



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 03:19 AM UTC

PDB ID : 5GL2 / pdb_00005gl2
Title : Crystal structure of TON_0340 in complex with Ca
Authors : Lee, S.G.; Sohn, Y.S.; Oh, B.H.
Deposited on : 2016-07-07
Resolution : 2.03 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
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

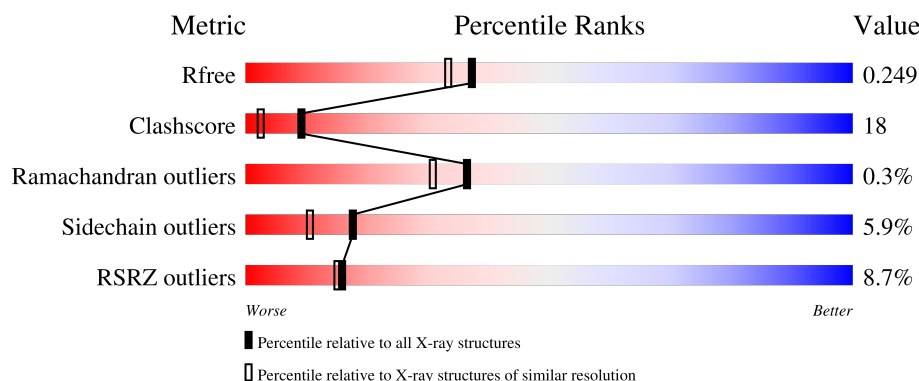
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.03 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	13299 (2.04-2.00)
Clashscore	190562	1022 (2.02-2.02)
Ramachandran outliers	187476	1014 (2.02-2.02)
Sidechain outliers	187428	1014 (2.02-2.02)
RSRZ outliers	180081	13314 (2.04-2.00)

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	269	2% 78% 18% .
1	B	269	6% 72% 23% ..
1	C	269	9% 61% 35% ..
1	D	269	8% 69% 27% .
1	E	269	24% 61% 36% .

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Mol	Chain	Length	Quality of chain
1	F	269	4% 70% 28%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 12519 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 Uncharacterized protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	269	Total	C	N	O	S	0	0	0
			2045	1303	347	387	8			
1	B	265	Total	C	N	O	S	0	0	0
			2014	1285	342	380	7			
1	C	266	Total	C	N	O	S	0	0	0
			2021	1288	344	382	7			
1	D	269	Total	C	N	O	S	0	0	0
			2039	1300	344	387	8			
1	E	268	Total	C	N	O	S	0	0	0
			2034	1297	343	386	8			
1	F	269	Total	C	N	O	S	0	0	0
			2045	1303	347	387	8			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	269	LEU	-	expression tag	UNP B6YTD8
B	269	LEU	-	expression tag	UNP B6YTD8
C	269	LEU	-	expression tag	UNP B6YTD8
D	269	LEU	-	expression tag	UNP B6YTD8
E	269	LEU	-	expression tag	UNP B6YTD8
F	269	LEU	-	expression tag	UNP B6YTD8

- Molecule 2 is CALCIUM ION (CCD ID: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Ca	0	0
			1	1		
2	B	1	Total	Ca	0	0
			1	1		
2	C	1	Total	Ca	0	0
			1	1		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	D	1	Total 1	Ca 1	0	0
2	E	1	Total 1	Ca 1	0	0
2	F	1	Total 1	Ca 1	0	0

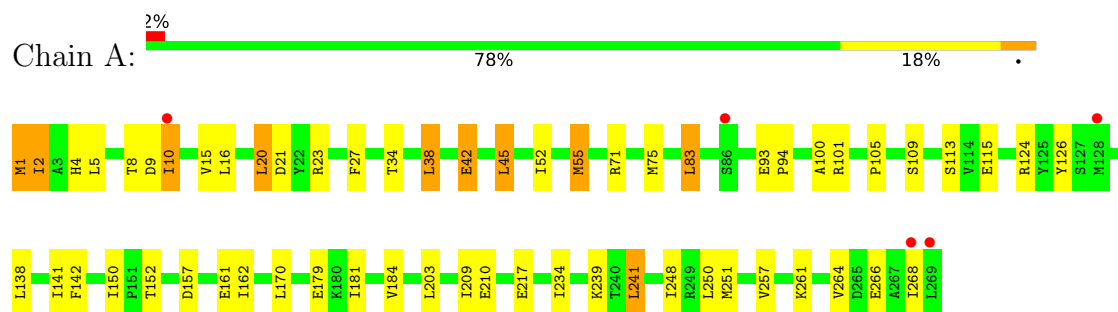
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	68	Total 68	O 68	0	0
3	B	59	Total 59	O 59	0	0
3	C	47	Total 47	O 47	0	0
3	D	44	Total 44	O 44	0	0
3	E	24	Total 24	O 24	0	0
3	F	73	Total 73	O 73	0	0

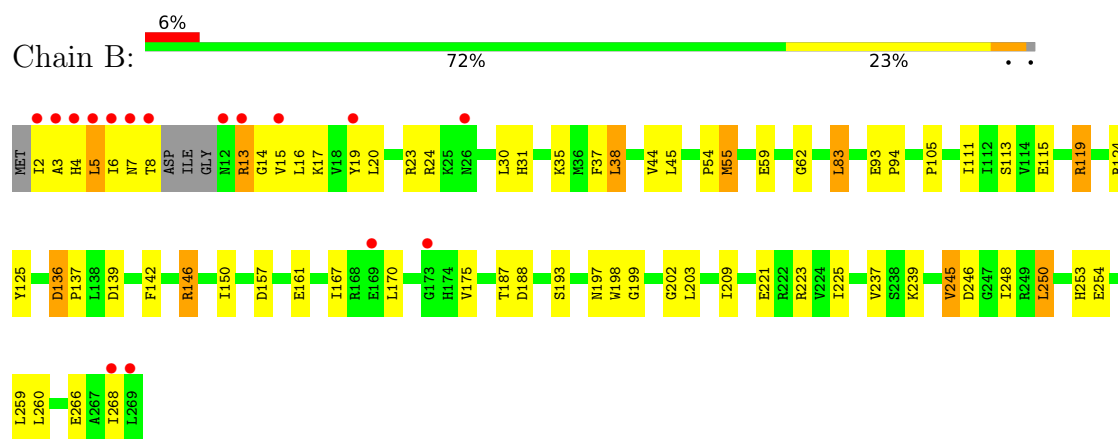
3 Residue-property plots [i](#)

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.

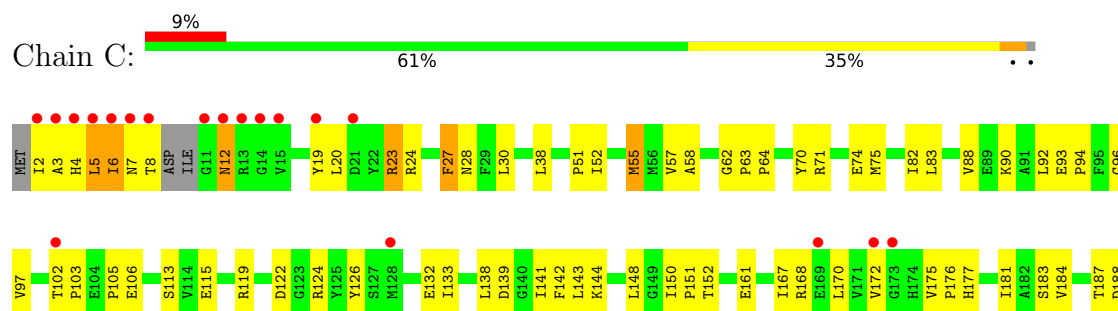
• Molecule 1: Uncharacterized protein

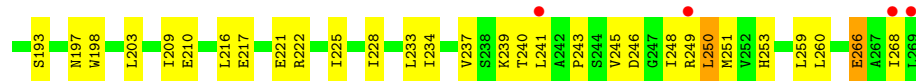


• Molecule 1: Uncharacterized protein

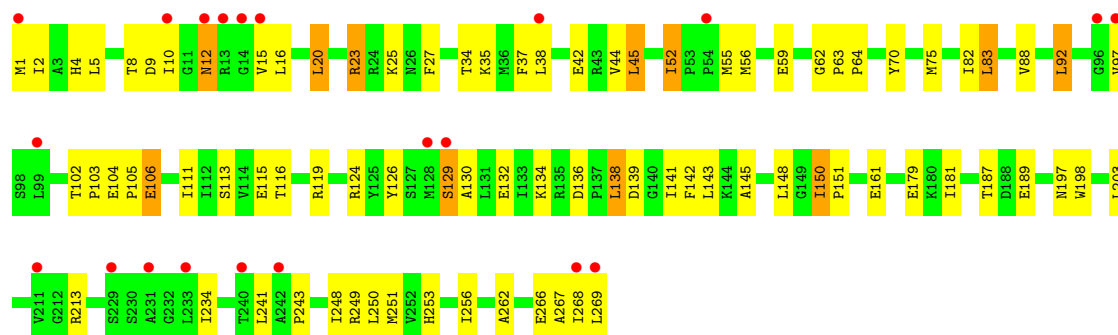


• Molecule 1: Uncharacterized protein

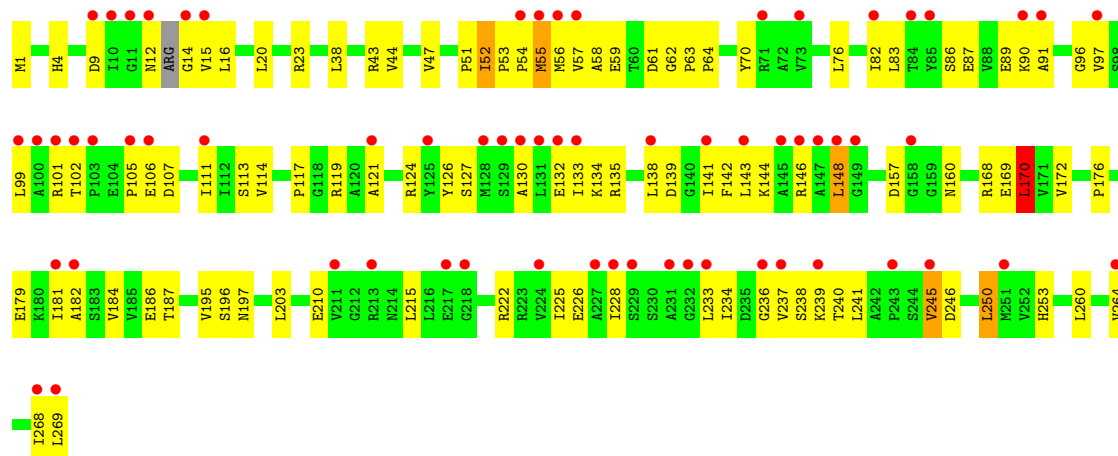




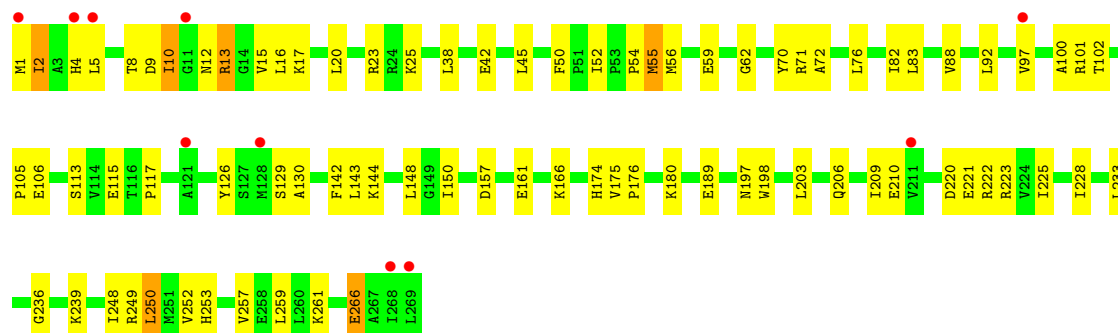
• Molecule 1: Uncharacterized protein



• Molecule 1: Uncharacterized protein



• Molecule 1: Uncharacterized protein



4 Data and refinement statistics

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, α , β , γ	106.84Å 106.84Å 364.02Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	50.00 – 2.03 50.00 – 2.03	Depositor EDS
% Data completeness (in resolution range)	91.3 (50.00-2.03) 91.3 (50.00-2.03)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	5.34 (at 2.03Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.219 , 0.249 0.219 , 0.249	Depositor DCC
R_{free} test set	12469 reflections (9.98%)	wwPDB-VP
Wilson B-factor (Å ²)	32.1	Xtriage
Anisotropy	0.037	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 34.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	12519	wwPDB-VP
Average B, all atoms (Å ²)	37.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.43% 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

5.1 Standard geometry

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

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	0.45	0/2080	0.92	3/2819 (0.1%)
1	B	0.43	0/2048	0.93	6/2775 (0.2%)
1	C	0.39	0/2055	0.91	5/2784 (0.2%)
1	D	0.39	0/2074	0.92	10/2812 (0.4%)
1	E	0.36	0/2068	0.88	4/2802 (0.1%)
1	F	0.44	0/2080	0.91	3/2819 (0.1%)
All	All	0.41	0/12405	0.91	31/16811 (0.2%)

There are no bond length outliers.

All (31) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	2	ILE	N-CA-C	8.27	118.32	110.30
1	A	2	ILE	N-CA-C	7.35	117.48	110.42
1	B	136	ASP	CA-C-N	7.20	127.15	120.03
1	B	136	ASP	C-N-CA	7.20	127.15	120.03
1	A	250	LEU	N-CA-C	7.15	119.98	111.33
1	C	250	LEU	N-CA-C	6.77	119.52	111.33
1	B	250	LEU	N-CA-C	6.76	119.52	111.33
1	E	52	ILE	N-CA-C	6.57	113.54	107.56
1	D	52	ILE	N-CA-C	6.30	113.79	107.55
1	C	175	VAL	N-CA-C	6.14	115.29	108.05
1	B	175	VAL	N-CA-C	5.95	115.07	108.05
1	A	52	ILE	N-CA-C	5.90	113.91	107.60
1	F	250	LEU	N-CA-C	5.87	119.27	111.75
1	E	170	LEU	N-CA-C	-5.79	106.77	113.88
1	C	52	ILE	N-CA-C	5.69	113.18	107.55
1	F	143	LEU	N-CA-C	-5.69	105.08	111.28
1	D	150	ILE	CA-C-N	5.65	125.97	119.93
1	D	150	ILE	C-N-CA	5.65	125.97	119.93

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	181	ILE	N-CA-C	5.42	118.70	111.44
1	D	2	ILE	N-CA-C	5.40	115.61	110.42
1	D	116	THR	CA-C-N	5.34	125.65	119.93
1	D	116	THR	C-N-CA	5.34	125.65	119.93
1	B	187	THR	N-CA-C	-5.25	101.39	109.52
1	D	44	VAL	N-CA-C	5.23	115.84	108.36
1	B	44	VAL	N-CA-C	5.22	115.61	107.99
1	D	59	GLU	N-CA-C	5.20	118.02	110.17
1	C	27	PHE	N-CA-C	5.18	116.93	111.28
1	E	187	THR	N-CA-C	-5.14	101.48	109.24
1	D	136	ASP	CA-C-N	5.13	126.25	119.84
1	D	136	ASP	C-N-CA	5.13	126.25	119.84
1	E	44	VAL	N-CA-C	5.10	115.66	108.36

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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	2045	0	2090	64	0
1	B	2014	0	2055	93	0
1	C	2021	0	2062	104	0
1	D	2039	0	2079	58	0
1	E	2034	0	2076	99	0
1	F	2045	0	2090	85	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	F	1	0	0	0	0
3	A	68	0	0	1	0
3	B	59	0	0	0	0
3	C	47	0	0	0	0
3	D	44	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	E	24	0	0	0	0
3	F	73	0	0	1	0
All	All	12519	0	12452	449	0

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 18.

All (449) 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)
1:F:52:ILE:HD11	1:F:59:GLU:HB3	1.27	1.16
1:E:52:ILE:HD11	1:E:59:GLU:HB3	1.26	1.10
1:C:82:ILE:HD12	1:C:97:VAL:HG11	1.39	1.04
1:B:119:ARG:HH11	1:B:119:ARG:HB3	1.21	1.03
1:A:55:MET:HE1	1:A:239:LYS:HB3	1.44	0.98
1:A:71:ARG:HG2	1:A:75:MET:HE2	1.47	0.97
1:D:12:ASN:HD22	1:D:15:VAL:HG11	1.26	0.96
1:F:1:MET:HE1	1:F:23:ARG:HH12	1.29	0.95
1:C:55:MET:HE1	1:C:239:LYS:HB3	1.49	0.92
1:E:82:ILE:HD12	1:E:97:VAL:HG11	1.49	0.92
1:A:1:MET:CE	1:A:23:ARG:HH22	1.84	0.91
1:E:52:ILE:HD13	1:E:236:GLY:HA2	1.53	0.91
1:A:105:PRO:HG3	1:A:141:ILE:HG13	1.53	0.91
1:F:52:ILE:HD13	1:F:236:GLY:HA2	1.51	0.89
1:D:62:GLY:H	1:D:197:ASN:HD21	1.19	0.89
1:F:52:ILE:CD1	1:F:59:GLU:HB3	2.02	0.89
1:C:152:THR:HG23	1:C:188:ASP:H	1.36	0.88
1:F:62:GLY:H	1:F:197:ASN:HD21	1.21	0.88
1:C:12:ASN:N	1:C:12:ASN:HD22	1.73	0.87
1:E:55:MET:HE1	1:E:239:LYS:HB3	1.58	0.86
1:B:198:TRP:HE1	1:B:253:HIS:HD2	1.25	0.85
1:C:12:ASN:HD22	1:C:12:ASN:H	1.24	0.84
1:C:119:ARG:HG3	1:C:139:ASP:OD1	1.80	0.82
1:B:13:ARG:HH21	1:B:17:LYS:HD2	1.45	0.82
1:C:234:ILE:HG22	1:C:241:LEU:HD12	1.60	0.82
1:B:6:ILE:HD11	1:B:202:GLY:HA3	1.62	0.81
1:B:55:MET:HE1	1:B:239:LYS:HD3	1.61	0.81
1:F:52:ILE:CD1	1:F:236:GLY:HA2	2.11	0.81
1:F:62:GLY:H	1:F:197:ASN:ND2	1.79	0.81
1:B:6:ILE:HG22	1:B:193:SER:HB2	1.63	0.80
1:C:198:TRP:HE1	1:C:253:HIS:HD2	1.30	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:12:ASN:ND2	1:D:15:VAL:HG11	1.95	0.80
1:B:6:ILE:HG21	1:B:199:GLY:HA2	1.64	0.80
1:E:52:ILE:CD1	1:E:59:GLU:HB3	2.10	0.79
1:F:1:MET:HE1	1:F:23:ARG:NH1	1.96	0.79
1:F:1:MET:HE3	1:F:4:HIS:H	1.46	0.79
1:A:1:MET:HE1	1:A:23:ARG:HH22	1.48	0.78
1:F:198:TRP:HE1	1:F:253:HIS:HD2	1.30	0.78
1:C:6:ILE:HG23	1:C:193:SER:HB3	1.65	0.77
1:E:62:GLY:H	1:E:197:ASN:HD21	1.31	0.77
1:B:5:LEU:HD23	1:B:5:LEU:C	2.10	0.77
1:E:160:ASN:HB3	1:E:181:ILE:HG22	1.67	0.77
1:D:62:GLY:H	1:D:197:ASN:ND2	1.82	0.77
1:B:119:ARG:HH11	1:B:119:ARG:CB	1.97	0.75
1:E:225:ILE:HD12	1:E:250:LEU:HD21	1.69	0.75
1:E:62:GLY:H	1:E:197:ASN:ND2	1.86	0.74
1:E:146:ARG:HG3	1:E:146:ARG:HH11	1.53	0.74
1:B:6:ILE:CD1	1:B:202:GLY:HA3	2.17	0.73
1:E:52:ILE:CD1	1:E:236:GLY:HA2	2.18	0.73
1:E:176:PRO:HA	1:F:106:GLU:HG2	1.68	0.73
1:B:31:HIS:HE1	1:B:35:LYS:HE3	1.53	0.73
1:C:152:THR:CG2	1:C:188:ASP:H	1.99	0.73
1:C:105:PRO:HG3	1:C:141:ILE:HG13	1.71	0.73
1:B:6:ILE:HG22	1:B:193:SER:CB	2.19	0.73
1:F:144:LYS:O	1:F:148:LEU:HD23	1.90	0.72
1:D:1:MET:HB3	3:D:442:HOH:O	1.88	0.72
1:F:82:ILE:HD12	1:F:97:VAL:HG11	1.72	0.72
1:B:62:GLY:H	1:B:197:ASN:HD21	1.38	0.71
1:B:31:HIS:CE1	1:B:35:LYS:HE3	2.25	0.70
1:F:105:PRO:O	1:F:150:ILE:HD13	1.92	0.69
1:C:62:GLY:H	1:C:197:ASN:HD21	1.38	0.69
1:C:228:ILE:HB	1:C:233:LEU:HD22	1.73	0.69
1:C:62:GLY:H	1:C:197:ASN:ND2	1.90	0.69
1:C:5:LEU:HB2	1:F:8:THR:HG23	1.75	0.69
1:A:10:ILE:HG12	1:A:248:ILE:HD13	1.76	0.68
1:F:55:MET:HE1	1:F:239:LYS:HD3	1.76	0.68
1:A:42:GLU:HG2	1:A:109:SER:HB3	1.75	0.68
1:D:234:ILE:HG22	1:D:241:LEU:HD12	1.75	0.68
1:D:198:TRP:HE1	1:D:253:HIS:HD2	1.41	0.68
1:F:52:ILE:HD11	1:F:59:GLU:CB	2.16	0.68
1:A:45:LEU:HD21	1:A:83:LEU:HB2	1.75	0.68
1:E:12:ASN:HB3	1:E:14:GLY:N	2.08	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:5:LEU:C	1:C:5:LEU:HD23	2.20	0.67
1:F:70:TYR:CE2	1:F:97:VAL:HG13	2.29	0.67
1:B:119:ARG:NH1	1:B:125:TYR:OH	2.26	0.66
1:C:266:GLU:OE2	1:F:249:ARG:HG3	1.96	0.66
1:F:1:MET:HG2	1:F:2:ILE:N	2.10	0.66
1:C:198:TRP:HE1	1:C:253:HIS:CD2	2.14	0.66
1:C:2:ILE:N	1:F:9:ASP:HB3	2.12	0.65
1:A:1:MET:HG2	1:B:16:LEU:HD22	1.77	0.65
1:C:144:LYS:O	1:C:148:LEU:HD13	1.96	0.65
1:E:43:ARG:HD3	1:E:107:ASP:O	1.95	0.65
1:A:4:HIS:HE2	1:B:19:TYR:HE2	1.43	0.65
1:B:62:GLY:H	1:B:197:ASN:ND2	1.95	0.65
1:D:75:MET:HG2	1:D:213:ARG:HH22	1.61	0.64
1:D:45:LEU:HD21	1:D:83:LEU:HB2	1.80	0.64
1:C:19:TYR:HE2	1:F:4:HIS:HE1	1.44	0.64
1:E:237:VAL:HG23	1:E:246:ASP:HA	1.80	0.64
1:F:55:MET:HE1	1:F:239:LYS:HB3	1.81	0.63
1:B:225:ILE:HD12	1:B:250:LEU:HD21	1.81	0.63
1:C:6:ILE:HG23	1:C:193:SER:CB	2.29	0.63
1:E:119:ARG:HG3	1:E:139:ASP:OD1	1.99	0.63
1:D:12:ASN:HD22	1:D:15:VAL:CG1	2.05	0.63
1:C:6:ILE:HG22	1:C:7:ASN:ND2	2.14	0.62
1:A:42:GLU:HG2	1:A:109:SER:CB	2.28	0.62
1:B:167:ILE:HB	1:B:170:LEU:HD13	1.82	0.62
1:D:37:PHE:CD2	1:D:38:LEU:HD12	2.35	0.62
1:F:198:TRP:HE1	1:F:253:HIS:CD2	2.15	0.62
1:E:70:TYR:CE2	1:E:97:VAL:HG13	2.35	0.62
1:B:5:LEU:HD22	1:B:260:LEU:HD21	1.82	0.62
1:E:119:ARG:HG3	1:E:119:ARG:HH11	1.64	0.61
1:C:55:MET:CE	1:C:239:LYS:HB3	2.27	0.61
1:D:124:ARG:HE	1:D:132:GLU:CD	2.08	0.61
1:D:151:PRO:HG3	1:F:25:LYS:HA	1.82	0.61
1:E:9:ASP:OD1	1:E:16:LEU:HD22	2.01	0.61
1:C:7:ASN:OD1	1:C:193:SER:HA	2.01	0.61
1:A:5:LEU:HG	1:B:8:THR:CG2	2.31	0.60
1:E:9:ASP:OD2	1:E:16:LEU:HD22	2.00	0.60
1:E:222:ARG:O	1:E:226:GLU:HG2	2.01	0.60
1:E:225:ILE:HD12	1:E:250:LEU:CD2	2.31	0.60
1:E:63:PRO:HB2	1:E:64:PRO:HD3	1.83	0.60
1:F:5:LEU:HD11	1:F:259:LEU:HG	1.84	0.59
1:C:152:THR:HG23	1:C:188:ASP:N	2.10	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:82:ILE:CD1	1:C:97:VAL:HG11	2.25	0.59
1:E:9:ASP:CG	1:E:16:LEU:HD22	2.26	0.59
1:A:105:PRO:HG3	1:A:141:ILE:CG1	2.31	0.59
1:A:217:GLU:OE2	1:C:222:ARG:NH1	2.36	0.59
1:D:37:PHE:HD2	1:D:38:LEU:HD12	1.67	0.59
1:E:82:ILE:CD1	1:E:97:VAL:HG11	2.29	0.59
1:C:221:GLU:OE2	1:C:225:ILE:HD11	2.02	0.59
1:D:106:GLU:CD	1:D:106:GLU:H	2.10	0.59
1:E:228:ILE:CG1	1:E:233:LEU:HD22	2.33	0.59
1:E:245:VAL:HG13	1:E:253:HIS:CE1	2.37	0.59
1:C:88:VAL:O	1:C:92:LEU:HD13	2.03	0.58
1:E:52:ILE:HD11	1:E:59:GLU:CB	2.18	0.58
1:F:115:GLU:OE1	1:F:161:GLU:HG2	2.03	0.58
1:E:169:GLU:OE2	1:E:170:LEU:HD13	2.03	0.58
1:C:20:LEU:O	1:C:24:ARG:HG3	2.02	0.58
1:A:9:ASP:HB3	1:B:2:ILE:N	2.19	0.58
1:E:119:ARG:NH1	1:E:139:ASP:CG	2.62	0.58
1:E:245:VAL:HG13	1:E:253:HIS:NE2	2.19	0.58
1:B:2:ILE:O	1:B:6:ILE:HG13	2.04	0.58
1:C:19:TYR:HE2	1:F:4:HIS:CE1	2.22	0.57
1:C:124:ARG:NE	1:C:132:GLU:OE2	2.36	0.57
1:D:115:GLU:OE1	1:D:161:GLU:HG2	2.03	0.57
1:B:245:VAL:HG22	1:B:253:HIS:NE2	2.19	0.57
1:F:220:ASP:CG	1:F:223:ARG:HG3	2.29	0.57
1:C:2:ILE:HD11	1:C:209:ILE:HD12	1.86	0.57
1:C:152:THR:OG1	1:C:187:THR:HG22	2.04	0.57
1:C:12:ASN:H	1:C:12:ASN:ND2	1.99	0.57
1:D:129:SER:O	1:D:130:ALA:HB3	2.04	0.57
1:A:10:ILE:HG23	1:A:10:ILE:O	2.05	0.56
1:B:93:GLU:HB3	1:B:94:PRO:HD3	1.87	0.56
1:C:19:TYR:CE2	1:F:4:HIS:CE1	2.93	0.56
1:E:55:MET:CE	1:E:239:LYS:HB3	2.31	0.56
1:F:42:GLU:H	1:F:42:GLU:CD	2.13	0.56
1:D:56:MET:HE3	1:D:134:LYS:HB2	1.87	0.56
1:C:168:ARG:O	1:C:172:VAL:HG23	2.06	0.56
1:F:113:SER:HB2	1:F:142:PHE:CZ	2.41	0.56
1:A:15:VAL:HG21	1:A:157:ASP:O	2.05	0.56
1:E:146:ARG:NH1	1:E:186:GLU:HB2	2.19	0.56
1:A:42:GLU:CD	1:A:42:GLU:H	2.14	0.56
1:E:228:ILE:HD11	1:E:233:LEU:HD22	1.88	0.56
1:E:268:ILE:O	1:E:269:LEU:HB2	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:115:GLU:OE1	1:B:161:GLU:HG2	2.06	0.55
1:F:222:ARG:HG3	1:F:250:LEU:HD13	1.88	0.55
1:B:146:ARG:HH21	1:B:188:ASP:HA	1.71	0.55
1:D:75:MET:HG2	1:D:213:ARG:NH2	2.20	0.55
1:D:12:ASN:O	1:D:15:VAL:HG12	2.05	0.55
1:C:4:HIS:CD2	1:F:16:LEU:HD11	2.42	0.55
1:C:93:GLU:HB3	1:C:94:PRO:HD3	1.87	0.55
1:D:113:SER:HB2	1:D:142:PHE:CZ	2.41	0.55
1:A:1:MET:H3	1:B:8:THR:HG23	1.72	0.55
1:E:119:ARG:NH1	1:E:139:ASP:OD2	2.40	0.55
1:B:119:ARG:HB3	1:B:119:ARG:NH1	2.05	0.54
1:C:249:ARG:NE	1:F:266:GLU:OE2	2.40	0.54
1:A:10:ILE:HG12	1:A:248:ILE:CD1	2.37	0.54
1:A:55:MET:CE	1:A:239:LYS:HB3	2.28	0.54
1:E:124:ARG:HD3	1:E:132:GLU:CD	2.32	0.54
1:A:1:MET:HE1	1:A:23:ARG:NH2	2.19	0.54
1:B:15:VAL:HG21	1:B:157:ASP:O	2.06	0.54
1:C:55:MET:HE1	1:C:239:LYS:CB	2.32	0.54
1:F:17:LYS:HG2	1:F:174:HIS:CE1	2.42	0.54
1:B:105:PRO:O	1:B:150:ILE:HD13	2.07	0.54
1:C:266:GLU:HG3	1:F:252:VAL:HG21	1.90	0.54
1:E:113:SER:HB2	1:E:142:PHE:CZ	2.42	0.54
1:F:88:VAL:O	1:F:92:LEU:HD13	2.07	0.54
1:E:106:GLU:CG	1:E:148:LEU:HD23	2.38	0.54
1:E:55:MET:HB2	1:E:57:VAL:HG23	1.90	0.54
1:E:51:PRO:HB2	1:E:133:ILE:HG23	1.90	0.53
1:B:7:ASN:OD1	1:B:193:SER:HA	2.09	0.53
1:C:105:PRO:O	1:C:150:ILE:HD13	2.08	0.53
1:E:61:ASP:HB2	1:E:245:VAL:HG23	1.89	0.53
1:C:19:TYR:OH	1:C:23:ARG:HG3	2.09	0.53
1:C:28:ASN:HD21	1:F:13:ARG:NH2	2.06	0.53
1:E:141:ILE:HA	1:E:144:LYS:HD3	1.90	0.53
1:C:70:TYR:CE2	1:C:97:VAL:HG13	2.44	0.53
1:C:268:ILE:O	1:C:268:ILE:HG22	2.09	0.53
1:E:87:GLU:OE2	1:E:135:ARG:NH2	2.42	0.53
1:E:222:ARG:HA	1:E:250:LEU:CD2	2.39	0.52
1:E:126:TYR:HB2	1:E:181:ILE:HG23	1.92	0.52
1:F:12:ASN:N	1:F:12:ASN:HD22	2.06	0.52
1:A:234:ILE:HG22	1:A:241:LEU:HD13	1.91	0.52
1:A:1:MET:H3	1:B:8:THR:CG2	2.23	0.52
1:A:5:LEU:HG	1:B:8:THR:HG21	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:113:SER:HB2	1:A:142:PHE:CZ	2.44	0.52
1:E:139:ASP:O	1:E:143:LEU:HD12	2.10	0.52
1:F:62:GLY:N	1:F:197:ASN:HD21	2.01	0.52
1:B:225:ILE:HD12	1:B:250:LEU:CD2	2.39	0.52
1:C:3:ALA:HB2	1:C:30:LEU:HB2	1.92	0.52
1:C:4:HIS:HE1	1:F:4:HIS:O	1.93	0.52
1:D:20:LEU:HD21	1:E:23:ARG:CG	2.40	0.51
1:C:63:PRO:HB2	1:C:64:PRO:HD3	1.91	0.51
1:E:53:PRO:HA	1:E:56:MET:HE2	1.93	0.51
1:C:240:THR:HG22	1:C:241:LEU:N	2.25	0.51
1:C:266:GLU:HA	1:F:249:ARG:HH12	1.76	0.51
1:D:9:ASP:OD2	1:D:16:LEU:HD22	2.11	0.51
1:B:115:GLU:HG3	1:B:115:GLU:O	2.11	0.51
1:D:70:TYR:CE2	1:D:97:VAL:HG22	2.45	0.51
1:B:55:MET:CE	1:B:239:LYS:HD3	2.35	0.51
1:E:146:ARG:HH12	1:E:186:GLU:HB2	1.76	0.51
1:B:198:TRP:NE1	1:B:253:HIS:HD2	2.02	0.51
1:E:168:ARG:HG3	1:E:182:ALA:HB1	1.93	0.51
1:F:55:MET:CE	1:F:239:LYS:HB3	2.40	0.51
1:A:1:MET:N	1:B:8:THR:CG2	2.74	0.50
1:C:5:LEU:HD22	1:C:260:LEU:HD21	1.93	0.50
1:F:1:MET:CE	1:F:4:HIS:H	2.22	0.50
1:A:9:ASP:H	1:B:4:HIS:HB3	1.75	0.50
1:D:234:ILE:HG22	1:D:241:LEU:CD1	2.42	0.50
1:C:240:THR:CG2	1:C:241:LEU:N	2.73	0.50
1:D:52:ILE:HB	1:D:234:ILE:HD11	1.91	0.50
1:E:225:ILE:HA	1:E:228:ILE:HG22	1.93	0.50
1:E:241:LEU:HD12	1:E:241:LEU:N	2.26	0.50
1:C:23:ARG:HG3	1:C:23:ARG:HH11	1.77	0.50
1:D:104:GLU:HB3	1:D:106:GLU:OE2	2.12	0.50
1:F:15:VAL:HG21	1:F:157:ASP:O	2.12	0.50
1:A:2:ILE:HD11	1:A:209:ILE:HD12	1.94	0.50
1:A:4:HIS:CE1	1:B:7:ASN:HB2	2.46	0.50
1:C:8:THR:HG22	1:F:1:MET:N	2.26	0.50
1:B:54:PRO:HD2	1:B:55:MET:HE3	1.93	0.49
1:C:124:ARG:HD3	1:C:126:TYR:OH	2.12	0.49
1:A:8:THR:HG23	1:B:5:LEU:HB2	1.94	0.49
1:D:187:THR:HG23	1:D:189:GLU:O	2.13	0.49
1:C:152:THR:HG22	1:C:188:ASP:OD2	2.12	0.49
1:D:20:LEU:HD21	1:E:23:ARG:HG2	1.94	0.49
1:B:3:ALA:HB2	1:B:30:LEU:CB	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:76:LEU:HD21	1:E:215:LEU:HD11	1.95	0.49
1:D:249:ARG:HH21	1:D:251:MET:HE1	1.78	0.49
1:E:51:PRO:HD2	1:E:117:PRO:HG2	1.94	0.49
1:A:251:MET:HG3	3:A:465:HOH:O	2.12	0.49
1:C:28:ASN:HD21	1:F:13:ARG:HH21	1.59	0.49
1:E:59:GLU:HA	1:E:234:ILE:O	2.12	0.49
1:E:184:VAL:HG12	1:E:184:VAL:O	2.13	0.49
1:B:5:LEU:C	1:B:5:LEU:CD2	2.81	0.48
1:E:106:GLU:HG2	1:E:148:LEU:HD23	1.95	0.48
1:C:168:ARG:HG2	1:C:168:ARG:HH11	1.78	0.48
1:E:172:VAL:HG13	1:E:179:GLU:HG2	1.95	0.48
1:B:24:ARG:HG2	1:B:24:ARG:HH11	1.77	0.48
1:B:113:SER:HB2	1:B:142:PHE:CZ	2.48	0.48
1:C:167:ILE:HB	1:C:170:LEU:HD23	1.95	0.48
1:C:102:THR:N	1:C:103:PRO:CD	2.77	0.48
1:E:51:PRO:HB2	1:E:133:ILE:CG2	2.43	0.48
1:F:166:LYS:O	1:F:166:LYS:HG2	2.14	0.48
1:E:101:ARG:O	1:E:102:THR:C	2.57	0.48
1:F:1:MET:HG2	1:F:2:ILE:H	1.78	0.48
1:A:251:MET:HE1	1:F:223:ARG:HG2	1.96	0.48
1:E:62:GLY:HA2	1:E:114:VAL:HG12	1.96	0.48
1:B:268:ILE:HG22	1:B:268:ILE:O	2.13	0.48
1:D:4:HIS:HE1	1:E:4:HIS:O	1.97	0.48
1:C:8:THR:HG22	1:F:1:MET:H2	1.80	0.47
1:C:119:ARG:O	1:C:183:SER:HA	2.15	0.47
1:D:37:PHE:HD2	1:D:38:LEU:CD1	2.27	0.47
1:F:100:ALA:O	1:F:101:ARG:HD3	2.13	0.47
1:F:126:TYR:CZ	1:F:180:LYS:HD2	2.50	0.47
1:E:89:GLU:C	1:E:91:ALA:H	2.22	0.47
1:E:146:ARG:HG3	1:E:146:ARG:NH1	2.25	0.47
1:A:5:LEU:HD11	1:B:8:THR:HG21	1.96	0.47
1:A:115:GLU:OE1	1:A:161:GLU:HG2	2.13	0.47
1:B:2:ILE:HG22	1:B:6:ILE:HD11	1.96	0.47
1:D:198:TRP:HE1	1:D:253:HIS:CD2	2.29	0.47
1:D:248:ILE:HB	1:D:253:HIS:CE1	2.50	0.47
1:E:15:VAL:HG21	1:E:157:ASP:O	2.14	0.47
1:F:228:ILE:HB	1:F:233:LEU:HD22	1.96	0.47
1:A:142:PHE:CD1	1:A:162:ILE:HD13	2.49	0.47
1:B:111:ILE:HG22	1:B:142:PHE:CE2	2.50	0.47
1:E:264:VAL:O	1:E:268:ILE:HG13	2.14	0.47
1:C:71:ARG:O	1:C:75:MET:HG3	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:243:PRO:O	1:D:250:LEU:HG	2.15	0.47
1:A:34:THR:HG22	1:A:38:LEU:HD22	1.96	0.47
1:A:93:GLU:HB3	1:A:94:PRO:HD3	1.96	0.47
1:D:198:TRP:NE1	1:D:253:HIS:HD2	2.09	0.47
1:E:222:ARG:HA	1:E:250:LEU:HD22	1.96	0.47
1:A:21:ASP:OD1	1:B:24:ARG:NH1	2.48	0.47
1:B:119:ARG:NH1	1:B:139:ASP:OD1	2.48	0.47
1:C:2:ILE:HD11	1:C:209:ILE:CD1	2.44	0.47
1:C:5:LEU:HD11	1:C:259:LEU:HG	1.96	0.47
1:D:35:LYS:NZ	1:F:189:GLU:OE2	2.47	0.47
1:F:10:ILE:O	1:F:10:ILE:HG23	2.14	0.47
1:B:136:ASP:HA	1:B:137:PRO:HD3	1.73	0.46
1:E:228:ILE:HD11	1:E:233:LEU:CD2	2.44	0.46
1:C:6:ILE:HG13	1:C:198:TRP:O	2.14	0.46
1:D:126:TYR:CB	1:D:181:ILE:HG22	2.45	0.46
1:F:115:GLU:OE1	1:F:115:GLU:HA	2.15	0.46
1:B:6:ILE:HG22	1:B:193:SER:HB3	1.95	0.46
1:E:168:ARG:O	1:E:172:VAL:HG23	2.15	0.46
1:A:4:HIS:O	1:B:4:HIS:HE1	1.98	0.46
1:A:105:PRO:C	1:A:150:ILE:HD13	2.40	0.46
1:D:115:GLU:OE1	1:D:115:GLU:HA	2.16	0.46
1:D:102:THR:N	1:D:103:PRO:CD	2.79	0.46
1:B:19:TYR:CE1	1:B:23:ARG:HB2	2.51	0.46
1:C:23:ARG:HD3	1:C:27:PHE:HA	1.97	0.46
1:B:54:PRO:HD2	1:B:55:MET:CE	2.45	0.46
1:D:88:VAL:HG12	1:D:92:LEU:HD22	1.98	0.46
1:E:268:ILE:O	1:E:269:LEU:CB	2.64	0.46
1:F:126:TYR:CE2	1:F:180:LYS:HD2	2.51	0.46
1:A:23:ARG:HG2	1:B:20:LEU:CD1	2.45	0.46
1:B:6:ILE:HG23	1:B:198:TRP:C	2.40	0.46
1:B:3:ALA:HB2	1:B:30:LEU:HB3	1.98	0.46
1:B:170:LEU:HD12	1:B:170:LEU:N	2.30	0.46
1:E:86:SER:O	1:E:90:LYS:HD3	2.15	0.46
1:C:115:GLU:OE1	1:C:161:GLU:HG2	2.16	0.45
1:E:54:PRO:HA	1:E:56:MET:HE2	1.98	0.45
1:A:5:LEU:CG	1:B:8:THR:HG21	2.46	0.45
1:D:8:THR:HA	1:E:4:HIS:CD2	2.52	0.45
1:D:83:LEU:HD13	1:D:138:LEU:HG	1.99	0.45
1:E:47:VAL:HG22	1:E:83:LEU:HB3	1.98	0.45
1:F:249:ARG:HG3	1:F:249:ARG:HH11	1.80	0.45
1:B:5:LEU:HD23	1:B:6:ILE:N	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:248:ILE:O	1:B:253:HIS:HE1	1.98	0.45
1:A:23:ARG:HG3	1:A:27:PHE:HA	1.97	0.45
1:C:228:ILE:O	1:C:233:LEU:HB2	2.17	0.45
1:F:54:PRO:HA	1:F:56:MET:HE2	1.98	0.45
1:B:2:ILE:HD11	1:B:209:ILE:CD1	2.46	0.45
1:D:262:ALA:O	1:D:266:GLU:HB2	2.16	0.45
1:F:10:ILE:HG12	1:F:248:ILE:HD13	1.97	0.45
1:F:129:SER:O	1:F:130:ALA:HB3	2.16	0.45
1:E:127:SER:O	1:E:181:ILE:HD13	2.17	0.45
1:E:228:ILE:CD1	1:E:233:LEU:HD22	2.47	0.45
1:E:238:SER:O	1:E:240:THR:HG23	2.17	0.45
1:E:172:VAL:CG1	1:E:179:GLU:HG2	2.47	0.44
1:D:267:ALA:C	1:D:269:LEU:H	2.25	0.44
1:E:134:LYS:HD3	1:E:134:LYS:HA	1.83	0.44
1:C:237:VAL:HG23	1:C:246:ASP:HA	1.99	0.44
1:F:257:VAL:HG12	1:F:261:LYS:HE3	2.00	0.44
1:A:1:MET:N	1:B:8:THR:HG22	2.32	0.44
1:B:7:ASN:CG	1:B:19:TYR:CD1	2.96	0.44
1:C:119:ARG:HE	1:C:143:LEU:HD21	1.83	0.44
1:D:119:ARG:HE	1:D:119:ARG:HB2	1.60	0.44
1:B:13:ARG:HD3	1:B:14:GLY:N	2.33	0.44
1:C:152:THR:CG2	1:C:187:THR:HA	2.47	0.44
1:A:16:LEU:HD11	1:B:4:HIS:CD2	2.53	0.44
1:E:121:ALA:HA	1:E:184:VAL:HG21	1.98	0.44
1:A:5:LEU:CD1	1:B:8:THR:HG21	2.47	0.44
1:B:223:ARG:HD2	1:F:71:ARG:HG3	1.99	0.44
1:A:184:VAL:O	1:A:184:VAL:HG12	2.16	0.43
1:D:34:THR:O	1:D:38:LEU:HD13	2.18	0.43
1:D:63:PRO:HB2	1:D:64:PRO:HD3	1.99	0.43
1:E:119:ARG:HH11	1:E:139:ASP:CG	2.24	0.43
1:B:6:ILE:HG22	1:B:6:ILE:O	2.19	0.43
1:C:266:GLU:HG2	1:F:249:ARG:HH12	1.81	0.43
1:A:1:MET:SD	1:A:23:ARG:NH1	2.83	0.43
1:C:5:LEU:CD1	1:C:259:LEU:HG	2.49	0.43
1:C:7:ASN:CG	1:C:19:TYR:CD1	2.96	0.43
1:E:89:GLU:OE1	1:E:99:LEU:HD13	2.18	0.43
1:E:61:ASP:OD1	1:E:196:SER:HB2	2.19	0.43
1:A:1:MET:HG2	1:B:16:LEU:CD2	2.46	0.43
1:A:20:LEU:HG	1:B:24:ARG:HG3	2.00	0.43
1:A:126:TYR:CB	1:A:181:ILE:HG22	2.47	0.43
1:C:266:GLU:HA	1:F:249:ARG:NH1	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:115:GLU:OE1	1:F:161:GLU:CG	2.67	0.43
1:D:105:PRO:HG3	1:D:141:ILE:HG13	2.00	0.43
1:B:237:VAL:HG23	1:B:246:ASP:HA	2.01	0.43
1:C:23:ARG:HD3	1:C:23:ARG:O	2.17	0.43
1:D:23:ARG:O	1:D:27:PHE:HA	2.19	0.43
1:F:72:ALA:O	1:F:76:LEU:HG	2.19	0.43
1:D:143:LEU:HD12	1:D:143:LEU:N	2.34	0.42
1:B:54:PRO:CD	1:B:55:MET:HE3	2.49	0.42
1:C:8:THR:C	1:F:1:MET:N	2.78	0.42
1:E:130:ALA:CA	1:E:181:ILE:HD11	2.49	0.42
1:A:4:HIS:NE2	1:B:19:TYR:CE2	2.86	0.42
1:A:264:VAL:O	1:A:268:ILE:HG13	2.19	0.42
1:C:3:ALA:HB2	1:C:30:LEU:CB	2.49	0.42
1:F:2:ILE:HD11	1:F:209:ILE:HD12	2.01	0.42
1:C:12:ASN:N	1:C:12:ASN:ND2	2.45	0.42
1:D:150:ILE:HA	1:D:151:PRO:HD3	1.83	0.42
1:E:43:ARG:NH1	1:E:107:ASP:HB3	2.33	0.42
1:B:221:GLU:OE2	1:B:225:ILE:HD11	2.19	0.42
1:C:5:LEU:HD23	1:C:5:LEU:O	2.19	0.42
1:C:113:SER:HB2	1:C:142:PHE:CZ	2.54	0.42
1:E:260:LEU:O	1:E:264:VAL:HG23	2.18	0.42
1:A:1:MET:HB2	1:A:1:MET:HE2	1.66	0.42
1:B:6:ILE:HD13	1:B:202:GLY:HA3	1.97	0.42
1:C:4:HIS:CE1	1:F:4:HIS:O	2.72	0.42
1:E:119:ARG:HG3	1:E:119:ARG:NH1	2.34	0.42
1:F:198:TRP:NE1	1:F:253:HIS:HD2	2.07	0.42
1:A:115:GLU:OE1	1:A:115:GLU:HA	2.20	0.42
1:F:12:ASN:N	1:F:12:ASN:ND2	2.68	0.42
1:F:101:ARG:O	1:F:102:THR:C	2.63	0.42
1:A:257:VAL:HG12	1:A:261:LYS:HE3	2.00	0.42
1:C:198:TRP:NE1	1:C:253:HIS:HD2	2.08	0.42
1:C:248:ILE:O	1:C:253:HIS:HE1	2.03	0.42
1:D:42:GLU:H	1:D:42:GLU:CD	2.27	0.42
1:E:51:PRO:O	1:E:53:PRO:HD3	2.19	0.42
1:E:111:ILE:HG22	1:E:142:PHE:CZ	2.54	0.42
1:F:50:PHE:CD1	1:F:117:PRO:HG3	2.54	0.42
1:B:170:LEU:HD12	1:B:170:LEU:H	1.84	0.42
1:B:250:LEU:O	1:B:254:GLU:HG3	2.19	0.42
1:C:6:ILE:CG2	1:C:193:SER:HB3	2.42	0.42
1:C:106:GLU:CD	1:C:106:GLU:H	2.26	0.42
1:C:184:VAL:O	1:C:184:VAL:HG12	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:139:ASP:O	1:D:143:LEU:HD13	2.20	0.42
1:E:89:GLU:HG2	1:E:99:LEU:HD22	2.02	0.42
1:A:150:ILE:O	1:A:152:THR:HG23	2.19	0.42
1:B:83:LEU:C	1:B:83:LEU:CD2	2.93	0.42
1:E:105:PRO:HD3	1:E:144:LYS:HE2	2.02	0.42
1:F:1:MET:HE2	1:F:1:MET:HB3	1.67	0.41
1:B:37:PHE:HD2	1:B:38:LEU:HD13	1.86	0.41
1:C:152:THR:HG21	1:C:187:THR:HA	2.01	0.41
1:A:1:MET:N	1:B:8:THR:HG23	2.33	0.41
1:A:100:ALA:O	1:A:101:ARG:HD3	2.20	0.41
1:C:7:ASN:CG	1:C:193:SER:HA	2.43	0.41
1:F:52:ILE:HD11	1:F:236:GLY:HA2	1.97	0.41
1:E:1:MET:O	1:E:1:MET:HG2	2.19	0.41
1:E:57:VAL:HG12	1:E:58:ALA:N	2.35	0.41
1:E:157:ASP:OD1	1:E:195:VAL:HA	2.20	0.41
1:C:150:ILE:HA	1:C:151:PRO:HD3	1.96	0.41
1:F:144:LYS:HE2	1:F:144:LYS:HB2	1.80	0.41
1:A:71:ARG:O	1:A:75:MET:HG3	2.20	0.41
1:C:51:PRO:HB2	1:C:133:ILE:HG23	2.02	0.41
1:C:57:VAL:HG12	1:C:58:ALA:N	2.34	0.41
1:F:175:VAL:HA	1:F:176:PRO:HD3	1.93	0.41
1:F:221:GLU:O	1:F:225:ILE:HG12	2.20	0.41
1:B:5:LEU:HD12	1:B:259:LEU:HG	2.01	0.41
1:C:176:PRO:O	1:C:177:HIS:HB2	2.21	0.41
1:D:111:ILE:HD12	1:D:145:ALA:HB2	2.03	0.41
1:D:129:SER:O	1:D:130:ALA:CB	2.69	0.41
1:F:1:MET:CE	1:F:4:HIS:HB2	2.50	0.41
1:B:2:ILE:C	1:B:4:HIS:H	2.28	0.41
1:B:7:ASN:ND2	1:B:19:TYR:CE1	2.88	0.41
1:C:90:LYS:HD3	1:C:90:LYS:O	2.21	0.41
1:D:82:ILE:HD12	1:D:97:VAL:HG21	2.02	0.41
1:F:12:ASN:HB3	3:F:455:HOH:O	2.20	0.41
1:F:206:GLN:O	1:F:210:GLU:HG3	2.21	0.41
1:B:198:TRP:HE1	1:B:253:HIS:CD2	2.18	0.41
1:E:222:ARG:HG3	1:E:250:LEU:HD13	2.03	0.41
1:C:92:LEU:CD1	1:C:92:LEU:N	2.84	0.40
1:E:268:ILE:O	1:E:268:ILE:HG22	2.20	0.40
1:C:216:LEU:HD23	1:C:216:LEU:HA	1.97	0.40
1:C:243:PRO:O	1:C:250:LEU:HG	2.21	0.40
1:E:225:ILE:HA	1:E:228:ILE:CG2	2.52	0.40
1:A:4:HIS:O	1:B:4:HIS:CE1	2.75	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:157:ASP:CB	1:B:193:SER:O	2.69	0.40
1:D:70:TYR:CD1	1:D:70:TYR:C	3.00	0.40
1:A:105:PRO:O	1:A:150:ILE:HD13	2.22	0.40
1:A:124:ARG:HH11	1:A:124:ARG:CG	2.35	0.40
1:B:119:ARG:HH11	1:B:119:ARG:CG	2.29	0.40
1:C:2:ILE:N	1:F:9:ASP:CB	2.84	0.40
1:C:122:ASP:OD2	1:C:122:ASP:C	2.64	0.40
1:C:245:VAL:HB	1:C:253:HIS:CE1	2.56	0.40

There are no symmetry-related clashes.

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	267/269 (99%)	261 (98%)	6 (2%)	0	100	100
1	B	261/269 (97%)	250 (96%)	11 (4%)	0	100	100
1	C	262/269 (97%)	248 (95%)	13 (5%)	1 (0%)	30	22
1	D	267/269 (99%)	251 (94%)	14 (5%)	2 (1%)	18	10
1	E	264/269 (98%)	248 (94%)	15 (6%)	1 (0%)	30	22
1	F	267/269 (99%)	256 (96%)	11 (4%)	0	100	100
All	All	1588/1614 (98%)	1514 (95%)	70 (4%)	4 (0%)	36	31

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	96	GLY
1	D	268	ILE
1	C	96	GLY
1	D	10	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	218/218 (100%)	203 (93%)	15 (7%)	14	7
1	B	214/218 (98%)	201 (94%)	13 (6%)	17	10
1	C	215/218 (99%)	201 (94%)	14 (6%)	15	9
1	D	217/218 (100%)	201 (93%)	16 (7%)	13	7
1	E	217/218 (100%)	207 (95%)	10 (5%)	24	17
1	F	218/218 (100%)	209 (96%)	9 (4%)	27	20
All	All	1299/1308 (99%)	1222 (94%)	77 (6%)	18	10

All (77) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1	MET
1	A	10	ILE
1	A	20	LEU
1	A	38	LEU
1	A	42	GLU
1	A	45	LEU
1	A	55	MET
1	A	83	LEU
1	A	138	LEU
1	A	170	LEU
1	A	179	GLU
1	A	203	LEU
1	A	210	GLU
1	A	241	LEU
1	A	266	GLU
1	B	5	LEU
1	B	13	ARG
1	B	38	LEU
1	B	45	LEU
1	B	55	MET
1	B	59	GLU
1	B	83	LEU

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Mol	Chain	Res	Type
1	B	119	ARG
1	B	124	ARG
1	B	146	ARG
1	B	203	LEU
1	B	245	VAL
1	B	266	GLU
1	C	5	LEU
1	C	6	ILE
1	C	12	ASN
1	C	23	ARG
1	C	38	LEU
1	C	55	MET
1	C	74	GLU
1	C	83	LEU
1	C	138	LEU
1	C	203	LEU
1	C	210	GLU
1	C	217	GLU
1	C	251	MET
1	C	266	GLU
1	D	5	LEU
1	D	12	ASN
1	D	20	LEU
1	D	23	ARG
1	D	25	LYS
1	D	45	LEU
1	D	55	MET
1	D	83	LEU
1	D	92	LEU
1	D	106	GLU
1	D	129	SER
1	D	138	LEU
1	D	148	LEU
1	D	179	GLU
1	D	203	LEU
1	D	256	ILE
1	E	20	LEU
1	E	38	LEU
1	E	55	MET
1	E	138	LEU
1	E	148	LEU
1	E	170	LEU

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Mol	Chain	Res	Type
1	E	203	LEU
1	E	210	GLU
1	E	245	VAL
1	E	250	LEU
1	F	10	ILE
1	F	13	ARG
1	F	20	LEU
1	F	38	LEU
1	F	45	LEU
1	F	55	MET
1	F	83	LEU
1	F	203	LEU
1	F	266	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (22) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	7	ASN
1	B	7	ASN
1	B	31	HIS
1	B	197	ASN
1	B	253	HIS
1	C	12	ASN
1	C	28	ASN
1	C	197	ASN
1	C	253	HIS
1	D	26	ASN
1	D	31	HIS
1	D	40	ASN
1	D	197	ASN
1	D	206	GLN
1	D	253	HIS
1	E	4	HIS
1	E	31	HIS
1	E	197	ASN
1	F	7	ASN
1	F	12	ASN
1	F	197	ASN
1	F	253	HIS

5.3.3 RNA [i](#)

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](#)

Of 6 ligands modelled in this entry, 6 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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	269/269 (100%)	0.07	5 (1%) 66 66	19, 30, 43, 58	0
1	B	265/269 (98%)	0.26	16 (6%) 27 27	18, 32, 49, 88	0
1	C	266/269 (98%)	0.61	23 (8%) 16 15	22, 38, 56, 80	0
1	D	269/269 (100%)	0.75	21 (7%) 19 18	24, 39, 53, 74	0
1	E	268/269 (99%)	1.31	65 (24%) 2 1	27, 48, 67, 84	0
1	F	269/269 (100%)	0.15	10 (3%) 45 44	19, 30, 42, 59	0
All	All	1606/1614 (99%)	0.53	140 (8%) 16 15	18, 35, 60, 88	0

All (140) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	3	ALA	7.7
1	D	14	GLY	7.7
1	B	7	ASN	7.2
1	B	8	THR	6.1
1	E	14	GLY	5.4
1	E	10	ILE	5.3
1	F	269	LEU	5.2
1	C	6	ILE	5.1
1	D	13	ARG	5.1
1	B	4	HIS	5.1
1	C	3	ALA	5.0
1	A	269	LEU	5.0
1	C	269	LEU	5.0
1	C	8	THR	4.8
1	B	12	ASN	4.7
1	B	2	ILE	4.7
1	B	5	LEU	4.6
1	D	269	LEU	4.6
1	C	4	HIS	4.5

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Mol	Chain	Res	Type	RSRZ
1	B	6	ILE	4.5
1	D	15	VAL	4.3
1	E	12	ASN	4.2
1	C	11	GLY	4.2
1	E	243	PRO	4.1
1	E	128	MET	4.0
1	E	9	ASP	4.0
1	E	181	ILE	4.0
1	C	5	LEU	3.8
1	E	57	VAL	3.7
1	E	129	SER	3.7
1	C	2	ILE	3.7
1	E	143	LEU	3.6
1	B	13	ARG	3.6
1	B	269	LEU	3.5
1	B	19	TYR	3.5
1	E	231	ALA	3.4
1	E	15	VAL	3.3
1	C	15	VAL	3.3
1	E	145	ALA	3.3
1	C	169	GLU	3.3
1	E	269	LEU	3.2
1	E	138	LEU	3.1
1	E	213	ARG	3.1
1	E	251	MET	3.1
1	C	12	ASN	3.0
1	E	125	TYR	3.0
1	E	90	LYS	3.0
1	D	268	ILE	3.0
1	E	228	ILE	3.0
1	E	130	ALA	3.0
1	E	56	MET	3.0
1	E	121	ALA	2.9
1	E	237	VAL	2.9
1	F	11	GLY	2.9
1	F	4	HIS	2.9
1	D	10	ILE	2.9
1	E	148	LEU	2.8
1	E	233	LEU	2.8
1	E	103	PRO	2.8
1	D	97	VAL	2.8
1	C	268	ILE	2.8

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Mol	Chain	Res	Type	RSRZ
1	E	99	LEU	2.8
1	F	5	LEU	2.8
1	B	15	VAL	2.8
1	E	211	VAL	2.8
1	E	55	MET	2.7
1	D	38	LEU	2.7
1	E	217	GLU	2.7
1	C	241	LEU	2.6
1	E	11	GLY	2.6
1	E	236	GLY	2.6
1	D	12	ASN	2.6
1	E	227	ALA	2.6
1	E	97	VAL	2.6
1	C	14	GLY	2.6
1	C	13	ARG	2.6
1	E	268	ILE	2.6
1	D	242	ALA	2.6
1	A	128	MET	2.5
1	C	7	ASN	2.5
1	E	106	GLU	2.5
1	E	239	LYS	2.5
1	E	101	ARG	2.5
1	D	54	PRO	2.4
1	C	173	GLY	2.4
1	C	21	ASP	2.4
1	E	133	ILE	2.4
1	E	141	ILE	2.4
1	D	129	SER	2.4
1	E	105	PRO	2.4
1	F	128	MET	2.4
1	E	158	GLY	2.4
1	E	131	LEU	2.4
1	D	211	VAL	2.4
1	E	232	GLY	2.3
1	C	128	MET	2.3
1	E	146	ARG	2.3
1	B	268	ILE	2.3
1	E	54	PRO	2.3
1	E	149	GLY	2.3
1	F	97	VAL	2.3
1	C	102	THR	2.3
1	D	99	LEU	2.3

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Mol	Chain	Res	Type	RSRZ
1	E	229	SER	2.3
1	E	84	THR	2.3
1	D	96	GLY	2.3
1	D	128	MET	2.3
1	D	233	LEU	2.2
1	F	268	ILE	2.2
1	E	147	ALA	2.2
1	E	182	ALA	2.2
1	E	71	ARG	2.2
1	E	85	TYR	2.2
1	D	240	THR	2.2
1	E	224	VAL	2.1
1	E	245	VAL	2.1
1	D	229	SER	2.1
1	E	102	THR	2.1
1	A	268	ILE	2.1
1	B	173	GLY	2.1
1	C	249	ARG	2.1
1	B	26	ASN	2.1
1	C	19	TYR	2.1
1	A	10	ILE	2.1
1	C	172	VAL	2.1
1	E	100	ALA	2.1
1	D	1	MET	2.1
1	E	111	ILE	2.1
1	E	73	VAL	2.1
1	F	211	VAL	2.1
1	D	231	ALA	2.1
1	E	132	GLU	2.0
1	F	121	ALA	2.1
1	E	82	ILE	2.0
1	B	169	GLU	2.0
1	E	264	VAL	2.0
1	A	86	SER	2.0
1	F	1	MET	2.0
1	E	91	ALA	2.0
1	E	218	GLY	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
2	CA	E	301	1/1	0.96	0.05	45,45,45,45	0
2	CA	D	301	1/1	0.97	0.07	37,37,37,37	0
2	CA	B	301	1/1	0.98	0.06	33,33,33,33	0
2	CA	C	301	1/1	0.98	0.05	39,39,39,39	0
2	CA	A	301	1/1	0.99	0.07	32,32,32,32	0
2	CA	F	301	1/1	0.99	0.04	31,31,31,31	0

6.5 Other polymers [i](#)

There are no such residues in this entry.