	De Novo model	Not available	Not available

ID	Dataset type	Database name	Data access code
41	De Novo model	Not available	Not available
42	De Novo model	Not available	Not available
43	De Novo model	Not available	Not available
44	De Novo model	Not available	Not available
45	De Novo model	Not available	Not available
47	De Novo model	Not available	Not available
48	De Novo model	Not available	Not available
49	De Novo model	Not available	Not available
50	De Novo model	Not available	Not available

2.4. Methodology and software

This entry is a result of 1 distinct protocol.

Step number	Protocol ID	Method name	Method type	Method description	Number of computed models	Multi state modeling	Multi scale modeling
1	1	Starting model generation	AlphaFold prediction	Subcomplex and nucleoporin structures were predicted with AlphaFold 3 (server and standalone). TPR homodimers were modeled with AF3x guided by XL-MS cross-links, and the TPR tetramer (residues 1-320 and 660-1460) with ColabFold using the top homodimer models as custom templates. The highest-ranked models (USalign, pLDDT, PAE and agreement with XL-MS data) were selected as starting models.	1	False	False

Step number	Protocol ID	Method name	Method type	Method description	Number of computed models	Multi state modeling	Multi scale modeling
2	1	Systematic fitting	Superposition and systematic rigid-body fitting	The scaffold was assembled ring by ring, using the previously published human NPC models (Mosalaganti et al.) and the cryo-ET map of the human macrophage NPC. Inner ring (IR): an initial IR model was built from the published constricted-state NPC model; AF3 models of the previously assigned NUPs and their subcomplexes were superposed onto their counterparts in that structure, and the newly identified subcomplexes (NUP155-SMPD4, TMEM209 CTD-(NUP98-NUP93-NUP62-NUP58-NUP54)x2, NUP93-NUP35x2) were positioned by systematic rigid-body fitting with Assembline; the resulting IR model was then fitted as a rigid body into the dilated-state macrophage cryo-ET map. Nuclear ring (NR) and nuclear basket: modeled using the macrophage cryo-ET map and the published model; AF3 models of the previously assigned NUPs and their subcomplexes were superposed onto the corresponding components in the published structure fitted into the map, and the newly identified subcomplexes (NUP85-SEH1-NUP43-GANP-NUP153, NUP205-NUP93-GANP, NUP96-NUP107-TPRx2-NUP153-GANP) were positioned by systematic fitting with Assembline; the NUP85-SEH1-NUP43-GANP-NUP153-Centrin-2-ENY2x2 subcomplex was placed by superposition onto the NUP85-SEH1-NUP43-GANP-NUP153 model and used as a reference to position GANP-ENY2x4; the inner TPR insertion region (TPRx2-NUP153-GANP) and the TPR tetramer were placed manually and locally refined in ChimeraX. Cytoplasmic ring (CR): generated with the same approach as the NR; the second copy of the NUP214 subcomplex was positioned by systematic fitting with Assembline. Luminal ring (LR): initial coordinates	1	False	False

Step number	Protocol ID	Method name	Method type	Method description	Number of computed models	Multi state modeling	Multi scale modeling
				were taken directly from the previously published dilated-state NPC model. Systematic-fitting runs used 100,000 random placements requiring at least 30% map overlap, scored by cross-correlation about the mean (cam score) and assessed via Fisher-transformed z-scores and Benjamini-Hochberg-adjusted p-values.			
3	1	Integrative refinement	Assembline/IMP refinement	The assembled NPC model was refined with Assembline built on the Integrative Modeling Platform (IMP v2.15) and the Python Modeling Interface (PMI). Models were divided into rigid-body segments in a C-alpha-only representation; the scoring function combined EM-fit restraints, steric-clash penalties (SoftSpherePairScore), connectivity restraints between sequentially adjacent domains, and elastic-network restraints derived from AF3 subcomplex models. Refined C-alpha representations were back-mapped to the atomic AF3 models.	1	False	False
4	1	Flexible and disordered region building	MODELLER/ISOLDE	AF3 models of flexible domains and all disordered regions were placed in arbitrary positions and connected within chains using MODELLER and ISOLDE; remaining clashes were removed with MODELLER.	1	False	False

There are 10 software packages reported in this entry.

ID	Software name	Software version	Software classification	Software location
1	AlphaFold 3	Not available	model building	https://alphafold.ebi.ac.uk/
4	Assembline	Not available	integrative model building	https://assembline.readthedocs.io/
5	Integrative Modeling Platform (IMP)	2.15	integrative model building	https://integrativemodeling.org/
8	MODELLER	Not available	model building	https://salilab.org/modeller/
2	AF3x	Not available	model building	https://github.com/KosinskiLab/af3x
3	ColabFold	Not available	model building	https://github.com/sokrypton/ColabFold
6	Python Modeling Interface (PMI)	Not available	integrative model building	https://github.com/salilab/pmi
7	UCSF Chimera	Not available	model building	https://www.cgl.ucsf.edu/chimera/

ID	Software name	Software version	Software classification	Software location
9	ISOLDE	Not available	model building	https://isolde.cimr.cam.ac.uk/
10	UCSF ChimeraX	1.10/v10	model building	https://www.rbvi.ucsf.edu/chimerax/

3. Data quality

3.2. Crosslinking-MS

At the moment, data validation is only available for crosslinking-MS data deposited as a fully compliant dataset in the PRIDE Crosslinking database. Correspondence between crosslinking-MS and entry entities is established using pyHMMER. Only residue pairs that passed the reported threshold are used for the analysis. The values in the report have to be interpreted in the context of the experiment (i.e. only a minor fraction of in-situ or in-vivo dataset can be used for modeling).

Crosslinking-MS dataset is not available in the PRIDE Crosslinking database.

3.3. 3DEM

This section describes the quality of the 3DEM datasets.

EMD-58804

3.3.1. Experimental information

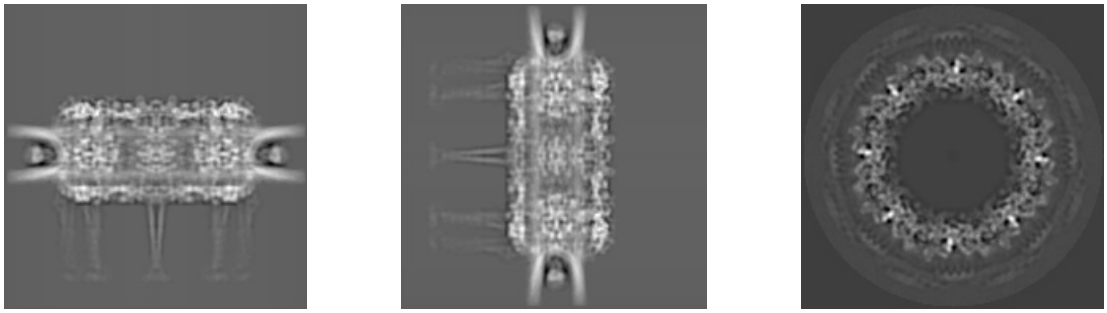
EM reconstruction method:	SUBTOMOGRAM AVERAGING
Resolution:	28.00 Å
Recommended level:	0.050
Estimated volume:	381727.59 nm³
Specimen preparation:	Preparation ID 1 Vitrification
Map-only validation report:	wwPDB validation report

3.3.2. Map visualisation

This section contains visualisations of the EMDB entry EMD-58804. These allow visual inspection of the internal detail of the map and identification of artifacts. Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

3.3.2.1. Orthogonal projections

Primary map



X **Y** **Z**

The images above show the map projected in three orthogonal directions.

3.3.2.2. Central slices

Primary map



X Index: 96 **Y Index: 96** **Z Index: 96**

The images above show central slices of the map in three orthogonal directions.

3.3.2.3. Largest variance slices

Primary map

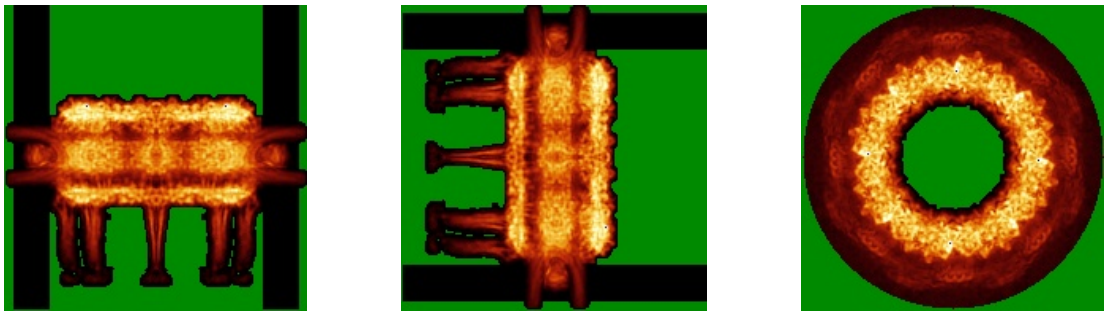


X Index: 52 **Y Index: 52** **Z Index: 122**

The images above show the largest variance slices of the map in three orthogonal directions.

3.3.2.4. Orthogonal standard-deviation projections (false-color)

Primary map

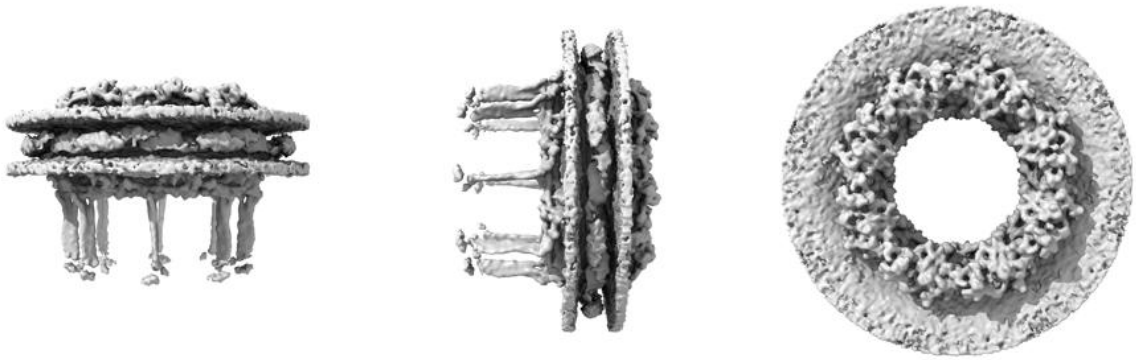


X **Y** **Z**

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

3.3.2.5. Orthogonal surface views

Primary map



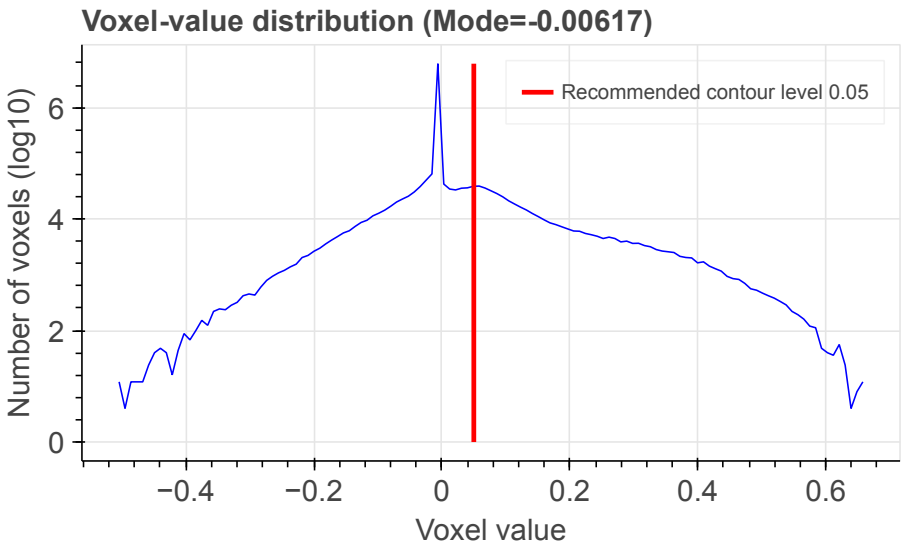
X **Y** **Z**

The images above show the 3D surface view of the map at the recommended contour level 0.050 . These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

3.3.3. Map analysis

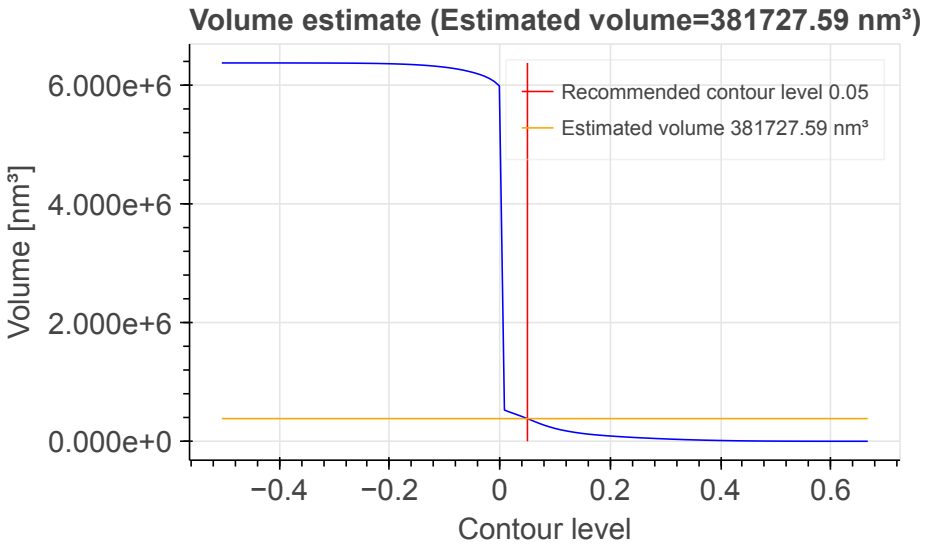
This section contains the results of statistical analysis of the map.

3.3.3.1. Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

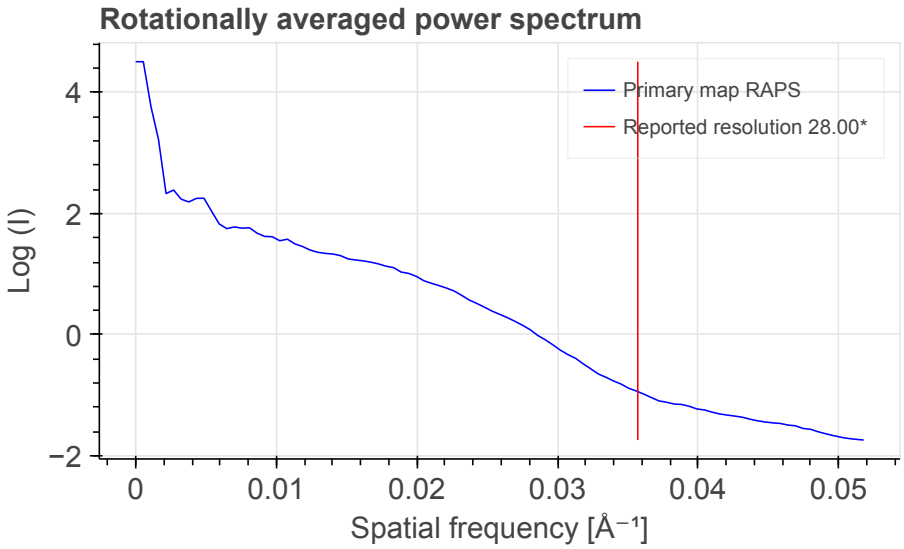
3.3.3.2. Volume estimate



The volume at the recommended contour level is 381727.59 nm³.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

3.3.3.3. Rotationally averaged power spectrum



*Reported resolution corresponds to spatial frequency of 0.036 Å⁻¹

3.3.4. Fourier-Shell correlation

3.3.4.2. Resolution estimates

Resolution estimate (Å)	Estimation criterion (FSC cut-off)			
	0.143	0.5	Half-bit	Other
Reported by author	-	-	-	28.00

Author-provided FSC curve is not available.

EMD-14322

3.3.1. Experimental information

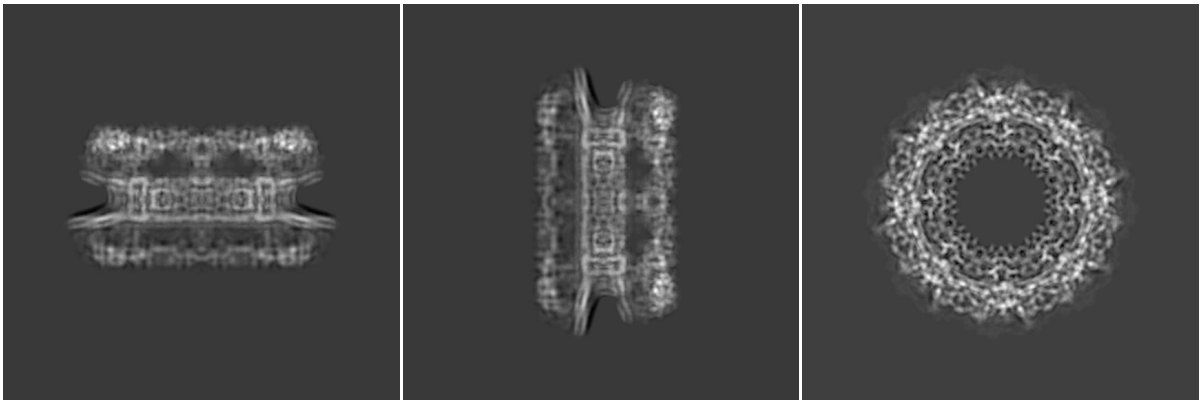
EM reconstruction method:	SUBTOMOGRAM AVERAGING
Resolution:	12.00 Å
Recommended level:	3.500
Estimated volume:	92616.23 nm³
Specimen preparation:	Preparation ID 1 Vitrification
Map-only validation report:	wwPDB validation report

3.3.2. Map visualisation

This section contains visualisations of the EMDB entry EMD-14322. These allow visual inspection of the internal detail of the map and identification of artifacts. Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

3.3.2.1. Orthogonal projections

Primary map

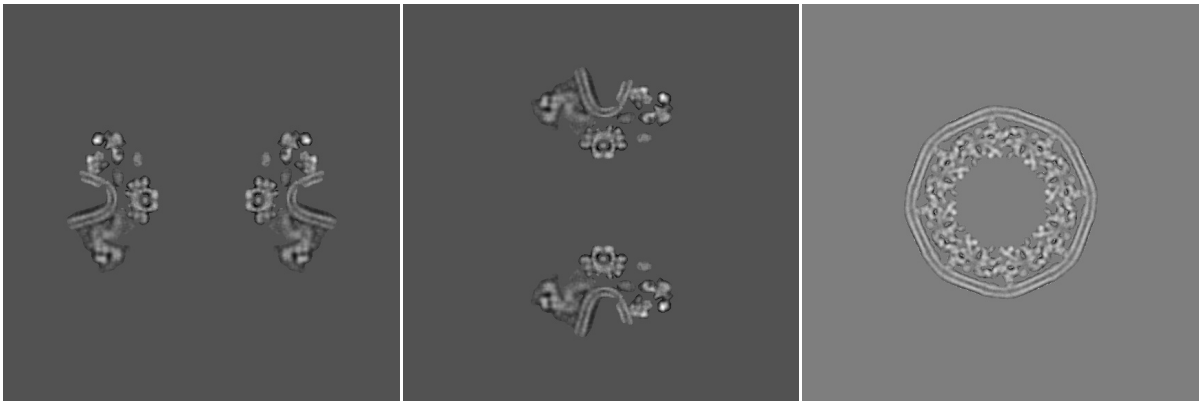


X **Y** **Z**

The images above show the map projected in three orthogonal directions.

3.3.2.2. Central slices

Primary map

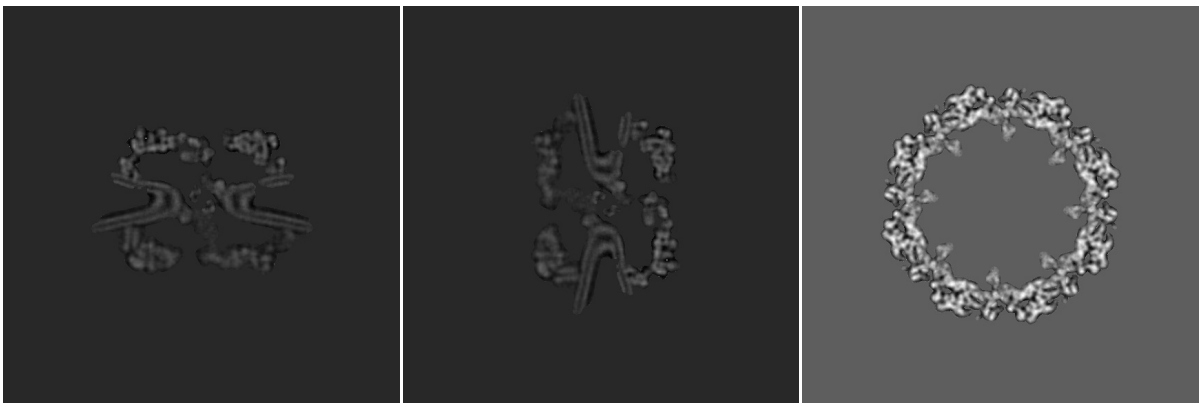


X Index: 288 **Y Index: 288** **Z Index: 288**

The images above show central slices of the map in three orthogonal directions.

3.3.2.3. Largest variance slices

Primary map

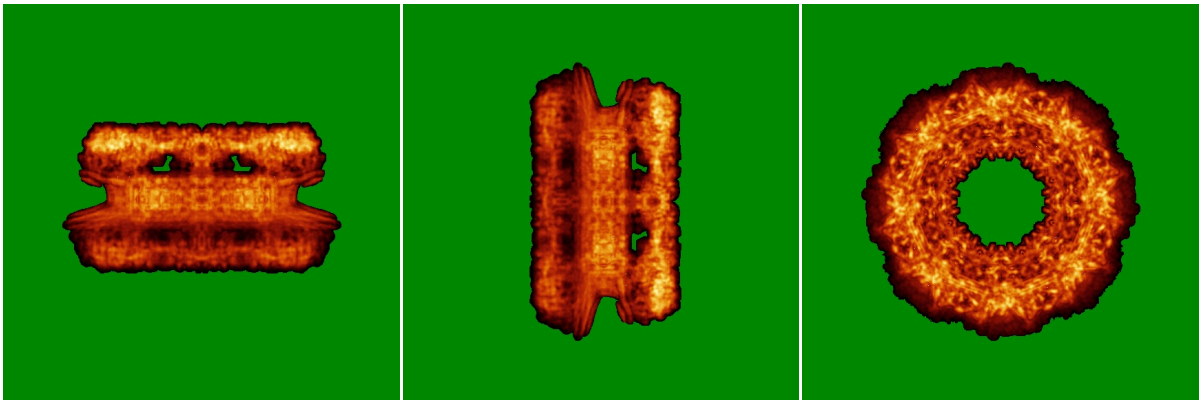


X Index: 404 **Y Index: 172** **Z Index: 370**

The images above show the largest variance slices of the map in three orthogonal directions.

3.3.2.4. Orthogonal standard-deviation projections (false-color)

Primary map

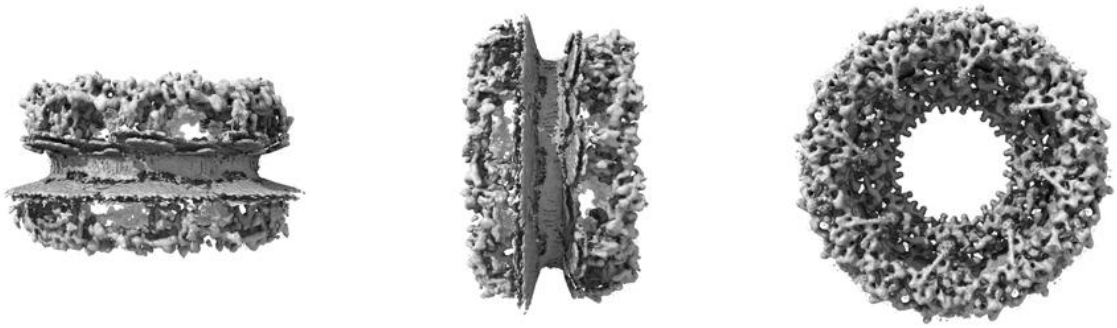


X **Y** **Z**

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

3.3.2.5. Orthogonal surface views

Primary map



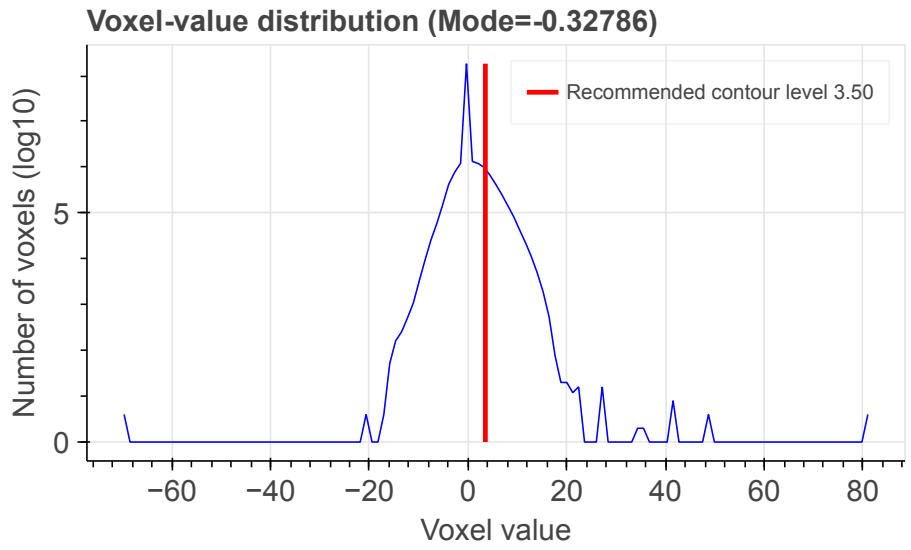
X **Y** **Z**

The images above show the 3D surface view of the map at the recommended contour level 3.500 . These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

3.3.3. Map analysis

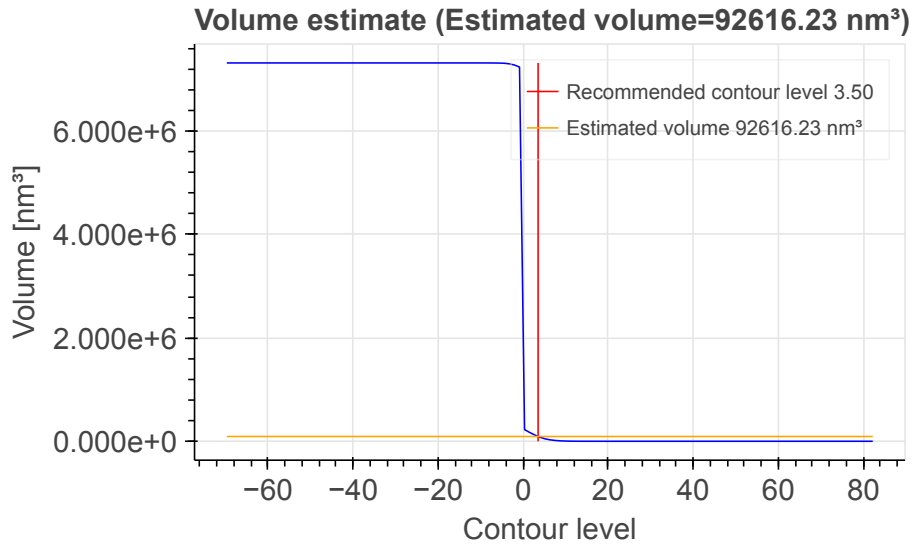
This section contains the results of statistical analysis of the map.

3.3.3.1. Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

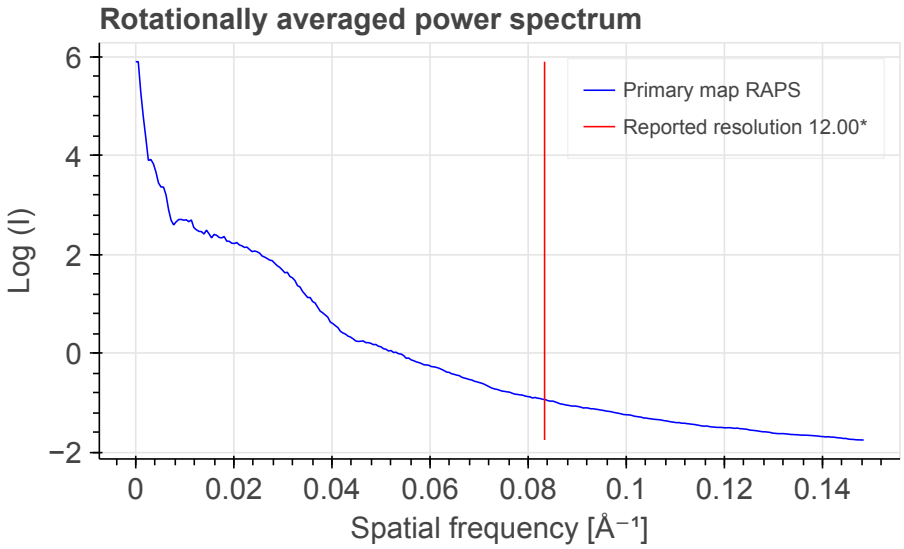
3.3.3.2. Volume estimate



The volume at the recommended contour level is 92616.23 nm³.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

3.3.3.3. Rotationally averaged power spectrum



*Reported resolution corresponds to spatial frequency of 0.083 Å⁻¹

3.3.4. Fourier-Shell correlation

3.3.4.2. Resolution estimates

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	12.00	-	-

Author-provided FSC curve is not available.

4. Model quality

For models with atomic structures, MolProbity analysis is performed. For models with coarse-grained or multi-scale structures, excluded volume analysis is performed.

4.1b. MolProbity Analysis

Standard geometry

The Z score of a bond length (or angle) is the number of standard deviations it is from its ideal value, as MolProbity scores it with the conformation-dependent library; hydrogens are left out. A bond length (or angle) with |Z| > 5 is an outlier worth inspection. RMSZ is the root-mean-square of the Z scores of a chain's bond lengths (or angles). For a chain in several models, the table shows the mean ± the standard deviation over the models; the All row pools every chain of every model. Only the first 100 of 1080 chains are listed.

Mol	Chain	Bond lengths RMSZ	Bond lengths #|Z|>5	Bond angles RMSZ	Bond angles #|Z|>5
1	A1	1.39	3/25719 (0.0%)	1.49	262/34757 (0.8%)
1	B1	1.40	4/25719 (0.0%)	1.49	242/34757 (0.7%)
1	C1	1.39	7/25719 (0.0%)	1.48	224/34757 (0.6%)
1	D1	1.39	2/25719 (0.0%)	1.51	269/34757 (0.8%)
1	E1	0.86	4/25734 (0.0%)	1.38	147/34787 (0.4%)

Mol	Chain	Bond lengths RMSZ	Bond lengths #|Z|>5	Bond angles RMSZ	Bond angles #|Z|>5
2	F1	1.50	2/14777 (0.0%)	1.51	112/20154 (0.6%)
2	G1	1.48	8/14777 (0.1%)	1.48	109/20154 (0.5%)
2	H1	1.47	7/14777 (0.0%)	1.46	97/20154 (0.5%)
2	I1	1.50	1/14777 (0.0%)	1.52	115/20154 (0.6%)
2	J1	1.49	5/14777 (0.0%)	1.49	111/20154 (0.6%)
2	K1	1.49	6/14777 (0.0%)	1.49	111/20154 (0.6%)
2	L1	1.48	4/14777 (0.0%)	1.48	103/20154 (0.5%)
2	M1	1.49	1/14777 (0.0%)	1.52	117/20154 (0.6%)
3	N1	1.43	2/18902 (0.0%)	1.46	70/25443 (0.3%)
3	O1	1.44	1/18901 (0.0%)	1.49	72/25441 (0.3%)
4	P1	0.80	2/3905 (0.1%)	1.04	5/5342 (0.1%)
4	Q1	0.78	1/3905 (0.0%)	0.99	0/5342 (0.0%)
3	R1	1.51	3/18905 (0.0%)	1.48	72/25449 (0.3%)
3	S1	1.43	1/18901 (0.0%)	1.47	62/25441 (0.2%)
5	T1	1.44	1/15670 (0.0%)	1.52	136/21229 (0.6%)
6	U1	0.87	1/3586 (0.0%)	1.30	14/4841 (0.3%)
6	V1	0.88	2/3586 (0.1%)	1.30	13/4841 (0.3%)
6	W1	1.43	1/3586 (0.0%)	1.53	36/4841 (0.7%)
6	X1	0.88	1/3586 (0.0%)	1.31	16/4841 (0.3%)
6	Y1	1.43	1/3586 (0.0%)	1.52	40/4841 (0.8%)
6	Z1	1.44	1/3586 (0.0%)	1.51	34/4841 (0.7%)
7	AA1	0.81	11/5963 (0.2%)	1.07	7/8059 (0.1%)
7	BA1	0.88	4/6695 (0.1%)	1.15	13/9048 (0.1%)
7	CA1	1.44	0/6695 (0.0%)	1.57	76/9048 (0.8%)
7	DA1	1.92	8/6695 (0.1%)	1.28	18/9048 (0.2%)
7	EA1	0.76	3/6695 (0.0%)	1.13	6/9048 (0.1%)
7	FA1	0.87	13/5963 (0.2%)	1.15	22/8059 (0.3%)
7	GA1	1.80	14/5963 (0.2%)	1.19	9/8059 (0.1%)
8	HA1	0.93	7/14026 (0.0%)	1.10	18/19034 (0.1%)
8	IA1	0.77	7/14026 (0.0%)	1.09	23/19034 (0.1%)
9	JA1	1.43	0/16310 (0.0%)	1.50	115/22104 (0.5%)
9	KA1	1.43	1/16310 (0.0%)	1.51	101/22104 (0.5%)
9	LA1	1.44	2/16310 (0.0%)	1.49	129/22104 (0.6%)
9	MA1	1.45	0/16310 (0.0%)	1.53	122/22104 (0.6%)
9	NA1	1.42	0/16310 (0.0%)	1.50	144/22104 (0.7%)

Mol	Chain	Bond lengths RMSZ	Bond lengths #|Z|>5	Bond angles RMSZ	Bond angles #|Z|>5
10	OA1	1.44	1/10626 (0.0%)	1.52	80/14401 (0.6%)
10	PA1	1.45	2/10626 (0.0%)	1.54	95/14401 (0.7%)
10	QA1	1.44	2/10626 (0.0%)	1.51	82/14401 (0.6%)
10	RA1	1.45	1/10626 (0.0%)	1.51	86/14401 (0.6%)
10	SA1	1.45	3/10626 (0.0%)	1.54	90/14401 (0.6%)
10	TA1	1.45	0/10626 (0.0%)	1.53	91/14401 (0.6%)
11	UA1	1.42	0/4531 (0.0%)	1.57	45/6171 (0.7%)
11	VA1	1.43	0/4531 (0.0%)	1.54	47/6171 (0.8%)
12	WA1	1.43	0/1891 (0.0%)	1.49	17/2569 (0.7%)
12	XA1	1.17	5/1891 (0.3%)	1.47	17/2569 (0.7%)
12	YA1	3.27	2/1891 (0.1%)	1.72	26/2569 (1.0%)
12	ZA1	1.42	0/1891 (0.0%)	1.57	19/2569 (0.7%)
13	AB1	0.83	6/7122 (0.1%)	1.07	3/9696 (0.0%)
13	BB1	0.83	6/7122 (0.1%)	1.07	2/9696 (0.0%)
14	CB1	1.43	0/8708 (0.0%)	1.58	117/11806 (1.0%)
14	DB1	1.41	0/8708 (0.0%)	1.50	66/11806 (0.6%)
14	EB1	0.80	1/8708 (0.0%)	1.08	14/11806 (0.1%)
14	FB1	0.81	2/8708 (0.0%)	1.09	22/11806 (0.2%)
15	GB1	0.78	2/6518 (0.0%)	1.13	4/8821 (0.0%)
15	HB1	0.78	4/6518 (0.1%)	1.06	7/8821 (0.1%)
15	IB1	1.41	0/6518 (0.0%)	1.51	44/8821 (0.5%)
15	JB1	1.41	0/6518 (0.0%)	1.52	48/8821 (0.5%)
16	KB1	1.46	0/5586 (0.0%)	1.57	53/7582 (0.7%)
16	LB1	1.42	0/5586 (0.0%)	1.54	50/7582 (0.7%)
16	MB1	1.45	0/5586 (0.0%)	1.54	33/7582 (0.4%)
16	NB1	1.44	1/5586 (0.0%)	1.56	36/7582 (0.5%)
17	OB1	0.81	6/11371 (0.1%)	0.97	5/15448 (0.0%)
17	PB1	1.41	0/11371 (0.0%)	1.48	56/15448 (0.4%)
17	QB1	0.82	7/11371 (0.1%)	0.96	2/15448 (0.0%)
17	RB1	0.83	8/11371 (0.1%)	0.96	1/15448 (0.0%)
18	SB1	0.81	2/2623 (0.1%)	0.91	1/3570 (0.0%)
18	TB1	1.45	0/2622 (0.0%)	1.56	42/3568 (1.2%)
18	UB1	0.80	1/2623 (0.0%)	0.92	0/3570 (0.0%)
18	VB1	0.81	2/2623 (0.1%)	0.91	1/3570 (0.0%)
19	WB1	1.43	0/5972 (0.0%)	1.55	58/8107 (0.7%)

Mol	Chain	Bond lengths RMSZ	Bond lengths #|Z|>5	Bond angles RMSZ	Bond angles #|Z|>5
19	XB1	1.42	3/5972 (0.1%)	1.52	46/8107 (0.6%)
20	YB1	0.89	7/4552 (0.2%)	1.10	6/6199 (0.1%)
20	ZB1	1.43	1/4552 (0.0%)	1.50	35/6199 (0.6%)
21	AC1	1.37	1/9196 (0.0%)	1.49	120/12464 (1.0%)
21	BC1	1.39	1/9196 (0.0%)	1.47	114/12464 (0.9%)
21	CC1	1.38	2/9196 (0.0%)	1.49	122/12464 (1.0%)
22	DC1	0.68	0/1391 (0.0%)	1.02	2/1847 (0.1%)
23	EC1	0.77	0/813 (0.0%)	1.04	0/1087 (0.0%)
23	FC1	0.77	1/813 (0.1%)	1.04	0/1087 (0.0%)
23	GC1	0.78	1/813 (0.1%)	1.07	0/1087 (0.0%)
23	HC1	0.85	1/813 (0.1%)	1.18	2/1087 (0.2%)
24	IC1	0.73	0/3307 (0.0%)	1.01	1/4460 (0.0%)
25	JC1	0.76	1/596 (0.2%)	1.05	0/807 (0.0%)
26	KC1	0.71	0/3496 (0.0%)	1.04	1/4709 (0.0%)
27	LC1	0.71	0/3840 (0.0%)	1.02	0/5185 (0.0%)
28	MC1	0.73	0/2636 (0.0%)	1.02	0/3559 (0.0%)
29	NC1	0.77	0/362 (0.0%)	1.07	1/492 (0.2%)
27	OC1	0.71	0/3840 (0.0%)	1.02	0/5185 (0.0%)
28	PC1	0.73	0/2636 (0.0%)	1.02	0/3559 (0.0%)
29	QC1	0.77	0/362 (0.0%)	1.06	1/492 (0.2%)
30	RC1	0.75	0/3971 (0.0%)	1.10	7/5374 (0.1%)
30	SC1	0.77	1/3971 (0.0%)	1.12	8/5374 (0.1%)
30	TC1	0.77	1/3971 (0.0%)	1.10	7/5374 (0.1%)
30	UC1	0.77	1/3971 (0.0%)	1.11	6/5374 (0.1%)
31	VC1	0.89	4/4311 (0.1%)	1.30	18/5851 (0.3%)
All	All	1.30	2929/8181848 (0.0%)	1.40	53348/11096880 (0.5%)

All unique bond length outliers are listed below, sorted by the |Z| of their worst occurrence. The output is limited to 100 rows.

Mol	Chain	Res	Type	Atoms	Z	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
7	DA3	92	PRO	N-CD	141.82	3.46	1.47	1	1
7	DA1	92	PRO	N-CD	141.82	3.46	1.47	1	1
7	DA7	92	PRO	N-CD	141.82	3.46	1.47	1	1
7	DA5	92	PRO	N-CD	141.82	3.46	1.47	1	1
7	DA4	92	PRO	N-CD	141.79	3.46	1.47	1	1
7	DA8	92	PRO	N-CD	141.79	3.46	1.47	1	1

Mol	Chain	Res	Type	Atoms	Z	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
7	DA6	92	PRO	N-CD	141.79	3.46	1.47	1	1
7	DA2	92	PRO	N-CD	141.79	3.46	1.47	1	1
12	YA4	122	PRO	N-CD	136.27	3.38	1.47	1	1
12	YA2	122	PRO	N-CD	136.27	3.38	1.47	1	1
12	YA6	122	PRO	N-CD	136.27	3.38	1.47	1	1
12	YA8	122	PRO	N-CD	136.27	3.38	1.47	1	1
12	YA1	122	PRO	N-CD	136.26	3.38	1.47	1	1
12	YA3	122	PRO	N-CD	136.26	3.38	1.47	1	1
12	YA5	122	PRO	N-CD	136.26	3.38	1.47	1	1
12	YA7	122	PRO	N-CD	136.26	3.38	1.47	1	1
32	BD3	554	PRO	N-CD	135.53	3.37	1.47	1	1
32	BD5	554	PRO	N-CD	135.53	3.37	1.47	1	1
32	BD7	554	PRO	N-CD	135.53	3.37	1.47	1	1
32	BD1	554	PRO	N-CD	135.53	3.37	1.47	1	1
32	BD8	554	PRO	N-CD	135.49	3.37	1.47	1	1
32	BD6	554	PRO	N-CD	135.49	3.37	1.47	1	1
32	BD2	554	PRO	N-CD	135.49	3.37	1.47	1	1
32	BD4	554	PRO	N-CD	135.49	3.37	1.47	1	1
7	GA4	173	PRO	N-CD	123.40	3.20	1.47	1	1
7	GA6	173	PRO	N-CD	123.40	3.20	1.47	1	1
7	GA2	173	PRO	N-CD	123.40	3.20	1.47	1	1
7	GA8	173	PRO	N-CD	123.40	3.20	1.47	1	1
7	GA3	173	PRO	N-CD	123.39	3.20	1.47	1	1
7	GA7	173	PRO	N-CD	123.39	3.20	1.47	1	1
7	GA5	173	PRO	N-CD	123.39	3.20	1.47	1	1
7	GA1	173	PRO	N-CD	123.39	3.20	1.47	1	1
8	HA1	1521	PRO	N-CD	55.50	2.25	1.47	1	1
8	HA3	1521	PRO	N-CD	55.50	2.25	1.47	1	1
8	HA7	1521	PRO	N-CD	55.50	2.25	1.47	1	1
8	HA5	1521	PRO	N-CD	55.50	2.25	1.47	1	1
8	HA4	1521	PRO	N-CD	55.49	2.25	1.47	1	1
8	HA6	1521	PRO	N-CD	55.49	2.25	1.47	1	1
8	HA2	1521	PRO	N-CD	55.49	2.25	1.47	1	1
8	HA8	1521	PRO	N-CD	55.49	2.25	1.47	1	1
3	R1	1149	CYS	SG-SG	47.86	2.99	2.03	1	1

Mol	Chain	Res	Type	Atoms	Z	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
3	R3	1149	CYS	SG-SG	47.86	2.99	2.03	1	1
3	R5	1149	CYS	SG-SG	47.86	2.99	2.03	1	1
3	R7	1149	CYS	SG-SG	47.86	2.99	2.03	1	1
3	R2	1149	CYS	SG-SG	47.84	2.99	2.03	1	1
3	R4	1149	CYS	SG-SG	47.84	2.99	2.03	1	1
3	R8	1149	CYS	SG-SG	47.84	2.99	2.03	1	1
3	R6	1149	CYS	SG-SG	47.84	2.99	2.03	1	1
3	R1	630	ALA	C-OXT	46.51	2.16	1.23	1	1
3	R7	630	ALA	C-OXT	46.51	2.16	1.23	1	1
3	R3	630	ALA	C-OXT	46.51	2.16	1.23	1	1
3	R5	630	ALA	C-OXT	46.51	2.16	1.23	1	1
3	R6	630	ALA	C-OXT	46.49	2.16	1.23	1	1
3	R4	630	ALA	C-OXT	46.49	2.16	1.23	1	1
3	R8	630	ALA	C-OXT	46.49	2.16	1.23	1	1
3	R2	630	ALA	C-OXT	46.49	2.16	1.23	1	1
7	BA5	164	PRO	N-CD	28.21	1.87	1.47	1	1
7	BA7	164	PRO	N-CD	28.21	1.87	1.47	1	1
7	BA1	164	PRO	N-CD	28.21	1.87	1.47	1	1
7	BA3	164	PRO	N-CD	28.21	1.87	1.47	1	1
7	BA4	164	PRO	N-CD	28.18	1.87	1.47	1	1
7	BA6	164	PRO	N-CD	28.18	1.87	1.47	1	1
7	BA8	164	PRO	N-CD	28.18	1.87	1.47	1	1
7	BA2	164	PRO	N-CD	28.18	1.87	1.47	1	1
7	BA3	92	PRO	N-CD	23.36	1.80	1.47	1	1
7	BA7	92	PRO	N-CD	23.36	1.80	1.47	1	1
7	BA5	92	PRO	N-CD	23.36	1.80	1.47	1	1
7	BA1	92	PRO	N-CD	23.36	1.80	1.47	1	1
7	BA8	92	PRO	N-CD	23.34	1.80	1.47	1	1
7	BA2	92	PRO	N-CD	23.34	1.80	1.47	1	1
7	BA6	92	PRO	N-CD	23.34	1.80	1.47	1	1
7	BA4	92	PRO	N-CD	23.34	1.80	1.47	1	1
32	ZC5	556	PRO	N-CD	22.03	1.78	1.47	1	1
32	ZC7	556	PRO	N-CD	22.03	1.78	1.47	1	1
32	ZC1	556	PRO	N-CD	22.03	1.78	1.47	1	1
32	ZC3	556	PRO	N-CD	22.03	1.78	1.47	1	1

Mol	Chain	Res	Type	Atoms	Z	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
32	ZC2	556	PRO	N-CD	22.03	1.78	1.47	1	1
32	ZC4	556	PRO	N-CD	22.03	1.78	1.47	1	1
32	ZC6	556	PRO	N-CD	22.03	1.78	1.47	1	1
32	ZC8	556	PRO	N-CD	22.03	1.78	1.47	1	1
32	ZC1	547	PRO	N-CD	21.91	1.78	1.47	1	1
32	ZC7	547	PRO	N-CD	21.91	1.78	1.47	1	1
32	ZC3	547	PRO	N-CD	21.91	1.78	1.47	1	1
32	ZC5	547	PRO	N-CD	21.91	1.78	1.47	1	1
32	ZC6	547	PRO	N-CD	21.90	1.78	1.47	1	1
32	ZC4	547	PRO	N-CD	21.90	1.78	1.47	1	1
32	ZC8	547	PRO	N-CD	21.90	1.78	1.47	1	1
32	ZC2	547	PRO	N-CD	21.90	1.78	1.47	1	1
32	BD6	556	PRO	N-CD	21.54	1.77	1.47	1	1
32	BD8	556	PRO	N-CD	21.54	1.77	1.47	1	1
32	BD2	556	PRO	N-CD	21.49	1.77	1.47	1	1
32	BD4	556	PRO	N-CD	21.49	1.77	1.47	1	1
32	BD3	556	PRO	N-CD	21.48	1.77	1.47	1	1
32	BD1	556	PRO	N-CD	21.48	1.77	1.47	1	1
32	BD7	556	PRO	N-CD	21.48	1.77	1.47	1	1
32	BD5	556	PRO	N-CD	21.48	1.77	1.47	1	1
32	BD3	526	PRO	N-CD	21.44	1.77	1.47	1	1
32	BD5	526	PRO	N-CD	21.44	1.77	1.47	1	1
32	BD1	526	PRO	N-CD	21.44	1.77	1.47	1	1
32	BD7	526	PRO	N-CD	21.44	1.77	1.47	1	1

All unique bond angle outliers are listed below, sorted by the |Z| of their worst occurrence. The output is limited to 100 rows.

Mol	Chain	Res	Type	Atoms	Z	Observed (°)	Ideal (°)	Model ID (Worst)	Models (Total)
7	DA2	92	PRO	CA-N-CD	-51.32	40.15	112.00	1	1
7	DA4	92	PRO	CA-N-CD	-51.32	40.15	112.00	1	1
7	DA6	92	PRO	CA-N-CD	-51.32	40.15	112.00	1	1
7	DA8	92	PRO	CA-N-CD	-51.32	40.15	112.00	1	1
7	DA3	92	PRO	CA-N-CD	-51.32	40.16	112.00	1	1
7	DA7	92	PRO	CA-N-CD	-51.32	40.16	112.00	1	1
7	DA1	92	PRO	CA-N-CD	-51.32	40.16	112.00	1	1
7	DA5	92	PRO	CA-N-CD	-51.32	40.16	112.00	1	1

Mol	Chain	Res	Type	Atoms	Z	Observed (°)	Ideal (°)	Model ID (Worst)	Models (Total)
12	YA4	122	PRO	CA-N-CD	-48.63	43.92	112.00	1	1
12	YA2	122	PRO	CA-N-CD	-48.63	43.92	112.00	1	1
12	YA6	122	PRO	CA-N-CD	-48.63	43.92	112.00	1	1
12	YA8	122	PRO	CA-N-CD	-48.63	43.92	112.00	1	1
12	YA7	122	PRO	CA-N-CD	-48.63	43.92	112.00	1	1
12	YA5	122	PRO	CA-N-CD	-48.63	43.92	112.00	1	1
12	YA1	122	PRO	CA-N-CD	-48.63	43.92	112.00	1	1
12	YA3	122	PRO	CA-N-CD	-48.63	43.92	112.00	1	1
32	BD5	554	PRO	CA-N-CD	-48.45	44.17	112.00	1	1
32	BD3	554	PRO	CA-N-CD	-48.45	44.17	112.00	1	1
32	BD1	554	PRO	CA-N-CD	-48.45	44.17	112.00	1	1
32	BD7	554	PRO	CA-N-CD	-48.45	44.17	112.00	1	1
32	BD6	554	PRO	CA-N-CD	-48.45	44.18	112.00	1	1
32	BD2	554	PRO	CA-N-CD	-48.45	44.18	112.00	1	1
32	BD8	554	PRO	CA-N-CD	-48.45	44.18	112.00	1	1
32	BD4	554	PRO	CA-N-CD	-48.45	44.18	112.00	1	1
7	GA4	173	PRO	CA-N-CD	-43.94	50.48	112.00	1	1
7	GA6	173	PRO	CA-N-CD	-43.94	50.48	112.00	1	1
7	GA8	173	PRO	CA-N-CD	-43.94	50.48	112.00	1	1
7	GA2	173	PRO	CA-N-CD	-43.94	50.48	112.00	1	1
7	GA3	173	PRO	CA-N-CD	-43.94	50.49	112.00	1	1
7	GA5	173	PRO	CA-N-CD	-43.94	50.49	112.00	1	1
7	GA7	173	PRO	CA-N-CD	-43.94	50.49	112.00	1	1
7	GA1	173	PRO	CA-N-CD	-43.94	50.49	112.00	1	1
35	MD4	464	PRO	CA-N-CD	-28.63	71.92	112.00	1	1
35	MD6	464	PRO	CA-N-CD	-28.63	71.92	112.00	1	1
35	MD8	464	PRO	CA-N-CD	-28.63	71.92	112.00	1	1
35	MD2	464	PRO	CA-N-CD	-28.63	71.92	112.00	1	1
35	MD3	464	PRO	CA-N-CD	-28.61	71.94	112.00	1	1
35	MD5	464	PRO	CA-N-CD	-28.61	71.94	112.00	1	1
35	MD1	464	PRO	CA-N-CD	-28.61	71.94	112.00	1	1
35	MD7	464	PRO	CA-N-CD	-28.61	71.94	112.00	1	1
32	AD4	610	LEU	O-C-OXT	-23.40	47.79	118.00	1	1
32	AD2	610	LEU	O-C-OXT	-23.40	47.79	118.00	1	1
32	AD8	610	LEU	O-C-OXT	-23.40	47.80	118.00	1	1

Mol	Chain	Res	Type	Atoms	Z	Observed (°)	Ideal (°)	Model ID (Worst)	Models (Total)
32	AD6	610	LEU	O-C-OXT	-23.40	47.80	118.00	1	1
32	AD3	610	LEU	O-C-OXT	-23.40	47.81	118.00	1	1
32	AD1	610	LEU	O-C-OXT	-23.40	47.81	118.00	1	1
32	AD5	610	LEU	O-C-OXT	-23.40	47.81	118.00	1	1
32	AD7	610	LEU	O-C-OXT	-23.40	47.81	118.00	1	1
35	MD5	502	VAL	O-C-OXT	-23.06	48.82	118.00	1	1
35	MD7	502	VAL	O-C-OXT	-23.06	48.82	118.00	1	1
35	MD1	502	VAL	O-C-OXT	-23.06	48.82	118.00	1	1
35	MD3	502	VAL	O-C-OXT	-23.06	48.82	118.00	1	1
35	MD2	502	VAL	O-C-OXT	-23.06	48.82	118.00	1	1
35	MD6	502	VAL	O-C-OXT	-23.06	48.82	118.00	1	1
35	MD4	502	VAL	O-C-OXT	-23.06	48.82	118.00	1	1
35	MD8	502	VAL	O-C-OXT	-23.06	48.82	118.00	1	1
35	MD4	464	PRO	N-CA-CB	22.13	126.49	103.25	1	1
35	MD2	464	PRO	N-CA-CB	22.13	126.49	103.25	1	1
35	MD8	464	PRO	N-CA-CB	22.13	126.49	103.25	1	1
35	MD6	464	PRO	N-CA-CB	22.13	126.49	103.25	1	1
35	MD1	464	PRO	N-CA-CB	22.13	126.48	103.25	1	1
35	MD7	464	PRO	N-CA-CB	22.13	126.48	103.25	1	1
35	MD3	464	PRO	N-CA-CB	22.13	126.48	103.25	1	1
35	MD5	464	PRO	N-CA-CB	22.13	126.48	103.25	1	1
12	XA5	121	SER	C-N-CD	-21.72	35.95	125.00	1	1
12	XA7	121	SER	C-N-CD	-21.72	35.95	125.00	1	1
12	XA1	121	SER	C-N-CD	-21.72	35.95	125.00	1	1
12	XA3	121	SER	C-N-CD	-21.72	35.95	125.00	1	1
12	XA8	121	SER	C-N-CD	-21.72	35.96	125.00	1	1
12	XA6	121	SER	C-N-CD	-21.72	35.96	125.00	1	1
12	XA2	121	SER	C-N-CD	-21.72	35.96	125.00	1	1
12	XA4	121	SER	C-N-CD	-21.72	35.96	125.00	1	1
12	XA2	113	GLN	C-N-CD	-21.42	37.18	125.00	1	1
12	XA8	113	GLN	C-N-CD	-21.42	37.18	125.00	1	1
12	XA1	113	GLN	C-N-CD	-21.42	37.20	125.00	1	1
12	XA5	113	GLN	C-N-CD	-21.42	37.20	125.00	1	1
12	XA7	113	GLN	C-N-CD	-21.42	37.20	125.00	1	1
12	XA3	113	GLN	C-N-CD	-21.42	37.20	125.00	1	1

Mol	Chain	Res	Type	Atoms	Z	Observed (°)	Ideal (°)	Model ID (Worst)	Models (Total)
12	XA4	113	GLN	C-N-CD	-21.41	37.21	125.00	1	1
12	XA6	113	GLN	C-N-CD	-21.41	37.21	125.00	1	1
32	ZC3	555	ARG	C-N-CD	-21.31	37.62	125.00	1	1
32	ZC7	555	ARG	C-N-CD	-21.31	37.62	125.00	1	1
32	ZC1	555	ARG	C-N-CD	-21.31	37.62	125.00	1	1
32	ZC5	555	ARG	C-N-CD	-21.31	37.62	125.00	1	1
32	ZC8	555	ARG	C-N-CD	-21.31	37.63	125.00	1	1
32	ZC6	555	ARG	C-N-CD	-21.31	37.63	125.00	1	1
32	ZC2	555	ARG	C-N-CD	-21.31	37.63	125.00	1	1
32	ZC4	555	ARG	C-N-CD	-21.31	37.63	125.00	1	1
8	IA4	1710	PRO	N-CA-CB	21.10	125.40	103.25	1	1
8	IA2	1710	PRO	N-CA-CB	21.10	125.40	103.25	1	1
8	IA6	1710	PRO	N-CA-CB	21.10	125.40	103.25	1	1
8	IA8	1710	PRO	N-CA-CB	21.10	125.40	103.25	1	1
8	IA5	1710	PRO	N-CA-CB	21.08	125.39	103.25	1	1
8	IA3	1710	PRO	N-CA-CB	21.08	125.39	103.25	1	1
8	IA1	1710	PRO	N-CA-CB	21.08	125.39	103.25	1	1
8	IA7	1710	PRO	N-CA-CB	21.08	125.39	103.25	1	1
12	XA2	144	GLN	C-N-CD	-20.72	40.03	125.00	1	1
12	XA8	144	GLN	C-N-CD	-20.72	40.03	125.00	1	1
12	XA6	144	GLN	C-N-CD	-20.72	40.03	125.00	1	1
12	XA4	144	GLN	C-N-CD	-20.72	40.03	125.00	1	1

Too-close contacts

The all-atom clashscore, from a MolProbity analysis, is the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 31.59. The table below contains the clashscores of all atomic models in this entry.

Model ID	Clash score	Number of clashes
1	31.59	504553

All unique clashes are listed below, sorted by their clash magnitude. A clash is an overlap of 0.4 Å or more between two atoms. The output is limited to 100 rows.

Atom 1	Atom 2	Clash (Å)	Distance (Å)	Model ID (Worst)	Models (Total)
35:KD6:32:PHE:CD2	32:AD5:10:PHE:HB3	1.71	1.25	1	1
35:KD1:32:PHE:CD2	32:AD8:10:PHE:HB3	1.69	1.25	1	1
15:HB7:852:LEU:HD21	15:HB7:853:CYS:SG	1.69	1.12	1	1
35:KD8:32:PHE:CD2	32:AD7:10:PHE:HB3	1.69	1.25	1	1

Atom 1	Atom 2	Clash (Å)	Distance (Å)	Model ID (Worst)	Models (Total)
35:KD3:32:PHE:CD2	32:AD2:10:PHE:HB3	1.68	1.25	1	1
1:B7:6:ALA:CA	38:VD7:620:GLU:HG2	1.68	1.24	1	1
15:HB5:852:LEU:HD21	15:HB5:853:CYS:SG	1.67	1.12	1	1
9:JA1:1449:TRP:HH2	15:GB8:210:TRP:CZ3	1.67	1.06	1	1
15:HB6:852:LEU:HD21	15:HB6:853:CYS:SG	1.67	1.12	1	1
17:QB1:1162:HIS:CE1	14:DB2:715:PRO:HG2	1.67	1.25	1	1
33:ED8:906:ILE:CG2	39:ZD8:62:GLU:HA	1.67	1.24	1	1
15:HB4:852:LEU:HD21	15:HB4:853:CYS:SG	1.66	1.12	1	1
10:TA2:1132:SER:CA	7:CA2:365:PRO:HG2	1.66	1.19	1	1
15:HB2:852:LEU:HD21	15:HB2:853:CYS:SG	1.66	1.12	1	1
9:LA2:1696:VAL:CG1	7:DA2:658:SER:HB2	1.66	1.20	1	1
35:MD2:409:PRO:HD3	1:A1:40:LYS:CE	1.65	1.18	1	1
9:LA4:1696:VAL:CG1	7:DA4:658:SER:HB2	1.65	1.20	1	1
1:B5:6:ALA:CA	38:VD5:620:GLU:HG2	1.65	1.24	1	1
14:DB1:715:PRO:HG2	17:QB8:1162:HIS:CE1	1.65	1.25	1	1
15:HB3:852:LEU:HD21	15:HB3:853:CYS:SG	1.65	1.12	1	1
39:ZD1:62:GLU:HA	33:ED1:906:ILE:CG2	1.65	1.24	1	1
23:FC8:77:ALA:CA	32:AD7:300:PHE:HE2	1.65	1.02	1	1
15:GB1:210:TRP:CZ3	9:JA2:1449:TRP:HH2	1.65	1.06	1	1
32:AD3:10:PHE:HB3	35:KD4:32:PHE:CD2	1.65	1.25	1	1
23:FC8:77:ALA:CB	32:AD7:300:PHE:CD2	1.65	1.76	1	1
9:JA4:1449:TRP:HH2	15:GB3:210:TRP:CZ3	1.65	1.06	1	1
35:KD1:28:PRO:CB	32:AD8:8:THR:HG22	1.65	1.22	1	1
3:R4:1262:LEU:HB3	3:S4:1262:LEU:CD1	1.65	1.24	1	1
14:DB4:551:LEU:HD13	17:QB3:189:ASP:CB	1.65	1.26	1	1
3:O3:726:GLU:HB3	3:S3:1250:GLN:CG	1.65	1.20	1	1
15:HB1:852:LEU:HD21	15:HB1:853:CYS:SG	1.65	1.12	1	1
16:KB1:901:ARG:HB2	1:C1:54:ASN:CB	1.65	1.22	1	1
1:C6:54:ASN:CB	16:KB6:901:ARG:HB2	1.64	1.22	1	1
1:A7:40:LYS:CE	35:MD8:409:PRO:HD3	1.64	1.18	1	1
32:AD1:10:PHE:HB3	35:KD2:32:PHE:CD2	1.64	1.25	1	1
39:ZD7:62:GLU:HA	33:ED7:906:ILE:CG2	1.64	1.24	1	1
15:HB8:852:LEU:HD21	15:HB8:853:CYS:SG	1.64	1.12	1	1
16:KB4:901:ARG:HB2	1:C4:54:ASN:CB	1.64	1.22	1	1
3:R1:1262:LEU:HB3	3:S1:1262:LEU:CD1	1.64	1.24	1	1

Atom 1	Atom 2	Clash (Å)	Distance (Å)	Model ID (Worst)	Models (Total)
1:C7:54:ASN:CB	16:KB7:901:ARG:HB2	1.64	1.22	1	1
10:TA8:1132:SER:CA	7:CA8:365:PRO:HG2	1.64	1.19	1	1
14:CB4:502:MET:H	17:RB5:198:PRO:CG	1.64	1.07	1	1
9:JA8:1449:TRP:HH2	15:GB7:210:TRP:CZ3	1.64	1.06	1	1
14:DB3:715:PRO:HG2	17:QB2:1162:HIS:CE1	1.64	1.25	1	1
14:DB5:715:PRO:HG2	17:QB4:1162:HIS:CE1	1.64	1.25	1	1
17:QB1:189:ASP:CB	14:DB2:551:LEU:HD13	1.64	1.26	1	1
10:TA6:1132:SER:CA	7:CA6:365:PRO:HG2	1.64	1.19	1	1
23:FC3:77:ALA:CB	32:AD2:300:PHE:CD2	1.64	1.76	1	1
1:B4:6:ALA:CA	38:VD4:620:GLU:HG2	1.63	1.24	1	1
23:FC6:77:ALA:CA	32:AD5:300:PHE:HE2	1.63	1.02	1	1
35:KD7:32:PHE:CD2	32:AD6:10:PHE:HB3	1.63	1.25	1	1
1:A6:40:LYS:CE	35:MD7:409:PRO:HD3	1.63	1.18	1	1
23:FC5:77:ALA:CB	32:AD4:300:PHE:CD2	1.63	1.76	1	1
21:CC6:508:LEU:HB3	6:V6:120:GLY:CA	1.63	1.17	1	1
9:JA6:1449:TRP:HH2	15:GB5:210:TRP:CZ3	1.62	1.06	1	1
16:KB2:901:ARG:HB2	1:C2:54:ASN:CB	1.62	1.22	1	1
16:KB3:901:ARG:HB2	1:C3:54:ASN:CB	1.62	1.22	1	1
35:KD5:32:PHE:CD2	32:AD4:10:PHE:HB3	1.62	1.25	1	1
32:AD1:8:THR:HG22	35:KD2:28:PRO:CB	1.62	1.22	1	1
1:B5:46:LYS:HZ2	37:RD5:96:LYS:CD	1.62	1.11	1	1
14:DB4:715:PRO:HG2	17:QB3:1162:HIS:CE1	1.62	1.25	1	1
17:OB7:793:GLU:CB	10:OA7:1316:ARG:HD3	1.62	1.29	1	1
14:DB1:551:LEU:HD13	17:QB8:189:ASP:CB	1.62	1.26	1	1
23:FC6:77:ALA:CA	32:AD5:300:PHE:CE2	1.62	1.83	1	1
23:FC7:77:ALA:CA	32:AD6:300:PHE:CE2	1.62	1.83	1	1
9:LA5:1696:VAL:CG1	7:DA5:658:SER:HB2	1.62	1.20	1	1
3:R7:1262:LEU:HB3	3:S7:1262:LEU:CD1	1.62	1.24	1	1
32:AD3:8:THR:HG22	35:KD4:28:PRO:CB	1.62	1.22	1	1
14:DB8:715:PRO:HG2	17:QB7:1162:HIS:CE1	1.62	1.25	1	1
14:CB3:502:MET:H	17:RB4:198:PRO:CG	1.62	1.07	1	1
14:DB6:715:PRO:HG2	17:QB5:1162:HIS:CE1	1.62	1.25	1	1
3:R6:1262:LEU:HB3	3:S6:1262:LEU:CD1	1.62	1.24	1	1
3:R8:1262:LEU:HB3	3:S8:1262:LEU:CD1	1.62	1.24	1	1
10:TA4:1132:SER:CA	7:CA4:365:PRO:HG2	1.62	1.19	1	1

Atom 1	Atom 2	Clash (Å)	Distance (Å)	Model ID (Worst)	Models (Total)
14:DB5:551:LEU:HD13	17:QB4:189:ASP:CB	1.62	1.26	1	1
32:AD1:300:PHE:CD2	23:FC2:77:ALA:CB	1.61	1.76	1	1
3:R2:1262:LEU:HB3	3:S2:1262:LEU:CD1	1.61	1.24	1	1
10:TA7:1132:SER:CA	7:CA7:365:PRO:HG2	1.61	1.19	1	1
14:CB3:501:SER:HB2	17:RB4:198:PRO:CB	1.61	1.27	1	1
14:DB7:551:LEU:HD13	17:QB6:189:ASP:CB	1.61	1.26	1	1
17:RB6:198:PRO:CB	14:CB5:501:SER:HB2	1.61	1.27	1	1
38:VD4:256:LEU:HD13	19:XB4:478:PRO:CD	1.61	1.30	1	1
21:BC1:480:THR:CG2	6:X1:113:PHE:HB2	1.61	1.31	1	1
3:R5:1262:LEU:HB3	3:S5:1262:LEU:CD1	1.61	1.24	1	1
17:RB8:198:PRO:CG	14:CB7:502:MET:H	1.61	1.07	1	1
3:R3:1262:LEU:HB3	3:S3:1262:LEU:CD1	1.61	1.24	1	1
21:BC7:480:THR:CG2	6:X7:113:PHE:HB2	1.61	1.31	1	1
23:FC8:77:ALA:CA	32:AD7:300:PHE:CE2	1.61	1.83	1	1
9:JA3:1449:TRP:HH2	15:GB2:210:TRP:CZ3	1.61	1.06	1	1
9:LA1:1696:VAL:CG1	7:DA1:658:SER:HB2	1.61	1.20	1	1
17:OB6:1209:SER:CB	9:NA6:475:ILE:CG2	1.61	1.79	1	1
38:VD2:620:GLU:HG2	1:B2:6:ALA:CA	1.61	1.24	1	1
31:YC6:552:GLY:C	31:VC5:177:GLY:HA3	1.61	1.19	1	1
17:OB1:793:GLU:CB	10:OA1:1316:ARG:HD3	1.61	1.29	1	1
12:YA1:100:SER:HB2	12:YA1:106:THR:CG2	1.61	1.31	1	1
1:A3:40:LYS:CE	35:MD4:409:PRO:HD3	1.60	1.18	1	1
14:DB7:715:PRO:HG2	17:QB6:1162:HIS:CE1	1.60	1.25	1	1
17:OB2:1209:SER:CB	9:NA2:475:ILE:CG2	1.60	1.79	1	1
17:RB6:198:PRO:CG	14:CB5:502:MET:H	1.60	1.07	1	1
17:OB1:1209:SER:CB	9:NA1:475:ILE:CG2	1.60	1.79	1	1

Torsion angles: Protein backbone

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues. For a chain in several models, the counts are the mean ± the standard deviation over the models; the All row pools every chain of every model. Only the first 100 of 1080 chains are listed.

Mol	Chain	Analysed	Favoured	Allowed	Outliers
1	A1	3222/3224 (99.9%)	2440 (75.7%)	622 (19.3%)	160 (5.0%)
1	B1	3222/3224 (99.9%)	2241 (69.6%)	721 (22.4%)	260 (8.1%)
1	C1	3222/3224 (99.9%)	2354 (73.1%)	659 (20.5%)	209 (6.5%)
1	D1	3222/3224 (99.9%)	2555 (79.3%)	540 (16.8%)	127 (3.9%)

Mol	Chain	Analysed	Favoured	Allowed	Outliers
1	E1	3222/3224 (99.9%)	2851 (88.5%)	275 (8.5%)	96 (3.0%)
2	F1	1885/1887 (99.9%)	1618 (85.8%)	225 (11.9%)	42 (2.2%)
2	G1	1885/1887 (99.9%)	1582 (83.9%)	246 (13.1%)	57 (3.0%)
2	H1	1885/1887 (99.9%)	1606 (85.2%)	224 (11.9%)	55 (2.9%)
2	I1	1885/1887 (99.9%)	1676 (88.9%)	174 (9.2%)	35 (1.9%)
2	J1	1885/1887 (99.9%)	1485 (78.8%)	294 (15.6%)	106 (5.6%)
2	K1	1885/1887 (99.9%)	1528 (81.1%)	272 (14.4%)	85 (4.5%)
2	L1	1885/1887 (99.9%)	1503 (79.7%)	289 (15.3%)	93 (4.9%)
2	M1	1885/1887 (99.9%)	1716 (91.0%)	150 (8.0%)	19 (1.0%)
3	N1	2361/2363 (99.9%)	1973 (83.6%)	328 (13.9%)	60 (2.5%)
3	O1	2361/2363 (99.9%)	2106 (89.2%)	203 (8.6%)	52 (2.2%)
4	P1	488/490 (99.6%)	468 (95.9%)	17 (3.5%)	3 (0.6%)
4	Q1	488/490 (99.6%)	467 (95.7%)	19 (3.9%)	2 (0.4%)
3	R1	2361/2363 (99.9%)	2031 (86.0%)	270 (11.4%)	60 (2.5%)
3	S1	2361/2363 (99.9%)	1980 (83.9%)	309 (13.1%)	72 (3.0%)
5	T1	1978/1980 (99.9%)	1512 (76.4%)	370 (18.7%)	96 (4.9%)
6	U1	466/468 (99.6%)	384 (82.4%)	68 (14.6%)	14 (3.0%)
6	V1	466/468 (99.6%)	386 (82.8%)	67 (14.4%)	13 (2.8%)
6	W1	466/468 (99.6%)	352 (75.5%)	92 (19.7%)	22 (4.7%)
6	X1	466/468 (99.6%)	382 (82.0%)	69 (14.8%)	15 (3.2%)
6	Y1	466/468 (99.6%)	335 (71.9%)	109 (23.4%)	22 (4.7%)
6	Z1	466/468 (99.6%)	325 (69.7%)	117 (25.1%)	24 (5.2%)
7	AA1	723/725 (99.7%)	699 (96.7%)	20 (2.8%)	4 (0.6%)
7	BA1	817/819 (99.8%)	783 (95.8%)	22 (2.7%)	12 (1.5%)
7	CA1	817/819 (99.8%)	733 (89.7%)	72 (8.8%)	12 (1.5%)
7	DA1	817/819 (99.8%)	781 (95.6%)	26 (3.2%)	10 (1.2%)
7	EA1	817/819 (99.8%)	789 (96.6%)	19 (2.3%)	9 (1.1%)
7	FA1	723/725 (99.7%)	694 (96.0%)	22 (3.0%)	7 (1.0%)
7	GA1	723/725 (99.7%)	701 (97.0%)	16 (2.2%)	6 (0.8%)
8	HA1	1747/1749 (99.9%)	1679 (96.1%)	48 (2.7%)	20 (1.1%)
8	IA1	1747/1749 (99.9%)	1677 (96.0%)	48 (2.7%)	22 (1.3%)
9	JA1	2006/2008 (99.9%)	1597 (79.6%)	286 (14.3%)	123 (6.1%)
9	KA1	2006/2008 (99.9%)	1668 (83.2%)	275 (13.7%)	63 (3.1%)
9	LA1	2006/2008 (99.9%)	1588 (79.2%)	313 (15.6%)	105 (5.2%)
9	MA1	2006/2008 (99.9%)	1631 (81.3%)	289 (14.4%)	86 (4.3%)

Mol	Chain	Analysed	Favoured	Allowed	Outliers
9	NA1	2006/2008 (99.9%)	1828 (91.1%)	147 (7.3%)	31 (1.5%)
10	OA1	1317/1321 (99.7%)	1067 (81.0%)	198 (15.0%)	52 (3.9%)
10	PA1	1317/1321 (99.7%)	1202 (91.3%)	98 (7.4%)	17 (1.3%)
10	QA1	1317/1321 (99.7%)	1071 (81.3%)	197 (15.0%)	49 (3.7%)
10	RA1	1317/1321 (99.7%)	1023 (77.7%)	228 (17.3%)	66 (5.0%)
10	SA1	1317/1321 (99.7%)	1181 (89.7%)	120 (9.1%)	16 (1.2%)
10	TA1	1317/1321 (99.7%)	1158 (87.9%)	134 (10.2%)	25 (1.9%)
11	UA1	539/543 (99.3%)	496 (92.0%)	39 (7.2%)	4 (0.7%)
11	VA1	539/543 (99.3%)	470 (87.2%)	60 (11.1%)	9 (1.7%)
12	WA1	240/242 (99.2%)	157 (65.4%)	52 (21.7%)	31 (12.9%)
12	XA1	240/242 (99.2%)	189 (78.8%)	32 (13.3%)	19 (7.9%)
12	YA1	240/242 (99.2%)	191 (79.6%)	25 (10.4%)	24 (10.0%)
12	ZA1	240/242 (99.2%)	173 (72.1%)	39 (16.2%)	28 (11.7%)
13	AB1	864/866 (99.8%)	787 (91.1%)	56 (6.5%)	21 (2.4%)
13	BB1	864/866 (99.8%)	787 (91.1%)	57 (6.6%)	20 (2.3%)
14	CB1	1080/1082 (99.8%)	1005 (93.1%)	66 (6.1%)	9 (0.8%)
14	DB1	1080/1082 (99.8%)	903 (83.6%)	147 (13.6%)	30 (2.8%)
14	EB1	1080/1082 (99.8%)	1029 (95.3%)	26 (2.4%)	25 (2.3%)
14	FB1	1080/1082 (99.8%)	1029 (95.3%)	31 (2.9%)	20 (1.9%)
15	GB1	780/782 (99.7%)	751 (96.3%)	23 (2.9%)	6 (0.8%)
15	HB1	780/782 (99.7%)	763 (97.8%)	8 (1.0%)	9 (1.2%)
15	IB1	780/782 (99.7%)	671 (86.0%)	93 (11.9%)	16 (2.1%)
15	JB1	780/782 (99.7%)	662 (84.9%)	96 (12.3%)	22 (2.8%)
16	KB1	669/673 (99.4%)	628 (93.9%)	36 (5.4%)	5 (0.7%)
16	LB1	669/673 (99.4%)	637 (95.2%)	26 (3.9%)	6 (0.9%)
16	MB1	669/673 (99.4%)	570 (85.2%)	82 (12.3%)	17 (2.5%)
16	NB1	669/673 (99.4%)	584 (87.3%)	72 (10.8%)	13 (1.9%)
17	OB1	1397/1399 (99.9%)	1334 (95.5%)	48 (3.4%)	15 (1.1%)
17	PB1	1397/1399 (99.9%)	1195 (85.5%)	177 (12.7%)	25 (1.8%)
17	QB1	1397/1399 (99.9%)	1331 (95.3%)	55 (3.9%)	11 (0.8%)
17	RB1	1397/1399 (99.9%)	1322 (94.6%)	60 (4.3%)	15 (1.1%)
18	SB1	320/322 (99.4%)	309 (96.6%)	11 (3.4%)	0 (0.0%)
18	TB1	320/322 (99.4%)	269 (84.1%)	43 (13.4%)	8 (2.5%)
18	UB1	320/322 (99.4%)	309 (96.6%)	10 (3.1%)	1 (0.3%)
18	VB1	320/322 (99.4%)	309 (96.6%)	11 (3.4%)	0 (0.0%)

Mol	Chain	Analysed	Favoured	Allowed	Outliers
19	WB1	733/735 (99.7%)	645 (88.0%)	61 (8.3%)	27 (3.7%)
19	XB1	733/735 (99.7%)	623 (85.0%)	80 (10.9%)	30 (4.1%)
20	YB1	559/561 (99.6%)	518 (92.7%)	34 (6.1%)	7 (1.3%)
20	ZB1	559/561 (99.6%)	390 (69.8%)	123 (22.0%)	46 (8.2%)
21	AC1	1234/1236 (99.8%)	811 (65.7%)	277 (22.4%)	146 (11.8%)
21	BC1	1234/1236 (99.8%)	764 (61.9%)	313 (25.4%)	157 (12.7%)
21	CC1	1234/1236 (99.8%)	746 (60.5%)	325 (26.3%)	163 (13.2%)
22	DC1	170/172 (98.8%)	153 (90.0%)	11 (6.5%)	6 (3.5%)
23	EC1	99/101 (98.0%)	97 (98.0%)	1 (1.0%)	1 (1.0%)
23	FC1	99/101 (98.0%)	99 (100.0%)	0 (0.0%)	0 (0.0%)
23	GC1	99/101 (98.0%)	99 (100.0%)	0 (0.0%)	0 (0.0%)
23	HC1	99/101 (98.0%)	97 (98.0%)	1 (1.0%)	1 (1.0%)
24	IC1	397/399 (99.5%)	394 (99.2%)	3 (0.8%)	0 (0.0%)
25	JC1	68/70 (97.1%)	61 (89.7%)	7 (10.3%)	0 (0.0%)
26	KC1	426/428 (99.5%)	388 (91.1%)	31 (7.3%)	7 (1.6%)
27	LC1	477/479 (99.6%)	458 (96.0%)	15 (3.1%)	4 (0.8%)
28	MC1	317/319 (99.4%)	313 (98.7%)	4 (1.3%)	0 (0.0%)
29	NC1	42/44 (95.5%)	40 (95.2%)	1 (2.4%)	1 (2.4%)
27	OC1	477/479 (99.6%)	458 (96.0%)	15 (3.1%)	4 (0.8%)
28	PC1	317/319 (99.4%)	313 (98.7%)	4 (1.3%)	0 (0.0%)
29	QC1	42/44 (95.5%)	40 (95.2%)	1 (2.4%)	1 (2.4%)
30	RC1	505/507 (99.6%)	478 (94.7%)	20 (4.0%)	7 (1.4%)
30	SC1	505/507 (99.6%)	476 (94.3%)	24 (4.8%)	5 (1.0%)
30	TC1	505/507 (99.6%)	481 (95.2%)	20 (4.0%)	4 (0.8%)
30	UC1	505/507 (99.6%)	475 (94.1%)	24 (4.8%)	6 (1.2%)
31	VC1	592/594 (99.7%)	513 (86.7%)	57 (9.6%)	22 (3.7%)
All	All	1028752/1031104 (99.8%)	870513 (84.6%)	121597 (11.8%)	36642 (3.6%)

All (36642) unique Ramachandran outliers are listed below, sorted by the number of models they are in. The output is limited to 100 rows.

Mol	Chain	Res	Type	Models (Total)
1	A1	55	VAL	1
1	A1	89	LEU	1
1	A1	107	ASN	1
1	A1	116	TYR	1
1	A1	160	VAL	1

Mol	Chain	Res	Type	Models (Total)
1	A1	389	LEU	1
1	A1	460	LEU	1
1	A1	505	SER	1
1	A1	727	SER	1
1	A1	764	LYS	1
1	A1	765	ASN	1
1	A1	778	SER	1
1	A1	781	SER	1
1	A1	786	SER	1
1	A1	790	SER	1
1	A1	792	SER	1
1	A1	793	TYR	1
1	A1	830	LEU	1
1	A1	852	PRO	1
1	A1	860	THR	1
1	A1	880	SER	1
1	A1	902	VAL	1
1	A1	909	PRO	1
1	A1	926	VAL	1
1	A1	933	MET	1
1	A1	938	MET	1
1	A1	956	PRO	1
1	A1	966	VAL	1
1	A1	968	GLN	1
1	A1	970	SER	1
1	A1	999	ILE	1
1	A1	1001	PHE	1
1	A1	1004	THR	1
1	A1	1007	VAL	1
1	A1	1066	LEU	1
1	A1	1079	ASP	1
1	A1	1087	ILE	1
1	A1	1115	MET	1
1	A1	1141	VAL	1
1	A1	1157	ASP	1

Mol	Chain	Res	Type	Models (Total)
1	A1	1196	CYS	1
1	A1	1207	GLU	1
1	A1	1226	THR	1
1	A1	1238	GLN	1
1	A1	1245	ASN	1
1	A1	1331	ASN	1
1	A1	1343	ASN	1
1	A1	1344	PHE	1
1	A1	1360	SER	1
1	A1	1374	SER	1
1	A1	1437	ALA	1
1	A1	1450	SER	1
1	A1	1501	ALA	1
1	A1	1510	LEU	1
1	A1	1519	ALA	1
1	A1	1520	SER	1
1	A1	1531	THR	1
1	A1	1533	LYS	1
1	A1	1535	GLY	1
1	A1	1578	VAL	1
1	A1	1597	SER	1
1	A1	1603	PHE	1
1	A1	1607	GLU	1
1	A1	1614	VAL	1
1	A1	1628	ALA	1
1	A1	1641	ALA	1
1	A1	1642	VAL	1
1	A1	1656	SER	1
1	A1	1699	SER	1
1	A1	1701	VAL	1
1	A1	1702	SER	1
1	A1	1708	GLU	1
1	A1	1715	SER	1
1	A1	1732	VAL	1
1	A1	1756	THR	1

Mol	Chain	Res	Type	Models (Total)
1	A1	1758	ALA	1
1	A1	1767	ILE	1
1	A1	1776	GLU	1
1	A1	1781	ARG	1
1	A1	1806	ALA	1
1	A1	1814	ILE	1
1	A1	1816	GLU	1
1	A1	1822	THR	1
1	A1	1828	LYS	1
1	A1	1830	HIS	1
1	A1	1832	SER	1
1	A1	1866	GLN	1
1	A1	1891	ILE	1
1	A1	1908	GLN	1
1	A1	1909	GLU	1
1	A1	1916	LEU	1
1	A1	1923	GLN	1
1	A1	1929	GLY	1
1	A1	1930	GLN	1
1	A1	1950	LEU	1
1	A1	1951	ALA	1
1	A1	2001	ASP	1
1	A1	2004	LYS	1
1	A1	2067	VAL	1
1	A1	2079	GLN	1

Torsion angles: Protein sidechains

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues other than glycine and alanine, which have no rotamers. For a chain in several models, the counts are the mean ± the standard deviation over the models; the All row pools every chain of every model. Only the first 100 of 1080 chains are listed.

Mol	Chain	Analysed	Rotameric	Outliers
1	A1	2818/2818 (100.0%)	2756 (97.8%)	62 (2.2%)
1	B1	2818/2818 (100.0%)	2739 (97.2%)	79 (2.8%)
1	C1	2818/2818 (100.0%)	2764 (98.1%)	54 (1.9%)
1	D1	2818/2818 (100.0%)	2749 (97.6%)	69 (2.4%)
1	E1	2818/2818 (100.0%)	2759 (97.9%)	59 (2.1%)

Mol	Chain	Analysed	Rotameric	Outliers
2	F1	1608/1608 (100.0%)	1590 (98.9%)	18 (1.1%)
2	G1	1608/1608 (100.0%)	1592 (99.0%)	16 (1.0%)
2	H1	1608/1608 (100.0%)	1591 (98.9%)	17 (1.1%)
2	I1	1608/1608 (100.0%)	1594 (99.1%)	14 (0.9%)
2	J1	1608/1608 (100.0%)	1589 (98.8%)	19 (1.2%)
2	K1	1608/1608 (100.0%)	1586 (98.6%)	22 (1.4%)
2	L1	1608/1608 (100.0%)	1587 (98.7%)	21 (1.3%)
2	M1	1608/1608 (100.0%)	1591 (98.9%)	17 (1.1%)
3	N1	2125/2125 (100.0%)	2112 (99.4%)	13 (0.6%)
3	O1	2125/2125 (100.0%)	2094 (98.5%)	31 (1.5%)
4	P1	416/416 (100.0%)	411 (98.8%)	5 (1.2%)
4	Q1	416/416 (100.0%)	411 (98.8%)	5 (1.2%)
3	R1	2125/2125 (100.0%)	2106 (99.1%)	19 (0.9%)
3	S1	2125/2125 (100.0%)	2114 (99.5%)	11 (0.5%)
5	T1	1719/1719 (100.0%)	1695 (98.6%)	24 (1.4%)
6	U1	393/393 (100.0%)	381 (96.9%)	12 (3.1%)
6	V1	393/393 (100.0%)	379 (96.4%)	14 (3.6%)
6	W1	393/393 (100.0%)	383 (97.5%)	10 (2.5%)
6	X1	393/393 (100.0%)	379 (96.4%)	14 (3.6%)
6	Y1	393/393 (100.0%)	381 (96.9%)	12 (3.1%)
6	Z1	393/393 (100.0%)	383 (97.5%)	10 (2.5%)
7	AA1	646/646 (100.0%)	639 (98.9%)	7 (1.1%)
7	BA1	726/726 (100.0%)	712 (98.1%)	14 (1.9%)
7	CA1	726/726 (100.0%)	714 (98.3%)	12 (1.7%)
7	DA1	726/726 (100.0%)	713 (98.2%)	13 (1.8%)
7	EA1	726/726 (100.0%)	714 (98.3%)	12 (1.7%)
7	FA1	646/646 (100.0%)	642 (99.4%)	4 (0.6%)
7	GA1	646/646 (100.0%)	639 (98.9%)	7 (1.1%)
8	HA1	1541/1541 (100.0%)	1515 (98.3%)	26 (1.7%)
8	IA1	1541/1541 (100.0%)	1514 (98.2%)	27 (1.8%)
9	JA1	1774/1774 (100.0%)	1756 (99.0%)	18 (1.0%)
9	KA1	1774/1774 (100.0%)	1761 (99.3%)	13 (0.7%)
9	LA1	1774/1774 (100.0%)	1752 (98.8%)	22 (1.2%)
9	MA1	1774/1774 (100.0%)	1758 (99.1%)	16 (0.9%)
9	NA1	1774/1774 (100.0%)	1754 (98.9%)	20 (1.1%)

Mol	Chain	Analysed	Rotameric	Outliers
10	OA1	1163/1163 (100.0%)	1145 (98.5%)	18 (1.5%)
10	PA1	1163/1163 (100.0%)	1152 (99.1%)	11 (0.9%)
10	QA1	1163/1163 (100.0%)	1154 (99.2%)	9 (0.8%)
10	RA1	1163/1163 (100.0%)	1156 (99.4%)	7 (0.6%)
10	SA1	1163/1163 (100.0%)	1153 (99.1%)	10 (0.9%)
10	TA1	1163/1163 (100.0%)	1150 (98.9%)	13 (1.1%)
11	UA1	485/485 (100.0%)	475 (97.9%)	10 (2.1%)
11	VA1	485/485 (100.0%)	479 (98.8%)	6 (1.2%)
12	WA1	211/211 (100.0%)	204 (96.7%)	7 (3.3%)
12	XA1	211/211 (100.0%)	202 (95.7%)	9 (4.3%)
12	YA1	211/211 (100.0%)	203 (96.2%)	8 (3.8%)
12	ZA1	211/211 (100.0%)	205 (97.2%)	6 (2.8%)
13	AB1	756/756 (100.0%)	738 (97.6%)	18 (2.4%)
13	BB1	756/756 (100.0%)	737 (97.5%)	19 (2.5%)
14	CB1	954/954 (100.0%)	945 (99.1%)	9 (0.9%)
14	DB1	954/954 (100.0%)	949 (99.5%)	5 (0.5%)
14	EB1	954/954 (100.0%)	947 (99.3%)	7 (0.7%)
14	FB1	954/954 (100.0%)	945 (99.1%)	9 (0.9%)
15	GB1	701/701 (100.0%)	694 (99.0%)	7 (1.0%)
15	HB1	701/701 (100.0%)	692 (98.7%)	9 (1.3%)
15	IB1	701/701 (100.0%)	695 (99.1%)	6 (0.9%)
15	JB1	701/701 (100.0%)	698 (99.6%)	3 (0.4%)
16	KB1	602/602 (100.0%)	595 (98.8%)	7 (1.2%)
16	LB1	602/602 (100.0%)	587 (97.5%)	15 (2.5%)
16	MB1	602/602 (100.0%)	595 (98.8%)	7 (1.2%)
16	NB1	602/602 (100.0%)	589 (97.8%)	13 (2.2%)
17	OB1	1233/1233 (100.0%)	1214 (98.5%)	19 (1.5%)
17	PB1	1233/1233 (100.0%)	1191 (96.6%)	42 (3.4%)
17	QB1	1233/1233 (100.0%)	1210 (98.1%)	23 (1.9%)
17	RB1	1233/1233 (100.0%)	1215 (98.5%)	18 (1.5%)
18	SB1	278/278 (100.0%)	275 (98.9%)	3 (1.1%)
18	TB1	278/278 (100.0%)	266 (95.7%)	12 (4.3%)
18	UB1	278/278 (100.0%)	273 (98.2%)	5 (1.8%)
18	VB1	278/278 (100.0%)	275 (98.9%)	3 (1.1%)
19	WB1	661/661 (100.0%)	648 (98.0%)	13 (2.0%)

Mol	Chain	Analysed	Rotameric	Outliers
19	XB1	661/661 (100.0%)	651 (98.5%)	10 (1.5%)
20	YB1	499/499 (100.0%)	481 (96.4%)	18 (3.6%)
20	ZB1	499/499 (100.0%)	484 (97.0%)	15 (3.0%)
21	AC1	1040/1040 (100.0%)	1011 (97.2%)	29 (2.8%)
21	BC1	1040/1040 (100.0%)	1005 (96.6%)	35 (3.4%)
21	CC1	1040/1040 (100.0%)	1007 (96.8%)	33 (3.2%)
22	DC1	152/152 (100.0%)	150 (98.7%)	2 (1.3%)
23	EC1	88/88 (100.0%)	86 (97.7%)	2 (2.3%)
23	FC1	88/88 (100.0%)	88 (100.0%)	0 (0.0%)
23	GC1	88/88 (100.0%)	87 (98.9%)	1 (1.1%)
23	HC1	88/88 (100.0%)	87 (98.9%)	1 (1.1%)
24	IC1	353/353 (100.0%)	353 (100.0%)	0 (0.0%)
25	JC1	63/63 (100.0%)	62 (98.4%)	1 (1.6%)
26	KC1	381/381 (100.0%)	378 (99.2%)	3 (0.8%)
27	LC1	418/418 (100.0%)	410 (98.1%)	8 (1.9%)
28	MC1	281/281 (100.0%)	279 (99.3%)	2 (0.7%)
29	NC1	42/42 (100.0%)	41 (97.6%)	1 (2.4%)
27	OC1	418/418 (100.0%)	410 (98.1%)	8 (1.9%)
28	PC1	281/281 (100.0%)	279 (99.3%)	2 (0.7%)
29	QC1	42/42 (100.0%)	41 (97.6%)	1 (2.4%)
30	RC1	425/425 (100.0%)	410 (96.5%)	15 (3.5%)
30	SC1	425/425 (100.0%)	410 (96.5%)	15 (3.5%)
30	TC1	425/425 (100.0%)	411 (96.7%)	14 (3.3%)
30	UC1	425/425 (100.0%)	410 (96.5%)	15 (3.5%)
31	VC1	455/455 (100.0%)	451 (99.1%)	4 (0.9%)
All	All	891616/891616 (100.0%)	876590 (98.3%)	15026 (1.7%)

All (15026) unique residues with a non-rotameric sidechain are listed below, sorted by the number of models they are in. The output is limited to 100 rows.

Mol	Chain	Res	Type	Models (Total)
1	A1	729	LEU	1
1	A1	769	ARG	1
1	A1	791	LYS	1
1	A1	831	ASN	1
1	A1	888	LEU	1
1	A1	889	LEU	1

Mol	Chain	Res	Type	Models (Total)
1	A1	954	LEU	1
1	A1	1076	LEU	1
1	A1	1100	ASN	1
1	A1	1141	VAL	1
1	A1	1178	LEU	1
1	A1	1225	LYS	1
1	A1	1323	VAL	1
1	A1	1407	ARG	1
1	A1	1427	ARG	1
1	A1	1453	HIS	1
1	A1	1508	GLN	1
1	A1	1527	GLU	1
1	A1	1562	ARG	1
1	A1	1578	VAL	1
1	A1	1606	LYS	1
1	A1	1697	THR	1
1	A1	1753	GLN	1
1	A1	1804	CYS	1
1	A1	1873	MET	1
1	A1	1914	LYS	1
1	A1	1997	GLU	1
1	A1	2011	ILE	1
1	A1	2019	MET	1
1	A1	2183	PHE	1
1	A1	2212	LYS	1
1	A1	2216	GLU	1
1	A1	2223	GLU	1
1	A1	2228	ASP	1
1	A1	2229	LEU	1
1	A1	2230	ARG	1
1	A1	2232	ASP	1
1	A1	2254	ARG	1
1	A1	2259	ARG	1
1	A1	2260	PHE	1
1	A1	2268	ASN	1

Mol	Chain	Res	Type	Models (Total)
1	A1	2272	LYS	1
1	A1	2286	GLN	1
1	A1	2294	ASP	1
1	A1	2296	GLU	1
1	A1	2303	GLU	1
1	A1	2311	GLU	1
1	A1	2316	LEU	1
1	A1	2323	SER	1
1	A1	2377	VAL	1
1	A1	2446	ASP	1
1	A1	2596	LEU	1
1	A1	2633	LEU	1
1	A1	2656	THR	1
1	A1	2743	THR	1
1	A1	2799	ILE	1
1	A1	2813	MET	1
1	A1	2825	ILE	1
1	A1	2834	GLU	1
1	A1	2944	ASP	1
1	A1	3106	PHE	1
1	A1	3146	GLU	1
1	A2	729	LEU	1
1	A2	769	ARG	1
1	A2	791	LYS	1
1	A2	831	ASN	1
1	A2	888	LEU	1
1	A2	889	LEU	1
1	A2	954	LEU	1
1	A2	1076	LEU	1
1	A2	1100	ASN	1
1	A2	1141	VAL	1
1	A2	1178	LEU	1
1	A2	1225	LYS	1
1	A2	1323	VAL	1
1	A2	1407	ARG	1

Mol	Chain	Res	Type	Models (Total)
1	A2	1427	ARG	1
1	A2	1453	HIS	1
1	A2	1508	GLN	1
1	A2	1527	GLU	1
1	A2	1562	ARG	1
1	A2	1578	VAL	1
1	A2	1606	LYS	1
1	A2	1697	THR	1
1	A2	1753	GLN	1
1	A2	1804	CYS	1
1	A2	1873	MET	1
1	A2	1914	LYS	1
1	A2	1997	GLU	1
1	A2	2011	ILE	1
1	A2	2019	MET	1
1	A2	2183	PHE	1
1	A2	2212	LYS	1
1	A2	2216	GLU	1
1	A2	2223	GLU	1
1	A2	2228	ASP	1
1	A2	2229	LEU	1
1	A2	2230	ARG	1
1	A2	2232	ASP	1
1	A2	2254	ARG	1

5. Fit to Data Used for Modeling Assessment

5.2. Crosslinking-MS

5.2.1. Restraint types

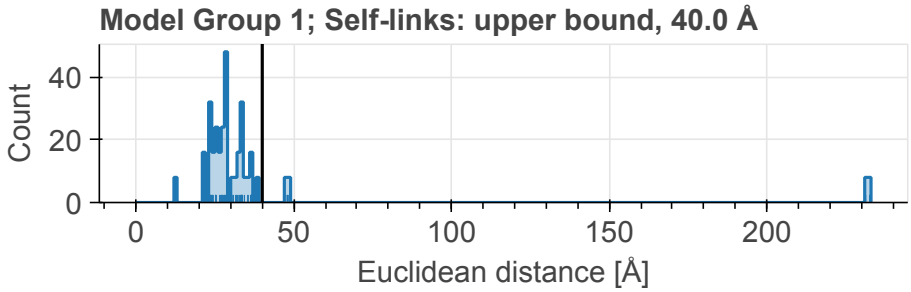
This table summarizes information about crosslinker(s) used for data generation, and how crosslinking information was translated into actual modeling restraints. Restraints assigned "by-residue" are interpreted as between CA atoms. Restraints between coarse-grained beads are indicated as "coarse-grained". Restraint group represents a set of crosslinking restraints applied collectively in the modeling.

There are 320 crosslinking restraints combined in 16 restraint groups.

Linker	Residue 1	Atom 1	Residue 2	Atom 2	Restraint type	Distance, Å	Count
Other	LYS	CA	LYS	CA	upper bound	40.00	320

Distograms of individual restraints

Distograms (i.e., histogram plots of distances) provide an overview of distributions of distances between residues for which chemical crosslinks were identified. The shift of the distogram relative to the threshold value may indicate a poor model. Restraints with identical thresholds are grouped into one plot. Only the best distance per restraint per model group/ensemble is plotted. Inter- and intramolecular (including self-links) restraints are also grouped into one plot. Distance for a restraint between coarse-grained beads is calculated as a minimal distance between shells; if beads intersect, the distance will be reported as 0.0. A bead with the highest available resolution for a given residue is used for the assessment.



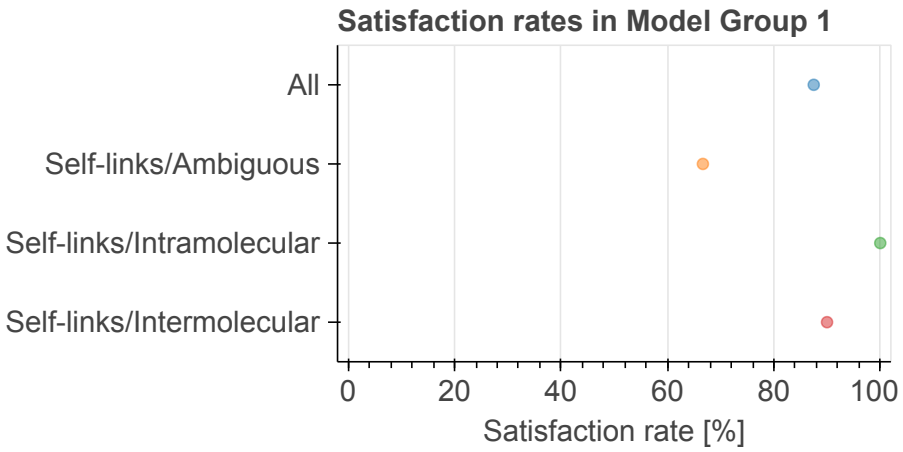
5.2.2. Satisfaction of restraints

Satisfaction of restraints is calculated on a restraint group (a set of crosslinking restraints applied collectively in the modeling) level. Satisfaction of a restraint group depends on satisfaction of individual restraints in the group and the conditionality (all/any). A restraint group is considered satisfied, if the condition was met in at least one model of the model group/ensemble. The number of measured restraints can be smaller than the total number of restraint groups if crosslinks involve non-modeled residues. Only deposited models are used for validation right now.

State group	State	Model group	# of Deposited models/Total	Restraint group type	Satisfied (%)	Violated (%)	Count (Total=16)
1	1	1	1/1	All	87.50	12.50	16
				Self-links/ Ambiguous	66.67	33.33	3
				Self-links/ Intramolecular	100.00	0.00	3
				Self-links/ Intermolecular	90.00	10.00	10

Per-model satisfaction rates in model groups/ensembles

Every point represents one model in a model group/ensemble. Where possible, boxplots with quartile marks are also plotted.



5.3. 3DEM

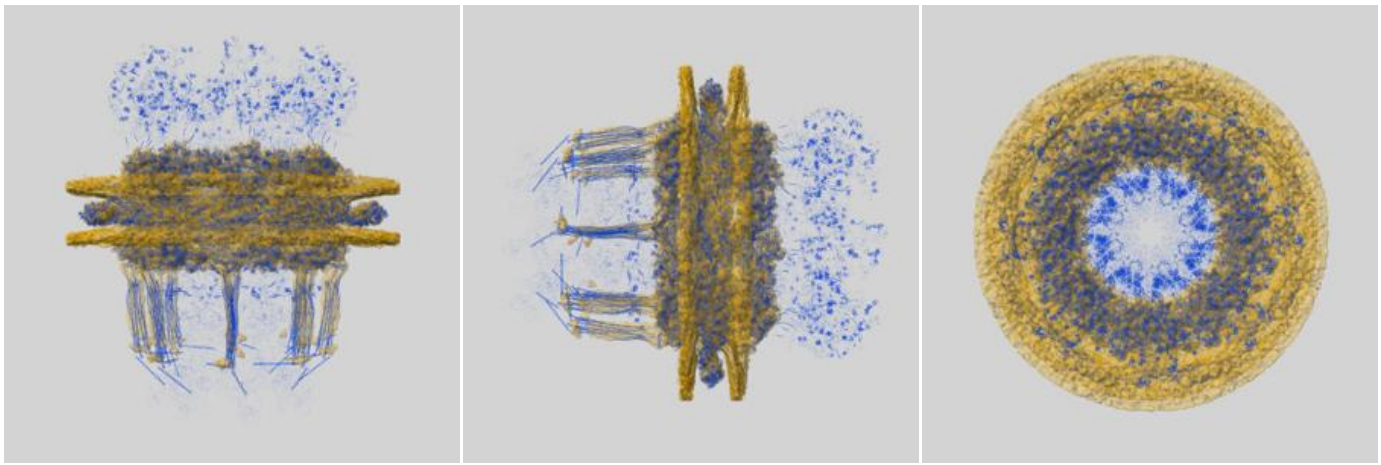
This section describes fit of models to the 3DEM data. Only results for the representative model (the first model with the largest number of asymmetric units) are shown.

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5.3.1. Map-model fit

Only results for the representative Model 1 are shown.

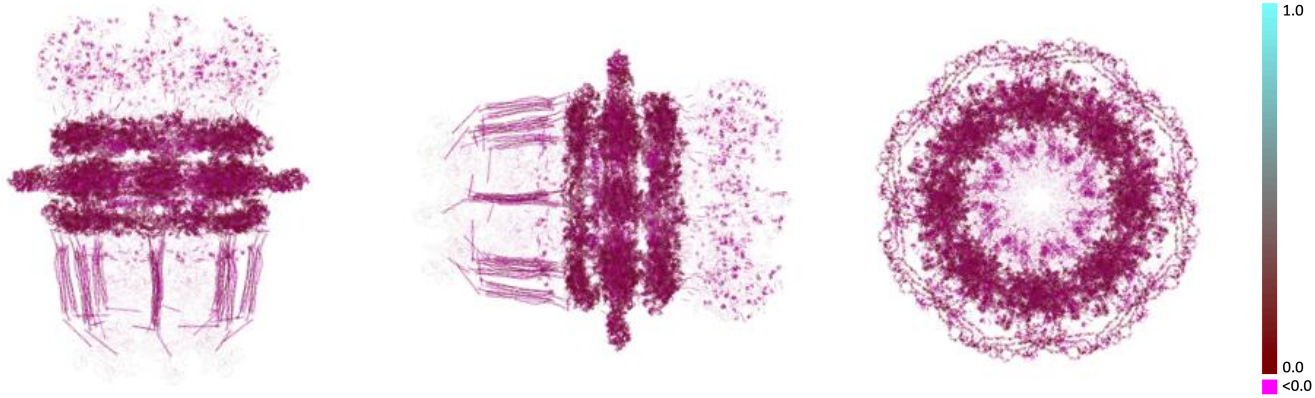
5.3.1.1. Map-model overlay



X **Y** **Z**

The images above show the 3D surface view of the map at the recommended contour level 0.050 at 50% transparency in yellow overlaid with a ribbon representation of the model colored in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

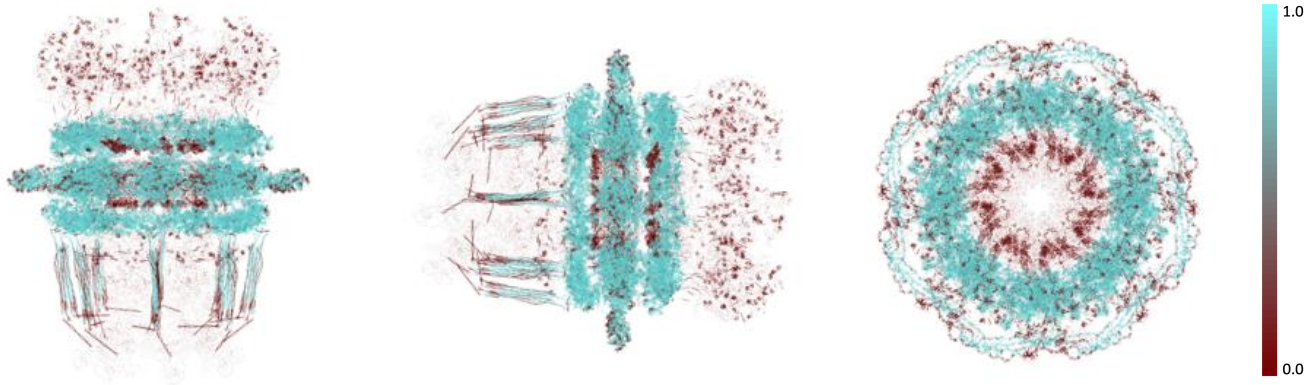
5.3.1.2. Q-score mapped to coordinate model



X **Y** **Z**

The images above show the model with each residue colored according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

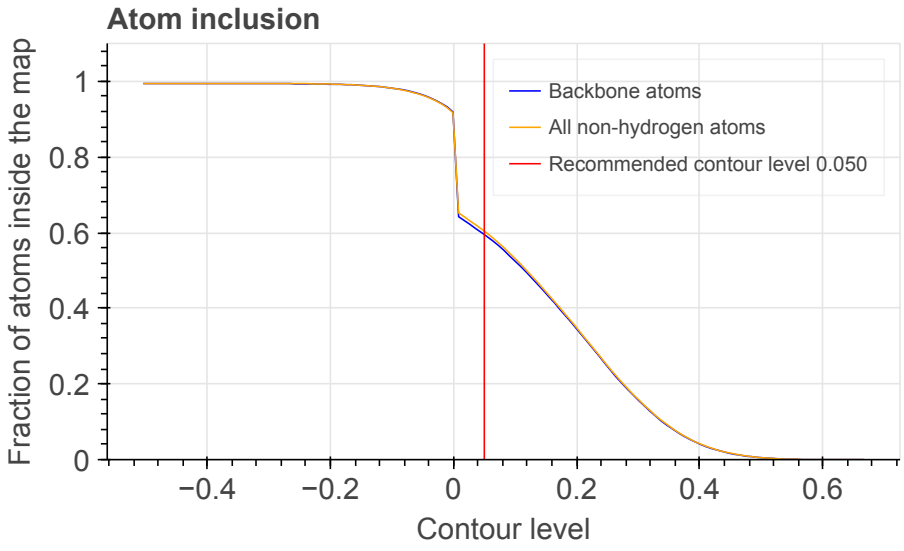
5.3.1.3. Atom inclusion mapped to coordinate model



X **Y** **Z**

The images above show the model with each residue colored according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level 0.050 .

5.3.1.4. Atom inclusion



At the recommended contour level, 60% of all backbone atoms, 60% of all non-hydrogen atoms, are inside the map.

5.3.1.5. Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.050) and Q-score for the entire model and for each chain.



Chain	Atom inclusion	Q-score
All	0.604	0.023
A1	0.235	0.004
B1	0.231	0.014
C1	0.202	0.004
D1	0.237	0.012
E1	0.191	-0.004
F1	0.772	0.030
G1	0.675	0.021
H1	0.424	0.019
I1	0.534	0.021
J1	0.709	0.032
K1	0.838	0.041
L1	0.629	0.034
M1	0.723	0.017
N1	0.386	0.007
O1	0.364	0.005
P1	0.970	0.038
Q1	0.974	0.037
R1	0.387	0.008
S1	0.368	0.006
T1	0.369	0.015
U1	0.000	-0.003
V1	0.000	0.003
W1	0.000	0.003
X1	0.000	-0.011
Y1	0.000	0.010
Z1	0.000	0.000
AA1	0.953	0.041
BA1	0.954	0.052
CA1	0.879	0.037
DA1	0.898	0.039

Chain	Atom inclusion	Q-score
EA1	0.946	0.041
FA1	0.959	0.046
GA1	0.943	0.046
HA1	0.910	0.043
IA1	0.929	0.043
JA1	0.849	0.032
KA1	0.922	0.039
LA1	0.916	0.040
MA1	0.946	0.038
NA1	0.947	0.043
OA1	0.804	0.037
PA1	0.854	0.032
QA1	0.866	0.028
RA1	0.952	0.048
SA1	0.889	0.044
TA1	0.921	0.045
UA1	0.959	0.038
VA1	0.962	0.032
WA1	0.787	0.013
XA1	0.737	0.008
YA1	0.783	0.005
ZA1	0.717	0.009
AB1	0.521	0.008
BB1	0.554	0.006
CB1	0.828	0.044
DB1	0.924	0.040
EB1	0.911	0.042
FB1	0.753	0.028
GB1	0.941	0.040
HB1	0.953	0.052
IB1	0.957	0.048
JB1	0.934	0.035
KB1	0.946	0.047
LB1	0.968	0.037
MB1	0.981	0.055

Chain	Atom inclusion	Q-score
NB1	0.904	0.036
OB1	0.932	0.027
PB1	0.960	0.041
QB1	0.976	0.040
RB1	0.958	0.041
SB1	0.909	0.052
TB1	0.993	0.049
UB1	0.984	0.029
VB1	0.792	0.039
WB1	0.881	0.041
XB1	0.896	0.040
YB1	0.617	0.013
ZB1	0.705	0.019
AC1	0.079	-0.011
BC1	0.061	-0.002
CC1	0.058	-0.003
DC1	0.751	0.025
EC1	0.144	0.007
FC1	0.000	-0.011
GC1	0.000	0.007
HC1	0.000	0.017
IC1	0.000	-0.022
JC1	0.000	-0.011
KC1	0.000	-0.008
LC1	0.000	-0.006
MC1	0.000	-0.005
NC1	0.000	0.025
OC1	0.000	-0.015
PC1	0.000	-0.014
QC1	0.000	-0.008
RC1	0.702	0.028
SC1	0.771	0.037
TC1	0.692	0.032
UC1	0.767	0.030
VC1	0.386	0.018

Chain	Atom inclusion	Q-score
WC1	0.389	0.015
XC1	0.357	0.011
YC1	0.397	0.027
ZC1	0.149	-0.010
AD1	0.139	0.004
BD1	0.129	-0.008
CD1	0.170	0.007
DD1	0.144	0.005
ED1	0.125	0.004
FD1	0.158	-0.006
GD1	0.135	-0.000
HD1	0.360	0.004
ID1	0.420	0.021
JD1	0.427	0.029
KD1	0.344	0.010
LD1	0.352	0.012
MD1	0.355	-0.002
ND1	0.938	0.025
OD1	0.970	0.014
PD1	0.985	0.041
QD1	0.987	0.044
RD1	0.965	0.041
SD1	0.986	0.045
TD1	0.967	0.039
UD1	0.964	0.035
VD1	0.924	0.041
WD1	0.963	0.040
XD1	0.966	0.035
YD1	0.922	0.033
ZD1	0.895	0.036
AE1	0.968	0.038
BE1	0.978	0.040
CE1	0.964	0.050
DE1	0.876	0.029
EE1	0.689	0.013

Chain	Atom inclusion	Q-score
A2	0.235	0.010
B2	0.231	0.004
C2	0.203	0.001
D2	0.237	-0.000
E2	0.194	0.007
F2	0.772	0.028
G2	0.675	0.022
H2	0.426	0.019
I2	0.535	0.021
J2	0.713	0.036
K2	0.838	0.039
L2	0.624	0.032
M2	0.721	0.017
N2	0.386	0.006
O2	0.363	-0.000
P2	0.973	0.037
Q2	0.970	0.038
R2	0.386	0.010
S2	0.368	0.009
T2	0.369	0.016
U2	0.000	-0.014
V2	0.000	-0.005
W2	0.000	-0.015
X2	0.000	-0.023
Y2	0.000	0.018
Z2	0.000	-0.015
AA2	0.959	0.042
BA2	0.954	0.052
CA2	0.875	0.035
DA2	0.899	0.040
EA2	0.946	0.040
FA2	0.959	0.043
GA2	0.947	0.044
HA2	0.910	0.042
IA2	0.929	0.041

Chain	Atom inclusion	Q-score
JA2	0.847	0.030
KA2	0.923	0.039
LA2	0.916	0.040
MA2	0.946	0.038
NA2	0.947	0.043
OA2	0.806	0.038
PA2	0.854	0.037
QA2	0.867	0.028
RA2	0.952	0.049
SA2	0.889	0.044
TA2	0.921	0.045
UA2	0.954	0.039
VA2	0.962	0.030
WA2	0.784	0.017
XA2	0.738	0.016
YA2	0.781	0.010
ZA2	0.720	0.010
AB2	0.517	0.007
BB2	0.555	0.007
CB2	0.827	0.042
DB2	0.926	0.038
EB2	0.911	0.042
FB2	0.753	0.028
GB2	0.943	0.044
HB2	0.954	0.050
IB2	0.958	0.047
JB2	0.933	0.037
KB2	0.945	0.047
LB2	0.969	0.037
MB2	0.982	0.055
NB2	0.904	0.039
OB2	0.931	0.027
PB2	0.960	0.041
QB2	0.977	0.040
RB2	0.958	0.039

Chain	Atom inclusion	Q-score
SB2	0.912	0.047
TB2	0.992	0.049
UB2	0.982	0.031
VB2	0.794	0.038
WB2	0.871	0.039
XB2	0.897	0.039
YB2	0.618	0.010
ZB2	0.705	0.018
AC2	0.078	-0.004
BC2	0.060	-0.010
CC2	0.059	-0.015
DC2	0.752	0.023
EC2	0.146	-0.004
FC2	0.000	-0.007
GC2	0.000	0.023
HC2	0.000	0.016
IC2	0.000	-0.009
JC2	0.000	-0.014
KC2	0.000	-0.002
LC2	0.000	-0.015
MC2	0.000	-0.010
NC2	0.000	0.018
OC2	0.000	-0.025
PC2	0.000	-0.020
QC2	0.000	0.055
RC2	0.701	0.032
SC2	0.770	0.033
TC2	0.692	0.023
UC2	0.765	0.033
VC2	0.386	0.012
WC2	0.389	0.018
XC2	0.357	0.014
YC2	0.397	0.026
ZC2	0.149	-0.020
AD2	0.137	-0.003

Chain	Atom inclusion	Q-score
BD2	0.129	-0.008
CD2	0.169	-0.004
DD2	0.144	0.003
ED2	0.125	-0.007
FD2	0.156	-0.001
GD2	0.134	-0.006
HD2	0.360	0.002
ID2	0.421	0.022
JD2	0.428	0.028
KD2	0.346	0.010
LD2	0.354	0.002
MD2	0.356	0.007
ND2	0.936	0.022
OD2	0.968	0.015
PD2	0.984	0.039
QD2	0.988	0.044
RD2	0.965	0.043
SD2	0.986	0.043
TD2	0.966	0.043
UD2	0.966	0.040
VD2	0.924	0.039
WD2	0.961	0.042
XD2	0.965	0.036
YD2	0.922	0.032
ZD2	0.894	0.035
AE2	0.969	0.041
BE2	0.974	0.038
CE2	0.965	0.047
DE2	0.875	0.027
EE2	0.693	0.014
A3	0.235	0.004
B3	0.231	0.012
C3	0.202	0.001
D3	0.237	0.012
E3	0.191	-0.004

Chain	Atom inclusion	Q-score
F3	0.772	0.030
G3	0.675	0.025
H3	0.424	0.020
I3	0.534	0.021
J3	0.709	0.032
K3	0.838	0.042
L3	0.629	0.033
M3	0.723	0.020
N3	0.386	0.008
O3	0.364	0.005
P3	0.970	0.040
Q3	0.974	0.037
R3	0.387	0.010
S3	0.368	0.008
T3	0.369	0.016
U3	0.000	-0.002
V3	0.000	0.003
W3	0.000	0.008
X3	0.000	-0.009
Y3	0.000	0.012
Z3	0.000	0.000
AA3	0.953	0.040
BA3	0.954	0.052
CA3	0.879	0.037
DA3	0.898	0.038
EA3	0.946	0.040
FA3	0.959	0.048
GA3	0.943	0.045
HA3	0.910	0.043
IA3	0.929	0.042
JA3	0.849	0.030
KA3	0.922	0.039
LA3	0.916	0.040
MA3	0.946	0.040
NA3	0.947	0.043

Chain	Atom inclusion	Q-score
OA3	0.804	0.036
PA3	0.854	0.033
QA3	0.866	0.027
RA3	0.952	0.047
SA3	0.889	0.042
TA3	0.921	0.045
UA3	0.959	0.036
VA3	0.962	0.033
WA3	0.787	0.011
XA3	0.737	0.013
YA3	0.783	0.003
ZA3	0.717	0.003
AB3	0.521	0.004
BB3	0.554	0.009
CB3	0.828	0.040
DB3	0.924	0.039
EB3	0.911	0.045
FB3	0.753	0.025
GB3	0.941	0.040
HB3	0.953	0.052
IB3	0.957	0.047
JB3	0.934	0.036
KB3	0.946	0.047
LB3	0.968	0.038
MB3	0.981	0.055
NB3	0.904	0.036
OB3	0.932	0.025
PB3	0.960	0.041
QB3	0.976	0.040
RB3	0.958	0.041
SB3	0.909	0.049
TB3	0.993	0.047
UB3	0.984	0.027
VB3	0.792	0.036
WB3	0.881	0.043

Chain	Atom inclusion	Q-score
XB3	0.896	0.037
YB3	0.617	0.011
ZB3	0.705	0.019
AC3	0.079	-0.011
BC3	0.061	-0.000
CC3	0.058	-0.004
DC3	0.751	0.020
EC3	0.144	0.006
FC3	0.000	-0.004
GC3	0.000	0.010
HC3	0.000	0.012
IC3	0.000	-0.018
JC3	0.000	0.000
KC3	0.000	-0.011
LC3	0.000	-0.004
MC3	0.000	-0.006
NC3	0.000	0.027
OC3	0.000	-0.010
PC3	0.000	-0.010
QC3	0.000	-0.004
RC3	0.702	0.026
SC3	0.771	0.037
TC3	0.692	0.034
UC3	0.767	0.028
VC3	0.386	0.019
WC3	0.389	0.016
XC3	0.357	0.011
YC3	0.397	0.029
ZC3	0.149	-0.012
AD3	0.139	0.005
BD3	0.129	-0.007
CD3	0.170	0.007
DD3	0.144	0.006
ED3	0.125	0.006
FD3	0.158	-0.005

Chain	Atom inclusion	Q-score
GD3	0.135	0.001
HD3	0.360	0.005
ID3	0.420	0.019
JD3	0.427	0.030
KD3	0.344	0.013
LD3	0.352	0.010
MD3	0.355	-0.002
ND3	0.938	0.027
OD3	0.970	0.020
PD3	0.985	0.044
QD3	0.987	0.043
RD3	0.965	0.044
SD3	0.986	0.046
TD3	0.967	0.040
UD3	0.964	0.038
VD3	0.924	0.041
WD3	0.963	0.040
XD3	0.966	0.034
YD3	0.922	0.032
ZD3	0.895	0.034
AE3	0.968	0.040
BE3	0.978	0.042
CE3	0.964	0.051
DE3	0.876	0.030
EE3	0.689	0.013
A4	0.235	0.011
B4	0.231	0.006
C4	0.203	0.001
D4	0.237	0.001
E4	0.194	0.007
F4	0.772	0.028
G4	0.675	0.026
H4	0.426	0.022
I4	0.535	0.022
J4	0.713	0.035

Chain	Atom inclusion	Q-score
K4	0.838	0.039
L4	0.624	0.030
M4	0.721	0.019
N4	0.386	0.007
O4	0.363	0.001
P4	0.973	0.040
Q4	0.970	0.040
R4	0.386	0.010
S4	0.368	0.008
T4	0.369	0.015
U4	0.000	-0.012
V4	0.000	-0.004
W4	0.000	-0.013
X4	0.000	-0.024
Y4	0.000	0.019
Z4	0.000	-0.016
AA4	0.959	0.042
BA4	0.954	0.052
CA4	0.875	0.034
DA4	0.899	0.038
EA4	0.946	0.041
FA4	0.959	0.043
GA4	0.947	0.045
HA4	0.910	0.042
IA4	0.929	0.041
JA4	0.847	0.028
KA4	0.923	0.039
LA4	0.916	0.041
MA4	0.946	0.039
NA4	0.947	0.043
OA4	0.806	0.037
PA4	0.854	0.037
QA4	0.867	0.028
RA4	0.952	0.050
SA4	0.889	0.040

Chain	Atom inclusion	Q-score
TA4	0.921	0.045
UA4	0.954	0.039
VA4	0.962	0.031
WA4	0.784	0.016
XA4	0.738	0.020
YA4	0.781	0.008
ZA4	0.720	0.007
AB4	0.517	0.006
BB4	0.555	0.008
CB4	0.827	0.037
DB4	0.926	0.039
EB4	0.911	0.044
FB4	0.753	0.028
GB4	0.943	0.045
HB4	0.954	0.050
IB4	0.958	0.047
JB4	0.933	0.037
KB4	0.945	0.046
LB4	0.969	0.037
MB4	0.982	0.055
NB4	0.904	0.039
OB4	0.931	0.023
PB4	0.960	0.041
QB4	0.977	0.039
RB4	0.958	0.037
SB4	0.912	0.044
TB4	0.992	0.049
UB4	0.982	0.029
VB4	0.794	0.033
WB4	0.871	0.040
XB4	0.897	0.037
YB4	0.618	0.009
ZB4	0.705	0.018
AC4	0.078	-0.003
BC4	0.060	-0.008

Chain	Atom inclusion	Q-score
CC4	0.059	-0.016
DC4	0.752	0.021
EC4	0.146	-0.006
FC4	0.000	0.002
GC4	0.000	0.025
HC4	0.000	0.020
IC4	0.000	-0.008
JC4	0.000	-0.007
KC4	0.000	0.000
LC4	0.000	-0.017
MC4	0.000	-0.011
NC4	0.000	0.022
OC4	0.000	-0.027
PC4	0.000	-0.021
QC4	0.000	0.054
RC4	0.701	0.031
SC4	0.770	0.032
TC4	0.692	0.025
UC4	0.765	0.030
VC4	0.386	0.014
WC4	0.389	0.018
XC4	0.357	0.014
YC4	0.397	0.025
ZC4	0.149	-0.019
AD4	0.137	-0.003
BD4	0.129	-0.008
CD4	0.169	-0.003
DD4	0.144	0.004
ED4	0.125	-0.006
FD4	0.156	0.000
GD4	0.134	-0.007
HD4	0.360	0.002
ID4	0.421	0.023
JD4	0.428	0.028
KD4	0.346	0.011

Chain	Atom inclusion	Q-score
LD4	0.354	0.003
MD4	0.356	0.005
ND4	0.936	0.023
OD4	0.968	0.020
PD4	0.984	0.042
QD4	0.988	0.044
RD4	0.965	0.044
SD4	0.986	0.045
TD4	0.966	0.044
UD4	0.966	0.044
VD4	0.924	0.038
WD4	0.961	0.041
XD4	0.965	0.036
YD4	0.922	0.032
ZD4	0.894	0.036
AE4	0.969	0.042
BE4	0.974	0.038
CE4	0.965	0.049
DE4	0.875	0.029
EE4	0.693	0.015
A5	0.235	0.004
B5	0.231	0.014
C5	0.202	0.003
D5	0.237	0.012
E5	0.191	-0.001
F5	0.772	0.030
G5	0.675	0.028
H5	0.424	0.023
I5	0.534	0.024
J5	0.709	0.031
K5	0.838	0.042
L5	0.629	0.031
M5	0.723	0.021
N5	0.386	0.009
O5	0.364	0.005

Chain	Atom inclusion	Q-score
P5	0.970	0.042
Q5	0.974	0.039
R5	0.387	0.009
S5	0.368	0.006
T5	0.369	0.016
U5	0.000	-0.003
V5	0.000	0.001
W5	0.000	0.004
X5	0.000	-0.006
Y5	0.000	0.015
Z5	0.000	0.001
AA5	0.953	0.042
BA5	0.954	0.052
CA5	0.879	0.034
DA5	0.898	0.036
EA5	0.946	0.041
FA5	0.959	0.048
GA5	0.943	0.046
HA5	0.910	0.044
IA5	0.929	0.042
JA5	0.849	0.030
KA5	0.922	0.038
LA5	0.916	0.041
MA5	0.946	0.041
NA5	0.947	0.042
OA5	0.804	0.034
PA5	0.854	0.031
QA5	0.866	0.027
RA5	0.952	0.049
SA5	0.889	0.040
TA5	0.921	0.045
UA5	0.959	0.037
VA5	0.962	0.032
WA5	0.787	0.012
XA5	0.737	0.012

Chain	Atom inclusion	Q-score
YA5	0.783	0.004
ZA5	0.717	0.003
AB5	0.521	0.006
BB5	0.554	0.008
CB5	0.828	0.038
DB5	0.924	0.042
EB5	0.911	0.045
FB5	0.753	0.029
GB5	0.941	0.041
HB5	0.953	0.053
IB5	0.957	0.047
JB5	0.934	0.037
KB5	0.946	0.048
LB5	0.968	0.038
MB5	0.981	0.055
NB5	0.904	0.037
OB5	0.932	0.023
PB5	0.960	0.041
QB5	0.976	0.039
RB5	0.958	0.038
SB5	0.909	0.048
TB5	0.993	0.048
UB5	0.984	0.030
VB5	0.792	0.030
WB5	0.881	0.043
XB5	0.896	0.037
YB5	0.617	0.012
ZB5	0.705	0.019
AC5	0.079	-0.008
BC5	0.061	0.000
CC5	0.058	-0.004
DC5	0.751	0.021
EC5	0.144	0.002
FC5	0.000	0.002
GC5	0.000	0.011

Chain	Atom inclusion	Q-score
HC5	0.000	0.022
IC5	0.000	-0.017
JC5	0.000	0.005
KC5	0.000	-0.010
LC5	0.000	-0.003
MC5	0.000	-0.005
NC5	0.000	0.022
OC5	0.000	-0.008
PC5	0.000	-0.007
QC5	0.000	0.003
RC5	0.702	0.027
SC5	0.771	0.036
TC5	0.692	0.034
UC5	0.767	0.027
VC5	0.386	0.017
WC5	0.389	0.016
XC5	0.357	0.010
YC5	0.397	0.026
ZC5	0.149	-0.012
AD5	0.139	0.006
BD5	0.129	-0.007
CD5	0.170	0.010
DD5	0.144	0.007
ED5	0.125	0.006
FD5	0.158	-0.006
GD5	0.135	0.002
HD5	0.360	0.007
ID5	0.420	0.023
JD5	0.427	0.027
KD5	0.344	0.011
LD5	0.352	0.012
MD5	0.355	-0.003
ND5	0.938	0.030
OD5	0.970	0.021
PD5	0.985	0.045

Chain	Atom inclusion	Q-score
QD5	0.987	0.045
RD5	0.965	0.044
SD5	0.986	0.047
TD5	0.967	0.043
UD5	0.964	0.041
VD5	0.924	0.039
WD5	0.963	0.042
XD5	0.966	0.035
YD5	0.922	0.033
ZD5	0.895	0.035
AE5	0.968	0.042
BE5	0.978	0.046
CE5	0.964	0.052
DE5	0.876	0.032
EE5	0.689	0.015
A6	0.235	0.010
B6	0.231	0.007
C6	0.203	0.003
D6	0.237	-0.001
E6	0.194	0.008
F6	0.772	0.028
G6	0.675	0.027
H6	0.426	0.023
I6	0.535	0.024
J6	0.713	0.035
K6	0.838	0.039
L6	0.624	0.029
M6	0.721	0.020
N6	0.386	0.008
O6	0.363	0.000
P6	0.973	0.040
Q6	0.970	0.042
R6	0.386	0.008
S6	0.368	0.006
T6	0.369	0.016

Chain	Atom inclusion	Q-score
U6	0.000	-0.015
V6	0.000	-0.002
W6	0.000	-0.013
X6	0.000	-0.023
Y6	0.000	0.019
Z6	0.000	-0.018
AA6	0.959	0.043
BA6	0.954	0.052
CA6	0.875	0.031
DA6	0.899	0.038
EA6	0.946	0.042
FA6	0.959	0.043
GA6	0.947	0.046
HA6	0.910	0.043
IA6	0.929	0.042
JA6	0.847	0.030
KA6	0.923	0.040
LA6	0.916	0.041
MA6	0.946	0.040
NA6	0.947	0.043
OA6	0.806	0.036
PA6	0.854	0.035
QA6	0.867	0.028
RA6	0.952	0.051
SA6	0.889	0.040
TA6	0.921	0.045
UA6	0.954	0.042
VA6	0.962	0.028
WA6	0.784	0.017
XA6	0.738	0.016
YA6	0.781	0.010
ZA6	0.720	0.010
AB6	0.517	0.010
BB6	0.555	0.006
CB6	0.827	0.040

Chain	Atom inclusion	Q-score
DB6	0.926	0.042
EB6	0.911	0.042
FB6	0.753	0.033
GB6	0.943	0.044
HB6	0.954	0.050
IB6	0.958	0.047
JB6	0.933	0.038
KB6	0.945	0.047
LB6	0.969	0.036
MB6	0.982	0.054
NB6	0.904	0.040
OB6	0.931	0.024
PB6	0.960	0.041
QB6	0.977	0.039
RB6	0.958	0.035
SB6	0.912	0.045
TB6	0.992	0.050
UB6	0.982	0.034
VB6	0.794	0.032
WB6	0.871	0.039
XB6	0.897	0.037
YB6	0.618	0.012
ZB6	0.705	0.017
AC6	0.078	-0.005
BC6	0.060	-0.009
CC6	0.059	-0.014
DC6	0.752	0.026
EC6	0.146	-0.009
FC6	0.000	0.002
GC6	0.000	0.031
HC6	0.000	0.031
IC6	0.000	-0.006
JC6	0.000	-0.005
KC6	0.000	-0.000
LC6	0.000	-0.016

Chain	Atom inclusion	Q-score
MC6	0.000	-0.011
NC6	0.000	0.020
OC6	0.000	-0.023
PC6	0.000	-0.017
QC6	0.000	0.055
RC6	0.701	0.033
SC6	0.770	0.031
TC6	0.692	0.026
UC6	0.765	0.033
VC6	0.386	0.013
WC6	0.389	0.019
XC6	0.357	0.014
YC6	0.397	0.022
ZC6	0.149	-0.020
AD6	0.137	-0.002
BD6	0.129	-0.006
CD6	0.169	-0.004
DD6	0.144	0.006
ED6	0.125	-0.007
FD6	0.156	-0.003
GD6	0.134	-0.005
HD6	0.360	0.004
ID6	0.421	0.024
JD6	0.428	0.026
KD6	0.346	0.013
LD6	0.354	0.003
MD6	0.356	0.009
ND6	0.936	0.026
OD6	0.968	0.019
PD6	0.984	0.041
QD6	0.988	0.046
RD6	0.965	0.042
SD6	0.986	0.047
TD6	0.966	0.049
UD6	0.966	0.043

Chain	Atom inclusion	Q-score
VD6	0.924	0.038
WD6	0.961	0.043
XD6	0.965	0.035
YD6	0.922	0.033
ZD6	0.894	0.036
AE6	0.969	0.043
BE6	0.974	0.041
CE6	0.965	0.049
DE6	0.875	0.030
EE6	0.693	0.017
A7	0.235	0.004
B7	0.231	0.014
C7	0.202	0.004
D7	0.237	0.011
E7	0.191	-0.002
F7	0.772	0.030
G7	0.675	0.024
H7	0.424	0.022
I7	0.534	0.024
J7	0.709	0.032
K7	0.838	0.042
L7	0.629	0.031
M7	0.723	0.019
N7	0.386	0.009
O7	0.364	0.004
P7	0.970	0.041
Q7	0.974	0.039
R7	0.387	0.007
S7	0.368	0.005
T7	0.369	0.015
U7	0.000	0.001
V7	0.000	0.006
W7	0.000	0.002
X7	0.000	-0.012
Y7	0.000	0.012

Chain	Atom inclusion	Q-score
Z7	0.000	-0.004
AA7	0.953	0.041
BA7	0.954	0.052
CA7	0.879	0.034
DA7	0.898	0.037
EA7	0.946	0.042
FA7	0.959	0.046
GA7	0.943	0.047
HA7	0.910	0.045
IA7	0.929	0.043
JA7	0.849	0.032
KA7	0.922	0.039
LA7	0.916	0.041
MA7	0.946	0.040
NA7	0.947	0.042
OA7	0.804	0.036
PA7	0.854	0.030
QA7	0.866	0.027
RA7	0.952	0.050
SA7	0.889	0.042
TA7	0.921	0.044
UA7	0.959	0.040
VA7	0.962	0.029
WA7	0.787	0.013
XA7	0.737	0.008
YA7	0.783	0.004
ZA7	0.717	0.007
AB7	0.521	0.010
BB7	0.554	0.005
CB7	0.828	0.043
DB7	0.924	0.043
EB7	0.911	0.041
FB7	0.753	0.032
GB7	0.941	0.039
HB7	0.953	0.053

Chain	Atom inclusion	Q-score
IB7	0.957	0.047
JB7	0.934	0.038
KB7	0.946	0.048
LB7	0.968	0.037
MB7	0.981	0.055
NB7	0.904	0.037
OB7	0.932	0.025
PB7	0.960	0.041
QB7	0.976	0.039
RB7	0.958	0.038
SB7	0.909	0.050
TB7	0.993	0.048
UB7	0.984	0.033
VB7	0.792	0.033
WB7	0.881	0.042
XB7	0.896	0.038
YB7	0.617	0.013
ZB7	0.705	0.020
AC7	0.079	-0.009
BC7	0.061	0.001
CC7	0.058	-0.005
DC7	0.751	0.025
EC7	0.144	0.002
FC7	0.000	-0.000
GC7	0.000	0.011
HC7	0.000	0.026
IC7	0.000	-0.019
JC7	0.000	-0.009
KC7	0.000	-0.009
LC7	0.000	-0.000
MC7	0.000	-0.008
NC7	0.000	0.020
OC7	0.000	-0.013
PC7	0.000	-0.011
QC7	0.000	0.002

Chain	Atom inclusion	Q-score
RC7	0.702	0.028
SC7	0.771	0.034
TC7	0.692	0.032
UC7	0.767	0.031
VC7	0.386	0.020
WC7	0.389	0.018
XC7	0.357	0.009
YC7	0.397	0.025
ZC7	0.149	-0.011
AD7	0.139	0.007
BD7	0.129	-0.007
CD7	0.170	0.007
DD7	0.144	0.008
ED7	0.125	0.006
FD7	0.158	-0.007
GD7	0.135	0.000
HD7	0.360	0.007
ID7	0.420	0.025
JD7	0.427	0.028
KD7	0.344	0.010
LD7	0.352	0.016
MD7	0.355	-0.003
ND7	0.938	0.029
OD7	0.970	0.018
PD7	0.985	0.043
QD7	0.987	0.046
RD7	0.965	0.040
SD7	0.986	0.048
TD7	0.967	0.044
UD7	0.964	0.037
VD7	0.924	0.040
WD7	0.963	0.041
XD7	0.966	0.034
YD7	0.922	0.034
ZD7	0.895	0.037

Chain	Atom inclusion	Q-score
AE7	0.968	0.040
BE7	0.978	0.044
CE7	0.964	0.052
DE7	0.876	0.031
EE7	0.689	0.015
A8	0.235	0.010
B8	0.231	0.006
C8	0.203	0.001
D8	0.237	-0.001
E8	0.194	0.008
F8	0.772	0.028
G8	0.675	0.021
H8	0.426	0.020
I8	0.535	0.023
J8	0.713	0.036
K8	0.838	0.039
L8	0.624	0.031
M8	0.721	0.017
N8	0.386	0.007
O8	0.363	-0.000
P8	0.973	0.037
Q8	0.970	0.041
R8	0.386	0.009
S8	0.368	0.007
T8	0.369	0.017
U8	0.000	-0.013
V8	0.000	-0.003
W8	0.000	-0.011
X8	0.000	-0.021
Y8	0.000	0.016
Z8	0.000	-0.016
AA8	0.959	0.043
BA8	0.954	0.052
CA8	0.875	0.033
DA8	0.899	0.041

Chain	Atom inclusion	Q-score
EA8	0.946	0.041
FA8	0.959	0.041
GA8	0.947	0.046
HA8	0.910	0.043
IA8	0.929	0.042
JA8	0.847	0.032
KA8	0.923	0.040
LA8	0.916	0.040
MA8	0.946	0.038
NA8	0.947	0.044
OA8	0.806	0.038
PA8	0.854	0.035
QA8	0.867	0.029
RA8	0.952	0.050
SA8	0.889	0.043
TA8	0.921	0.045
UA8	0.954	0.043
VA8	0.962	0.029
WA8	0.784	0.018
XA8	0.738	0.015
YA8	0.781	0.011
ZA8	0.720	0.014
AB8	0.517	0.010
BB8	0.555	0.005
CB8	0.827	0.044
DB8	0.926	0.041
EB8	0.911	0.041
FB8	0.753	0.033
GB8	0.943	0.044
HB8	0.954	0.050
IB8	0.958	0.048
JB8	0.933	0.037
KB8	0.945	0.048
LB8	0.969	0.036
MB8	0.982	0.054

Chain	Atom inclusion	Q-score
NB8	0.904	0.040
OB8	0.931	0.027
PB8	0.960	0.041
QB8	0.977	0.041
RB8	0.958	0.037
SB8	0.912	0.049
TB8	0.992	0.049
UB8	0.982	0.035
VB8	0.794	0.037
WB8	0.871	0.038
XB8	0.897	0.039
YB8	0.618	0.012
ZB8	0.705	0.018
AC8	0.078	-0.007
BC8	0.060	-0.010
CC8	0.059	-0.013
DC8	0.752	0.029
EC8	0.146	-0.007
FC8	0.000	-0.005
GC8	0.000	0.029
HC8	0.000	0.024
IC8	0.000	-0.006
JC8	0.000	-0.000
KC8	0.000	0.000
LC8	0.000	-0.010
MC8	0.000	-0.012
NC8	0.000	0.020
OC8	0.000	-0.024
PC8	0.000	-0.016
QC8	0.000	0.057
RC8	0.701	0.034
SC8	0.770	0.032
TC8	0.692	0.024
UC8	0.765	0.034
VC8	0.386	0.013

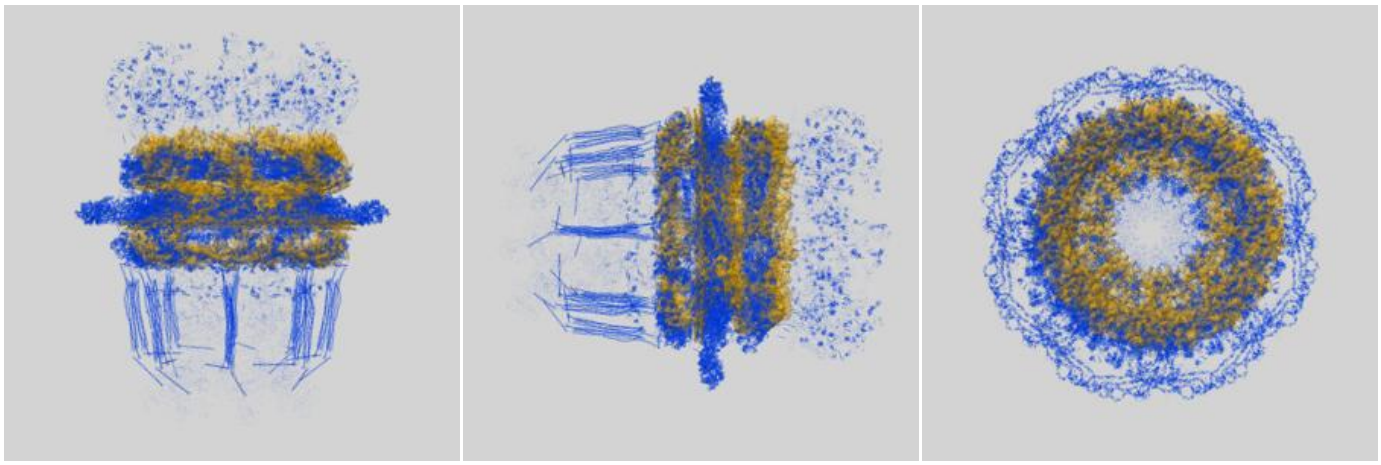
Chain	Atom inclusion	Q-score
WC8	0.389	0.017
XC8	0.357	0.014
YC8	0.397	0.024
ZC8	0.149	-0.019
AD8	0.137	-0.000
BD8	0.129	-0.005
CD8	0.169	-0.006
DD8	0.144	0.005
ED8	0.125	-0.007
FD8	0.156	-0.004
GD8	0.134	-0.004
HD8	0.360	0.006
ID8	0.421	0.026
JD8	0.428	0.026
KD8	0.346	0.011
LD8	0.354	0.003
MD8	0.356	0.008
ND8	0.936	0.023
OD8	0.968	0.014
PD8	0.984	0.038
QD8	0.988	0.046
RD8	0.965	0.040
SD8	0.986	0.045
TD8	0.966	0.047
UD8	0.966	0.041
VD8	0.924	0.039
WD8	0.961	0.042
XD8	0.965	0.036
YD8	0.922	0.034
ZD8	0.894	0.034
AE8	0.969	0.040
BE8	0.974	0.041
CE8	0.965	0.047
DE8	0.875	0.028
EE8	0.693	0.015

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5.3.1. Map-model fit

Only results for the representative Model 1 are shown.

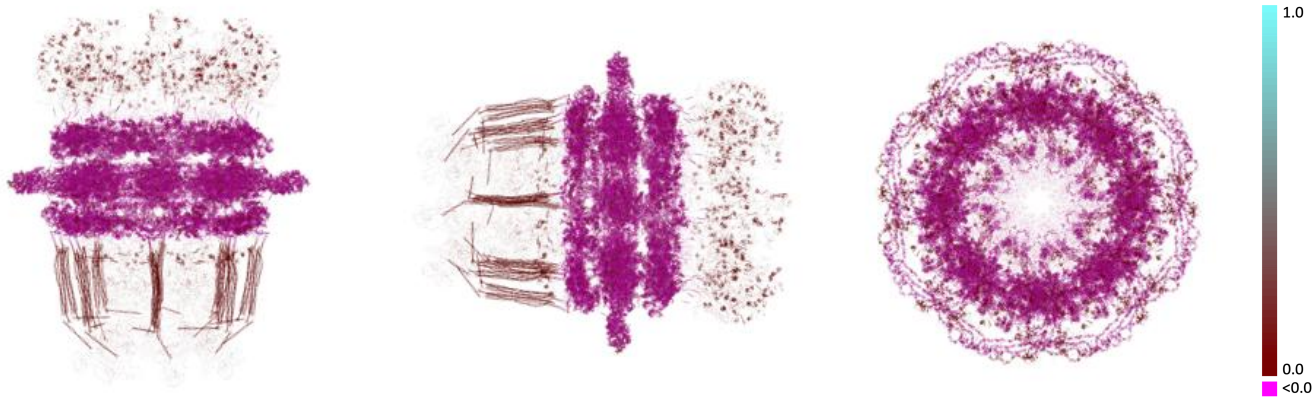
5.3.1.1. Map-model overlay



X **Y** **Z**

The images above show the 3D surface view of the map at the recommended contour level 3.500 at 50% transparency in yellow overlaid with a ribbon representation of the model colored in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

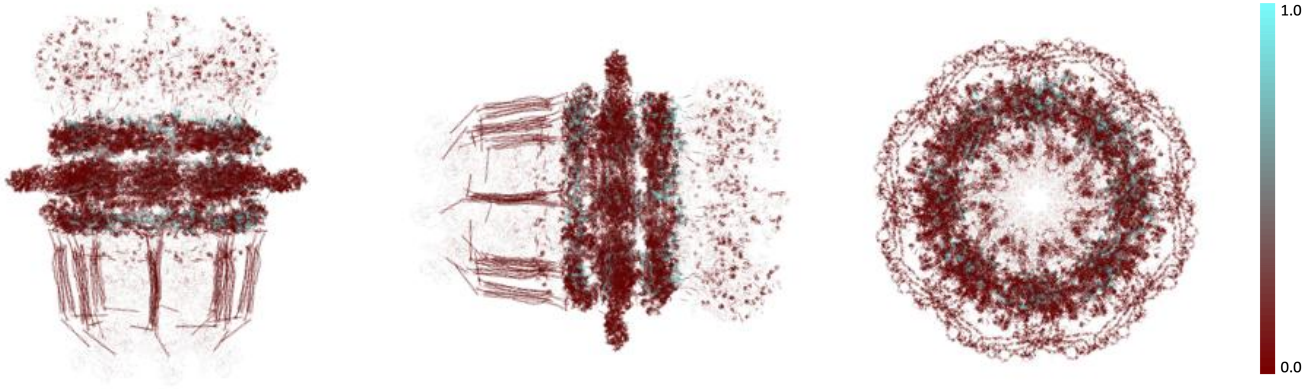
5.3.1.2. Q-score mapped to coordinate model



X **Y** **Z**

The images above show the model with each residue colored according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

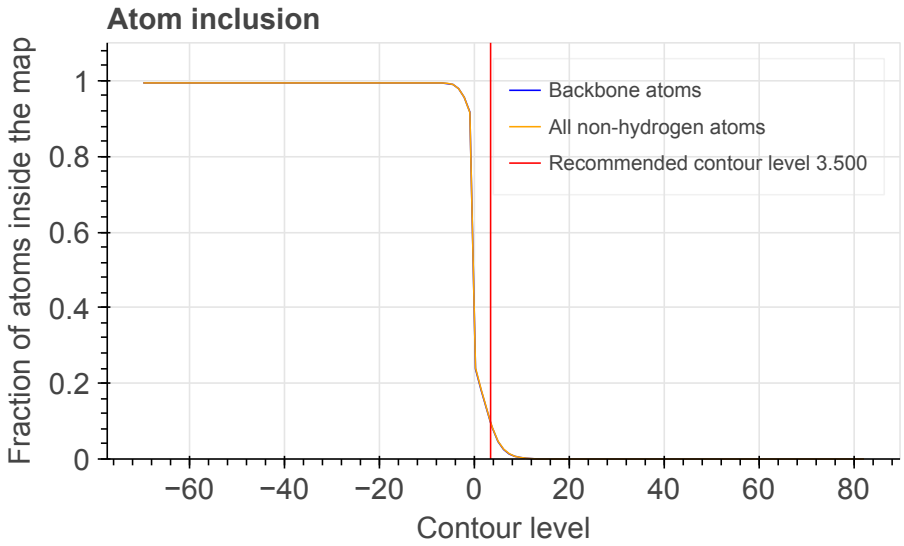
5.3.1.3. Atom inclusion mapped to coordinate model



X **Y** **Z**

The images above show the model with each residue colored according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level 3.500 .

5.3.1.4. Atom inclusion



At the recommended contour level, 10% of all backbone atoms, 10% of all non-hydrogen atoms, are inside the map.

5.3.1.5. Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (3.500) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.097	0.000
A1	0.143	0.006
B1	0.105	0.001
C1	0.054	0.002
D1	0.122	0.000
E1	0.015	0.001
F1	0.001	0.008
G1	0.029	-0.003



Chain	Atom inclusion	Q-score
H1	0.058	0.000
I1	0.000	-0.002
J1	0.000	-0.004
K1	0.003	-0.002
L1	0.012	-0.003
M1	0.001	-0.010
N1	0.007	-0.001
O1	0.000	-0.001
P1	0.000	0.013
Q1	0.165	0.008
R1	0.018	0.003
S1	0.014	-0.001
T1	0.149	0.008
U1	0.000	0.000
V1	0.000	0.000
W1	0.000	0.000
X1	0.000	0.007
Y1	0.000	-0.003
Z1	0.000	0.000
AA1	0.164	-0.008
BA1	0.268	-0.002
CA1	0.199	-0.008
DA1	0.162	0.008
EA1	0.069	0.005
FA1	0.211	-0.007
GA1	0.061	0.002
HA1	0.178	0.005
IA1	0.043	0.010
JA1	0.015	0.004
KA1	0.314	0.004
LA1	0.108	0.005
MA1	0.410	0.020
NA1	0.002	0.009
OA1	0.151	0.008
PA1	0.103	0.000

Chain	Atom inclusion	Q-score
QA1	0.124	0.006
RA1	0.168	0.010
SA1	0.189	0.002
TA1	0.152	0.004
UA1	0.000	0.007
VA1	0.376	0.019
WA1	0.223	0.001
XA1	0.150	0.016
YA1	0.039	-0.009
ZA1	0.384	0.030
AB1	0.057	-0.015
BB1	0.172	0.001
CB1	0.124	-0.004
DB1	0.171	-0.007
EB1	0.209	0.003
FB1	0.002	0.005
GB1	0.017	0.019
HB1	0.414	0.004
IB1	0.317	-0.001
JB1	0.200	0.000
KB1	0.388	0.001
LB1	0.457	-0.000
MB1	0.290	-0.011
NB1	0.445	0.011
OB1	0.281	0.002
PB1	0.394	0.017
QB1	0.325	0.006
RB1	0.013	-0.005
SB1	0.000	-0.002
TB1	0.346	0.020
UB1	0.160	-0.032
VB1	0.004	0.012
WB1	0.026	0.012
XB1	0.024	-0.011
YB1	0.269	0.010

Chain	Atom inclusion	Q-score
ZB1	0.300	0.008
AC1	0.039	0.002
BC1	0.024	-0.003
CC1	0.001	-0.000
DC1	0.026	-0.015
EC1	0.000	0.005
FC1	0.186	0.004
GC1	0.092	-0.046
HC1	0.000	0.011
IC1	0.000	0.004
JC1	0.000	-0.040
KC1	0.000	-0.008
LC1	0.000	-0.006
MC1	0.000	-0.002
NC1	0.000	0.046
OC1	0.000	0.006
PC1	0.000	0.002
QC1	0.000	0.013
RC1	0.400	0.014
SC1	0.228	0.004
TC1	0.077	-0.023
UC1	0.333	0.017
VC1	0.189	0.005
WC1	0.194	-0.006
XC1	0.111	0.004
YC1	0.261	0.007
ZC1	0.198	0.006
AD1	0.120	0.012
BD1	0.062	0.002
CD1	0.293	0.010
DD1	0.025	0.005
ED1	0.037	-0.003
FD1	0.157	0.002
GD1	0.024	-0.003
HD1	0.194	0.001

Chain	Atom inclusion	Q-score
ID1	0.160	0.007
JD1	0.112	-0.002
KD1	0.101	0.003
LD1	0.051	0.004
MD1	0.093	0.002
ND1	0.425	0.005
OD1	0.647	0.044
PD1	0.186	-0.005
QD1	0.412	-0.003
RD1	0.548	0.011
SD1	0.457	-0.003
TD1	0.221	-0.020
UD1	0.656	0.016
VD1	0.133	0.007
WD1	0.495	0.013
XD1	0.298	0.002
YD1	0.537	0.020
ZD1	0.015	0.012
AE1	0.373	0.002
BE1	0.419	-0.003
CE1	0.112	-0.035
DE1	0.059	-0.018
EE1	0.146	0.004
A2	0.030	-0.000
B2	0.134	0.000
C2	0.075	-0.004
D2	0.131	0.003
E2	0.034	0.000
F2	0.004	-0.005
G2	0.046	0.001
H2	0.063	0.005
I2	0.002	0.002
J2	0.000	-0.003
K2	0.003	0.007
L2	0.003	-0.004

Chain	Atom inclusion	Q-score
M2	0.002	-0.006
N2	0.007	-0.001
O2	0.002	-0.001
P2	0.002	-0.006
Q2	0.173	-0.003
R2	0.005	0.001
S2	0.003	-0.000
T2	0.032	0.001
U2	0.000	-0.001
V2	0.000	0.000
W2	0.000	0.000
X2	0.000	-0.018
Y2	0.000	-0.001
Z2	0.000	0.000
AA2	0.176	-0.012
BA2	0.299	-0.007
CA2	0.199	-0.010
DA2	0.222	0.009
EA2	0.013	0.003
FA2	0.242	0.004
GA2	0.009	-0.003
HA2	0.250	-0.007
IA2	0.011	0.000
JA2	0.006	0.006
KA2	0.250	0.000
LA2	0.042	-0.002
MA2	0.241	0.007
NA2	0.035	0.000
OA2	0.070	0.003
PA2	0.219	0.005
QA2	0.184	0.002
RA2	0.086	-0.003
SA2	0.102	-0.006
TA2	0.223	-0.003
UA2	0.000	-0.012

Chain	Atom inclusion	Q-score
VA2	0.316	0.001
WA2	0.280	0.011
XA2	0.073	-0.012
YA2	0.050	-0.031
ZA2	0.402	0.034
AB2	0.179	0.003
BB2	0.158	0.005
CB2	0.165	-0.013
DB2	0.253	0.004
EB2	0.181	0.004
FB2	0.084	-0.004
GB2	0.030	0.010
HB2	0.338	-0.005
IB2	0.400	0.011
JB2	0.182	-0.005
KB2	0.222	0.006
LB2	0.323	0.006
MB2	0.240	-0.022
NB2	0.332	-0.000
OB2	0.270	-0.001
PB2	0.214	-0.008
QB2	0.158	-0.005
RB2	0.177	0.000
SB2	0.123	-0.002
TB2	0.462	0.012
UB2	0.075	-0.023
VB2	0.000	0.007
WB2	0.001	0.002
XB2	0.000	0.002
YB2	0.096	-0.005
ZB2	0.223	0.003
AC2	0.004	-0.002
BC2	0.021	-0.005
CC2	0.012	-0.002
DC2	0.000	0.009

Chain	Atom inclusion	Q-score
EC2	0.000	0.014
FC2	0.381	-0.022
GC2	0.444	0.062
HC2	0.000	-0.015
IC2	0.000	0.001
JC2	0.000	-0.041
KC2	0.000	-0.000
LC2	0.000	0.002
MC2	0.000	0.021
NC2	0.000	-0.004
OC2	0.000	0.006
PC2	0.000	-0.002
QC2	0.000	-0.046
RC2	0.307	0.009
SC2	0.197	-0.003
TC2	0.166	-0.016
UC2	0.129	-0.010
VC2	0.183	-0.005
WC2	0.185	-0.017
XC2	0.125	-0.008
YC2	0.120	-0.014
ZC2	0.145	0.009
AD2	0.116	0.003
BD2	0.049	-0.005
CD2	0.173	0.001
DD2	0.003	0.006
ED2	0.023	0.003
FD2	0.218	0.003
GD2	0.059	-0.009
HD2	0.162	-0.006
ID2	0.187	0.002
JD2	0.092	-0.013
KD2	0.091	0.005
LD2	0.000	0.008
MD2	0.015	-0.016

Chain	Atom inclusion	Q-score
ND2	0.645	0.011
OD2	0.494	0.019
PD2	0.367	0.023
QD2	0.572	0.007
RD2	0.433	0.016
SD2	0.377	0.015
TD2	0.071	-0.011
UD2	0.631	0.008
VD2	0.166	-0.008
WD2	0.202	-0.002
XD2	0.186	-0.008
YD2	0.397	-0.005
ZD2	0.451	-0.002
AE2	0.576	0.027
BE2	0.539	0.021
CE2	0.484	0.002
DE2	0.266	-0.003
EE2	0.096	-0.008
A3	0.087	-0.001
B3	0.112	-0.001
C3	0.077	0.003
D3	0.113	0.001
E3	0.025	0.001
F3	0.001	0.002
G3	0.018	0.002
H3	0.054	0.005
I3	0.000	0.001
J3	0.002	0.004
K3	0.004	0.002
L3	0.018	-0.002
M3	0.000	0.006
N3	0.023	0.002
O3	0.033	0.003
P3	0.000	-0.010
Q3	0.180	-0.008

Chain	Atom inclusion	Q-score
R3	0.000	-0.000
S3	0.001	0.001
T3	0.036	0.002
U3	0.000	-0.003
V3	0.000	0.000
W3	0.000	0.000
X3	0.000	-0.006
Y3	0.000	0.003
Z3	0.000	0.000
AA3	0.328	0.019
BA3	0.298	0.009
CA3	0.304	0.024
DA3	0.077	-0.005
EA3	0.000	0.008
FA3	0.377	0.018
GA3	0.080	0.001
HA3	0.353	0.011
IA3	0.064	0.006
JA3	0.064	-0.004
KA3	0.225	0.009
LA3	0.011	0.003
MA3	0.239	0.012
NA3	0.129	0.003
OA3	0.191	0.001
PA3	0.202	0.009
QA3	0.088	0.007
RA3	0.161	0.011
SA3	0.241	0.004
TA3	0.118	0.003
UA3	0.000	0.009
VA3	0.361	0.011
WA3	0.010	0.017
XA3	0.128	0.006
YA3	0.057	-0.005
ZA3	0.105	-0.008

Chain	Atom inclusion	Q-score
AB3	0.203	0.009
BB3	0.056	0.005
CB3	0.210	-0.006
DB3	0.206	0.012
EB3	0.203	0.013
FB3	0.052	-0.000
GB3	0.003	0.000
HB3	0.326	0.006
IB3	0.314	-0.004
JB3	0.079	-0.004
KB3	0.052	0.009
LB3	0.456	0.017
MB3	0.404	0.005
NB3	0.321	0.000
OB3	0.469	0.001
PB3	0.309	0.008
QB3	0.169	0.005
RB3	0.399	0.001
SB3	0.196	-0.007
TB3	0.175	-0.020
UB3	0.359	0.015
VB3	0.211	0.007
WB3	0.000	0.008
XB3	0.018	-0.018
YB3	0.137	-0.015
ZB3	0.283	0.002
AC3	0.036	0.003
BC3	0.000	0.001
CC3	0.041	0.004
DC3	0.000	-0.005
EC3	0.000	-0.006
FC3	0.408	-0.006
GC3	0.618	0.024
HC3	0.004	-0.002
IC3	0.000	-0.003

Chain	Atom inclusion	Q-score
JC3	0.000	-0.034
KC3	0.000	-0.007
LC3	0.000	-0.006
MC3	0.000	0.010
NC3	0.000	0.040
OC3	0.000	0.007
PC3	0.000	0.002
QC3	0.000	0.013
RC3	0.149	-0.001
SC3	0.170	-0.001
TC3	0.119	-0.002
UC3	0.339	0.014
VC3	0.143	0.002
WC3	0.159	0.015
XC3	0.099	0.010
YC3	0.282	0.015
ZC3	0.156	0.003
AD3	0.107	0.013
BD3	0.075	-0.004
CD3	0.220	0.009
DD3	0.001	0.004
ED3	0.044	0.008
FD3	0.108	0.005
GD3	0.049	-0.019
HD3	0.242	0.004
ID3	0.263	0.034
JD3	0.101	-0.001
KD3	0.075	-0.003
LD3	0.086	-0.010
MD3	0.000	0.014
ND3	0.204	0.014
OD3	0.571	0.008
PD3	0.467	0.006
QD3	0.340	0.014
RD3	0.559	0.005

Chain	Atom inclusion	Q-score
SD3	0.379	0.022
TD3	0.160	-0.019
UD3	0.632	0.031
VD3	0.423	0.011
WD3	0.211	-0.004
XD3	0.231	0.015
YD3	0.373	-0.003
ZD3	0.555	0.018
AE3	0.151	-0.001
BE3	0.050	-0.007
CE3	0.244	-0.020
DE3	0.274	-0.003
EE3	0.000	-0.001
A4	0.086	-0.007
B4	0.145	0.001
C4	0.022	0.000
D4	0.145	0.005
E4	0.034	0.001
F4	0.000	-0.003
G4	0.003	0.001
H4	0.014	0.000
I4	0.000	0.013
J4	0.000	-0.000
K4	0.005	-0.006
L4	0.000	-0.006
M4	0.000	0.005
N4	0.009	-0.000
O4	0.014	0.002
P4	0.000	-0.003
Q4	0.200	0.011
R4	0.010	-0.000
S4	0.016	-0.000
T4	0.059	-0.006
U4	0.000	0.002
V4	0.000	0.000

Chain	Atom inclusion	Q-score
W4	0.000	0.000
X4	0.000	-0.007
Y4	0.024	-0.011
Z4	0.000	0.000
AA4	0.031	-0.005
BA4	0.070	-0.002
CA4	0.018	-0.010
DA4	0.268	0.006
EA4	0.056	-0.001
FA4	0.236	-0.010
GA4	0.232	0.004
HA4	0.261	0.002
IA4	0.019	-0.004
JA4	0.130	0.001
KA4	0.234	-0.000
LA4	0.080	-0.005
MA4	0.327	0.003
NA4	0.084	-0.006
OA4	0.068	-0.005
PA4	0.151	0.005
QA4	0.067	0.001
RA4	0.185	-0.002
SA4	0.195	0.011
TA4	0.001	-0.008
UA4	0.000	-0.005
VA4	0.382	0.019
WA4	0.000	-0.006
XA4	0.196	-0.010
YA4	0.197	-0.006
ZA4	0.000	0.009
AB4	0.072	-0.010
BB4	0.071	0.004
CB4	0.047	-0.002
DB4	0.195	0.005
EB4	0.011	0.002

Chain	Atom inclusion	Q-score
FB4	0.000	-0.003
GB4	0.053	-0.014
HB4	0.306	0.003
IB4	0.294	0.006
JB4	0.040	-0.008
KB4	0.000	0.003
LB4	0.127	-0.038
MB4	0.114	-0.015
NB4	0.097	-0.021
OB4	0.116	-0.013
PB4	0.303	0.008
QB4	0.003	0.001
RB4	0.129	-0.000
SB4	0.721	0.020
TB4	0.440	0.018
UB4	0.000	0.003
VB4	0.582	0.001
WB4	0.014	-0.006
XB4	0.121	0.007
YB4	0.211	0.010
ZB4	0.092	0.004
AC4	0.015	-0.000
BC4	0.033	0.002
CC4	0.037	-0.001
DC4	0.000	0.033
EC4	0.000	0.010
FC4	0.319	0.008
GC4	0.428	0.031
HC4	0.000	0.012
IC4	0.000	0.003
JC4	0.000	-0.019
KC4	0.000	0.004
LC4	0.000	0.008
MC4	0.000	0.015
NC4	0.000	0.000

Chain	Atom inclusion	Q-score
OC4	0.000	0.006
PC4	0.000	-0.001
QC4	0.000	0.024
RC4	0.295	-0.002
SC4	0.168	0.004
TC4	0.106	-0.002
UC4	0.295	0.009
VC4	0.249	-0.006
WC4	0.216	-0.005
XC4	0.123	0.003
YC4	0.215	0.012
ZC4	0.170	0.002
AD4	0.083	-0.000
BD4	0.113	-0.001
CD4	0.234	-0.002
DD4	0.059	-0.002
ED4	0.063	-0.001
FD4	0.281	0.014
GD4	0.059	-0.001
HD4	0.308	0.011
ID4	0.149	0.011
JD4	0.114	0.006
KD4	0.006	0.004
LD4	0.166	-0.006
MD4	0.000	0.002
ND4	0.000	0.008
OD4	0.180	-0.006
PD4	0.134	-0.013
QD4	0.036	-0.004
RD4	0.457	-0.000
SD4	0.151	-0.002
TD4	0.031	-0.021
UD4	0.353	-0.019
VD4	0.450	-0.007
WD4	0.129	0.005

Chain	Atom inclusion	Q-score
XD4	0.019	-0.012
YD4	0.339	-0.005
ZD4	0.019	-0.006
AE4	0.296	0.005
BE4	0.008	-0.007
CE4	0.518	0.015
DE4	0.122	0.000
EE4	0.000	0.004
A5	0.058	-0.005
B5	0.055	0.004
C5	0.000	0.001
D5	0.079	0.000
E5	0.000	-0.003
F5	0.000	0.000
G5	0.006	0.005
H5	0.008	0.002
I5	0.000	0.001
J5	0.000	0.005
K5	0.000	0.001
L5	0.000	0.002
M5	0.000	-0.003
N5	0.006	0.001
O5	0.015	0.005
P5	0.000	-0.007
Q5	0.217	-0.001
R5	0.028	0.006
S5	0.020	0.008
T5	0.070	-0.001
U5	0.000	0.001
V5	0.000	0.000
W5	0.000	0.000
X5	0.000	0.006
Y5	0.083	0.000
Z5	0.000	0.000
AA5	0.037	-0.001

Chain	Atom inclusion	Q-score
BA5	0.019	0.009
CA5	0.007	0.024
DA5	0.267	0.004
EA5	0.138	0.003
FA5	0.086	-0.004
GA5	0.344	0.018
HA5	0.078	-0.002
IA5	0.107	-0.000
JA5	0.183	-0.000
KA5	0.049	0.001
LA5	0.204	0.013
MA5	0.160	-0.005
NA5	0.282	0.004
OA5	0.043	-0.006
PA5	0.092	-0.015
QA5	0.051	0.006
RA5	0.168	0.007
SA5	0.063	0.002
TA5	0.000	-0.003
UA5	0.000	0.010
VA5	0.230	0.002
WA5	0.000	0.013
XA5	0.248	0.006
YA5	0.231	-0.007
ZA5	0.000	0.005
AB5	0.092	0.002
BB5	0.044	-0.003
CB5	0.000	0.013
DB5	0.059	-0.002
EB5	0.000	0.002
FB5	0.000	0.006
GB5	0.000	-0.005
HB5	0.214	-0.006
IB5	0.050	-0.017
JB5	0.000	-0.008

Chain	Atom inclusion	Q-score
KB5	0.000	0.004
LB5	0.058	-0.024
MB5	0.009	-0.006
NB5	0.002	-0.002
OB5	0.029	-0.005
PB5	0.068	-0.009
QB5	0.001	-0.002
RB5	0.059	0.002
SB5	0.019	0.009
TB5	0.479	0.018
UB5	0.000	0.008
VB5	0.000	-0.028
WB5	0.126	0.008
XB5	0.097	-0.008
YB5	0.101	-0.018
ZB5	0.019	0.002
AC5	0.035	0.000
BC5	0.065	0.004
CC5	0.026	0.001
DC5	0.177	0.011
EC5	0.000	0.025
FC5	0.001	0.007
GC5	0.166	-0.006
HC5	0.000	0.017
IC5	0.000	-0.014
JC5	0.000	-0.026
KC5	0.000	0.008
LC5	0.016	-0.012
MC5	0.000	-0.009
NC5	0.000	-0.023
OC5	0.072	-0.012
PC5	0.143	0.017
QC5	0.000	-0.006
RC5	0.264	-0.009
SC5	0.114	-0.005

Chain	Atom inclusion	Q-score
TC5	0.201	-0.006
UC5	0.166	0.002
VC5	0.288	-0.003
WC5	0.170	0.002
XC5	0.092	-0.002
YC5	0.170	0.009
ZC5	0.214	-0.002
AD5	0.079	0.015
BD5	0.111	-0.005
CD5	0.248	0.015
DD5	0.043	-0.001
ED5	0.117	0.012
FD5	0.168	-0.010
GD5	0.044	-0.000
HD5	0.305	-0.000
ID5	0.162	0.014
JD5	0.033	0.008
KD5	0.073	-0.001
LD5	0.168	-0.003
MD5	0.040	-0.006
ND5	0.000	0.015
OD5	0.350	0.020
PD5	0.000	0.005
QD5	0.072	0.005
RD5	0.431	0.003
SD5	0.172	-0.005
TD5	0.000	0.006
UD5	0.288	-0.021
VD5	0.252	-0.006
WD5	0.412	-0.003
XD5	0.009	0.008
YD5	0.641	0.028
ZD5	0.337	0.013
AE5	0.181	-0.017
BE5	0.000	-0.005

Chain	Atom inclusion	Q-score
CE5	0.226	0.013
DE5	0.013	-0.015
EE5	0.000	-0.001
A6	0.106	0.002
B6	0.016	-0.000
C6	0.000	-0.000
D6	0.046	0.001
E6	0.000	0.001
F6	0.000	-0.007
G6	0.001	-0.013
H6	0.005	0.000
I6	0.000	0.003
J6	0.000	0.001
K6	0.000	-0.008
L6	0.000	-0.011
M6	0.000	0.003
N6	0.000	-0.001
O6	0.002	-0.000
P6	0.000	-0.002
Q6	0.143	-0.006
R6	0.009	0.001
S6	0.007	-0.000
T6	0.048	-0.001
U6	0.000	-0.002
V6	0.000	0.000
W6	0.000	0.000
X6	0.000	-0.019
Y6	0.175	-0.010
Z6	0.000	0.000
AA6	0.101	-0.002
BA6	0.000	-0.004
CA6	0.013	-0.008
DA6	0.272	0.005
EA6	0.219	0.001
FA6	0.038	-0.008

Chain	Atom inclusion	Q-score
GA6	0.101	0.011
HA6	0.013	-0.006
IA6	0.172	0.004
JA6	0.128	-0.005
KA6	0.010	-0.005
LA6	0.221	0.003
MA6	0.142	-0.006
NA6	0.408	0.009
OA6	0.040	0.004
PA6	0.031	-0.013
QA6	0.054	-0.005
RA6	0.210	0.009
SA6	0.055	-0.005
TA6	0.011	-0.004
UA6	0.000	-0.003
VA6	0.077	0.008
WA6	0.000	-0.004
XA6	0.294	0.017
YA6	0.307	0.008
ZA6	0.000	-0.013
AB6	0.026	-0.009
BB6	0.064	-0.005
CB6	0.000	-0.001
DB6	0.013	0.001
EB6	0.000	-0.005
FB6	0.000	0.005
GB6	0.001	-0.003
HB6	0.196	0.001
IB6	0.000	0.000
JB6	0.000	-0.006
KB6	0.048	0.009
LB6	0.028	-0.010
MB6	0.000	-0.005
NB6	0.043	-0.002
OB6	0.112	0.000

Chain	Atom inclusion	Q-score
PB6	0.038	-0.010
QB6	0.000	-0.002
RB6	0.098	0.003
SB6	0.000	0.006
TB6	0.000	0.001
UB6	0.000	-0.004
VB6	0.000	-0.007
WB6	0.008	-0.001
XB6	0.079	-0.019
YB6	0.113	-0.012
ZB6	0.035	0.009
AC6	0.013	0.001
BC6	0.068	-0.001
CC6	0.019	0.002
DC6	0.670	0.032
EC6	0.356	0.022
FC6	0.000	-0.019
GC6	0.397	0.011
HC6	0.000	0.029
IC6	0.000	-0.005
JC6	0.000	-0.016
KC6	0.000	0.006
LC6	0.000	0.002
MC6	0.025	0.023
NC6	0.000	0.051
OC6	0.000	-0.002
PC6	0.052	-0.010
QC6	0.155	0.003
RC6	0.167	-0.008
SC6	0.088	-0.010
TC6	0.130	-0.006
UC6	0.166	-0.001
VC6	0.200	0.003
WC6	0.114	0.003
XC6	0.231	0.023

Chain	Atom inclusion	Q-score
YC6	0.169	-0.021
ZC6	0.269	-0.003
AD6	0.115	0.003
BD6	0.141	-0.003
CD6	0.253	0.001
DD6	0.058	-0.003
ED6	0.156	0.004
FD6	0.193	-0.002
GD6	0.089	0.006
HD6	0.289	0.003
ID6	0.091	-0.013
JD6	0.046	-0.006
KD6	0.067	-0.003
LD6	0.220	-0.009
MD6	0.040	0.007
ND6	0.238	0.002
OD6	0.000	-0.036
PD6	0.000	-0.007
QD6	0.063	-0.017
RD6	0.256	-0.008
SD6	0.455	0.021
TD6	0.000	-0.008
UD6	0.174	-0.001
VD6	0.348	-0.004
WD6	0.325	0.007
XD6	0.000	0.006
YD6	0.281	0.005
ZD6	0.485	0.019
AE6	0.275	-0.002
BE6	0.000	0.004
CE6	0.049	-0.022
DE6	0.000	-0.005
EE6	0.000	0.003
A7	0.137	0.002
B7	0.093	0.004

Chain	Atom inclusion	Q-score
C7	0.000	-0.002
D7	0.023	-0.001
E7	0.013	-0.003
F7	0.000	0.009
G7	0.008	-0.002
H7	0.011	0.003
I7	0.000	0.003
J7	0.000	-0.004
K7	0.000	0.002
L7	0.000	-0.003
M7	0.000	-0.003
N7	0.000	-0.001
O7	0.001	0.002
P7	0.000	0.013
Q7	0.198	-0.004
R7	0.007	-0.002
S7	0.004	-0.003
T7	0.049	-0.002
U7	0.000	0.000
V7	0.000	0.000
W7	0.000	0.000
X7	0.000	-0.004
Y7	0.188	-0.006
Z7	0.000	0.000
AA7	0.030	-0.013
BA7	0.026	-0.001
CA7	0.013	-0.001
DA7	0.298	0.005
EA7	0.162	-0.004
FA7	0.171	0.005
GA7	0.052	-0.003
HA7	0.038	-0.008
IA7	0.075	0.005
JA7	0.013	0.006
KA7	0.022	0.009

Chain	Atom inclusion	Q-score
LA7	0.189	0.015
MA7	0.152	-0.013
NA7	0.264	0.008
OA7	0.063	0.006
PA7	0.015	0.002
QA7	0.091	0.013
RA7	0.203	0.004
SA7	0.046	-0.001
TA7	0.040	-0.002
UA7	0.000	0.007
VA7	0.122	0.009
WA7	0.000	0.003
XA7	0.231	0.009
YA7	0.187	0.001
ZA7	0.000	0.010
AB7	0.000	-0.004
BB7	0.150	0.008
CB7	0.021	-0.011
DB7	0.041	-0.005
EB7	0.000	-0.009
FB7	0.000	0.001
GB7	0.000	-0.001
HB7	0.216	-0.000
IB7	0.005	0.010
JB7	0.003	-0.004
KB7	0.372	0.007
LB7	0.204	0.009
MB7	0.006	-0.003
NB7	0.240	-0.005
OB7	0.036	0.006
PB7	0.064	-0.004
QB7	0.043	-0.012
RB7	0.018	0.008
SB7	0.313	0.006
TB7	0.067	-0.004

Chain	Atom inclusion	Q-score
UB7	0.022	0.002
VB7	0.000	0.006
WB7	0.002	-0.014
XB7	0.097	0.005
YB7	0.089	-0.002
ZB7	0.042	0.014
AC7	0.032	0.000
BC7	0.045	-0.005
CC7	0.030	0.003
DC7	0.241	-0.031
EC7	0.000	-0.022
FC7	0.144	-0.001
GC7	0.339	0.026
HC7	0.000	-0.024
IC7	0.000	-0.010
JC7	0.000	-0.031
KC7	0.000	0.001
LC7	0.130	0.021
MC7	0.005	-0.010
NC7	0.000	-0.035
OC7	0.000	-0.000
PC7	0.000	0.005
QC7	0.000	-0.002
RC7	0.283	0.028
SC7	0.062	-0.003
TC7	0.186	-0.009
UC7	0.156	-0.010
VC7	0.255	0.007
WC7	0.108	-0.001
XC7	0.160	0.013
YC7	0.201	-0.012
ZC7	0.240	0.001
AD7	0.073	-0.005
BD7	0.148	-0.006
CD7	0.245	0.006

Chain	Atom inclusion	Q-score
DD7	0.010	0.007
ED7	0.103	-0.001
FD7	0.151	-0.008
GD7	0.083	0.003
HD7	0.233	0.010
ID7	0.238	0.009
JD7	0.041	-0.011
KD7	0.103	-0.000
LD7	0.106	-0.011
MD7	0.000	0.006
ND7	0.606	0.024
OD7	0.328	0.012
PD7	0.000	0.002
QD7	0.369	0.029
RD7	0.537	0.012
SD7	0.347	0.003
TD7	0.000	-0.026
UD7	0.477	0.003
VD7	0.233	0.009
WD7	0.357	0.006
XD7	0.000	0.003
YD7	0.399	0.008
ZD7	0.096	0.000
AE7	0.441	0.011
BE7	0.000	-0.003
CE7	0.159	-0.004
DE7	0.000	0.000
EE7	0.000	0.002
A8	0.141	0.005
B8	0.114	-0.003
C8	0.010	-0.003
D8	0.063	-0.004
E8	0.021	0.002
F8	0.000	-0.008
G8	0.012	-0.006

Chain	Atom inclusion	Q-score
H8	0.009	0.006
I8	0.000	0.015
J8	0.000	-0.010
K8	0.004	0.006
L8	0.000	0.005
M8	0.000	-0.001
N8	0.000	-0.002
O8	0.000	-0.003
P8	0.000	0.002
Q8	0.263	0.004
R8	0.019	-0.000
S8	0.013	-0.001
T8	0.101	0.002
U8	0.000	0.002
V8	0.000	0.000
W8	0.000	0.000
X8	0.000	-0.006
Y8	0.000	-0.018
Z8	0.000	0.000
AA8	0.060	0.005
BA8	0.147	-0.004
CA8	0.035	-0.014
DA8	0.292	0.008
EA8	0.076	0.000
FA8	0.124	-0.007
GA8	0.041	0.006
HA8	0.272	0.001
IA8	0.043	0.001
JA8	0.000	0.000
KA8	0.245	0.002
LA8	0.084	-0.008
MA8	0.278	-0.002
NA8	0.032	-0.001
OA8	0.155	-0.002
PA8	0.038	-0.007

Chain	Atom inclusion	Q-score
QA8	0.054	-0.015
RA8	0.195	-0.006
SA8	0.082	-0.002
TA8	0.010	0.008
UA8	0.000	-0.005
VA8	0.230	0.013
WA8	0.008	0.000
XA8	0.144	0.008
YA8	0.155	0.018
ZA8	0.017	-0.018
AB8	0.042	0.013
BB8	0.121	-0.007
CB8	0.081	-0.012
DB8	0.035	-0.001
EB8	0.001	0.001
FB8	0.000	0.003
GB8	0.058	-0.007
HB8	0.106	-0.017
IB8	0.237	-0.002
JB8	0.182	-0.006
KB8	0.296	-0.002
LB8	0.185	-0.014
MB8	0.274	-0.019
NB8	0.288	-0.009
OB8	0.231	0.001
PB8	0.234	0.011
QB8	0.298	0.003
RB8	0.028	-0.005
SB8	0.171	-0.016
TB8	0.568	0.017
UB8	0.230	-0.005
VB8	0.000	-0.011
WB8	0.037	0.004
XB8	0.068	-0.000
YB8	0.129	-0.011

Chain	Atom inclusion	Q-score
ZB8	0.104	-0.011
AC8	0.021	-0.001
BC8	0.044	-0.003
CC8	0.012	0.002
DC8	0.100	0.018
EC8	0.000	-0.018
FC8	0.128	0.004
GC8	0.570	0.036
HC8	0.052	0.007
IC8	0.000	-0.000
JC8	0.000	-0.002
KC8	0.000	0.012
LC8	0.000	0.007
MC8	0.000	0.028
NC8	0.000	-0.008
OC8	0.000	0.010
PC8	0.000	-0.026
QC8	0.000	0.001
RC8	0.254	-0.001
SC8	0.217	0.007
TC8	0.293	0.003
UC8	0.204	-0.011
VC8	0.314	0.006
WC8	0.150	-0.010
XC8	0.120	-0.003
YC8	0.345	0.015
ZC8	0.147	-0.007
AD8	0.149	0.002
BD8	0.230	0.009
CD8	0.237	-0.000
DD8	0.004	-0.001
ED8	0.097	0.000
FD8	0.197	0.008
GD8	0.001	-0.010
HD8	0.224	0.000

Chain	Atom inclusion	Q-score
ID8	0.301	0.016
JD8	0.059	0.006
KD8	0.115	-0.011
LD8	0.045	-0.013
MD8	0.088	0.009
ND8	0.115	-0.001
OD8	0.186	-0.019
PD8	0.452	-0.001
QD8	0.492	0.010
RD8	0.241	-0.017
SD8	0.313	0.003
TD8	0.035	0.004
UD8	0.666	0.021
VD8	0.048	-0.015
WD8	0.234	-0.013
XD8	0.200	-0.005
YD8	0.317	0.001
ZD8	0.164	-0.007
AE8	0.335	0.006
BE8	0.009	0.011
CE8	0.306	0.007
DE8	0.000	-0.015
EE8	0.008	-0.005

6. Fit to Data Used for Validation Assessment

Validation for this section is under development.

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