

Integrative Structure Validation Report

July 22, 2024 - 05:18 PM PDT

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

Python-IHM Version 1.3

MolProbity Version 4.5.2

Integrative Modeling Validation Version 1.2

PDB ID	9A3D
PDB-Dev ID	PDBDEV_00000198
Structure Title	Model of E. coli BamB by in-cell photo-crosslinking MS and deep learning
Structure Authors	Stahl, K.; Graziadei, A.; Dau, T.; Brock, O.; Rappilber, J.

This is a PDB-Dev IM Structure Validation Report for a publicly released PDB-Dev entry.

We welcome your comments at pdb-dev@mail.wwpdb.org

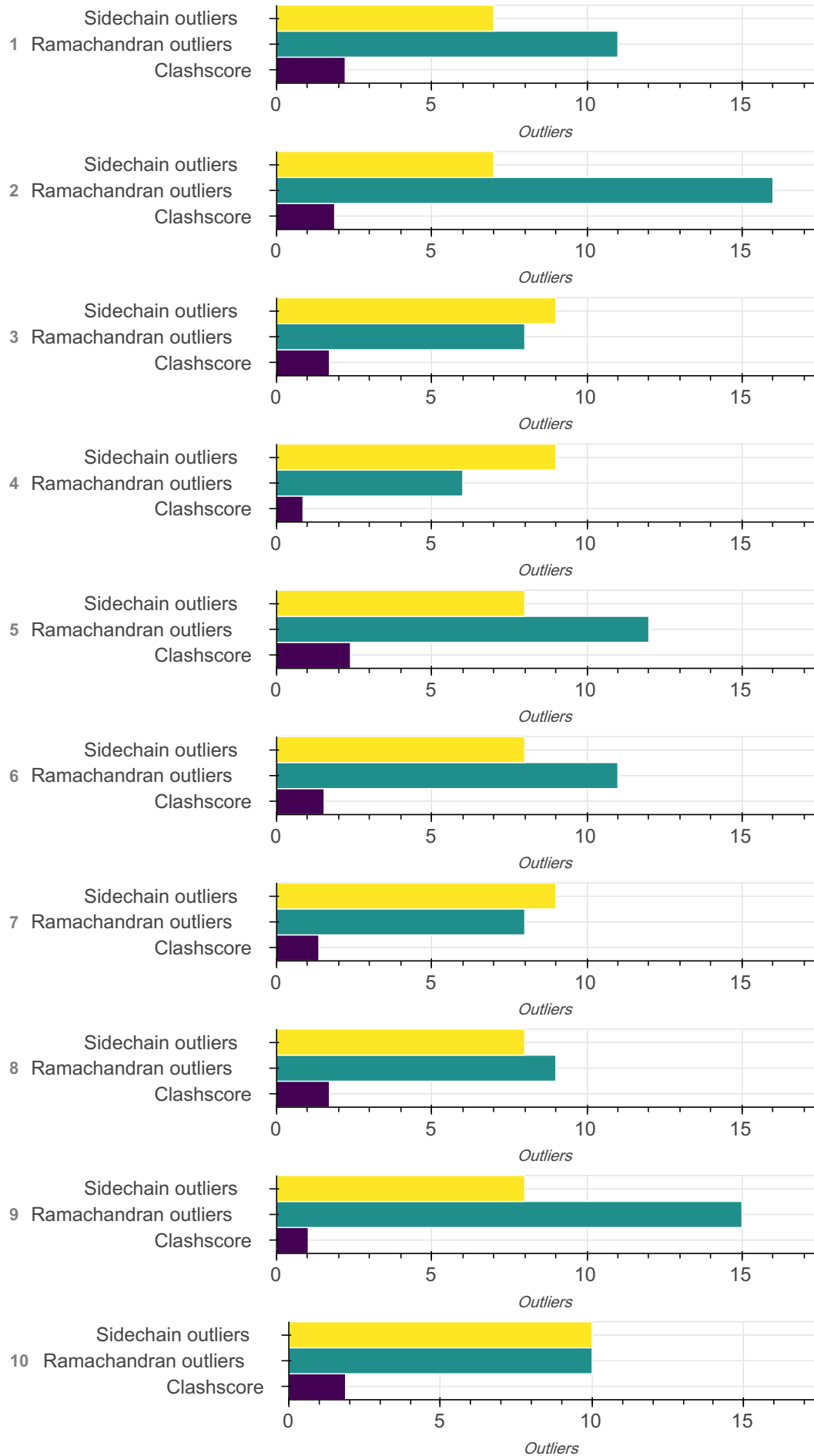
A user guide is available at https://pdb-dev.wwpdb.org/validation_help.html with specific help available everywhere you see the  symbol.

List of references used to build this report is available [here](#).

Overall quality

This validation report contains model quality assessments for all structures, data quality assessment for SAS datasets and fit to model assessments for SAS 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



Ensemble information ?

This entry consists of 0 distinct ensemble(s).

Summary ?

This entry consists of 10 unique models, with 1 subunits in each model. A total of 1 datasets or restraints were used to build this entry. Each model is represented by 0 rigid bodies and 1 flexible or non-rigid units.

Entry composition ?

There are 10 unique types of models in this entry. These models are titled None, None, None, None, None, None, None, None, None, None respectively.

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	1	1	P77774	A	A	392
2	1	1	P77774	A	A	392
3	1	1	P77774	A	A	392
4	1	1	P77774	A	A	392
5	1	1	P77774	A	A	392
6	1	1	P77774	A	A	392
7	1	1	P77774	A	A	392
8	1	1	P77774	A	A	392
9	1	1	P77774	A	A	392
10	1	1	P77774	A	A	392

Datasets used for modeling ?

There is 1 unique dataset used to build the models in this entry.

ID	Dataset type	Database name	Data access code
1	Crosslinking-MS data	jPOSTrepo	JPST001851

Representation ?

This entry has only one representation and includes 0 rigid bodies and 1 flexible units

Chain ID	Rigid bodies	Non-rigid segments
A	-	1-392

Methodology and software ?

This entry is a result of 1 distinct protocol(s).

Step number	Protocol ID	Method name	Method type	Method description	Number of computed models	Multi state modeling	Multi scale modeling
1	1	AlphaLink with 10 msa subsamples	AlphaLink	None	10	False	False

There is 1 software package reported in this entry.

ID	Software name	Software version	Software classification	Software location
1	AlphaLink	1.0	model building	https://github.com/lhatsk/AlphaLink

Data quality ?

Crosslinking-MS

Validation for this section is under development.

Model quality ?

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

Standard geometry: bond outliers?

There are 29210 bond outliers in this entry. A summary is provided below, and a detailed list of outliers can be found [here](#).

Bond type	Observed distance (Å)	Ideal distance (Å)	Number of outliers
CG2--HG21	1.09	0.97	830
CB--HB3	1.09	0.97	2700
CD2--HD21	1.09	0.97	450
CB--HB	1.09	0.97	830
CA--HA	1.09	0.97	3530
CG2--HG23	1.09	0.97	830
OG1--HG1	0.96	0.84	260
CG1--HG12	1.09	0.97	570
CB--HB2	1.09	0.97	2700
CG2--HG22	1.09	0.97	830
CA--HA2	1.09	0.97	390
CG--HG3	1.09	0.97	800
CB--HB1	1.09	0.97	320
CG1--HG13	1.09	0.97	570
CG--HG2	1.09	0.97	800
CE--HE3	1.09	0.97	200
CD2--HD23	1.09	0.97	450
CG--HG	1.09	0.97	450
CD1--HD11	1.09	0.97	590
OH--HH	0.96	0.84	90
CD--HD2	1.09	0.97	390
CG1--HG11	1.09	0.97	430

Bond type	Observed distance (Å)	Ideal distance (Å)	Number of outliers
OG--HG	0.96	0.84	340
NZ--HZ3	1.01	0.89	130
CE--HE2	1.09	0.97	200
CD1--HD13	1.09	0.97	590
CD1--HD12	1.09	0.97	590
CD--HD3	1.09	0.97	390
NZ--HZ2	1.01	0.89	130
CD2--HD22	1.09	0.97	450
NZ--HZ1	1.01	0.89	130
CA--HA3	1.09	0.97	390
CE--HE1	1.09	0.97	70
N--H3	1.01	0.89	10
N--H2	1.01	0.89	10
N--H1	1.01	0.89	10
SG--HG	1.34	1.20	10
CH2--HH2	1.08	0.93	90
CD2--HD2	1.08	0.93	230
N--H	1.01	0.86	3790
NE1--HE1	1.01	0.86	90
CE3--HE3	1.08	0.93	90
ND2--HD22	1.01	0.86	200
CZ--HZ	1.08	0.93	90
NE2--HE22	1.01	0.86	180

Bond type	Observed distance (Å)	Ideal distance (Å)	Number of outliers
NH2--HH21	1.01	0.86	140
CE1--HE1	1.08	0.93	230
NH2--HH22	1.01	0.86	140
NE--HE	1.01	0.86	140
NE2--HE21	1.01	0.86	180
CE2--HE2	1.08	0.93	180
ND2--HD21	1.01	0.86	200
NH1--HH11	1.01	0.86	140
CD1--HD1	1.08	0.93	270
ND1--HD1	1.01	0.86	39
CZ3--HZ3	1.08	0.93	90
CZ2--HZ2	1.08	0.93	90
NH1--HH12	1.01	0.86	140
NE2--HE2	1.01	0.86	11

Standard geometry: angle outliers

There are 224 angle outliers in this entry. A summary is provided below, and a detailed list of outliers can be found [here](#).

Angle type	Observed angle (°)	Ideal angle (°)	Number of outliers
C-N-CA	121.70	137.63	1
OE1-CD-NE2	122.60	116.27	1
C-N-CA	121.70	132.81	1
C-N-CA	121.70	132.66	1
CA-C-N	116.90	125.70	1
OE1-CD-NE2	122.60	116.74	1

Angle type	Observed angle (°)	Ideal angle (°)	Number of outliers
OE1-CD-NE2	122.60	116.83	1
OE1-CD-NE2	122.60	116.91	1
CA-CB-CG	112.60	118.25	1
CB-CG-CD2	131.20	123.90	1
CA-CB-CG	112.60	118.19	1
OD1-CG-ND2	122.60	117.04	1
CA-CB-CG	112.60	118.15	1
C-N-CA	121.70	131.65	1
OE1-CD-NE2	122.60	117.08	1
OE1-CD-NE2	122.60	117.09	1
CA-CB-CG	112.60	118.08	1
OE1-CD-NE2	122.60	117.15	2
CA-CB-CG	112.60	118.03	1
CA-CB-CG	112.60	118.01	1
CA-CB-CG	112.60	118.00	1
OE1-CD-NE2	122.60	117.22	1
OE1-CD-NE2	122.60	117.23	1
CA-CB-CG	112.60	117.92	1
C-N-CA	121.70	131.26	1
OE1-CD-NE2	122.60	117.29	1
OE1-CD-NE2	122.60	117.31	1
OE1-CD-NE2	122.60	117.32	1
OE1-CD-NE2	122.60	117.33	1

Angle type	Observed angle (°)	Ideal angle (°)	Number of outliers
CA-N-CD	112.00	104.63	1
OE1-CD-NE2	122.60	117.34	1
OE1-CD-NE2	122.60	117.41	1
OE1-CD-NE2	122.60	117.42	1
CA-CB-CG	112.60	117.77	2
CA-CB-CG	112.60	117.76	1
OE1-CD-NE2	122.60	117.45	1
CA-CB-CG	112.60	117.75	1
CA-CB-CG	112.60	117.71	1
OE1-CD-NE2	122.60	117.59	1
OE1-CD-NE2	122.60	117.60	1
OE1-CD-NE2	122.60	117.62	1
CA-CB-CG	112.60	117.56	1
C-N-CA	121.70	130.62	1
OE1-CD-NE2	122.60	117.66	1
OD1-CG-ND2	122.60	117.67	1
O-C-N	123.00	115.18	1
CB-CG-CD2	131.20	124.85	1
OE1-CD-NE2	122.60	117.73	1
CA-CB-CG	112.60	117.46	1
OD1-CG-ND2	122.60	117.74	1
OE1-CD-NE2	122.60	117.74	1
CA-CB-CG	112.60	117.45	1

Angle type	Observed angle (°)	Ideal angle (°)	Number of outliers
C-N-CA	121.70	130.39	1
CA-CB-CG	112.60	117.42	2
CA-CB-CG	112.60	117.40	1
CA-N-CD	112.00	105.30	1
OE1-CD-NE2	122.60	117.82	1
OE1-CD-NE2	122.60	117.83	3
OE1-CD-NE2	122.60	117.84	1
OE1-CD-NE2	122.60	117.85	2
OE1-CD-NE2	122.60	117.86	1
OE1-CD-NE2	122.60	117.87	3
OE1-CD-NE2	122.60	117.88	1
C-N-CA	121.70	130.19	1
C-N-CA	121.70	130.18	1
OE1-CD-NE2	122.60	117.90	2
OE1-CD-NE2	122.60	117.91	1
OE1-CD-NE2	122.60	117.92	1
C-N-CA	121.70	130.13	1
OE1-CD-NE2	122.60	117.94	3
C-N-CA	121.70	130.09	1
OD1-CG-ND2	122.60	117.94	1
OE1-CD-NE2	122.60	117.96	3
C-N-CA	121.70	130.05	1
OE1-CD-NE2	122.60	117.97	2

Angle type	Observed angle (°)	Ideal angle (°)	Number of outliers
CA-CB-CG	112.60	117.23	1
OD1-CG-ND2	122.60	117.97	1
OE1-CD-NE2	122.60	117.98	1
OE1-CD-NE2	122.60	117.99	2
OD1-CG-ND2	122.60	117.99	1
OE1-CD-NE2	122.60	118.01	1
C-N-CA	121.70	129.96	1
OE1-CD-NE2	122.60	118.03	4
OE1-CD-NE2	122.60	118.04	3
OD1-CG-ND2	122.60	118.06	1
CA-CB-CG	112.60	117.10	2
OE1-CD-NE2	122.60	118.10	1
C-N-CA	121.70	129.80	1
OE1-CD-NE2	122.60	118.11	2
OE1-CD-NE2	122.60	118.13	1
NH1-CZ-NH2	119.30	113.49	1
OE1-CD-NE2	122.60	118.14	3
OD1-CG-ND2	122.60	118.14	1
CB-CG-CD2	131.20	125.40	1
OE1-CD-NE2	122.60	118.16	2
C-N-CA	121.70	129.70	1
NE-CZ-NH1	121.50	125.94	1
OE1-CD-NE2	122.60	118.17	1

Angle type	Observed angle (°)	Ideal angle (°)	Number of outliers
OD1-CG-ND2	122.60	118.17	1
OE1-CD-NE2	122.60	118.19	2
CA-CB-CG	112.60	117.01	1
OD1-CG-ND2	122.60	118.20	1
CA-N-CD	112.00	105.85	1
OD1-CG-ND2	122.60	118.21	1
CA-C-N	116.20	124.98	1
OE1-CD-NE2	122.60	118.22	2
CB-CG-CD2	131.20	125.51	1
OE1-CD-NE2	122.60	118.23	4
OD1-CG-ND2	122.60	118.23	1
CA-CB-CG	112.60	108.23	1
OE1-CD-NE2	122.60	118.24	4
OD1-CG-ND2	122.60	118.24	1
CA-CB-CG	112.60	116.95	1
N-CA-CB	110.50	103.10	1
OE1-CD-NE2	122.60	118.26	3
OD1-CG-ND2	122.60	118.26	2
OD1-CG-ND2	122.60	118.27	2
CA-CB-CG	112.60	116.93	1
OE1-CD-NE2	122.60	118.27	1
OE1-CD-NE2	122.60	118.28	2
C-CA-CB	110.10	118.31	1

Angle type	Observed angle (°)	Ideal angle (°)	Number of outliers
NE-CZ-NH2	119.20	123.09	1
CA-CB-CG	112.60	116.92	1
OE1-CD-NE2	122.60	118.29	1
OD1-CG-ND2	122.60	118.29	1
OE1-CD-NE2	122.60	118.30	1
OD1-CG-ND2	122.60	118.31	1
OE1-CD-NE2	122.60	118.31	1
OD1-CG-ND2	122.60	118.32	1
OE1-CD-NE2	122.60	118.32	1
OE1-CD-NE2	122.60	118.33	3
C-N-CA	121.70	129.38	1
OE1-CD-NE2	122.60	118.34	1
C-N-CA	121.70	129.34	1
NH1-CZ-NH2	119.30	113.80	1
OD1-CG-ND2	122.60	118.37	1
OE1-CD-NE2	122.60	118.37	1
OD1-CG-ND2	122.60	118.39	1
CB-CG-CD2	131.20	125.73	1
C-N-CA	121.70	129.27	1
OE1-CD-NE2	122.60	118.40	1
NE-CZ-NH2	119.20	122.98	1
OD1-CG-ND2	122.60	118.42	1
OE1-CD-NE2	122.60	118.44	1

Angle type	Observed angle (°)	Ideal angle (°)	Number of outliers
C-N-CA	121.70	129.19	1
OD1-CG-ND2	122.60	118.44	1
C-N-CA	121.70	129.17	1
OD1-CG-ND2	122.60	118.45	1
CA-C-N	116.90	123.11	1
CB-CG-CD2	131.20	125.82	1
C-CA-CB	110.10	117.96	1
OD1-CG-ND2	122.60	118.48	1
N-CA-CB	110.50	103.49	1
C-N-CA	121.70	129.11	1
OE1-CD-NE2	122.60	118.48	1
N-CA-C	111.00	122.52	1
C-N-CA	121.70	129.10	1
O-C-N	123.00	116.43	1
OE1-CD-NE2	122.60	118.50	1
OD1-CG-ND2	122.60	118.50	1
NE-CZ-NH2	119.20	122.89	1
C-N-CA	121.70	129.06	1
CB-CG-CD2	131.20	125.88	1
OE1-CD-NE2	122.60	118.51	1
CB-CG-CD2	131.20	125.89	1
N-CA-C	111.00	99.58	1
OD1-CG-ND2	122.60	118.52	1

Angle type	Observed angle (°)	Ideal angle (°)	Number of outliers
NH1-CZ-NH2	119.30	114.01	1
CB-CG-CD2	131.20	125.95	1
CB-CG-CD2	131.20	125.96	2
OD1-CG-ND2	122.60	118.58	1
CB-CG-CD2	131.20	125.98	1
OD1-CG-ND2	122.60	118.59	1
C-N-H	112.25	124.30	1
C-N-H	112.00	124.30	1
C-N-H	111.81	124.30	1
CZ-NH1-HH12	107.48	120.00	1
C-N-H	111.60	124.30	1
HH11-NH1-HH12	107.08	120.00	1
C-N-H	109.88	124.30	1
C-N-H	109.56	124.30	1
C-N-H	109.38	124.30	1
C-N-H	106.95	124.30	1

Too-close contacts

The following all-atom clashscore is based on a MolProbity analysis. All-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The table below contains clashscores for all the models in this entry.

Model ID	Clash score	Number of clashes
1	2.21	13
2	1.87	11
3	1.70	10

Model ID	Clash score	Number of clashes
4	0.85	5
5	2.38	14
6	1.53	9
7	1.36	8
8	1.70	10
9	1.02	6
10	1.87	11

All 97 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	A:235:ALA:HB1	A:243:ARG:HA	0.615
1	A:261:LEU:HD21	A:286:VAL:HB	0.549
1	A:286:VAL:HA	A:300:ASP:HA	0.543
1	A:64:HIS:CE1	A:154:ARG:HH11	0.511
1	A:169:GLY:HA2	A:189:MET:HE3	0.498
1	A:213:ASN:ND2	A:215:ARG:HH21	0.494
1	A:212:ASP:HA	A:246:ASP:HA	0.488
1	A:41:GLN:NE2	A:355:ARG:HH12	0.479
1	A:295:ARG:HH12	A:352:GLU:HA	0.461
1	A:64:HIS:CE1	A:154:ARG:HD3	0.455
1	A:48:TRP:CE2	A:389:SER:HB2	0.446
1	A:249:THR:HG21	A:261:LEU:HD23	0.428
1	A:165:HIS:NE2	A:189:MET:CE	0.417
2	A:360:GLN:HE22	A:390:ILE:HG23	0.633

Model ID	Atom-1	Atom-2	Clash overlap (Å)
2	A:42:PHE:CZ	A:44:PRO:HG3	0.618
2	A:48:TRP:CE2	A:389:SER:HB2	0.495
2	A:44:PRO:HB2	A:360:GLN:HE21	0.487
2	A:189:MET:SD	A:211:GLY:HA3	0.478
2	A:152:LEU:HB3	A:196:GLY:HA2	0.425
2	A:295:ARG:HH12	A:352:GLU:HA	0.423
2	A:238:SER:HA	A:242:ASP:OD2	0.417
2	A:303:ASP:OD1	A:325:ARG:HA	0.417
2	A:121:HIS:HB2	A:123:TYR:CZ	0.408
2	A:83:ALA:HB2	A:93:TRP:CE2	0.401
3	A:189:MET:HE1	A:212:ASP:OD2	0.528
3	A:261:LEU:HD21	A:286:VAL:CG1	0.516
3	A:285:SER:HB2	A:301:GLN:CD	0.459
3	A:167:SER:HA	A:197:GLU:OE1	0.455
3	A:286:VAL:HA	A:300:ASP:HA	0.444
3	A:64:HIS:NE2	A:154:ARG:HD3	0.436
3	A:73:TYR:CD2	A:117:VAL:HG21	0.434
3	A:261:LEU:HD21	A:286:VAL:HB	0.428
3	A:52:VAL:O	A:80:LEU:HD23	0.412
3	A:83:ALA:HB2	A:93:TRP:CE2	0.402
4	A:152:LEU:CD1	A:195:ARG:HB3	0.476
4	A:261:LEU:HD21	A:286:VAL:HB	0.445
4	A:41:GLN:NE2	A:355:ARG:HH12	0.443

Model ID	Atom-1	Atom-2	Clash overlap (Å)
4	A:83:ALA:HB2	A:93:TRP:CE2	0.404
4	A:265:GLY:HA3	A:284:GLY:O	0.404
5	A:62:ASN:HB3	A:369:THR:HG22	0.548
5	A:41:GLN:NE2	A:355:ARG:HH12	0.541
5	A:194:LEU:HD12	A:244:LEU:HD11	0.500
5	A:63:LEU:O	A:369:THR:HG21	0.490
5	A:331:VAL:HG11	A:371:PRO:O	0.472
5	A:265:GLY:HA3	A:284:GLY:O	0.454
5	A:73:TYR:CD2	A:117:VAL:HG21	0.435
5	A:286:VAL:HA	A:300:ASP:HA	0.434
5	A:261:LEU:HD21	A:286:VAL:CG1	0.429
5	A:297:TYR:CD1	A:337:LEU:HD11	0.419
5	A:307:ALA:C	A:308:LEU:HD12	0.417
5	A:295:ARG:HH12	A:352:GLU:HA	0.417
5	A:285:SER:HB3	A:301:GLN:CD	0.408
5	A:83:ALA:HB2	A:93:TRP:CE2	0.403
6	A:5:LYS:HB3	A:6:LEU:HD12	0.676
6	A:35:LEU:HD21	A:324:HIS:CE1	0.665
6	A:35:LEU:HD21	A:324:HIS:NE2	0.593
6	A:41:GLN:NE2	A:355:ARG:HH12	0.494
6	A:261:LEU:HD21	A:286:VAL:CG1	0.448
6	A:48:TRP:CE2	A:389:SER:HB2	0.440
6	A:193:SER:HB2	A:212:ASP:CB	0.433

Model ID	Atom-1	Atom-2	Clash overlap (Å)
6	A:173:ALA:HB2	A:183:TRP:CZ2	0.401
6	A:331:VAL:HG11	A:371:PRO:O	0.400
7	A:308:LEU:HD23	A:315:THR:HA	0.498
7	A:261:LEU:HD21	A:286:VAL:CG1	0.479
7	A:286:VAL:HA	A:300:ASP:HA	0.417
7	A:83:ALA:HB2	A:93:TRP:CE2	0.415
7	A:156:VAL:HG21	A:200:PRO:O	0.414
7	A:48:TRP:CE2	A:389:SER:HB2	0.414
7	A:38:VAL:HG12	A:40:ASN:H	0.403
7	A:295:ARG:HH12	A:352:GLU:HA	0.402
8	A:190:PRO:CD	A:213:ASN:HD21	0.510
8	A:41:GLN:NE2	A:355:ARG:HH12	0.490
8	A:261:LEU:HD21	A:286:VAL:CG1	0.459
8	A:48:TRP:CE2	A:389:SER:HB2	0.441
8	A:295:ARG:HH12	A:352:GLU:HA	0.437
8	A:286:VAL:HA	A:300:ASP:HA	0.417
8	A:73:TYR:CD2	A:117:VAL:HG21	0.405
8	A:121:HIS:HB2	A:123:TYR:CZ	0.403
8	A:59:PHE:HB3	A:60:TYR:CD2	0.401
8	A:83:ALA:HB2	A:93:TRP:CE2	0.400
9	A:150:GLU:CD	A:195:ARG:HH21	0.529
9	A:64:HIS:NE2	A:154:ARG:HD3	0.477
9	A:261:LEU:HD21	A:286:VAL:HB	0.428

Model ID	Atom-1	Atom-2	Clash overlap (Å)
9	A:265:GLY:HA3	A:284:GLY:O	0.425
9	A:286:VAL:HA	A:300:ASP:HA	0.425
9	A:73:TYR:CD2	A:117:VAL:HG21	0.404
10	A:41:GLN:NE2	A:355:ARG:HH12	0.533
10	A:265:GLY:HA3	A:284:GLY:O	0.473
10	A:295:ARG:HH12	A:352:GLU:HA	0.468
10	A:24:ASN:C	A:26:GLU:H	0.462
10	A:286:VAL:HA	A:300:ASP:HA	0.442
10	A:261:LEU:HD21	A:286:VAL:CG1	0.429
10	A:26:GLU:HB3	A:28:ASP:H	0.412
10	A:285:SER:HB3	A:301:GLN:CD	0.411
10	A:308:LEU:HD23	A:315:THR:HA	0.408
10	A:73:TYR:CD2	A:117:VAL:HG21	0.407
10	A:26:GLU:HA	A:27:GLU:C	0.406

Torsion angles: Protein backbone

In the following table, Ramachandran outliers are listed. The Analysed column shows the number of residues for which the backbone conformation was analysed.

Model ID	Analysed	Favored	Allowed	Outliers
1	390	347	32	11
2	390	355	19	16
3	390	349	33	8
4	390	366	18	6
5	390	351	27	12
6	390	361	18	11

Model ID	Analyzed	Favored	Allowed	Outliers
7	390	357	25	8
8	390	354	27	9
9	390	351	24	15
10	390	354	26	10

Detailed list of outliers are tabulated below.

Torsion angles: Protein sidechains ?

In the following table, sidechain outliers are listed. The Analysed column shows the number of residues for which the sidechain conformation was analysed.

Model ID	Analyzed	Favored	Allowed	Outliers
1	321	308	6	7
2	321	303	11	7
3	321	304	8	9
4	321	309	3	9
5	321	302	11	8
6	321	306	7	8
7	321	306	6	9
8	321	305	8	8
9	321	302	11	8
10	321	302	9	10

Detailed list of outliers are tabulated below.

Model ID	Chain	Residue ID	Residue type
1	A	3	LEU
1	A	8	LEU
1	A	11	LEU
1	A	12	LEU

Model ID	Chain	Residue ID	Residue type
1	A	76	ASP
1	A	189	MET
1	A	300	ASP
2	A	6	LEU
2	A	8	LEU
2	A	11	LEU
2	A	12	LEU
2	A	37	THR
2	A	300	ASP
2	A	329	SER
3	A	3	LEU
3	A	6	LEU
3	A	8	LEU
3	A	11	LEU
3	A	12	LEU
3	A	192	LEU
3	A	212	ASP
3	A	285	SER
3	A	300	ASP
4	A	6	LEU
4	A	8	LEU
4	A	11	LEU
4	A	12	LEU

Model ID	Chain	Residue ID	Residue type
4	A	16	LEU
4	A	76	ASP
4	A	189	MET
4	A	194	LEU
4	A	300	ASP
5	A	3	LEU
5	A	6	LEU
5	A	8	LEU
5	A	11	LEU
5	A	15	THR
5	A	76	ASP
5	A	281	ARG
5	A	300	ASP
6	A	6	LEU
6	A	8	LEU
6	A	12	LEU
6	A	16	LEU
6	A	18	SER
6	A	212	ASP
6	A	300	ASP
6	A	369	THR
7	A	3	LEU
7	A	6	LEU

Model ID	Chain	Residue ID	Residue type
7	A	8	LEU
7	A	11	LEU
7	A	12	LEU
7	A	15	THR
7	A	76	ASP
7	A	270	LEU
7	A	300	ASP
8	A	3	LEU
8	A	12	LEU
8	A	16	LEU
8	A	76	ASP
8	A	99	GLU
8	A	194	LEU
8	A	285	SER
8	A	300	ASP
9	A	6	LEU
9	A	8	LEU
9	A	15	THR
9	A	16	LEU
9	A	18	SER
9	A	76	ASP
9	A	189	MET
9	A	300	ASP

Model ID	Chain	Residue ID	Residue type
10	A	3	LEU
10	A	6	LEU
10	A	8	LEU
10	A	11	LEU
10	A	12	LEU
10	A	15	THR
10	A	21	SER
10	A	76	ASP
10	A	285	SER
10	A	300	ASP

Fit of model to data used for modeling ?

Crosslinking-MS

Validation for this section is under development.

Fit of model to data used for validation ?

Validation for this section is under development.

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