



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 10, 2026 – 09:20 AM UTC

PDB ID : 1YMM / pdb_00001ymm
Title : TCR/HLA-DR2b/MBP-peptide complex
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Deposited on : 2005-01-21
Resolution : 3.50 Å(reported)

This is a Full wwPDB X-ray 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/XrayValidationReportHelp>

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)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

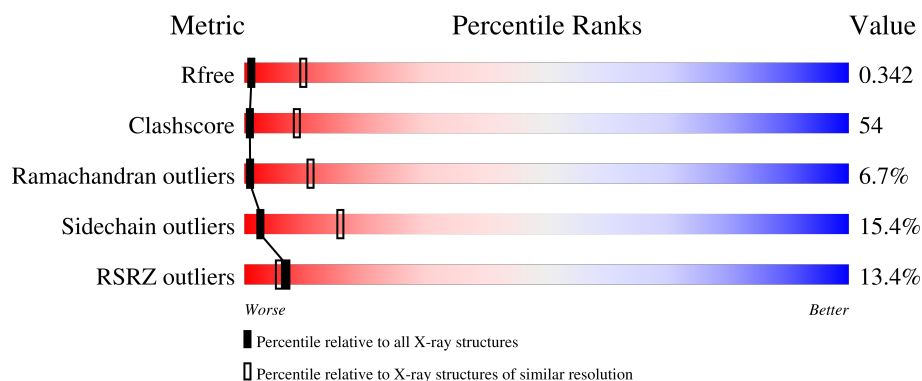
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.50 Å.

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)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	1085 (3.54-3.46)
Clashscore	190562	1140 (3.54-3.46)
Ramachandran outliers	187476	1113 (3.54-3.46)
Sidechain outliers	187428	1114 (3.54-3.46)
RSRZ outliers	180081	1084 (3.54-3.46)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. 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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	191	10% 31% 50% 13% 5%
2	B	198	2% 35% 43% 10% 10%
3	C	23	22% 30% 39%
4	D	207	10% 15% 18% 8% 54%
5	E	249	29% 34% 45% 15% 5%

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 5789 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called HLA class II histocompatibility antigen, DR alpha chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	182	Total	C	N	O	S	79	0	0
			1494	968	243	278	5			

- Molecule 2 is a protein called HLA class II histocompatibility antigen, DR beta chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	178	Total	C	N	O	S	68	0	0
			1466	930	257	273	6			

- Molecule 3 is a protein called MBP peptide.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	C	14	Total	C	N	O	0	0	0
			116	78	19	19			

- Molecule 4 is a protein called T cell receptor alpha chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	96	Total	C	N	O	S	133	0	0
			750	461	137	149	3			

There are 13 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	92	ASP	ALA	see remark 999	GB 29293741
D	93	THR	ASN	see remark 999	GB 29293741
D	94	THR	ALA	see remark 999	GB 29293741
D	95	SER	GLY	see remark 999	GB 29293741
D	?	-	SER	see remark 999	GB 29293741
D	?	-	GLY	see remark 999	GB 29293741
D	100	TYR	LEU	see remark 999	GB 29293741
D	101	ILE	THR	see remark 999	GB 29293741

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Chain	Residue	Modelled	Actual	Comment	Reference
D	104	THR	GLN	see remark 999	GB 29293741
D	107	ARG	ILE	see remark 999	GB 29293741
D	109	LYS	THR	see remark 999	GB 29293741
D	111	LEU	HIS	see remark 999	GB 29293741
D	112	ALA	PRO	see remark 999	GB 29293741

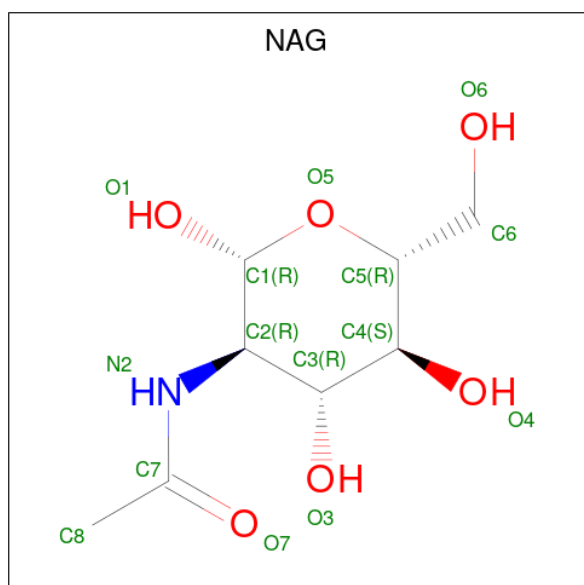
- Molecule 5 is a protein called T-cell receptor beta chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	E	246	Total	C	N	O	S	395	0	0
			1948	1229	335	377	7			

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	13	SER	CYS	engineered mutation	UNP P01850
E	98	ASP	GLU	see remark 999	UNP P01850
E	99	LEU	SER	see remark 999	UNP P01850
E	102	GLY	ASP	see remark 999	UNP P01850
E	103	ALA	PRO	see remark 999	UNP P01850
E	104	ASN	LYS	see remark 999	UNP P01850
E	193	SER	CYS	engineered mutation	UNP P01850

- Molecule 6 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).

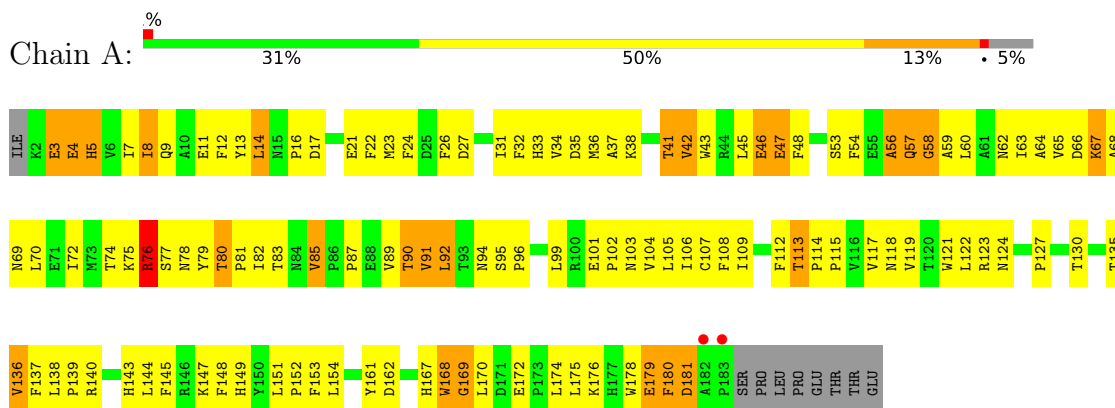


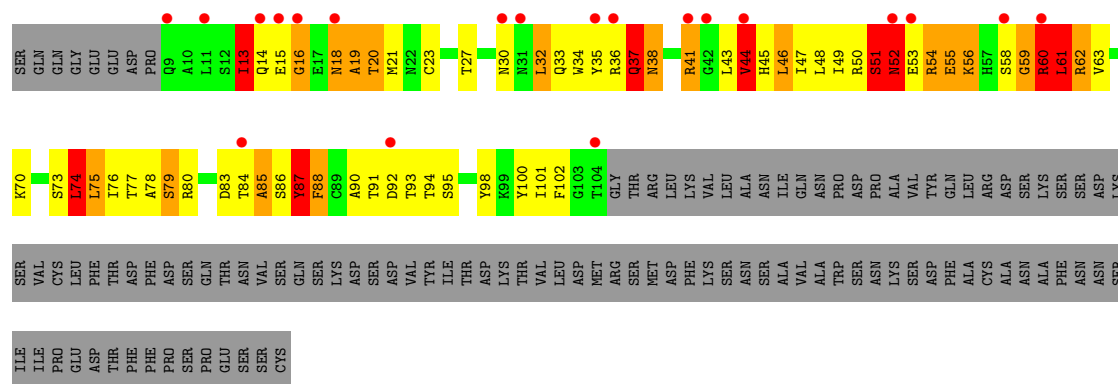
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	A	1	Total	C	N	O	1	0
			15	8	1	6		

3 Residue-property plots

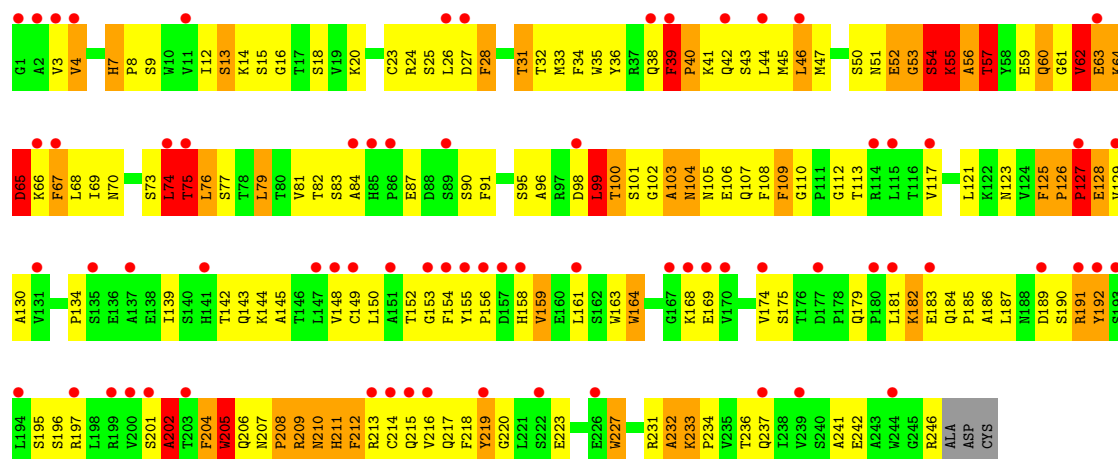
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-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. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: HLA class II histocompatibility antigen, DR alpha chain





• Molecule 5: T-cell receptor beta chain



4 Data and refinement statistics

Property	Value	Source
Space group	F 2 2 2	Depositor
Cell constants a, b, c, α , β , γ	137.34Å 212.62Å 278.22Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	19.72 – 3.50 19.72 – 3.50	Depositor EDS
% Data completeness (in resolution range)	96.4 (19.72-3.50) 95.7 (19.72-3.50)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.82 (at 3.22Å)	Xtriage
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.274 , 0.318 0.292 , 0.342	Depositor DCC
R_{free} test set	1634 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å ²)	96.5	Xtriage
Anisotropy	0.186	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.28 , 111.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.86	EDS
Total number of atoms	5789	wwPDB-VP
Average B, all atoms (Å ²)	65.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.69% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: NAG

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 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	A	0.63	1/1540 (0.1%)	1.14	15/2100 (0.7%)
2	B	0.66	1/1505 (0.1%)	1.10	10/2044 (0.5%)
3	C	1.30	3/120 (2.5%)	1.45	4/164 (2.4%)
4	D	1.32	9/760 (1.2%)	1.63	22/1024 (2.1%)
5	E	1.01	16/2000 (0.8%)	1.43	39/2722 (1.4%)
All	All	0.90	30/5925 (0.5%)	1.31	90/8054 (1.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
3	C	0	1
4	D	0	1
5	E	0	1
All	All	0	3

All (30) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	E	55	LYS	CA-C	14.00	1.71	1.52
4	D	86	SER	CA-C	13.21	1.70	1.53
4	D	62	ARG	CA-C	-13.11	1.38	1.52
4	D	62	ARG	CA-CB	12.59	1.74	1.53
5	E	126	PRO	CA-C	11.63	1.62	1.52
4	D	59	GLY	CA-C	-10.72	1.36	1.51
5	E	125	PHE	C-O	-9.56	1.11	1.24
4	D	86	SER	CA-CB	-9.52	1.38	1.53
2	B	34	GLN	CA-C	9.42	1.65	1.52
5	E	75	THR	CA-C	9.05	1.64	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	E	63	GLU	CA-C	-8.45	1.43	1.52
3	C	86	ASN	C-O	8.37	1.34	1.24
4	D	53	GLU	CA-C	8.07	1.62	1.52
5	E	202	ALA	CA-CB	8.06	1.67	1.53
5	E	75	THR	N-CA	7.56	1.55	1.46
4	D	52	ASN	CA-C	7.51	1.62	1.52
5	E	55	LYS	C-O	7.32	1.33	1.24
5	E	54	SER	C-O	-7.11	1.15	1.24
5	E	57	THR	CA-CB	6.52	1.64	1.53
5	E	40	PRO	CA-C	6.44	1.61	1.52
5	E	27	ASP	CA-CB	6.39	1.68	1.53
3	C	87	PRO	CA-C	-6.38	1.44	1.52
5	E	18	SER	CA-CB	-6.32	1.44	1.52
4	D	61	LEU	CA-C	5.91	1.60	1.52
5	E	27	ASP	CA-C	-5.91	1.45	1.53
1	A	4	GLU	CA-CB	-5.87	1.45	1.53
5	E	209	ARG	CA-C	-5.73	1.47	1.53
3	C	86	ASN	C-N	5.42	1.40	1.33
5	E	18	SER	CA-C	5.13	1.59	1.53
4	D	13	ILE	CB-CG2	-5.03	1.35	1.52

All (90) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	E	74	LEU	O-C-N	13.52	140.57	122.59
5	E	74	LEU	CA-C-N	13.51	147.34	121.54
5	E	74	LEU	C-N-CA	13.51	147.34	121.54
5	E	63	GLU	N-CA-C	-13.04	94.86	114.16
5	E	125	PHE	CA-C-N	-12.95	107.04	120.38
5	E	125	PHE	C-N-CA	-12.95	107.04	120.38
5	E	68	LEU	N-CA-C	11.71	127.98	110.64
5	E	54	SER	O-C-N	-11.39	107.44	122.59
4	D	61	LEU	O-C-N	-11.38	107.46	122.59
4	D	61	LEU	CA-C-N	-10.98	105.19	121.76
4	D	61	LEU	C-N-CA	-10.98	105.19	121.76
4	D	14	GLN	N-CA-C	-10.24	98.25	113.61
4	D	37	GLN	N-CA-C	9.95	124.01	108.79
5	E	210	ASN	CA-C-N	-9.67	107.58	121.99
5	E	210	ASN	C-N-CA	-9.67	107.58	121.99
2	B	8	LEU	N-CA-C	8.70	122.61	108.34
5	E	54	SER	CA-C-N	-8.65	105.01	121.54
5	E	54	SER	C-N-CA	-8.65	105.01	121.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	5	HIS	N-CA-C	8.47	122.59	110.14
5	E	55	LYS	N-CA-C	8.39	128.67	110.80
5	E	210	ASN	O-C-N	-8.25	112.32	122.55
5	E	87	GLU	N-CA-C	-8.24	104.36	114.75
4	D	53	GLU	N-CA-C	7.65	121.04	109.41
4	D	58	SER	N-CA-C	7.54	121.92	111.74
4	D	58	SER	O-C-N	7.45	132.40	122.41
2	B	34	GLN	N-CA-C	7.36	126.48	110.80
5	E	62	VAL	O-C-N	-7.35	113.39	122.57
5	E	211	HIS	N-CA-C	7.34	120.05	108.67
1	A	14	LEU	N-CA-C	7.21	120.28	107.80
4	D	13	ILE	CA-C-N	-7.16	111.12	122.29
4	D	13	ILE	C-N-CA	-7.16	111.12	122.29
5	E	64	LYS	N-CA-C	6.91	125.53	110.80
1	A	3	GLU	N-CA-C	6.79	120.86	111.90
5	E	55	LYS	CA-C-N	6.74	134.42	121.54
5	E	55	LYS	C-N-CA	6.74	134.42	121.54
5	E	205	TRP	CA-CB-CG	-6.72	100.83	113.60
5	E	65	ASP	N-CA-C	6.72	125.11	110.80
3	C	86	ASN	CA-C-N	6.49	126.44	119.76
3	C	86	ASN	C-N-CA	6.49	126.44	119.76
4	D	51	SER	O-C-N	6.42	131.13	122.59
5	E	62	VAL	CA-C-N	-6.38	110.30	120.70
5	E	62	VAL	C-N-CA	-6.38	110.30	120.70
5	E	63	GLU	O-C-N	6.38	128.42	121.85
5	E	103	ALA	N-CA-C	-6.34	97.28	110.80
5	E	77	SER	N-CA-C	-6.34	99.82	108.38
1	A	85	VAL	CA-C-N	6.18	124.11	119.66
1	A	85	VAL	C-N-CA	6.18	124.11	119.66
5	E	148	VAL	N-CA-C	6.17	116.74	108.11
4	D	87	TYR	CA-CB-CG	-6.09	102.93	113.90
5	E	152	THR	N-CA-C	6.09	118.86	108.02
4	D	51	SER	CA-C-N	6.02	133.03	121.54
4	D	51	SER	C-N-CA	6.02	133.03	121.54
5	E	159	VAL	N-CA-C	6.01	116.50	108.27
5	E	27	ASP	N-CA-C	-5.97	103.53	112.54
5	E	126	PRO	N-CA-C	5.96	117.97	110.70
1	A	138	LEU	CA-C-N	5.93	125.69	119.76
1	A	138	LEU	C-N-CA	5.93	125.69	119.76
5	E	164	TRP	CA-CB-CG	5.91	124.84	113.60
1	A	91	VAL	N-CA-C	5.90	116.80	108.36
5	E	63	GLU	CA-C-O	5.86	124.97	118.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	53	LEU	CA-CB-CG	5.79	136.56	116.30
1	A	67	LYS	N-CA-C	-5.75	104.65	111.03
2	B	68	LEU	N-CA-C	-5.74	106.20	113.43
4	D	74	LEU	CA-CB-CG	5.63	136.00	116.30
5	E	53	GLY	N-CA-C	-5.62	99.87	113.18
2	B	181	THR	N-CA-C	5.57	117.35	111.28
4	D	44	VAL	N-CA-C	-5.55	97.80	109.34
1	A	8	ILE	N-CA-C	5.54	116.71	108.46
1	A	56	ALA	N-CA-C	5.41	116.85	111.07
4	D	59	GLY	CA-C-O	-5.39	111.18	120.57
2	B	120	SER	N-CA-C	5.39	117.37	109.24
4	D	85	ALA	N-CA-C	5.39	114.95	107.73
2	B	145	THR	N-CA-C	-5.38	106.46	114.64
3	C	86	ASN	O-C-N	5.37	127.50	121.32
5	E	192	TYR	CA-CB-CG	5.37	123.57	113.90
4	D	14	GLN	CA-C-O	5.34	125.48	119.18
2	B	33	ASN	N-CA-C	-5.27	99.58	110.80
3	C	88	VAL	N-CA-C	5.23	115.50	108.17
1	A	3	GLU	CA-C-N	-5.22	115.60	122.85
1	A	3	GLU	C-N-CA	-5.22	115.60	122.85
5	E	189	ASP	N-CA-C	5.18	119.77	112.72
4	D	16	GLY	N-CA-C	5.17	119.80	111.38
4	D	84	THR	N-CA-C	-5.15	102.06	110.20
5	E	153	GLY	N-CA-C	5.13	125.34	113.18
4	D	19	ALA	N-CA-C	-5.13	102.27	109.96
1	A	79	TYR	N-CA-C	5.12	118.50	111.54
2	B	89	PHE	N-CA-C	5.12	120.16	113.30
2	B	127	ILE	N-CA-C	5.11	113.93	107.70
1	A	36	MET	N-CA-C	-5.09	105.73	112.34
5	E	75	THR	N-CA-CB	5.02	118.97	110.49

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	C	86	ASN	Mainchain
4	D	87	TYR	Sidechain
5	E	74	LEU	Mainchain

5.2 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 the 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 within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1494	0	1430	147	0
2	B	1466	0	1394	145	1
3	C	116	0	114	23	0
4	D	750	0	739	83	3
5	E	1948	0	1866	194	11
6	A	15	0	14	1	0
All	All	5789	0	5557	530	15

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 54.

All (530) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:13:ILE:HB	4:D:79:SER:HB2	1.16	1.16
5:E:31:THR:HA	5:E:74:LEU:HD12	1.26	1.13
5:E:16:GLY:H	5:E:84:ALA:HB3	1.19	1.07
5:E:25:SER:HB2	5:E:28:PHE:CE1	1.89	1.06
4:D:56:LYS:HB3	4:D:63:VAL:H	1.19	1.03
1:A:170:LEU:HD21	1:A:174:LEU:HB2	1.38	1.02
5:E:25:SER:HB2	5:E:28:PHE:HE1	1.22	1.01
5:E:66:LYS:HB3	5:E:82:THR:OG1	1.60	1.01
5:E:73:SER:CB	5:E:76:LEU:H	1.75	0.99
4:D:19:ALA:HB2	4:D:76:ILE:HB	1.46	0.97
5:E:65:ASP:OD1	5:E:65:ASP:N	1.94	0.97
1:A:16:PRO:HD2	2:B:6:ARG:HD3	1.49	0.95
1:A:45:LEU:HD12	1:A:48:PHE:CZ	2.01	0.95
5:E:4:VAL:HB	5:E:110:GLY:HA2	1.48	0.94
5:E:39:PHE:CB	5:E:40:PRO:HD2	1.98	0.93
5:E:207:ASN:HB2	5:E:208:PRO:HD2	1.51	0.93
5:E:155:TYR:CD1	5:E:156:PRO:HA	2.05	0.92
1:A:122:LEU:HD23	1:A:127:PRO:HA	1.53	0.91
5:E:16:GLY:N	5:E:84:ALA:HB3	1.87	0.89
4:D:60:ARG:HA	4:D:76:ILE:HA	1.55	0.89
5:E:46:LEU:HD13	5:E:46:LEU:H	1.38	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:54:SER:O	5:E:55:LYS:C	2.03	0.88
5:E:4:VAL:HG21	5:E:109:PHE:O	1.73	0.88
5:E:127:PRO:CD	5:E:154:PHE:HB3	2.05	0.87
2:B:17:PHE:CZ	2:B:83:TYR:HB2	2.09	0.87
5:E:7:HIS:HB3	5:E:8:PRO:CD	2.04	0.87
5:E:39:PHE:HB3	5:E:40:PRO:HD2	1.56	0.86
4:D:98:TYR:HB3	5:E:105:ASN:HD21	1.41	0.85
5:E:201:SER:O	5:E:202:ALA:CB	2.21	0.85
2:B:94:ARG:HG3	2:B:94:ARG:HH11	1.42	0.85
5:E:3:VAL:HB	5:E:26:LEU:HB2	1.60	0.83
4:D:37:GLN:HB2	4:D:41:ARG:HG2	1.60	0.83
4:D:13:ILE:HB	4:D:79:SER:CB	2.05	0.83
5:E:155:TYR:HD1	5:E:156:PRO:HA	1.41	0.83
4:D:32:LEU:HD22	4:D:91:THR:HG22	1.61	0.82
5:E:39:PHE:HB3	5:E:40:PRO:CD	2.10	0.82
5:E:159:VAL:HA	5:E:217:GLN:O	1.79	0.82
5:E:158:HIS:HB2	5:E:219:TYR:HB3	1.60	0.82
1:A:87:PRO:HD2	1:A:170:LEU:HD13	1.61	0.81
2:B:189:ARG:HH11	2:B:189:ARG:HB3	1.43	0.81
4:D:41:ARG:HH21	5:E:38:GLN:CD	1.89	0.81
4:D:21:MET:HE1	4:D:36:ARG:HD3	1.61	0.81
4:D:79:SER:O	4:D:80:ARG:HG3	1.82	0.79
5:E:66:LYS:HB3	5:E:82:THR:HG1	1.46	0.79
5:E:127:PRO:HD3	5:E:154:PHE:HB3	1.62	0.79
4:D:56:LYS:HB3	4:D:63:VAL:N	1.95	0.79
4:D:90:ALA:HB2	4:D:102:PHE:CD2	2.18	0.79
4:D:19:ALA:O	4:D:75:LEU:HA	1.83	0.79
5:E:39:PHE:CB	5:E:40:PRO:CD	2.61	0.78
4:D:41:ARG:HE	5:E:38:GLN:HE22	1.31	0.78
5:E:28:PHE:HD1	5:E:28:PHE:O	1.65	0.78
5:E:127:PRO:CG	5:E:154:PHE:HB3	2.13	0.78
1:A:14:LEU:HD13	2:B:8:LEU:HD13	1.65	0.78
4:D:19:ALA:HB3	4:D:76:ILE:N	1.98	0.77
4:D:56:LYS:HB2	4:D:62:ARG:HA	1.66	0.77
1:A:109:ILE:HG22	1:A:112:PHE:CE1	2.18	0.77
4:D:37:GLN:O	4:D:85:ALA:HB1	1.84	0.77
1:A:16:PRO:HG3	2:B:4:ARG:HD2	1.65	0.76
1:A:57:GLN:H	1:A:57:GLN:NE2	1.82	0.76
5:E:213:ARG:HH21	5:E:215:GLN:HE21	1.31	0.76
3:C:85:GLU:HG2	3:C:86:ASN:H	1.48	0.76
4:D:13:ILE:CB	4:D:79:SER:HB2	2.08	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:56:LYS:CB	4:D:62:ARG:HA	2.16	0.76
2:B:188:TRP:CH2	2:B:189:ARG:HD2	2.21	0.75
1:A:95:SER:HB2	1:A:96:PRO:HD2	1.67	0.75
1:A:117:VAL:HG12	1:A:118:ASN:N	2.00	0.75
5:E:99:LEU:C	5:E:99:LEU:HD23	2.11	0.75
5:E:31:THR:HA	5:E:74:LEU:CD1	2.13	0.74
4:D:41:ARG:HH21	5:E:38:GLN:NE2	1.84	0.74
5:E:46:LEU:HD13	5:E:46:LEU:N	2.02	0.74
4:D:37:GLN:CB	4:D:41:ARG:HG2	2.18	0.74
5:E:66:LYS:O	5:E:67:PHE:HB2	1.86	0.74
5:E:39:PHE:HB2	5:E:40:PRO:HD2	1.68	0.73
5:E:56:ALA:O	5:E:57:THR:HB	1.89	0.73
5:E:25:SER:CB	5:E:28:PHE:HE1	1.99	0.73
4:D:36:ARG:HA	4:D:87:TYR:HA	1.70	0.73
2:B:50:VAL:HG23	2:B:51:THR:HG23	1.69	0.73
2:B:147:LEU:HD23	2:B:155:PHE:CD2	2.24	0.73
5:E:7:HIS:HB3	5:E:8:PRO:HD3	1.69	0.72
5:E:150:LEU:HD12	5:E:195:SER:HB3	1.71	0.72
5:E:28:PHE:HE2	5:E:108:PHE:HD2	1.35	0.72
5:E:52:GLU:HG2	5:E:74:LEU:HD13	1.71	0.72
1:A:122:LEU:HD23	1:A:127:PRO:CA	2.18	0.72
1:A:137:PHE:HB3	1:A:145:PHE:HD2	1.55	0.72
1:A:41:THR:HG21	1:A:54:PHE:O	1.90	0.72
5:E:38:GLN:HG2	5:E:91:PHE:HB3	1.70	0.72
4:D:56:LYS:CB	4:D:63:VAL:H	2.00	0.71
4:D:19:ALA:CB	4:D:76:ILE:HB	2.20	0.71
5:E:129:VAL:O	5:E:241:ALA:HB2	1.89	0.71
1:A:77:SER:O	1:A:80:THR:HG22	1.90	0.71
5:E:164:TRP:HA	5:E:169:GLU:HA	1.70	0.71
4:D:59:GLY:O	4:D:61:LEU:HB2	1.91	0.71
5:E:201:SER:O	5:E:202:ALA:HB3	1.88	0.71
2:B:188:TRP:CD2	2:B:189:ARG:HG3	2.26	0.71
1:A:57:GLN:HG2	5:E:99:LEU:HD11	1.73	0.71
4:D:44:VAL:O	4:D:46:LEU:N	2.24	0.70
1:A:34:VAL:HG21	1:A:59:ALA:CB	2.21	0.70
4:D:19:ALA:HB3	4:D:76:ILE:H	1.56	0.70
4:D:37:GLN:CB	4:D:41:ARG:NH1	2.54	0.70
2:B:29:ARG:HG2	2:B:29:ARG:HH11	1.57	0.70
1:A:32:PHE:HB3	1:A:43:TRP:CE3	2.27	0.70
1:A:117:VAL:CG1	1:A:118:ASN:N	2.55	0.69
2:B:94:ARG:HG3	2:B:94:ARG:NH1	2.06	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:213:ARG:HA	5:E:242:GLU:HA	1.72	0.69
4:D:98:TYR:HB3	5:E:105:ASN:ND2	2.07	0.69
5:E:50:SER:HB3	5:E:69:ILE:HG21	1.72	0.69
5:E:38:GLN:HE21	5:E:91:PHE:HD2	1.39	0.69
2:B:189:ARG:HB3	2:B:189:ARG:NH1	2.07	0.69
5:E:4:VAL:CB	5:E:110:GLY:HA2	2.21	0.69
4:D:41:ARG:NE	5:E:38:GLN:HE22	1.91	0.69
4:D:41:ARG:NH2	5:E:38:GLN:OE1	2.25	0.68
1:A:168:TRP:NE1	6:A:192:NAG:O6	2.14	0.68
1:A:57:GLN:CB	5:E:99:LEU:HD11	2.24	0.68
2:B:134:ASN:HD21	2:B:169:GLU:HA	1.58	0.67
5:E:227:TRP:NE1	5:E:233:LYS:HA	2.09	0.67
4:D:55:GLU:O	4:D:63:VAL:HB	1.94	0.67
5:E:28:PHE:CD1	5:E:28:PHE:C	2.69	0.67
1:A:170:LEU:CD2	1:A:174:LEU:HB2	2.19	0.67
5:E:207:ASN:CB	5:E:208:PRO:HD2	2.22	0.67
4:D:41:ARG:HD2	4:D:41:ARG:O	1.95	0.67
2:B:97:PRO:HD3	2:B:179:SER:OG	1.95	0.67
1:A:90:THR:HG23	1:A:108:PHE:HB3	1.76	0.66
1:A:65:VAL:HG12	1:A:69:ASN:ND2	2.10	0.66
5:E:182:LYS:O	5:E:185:PRO:HD3	1.94	0.66
2:B:115:LEU:HD11	2:B:188:TRP:CZ3	2.31	0.66
4:D:41:ARG:HH21	5:E:38:GLN:HE22	1.43	0.66
5:E:67:PHE:HA	5:E:81:VAL:HA	1.77	0.66
1:A:57:GLN:H	1:A:57:GLN:HE21	1.44	0.66
5:E:4:VAL:HB	5:E:110:GLY:CA	2.23	0.66
5:E:4:VAL:HG21	5:E:109:PHE:C	2.19	0.66
4:D:60:ARG:HB2	4:D:76:ILE:CB	2.26	0.65
1:A:33:HIS:CD2	1:A:136:VAL:HG11	2.32	0.65
2:B:60:TYR:HB3	3:C:98:PRO:HG3	1.78	0.65
2:B:93:ARG:HG3	2:B:93:ARG:HH11	1.62	0.65
5:E:52:GLU:CD	5:E:53:GLY:N	2.54	0.65
5:E:28:PHE:HD1	5:E:28:PHE:C	2.05	0.65
4:D:35:TYR:HD2	4:D:102:PHE:HE2	1.44	0.64
4:D:32:LEU:HD22	4:D:91:THR:CG2	2.27	0.64
5:E:182:LYS:HA	5:E:191:ARG:O	1.98	0.64
3:C:85:GLU:O	3:C:86:ASN:HB2	1.97	0.64
1:A:89:VAL:HG12	1:A:90:THR:N	2.13	0.64
5:E:56:ALA:O	5:E:57:THR:CB	2.44	0.64
5:E:28:PHE:CE2	5:E:108:PHE:HD2	2.15	0.64
5:E:53:GLY:O	5:E:55:LYS:N	2.30	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:95:ILE:HD12	3:C:96:VAL:H	1.63	0.63
5:E:149:CYS:HB2	5:E:163:TRP:CZ2	2.33	0.63
5:E:127:PRO:HD3	5:E:154:PHE:CB	2.28	0.63
5:E:174:VAL:HG12	5:E:175:SER:N	2.14	0.63
5:E:130:ALA:HA	5:E:241:ALA:CB	2.28	0.62
1:A:57:GLN:HB3	5:E:99:LEU:HD11	1.80	0.62
1:A:82:ILE:HG22	2:B:6:ARG:O	2.00	0.62
4:D:60:ARG:HA	4:D:76:ILE:CA	2.29	0.62
5:E:210:ASN:HB2	5:E:212:PHE:CZ	2.34	0.62
2:B:116:VAL:HG22	2:B:160:MET:HG2	1.81	0.62
1:A:23:MET:SD	1:A:23:MET:C	2.82	0.62
4:D:60:ARG:CA	4:D:76:ILE:HA	2.29	0.62
2:B:57:ASP:OD1	3:C:98:PRO:HD2	1.99	0.62
1:A:85:VAL:HB	1:A:113:THR:HG22	1.81	0.62
2:B:68:LEU:O	2:B:72:ARG:HG3	2.00	0.62
5:E:52:GLU:CD	5:E:53:GLY:H	2.08	0.62
2:B:67:ILE:HD13	3:C:95:ILE:HG12	1.82	0.61
1:A:16:PRO:HD2	2:B:6:ARG:CD	2.26	0.61
4:D:60:ARG:HA	4:D:77:THR:H	1.64	0.61
5:E:91:PHE:CZ	5:E:112:GLY:HA3	2.34	0.61
5:E:206:GLN:HA	5:E:246:ARG:H	1.65	0.61
2:B:60:TYR:CB	3:C:98:PRO:HG3	2.30	0.61
4:D:90:ALA:HB2	4:D:102:PHE:CE2	2.35	0.61
5:E:39:PHE:CD1	5:E:39:PHE:N	2.67	0.61
4:D:79:SER:O	4:D:80:ARG:CG	2.48	0.61
1:A:136:VAL:HG23	1:A:137:PHE:N	2.14	0.61
5:E:213:ARG:HH21	5:E:215:GLN:NE2	1.97	0.61
5:E:184:GLN:O	5:E:190:SER:HB3	2.01	0.60
2:B:125:GLY:HA3	2:B:147:LEU:HD21	1.83	0.60
4:D:41:ARG:NH2	5:E:38:GLN:HE22	1.98	0.60
2:B:37:SER:O	2:B:50:VAL:HG22	2.02	0.60
5:E:103:ALA:O	5:E:104:ASN:C	2.40	0.60
1:A:12:PHE:CD1	1:A:12:PHE:C	2.79	0.60
2:B:188:TRP:CZ2	2:B:189:ARG:HD2	2.36	0.60
5:E:107:GLN:O	5:E:108:PHE:CD1	2.55	0.60
2:B:153:TRP:O	2:B:154:THR:HG22	2.02	0.59
4:D:41:ARG:HD2	4:D:41:ARG:C	2.27	0.59
1:A:62:ASN:ND2	3:C:94:ASN:ND2	2.51	0.59
1:A:137:PHE:HB3	1:A:145:PHE:CD2	2.36	0.59
5:E:3:VAL:HB	5:E:26:LEU:CB	2.32	0.59
2:B:174:GLN:HA	2:B:185:THR:HG22	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:57:GLN:O	1:A:59:ALA:N	2.35	0.59
1:A:76:ARG:HG3	1:A:76:ARG:O	2.02	0.59
5:E:101:SER:OG	5:E:106:GLU:HB2	2.02	0.59
1:A:23:MET:SD	1:A:23:MET:O	2.61	0.59
4:D:101:ILE:HG22	5:E:46:LEU:HG	1.85	0.59
5:E:214:CYS:N	5:E:241:ALA:O	2.35	0.59
1:A:105:LEU:HG	1:A:153:PHE:CE1	2.36	0.59
2:B:133:LEU:C	2:B:133:LEU:HD12	2.28	0.58
3:C:85:GLU:HG2	3:C:86:ASN:N	2.18	0.58
5:E:39:PHE:N	5:E:39:PHE:HD1	2.00	0.58
1:A:57:GLN:CG	5:E:99:LEU:HD11	2.33	0.58
2:B:119:VAL:HG11	2:B:127:ILE:HD11	1.86	0.58
5:E:130:ALA:HA	5:E:241:ALA:HB1	1.85	0.58
1:A:45:LEU:HD11	2:B:153:TRP:CG	2.39	0.58
1:A:22:PHE:HB3	1:A:34:VAL:CG2	2.33	0.58
1:A:63:ILE:O	1:A:66:ASP:N	2.36	0.58
1:A:45:LEU:O	1:A:46:GLU:C	2.46	0.57
5:E:125:PHE:O	5:E:154:PHE:HA	2.04	0.57
1:A:179:GLU:O	1:A:181:ASP:N	2.35	0.57
2:B:67:ILE:CD1	3:C:95:ILE:HG12	2.34	0.57
4:D:41:ARG:HE	5:E:38:GLN:NE2	1.99	0.57
4:D:60:ARG:HA	4:D:77:THR:N	2.19	0.57
5:E:156:PRO:O	5:E:218:PHE:HE1	1.87	0.57
2:B:133:LEU:HD23	2:B:138:GLU:OE2	2.05	0.57
5:E:155:TYR:C	5:E:218:PHE:HZ	2.12	0.57
1:A:81:PRO:HA	2:B:7:PHE:CE1	2.39	0.57
5:E:35:TRP:CE3	5:E:79:LEU:HD12	2.40	0.57
5:E:53:GLY:O	5:E:54:SER:C	2.47	0.57
5:E:109:PHE:HD1	5:E:109:PHE:H	1.51	0.57
1:A:34:VAL:HG21	1:A:59:ALA:HB1	1.86	0.57
5:E:32:THR:HG23	5:E:51:ASN:HB3	1.86	0.57
2:B:40:PHE:CD1	2:B:40:PHE:C	2.82	0.56
5:E:38:GLN:C	5:E:39:PHE:HD1	2.12	0.56
2:B:44:VAL:HG12	2:B:44:VAL:O	2.04	0.56
5:E:38:GLN:C	5:E:39:PHE:CD1	2.83	0.56
1:A:170:LEU:HD21	1:A:174:LEU:CB	2.22	0.56
2:B:26:PHE:HB3	2:B:42:SER:HB3	1.88	0.56
1:A:65:VAL:HG12	1:A:69:ASN:HD21	1.69	0.56
1:A:117:VAL:CG1	1:A:118:ASN:H	2.18	0.56
5:E:181:LEU:O	5:E:182:LYS:C	2.49	0.56
1:A:14:LEU:HD12	2:B:7:PHE:O	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:83:TYR:C	2:B:83:TYR:CD1	2.84	0.56
2:B:155:PHE:CD1	2:B:155:PHE:N	2.74	0.56
4:D:35:TYR:CD2	4:D:102:PHE:HE2	2.23	0.56
4:D:20:THR:O	4:D:20:THR:OG1	2.24	0.56
1:A:26:PHE:CD2	2:B:90:THR:HB	2.40	0.55
1:A:42:VAL:HG12	1:A:42:VAL:O	2.04	0.55
2:B:34:GLN:O	2:B:34:GLN:HG2	2.06	0.55
1:A:143:HIS:CD2	2:B:31:PHE:CE2	2.94	0.55
2:B:134:ASN:ND2	2:B:169:GLU:HA	2.21	0.55
5:E:149:CYS:SG	5:E:150:LEU:N	2.80	0.55
2:B:9:TRP:HA	2:B:9:TRP:CE3	2.41	0.55
5:E:28:PHE:O	5:E:28:PHE:CD1	2.54	0.55
1:A:123:ARG:HD3	1:A:161:TYR:OH	2.07	0.55
2:B:93:ARG:HD3	2:B:123:TYR:CD1	2.41	0.55
2:B:125:GLY:CA	2:B:147:LEU:HD21	2.37	0.55
1:A:94:ASN:HB2	1:A:104:VAL:HB	1.87	0.55
5:E:14:LYS:O	5:E:16:GLY:N	2.40	0.55
1:A:53:SER:OG	3:C:86:ASN:O	2.24	0.55
5:E:38:GLN:O	5:E:90:SER:HB3	2.06	0.55
1:A:99:LEU:HD21	1:A:180:PHE:CE2	2.42	0.55
1:A:112:PHE:O	1:A:113:THR:HB	2.06	0.55
2:B:27:LEU:HD12	2:B:29:ARG:HD2	1.89	0.55
2:B:29:ARG:HG2	2:B:29:ARG:NH1	2.21	0.55
5:E:227:TRP:HA	5:E:227:TRP:CE3	2.42	0.55
3:C:85:GLU:OE1	3:C:86:ASN:OD1	2.25	0.54
2:B:27:LEU:HD13	2:B:40:PHE:O	2.07	0.54
5:E:33:MET:HE2	5:E:96:ALA:HB2	1.89	0.54
5:E:184:GLN:H	5:E:190:SER:HB2	1.71	0.54
1:A:34:VAL:HG21	1:A:59:ALA:HB3	1.90	0.54
5:E:158:HIS:O	5:E:218:PHE:HA	2.07	0.54
1:A:17:ASP:OD1	2:B:6:ARG:HD2	2.08	0.54
1:A:22:PHE:HB3	1:A:34:VAL:HG22	1.89	0.54
2:B:10:GLN:O	2:B:31:PHE:HD1	1.89	0.54
1:A:123:ARG:HD3	1:A:161:TYR:CZ	2.42	0.54
1:A:58:GLY:O	1:A:62:ASN:HB2	2.08	0.53
5:E:47:MET:O	5:E:63:GLU:OE2	2.27	0.53
5:E:98:ASP:O	5:E:100:THR:N	2.41	0.53
5:E:155:TYR:O	5:E:218:PHE:HZ	1.91	0.53
5:E:158:HIS:CB	5:E:219:TYR:HB3	2.35	0.53
4:D:60:ARG:HB3	4:D:78:ALA:H	1.72	0.53
5:E:33:MET:C	5:E:34:PHE:CD1	2.86	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:36:TYR:HA	5:E:45:MET:O	2.08	0.53
5:E:66:LYS:CB	5:E:82:THR:OG1	2.45	0.53
1:A:62:ASN:CG	3:C:94:ASN:HD22	2.16	0.53
1:A:115:PRO:HB3	1:A:145:PHE:CE2	2.43	0.53
4:D:21:MET:CE	4:D:36:ARG:HH11	2.21	0.53
5:E:99:LEU:HD23	5:E:99:LEU:O	2.08	0.53
2:B:74:ALA:O	2:B:76:ASP:N	2.41	0.53
1:A:82:ILE:HB	2:B:33:ASN:OD1	2.08	0.53
1:A:135:THR:CG2	1:A:148:PHE:HB2	2.38	0.53
5:E:109:PHE:CD1	5:E:109:PHE:N	2.77	0.52
1:A:57:GLN:O	1:A:58:GLY:C	2.50	0.52
4:D:41:ARG:CZ	5:E:38:GLN:HE22	2.22	0.52
5:E:52:GLU:CG	5:E:74:LEU:HD13	2.39	0.52
1:A:62:ASN:OD1	3:C:94:ASN:HB2	2.09	0.52
5:E:34:PHE:CD1	5:E:34:PHE:N	2.78	0.52
4:D:19:ALA:CB	4:D:76:ILE:H	2.22	0.52
1:A:101:GLU:O	1:A:102:PRO:C	2.53	0.52
2:B:52:GLU:O	2:B:54:GLY:N	2.43	0.52
2:B:174:GLN:HG3	2:B:185:THR:CG2	2.39	0.52
1:A:67:LYS:O	1:A:68:ALA:C	2.52	0.52
2:B:9:TRP:HA	2:B:9:TRP:HE3	1.75	0.52
2:B:55:ARG:N	2:B:56:PRO:HD2	2.25	0.52
4:D:36:ARG:HG3	4:D:87:TYR:HB3	1.91	0.52
5:E:69:ILE:CD1	5:E:79:LEU:HG	2.40	0.52
5:E:102:GLY:C	5:E:103:ALA:O	2.47	0.52
4:D:59:GLY:O	4:D:60:ARG:C	2.53	0.51
2:B:83:TYR:C	2:B:83:TYR:HD1	2.18	0.51
5:E:25:SER:HB2	5:E:28:PHE:CD1	2.43	0.51
5:E:127:PRO:HG3	5:E:154:PHE:HB3	1.92	0.51
2:B:26:PHE:CE2	2:B:28:ASP:HB2	2.44	0.51
1:A:59:ALA:O	1:A:63:ILE:HG12	2.10	0.51
2:B:173:CYS:O	2:B:185:THR:HA	2.11	0.51
1:A:63:ILE:O	1:A:66:ASP:HB2	2.11	0.51
2:B:93:ARG:O	2:B:94:ARG:HG3	2.11	0.51
4:D:21:MET:HE1	4:D:36:ARG:HH11	1.76	0.51
5:E:134:PRO:HG2	5:E:139:ILE:HD11	1.93	0.51
4:D:38:ASN:OD1	4:D:38:ASN:N	2.43	0.51
5:E:227:TRP:HA	5:E:227:TRP:HE3	1.76	0.51
1:A:3:GLU:HA	1:A:5:HIS:NE2	2.26	0.51
2:B:3:THR:HG22	2:B:3:THR:O	2.11	0.51
2:B:164:VAL:O	2:B:164:VAL:HG22	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:90:ALA:HA	4:D:102:PHE:HA	1.92	0.50
2:B:80:ARG:HG3	2:B:80:ARG:HH11	1.76	0.50
2:B:27:LEU:HD12	2:B:29:ARG:HG3	1.94	0.50
5:E:145:ALA:H	5:E:201:SER:HB3	1.76	0.50
5:E:204:PHE:HA	5:E:207:ASN:HB3	1.92	0.50
4:D:98:TYR:CB	5:E:105:ASN:HD21	2.21	0.50
5:E:149:CYS:HB2	5:E:163:TRP:HZ2	1.76	0.50
5:E:184:GLN:C	5:E:190:SER:HB3	2.36	0.50
1:A:75:LYS:O	1:A:78:ASN:N	2.40	0.50
1:A:91:VAL:HG11	1:A:178:TRP:HB2	1.93	0.50
2:B:29:ARG:NH1	2:B:36:GLU:OE2	2.45	0.50
2:B:67:ILE:HG22	2:B:67:ILE:O	2.10	0.50
2:B:132:PHE:HA	2:B:137:GLU:HA	1.94	0.50
5:E:227:TRP:HE1	5:E:233:LYS:HA	1.76	0.50
1:A:9:GLN:HB3	2:B:13:ARG:HB2	1.94	0.50
1:A:89:VAL:CG1	1:A:90:THR:N	2.75	0.50
1:A:89:VAL:HG23	1:A:174:LEU:HD23	1.93	0.50
5:E:123:ASN:O	5:E:155:TYR:HD2	1.95	0.50
2:B:55:ARG:O	2:B:56:PRO:C	2.55	0.50
5:E:83:SER:O	5:E:84:ALA:HB2	2.12	0.50
1:A:62:ASN:CG	3:C:94:ASN:ND2	2.70	0.49
1:A:179:GLU:O	1:A:180:PHE:C	2.55	0.49
5:E:184:GLN:H	5:E:190:SER:CB	2.25	0.49
2:B:55:ARG:O	2:B:58:ALA:N	2.45	0.49
1:A:75:LYS:O	1:A:77:SER:N	2.46	0.49
5:E:28:PHE:HE2	5:E:108:PHE:CD2	2.24	0.49
1:A:14:LEU:HD13	2:B:8:LEU:CD1	2.38	0.49
2:B:83:TYR:CD1	2:B:83:TYR:O	2.66	0.49
5:E:91:PHE:CE1	5:E:113:THR:N	2.80	0.49
5:E:66:LYS:O	5:E:67:PHE:CB	2.58	0.49
5:E:174:VAL:HG12	5:E:175:SER:H	1.77	0.49
2:B:17:PHE:CD2	2:B:83:TYR:HD2	2.29	0.49
5:E:185:PRO:HG2	5:E:186:ALA:H	1.76	0.49
1:A:35:ASP:C	1:A:37:ALA:N	2.69	0.49
5:E:182:LYS:O	5:E:183:GLU:C	2.56	0.49
1:A:8:ILE:O	1:A:24:PHE:HA	2.12	0.49
5:E:31:THR:CA	5:E:74:LEU:HD12	2.19	0.49
5:E:145:ALA:HB3	5:E:205:TRP:CB	2.42	0.49
1:A:21:GLU:OE1	1:A:137:PHE:HD1	1.97	0.48
2:B:83:TYR:HD1	2:B:83:TYR:O	1.95	0.48
2:B:45:GLY:O	2:B:46:GLU:HB3	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:153:TRP:C	2:B:154:THR:CG2	2.85	0.48
1:A:109:ILE:N	1:A:109:ILE:HD12	2.29	0.48
2:B:27:LEU:CD1	2:B:27:LEU:C	2.85	0.48
1:A:41:THR:HG22	1:A:56:ALA:HB2	1.94	0.48
2:B:27:LEU:HD12	2:B:29:ARG:CD	2.42	0.48
1:A:89:VAL:HG12	1:A:176:LYS:HG3	1.95	0.48
1:A:103:ASN:C	1:A:104:VAL:HG23	2.38	0.48
4:D:15:GLU:O	4:D:78:ALA:HB1	2.13	0.48
4:D:101:ILE:HG13	4:D:101:ILE:O	2.13	0.48
1:A:3:GLU:HA	1:A:5:HIS:CE1	2.49	0.48
5:E:91:PHE:HE1	5:E:113:THR:N	2.11	0.48
1:A:24:PHE:CD1	1:A:32:PHE:CE1	3.02	0.48
2:B:75:VAL:HG12	2:B:75:VAL:O	2.13	0.48
1:A:72:ILE:HG21	3:C:97:THR:HG23	1.96	0.48
2:B:57:ASP:OD1	3:C:97:THR:OG1	2.31	0.48
5:E:185:PRO:C	5:E:187:LEU:N	2.71	0.48
1:A:140:ARG:HD3	1:A:144:LEU:HB2	1.95	0.47
1:A:167:HIS:C	1:A:169:GLY:H	2.21	0.47
2:B:37:SER:C	2:B:50:VAL:HG22	2.38	0.47
1:A:26:PHE:O	1:A:27:ASP:C	2.57	0.47
2:B:102:TYR:CD1	2:B:102:TYR:C	2.91	0.47
1:A:121:TRP:O	1:A:127:PRO:HA	2.15	0.47
5:E:60:GLN:O	5:E:62:VAL:N	2.47	0.47
1:A:82:ILE:HG13	2:B:33:ASN:HB3	1.95	0.47
2:B:133:LEU:HD12	2:B:134:ASN:N	2.30	0.47
5:E:73:SER:O	5:E:74:LEU:HB3	2.13	0.47
2:B:13:ARG:HD2	2:B:13:ARG:N	2.29	0.47
1:A:11:GLU:HA	1:A:21:GLU:O	2.15	0.47
1:A:47:GLU:O	1:A:48:PHE:C	2.56	0.47
1:A:57:GLN:O	1:A:60:LEU:N	2.48	0.47
1:A:59:ALA:O	1:A:60:LEU:C	2.58	0.47
2:B:4:ARG:CG	2:B:5:PRO:HD2	2.45	0.47
2:B:24:VAL:HG12	2:B:25:ARG:N	2.28	0.47
1:A:33:HIS:CG	1:A:136:VAL:HG11	2.48	0.47
2:B:13:ARG:N	2:B:13:ARG:CD	2.78	0.47
2:B:87:GLU:O	2:B:88:SER:C	2.57	0.47
5:E:156:PRO:O	5:E:218:PHE:CE1	2.67	0.47
1:A:113:THR:OG1	1:A:114:PRO:HA	2.13	0.47
1:A:17:ASP:CG	2:B:6:ARG:NH1	2.74	0.46
1:A:108:PHE:CD1	1:A:148:PHE:CE1	3.04	0.46
4:D:62:ARG:O	4:D:74:LEU:HA	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:43:SER:O	5:E:44:LEU:C	2.59	0.46
1:A:75:LYS:C	1:A:77:SER:N	2.72	0.46
1:A:180:PHE:O	1:A:181:ASP:HB2	2.15	0.46
5:E:35:TRP:CD2	5:E:79:LEU:HD12	2.51	0.46
5:E:213:ARG:O	5:E:213:ARG:HG3	2.13	0.46
1:A:54:PHE:O	1:A:54:PHE:CD1	2.69	0.46
2:B:172:THR:OG1	2:B:187:GLU:HG2	2.16	0.46
4:D:27:THR:HB	4:D:93:THR:OG1	2.14	0.46
1:A:119:VAL:HG11	1:A:149:HIS:CG	2.50	0.46
5:E:207:ASN:CB	5:E:208:PRO:CD	2.93	0.46
1:A:113:THR:O	1:A:167:HIS:HE1	1.99	0.46
1:A:57:GLN:C	1:A:59:ALA:N	2.73	0.46
1:A:67:LYS:O	1:A:70:LEU:HB3	2.16	0.46
2:B:161:LEU:HG	2:B:163:THR:HG23	1.97	0.46
2:B:174:GLN:HG3	2:B:185:THR:HG22	1.98	0.46
4:D:18:ASN:O	4:D:20:THR:HG22	2.16	0.46
5:E:99:LEU:C	5:E:99:LEU:CD2	2.83	0.46
1:A:54:PHE:CD1	1:A:54:PHE:C	2.95	0.45
4:D:19:ALA:H	4:D:76:ILE:H	1.65	0.45
5:E:41:LYS:O	5:E:42:GLN:C	2.59	0.45
1:A:23:MET:HE3	1:A:139:PRO:HD2	1.99	0.45
2:B:31:PHE:HA	2:B:35:GLU:O	2.16	0.45
2:B:66:ASP:O	2:B:68:LEU:N	2.49	0.45
4:D:102:PHE:HZ	5:E:109:PHE:CE2	2.34	0.45
2:B:18:PHE:O	2:B:19:ASN:C	2.58	0.45
5:E:52:GLU:HG2	5:E:74:LEU:CD1	2.42	0.45
1:A:33:HIS:CD2	1:A:136:VAL:CG1	2.99	0.45
1:A:178:TRP:CH2	1:A:180:PHE:HA	2.52	0.45
2:B:81:HIS:CE1	4:D:95:SER:H	2.35	0.45
2:B:8:LEU:HB3	2:B:33:ASN:HA	1.98	0.45
3:C:86:ASN:HA	3:C:87:PRO:HD2	1.71	0.45
5:E:161:LEU:HG	5:E:215:GLN:O	2.16	0.45
5:E:174:VAL:CG1	5:E:175:SER:N	2.78	0.45
5:E:175:SER:O	5:E:196:SER:HA	2.16	0.45
1:A:87:PRO:HA	1:A:112:PHE:HB3	1.99	0.45
1:A:92:LEU:HB2	1:A:106:ILE:HB	1.99	0.45
5:E:4:VAL:CG2	5:E:110:GLY:HA2	2.46	0.45
5:E:9:SER:O	5:E:113:THR:HA	2.16	0.45
5:E:98:ASP:OD2	5:E:100:THR:HG23	2.17	0.45
1:A:75:LYS:C	1:A:77:SER:H	2.25	0.45
1:A:168:TRP:CZ3	2:B:6:ARG:HG3	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:67:ILE:HD11	3:C:95:ILE:HD11	1.98	0.45
2:B:13:ARG:NH2	3:C:94:ASN:OD1	2.48	0.44
4:D:50:ARG:O	4:D:52:ASN:HB2	2.16	0.44
4:D:56:LYS:HB2	4:D:61:LEU:O	2.17	0.44
2:B:26:PHE:CG	2:B:27:LEU:N	2.86	0.44
4:D:36:ARG:HG3	4:D:87:TYR:CB	2.47	0.44
1:A:7:ILE:HD12	2:B:17:PHE:HE2	1.82	0.44
1:A:74:THR:O	1:A:77:SER:OG	2.34	0.44
1:A:13:TYR:HD2	1:A:70:LEU:HD23	1.83	0.44
4:D:59:GLY:O	4:D:61:LEU:N	2.51	0.44
1:A:26:PHE:CE2	2:B:90:THR:HB	2.53	0.44
4:D:92:ASP:HB3	4:D:100:TYR:CE1	2.52	0.44
1:A:162:ASP:HA	1:A:176:LYS:O	2.17	0.44
2:B:38:VAL:HG11	2:B:61:TRP:CZ3	2.53	0.44
2:B:66:ASP:C	2:B:68:LEU:H	2.26	0.44
2:B:153:TRP:O	2:B:154:THR:CG2	2.66	0.44
5:E:126:PRO:HB3	5:E:218:PHE:CD2	2.53	0.44
2:B:27:LEU:CD1	2:B:29:ARG:HD2	2.47	0.43
2:B:42:SER:HB2	2:B:75:VAL:HG21	2.00	0.43
5:E:128:GLU:OE1	5:E:128:GLU:HA	2.17	0.43
2:B:57:ASP:HA	3:C:98:PRO:CD	2.48	0.43
4:D:100:TYR:HD2	5:E:107:GLN:OE1	2.01	0.43
2:B:72:ARG:C	2:B:74:ALA:H	2.26	0.43
2:B:119:VAL:HG11	2:B:127:ILE:CD1	2.48	0.43
5:E:65:ASP:HB2	5:E:66:LYS:H	1.47	0.43
1:A:67:LYS:O	1:A:70:LEU:N	2.52	0.43
2:B:152:ASP:O	2:B:153:TRP:HB2	2.18	0.43
1:A:168:TRP:CH2	2:B:6:ARG:CZ	3.01	0.43
4:D:43:LEU:HB3	4:D:44:VAL:H	1.50	0.43
5:E:13:SER:O	5:E:117:VAL:HA	2.19	0.43
5:E:154:PHE:HB2	5:E:218:PHE:CE1	2.53	0.43
1:A:26:PHE:HB2	1:A:31:ILE:HD11	2.00	0.43
5:E:23:CYS:HB2	5:E:35:TRP:CZ2	2.54	0.43
5:E:51:ASN:C	5:E:52:GLU:O	2.59	0.43
1:A:147:LYS:NZ	1:A:149:HIS:CE1	2.86	0.43
5:E:215:GLN:HG2	5:E:216:VAL:N	2.34	0.43
1:A:57:GLN:HB3	5:E:99:LEU:HD21	2.00	0.43
1:A:107:CYS:SG	1:A:109:ILE:HD11	2.59	0.43
5:E:101:SER:HB3	5:E:104:ASN:O	2.18	0.43
2:B:90:THR:OG1	2:B:91:VAL:N	2.52	0.43
4:D:32:LEU:CB	4:D:49:ILE:O	2.67	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:94:ARG:NH1	2:B:94:ARG:CG	2.78	0.42
5:E:100:THR:O	5:E:101:SER:C	2.61	0.42
2:B:27:LEU:HA	2:B:40:PHE:O	2.19	0.42
2:B:29:ARG:HG2	2:B:36:GLU:OE2	2.19	0.42
2:B:70:GLN:HA	4:D:50:ARG:NH1	2.34	0.42
5:E:174:VAL:CG1	5:E:175:SER:H	2.31	0.42
1:A:63:ILE:O	1:A:64:ALA:C	2.61	0.42
2:B:31:PHE:CD1	2:B:31:PHE:N	2.87	0.42
2:B:97:PRO:HB3	2:B:119:VAL:CG1	2.49	0.42
4:D:21:MET:O	4:D:73:SER:HA	2.18	0.42
5:E:23:CYS:HB2	5:E:35:TRP:CH2	2.55	0.42
5:E:25:SER:OG	5:E:75:THR:HG23	2.19	0.42
2:B:30:TYR:C	2:B:31:PHE:CD1	2.98	0.42
5:E:204:PHE:C	5:E:206:GLN:N	2.74	0.42
4:D:23:CYS:HB2	4:D:34:TRP:CH2	2.54	0.42
5:E:127:PRO:CB	5:E:154:PHE:HB3	2.48	0.42
1:A:119:VAL:HG21	1:A:149:HIS:CE1	2.54	0.42
2:B:40:PHE:C	2:B:40:PHE:HD1	2.25	0.42
1:A:123:ARG:HD3	1:A:161:TYR:CE2	2.55	0.42
2:B:93:ARG:HG3	2:B:93:ARG:NH1	2.30	0.42
5:E:95:SER:HA	5:E:109:PHE:HA	2.01	0.42
1:A:11:GLU:HG3	2:B:11:PRO:HG2	2.02	0.42
1:A:135:THR:HG23	1:A:148:PHE:HB2	2.01	0.42
5:E:38:GLN:CG	5:E:91:PHE:HB3	2.46	0.42
1:A:54:PHE:O	1:A:54:PHE:HD1	2.03	0.41
1:A:121:TRP:CG	1:A:151:LEU:HD22	2.55	0.41
2:B:54:GLY:O	2:B:55:ARG:C	2.61	0.41
4:D:16:GLY:HA2	4:D:78:ALA:HA	2.02	0.41
5:E:213:ARG:O	5:E:213:ARG:CG	2.68	0.41
2:B:24:VAL:HB	2:B:75:VAL:CG1	2.51	0.41
2:B:46:GLU:OE1	2:B:62:ASN:ND2	2.52	0.41
4:D:35:TYR:O	4:D:88:PHE:O	2.39	0.41
2:B:32:TYR:CE2	2:B:33:ASN:ND2	2.89	0.41
4:D:50:ARG:O	4:D:51:SER:C	2.63	0.41
5:E:134:PRO:CB	5:E:145:ALA:HB1	2.49	0.41
1:A:65:VAL:CG1	1:A:69:ASN:HD21	2.32	0.41
1:A:167:HIS:O	1:A:169:GLY:N	2.49	0.41
2:B:177:HIS:O	2:B:179:SER:N	2.53	0.41
1:A:82:ILE:HG23	1:A:82:ILE:O	2.20	0.41
2:B:94:ARG:HG2	2:B:124:PRO:HD3	2.03	0.41
1:A:143:HIS:CD2	2:B:31:PHE:CZ	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:168:TRP:CH2	2:B:6:ARG:NE	2.88	0.41
2:B:56:PRO:C	3:C:98:PRO:HG2	2.46	0.41
2:B:67:ILE:O	2:B:67:ILE:CG2	2.69	0.41
4:D:101:ILE:HG22	5:E:46:LEU:CD1	2.50	0.41
5:E:220:GLY:H	5:E:236:THR:CB	2.34	0.41
5:E:233:LYS:HA	5:E:234:PRO:HD3	1.89	0.41
2:B:26:PHE:HB2	2:B:75:VAL:HG22	2.03	0.41
2:B:26:PHE:HE2	2:B:28:ASP:HB2	1.86	0.41
3:C:97:THR:OG1	3:C:98:PRO:HD2	2.21	0.41
2:B:182:SER:HA	2:B:183:PRO:HD2	1.87	0.40
5:E:38:GLN:O	5:E:91:PHE:N	2.39	0.40
2:B:52:GLU:C	2:B:54:GLY:N	2.78	0.40
1:A:151:LEU:HA	1:A:152:PRO:HD2	1.93	0.40
2:B:17:PHE:CG	2:B:83:TYR:HD2	2.39	0.40
2:B:74:ALA:C	2:B:76:ASP:H	2.30	0.40
5:E:91:PHE:CE1	5:E:112:GLY:HA3	2.57	0.40
5:E:142:THR:O	5:E:143:GLN:CB	2.69	0.40

All (15) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:168:LYS:C	5:E:169:GLU:OE1[4_555]	0.53	1.67
5:E:168:LYS:CA	5:E:169:GLU:OE1[4_555]	1.16	1.04
5:E:169:GLU:N	5:E:169:GLU:OE1[4_555]	1.37	0.83
4:D:15:GLU:OE1	4:D:77:THR:O[3_455]	1.38	0.82
5:E:223:GLU:OE1	5:E:232:ALA:CB[4_555]	1.42	0.78
5:E:168:LYS:CA	5:E:169:GLU:CD[4_555]	1.54	0.66
5:E:169:GLU:N	5:E:169:GLU:CD[4_555]	1.56	0.64
4:D:15:GLU:CD	4:D:77:THR:O[3_455]	1.67	0.53
5:E:168:LYS:C	5:E:169:GLU:CD[4_555]	1.71	0.49
5:E:168:LYS:O	5:E:169:GLU:OE1[4_555]	1.71	0.49
5:E:169:GLU:N	5:E:169:GLU:CG[4_555]	1.72	0.48
5:E:168:LYS:CA	5:E:169:GLU:OE2[4_555]	1.74	0.46
4:D:15:GLU:OE2	4:D:77:THR:O[3_455]	1.89	0.31
2:B:174:GLN:NE2	2:B:174:GLN:NE2[8_554]	2.01	0.19
5:E:223:GLU:CD	5:E:232:ALA:CB[4_555]	2.11	0.09

5.3 Torsion angles

5.3.1 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 X-ray entries followed by that with respect to entries of similar resolution.

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	A	180/191 (94%)	147 (82%)	23 (13%)	10 (6%)	1	13
2	B	174/198 (88%)	143 (82%)	24 (14%)	7 (4%)	2	19
3	C	12/23 (52%)	11 (92%)	0	1 (8%)	0	7
4	D	94/207 (45%)	67 (71%)	17 (18%)	10 (11%)	0	5
5	E	244/249 (98%)	171 (70%)	54 (22%)	19 (8%)	1	8
All	All	704/868 (81%)	539 (77%)	118 (17%)	47 (7%)	1	11

All (47) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	180	PHE
4	D	44	VAL
4	D	46	LEU
5	E	7	HIS
5	E	54	SER
5	E	57	THR
5	E	61	GLY
5	E	62	VAL
5	E	64	LYS
5	E	65	ASP
5	E	99	LEU
1	A	58	GLY
1	A	76	ARG
1	A	113	THR
2	B	34	GLN
2	B	53	LEU
2	B	67	ILE
2	B	75	VAL
4	D	60	ARG
4	D	79	SER
5	E	15	SER

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Mol	Chain	Res	Type
5	E	55	LYS
5	E	56	ALA
5	E	67	PHE
5	E	202	ALA
5	E	208	PRO
5	E	232	ALA
1	A	168	TRP
2	B	88	SER
2	B	183	PRO
3	C	86	ASN
4	D	51	SER
4	D	52	ASN
4	D	61	LEU
5	E	39	PHE
5	E	127	PRO
1	A	136	VAL
1	A	181	ASP
4	D	45	HIS
4	D	54	ARG
5	E	75	THR
5	E	182	LYS
1	A	46	GLU
1	A	124	ASN
1	A	169	GLY
2	B	165	PRO
4	D	13	ILE

5.3.2 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 X-ray entries followed by that with respect to entries of similar resolution.

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	A	166/175 (95%)	150 (90%)	16 (10%)	8	30
2	B	161/178 (90%)	141 (88%)	20 (12%)	4	22
3	C	14/16 (88%)	14 (100%)	0	100	100
4	D	83/185 (45%)	59 (71%)	24 (29%)	0	2

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	E	217/219 (99%)	178 (82%)	39 (18%)	2	10
All	All	641/773 (83%)	542 (85%)	99 (15%)	2	16

All (99) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	4	GLU
1	A	38	LYS
1	A	41	THR
1	A	42	VAL
1	A	47	GLU
1	A	57	GLN
1	A	76	ARG
1	A	80	THR
1	A	83	THR
1	A	90	THR
1	A	92	LEU
1	A	130	THR
1	A	154	LEU
1	A	172	GLU
1	A	175	LEU
1	A	179	GLU
2	B	9	TRP
2	B	23	ARG
2	B	27	LEU
2	B	29	ARG
2	B	39	ARG
2	B	52	GLU
2	B	53	LEU
2	B	55	ARG
2	B	62	ASN
2	B	68	LEU
2	B	104	SER
2	B	133	LEU
2	B	147	LEU
2	B	154	THR
2	B	155	PHE
2	B	156	GLN
2	B	158	LEU
2	B	160	MET
2	B	162	GLU
2	B	164	VAL

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Mol	Chain	Res	Type
4	D	13	ILE
4	D	18	ASN
4	D	20	THR
4	D	30	ASN
4	D	32	LEU
4	D	33	GLN
4	D	37	GLN
4	D	38	ASN
4	D	41	ARG
4	D	44	VAL
4	D	47	ILE
4	D	48	LEU
4	D	52	ASN
4	D	54	ARG
4	D	55	GLU
4	D	56	LYS
4	D	60	ARG
4	D	61	LEU
4	D	70	LYS
4	D	74	LEU
4	D	75	LEU
4	D	83	ASP
4	D	88	PHE
4	D	94	THR
5	E	4	VAL
5	E	12	ILE
5	E	13	SER
5	E	20	LYS
5	E	24	ARG
5	E	28	PHE
5	E	31	THR
5	E	39	PHE
5	E	46	LEU
5	E	52	GLU
5	E	59	GLU
5	E	60	GLN
5	E	62	VAL
5	E	65	ASP
5	E	70	ASN
5	E	76	LEU
5	E	79	LEU
5	E	99	LEU

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Mol	Chain	Res	Type
5	E	100	THR
5	E	104	ASN
5	E	109	PHE
5	E	121	LEU
5	E	127	PRO
5	E	128	GLU
5	E	144	LYS
5	E	179	GLN
5	E	191	ARG
5	E	192	TYR
5	E	197	ARG
5	E	204	PHE
5	E	205	TRP
5	E	209	ARG
5	E	211	HIS
5	E	212	PHE
5	E	219	TYR
5	E	227	TRP
5	E	231	ARG
5	E	233	LYS
5	E	237	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	57	GLN
1	A	149	HIS
1	A	167	HIS
2	B	70	GLN
2	B	134	ASN
3	C	94	ASN
4	D	30	ASN
4	D	52	ASN
5	E	29	GLN
5	E	38	GLN
5	E	211	HIS
5	E	215	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

1 ligand is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or 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 length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
6	NAG	A	192	1	15,15,15	0.48	0	21,21,21	0.81	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
6	NAG	A	192	1	-	2/6/26/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	192	NAG	C4-C5-C6-O6
6	A	192	NAG	O5-C5-C6-O6

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	192	NAG	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	182/191 (95%)	0.00	2 (1%) 78 54	12, 40, 80, 164	22 (12%)
2	B	178/198 (89%)	-0.04	3 (1%) 69 43	8, 41, 82, 104	19 (10%)
3	C	14/23 (60%)	0.50	0 100 100	18, 63, 93, 102	0
4	D	96/207 (46%)	1.26	20 (20%) 2 3	36, 85, 144, 163	44 (45%)
5	E	246/249 (98%)	1.41	71 (28%) 1 1	22, 82, 148, 180	120 (48%)
All	All	716/868 (82%)	0.65	96 (13%) 7 6	8, 60, 138, 180	205 (28%)

All (96) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
5	E	156	PRO	8.3
5	E	154	PHE	6.7
5	E	131	VAL	6.1
4	D	11	LEU	5.2
4	D	15	GLU	5.2
5	E	194	LEU	4.9
5	E	168	LYS	4.7
5	E	148	VAL	4.7
5	E	3	VAL	4.7
4	D	60	ARG	4.5
4	D	36	ARG	4.3
4	D	18	ASN	4.3
5	E	193	SER	4.1
5	E	183	GLU	4.0
5	E	74	LEU	3.9
5	E	67	PHE	3.9
5	E	151	ALA	3.7
5	E	161	LEU	3.7
4	D	104	THR	3.6
5	E	167	GLY	3.6

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Mol	Chain	Res	Type	RSRZ
4	D	42	GLY	3.5
5	E	177	ASP	3.5
5	E	181	LEU	3.5
4	D	31	ASN	3.5
5	E	169	GLU	3.4
4	D	53	GLU	3.4
4	D	41	ARG	3.4
5	E	214	CYS	3.4
5	E	244	TRP	3.4
5	E	127	PRO	3.4
4	D	14	GLN	3.3
5	E	216	VAL	3.3
5	E	27	ASP	3.2
4	D	9	GLN	3.2
5	E	239	VAL	3.2
5	E	192	TYR	3.1
5	E	1	GLY	3.1
5	E	199	ARG	3.0
5	E	226	GLU	3.0
5	E	86	PRO	3.0
5	E	117	VAL	3.0
5	E	63	GLU	3.0
5	E	115	LEU	3.0
5	E	219	TYR	2.9
5	E	129	VAL	2.9
5	E	170	VAL	2.9
5	E	66	LYS	2.9
5	E	191	ARG	2.9
5	E	2	ALA	2.8
5	E	38	GLN	2.8
5	E	137	ALA	2.8
5	E	215	GLN	2.8
4	D	16	GLY	2.8
4	D	92	ASP	2.7
5	E	203	THR	2.7
2	B	18	PHE	2.7
5	E	201	SER	2.6
5	E	11	VAL	2.6
2	B	53	LEU	2.6
5	E	197	ARG	2.6
2	B	48	ARG	2.5
5	E	114	ARG	2.5

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Mol	Chain	Res	Type	RSRZ
5	E	44	LEU	2.5
5	E	141	HIS	2.5
5	E	237	GLN	2.5
5	E	155	TYR	2.5
5	E	26	LEU	2.5
5	E	180	PRO	2.4
5	E	213	ARG	2.4
4	D	52	ASN	2.4
5	E	89	SER	2.4
5	E	85	HIS	2.4
5	E	46	LEU	2.4
5	E	84	ALA	2.4
4	D	58	SER	2.3
1	A	183	PRO	2.3
4	D	84	THR	2.3
5	E	174	VAL	2.3
5	E	149	CYS	2.3
5	E	98	ASP	2.3
5	E	147	LEU	2.2
4	D	35	TYR	2.2
5	E	200	VAL	2.2
5	E	189	ASP	2.2
5	E	222	SER	2.2
4	D	44	VAL	2.2
5	E	153	GLY	2.1
1	A	182	ALA	2.1
5	E	42	GLN	2.1
5	E	39	PHE	2.1
4	D	30	ASN	2.1
5	E	4	VAL	2.1
5	E	75	THR	2.0
5	E	158	HIS	2.0
5	E	157	ASP	2.0
5	E	135	SER	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
6	NAG	A	192	15/15	0.34	0.24	1,154,168,176	1

6.5 Other polymers [i](#)

There are no such residues in this entry.