



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2018 – 05:12 am GMT

PDB ID : 4JM2
Title : Crystal Structure of PGT 135 Fab in Complex with gp120 Core Protein from HIV-1 Strain JR-FL Bound to CD4 and 17b Fab
Authors : Kong, L.; Wilson, I.A.
Deposited on : 2013-03-13
Resolution : 3.10 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 following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.7.3 (157068), CSD as539be (2018)
Xtriage (Phenix) : 1.13
EDS : trunk30967
Percentile statistics : 20171227.v01 (using entries in the PDB archive December 27th 2017)
Refmac : 5.8.0158
CCP4 : 7.0 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk30967

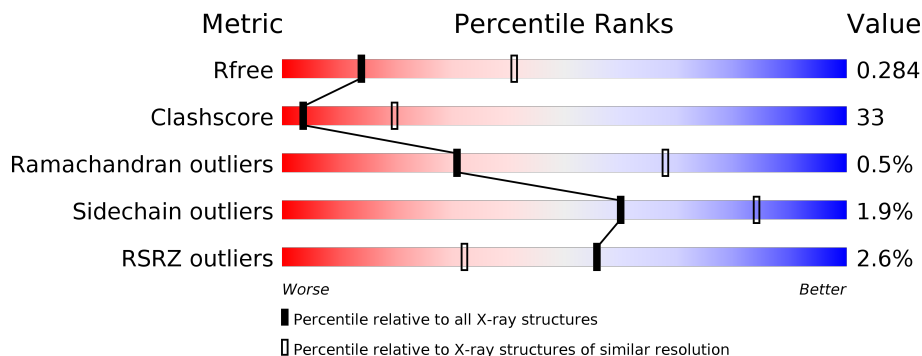
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.10 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}	111664	1115 (3.12-3.08)
Clashscore	122126	1042 (3.10-3.10)
Ramachandran outliers	120053	1010 (3.10-3.10)
Sidechain outliers	120020	1010 (3.10-3.10)
RSRZ outliers	108989	1089 (3.12-3.08)

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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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	236	
2	B	214	
3	C	214	
4	D	229	
5	E	321	
6	F	185	

2 Entry composition [i](#)

There are 11 unique types of molecules in this entry. The entry contains 10907 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 PGT 135 Heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	227	1744	1106	308	323	7	0	0	0

- Molecule 2 is a protein called PGT 135 Light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	214	1672	1050	279	336	7	0	0	0

- Molecule 3 is a protein called 17b Light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	C	214	1646	1028	282	331	5	0	0	0

- Molecule 4 is a protein called 17b Heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	D	220	1668	1056	279	328	5	0	0	0

- Molecule 5 is a protein called gp120.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	E	315	2467	1539	437	470	21	0	0	0

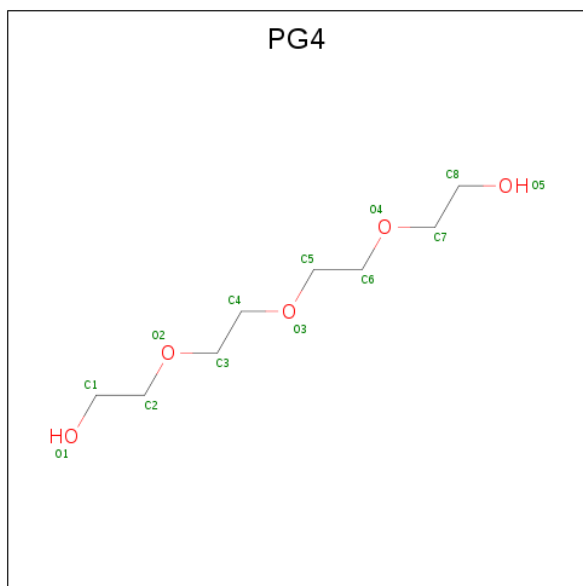
- Molecule 6 is a protein called T-cell surface glycoprotein CD4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	F	175	1363	851	239	269	4	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

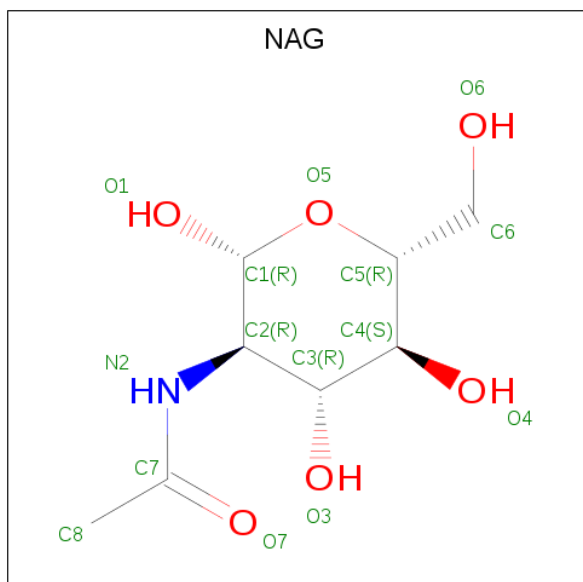
Chain	Residue	Modelled	Actual	Comment	Reference
F	184	ASN	-	EXPRESSION TAG	UNP P01730
F	185	THR	-	EXPRESSION TAG	UNP P01730

- Molecule 7 is TETRAETHYLENE GLYCOL (three-letter code: PG4) (formula: $C_8H_{18}O_5$).



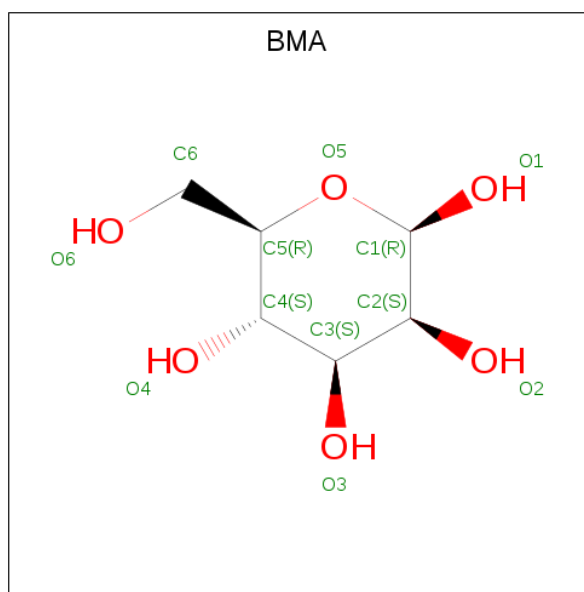
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	C	1	Total C O 13 8 5	0	0

- Molecule 8 is N-ACETYL-D-GLUCOSAMINE (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



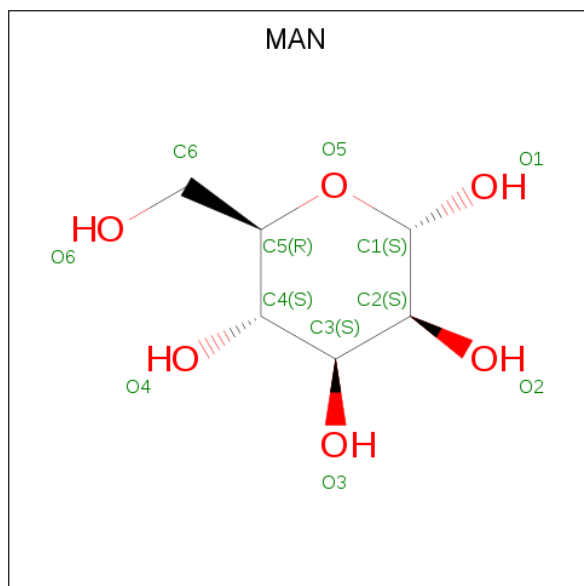
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
8	E	1	Total	C	N	O	0	0
			14	8	1	5		
8	E	1	Total	C	N	O	0	0
			14	8	1	5		
8	E	1	Total	C	N	O	0	0
			14	8	1	5		
8	E	1	Total	C	N	O	0	0
			14	8	1	5		
8	E	1	Total	C	N	O	0	0
			14	8	1	5		
8	E	1	Total	C	N	O	0	0
			14	8	1	5		
8	E	1	Total	C	N	O	0	0
			14	8	1	5		
8	E	1	Total	C	N	O	0	0
			14	8	1	5		
8	E	1	Total	C	N	O	0	0
			14	8	1	5		
8	E	1	Total	C	N	O	0	0
			14	8	1	5		
8	E	1	Total	C	N	O	0	0
			14	8	1	5		

- Molecule 9 is BETA-D-MANNOSE (three-letter code: BMA) (formula: C₆H₁₂O₆).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	E	1	Total C O 11 6 5	0	0
9	E	1	Total C O 11 6 5	0	0
9	E	1	Total C O 11 6 5	0	0

- Molecule 10 is ALPHA-D-MANNOSE (three-letter code: MAN) (formula: C₆H₁₂O₆).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
10	E	1	Total C O 11 6 5	0	0
10	E	1	Total C O 11 6 5	0	0
10	E	1	Total C O 11 6 5	0	0
10	E	1	Total C O 11 6 5	0	0
10	E	1	Total C O 11 6 5	0	0
10	E	1	Total C O 11 6 5	0	0
10	E	1	Total C O 11 6 5	0	0
10	E	1	Total C O 11 6 5	0	0
10	E	1	Total C O 11 6 5	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
10	E	1	Total	C	O	0	0
			11	6	5		
10	E	1	Total	C	O	0	0
			11	6	5		
10	E	1	Total	C	O	0	0
			11	6	5		

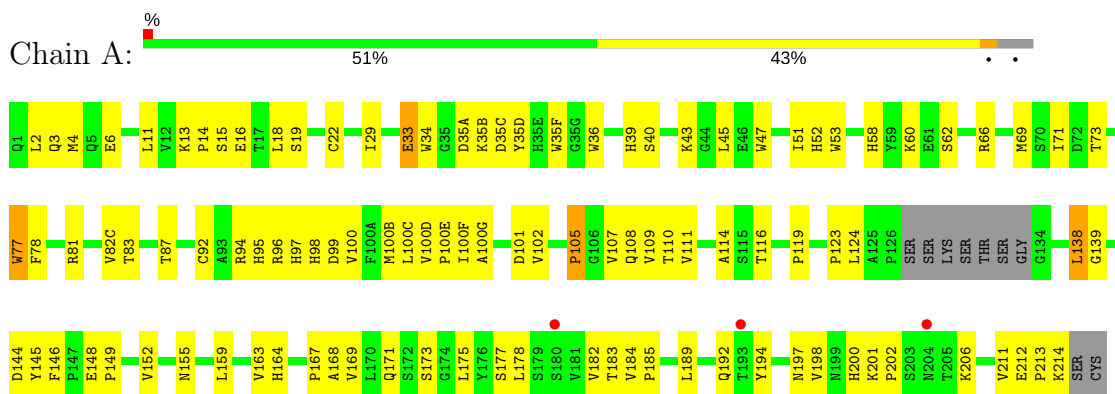
- Molecule 11 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
11	A	1	Total	O	0	0
			1	1		

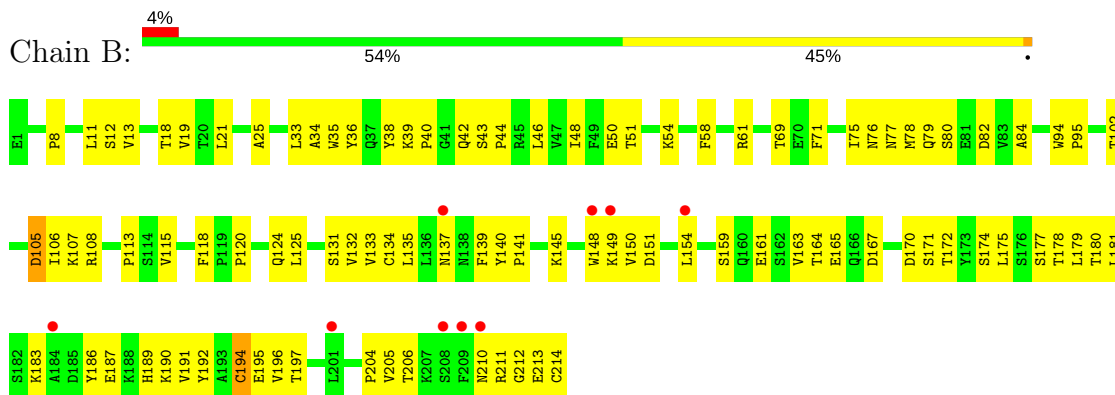
3 Residue-property plots

These plots are drawn for all protein, RNA and DNA 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.

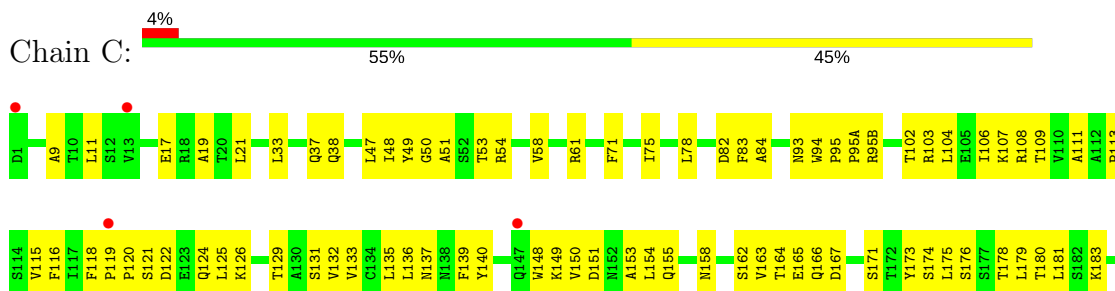
- Molecule 1: PGT 135 Heavy chain

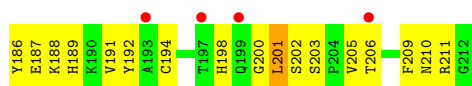


- Molecule 2: PGT 135 Light chain

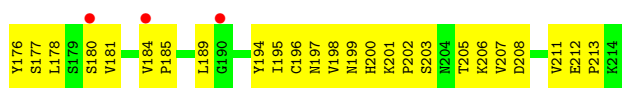
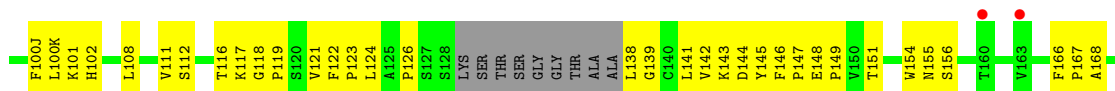


- Molecule 3: 17b Light chain

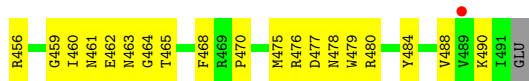
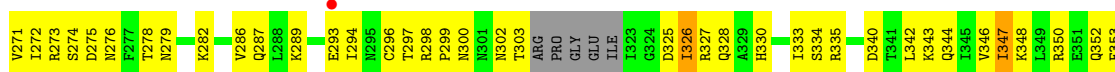




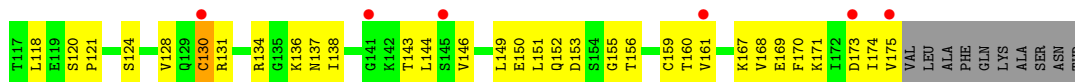
- Molecule 4: 17b Heavy chain



- Molecule 5: gp120



- Molecule 6: T-cell surface glycoprotein CD4



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	218.41Å 92.15Å 88.19Å 90.00° 104.75° 90.00°	Depositor
Resolution (Å)	43.58 – 3.10 43.58 – 3.10	Depositor EDS
% Data completeness (in resolution range)	99.7 (43.58-3.10) 99.7 (43.58-3.10)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.06	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.45 (at 3.12Å)	Xtrriage
Refinement program	PHENIX (phenix.refine: 1.7_650)	Depositor
R, R_{free}	0.238 , 0.285 0.242 , 0.284	Depositor DCC
R_{free} test set	1567 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å ²)	104.8	Xtrriage
Anisotropy	0.250	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.28 , 89.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	10907	wwPDB-VP
Average B, all atoms (Å ²)	125.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.05% 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: PG4, BMA, NAG, MAN

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	0.43	0/1795	0.67	0/2447
2	B	0.45	0/1709	0.70	0/2323
3	C	0.41	0/1683	0.63	0/2288
4	D	0.51	0/1707	0.69	0/2325
5	E	0.48	0/2514	0.70	1/3404 (0.0%)
6	F	0.37	0/1382	0.62	0/1863
All	All	0.45	0/10790	0.67	1/14650 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	E	406	ASN	N-CA-C	-5.47	96.23	111.00

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	1744	0	1700	126	0
2	B	1672	0	1619	115	0
3	C	1646	0	1595	124	0
4	D	1668	0	1637	116	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	E	2467	0	2412	159	0
6	F	1363	0	1389	92	0
7	C	13	0	18	0	0
8	E	168	0	150	14	0
9	E	33	0	26	2	0
10	E	132	0	112	7	0
11	A	1	0	0	0	0
All	All	10907	0	10658	710	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 33.

All (710) 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)
5:E:268:GLU:CG	5:E:269:GLU:H	1.32	1.34
4:D:82(C):LEU:O	4:D:111:VAL:HG11	1.35	1.26
1:A:33:GLU:HG3	1:A:34:TRP:N	1.37	1.12
5:E:268:GLU:HG2	5:E:269:GLU:N	1.61	1.11
3:C:151:ASP:OD1	3:C:191:VAL:HG12	1.50	1.10
5:E:268:GLU:CG	5:E:269:GLU:N	2.09	1.06
1:A:212:GLU:HG3	1:A:213:PRO:HD2	1.39	1.04
5:E:268:GLU:HG2	5:E:269:GLU:H	0.88	1.02
2:B:187:GLU:HA	2:B:211:ARG:HH22	1.21	1.00
6:F:5:LEU:CD1	6:F:98:PHE:CD1	2.46	0.98
5:E:101:VAL:HG13	5:E:102:GLU:OE1	1.63	0.98
5:E:326:ILE:HG13	5:E:327:ARG:H	1.24	0.98
1:A:87:THR:HG22	1:A:111:VAL:H	1.27	0.98
4:D:200:HIS:HB3	4:D:205:THR:OG1	1.63	0.97
5:E:231:LYS:HE3	5:E:267:GLU:OE1	1.64	0.97
1:A:33:GLU:HG3	1:A:34:TRP:H	0.98	0.96
2:B:150:VAL:HG12	2:B:189:HIS:CG	2.00	0.96
2:B:213:GLU:HG2	2:B:214:CYS:H	1.29	0.96
1:A:33:GLU:CG	1:A:34:TRP:N	2.29	0.95
1:A:100(B):MET:HE3	1:A:100(E):PRO:HA	1.49	0.95
6:F:37:LEU:HD21	6:F:44:LEU:HD11	1.49	0.94
1:A:29:ILE:HG21	1:A:71:ILE:HD11	1.48	0.94
3:C:151:ASP:HA	3:C:191:VAL:CG1	1.98	0.93
5:E:350:ARG:HG2	5:E:355:ASN:HA	1.49	0.93
3:C:201:LEU:HD12	3:C:202:SER:H	1.34	0.92
5:E:268:GLU:HG3	5:E:269:GLU:H	1.33	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:141:LEU:HD21	4:D:143:LYS:HB2	1.50	0.92
6:F:134:ARG:NH2	6:F:152:GLN:HB2	1.86	0.91
3:C:162:SER:HB2	4:D:167:PRO:HG2	1.52	0.90
3:C:201:LEU:HD12	3:C:202:SER:N	1.86	0.90
6:F:161:VAL:O	6:F:167:LYS:HA	1.74	0.88
1:A:171:GLN:HE21	1:A:177:SER:HB2	1.38	0.88
4:D:82(C):LEU:O	4:D:111:VAL:CG1	2.20	0.88
2:B:42:GLN:HG2	2:B:43:SER:H	1.38	0.88
5:E:358:THR:HG22	5:E:465:THR:CB	2.05	0.87
5:E:346:VAL:HG13	5:E:359:ILE:HD11	1.56	0.87
3:C:180:THR:O	3:C:181:LEU:HD23	1.75	0.87
3:C:125:LEU:O	3:C:183:LYS:HE2	1.75	0.86
4:D:154:TRP:HE1	4:D:180:SER:HG	1.21	0.86
5:E:327:ARG:HD3	5:E:420:ILE:O	1.76	0.86
2:B:187:GLU:HA	2:B:211:ARG:NH2	1.90	0.85
5:E:325:ASP:O	5:E:326:ILE:HB	1.75	0.84
1:A:171:GLN:NE2	1:A:177:SER:HB2	1.92	0.84
3:C:11:LEU:O	3:C:104:LEU:HD12	1.76	0.83
1:A:33:GLU:CG	1:A:34:TRP:H	1.88	0.83
3:C:120:PRO:HG3	3:C:131:SER:O	1.76	0.83
2:B:118:PHE:HB2	2:B:133:VAL:HG22	1.61	0.82
1:A:212:GLU:CG	1:A:213:PRO:HD2	2.09	0.82
5:E:346:VAL:HA	5:E:359:ILE:CD1	2.10	0.81
2:B:213:GLU:HG2	2:B:214:CYS:N	1.95	0.81
3:C:37:GLN:HB2	3:C:47:LEU:HD11	1.63	0.81
5:E:358:THR:HG22	5:E:465:THR:HB	1.62	0.81
9:E:503:BMA:H2	10:E:507:MAN:O6	1.81	0.80
5:E:108:ILE:HG22	5:E:427:TRP:HH2	1.44	0.80
2:B:125:LEU:HA	2:B:183:LYS:HZ1	1.46	0.80
2:B:80:SER:HA	2:B:106:ILE:CD1	2.13	0.79
3:C:48:ILE:HD13	3:C:54:ARG:HA	1.61	0.79
1:A:100(C):LEU:CD1	5:E:415:THR:HG21	2.12	0.79
1:A:34:TRP:CH2	5:E:419:ARG:HG2	2.18	0.79
5:E:326:ILE:HG13	5:E:327:ARG:N	1.97	0.79
6:F:134:ARG:HH22	6:F:152:GLN:HB2	1.45	0.79
6:F:116:LEU:HD11	6:F:144:LEU:HD13	1.65	0.78
2:B:164:THR:HG22	2:B:174:SER:H	1.48	0.78
5:E:346:VAL:HG22	5:E:359:ILE:HD11	1.66	0.78
1:A:39:HIS:HB2	1:A:45:LEU:CD2	2.13	0.78
4:D:184:VAL:HG13	4:D:185:PRO:HD2	1.66	0.78
4:D:138:LEU:HD11	4:D:211:VAL:HG21	1.65	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:149:LYS:HG2	2:B:154:LEU:HD23	1.66	0.77
4:D:138:LEU:HD11	4:D:211:VAL:CG2	2.14	0.77
6:F:5:LEU:HD21	6:F:168:VAL:HB	1.65	0.77
1:A:29:ILE:CG2	1:A:71:ILE:HD11	2.14	0.77
5:E:270:VAL:O	5:E:348:LYS:HE2	1.85	0.77
5:E:358:THR:CG2	5:E:465:THR:HB	2.14	0.76
3:C:108:ARG:NH2	3:C:140:TYR:HB2	2.00	0.76
1:A:214:LYS:HB3	2:B:214:CYS:SG	2.25	0.76
2:B:120:PRO:HD3	2:B:132:VAL:HG22	1.68	0.76
5:E:358:THR:CG2	5:E:465:THR:CB	2.64	0.76
2:B:145:LYS:HB3	2:B:197:THR:OG1	1.86	0.75
1:A:171:GLN:HE21	1:A:177:SER:CB	1.99	0.75
4:D:167:PRO:C	4:D:178:LEU:HD21	2.08	0.75
5:E:346:VAL:HA	5:E:359:ILE:HD11	1.67	0.75
4:D:2:VAL:HG12	4:D:102:HIS:ND1	2.02	0.74
5:E:461:ASN:OD1	5:E:462:GLU:N	2.19	0.74
1:A:6:GLU:OE1	1:A:105:PRO:HD2	1.86	0.74
5:E:350:ARG:CG	5:E:355:ASN:HA	2.16	0.74
5:E:126:CYS:HB3	5:E:195:SER:O	1.86	0.74
6:F:160:THR:CG2	6:F:167:LYS:HB2	2.17	0.74
2:B:125:LEU:HA	2:B:183:LYS:NZ	2.01	0.74
6:F:108:LEU:HB3	6:F:175:VAL:C	2.08	0.74
1:A:2:LEU:HD21	1:A:4:MET:HE3	1.67	0.74
6:F:37:LEU:CD2	6:F:44:LEU:HD11	2.18	0.74
2:B:125:LEU:HD23	2:B:183:LYS:HZ1	1.54	0.73
4:D:138:LEU:HD21	4:D:211:VAL:HG21	1.67	0.73
6:F:53:ASP:OD1	6:F:54:ARG:HG3	1.89	0.73
1:A:33:GLU:O	1:A:34:TRP:HB2	1.88	0.73
5:E:297:THR:OG1	5:E:444:ARG:HD3	1.88	0.73
2:B:151:ASP:CB	2:B:189:HIS:HD2	2.01	0.73
3:C:151:ASP:H	3:C:191:VAL:HG13	1.52	0.72
2:B:125:LEU:HD23	2:B:183:LYS:NZ	2.05	0.72
4:D:12:LYS:CB	4:D:82(C):LEU:HD12	2.19	0.72
5:E:371:ILE:CD1	6:F:45:THR:HG22	2.20	0.71
3:C:108:ARG:HG2	3:C:109:THR:N	2.05	0.71
5:E:335:ARG:NE	5:E:410:GLY:O	2.22	0.71
6:F:5:LEU:HD11	6:F:98:PHE:CD1	2.25	0.71
2:B:164:THR:CG2	2:B:174:SER:H	2.02	0.71
3:C:158:ASN:HD22	3:C:181:LEU:HD21	1.56	0.71
6:F:30:ASN:HD21	6:F:34:ILE:HD12	1.56	0.71
6:F:5:LEU:CD1	6:F:98:PHE:CE1	2.73	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:151:ASP:HA	3:C:191:VAL:HG12	1.73	0.71
5:E:289:LYS:HD3	5:E:289:LYS:O	1.91	0.71
6:F:5:LEU:HD12	6:F:98:PHE:CD1	2.26	0.71
1:A:16:GLU:O	1:A:82(C):VAL:HG23	1.91	0.70
2:B:161:GLU:OE2	2:B:175:LEU:HD22	1.91	0.70
2:B:40:PRO:HG3	2:B:165:GLU:HG2	1.74	0.70
3:C:17:GLU:O	3:C:78:LEU:HD13	1.91	0.70
4:D:156:SER:H	4:D:195:ILE:HD11	1.56	0.70
3:C:47:LEU:HA	3:C:58:VAL:HG21	1.74	0.70
5:E:342:LEU:O	5:E:346:VAL:HG23	1.90	0.70
5:E:459:GLY:HA2	6:F:33:GLN:HB2	1.73	0.70
5:E:346:VAL:CG1	5:E:359:ILE:HD11	2.21	0.70
6:F:128:VAL:HB	6:F:144:LEU:HD11	1.75	0.69
6:F:96:LEU:HD23	6:F:98:PHE:HZ	1.57	0.69
1:A:201:LYS:N	1:A:202:PRO:HD2	2.07	0.69
5:E:260:LEU:HD21	5:E:453:LEU:HD11	1.74	0.69
4:D:121:VAL:HG22	4:D:142:VAL:HG13	1.73	0.69
1:A:119:PRO:HB3	1:A:145:TYR:HB3	1.73	0.69
5:E:279:ASN:HA	8:E:526:NAG:H83	1.73	0.69
3:C:151:ASP:CA	3:C:191:VAL:CG1	2.69	0.69
6:F:5:LEU:HD13	6:F:98:PHE:CE1	2.27	0.69
2:B:197:THR:HG22	2:B:204:PRO:HB3	1.75	0.69
3:C:158:ASN:ND2	3:C:179:LEU:HD11	2.08	0.69
1:A:2:LEU:HD23	1:A:3:GLN:N	2.08	0.68
6:F:31:SER:HB3	6:F:81:THR:HB	1.74	0.68
1:A:168:ALA:HA	1:A:178:LEU:HB3	1.75	0.68
2:B:54:LYS:HE2	2:B:58:PHE:O	1.93	0.68
2:B:135:LEU:HD21	2:B:137:ASN:HB2	1.74	0.68
3:C:95:PRO:HG3	5:E:202:THR:HG22	1.74	0.68
5:E:335:ARG:HD2	5:E:410:GLY:O	1.94	0.68
1:A:100(C):LEU:HD11	5:E:415:THR:HG21	1.76	0.68
2:B:25:ALA:O	2:B:69:THR:HG23	1.94	0.67
3:C:108:ARG:HG2	3:C:109:THR:H	1.59	0.67
4:D:82(A):ARG:O	4:D:82(B):ASN:HB2	1.95	0.67
5:E:268:GLU:O	5:E:289:LYS:HG3	1.94	0.67
5:E:326:ILE:CG1	5:E:327:ARG:H	1.98	0.67
1:A:2:LEU:C	1:A:2:LEU:HD23	2.16	0.67
4:D:139:GLY:HA2	4:D:154:TRP:HH2	1.59	0.67
2:B:150:VAL:HG12	2:B:189:HIS:CD2	2.30	0.66
5:E:335:ARG:CD	5:E:410:GLY:O	2.43	0.66
6:F:110:GLN:HG2	6:F:151:LEU:HB2	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:100(C):LEU:HD12	5:E:415:THR:HG21	1.78	0.66
4:D:118:GLY:HA3	4:D:205:THR:HG21	1.78	0.66
4:D:148:GLU:OE2	4:D:149:PRO:HA	1.95	0.66
6:F:23:SER:HB2	6:F:63:ASP:HA	1.77	0.66
2:B:205:VAL:HG12	2:B:206:THR:N	2.09	0.66
3:C:135:LEU:HD12	4:D:181:VAL:HG11	1.77	0.66
4:D:34:PHE:HD2	4:D:52(A):THR:HG21	1.61	0.66
5:E:207:LYS:O	5:E:208:ILE:HD13	1.96	0.66
5:E:346:VAL:CB	5:E:359:ILE:HD11	2.26	0.65
6:F:106:THR:HG22	6:F:106:THR:O	1.94	0.65
3:C:122:ASP:O	3:C:126:LYS:HG3	1.96	0.65
5:E:346:VAL:HG13	5:E:359:ILE:CD1	2.26	0.65
4:D:141:LEU:CD2	4:D:143:LYS:HB2	2.26	0.65
6:F:5:LEU:CD2	6:F:168:VAL:HB	2.26	0.65
5:E:298:ARG:HH11	5:E:443:ILE:HD12	1.62	0.65
1:A:2:LEU:HD22	1:A:102:VAL:HG11	1.79	0.64
1:A:13:LYS:O	1:A:16:GLU:HB2	1.98	0.64
5:E:463:ASN:O	5:E:463:ASN:ND2	2.30	0.64
3:C:188:LYS:C	3:C:189:HIS:HD2	2.01	0.64
5:E:91:GLU:CD	5:E:242:VAL:HG21	2.18	0.64
3:C:94:TRP:HA	3:C:95:PRO:C	2.17	0.64
5:E:108:ILE:HG22	5:E:427:TRP:CH2	2.31	0.64
1:A:82(C):VAL:CG1	1:A:111:VAL:HG21	2.28	0.64
3:C:106:ILE:HD11	3:C:171:SER:OG	1.97	0.64
5:E:346:VAL:CA	5:E:359:ILE:HD11	2.28	0.64
6:F:110:GLN:HA	6:F:149:LEU:HD11	1.80	0.64
1:A:4:MET:HG2	1:A:22:CYS:SG	2.38	0.63
1:A:123:PRO:HB3	1:A:211:VAL:HG12	1.79	0.63
3:C:151:ASP:HA	3:C:191:VAL:HG11	1.80	0.63
5:E:358:THR:CG2	5:E:465:THR:OG1	2.46	0.63
4:D:82:LEU:HD12	4:D:82(A):ARG:N	2.14	0.63
2:B:125:LEU:CD2	2:B:183:LYS:HZ1	2.12	0.63
3:C:21:LEU:HD23	3:C:102:THR:HG23	1.79	0.63
4:D:34:PHE:CD2	4:D:52(A):THR:HG21	2.33	0.63
4:D:65:GLY:O	4:D:82(A):ARG:NH1	2.30	0.63
10:E:513:MAN:C1	10:E:514:MAN:H5	2.28	0.63
3:C:148:TRP:CE3	3:C:179:LEU:HD22	2.34	0.63
4:D:143:LYS:HG2	4:D:144:ASP:OD2	1.99	0.63
6:F:160:THR:HG22	6:F:167:LYS:HB2	1.79	0.63
2:B:124:GLN:NE2	2:B:131:SER:H	1.97	0.63
5:E:346:VAL:CG2	5:E:359:ILE:HD11	2.28	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:156:THR:HG21	6:F:171:LYS:HE2	1.80	0.63
1:A:184:VAL:HG13	1:A:185:PRO:HD2	1.81	0.62
4:D:1:GLU:N	4:D:1:GLU:OE1	2.30	0.62
5:E:241:ASN:C	5:E:241:ASN:OD1	2.36	0.62
2:B:150:VAL:HG12	2:B:189:HIS:CB	2.30	0.62
1:A:212:GLU:CG	1:A:213:PRO:CD	2.76	0.62
1:A:2:LEU:HD21	1:A:4:MET:CE	2.29	0.62
1:A:124:LEU:HB3	2:B:118:PHE:CD1	2.34	0.62
2:B:190:LYS:HD3	2:B:211:ARG:HB3	1.81	0.62
2:B:150:VAL:CG1	2:B:189:HIS:CG	2.79	0.62
1:A:87:THR:CG2	1:A:111:VAL:H	2.08	0.62
1:A:14:PRO:O	1:A:15:SER:CB	2.45	0.62
5:E:279:ASN:HB2	8:E:526:NAG:HN2	1.65	0.62
3:C:21:LEU:HD23	3:C:102:THR:CG2	2.29	0.62
4:D:12:LYS:HB2	4:D:82(C):LEU:HD12	1.82	0.62
2:B:151:ASP:HB3	2:B:189:HIS:HD2	1.64	0.61
4:D:194:TYR:HB2	4:D:211:VAL:HG11	1.82	0.61
2:B:39:LYS:HB3	2:B:40:PRO:HD2	1.82	0.61
4:D:203:SER:HB2	4:D:205:THR:HG23	1.82	0.61
2:B:190:LYS:CD	2:B:211:ARG:HB3	2.30	0.61
4:D:53:ILE:HG23	4:D:54:LEU:N	2.15	0.61
1:A:123:PRO:CB	1:A:211:VAL:HG12	2.31	0.61
1:A:35(B):LYS:HD2	1:A:35(B):LYS:N	2.16	0.61
1:A:144:ASP:OD1	1:A:171:GLN:NE2	2.33	0.61
2:B:42:GLN:HG2	2:B:43:SER:N	2.13	0.61
3:C:189:HIS:O	3:C:211:ARG:HD2	2.01	0.61
1:A:189:LEU:HD11	1:A:213:PRO:HG3	1.83	0.61
2:B:118:PHE:HB2	2:B:133:VAL:CG2	2.30	0.61
2:B:151:ASP:HB2	2:B:189:HIS:HD2	1.64	0.61
4:D:119:PRO:HB3	4:D:145:TYR:HB3	1.81	0.61
6:F:96:LEU:HD23	6:F:98:PHE:CZ	2.35	0.61
4:D:82(C):LEU:HB3	4:D:111:VAL:HG21	1.83	0.60
3:C:107:LYS:HA	3:C:140:TYR:OH	2.01	0.60
2:B:205:VAL:CG1	2:B:206:THR:N	2.64	0.60
4:D:68:THR:HG23	4:D:82(A):ARG:NH2	2.15	0.60
1:A:108:GLN:HB3	1:A:149:PRO:HD3	1.84	0.60
3:C:164:THR:HG22	3:C:174:SER:H	1.65	0.60
6:F:105:ASP:O	6:F:106:THR:HB	2.02	0.60
3:C:150:VAL:HG11	3:C:155:GLN:NE2	2.17	0.60
6:F:136:LYS:HG3	6:F:138:ILE:HD11	1.83	0.60
5:E:344:GLN:O	5:E:347:ILE:HB	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:124:GLN:HE22	2:B:131:SER:CB	2.15	0.60
9:E:503:BMA:H2	10:E:507:MAN:C5	2.32	0.60
3:C:93:ASN:ND2	3:C:95(B):ARG:HB2	2.17	0.59
1:A:35(C):ASP:O	1:A:52:HIS:CD2	2.55	0.59
2:B:187:GLU:CA	2:B:211:ARG:HH22	2.05	0.59
5:E:278:THR:HG22	8:E:526:NAG:H82	1.84	0.59
5:E:475:MET:O	5:E:478:ASN:HB2	2.02	0.59
2:B:11:LEU:HD23	2:B:19:VAL:CG2	2.32	0.59
1:A:82(C):VAL:HG12	1:A:111:VAL:HG21	1.84	0.59
2:B:120:PRO:HD3	2:B:132:VAL:CG2	2.32	0.59
4:D:168:ALA:HA	4:D:178:LEU:CD2	2.32	0.59
1:A:11:LEU:HD23	1:A:11:LEU:H	1.68	0.59
2:B:21:LEU:CD2	2:B:102:THR:HG21	2.33	0.59
3:C:19:ALA:HB3	3:C:75:ILE:HG23	1.85	0.59
1:A:114:ALA:HB3	1:A:146:PHE:CE2	2.38	0.59
1:A:97:HIS:ND1	1:A:98:HIS:N	2.43	0.59
2:B:135:LEU:HD23	2:B:135:LEU:C	2.23	0.58
3:C:49:TYR:CZ	3:C:53:THR:HG21	2.38	0.58
4:D:168:ALA:HA	4:D:178:LEU:HD21	1.84	0.58
6:F:5:LEU:CD1	6:F:98:PHE:HD1	2.11	0.58
3:C:151:ASP:CA	3:C:191:VAL:HG12	2.34	0.58
4:D:19:LYS:HA	4:D:80:LEU:O	2.04	0.58
6:F:106:THR:O	6:F:107:HIS:ND1	2.36	0.58
1:A:138:LEU:HD23	1:A:139:GLY:H	1.68	0.58
4:D:82(C):LEU:HB3	4:D:111:VAL:CG2	2.34	0.58
6:F:143:THR:C	6:F:144:LEU:HD12	2.23	0.58
1:A:87:THR:HG22	1:A:111:VAL:N	2.09	0.58
3:C:155:GLN:HB3	3:C:158:ASN:HD21	1.69	0.58
6:F:109:LEU:HD12	6:F:110:GLN:H	1.68	0.58
3:C:151:ASP:CG	3:C:191:VAL:HG12	2.24	0.58
3:C:187:GLU:HA	3:C:211:ARG:NH2	2.19	0.57
3:C:19:ALA:HB3	3:C:75:ILE:CG2	2.34	0.57
5:E:358:THR:O	5:E:358:THR:CG2	2.50	0.57
6:F:120:SER:HB3	6:F:121:PRO:HD2	1.84	0.57
2:B:61:ARG:HD2	2:B:76:ASN:O	2.03	0.57
3:C:131:SER:OG	3:C:180:THR:HG22	2.04	0.57
5:E:353:PHE:O	5:E:354:GLU:HG2	2.04	0.57
1:A:105:PRO:HA	2:B:43:SER:OG	2.04	0.57
3:C:187:GLU:HA	3:C:211:ARG:CZ	2.35	0.57
6:F:114:LEU:O	6:F:146:VAL:HG12	2.05	0.57
4:D:58:HIS:HE1	5:E:202:THR:HG21	1.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:66:ARG:O	4:D:82:LEU:HD12	2.05	0.57
3:C:54:ARG:HG2	3:C:58:VAL:HB	1.85	0.57
1:A:95:HIS:ND1	1:A:100(G):ALA:HB1	2.20	0.56
4:D:58:HIS:CE1	5:E:202:THR:HG21	2.40	0.56
2:B:178:THR:O	2:B:178:THR:HG23	2.05	0.56
2:B:78:MET:SD	2:B:82:ASP:HB2	2.45	0.56
3:C:33:LEU:HD13	3:C:71:PHE:CD1	2.40	0.56
6:F:96:LEU:HB3	6:F:98:PHE:HE1	1.71	0.56
6:F:160:THR:HA	6:F:168:VAL:O	2.05	0.56
3:C:151:ASP:N	3:C:191:VAL:HG13	2.21	0.56
4:D:167:PRO:O	4:D:178:LEU:HD21	2.05	0.56
5:E:420:ILE:HG21	5:E:438:PRO:HG3	1.87	0.56
5:E:223:PHE:CE1	5:E:490:LYS:HB2	2.41	0.56
5:E:350:ARG:HG2	5:E:355:ASN:OD1	2.05	0.56
5:E:446:SER:O	8:E:524:NAG:H83	2.06	0.56
2:B:180:THR:O	2:B:181:LEU:HD23	2.05	0.56
5:E:326:ILE:HG23	5:E:327:ARG:N	2.21	0.56
5:E:477:ASP:HA	5:E:480:ARG:HG3	1.88	0.56
6:F:100:LEU:HD11	6:F:118:LEU:HD12	1.87	0.56
4:D:29:PHE:CD2	4:D:73:LYS:HA	2.41	0.56
6:F:109:LEU:O	6:F:149:LEU:HD11	2.06	0.56
6:F:89:GLN:HG3	6:F:90:LYS:N	2.22	0.55
3:C:175:LEU:C	4:D:166:PHE:CE2	2.80	0.55
3:C:116:PHE:HD2	3:C:135:LEU:HD22	1.71	0.55
3:C:175:LEU:CA	4:D:166:PHE:HE2	2.19	0.55
3:C:133:VAL:HG12	3:C:178:THR:OG1	2.07	0.55
3:C:150:VAL:HG23	3:C:192:TYR:CE1	2.42	0.55
6:F:131:ARG:HA	6:F:136:LYS:O	2.07	0.55
6:F:108:LEU:HD22	6:F:174:ILE:HG13	1.89	0.55
2:B:8:PRO:CG	2:B:11:LEU:HD13	2.37	0.55
3:C:150:VAL:O	3:C:151:ASP:HB2	2.07	0.55
4:D:68:THR:OG1	4:D:81:GLU:HB3	2.07	0.55
3:C:164:THR:HG23	3:C:165:GLU:O	2.07	0.54
1:A:18:LEU:O	1:A:81:ARG:HA	2.07	0.54
3:C:94:TRP:CE3	3:C:95(A):PRO:HD3	2.42	0.54
4:D:20:VAL:HG13	4:D:80:LEU:HB3	1.90	0.54
5:E:268:GLU:HG3	5:E:269:GLU:N	1.99	0.54
6:F:5:LEU:HD12	6:F:98:PHE:HD1	1.68	0.54
5:E:406:ASN:O	5:E:407:ASN:HB2	2.07	0.54
6:F:134:ARG:NH1	6:F:150:GLU:HG3	2.22	0.54
4:D:112:SER:OG	4:D:146:PHE:CZ	2.61	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:95:VAL:HG21	4:D:100(J):PHE:O	2.07	0.54
2:B:94:TRP:CD1	10:E:506:MAN:H2	2.42	0.54
6:F:161:VAL:HB	6:F:168:VAL:HG12	1.88	0.54
5:E:102:GLU:O	5:E:105:GLN:HB3	2.08	0.54
6:F:37:LEU:HD21	6:F:44:LEU:CD1	2.32	0.54
1:A:163:VAL:O	1:A:164:HIS:CD2	2.61	0.54
2:B:35:TRP:HD1	2:B:48:ILE:HB	1.73	0.54
4:D:34:PHE:HD2	4:D:52(A):THR:CG2	2.20	0.54
1:A:212:GLU:HG3	1:A:213:PRO:CD	2.23	0.54
3:C:191:VAL:O	3:C:191:VAL:HG13	2.07	0.54
5:E:327:ARG:NE	5:E:422:GLN:OE1	2.40	0.54
2:B:125:LEU:O	2:B:183:LYS:HE3	2.08	0.54
3:C:106:ILE:HG12	3:C:166:GLN:NE2	2.23	0.54
3:C:188:LYS:C	3:C:189:HIS:CD2	2.80	0.54
1:A:189:LEU:HG	1:A:213:PRO:HG2	1.90	0.54
2:B:148:TRP:CD1	2:B:159:SER:HB3	2.43	0.54
3:C:83:PHE:CE1	3:C:106:ILE:HG22	2.42	0.54
2:B:69:THR:HG22	2:B:69:THR:O	2.09	0.53
4:D:145:TYR:CZ	4:D:176:TYR:HB2	2.43	0.53
4:D:12:LYS:HB3	4:D:82(C):LEU:HD12	1.89	0.53
6:F:99:GLY:O	6:F:100:LEU:HD12	2.08	0.53
5:E:241:ASN:OD1	5:E:242:VAL:N	2.42	0.53
1:A:58:HIS:ND1	10:E:505:MAN:H3	2.24	0.53
2:B:139:PHE:CZ	2:B:175:LEU:HD12	2.44	0.53
3:C:75:ILE:HD11	3:C:82:ASP:OD2	2.08	0.53
6:F:120:SER:HB3	6:F:124:SER:OG	2.08	0.53
5:E:214:PRO:HA	5:E:251:ILE:O	2.08	0.53
2:B:134:CYS:HB2	2:B:148:TRP:CH2	2.44	0.53
3:C:11:LEU:O	3:C:104:LEU:CD1	2.54	0.53
5:E:346:VAL:HG22	5:E:359:ILE:CD1	2.38	0.53
3:C:120:PRO:HG3	3:C:131:SER:C	2.29	0.53
6:F:51:LEU:HD13	6:F:71:ILE:HD13	1.90	0.53
4:D:116:THR:HG22	4:D:147:PRO:HD3	1.89	0.52
2:B:34:ALA:HA	2:B:48:ILE:O	2.08	0.52
3:C:135:LEU:C	3:C:135:LEU:HD23	2.29	0.52
4:D:119:PRO:CB	4:D:145:TYR:HB3	2.39	0.52
2:B:12:SER:HA	2:B:105:ASP:OD1	2.09	0.52
1:A:95:HIS:CE1	1:A:100(G):ALA:HB1	2.44	0.52
2:B:77:ASN:ND2	2:B:77:ASN:O	2.42	0.52
4:D:184:VAL:HG12	4:D:185:PRO:O	2.09	0.52
5:E:462:GLU:HG3	5:E:462:GLU:O	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:150:GLU:H	6:F:150:GLU:CD	2.13	0.52
3:C:148:TRP:CE2	3:C:179:LEU:HB2	2.45	0.52
4:D:139:GLY:HA3	4:D:180:SER:O	2.09	0.52
5:E:124:PRO:HD2	5:E:430:VAL:O	2.09	0.52
6:F:93:VAL:HG12	6:F:94:GLN:N	2.25	0.52
3:C:175:LEU:HD23	3:C:176:SER:N	2.25	0.52
3:C:50:GLY:O	3:C:51:ALA:HB3	2.10	0.52
3:C:203:SER:OG	3:C:205:VAL:HG23	2.10	0.52
1:A:138:LEU:HD21	1:A:211:VAL:HB	1.92	0.51
1:A:200:HIS:NE2	1:A:202:PRO:HG2	2.25	0.51
3:C:108:ARG:HH12	3:C:111:ALA:HB2	1.74	0.51
3:C:48:ILE:HG21	3:C:51:ALA:O	2.09	0.51
4:D:194:TYR:HB2	4:D:211:VAL:CG1	2.40	0.51
1:A:97:HIS:HB2	1:A:100(F):ILE:O	2.10	0.51
2:B:124:GLN:NE2	2:B:131:SER:N	2.58	0.51
1:A:18:LEU:HD12	1:A:19:SER:N	2.26	0.51
1:A:184:VAL:HG11	1:A:194:TYR:OH	2.10	0.51
2:B:80:SER:HA	2:B:106:ILE:HD11	1.92	0.51
3:C:83:PHE:CZ	3:C:106:ILE:HG22	2.45	0.51
4:D:139:GLY:HA2	4:D:154:TRP:CH2	2.44	0.51
6:F:118:LEU:HD21	6:F:120:SER:OG	2.10	0.51
2:B:124:GLN:HE22	2:B:131:SER:H	1.58	0.51
2:B:167:ASP:HB3	2:B:170:ASP:OD1	2.09	0.51
5:E:95:MET:SD	5:E:484:TYR:HB2	2.50	0.51
3:C:186:TYR:CE1	3:C:192:TYR:HE2	2.28	0.51
5:E:373:MET:HB3	5:E:385:CYS:O	2.09	0.51
3:C:113:PRO:HB3	3:C:139:PHE:HB3	1.92	0.51
3:C:124:GLN:HG2	3:C:129:THR:O	2.10	0.51
6:F:108:LEU:HG	6:F:109:LEU:N	2.25	0.51
2:B:124:GLN:HE22	2:B:131:SER:N	2.08	0.51
2:B:131:SER:HA	2:B:179:LEU:O	2.10	0.51
2:B:11:LEU:HD23	2:B:19:VAL:HG21	1.92	0.51
4:D:124:LEU:HD11	4:D:138:LEU:HA	1.93	0.51
1:A:39:HIS:HB2	1:A:45:LEU:HD23	1.88	0.51
6:F:106:THR:CG2	6:F:106:THR:O	2.58	0.51
1:A:35(A):ASP:OD1	1:A:35(B):LYS:NZ	2.43	0.51
3:C:21:LEU:N	3:C:21:LEU:HD12	2.25	0.51
2:B:190:LYS:HD3	2:B:211:ARG:HD2	1.93	0.51
2:B:19:VAL:CG1	2:B:75:ILE:HB	2.41	0.51
6:F:159:CYS:O	6:F:169:GLU:HA	2.11	0.51
1:A:167:PRO:HG2	2:B:163:VAL:O	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:150:VAL:CG1	2:B:189:HIS:HB2	2.40	0.50
1:A:107:VAL:O	1:A:107:VAL:HG13	2.11	0.50
1:A:13:LYS:HD3	1:A:13:LYS:N	2.27	0.50
1:A:163:VAL:C	1:A:164:HIS:HD2	2.14	0.50
2:B:150:VAL:CG1	2:B:189:HIS:CB	2.89	0.50
6:F:149:LEU:C	6:F:149:LEU:HD12	2.31	0.50
6:F:5:LEU:HD21	6:F:168:VAL:CB	2.40	0.50
3:C:149:LYS:HA	3:C:153:ALA:O	2.11	0.50
3:C:186:TYR:CD1	3:C:192:TYR:HE2	2.29	0.50
4:D:168:ALA:N	4:D:178:LEU:HD21	2.26	0.50
2:B:33:LEU:HD22	2:B:71:PHE:CG	2.47	0.50
4:D:58:HIS:HE1	5:E:202:THR:CG2	2.23	0.50
5:E:396:ASN:OD1	5:E:402:THR:O	2.30	0.50
1:A:40:SER:O	1:A:43:LYS:O	2.30	0.50
2:B:50:GLU:O	2:B:51:THR:HB	2.12	0.50
5:E:276:ASN:ND2	5:E:279:ASN:HB2	2.25	0.50
5:E:275:ASP:HB3	5:E:282:LYS:HD2	1.93	0.50
5:E:293:GLU:OE1	8:E:527:NAG:H4	2.12	0.50
3:C:94:TRP:CZ3	3:C:95(A):PRO:HD3	2.46	0.50
5:E:381:GLU:HG3	5:E:443:ILE:HD13	1.94	0.50
2:B:18:THR:HG22	2:B:18:THR:O	2.10	0.50
5:E:403:GLU:O	5:E:403:GLU:OE1	2.30	0.50
2:B:124:GLN:HE22	2:B:131:SER:HB2	1.77	0.49
5:E:272:ILE:HD11	5:E:352:GLN:HG3	1.94	0.49
2:B:164:THR:HG23	2:B:165:GLU:O	2.12	0.49
3:C:125:LEU:HD23	3:C:183:LYS:HD3	1.95	0.49
5:E:333:ILE:HD12	5:E:390:LEU:HD21	1.93	0.49
3:C:150:VAL:O	3:C:150:VAL:HG13	2.12	0.49
5:E:294:ILE:HG23	5:E:294:ILE:O	2.12	0.49
5:E:358:THR:HG22	5:E:465:THR:CA	2.42	0.49
6:F:100:LEU:HD22	6:F:170:PHE:CD1	2.47	0.49
6:F:96:LEU:HB3	6:F:98:PHE:CE1	2.47	0.49
4:D:82:LEU:HD12	4:D:82(A):ARG:H	1.77	0.49
2:B:140:TYR:CD1	2:B:141:PRO:HA	2.47	0.49
3:C:132:VAL:HG13	3:C:132:VAL:O	2.13	0.49
5:E:126:CYS:CB	5:E:195:SER:O	2.59	0.49
5:E:340:ASP:O	5:E:343:LYS:HB3	2.12	0.49
5:E:462:GLU:OE1	5:E:462:GLU:HA	2.13	0.49
1:A:14:PRO:O	1:A:15:SER:OG	2.30	0.49
2:B:191:VAL:HG22	2:B:210:ASN:OD1	2.12	0.49
5:E:226:LEU:CD2	5:E:244:THR:HG22	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:135:LEU:HD21	3:C:137:ASN:HB2	1.95	0.49
4:D:200:HIS:HB3	4:D:205:THR:HG1	1.71	0.49
5:E:358:THR:HG23	5:E:465:THR:OG1	2.12	0.48
3:C:115:VAL:HG12	3:C:116:PHE:N	2.28	0.48
3:C:198:HIS:CD2	3:C:200:GLY:H	2.30	0.48
1:A:34:TRP:HE3	5:E:417:PRO:HB2	1.78	0.48
1:A:35(B):LYS:HG3	1:A:35(D):TYR:CE2	2.48	0.48
1:A:87:THR:HA	1:A:109:VAL:O	2.13	0.48
4:D:97:GLU:HG3	4:D:100(E):TYR:CZ	2.49	0.48
6:F:138:ILE:N	6:F:138:ILE:HD12	2.28	0.48
2:B:13:VAL:O	2:B:106:ILE:HA	2.14	0.48
5:E:346:VAL:HG21	5:E:395:TRP:CD2	2.48	0.48
5:E:371:ILE:HD13	6:F:45:THR:HG22	1.94	0.48
6:F:75:LYS:HD2	6:F:77:GLU:OE1	2.13	0.48
4:D:27:ASP:OD1	4:D:28:THR:N	2.42	0.48
2:B:21:LEU:HD23	2:B:102:THR:HG21	1.95	0.48
4:D:143:LYS:HG3	4:D:177:SER:HB3	1.95	0.48
1:A:4:MET:CE	1:A:35(F):TRP:HZ3	2.27	0.48
1:A:35(A):ASP:CG	1:A:35(B):LYS:HD3	2.34	0.48
6:F:30:ASN:ND2	6:F:34:ILE:HB	2.28	0.48
1:A:169:VAL:HG22	1:A:177:SER:O	2.13	0.48
4:D:93:ALA:HA	4:D:102:HIS:O	2.13	0.48
4:D:124:LEU:HG	4:D:139:GLY:O	2.14	0.48
5:E:476:ARG:HA	5:E:479:TRP:CD1	2.49	0.48
1:A:35(C):ASP:O	1:A:52:HIS:NE2	2.47	0.47
2:B:151:ASP:HB3	2:B:189:HIS:CD2	2.47	0.47
2:B:35:TRP:CD1	2:B:48:ILE:HB	2.49	0.47
4:D:22:CYS:HB3	4:D:78:VAL:HG13	1.96	0.47
2:B:36:TYR:CE1	2:B:46:LEU:HD13	2.49	0.47
4:D:168:ALA:CA	4:D:178:LEU:HD21	2.44	0.47
5:E:99:ASN:O	5:E:100:MET:C	2.51	0.47
1:A:163:VAL:O	1:A:164:HIS:HD2	1.98	0.47
1:A:183:THR:O	1:A:183:THR:HG22	2.13	0.47
4:D:145:TYR:CZ	4:D:176:TYR:CB	2.98	0.47
5:E:96:TRP:CE3	5:E:275:ASP:HB2	2.49	0.47
6:F:120:SER:CB	6:F:121:PRO:HD2	2.44	0.47
6:F:64:GLN:O	6:F:64:GLN:HG3	2.15	0.47
1:A:35(B):LYS:CD	1:A:35(B):LYS:N	2.77	0.47
1:A:100(D):VAL:HG22	8:E:502:NAG:C7	2.45	0.47
5:E:282:LYS:HD3	5:E:282:LYS:HA	1.68	0.47
5:E:412:ASN:OD1	5:E:412:ASN:O	2.33	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:89:VAL:O	5:E:89:VAL:HG22	2.13	0.47
6:F:155:GLY:O	6:F:173:ASP:HA	2.14	0.47
2:B:194:CYS:O	2:B:206:THR:HA	2.14	0.47
2:B:125:LEU:CD2	2:B:183:LYS:NZ	2.75	0.47
5:E:279:ASN:OD1	6:F:29:LYS:NZ	2.47	0.47
5:E:271:VAL:HG13	5:E:287:GLN:HB3	1.97	0.47
1:A:82(C):VAL:HG11	1:A:111:VAL:HG21	1.96	0.47
1:A:163:VAL:HG22	1:A:182:VAL:HG13	1.95	0.47
1:A:35(C):ASP:HA	1:A:53:TRP:HE1	1.80	0.47
3:C:125:LEU:HD23	3:C:183:LYS:CD	2.45	0.47
3:C:194:CYS:O	3:C:206:THR:HB	2.15	0.47
4:D:201:LYS:N	4:D:202:PRO:CD	2.78	0.47
5:E:391:PHE:CE2	5:E:470:PRO:HB3	2.50	0.47
6:F:116:LEU:HD11	6:F:144:LEU:CD1	2.40	0.47
1:A:212:GLU:HG2	1:A:213:PRO:N	2.30	0.47
1:A:36:TRP:CZ3	1:A:92:CYS:HB3	2.50	0.47
1:A:155:ASN:HD22	1:A:159:LEU:HD13	1.80	0.47
2:B:196:VAL:HG13	2:B:196:VAL:O	2.13	0.47
3:C:106:ILE:HG13	3:C:106:ILE:O	2.13	0.47
6:F:8:LYS:HD2	6:F:76:ILE:CD1	2.45	0.47
3:C:150:VAL:CG2	3:C:192:TYR:HE1	2.28	0.46
4:D:154:TRP:NE1	4:D:180:SER:OG	2.34	0.46
5:E:300:ASN:HB2	5:E:441:GLY:O	2.15	0.46
5:E:350:ARG:HG3	5:E:350:ARG:HH21	1.80	0.46
1:A:144:ASP:HB3	1:A:175:LEU:HD13	1.97	0.46
1:A:35(A):ASP:O	1:A:35(B):LYS:HB2	2.15	0.46
2:B:11:LEU:CD2	2:B:19:VAL:HG23	2.45	0.46
2:B:38:TYR:CD1	2:B:44:PRO:HG3	2.51	0.46
1:A:100(D):VAL:HG22	8:E:502:NAG:O7	2.15	0.46
2:B:39:LYS:HG2	2:B:84:ALA:HB2	1.98	0.46
2:B:8:PRO:HG3	2:B:11:LEU:HD13	1.97	0.46
2:B:149:LYS:NZ	2:B:195:GLU:HB2	2.30	0.46
3:C:119:PRO:HG2	3:C:209:PHE:CD1	2.50	0.46
4:D:155:ASN:HD21	4:D:194:TYR:HD1	1.60	0.46
5:E:271:VAL:HG11	5:E:273:ARG:NH2	2.30	0.46
5:E:298:ARG:O	5:E:298:ARG:HG2	2.15	0.46
2:B:113:PRO:HB3	2:B:139:PHE:HB3	1.98	0.46
5:E:213:ILE:HG23	5:E:214:PRO:HD2	1.98	0.46
4:D:54:LEU:HA	4:D:54:LEU:HD23	1.55	0.46
3:C:11:LEU:O	3:C:104:LEU:HA	2.16	0.46
5:E:358:THR:HG22	5:E:465:THR:HA	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:163:VAL:C	1:A:164:HIS:CD2	2.90	0.46
4:D:124:LEU:HG	4:D:139:GLY:H	1.81	0.46
1:A:200:HIS:CE1	1:A:202:PRO:HG2	2.52	0.45
2:B:108:ARG:HD2	2:B:171:SER:HG	1.81	0.45
3:C:108:ARG:CG	3:C:109:THR:H	2.28	0.45
3:C:108:ARG:CG	3:C:109:THR:N	2.77	0.45
4:D:122:PHE:HA	4:D:123:PRO:HD3	1.82	0.45
6:F:100:LEU:HD13	6:F:170:PHE:CZ	2.51	0.45
3:C:151:ASP:N	3:C:191:VAL:CG1	2.78	0.45
4:D:12:LYS:HB2	4:D:82(C):LEU:CD1	2.46	0.45
5:E:242:VAL:HG12	5:E:243:SER:N	2.30	0.45
4:D:138:LEU:CD1	4:D:211:VAL:HG21	2.41	0.45
1:A:96:ARG:NH2	10:E:515:MAN:H4	2.32	0.45
1:A:100(D):VAL:HG23	1:A:100(D):VAL:O	2.15	0.45
1:A:2:LEU:CD2	1:A:4:MET:HE3	2.43	0.45
3:C:54:ARG:HD2	3:C:58:VAL:HG12	1.99	0.45
3:C:9:ALA:O	3:C:102:THR:HA	2.17	0.45
4:D:145:TYR:CE1	4:D:176:TYR:HB2	2.51	0.45
4:D:195:ILE:CD1	4:D:197:ASN:HB2	2.47	0.45
5:E:447:SER:HA	8:E:524:NAG:C8	2.46	0.45
6:F:110:GLN:OE1	6:F:150:GLU:HA	2.17	0.45
2:B:205:VAL:CG1	2:B:206:THR:H	2.29	0.45
4:D:95:VAL:CG2	4:D:101:LYS:H	2.30	0.45
4:D:151:THR:OG1	4:D:199:ASN:HB3	2.17	0.45
4:D:203:SER:HB2	4:D:205:THR:CG2	2.44	0.45
6:F:144:LEU:N	6:F:144:LEU:HD12	2.31	0.45
1:A:4:MET:HE2	1:A:35(F):TRP:HZ3	1.81	0.45
1:A:34:TRP:CE3	5:E:417:PRO:HB2	2.52	0.45
1:A:155:ASN:ND2	1:A:159:LEU:HD13	2.32	0.45
2:B:148:TRP:HD1	2:B:159:SER:HB3	1.82	0.45
5:E:358:THR:O	5:E:358:THR:HG23	2.15	0.45
5:E:447:SER:HA	8:E:524:NAG:H82	1.99	0.45
6:F:131:ARG:HD3	6:F:137:ASN:HD21	1.81	0.45
4:D:178:LEU:HA	4:D:178:LEU:HD23	1.68	0.45
5:E:456:ARG:HB2	5:E:468:PHE:CE1	2.52	0.45
2:B:115:VAL:HG21	2:B:196:VAL:HG11	1.99	0.45
3:C:113:PRO:O	3:C:115:VAL:HG23	2.16	0.45
3:C:174:SER:O	3:C:175:LEU:HB2	2.17	0.45
5:E:389:GLN:HG2	8:E:509:NAG:H81	1.99	0.45
6:F:106:THR:O	6:F:107:HIS:CG	2.70	0.45
6:F:150:GLU:OE2	6:F:153:ASP:OD2	2.34	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:326:ILE:HG12	5:E:419:ARG:HH22	1.81	0.44
3:C:116:PHE:CD2	3:C:135:LEU:HD22	2.50	0.44
4:D:138:LEU:CD2	4:D:211:VAL:HG21	2.42	0.44
4:D:212:GLU:HA	4:D:213:PRO:HD3	1.86	0.44
5:E:298:ARG:HH11	5:E:443:ILE:CD1	2.29	0.44
1:A:184:VAL:HG12	1:A:185:PRO:O	2.18	0.44
3:C:150:VAL:HG13	3:C:153:ALA:HB3	2.00	0.44
3:C:209:PHE:CE1	3:C:210:ASN:O	2.71	0.44
3:C:93:ASN:N	3:C:93:ASN:OD1	2.41	0.44
4:D:196:CYS:O	4:D:198:VAL:HG23	2.18	0.44
4:D:95:VAL:HG23	4:D:100(K):LEU:HA	1.99	0.44
5:E:122:LEU:HD22	5:E:200:VAL:HG22	1.98	0.44
4:D:57:ALA:C	4:D:58:HIS:HD2	2.20	0.44
2:B:80:SER:HA	2:B:106:ILE:HD12	1.96	0.44
4:D:14:PRO:HD3	4:D:112:SER:C	2.38	0.44
5:E:459:GLY:O	5:E:460:ILE:CG1	2.66	0.44
6:F:134:ARG:HH12	6:F:150:GLU:HG3	1.83	0.44
6:F:75:LYS:O	6:F:78:ASP:HB2	2.17	0.44
1:A:192:GLN:HG2	1:A:194:TYR:CZ	2.53	0.44
1:A:77:TRP:CE3	1:A:77:TRP:C	2.90	0.44
3:C:135:LEU:C	3:C:136:LEU:HD12	2.38	0.44
5:E:350:ARG:HG3	5:E:350:ARG:NH2	2.33	0.44
1:A:144:ASP:HB3	1:A:175:LEU:CD1	2.47	0.44
1:A:51:ILE:HB	1:A:69:MET:HE2	1.99	0.44
3:C:119:PRO:HA	3:C:120:PRO:HD3	1.80	0.44
5:E:255:VAL:HG12	5:E:255:VAL:O	2.16	0.44
1:A:78:PHE:CZ	1:A:92:CYS:HB2	2.52	0.43
3:C:121:SER:O	3:C:125:LEU:HD12	2.18	0.43
5:E:91:GLU:OE2	5:E:242:VAL:HG21	2.18	0.43
4:D:12:LYS:CB	4:D:82(C):LEU:CD1	2.92	0.43
4:D:184:VAL:HG13	4:D:185:PRO:CD	2.45	0.43
6:F:131:ARG:HB2	6:F:137:ASN:HD22	1.82	0.43
1:A:94:ARG:NH2	1:A:101:ASP:OD2	2.36	0.43
2:B:178:THR:O	2:B:178:THR:CG2	2.66	0.43
3:C:103:ARG:CG	3:C:104:LEU:N	2.82	0.43
4:D:29:PHE:CE2	4:D:73:LYS:HA	2.54	0.43
6:F:53:ASP:OD1	6:F:53:ASP:C	2.56	0.43
3:C:61:ARG:NH1	3:C:82:ASP:OD1	2.52	0.43
4:D:82(C):LEU:C	4:D:111:VAL:HG11	2.25	0.43
3:C:38:GLN:O	3:C:84:ALA:HB1	2.18	0.43
5:E:405:SER:HB3	8:E:525:NAG:C7	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:439:ILE:HG13	5:E:439:ILE:H	1.56	0.43
4:D:194:TYR:O	4:D:211:VAL:HG12	2.18	0.43
5:E:358:THR:HG21	5:E:465:THR:HB	1.97	0.43
6:F:110:GLN:HA	6:F:149:LEU:CD1	2.47	0.43
1:A:47:TRP:O	1:A:60:LYS:HD2	2.18	0.43
1:A:82(C):VAL:HG12	1:A:83:THR:N	2.34	0.43
1:A:148:GLU:OE1	1:A:149:PRO:HA	2.19	0.43
4:D:146:PHE:HA	4:D:147:PRO:HA	1.75	0.43
4:D:46:GLU:OE2	4:D:62:HIS:NE2	2.37	0.43
5:E:127:VAL:HG22	5:E:128:GLY:N	2.33	0.43
5:E:225:ILE:HG12	5:E:488:VAL:HG22	1.99	0.43
1:A:6:GLU:HG3	1:A:92:CYS:SG	2.59	0.43
3:C:49:TYR:CZ	3:C:53:THR:CG2	3.01	0.43
1:A:198:VAL:O	1:A:206:LYS:HD2	2.19	0.43
3:C:103:ARG:HG2	3:C:104:LEU:N	2.34	0.43
3:C:163:VAL:HG12	3:C:164:THR:O	2.19	0.43
4:D:189:LEU:HD12	4:D:189:LEU:N	2.34	0.43
1:A:152:VAL:HA	1:A:197:ASN:O	2.19	0.42
2:B:69:THR:CG2	2:B:69:THR:O	2.67	0.42
1:A:60:LYS:HG3	2:B:95:PRO:HB2	2.00	0.42
4:D:119:PRO:HB2	4:D:142:VAL:HG12	2.01	0.42
3:C:108:ARG:HH22	3:C:140:TYR:HB2	1.81	0.42
4:D:100(A):ASP:N	4:D:100(A):ASP:OD1	2.51	0.42
4:D:206:LYS:O	4:D:207:VAL:HG13	2.19	0.42
4:D:82(A):ARG:O	4:D:82(B):ASN:CB	2.66	0.42
5:E:279:ASN:HA	8:E:526:NAG:C8	2.45	0.42
1:A:96:ARG:HD3	1:A:101:ASP:CG	2.39	0.42
4:D:141:LEU:HD23	4:D:141:LEU:O	2.19	0.42
6:F:108:LEU:HD12	6:F:109:LEU:H	1.84	0.42
1:A:14:PRO:O	1:A:15:SER:HB3	2.18	0.42
2:B:43:SER:HA	2:B:44:PRO:HD3	1.96	0.42
3:C:150:VAL:HG21	3:C:189:HIS:ND1	2.35	0.42
4:D:98:GLY:O	4:D:100:ALA:N	2.50	0.42
2:B:186:TYR:O	2:B:192:TYR:OH	2.38	0.42
4:D:2:VAL:HG12	4:D:102:HIS:CE1	2.55	0.42
5:E:100:MET:HB3	5:E:100:MET:HE2	1.91	0.42
6:F:93:VAL:CG1	6:F:94:GLN:N	2.82	0.42
3:C:191:VAL:HG23	3:C:210:ASN:OD1	2.20	0.42
4:D:101:LYS:HG3	4:D:102:HIS:CD2	2.55	0.42
5:E:213:ILE:HA	5:E:213:ILE:HD13	1.91	0.42
5:E:296:CYS:HA	5:E:330:HIS:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:100(D):VAL:HG21	8:E:502:NAG:O3	2.20	0.42
1:A:201:LYS:N	1:A:202:PRO:CD	2.79	0.42
2:B:211:ARG:HG2	2:B:212:GLY:N	2.35	0.42
2:B:38:TYR:HD1	2:B:44:PRO:HG3	1.85	0.42
3:C:106:ILE:HD11	3:C:171:SER:CB	2.49	0.42
3:C:118:PHE:CD2	4:D:124:LEU:HD13	2.55	0.42
5:E:123:THR:HG23	5:E:124:PRO:HD2	2.01	0.42
6:F:156:THR:CG2	6:F:171:LYS:HE2	2.46	0.42
1:A:39:HIS:CB	1:A:45:LEU:HD23	2.49	0.41
2:B:19:VAL:HG12	2:B:75:ILE:HB	2.02	0.41
4:D:126:PRO:HG2	4:D:213:PRO:HA	2.02	0.41
5:E:412:ASN:OD1	5:E:412:ASN:C	2.58	0.41
2:B:135:LEU:CD2	2:B:137:ASN:HB2	2.49	0.41
2:B:11:LEU:CD2	2:B:19:VAL:CG2	2.98	0.41
3:C:210:ASN:O	3:C:211:ARG:C	2.58	0.41
6:F:128:VAL:CB	6:F:144:LEU:HD11	2.47	0.41
2:B:11:LEU:HD12	2:B:11:LEU:HA	1.81	0.41
3:C:125:LEU:HD21	3:C:186:TYR:CD2	2.54	0.41
4:D:68:THR:CG2	4:D:82(A):ARG:NH2	2.81	0.41
5:E:211:GLU:O	5:E:212:PRO:C	2.56	0.41
5:E:272:ILE:HG22	5:E:286:VAL:HG22	2.02	0.41
3:C:124:GLN:HG3	4:D:122:PHE:CE2	2.55	0.41
4:D:88:ALA:O	4:D:108:LEU:HD12	2.20	0.41
4:D:121:VAL:CG2	4:D:142:VAL:HG13	2.47	0.41
6:F:109:LEU:O	6:F:149:LEU:HD21	2.20	0.41
5:E:302:ASN:HA	5:E:303:THR:HA	1.68	0.41
5:E:96:TRP:CH2	5:E:274:SER:HA	2.55	0.41
1:A:192:GLN:OE1	1:A:192:GLN:HA	2.21	0.41
4:D:52:ILE:HG23	4:D:100(E):TYR:CZ	2.55	0.41
2:B:77:ASN:HD22	2:B:79:GLN:NE2	2.18	0.41
5:E:267:GLU:O	5:E:268:GLU:HB3	2.20	0.41
5:E:395:TRP:CZ3	8:E:525:NAG:H82	2.56	0.41
2:B:107:LYS:HA	2:B:140:TYR:OH	2.21	0.41
2:B:78:MET:HB2	2:B:78:MET:HE2	1.92	0.41
3:C:33:LEU:HD13	3:C:71:PHE:CG	2.56	0.41
5:E:462:GLU:C	5:E:464:GLY:H	2.23	0.41
6:F:149:LEU:O	6:F:149:LEU:HD12	2.21	0.41
1:A:184:VAL:CG1	1:A:185:PRO:N	2.83	0.41
1:A:178:LEU:HD12	1:A:178:LEU:C	2.42	0.41
5:E:101:VAL:HG13	5:E:102:GLU:N	2.36	0.41
5:E:353:PHE:C	5:E:354:GLU:HG2	2.42	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:130:CYS:O	6:F:137:ASN:HA	2.20	0.41
1:A:87:THR:HG22	1:A:110:THR:HA	2.03	0.40
1:A:184:VAL:HG13	1:A:185:PRO:CD	2.50	0.40
3:C:166:GLN:HB2	3:C:173:TYR:CZ	2.56	0.40
3:C:132:VAL:CG1	3:C:179:LEU:HB3	2.50	0.40
5:E:426:MET:HB3	5:E:428:GLN:OE1	2.21	0.40
5:E:459:GLY:O	5:E:460:ILE:HG13	2.21	0.40
6:F:77:GLU:CD	6:F:77:GLU:H	2.24	0.40
3:C:150:VAL:CG2	3:C:192:TYR:CE1	3.01	0.40
3:C:167:ASP:O	3:C:171:SER:HA	2.20	0.40
5:E:268:GLU:HG3	5:E:269:GLU:HG3	2.03	0.40
5:E:326:ILE:HG23	5:E:328:GLN:N	2.36	0.40
5:E:358:THR:OG1	5:E:395:TRP:O	2.24	0.40
5:E:420:ILE:CG2	5:E:438:PRO:HG3	2.50	0.40
10:E:512:MAN:O4	10:E:513:MAN:H5	2.20	0.40
1:A:212:GLU:CG	1:A:213:PRO:N	2.85	0.40
2:B:108:ARG:NH1	2:B:172:THR:CG2	2.85	0.40
4:D:82(C):LEU:O	4:D:83:ARG:C	2.56	0.40
5:E:208:ILE:HA	5:E:208:ILE:HD13	1.72	0.40
5:E:242:VAL:CG1	5:E:243:SER:N	2.83	0.40
5:E:371:ILE:HD12	6:F:45:THR:HG22	2.01	0.40
1:A:14:PRO:HG3	1:A:111:VAL:HG12	2.04	0.40
3:C:148:TRP:CD2	3:C:179:LEU:HD22	2.56	0.40
5:E:298:ARG:HD3	5:E:443:ILE:HD12	2.04	0.40
5:E:440:ARG:HG2	5:E:441:GLY:H	1.87	0.40
4:D:66:ARG:O	4:D:82:LEU:CD1	2.70	0.40
5:E:95:MET:HE2	5:E:96:TRP:NE1	2.37	0.40
6:F:146:VAL:O	6:F:146:VAL:HG13	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [\(i\)](#)

5.3.1 Protein backbone [\(i\)](#)

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	223/236 (94%)	201 (90%)	20 (9%)	2 (1%)	19	56
2	B	212/214 (99%)	199 (94%)	13 (6%)	0	100	100
3	C	212/214 (99%)	204 (96%)	8 (4%)	0	100	100
4	D	216/229 (94%)	213 (99%)	2 (1%)	1 (0%)	31	68
5	E	311/321 (97%)	291 (94%)	16 (5%)	4 (1%)	13	46
6	F	173/185 (94%)	165 (95%)	8 (5%)	0	100	100
All	All	1347/1399 (96%)	1273 (94%)	67 (5%)	7 (0%)	31	68

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	E	326	ILE
5	E	407	ASN
1	A	62	SER
5	E	299	PRO
4	D	82(B)	ASN
1	A	105	PRO
5	E	347	ILE

5.3.2 Protein sidechains [i](#)

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	193/201 (96%)	184 (95%)	9 (5%)	29	63
2	B	190/190 (100%)	187 (98%)	3 (2%)	65	87
3	C	184/184 (100%)	182 (99%)	2 (1%)	76	90
4	D	188/193 (97%)	184 (98%)	4 (2%)	56	82
5	E	282/287 (98%)	279 (99%)	3 (1%)	76	90
6	F	159/167 (95%)	157 (99%)	2 (1%)	71	88
All	All	1196/1222 (98%)	1173 (98%)	23 (2%)	60	84

All (23) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	33	GLU
1	A	66	ARG
1	A	73	THR
1	A	77	TRP
1	A	99	ASP
1	A	100	VAL
1	A	116	THR
1	A	138	LEU
1	A	173	SER
2	B	105	ASP
2	B	177	SER
2	B	194	CYS
3	C	154	LEU
3	C	201	LEU
4	D	78	VAL
4	D	82	LEU
4	D	117	LYS
4	D	208	ASP
5	E	255	VAL
5	E	334	SER
5	E	401	ASN
6	F	88	ASP
6	F	130	CYS

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

Mol	Chain	Res	Type
1	A	52	HIS
1	A	164	HIS
1	A	171	GLN
2	B	32	ASN
2	B	77	ASN
2	B	124	GLN
2	B	189	HIS
2	B	199	GLN
3	C	92	ASN
3	C	138	ASN
3	C	198	HIS
4	D	58	HIS
5	E	114	GLN
5	E	216	HIS
5	E	249	HIS
5	E	301	ASN

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Mol	Chain	Res	Type
5	E	302	ASN
5	E	463	ASN
6	F	40	GLN
6	F	89	GLN
6	F	129	GLN
6	F	137	ASN

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 carbohydrates in this entry.

5.6 Ligand geometry [i](#)

28 ligands are 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
7	PG4	C	301	-	12,12,12	0.65	0	11,11,11	0.80	0
8	NAG	E	501	8,5	14,14,15	1.07	2 (14%)	17,19,21	1.93	4 (23%)
8	NAG	E	502	9,8	14,14,15	1.32	2 (14%)	17,19,21	3.16	5 (29%)
9	BMA	E	503	10,8	11,11,12	1.44	1 (9%)	15,15,17	3.35	10 (66%)
10	MAN	E	504	9,10	11,11,12	1.00	0	15,15,17	2.43	4 (26%)
10	MAN	E	505	10	11,11,12	0.70	0	15,15,17	1.61	3 (20%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
10	MAN	E	506	10	11,11,12	1.28	1 (9%)	15,15,17	1.08	0
10	MAN	E	507	9,10	11,11,12	1.52	3 (27%)	15,15,17	1.57	2 (13%)
10	MAN	E	508	10	11,11,12	1.51	3 (27%)	15,15,17	1.59	1 (6%)
8	NAG	E	509	8,5	14,14,15	0.55	0	17,19,21	1.16	1 (5%)
8	NAG	E	510	9,8	14,14,15	1.00	1 (7%)	17,19,21	3.29	8 (47%)
9	BMA	E	511	8,10	11,11,12	1.43	2 (18%)	15,15,17	0.88	1 (6%)
10	MAN	E	512	9,10	11,11,12	1.53	3 (27%)	15,15,17	1.25	2 (13%)
10	MAN	E	513	10	11,11,12	1.49	3 (27%)	15,15,17	1.39	2 (13%)
10	MAN	E	514	10	11,11,12	1.30	1 (9%)	15,15,17	2.41	5 (33%)
10	MAN	E	515	10	11,11,12	0.66	0	15,15,17	0.83	1 (6%)
10	MAN	E	516	9,10	11,11,12	0.60	0	15,15,17	0.83	0
10	MAN	E	517	10	11,11,12	0.70	0	15,15,17	1.62	4 (26%)
10	MAN	E	518	10	11,11,12	0.71	0	15,15,17	1.32	1 (6%)
8	NAG	E	519	8,5	14,14,15	1.40	3 (21%)	17,19,21	1.13	1 (5%)
8	NAG	E	520	9,8	14,14,15	0.53	0	17,19,21	1.18	3 (17%)
9	BMA	E	521	8	11,11,12	0.64	0	15,15,17	0.67	0
8	NAG	E	522	5	14,14,15	0.54	0	17,19,21	0.83	0
8	NAG	E	523	5	14,14,15	0.50	0	17,19,21	0.96	1 (5%)
8	NAG	E	524	5	14,14,15	0.52	0	17,19,21	1.35	2 (11%)
8	NAG	E	525	5	14,14,15	0.55	0	17,19,21	0.75	0
8	NAG	E	526	5	14,14,15	0.63	0	17,19,21	0.75	0
8	NAG	E	527	5	14,14,15	0.61	0	17,19,21	0.58	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
7	PG4	C	301	-	-	0/10/10/10	0/0/0/0
8	NAG	E	501	8,5	-	0/6/23/26	0/1/1/1
8	NAG	E	502	9,8	-	0/6/23/26	0/1/1/1
9	BMA	E	503	10,8	-	0/2/19/22	0/1/1/1
10	MAN	E	504	9,10	-	0/2/19/22	0/1/1/1
10	MAN	E	505	10	-	0/2/19/22	0/1/1/1
10	MAN	E	506	10	-	0/2/19/22	0/1/1/1
10	MAN	E	507	9,10	-	0/2/19/22	0/1/1/1
10	MAN	E	508	10	-	0/2/19/22	0/1/1/1
8	NAG	E	509	8,5	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
8	NAG	E	510	9,8	-	0/6/23/26	0/1/1/1
9	BMA	E	511	8,10	-	0/2/19/22	0/1/1/1
10	MAN	E	512	9,10	-	0/2/19/22	0/1/1/1
10	MAN	E	513	10	-	0/2/19/22	0/1/1/1
10	MAN	E	514	10	-	0/2/19/22	0/1/1/1
10	MAN	E	515	10	-	0/2/19/22	0/1/1/1
10	MAN	E	516	9,10	-	0/2/19/22	0/1/1/1
10	MAN	E	517	10	-	0/2/19/22	0/1/1/1
10	MAN	E	518	10	-	0/2/19/22	0/1/1/1
8	NAG	E	519	8,5	-	0/6/23/26	0/1/1/1
8	NAG	E	520	9,8	-	0/6/23/26	0/1/1/1
9	BMA	E	521	8	-	0/2/19/22	0/1/1/1
8	NAG	E	522	5	-	0/6/23/26	0/1/1/1
8	NAG	E	523	5	-	0/6/23/26	0/1/1/1
8	NAG	E	524	5	-	0/6/23/26	0/1/1/1
8	NAG	E	525	5	-	0/6/23/26	0/1/1/1
8	NAG	E	526	5	-	0/6/23/26	0/1/1/1
8	NAG	E	527	5	-	0/6/23/26	0/1/1/1

All (25) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	E	506	MAN	O5-C1	-3.83	1.37	1.43
8	E	502	NAG	C4-C5	-2.97	1.46	1.53
9	E	503	BMA	O5-C5	-2.96	1.37	1.43
8	E	510	NAG	O5-C1	-2.25	1.40	1.43
8	E	502	NAG	O4-C4	-2.19	1.37	1.43
8	E	501	NAG	O5-C1	-2.04	1.40	1.43
8	E	519	NAG	O4-C4	2.03	1.48	1.43
8	E	501	NAG	O4-C4	2.04	1.48	1.43
10	E	508	MAN	O2-C2	2.14	1.48	1.43
10	E	512	MAN	O3-C3	2.14	1.48	1.43
10	E	513	MAN	O2-C2	2.31	1.48	1.43
10	E	507	MAN	O2-C2	2.32	1.48	1.43
10	E	512	MAN	O5-C5	2.35	1.48	1.43
10	E	513	MAN	O5-C5	2.46	1.48	1.43
8	E	519	NAG	O5-C5	2.50	1.48	1.43
9	E	511	BMA	O5-C5	2.58	1.48	1.43
10	E	508	MAN	O5-C5	2.59	1.48	1.43
10	E	507	MAN	O5-C5	2.63	1.48	1.43
8	E	519	NAG	O5-C1	2.82	1.48	1.43
10	E	513	MAN	O5-C1	2.91	1.48	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	E	507	MAN	O5-C1	2.97	1.48	1.43
9	E	511	BMA	O5-C1	3.02	1.48	1.43
10	E	508	MAN	O5-C1	3.06	1.48	1.43
10	E	512	MAN	O5-C1	3.16	1.48	1.43
10	E	514	MAN	O5-C1	3.20	1.48	1.43

All (61) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	E	510	NAG	O5-C1-C2	-8.53	99.75	111.52
8	E	502	NAG	C2-N2-C7	-7.66	111.77	122.94
10	E	514	MAN	C1-O5-C5	-7.18	102.31	112.19
9	E	503	BMA	C1-O5-C5	-6.75	102.90	112.19
8	E	510	NAG	C4-C3-C2	-5.82	102.48	111.02
8	E	510	NAG	C1-O5-C5	-5.59	104.49	112.19
9	E	503	BMA	C2-C3-C4	-5.32	101.63	110.87
8	E	501	NAG	C4-C3-C2	-4.57	104.33	111.02
8	E	501	NAG	O5-C1-C2	-4.31	105.58	111.52
8	E	510	NAG	O5-C5-C4	-3.59	102.09	110.83
10	E	514	MAN	C1-C2-C3	-3.46	105.28	109.66
8	E	502	NAG	O4-C4-C5	-3.40	100.78	109.31
10	E	517	MAN	C2-C3-C4	-3.36	105.03	110.87
8	E	509	NAG	O5-C1-C2	-3.18	107.13	111.52
10	E	518	MAN	O5-C1-C2	-3.16	105.86	110.78
9	E	503	BMA	O3-C3-C4	-3.11	103.08	110.34
8	E	502	NAG	O6-C6-C5	-3.09	100.50	111.29
10	E	517	MAN	O5-C1-C2	-3.04	106.05	110.78
8	E	524	NAG	O5-C1-C2	-3.03	107.33	111.52
8	E	510	NAG	C3-C4-C5	-3.03	104.83	110.24
10	E	505	MAN	O2-C2-C3	-2.93	104.47	110.19
9	E	503	BMA	O2-C2-C1	-2.89	103.35	109.17
8	E	501	NAG	C2-N2-C7	-2.76	118.92	122.94
8	E	524	NAG	C2-N2-C7	-2.65	119.08	122.94
10	E	517	MAN	O2-C2-C1	-2.60	103.93	109.17
8	E	510	NAG	C2-N2-C7	-2.59	119.16	122.94
9	E	503	BMA	O6-C6-C5	-2.55	102.39	111.29
10	E	517	MAN	O2-C2-C3	-2.39	105.53	110.19
9	E	503	BMA	C1-C2-C3	-2.26	106.80	109.66
8	E	502	NAG	O4-C4-C3	-2.22	105.16	110.34
10	E	514	MAN	C2-C3-C4	-2.11	107.20	110.87
8	E	510	NAG	O3-C3-C4	-2.10	105.43	110.34
10	E	514	MAN	O5-C5-C4	-2.09	105.75	110.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	E	520	NAG	O5-C1-C2	-2.06	108.68	111.52
8	E	520	NAG	C2-N2-C7	-2.02	119.99	122.94
8	E	520	NAG	C1-O5-C5	2.02	114.97	112.19
10	E	505	MAN	O3-C3-C2	2.07	113.88	110.04
9	E	511	BMA	C1-O5-C5	2.07	115.04	112.19
10	E	515	MAN	O5-C5-C6	2.17	110.59	107.15
10	E	513	MAN	C1-C2-C3	2.19	112.44	109.66
10	E	504	MAN	O3-C3-C4	2.20	115.48	110.34
10	E	507	MAN	C1-C2-C3	2.35	112.64	109.66
9	E	503	BMA	C3-C4-C5	2.36	114.45	110.24
10	E	512	MAN	C1-C2-C3	2.55	112.88	109.66
8	E	501	NAG	C1-O5-C5	2.66	115.84	112.19
10	E	514	MAN	O5-C5-C6	2.70	111.42	107.15
8	E	523	NAG	C1-O5-C5	2.73	115.95	112.19
10	E	512	MAN	C1-O5-C5	2.74	115.95	112.19
8	E	510	NAG	O4-C4-C5	2.84	116.41	109.31
9	E	503	BMA	O3-C3-C2	3.18	115.95	110.04
10	E	504	MAN	C1-C2-C3	3.21	113.72	109.66
8	E	519	NAG	C1-O5-C5	3.33	116.77	112.19
9	E	503	BMA	O5-C1-C2	3.46	116.18	110.78
10	E	513	MAN	C1-O5-C5	3.69	117.26	112.19
10	E	505	MAN	C1-O5-C5	4.23	118.00	112.19
10	E	504	MAN	O4-C4-C5	4.32	120.12	109.31
10	E	507	MAN	C1-O5-C5	4.72	118.67	112.19
10	E	508	MAN	C1-O5-C5	5.06	119.15	112.19
9	E	503	BMA	O2-C2-C3	5.29	120.50	110.19
10	E	504	MAN	C1-O5-C5	5.91	120.32	112.19
8	E	502	NAG	O5-C5-C6	7.92	119.68	107.15

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

14 monomers are involved in 21 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
8	E	502	NAG	3	0
9	E	503	BMA	2	0
10	E	505	MAN	1	0
10	E	506	MAN	1	0
10	E	507	MAN	2	0
8	E	509	NAG	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
10	E	512	MAN	1	0
10	E	513	MAN	2	0
10	E	514	MAN	1	0
10	E	515	MAN	1	0
8	E	524	NAG	3	0
8	E	525	NAG	2	0
8	E	526	NAG	4	0
8	E	527	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	227/236 (96%)	0.03	3 (1%) 77 59	75, 122, 168, 178	0
2	B	214/214 (100%)	0.21	9 (4%) 36 17	72, 121, 182, 197	0
3	C	214/214 (100%)	0.03	8 (3%) 41 20	81, 145, 187, 197	0
4	D	220/229 (96%)	0.05	5 (2%) 60 38	49, 96, 210, 242	0
5	E	315/321 (98%)	-0.03	3 (0%) 82 67	27, 110, 174, 204	0
6	F	175/185 (94%)	0.22	8 (4%) 32 15	79, 143, 214, 222	0
All	All	1365/1399 (97%)	0.07	36 (2%) 56 32	27, 122, 194, 242	0

All (36) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	180	SER	4.1
2	B	208	SER	3.8
6	F	145	SER	3.7
2	B	210	ASN	3.5
4	D	184	VAL	3.5
3	C	1	ASP	3.4
1	A	193	THR	3.2
3	C	199	GLN	3.1
2	B	209	PHE	3.1
6	F	100	LEU	3.0
6	F	130	CYS	3.0
2	B	201	LEU	2.9
4	D	163	VAL	2.9
4	D	190	GLY	2.9
2	B	184	ALA	2.9
6	F	116	LEU	2.7
2	B	149	LYS	2.7
2	B	154	LEU	2.7
3	C	193	ALA	2.7

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Mol	Chain	Res	Type	RSRZ
3	C	206	THR	2.7
2	B	137	ASN	2.6
3	C	147	GLN	2.4
3	C	119	PRO	2.3
1	A	204	ASN	2.3
5	E	406	ASN	2.3
3	C	197	THR	2.2
6	F	161	VAL	2.2
6	F	173	ASP	2.1
3	C	13	VAL	2.1
2	B	148	TRP	2.1
4	D	160	THR	2.1
5	E	489	VAL	2.1
6	F	175	VAL	2.1
5	E	293	GLU	2.0
4	D	180	SER	2.0
6	F	141	GLY	2.0

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

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

6.3 Carbohydrates [i](#)

There are no carbohydrates 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(Å ²)	Q<0.9
8	NAG	E	525	14/15	0.58	0.37	148,154,164,165	0
7	PG4	C	301	13/13	0.73	0.26	85,107,121,123	0
9	BMA	E	521	11/12	0.76	0.14	131,140,144,146	0
10	MAN	E	505	11/12	0.80	0.23	94,97,103,110	0
10	MAN	E	514	11/12	0.82	0.19	135,140,144,152	0
8	NAG	E	524	14/15	0.82	0.25	120,142,156,156	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
10	MAN	E	508	11/12	0.85	0.21	148,152,157,159	0
8	NAG	E	526	14/15	0.86	0.16	114,126,132,132	0
10	MAN	E	518	11/12	0.86	0.25	100,107,114,114	0
10	MAN	E	507	11/12	0.86	0.21	121,125,134,144	0
10	MAN	E	504	11/12	0.88	0.18	85,91,95,101	0
8	NAG	E	520	14/15	0.89	0.19	116,125,135,139	0
10	MAN	E	515	11/12	0.89	0.26	87,88,90,93	0
8	NAG	E	519	14/15	0.89	0.23	104,113,123,136	0
10	MAN	E	512	11/12	0.90	0.18	89,93,101,107	0
10	MAN	E	516	11/12	0.92	0.20	86,88,97,97	0
8	NAG	E	522	14/15	0.92	0.20	100,107,112,115	0
8	NAG	E	527	14/15	0.92	0.18	115,135,142,144	0
9	BMA	E	503	11/12	0.92	0.14	88,94,105,110	0
8	NAG	E	509	14/15	0.93	0.20	87,96,99,101	0
10	MAN	E	506	11/12	0.93	0.20	86,92,103,104	0
10	MAN	E	513	11/12	0.93	0.26	116,121,127,128	0
8	NAG	E	510	14/15	0.93	0.17	94,102,105,118	0
10	MAN	E	517	11/12	0.94	0.21	80,86,94,100	0
8	NAG	E	523	14/15	0.94	0.22	86,91,97,100	0
9	BMA	E	511	11/12	0.95	0.17	83,89,96,96	0
8	NAG	E	502	14/15	0.95	0.21	77,87,100,110	0
8	NAG	E	501	14/15	0.97	0.19	75,86,100,106	0

6.5 Other polymers [i](#)

There are no such residues in this entry.