



Full wwPDB NMR Structure Validation Report ⓘ

Apr 20, 2026 – 08:24 AM EDT

PDB ID : 7R7P / pdb_00007r7p
BMRB ID : 30929
Title : Immature HIV-1 CACTD-SP1 lattice with Bevirimat (BVM) and Inositol hexakisphosphate (IP6)
Authors : Sarkar, S.; Zadrozny, K.K.; Zadorozhnyi, R.; Russell, R.W.; Quinn, C.M.; Kleinpeter, A.; Ablan, S.; Meshkin, H.; Perilla, J.R.; Ganser-Pornillos, B.K.; Pornillos, O.; Freed, E.O.; Gronenborn, A.M.; Polenova, T.
Deposited on : 2021-06-25

This is a Full wwPDB NMR Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/NMRValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
wwPDB-RCI : v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV : Wang et al. (2010)
wwPDB-ShiftChecker : v1.2
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

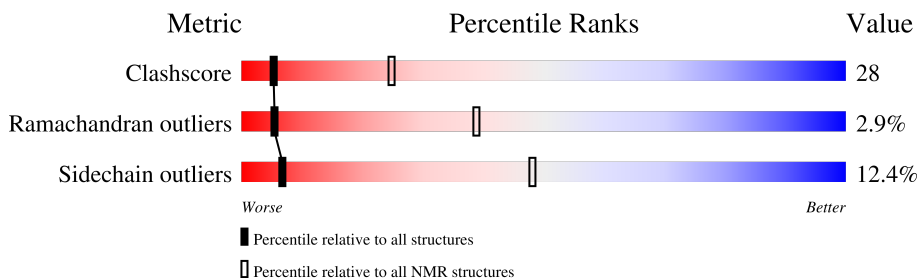
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

SOLID-STATE NMR

The overall completeness of chemical shifts assignment is 9%.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	NMR archive (#Entries)
Clashscore	229148	14424
Ramachandran outliers	224038	12848
Sidechain outliers	223484	12823

The table below summarises the geometric issues observed across the polymeric chains and their fit to the experimental data. The red, orange, yellow and green segments indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A cyan segment indicates the fraction of residues that are not part of the well-defined cores, and a grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	G	102	
1	H	102	
1	I	102	
1	J	102	
1	K	102	
1	L	102	

2 Ensemble composition and analysis

This entry contains 5 models. Model 1 is the overall representative, medoid model (most similar to other models).

The following residues are included in the computation of the global validation metrics.

Well-defined (core) protein residues			
Well-defined core	Residue range (total)	Backbone RMSD (Å)	Medoid model
1	G:144-G:245, H:144-H:245, I:144-I:245, J:144-J:245, K:144-K:245, L:144-L:245 (612)	0.85	1

Ill-defined regions of proteins are excluded from the global statistics.

Ligands and non-protein polymers are included in the analysis.

The models can be grouped into 2 clusters and 1 single-model cluster was found.

Cluster number	Models
1	3, 5
2	1, 4
Single-model clusters	2

3 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 9444 atoms, of which 4728 are hydrogens and 0 are deuteriums.

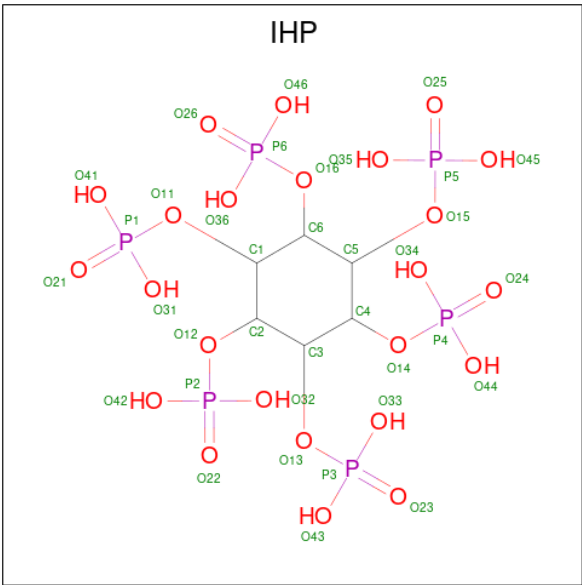
- Molecule 1 is a protein called Gag polypeptide.

Mol	Chain	Residues	Atoms						Trace
1	G	102	Total	C	H	N	O	S	0
			1551	479	778	136	151	7	
1	H	102	Total	C	H	N	O	S	0
			1551	479	778	136	151	7	
1	I	102	Total	C	H	N	O	S	0
			1551	479	778	136	151	7	
1	J	102	Total	C	H	N	O	S	0
			1551	479	778	136	151	7	
1	K	102	Total	C	H	N	O	S	0
			1551	479	778	136	151	7	
1	L	102	Total	C	H	N	O	S	0
			1551	479	778	136	151	7	

There are 18 discrepancies between the modelled and reference sequences:

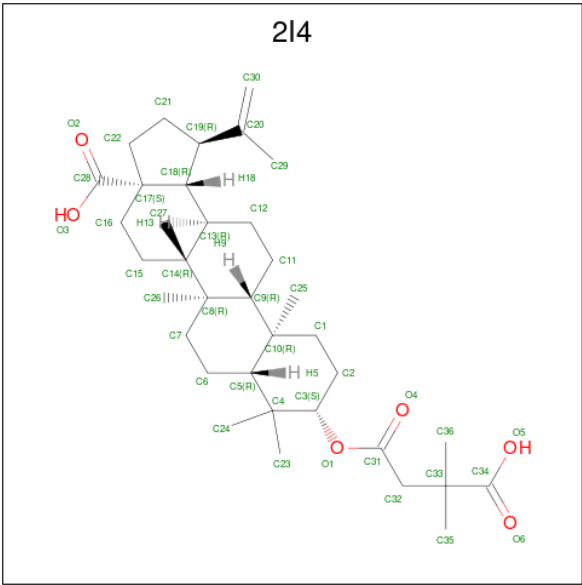
Chain	Residue	Modelled	Actual	Comment	Reference
G	144	GLY	-	expression tag	UNP Q72497
G	145	GLY	-	expression tag	UNP Q72497
G	241	THR	PRO	engineered mutation	UNP Q72497
H	144	GLY	-	expression tag	UNP Q72497
H	145	GLY	-	expression tag	UNP Q72497
H	241	THR	PRO	engineered mutation	UNP Q72497
I	144	GLY	-	expression tag	UNP Q72497
I	145	GLY	-	expression tag	UNP Q72497
I	241	THR	PRO	engineered mutation	UNP Q72497
J	144	GLY	-	expression tag	UNP Q72497
J	145	GLY	-	expression tag	UNP Q72497
J	241	THR	PRO	engineered mutation	UNP Q72497
K	144	GLY	-	expression tag	UNP Q72497
K	145	GLY	-	expression tag	UNP Q72497
K	241	THR	PRO	engineered mutation	UNP Q72497
L	144	GLY	-	expression tag	UNP Q72497
L	145	GLY	-	expression tag	UNP Q72497
L	241	THR	PRO	engineered mutation	UNP Q72497

- Molecule 2 is INOSITOL HEXAKISPHOSPHATE (CCD ID: IHP) (formula: $C_6H_{18}O_{24}P_6$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				
2	G	1	Total	C	H	O	P
			42	6	6	24	6

- Molecule 3 is 3alpha-[(3-carboxy-3-methylbutanoyl)oxy]-8alpha,9beta,10alpha,13alpha,17alpha,19beta-lup-20(29)-en-28-oic acid (CCD ID: 2I4) (formula: C₃₆H₅₆O₆) (labeled as "Ligand of Interest" by depositor).



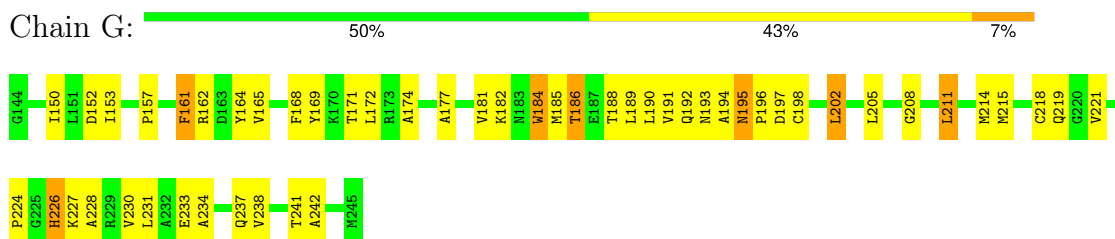
Mol	Chain	Residues	Atoms				
3	I	1	Total	C	H	O	
			96	36	54	6	

4 Residue-property plots [i](#)

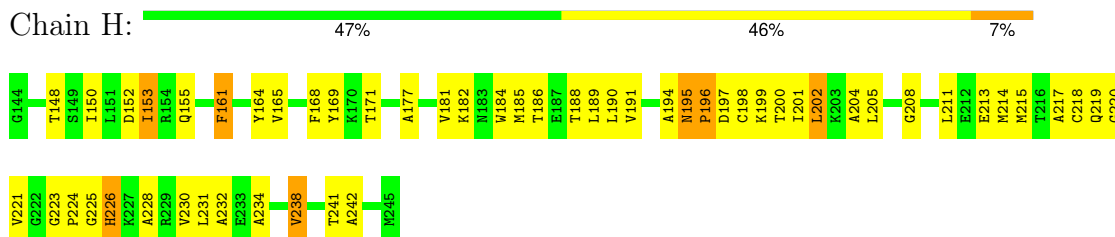
4.1 Average score per residue in the NMR ensemble

These plots are provided for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic is the same as shown in the summary in section 1 of this report. The second graphic shows the sequence where residues are colour-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outliers are shown as green connectors. Residues which are classified as ill-defined in the NMR ensemble, are shown in cyan with an underline colour-coded according to the previous scheme. Residues which were present in the experimental sample, but not modelled in the final structure are shown in grey.

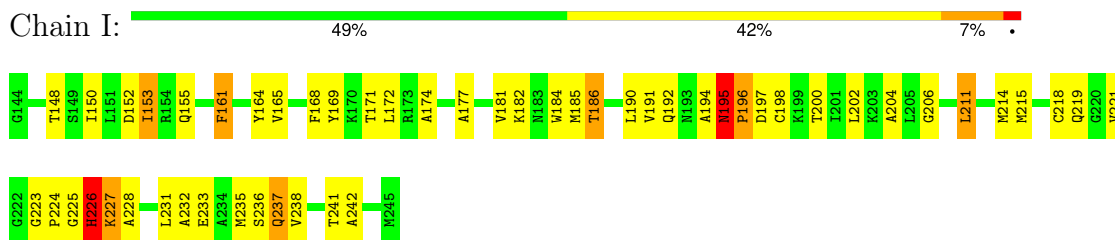
• Molecule 1: Gag polyprotein



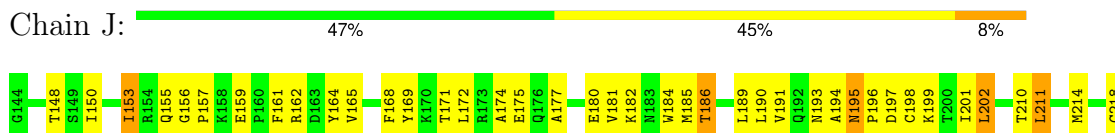
• Molecule 1: Gag polyprotein



• Molecule 1: Gag polyprotein



• Molecule 1: Gag polyprotein





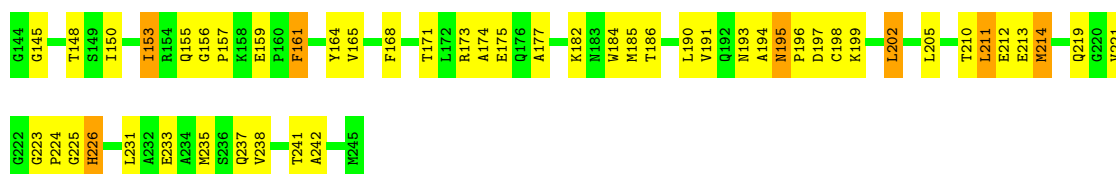
- Molecule 1: Gag polyprotein

Chain K: 52% 41% 6%



- Molecule 1: Gag polyprotein

Chain L: 51% 42% 7%



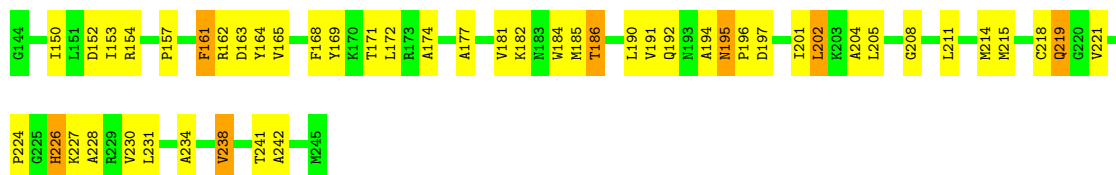
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1 (medoid)

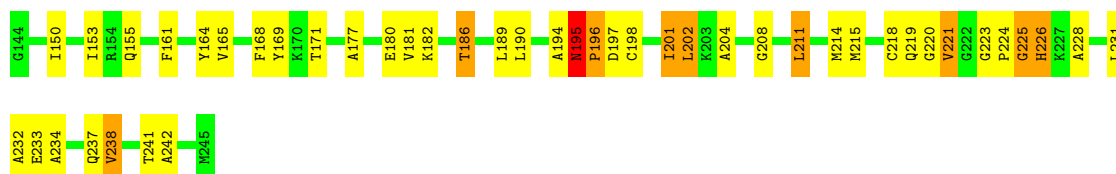
- Molecule 1: Gag polyprotein

Chain G: 52% 41% 7%

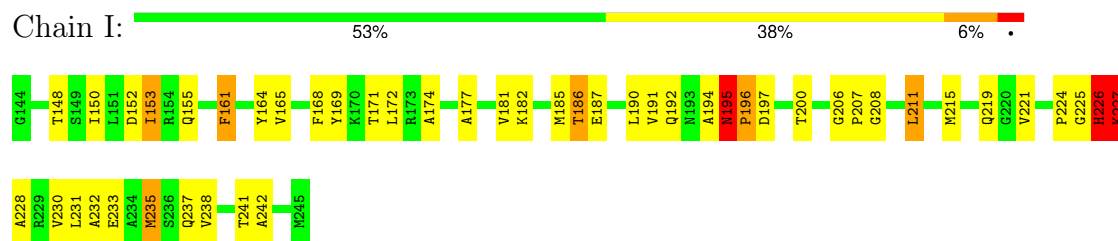


- Molecule 1: Gag polyprotein

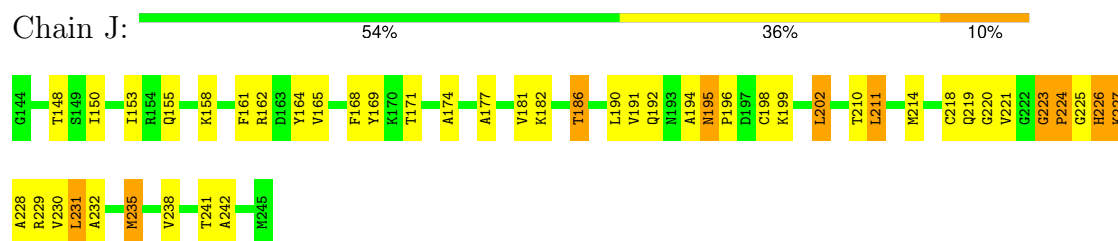
Chain H: 56% 34% 9%



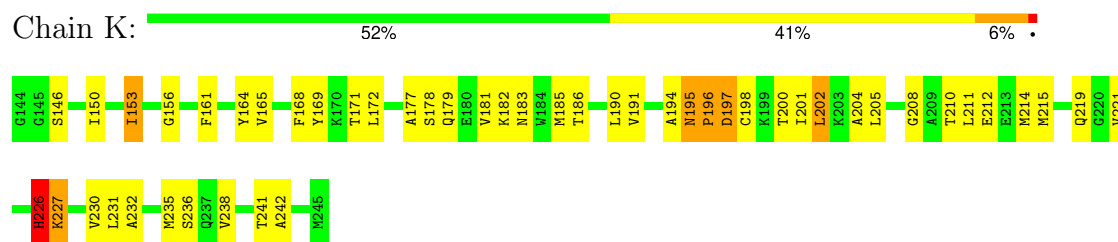
- Molecule 1: Gag polypeptide



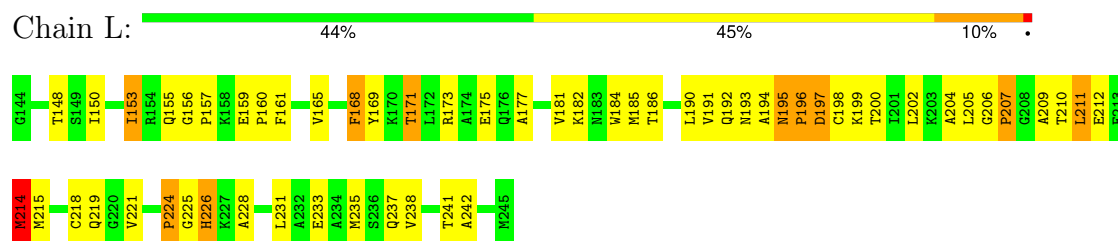
- Molecule 1: Gag polypeptide



- Molecule 1: Gag polypeptide

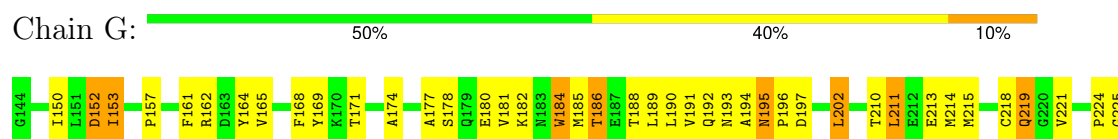


- Molecule 1: Gag polypeptide



4.2.2 Score per residue for model 2

- Molecule 1: Gag polypeptide





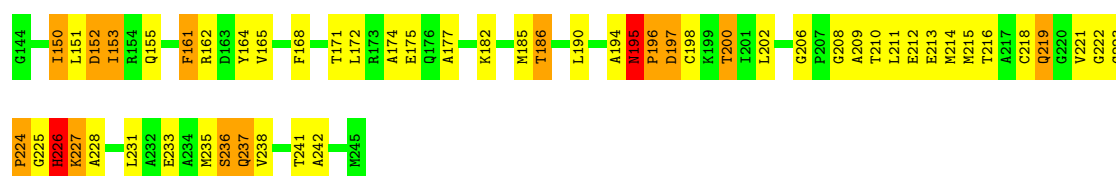
● Molecule 1: Gag polyprotein

Chain H: 48% 37% 15%



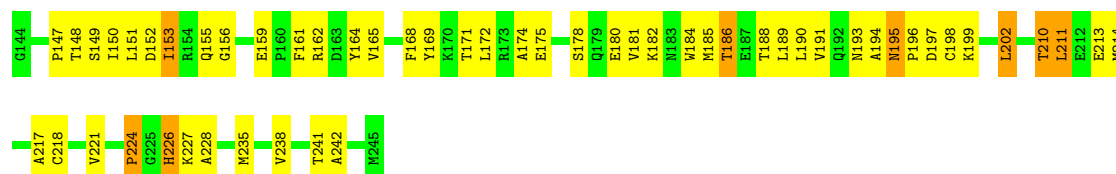
● Molecule 1: Gag polyprotein

Chain I: 47% 38% 13%



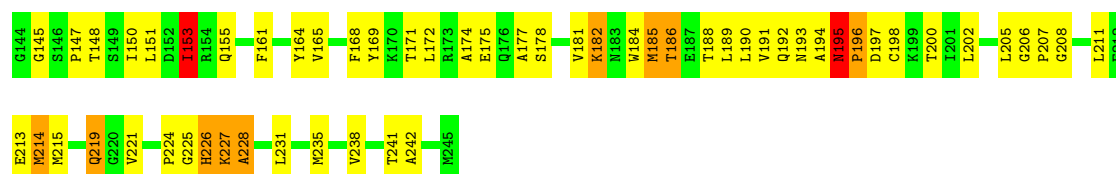
● Molecule 1: Gag polyprotein

Chain J: 47% 45% 8%



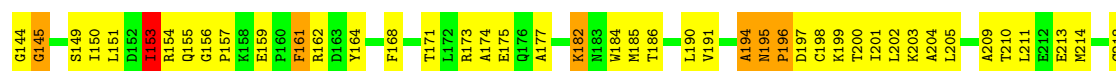
● Molecule 1: Gag polyprotein

Chain K: 45% 44% 9%



● Molecule 1: Gag polyprotein

Chain L: 45% 45% 9%

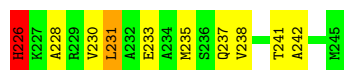




4.2.3 Score per residue for model 3

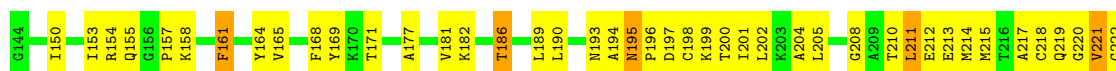
- Molecule 1: Gag polypeptide

Chain G: 54% 37% 8%



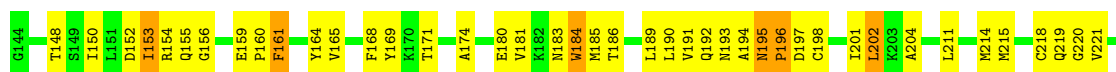
- Molecule 1: Gag polypeptide

Chain H: 47% 45% 8%



- Molecule 1: Gag polypeptide

Chain I: 46% 44% 8%



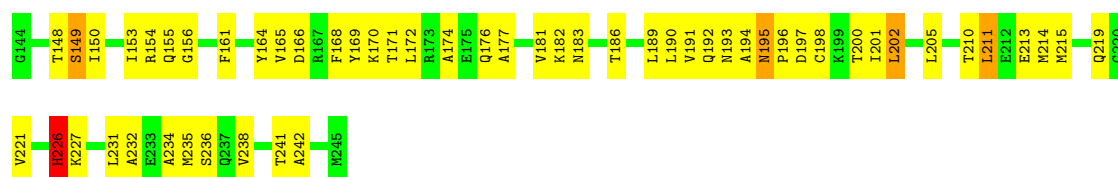
- Molecule 1: Gag polypeptide

Chain J: 41% 49% 9%



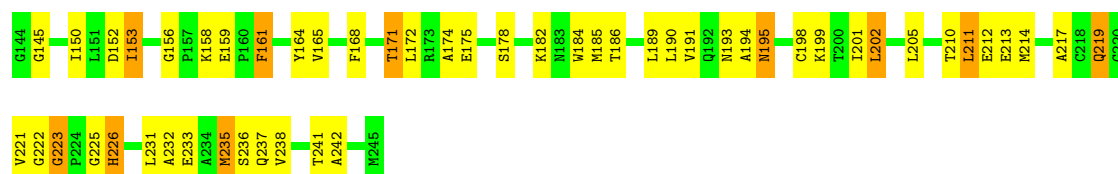
- Molecule 1: Gag polypeptide

Chain K: 47% 48% 5%



- Molecule 1: Gag polyprotein

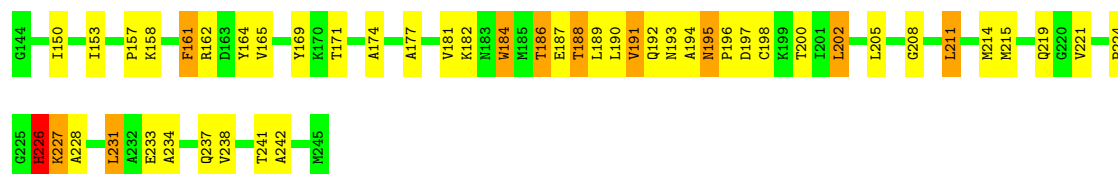
Chain L: 49% 41% 10%



4.2.4 Score per residue for model 4

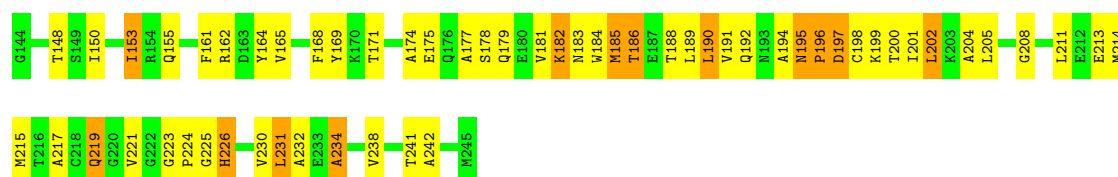
- Molecule 1: Gag polyprotein

Chain G: 53% 36% 10%



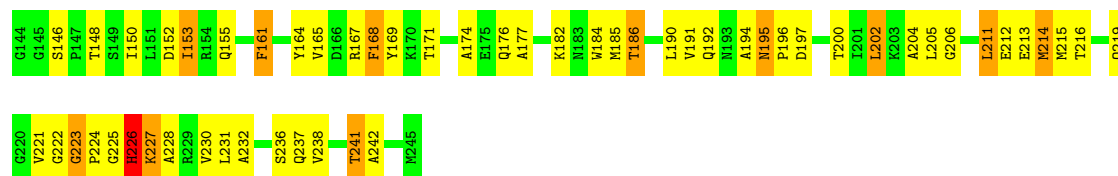
- Molecule 1: Gag polyprotein

Chain H: 44% 43% 13%

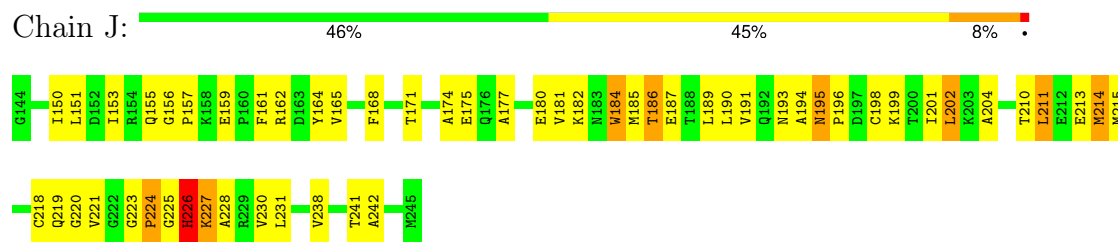


- Molecule 1: Gag polyprotein

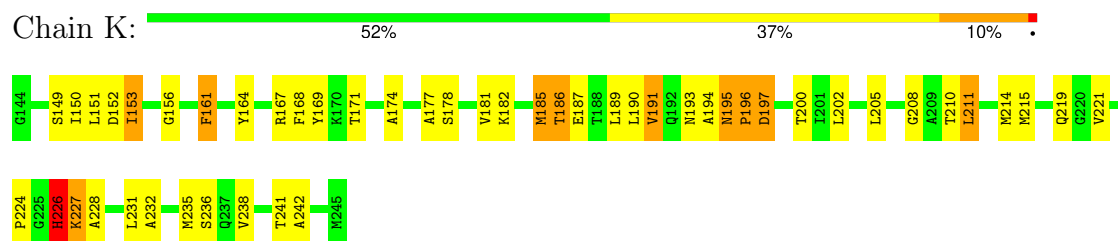
Chain I: 46% 42% 11%



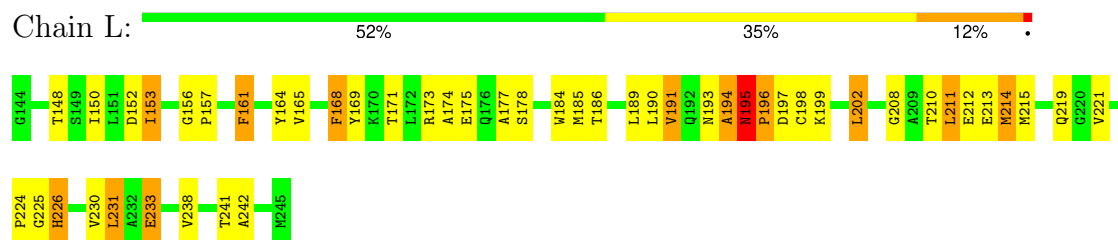
- Molecule 1: Gag polyprotein



- Molecule 1: Gag polypeptide

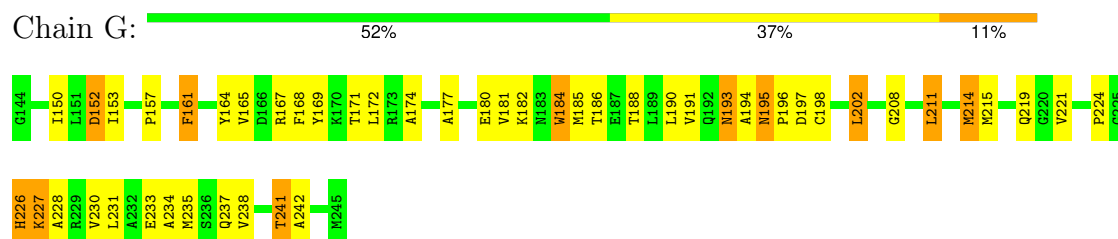


- Molecule 1: Gag polypeptide

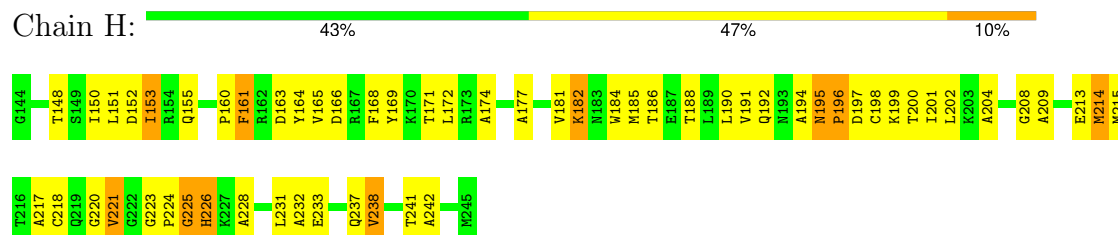


4.2.5 Score per residue for model 5

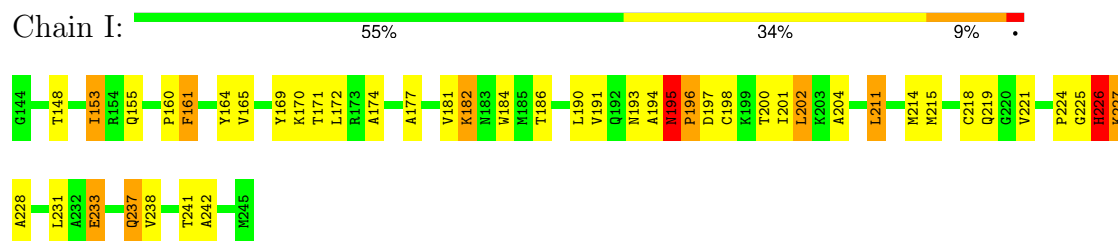
- Molecule 1: Gag polypeptide



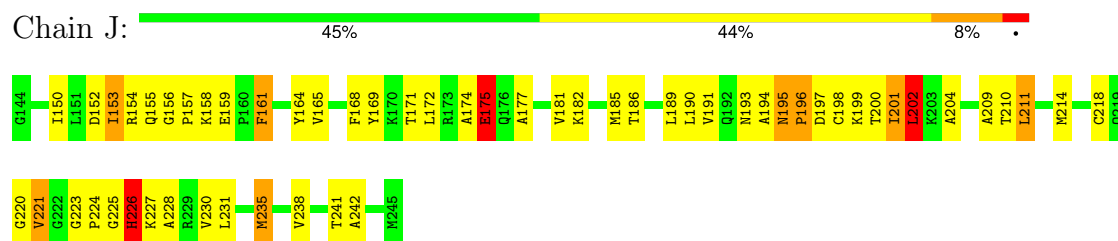
- Molecule 1: Gag polypeptide



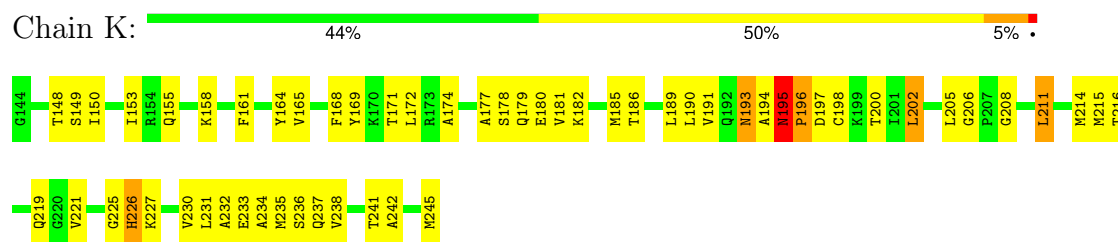
• Molecule 1: Gag polypeptide



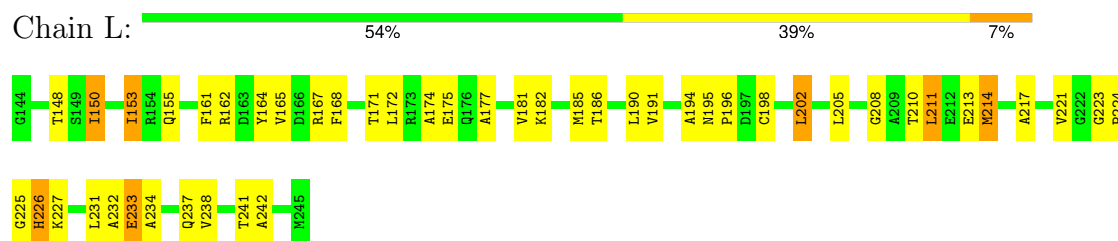
• Molecule 1: Gag polypeptide



• Molecule 1: Gag polypeptide



• Molecule 1: Gag polypeptide



5 Refinement protocol and experimental data overview

The models were refined using the following method: *simulated annealing*.

Of the 100 calculated structures, 5 were deposited, based on the following criterion: *structures with the lowest energy*.

The following table shows the software used for structure solution, optimisation and refinement.

Software name	Classification	Version
TALOS-N	structure calculation	
X-PLOR NIH	structure calculation	2.53
X-PLOR NIH	refinement	2.53

The following table shows chemical shift validation statistics as aggregates over all chemical shift files. Detailed validation can be found in section 7 of this report.

Chemical shift file(s)	working_cs.cif
Number of chemical shift lists	1
Total number of shifts	770
Number of shifts mapped to atoms	770
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	9%

Note: This is a solid-state NMR structure, where hydrogen atoms are typically not assigned a chemical shift value, which may lead to lower completeness of assignment measure.

6 Model quality (i)

6.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: 2I4, IHP

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the (average) root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#Z>5	RMSZ	#Z>5
1	G	1.17±0.02	2±1/785 (0.3± 0.1%)	1.34±0.02	3±0/1060 (0.3± 0.0%)
1	H	1.07±0.02	1±1/785 (0.2± 0.1%)	1.32±0.03	5±1/1060 (0.5± 0.1%)
1	I	1.16±0.04	3±0/785 (0.4± 0.0%)	1.32±0.04	4±0/1060 (0.4± 0.0%)
1	J	1.14±0.04	3±0/785 (0.4± 0.1%)	1.35±0.01	2±1/1060 (0.2± 0.1%)
1	K	1.13±0.03	3±0/785 (0.4± 0.1%)	1.34±0.04	3±1/1060 (0.3± 0.1%)
1	L	1.06±0.01	0±0/785 (0.0± 0.0%)	1.31±0.02	5±2/1060 (0.5± 0.2%)
All	All	1.12	64/23550 (0.3%)	1.33	111/31800 (0.3%)

All unique bond outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)	Models	
								Worst	Total
1	I	226	HIS	CA-C	-8.60	1.41	1.53	4	5
1	K	226	HIS	C-N	-8.51	1.22	1.33	1	5
1	G	226	HIS	CA-C	-8.45	1.42	1.53	4	4
1	J	226	HIS	C-N	-8.07	1.23	1.33	5	5
1	K	227	LYS	N-CA	-7.89	1.36	1.46	1	5
1	I	226	HIS	C-N	-7.68	1.23	1.33	1	5
1	J	227	LYS	N-CA	-6.98	1.37	1.46	5	5
1	I	227	LYS	N-CA	-6.82	1.37	1.46	2	5
1	H	220	GLY	C-N	6.72	1.40	1.33	1	2
1	J	226	HIS	CA-C	-6.56	1.43	1.52	5	4
1	K	226	HIS	CA-C	-6.54	1.44	1.52	3	5
1	H	221	VAL	N-CA	6.16	1.53	1.46	3	3
1	G	226	HIS	C-N	-6.11	1.24	1.33	3	2
1	G	227	LYS	N-CA	-5.75	1.39	1.46	4	2
1	H	226	HIS	CA-C	-5.41	1.45	1.52	3	1
1	K	156	GLY	C-N	-5.34	1.27	1.34	4	2
1	G	188	THR	C-N	5.29	1.41	1.33	3	2
1	J	149	SER	C-N	-5.18	1.28	1.34	2	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)	Models	
								Worst	Total
1	J	202	LEU	N-CA	-5.00	1.40	1.46	5	1

All unique angle outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	K	226	HIS	CA-CB-CG	-12.29	101.51	113.80	2	5
1	J	226	HIS	CA-CB-CG	-11.35	102.45	113.80	2	5
1	I	226	HIS	CA-CB-CG	-10.36	103.44	113.80	2	5
1	L	226	HIS	CA-CB-CG	-8.77	105.03	113.80	5	5
1	G	226	HIS	CA-CB-CG	-8.75	105.05	113.80	3	5
1	H	225	GLY	N-CA-C	-7.78	103.40	112.73	2	4
1	L	194	ALA	N-CA-C	7.76	121.46	110.68	2	2
1	H	226	HIS	CA-CB-CG	-7.42	106.38	113.80	5	4
1	H	234	ALA	N-CA-C	-7.10	103.54	111.28	3	2
1	I	161	PHE	CA-CB-CG	-6.98	106.82	113.80	4	5
1	I	208	GLY	N-CA-C	-6.67	106.11	115.32	2	2
1	I	225	GLY	N-CA-C	-6.63	104.74	112.83	3	4
1	J	185	MET	N-CA-C	-6.63	103.53	111.69	3	1
1	L	208	GLY	N-CA-C	-6.61	105.78	115.63	5	2
1	K	185	MET	N-CA-C	-6.45	104.25	111.28	1	3
1	J	161	PHE	CA-CB-CG	-6.38	107.42	113.80	5	2
1	L	225	GLY	N-CA-C	-6.24	105.07	113.24	1	3
1	H	221	VAL	CB-CA-C	-6.21	104.53	111.23	1	1
1	H	192	GLN	N-CA-C	6.14	118.05	111.36	5	1
1	K	225	GLY	N-CA-C	-6.09	105.42	112.73	2	2
1	I	168	PHE	CA-CB-CG	-6.08	107.72	113.80	4	1
1	H	161	PHE	CA-CB-CG	-6.06	107.74	113.80	5	3
1	L	173	ARG	N-CA-C	-6.04	104.70	111.28	4	3
1	G	161	PHE	CA-CB-CG	-6.00	107.80	113.80	3	4
1	L	224	PRO	N-CA-C	-5.97	106.69	114.03	1	3
1	L	214	MET	N-CA-C	-5.94	104.50	110.97	1	1
1	K	153	ILE	N-CA-CB	-5.90	105.33	112.35	1	1
1	L	168	PHE	N-CA-C	-5.82	104.84	111.07	1	2
1	K	208	GLY	N-CA-C	-5.74	107.85	114.69	5	4
1	H	194	ALA	N-CA-C	5.69	118.16	109.62	2	1
1	G	208	GLY	N-CA-C	-5.66	107.86	115.21	4	3
1	K	228	ALA	N-CA-C	5.64	117.11	111.07	2	1
1	I	202	LEU	N-CA-C	-5.47	105.32	111.28	5	1
1	H	202	LEU	N-CA-C	-5.43	105.36	111.28	4	1
1	J	175	GLU	N-CA-C	-5.41	103.55	110.53	5	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	H	208	GLY	N-CA-C	-5.38	108.21	115.36	3	4
1	L	234	ALA	N-CA-C	-5.37	104.98	112.45	5	1
1	I	237	GLN	N-CA-C	-5.36	105.55	111.71	3	3
1	L	161	PHE	CA-CB-CG	-5.31	108.49	113.80	3	1
1	L	161	PHE	N-CA-C	-5.26	105.72	111.82	4	1
1	G	231	LEU	N-CA-C	-5.20	105.61	111.28	3	1
1	J	217	ALA	N-CA-C	5.15	116.70	111.14	2	1
1	G	225	GLY	N-CA-C	-5.12	106.53	113.24	2	1
1	H	185	MET	N-CA-C	-5.10	105.61	111.07	4	1
1	I	214	MET	N-CA-C	-5.08	105.75	111.28	4	1
1	J	226	HIS	CB-CA-C	5.07	118.53	109.29	2	1
1	H	220	GLY	N-CA-C	-5.05	107.78	115.66	2	1
1	H	213	GLU	N-CA-C	-5.01	105.82	111.28	5	1

There are no chirality outliers.

There are no planarity outliers.

6.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in each chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes averaged over the ensemble.

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	G	773	778	775	42±2
1	H	773	778	775	48±5
1	I	773	778	775	44±7
1	J	773	778	775	55±5
1	K	773	778	775	49±2
1	L	773	778	775	43±5
3	I	42	54	0	2±1
All	All	23580	23640	23280	1328

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 28.

All unique clashes are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:G:234:ALA:HB1	1:H:232:ALA:HB2	0.91	1.42	5	3
1:K:234:ALA:HB1	1:L:232:ALA:HB2	0.88	1.43	5	1
1:L:165:VAL:HG12	1:L:190:LEU:HD11	0.86	1.42	5	1
1:K:221:VAL:HG22	1:K:226:HIS:CE1	0.84	2.07	1	4
1:J:191:VAL:HG22	1:J:202:LEU:HD22	0.83	1.48	5	1
1:H:190:LEU:O	1:H:194:ALA:HB2	0.82	1.73	1	5
1:J:211:LEU:HD22	1:J:214:MET:HE2	0.82	1.49	3	1
1:K:190:LEU:O	1:K:194:ALA:HB2	0.81	1.74	4	5
1:J:238:VAL:O	1:J:242:ALA:HB2	0.81	1.75	2	5
1:G:238:VAL:O	1:G:242:ALA:HB2	0.80	1.75	3	5
1:G:232:ALA:HB2	1:L:234:ALA:HB1	0.80	1.55	2	1
1:J:161:PHE:O	1:J:165:VAL:HG23	0.79	1.78	4	1
1:K:238:VAL:O	1:K:242:ALA:HB2	0.78	1.78	3	5
1:H:238:VAL:O	1:H:242:ALA:HB2	0.78	1.76	3	5
1:H:221:VAL:HG22	1:H:226:HIS:CE1	0.78	2.13	3	1
1:G:190:LEU:O	1:G:194:ALA:HB2	0.77	1.80	4	5
1:G:182:LYS:O	1:G:186:THR:HG23	0.77	1.78	3	2
1:G:191:VAL:HG22	1:G:202:LEU:HD22	0.77	1.54	5	1
1:H:198:CYS:O	1:H:202:LEU:HD12	0.76	1.78	4	5
1:K:230:VAL:HG11	1:L:228:ALA:HB1	0.76	1.54	1	1
1:H:234:ALA:HB1	1:I:232:ALA:HB2	0.75	1.57	4	2
1:K:177:ALA:HB3	1:K:182:LYS:HG3	0.74	1.58	1	4
1:J:202:LEU:HD21	1:J:214:MET:SD	0.74	2.21	5	4
1:H:191:VAL:HG12	1:H:202:LEU:HD22	0.74	1.59	4	1
1:G:234:ALA:HB1	1:H:232:ALA:CB	0.73	2.12	5	3
1:K:181:VAL:CG1	1:K:185:MET:HE3	0.73	2.13	4	1
1:G:234:ALA:O	1:G:238:VAL:HG23	0.73	1.82	1	1
1:J:221:VAL:HG22	1:J:226:HIS:NE2	0.72	1.99	3	5
1:I:190:LEU:HD23	1:I:211:LEU:HD21	0.72	1.60	5	1
1:I:221:VAL:HG22	1:I:226:HIS:CE1	0.72	2.19	3	4
1:I:221:VAL:HG22	1:I:226:HIS:NE2	0.72	1.99	4	3
1:H:202:LEU:HD23	1:H:214:MET:HE3	0.72	1.61	5	1
1:I:202:LEU:HD21	1:I:214:MET:SD	0.71	2.25	3	3
1:J:150:ILE:HG21	1:J:185:MET:HG2	0.71	1.61	2	2
1:H:182:LYS:O	1:H:186:THR:HG23	0.71	1.85	5	1
1:H:205:LEU:HD11	1:H:217:ALA:HB3	0.71	1.62	4	2
1:H:202:LEU:HD23	1:H:214:MET:SD	0.71	2.26	4	1
1:G:221:VAL:HG22	1:G:226:HIS:CE1	0.70	2.22	5	5
1:I:238:VAL:O	1:I:242:ALA:HB2	0.70	1.86	5	5
1:L:238:VAL:O	1:L:242:ALA:HB2	0.70	1.86	1	5
1:I:190:LEU:CD2	1:I:211:LEU:HD21	0.69	2.17	4	2
1:J:235:MET:CE	1:K:235:MET:HE1	0.69	2.17	1	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:J:171:THR:O	1:J:174:ALA:HB3	0.69	1.88	4	5
1:K:150:ILE:HD11	1:K:168:PHE:CD2	0.69	2.23	1	4
1:H:177:ALA:HB1	1:H:181:VAL:CG1	0.68	2.18	5	4
1:J:150:ILE:HD11	1:J:168:PHE:CD2	0.68	2.23	1	5
1:K:198:CYS:SG	1:K:221:VAL:HG21	0.68	2.28	1	4
1:L:190:LEU:O	1:L:194:ALA:HB2	0.68	1.88	2	2
1:I:231:LEU:HD12	1:J:231:LEU:HD22	0.68	1.65	4	1
1:J:182:LYS:O	1:J:186:THR:HG23	0.68	1.89	5	1
1:H:169:TYR:OH	1:H:190:LEU:HD22	0.68	1.89	4	2
1:I:152:ASP:OD1	1:J:215:MET:HE1	0.68	1.89	4	1
1:K:191:VAL:HG22	1:K:202:LEU:HD22	0.67	1.64	5	1
1:L:211:LEU:HD22	1:L:214:MET:HE2	0.67	1.64	4	2
1:J:238:VAL:HG21	1:K:235:MET:HB3	0.67	1.66	4	4
1:I:150:ILE:HG21	1:I:185:MET:HG2	0.67	1.65	1	1
1:J:189:LEU:HD12	1:J:193:ASN:ND2	0.67	2.03	2	1
1:L:205:LEU:HD21	1:L:217:ALA:HB2	0.67	1.67	5	1
1:H:211:LEU:HD22	1:H:214:MET:SD	0.67	2.30	3	3
1:L:194:ALA:O	1:L:198:CYS:HB2	0.67	1.89	5	3
1:K:175:GLU:OE1	1:K:177:ALA:HB2	0.67	1.90	2	1
1:K:150:ILE:HG21	1:K:185:MET:HG2	0.67	1.67	2	1
1:J:190:LEU:O	1:J:194:ALA:HB2	0.66	1.90	4	5
1:K:172:LEU:HD21	1:K:182:LYS:O	0.66	1.90	2	2
1:J:153:ILE:HD11	1:J:171:THR:OG1	0.66	1.90	1	1
1:K:221:VAL:HG22	1:K:226:HIS:ND1	0.66	2.05	2	3
1:J:210:THR:HG23	1:J:213:GLU:H	0.66	1.50	2	2
1:H:205:LEU:HD11	1:H:217:ALA:CB	0.66	2.20	4	2
1:I:191:VAL:HG12	1:I:202:LEU:CD2	0.66	2.21	4	1
1:J:150:ILE:HD11	1:J:168:PHE:CG	0.66	2.25	4	3
1:L:148:THR:O	1:L:171:THR:HG22	0.66	1.91	1	1
1:I:190:LEU:O	1:I:194:ALA:HB2	0.66	1.91	5	3
1:H:197:ASP:O	1:H:200:THR:HG22	0.66	1.91	2	2
1:G:232:ALA:CB	1:L:234:ALA:HB1	0.65	2.20	2	1
1:G:189:LEU:O	1:G:193:ASN:OD1	0.65	2.14	4	2
1:J:189:LEU:HD12	1:J:193:ASN:HD21	0.65	1.51	2	1
1:K:202:LEU:HD21	1:K:214:MET:SD	0.65	2.32	5	3
1:I:168:PHE:CE2	1:I:186:THR:HA	0.65	2.26	3	4
1:I:227:LYS:O	1:I:231:LEU:HD12	0.65	1.92	5	2
1:K:211:LEU:HD22	1:K:214:MET:SD	0.65	2.32	3	3
1:L:221:VAL:HG22	1:L:226:HIS:CE1	0.65	2.27	4	5
1:H:202:LEU:HD21	1:H:214:MET:SD	0.64	2.31	1	3
1:L:171:THR:O	1:L:174:ALA:HB3	0.64	1.92	2	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:G:202:LEU:HD21	1:G:214:MET:SD	0.64	2.32	3	3
1:L:194:ALA:O	1:L:195:ASN:O	0.64	2.14	4	2
1:I:150:ILE:HD11	1:I:168:PHE:O	0.64	1.91	2	1
1:J:162:ARG:O	1:J:165:VAL:HG12	0.64	1.93	1	2
1:K:221:VAL:HG13	1:K:226:HIS:ND1	0.64	2.07	5	3
1:I:171:THR:O	1:I:174:ALA:HB3	0.64	1.91	1	5
1:G:202:LEU:HD23	1:G:214:MET:HE3	0.64	1.68	5	1
1:I:177:ALA:HB3	1:I:182:LYS:HG3	0.63	1.70	4	3
1:J:164:TYR:CE2	1:J:190:LEU:HD12	0.63	2.28	2	5
1:G:189:LEU:HD12	1:G:193:ASN:ND2	0.63	2.08	2	1
1:I:181:VAL:HG13	1:I:184:TRP:CD1	0.63	2.28	3	1
1:K:161:PHE:CE1	1:K:194:ALA:HB1	0.63	2.27	4	1
1:K:191:VAL:HG12	1:K:202:LEU:CD2	0.63	2.23	4	1
1:I:177:ALA:HB3	1:I:182:LYS:CG	0.63	2.24	1	2
1:I:172:LEU:HD22	1:I:186:THR:HG22	0.63	1.71	5	1
1:J:177:ALA:HB1	1:J:181:VAL:CG1	0.63	2.24	1	4
1:J:150:ILE:HG21	1:J:185:MET:SD	0.63	2.34	5	1
1:L:177:ALA:HB3	1:L:182:LYS:HG2	0.63	1.71	1	1
1:L:198:CYS:O	1:L:202:LEU:HD12	0.63	1.94	4	1
1:H:177:ALA:HB3	1:H:182:LYS:HG2	0.62	1.69	5	1
1:H:224:PRO:O	1:H:228:ALA:HB3	0.62	1.93	1	2
1:J:177:ALA:HB3	1:J:182:LYS:CG	0.62	2.24	4	2
1:I:191:VAL:HG22	1:I:202:LEU:CD2	0.62	2.24	5	1
1:H:164:TYR:CE2	1:H:190:LEU:HD12	0.62	2.30	1	5
1:K:161:PHE:HE1	1:K:194:ALA:HB1	0.62	1.54	4	1
1:K:150:ILE:HG22	1:K:175:GLU:OE2	0.62	1.94	2	1
1:H:150:ILE:HD11	1:H:168:PHE:CD2	0.62	2.30	1	1
1:L:150:ILE:HD11	1:L:168:PHE:CG	0.61	2.29	3	2
1:K:152:ASP:OD1	1:L:215:MET:HE1	0.61	1.94	4	1
1:J:224:PRO:O	1:J:228:ALA:HB3	0.61	1.95	3	5
1:K:150:ILE:HD12	1:K:153:ILE:HG13	0.61	1.71	3	3
1:I:202:LEU:HD12	1:I:218:CYS:SG	0.61	2.35	3	1
1:K:197:ASP:O	1:K:200:THR:HG22	0.61	1.96	2	2
1:L:172:LEU:HD21	1:L:182:LYS:HB3	0.61	1.72	5	1
1:I:231:LEU:HD12	1:J:231:LEU:CD2	0.60	2.26	4	1
1:K:171:THR:O	1:K:174:ALA:HB3	0.60	1.96	3	4
1:G:154:ARG:CZ	1:H:215:MET:HE3	0.60	2.26	1	1
1:I:164:TYR:CE2	1:I:190:LEU:HD12	0.60	2.31	4	4
1:G:211:LEU:HD22	1:G:214:MET:SD	0.60	2.37	2	3
3:I:301:2I4:O2	1:L:231:LEU:HD11	0.60	1.96	4	2
1:K:198:CYS:O	1:K:202:LEU:HD12	0.60	1.95	3	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:I:222:GLY:O	1:I:223:GLY:O	0.60	2.18	4	1
1:K:191:VAL:CG2	1:K:202:LEU:HD22	0.59	2.27	5	2
1:G:233:GLU:O	1:G:237:GLN:N	0.59	2.35	5	3
1:H:191:VAL:HG12	1:H:202:LEU:CD2	0.59	2.27	4	1
1:J:202:LEU:HD12	1:J:218:CYS:SG	0.59	2.38	1	3
1:K:226:HIS:CD2	1:K:230:VAL:HG23	0.59	2.32	1	2
1:L:150:ILE:HD11	1:L:168:PHE:CD2	0.59	2.32	3	2
1:J:221:VAL:HG22	1:J:226:HIS:CD2	0.59	2.33	5	5
1:J:161:PHE:O	1:J:165:VAL:HG12	0.59	1.97	5	2
1:I:161:PHE:O	1:I:165:VAL:HG23	0.59	1.97	4	1
1:I:182:LYS:O	1:I:186:THR:HG23	0.59	1.97	5	1
1:G:150:ILE:HD12	1:G:153:ILE:HG13	0.59	1.75	5	5
1:H:171:THR:O	1:H:174:ALA:HB3	0.59	1.98	4	2
1:G:171:THR:O	1:G:174:ALA:HB3	0.58	1.98	5	5
1:I:169:TYR:OH	1:I:186:THR:HG23	0.58	1.98	1	2
1:J:150:ILE:HD12	1:J:153:ILE:HG13	0.58	1.73	1	2
1:H:181:VAL:CG1	1:H:185:MET:HE2	0.58	2.28	2	1
1:G:169:TYR:OH	1:G:186:THR:HG23	0.58	1.98	1	3
1:K:177:ALA:HB1	1:K:181:VAL:HB	0.58	1.76	5	3
1:L:172:LEU:HD22	1:L:186:THR:HG22	0.58	1.75	3	1
1:L:189:LEU:O	1:L:193:ASN:OD1	0.58	2.22	4	2
1:K:177:ALA:HB3	1:K:182:LYS:CG	0.58	2.28	5	3
1:G:191:VAL:HG22	1:G:202:LEU:CD2	0.58	2.28	5	1
1:J:150:ILE:HG21	1:J:185:MET:CG	0.58	2.29	2	1
1:G:231:LEU:O	1:G:235:MET:HB2	0.58	1.99	3	1
1:I:189:LEU:O	1:I:193:ASN:CG	0.58	2.46	3	1
1:I:238:VAL:HB	1:J:235:MET:HE3	0.58	1.74	3	1
1:I:233:GLU:O	1:I:237:GLN:N	0.58	2.36	5	4
1:G:198:CYS:O	1:G:202:LEU:HD12	0.57	1.99	3	3
1:J:205:LEU:HB3	1:J:209:ALA:HB2	0.57	1.76	3	1
1:G:228:ALA:HB1	1:L:230:VAL:HG11	0.57	1.76	4	1
1:J:220:GLY:O	1:J:225:GLY:HA3	0.57	1.99	5	4
1:G:177:ALA:HB3	1:G:182:LYS:HG3	0.57	1.75	4	5
1:I:181:VAL:O	1:I:185:MET:HB2	0.57	1.99	1	1
1:K:187:GLU:O	1:K:191:VAL:HG13	0.57	1.99	4	1
1:G:191:VAL:HG12	1:G:202:LEU:CD2	0.57	2.29	4	1
1:L:164:TYR:CE2	1:L:190:LEU:HD12	0.57	2.35	5	3
1:I:231:LEU:CD2	1:J:231:LEU:HD13	0.57	2.30	5	1
1:I:150:ILE:HG21	1:I:185:MET:CG	0.57	2.28	1	1
1:K:150:ILE:HD11	1:K:168:PHE:CG	0.57	2.34	5	4
1:G:211:LEU:HD22	1:G:214:MET:HE2	0.57	1.77	5	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:G:164:TYR:CE2	1:G:190:LEU:HD12	0.57	2.35	3	5
1:G:202:LEU:HD12	1:G:218:CYS:SG	0.57	2.40	1	2
1:L:161:PHE:CE1	1:L:202:LEU:HD11	0.56	2.35	5	3
1:K:210:THR:O	1:K:214:MET:HE3	0.56	1.99	4	2
1:J:191:VAL:HG22	1:J:202:LEU:CD2	0.56	2.29	5	1
1:L:182:LYS:O	1:L:186:THR:HG23	0.56	1.99	3	2
1:H:210:THR:HG23	1:H:213:GLU:H	0.56	1.60	2	1
1:J:181:VAL:CG1	1:J:185:MET:HE3	0.56	2.30	3	1
1:L:191:VAL:HG23	1:L:202:LEU:CB	0.56	2.30	3	1
1:L:233:GLU:O	1:L:237:GLN:N	0.56	2.38	1	2
1:G:231:LEU:HD13	1:H:231:LEU:HD21	0.56	1.78	4	1
1:H:150:ILE:HD11	1:H:168:PHE:CG	0.56	2.36	1	5
1:H:177:ALA:HB3	1:H:182:LYS:CG	0.56	2.31	5	1
1:H:152:ASP:O	1:H:152:ASP:CG	0.55	2.49	2	1
1:J:172:LEU:HD21	1:J:182:LYS:HB3	0.55	1.77	5	2
1:K:153:ILE:HD11	1:K:171:THR:OG1	0.55	2.01	1	2
1:J:150:ILE:HG12	1:J:172:LEU:HD13	0.55	1.78	2	1
1:J:194:ALA:O	1:J:195:ASN:O	0.55	2.24	5	2
1:G:195:ASN:O	1:G:197:ASP:N	0.55	2.40	5	5
1:J:238:VAL:HG22	1:K:232:ALA:O	0.55	2.02	1	4
1:K:150:ILE:HG21	1:K:185:MET:CG	0.55	2.30	2	1
1:H:189:LEU:O	1:H:193:ASN:OD1	0.55	2.25	3	1
1:K:195:ASN:ND2	1:K:221:VAL:HG11	0.55	2.16	3	1
1:H:150:ILE:HD12	1:H:153:ILE:HG13	0.55	1.76	1	3
1:K:191:VAL:HG12	1:K:202:LEU:HD23	0.55	1.77	4	1
1:K:194:ALA:O	1:K:195:ASN:O	0.55	2.24	2	5
1:L:164:TYR:OH	1:L:193:ASN:OD1	0.55	2.24	4	2
1:G:235:MET:HB3	1:L:238:VAL:HG21	0.55	1.78	5	1
1:L:224:PRO:O	1:L:228:ALA:N	0.55	2.39	1	2
1:K:215:MET:O	1:K:219:GLN:N	0.55	2.39	4	4
1:I:161:PHE:O	1:I:165:VAL:HG12	0.55	2.01	3	4
1:J:191:VAL:HB	1:J:202:LEU:HD22	0.55	1.79	1	1
1:J:201:ILE:O	1:J:204:ALA:HB3	0.55	2.02	5	2
1:H:172:LEU:HD22	1:H:186:THR:HG22	0.55	1.79	5	1
1:I:226:HIS:CD2	1:I:230:VAL:HG21	0.54	2.36	1	1
3:I:301:2I4:C29	1:J:235:MET:HE3	0.54	2.32	1	1
1:H:177:ALA:HB1	1:H:181:VAL:HB	0.54	1.78	4	1
1:H:172:LEU:CD2	1:H:186:THR:HG22	0.54	2.32	5	1
1:L:150:ILE:O	1:L:153:ILE:HB	0.54	2.02	4	4
1:H:157:PRO:CG	1:I:219:GLN:O	0.54	2.54	3	1
1:G:215:MET:O	1:G:219:GLN:HB2	0.54	2.01	2	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:L:190:LEU:CD2	1:L:211:LEU:HD21	0.54	2.32	5	2
1:G:157:PRO:HB2	1:H:222:GLY:C	0.54	2.27	3	1
1:J:189:LEU:O	1:J:193:ASN:OD1	0.54	2.25	5	3
1:G:177:ALA:HB1	1:G:181:VAL:CG1	0.54	2.32	1	5
1:J:169:TYR:OH	1:J:186:THR:HG23	0.54	2.02	1	2
1:J:150:ILE:O	1:J:153:ILE:HB	0.54	2.02	2	3
1:H:205:LEU:HD13	1:H:213:GLU:HG3	0.54	1.80	3	2
1:K:164:TYR:OH	1:K:193:ASN:OD1	0.54	2.25	4	2
1:L:202:LEU:CD2	1:L:214:MET:HE3	0.54	2.33	5	1
1:L:150:ILE:HD12	1:L:153:ILE:HG13	0.54	1.78	4	2
1:G:164:TYR:OH	1:G:193:ASN:OD1	0.54	2.25	3	2
1:J:154:ARG:HA	1:J:193:ASN:O	0.54	2.02	5	1
1:J:168:PHE:HE2	1:J:186:THR:HG22	0.54	1.62	5	1
1:G:221:VAL:HG22	1:G:226:HIS:NE2	0.54	2.17	3	2
1:I:172:LEU:CD2	1:I:186:THR:HG22	0.54	2.31	5	1
1:H:150:ILE:O	1:H:153:ILE:HB	0.54	2.03	5	3
1:L:209:ALA:HB3	1:L:214:MET:SD	0.54	2.42	2	1
1:L:231:LEU:O	1:L:235:MET:HB2	0.54	2.03	3	1
1:K:164:TYR:CE2	1:K:190:LEU:HD12	0.54	2.38	5	4
1:I:235:MET:O	1:J:235:MET:HE2	0.54	2.02	3	1
1:H:210:THR:HG22	1:H:212:GLU:H	0.53	1.61	3	1
1:H:178:SER:O	1:H:179:GLN:C	0.53	2.51	4	1
1:I:224:PRO:O	1:I:228:ALA:N	0.53	2.42	5	3
1:H:214:MET:O	1:H:217:ALA:N	0.53	2.41	5	1
1:L:197:ASP:O	1:L:200:THR:HG22	0.53	2.03	2	1
1:K:153:ILE:HG22	1:K:153:ILE:O	0.53	2.04	1	2
1:J:202:LEU:CD2	1:J:214:MET:HE3	0.53	2.34	3	1
1:G:202:LEU:CD2	1:G:214:MET:HE3	0.53	2.33	5	1
1:H:161:PHE:CG	1:H:218:CYS:SG	0.53	3.01	5	1
1:H:194:ALA:O	1:H:195:ASN:O	0.53	2.27	1	3
1:L:191:VAL:HG23	1:L:202:LEU:HB3	0.53	1.80	3	2
1:J:205:LEU:CB	1:J:209:ALA:HB2	0.53	2.34	3	1
1:L:191:VAL:HG22	1:L:202:LEU:HD22	0.53	1.81	5	1
1:I:191:VAL:HG22	1:I:202:LEU:HD23	0.53	1.80	5	1
1:J:172:LEU:HD12	1:J:175:GLU:HG2	0.53	1.81	5	1
1:I:187:GLU:O	1:I:191:VAL:HG12	0.53	2.03	1	1
1:K:195:ASN:O	1:K:196:PRO:C	0.53	2.51	3	5
1:G:219:GLN:O	1:L:157:PRO:HG3	0.53	2.04	2	1
1:H:209:ALA:HB3	1:H:214:MET:SD	0.53	2.43	5	1
1:I:184:TRP:CD1	1:I:184:TRP:C	0.53	2.85	3	1
1:L:200:THR:O	1:L:204:ALA:N	0.52	2.42	1	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:K:177:ALA:O	1:K:178:SER:C	0.52	2.51	2	3
1:L:172:LEU:O	1:L:175:GLU:O	0.52	2.26	5	2
1:I:206:GLY:O	1:I:209:ALA:HB2	0.52	2.04	2	1
1:H:155:GLN:HG3	1:H:164:TYR:HB2	0.52	1.82	3	2
1:J:231:LEU:HD22	1:J:235:MET:HE1	0.52	1.79	5	1
1:H:195:ASN:O	1:H:197:ASP:N	0.52	2.42	2	5
1:G:189:LEU:HD12	1:G:193:ASN:HD21	0.52	1.62	2	1
1:J:191:VAL:HG23	1:J:202:LEU:HB3	0.52	1.80	2	2
1:I:224:PRO:O	1:I:228:ALA:HB3	0.52	2.05	3	1
1:L:172:LEU:HD21	1:L:182:LYS:CB	0.52	2.35	5	1
1:L:172:LEU:HD22	1:L:186:THR:CG2	0.52	2.33	5	1
1:K:183:ASN:O	1:K:186:THR:OG1	0.52	2.23	1	2
1:K:211:LEU:HD23	1:K:214:MET:SD	0.52	2.45	1	1
1:K:189:LEU:O	1:K:193:ASN:OD1	0.52	2.28	3	2
1:L:181:VAL:CG1	1:L:185:MET:HE3	0.52	2.34	5	2
1:G:157:PRO:HB3	1:H:220:GLY:O	0.52	2.05	2	2
1:K:169:TYR:OH	1:K:186:THR:HG23	0.52	2.04	4	2
1:G:153:ILE:O	1:G:153:ILE:HG22	0.52	2.05	2	4
1:G:161:PHE:O	1:G:165:VAL:HG12	0.52	2.05	5	4
1:J:172:LEU:O	1:J:175:GLU:O	0.52	2.27	2	1
1:I:155:GLN:OE1	1:I:156:GLY:O	0.52	2.27	3	1
1:G:189:LEU:O	1:G:193:ASN:CG	0.52	2.53	3	2
1:H:215:MET:O	1:H:219:GLN:CB	0.52	2.59	3	1
1:K:150:ILE:HD12	1:K:153:ILE:HG12	0.52	1.81	5	1
1:G:153:ILE:HD11	1:G:171:THR:OG1	0.51	2.05	4	4
1:K:189:LEU:HD12	1:K:193:ASN:HD21	0.51	1.64	2	1
1:H:177:ALA:HB3	1:H:182:LYS:HG3	0.51	1.81	3	2
1:I:155:GLN:HB2	1:I:164:TYR:CD2	0.51	2.40	2	2
1:H:161:PHE:CE1	1:H:202:LEU:HD11	0.51	2.40	4	3
1:K:153:ILE:HD12	1:K:167:ARG:HG2	0.51	1.82	4	1
1:H:231:LEU:HD21	1:I:231:LEU:HD13	0.51	1.81	2	2
1:I:155:GLN:HB3	1:I:195:ASN:CB	0.51	2.35	3	2
1:J:181:VAL:O	1:J:185:MET:HG3	0.51	2.05	3	1
1:H:238:VAL:HG22	1:I:236:SER:HB3	0.51	1.81	4	1
1:I:195:ASN:O	1:I:197:ASP:N	0.51	2.44	2	5
1:H:191:VAL:HG23	1:H:202:LEU:CB	0.51	2.36	2	1
1:G:161:PHE:O	1:G:165:VAL:HG23	0.51	2.05	4	1
1:K:224:PRO:O	1:K:228:ALA:N	0.51	2.44	4	1
1:L:191:VAL:HG12	1:L:202:LEU:HD22	0.51	1.82	4	1
1:H:195:ASN:O	1:H:196:PRO:C	0.51	2.54	1	4
1:J:231:LEU:O	1:J:235:MET:HB2	0.51	2.04	5	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:H:238:VAL:HG13	1:I:236:SER:CB	0.51	2.36	4	2
1:K:195:ASN:O	1:K:197:ASP:N	0.51	2.44	1	5
1:L:155:GLN:O	1:L:195:ASN:HB2	0.51	2.06	2	1
1:J:164:TYR:OH	1:J:193:ASN:OD1	0.51	2.24	3	3
1:L:198:CYS:O	1:L:201:ILE:HB	0.51	2.06	3	1
1:J:211:LEU:HD22	1:J:214:MET:SD	0.50	2.45	2	2
1:L:155:GLN:HB3	1:L:195:ASN:N	0.50	2.22	1	1
1:I:150:ILE:O	1:I:153:ILE:HB	0.50	2.06	4	1
1:J:164:TYR:HE2	1:J:190:LEU:HD12	0.50	1.65	1	3
1:J:194:ALA:O	1:J:198:CYS:HB2	0.50	2.07	5	4
1:K:189:LEU:HD12	1:K:193:ASN:ND2	0.50	2.21	2	1
1:L:150:ILE:CD1	1:L:153:ILE:HG21	0.50	2.35	5	1
1:J:153:ILE:HG21	1:J:168:PHE:CD1	0.50	2.42	1	3
1:L:195:ASN:O	1:L:197:ASP:N	0.50	2.45	2	3
1:I:231:LEU:HD11	3:I:301:2I4:C12	0.50	2.37	4	1
1:G:227:LYS:HE2	1:H:224:PRO:HB3	0.50	1.82	2	3
1:I:177:ALA:HB3	1:I:182:LYS:HG2	0.50	1.83	1	1
1:J:177:ALA:HB1	1:J:181:VAL:HG12	0.50	1.82	4	2
1:L:225:GLY:O	1:L:228:ALA:HB3	0.50	2.07	2	1
1:I:150:ILE:HG21	1:I:185:MET:HB3	0.50	1.84	3	1
1:G:224:PRO:O	1:G:228:ALA:N	0.50	2.42	3	1
1:H:205:LEU:HD13	1:H:213:GLU:C	0.50	2.31	4	1
1:J:177:ALA:HB3	1:J:182:LYS:HG3	0.50	1.84	1	3
1:J:227:LYS:O	1:J:231:LEU:HD13	0.50	2.07	1	2
1:I:224:PRO:O	1:I:228:ALA:CB	0.50	2.60	3	4
1:L:161:PHE:O	1:L:165:VAL:HG12	0.50	2.07	1	2
1:J:153:ILE:O	1:J:153:ILE:HG22	0.50	2.07	5	2
1:H:238:VAL:HG13	1:I:236:SER:HB3	0.50	1.83	4	1
1:J:150:ILE:CD1	1:J:168:PHE:O	0.49	2.60	3	4
1:L:205:LEU:HD12	1:L:214:MET:SD	0.49	2.47	2	2
1:H:153:ILE:HG21	1:H:168:PHE:CD1	0.49	2.42	1	4
1:I:153:ILE:CG1	1:I:171:THR:HG21	0.49	2.37	1	2
1:I:168:PHE:C	1:I:168:PHE:CD2	0.49	2.90	2	4
1:G:168:PHE:CE2	1:G:186:THR:HA	0.49	2.42	3	3
1:L:150:ILE:HD11	1:L:168:PHE:O	0.49	2.06	5	1
1:K:191:VAL:HG23	1:K:202:LEU:HD22	0.49	1.83	1	1
1:K:205:LEU:HD22	1:K:213:GLU:HB3	0.49	1.84	3	1
1:H:224:PRO:O	1:H:228:ALA:CB	0.49	2.61	1	2
1:H:155:GLN:HB3	1:H:195:ASN:N	0.49	2.22	4	2
1:I:227:LYS:HG2	3:I:301:2I4:O4	0.49	2.08	1	1
1:H:164:TYR:HE2	1:H:190:LEU:HD12	0.49	1.67	4	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:K:155:GLN:HB3	1:K:195:ASN:N	0.49	2.22	2	2
1:K:238:VAL:HG11	1:L:235:MET:SD	0.49	2.47	3	1
1:L:221:VAL:HA	1:L:226:HIS:CG	0.49	2.42	3	2
1:H:214:MET:O	1:H:218:CYS:SG	0.49	2.71	5	1
1:L:181:VAL:HG12	1:L:185:MET:HE3	0.49	1.85	5	1
1:G:224:PRO:O	1:G:228:ALA:CB	0.49	2.61	1	4
1:I:227:LYS:HB3	3:I:301:2I4:O4	0.49	2.07	2	1
1:K:224:PRO:O	1:K:228:ALA:HB3	0.49	2.08	2	1
1:L:198:CYS:HA	1:L:201:ILE:HD12	0.49	1.84	2	1
1:I:155:GLN:OE1	1:I:195:ASN:CB	0.49	2.61	3	1
1:K:181:VAL:HG12	1:K:185:MET:HE3	0.49	1.85	4	1
1:L:161:PHE:CE2	1:L:165:VAL:HG11	0.49	2.42	5	1
1:L:177:ALA:HB1	1:L:181:VAL:CG1	0.49	2.38	1	1
1:L:191:VAL:HA	1:L:202:LEU:HD22	0.49	1.85	1	2
1:I:223:GLY:O	1:I:225:GLY:N	0.49	2.46	2	1
1:K:161:PHE:O	1:K:165:VAL:HG12	0.49	2.07	3	4
1:L:210:THR:C	1:L:214:MET:HE3	0.49	2.32	3	1
1:I:150:ILE:CD1	1:I:168:PHE:O	0.49	2.61	4	1
1:G:172:LEU:HD21	1:G:182:LYS:HB3	0.48	1.84	3	3
1:G:226:HIS:O	1:G:227:LYS:C	0.48	2.56	1	4
1:L:155:GLN:CG	1:L:159:GLU:O	0.48	2.61	1	1
1:J:153:ILE:O	1:J:193:ASN:HB3	0.48	2.08	2	1
1:L:161:PHE:O	1:L:165:VAL:HG23	0.48	2.07	4	1
1:H:224:PRO:O	1:H:225:GLY:C	0.48	2.54	1	2
1:J:177:ALA:HB3	1:J:182:LYS:HG2	0.48	1.83	4	2
1:K:186:THR:O	1:K:190:LEU:CB	0.48	2.62	1	5
1:L:195:ASN:O	1:L:196:PRO:C	0.48	2.56	2	3
1:H:184:TRP:CE3	1:H:188:THR:HG21	0.48	2.44	4	3
1:L:202:LEU:HD21	1:L:214:MET:SD	0.48	2.48	3	1
1:G:177:ALA:HB3	1:G:182:LYS:CG	0.48	2.38	4	3
1:G:201:ILE:O	1:G:205:LEU:N	0.48	2.46	1	1
1:H:177:ALA:HB3	1:H:182:LYS:HD2	0.48	1.83	4	1
1:L:156:GLY:O	1:L:157:PRO:C	0.48	2.56	1	2
1:G:165:VAL:O	1:G:169:TYR:HD1	0.48	1.92	4	5
1:L:211:LEU:HD13	1:L:211:LEU:O	0.48	2.09	1	1
1:G:234:ALA:CB	1:H:232:ALA:HB2	0.48	2.32	1	2
1:J:226:HIS:O	1:J:230:VAL:HB	0.48	2.09	3	4
1:K:191:VAL:CB	1:K:202:LEU:HD22	0.48	2.38	1	1
1:H:177:ALA:HB1	1:H:181:VAL:HG11	0.48	1.84	2	2
1:L:159:GLU:O	1:L:160:PRO:C	0.48	2.54	1	1
1:K:168:PHE:CE2	1:K:186:THR:HA	0.48	2.44	2	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:K:177:ALA:O	1:K:182:LYS:HG3	0.48	2.09	5	2
1:J:169:TYR:N	1:J:169:TYR:CD1	0.48	2.82	2	1
1:J:235:MET:HE1	1:K:235:MET:HE2	0.48	1.86	2	1
1:K:147:PRO:C	1:K:148:THR:HG23	0.48	2.34	2	1
1:L:221:VAL:HG13	1:L:226:HIS:ND1	0.48	2.24	4	1
1:J:235:MET:HE3	1:K:235:MET:HE1	0.48	1.84	1	1
1:L:177:ALA:HB3	1:L:182:LYS:HG3	0.48	1.85	2	1
1:J:150:ILE:HD13	1:J:172:LEU:HB2	0.48	1.85	3	2
1:H:169:TYR:OH	1:H:186:THR:HG23	0.47	2.09	4	3
1:G:184:TRP:CZ3	1:G:188:THR:HG21	0.47	2.43	4	4
1:H:161:PHE:CD2	1:H:165:VAL:HG21	0.47	2.44	4	1
1:J:156:GLY:H	1:J:159:GLU:HB3	0.47	1.69	5	1
1:J:191:VAL:CG2	1:J:202:LEU:HD22	0.47	2.31	5	1
1:J:224:PRO:O	1:J:228:ALA:CB	0.47	2.62	5	5
1:J:229:ARG:O	1:J:232:ALA:HB3	0.47	2.08	1	2
1:K:194:ALA:O	1:K:198:CYS:HB2	0.47	2.08	1	2
1:I:195:ASN:O	1:I:196:PRO:C	0.47	2.56	5	3
1:J:191:VAL:CB	1:J:202:LEU:HD22	0.47	2.39	1	1
1:L:162:ARG:O	1:L:165:VAL:HG22	0.47	2.09	5	1
1:H:168:PHE:C	1:H:168:PHE:CD2	0.47	2.93	3	1
1:H:201:ILE:O	1:H:204:ALA:HB3	0.47	2.09	1	1
1:K:150:ILE:CD1	1:K:168:PHE:O	0.47	2.63	1	2
1:J:178:SER:O	1:J:182:LYS:HB2	0.47	2.09	2	1
1:H:161:PHE:HZ	1:H:202:LEU:HD21	0.47	1.70	4	1
1:I:194:ALA:O	1:I:195:ASN:O	0.47	2.31	5	2
1:I:212:GLU:O	1:I:216:THR:N	0.47	2.48	2	2
1:G:205:LEU:HD22	1:G:213:GLU:HG3	0.47	1.85	3	1
1:K:165:VAL:O	1:K:169:TYR:HD1	0.47	1.92	5	2
1:K:168:PHE:CD2	1:K:168:PHE:C	0.47	2.93	1	4
1:K:178:SER:O	1:K:179:GLN:C	0.47	2.58	1	2
1:L:161:PHE:CZ	1:L:202:LEU:HD11	0.47	2.45	2	1
1:G:205:LEU:CD1	1:G:214:MET:HA	0.47	2.39	3	2
1:J:202:LEU:HD21	1:J:214:MET:HE3	0.47	1.86	3	1
1:J:219:GLN:C	1:J:221:VAL:H	0.47	2.18	4	1
1:L:205:LEU:HD21	1:L:217:ALA:CB	0.47	2.38	5	1
1:K:169:TYR:CD1	1:K:169:TYR:N	0.47	2.81	1	4
1:I:194:ALA:O	1:I:195:ASN:HB3	0.47	2.10	4	3
1:I:223:GLY:O	1:I:224:PRO:C	0.47	2.58	2	1
1:I:227:LYS:O	1:I:231:LEU:HB2	0.47	2.10	4	1
1:L:178:SER:O	1:L:182:LYS:N	0.47	2.48	3	1
1:H:161:PHE:O	1:H:165:VAL:HG12	0.47	2.10	1	4

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:H:226:HIS:C	1:H:228:ALA:N	0.47	2.73	2	3
1:G:177:ALA:HB1	1:G:181:VAL:HG12	0.46	1.86	4	3
1:H:198:CYS:O	1:H:201:ILE:HB	0.46	2.10	4	3
1:H:154:ARG:CG	1:H:193:ASN:HB2	0.46	2.41	3	1
1:H:223:GLY:O	1:H:226:HIS:N	0.46	2.46	2	2
1:L:153:ILE:HG21	1:L:168:PHE:CD1	0.46	2.44	3	3
1:G:187:GLU:O	1:G:191:VAL:HG13	0.46	2.10	4	1
1:I:150:ILE:CD1	1:I:153:ILE:HG21	0.46	2.41	2	1
1:J:150:ILE:HG23	1:J:151:LEU:HD12	0.46	1.87	4	2
1:J:191:VAL:CG1	1:J:202:LEU:HD22	0.46	2.40	4	1
1:L:231:LEU:HD12	1:L:231:LEU:O	0.46	2.10	4	1
1:I:181:VAL:O	1:I:182:LYS:C	0.46	2.59	5	1
1:J:210:THR:O	1:J:211:LEU:C	0.46	2.57	5	5
1:K:153:ILE:HG21	1:K:168:PHE:CD1	0.46	2.46	1	3
1:I:215:MET:O	1:I:219:GLN:CB	0.46	2.63	3	3
1:I:183:ASN:O	1:I:186:THR:OG1	0.46	2.34	3	1
1:L:171:THR:O	1:L:175:GLU:N	0.46	2.49	4	2
1:I:205:LEU:HD22	1:I:213:GLU:HG3	0.46	1.88	4	1
1:H:150:ILE:HG21	1:H:185:MET:HG2	0.46	1.88	5	1
1:H:233:GLU:O	1:H:237:GLN:N	0.46	2.48	5	2
1:J:153:ILE:CG1	1:J:171:THR:HG21	0.46	2.40	4	3
1:G:153:ILE:CG1	1:G:171:THR:HG21	0.46	2.41	3	3
1:H:151:LEU:HD11	1:H:185:MET:SD	0.46	2.50	2	1
1:G:237:GLN:O	1:G:241:THR:N	0.46	2.49	5	2
1:H:184:TRP:CZ3	1:H:188:THR:HG21	0.46	2.46	5	2
1:I:227:LYS:CB	3:I:301:2I4:O4	0.46	2.64	2	1
1:G:150:ILE:HD11	1:G:168:PHE:CD2	0.46	2.46	1	1
1:K:190:LEU:O	1:K:194:ALA:CB	0.46	2.64	3	4
1:G:231:LEU:HD22	1:L:231:LEU:HD11	0.46	1.88	2	1
1:J:194:ALA:O	1:J:195:ASN:HB3	0.46	2.11	2	1
1:K:221:VAL:HA	1:K:226:HIS:HB2	0.46	1.86	2	1
1:J:234:ALA:HB1	1:K:231:LEU:HD23	0.46	1.86	3	1
1:K:172:LEU:HD21	1:K:182:LYS:HB3	0.46	1.87	3	1
1:H:191:VAL:HG22	1:H:202:LEU:HD22	0.46	1.87	5	1
1:J:186:THR:O	1:J:190:LEU:CB	0.46	2.63	5	1
1:G:153:ILE:HG21	1:G:168:PHE:CD1	0.46	2.45	3	3
1:G:219:GLN:O	1:L:157:PRO:CG	0.46	2.64	2	1
1:H:200:THR:O	1:H:204:ALA:N	0.46	2.49	5	3
1:H:161:PHE:CZ	1:H:202:LEU:HD21	0.46	2.46	4	1
1:L:198:CYS:C	1:L:202:LEU:HD12	0.46	2.36	4	1
1:I:169:TYR:CD1	1:I:169:TYR:N	0.45	2.84	3	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:L:214:MET:C	1:L:218:CYS:SG	0.45	2.99	1	1
1:I:153:ILE:O	1:I:153:ILE:HG22	0.45	2.10	5	3
1:I:172:LEU:HD21	1:I:182:LYS:HB3	0.45	1.87	1	1
1:K:177:ALA:HB1	1:K:181:VAL:CB	0.45	2.41	1	1
1:L:209:ALA:HB3	1:L:214:MET:CE	0.45	2.41	1	1
1:K:150:ILE:O	1:K:153:ILE:HB	0.45	2.11	2	2
1:L:155:GLN:HB2	1:L:164:TYR:CG	0.45	2.47	5	1
1:H:215:MET:O	1:H:219:GLN:N	0.45	2.49	4	3
1:J:192:GLN:O	1:J:199:LYS:HD3	0.45	2.12	1	1
1:K:238:VAL:O	1:K:238:VAL:HG12	0.45	2.11	3	2
1:J:182:LYS:O	1:J:186:THR:HB	0.45	2.11	3	1
1:H:226:HIS:CD2	1:H:230:VAL:HG21	0.45	2.46	4	1
1:J:156:GLY:N	1:J:159:GLU:HB3	0.45	2.26	2	1
1:J:233:GLU:O	1:J:237:GLN:N	0.45	2.50	3	1
1:G:195:ASN:OD1	1:G:195:ASN:C	0.45	2.59	3	4
1:H:230:VAL:HG11	1:I:228:ALA:HB1	0.45	1.88	2	1
1:I:227:LYS:CG	3:I:301:2I4:O4	0.45	2.64	4	3
1:H:153:ILE:CG1	1:H:171:THR:HG21	0.45	2.42	5	4
1:L:150:ILE:CD1	1:L:168:PHE:O	0.45	2.65	3	3
1:J:155:GLN:HB2	1:J:164:TYR:CG	0.45	2.46	5	4
1:L:150:ILE:HG21	1:L:185:MET:HG2	0.45	1.89	2	1
1:L:211:LEU:HD22	1:L:214:MET:SD	0.45	2.51	3	1
1:I:218:CYS:HA	1:I:221:VAL:HG23	0.45	1.89	2	1
1:L:210:THR:O	1:L:213:GLU:N	0.45	2.50	5	1
1:G:201:ILE:O	1:G:204:ALA:HB3	0.45	2.11	1	1
1:J:184:TRP:CE3	1:J:188:THR:HG21	0.45	2.47	2	1
1:L:205:LEU:HD13	1:L:213:GLU:HB3	0.45	1.89	3	1
1:I:191:VAL:HG23	1:I:192:GLN:N	0.45	2.27	4	1
1:K:164:TYR:O	1:K:168:PHE:N	0.45	2.50	4	1
1:I:153:ILE:O	1:I:193:ASN:HB3	0.45	2.12	5	1
1:I:238:VAL:O	1:I:242:ALA:CB	0.45	2.64	5	1
1:H:147:PRO:C	1:H:148:THR:HG23	0.45	2.37	2	1
1:H:156:GLY:O	1:H:157:PRO:C	0.45	2.60	2	1
1:J:147:PRO:C	1:J:148:THR:HG23	0.45	2.36	2	1
1:L:198:CYS:O	1:L:201:ILE:N	0.45	2.50	3	1
1:H:155:GLN:HB2	1:H:164:TYR:CD2	0.44	2.47	1	2
1:J:168:PHE:CE2	1:J:186:THR:HA	0.44	2.47	3	4
1:J:223:GLY:O	1:J:225:GLY:N	0.44	2.49	1	2
1:L:153:ILE:O	1:L:193:ASN:HB3	0.44	2.12	1	1
1:K:213:GLU:O	1:K:214:MET:C	0.44	2.59	2	1
1:H:230:VAL:HG12	1:I:228:ALA:HB1	0.44	1.89	3	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:I:161:PHE:HB2	1:I:218:CYS:HB3	0.44	1.90	5	2
1:J:195:ASN:O	1:J:198:CYS:N	0.44	2.50	5	2
1:J:161:PHE:HB2	1:J:218:CYS:HB3	0.44	1.88	4	1
1:G:190:LEU:CD2	1:G:211:LEU:HD21	0.44	2.43	5	1
1:J:191:VAL:HG23	1:J:202:LEU:CB	0.44	2.41	2	2
1:H:238:VAL:HG21	1:I:232:ALA:O	0.44	2.12	3	1
1:J:153:ILE:HG12	1:J:171:THR:HG21	0.44	1.88	1	2
1:G:157:PRO:HG2	1:H:221:VAL:O	0.44	2.12	1	1
1:J:169:TYR:OH	1:J:190:LEU:HD22	0.44	2.12	1	1
1:K:231:LEU:O	1:K:235:MET:CB	0.44	2.65	3	4
1:L:161:PHE:HZ	1:L:202:LEU:HD21	0.44	1.73	2	1
1:H:234:ALA:O	1:H:238:VAL:HG22	0.44	2.13	1	1
1:I:226:HIS:C	1:I:228:ALA:N	0.44	2.74	3	4
1:K:153:ILE:HD11	1:K:171:THR:CB	0.44	2.42	1	2
1:J:155:GLN:NE2	1:J:161:PHE:N	0.44	2.66	2	2
1:J:221:VAL:HG22	1:J:226:HIS:CE1	0.44	2.47	2	1
1:L:150:ILE:HG22	1:L:175:GLU:OE1	0.44	2.13	2	1
1:I:198:CYS:O	1:I:201:ILE:HB	0.44	2.12	3	2
1:I:150:ILE:HD13	1:I:168:PHE:O	0.44	2.12	4	1
1:L:167:ARG:O	1:L:171:THR:N	0.44	2.49	5	1
1:I:181:VAL:HG13	1:I:184:TRP:NE1	0.44	2.27	3	1
1:K:155:GLN:OE1	1:K:156:GLY:O	0.44	2.36	3	1
1:K:198:CYS:HA	1:K:201:ILE:HD12	0.44	1.90	3	1
1:G:157:PRO:HB2	1:H:223:GLY:H	0.44	1.73	4	3
1:K:227:LYS:O	1:K:231:LEU:N	0.44	2.51	2	1
1:H:165:VAL:O	1:H:169:TYR:HD1	0.44	1.96	5	2
1:J:157:PRO:HB3	1:K:219:GLN:O	0.44	2.13	3	2
1:G:193:ASN:OD1	1:G:193:ASN:N	0.44	2.51	5	1
1:L:210:THR:HG22	1:L:212:GLU:H	0.43	1.73	1	1
1:J:181:VAL:O	1:J:184:TRP:CD1	0.43	2.71	2	1
1:G:164:TYR:HE2	1:G:190:LEU:HD12	0.43	1.73	3	1
1:H:191:VAL:HG23	1:H:192:GLN:N	0.43	2.27	4	1
1:G:191:VAL:HG13	1:G:192:GLN:N	0.43	2.28	3	3
1:I:177:ALA:HB1	1:I:181:VAL:HG12	0.43	1.88	1	1
1:I:215:MET:O	1:I:219:GLN:HB2	0.43	2.12	1	2
1:I:152:ASP:O	1:I:152:ASP:CG	0.43	2.60	2	1
1:K:185:MET:SD	1:K:189:LEU:HD23	0.43	2.53	2	1
1:H:194:ALA:O	1:H:199:LYS:N	0.43	2.51	4	1
1:J:238:VAL:HG22	1:K:236:SER:HB2	0.43	1.89	3	2
1:J:164:TYR:HH	1:J:193:ASN:CG	0.43	2.17	3	1
1:K:166:ASP:O	1:K:170:LYS:N	0.43	2.50	3	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:L:214:MET:O	1:L:218:CYS:N	0.43	2.50	1	1
1:G:226:HIS:O	1:G:230:VAL:HB	0.43	2.13	3	1
1:H:224:PRO:HA	1:H:227:LYS:HG2	0.43	1.90	3	1
1:I:164:TYR:OH	1:I:193:ASN:OD1	0.43	2.35	3	1
1:H:160:PRO:O	1:H:164:TYR:N	0.43	2.43	5	1
1:J:189:LEU:O	1:J:193:ASN:CG	0.43	2.61	5	1
1:L:165:VAL:HG12	1:L:190:LEU:CD1	0.43	2.30	5	1
1:K:201:ILE:O	1:K:204:ALA:HB3	0.43	2.12	1	1
1:I:222:GLY:C	1:I:223:GLY:O	0.43	2.61	2	1
1:I:155:GLN:NE2	1:I:198:CYS:SG	0.43	2.92	3	1
1:G:158:LYS:HB3	1:H:223:GLY:HA2	0.43	1.90	4	1
1:J:150:ILE:HG22	1:J:175:GLU:OE1	0.43	2.14	5	2
1:G:226:HIS:C	1:G:228:ALA:N	0.43	2.75	1	2
1:L:209:ALA:HB3	1:L:214:MET:HE1	0.43	1.89	1	1
1:K:178:SER:O	1:K:181:VAL:N	0.43	2.51	2	2
1:L:154:ARG:C	1:L:164:TYR:CE1	0.43	2.97	2	1
1:L:161:PHE:CG	1:L:218:CYS:HB2	0.43	2.48	2	1
1:L:194:ALA:O	1:L:199:LYS:N	0.43	2.52	2	1
1:H:189:LEU:O	1:H:193:ASN:ND2	0.43	2.52	3	1
1:G:197:ASP:OD2	1:H:225:GLY:HA2	0.43	2.13	5	1
1:L:190:LEU:HD23	1:L:211:LEU:HD21	0.43	1.90	5	1
1:H:168:PHE:CD2	1:H:168:PHE:C	0.43	2.97	1	1
1:L:153:ILE:O	1:L:153:ILE:HG22	0.43	2.13	4	3
1:L:214:MET:O	1:L:218:CYS:SG	0.43	2.77	1	1
1:H:155:GLN:CG	1:H:159:GLU:O	0.43	2.67	2	1
1:I:219:GLN:C	1:I:221:VAL:H	0.43	2.22	3	1
1:L:168:PHE:CE2	1:L:186:THR:HA	0.43	2.49	5	2
1:I:155:GLN:HB2	1:I:164:TYR:CG	0.43	2.49	5	1
1:J:195:ASN:O	1:J:196:PRO:C	0.43	2.61	5	1
1:L:192:GLN:C	1:L:199:LYS:HD3	0.43	2.38	1	1
1:L:233:GLU:N	1:L:233:GLU:CD	0.43	2.74	1	2
1:H:150:ILE:CG2	1:H:151:LEU:HD12	0.43	2.44	2	1
1:H:230:VAL:CG1	1:I:228:ALA:HB1	0.43	2.44	2	1
1:K:168:PHE:C	1:K:168:PHE:CD2	0.43	2.97	2	1
1:H:154:ARG:HG2	1:H:193:ASN:HB2	0.43	1.91	3	1
1:I:194:ALA:O	1:I:198:CYS:HB2	0.43	2.14	3	1
1:L:205:LEU:HD13	1:L:213:GLU:CB	0.43	2.44	3	1
1:G:215:MET:O	1:G:219:GLN:CB	0.43	2.67	4	1
1:H:183:ASN:O	1:H:186:THR:HB	0.43	2.13	4	1
1:H:205:LEU:HD22	1:H:213:GLU:HG3	0.43	1.90	4	1
1:J:219:GLN:C	1:J:221:VAL:N	0.43	2.76	4	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:L:152:ASP:O	1:L:153:ILE:C	0.43	2.61	4	1
1:J:169:TYR:CE2	1:J:186:THR:HG21	0.43	2.48	5	1
1:J:238:VAL:HG22	1:K:236:SER:HB3	0.43	1.91	5	1
1:L:168:PHE:C	1:L:168:PHE:CD2	0.43	2.96	5	1
1:H:155:GLN:HA	1:H:164:TYR:CD1	0.43	2.49	1	3
1:H:238:VAL:HG11	1:I:232:ALA:O	0.43	2.13	1	1
1:J:168:PHE:CD2	1:J:168:PHE:C	0.43	2.97	2	2
1:I:153:ILE:HD11	1:I:171:THR:OG1	0.43	2.13	2	2
1:K:191:VAL:HG13	1:K:192:GLN:N	0.43	2.29	2	2
1:K:215:MET:O	1:K:219:GLN:CB	0.43	2.67	2	2
1:G:153:ILE:O	1:G:193:ASN:ND2	0.43	2.52	3	2
1:I:160:PRO:O	1:I:164:TYR:N	0.43	2.52	3	2
3:I:301:2I4:C26	1:L:231:LEU:HD22	0.43	2.43	3	1
1:L:152:ASP:CG	1:L:152:ASP:O	0.43	2.62	3	1
1:G:211:LEU:O	1:G:215:MET:HB2	0.43	2.13	4	1
1:H:153:ILE:HG12	1:H:171:THR:HG21	0.43	1.91	5	1
1:L:155:GLN:O	1:L:156:GLY:C	0.42	2.61	1	1
1:G:152:ASP:O	1:G:152:ASP:CG	0.42	2.61	5	2
1:J:209:ALA:HB3	1:J:214:MET:HE2	0.42	1.91	5	1
1:G:194:ALA:O	1:G:195:ASN:O	0.42	2.36	2	1
1:H:201:ILE:O	1:H:205:LEU:N	0.42	2.52	2	1
1:K:153:ILE:HG21	1:K:168:PHE:HA	0.42	1.90	3	2
1:I:226:HIS:ND1	1:I:230:VAL:HG21	0.42	2.29	4	1
1:J:175:GLU:O	1:J:182:LYS:NZ	0.42	2.52	4	1
1:J:184:TRP:CZ3	1:J:188:THR:HG21	0.42	2.49	2	1
1:K:155:GLN:HB2	1:K:164:TYR:CG	0.42	2.49	2	1
1:L:226:HIS:CD2	1:L:230:VAL:HG21	0.42	2.49	2	1
1:J:190:LEU:O	1:J:194:ALA:CB	0.42	2.65	4	2
1:J:214:MET:O	1:J:218:CYS:HB2	0.42	2.14	5	2
1:G:231:LEU:O	1:G:235:MET:CB	0.42	2.67	5	1
1:K:172:LEU:HG	1:K:182:LYS:HD3	0.42	1.91	5	1
1:L:177:ALA:HB3	1:L:182:LYS:CG	0.42	2.44	5	1
1:G:202:LEU:CD2	1:G:214:MET:SD	0.42	3.07	1	1
1:L:165:VAL:O	1:L:169:TYR:HD1	0.42	1.97	1	1
1:L:231:LEU:O	1:L:235:MET:CB	0.42	2.68	1	1
1:I:155:GLN:HG3	1:I:164:TYR:CB	0.42	2.44	3	1
1:I:155:GLN:CG	1:I:164:TYR:HB2	0.42	2.44	3	1
1:I:224:PRO:O	1:I:225:GLY:C	0.42	2.62	3	1
1:H:185:MET:O	1:H:186:THR:C	0.42	2.63	4	1
1:G:169:TYR:N	1:G:169:TYR:CD1	0.42	2.86	2	3
1:G:226:HIS:CD2	1:G:230:VAL:HG21	0.42	2.49	5	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:L:161:PHE:CG	1:L:218:CYS:SG	0.42	3.11	1	1
1:L:165:VAL:O	1:L:169:TYR:CD1	0.42	2.72	1	2
1:I:152:ASP:CG	1:I:152:ASP:O	0.42	2.62	3	1
1:L:177:ALA:O	1:L:178:SER:C	0.42	2.63	4	1
1:L:194:ALA:O	1:L:195:ASN:C	0.42	2.61	4	1
1:J:238:VAL:HG13	1:K:236:SER:CB	0.42	2.43	1	2
1:H:150:ILE:HG22	1:H:151:LEU:HD12	0.42	1.91	2	1
1:J:195:ASN:O	1:J:197:ASP:N	0.42	2.53	5	3
1:I:156:GLY:O	1:I:159:GLU:N	0.42	2.53	3	1
1:L:156:GLY:N	1:L:159:GLU:HB3	0.42	2.30	3	1
1:H:214:MET:C	1:H:218:CYS:SG	0.42	3.02	5	1
1:K:221:VAL:HG22	1:K:226:HIS:CD2	0.42	2.49	3	1
1:H:163:ASP:O	1:H:166:ASP:N	0.42	2.52	5	1
1:I:155:GLN:HA	1:I:164:TYR:CD1	0.42	2.50	1	3
1:G:153:ILE:O	1:G:193:ASN:HB3	0.42	2.15	2	1
1:I:210:THR:HG23	1:I:213:GLU:H	0.42	1.74	2	1
1:J:150:ILE:HD13	1:J:168:PHE:O	0.42	2.15	4	1
1:K:189:LEU:O	1:K:193:ASN:CG	0.42	2.63	5	1
1:K:191:VAL:HG22	1:K:202:LEU:CD2	0.42	2.39	5	1
1:K:211:LEU:HA	1:K:214:MET:HE3	0.42	1.90	5	1
1:L:210:THR:C	1:L:212:GLU:N	0.42	2.75	1	2
1:G:210:THR:HG23	1:G:213:GLU:H	0.42	1.74	2	1
1:L:150:ILE:HG22	1:L:175:GLU:CD	0.42	2.40	2	1
1:H:191:VAL:HG22	1:H:202:LEU:CD2	0.42	2.45	5	1
1:K:150:ILE:HD11	1:K:168:PHE:CE2	0.42	2.50	1	1
1:L:155:GLN:HG3	1:L:164:TYR:HB2	0.42	1.90	2	1
1:K:149:SER:O	1:K:150:ILE:C	0.42	2.63	3	1
1:K:195:ASN:C	1:K:197:ASP:N	0.42	2.77	3	1
1:L:158:LYS:O	1:L:159:GLU:C	0.42	2.63	3	1
1:J:180:GLU:O	1:J:184:TRP:HB3	0.42	2.14	4	1
1:G:168:PHE:CD2	1:G:168:PHE:C	0.41	2.98	5	2
1:J:169:TYR:CZ	1:J:186:THR:HG23	0.41	2.50	2	1
1:K:177:ALA:HB1	1:K:181:VAL:CG1	0.41	2.45	3	1
1:H:201:ILE:O	1:H:202:LEU:C	0.41	2.63	4	1
1:I:169:TYR:O	1:I:170:LYS:C	0.41	2.62	5	1
1:I:226:HIS:O	1:I:227:LYS:C	0.41	2.63	5	1
1:L:206:GLY:O	1:L:207:PRO:C	0.41	2.63	1	1
1:I:150:ILE:HD13	1:I:153:ILE:HG13	0.41	1.92	2	1
1:L:205:LEU:HD13	1:L:213:GLU:C	0.41	2.40	2	1
1:I:235:MET:C	1:J:235:MET:HE2	0.41	2.40	3	1
1:K:180:GLU:HG3	1:K:181:VAL:HG23	0.41	1.92	5	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:L:150:ILE:HG12	1:L:172:LEU:N	0.41	2.30	5	1
1:G:150:ILE:CD1	1:G:168:PHE:O	0.41	2.68	1	1
1:I:172:LEU:HD21	1:I:182:LYS:CB	0.41	2.44	1	1
1:J:169:TYR:CD1	1:J:169:TYR:N	0.41	2.88	1	1
1:H:161:PHE:HB2	1:H:218:CYS:HB2	0.41	1.92	2	1
1:I:164:TYR:CE2	1:I:190:LEU:CD1	0.41	3.03	4	1
1:J:150:ILE:HD11	1:J:168:PHE:CD1	0.41	2.48	4	1
1:K:153:ILE:HD12	1:K:167:ARG:CG	0.41	2.45	4	1
1:H:214:MET:O	1:H:215:MET:C	0.41	2.63	5	1
1:G:150:ILE:HD11	1:G:168:PHE:CG	0.41	2.50	1	1
1:H:180:GLU:HG2	1:H:181:VAL:N	0.41	2.31	1	1
1:I:191:VAL:HG13	1:I:192:GLN:N	0.41	2.31	1	2
1:I:184:TRP:CD1	1:I:185:MET:N	0.41	2.89	3	1
1:H:181:VAL:O	1:H:184:TRP:CD1	0.41	2.73	4	1
1:G:224:PRO:CB	1:L:227:LYS:HG2	0.41	2.46	5	1
1:K:164:TYR:HE2	1:K:190:LEU:HD12	0.41	1.71	5	1
1:L:161:PHE:O	1:L:165:VAL:HG13	0.41	2.15	5	1
1:J:195:ASN:OD1	1:J:195:ASN:C	0.41	2.63	2	2
1:K:165:VAL:O	1:K:168:PHE:HB3	0.41	2.16	2	1
1:G:154:ARG:CG	1:G:193:ASN:HB2	0.41	2.46	3	1
1:I:153:ILE:HG22	1:I:153:ILE:O	0.41	2.14	3	1
1:K:164:TYR:OH	1:K:193:ASN:CG	0.41	2.64	3	1
1:L:153:ILE:HD11	1:L:171:THR:HG21	0.41	1.93	3	1
1:L:172:LEU:HD11	1:L:182:LYS:HG3	0.41	1.93	3	1
1:L:189:LEU:O	1:L:193:ASN:CG	0.41	2.64	3	1
1:H:202:LEU:HD23	1:H:214:MET:CE	0.41	2.40	5	1
1:H:161:PHE:HB2	1:H:218:CYS:HB3	0.41	1.92	1	1
1:J:211:LEU:HD13	1:J:211:LEU:O	0.41	2.15	1	3
1:K:210:THR:C	1:K:212:GLU:N	0.41	2.78	1	1
1:H:181:VAL:O	1:H:185:MET:HB2	0.41	2.15	2	1
1:I:221:VAL:HG13	1:I:226:HIS:CD2	0.41	2.50	2	1
1:K:184:TRP:CE3	1:K:188:THR:HG21	0.41	2.49	2	1
1:L:155:GLN:NE2	1:L:194:ALA:HB1	0.41	2.31	2	1
1:K:234:ALA:HB1	1:L:232:ALA:HA	0.41	1.93	3	1
1:L:223:GLY:C	1:L:225:GLY:N	0.41	2.78	3	1
1:I:204:ALA:C	1:I:206:GLY:N	0.41	2.78	4	1
1:J:198:CYS:O	1:J:202:LEU:HD12	0.41	2.15	4	1
1:H:177:ALA:HB1	1:H:181:VAL:HG12	0.41	1.89	5	1
1:J:186:THR:O	1:J:190:LEU:HB3	0.41	2.15	5	1
1:K:158:LYS:HB3	1:L:223:GLY:HA3	0.41	1.93	5	1
1:H:224:PRO:C	1:H:226:HIS:N	0.41	2.75	5	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:L:156:GLY:N	1:L:159:GLU:CB	0.41	2.84	2	1
1:K:186:THR:O	1:K:190:LEU:HB3	0.41	2.16	5	1
1:I:231:LEU:O	1:I:235:MET:HB2	0.41	2.16	1	1
1:L:215:MET:O	1:L:219:GLN:CB	0.41	2.69	1	1
1:K:206:GLY:O	1:K:207:PRO:C	0.41	2.63	2	1
1:H:157:PRO:HG3	1:I:219:GLN:O	0.41	2.15	3	1
1:J:179:GLN:O	1:J:183:ASN:N	0.41	2.53	3	1
1:I:153:ILE:HD12	1:I:167:ARG:O	0.41	2.16	4	1
1:K:221:VAL:HG13	1:K:226:HIS:CE1	0.41	2.51	5	1
1:L:164:TYR:HE2	1:L:190:LEU:HD12	0.41	1.73	5	1
1:H:169:TYR:CD1	1:H:169:TYR:N	0.41	2.88	1	2
1:I:211:LEU:O	1:I:211:LEU:HD13	0.41	2.16	1	1
1:J:155:GLN:N	1:J:164:TYR:CE1	0.41	2.88	1	1
1:L:161:PHE:HB2	1:L:218:CYS:HB2	0.41	1.93	1	1
1:G:161:PHE:HB2	1:G:218:CYS:HB3	0.41	1.92	3	1
1:G:197:ASP:O	1:G:200:THR:HG22	0.41	2.15	4	2
1:H:161:PHE:HB2	1:H:218:CYS:CB	0.41	2.46	3	1
1:I:201:ILE:O	1:I:204:ALA:HB3	0.41	2.15	5	2
1:J:155:GLN:OE1	1:J:159:GLU:O	0.41	2.39	4	1
1:J:156:GLY:O	1:J:157:PRO:C	0.41	2.63	4	1
1:J:185:MET:C	1:J:187:GLU:N	0.41	2.77	4	1
1:J:223:GLY:C	1:J:225:GLY:N	0.41	2.78	4	1
1:K:149:SER:C	1:K:151:LEU:N	0.41	2.79	4	1
1:I:177:ALA:HB3	1:I:182:LYS:HD3	0.41	1.91	5	1
1:J:153:ILE:O	1:J:193:ASN:CG	0.41	2.64	5	1
1:L:224:PRO:C	1:L:226:HIS:N	0.41	2.79	5	1
1:J:218:CYS:O	1:J:221:VAL:HG23	0.41	2.14	1	1
1:L:199:LYS:O	1:L:200:THR:C	0.41	2.64	1	1
1:L:149:SER:C	1:L:151:LEU:N	0.41	2.79	2	1
1:L:209:ALA:O	1:L:210:THR:C	0.41	2.64	2	1
1:L:194:ALA:O	1:L:195:ASN:HB3	0.41	2.16	3	1
1:L:217:ALA:C	1:L:219:GLN:H	0.41	2.24	3	1
1:J:185:MET:O	1:J:189:LEU:N	0.41	2.52	5	1
1:J:230:VAL:O	1:J:231:LEU:C	0.40	2.63	1	1
1:I:196:PRO:O	1:I:200:THR:HB	0.40	2.16	2	1
1:L:144:GLY:O	1:L:145:GLY:C	0.40	2.63	2	1
1:H:150:ILE:HG23	1:H:151:LEU:HD12	0.40	1.94	5	1
1:G:232:ALA:HB2	1:L:234:ALA:CB	0.40	2.39	2	1
1:I:172:LEU:O	1:I:175:GLU:O	0.40	2.38	2	1
1:H:195:ASN:OD1	1:H:195:ASN:C	0.40	2.64	3	1
1:I:168:PHE:CD2	1:I:168:PHE:O	0.40	2.74	3	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:K:238:VAL:HG22	1:L:236:SER:HB3	0.40	1.92	3	1
1:L:222:GLY:O	1:L:223:GLY:O	0.40	2.39	3	1
1:G:191:VAL:CG2	1:G:192:GLN:N	0.40	2.83	4	1
1:L:171:THR:HA	1:L:174:ALA:HB3	0.40	1.92	4	1
1:K:233:GLU:O	1:K:237:GLN:N	0.40	2.54	5	1
1:I:150:ILE:HD12	1:I:153:ILE:HG13	0.40	1.92	1	1
1:H:235:MET:HE3	1:I:235:MET:HE2	0.40	1.93	2	1
1:I:161:PHE:O	1:I:165:VAL:CG1	0.40	2.69	2	1
1:K:181:VAL:HA	1:K:184:TRP:CD1	0.40	2.51	2	1
1:L:155:GLN:HB2	1:L:164:TYR:CD2	0.40	2.51	2	1
1:L:177:ALA:HB3	1:L:182:LYS:HD2	0.40	1.92	2	1
1:I:237:GLN:O	1:I:241:THR:N	0.40	2.53	4	1
1:H:198:CYS:O	1:H:201:ILE:N	0.40	2.54	5	1
1:H:198:CYS:SG	1:H:221:VAL:HG11	0.40	2.56	5	1
1:K:155:GLN:N	1:K:164:TYR:CD1	0.40	2.90	5	1
1:J:192:GLN:HA	1:J:199:LYS:CD	0.40	2.47	1	1
1:H:191:VAL:HG23	1:H:202:LEU:HB2	0.40	1.93	2	1
1:I:153:ILE:O	1:I:193:ASN:CG	0.40	2.64	3	1
1:L:198:CYS:O	1:L:199:LYS:C	0.40	2.64	4	1
3:I:301:2I4:C30	1:J:235:MET:HE3	0.40	2.46	5	1
1:K:216:THR:O	1:K:219:GLN:HB3	0.40	2.15	5	1
1:I:197:ASP:O	1:I:198:CYS:C	0.40	2.65	2	1
1:J:155:GLN:CG	1:J:159:GLU:O	0.40	2.69	2	1
1:K:150:ILE:HG23	1:K:151:LEU:HD12	0.40	1.93	2	1
1:J:211:LEU:CD2	1:J:214:MET:HE2	0.40	2.35	3	1
1:L:233:GLU:O	1:L:237:GLN:HB2	0.40	2.16	5	1

6.3 Torsion angles ⓘ

6.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all NMR entries. The Analysed column shows the number of residues for which the backbone conformation was analysed and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	G	100/102 (98%)	92±2 (92±2%)	6±2 (6±2%)	2±0 (2±0%)	8	49
1	H	100/102 (98%)	91±3 (91±3%)	7±2 (7±2%)	3±1 (3±1%)	6	40
1	I	100/102 (98%)	86±3 (86±3%)	11±3 (11±3%)	3±1 (3±1%)	5	38

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	J	100/102 (98%)	88±1 (88±1%)	8±1 (8±1%)	4±0 (4±0%)	4	32
1	K	100/102 (98%)	87±2 (87±2%)	9±2 (9±2%)	3±1 (3±1%)	5	36
1	L	100/102 (98%)	86±2 (86±2%)	11±2 (11±2%)	3±1 (3±1%)	5	38
All	All	3000/3060 (98%)	2653 (88%)	259 (9%)	88 (3%)	5	39

All 34 unique Ramachandran outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	G	195	ASN	5
1	G	196	PRO	5
1	H	195	ASN	5
1	H	196	PRO	5
1	I	195	ASN	5
1	I	196	PRO	5
1	J	195	ASN	5
1	J	196	PRO	5
1	K	195	ASN	5
1	L	195	ASN	5
1	K	196	PRO	4
1	L	196	PRO	4
1	J	223	GLY	3
1	J	224	PRO	3
1	K	153	ILE	2
1	L	145	GLY	2
1	L	153	ILE	2
1	K	148	THR	2
1	I	206	GLY	1
1	I	207	PRO	1
1	L	207	PRO	1
1	H	145	GLY	1
1	H	207	PRO	1
1	I	224	PRO	1
1	K	145	GLY	1
1	I	220	GLY	1
1	J	207	PRO	1
1	K	176	GLN	1
1	L	223	GLY	1
1	H	153	ILE	1
1	H	190	LEU	1
1	I	223	GLY	1

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Mol	Chain	Res	Type	Models (Total)
1	J	221	VAL	1
1	K	206	GLY	1

6.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all NMR entries. The Analysed column shows the number of residues for which the sidechain conformation was analysed and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	G	83/83 (100%)	73±2 (88±3%)	10±2 (12±3%)	7	49
1	H	83/83 (100%)	73±2 (88±2%)	10±2 (12±2%)	7	50
1	I	83/83 (100%)	71±2 (86±2%)	12±2 (14±2%)	5	43
1	J	83/83 (100%)	72±1 (87±1%)	11±1 (13±1%)	6	46
1	K	83/83 (100%)	74±1 (89±1%)	9±1 (11±1%)	9	52
1	L	83/83 (100%)	72±2 (87±2%)	11±2 (13±2%)	6	47
All	All	2490/2490 (100%)	2181 (88%)	309 (12%)	7	48

All 146 unique residues with a non-rotameric sidechain are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	G	184	TRP	5
1	G	202	LEU	5
1	G	211	LEU	5
1	G	241	THR	5
1	H	241	THR	5
1	I	153	ILE	5
1	I	211	LEU	5
1	I	226	HIS	5
1	I	241	THR	5
1	J	202	LEU	5
1	J	211	LEU	5
1	J	241	THR	5
1	K	241	THR	5
1	L	211	LEU	5
1	L	241	THR	5
1	H	211	LEU	4

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Mol	Chain	Res	Type	Models (Total)
1	H	231	LEU	4
1	I	148	THR	4
1	I	200	THR	4
1	J	186	THR	4
1	K	202	LEU	4
1	K	205	LEU	4
1	L	153	ILE	4
1	L	184	TRP	4
1	K	211	LEU	4
1	G	152	ASP	3
1	G	162	ARG	3
1	G	185	MET	3
1	G	186	THR	3
1	H	186	THR	3
1	H	238	VAL	3
1	I	186	THR	3
1	I	195	ASN	3
1	K	200	THR	3
1	K	226	HIS	3
1	L	186	THR	3
1	L	214	MET	3
1	J	153	ILE	3
1	J	199	LYS	3
1	L	231	LEU	3
1	I	184	TRP	3
1	L	202	LEU	3
1	G	219	GLN	2
1	G	231	LEU	2
1	H	189	LEU	2
1	H	202	LEU	2
1	I	152	ASP	2
1	I	227	LYS	2
1	J	148	THR	2
1	J	158	LYS	2
1	J	195	ASN	2
1	J	231	LEU	2
1	J	235	MET	2
1	K	197	ASP	2
1	K	227	LYS	2
1	L	171	THR	2
1	G	153	ILE	2
1	G	180	GLU	2

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Mol	Chain	Res	Type	Models (Total)
1	H	152	ASP	2
1	H	153	ILE	2
1	H	214	MET	2
1	I	185	MET	2
1	I	236	SER	2
1	J	152	ASP	2
1	J	162	ARG	2
1	J	180	GLU	2
1	K	186	THR	2
1	K	195	ASN	2
1	G	226	HIS	2
1	H	199	LYS	2
1	I	202	LEU	2
1	J	184	TRP	2
1	J	214	MET	2
1	K	149	SER	2
1	L	185	MET	2
1	L	219	GLN	2
1	H	148	THR	2
1	H	182	LYS	2
1	J	226	HIS	2
1	L	148	THR	2
1	L	233	GLU	2
1	G	163	ASP	1
1	G	238	VAL	1
1	H	195	ASN	1
1	H	201	ILE	1
1	I	235	MET	1
1	J	219	GLN	1
1	K	146	SER	1
1	L	197	ASP	1
1	G	178	SER	1
1	H	180	GLU	1
1	H	205	LEU	1
1	H	218	CYS	1
1	H	227	LYS	1
1	H	230	VAL	1
1	I	150	ILE	1
1	I	151	LEU	1
1	I	162	ARG	1
1	I	197	ASP	1
1	I	219	GLN	1

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Mol	Chain	Res	Type	Models (Total)
1	J	210	THR	1
1	K	153	ILE	1
1	K	182	LYS	1
1	K	214	MET	1
1	K	219	GLN	1
1	L	161	PHE	1
1	L	162	ARG	1
1	L	182	LYS	1
1	L	203	LYS	1
1	L	227	LYS	1
1	H	158	LYS	1
1	I	154	ARG	1
1	I	180	GLU	1
1	J	159	GLU	1
1	J	185	MET	1
1	K	154	ARG	1
1	L	199	LYS	1
1	L	212	GLU	1
1	L	235	MET	1
1	G	191	VAL	1
1	H	162	ARG	1
1	H	175	GLU	1
1	H	197	ASP	1
1	H	219	GLN	1
1	I	146	SER	1
1	I	176	GLN	1
1	I	214	MET	1
1	J	227	LYS	1
1	K	161	PHE	1
1	K	191	VAL	1
1	L	191	VAL	1
1	L	195	ASN	1
1	L	213	GLU	1
1	G	167	ARG	1
1	G	193	ASN	1
1	G	214	MET	1
1	H	221	VAL	1
1	I	182	LYS	1
1	I	233	GLU	1
1	J	175	GLU	1
1	J	200	THR	1
1	J	201	ILE	1

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Mol	Chain	Res	Type	Models (Total)
1	K	185	MET	1
1	K	193	ASN	1
1	K	245	MET	1
1	L	150	ILE	1

6.3.3 RNA [i](#)

There are no RNA molecules in this entry.

6.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

6.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.6 Ligand geometry [i](#)

2 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds for which Mogul statistics could be retrieved, the number of bonds that are observed in the model and the number of bonds that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length is the number of standard deviations the observed value is removed from the expected value. A bond length with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the average root-mean-square of all Z scores of the bond lengths.

Mol	Type	Chain	Res	Link	Bond lengths		
					Counts	RMSZ	#Z>2
3	2I4	I	301	-	46,46,46	2.45±0.00	16±0 (34±0%)
2	IHP	G	301	-	36,36,36	1.68±0.00	7±0 (19±0%)

In the following table, the Counts columns list the number of angles for which Mogul statistics could be retrieved, the number of angles that are observed in the model and the number of angles that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond angle is the number of standard deviations the observed value is removed from the expected value. A bond angle with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the average root-mean-square of all Z scores of

the bond angles.

Mol	Type	Chain	Res	Link	Counts	Bond angles	
						RMSZ	#Z>2
3	2I4	I	301	-	76,78,78	2.43±0.00	27±0 (35±0%)
2	IHP	G	301	-	60,60,60	1.38±0.00	9±0 (15±0%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	IHP	G	301	-	-	0±0,30,54,54	0±0,1,1,1
3	2I4	I	301	-	-	0±0,25,114,114	0±0,5,5,5

All unique bond outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)	Models	
								Worst	Total
3	I	301	2I4	C6-C5	6.73	1.64	1.53	5	5
3	I	301	2I4	C8-C14	6.53	1.69	1.59	5	5
3	I	301	2I4	C17-C28	5.97	1.63	1.52	5	5
2	G	301	IHP	P2-O12	5.52	1.69	1.59	5	5
3	I	301	2I4	C19-C20	4.43	1.44	1.51	4	5
3	I	301	2I4	C11-C9	4.00	1.59	1.53	2	5
3	I	301	2I4	C14-C13	3.86	1.61	1.56	5	5
3	I	301	2I4	C18-C13	3.77	1.59	1.54	4	5
3	I	301	2I4	C4-C5	3.18	1.61	1.56	2	5
2	G	301	IHP	P4-O14	3.17	1.54	1.59	5	5
2	G	301	IHP	C4-C3	3.00	1.58	1.52	1	5
3	I	301	2I4	C22-C17	2.88	1.50	1.54	2	5
3	I	301	2I4	C32-C33	2.76	1.45	1.53	4	5
2	G	301	IHP	P5-O15	2.69	1.64	1.59	5	5
3	I	301	2I4	C35-C33	2.68	1.58	1.53	3	5
3	I	301	2I4	C7-C8	2.51	1.58	1.54	4	5
3	I	301	2I4	C33-C34	2.49	1.62	1.51	2	5
2	G	301	IHP	P6-O46	2.35	1.46	1.54	3	5
2	G	301	IHP	P4-O44	2.28	1.46	1.54	2	5
3	I	301	2I4	C21-C19	2.22	1.58	1.54	1	5
3	I	301	2I4	O6-C34	2.21	1.29	1.22	3	5
3	I	301	2I4	C12-C13	2.16	1.50	1.53	3	5
2	G	301	IHP	C5-C4	2.16	1.56	1.52	3	5

All unique angle outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
3	I	301	2I4	C22-C17-C18	7.59	93.57	101.12	5	5
3	I	301	2I4	C12-C13-C14	6.65	117.83	110.99	2	5
3	I	301	2I4	C8-C14-C13	5.45	103.11	108.57	1	5
3	I	301	2I4	C18-C19-C20	5.32	126.72	116.92	4	5
3	I	301	2I4	C12-C13-C18	5.02	105.11	113.49	1	5
3	I	301	2I4	C26-C8-C9	4.90	118.96	111.93	5	5
3	I	301	2I4	C17-C18-C13	4.67	106.47	112.30	1	5
3	I	301	2I4	C21-C19-C18	4.65	98.02	103.33	4	5
2	G	301	IHP	P1-O11-C1	4.52	135.51	123.43	5	5
3	I	301	2I4	O1-C31-C32	4.32	103.68	111.26	3	5
3	I	301	2I4	C26-C8-C7	3.89	101.43	107.83	3	5
3	I	301	2I4	C6-C5-C10	3.85	114.90	110.92	3	5
3	I	301	2I4	O1-C3-C2	3.31	114.05	108.53	3	5
3	I	301	2I4	C1-C2-C3	3.30	116.89	110.66	2	5
2	G	301	IHP	C6-C1-C2	3.12	103.59	110.43	3	5
2	G	301	IHP	C5-C6-C1	2.86	104.14	110.43	4	5
3	I	301	2I4	C11-C9-C8	2.72	114.00	110.85	3	5
3	I	301	2I4	C15-C16-C17	2.67	107.18	112.03	4	5
2	G	301	IHP	O32-P2-O12	2.67	116.25	105.85	4	5
2	G	301	IHP	P2-O12-C2	2.63	116.40	123.43	2	5
3	I	301	2I4	C3-O1-C31	2.61	113.27	118.03	1	5
3	I	301	2I4	C18-C17-C28	2.50	116.94	113.98	1	5
3	I	301	2I4	C7-C6-C5	2.44	106.33	111.05	4	5
3	I	301	2I4	O1-C31-O4	2.44	129.41	123.70	3	5
2	G	301	IHP	O42-P2-O22	2.39	120.16	110.83	5	5
3	I	301	2I4	C2-C3-C4	2.34	111.15	114.32	2	5
3	I	301	2I4	C35-C33-C34	2.29	104.12	108.98	5	5
3	I	301	2I4	C5-C4-C3	2.29	110.52	106.81	2	5
2	G	301	IHP	C5-C4-C3	2.29	115.44	110.43	1	5
3	I	301	2I4	C15-C14-C8	2.28	112.75	110.78	2	5
2	G	301	IHP	P5-O15-C5	2.25	129.44	123.43	2	5
3	I	301	2I4	C24-C4-C23	2.24	104.65	107.70	3	5
3	I	301	2I4	C24-C4-C3	2.22	114.20	109.40	4	5
3	I	301	2I4	C29-C20-C19	2.16	112.75	117.47	3	5
3	I	301	2I4	C36-C33-C34	2.11	113.44	108.98	3	5
2	G	301	IHP	O16-C6-C5	2.10	113.22	108.76	2	5

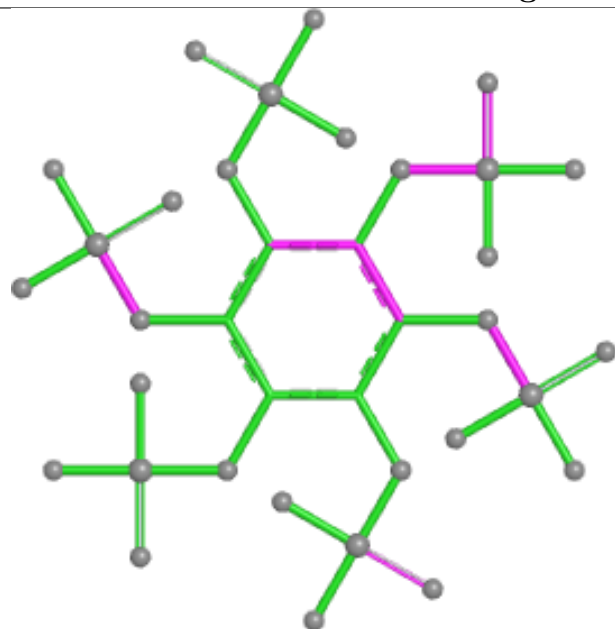
There are no chirality outliers.

There are no torsion outliers.

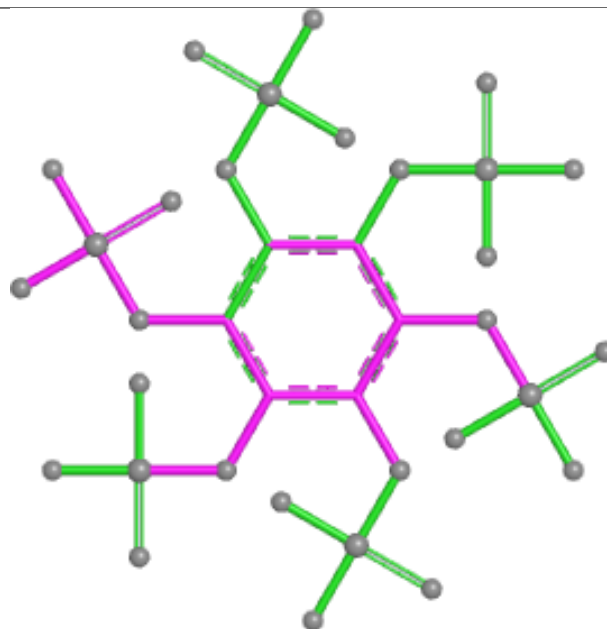
There are no ring outliers.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

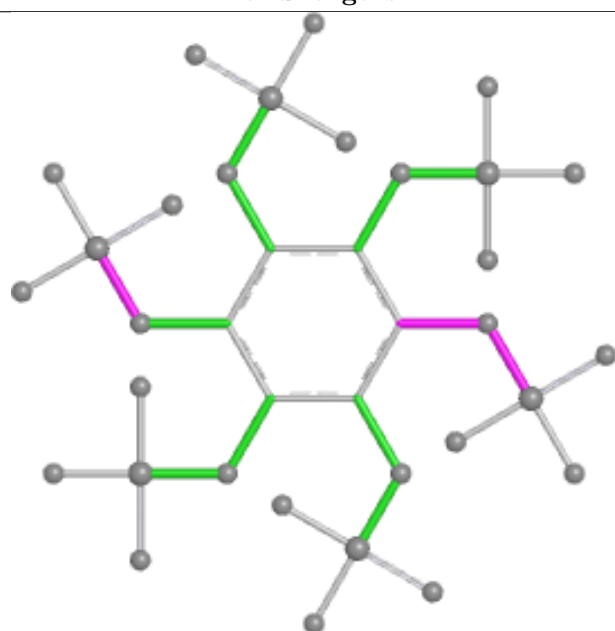
Ligand IHP G 301



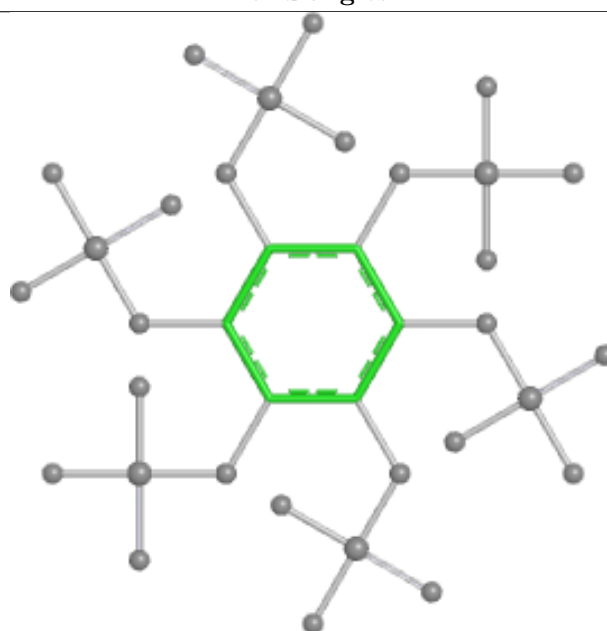
Bond lengths



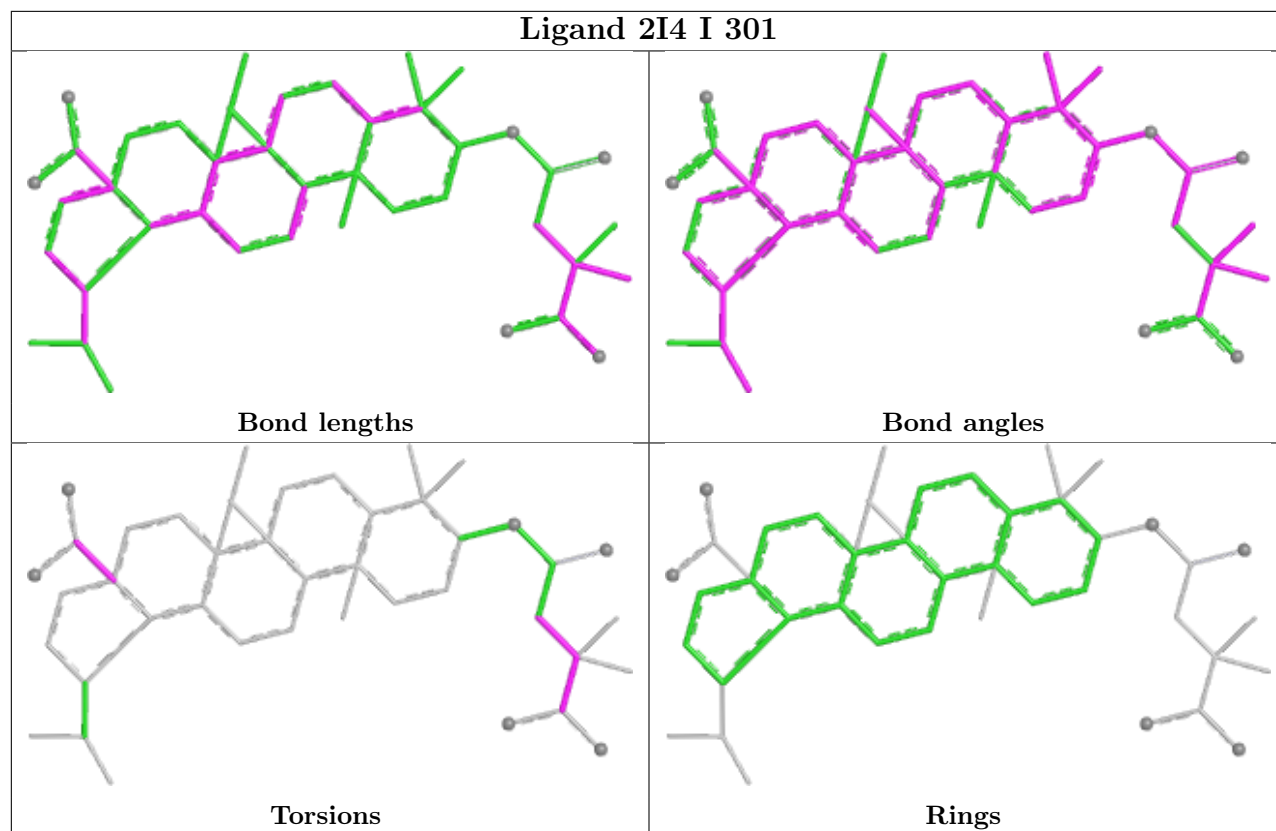
Bond angles



Torsions



Rings



6.7 Other polymers [i](#)

There are no such molecules in this entry.

6.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

7 Chemical shift validation i

The completeness of assignment taking into account all chemical shift lists is 9% for the well-defined parts and 9% for the entire structure.

7.1 Chemical shift list 1

File name: working_cs.cif

Chemical shift list name: *BVMIP6_chemicalshift_040721.str*

7.1.1 Bookkeeping i

The following table shows the results of parsing the chemical shift list and reports the number of nuclei with statistically unusual chemical shifts.

Total number of shifts	770
Number of shifts mapped to atoms	770
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	0

7.1.2 Chemical shift referencing i

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction $\pm$ precision, ppm	Suggested action
$^{13}\text{C}_\alpha$	98	-1.40 ± 0.43	Should be checked
$^{13}\text{C}_\beta$	88	0.27 ± 0.18	None needed (< 0.5 ppm)
$^{13}\text{C}'$	93	-1.34 ± 0.39	Should be applied
^{15}N	95	-0.02 ± 0.82	None needed (< 0.5 ppm)

7.1.3 Completeness of resonance assignments i

The following table shows the completeness of the chemical shift assignments for the well-defined regions of the structure. The overall completeness is 9%, i.e. 744 atoms were assigned a chemical shift out of a possible 8047. 0 out of 84 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^1H	^{13}C	^{15}N
Backbone	398/3042 (13%)	117/1242 (9%)	191/1224 (16%)	90/576 (16%)
Sidechain	316/4662 (7%)	112/3036 (4%)	200/1440 (14%)	4/186 (2%)

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	Total	¹H	¹³C	¹⁵N
Aromatic	30/343 (9%)	9/168 (5%)	18/162 (11%)	3/13 (23%)
Overall	744/8047 (9%)	238/4446 (5%)	409/2826 (14%)	97/775 (13%)

Note: This is a solid-state NMR structure, where hydrogen atoms are typically not assigned a chemical shift value, which may lead to lower completeness of assignment measure.

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 9%, i.e. 744 atoms were assigned a chemical shift out of a possible 8047. 0 out of 84 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	¹H	¹³C	¹⁵N
Backbone	398/3042 (13%)	117/1242 (9%)	191/1224 (16%)	90/576 (16%)
Sidechain	316/4662 (7%)	112/3036 (4%)	200/1440 (14%)	4/186 (2%)
Aromatic	30/343 (9%)	9/168 (5%)	18/162 (11%)	3/13 (23%)
Overall	744/8047 (9%)	238/4446 (5%)	409/2826 (14%)	97/775 (13%)

Note: This is a solid-state NMR structure, where hydrogen atoms are typically not assigned a chemical shift value, which may lead to lower completeness of assignment measure.

7.1.4 Statistically unusual chemical shifts [i](#)

There are no statistically unusual chemical shifts.

7.1.5 Random Coil Index (RCI) plots [i](#)

The image below reports *random coil index* values for the protein chains in the structure. The height of each bar gives a probability of a given residue to be disordered, as predicted from the available chemical shifts and the amino acid sequence. A value above 0.2 is an indication of significant predicted disorder. The colour of the bar shows whether the residue is in the well-defined core (black) or in the ill-defined residue ranges (cyan), as described in section 2 on ensemble composition. If well-defined core and ill-defined regions are not identified then it is shown as gray bars.

Random coil index (RCI) for chain G:

