

# Integrative Structure Validation Report

July 22, 2024 - 04:23 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	9A18
PDB-Dev ID	PDBDEV_00000080
Structure Title	Integrative model of full-length RAGE in complex with S100B
Structure Authors	Moysa A; Steczkiewicz K; Niedzialek D; Hammerschmid D; Zhukova L; Sobott F; Dadlez M

*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](mailto:pdb-dev@mail.wwpdb.org)*

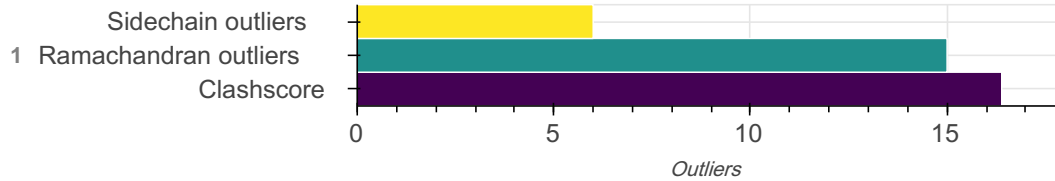
*A user guide is available at [https://pdb-dev.wwpdb.org/validation\\_help.html](https://pdb-dev.wwpdb.org/validation_help.html) with specific help available everywhere you see the  symbol.*

*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 1 unique models, with 8 subunits in each model. A total of 6 datasets or restraints were used to build this entry. Each model is represented by 0 rigid bodies and 12 flexible or non-rigid units.

### Entry composition ?

There is 1 unique type of models in this entry. This model is titled None/None.

Model ID	Subunit number	Subunit ID	Subunit name	Chain ID	Chain ID [auth]	Total residues
1	1	1	RAGE	A	A	383
1	2	1	RAGE	B	B	383
1	3	1	RAGE	C	C	383
1	4	1	RAGE	D	D	383
1	5	2	S100B	E	E	91
1	6	2	S100B	F	F	91
1	7	2	S100B	G	G	91
1	8	2	S100B	H	H	91

### Datasets used for modeling ?

There are 6 unique datasets used to build the models in this entry.

ID	Dataset type	Database name	Data access code
1	Experimental model	PDB	4ybh
2	Experimental model	PDB	4xyn
3	Experimental model	PDB	5d7f
4	Crosslinking-MS data	MASSIVE	MSV000086438
5	Crosslinking-MS data	MASSIVE	MSV000086437
6	H/D exchange data	MASSIVE	MSV000086718

## Representation

*This entry has only one representation and includes 0 rigid bodies and 12 flexible units*

Chain ID	Rigid bodies	Non-rigid segments
A	-	1-301, 302-383
B	-	1-301, 302-383
C	-	1-301, 302-383
D	-	1-301, 302-383
E	-	1-91
F	-	1-91
G	-	1-91
H	-	1-91

## 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
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Step number	Protocol ID	Method name	Method type	Method description	Number of computed models	Multi state modeling	Multi scale modeling
1	1	_	modeling	_	_	False	False

There is 1 software package reported in this entry.

ID	Software name	Software version	Software classification	Software location
1	<a href="#">ROSETTA</a>	Not available	model building	<a href="https://github.com/RosettaCommons">https://github.com/RosettaCommons</a>

### Data quality ?

#### H/D exchange

Validation for this section is under development.

#### Crosslinking-MS

Validation for this section is under development.

### 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.

#### Standard geometry: bond outliers ?

*Bond length outliers can not be evaluated for this model*

#### Standard geometry: angle outliers ?

*There are 54 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	60.74	1
CA-C-N	116.20	52.11	1
O-C-N	123.00	72.95	1
O-C-N	123.00	73.04	1
O-C-N	123.00	73.11	1
O-C-N	123.00	73.21	1

Angle type	Observed angle (°)	Ideal angle (°)	Number of outliers
C-N-CD	125.00	31.12	1
CA-C-N	116.20	160.97	1
CA-C-N	116.20	160.65	1
CA-C-N	116.20	160.63	1
CA-C-N	116.20	160.60	1
C-N-CD	125.00	40.96	1
O-C-N	123.00	154.79	1
C-N-CA	121.70	153.87	1
C-N-CA	121.70	153.48	1
C-N-CA	121.70	153.42	1
C-N-CA	121.70	153.34	1
CA-N-CD	112.00	88.03	1
CA-N-CD	112.00	94.04	1
CA-N-CD	112.00	94.90	1
CA-N-CD	112.00	95.71	1
C-N-CA	121.70	140.84	1
CA-C-N	116.20	136.83	1
CA-N-CD	112.00	100.47	1
O-C-N	123.00	109.90	1
O-C-N	123.00	111.37	1
CA-C-N	116.20	129.53	1
C-N-CA	121.70	132.61	1
C-N-CA	121.70	131.95	1

Angle type	Observed angle (°)	Ideal angle (°)	Number of outliers
CA-N-CD	112.00	104.16	1
N-CA-C	111.00	96.99	1
N-CA-C	111.00	97.21	1
N-CA-C	111.00	97.26	1
N-CA-C	111.00	97.33	1
C-N-CA	121.70	130.46	1
N-CA-C	113.30	99.70	1
N-CA-C	111.00	97.93	1
N-CA-C	113.30	100.00	1
N-CA-C	113.30	100.09	1
CA-C-O	120.80	113.09	1
N-CD-CG	103.20	96.48	1
N-CA-C	111.00	98.48	1
N-CA-C	113.30	100.34	1
N-CA-C	113.30	100.35	1
N-CA-C	113.30	100.43	1
CA-C-N	116.20	124.69	1
N-CA-C	113.30	101.14	1
N-CA-C	111.00	99.38	1
N-CA-C	111.00	99.42	1
N-CA-N-CA-C	111.00	99.54	1
CA-C-N	116.20	124.37	1
O-C-N	123.00	116.48	1

Angle type	Observed angle (°)	Ideal angle (°)	Number of outliers
N-CA-C	113.30	101.53	1
N-CA-C	111.00	99.72	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	16.39	470

All 470 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	C:23:SER:O	C:24:PRO:CG	1.416
1	B:298:THR:OG1	C:296:LEU:CB	1.389
1	A:133:GLU:OE1	B:1:LYS:CE	1.338
1	B:300:ALA:CB	C:296:LEU:HB2	1.283
1	B:31:ASP:OD1	C:83:GLU:HA	1.266
1	A:174:ARG:NH2	C:83:GLU:HB3	1.243
1	B:30:TRP:CZ3	C:296:LEU:CB	1.214
1	B:300:ALA:HB3	D:298:THR:CG2	1.201
1	B:301:LEU:HD11	C:296:LEU:CB	1.187
1	B:300:ALA:CB	D:298:THR:HG23	1.129
1	B:301:LEU:CD1	C:296:LEU:HB3	1.127
1	B:298:THR:CB	B:259:CYS:SG	1.114
1	B:217:CYS:SG	C:24:PRO:N	1.112
1	C:24:PRO:CD	C:296:LEU:HB3	1.105
1	B:298:THR:OG1	C:83:GLU:CA	1.094

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	B:31:ASP:OD1	B:1:LYS:CD	1.071
1	A:133:GLU:OE1	C:24:PRO:CD	1.064
1	C:23:SER:CA	B:1:LYS:NZ	1.062
1	A:133:GLU:OE1	C:81:LYS:HB3	1.040
1	B:28:GLY:HA3	C:83:GLU:CB	1.007
1	B:30:TRP:CZ3	B:1:LYS:HD3	0.984
1	A:133:GLU:OE1	B:1:LYS:HE2	0.982
1	A:133:GLU:CG	B:1:LYS:HE2	0.978
1	A:133:GLU:HG3	B:38:PRO:HG2	0.964
1	A:123:VAL:CG1	B:198:LEU:O	0.960
1	B:196:VAL:HG13	D:149:GLU:OE1	0.959
1	B:127:LYS:NZ	B:1:LYS:HE2	0.954
1	A:133:GLU:OE1	C:296:LEU:HD13	0.935
1	B:298:THR:C	C:147:GLN:OE1	0.916
1	C:134:GLN:NE2	B:1:LYS:HE2	0.904
1	A:133:GLU:CD	C:24:PRO:HD3	0.896
1	C:23:SER:CA	C:298:THR:OG1	0.873
1	B:302:ALA:HB2	E:57:VAL:HG13	0.867
1	E:57:VAL:O	C:296:LEU:O	0.865
1	B:300:ALA:HB2	C:24:PRO:CD	0.859
1	C:23:SER:C	A:129:VAL:O	0.852
1	A:125:ASN:HA	C:296:LEU:HB3	0.841
1	B:298:THR:CG2	A:223:PRO:HD3	0.833



Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	A:182:PRO:HD3	D:305:ILE:HG22	0.825
1	B:305:ILE:HD11	B:1:LYS:CE	0.824
1	A:133:GLU:CD	C:296:LEU:CD2	0.821
1	B:298:THR:OG1	C:296:LEU:HD22	0.809
1	B:298:THR:HG1	C:132:LYS:CB	0.799
1	A:126:GLU:HB3	C:296:LEU:C	0.790
1	B:300:ALA:HB2	C:296:LEU:HD22	0.790
1	B:298:THR:OG1	A:19:TRP:H	0.788
1	A:19:TRP:CD1	C:296:LEU:CG	0.785
1	B:298:THR:OG1	C:84:ILE:O	0.773
1	B:35:ARG:NH1	B:198:LEU:H	0.767
1	B:196:VAL:HG22	C:132:LYS:HB3	0.764
1	A:126:GLU:HB3	D:298:THR:HG23	0.764
1	B:301:LEU:HD11	C:296:LEU:CB	0.764
1	B:300:ALA:HB2	C:296:LEU:O	0.764
1	C:296:LEU:HG	C:132:LYS:HG2	0.762
1	A:127:LYS:HD2	B:186:ARG:O	0.762
1	B:91:LEU:N	B:198:LEU:O	0.761
1	B:196:VAL:CG1	A:166:CYS:SG	0.754
1	A:102:CYS:SG	C:132:LYS:HB3	0.752
1	A:126:GLU:CB	C:83:GLU:CB	0.743
1	B:30:TRP:HZ3	A:51:ASP:OD1	0.738
1	A:20:LYS:NZ	D:147:GLN:NE2	0.735

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	B:126:GLU:OE2	G:90:GLU:O	0.733
1	G:90:GLU:HG2	A:223:PRO:HD3	0.729
1	A:182:PRO:CD	B:196:VAL:HG12	0.719
1	B:195:GLU:C	E:90:GLU:O	0.718
1	E:90:GLU:HG3	B:38:PRO:HG2	0.717
1	A:169:SER:O	G:62:ASP:N	0.714
1	A:123:VAL:HG13	A:221:ALA:O	0.710
1	G:58:MET:O	A:221:ALA:O	0.709
1	A:182:PRO:HG3	A:19:TRP:HD1	0.709
1	A:182:PRO:CG	C:24:PRO:HD3	0.708
1	A:19:TRP:H	C:83:GLU:HB3	0.700
1	C:23:SER:O	B:271:SER:HA	0.696
1	B:30:TRP:CH2	C:296:LEU:CD2	0.694
1	A:133:GLU:CD	E:72:GLN:OE1	0.690
1	B:197:GLN:CB	C:135:THR:HG23	0.685
1	B:298:THR:HG1	A:24:PRO:CD	0.681
1	E:72:GLN:N	C:139:PRO:HD2	0.681
1	C:135:THR:O	B:131:VAL:HB	0.680
1	A:24:PRO:C	A:183:ILE:HD11	0.677
1	B:6:ARG:HG2	B:248:GLU:N	0.677
1	A:1:LYS:HD2	C:24:PRO:HD3	0.671
1	A:99:VAL:CG1	H:88:PHE:CD1	0.671
1	B:211:GLY:O	D:305:ILE:CG2	0.669

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	C:23:SER:C	A:183:ILE:CD1	0.663
1	H:88:PHE:C	C:149:GLU:HB3	0.654
1	B:305:ILE:HD11	B:30:TRP:O	0.654
1	A:99:VAL:CG1	G:17:GLN:NE2	0.651
1	A:133:GLU:OE2	B:38:PRO:HG2	0.648
1	C:132:LYS:HD3	C:85:VAL:HA	0.645
1	B:30:TRP:HE3	C:296:LEU:HB2	0.644
1	G:13:ASP:OD2	A:186:ARG:N	0.644
1	A:123:VAL:HG12	C:132:LYS:HA	0.642
1	B:35:ARG:CZ	F:88:PHE:O	0.642
1	B:300:ALA:HB3	D:101:THR:HG21	0.641
1	A:89:SER:O	A:29:PRO:CD	0.640
1	A:127:LYS:HG3	B:196:VAL:HB	0.637
1	F:88:PHE:CD1	B:196:VAL:CB	0.635
1	B:126:GLU:OE2	C:11:LEU:HD23	0.635
1	A:28:GLY:N	B:126:GLU:H	0.634
1	B:195:GLU:O	D:77:GLN:NE2	0.631
1	B:195:GLU:O	B:29:PRO:HD2	0.629
1	C:11:LEU:C	A:129:VAL:O	0.627
1	B:124:PRO:C	B:1:LYS:HB2	0.625
1	A:26:GLY:O	C:298:THR:OG1	0.625
1	B:27:GLY:C	B:142:GLY:N	0.620
1	A:125:ASN:CA	C:296:LEU:CA	0.619

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	A:131:VAL:C	B:29:PRO:HD2	0.617
1	B:302:ALA:CB	C:327:ARG:NH1	0.616
1	B:138:HIS:O	A:19:TRP:N	0.614
1	B:298:THR:OG1	C:132:LYS:HG2	0.611
1	B:27:GLY:CA	D:305:ILE:CG2	0.609
1	B:333:ALA:O	H:88:PHE:O	0.607
1	A:19:TRP:CD1	H:88:PHE:O	0.604
1	A:127:LYS:CD	C:24:PRO:CD	0.604
1	B:305:ILE:CD1	B:1:LYS:HB2	0.602
1	H:88:PHE:CD1	A:183:ILE:CD1	0.600
1	H:88:PHE:HD1	A:164:PHE:CE2	0.596
1	C:23:SER:O	C:132:LYS:HG2	0.595
1	A:131:VAL:O	D:139:PRO:HD2	0.594
1	A:99:VAL:HG12	A:126:GLU:HG2	0.593
1	A:174:ARG:H	C:147:GLN:OE1	0.593
1	A:117:LEU:HD13	C:85:VAL:HA	0.593
1	A:127:LYS:HG3	C:304:GLY:H	0.592
1	A:5:GLN:O	B:1:LYS:NZ	0.592
1	A:124:PRO:O	E:66:ASP:OD2	0.592
1	B:38:PRO:HG3	C:137:ARG:O	0.592
1	B:35:ARG:NH2	B:29:PRO:HD2	0.590
1	C:301:LEU:HG	A:127:LYS:C	0.588
1	A:133:GLU:CD	A:39:ASN:OD1	0.586

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	E:27:LYS:NZ	B:126:GLU:N	0.586
1	B:5:GLN:O	C:296:LEU:HD21	0.586
1	B:28:GLY:N	F:70:ASP:OD1	0.584
1	A:126:GLU:O	F:88:PHE:CD1	0.582
1	A:39:ASN:C	D:11:LEU:HD23	0.581
1	B:124:PRO:C	A:161:ARG:O	0.577
1	B:299:LEU:HB2	B:22:LEU:C	0.577
1	F:70:ASP:C	A:24:PRO:HD2	0.574
1	F:88:PHE:C	B:186:ARG:O	0.574
1	D:11:LEU:H	B:30:TRP:CE3	0.573
1	A:161:ARG:HG3	A:150:LEU:HB2	0.572
1	B:21:VAL:O	E:60:THR:OG1	0.572
1	A:24:PRO:C	C:296:LEU:HD22	0.571
1	B:90:GLU:HA	A:19:TRP:N	0.570
1	B:30:TRP:C	C:359:THR:OG1	0.568
1	A:115:TRP:CE2	F:88:PHE:O	0.564
1	B:26:GLY:O	B:167:SER:N	0.563
1	B:299:LEU:N	A:62:ARG:H	0.562
1	A:19:TRP:HD1	B:196:VAL:HG12	0.561
1	A:355:GLY:N	B:29:PRO:HD2	0.558
1	F:88:PHE:HD1	B:1:LYS:C	0.557
1	B:166:CYS:SG	C:135:THR:O	0.554
1	A:61:ASN:CG	A:40:GLY:H	0.552

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	B:195:GLU:O	A:186:ARG:O	0.550
1	B:27:GLY:HA3	B:24:PRO:CD	0.550
1	A:131:VAL:O	E:65:GLY:N	0.550
1	C:135:THR:CG2	B:4:PRO:C	0.549
1	A:38:PRO:C	B:29:PRO:CD	0.549
1	A:186:ARG:HG2	B:271:SER:HA	0.548
1	B:23:SER:N	C:296:LEU:HD22	0.547
1	E:62:ASP:OD1	B:131:VAL:O	0.546
1	B:3:PRO:HA	A:180:THR:HG21	0.545
1	B:28:GLY:N	D:305:ILE:HG22	0.542
1	B:197:GLN:HB2	A:129:VAL:O	0.542
1	B:299:LEU:H	A:122:LEU:HB3	0.541
1	A:1:LYS:HB2	B:281:PRO:O	0.540
1	A:102:CYS:SG	D:235:PRO:HG2	0.539
1	B:305:ILE:CD1	A:332:LYS:NZ	0.539
1	A:125:ASN:N	B:304:GLY:N	0.539
1	A:115:TRP:HB2	C:191:VAL:HG12	0.538
1	B:281:PRO:HD2	B:223:PRO:HD2	0.536
1	B:238:LEU:HD21	D:326:ARG:CB	0.536
1	A:329:GLU:OE1	C:145:THR:OG1	0.536
1	B:301:LEU:O	D:327:ARG:NH1	0.535
1	C:191:VAL:O	D:327:ARG:NH1	0.535
1	B:182:PRO:HB2	C:296:LEU:C	0.534

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	D:325:GLN:O	A:7:LEU:HD12	0.533
1	C:136:ARG:NH2	A:29:PRO:HD3	0.530
1	A:330:GLU:O	A:223:PRO:HB3	0.530
1	A:333:ALA:O	B:173:PRO:HD3	0.530
1	B:300:ALA:CB	B:174:ARG:C	0.530
1	A:7:LEU:O	C:148:SER:HA	0.529
1	A:28:GLY:N	C:144:PHE:HA	0.526
1	A:182:PRO:HB3	A:248:GLU:N	0.525
1	B:76:TYR:CD2	B:131:VAL:HB	0.523
1	B:173:PRO:O	A:225:PRO:HG3	0.523
1	C:132:LYS:O	A:40:GLY:N	0.520
1	C:136:ARG:O	D:326:ARG:HB2	0.520
1	A:211:GLY:O	A:113:LEU:HD13	0.519
1	A:1:LYS:CD	A:190:PRO:HD2	0.519
1	A:219:VAL:H	E:57:VAL:O	0.519
1	A:38:PRO:C	B:2:LYS:HA	0.515
1	D:325:GLN:O	C:132:LYS:O	0.513
1	A:102:CYS:SG	C:132:LYS:HG2	0.512
1	A:189:GLU:HB3	C:191:VAL:C	0.512
1	E:57:VAL:CG1	A:126:GLU:N	0.512
1	A:125:ASN:HD21	H:70:ASP:OD1	0.509
1	A:126:GLU:OE1	C:132:LYS:HB3	0.508
1	A:127:LYS:CG	C:324:ARG:HB3	0.506

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	C:190:PRO:O	C:24:PRO:HD2	0.506
1	A:124:PRO:O	B:110:ALA:C	0.505
1	H:70:ASP:C	C:296:LEU:CB	0.505
1	A:126:GLU:HB2	G:46:GLU:N	0.505
1	C:321:TRP:O	C:296:LEU:O	0.505
1	C:23:SER:O	A:183:ILE:HD11	0.504
1	B:109:PRO:O	F:91:HIS:O	0.502
1	B:298:THR:CG2	E:36:LEU:HD23	0.502
1	A:15:ARG:O	C:86:ASP:H	0.502
1	C:296:LEU:CG	C:24:PRO:HD3	0.501
1	A:99:VAL:HG12	H:36:LEU:HD23	0.501
1	C:36:VAL:HG23	B:124:PRO:HG3	0.500
1	E:36:LEU:C	H:77:PHE:HB3	0.500
1	B:35:ARG:NH2	B:196:VAL:CG1	0.498
1	C:23:SER:CB	B:326:ARG:C	0.498
1	H:36:LEU:C	H:89:PHE:CE2	0.498
1	A:39:ASN:HA	C:132:LYS:CA	0.496
1	H:74:PHE:O	C:84:ILE:N	0.495
1	B:195:GLU:O	C:132:LYS:HA	0.494
1	B:325:GLN:O	C:24:PRO:HD2	0.493
1	H:86:HIS:HA	A:186:ARG:HB3	0.492
1	A:127:LYS:H	B:193:LEU:HD12	0.492
1	B:31:ASP:OD1	B:271:SER:CB	0.488



Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	A:112:THR:H	B:21:VAL:HG22	0.487
1	A:127:LYS:H	B:40:GLY:O	0.487
1	C:23:SER:C	C:132:LYS:C	0.486
1	A:185:PRO:O	E:54:VAL:HB	0.486
1	B:193:LEU:C	C:83:GLU:CG	0.484
1	B:197:GLN:HB3	F:75:MET:HE2	0.483
1	B:11:LEU:O	A:167:SER:N	0.483
1	B:9:TRP:NE1	A:183:ILE:HD12	0.482
1	A:126:GLU:HB3	B:125:ASN:OD1	0.481
1	E:51:GLN:O	C:149:GLU:HA	0.480
1	B:30:TRP:CH2	B:174:ARG:HD3	0.478
1	F:75:MET:HA	A:149:GLU:O	0.477
1	A:166:CYS:SG	A:271:SER:CA	0.477
1	A:99:VAL:HG13	C:103:VAL:HB	0.477
1	A:3:PRO:HD3	G:49:LYS:NZ	0.477
1	C:101:THR:HA	A:180:THR:HG22	0.475
1	A:76:TYR:CE2	B:149:GLU:O	0.475
1	A:131:VAL:HA	B:151:MET:HA	0.475
1	A:196:VAL:HB	C:296:LEU:HD13	0.475
1	C:83:GLU:HG2	D:11:LEU:HD23	0.474
1	G:47:GLU:OE1	C:133:GLU:N	0.474
1	A:82:PRO:HB2	H:63:ASN:N	0.474
1	B:131:VAL:HA	B:249:ILE:HG23	0.472

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	B:97:ASN:O	A:147:GLN:HB2	0.471
1	B:298:THR:O	B:271:SER:CA	0.471
1	D:11:LEU:N	E:35:GLU:OE1	0.471
1	A:127:LYS:H	G:71:PHE:N	0.470
1	H:61:LEU:O	B:223:PRO:HD3	0.469
1	A:112:THR:HB	B:271:SER:CA	0.469
1	B:249:ILE:O	G:36:LEU:HD23	0.467
1	A:134:GLN:HB3	B:216:THR:O	0.465
1	B:197:GLN:CB	F:71:PHE:CZ	0.465
1	E:21:ARG:NH1	C:324:ARG:O	0.464
1	G:70:ASP:OD1	A:62:ARG:N	0.463
1	A:111:GLY:C	A:180:THR:CG2	0.463
1	B:184:GLN:HB2	C:296:LEU:HD23	0.463
1	B:197:GLN:HB2	A:225:PRO:HB3	0.461
1	G:36:LEU:C	B:196:VAL:N	0.461
1	B:198:LEU:HD23	C:147:GLN:HB2	0.461
1	F:12:ILE:HG12	H:5:GLU:HG3	0.460
1	C:324:ARG:HG3	D:305:ILE:HG21	0.459
1	A:61:ASN:CG	A:227:ILE:HG21	0.458
1	A:166:CYS:HB3	B:19:TRP:O	0.458
1	C:296:LEU:N	C:296:LEU:HD23	0.458
1	A:222:GLN:HB2	H:5:GLU:HG2	0.458
1	B:194:GLU:C	B:196:VAL:H	0.457

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	A:126:GLU:OE2	B:217:CYS:HB2	0.457
1	A:174:ARG:HB2	H:4:LEU:CD1	0.457
1	G:40:GLU:O	B:127:LYS:C	0.457
1	B:305:ILE:CD1	A:25:GLN:HG3	0.456
1	A:217:CYS:SG	E:84:ALA:HA	0.456
1	B:19:TRP:CE3	B:31:ASP:N	0.456
1	C:296:LEU:H	B:271:SER:CB	0.455
1	G:44:PHE:CD2	B:223:PRO:CB	0.454
1	B:194:GLU:C	B:125:ASN:ND2	0.454
1	B:198:LEU:CD2	A:7:LEU:HD12	0.453
1	G:11:LEU:CD2	C:132:LYS:HB2	0.453
1	B:126:GLU:O	B:59:ALA:HA	0.453
1	A:22:LEU:HD22	B:174:ARG:HD3	0.453
1	B:56:ARG:NH1	C:296:LEU:CD2	0.453
1	B:28:GLY:O	A:70:ASN:OD1	0.452
1	B:197:GLN:CB	C:152:VAL:HG22	0.452
1	B:163:THR:HA	C:147:GLN:HE21	0.452
1	A:5:GLN:OE1	B:67:THR:O	0.452
1	A:7:LEU:C	A:151:MET:O	0.451
1	A:126:GLU:HB3	B:271:SER:HA	0.450
1	B:6:ARG:O	A:259:CYS:HB2	0.449
1	A:76:TYR:HE2	B:31:ASP:H	0.449
1	B:299:LEU:N	B:196:VAL:CG1	0.449

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	A:56:ARG:CZ	G:28:LEU:HG	0.449
1	C:99:VAL:CG2	A:57:CYS:HB2	0.448
1	C:103:VAL:HG13	C:64:GLY:CA	0.448
1	B:59:ALA:N	A:223:PRO:CD	0.447
1	A:130:SER:N	H:28:LEU:HG	0.446
1	B:197:GLN:HB3	G:47:GLU:OE2	0.446
1	A:227:ILE:CG2	A:221:ALA:O	0.445
1	B:29:PRO:C	C:296:LEU:H	0.444
1	B:195:GLU:C	G:90:GLU:O	0.443
1	G:15:PHE:CE1	B:173:PRO:HD3	0.442
1	A:9:TRP:CD2	C:103:VAL:HB	0.442
1	A:174:ARG:H	H:4:LEU:CD1	0.442
1	C:61:ASN:HB3	A:146:LEU:HD21	0.441
1	A:182:PRO:HD3	B:223:PRO:CD	0.441
1	H:15:PHE:CE1	C:259:CYS:HB2	0.441
1	F:25:LYS:NZ	E:63:ASN:N	0.441
1	A:182:PRO:CD	E:75:MET:SD	0.440
1	B:298:THR:HG1	A:120:LYS:O	0.440
1	G:90:GLU:CG	B:174:ARG:O	0.440
1	B:76:TYR:CE2	B:217:CYS:HB2	0.439
1	C:83:GLU:CG	A:308:GLY:N	0.439
1	G:11:LEU:HD23	D:33:VAL:HG12	0.439
1	A:110:ALA:O	A:278:ILE:N	0.438

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	B:184:GLN:HB2	B:222:GLN:O	0.438
1	C:227:ILE:CG2	F:27:LYS:NZ	0.438
1	E:61:LEU:O	B:3:PRO:O	0.437
1	E:71:PHE:CZ	C:11:LEU:HD23	0.437
1	A:117:LEU:N	B:197:GLN:OE1	0.437
1	B:173:PRO:C	H:21:ARG:NE	0.437
1	B:198:LEU:HD21	C:147:GLN:HG3	0.436
1	A:305:ILE:O	C:324:ARG:N	0.436
1	D:33:VAL:O	A:173:PRO:HD3	0.435
1	A:277:SER:OG	A:183:ILE:HD12	0.435
1	B:219:VAL:O	C:132:LYS:CG	0.435
1	F:24:ASP:OD2	A:147:GLN:HA	0.434
1	B:2:LYS:HG2	C:340:GLU:OE1	0.434
1	C:11:LEU:O	C:145:THR:OG1	0.434
1	B:197:GLN:N	D:298:THR:C	0.434
1	H:17:GLN:O	D:132:LYS:HE3	0.433
1	C:103:VAL:HG22	C:83:GLU:CB	0.433
1	C:321:TRP:O	C:358:SER:HB3	0.432
1	A:76:TYR:CG	B:131:VAL:HB	0.431
1	A:99:VAL:CG1	B:223:PRO:HB2	0.431
1	A:127:LYS:HG3	F:40:GLU:O	0.431
1	A:102:CYS:O	B:25:GLN:C	0.428
1	A:334:PRO:HB3	D:7:LEU:HD12	0.428

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	C:136:ARG:CZ	F:79:ALA:HA	0.428
1	D:297:GLY:O	G:65:GLY:N	0.428
1	B:128:GLY:N	B:183:ILE:HG13	0.427
1	B:31:ASP:OD1	A:64:GLY:CA	0.425
1	C:357:SER:O	A:163:THR:O	0.425
1	A:1:LYS:HB2	B:30:TRP:CD1	0.425
1	B:163:THR:HA	C:298:THR:HG1	0.424
1	E:5:GLU:HG3	D:259:CYS:HB2	0.424
1	B:24:PRO:O	B:1:LYS:HG3	0.423
1	D:7:LEU:C	H:13:ASP:OD2	0.423
1	E:75:MET:HE2	A:27:GLY:H	0.423
1	G:64:ASP:OD1	A:72:ARG:HA	0.422
1	B:183:ILE:O	B:180:THR:CG2	0.422
1	A:63:ASN:N	B:30:TRP:O	0.422
1	A:117:LEU:HD12	B:30:TRP:N	0.421
1	B:27:GLY:O	C:70:ASN:OD1	0.420
1	B:302:ALA:HB2	F:15:PHE:C	0.420
1	D:227:ILE:HG23	B:130:SER:HB3	0.419
1	A:131:VAL:HG12	B:29:PRO:CD	0.419
1	F:6:LYS:HD3	C:83:GLU:C	0.419
1	A:25:GLN:NE2	C:296:LEU:N	0.419
1	A:53:GLY:O	A:120:LYS:O	0.418
1	B:166:CYS:HB3	B:131:VAL:CB	0.417

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	B:30:TRP:CE3	A:22:LEU:HG	0.417
1	B:28:GLY:C	B:131:VAL:CG1	0.416
1	A:174:ARG:CB	D:298:THR:CG2	0.416
1	C:70:ASN:C	A:146:LEU:HD21	0.415
1	F:14:VAL:O	B:271:SER:OG	0.415
1	A:2:LYS:HB3	C:26:GLY:H	0.415
1	B:27:GLY:C	H:88:PHE:CD2	0.415
1	B:31:ASP:OD1	C:260:VAL:HG13	0.415
1	B:298:THR:OG1	A:146:LEU:HD21	0.414
1	A:116:HIS:HA	C:186:ARG:HB2	0.414
1	A:1:LYS:HD2	A:73:VAL:N	0.414
1	A:11:LEU:HB2	B:223:PRO:HD3	0.412
1	A:1:LYS:HD2	C:132:LYS:HA	0.412
1	A:112:THR:N	A:185:PRO:HB3	0.411
1	B:301:LEU:CD1	A:129:VAL:C	0.410
1	A:111:GLY:C	D:101:THR:O	0.410
1	B:198:LEU:CD1	D:11:LEU:N	0.409
1	C:24:PRO:HD2	A:126:GLU:HG3	0.408
1	H:85:CYS:O	A:150:LEU:HD11	0.408
1	C:260:VAL:O	C:7:LEU:HD12	0.408
1	A:111:GLY:O	C:142:GLY:HA3	0.408
1	C:185:PRO:O	C:64:GLY:HA2	0.408
1	A:53:GLY:O	C:144:PHE:CE2	0.408

Model ID	Atom-1	Atom-2	Clash overlap (Å)
1	B:184:GLN:N	F:5:GLU:OE1	0.408
1	A:127:LYS:N	C:241:SER:O	0.408
1	A:91:LEU:HG	D:317:GLY:N	0.408
1	A:125:ASN:H	A:273:ALA:HB1	0.407
1	D:84:ILE:HA	B:73:VAL:HG21	0.407
1	D:11:LEU:CD2	D:160:PRO:HD2	0.407
1	A:123:VAL:HB	B:126:GLU:HB3	0.406
1	A:129:VAL:CG1	C:315:LEU:C	0.405
1	C:7:LEU:C	D:37:LEU:N	0.404
1	C:49:ILE:HD12	D:41:SER:OG	0.403
1	C:61:ASN:HB3	G:74:PHE:HB3	0.403
1	C:137:ARG:HB2	B:39:ASN:OD1	0.403
1	F:1:MET:HA	D:291:VAL:HB	0.403
1	C:229:TRP:NE1	G:48:ILE:N	0.403
1	D:314:LEU:O	D:140:GLU:OE1	0.402
1	A:171:GLY:O	B:64:GLY:HA2	0.402
1	A:256:THR:CG2	A:113:LEU:N	0.402
1	B:55:PHE:CE1	A:73:VAL:HG23	0.400

### 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	1878	1778	85	15

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	1574	1553	15	6

Detailed list of outliers are tabulated below.

Model ID	Chain	Residue ID	Residue type
1	A	19	TRP
1	A	24	PRO
1	B	29	PRO
1	B	192	PRO
1	C	24	PRO

### Fit of model to data used for modeling ?

#### H/D exchange

Validation for this section is under development.

#### 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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