

Integrative Structure Validation Report

October 16, 2025 - 05:41 PM PDT

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

IHMValidation Version 3.0

Python-IHM Version 2.5

MolProbity Version 4.5.2

PDB ID	9AA0 pdb_00009aa0
Structure Title	Integrative structure of annexin based in 3D localization AFM (3D-LAFM) density map
Structure Authors	Jiang, Y.; Wang, Z.; Scheuring, S.
Deposited on	2025-04-12

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

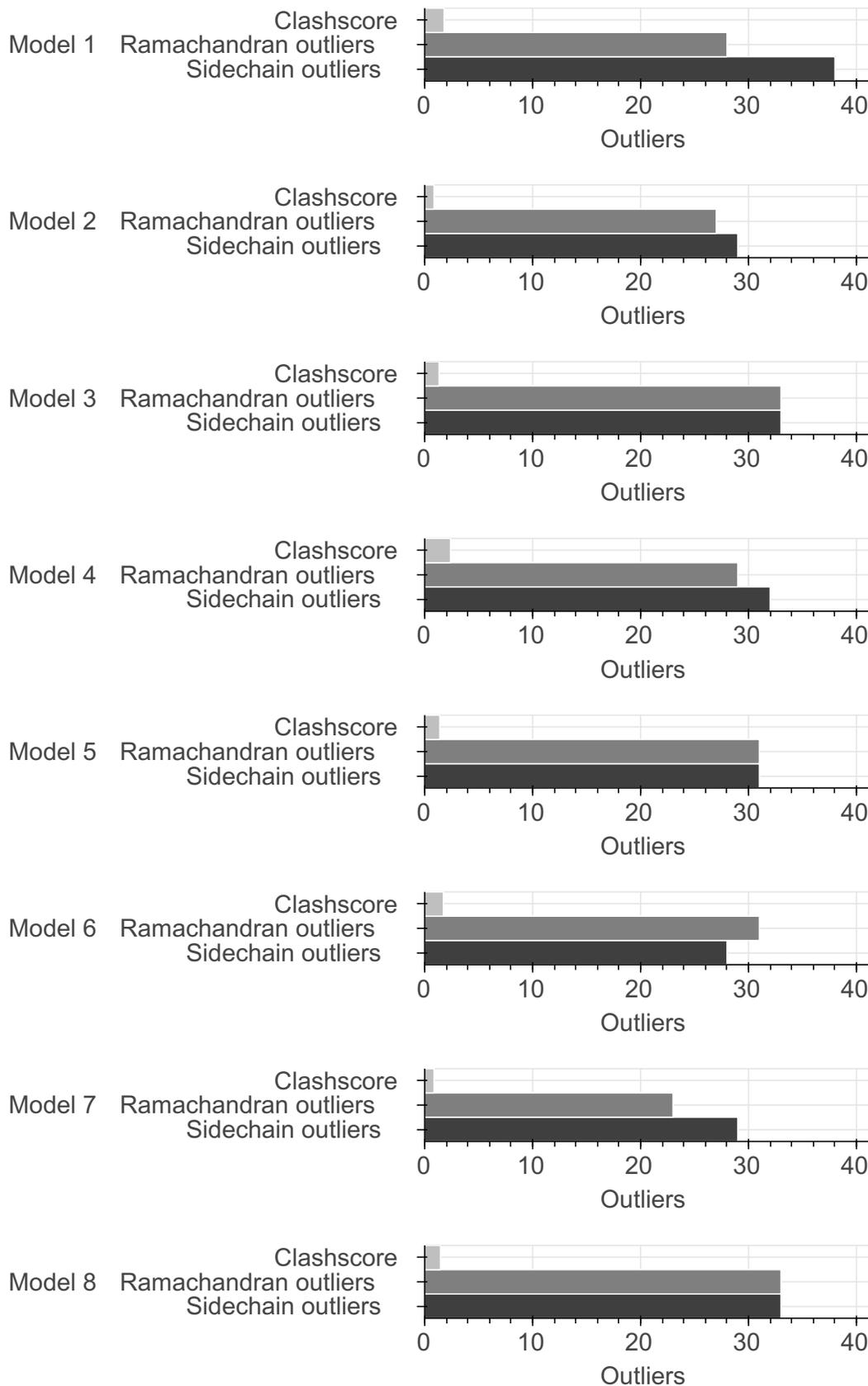
This entry consists of 10 model(s). A total of 2 dataset(s) were used to build this entry.

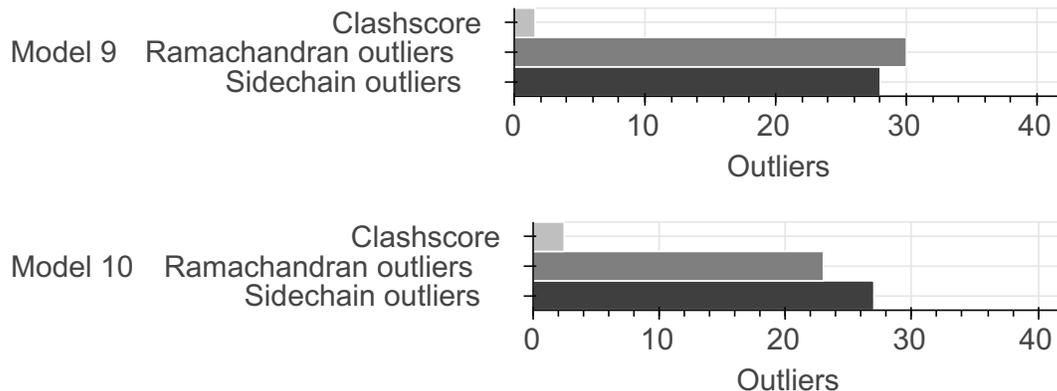
Name	Type	Count
Other	Experimental data	1
Experimental model	Starting model	1

1.2. Overall quality

This validation report contains model quality assessments for all structures, data quality and fit to model assessments for SAS and crosslinking-MS 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 ?





2. Model Details ?

2.1. Ensemble information ?

This entry consists of 0 distinct ensemble(s).

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	1-10	1	Annexin-V	A	317	-	1-317	100.00 / 100.00	Atomic
			B						
			C						

2.3. Datasets used for modeling ?

There are 2 unique datasets used to build the models in this entry.

ID	Dataset type	Database name	Data access code
1	Other	Zenodo	10.5281/zenodo.14170918
2	Experimental model	PDB	pdb_00001avr

2.4. 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	Not available	Not available	Not available	Not available	False	False

There are 2 software packages reported in this entry.

ID	Software name	Software version	Software classification	Software location
1	UCSF ChimeraX	Not available	model building	https://www.rbvi.ucsf.edu/chimerax/
2	Visual Molecular Dynamics (VMD)	Not available	model building	https://www.ks.uiuc.edu/Research/vmd/

3. Data quality ?

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 ?

Excluded volume satisfaction for the models in the entry are listed below. The Analysed column shows the number of particle-particle or particle-atom pairs for which excluded volume was analysed.

Standard geometry: bond outliers ?

There are 3282 bond length outliers in this entry (4.31% of 76170 assessed bonds). A summary is provided below. The output is limited to 100 rows.

Chain	Res	Type	Atoms	Z	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
C	206	LYS	C-N	10.82	1.48	1.33	8	2
A	203	HIS	ND1-CE1	10.55	1.43	1.32	1	3
A	106	LYS	C-N	10.54	1.48	1.33	5	3
C	203	HIS	ND1-CE1	10.52	1.43	1.32	6	4
C	96	HIS	ND1-CE1	10.43	1.43	1.32	1	4
A	121	ARG	NE-CZ	10.17	1.44	1.33	4	4
B	4	ARG	NE-CZ	10.04	1.44	1.33	9	4
C	265	HIS	ND1-CE1	10.00	1.42	1.32	2	4
C	101	ALA	C-N	9.86	1.47	1.33	10	2
A	115	ARG	NE-CZ	9.81	1.43	1.33	1	5
C	176	ALA	C-N	9.77	1.47	1.33	7	4
B	203	HIS	ND1-CE1	9.54	1.42	1.32	4	5
C	136	GLU	C-N	9.42	1.46	1.33	3	3
B	60	GLY	C-N	9.18	1.46	1.33	8	2
C	287	ARG	NE-CZ	9.14	1.43	1.33	7	6
B	48	ARG	NE-CZ	8.98	1.42	1.33	7	4
C	61	ARG	NE-CZ	8.94	1.42	1.33	8	5

Chain	Res	Type	Atoms	Z	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
C	137	ASP	C-N	8.91	1.45	1.33	6	2
C	281	ASN	C-N	8.85	1.45	1.33	3	5
A	213	THR	C-N	8.69	1.45	1.33	6	3
A	206	LYS	C-N	8.65	1.45	1.33	5	4
C	225	ARG	C-N	8.65	1.45	1.33	10	2
A	313	LEU	C-N	8.53	1.45	1.33	2	2
A	283	ARG	CD-NE	8.50	1.58	1.46	10	4
C	266	THR	C-N	8.40	1.45	1.33	3	3
A	198	THR	C-N	8.36	1.45	1.33	6	1
A	96	HIS	C-N	8.36	1.45	1.33	9	2
C	203	HIS	CB-CG	8.35	1.61	1.50	8	3
B	20	GLU	C-N	8.34	1.45	1.33	5	4
C	149	ARG	NE-CZ	8.32	1.42	1.33	5	6
A	168	ALA	C-N	8.30	1.45	1.33	4	1
A	86	SER	C-N	8.27	1.44	1.33	9	4
A	287	ARG	NE-CZ	8.23	1.42	1.33	3	3
A	113	ALA	C-N	8.17	1.44	1.33	1	2
B	156	GLN	C-N	8.13	1.44	1.33	10	2
A	250	ALA	C-N	8.10	1.44	1.33	5	1
C	121	ARG	NE-CZ	8.06	1.41	1.33	2	2
B	189	GLU	C-N	7.99	1.44	1.33	2	1
B	269	ARG	CD-NE	7.98	1.57	1.46	10	7
A	81	ALA	C-N	7.96	1.44	1.33	8	3
C	16	ARG	NE-CZ	7.93	1.41	1.33	10	4
B	43	ARG	NE-CZ	7.93	1.41	1.33	3	4
B	108	LEU	C-N	7.83	1.44	1.33	10	3
A	119	GLU	C-N	7.82	1.44	1.33	3	3
C	43	ARG	CD-NE	7.80	1.57	1.46	7	2
A	47	GLN	C-N	7.78	1.44	1.33	4	3
B	293	SER	C-N	7.76	1.44	1.33	3	4
B	171	GLU	C-N	7.72	1.44	1.33	3	3
C	4	ARG	NE-CZ	7.72	1.41	1.33	9	4
C	260	ALA	C-N	7.71	1.44	1.33	7	3
B	269	ARG	NE-CZ	7.71	1.41	1.33	4	4
B	61	ARG	NE-CZ	7.69	1.41	1.33	8	5

Chain	Res	Type	Atoms	Z	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
C	16	ARG	CZ-NH2	7.69	1.43	1.33	10	2
C	199	ARG	CZ-NH1	7.67	1.43	1.32	7	2
A	189	GLU	C-N	7.62	1.44	1.33	5	2
C	280	PHE	C-N	7.62	1.44	1.33	7	2
C	115	ARG	C-N	7.60	1.44	1.33	1	2
C	105	GLU	C-N	7.59	1.44	1.33	8	2
C	211	TYR	CA-CB	7.58	1.68	1.53	2	1
B	270	VAL	C-N	7.56	1.43	1.33	7	2
C	159	ARG	NE-CZ	7.54	1.41	1.33	9	4
A	187	THR	C-N	7.53	1.43	1.33	6	5
A	96	HIS	ND1-CE1	7.53	1.40	1.32	3	4
A	282	ILE	C-N	7.51	1.43	1.33	9	2
B	23	ARG	NE-CZ	7.51	1.41	1.33	9	4
C	92	TYR	C-N	7.50	1.43	1.33	5	2
B	74	LYS	C-N	7.45	1.43	1.33	10	1
B	243	ARG	NE-CZ	7.44	1.41	1.33	9	2
C	269	ARG	CA-C	7.44	1.37	1.52	3	2
C	73	GLY	C-N	7.42	1.43	1.33	8	2
B	243	ARG	CD-NE	7.42	1.56	1.46	7	3
C	199	ARG	NE-CZ	7.41	1.41	1.33	10	1
C	157	ALA	C-N	7.41	1.43	1.33	9	2
B	159	ARG	NE-CZ	7.41	1.41	1.33	2	7
A	199	ARG	NE-CZ	7.39	1.41	1.33	6	6
A	264	ASP	C-N	7.39	1.43	1.33	1	1
A	96	HIS	CE1-NE2	7.38	1.25	1.32	5	3
B	201	VAL	C-N	7.38	1.43	1.33	7	2
C	83	MET	C-N	7.38	1.43	1.33	7	3
A	2	VAL	C-N	7.38	1.43	1.33	3	2
A	265	HIS	CG-ND1	7.37	1.46	1.38	7	1
A	57	THR	C-N	7.37	1.43	1.33	5	2
C	274	ARG	NE-CZ	7.36	1.41	1.33	8	4
B	199	ARG	NE-CZ	7.29	1.41	1.33	3	2
B	31	THR	C-N	7.27	1.43	1.33	9	3
A	205	ARG	C-N	7.26	1.43	1.33	10	2
A	121	ARG	C-N	7.25	1.43	1.33	6	2

Chain	Res	Type	Atoms	Z	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
C	269	ARG	NE-CZ	7.24	1.41	1.33	9	4
B	96	HIS	ND1-CE1	7.24	1.39	1.32	8	6
A	87	ARG	NE-CZ	7.24	1.41	1.33	3	3
A	149	ARG	C-N	7.24	1.43	1.33	7	2
B	257	MET	C-N	7.22	1.43	1.33	5	2
A	16	ARG	CD-NE	7.21	1.56	1.46	8	3
A	267	LEU	C-N	7.21	1.43	1.33	10	3
B	271	MET	C-N	7.21	1.43	1.33	1	1
C	265	HIS	C-N	7.21	1.43	1.33	5	1
B	85	PRO	C-N	7.20	1.43	1.33	6	2
C	149	ARG	CD-NE	7.20	1.56	1.46	8	4
C	282	ILE	C-N	7.19	1.43	1.33	5	6
A	214	ILE	CB-CG1	7.17	1.67	1.53	8	1

Standard geometry: angle outliers ?

There are 4032 bond angle outliers in this entry (3.93% of 102540 assessed bonds). A summary is provided below. The output is limited to 100 rows.

Chain	Res	Type	Atoms	Z	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
C	59	PHE	CA-CB-CG	13.68	100.12	113.80	7	9
B	290	PHE	CA-CB-CG	12.39	101.41	113.80	7	6
B	104	ASN	CA-CB-CG	12.01	100.59	112.60	4	4
B	59	PHE	CA-CB-CG	10.93	102.87	113.80	5	5
B	280	PHE	CA-CB-CG	10.77	124.57	113.80	9	4
C	75	PHE	CA-CB-CG	10.52	103.28	113.80	3	5
A	290	PHE	CA-CB-CG	10.39	103.41	113.80	4	6
C	23	ARG	NE-CZ-NH2	10.15	110.07	119.20	6	2
A	264	ASP	CA-CB-CG	10.10	122.70	112.60	4	2
B	230	ASN	OD1-CG-ND2	9.98	132.58	122.60	9	3
C	116	THR	CA-C-N	9.94	131.82	116.90	3	8
C	121	ARG	NE-CZ-NH2	9.88	128.09	119.20	8	3
A	225	ARG	NE-CZ-NH2	9.78	128.00	119.20	3	2
A	62	ASP	CA-CB-CG	9.73	122.33	112.60	6	5
A	278	ASP	CA-CB-CG	9.67	122.27	112.60	9	5
A	158	ASN	CA-CB-CG	9.66	102.94	112.60	9	3
C	199	ARG	NE-CZ-NH2	9.63	127.87	119.20	5	2

Chain	Res	Type	Atoms	Z	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
C	281	ASN	CA-CB-CG	9.60	122.20	112.60	10	3
C	290	PHE	CA-CB-CG	9.57	104.23	113.80	10	9
C	207	VAL	CA-CB-CG2	9.53	94.20	110.40	3	2
A	96	HIS	CA-CB-CG	9.48	123.28	113.80	1	4
C	224	ASP	N-CA-CB	9.46	126.58	110.50	4	10
A	192	PHE	CA-CB-CG	9.40	104.40	113.80	10	4
C	104	ASN	CA-CB-CG	9.31	103.29	112.60	1	6
A	75	PHE	CA-CB-CG	9.30	104.50	113.80	3	3
A	269	ARG	NE-CZ-NH1	9.23	130.73	121.50	9	3
C	96	HIS	CA-CB-CG	9.14	122.94	113.80	8	5
C	149	ARG	NE-CZ-NH2	9.14	127.42	119.20	4	5
C	196	PHE	CA-CB-CG	9.10	122.90	113.80	7	3
B	10	PHE	CA-CB-CG	9.04	122.84	113.80	8	4
B	142	ASP	CA-CB-CG	8.94	121.54	112.60	2	3
C	283	ARG	NE-CZ-NH2	8.93	111.16	119.20	5	3
A	205	ARG	CD-NE-CZ	8.92	111.91	124.40	6	1
C	158	ASN	CA-CB-CG	8.91	103.69	112.60	4	3
A	269	ARG	NE-CZ-NH2	8.90	127.21	119.20	4	3
A	65	ASP	CA-CB-CG	8.89	121.49	112.60	4	3
A	283	ARG	NE-CZ-NH2	8.88	111.21	119.20	9	5
B	96	HIS	ND1-CE1-NE2	8.87	117.27	108.40	6	5
C	9	ASP	CA-CB-CG	8.84	121.44	112.60	6	6
B	96	HIS	CB-CG-CD2	8.81	119.75	131.20	10	2
C	149	ARG	NE-CZ-NH1	8.77	112.73	121.50	5	4
B	281	ASN	CA-CB-CG	8.75	121.35	112.60	2	6
C	245	ILE	CA-C-N	8.70	129.95	116.90	5	9
B	166	ASP	CA-CB-CG	8.65	121.25	112.60	9	5
A	237	ALA	C-CA-CB	8.61	97.59	110.50	6	3
A	250	ALA	C-CA-CB	8.58	97.63	110.50	7	4
B	115	ARG	NE-CZ-NH1	8.57	130.07	121.50	8	3
B	45	ASN	CA-CB-CG	8.56	121.16	112.60	2	4
A	245	ILE	CA-C-N	8.50	129.64	116.90	8	8
C	208	PHE	CA-CB-CG	8.48	105.32	113.80	3	3
A	199	ARG	NE-CZ-NH2	8.44	126.79	119.20	5	5
B	265	HIS	CD2-NE2-CE1	8.42	100.58	109.00	8	7

Chain	Res	Type	Atoms	Z	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
B	203	HIS	CA-CB-CG	8.42	122.22	113.80	3	1
B	54	ALA	C-CA-CB	8.40	97.90	110.50	4	4
B	256	ALA	N-CA-CB	8.39	122.98	110.40	8	2
B	48	ARG	NE-CZ-NH2	8.38	126.74	119.20	8	3
C	217	PHE	CA-CB-CG	8.38	105.42	113.80	3	3
A	73	GLY	C-N-CA	8.38	136.78	121.70	1	2
A	230	ASN	OD1-CG-ND2	8.31	130.91	122.60	8	3
A	59	PHE	CA-CB-CG	8.23	122.03	113.80	10	5
C	115	ARG	NE-CZ-NH2	8.22	126.60	119.20	2	3
C	90	ASP	CA-CB-CG	8.17	104.43	112.60	9	4
A	138	ASP	CA-CB-CG	8.16	104.44	112.60	3	3
C	6	THR	CA-CB-OG1	8.15	121.83	109.60	4	2
C	287	ARG	NE-CZ-NH2	8.15	111.87	119.20	1	5
A	179	GLN	OE1-CD-NE2	8.08	130.68	122.60	10	2
A	103	THR	CA-CB-OG1	8.08	121.71	109.60	5	1
A	48	ARG	NE-CZ-NH1	8.04	129.54	121.50	4	1
A	160	ASP	CA-CB-CG	8.02	120.62	112.60	7	4
C	160	ASP	CA-CB-CG	8.02	120.62	112.60	9	2
A	85	PRO	C-N-CA	8.00	136.10	121.70	1	4
B	265	HIS	ND1-CE1-NE2	7.99	116.39	108.40	3	7
C	166	ASP	CA-CB-CG	7.94	120.54	112.60	5	5
A	125	GLN	OE1-CD-NE2	7.93	130.53	122.60	5	2
C	301	ASP	CA-CB-CG	7.92	120.52	112.60	6	4
B	205	ARG	NE-CZ-NH1	7.90	129.40	121.50	3	4
C	14	ASP	CA-CB-CG	7.89	104.71	112.60	9	2
A	66	ASP	CA-CB-CG	7.85	120.45	112.60	2	3
C	203	HIS	ND1-CE1-NE2	7.84	116.24	108.40	8	6
B	203	HIS	CD2-NE2-CE1	7.82	101.18	109.00	2	5
B	158	ASN	CA-CB-CG	7.81	104.79	112.60	5	3
B	283	ARG	NE-CZ-NH1	7.80	129.30	121.50	8	2
B	160	ASP	N-CA-CB	7.79	123.74	110.50	1	5
B	13	PHE	CA-CB-CG	7.78	106.02	113.80	3	3
A	199	ARG	C-N-CA	7.75	135.65	121.70	2	2
B	85	PRO	C-N-CA	7.75	135.64	121.70	3	4
A	96	HIS	CD2-NE2-CE1	7.75	101.25	109.00	8	6

Chain	Res	Type	Atoms	Z	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
A	166	ASP	CA-CB-CG	7.70	120.30	112.60	5	2
C	48	ARG	NE-CZ-NH2	7.70	126.13	119.20	5	3
B	228	SER	N-CA-CB	7.68	123.56	110.50	10	3
A	13	PHE	C-N-CA	7.68	135.53	121.70	2	3
A	194	THR	CA-CB-OG1	7.68	121.13	109.60	3	1
A	162	ASP	CA-CB-CG	7.68	120.28	112.60	1	6
B	132	GLY	C-N-CA	7.65	135.47	121.70	2	2
A	290	PHE	N-CA-CB	7.64	123.49	110.50	8	4
A	4	ARG	N-CA-CB	7.63	123.47	110.50	4	6
B	291	ALA	C-N-CA	7.63	135.43	121.70	9	5
C	199	ARG	NH1-CZ-NH2	7.61	109.41	119.30	5	1
B	188	ASP	CA-CB-CG	7.59	120.19	112.60	3	5
C	253	LEU	N-CA-CB	7.58	97.61	110.50	7	2

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 atomic models in this entry.

Model ID	Clash score	Number of clashes
1	1.79	27
2	0.86	13
3	1.33	20
4	2.39	36
5	1.39	21
6	1.73	26
7	0.86	13
8	1.46	22
9	1.59	24
10	2.46	37

There are 239 clashes. The table below contains the detailed list of all clashes based on a MolProbity analysis. Bad clashes are ≥ 0.4 Angstrom. The output is limited to 100 rows.

Atom 1	Atom 2	Clash(Å)	Model ID (Worst)	Models (Total)
C:235:LEU:O	C:239:VAL:HG23	0.74	1	2
A:287:ARG:HE	A:294:LEU:H	0.71	4	3
A:196:PHE:CD1	A:238:VAL:HG21	0.68	4	1
C:3:LEU:H	C:3:LEU:HD23	0.66	1	4

Atom 1	Atom 2	Clash(Å)	Model ID (Worst)	Models (Total)
C:45:ASN:HD21	C:85:PRO:HA	0.66	10	1
C:121:ARG:HE	C:159:ARG:HH21	0.64	7	3
C:170:VAL:HG23	C:203:HIS:CE1	0.62	2	3
A:81:ALA:HB1	A:89:TYR:HA	0.61	3	2
A:69:SER:HB3	B:152:VAL:HG11	0.60	4	1
A:250:ALA:HB3	A:289:ASN:HD22	0.60	9	1
C:87:ARG:HH12	C:119:GLU:HG2	0.60	4	1
A:164:GLY:HA3	A:200:SER:H	0.60	1	1
A:121:ARG:HA	A:157:ALA:HB2	0.59	9	2
B:170:VAL:HG13	B:207:VAL:HA	0.58	1	1
B:192:PHE:HA	B:195:ILE:HD12	0.58	1	2
C:120:LEU:HB2	C:159:ARG:HH22	0.58	1	2
B:245:ILE:H	B:245:ILE:HD12	0.57	9	4
A:149:ARG:HH21	C:31:THR:HG22	0.57	9	1
A:4:ARG:HH21	A:276:GLU:HA	0.57	10	1
B:7:VAL:HG11	B:45:ASN:H	0.57	10	1
C:49:GLN:HA	C:49:GLN:HE21	0.56	8	1
B:49:GLN:HE22	B:83:MET:HA	0.56	4	2
A:61:ARG:HH12	B:156:GLN:HG2	0.56	9	1
A:56:LYS:HG3	A:61:ARG:H	0.56	2	1
A:165:ILE:H	A:165:ILE:HD13	0.55	7	1
B:209:ASP:HA	B:212:MET:HE2	0.54	5	2
B:170:VAL:HG23	B:203:HIS:CE1	0.54	9	3
A:3:LEU:H	A:3:LEU:HD23	0.54	4	2
A:87:ARG:HH21	A:123:ILE:HD11	0.54	8	1
C:170:VAL:CG2	C:203:HIS:CE1	0.54	2	1
A:250:ALA:CB	A:289:ASN:HD22	0.54	9	1
C:136:GLU:O	C:140:VAL:HG23	0.53	10	2
B:1:GLN:HG3	B:87:ARG:HH21	0.53	3	1
C:199:ARG:HE	C:203:HIS:CE1	0.53	6	1
B:169:GLN:HB2	B:203:HIS:CE1	0.53	9	1
C:43:ARG:HA	C:43:ARG:HE	0.53	1	1
A:245:ILE:H	A:245:ILE:HD12	0.52	6	4
B:201:VAL:HA	B:242:ILE:HD12	0.52	6	1
A:306:TYR:CE2	A:310:LEU:HD11	0.52	10	1

Atom 1	Atom 2	Clash(Å)	Model ID (Worst)	Models (Total)
A:69:SER:HA	B:140:VAL:HG21	0.52	4	1
B:208:PHE:CZ	B:239:VAL:HG22	0.52	4	1
A:170:VAL:HG23	A:203:HIS:CE1	0.52	3	1
C:127:TYR:CE2	C:135:LEU:HD13	0.52	5	1
A:61:ARG:H	B:159:ARG:HA	0.51	3	1
B:208:PHE:HE2	B:243:ARG:HH12	0.51	4	1
C:150:MET:HA	C:150:MET:HE3	0.51	4	1
C:7:VAL:HG22	C:44:SER:HA	0.51	3	2
A:268:ILE:O	A:272:VAL:HG23	0.50	4	1
A:196:PHE:CE1	A:238:VAL:HG21	0.50	4	1
A:199:ARG:HH22	C:23:ARG:HE	0.50	6	1
A:159:ARG:HE	A:163:ALA:HB1	0.50	8	1
B:235:LEU:O	B:239:VAL:HG23	0.50	1	2
C:245:ILE:H	C:245:ILE:HD12	0.49	6	2
C:257:MET:HE1	C:298:ILE:HG12	0.49	10	1
C:170:VAL:HG23	C:203:HIS:HE1	0.49	2	1
A:159:ARG:HH11	C:61:ARG:HA	0.49	5	1
C:231:LEU:HD23	C:234:LEU:HD12	0.49	4	1
B:1:GLN:HE22	B:119:GLU:HG2	0.49	1	1
B:23:ARG:HH12	C:198:THR:HG21	0.49	6	1
B:196:PHE:CD2	B:238:VAL:HG21	0.49	3	1
B:199:ARG:HE	B:203:HIS:CD2	0.49	7	2
B:146:TYR:CE1	B:150:MET:HE3	0.49	9	1
B:67:LEU:HB3	B:79:ILE:HG21	0.48	3	1
B:127:TYR:CD1	B:135:LEU:HD13	0.48	7	2
C:279:LEU:HA	C:282:ILE:HD12	0.48	9	1
A:253:LEU:HG	A:257:MET:HE2	0.48	1	1
B:223:ILE:O	B:223:ILE:HG22	0.48	10	3
A:71:LEU:HD23	A:75:PHE:HB3	0.48	8	1
C:287:ARG:HG2	C:293:SER:HA	0.48	10	1
B:7:VAL:HG22	B:44:SER:HA	0.48	4	1
B:221:GLU:HA	B:243:ARG:HH21	0.48	5	1
B:246:PRO:HB2	B:285:GLU:HG3	0.48	1	1
C:23:ARG:HB2	C:59:PHE:CE2	0.47	3	1
B:9:ASP:HA	B:43:ARG:HA	0.47	4	1

Atom 1	Atom 2	Clash(Å)	Model ID (Worst)	Models (Total)
B:7:VAL:HG13	B:45:ASN:H	0.47	4	1
A:96:HIS:HE1	A:107:VAL:HG21	0.47	1	1
A:6:THR:HG1	A:280:PHE:HD2	0.47	4	1
C:121:ARG:HG2	C:159:ARG:HH21	0.47	9	2
A:160:ASP:HB2	A:163:ALA:HA	0.47	9	1
B:154:LEU:HA	B:159:ARG:HE	0.47	9	1
C:199:ARG:HB3	C:203:HIS:CD2	0.47	4	2
C:148:GLN:O	C:152:VAL:HG23	0.47	1	1
A:287:ARG:NH1	A:294:LEU:H	0.47	8	1
C:245:ILE:HB	C:246:PRO:HD3	0.47	4	1
A:191:LYS:HG3	C:23:ARG:HH22	0.47	6	1
B:253:LEU:O	B:256:ALA:HB3	0.46	6	2
A:121:ARG:HH11	A:157:ALA:HA	0.46	8	1
A:299:LYS:HA	A:307:LYS:HD2	0.46	3	1
C:94:LEU:HD21	C:135:LEU:HD21	0.46	3	1
B:205:ARG:HE	B:242:ILE:HG22	0.46	5	1
B:193:ILE:HG12	B:234:LEU:HD13	0.46	2	1
C:274:ARG:NH2	C:277:ILE:HG21	0.46	5	1
A:61:ARG:HD3	B:153:VAL:HG13	0.46	5	1
A:115:ARG:HG3	A:115:ARG:HH11	0.46	6	1
A:15:GLU:CD	A:15:GLU:H	0.46	2	1
C:1:GLN:HB2	C:245:ILE:CD1	0.46	4	1
A:173:ASP:HB2	A:207:VAL:HG13	0.46	10	2
A:208:PHE:CD2	A:239:VAL:HG22	0.46	1	2
B:287:ARG:HE	B:294:LEU:H	0.46	1	1
B:7:VAL:CG1	B:45:ASN:H	0.46	4	2

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	945	872	45	28
2	945	867	51	27
3	945	867	45	33
4	945	864	52	29
5	945	855	59	31

Model ID	Analysed	Favored	Allowed	Outliers
6	945	870	44	31
7	945	866	56	23
8	945	870	42	33
9	945	870	45	30
10	945	863	59	23

There are 75 unique backbone outliers. Detailed list of outliers are tabulated below.

Chain	Res	Type	Models (Total)
A	163	ALA	10
B	260	ALA	10
A	101	ALA	9
A	260	ALA	9
A	14	ASP	8
A	164	GLY	8
B	161	PRO	8
C	224	ASP	8
A	61	ARG	7
A	162	ASP	7
A	223	ILE	7
B	160	ASP	7
C	260	ALA	7
A	7	VAL	6
A	159	ARG	6
A	316	GLU	6
B	217	PHE	6
B	228	SER	6
C	4	ARG	6
C	6	THR	6
C	161	PRO	6
C	184	LYS	6
A	166	ASP	5
B	4	ARG	5
B	159	ARG	5
B	184	LYS	5
B	277	ILE	5

Chain	Res	Type	Models (Total)
A	4	ARG	4
A	85	PRO	4
A	185	TRP	4
B	7	VAL	4
B	14	ASP	4
B	188	ASP	4
C	11	PRO	4
C	13	PHE	4
C	143	THR	4
C	160	ASP	4
C	228	SER	4
A	65	ASP	3
A	277	ILE	3
B	85	PRO	3
B	292	THR	3
C	85	PRO	3
C	159	ARG	3
C	278	ASP	3
A	2	VAL	2
A	11	PRO	2
A	291	ALA	2
B	101	ALA	2
B	291	ALA	2
C	157	ALA	2
C	200	SER	2
C	259	GLY	2
C	277	ILE	2
A	60	GLY	1
A	99	LYS	1
A	104	ASN	1
A	165	ILE	1
A	184	LYS	1
A	188	ASP	1
A	226	GLU	1
A	258	LYS	1

Chain	Res	Type	Models (Total)
B	28	GLY	1
B	29	LEU	1
B	30	GLY	1
B	143	THR	1
B	157	ALA	1
B	219	ILE	1
C	2	VAL	1
C	100	GLY	1
C	133	SER	1
C	164	GLY	1
C	223	ILE	1
C	263	ASP	1
C	291	ALA	1

Torsion angles : Protein sidechains ?

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

Model ID	Analysed	Favored	Allowed	Outliers
1	810	713	59	38
2	810	722	59	29
3	810	721	56	33
4	810	710	68	32
5	810	705	74	31
6	810	738	44	28
7	810	718	63	29
8	810	720	57	33
9	810	726	56	28
10	810	715	68	27

There are 170 unique sidechain outliers. Detailed list of outliers are tabulated below. The output is limited to 100 rows.

Chain	Res	Type	Models (Total)
A	6	THR	10
A	87	ARG	10
B	279	LEU	9
C	159	ARG	8
A	152	VAL	5

Chain	Res	Type	Models (Total)
A	242	ILE	5
B	239	VAL	5
A	124	LYS	4
B	8	THR	4
B	16	ARG	4
B	117	PRO	4
B	159	ARG	4
C	52	SER	4
C	116	THR	4
C	175	GLN	4
C	212	MET	4
C	277	ILE	4
A	103	THR	3
A	227	THR	3
A	292	THR	3
A	308	LYS	3
B	7	VAL	3
B	47	GLN	3
B	64	LEU	3
B	85	PRO	3
B	148	GLN	3
B	214	ILE	3
B	249	LEU	3
C	16	ARG	3
C	76	GLU	3
C	85	PRO	3
C	194	THR	3
C	249	LEU	3
A	11	PRO	2
A	15	GLU	2
A	72	THR	2
A	76	GLU	2
A	121	ARG	2
A	160	ASP	2
A	165	ILE	2

Chain	Res	Type	Models (Total)
A	220	GLU	2
A	231	LEU	2
A	277	ILE	2
A	279	LEU	2
B	6	THR	2
B	15	GLU	2
B	45	ASN	2
B	57	THR	2
B	71	LEU	2
B	111	ILE	2
B	121	ARG	2
B	154	LEU	2
B	172	GLN	2
B	194	THR	2
B	222	THR	2
B	240	LYS	2
B	262	THR	2
C	3	LEU	2
C	72	THR	2
C	103	THR	2
C	117	PRO	2
C	148	GLN	2
C	284	LYS	2
C	302	THR	2
A	1	GLN	1
A	3	LEU	1
A	7	VAL	1
A	8	THR	1
A	21	THR	1
A	23	ARG	1
A	27	LYS	1
A	34	GLU	1
A	37	LEU	1
A	42	SER	1
A	44	SER	1

Chain	Res	Type	Models (Total)
A	67	LEU	1
A	85	PRO	1
A	93	GLU	1
A	117	PRO	1
A	153	VAL	1
A	158	ASN	1
A	161	PRO	1
A	162	ASP	1
A	175	GLN	1
A	183	LEU	1
A	187	THR	1
A	201	VAL	1
A	207	VAL	1
A	209	ASP	1
A	210	LYS	1
A	218	GLN	1
A	244	SER	1
A	264	ASP	1
A	267	LEU	1
A	272	VAL	1
A	276	GLU	1
A	298	ILE	1
A	302	THR	1
A	307	LYS	1
B	2	VAL	1

5. Fit to Data Used for Modeling Assessment

6. Fit to Data Used for Validation Assessment

Validation for this section is under development.

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