Integrative Structure Validation Report

October 09, 2025 - 04:49 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	9A84 | pdb_00009a84
PDB-Dev ID	PDBDEV_00000369
Structure Title	52-mer bacterial gasdermin pore model from Vitiosangium sp.
Structure Authors	Johnson, A.G.; Mayer, M.L.; Schaefer, S.L.; McNamara-Bordewick, N.K.; Hummer, G.; Kranzusch, P.J.
Deposited on	2024-01-25

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

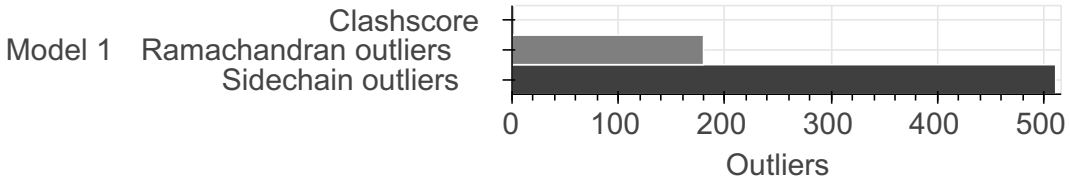
This entry consists of 1 model(s). A total of 2 dataset(s) were used to build this entry.

Name	Type	Count
2DEM class average	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	1	Gasdermin bGSDM	A	234	-	1-234	100.00 / 100.00	Atomic
				B					
				C					
				D					
				E					
				F					
				G					
				H					
				I					
				J					
				K					
				L					
				M					
				N					
				O					
				P					
				Q					
				R					

ID	Model(s)	Entity ID	Molecule name	Chain(s) [auth]	Total residues	Rigid segments	Flexible segments	Model coverage/ Starting model coverage (%)	Scale
				S					
				T					
				U					
				V					
				W					
				X					
				Y					
				Z					
				AA [a]					
				BA [b]					
				CA [c]					
				DA [d]					
				EA [e]					
				FA [f]					
				GA [g]					
				HA [h]					
				IA [i]					
				JA [j]					
				KA [k]					
				LA [l]					
				MA [m]					
				NA [n]					
				OA [o]					
				PA [p]					
				QA [q]					
				RA [r]					
				SA [s]					
				TA [t]					
				UA [u]					
				VA [v]					
				WA [w]					
				XA [x]					
				YA [y]					

ID	Model(s)	Entity ID	Molecule name	Chain(s) [auth]	Total residues	Rigid segments	Flexible segments	Model coverage/ Starting model coverage (%)	Scale
				ZA [z]					

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	Experimental model	PDB	pdb_00008sl0
2	2DEM class average	Zenodo	10.5281/zenodo.10570209

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	To make the 52-mer pore model, protomer models (PDB 8SL0) were realigned using a custom script and a geometric model based on the number of protomers observed in the major 2D classes (52). Protomers were realigned to preserve the inter-subunit hydrogen bonding pattern observed in the slinky-like oligomer.	Not available	False	False

There are 2 software packages reported in this entry.

ID	Software name	Software version	Software classification	Software location
1	Python	v3.9.7	model building	https://www.python.org/
2	MDAnalysis	v2.4.2	model building	https://www.mdanalysis.org/

3. Data quality

3.4. 2DEM class average

Validation for this section is under development.

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-partice or particle-atom pairs for which excluded volume was analysed.

Standard geometry: bond outliers

There are 59 bond length outliers in this entry (0.06% of 93860 assessed bonds). A summary is provided below.

Chain	Res	Type	Atoms	|Z|	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
L	4	P1L	SG-C7	111.00	3.95	1.73	1	1
H	4	P1L	SG-C7	110.50	3.94	1.73	1	1
HA	4	P1L	SG-C7	110.16	3.94	1.73	1	1
PA	4	P1L	SG-C7	109.22	3.92	1.73	1	1
A	4	P1L	SG-C7	109.14	3.92	1.73	1	1
NA	4	P1L	SG-C7	108.52	3.90	1.73	1	1
X	4	P1L	SG-C7	108.19	3.90	1.73	1	1
V	4	P1L	SG-C7	108.18	3.90	1.73	1	1
S	4	P1L	SG-C7	108.09	3.89	1.73	1	1
C	4	P1L	SG-C7	108.05	3.89	1.73	1	1
UA	4	P1L	SG-C7	107.90	3.89	1.73	1	1
ZA	4	P1L	SG-C7	107.78	3.89	1.73	1	1
AA	4	P1L	SG-C7	107.73	3.89	1.73	1	1
Q	4	P1L	SG-C7	107.71	3.89	1.73	1	1
R	4	P1L	SG-C7	107.67	3.89	1.73	1	1
I	4	P1L	SG-C7	107.62	3.89	1.73	1	1
GA	4	P1L	SG-C7	107.46	3.88	1.73	1	1
BA	4	P1L	SG-C7	107.43	3.88	1.73	1	1
O	4	P1L	SG-C7	107.40	3.88	1.73	1	1
Z	4	P1L	SG-C7	107.35	3.88	1.73	1	1
JA	4	P1L	SG-C7	107.34	3.88	1.73	1	1
CA	4	P1L	SG-C7	107.27	3.88	1.73	1	1
WA	4	P1L	SG-C7	107.04	3.87	1.73	1	1
MA	4	P1L	SG-C7	107.02	3.87	1.73	1	1
LA	4	P1L	SG-C7	107.01	3.87	1.73	1	1
VA	4	P1L	SG-C7	107.01	3.87	1.73	1	1
B	4	P1L	SG-C7	106.91	3.87	1.73	1	1
T	4	P1L	SG-C7	106.75	3.87	1.73	1	1
KA	4	P1L	SG-C7	106.55	3.86	1.73	1	1
U	4	P1L	SG-C7	106.41	3.86	1.73	1	1
FA	4	P1L	SG-C7	106.31	3.86	1.73	1	1

Chain	Res	Type	Atoms	|Z|	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
Y	4	P1L	SG-C7	106.31	3.86	1.73	1	1
IA	4	P1L	SG-C7	106.29	3.86	1.73	1	1
M	4	P1L	SG-C7	106.15	3.86	1.73	1	1
DA	4	P1L	SG-C7	106.11	3.86	1.73	1	1
K	4	P1L	SG-C7	106.04	3.85	1.73	1	1
QA	4	P1L	SG-C7	105.92	3.85	1.73	1	1
YA	4	P1L	SG-C7	105.89	3.85	1.73	1	1
F	4	P1L	SG-C7	105.76	3.85	1.73	1	1
XA	4	P1L	SG-C7	105.46	3.84	1.73	1	1
OA	4	P1L	SG-C7	105.41	3.84	1.73	1	1
RA	4	P1L	SG-C7	104.99	3.83	1.73	1	1
TA	4	P1L	SG-C7	104.87	3.83	1.73	1	1
G	4	P1L	SG-C7	104.76	3.83	1.73	1	1
W	4	P1L	SG-C7	104.49	3.82	1.73	1	1
J	4	P1L	SG-C7	104.38	3.82	1.73	1	1
P	4	P1L	SG-C7	104.33	3.82	1.73	1	1
N	4	P1L	SG-C7	104.16	3.82	1.73	1	1
SA	4	P1L	SG-C7	103.93	3.81	1.73	1	1
D	4	P1L	SG-C7	103.88	3.81	1.73	1	1
EA	4	P1L	SG-C7	103.40	3.80	1.73	1	1
E	4	P1L	SG-C7	103.01	3.79	1.73	1	1
I	31	HIS	ND1-CE1	4.43	1.37	1.32	1	1
TA	31	HIS	ND1-CE1	4.26	1.36	1.32	1	1
T	31	HIS	ND1-CE1	4.14	1.36	1.32	1	1
MA	24	ARG	CD-NE	4.12	1.52	1.46	1	1
YA	31	HIS	ND1-CE1	4.11	1.36	1.32	1	1
AA	31	HIS	ND1-CE1	4.08	1.36	1.32	1	1
XA	31	HIS	ND1-CE1	4.04	1.36	1.32	1	1

Standard geometry: angle outliers

There are 582 bond angle outliers in this entry (0.46% of 126672 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)
R	179	ASP	CA-CB-CG	9.22	121.82	112.60	1	1
Y	179	ASP	CA-CB-CG	7.37	119.97	112.60	1	1

Chain	Res	Type	Atoms	|Z|	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
B	179	ASP	CA-CB-CG	6.68	119.28	112.60	1	1
MA	179	ASP	CA-CB-CG	6.61	119.21	112.60	1	1
HA	179	ASP	CA-CB-CG	6.38	118.98	112.60	1	1
C	179	ASP	CA-CB-CG	6.36	118.96	112.60	1	1
J	138	ASP	CA-CB-CG	6.36	118.96	112.60	1	1
AA	136	ASP	CA-CB-CG	6.35	118.95	112.60	1	1
CA	149	ASN	CA-CB-CG	6.30	118.90	112.60	1	1
N	179	ASP	CA-CB-CG	6.27	118.87	112.60	1	1
L	136	ASP	CA-CB-CG	6.25	118.85	112.60	1	1
H	179	ASP	CA-CB-CG	6.18	118.78	112.60	1	1
W	136	ASP	CA-CB-CG	6.16	118.76	112.60	1	1
DA	115	ASN	CA-CB-CG	6.07	118.67	112.60	1	1
G	115	ASN	CA-CB-CG	6.05	118.65	112.60	1	1
MA	138	ASP	CA-CB-CG	6.04	118.64	112.60	1	1
D	136	ASP	CA-CB-CG	6.04	118.64	112.60	1	1
M	136	ASP	CA-CB-CG	6.03	118.63	112.60	1	1
G	136	ASP	CA-CB-CG	5.97	118.57	112.60	1	1
F	179	ASP	CA-CB-CG	5.95	118.55	112.60	1	1
CA	115	ASN	CA-CB-CG	5.94	118.54	112.60	1	1
YA	136	ASP	CA-CB-CG	5.94	118.54	112.60	1	1
FA	115	ASN	CA-CB-CG	5.92	118.52	112.60	1	1
J	136	ASP	CA-CB-CG	5.90	118.50	112.60	1	1
OA	136	ASP	CA-CB-CG	5.89	118.49	112.60	1	1
E	136	ASP	CA-CB-CG	5.88	118.48	112.60	1	1
EA	179	ASP	CA-CB-CG	5.85	118.45	112.60	1	1
CA	136	ASP	CA-CB-CG	5.84	118.44	112.60	1	1
K	115	ASN	CA-CB-CG	5.80	118.40	112.60	1	1
V	136	ASP	CA-CB-CG	5.78	118.38	112.60	1	1
PA	115	ASN	CA-CB-CG	5.78	118.38	112.60	1	1
WA	136	ASP	CA-CB-CG	5.78	118.38	112.60	1	1
SA	138	ASP	CA-CB-CG	5.77	118.37	112.60	1	1
Q	179	ASP	CA-CB-CG	5.76	118.36	112.60	1	1
NA	136	ASP	CA-CB-CG	5.75	118.35	112.60	1	1
SA	115	ASN	CA-CB-CG	5.74	118.34	112.60	1	1
JA	179	ASP	CA-CB-CG	5.73	118.33	112.60	1	1

Chain	Res	Type	Atoms	|Z|	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
MA	136	ASP	CA-CB-CG	5.73	118.33	112.60	1	1
KA	115	ASN	CA-CB-CG	5.72	118.32	112.60	1	1
BA	136	ASP	CA-CB-CG	5.72	118.32	112.60	1	1
L	138	ASP	CA-CB-CG	5.71	118.31	112.60	1	1
QA	136	ASP	CA-CB-CG	5.71	118.31	112.60	1	1
JA	138	ASP	CA-CB-CG	5.70	118.30	112.60	1	1
S	136	ASP	CA-CB-CG	5.69	118.29	112.60	1	1
AA	115	ASN	CA-CB-CG	5.69	118.29	112.60	1	1
K	136	ASP	CA-CB-CG	5.67	118.27	112.60	1	1
WA	115	ASN	CA-CB-CG	5.66	118.26	112.60	1	1
N	149	ASN	CA-CB-CG	5.65	118.25	112.60	1	1
E	115	ASN	CA-CB-CG	5.65	118.25	112.60	1	1
UA	115	ASN	CA-CB-CG	5.64	118.24	112.60	1	1
VA	136	ASP	CA-CB-CG	5.60	118.20	112.60	1	1
CA	179	ASP	CA-CB-CG	5.59	118.19	112.60	1	1
FA	136	ASP	CA-CB-CG	5.59	118.19	112.60	1	1
EA	136	ASP	CA-CB-CG	5.58	118.18	112.60	1	1
KA	138	ASP	CA-CB-CG	5.58	118.18	112.60	1	1
DA	136	ASP	CA-CB-CG	5.54	118.14	112.60	1	1
I	115	ASN	CA-CB-CG	5.52	118.12	112.60	1	1
U	136	ASP	CA-CB-CG	5.50	118.10	112.60	1	1
D	138	ASP	CA-CB-CG	5.49	118.09	112.60	1	1
LA	179	ASP	CA-CB-CG	5.49	118.09	112.60	1	1
BA	115	ASN	CA-CB-CG	5.48	118.08	112.60	1	1
GA	179	ASP	CA-CB-CG	5.47	118.07	112.60	1	1
UA	136	ASP	CA-CB-CG	5.45	118.05	112.60	1	1
PA	104	ASN	CA-CB-CG	5.45	118.05	112.60	1	1
W	179	ASP	CA-CB-CG	5.45	118.05	112.60	1	1
V	89	VAL	C-N-CA	5.42	131.45	121.70	1	1
U	179	ASP	CA-CB-CG	5.41	118.01	112.60	1	1
XA	136	ASP	CA-CB-CG	5.40	118.00	112.60	1	1
Z	136	ASP	CA-CB-CG	5.39	117.99	112.60	1	1
AA	138	ASP	CA-CB-CG	5.38	117.98	112.60	1	1
A	136	ASP	CA-CB-CG	5.38	117.98	112.60	1	1
LA	136	ASP	CA-CB-CG	5.38	117.98	112.60	1	1

Chain	Res	Type	Atoms	|Z|	Observed (Å)	Ideal (Å)	Model ID (Worst)	Models (Total)
IA	136	ASP	CA-CB-CG	5.37	117.97	112.60	1	1
R	138	ASP	CA-CB-CG	5.37	117.97	112.60	1	1
TA	136	ASP	CA-CB-CG	5.32	117.92	112.60	1	1
EA	115	ASN	CA-CB-CG	5.32	117.92	112.60	1	1
GA	136	ASP	CA-CB-CG	5.30	117.90	112.60	1	1
K	179	ASP	CA-CB-CG	5.28	117.88	112.60	1	1
N	136	ASP	CA-CB-CG	5.28	117.88	112.60	1	1
RA	138	ASP	CA-CB-CG	5.27	117.87	112.60	1	1
ZA	115	ASN	CA-CB-CG	5.27	117.87	112.60	1	1
TA	179	ASP	CA-CB-CG	5.26	117.86	112.60	1	1
DA	22	LEU	N-CA-CB	5.26	119.44	110.50	1	1
KA	136	ASP	CA-CB-CG	5.24	117.84	112.60	1	1
X	115	ASN	CA-CB-CG	5.24	117.84	112.60	1	1
HA	115	ASN	CA-CB-CG	5.24	117.84	112.60	1	1
O	136	ASP	CA-CB-CG	5.21	117.81	112.60	1	1
QA	149	ASN	CA-CB-CG	5.21	117.81	112.60	1	1
ZA	136	ASP	CA-CB-CG	5.19	117.79	112.60	1	1
GA	115	ASN	CA-CB-CG	5.18	117.78	112.60	1	1
IA	89	VAL	C-N-CA	5.18	131.02	121.70	1	1
EA	22	LEU	N-CA-CB	5.17	119.29	110.50	1	1
F	136	ASP	CA-CB-CG	5.16	117.76	112.60	1	1
O	138	ASP	CA-CB-CG	5.16	117.76	112.60	1	1
E	149	ASN	CA-CB-CG	5.16	117.76	112.60	1	1
FA	22	LEU	N-CA-CB	5.15	119.26	110.50	1	1
P	136	ASP	CA-CB-CG	5.12	117.72	112.60	1	1
VA	89	VAL	C-N-CA	5.10	130.88	121.70	1	1
J	179	ASP	CA-CB-CG	5.08	117.68	112.60	1	1
T	179	ASP	CA-CB-CG	5.08	117.68	112.60	1	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 atomic models in this entry.

Model ID	Clash score	Number of clashes
1	2.61	480

There are 480 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)
SA:86:LEU:HD13	TA:186:VAL:HG12	0.66	1	1
YA:89:VAL:HG21	ZA:185:LYS:HG2	0.56	1	1
XA:89:VAL:HG21	YA:185:LYS:HG2	0.53	1	1
SA:86:LEU:HD22	TA:186:VAL:CG1	0.53	1	1
JA:89:VAL:HG21	KA:185:LYS:HG2	0.52	1	1
SA:86:LEU:HD22	TA:186:VAL:HG11	0.52	1	1
SA:86:LEU:CD1	TA:186:VAL:HG12	0.51	1	1
E:89:VAL:HG21	F:185:LYS:HG2	0.51	1	1
QA:89:VAL:HG21	RA:185:LYS:HG2	0.51	1	1
U:89:VAL:HG21	V:185:LYS:HG2	0.51	1	1
S:89:VAL:HG21	T:185:LYS:HG2	0.51	1	1
F:229:LEU:HB2	G:141:VAL:HG13	0.50	1	1
Z:229:LEU:HB2	AA:141:VAL:HG13	0.50	1	1
TA:89:VAL:HG21	UA:185:LYS:HG2	0.50	1	1
NA:229:LEU:HB2	OA:141:VAL:HG13	0.50	1	1
UA:229:LEU:HB2	VA:141:VAL:HG13	0.50	1	1
H:89:VAL:HG21	I:185:LYS:HG2	0.49	1	1
O:89:VAL:HG21	P:185:LYS:HG2	0.49	1	1
B:229:LEU:HB2	C:141:VAL:HG13	0.49	1	1
QA:229:LEU:HB2	RA:141:VAL:HG13	0.49	1	1
L:229:LEU:HB2	M:141:VAL:HG13	0.49	1	1
DA:229:LEU:HB2	EA:141:VAL:HG13	0.49	1	1
Y:229:LEU:HB2	Z:141:VAL:HG13	0.49	1	1
A:141:VAL:HG13	ZA:229:LEU:HB2	0.49	1	1
EA:229:LEU:HB2	FA:141:VAL:HG13	0.49	1	1
PA:229:LEU:HB2	QA:141:VAL:HG13	0.49	1	1
KA:89:VAL:HG21	LA:185:LYS:HG2	0.49	1	1
I:229:LEU:HB2	J:141:VAL:HG13	0.49	1	1
BA:229:LEU:HB2	CA:141:VAL:HG13	0.49	1	1
K:24:ARG:HH21	K:27:ILE:CD	0.49	1	1
K:229:LEU:HB2	L:141:VAL:HG13	0.49	1	1
HA:229:LEU:HB2	IA:141:VAL:HG13	0.49	1	1
KA:229:LEU:HB2	LA:141:VAL:HG13	0.49	1	1
NA:24:ARG:HH21	NA:27:ILE:CD	0.49	1	1
SA:229:LEU:HB2	TA:141:VAL:HG13	0.49	1	1

Atom 1	Atom 2	Clash(Å)	Model ID (Worst)	Models (Total)
JA:229:LEU:HB2	KA:141:VAL:HG13	0.49	1	1
E:229:LEU:HB2	F:141:VAL:HG13	0.48	1	1
J:229:LEU:HB2	K:141:VAL:HG13	0.48	1	1
O:229:LEU:HB2	P:141:VAL:HG13	0.48	1	1
Y:89:VAL:HG21	Z:185:LYS:HG2	0.48	1	1
MA:229:LEU:HB2	NA:141:VAL:HG13	0.48	1	1
FA:229:LEU:HB2	GA:141:VAL:HG13	0.48	1	1
A:229:LEU:HB2	B:141:VAL:HG13	0.48	1	1
G:229:LEU:HB2	H:141:VAL:HG13	0.48	1	1
H:229:LEU:HB2	I:141:VAL:HG13	0.48	1	1
P:229:LEU:HB2	Q:141:VAL:HG13	0.48	1	1
Q:229:LEU:HB2	R:141:VAL:HG13	0.48	1	1
AA:229:LEU:HB2	BA:141:VAL:HG13	0.48	1	1
IA:229:LEU:HB2	JA:141:VAL:HG13	0.48	1	1
OA:229:LEU:HB2	PA:141:VAL:HG13	0.48	1	1
WA:229:LEU:HB2	XA:141:VAL:HG13	0.48	1	1
R:229:LEU:HB2	S:141:VAL:HG13	0.48	1	1
C:229:LEU:HB2	D:141:VAL:HG13	0.48	1	1
M:229:LEU:HB2	N:141:VAL:HG13	0.48	1	1
GA:229:LEU:HB2	HA:141:VAL:HG13	0.48	1	1
TA:229:LEU:HB2	UA:141:VAL:HG13	0.48	1	1
N:89:VAL:HG21	O:185:LYS:HG2	0.48	1	1
V:229:LEU:HB2	W:141:VAL:HG13	0.48	1	1
X:229:LEU:HB2	Y:141:VAL:HG13	0.48	1	1
LA:229:LEU:HB2	MA:141:VAL:HG13	0.48	1	1
D:229:LEU:HB2	E:141:VAL:HG13	0.48	1	1
T:229:LEU:HB2	U:141:VAL:HG13	0.48	1	1
CA:229:LEU:HB2	DA:141:VAL:HG13	0.48	1	1
RA:229:LEU:HB2	SA:141:VAL:HG13	0.48	1	1
D:89:VAL:HG21	E:185:LYS:HG2	0.48	1	1
G:89:VAL:HG21	H:185:LYS:HG2	0.48	1	1
S:229:LEU:HB2	T:141:VAL:HG13	0.48	1	1
Y:24:ARG:HH21	Y:27:ILE:CD	0.48	1	1
VA:229:LEU:HB2	WA:141:VAL:HG13	0.48	1	1
W:229:LEU:HB2	X:141:VAL:HG13	0.47	1	1

Atom 1	Atom 2	Clash(Å)	Model ID (Worst)	Models (Total)
HA:24:ARG:HH21	HA:27:ILE:CD	0.47	1	1
XA:229:LEU:HB2	YA:141:VAL:HG13	0.47	1	1
P:89:VAL:HG21	Q:185:LYS:HG2	0.47	1	1
U:229:LEU:HB2	V:141:VAL:HG13	0.47	1	1
FA:89:VAL:HG21	GA:185:LYS:HG2	0.47	1	1
L:24:ARG:HH21	L:27:ILE:CD	0.47	1	1
X:89:VAL:HG21	Y:185:LYS:HG2	0.47	1	1
I:89:VAL:HG21	J:185:LYS:HG2	0.47	1	1
MA:89:VAL:HG21	NA:185:LYS:HG2	0.47	1	1
YA:229:LEU:HB2	ZA:141:VAL:HG13	0.47	1	1
N:229:LEU:HB2	O:141:VAL:HG13	0.46	1	1
U:24:ARG:HH21	U:27:ILE:CD	0.46	1	1
P:24:ARG:HH21	P:27:ILE:CD	0.46	1	1
F:89:VAL:HG21	G:185:LYS:HG2	0.46	1	1
LA:89:VAL:HG21	MA:185:LYS:HG2	0.46	1	1
SA:24:ARG:HH21	SA:27:ILE:CD	0.46	1	1
Z:89:VAL:HG21	AA:185:LYS:HG2	0.46	1	1
GA:24:ARG:HH21	GA:27:ILE:CD	0.46	1	1
FA:24:ARG:HH21	FA:27:ILE:CD	0.45	1	1
OA:24:ARG:HH21	OA:27:ILE:CD	0.45	1	1
L:89:VAL:HG21	M:185:LYS:HG2	0.45	1	1
MA:24:ARG:HH21	MA:27:ILE:CD	0.45	1	1
SA:89:VAL:HG21	TA:185:LYS:HG2	0.45	1	1
LA:24:ARG:HH21	LA:27:ILE:CD	0.45	1	1
M:15:LEU:HD22	N:22:LEU:HD13	0.45	1	1
E:84:ASN:O	F:187:VAL:HA	0.45	1	1
M:24:ARG:HH21	M:27:ILE:CD	0.45	1	1
RA:89:VAL:HG21	SA:185:LYS:HG2	0.45	1	1
XA:84:ASN:O	YA:187:VAL:HA	0.45	1	1
T:24:ARG:HH21	T:27:ILE:CD	0.44	1	1

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	11856	10687	989	180

There are 180 unique backbone outliers. Detailed list of outliers are tabulated below. The output is limited to 100 rows.

Chain	Res	Type	Models (Total)
A	182	GLU	1
A	183	ILE	1
A	223	LYS	1
AA	182	GLU	1
AA	183	ILE	1
AA	223	LYS	1
B	131	LYS	1
B	182	GLU	1
B	183	ILE	1
B	206	LYS	1
B	223	LYS	1
BA	182	GLU	1
BA	183	ILE	1
BA	223	LYS	1
C	182	GLU	1
C	183	ILE	1
C	223	LYS	1
CA	131	LYS	1
CA	182	GLU	1
CA	183	ILE	1
CA	223	LYS	1
D	182	GLU	1
D	183	ILE	1
D	223	LYS	1
DA	182	GLU	1
DA	183	ILE	1
DA	223	LYS	1
E	131	LYS	1
E	182	GLU	1
E	183	ILE	1
E	223	LYS	1
EA	182	GLU	1
EA	183	ILE	1
EA	223	LYS	1

Chain	Res	Type	Models (Total)
F	131	LYS	1
F	182	GLU	1
F	183	ILE	1
F	223	LYS	1
FA	131	LYS	1
FA	182	GLU	1
FA	183	ILE	1
FA	206	LYS	1
FA	223	LYS	1
G	89	VAL	1
G	182	GLU	1
G	183	ILE	1
G	223	LYS	1
GA	182	GLU	1
GA	183	ILE	1
GA	223	LYS	1
H	182	GLU	1
H	183	ILE	1
H	223	LYS	1
HA	182	GLU	1
HA	183	ILE	1
HA	223	LYS	1
I	182	GLU	1
I	183	ILE	1
I	223	LYS	1
IA	182	GLU	1
IA	183	ILE	1
IA	223	LYS	1
J	182	GLU	1
J	183	ILE	1
J	223	LYS	1
JA	131	LYS	1
JA	182	GLU	1
JA	183	ILE	1
JA	223	LYS	1

Chain	Res	Type	Models (Total)
K	90	LEU	1
K	182	GLU	1
K	183	ILE	1
K	223	LYS	1
KA	182	GLU	1
KA	183	ILE	1
KA	206	LYS	1
KA	223	LYS	1
L	131	LYS	1
L	182	GLU	1
L	183	ILE	1
L	223	LYS	1
LA	182	GLU	1
LA	183	ILE	1
LA	223	LYS	1
M	131	LYS	1
M	182	GLU	1
M	183	ILE	1
M	223	LYS	1
MA	182	GLU	1
MA	183	ILE	1
MA	223	LYS	1
N	131	LYS	1
N	182	GLU	1
N	183	ILE	1
N	223	LYS	1
NA	182	GLU	1
NA	183	ILE	1
NA	223	LYS	1
O	182	GLU	1
O	183	ILE	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	9100	7627	962	511

There are 511 unique sidechain outliers. Detailed list of outliers are tabulated below. The output is limited to 100 rows.

Chain	Res	Type	Models (Total)
A	35	GLN	1
A	47	GLU	1
A	76	ASN	1
A	86	LEU	1
A	87	LYS	1
A	88	SER	1
A	90	LEU	1
A	104	ASN	1
A	115	ASN	1
A	119	ASP	1
A	124	LEU	1
AA	35	GLN	1
AA	76	ASN	1
AA	86	LEU	1
AA	87	LYS	1
AA	88	SER	1
AA	104	ASN	1
AA	119	ASP	1
AA	122	GLU	1
AA	124	LEU	1
B	35	GLN	1
B	87	LYS	1
B	88	SER	1
B	104	ASN	1
B	119	ASP	1
B	122	GLU	1
B	124	LEU	1
B	141	VAL	1
BA	35	GLN	1
BA	47	GLU	1
BA	86	LEU	1

Chain	Res	Type	Models (Total)
BA	87	LYS	1
BA	88	SER	1
BA	104	ASN	1
BA	119	ASP	1
BA	124	LEU	1
BA	138	ASP	1
BA	141	VAL	1
C	35	GLN	1
C	47	GLU	1
C	86	LEU	1
C	87	LYS	1
C	88	SER	1
C	104	ASN	1
C	119	ASP	1
C	124	LEU	1
CA	35	GLN	1
CA	47	GLU	1
CA	86	LEU	1
CA	87	LYS	1
CA	88	SER	1
CA	104	ASN	1
CA	119	ASP	1
CA	122	GLU	1
CA	124	LEU	1
D	35	GLN	1
D	47	GLU	1
D	76	ASN	1
D	86	LEU	1
D	87	LYS	1
D	88	SER	1
D	90	LEU	1
D	104	ASN	1
D	115	ASN	1
D	119	ASP	1
D	122	GLU	1

Chain	Res	Type	Models (Total)
D	124	LEU	1
D	177	GLN	1
DA	35	GLN	1
DA	47	GLU	1
DA	76	ASN	1
DA	87	LYS	1
DA	88	SER	1
DA	104	ASN	1
DA	119	ASP	1
DA	122	GLU	1
DA	124	LEU	1
E	35	GLN	1
E	47	GLU	1
E	86	LEU	1
E	87	LYS	1
E	88	SER	1
E	104	ASN	1
E	119	ASP	1
E	122	GLU	1
E	124	LEU	1
EA	35	GLN	1
EA	47	GLU	1
EA	87	LYS	1
EA	88	SER	1
EA	104	ASN	1
EA	119	ASP	1
EA	122	GLU	1
EA	124	LEU	1
F	35	GLN	1
F	86	LEU	1
F	87	LYS	1
F	88	SER	1
F	104	ASN	1
F	115	ASN	1

5. Fit to Data Used for Modeling Assessment

5.4. 2DEM class average

Validation for this section is under development.

6. Fit to Data Used for Validation Assessment

Validation for this section is under development.

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