



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 10, 2021 – 01:50 PM EDT

PDB ID : 3ER8
Title : Crystal structure of the heterodimeric vaccinia virus mRNA polyadenylate polymerase complex with two fragments of RNA
Authors : Li, C.; Li, H.; Zhou, S.; Poulos, T.L.; Gershon, P.D.
Deposited on : 2008-10-01
Resolution : 3.18 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
Xtriage (Phenix) : 1.13
EDS : 2.23.2
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.23.2

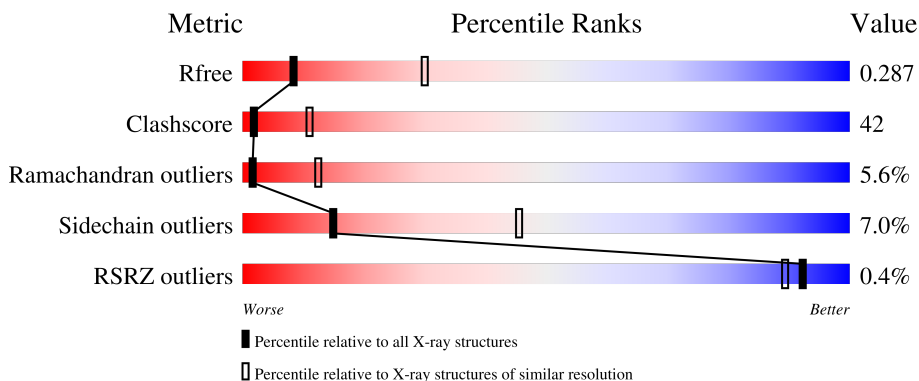
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.18 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.



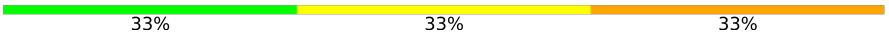
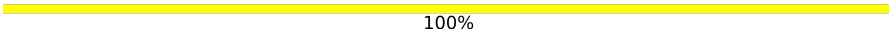
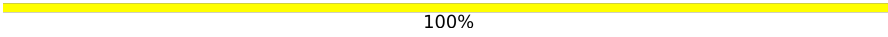
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1467 (3.20-3.16)
Clashscore	141614	1599 (3.20-3.16)
Ramachandran outliers	138981	1574 (3.20-3.16)
Sidechain outliers	138945	1573 (3.20-3.16)
RSRZ outliers	127900	1423 (3.20-3.16)

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	297	
1	B	297	
2	C	479	
2	D	479	
3	E	5	

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Mol	Chain	Length	Quality of chain
4	F	3	 33% 33% 33%
5	G	3	 100%
5	H	3	 100%

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 12289 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 Cap-specific mRNA (nucleoside-2'-O-)-methyltransferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	288	Total	C	N	O	S	0	0	0
			2382	1552	394	424	12			
1	B	288	Total	C	N	O	S	0	0	0
			2382	1552	394	424	12			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	140	ALA	ARG	engineered mutation	UNP P07617
A	142	ALA	LYS	engineered mutation	UNP P07617
A	143	ALA	ARG	engineered mutation	UNP P07617
B	140	ALA	ARG	engineered mutation	UNP P07617
B	142	ALA	LYS	engineered mutation	UNP P07617
B	143	ALA	ARG	engineered mutation	UNP P07617

- Molecule 2 is a protein called Poly(A) polymerase catalytic subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	C	445	Total	C	N	O	S	0	0	0
			3627	2318	605	680	24			
2	D	445	Total	C	N	O	S	0	0	0
			3627	2318	605	680	24			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	36	SER	LEU	engineered mutation	UNP P23371
D	36	SER	LEU	engineered mutation	UNP P23371

- Molecule 3 is DNA/RNA hybrid called RNA/DNA chimera 5'-D(CP*CP*)R(UP*UP*)D(C)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
3	E	5	94	45	13	32	4	0	0	0

- Molecule 4 is DNA/RNA hybrid called RNA/DNA chimera 5'-R(P*UP*UP*)D(C)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
4	F	3	59	27	7	22	3	0	0	0

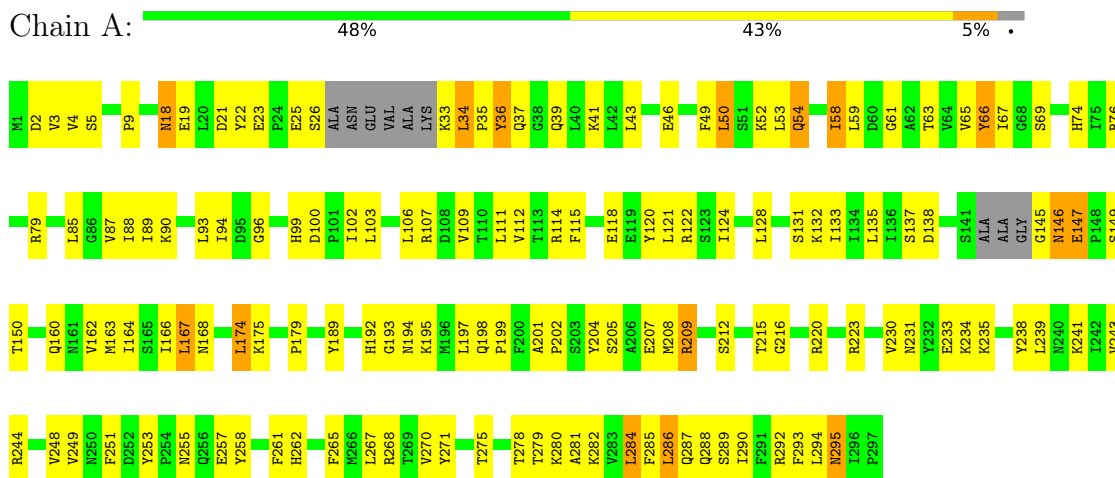
- Molecule 5 is DNA/RNA hybrid called RNA/DNA chimera 5'-D(P*CP*)R(UP*U)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
5	G	3	59	27	7	22	3	0	0	0
5	H	3	59	27	7	22	3	0	0	0

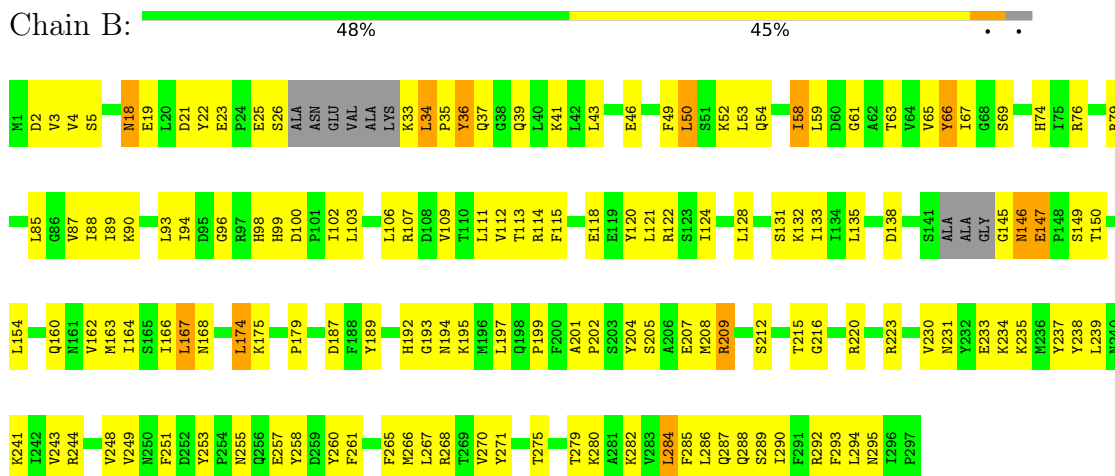
3 Residue-property plots [\(i\)](#)

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: Cap-specific mRNA (nucleoside-2'-O-)-methyltransferase

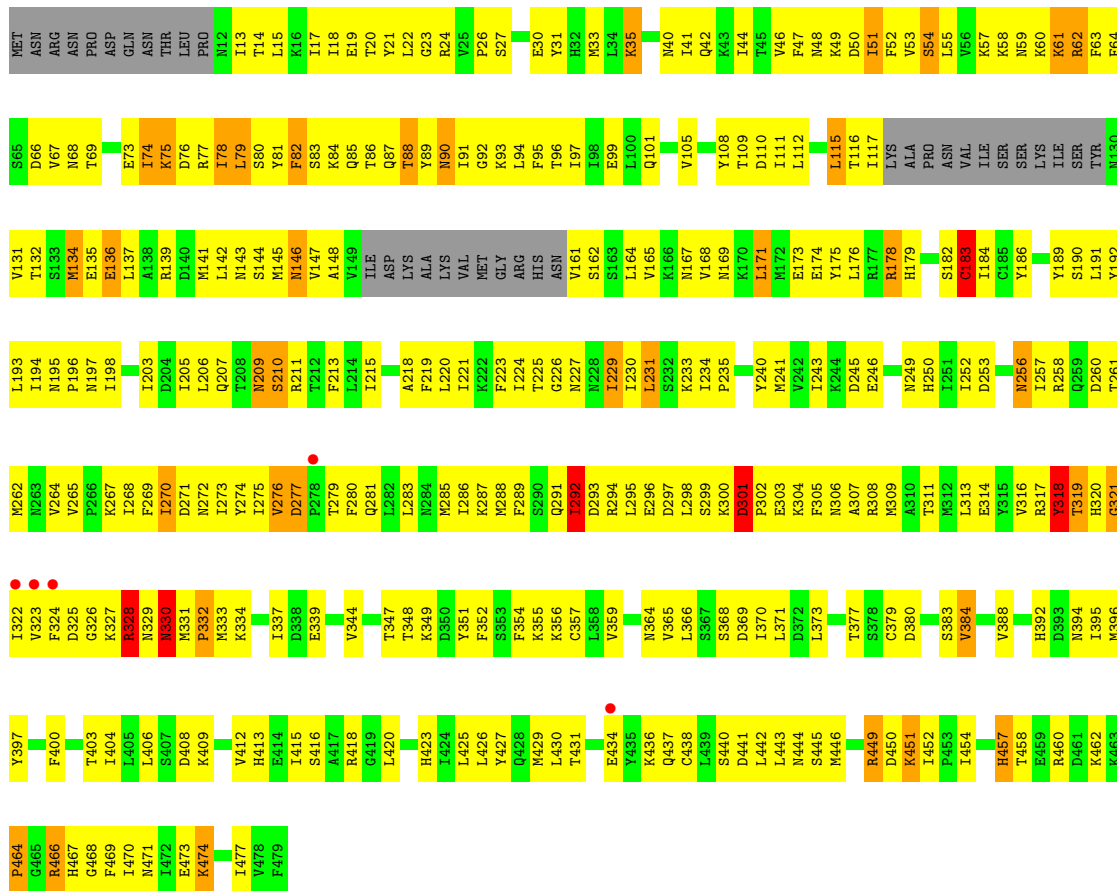


- Molecule 1: Cap-specific mRNA (nucleoside-2'-O-)-methyltransferase

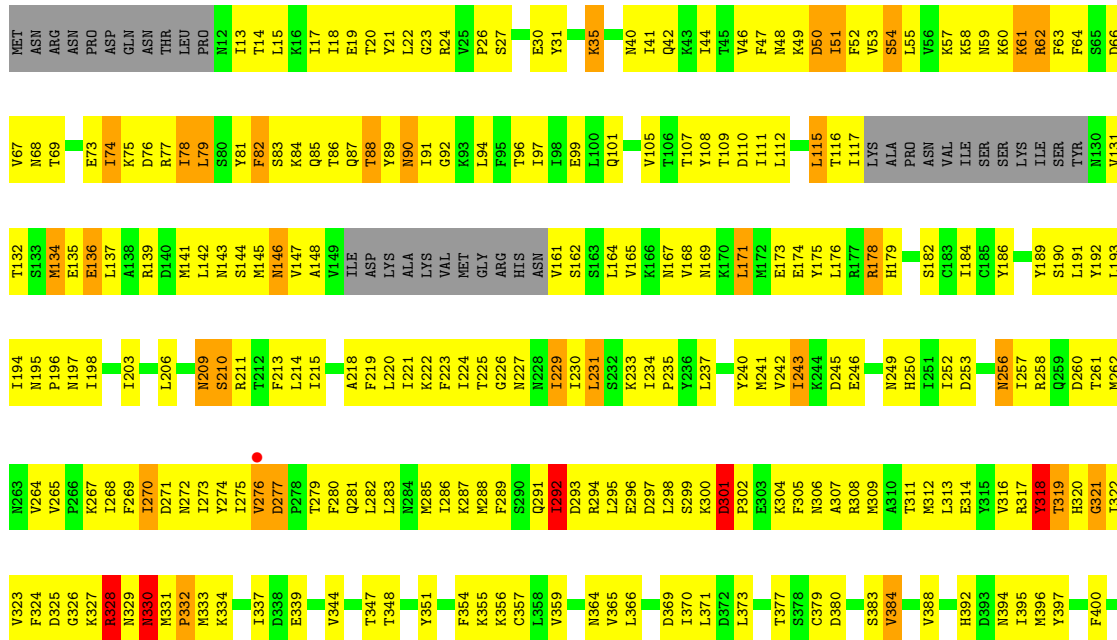


- Molecule 2: Poly(A) polymerase catalytic subunit





• Molecule 2: Poly(A) polymerase catalytic subunit





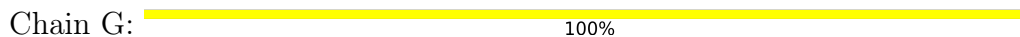
- Molecule 3: RNA/DNA chimera 5'-D(CP*CP*)R(UP*UP*)D(C)-3'



- Molecule 4: RNA/DNA chimera 5'-R(P*UP*UP*)D(C)-3'



- Molecule 5: RNA/DNA chimera 5'-D(P*CP*)R(UP*U)-3'



- Molecule 5: RNA/DNA chimera 5'-D(P*CP*)R(UP*U)-3'



4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	70.61Å 77.24Å 106.85Å 74.88° 74.00° 63.69°	Depositor
Resolution (Å)	38.90 – 3.18 38.90 – 3.15	Depositor EDS
% Data completeness (in resolution range)	93.3 (38.90-3.18) 92.3 (38.90-3.15)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	0.08	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.18 (at 3.12Å)	Xtrriage
Refinement program	CNS 1.2	Depositor
R, R_{free}	0.243 , 0.285 0.244 , 0.287	Depositor DCC
R_{free} test set	1521 reflections (4.96%)	wwPDB-VP
Wilson B-factor (Å ²)	69.3	Xtrriage
Anisotropy	0.359	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 40.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.34$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	12289	wwPDB-VP
Average B, all atoms (Å ²)	81.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.80% 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](#)

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	0.50	0/2444	0.69	0/3308
1	B	0.49	0/2444	0.69	0/3308
2	C	0.59	0/3686	0.69	0/4972
2	D	0.57	0/3686	0.69	0/4972
3	E	0.92	0/103	1.02	0/156
4	F	1.09	1/64 (1.6%)	0.84	1/96 (1.0%)
5	G	1.29	0/64	1.27	0/96
5	H	1.34	0/64	1.32	1/96 (1.0%)
All	All	0.57	1/12555 (0.0%)	0.70	2/17004 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	F	702	U	P-O5'	5.03	1.64	1.59

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	H	902	U	C3'-C2'-C1'	5.41	105.83	101.50
4	F	702	U	OP1-P-OP2	-5.21	111.78	119.60

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	2382	0	2389	141	0
1	B	2382	0	2389	139	0
2	C	3627	0	3689	392	0
2	D	3627	0	3689	376	0
3	E	94	0	55	14	0
4	F	59	0	32	8	0
5	G	59	0	32	4	0
5	H	59	0	32	3	0
All	All	12289	0	12307	1038	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 42.

All (1038) 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)
3:E:603:U:H6	3:E:603:U:H5'	1.12	1.12
1:B:106:LEU:HB2	1:B:109:VAL:HG22	1.31	1.08
1:A:106:LEU:HB2	1:A:109:VAL:HG22	1.34	1.05
2:D:256:ASN:HD22	2:D:257:ILE:N	1.59	1.01
2:D:474:LYS:HE3	2:D:474:LYS:HA	1.42	1.00
2:C:256:ASN:HD22	2:C:257:ILE:N	1.60	0.99
2:C:291:GLN:HE21	2:C:293:ASP:H	1.07	0.97
2:C:474:LYS:HE3	2:C:474:LYS:HA	1.43	0.97
1:B:131:SER:HB3	2:C:466:ARG:HG2	1.47	0.96
1:A:131:SER:HB3	2:D:466:ARG:HG2	1.47	0.95
2:D:291:GLN:HE21	2:D:293:ASP:H	1.11	0.94
2:C:288:MET:HG2	2:C:294:ARG:HG3	1.48	0.94
2:D:148:ALA:HB2	2:D:295:LEU:HB3	1.49	0.94
3:E:603:U:H5'	3:E:603:U:C6	2.03	0.93
2:D:270:ILE:HG22	2:D:271:ASP:N	1.84	0.93
2:C:148:ALA:HB2	2:C:295:LEU:HB3	1.51	0.93
2:C:270:ILE:HG22	2:C:271:ASP:N	1.84	0.92
2:D:288:MET:HG2	2:D:294:ARG:HG3	1.50	0.91
2:C:443:LEU:HA	2:C:446:MET:HE2	1.52	0.91
2:C:178:ARG:HA	2:C:178:ARG:HH11	1.35	0.91
2:D:443:LEU:HA	2:D:446:MET:HE2	1.51	0.91
2:C:316:VAL:HG22	2:C:322:ILE:HG13	1.51	0.90
2:D:229:ILE:HD13	2:D:229:ILE:H	1.36	0.90
2:D:178:ARG:HA	2:D:178:ARG:HH11	1.37	0.89
2:D:283:LEU:HD23	2:D:426:LEU:HD23	1.55	0.89
2:D:73:GLU:HB3	2:D:77:ARG:NH1	1.87	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:418:ARG:NE	2:C:446:MET:HG2	1.88	0.88
2:C:73:GLU:HB3	2:C:77:ARG:NH1	1.86	0.88
5:G:801:U:O2'	5:G:802:U:H5''	1.71	0.88
2:C:229:ILE:HD13	2:C:229:ILE:H	1.39	0.87
2:C:13:ILE:O	2:C:17:ILE:HG12	1.75	0.87
1:B:106:LEU:HB2	1:B:109:VAL:CG2	2.05	0.86
2:C:283:LEU:HD23	2:C:426:LEU:HD23	1.58	0.86
2:C:270:ILE:HG22	2:C:271:ASP:H	1.38	0.86
2:C:195:ASN:HD22	2:C:198:ILE:HG12	1.39	0.85
2:D:21:TYR:CE2	2:D:85:GLN:HG2	2.10	0.85
2:D:316:VAL:HG22	2:D:322:ILE:HG13	1.55	0.85
2:D:270:ILE:HG22	2:D:271:ASP:H	1.39	0.85
2:C:60:LYS:HE2	2:C:67:VAL:HB	1.56	0.85
2:C:256:ASN:HD22	2:C:257:ILE:H	1.22	0.84
2:C:21:TYR:CE2	2:C:85:GLN:HG2	2.11	0.84
2:D:60:LYS:HE2	2:D:67:VAL:HB	1.56	0.84
2:D:256:ASN:HD22	2:D:257:ILE:H	1.21	0.84
2:C:53:VAL:HG11	2:C:75:LYS:HG2	1.60	0.84
2:D:146:ASN:HD21	2:D:302:PRO:HB3	1.41	0.84
1:A:106:LEU:HB2	1:A:109:VAL:CG2	2.08	0.83
2:D:418:ARG:NE	2:D:446:MET:HG2	1.92	0.83
1:A:168:ASN:HD22	1:B:223:ARG:CZ	1.91	0.83
2:D:195:ASN:HD22	2:D:198:ILE:HG12	1.41	0.83
2:D:53:VAL:HG11	2:D:75:LYS:HG2	1.61	0.82
2:D:13:ILE:O	2:D:17:ILE:HG12	1.79	0.82
2:C:146:ASN:HD21	2:C:302:PRO:HB3	1.45	0.81
5:G:800:DC:H2''	5:G:801:U:OP2	1.81	0.81
2:D:60:LYS:HA	2:D:64:PHE:HB2	1.63	0.80
2:C:473:GLU:HG3	2:C:474:LYS:N	1.97	0.80
2:D:84:LYS:HG3	2:D:97:ILE:HD13	1.63	0.79
2:C:90:ASN:HD22	2:C:91:ILE:N	1.82	0.78
2:C:60:LYS:HA	2:C:64:PHE:HB2	1.65	0.78
2:C:84:LYS:HG3	2:C:97:ILE:HD13	1.63	0.78
2:D:74:ILE:HG13	2:D:224:ILE:HA	1.66	0.78
2:D:225:THR:HG21	2:D:227:ASN:HB2	1.65	0.78
2:C:148:ALA:HA	2:C:454:ILE:CD1	2.14	0.77
2:C:184:ILE:CG2	2:C:206:LEU:HB2	2.15	0.77
2:C:344:VAL:HG11	2:C:420:LEU:HD11	1.66	0.77
2:C:74:ILE:HG13	2:C:224:ILE:HA	1.67	0.77
1:B:53:LEU:HD22	1:B:58:ILE:HG12	1.66	0.77
2:D:30:GLU:HG2	2:D:91:ILE:HD11	1.66	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:473:GLU:HG3	2:D:474:LYS:N	1.99	0.77
2:D:90:ASN:HD22	2:D:91:ILE:N	1.83	0.77
2:C:344:VAL:HG11	2:C:420:LEU:CD1	2.15	0.76
2:C:473:GLU:HG3	2:C:474:LYS:H	1.51	0.76
2:D:473:GLU:HG3	2:D:474:LYS:H	1.51	0.76
2:C:59:ASN:HD21	2:C:220:LEU:HD21	1.51	0.76
2:D:148:ALA:HA	2:D:454:ILE:CD1	2.16	0.76
2:D:184:ILE:CG2	2:D:206:LEU:HB2	2.16	0.76
1:B:23:GLU:HB3	1:B:25:GLU:OE1	1.86	0.75
2:C:323:VAL:HG22	2:C:325:ASP:OD1	1.86	0.75
1:A:23:GLU:HB3	1:A:25:GLU:OE1	1.86	0.75
2:C:30:GLU:HG2	2:C:91:ILE:HD11	1.68	0.75
2:C:269:PHE:CZ	2:C:272:ASN:HA	2.22	0.74
2:D:323:VAL:HG22	2:D:325:ASP:OD1	1.87	0.74
1:A:53:LEU:HD22	1:A:58:ILE:HG12	1.68	0.74
2:C:333:MET:HE2	2:C:348:THR:HA	1.68	0.74
2:C:225:THR:HG21	2:C:227:ASN:HB2	1.69	0.74
2:C:470:ILE:HG23	2:C:477:ILE:HG12	1.67	0.74
2:C:73:GLU:HB3	2:C:77:ARG:HH12	1.50	0.74
2:C:288:MET:HE3	2:C:294:ARG:HD2	1.69	0.74
2:D:19:GLU:HG3	2:D:24:ARG:O	1.88	0.74
2:D:73:GLU:HB3	2:D:77:ARG:HH12	1.50	0.74
1:A:66:TYR:CD1	1:A:69:SER:HB3	2.23	0.74
2:C:19:GLU:HG3	2:C:24:ARG:O	1.88	0.74
2:D:331:MET:HG2	2:D:442:LEU:HA	1.70	0.74
2:D:344:VAL:HG11	2:D:420:LEU:HD11	1.69	0.74
1:A:121:LEU:HD13	1:A:163:MET:HA	1.70	0.73
2:D:470:ILE:HG23	2:D:477:ILE:HG12	1.69	0.73
2:D:59:ASN:HD21	2:D:220:LEU:HD21	1.53	0.73
2:D:344:VAL:HG11	2:D:420:LEU:CD1	2.18	0.73
2:C:195:ASN:ND2	2:C:198:ILE:HG12	2.03	0.73
1:B:66:TYR:CD1	1:B:69:SER:HB3	2.24	0.72
2:C:31:TYR:O	2:C:35:LYS:HB2	1.88	0.72
1:B:121:LEU:HD13	1:B:163:MET:HA	1.71	0.72
2:D:261:THR:O	2:D:265:VAL:HG23	1.88	0.72
2:C:229:ILE:O	2:C:230:ILE:HD13	1.90	0.72
2:C:300:LYS:O	2:C:301:ASP:HB2	1.88	0.72
2:C:162:SER:HB3	2:C:245:ASP:OD1	1.89	0.72
2:D:162:SER:HB3	2:D:245:ASP:OD1	1.89	0.72
2:C:331:MET:HB3	2:C:332:PRO:HD3	1.71	0.71
2:D:195:ASN:ND2	2:D:198:ILE:HG12	2.05	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:331:MET:HB3	2:D:332:PRO:HD3	1.72	0.71
2:D:90:ASN:ND2	2:D:92:GLY:H	1.89	0.71
2:C:69:THR:OG1	2:C:74:ILE:HD11	1.90	0.71
2:C:261:THR:O	2:C:265:VAL:HG23	1.89	0.71
2:D:69:THR:OG1	2:D:74:ILE:HD11	1.90	0.71
2:D:328:ARG:HA	2:D:328:ARG:NE	2.05	0.71
1:B:267:LEU:HB3	1:B:286:LEU:HD12	1.71	0.71
2:C:331:MET:HG2	2:C:442:LEU:HA	1.74	0.70
2:D:31:TYR:O	2:D:35:LYS:HB2	1.90	0.70
2:D:229:ILE:HD13	2:D:229:ILE:N	2.06	0.70
2:D:229:ILE:H	2:D:229:ILE:CD1	2.02	0.70
1:A:174:LEU:HD12	1:A:174:LEU:H	1.57	0.70
2:C:58:LYS:NZ	2:C:116:THR:HB	2.07	0.70
1:A:33:LYS:HG2	1:A:34:LEU:H	1.55	0.70
2:D:58:LYS:NZ	2:D:116:THR:HB	2.06	0.70
2:D:288:MET:HE3	2:D:294:ARG:HD2	1.73	0.70
2:C:90:ASN:ND2	2:C:92:GLY:H	1.90	0.70
2:C:291:GLN:HE21	2:C:293:ASP:N	1.88	0.70
2:C:301:ASP:H	2:C:302:PRO:HD3	1.57	0.70
1:A:267:LEU:HB3	1:A:286:LEU:HD12	1.71	0.70
1:B:150:THR:HG23	1:B:179:PRO:HB3	1.74	0.70
2:C:328:ARG:HA	2:C:328:ARG:NE	2.07	0.70
2:C:148:ALA:HB3	2:C:299:SER:OG	1.91	0.69
2:C:17:ILE:HD12	2:C:42:GLN:HB2	1.74	0.69
2:D:240:TYR:HE1	2:D:253:ASP:HB2	1.56	0.69
1:A:100:ASP:OD1	1:A:102:ILE:HG12	1.91	0.69
2:D:269:PHE:CZ	2:D:272:ASN:HA	2.28	0.69
1:B:53:LEU:HB3	1:B:58:ILE:HG13	1.74	0.69
2:D:229:ILE:O	2:D:230:ILE:HD13	1.93	0.69
1:B:50:LEU:HD12	1:B:53:LEU:HD12	1.75	0.69
2:D:111:ILE:HG23	2:D:175:TYR:OH	1.93	0.69
2:D:301:ASP:H	2:D:302:PRO:HD3	1.58	0.69
1:A:150:THR:HG23	1:A:179:PRO:HB3	1.75	0.68
2:C:111:ILE:HG23	2:C:175:TYR:OH	1.93	0.68
2:C:92:GLY:HA3	5:H:901:U:H5''	1.75	0.68
1:A:53:LEU:HB3	1:A:58:ILE:HG13	1.75	0.68
2:C:413:HIS:CD2	2:C:415:ILE:H	2.12	0.68
2:C:229:ILE:HD13	2:C:229:ILE:N	2.09	0.68
2:D:300:LYS:O	2:D:301:ASP:HB2	1.92	0.68
2:C:21:TYR:CG	2:C:41:ILE:HG23	2.29	0.68
2:C:316:VAL:HG22	2:C:322:ILE:CG1	2.23	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:229:ILE:H	2:C:229:ILE:CD1	2.05	0.68
2:C:240:TYR:HE1	2:C:253:ASP:HB2	1.57	0.68
2:D:413:HIS:CD2	2:D:415:ILE:H	2.12	0.68
1:B:160:GLN:O	1:B:164:ILE:HG12	1.94	0.67
2:C:131:VAL:CG1	2:C:311:THR:HA	2.24	0.67
1:A:50:LEU:HD12	1:A:53:LEU:HD12	1.77	0.67
2:C:184:ILE:HG22	2:C:206:LEU:HB2	1.76	0.67
1:B:33:LYS:HG2	1:B:34:LEU:H	1.58	0.67
1:B:174:LEU:H	1:B:174:LEU:HD12	1.60	0.67
2:D:474:LYS:HE3	2:D:474:LYS:CA	2.21	0.67
2:C:327:LYS:HE2	2:C:327:LYS:O	1.93	0.67
2:C:21:TYR:CD1	2:C:41:ILE:HG23	2.29	0.67
2:D:327:LYS:O	2:D:327:LYS:HE2	1.93	0.67
1:A:195:LYS:HD2	1:A:195:LYS:N	2.09	0.66
2:C:176:LEU:HD13	2:C:273:ILE:HD12	1.78	0.66
2:D:21:TYR:CG	2:D:41:ILE:HG23	2.31	0.66
2:D:286:ILE:HD12	2:D:286:ILE:N	2.11	0.66
1:A:53:LEU:HD13	1:A:58:ILE:HD11	1.78	0.66
2:C:291:GLN:NE2	2:C:293:ASP:H	1.89	0.66
2:D:17:ILE:HD12	2:D:42:GLN:HB2	1.78	0.66
1:B:53:LEU:HD13	1:B:58:ILE:HD11	1.78	0.66
2:C:164:LEU:HA	2:C:167:ASN:HB3	1.78	0.66
2:C:148:ALA:HA	2:C:454:ILE:HD11	1.78	0.65
2:D:148:ALA:HB3	2:D:299:SER:OG	1.96	0.65
2:D:146:ASN:ND2	2:D:302:PRO:HB3	2.11	0.65
1:A:231:ASN:HD21	1:A:235:LYS:HE3	1.60	0.65
1:A:118:GLU:HG2	1:A:122:ARG:NH1	2.10	0.65
1:A:174:LEU:HD12	1:A:174:LEU:N	2.11	0.65
1:B:100:ASP:OD1	1:B:102:ILE:HG12	1.95	0.65
2:D:30:GLU:HG2	2:D:91:ILE:CD1	2.26	0.65
2:D:148:ALA:HA	2:D:454:ILE:HD11	1.79	0.65
1:A:160:GLN:O	1:A:164:ILE:HG12	1.97	0.65
2:C:474:LYS:HE3	2:C:474:LYS:CA	2.24	0.65
2:D:21:TYR:CD1	2:D:41:ILE:HG23	2.31	0.65
2:D:184:ILE:HG22	2:D:206:LEU:HB2	1.78	0.65
2:D:331:MET:HG2	2:D:442:LEU:CA	2.27	0.65
2:D:27:SER:OG	2:D:30:GLU:HG3	1.97	0.64
1:A:204:TYR:OH	1:A:241:LYS:HD2	1.98	0.64
1:B:174:LEU:HD12	1:B:174:LEU:N	2.12	0.64
2:D:139:ARG:HH11	2:D:139:ARG:HG2	1.63	0.64
1:B:195:LYS:N	1:B:195:LYS:HD2	2.12	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:331:MET:CE	2:C:441:ASP:HB2	2.28	0.64
2:D:58:LYS:HD2	3:E:601:DC:C2	2.33	0.64
1:B:26:SER:HB3	1:B:204:TYR:CE2	2.33	0.64
2:C:146:ASN:ND2	2:C:302:PRO:HB3	2.13	0.64
1:A:118:GLU:HG2	1:A:122:ARG:HH12	1.62	0.63
2:C:74:ILE:N	2:C:74:ILE:HD12	2.12	0.63
2:D:225:THR:CG2	2:D:227:ASN:HB2	2.28	0.63
1:B:231:ASN:HD21	1:B:235:LYS:HE3	1.63	0.63
2:C:141:MET:HE1	2:C:443:LEU:O	1.99	0.63
2:C:161:VAL:HA	2:C:165:VAL:HG21	1.79	0.63
2:C:331:MET:HE3	2:C:441:ASP:HB2	1.80	0.63
2:D:210:SER:HA	2:D:213:PHE:HB3	1.81	0.63
2:C:331:MET:HG2	2:C:442:LEU:CA	2.29	0.63
2:D:331:MET:HE3	2:D:441:ASP:HB2	1.80	0.63
2:C:285:MET:O	2:C:288:MET:HB3	1.98	0.63
2:D:131:VAL:CG1	2:D:311:THR:HA	2.29	0.63
2:D:331:MET:CE	2:D:441:ASP:HB2	2.29	0.63
1:B:204:TYR:OH	1:B:241:LYS:HD2	1.99	0.63
2:D:198:ILE:HD12	2:D:308:ARG:HD3	1.80	0.63
2:D:443:LEU:HA	2:D:446:MET:CE	2.28	0.63
2:C:245:ASP:OD1	2:C:249:ASN:HB2	1.99	0.62
2:D:161:VAL:HA	2:D:165:VAL:HG21	1.79	0.62
2:D:164:LEU:HA	2:D:167:ASN:HB3	1.81	0.62
2:C:210:SER:HA	2:C:213:PHE:HB3	1.82	0.62
2:C:27:SER:OG	2:C:30:GLU:HG3	2.00	0.62
2:C:234:ILE:HD12	2:C:240:TYR:HE2	1.65	0.62
2:C:30:GLU:HG2	2:C:91:ILE:CD1	2.29	0.62
1:A:138:ASP:OD1	1:A:209:ARG:NH2	2.25	0.62
1:B:118:GLU:HG2	1:B:122:ARG:NH1	2.14	0.62
2:C:286:ILE:N	2:C:286:ILE:HD12	2.15	0.62
1:B:4:VAL:HG22	1:B:5:SER:N	2.14	0.61
2:D:74:ILE:HD12	2:D:74:ILE:N	2.15	0.61
2:D:316:VAL:HG22	2:D:322:ILE:CG1	2.27	0.61
1:A:163:MET:O	1:A:167:LEU:HB2	2.01	0.61
1:A:175:LYS:NZ	1:A:207:GLU:OE2	2.23	0.61
1:B:118:GLU:HG2	1:B:122:ARG:HH12	1.65	0.61
2:C:288:MET:CG	2:C:294:ARG:HG3	2.27	0.61
2:D:47:PHE:CD1	2:D:105:VAL:HG13	2.35	0.61
2:D:60:LYS:O	2:D:64:PHE:C	2.39	0.61
2:C:61:LYS:HZ3	2:C:62:ARG:HB2	1.65	0.61
2:D:40:ASN:O	2:D:44:ILE:HG13	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:53:VAL:HG12	2:D:57:LYS:HE3	1.81	0.61
2:D:195:ASN:C	2:D:197:ASN:H	2.04	0.61
2:D:331:MET:HB2	2:D:441:ASP:HB3	1.83	0.61
2:C:142:LEU:HD11	2:C:306:ASN:N	2.15	0.61
2:C:198:ILE:HD12	2:C:308:ARG:HD3	1.82	0.61
2:D:134:MET:HG3	2:D:137:LEU:HD23	1.83	0.61
1:A:26:SER:HB3	1:A:204:TYR:CE2	2.36	0.61
1:B:88:ILE:HD11	2:C:211:ARG:HD3	1.83	0.61
2:D:333:MET:HE2	2:D:348:THR:HA	1.82	0.61
2:D:333:MET:CE	2:D:348:THR:HA	2.30	0.61
1:A:25:GLU:CD	1:A:25:GLU:H	2.03	0.61
1:A:106:LEU:O	5:G:800:DC:N4	2.34	0.61
2:C:148:ALA:HA	2:C:454:ILE:HD12	1.81	0.61
2:C:331:MET:HG2	2:C:442:LEU:N	2.16	0.61
1:A:294:LEU:O	1:A:295:ASN:HB2	1.99	0.60
2:D:74:ILE:HG22	2:D:74:ILE:O	2.01	0.60
2:D:328:ARG:HB3	2:D:444:ASN:HB2	1.82	0.60
2:C:53:VAL:HG12	2:C:57:LYS:HE3	1.82	0.60
2:D:291:GLN:NE2	2:D:293:ASP:H	1.93	0.60
2:C:22:LEU:O	2:C:86:THR:HA	2.01	0.60
2:C:134:MET:HE2	2:C:134:MET:HA	1.83	0.60
2:C:134:MET:HG3	2:C:137:LEU:HD23	1.83	0.60
2:D:148:ALA:HA	2:D:454:ILE:HD12	1.82	0.60
2:D:22:LEU:O	2:D:86:THR:HA	2.01	0.60
2:D:143:ASN:O	2:D:451:LYS:HE2	2.02	0.60
2:D:134:MET:HA	2:D:134:MET:HE2	1.84	0.60
1:B:160:GLN:HB3	1:B:174:LEU:HD23	1.82	0.60
2:C:233:LYS:HG3	2:C:240:TYR:O	2.02	0.60
2:C:331:MET:HB2	2:C:441:ASP:HB3	1.84	0.60
2:D:145:MET:HB3	2:D:415:ILE:HD11	1.83	0.60
1:B:26:SER:HB3	1:B:204:TYR:CD2	2.36	0.60
2:C:23:GLY:HA3	2:C:86:THR:HG22	1.82	0.60
2:D:285:MET:O	2:D:288:MET:HB3	2.02	0.60
2:D:331:MET:O	2:D:333:MET:N	2.35	0.60
2:C:44:ILE:O	2:C:49:LYS:HE3	2.02	0.59
2:C:109:THR:HG23	4:F:702:U:O2'	2.03	0.59
2:D:44:ILE:O	2:D:49:LYS:HE3	2.02	0.59
2:D:147:VAL:HG12	2:D:451:LYS:HB3	1.84	0.59
2:D:234:ILE:HD12	2:D:240:TYR:HE2	1.67	0.59
1:B:59:LEU:HD11	1:B:89:ILE:HD13	1.84	0.59
2:C:331:MET:O	2:C:333:MET:N	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:142:LEU:HD11	2:D:306:ASN:N	2.17	0.59
1:B:46:GLU:OE2	1:B:66:TYR:OH	2.21	0.59
2:C:74:ILE:HG22	2:C:74:ILE:O	2.02	0.59
2:C:301:ASP:N	2:C:302:PRO:HD3	2.17	0.59
2:D:474:LYS:HA	2:D:474:LYS:CE	2.24	0.59
2:C:139:ARG:HG2	2:C:139:ARG:HH11	1.68	0.59
1:A:160:GLN:HB3	1:A:174:LEU:HD23	1.82	0.59
2:D:191:LEU:HB2	2:D:198:ILE:HG21	1.84	0.59
2:D:198:ILE:HD11	2:D:311:THR:OG1	2.02	0.59
2:D:331:MET:HG2	2:D:442:LEU:N	2.17	0.59
1:A:26:SER:HB3	1:A:204:TYR:CD2	2.37	0.59
1:B:147:GLU:OE1	1:B:147:GLU:HA	2.01	0.59
2:C:195:ASN:C	2:C:197:ASN:H	2.06	0.59
2:D:84:LYS:CG	2:D:97:ILE:HD13	2.33	0.59
2:D:333:MET:HB3	2:D:347:THR:O	2.03	0.59
1:A:59:LEU:HD11	1:A:89:ILE:HD13	1.85	0.59
2:C:131:VAL:HA	2:C:314:GLU:HG2	1.84	0.59
3:E:602:U:H4'	3:E:603:U:H5''	1.84	0.59
1:B:163:MET:O	1:B:167:LEU:HB2	2.03	0.59
2:C:134:MET:CG	2:C:137:LEU:HD23	2.32	0.59
2:C:225:THR:CG2	2:C:227:ASN:HB2	2.33	0.59
2:C:333:MET:CE	2:C:348:THR:HA	2.32	0.59
2:D:61:LYS:HZ3	2:D:62:ARG:HB2	1.67	0.59
2:D:288:MET:CG	2:D:294:ARG:HG3	2.30	0.59
2:D:291:GLN:HE21	2:D:293:ASP:N	1.92	0.59
1:A:88:ILE:HD11	2:D:211:ARG:HD3	1.85	0.58
2:C:109:THR:HG22	2:C:110:ASP:N	2.18	0.58
2:C:198:ILE:CD1	2:C:308:ARG:HH11	2.15	0.58
2:C:333:MET:HB3	2:C:347:THR:O	2.03	0.58
2:D:179:HIS:HB3	2:D:182:SER:OG	2.03	0.58
2:C:147:VAL:HG12	2:C:451:LYS:HB3	1.85	0.58
2:C:258:ARG:NH2	2:C:380:ASP:O	2.36	0.58
2:D:245:ASP:OD1	2:D:249:ASN:HB2	2.04	0.58
2:D:258:ARG:NH2	2:D:380:ASP:O	2.36	0.58
2:D:283:LEU:HD21	2:D:425:LEU:HB2	1.85	0.58
2:D:406:LEU:HA	2:D:413:HIS:H	1.68	0.58
2:D:176:LEU:HD13	2:D:273:ILE:HD12	1.86	0.58
2:D:186:TYR:HA	2:D:190:SER:HB2	1.86	0.58
1:A:4:VAL:HG22	1:A:5:SER:N	2.18	0.58
2:C:47:PHE:CD1	2:C:105:VAL:HG13	2.37	0.58
2:C:328:ARG:HB3	2:C:444:ASN:HB2	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:135:GLU:O	2:D:139:ARG:HB2	2.04	0.58
2:D:301:ASP:N	2:D:302:PRO:HD3	2.18	0.58
1:A:33:LYS:O	1:A:34:LEU:O	2.21	0.58
2:C:176:LEU:HB3	2:C:273:ILE:HB	1.85	0.58
2:C:406:LEU:HA	2:C:413:HIS:H	1.68	0.58
1:A:61:GLY:HA2	1:A:88:ILE:O	2.04	0.58
1:A:192:HIS:O	1:A:212:SER:HB3	2.04	0.58
2:D:145:MET:CB	2:D:415:ILE:HD11	2.32	0.58
2:D:231:LEU:HD13	2:D:241:MET:HE2	1.86	0.58
2:D:233:LYS:HG3	2:D:240:TYR:O	2.04	0.58
2:D:90:ASN:HD22	2:D:90:ASN:C	2.06	0.58
1:A:162:VAL:O	1:A:166:ILE:HG12	2.04	0.58
2:C:198:ILE:HD11	2:C:311:THR:OG1	2.04	0.58
1:B:294:LEU:O	1:B:295:ASN:HB2	2.03	0.57
2:C:164:LEU:HD23	2:C:167:ASN:HD22	1.68	0.57
2:D:404:ILE:O	2:D:457:HIS:HA	2.04	0.57
1:A:107:ARG:CZ	2:D:477:ILE:HG21	2.34	0.57
2:C:189:TYR:CE2	2:C:193:LEU:HD21	2.39	0.57
2:C:270:ILE:CG2	2:C:271:ASP:N	2.54	0.57
2:C:73:GLU:C	2:C:75:LYS:H	2.06	0.57
2:C:164:LEU:CD2	2:C:167:ASN:HD22	2.16	0.57
2:C:186:TYR:HA	2:C:190:SER:HB2	1.87	0.57
2:C:59:ASN:ND2	2:C:220:LEU:HD21	2.17	0.57
2:D:283:LEU:HD22	2:D:429:MET:CE	2.34	0.57
1:A:39:GLN:HB3	1:A:294:LEU:HD22	1.87	0.57
2:C:234:ILE:HD12	2:C:240:TYR:CE2	2.39	0.57
2:D:109:THR:HG22	2:D:110:ASP:N	2.19	0.57
2:D:131:VAL:HA	2:D:314:GLU:HG2	1.86	0.57
1:A:43:LEU:O	1:A:43:LEU:HD12	2.05	0.57
2:C:40:ASN:O	2:C:44:ILE:HG13	2.04	0.57
2:C:143:ASN:O	2:C:451:LYS:HE2	2.05	0.57
1:B:25:GLU:H	1:B:25:GLU:CD	2.07	0.57
2:C:90:ASN:HD22	2:C:90:ASN:C	2.07	0.57
2:C:179:HIS:HB3	2:C:182:SER:OG	2.05	0.57
2:C:134:MET:HG3	2:C:137:LEU:HB3	1.87	0.57
2:D:22:LEU:HD23	2:D:85:GLN:HB3	1.85	0.57
2:D:73:GLU:C	2:D:75:LYS:H	2.06	0.57
1:A:46:GLU:OE2	1:A:66:TYR:OH	2.23	0.57
1:B:79:ARG:C	1:B:79:ARG:HD3	2.26	0.57
2:C:24:ARG:HD3	2:C:89:TYR:CE2	2.40	0.57
2:C:135:GLU:O	2:C:139:ARG:HB2	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:58:LYS:HZ3	2:D:116:THR:HB	1.68	0.57
2:C:132:THR:HA	2:C:135:GLU:HG3	1.86	0.56
2:C:325:ASP:OD2	2:C:327:LYS:HE2	2.03	0.56
2:D:23:GLY:HA3	2:D:86:THR:HG22	1.86	0.56
2:C:44:ILE:HG12	2:C:105:VAL:HG21	1.87	0.56
2:C:191:LEU:HB2	2:C:198:ILE:HG21	1.86	0.56
2:C:198:ILE:HD13	2:C:308:ARG:NH1	2.20	0.56
2:C:474:LYS:HA	2:C:474:LYS:CE	2.27	0.56
2:C:283:LEU:HD21	2:C:425:LEU:HB2	1.87	0.56
1:A:147:GLU:HA	1:A:147:GLU:OE1	2.05	0.56
1:A:265:PHE:HA	1:A:268:ARG:HD3	1.86	0.56
2:D:234:ILE:HD12	2:D:240:TYR:CE2	2.41	0.56
1:B:3:VAL:HB	1:B:249:VAL:HG13	1.86	0.56
1:B:43:LEU:HD12	1:B:43:LEU:O	2.06	0.56
1:B:192:HIS:O	1:B:212:SER:HB3	2.06	0.56
1:B:39:GLN:HB3	1:B:294:LEU:HD22	1.88	0.56
2:D:44:ILE:HG12	2:D:105:VAL:HG21	1.86	0.56
1:A:4:VAL:O	1:A:249:VAL:HG22	2.04	0.56
2:C:443:LEU:HA	2:C:446:MET:CE	2.29	0.56
2:D:198:ILE:CD1	2:D:308:ARG:HH11	2.18	0.56
1:B:33:LYS:O	1:B:34:LEU:O	2.24	0.55
2:D:19:GLU:HB2	2:D:26:PRO:HD3	1.89	0.55
1:B:107:ARG:CZ	2:C:477:ILE:HG21	2.36	0.55
2:D:141:MET:HE1	2:D:443:LEU:O	2.06	0.55
2:D:176:LEU:HB3	2:D:273:ILE:HB	1.88	0.55
2:D:198:ILE:HD13	2:D:308:ARG:NH1	2.21	0.55
2:C:143:ASN:HA	2:C:146:ASN:HB2	1.88	0.55
1:A:112:VAL:CG1	1:A:114:ARG:HG2	2.37	0.55
2:D:51:ILE:HD12	3:E:603:U:C4	2.41	0.55
2:D:134:MET:CG	2:D:137:LEU:HD23	2.36	0.55
1:B:61:GLY:HA2	1:B:88:ILE:O	2.07	0.55
2:D:132:THR:HA	2:D:135:GLU:HG3	1.88	0.55
2:D:298:LEU:HD13	2:D:305:PHE:CD1	2.42	0.55
1:B:87:VAL:HG12	1:B:89:ILE:HG13	1.88	0.55
2:C:51:ILE:HG23	4:F:703:U:N3	2.21	0.55
2:C:325:ASP:O	2:C:327:LYS:N	2.40	0.55
2:C:227:ASN:OD1	2:C:246:GLU:HG3	2.05	0.55
2:C:449:ARG:NH1	2:C:449:ARG:HB3	2.22	0.55
2:D:134:MET:O	2:D:137:LEU:HB3	2.06	0.55
2:C:60:LYS:O	2:C:64:PHE:C	2.46	0.55
2:D:51:ILE:HG23	3:E:603:U:C4	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:109:VAL:HG23	1:A:109:VAL:O	2.06	0.54
1:A:114:ARG:HD3	1:A:120:TYR:CE1	2.42	0.54
2:D:44:ILE:O	2:D:47:PHE:HB3	2.06	0.54
1:B:138:ASP:OD1	1:B:209:ARG:NH2	2.26	0.54
2:C:108:TYR:CE1	2:C:112:LEU:HB2	2.42	0.54
2:D:63:PHE:CD2	2:D:171:LEU:HA	2.42	0.54
2:D:331:MET:CG	2:D:442:LEU:HA	2.36	0.54
1:B:162:VAL:O	1:B:166:ILE:HG12	2.07	0.54
2:C:145:MET:CB	2:C:415:ILE:HD11	2.36	0.54
2:C:276:VAL:O	2:C:281:GLN:HG3	2.06	0.54
1:B:265:PHE:HA	1:B:268:ARG:HD3	1.88	0.54
2:C:44:ILE:O	2:C:47:PHE:HB3	2.07	0.54
2:C:404:ILE:O	2:C:457:HIS:HA	2.08	0.54
1:A:3:VAL:HB	1:A:249:VAL:HG13	1.88	0.54
1:A:121:LEU:C	1:A:166:ILE:HG21	2.27	0.54
1:B:106:LEU:HD12	1:B:109:VAL:HG11	1.90	0.54
2:D:351:TYR:HD2	2:D:438:CYS:HG	1.55	0.54
2:D:240:TYR:CE1	2:D:253:ASP:HB2	2.41	0.54
1:B:121:LEU:C	1:B:166:ILE:HG21	2.28	0.54
2:D:134:MET:HG3	2:D:137:LEU:HB3	1.90	0.54
2:C:63:PHE:CD2	2:C:171:LEU:HA	2.43	0.54
2:C:145:MET:HB3	2:C:415:ILE:HD11	1.89	0.54
2:C:283:LEU:HD22	2:C:429:MET:CE	2.37	0.54
5:H:900:DC:H4'	5:H:901:U:H5''	1.90	0.54
1:A:79:ARG:HD3	1:A:79:ARG:C	2.29	0.54
1:A:87:VAL:HG12	1:A:89:ILE:HG13	1.90	0.54
1:A:223:ARG:HD2	1:B:168:ASN:ND2	2.23	0.54
2:C:174:GLU:O	2:C:178:ARG:HG2	2.08	0.54
2:D:24:ARG:HD3	2:D:89:TYR:CE2	2.43	0.54
2:D:59:ASN:ND2	2:D:220:LEU:HD21	2.21	0.54
1:B:4:VAL:O	1:B:249:VAL:HG22	2.06	0.54
2:C:116:THR:O	2:C:117:ILE:HG13	2.08	0.54
2:D:116:THR:O	2:D:117:ILE:HG13	2.08	0.54
1:B:286:LEU:O	1:B:289:SER:N	2.37	0.53
2:C:51:ILE:HD13	2:C:51:ILE:O	2.08	0.53
2:C:331:MET:CG	2:C:442:LEU:HA	2.37	0.53
1:A:286:LEU:O	1:A:289:SER:N	2.38	0.53
1:B:114:ARG:HD3	1:B:120:TYR:CE1	2.43	0.53
2:C:20:THR:HG22	2:C:20:THR:O	2.08	0.53
2:D:141:MET:O	2:D:144:SER:HB2	2.08	0.53
2:D:164:LEU:CD2	2:D:167:ASN:HD22	2.21	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:109:VAL:O	1:B:109:VAL:HG23	2.07	0.53
2:D:147:VAL:CG1	2:D:451:LYS:HB3	2.39	0.53
2:C:51:ILE:HG23	4:F:703:U:H3	1.73	0.53
2:C:84:LYS:CG	2:C:97:ILE:HD13	2.34	0.53
2:C:356:LYS:HE3	2:C:395:ILE:HD12	1.90	0.53
2:D:280:PHE:HD1	2:D:429:MET:SD	2.31	0.53
1:A:106:LEU:HD12	1:A:109:VAL:HG11	1.91	0.53
2:C:22:LEU:HD23	2:C:85:GLN:HB3	1.89	0.53
2:C:189:TYR:CZ	2:C:193:LEU:HD21	2.44	0.53
2:D:449:ARG:HB3	2:D:449:ARG:NH1	2.23	0.53
2:C:141:MET:CE	2:C:446:MET:HB2	2.38	0.53
2:C:240:TYR:CE1	2:C:253:ASP:HB2	2.42	0.53
2:D:112:LEU:HD13	2:D:220:LEU:HD22	1.89	0.53
1:B:35:PRO:O	1:B:36:TYR:HB2	2.09	0.53
2:C:90:ASN:ND2	2:C:90:ASN:C	2.60	0.53
2:C:366:LEU:O	2:C:370:ILE:HG13	2.08	0.53
2:C:267:LYS:HD3	2:C:274:TYR:CD2	2.43	0.53
2:C:434:GLU:HA	2:C:434:GLU:OE1	2.08	0.53
2:D:20:THR:O	2:D:20:THR:HG22	2.09	0.53
2:C:283:LEU:HD21	2:C:425:LEU:CB	2.38	0.53
2:C:286:ILE:HG12	2:C:442:LEU:HD21	1.91	0.53
2:C:357:CYS:HA	2:C:396:MET:O	2.09	0.53
2:D:164:LEU:HD23	2:D:167:ASN:HD22	1.74	0.53
2:D:397:TYR:CD1	2:D:397:TYR:N	2.77	0.53
2:C:58:LYS:HZ3	2:C:116:THR:HB	1.74	0.53
2:D:283:LEU:HD21	2:D:425:LEU:CB	2.38	0.53
2:D:286:ILE:HG12	2:D:442:LEU:HD21	1.91	0.53
1:A:168:ASN:HD22	1:B:223:ARG:NE	2.07	0.52
2:C:168:VAL:O	2:C:171:LEU:N	2.42	0.52
1:B:112:VAL:CG1	1:B:114:ARG:HG2	2.39	0.52
2:C:134:MET:O	2:C:137:LEU:HB3	2.09	0.52
2:C:198:ILE:HD12	2:C:308:ARG:HH11	1.74	0.52
2:D:143:ASN:HA	2:D:146:ASN:HB2	1.90	0.52
1:A:124:ILE:O	1:A:128:LEU:HD13	2.09	0.52
2:C:231:LEU:HD13	2:C:241:MET:HE2	1.91	0.52
2:D:168:VAL:O	2:D:171:LEU:N	2.43	0.52
2:C:57:LYS:C	2:C:59:ASN:H	2.13	0.52
1:B:286:LEU:O	1:B:287:GLN:C	2.48	0.52
2:C:19:GLU:HB2	2:C:26:PRO:HD3	1.92	0.52
2:C:317:ARG:HG2	2:C:317:ARG:HH11	1.73	0.52
2:D:189:TYR:CE2	2:D:193:LEU:HD21	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:276:VAL:O	2:D:281:GLN:HG3	2.08	0.52
2:C:198:ILE:CD1	2:C:308:ARG:NH1	2.73	0.52
1:A:168:ASN:ND2	1:B:223:ARG:CZ	2.69	0.52
2:C:112:LEU:HD13	2:C:220:LEU:HD22	1.91	0.52
1:A:22:TYR:HB2	1:A:233:GLU:HG2	1.92	0.52
1:A:35:PRO:O	1:A:36:TYR:HB2	2.10	0.52
2:C:298:LEU:HD13	2:C:305:PHE:CD1	2.45	0.52
2:D:267:LYS:HD3	2:D:274:TYR:CD2	2.44	0.52
2:D:331:MET:HE3	2:D:438:CYS:O	2.10	0.52
1:B:280:LYS:O	1:B:284:LEU:HB2	2.10	0.52
2:C:110:ASP:O	2:C:179:HIS:HE1	1.92	0.52
2:C:141:MET:O	2:C:144:SER:HB2	2.10	0.52
2:C:178:ARG:HH11	2:C:178:ARG:CA	2.17	0.52
1:B:43:LEU:HD23	1:B:290:ILE:HG23	1.92	0.52
2:D:108:TYR:CE1	2:D:112:LEU:HB2	2.45	0.52
2:D:221:ILE:O	2:D:225:THR:HB	2.10	0.52
2:D:434:GLU:OE1	2:D:434:GLU:HA	2.09	0.52
2:C:58:LYS:C	2:C:61:LYS:HZ2	2.13	0.51
2:C:178:ARG:HA	2:C:178:ARG:NH1	2.15	0.51
2:D:270:ILE:CG2	2:D:271:ASP:N	2.55	0.51
2:C:49:LYS:HZ3	2:C:82:PHE:HD2	1.58	0.51
2:C:397:TYR:CD1	2:C:397:TYR:N	2.78	0.51
2:D:289:PHE:CE2	2:D:298:LEU:HD22	2.45	0.51
2:C:289:PHE:CE2	2:C:298:LEU:HD22	2.45	0.51
2:D:57:LYS:C	2:D:59:ASN:H	2.14	0.51
2:D:325:ASP:OD2	2:D:327:LYS:HE2	2.09	0.51
1:A:33:LYS:O	1:A:34:LEU:C	2.48	0.51
2:C:351:TYR:HD2	2:C:438:CYS:HG	1.58	0.51
2:D:61:LYS:HZ3	2:D:62:ARG:CB	2.24	0.51
1:A:292:ARG:HG3	1:A:292:ARG:HH11	1.76	0.51
1:B:18:ASN:HB2	1:B:238:TYR:CZ	2.46	0.51
2:D:227:ASN:OD1	2:D:246:GLU:HG3	2.09	0.51
2:C:288:MET:CE	2:C:294:ARG:HD2	2.40	0.51
1:B:76:ARG:HD2	1:B:76:ARG:O	2.11	0.51
2:D:195:ASN:O	2:D:197:ASN:N	2.44	0.51
2:D:198:ILE:CD1	2:D:308:ARG:NH1	2.74	0.51
1:A:18:ASN:HB2	1:A:238:TYR:CZ	2.46	0.51
1:A:112:VAL:HG12	1:A:114:ARG:HG2	1.91	0.51
2:C:74:ILE:N	2:C:74:ILE:CD1	2.73	0.51
2:C:318:TYR:O	2:C:321:GLY:N	2.44	0.51
2:C:344:VAL:HG11	2:C:420:LEU:HD13	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:289:SER:O	1:A:292:ARG:HB3	2.10	0.51
2:D:317:ARG:HH11	2:D:317:ARG:HG2	1.75	0.51
2:D:318:TYR:O	2:D:321:GLY:N	2.43	0.51
2:C:76:ASP:O	2:C:77:ARG:C	2.48	0.50
2:C:147:VAL:CG1	2:C:451:LYS:HB3	2.41	0.50
2:C:450:ASP:O	2:C:452:ILE:N	2.45	0.50
2:D:90:ASN:ND2	2:D:90:ASN:C	2.62	0.50
1:A:99:HIS:HB3	1:A:103:LEU:HD12	1.94	0.50
1:B:124:ILE:O	1:B:128:LEU:HD13	2.10	0.50
2:C:61:LYS:HZ3	2:C:62:ARG:CB	2.24	0.50
2:C:218:ALA:O	2:C:229:ILE:HD11	2.11	0.50
1:B:93:LEU:HD12	1:B:111:LEU:HD21	1.92	0.50
2:C:90:ASN:HD21	2:C:92:GLY:H	1.58	0.50
2:C:462:LYS:HB2	2:C:462:LYS:NZ	2.25	0.50
2:D:462:LYS:HB2	2:D:462:LYS:NZ	2.26	0.50
3:E:602:U:H4'	3:E:603:U:C5'	2.40	0.50
1:B:22:TYR:HB2	1:B:233:GLU:HG2	1.93	0.50
2:C:58:LYS:HZ2	2:C:116:THR:HB	1.76	0.50
2:C:221:ILE:O	2:C:225:THR:HB	2.11	0.50
2:D:112:LEU:O	2:D:115:LEU:HB2	2.12	0.50
2:D:366:LEU:O	2:D:370:ILE:HG13	2.11	0.50
1:B:292:ARG:HG3	1:B:292:ARG:HH11	1.77	0.50
2:C:331:MET:HE3	2:C:438:CYS:O	2.12	0.50
2:D:450:ASP:O	2:D:452:ILE:N	2.45	0.50
2:C:75:LYS:CE	2:C:79:LEU:HD11	2.42	0.50
2:C:195:ASN:HD22	2:C:198:ILE:CG1	2.17	0.50
2:C:322:ILE:HG21	2:C:443:LEU:CD1	2.42	0.50
2:D:76:ASP:O	2:D:77:ARG:C	2.49	0.50
2:D:178:ARG:HA	2:D:178:ARG:NH1	2.16	0.50
2:D:50:ASP:C	2:D:52:PHE:N	2.64	0.50
2:D:51:ILE:HD13	2:D:51:ILE:O	2.11	0.50
2:D:325:ASP:O	2:D:327:LYS:N	2.45	0.50
2:C:280:PHE:HD1	2:C:429:MET:SD	2.35	0.50
2:C:292:ILE:HG13	2:C:457:HIS:ND1	2.26	0.50
2:C:320:HIS:O	2:C:321:GLY:C	2.50	0.50
2:D:471:ASN:OD1	2:D:473:GLU:HG2	2.12	0.50
2:C:112:LEU:O	2:C:115:LEU:HB2	2.12	0.49
2:C:44:ILE:HD13	2:C:101:GLN:HE21	1.76	0.49
5:H:900:DC:H4'	5:H:901:U:C5'	2.41	0.49
1:A:280:LYS:O	1:A:284:LEU:HB2	2.12	0.49
1:A:286:LEU:O	1:A:287:GLN:C	2.51	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:50:ASP:C	2:C:52:PHE:N	2.65	0.49
2:C:207:GLN:NE2	2:C:213:PHE:CD2	2.71	0.49
2:D:58:LYS:C	2:D:61:LYS:HZ2	2.16	0.49
2:D:110:ASP:O	2:D:179:HIS:HE1	1.95	0.49
2:C:148:ALA:HB1	2:C:296:GLU:HG2	1.94	0.49
2:D:47:PHE:CD2	2:D:105:VAL:HG22	2.48	0.49
1:B:289:SER:O	1:B:292:ARG:HB3	2.11	0.49
2:C:420:LEU:O	2:C:423:HIS:HB3	2.13	0.49
2:D:252:ILE:HD12	2:D:253:ASP:H	1.77	0.49
3:E:603:U:H6	3:E:603:U:C5'	2.03	0.49
1:B:99:HIS:HB3	1:B:103:LEU:HD12	1.95	0.49
2:D:90:ASN:HD21	2:D:92:GLY:H	1.59	0.49
2:D:231:LEU:HD22	2:D:241:MET:HE2	1.94	0.49
2:D:337:ILE:HD12	2:D:404:ILE:HG21	1.93	0.49
1:A:215:THR:HG23	2:D:364:ASN:ND2	2.27	0.49
1:A:223:ARG:CD	1:B:168:ASN:ND2	2.75	0.49
1:A:253:TYR:OH	1:A:287:GLN:NE2	2.45	0.49
2:D:47:PHE:CG	2:D:105:VAL:HG13	2.47	0.49
1:B:18:ASN:O	1:B:235:LYS:HG2	2.13	0.49
1:B:220:ARG:HG3	1:B:220:ARG:HH11	1.77	0.49
2:C:47:PHE:CG	2:C:105:VAL:HG13	2.47	0.49
2:C:231:LEU:HD22	2:C:241:MET:HE2	1.95	0.49
2:D:141:MET:CE	2:D:446:MET:HB2	2.42	0.49
1:A:202:PRO:HB2	1:A:205:SER:HB2	1.94	0.49
2:C:331:MET:HG2	2:C:441:ASP:C	2.32	0.49
2:D:148:ALA:HB1	2:D:296:GLU:HG2	1.94	0.49
2:D:344:VAL:HG11	2:D:420:LEU:HD13	1.93	0.49
1:A:109:VAL:CG2	1:A:109:VAL:O	2.60	0.48
2:C:51:ILE:HD12	4:F:703:U:C4	2.48	0.48
2:C:194:ILE:HD11	2:C:270:ILE:HD11	1.95	0.48
2:D:145:MET:HB3	2:D:415:ILE:CD1	2.42	0.48
2:D:189:TYR:CZ	2:D:193:LEU:HD21	2.48	0.48
2:D:292:ILE:O	2:D:295:LEU:HB2	2.12	0.48
2:D:292:ILE:HG13	2:D:457:HIS:ND1	2.27	0.48
2:C:51:ILE:CG2	4:F:703:U:N3	2.76	0.48
2:C:137:LEU:HG	2:C:313:LEU:HD13	1.96	0.48
2:C:195:ASN:O	2:C:197:ASN:N	2.46	0.48
2:C:471:ASN:OD1	2:C:473:GLU:HG2	2.13	0.48
2:D:51:ILE:HD13	2:D:55:LEU:HG	1.95	0.48
2:D:194:ILE:HD11	2:D:270:ILE:HD11	1.95	0.48
1:B:251:PHE:CE2	1:B:253:TYR:HB3	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:136:GLU:CD	2:C:136:GLU:H	2.15	0.48
2:C:252:ILE:HD12	2:C:253:ASP:H	1.78	0.48
2:D:198:ILE:HD12	2:D:308:ARG:HH11	1.78	0.48
2:D:273:ILE:HG13	2:D:273:ILE:O	2.13	0.48
2:D:357:CYS:HA	2:D:396:MET:O	2.13	0.48
1:B:67:ILE:HD12	1:B:135:LEU:HD11	1.95	0.48
2:D:270:ILE:O	2:D:272:ASN:N	2.44	0.48
2:D:420:LEU:O	2:D:423:HIS:HB3	2.14	0.48
1:B:33:LYS:O	1:B:34:LEU:C	2.51	0.48
2:D:75:LYS:CE	2:D:79:LEU:HD11	2.43	0.48
1:B:255:ASN:OD1	1:B:260:TYR:CD1	2.67	0.48
2:C:90:ASN:ND2	2:C:91:ILE:N	2.57	0.48
2:C:418:ARG:CD	2:C:446:MET:HG2	2.43	0.48
2:D:174:GLU:O	2:D:178:ARG:HG2	2.14	0.48
1:A:33:LYS:HG2	1:A:34:LEU:N	2.26	0.48
1:A:253:TYR:HE2	1:A:287:GLN:HE22	1.62	0.48
1:B:112:VAL:HG12	1:B:114:ARG:HG2	1.94	0.48
2:C:75:LYS:HE3	2:C:79:LEU:HD11	1.95	0.48
1:B:109:VAL:CG2	1:B:109:VAL:O	2.61	0.48
2:C:293:ASP:O	2:C:296:GLU:N	2.47	0.48
2:C:413:HIS:HE1	2:C:452:ILE:O	1.97	0.48
2:D:50:ASP:O	2:D:53:VAL:N	2.46	0.48
2:D:195:ASN:HD22	2:D:198:ILE:CG1	2.20	0.48
2:D:418:ARG:CD	2:D:446:MET:HG2	2.44	0.48
2:D:74:ILE:N	2:D:74:ILE:CD1	2.76	0.47
2:D:286:ILE:N	2:D:286:ILE:CD1	2.76	0.47
1:B:202:PRO:HB2	1:B:205:SER:HB2	1.94	0.47
2:C:184:ILE:HB	2:C:262:MET:HE1	1.95	0.47
2:D:14:THR:O	2:D:18:ILE:HG13	2.13	0.47
2:D:136:GLU:H	2:D:136:GLU:CD	2.16	0.47
2:D:331:MET:HG2	2:D:441:ASP:C	2.34	0.47
1:B:85:LEU:HD11	1:B:271:TYR:O	2.14	0.47
1:B:265:PHE:HA	1:B:268:ARG:CD	2.44	0.47
2:D:289:PHE:CE1	2:D:309:MET:CE	2.97	0.47
1:A:244:ARG:HA	1:A:258:TYR:CD2	2.49	0.47
1:A:265:PHE:HA	1:A:268:ARG:CD	2.44	0.47
2:D:137:LEU:HG	2:D:313:LEU:HD13	1.97	0.47
2:D:322:ILE:HG21	2:D:443:LEU:CD1	2.45	0.47
1:A:168:ASN:ND2	1:B:223:ARG:HD2	2.29	0.47
1:A:195:LYS:N	1:A:195:LYS:CD	2.77	0.47
2:C:298:LEU:HD13	2:C:305:PHE:HD1	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:93:LEU:HD12	1:A:111:LEU:HD21	1.95	0.47
2:C:373:LEU:HB3	2:C:392:HIS:CD2	2.49	0.47
2:D:356:LYS:HE3	2:D:395:ILE:HD12	1.96	0.47
2:C:46:VAL:HG12	2:C:46:VAL:O	2.14	0.47
2:C:58:LYS:O	2:C:116:THR:HG21	2.15	0.47
2:C:60:LYS:HD3	2:C:60:LYS:C	2.35	0.47
2:C:194:ILE:CD1	2:C:270:ILE:HD11	2.44	0.47
2:C:292:ILE:O	2:C:295:LEU:HB2	2.13	0.47
2:C:337:ILE:HD12	2:C:404:ILE:HG21	1.95	0.47
2:D:49:LYS:HZ3	2:D:82:PHE:HD2	1.62	0.47
2:D:49:LYS:HE2	2:D:82:PHE:HD2	1.80	0.47
2:D:84:LYS:O	2:D:88:THR:HB	2.15	0.47
2:D:298:LEU:HD13	2:D:305:PHE:HD1	1.79	0.47
2:D:304:LYS:HD3	2:D:305:PHE:CE1	2.50	0.47
2:D:307:ALA:HB1	2:D:308:ARG:NH1	2.30	0.47
1:A:43:LEU:HD23	1:A:290:ILE:HG23	1.96	0.47
1:A:168:ASN:ND2	1:B:223:ARG:CD	2.77	0.47
2:C:162:SER:N	2:C:165:VAL:HG23	2.30	0.47
2:D:19:GLU:HB2	2:D:26:PRO:CD	2.44	0.47
1:B:189:TYR:CE2	1:B:223:ARG:HB2	2.50	0.47
2:D:194:ILE:CD1	2:D:270:ILE:HD11	2.44	0.47
2:D:277:ASP:OD1	2:D:279:THR:N	2.43	0.47
2:D:413:HIS:HE1	2:D:452:ILE:O	1.98	0.47
2:C:276:VAL:O	2:C:277:ASP:C	2.53	0.47
2:D:75:LYS:HE3	2:D:79:LEU:HD11	1.96	0.47
2:D:293:ASP:O	2:D:296:GLU:N	2.48	0.47
3:E:602:U:C4'	3:E:603:U:OP2	2.63	0.47
1:B:285:PHE:O	1:B:288:GLN:HB3	2.15	0.46
2:C:51:ILE:HD13	2:C:51:ILE:C	2.36	0.46
2:D:58:LYS:HD2	3:E:601:DC:N3	2.30	0.46
2:D:288:MET:CE	2:D:294:ARG:HD2	2.45	0.46
2:D:289:PHE:HE1	2:D:309:MET:CE	2.28	0.46
1:B:43:LEU:HB2	1:B:74:HIS:HB2	1.97	0.46
1:B:230:VAL:O	1:B:234:LYS:HG2	2.16	0.46
2:C:145:MET:HG2	2:C:415:ILE:HG12	1.98	0.46
2:C:47:PHE:CD2	2:C:105:VAL:HG22	2.51	0.46
2:C:270:ILE:O	2:C:272:ASN:N	2.45	0.46
1:A:96:GLY:HA3	1:A:115:PHE:CE1	2.51	0.46
1:A:168:ASN:ND2	1:B:223:ARG:NE	2.64	0.46
1:B:239:LEU:HA	1:B:243:VAL:CG2	2.46	0.46
2:C:141:MET:CE	2:C:443:LEU:O	2.63	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:396:MET:HE2	2:C:427:TYR:CD2	2.50	0.46
2:D:192:TYR:CD2	2:D:193:LEU:HD22	2.50	0.46
2:D:218:ALA:O	2:D:229:ILE:HD11	2.15	0.46
1:B:49:PHE:CD2	1:B:50:LEU:HD13	2.51	0.46
1:B:267:LEU:HA	1:B:270:VAL:HG23	1.98	0.46
2:C:289:PHE:CE1	2:C:309:MET:CE	2.98	0.46
2:C:17:ILE:HD12	2:C:42:GLN:CB	2.44	0.46
2:C:49:LYS:HE2	2:C:82:PHE:HD2	1.81	0.46
2:C:50:ASP:O	2:C:53:VAL:N	2.48	0.46
2:C:275:ILE:O	2:C:275:ILE:HG13	2.15	0.46
2:D:60:LYS:HD3	2:D:60:LYS:C	2.36	0.46
2:D:78:ILE:HG12	2:D:223:PHE:CD1	2.51	0.46
2:D:289:PHE:HE1	2:D:309:MET:HE1	1.81	0.46
1:A:251:PHE:CE2	1:A:253:TYR:HB3	2.50	0.46
1:B:59:LEU:O	1:B:59:LEU:HG	2.16	0.46
1:B:94:ILE:HG23	1:B:112:VAL:HB	1.97	0.46
2:C:277:ASP:OD1	2:C:279:THR:N	2.44	0.46
2:D:169:ASN:O	2:D:173:GLU:HG3	2.16	0.46
2:D:320:HIS:O	2:D:321:GLY:C	2.54	0.46
1:A:63:THR:HG23	1:A:90:LYS:HG3	1.97	0.46
1:A:94:ILE:HG23	1:A:112:VAL:HB	1.97	0.46
1:A:189:TYR:CE2	1:A:223:ARG:HB2	2.51	0.46
1:A:220:ARG:HH11	1:A:220:ARG:HG3	1.80	0.46
1:B:52:LYS:HD3	2:C:371:LEU:HD13	1.98	0.46
1:B:215:THR:HG23	2:C:364:ASN:ND2	2.31	0.46
2:C:51:ILE:HD13	2:C:55:LEU:HG	1.98	0.46
2:D:44:ILE:HD13	2:D:101:GLN:HE21	1.80	0.46
2:D:134:MET:HA	2:D:134:MET:CE	2.46	0.46
2:D:289:PHE:CE1	2:D:309:MET:HE1	2.50	0.46
2:D:322:ILE:HB	2:D:324:PHE:HE1	1.81	0.46
1:A:43:LEU:HB2	1:A:74:HIS:HB2	1.98	0.45
2:D:366:LEU:HD11	2:D:370:ILE:HD11	1.98	0.45
2:D:426:LEU:O	2:D:430:LEU:HG	2.16	0.45
1:A:18:ASN:O	1:A:235:LYS:HG2	2.16	0.45
1:A:67:ILE:HD12	1:A:135:LEU:HD11	1.98	0.45
1:A:285:PHE:O	1:A:288:GLN:HB3	2.15	0.45
1:B:3:VAL:HB	1:B:249:VAL:CG1	2.46	0.45
2:C:379:CYS:C	2:C:388:VAL:HG23	2.36	0.45
2:D:51:ILE:HD12	3:E:603:U:C5	2.52	0.45
2:D:53:VAL:CG1	2:D:57:LYS:HE3	2.47	0.45
2:D:214:LEU:HD22	2:D:243:ILE:HD11	1.96	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:253:TYR:OH	1:B:287:GLN:NE2	2.49	0.45
2:C:169:ASN:O	2:C:173:GLU:HG3	2.17	0.45
2:C:192:TYR:CD2	2:C:193:LEU:HD22	2.51	0.45
2:C:289:PHE:CE1	2:C:309:MET:HE1	2.51	0.45
2:C:319:THR:HG22	2:C:320:HIS:CD2	2.52	0.45
1:A:100:ASP:CG	1:A:102:ILE:HG12	2.36	0.45
2:C:328:ARG:HB3	2:C:444:ASN:CB	2.45	0.45
2:D:19:GLU:CB	2:D:26:PRO:HD3	2.46	0.45
2:D:58:LYS:O	2:D:116:THR:HG21	2.17	0.45
2:C:273:ILE:O	2:C:273:ILE:HG13	2.16	0.45
2:D:59:ASN:HD22	2:D:220:LEU:HD11	1.82	0.45
1:A:122:ARG:HG2	1:A:166:ILE:HG23	1.98	0.45
1:B:63:THR:HG23	1:B:90:LYS:HG3	1.97	0.45
1:B:244:ARG:HA	1:B:258:TYR:CD2	2.51	0.45
1:B:258:TYR:O	1:B:261:PHE:HB3	2.16	0.45
2:C:289:PHE:HE1	2:C:309:MET:HE1	1.82	0.45
2:D:145:MET:HG2	2:D:415:ILE:HG12	1.99	0.45
2:D:276:VAL:O	2:D:277:ASP:C	2.54	0.45
2:D:406:LEU:C	2:D:413:HIS:HB2	2.37	0.45
1:A:37:GLN:C	1:A:39:GLN:H	2.20	0.45
1:A:49:PHE:CD2	1:A:50:LEU:HD13	2.52	0.45
2:C:96:THR:HG23	2:C:477:ILE:HG13	1.98	0.45
1:A:76:ARG:HD2	1:A:76:ARG:O	2.17	0.45
1:B:195:LYS:N	1:B:195:LYS:CD	2.79	0.45
2:C:78:ILE:HG12	2:C:223:PHE:CD1	2.51	0.45
2:C:331:MET:HB3	2:C:445:SER:OG	2.17	0.45
2:D:191:LEU:O	2:D:194:ILE:HB	2.17	0.45
2:D:373:LEU:HB3	2:D:392:HIS:CD2	2.51	0.45
1:B:175:LYS:NZ	1:B:207:GLU:OE2	2.25	0.45
2:C:75:LYS:O	2:C:75:LYS:HD3	2.16	0.45
2:D:24:ARG:HD3	2:D:89:TYR:HE2	1.82	0.45
2:D:184:ILE:HB	2:D:262:MET:HE1	1.98	0.45
2:D:256:ASN:HD22	2:D:256:ASN:C	2.16	0.45
1:B:33:LYS:HG2	1:B:34:LEU:N	2.28	0.45
2:C:304:LYS:HD3	2:C:305:PHE:CE1	2.52	0.45
1:A:3:VAL:HB	1:A:249:VAL:CG1	2.47	0.44
1:A:258:TYR:O	1:A:261:PHE:HB3	2.17	0.44
1:B:96:GLY:HA3	1:B:115:PHE:CE1	2.52	0.44
2:C:14:THR:O	2:C:18:ILE:HG13	2.16	0.44
2:C:44:ILE:HG21	2:C:101:GLN:NE2	2.32	0.44
2:D:51:ILE:HD13	2:D:51:ILE:C	2.38	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:52:LYS:HD3	2:D:371:LEU:HD13	1.99	0.44
1:A:121:LEU:CD1	1:A:163:MET:HA	2.45	0.44
1:B:150:THR:O	1:B:154:LEU:HG	2.16	0.44
1:B:253:TYR:HE2	1:B:287:GLN:HE22	1.65	0.44
2:C:316:VAL:CG2	2:C:322:ILE:HG13	2.36	0.44
2:C:325:ASP:C	2:C:327:LYS:N	2.70	0.44
1:A:66:TYR:CG	1:A:69:SER:HB3	2.52	0.44
1:B:93:LEU:HB2	1:B:111:LEU:CD2	2.47	0.44
2:C:53:VAL:HG13	2:C:75:LYS:HA	1.99	0.44
2:D:476:ILE:HD13	5:G:802:U:H4'	1.99	0.44
1:A:239:LEU:HA	1:A:243:VAL:CG2	2.48	0.44
1:A:293:PHE:C	1:A:293:PHE:CD2	2.91	0.44
2:C:24:ARG:HD3	2:C:89:TYR:HE2	1.79	0.44
2:C:59:ASN:HD22	2:C:220:LEU:HD11	1.82	0.44
2:D:44:ILE:HG21	2:D:101:GLN:NE2	2.33	0.44
2:C:53:VAL:O	2:C:57:LYS:HG3	2.18	0.44
2:C:437:GLN:O	2:C:440:SER:HB3	2.18	0.44
2:D:437:GLN:O	2:D:440:SER:HB3	2.18	0.44
2:C:49:LYS:CE	2:C:82:PHE:HD2	2.30	0.44
2:D:53:VAL:HG13	2:D:75:LYS:HA	2.00	0.44
2:D:75:LYS:O	2:D:75:LYS:HD3	2.17	0.44
2:D:94:LEU:O	2:D:97:ILE:N	2.48	0.44
2:D:169:ASN:OD1	2:D:203:ILE:HG13	2.17	0.44
1:B:59:LEU:HG	1:B:89:ILE:HD11	2.00	0.44
1:B:122:ARG:HG2	1:B:166:ILE:HG23	1.99	0.44
2:C:21:TYR:CG	2:C:41:ILE:CG2	2.99	0.44
2:C:134:MET:HA	2:C:134:MET:CE	2.48	0.44
2:C:174:GLU:OE1	2:C:178:ARG:HD3	2.18	0.44
2:C:203:ILE:O	2:C:252:ILE:HD11	2.17	0.44
2:C:406:LEU:C	2:C:413:HIS:HB2	2.38	0.44
2:D:230:ILE:HD12	2:D:471:ASN:ND2	2.31	0.44
2:D:328:ARG:HB3	2:D:444:ASN:CB	2.45	0.44
1:A:58:ILE:HD12	1:A:58:ILE:O	2.18	0.44
1:A:278:THR:O	1:A:281:ALA:HB3	2.18	0.44
2:C:286:ILE:N	2:C:286:ILE:CD1	2.79	0.44
2:C:354:PHE:HB2	2:C:394:ASN:O	2.18	0.44
1:B:248:VAL:HG21	1:B:261:PHE:CD2	2.53	0.44
2:C:48:ASN:HB3	4:F:703:U:O2	2.18	0.44
2:C:115:LEU:CD1	2:C:171:LEU:CD2	2.96	0.44
2:C:322:ILE:HB	2:C:324:PHE:HE1	1.83	0.44
2:D:235:PRO:HD2	2:D:467:HIS:ND1	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:279:THR:O	1:B:282:LYS:N	2.50	0.43
2:C:53:VAL:CG1	2:C:57:LYS:HE3	2.48	0.43
2:C:366:LEU:HD11	2:C:370:ILE:HD11	2.00	0.43
2:D:59:ASN:ND2	2:D:220:LEU:HD11	2.33	0.43
2:D:73:GLU:CB	2:D:77:ARG:HH12	2.24	0.43
2:D:74:ILE:CG1	2:D:224:ILE:HA	2.42	0.43
1:B:293:PHE:C	1:B:293:PHE:CD2	2.92	0.43
2:C:317:ARG:HG2	2:C:317:ARG:NH1	2.32	0.43
2:D:319:THR:HG22	2:D:320:HIS:CD2	2.54	0.43
1:A:248:VAL:HG21	1:A:261:PHE:CD2	2.53	0.43
1:B:37:GLN:C	1:B:39:GLN:H	2.22	0.43
1:B:58:ILE:HD12	1:B:58:ILE:O	2.18	0.43
2:C:77:ARG:NE	2:C:226:GLY:HA2	2.33	0.43
2:C:145:MET:HB3	2:C:415:ILE:CD1	2.47	0.43
2:C:256:ASN:HD22	2:C:256:ASN:C	2.18	0.43
2:C:307:ALA:HB1	2:C:308:ARG:NH1	2.33	0.43
2:C:468:GLY:O	2:C:469:PHE:HB3	2.18	0.43
2:D:51:ILE:O	2:D:54:SER:HB2	2.17	0.43
2:D:53:VAL:O	2:D:57:LYS:HG3	2.19	0.43
2:D:291:GLN:O	2:D:292:ILE:C	2.56	0.43
2:D:379:CYS:C	2:D:388:VAL:HG23	2.38	0.43
1:A:192:HIS:O	1:A:212:SER:CB	2.66	0.43
1:A:253:TYR:OH	1:A:284:LEU:HA	2.17	0.43
2:C:276:VAL:O	2:C:281:GLN:NE2	2.39	0.43
2:D:96:THR:HG23	2:D:477:ILE:HG13	1.99	0.43
1:B:34:LEU:HD11	1:B:260:TYR:OH	2.18	0.43
2:C:84:LYS:O	2:C:88:THR:HB	2.19	0.43
2:D:174:GLU:OE1	2:D:178:ARG:HD3	2.19	0.43
2:D:473:GLU:CG	2:D:474:LYS:H	2.25	0.43
1:B:4:VAL:CG2	1:B:5:SER:N	2.81	0.43
1:B:121:LEU:CD1	1:B:163:MET:HA	2.46	0.43
2:C:288:MET:SD	2:C:294:ARG:NE	2.91	0.43
2:C:289:PHE:HE1	2:C:309:MET:CE	2.31	0.43
2:C:473:GLU:CG	2:C:474:LYS:H	2.26	0.43
2:D:46:VAL:O	2:D:46:VAL:HG12	2.18	0.43
2:D:49:LYS:CE	2:D:82:PHE:HD2	2.31	0.43
1:A:267:LEU:HA	1:A:270:VAL:HG23	2.01	0.43
2:C:19:GLU:HB2	2:C:26:PRO:CD	2.48	0.43
2:C:395:ILE:HB	2:C:397:TYR:CE1	2.54	0.43
2:D:77:ARG:NE	2:D:226:GLY:HA2	2.34	0.43
3:E:603:U:C6	3:E:603:U:C5'	2.90	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:257:GLU:OE2	1:B:257:GLU:N	2.51	0.43
2:C:137:LEU:HD21	2:C:324:PHE:CD2	2.54	0.43
2:C:141:MET:HE1	2:C:446:MET:HB2	2.00	0.43
2:C:229:ILE:C	2:C:230:ILE:HD13	2.39	0.43
2:C:264:VAL:HB	2:C:430:LEU:O	2.18	0.43
2:D:316:VAL:HG13	2:D:317:ARG:N	2.34	0.43
1:A:39:GLN:NE2	1:A:39:GLN:HA	2.33	0.43
1:A:54:GLN:HB2	1:A:59:LEU:HD23	2.01	0.43
1:A:93:LEU:HB2	1:A:111:LEU:CD2	2.48	0.43
1:A:257:GLU:OE2	1:A:257:GLU:N	2.51	0.43
1:B:41:LYS:HE2	1:B:41:LYS:HB3	1.78	0.43
1:B:100:ASP:CG	1:B:102:ILE:HG12	2.38	0.43
2:C:331:MET:HE2	2:C:441:ASP:HB2	1.99	0.43
2:D:203:ILE:O	2:D:252:ILE:HD11	2.18	0.43
1:B:132:LYS:HD3	2:C:464:PRO:HB2	2.00	0.43
1:B:145:GLY:O	1:B:146:ASN:HB2	2.19	0.43
2:D:396:MET:HE2	2:D:427:TYR:CD2	2.54	0.43
1:A:253:TYR:CE1	1:A:284:LEU:HG	2.54	0.42
2:C:268:ILE:CG1	2:C:277:ASP:HA	2.49	0.42
2:C:292:ILE:CG2	2:C:293:ASP:N	2.81	0.42
2:C:296:GLU:O	2:C:299:SER:HB2	2.18	0.42
2:D:287:LYS:O	2:D:287:LYS:HG2	2.17	0.42
1:A:59:LEU:HG	1:A:89:ILE:HD11	2.02	0.42
1:A:255:ASN:OD1	1:A:257:GLU:OE2	2.36	0.42
1:B:65:VAL:HG23	1:B:133:ILE:HG23	2.00	0.42
2:C:19:GLU:CB	2:C:26:PRO:HD3	2.49	0.42
2:C:322:ILE:HG21	2:C:443:LEU:HD12	1.99	0.42
2:D:105:VAL:HG12	2:D:105:VAL:O	2.17	0.42
2:D:471:ASN:OD1	2:D:473:GLU:CG	2.68	0.42
1:A:239:LEU:O	1:A:243:VAL:HB	2.19	0.42
2:C:191:LEU:O	2:C:194:ILE:HB	2.19	0.42
2:D:242:VAL:HG23	2:D:252:ILE:O	2.19	0.42
2:D:268:ILE:CG1	2:D:277:ASP:HA	2.49	0.42
1:A:137:SER:OG	1:A:160:GLN:HG2	2.19	0.42
1:B:18:ASN:HB2	1:B:238:TYR:CE2	2.54	0.42
2:C:109:THR:CG2	4:F:702:U:O2'	2.66	0.42
2:C:383:SER:O	2:C:384:VAL:C	2.58	0.42
2:D:275:ILE:O	2:D:275:ILE:HG13	2.19	0.42
2:D:282:LEU:HD13	2:D:312:MET:HE3	2.00	0.42
2:D:366:LEU:HD12	2:D:370:ILE:HG13	2.02	0.42
2:D:462:LYS:HB2	2:D:462:LYS:HZ3	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:65:VAL:HG23	1:A:133:ILE:HG23	2.00	0.42
2:C:94:LEU:O	2:C:97:ILE:N	2.50	0.42
2:C:235:PRO:HD2	2:C:467:HIS:ND1	2.34	0.42
2:D:55:LEU:HD22	3:E:602:U:C5	2.54	0.42
2:D:162:SER:O	2:D:165:VAL:HB	2.20	0.42
2:D:325:ASP:C	2:D:327:LYS:N	2.73	0.42
2:D:354:PHE:HB2	2:D:394:ASN:O	2.20	0.42
1:A:198:GLN:HA	1:A:199:PRO:HD3	1.73	0.42
2:C:78:ILE:O	2:C:80:SER:N	2.53	0.42
2:C:96:THR:HG23	2:C:477:ILE:HD12	2.02	0.42
2:C:291:GLN:O	2:C:292:ILE:C	2.57	0.42
2:C:327:LYS:O	2:C:328:ARG:HB2	2.18	0.42
2:C:366:LEU:HD12	2:C:370:ILE:HG13	2.02	0.42
2:D:21:TYR:CG	2:D:41:ILE:CG2	3.01	0.42
2:D:137:LEU:HD21	2:D:324:PHE:CD2	2.55	0.42
2:D:209:ASN:O	2:D:211:ARG:N	2.52	0.42
1:B:122:ARG:N	1:B:166:ILE:HG21	2.34	0.42
2:C:211:ARG:O	2:C:215:ILE:HG13	2.19	0.42
2:D:189:TYR:O	2:D:193:LEU:HD23	2.19	0.42
2:D:365:VAL:HG12	2:D:369:ASP:OD2	2.20	0.42
1:A:19:GLU:HB2	1:A:234:LYS:HB3	2.02	0.42
1:B:201:ALA:O	1:B:202:PRO:C	2.58	0.42
2:C:74:ILE:CD1	2:C:74:ILE:H	2.33	0.42
2:C:78:ILE:O	2:C:81:TYR:N	2.53	0.42
2:C:209:ASN:O	2:C:211:ARG:N	2.53	0.42
2:D:264:VAL:HB	2:D:430:LEU:O	2.19	0.42
2:D:331:MET:HB3	2:D:445:SER:OG	2.20	0.42
2:D:463:LYS:HA	2:D:464:PRO:HD3	1.89	0.42
1:B:121:LEU:CB	1:B:166:ILE:HG21	2.50	0.42
2:C:250:HIS:CD2	2:C:250:HIS:C	2.93	0.42
2:C:473:GLU:CG	2:C:474:LYS:N	2.74	0.42
2:D:53:VAL:HG11	2:D:75:LYS:CG	2.43	0.42
2:D:268:ILE:HG12	2:D:277:ASP:HA	2.02	0.42
2:D:317:ARG:HG2	2:D:317:ARG:NH1	2.34	0.42
1:A:145:GLY:O	1:A:146:ASN:HB2	2.20	0.42
1:B:66:TYR:CG	1:B:69:SER:HB3	2.55	0.42
2:C:49:LYS:NZ	2:C:82:PHE:HD2	2.18	0.42
2:C:268:ILE:HG12	2:C:277:ASP:HA	2.02	0.42
2:C:270:ILE:CG2	2:C:271:ASP:H	2.05	0.42
2:C:395:ILE:HB	2:C:397:TYR:HE1	1.85	0.42
2:C:403:THR:HG22	2:C:458:THR:O	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:250:HIS:CD2	2:D:250:HIS:C	2.94	0.42
1:A:9:PRO:HD2	1:A:265:PHE:CD2	2.54	0.41
1:A:41:LYS:HE2	1:A:41:LYS:HB3	1.79	0.41
1:A:121:LEU:CB	1:A:166:ILE:HG21	2.50	0.41
1:A:230:VAL:O	1:A:234:LYS:HG2	2.20	0.41
1:B:199:PRO:HG2	1:B:266:MET:SD	2.60	0.41
2:C:135:GLU:HB3	2:C:139:ARG:NH2	2.35	0.41
2:C:147:VAL:HG23	2:C:454:ILE:HG13	2.02	0.41
2:C:230:ILE:HD12	2:C:471:ASN:ND2	2.34	0.41
2:C:318:TYR:O	2:C:320:HIS:N	2.53	0.41
2:C:427:TYR:CE1	2:C:431:THR:HG21	2.55	0.41
2:C:449:ARG:HB3	2:C:449:ARG:HH11	1.83	0.41
2:D:135:GLU:HB3	2:D:139:ARG:NH2	2.35	0.41
1:A:59:LEU:HG	1:A:59:LEU:O	2.21	0.41
1:A:201:ALA:O	1:A:202:PRO:C	2.59	0.41
1:B:248:VAL:HG21	1:B:261:PHE:CG	2.55	0.41
2:C:316:VAL:HG13	2:C:317:ARG:N	2.36	0.41
2:D:61:LYS:NZ	2:D:62:ARG:HG3	2.36	0.41
2:D:115:LEU:CD1	2:D:171:LEU:CD2	2.98	0.41
2:D:256:ASN:ND2	2:D:257:ILE:H	2.02	0.41
2:D:395:ILE:HB	2:D:397:TYR:CE1	2.55	0.41
1:A:193:GLY:HA3	1:A:212:SER:HB3	2.02	0.41
1:A:292:ARG:HG3	1:A:292:ARG:NH1	2.34	0.41
2:C:143:ASN:HA	2:C:146:ASN:HD22	1.85	0.41
2:C:301:ASP:O	2:C:303:GLU:N	2.53	0.41
2:D:143:ASN:HA	2:D:146:ASN:HD22	1.85	0.41
2:D:211:ARG:O	2:D:215:ILE:HG13	2.20	0.41
2:D:292:ILE:CG2	2:D:293:ASP:N	2.82	0.41
2:D:473:GLU:CG	2:D:474:LYS:N	2.75	0.41
2:D:283:LEU:HD22	2:D:429:MET:HE2	2.01	0.41
2:D:318:TYR:O	2:D:320:HIS:N	2.53	0.41
2:D:322:ILE:HB	2:D:324:PHE:CE1	2.55	0.41
2:D:329:ASN:HB2	2:D:330:ASN:H	1.71	0.41
1:A:248:VAL:HG21	1:A:261:PHE:CG	2.56	0.41
1:B:98:HIS:CE1	1:B:113:THR:HG21	2.55	0.41
1:B:192:HIS:O	1:B:212:SER:CB	2.68	0.41
2:C:162:SER:N	2:C:165:VAL:CG2	2.83	0.41
2:C:347:THR:CG2	2:C:349:LYS:HG2	2.50	0.41
2:C:462:LYS:HB2	2:C:462:LYS:HZ3	1.85	0.41
2:D:48:ASN:N	3:E:603:U:O2	2.54	0.41
2:D:49:LYS:HG3	2:D:82:PHE:CD2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:77:ARG:HE	2:D:226:GLY:HA2	1.85	0.41
1:A:18:ASN:HB2	1:A:238:TYR:CE2	2.55	0.41
1:B:193:GLY:HA3	1:B:212:SER:HB3	2.02	0.41
2:C:58:LYS:C	2:C:61:LYS:NZ	2.73	0.41
2:C:90:ASN:OD1	2:C:93:LYS:HG3	2.21	0.41
2:C:233:LYS:HB2	2:C:241:MET:HG2	2.02	0.41
2:C:256:ASN:ND2	2:C:257:ILE:H	2.03	0.41
2:C:352:PHE:HE2	2:C:434:GLU:O	2.04	0.41
2:D:17:ILE:HD12	2:D:42:GLN:CB	2.47	0.41
2:D:286:ILE:CD1	2:D:286:ILE:H	2.33	0.41
2:C:74:ILE:CG1	2:C:224:ILE:HA	2.46	0.41
2:C:81:TYR:O	2:C:83:SER:N	2.54	0.41
2:C:183:CYS:SG	2:C:205:ILE:HD12	2.60	0.41
2:C:301:ASP:N	2:C:302:PRO:CD	2.84	0.41
2:C:356:LYS:HG3	2:C:395:ILE:HD12	2.02	0.41
2:D:90:ASN:ND2	2:D:91:ILE:N	2.60	0.41
1:A:4:VAL:CG2	1:A:5:SER:N	2.83	0.41
1:B:93:LEU:HB2	1:B:111:LEU:HD23	2.02	0.41
2:C:51:ILE:O	2:C:54:SER:HB2	2.20	0.41
2:C:115:LEU:HD13	2:C:171:LEU:CD2	2.50	0.41
2:C:169:ASN:OD1	2:C:203:ILE:HG13	2.20	0.41
2:C:359:VAL:CG1	2:C:400:PHE:HB2	2.51	0.41
2:D:78:ILE:HG22	2:D:79:LEU:N	2.36	0.41
2:D:81:TYR:O	2:D:83:SER:N	2.54	0.41
2:D:331:MET:HE2	2:D:441:ASP:HB2	2.01	0.41
1:A:132:LYS:HD3	2:D:464:PRO:HB2	2.02	0.41
1:B:19:GLU:HB2	1:B:234:LYS:HB3	2.03	0.41
1:B:54:GLN:HB2	1:B:59:LEU:HD23	2.03	0.41
2:C:164:LEU:HD23	2:C:167:ASN:ND2	2.34	0.41
2:C:329:ASN:HB2	2:C:330:ASN:H	1.72	0.41
2:D:333:MET:HE1	2:D:348:THR:HG22	2.02	0.41
2:D:359:VAL:CG1	2:D:400:PHE:HB2	2.51	0.41
1:A:85:LEU:HD11	1:A:271:TYR:O	2.21	0.40
1:B:237:TYR:OH	1:B:241:LYS:HD3	2.21	0.40
2:C:51:ILE:CG2	4:F:703:U:H3	2.32	0.40
2:C:287:LYS:O	2:C:287:LYS:HG2	2.20	0.40
2:D:229:ILE:C	2:D:230:ILE:HD13	2.42	0.40
2:C:193:LEU:HB3	2:C:270:ILE:HG21	2.03	0.40
2:C:294:ARG:HA	2:C:297:ASP:OD2	2.21	0.40
2:C:364:ASN:OD1	2:C:365:VAL:N	2.54	0.40
2:C:365:VAL:HG12	2:C:369:ASP:OD2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:426:LEU:O	2:C:430:LEU:HG	2.21	0.40
2:D:96:THR:HG23	2:D:477:ILE:HD12	2.03	0.40
2:D:214:LEU:HD11	2:D:241:MET:O	2.21	0.40
2:D:234:ILE:HG21	2:D:237:LEU:HD23	2.03	0.40
2:D:308:ARG:O	2:D:312:MET:HG3	2.21	0.40
2:D:383:SER:O	2:D:384:VAL:C	2.60	0.40
1:A:199:PRO:HG3	1:A:262:HIS:CE1	2.56	0.40
2:C:96:THR:HG23	2:C:477:ILE:CD1	2.51	0.40
2:C:301:ASP:H	2:C:302:PRO:CD	2.31	0.40
2:D:107:THR:O	2:D:108:TYR:C	2.60	0.40
2:D:142:LEU:HD22	2:D:298:LEU:HD21	2.03	0.40
2:D:145:MET:O	2:D:147:VAL:HG22	2.21	0.40
2:D:301:ASP:N	2:D:302:PRO:CD	2.84	0.40
1:A:279:THR:O	1:A:282:LYS:N	2.55	0.40
1:B:239:LEU:O	1:B:243:VAL:HB	2.21	0.40
1:B:253:TYR:OH	1:B:284:LEU:HA	2.20	0.40
2:C:33:MET:HB3	2:C:95:PHE:CZ	2.56	0.40
2:C:33:MET:HB3	2:C:95:PHE:HZ	1.87	0.40
2:C:162:SER:O	2:C:165:VAL:HB	2.22	0.40
2:D:222:LYS:O	2:D:226:GLY:N	2.55	0.40
2:D:322:ILE:HG21	2:D:443:LEU:HD12	2.02	0.40
2:D:403:THR:HG22	2:D:458:THR:O	2.22	0.40
1:A:223:ARG:CD	1:B:168:ASN:HD22	2.35	0.40
2:C:78:ILE:O	2:C:79:LEU:C	2.59	0.40
2:C:318:TYR:C	2:C:318:TYR:CD1	2.95	0.40
2:C:365:VAL:O	2:C:368:SER:N	2.50	0.40
2:D:294:ARG:HA	2:D:297:ASP:OD2	2.21	0.40
2:D:449:ARG:HB3	2:D:449:ARG:HH11	1.84	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	282/297 (95%)	244 (86%)	30 (11%)	8 (3%)	5	27
1	B	282/297 (95%)	244 (86%)	33 (12%)	5 (2%)	8	38
2	C	439/479 (92%)	330 (75%)	74 (17%)	35 (8%)	1	5
2	D	439/479 (92%)	329 (75%)	77 (18%)	33 (8%)	1	6
All	All	1442/1552 (93%)	1147 (80%)	214 (15%)	81 (6%)	2	12

All (81) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	2	ASP
1	A	146	ASN
1	B	2	ASP
2	C	78	ILE
2	C	146	ASN
2	C	301	ASP
2	C	319	THR
2	C	328	ARG
2	C	334	LYS
2	C	451	LYS
2	D	78	ILE
2	D	146	ASN
2	D	301	ASP
2	D	319	THR
2	D	334	LYS
2	D	451	LYS
1	A	34	LEU
1	B	34	LEU
1	B	146	ASN
2	C	66	ASP
2	C	82	PHE
2	C	115	LEU
2	C	209	ASN
2	C	210	SER
2	C	321	GLY
2	C	326	GLY
2	C	355	LYS
2	C	409	LYS
2	C	436	LYS
2	D	66	ASP
2	D	82	PHE
2	D	115	LEU
2	D	209	ASN

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Mol	Chain	Res	Type
2	D	210	SER
2	D	321	GLY
2	D	326	GLY
2	D	328	ARG
2	D	330	ASN
2	D	355	LYS
2	D	436	LYS
2	C	74	ILE
2	C	79	LEU
2	C	196	PRO
2	C	270	ILE
2	C	330	ASN
2	C	339	GLU
2	C	460	ARG
2	D	74	ILE
2	D	79	LEU
2	D	196	PRO
2	D	270	ILE
2	D	339	GLU
2	D	409	LYS
2	C	276	VAL
2	C	318	TYR
2	C	384	VAL
2	C	464	PRO
2	D	318	TYR
2	D	460	ARG
2	D	464	PRO
1	A	36	TYR
1	A	54	GLN
1	A	295	ASN
1	B	36	TYR
1	B	216	GLY
2	C	68	ASN
2	C	183	CYS
2	C	332	PRO
2	D	276	VAL
2	D	292	ILE
2	D	332	PRO
2	D	384	VAL
1	A	286	LEU
2	C	35	LYS
2	C	292	ILE

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Mol	Chain	Res	Type
2	D	35	LYS
2	D	68	ASN
1	A	216	GLY
2	C	277	ASP
2	D	277	ASP
2	C	412	VAL

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	266/270 (98%)	251 (94%)	15 (6%)	21	54
1	B	266/270 (98%)	250 (94%)	16 (6%)	19	51
2	C	422/453 (93%)	389 (92%)	33 (8%)	12	41
2	D	422/453 (93%)	390 (92%)	32 (8%)	13	42
All	All	1376/1446 (95%)	1280 (93%)	96 (7%)	15	45

All (96) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	18	ASN
1	A	21	ASP
1	A	50	LEU
1	A	58	ILE
1	A	66	TYR
1	A	147	GLU
1	A	149	SER
1	A	167	LEU
1	A	174	LEU
1	A	194	ASN
1	A	197	LEU
1	A	208	MET
1	A	209	ARG
1	A	275	THR
1	A	284	LEU

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Mol	Chain	Res	Type
1	B	18	ASN
1	B	21	ASP
1	B	50	LEU
1	B	58	ILE
1	B	66	TYR
1	B	147	GLU
1	B	149	SER
1	B	167	LEU
1	B	174	LEU
1	B	187	ASP
1	B	194	ASN
1	B	197	LEU
1	B	208	MET
1	B	209	ARG
1	B	275	THR
1	B	284	LEU
2	C	15	LEU
2	C	51	ILE
2	C	54	SER
2	C	61	LYS
2	C	62	ARG
2	C	75	LYS
2	C	87	GLN
2	C	88	THR
2	C	90	ASN
2	C	99	GLU
2	C	134	MET
2	C	136	GLU
2	C	171	LEU
2	C	178	ARG
2	C	183	CYS
2	C	219	PHE
2	C	229	ILE
2	C	231	LEU
2	C	243	ILE
2	C	256	ASN
2	C	260	ASP
2	C	292	ILE
2	C	301	ASP
2	C	318	TYR
2	C	328	ARG
2	C	330	ASN

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Mol	Chain	Res	Type
2	C	377	THR
2	C	408	ASP
2	C	416	SER
2	C	449	ARG
2	C	457	HIS
2	C	466	ARG
2	C	474	LYS
2	D	15	LEU
2	D	50	ASP
2	D	51	ILE
2	D	54	SER
2	D	61	LYS
2	D	62	ARG
2	D	87	GLN
2	D	88	THR
2	D	90	ASN
2	D	99	GLU
2	D	134	MET
2	D	136	GLU
2	D	171	LEU
2	D	178	ARG
2	D	219	PHE
2	D	229	ILE
2	D	231	LEU
2	D	243	ILE
2	D	256	ASN
2	D	260	ASP
2	D	292	ILE
2	D	301	ASP
2	D	318	TYR
2	D	328	ARG
2	D	330	ASN
2	D	377	THR
2	D	408	ASP
2	D	416	SER
2	D	449	ARG
2	D	457	HIS
2	D	466	ARG
2	D	474	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (56) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	37	GLN
1	A	84	ASN
1	A	98	HIS
1	A	146	ASN
1	A	160	GLN
1	A	168	ASN
1	A	183	GLN
1	A	194	ASN
1	A	231	ASN
1	A	287	GLN
1	A	288	GLN
1	B	37	GLN
1	B	54	GLN
1	B	84	ASN
1	B	98	HIS
1	B	146	ASN
1	B	160	GLN
1	B	168	ASN
1	B	183	GLN
1	B	194	ASN
1	B	287	GLN
1	B	288	GLN
2	C	29	ASN
2	C	42	GLN
2	C	59	ASN
2	C	85	GLN
2	C	90	ASN
2	C	101	GLN
2	C	146	ASN
2	C	167	ASN
2	C	179	HIS
2	C	180	ASN
2	C	247	ASN
2	C	250	HIS
2	C	256	ASN
2	C	291	GLN
2	C	320	HIS
2	C	394	ASN
2	C	413	HIS
2	D	29	ASN
2	D	42	GLN
2	D	59	ASN
2	D	85	GLN

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Mol	Chain	Res	Type
2	D	90	ASN
2	D	101	GLN
2	D	146	ASN
2	D	167	ASN
2	D	179	HIS
2	D	180	ASN
2	D	247	ASN
2	D	250	HIS
2	D	256	ASN
2	D	291	GLN
2	D	320	HIS
2	D	394	ASN
2	D	413	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

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 [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	288/297 (96%)	-0.25	0 100 100	36, 61, 94, 135	0
1	B	288/297 (96%)	-0.28	0 100 100	38, 62, 95, 147	0
2	C	445/479 (92%)	-0.02	5 (1%) 80 69	46, 93, 130, 149	0
2	D	445/479 (92%)	-0.07	1 (0%) 95 94	43, 88, 122, 156	0
3	E	5/5 (100%)	0.35	0 100 100	74, 92, 107, 119	0
4	F	3/3 (100%)	-0.18	0 100 100	87, 87, 110, 112	0
5	G	3/3 (100%)	0.27	0 100 100	115, 115, 118, 123	0
5	H	3/3 (100%)	0.76	0 100 100	106, 106, 112, 124	0
All	All	1480/1566 (94%)	-0.13	6 (0%) 92 89	36, 79, 123, 156	0

All (6) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	C	323	VAL	3.1
2	C	322	ILE	3.0
2	C	324	PHE	2.7
2	C	278	PRO	2.5
2	C	434	GLU	2.4
2	D	276	VAL	2.3

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 monosaccharides in this entry.

6.4 Ligands

There are no ligands in this entry.

6.5 Other polymers

There are no such residues in this entry.