



# Full wwPDB X-ray Structure Validation Report ⓘ

Oct 2, 2017 – 02:25 PM EDT

PDB ID : 2DTU  
Title : Crystal structure of the beta hairpin loop deletion variant of RB69 gp43 in complex with DNA containing an abasic site analog  
Authors : Aller, P.; Hogg, M.; Konigsberg, W.; Wallace, S.S.; Doublet, S.  
Deposited on : unknown  
Resolution : 2.37 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](mailto:validation@mail.wwpdb.org)

A user guide is available at

<http://wwpdb.org/validation/2016/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467  
Mogul : 1.7.2 (RC1), CSD as538be (2017)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20030345  
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : rb-20030345

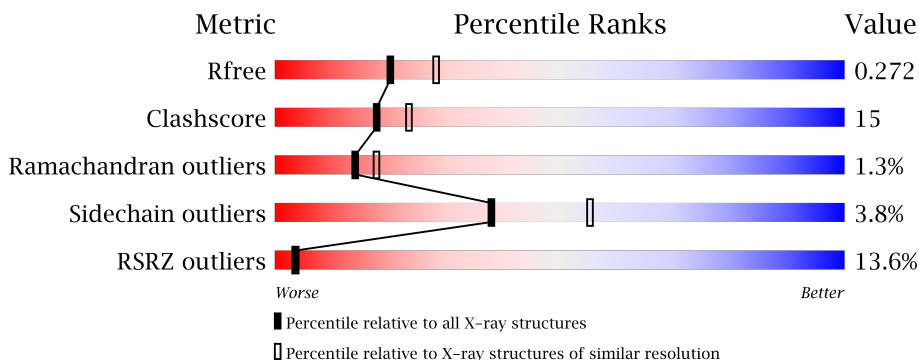
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.37 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))
$R_{free}$	100719	4388 (2.40-2.36)
Clashscore	112137	4984 (2.40-2.36)
Ramachandran outliers	110173	4907 (2.40-2.36)
Sidechain outliers	110143	4909 (2.40-2.36)
RSRZ outliers	101464	4423 (2.40-2.36)

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  $\geq 3$ , 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	E	18	
1	G	18	
1	I	18	
1	K	18	
2	F	15	

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Mol	Chain	Length	Quality of chain
2	H	15	 13% 13% 80% 7%
2	J	15	 20% 40% 27% 13%
2	L	15	 33% 100%
3	A	896	 6% 74% 24% .
3	B	896	 17% 72% 26% .
3	C	896	 3% 76% 21% .
3	D	896	 28% 57% 39% ..

## 2 Entry composition i

There are 4 unique types of molecules in this entry. The entry contains 32454 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 DNA chain called 5'-D(\*CP\*GP\*(3DR)P\*CP\*TP\*TP\*AP\*TP\*GP\*AP\*C P\*AP\*GP\*CP\*CP\*GP\*CP\*G)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	E	18	Total 355	C 169	N 64	O 105	P 17	0	0	0
1	G	18	Total 355	C 169	N 64	O 105	P 17	0	0	0
1	I	18	Total 355	C 169	N 64	O 105	P 17	0	0	0
1	K	18	Total 355	C 169	N 64	O 105	P 17	0	0	0

- Molecule 2 is a DNA chain called 5'-D(\*GP\*CP\*GP\*GP\*CP\*TP\*GP\*TP\*CP\*AP\*TP\*A P\*AP\*GP\*A)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	F	15	Total 308	C 147	N 60	O 87	P 14	0	0	0
2	H	15	Total 308	C 147	N 60	O 87	P 14	0	0	0
2	J	15	Total 308	C 147	N 60	O 87	P 14	0	0	0
2	L	15	Total 308	C 147	N 60	O 87	P 14	0	0	0

- Molecule 3 is a protein called DNA polymerase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	A	896	Total 7281	C 4678	N 1209	O 1362	S 32	0	0	0
3	B	896	Total 7235	C 4649	N 1201	O 1353	S 32	0	0	0
3	C	892	Total 7238	C 4650	N 1200	O 1357	S 31	0	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	D	891	7191	4619	1192	1349	31	0	0	0

There are 40 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	222	ALA	ASP	ENGINEERED	UNP Q38087
A	253	GLY	ILE	ENGINEERED	UNP Q38087
A	?	-	GLU	DELETION	UNP Q38087
A	?	-	ASN	DELETION	UNP Q38087
A	?	-	MET	DELETION	UNP Q38087
A	?	-	TYR	DELETION	UNP Q38087
A	?	-	GLY	DELETION	UNP Q38087
A	?	-	SER	DELETION	UNP Q38087
A	?	-	ARG	DELETION	UNP Q38087
A	327	ALA	ASP	ENGINEERED	UNP Q38087
B	222	ALA	ASP	ENGINEERED	UNP Q38087
B	253	GLY	ILE	ENGINEERED	UNP Q38087
B	?	-	GLU	DELETION	UNP Q38087
B	?	-	ASN	DELETION	UNP Q38087
B	?	-	MET	DELETION	UNP Q38087
B	?	-	TYR	DELETION	UNP Q38087
B	?	-	GLY	DELETION	UNP Q38087
B	?	-	SER	DELETION	UNP Q38087
B	?	-	ARG	DELETION	UNP Q38087
B	327	ALA	ASP	ENGINEERED	UNP Q38087
C	222	ALA	ASP	ENGINEERED	UNP Q38087
C	253	GLY	ILE	ENGINEERED	UNP Q38087
C	?	-	GLU	DELETION	UNP Q38087
C	?	-	ASN	DELETION	UNP Q38087
C	?	-	MET	DELETION	UNP Q38087
C	?	-	TYR	DELETION	UNP Q38087
C	?	-	GLY	DELETION	UNP Q38087
C	?	-	SER	DELETION	UNP Q38087
C	?	-	ARG	DELETION	UNP Q38087
C	327	ALA	ASP	ENGINEERED	UNP Q38087
D	222	ALA	ASP	ENGINEERED	UNP Q38087
D	253	GLY	ILE	ENGINEERED	UNP Q38087
D	?	-	GLU	DELETION	UNP Q38087
D	?	-	ASN	DELETION	UNP Q38087
D	?	-	MET	DELETION	UNP Q38087
D	?	-	TYR	DELETION	UNP Q38087

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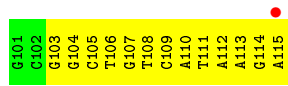
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Chain	Residue	Modelled	Actual	Comment	Reference
D	?	-	GLY	DELETION	UNP Q38087
D	?	-	SER	DELETION	UNP Q38087
D	?	-	ARG	DELETION	UNP Q38087
D	327	ALA	ASP	ENGINEERED	UNP Q38087

- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	E	9	Total O 9 9	0	0
4	F	10	Total O 10 10	0	0
4	G	15	Total O 15 15	0	0
4	H	8	Total O 8 8	0	0
4	I	31	Total O 31 31	0	0
4	J	18	Total O 18 18	0	0
4	K	10	Total O 10 10	0	0
4	A	251	Total O 251 251	0	0
4	B	195	Total O 195 195	0	0
4	C	272	Total O 272 272	0	0
4	D	38	Total O 38 38	0	0

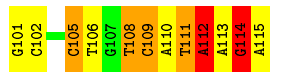
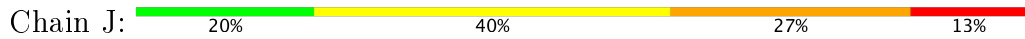




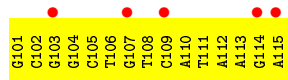
• Molecule 2: 5'-D(\*GP\*CP\*GP\*GP\*CP\*TP\*GP\*TP\*CP\*AP\*TP\*AP\*AP\*GP\*A)-3'



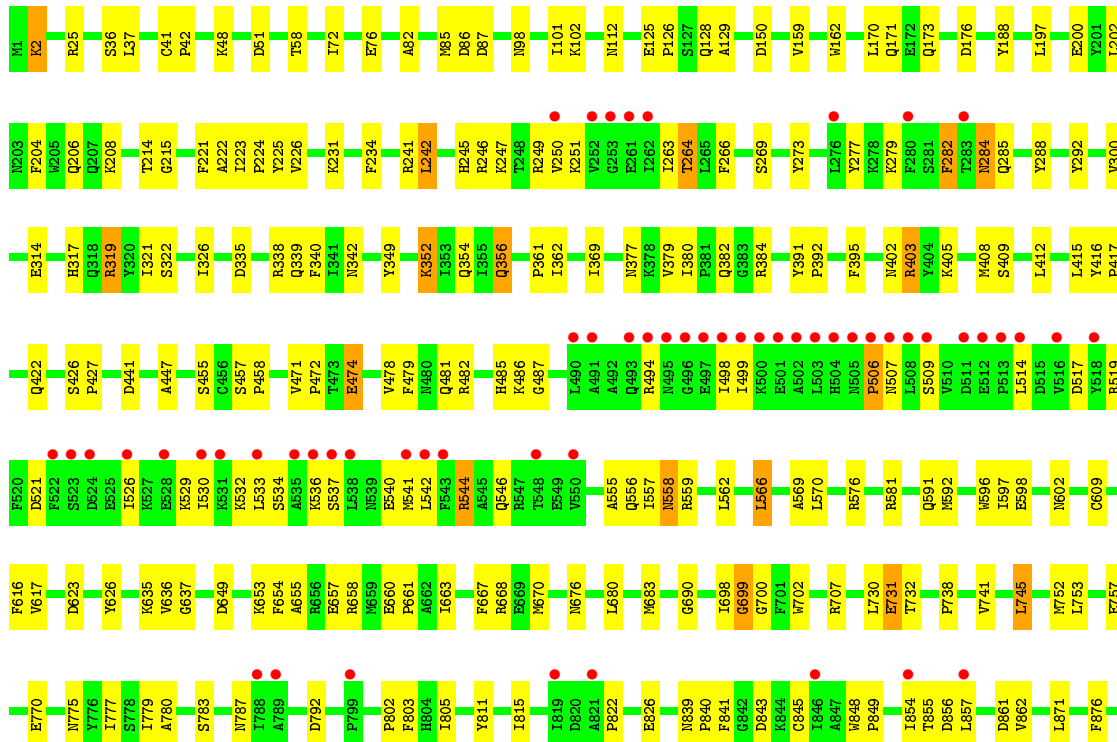
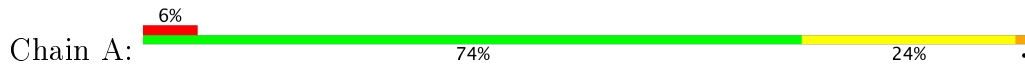
• Molecule 2: 5'-D(\*GP\*CP\*GP\*GP\*CP\*TP\*GP\*TP\*CP\*AP\*TP\*AP\*AP\*GP\*A)-3'



• Molecule 2: 5'-D(\*GP\*CP\*GP\*GP\*CP\*TP\*GP\*TP\*CP\*AP\*TP\*AP\*AP\*GP\*A)-3'

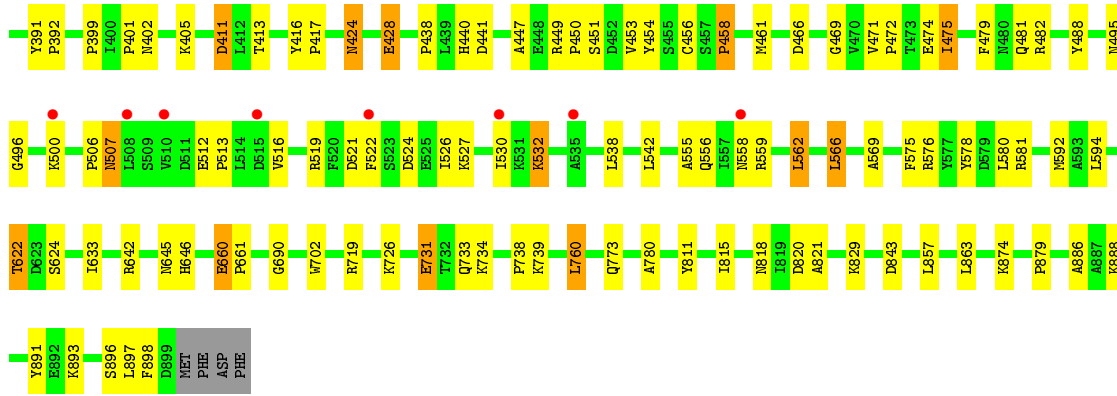


• Molecule 3: DNA polymerase

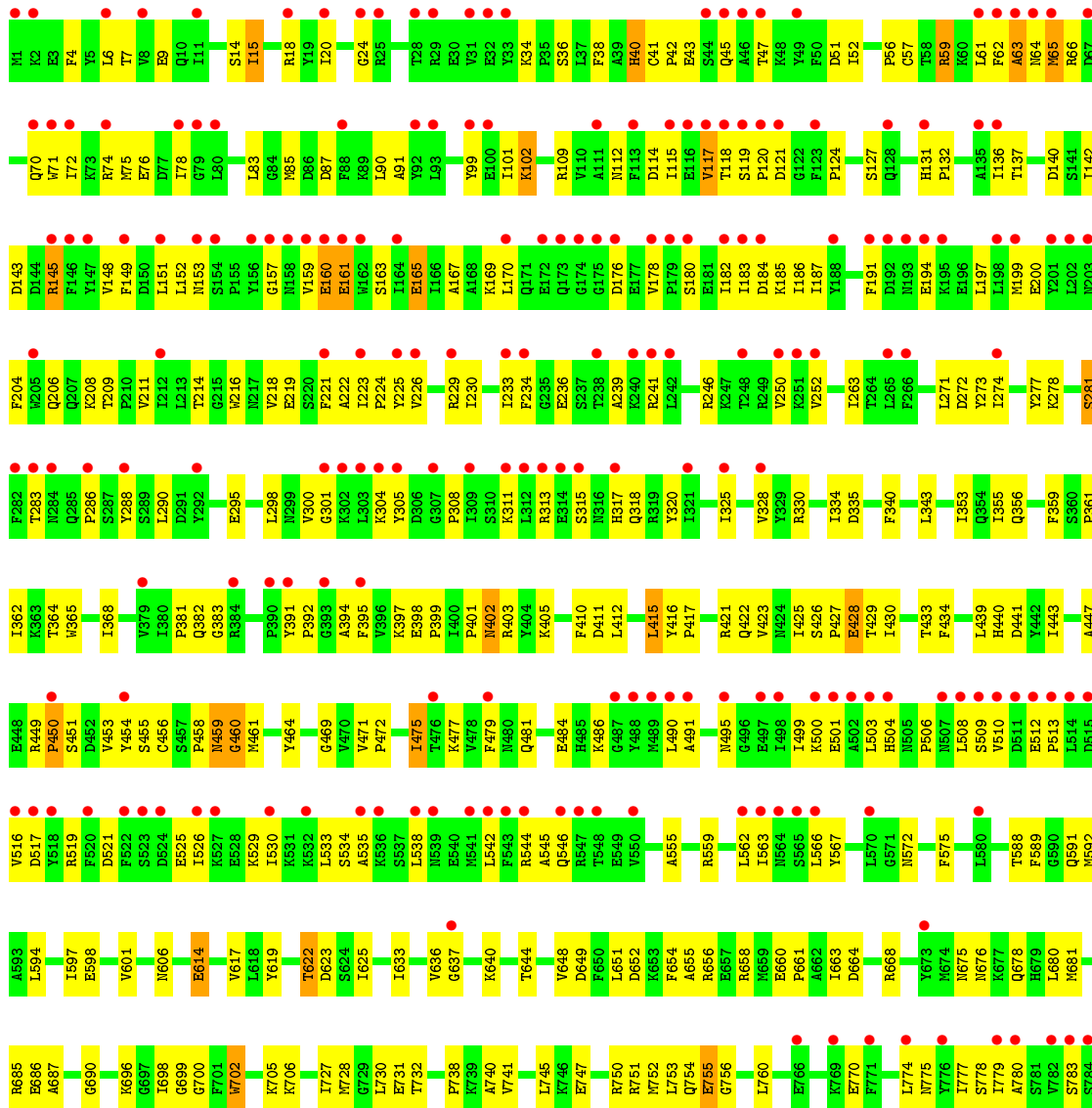








● Molecule 3: DNA polymerase





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	133.07Å 123.06Å 164.56Å 90.00° 96.78° 90.00°	Depositor
Resolution (Å)	50.00 – 2.37 48.64 – 2.38	Depositor EDS
% Data completeness (in resolution range)	89.4 (50.00-2.37) 94.2 (48.64-2.38)	Depositor EDS
$R_{merge}$	0.08	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.92 (at 2.37Å)	Xtrriage
Refinement program	CNS	Depositor
R, $R_{free}$	0.223 , 0.268 0.227 , 0.272	Depositor DCC
$R_{free}$ test set	18819 reflections (9.45%)	DCC
Wilson B-factor (Å <sup>2</sup> )	47.7	Xtrriage
Anisotropy	0.216	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.33 , 53.0	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	32454	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	73.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.44% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

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

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 3DR

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	E	0.49	0/384	1.35	1/588 (0.2%)
1	G	0.55	0/384	1.44	5/588 (0.9%)
1	I	0.63	0/384	1.42	5/588 (0.9%)
1	K	0.40	0/384	1.26	0/588
2	F	0.42	0/346	1.28	0/533
2	H	0.50	0/346	1.29	1/533 (0.2%)
2	J	0.68	0/346	1.40	6/533 (1.1%)
2	L	0.38	0/346	1.21	0/533
3	A	0.42	0/7461	0.57	0/10092
3	B	0.38	0/7414	0.53	0/10036
3	C	0.41	0/7416	0.57	0/10032
3	D	0.29	0/7369	0.45	0/9980
All	All	0.39	0/32580	0.66	18/44624 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	E	0	1
1	G	0	1
1	I	0	1
2	J	0	2
All	All	0	5

There are no bond length outliers.

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	6	DT	C4'-C3'-C2'	6.36	108.82	103.10
1	G	7	DA	C4'-C3'-O3'	5.95	124.58	109.70
1	E	7	DA	C4'-C3'-C2'	5.75	108.28	103.10
2	J	109	DC	O4'-C1'-C2'	5.64	110.42	105.90
1	I	7	DA	C4'-C3'-C2'	5.50	108.05	103.10
2	J	111	DT	O4'-C1'-C2'	5.48	110.28	105.90
2	J	114	DG	O4'-C1'-N9	5.38	111.77	108.00
2	H	109	DC	O4'-C1'-N1	5.30	111.71	108.00
1	G	7	DA	C4'-C3'-C2'	5.30	107.87	103.10
2	J	105	DC	C4'-C3'-C2'	5.27	107.84	103.10
1	G	8	DT	C4'-C3'-C2'	5.21	107.79	103.10
1	I	7	DA	C4'-C3'-O3'	5.19	122.69	112.30
1	G	6	DT	C4'-C3'-O3'	5.12	122.54	112.30
1	I	15	DC	C4'-C3'-C2'	5.09	107.68	103.10
1	I	17	DC	O4'-C1'-N1	5.08	111.56	108.00
2	J	108	DT	O4'-C1'-N1	5.02	111.52	108.00
1	I	9	DG	N9-C1'-C2'	5.01	122.12	112.60
2	J	112	DA	C4'-C3'-C2'	5.01	107.61	103.10

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	E	7	DA	Sidechain
1	G	7	DA	Sidechain
1	I	7	DA	Sidechain
2	J	112	DA	Sidechain
2	J	114	DG	Sidechain

## 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	E	355	0	200	17	0
1	G	355	0	200	16	0
1	I	355	0	200	10	0
1	K	355	0	200	18	0
2	F	308	0	170	17	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	H	308	0	170	20	0
2	J	308	0	170	21	0
2	L	308	0	170	17	0
3	A	7281	0	7136	177	0
3	B	7235	0	7052	190	0
3	C	7238	0	7101	151	0
3	D	7191	0	7005	289	0
4	A	251	0	0	18	0
4	B	195	0	0	19	0
4	C	272	0	0	18	0
4	D	38	0	0	9	0
4	E	9	0	0	0	0
4	F	10	0	0	1	0
4	G	15	0	0	1	0
4	H	8	0	0	3	0
4	I	31	0	0	1	0
4	J	18	0	0	5	0
4	K	10	0	0	4	0
All	All	32454	0	29774	930	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 15.

All (930) 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:A:85:MET:HE2	3:A:87:ASP:H	1.18	1.03
3:A:395:PHE:HB2	3:A:591:GLN:HG3	1.43	1.01
1:G:6:DT:H2'	1:G:7:DA:H5''	1.40	1.00
1:G:6:DT:C2'	1:G:7:DA:H5''	1.91	1.00
2:J:108:DT:H2''	2:J:109:DC:H5''	1.46	0.97
3:B:481:GLN:HE21	3:B:559:ARG:HE	1.13	0.97
3:A:2:LYS:HD2	3:A:2:LYS:H	1.33	0.91
3:D:194:GLU:HG2	3:D:229:ARG:HH21	1.35	0.91
3:C:356:GLN:H	3:C:356:GLN:HE21	1.16	0.89
1:I:3:3DR:H2''	1:I:4:DC:H5'	1.55	0.88
3:A:698:ILE:HG13	3:A:698:ILE:O	1.75	0.87
3:D:112:ASN:HB3	3:D:214:THR:HG23	1.55	0.86
3:D:85:MET:HE2	3:D:87:ASP:H	1.39	0.86
3:B:606:ASN:HD21	3:B:614:GLU:H	1.19	0.86
3:B:499:ILE:HA	3:B:530:ILE:HD11	1.57	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:412:LEU:HB2	3:D:623:ASP:HB2	1.58	0.86
3:C:163:SER:H	3:C:318:GLN:HE22	1.23	0.85
3:D:422:GLN:HE22	3:D:681:MET:HG2	1.42	0.83
3:B:115:ILE:HD11	3:B:133:ILE:HG21	1.59	0.83
3:C:74:ARG:HD3	4:C:1164:HOH:O	1.77	0.83
3:D:819:ILE:HG22	3:D:820:ASP:H	1.44	0.82
3:B:261:GLU:HG3	3:B:262:ILE:H	1.44	0.82
3:C:303:LEU:H	3:C:303:LEU:HD22	1.45	0.81
2:H:103:DG:H2''	2:H:104:DG:H5'	1.62	0.81
2:J:110:DA:H2''	2:J:111:DT:H5''	1.64	0.80
3:B:475:ILE:HD13	3:B:566:LEU:HD12	1.63	0.80
3:C:356:GLN:NE2	3:C:356:GLN:H	1.79	0.80
3:D:295:GLU:HG2	3:D:301:GLY:HA2	1.64	0.79
3:B:2:LYS:HD3	4:B:1077:HOH:O	1.82	0.78
3:C:167:ALA:HA	3:C:176:ASP:HB2	1.66	0.78
3:B:481:GLN:NE2	3:B:559:ARG:HE	1.80	0.78
3:D:458:PRO:HB2	3:D:588:THR:HG22	1.64	0.78
3:B:116:GLU:HB2	3:B:135:ALA:HB3	1.64	0.78
3:D:751:ARG:HA	3:D:755:GLU:HG3	1.66	0.78
2:J:108:DT:H2''	2:J:109:DC:C5'	2.13	0.78
3:B:559:ARG:O	3:B:563:ILE:HG12	1.84	0.77
3:A:792:ASP:HB2	4:A:927:HOH:O	1.84	0.77
3:C:302:LYS:HE2	3:C:302:LYS:HA	1.66	0.77
3:A:481:GLN:HE21	3:A:559:ARG:HE	1.33	0.77
3:D:402:ASN:ND2	3:D:403:ARG:H	1.83	0.76
3:C:298:LEU:HB2	3:C:300:VAL:HG12	1.65	0.76
3:B:897:LEU:H	3:B:897:LEU:HD23	1.51	0.76
3:C:495:ASN:HD21	3:C:522:PHE:H	1.33	0.76
3:B:321:ILE:HD12	4:B:1074:HOH:O	1.87	0.75
1:E:6:DT:H2''	1:E:7:DA:H5''	1.69	0.74
3:B:223:ILE:HB	3:B:224:PRO:HD3	1.69	0.74
3:B:273:TYR:HA	3:B:276:LEU:HD12	1.68	0.74
3:C:354:GLN:HB3	3:C:356:GLN:HE22	1.53	0.74
3:A:206:GLN:NE2	3:A:241:ARG:HE	1.86	0.73
3:C:482:ARG:HE	3:C:556:GLN:HE21	1.36	0.73
3:A:699:GLY:N	4:A:998:HOH:O	2.21	0.73
3:B:222:ALA:O	3:B:226:VAL:HG23	1.89	0.73
3:A:602:ASN:HD21	3:A:617:VAL:H	1.35	0.72
3:B:133:ILE:HD11	3:B:198:LEU:HD21	1.70	0.72
3:C:78:ILE:HG13	3:C:80:LEU:HD23	1.71	0.72
3:B:336:ALA:HB3	3:B:337:LYS:HE3	1.70	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:500:LYS:HA	3:D:503:LEU:HD12	1.71	0.72
3:C:231:LYS:HG3	3:C:236:GLU:HA	1.69	0.72
3:D:740:ALA:HB2	3:D:778:SER:HB3	1.71	0.71
3:B:231:LYS:HG3	3:B:236:GLU:HA	1.72	0.71
3:A:581:ARG:HD3	4:A:1102:HOH:O	1.90	0.71
3:B:273:TYR:HB3	4:B:1083:HOH:O	1.91	0.70
3:C:411:ASP:OD1	3:C:624:SER:HB3	1.91	0.70
3:D:308:PRO:HG2	3:D:311:LYS:HB2	1.74	0.70
3:A:698:ILE:C	4:A:998:HOH:O	2.29	0.70
3:D:298:LEU:HB2	3:D:300:VAL:HG12	1.72	0.70
3:A:698:ILE:O	3:A:753:LEU:HA	1.92	0.69
3:C:116:GLU:HB2	3:C:135:ALA:HB3	1.74	0.69
3:D:530:ILE:HA	3:D:533:LEU:HD13	1.73	0.69
1:E:5:DT:H2''	1:E:6:DT:H5'	1.73	0.69
3:C:516:VAL:HG11	3:C:526:ILE:HD13	1.74	0.69
1:E:6:DT:H2''	1:E:7:DA:C5'	2.22	0.69
2:H:112:DA:H2''	2:H:113:DA:H5'	1.74	0.69
3:A:471:VAL:HB	3:A:472:PRO:HD3	1.75	0.69
3:A:649:ASP:O	3:A:653:LYS:HG2	1.92	0.69
3:B:11:ILE:HD13	3:B:247:LYS:HG3	1.74	0.69
3:D:170:LEU:HD12	3:D:170:LEU:H	1.58	0.69
3:D:660:GLU:HG2	4:D:915:HOH:O	1.92	0.68
3:D:399:PRO:HB3	3:D:619:TYR:HD2	1.58	0.68
3:C:441:ASP:HB3	3:C:447:ALA:HB2	1.74	0.68
1:K:5:DT:H2''	1:K:6:DT:H5'	1.74	0.68
3:B:167:ALA:HA	3:B:177:GLU:OE2	1.93	0.68
1:K:6:DT:H1'	3:D:706:LYS:HE3	1.75	0.68
2:J:108:DT:C2'	2:J:109:DC:H5''	2.21	0.68
3:A:775:ASN:OD1	3:A:777:ILE:HG22	1.94	0.68
3:D:530:ILE:HG13	3:D:533:LEU:HD22	1.74	0.68
3:A:540:GLU:O	3:A:544:ARG:HD3	1.93	0.68
3:A:85:MET:HE2	3:A:87:ASP:N	2.03	0.67
1:K:15:DC:H5''	4:K:457:HOH:O	1.94	0.67
1:I:10:DA:H2''	1:I:11:DC:H5''	1.75	0.67
3:D:223:ILE:HB	3:D:224:PRO:HD3	1.74	0.67
3:D:731:GLU:HG3	3:D:879:PRO:HB3	1.75	0.67
4:F:120:HOH:O	3:A:783:SER:HA	1.95	0.67
3:D:598:GLU:HG3	3:D:617:VAL:HG11	1.76	0.67
3:A:354:GLN:HB3	3:A:356:GLN:HE22	1.59	0.67
3:C:526:ILE:HD12	4:C:1045:HOH:O	1.94	0.67
3:D:516:VAL:HG11	3:D:526:ILE:HG21	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:860:ASP:H	3:D:863:LEU:HD23	1.60	0.67
3:A:602:ASN:ND2	3:A:616:PHE:H	1.92	0.66
3:C:148:VAL:HG13	4:C:1125:HOH:O	1.96	0.66
3:D:830:VAL:HA	3:D:850:SER:HB3	1.78	0.66
3:A:72:ILE:O	3:A:76:GLU:HG3	1.95	0.66
3:A:481:GLN:NE2	3:A:559:ARG:HE	1.93	0.66
3:C:81:GLU:HG2	3:C:83:LEU:CD1	2.26	0.66
3:A:526:ILE:HG23	3:A:529:LYS:HD2	1.77	0.65
3:B:738:PRO:HG2	3:B:741:VAL:HB	1.77	0.65
3:D:738:PRO:HG2	3:D:741:VAL:HB	1.77	0.65
1:G:6:DT:H6	1:G:6:DT:H5''	1.62	0.65
3:D:41:CYS:HB2	3:D:45:GLN:HG3	1.78	0.65
2:H:112:DA:H2''	2:H:113:DA:C5'	2.25	0.65
3:D:118:THR:HG21	3:D:313:ARG:HB3	1.79	0.65
3:D:700:GLY:HA2	3:D:753:LEU:HD22	1.79	0.65
3:B:119:SER:HB3	3:B:124:PRO:HD3	1.77	0.65
3:C:283:THR:HB	4:C:1145:HOH:O	1.95	0.65
3:D:606:ASN:HD21	3:D:614:GLU:H	1.45	0.65
2:J:114:DG:H2''	2:J:115:DA:O5'	1.96	0.64
3:D:149:PHE:HB3	3:D:197:LEU:HD21	1.79	0.64
2:F:110:DA:H1'	2:F:111:DT:H5''	1.79	0.64
3:C:277:TYR:O	3:C:281:SER:HB3	1.97	0.64
3:D:398:GLU:OE1	3:D:705:LYS:HE3	1.97	0.64
3:B:540:GLU:HB3	3:B:544:ARG:NH1	2.13	0.64
3:A:848:TRP:HB2	3:A:849:PRO:HD2	1.80	0.64
3:D:512:GLU:HG3	3:D:513:PRO:HD2	1.78	0.64
2:J:110:DA:H2''	2:J:111:DT:C5'	2.28	0.64
3:A:598:GLU:HG3	3:A:617:VAL:HG11	1.79	0.64
1:K:5:DT:H2''	1:K:6:DT:C5'	2.28	0.63
3:B:52:ILE:HD12	3:B:428:GLU:HG3	1.81	0.63
2:F:113:DA:H3'	2:F:114:DG:H5''	1.80	0.63
3:A:653:LYS:O	3:A:657:GLU:HG2	1.98	0.63
3:A:422:GLN:NE2	3:A:680:LEU:H	1.96	0.63
3:A:514:LEU:HD12	3:A:530:ILE:HG12	1.80	0.63
2:F:110:DA:H2''	2:F:111:DT:C5'	2.28	0.63
2:J:112:DA:H2'	4:J:405:HOH:O	1.98	0.63
3:A:2:LYS:CD	3:A:2:LYS:H	2.06	0.62
3:A:82:ALA:O	3:A:382:GLN:HB2	1.99	0.62
3:B:606:ASN:ND2	3:B:614:GLU:H	1.95	0.62
3:C:223:ILE:HB	3:C:224:PRO:HD3	1.80	0.62
3:C:530:ILE:HG23	3:C:538:LEU:HD21	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:103:DG:H2''	2:F:104:DG:H5'	1.82	0.62
3:C:482:ARG:HH21	3:C:556:GLN:NE2	1.97	0.62
3:D:660:GLU:HB2	3:D:661:PRO:HD3	1.82	0.62
2:H:105:DC:H2'	2:H:106:DT:H72	1.80	0.62
3:C:191:PHE:HD2	3:C:196:GLU:HG3	1.63	0.62
3:A:2:LYS:HG2	3:A:102:LYS:HE3	1.81	0.62
3:A:395:PHE:HB2	3:A:591:GLN:CG	2.25	0.62
3:D:433:THR:HG22	3:D:461:MET:HE1	1.82	0.62
3:B:482:ARG:NH2	3:B:560:LYS:HD3	2.14	0.61
3:D:434:PHE:CZ	3:D:460:GLY:HA2	2.35	0.61
3:C:1:MET:HG2	3:C:22:SER:O	2.00	0.61
3:C:888:LYS:HE3	4:C:918:HOH:O	1.99	0.61
3:D:362:ILE:HG23	3:D:575:PHE:HD1	1.63	0.61
2:J:115:DA:H2'	4:J:414:HOH:O	1.98	0.61
3:D:230:ILE:HG23	3:D:234:PHE:HD2	1.66	0.61
2:H:104:DG:H2''	2:H:105:DC:O5'	2.00	0.61
3:D:51:ASP:HB2	4:D:912:HOH:O	2.01	0.61
3:B:635:LYS:HG2	3:D:898:PHE:CD2	2.35	0.61
2:L:112:DA:H2''	2:L:113:DA:H5'	1.82	0.61
3:C:148:VAL:HG22	4:C:1125:HOH:O	2.00	0.61
3:C:401:PRO:O	3:C:402:ASN:HB2	2.01	0.61
3:D:151:LEU:HD11	3:D:194:GLU:HA	1.83	0.61
3:D:812:ASN:HA	3:D:815:ILE:HG12	1.83	0.61
3:B:514:LEU:HG	3:B:533:LEU:HD21	1.82	0.61
3:D:859:LYS:HD3	3:D:860:ASP:HB2	1.81	0.61
3:C:347:MET:HE3	3:C:562:LEU:HD13	1.81	0.61
2:F:103:DG:H2'	2:F:104:DG:C8	2.35	0.61
3:B:606:ASN:HD21	3:B:614:GLU:N	1.97	0.60
3:D:286:PRO:O	3:D:829:LYS:HD2	2.01	0.60
1:K:17:DC:H2''	1:K:18:DG:OP1	2.01	0.60
3:B:202:LEU:O	3:B:206:GLN:HG2	2.01	0.60
3:D:401:PRO:HA	3:D:702:TRP:O	2.01	0.60
1:K:4:DC:H42	2:L:114:DG:H1	1.49	0.60
3:B:24:GLY:HA3	3:B:107:LYS:HE3	1.83	0.60
3:B:490:LEU:HA	3:B:493:GLN:HG2	1.83	0.60
3:C:169:LYS:HE2	3:C:174:GLY:H	1.66	0.60
3:C:424:ASN:HD21	3:C:469:GLY:H	1.48	0.60
3:D:535:ALA:HA	3:D:538:LEU:HB2	1.84	0.60
3:B:154:SER:HB2	3:B:155:PRO:HD2	1.82	0.60
3:A:176:ASP:HA	3:A:319:ARG:NH2	2.16	0.60
3:B:582:ASN:O	3:B:586:ILE:HG13	2.02	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:140:ASP:HB3	3:D:143:ASP:HB2	1.84	0.60
3:D:271:LEU:HD21	3:D:356:GLN:HA	1.84	0.60
3:B:825:VAL:HB	3:B:828:GLU:HG3	1.84	0.60
3:D:87:ASP:OD1	3:D:90:LEU:HD13	2.01	0.60
3:C:815:ILE:HG23	3:C:821:ALA:HB3	1.84	0.60
2:J:101:DG:H2'	2:J:102:DC:C5	2.36	0.60
2:J:110:DA:C2'	2:J:111:DT:H5''	2.32	0.60
3:A:441:ASP:HB3	3:A:447:ALA:HB2	1.83	0.59
3:B:391:TYR:HB2	3:B:392:PRO:HD2	1.83	0.59
3:D:416:TYR:HB2	3:D:417:PRO:HD3	1.83	0.59
3:C:52:ILE:HD12	3:C:428:GLU:HG3	1.82	0.59
3:D:434:PHE:CE1	3:D:460:GLY:HA2	2.37	0.59
1:E:5:DT:H2''	1:E:6:DT:C5'	2.32	0.59
3:D:449:ARG:HH21	3:D:675:ASN:HB2	1.65	0.59
3:A:556:GLN:HE22	3:A:557:ILE:HD13	1.67	0.59
3:B:261:GLU:HG3	3:B:262:ILE:N	2.17	0.59
3:D:131:HIS:HB3	3:D:132:PRO:HD2	1.85	0.59
3:D:698:ILE:HG12	3:D:752:MET:O	2.02	0.59
3:A:698:ILE:CA	4:A:998:HOH:O	2.49	0.59
3:B:772:ARG:HG2	4:B:1043:HOH:O	2.03	0.59
3:D:854:ILE:HD12	3:D:859:LYS:HB2	1.85	0.59
3:B:136:ILE:HG23	3:B:149:PHE:HB2	1.84	0.58
3:C:60:LYS:C	4:C:1100:HOH:O	2.41	0.58
3:D:405:LYS:O	3:D:690:GLY:HA2	2.03	0.58
3:D:471:VAL:HB	3:D:472:PRO:HD3	1.86	0.58
3:D:90:LEU:HG	3:D:353:ILE:HG22	1.85	0.58
3:D:102:LYS:HB2	3:D:102:LYS:NZ	2.18	0.58
2:H:110:DA:H2''	2:H:111:DT:O5'	2.02	0.58
2:F:110:DA:H2''	2:F:111:DT:H5'	1.84	0.58
3:C:284:ASN:HD21	3:C:829:LYS:HZ2	1.52	0.58
3:A:41:CYS:HB2	3:A:42:PRO:HD2	1.84	0.58
3:D:503:LEU:O	3:D:506:PRO:HD3	2.04	0.58
3:A:354:GLN:HB3	3:A:356:GLN:NE2	2.17	0.58
3:A:403:ARG:HD2	3:A:887:ALA:O	2.04	0.58
3:A:839:ASN:HD22	3:A:841:PHE:HB2	1.69	0.58
3:B:797:PRO:HG3	3:B:806:ARG:NH1	2.19	0.58
3:D:395:PHE:HB2	3:D:591:GLN:HG2	1.86	0.58
1:I:10:DA:H2''	1:I:11:DC:C5'	2.34	0.58
3:B:470:VAL:O	3:B:474:GLU:HG2	2.04	0.57
3:D:115:ILE:HG22	3:D:136:ILE:HG12	1.86	0.57
3:B:760:LEU:HD13	3:B:891:TYR:HA	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:78:ILE:CG1	3:C:80:LEU:HD23	2.34	0.57
3:A:202:LEU:O	3:A:206:GLN:HG2	2.05	0.57
3:B:322:SER:O	3:B:326:ILE:HG12	2.03	0.57
3:C:216:TRP:O	3:C:217:ASN:HB2	2.05	0.57
3:B:339:GLN:HB3	4:B:1056:HOH:O	2.04	0.57
3:A:395:PHE:CB	3:A:591:GLN:HG3	2.26	0.57
3:B:219:GLU:HG2	3:B:262:ILE:HG23	1.86	0.56
3:D:359:PHE:O	3:D:361:PRO:HD3	2.05	0.56
3:B:178:VAL:HB	3:B:179:PRO:HA	1.86	0.56
3:D:236:GLU:HA	3:D:239:ALA:HB3	1.88	0.56
3:D:664:ASP:O	3:D:668:ARG:HG3	2.05	0.56
3:A:408:MET:HE1	3:A:655:ALA:HB2	1.86	0.56
3:B:279:LYS:HE3	3:B:280:PHE:CZ	2.39	0.56
3:D:698:ILE:O	3:D:753:LEU:HA	2.05	0.56
3:D:405:LYS:O	3:D:699:GLY:HA3	2.05	0.56
2:J:101:DG:H2'	2:J:102:DC:C6	2.41	0.56
3:C:302:LYS:HG2	3:C:330:ARG:HH12	1.71	0.56
3:C:159:VAL:HG21	3:C:317:HIS:CD2	2.40	0.56
3:B:897:LEU:HD12	3:D:636:VAL:HG11	1.88	0.56
3:D:696:LYS:O	3:D:756:GLY:HA2	2.05	0.56
1:E:18:DG:H3'	1:E:18:DG:OP1	2.06	0.56
3:A:402:ASN:HA	3:A:886:ALA:O	2.06	0.56
3:D:545:ALA:HB1	4:D:923:HOH:O	2.04	0.56
1:I:7:DA:H2'	1:I:8:DT:H72	1.88	0.56
3:A:51:ASP:HA	3:A:379:VAL:HG22	1.87	0.56
3:A:362:ILE:HD11	3:A:569:ALA:HA	1.88	0.56
2:J:111:DT:H2''	2:J:112:DA:H8	1.71	0.56
3:C:507:ASN:HD22	3:C:507:ASN:N	2.04	0.56
3:C:481:GLN:HE21	3:C:559:ARG:HE	1.53	0.56
4:K:596:HOH:O	3:D:800:LYS:HG3	2.06	0.56
3:A:112:ASN:HB3	4:A:1119:HOH:O	2.05	0.55
3:D:597:ILE:O	3:D:601:VAL:HG23	2.06	0.55
3:D:856:ASP:HA	3:D:859:LYS:HG2	1.88	0.55
3:A:159:VAL:HG21	3:A:317:HIS:CD2	2.42	0.55
3:A:249:ARG:HB3	3:A:264:THR:HG23	1.89	0.55
3:B:326:ILE:O	3:B:330:ARG:HG2	2.06	0.55
3:D:805:ILE:HA	3:D:808:ILE:HD12	1.88	0.55
3:C:148:VAL:HG23	3:C:188:TYR:HA	1.88	0.55
3:A:202:LEU:CD1	3:A:242:LEU:HD13	2.36	0.55
3:A:249:ARG:HH11	3:A:251:LYS:HE2	1.71	0.55
3:D:272:ASP:OD1	3:D:274:ILE:HG22	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:109:DC:H2''	2:H:110:DA:H5'	1.89	0.55
3:C:303:LEU:HB2	3:C:323:TYR:OH	2.07	0.55
3:C:61:LEU:N	4:C:1100:HOH:O	2.39	0.55
3:D:109:ARG:HB3	3:D:211:VAL:HG23	1.87	0.55
1:G:8:DT:H2'	1:G:9:DG:C8	2.42	0.55
3:A:654:PHE:O	3:A:658:ARG:HB2	2.07	0.55
3:D:206:GLN:HE22	3:D:241:ARG:HE	1.55	0.55
3:D:426:SER:OG	3:D:427:PRO:HD2	2.07	0.55
3:B:336:ALA:CB	3:B:337:LYS:HE3	2.37	0.55
3:D:250:VAL:HG12	3:D:263:ILE:HD12	1.89	0.55
3:A:482:ARG:HE	3:A:556:GLN:HE21	1.54	0.54
3:A:223:ILE:HB	3:A:224:PRO:HD3	1.89	0.54
3:A:732:THR:HG22	3:A:745:LEU:HB3	1.87	0.54
3:C:475:ILE:HG12	3:C:566:LEU:HD12	1.90	0.54
3:A:482:ARG:HE	3:A:556:GLN:HG2	1.72	0.54
3:A:779:ILE:O	3:A:871:LEU:HD21	2.07	0.54
2:F:103:DG:H2''	2:F:104:DG:C5'	2.37	0.54
3:A:25:ARG:HD2	4:A:926:HOH:O	2.08	0.54
3:B:2:LYS:HA	4:B:1077:HOH:O	2.07	0.54
3:B:47:THR:HB	4:B:1059:HOH:O	2.08	0.54
3:B:897:LEU:HD23	3:B:897:LEU:N	2.22	0.54
3:C:313:ARG:O	3:C:317:HIS:HB2	2.08	0.54
3:D:66:ARG:HH21	3:D:70:GLN:NE2	2.05	0.54
3:A:555:ALA:O	3:A:559:ARG:HG2	2.08	0.54
3:A:822:PRO:HD2	3:A:855:THR:HB	1.88	0.54
3:D:229:ARG:NE	3:D:233:ILE:HD11	2.22	0.54
3:D:509:SER:HA	3:D:534:SER:HB3	1.89	0.54
1:G:15:DC:H5''	4:G:515:HOH:O	2.08	0.54
3:D:151:LEU:HD23	3:D:152:LEU:N	2.22	0.54
3:D:4:PHE:HB3	3:D:101:ILE:HG21	1.90	0.54
3:D:216:TRP:H	3:D:218:VAL:HG13	1.73	0.54
3:D:364:THR:O	3:D:368:ILE:HG13	2.08	0.54
3:A:542:LEU:O	3:A:546:GLN:HG3	2.07	0.54
3:B:26:GLU:O	3:B:27:ARG:HG2	2.08	0.54
3:B:516:VAL:HG11	3:B:526:ILE:HD13	1.89	0.54
3:A:222:ALA:O	3:A:226:VAL:HG23	2.08	0.54
3:A:98:ASN:HB3	4:A:1126:HOH:O	2.07	0.54
3:C:469:GLY:C	3:C:472:PRO:HD2	2.29	0.54
1:K:2:DG:C3'	1:K:3:3DR:H5'	2.38	0.54
2:J:105:DC:P	4:J:206:HOH:O	2.66	0.53
2:L:105:DC:H2'	2:L:106:DT:H72	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:112:DA:H2''	2:F:113:DA:O4'	2.08	0.53
2:H:105:DC:H2'	2:H:106:DT:C7	2.39	0.53
3:D:368:ILE:HD13	3:D:562:LEU:HD21	1.91	0.53
3:D:441:ASP:HB3	3:D:447:ALA:HB2	1.90	0.53
3:C:438:PRO:HD2	3:C:441:ASP:OD1	2.08	0.53
3:D:182:ILE:O	3:D:186:ILE:HG13	2.08	0.53
3:B:326:ILE:CG2	3:B:330:ARG:HE	2.22	0.53
3:C:354:GLN:HB3	3:C:356:GLN:NE2	2.23	0.53
3:D:241:ARG:HA	3:D:241:ARG:CZ	2.39	0.53
1:E:6:DT:H2''	1:E:7:DA:O5'	2.08	0.53
3:B:472:PRO:O	3:B:475:ILE:HG22	2.08	0.53
3:A:284:ASN:HA	3:A:288:TYR:OH	2.08	0.53
3:A:731:GLU:H	3:A:731:GLU:CD	2.10	0.53
3:B:478:VAL:HG13	3:B:559:ARG:HD2	1.90	0.52
3:B:731:GLU:HG3	3:B:879:PRO:CB	2.39	0.52
3:C:299:ASN:HB3	4:C:927:HOH:O	2.07	0.52
3:C:475:ILE:CG1	3:C:566:LEU:HD12	2.38	0.52
3:D:397:LYS:O	3:D:399:PRO:HD3	2.09	0.52
3:D:422:GLN:NE2	3:D:681:MET:HG2	2.18	0.52
3:B:250:VAL:HA	3:B:263:ILE:HG22	1.90	0.52
3:C:27:ARG:HB3	3:C:27:ARG:HH11	1.74	0.52
3:C:471:VAL:HB	3:C:472:PRO:HD3	1.91	0.52
3:C:516:VAL:CG1	3:C:526:ILE:HD13	2.39	0.52
3:A:507:ASN:HD22	3:A:532:LYS:HA	1.74	0.52
3:A:839:ASN:ND2	3:A:841:PHE:HB2	2.24	0.52
3:B:333:GLN:O	3:B:337:LYS:HG2	2.08	0.52
3:A:101:ILE:HD11	3:A:349:TYR:O	2.09	0.52
3:A:338:ARG:HB3	3:A:340:PHE:CE1	2.44	0.52
3:B:219:GLU:HA	3:B:223:ILE:HD12	1.90	0.52
3:B:514:LEU:HD13	3:B:526:ILE:HG23	1.90	0.52
3:A:245:HIS:HE1	4:A:938:HOH:O	1.92	0.52
3:A:285:GLN:HB3	3:A:292:TYR:HE2	1.75	0.52
3:B:145:ARG:HD2	3:B:187:ILE:HD11	1.91	0.52
3:B:294:SER:O	3:B:298:LEU:HB2	2.10	0.52
3:C:874:LYS:HB2	4:C:1151:HOH:O	2.07	0.52
3:D:271:LEU:HD11	3:D:355:ILE:HG22	1.90	0.52
3:C:738:PRO:HB3	3:C:780:ALA:O	2.10	0.52
3:D:194:GLU:HG2	3:D:229:ARG:NH2	2.15	0.52
3:D:656:ARG:HA	3:D:660:GLU:HG3	1.91	0.52
3:A:609:CYS:HA	3:A:635:LYS:HE3	1.91	0.52
3:B:755:GLU:HB3	3:B:759:SER:HB3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:221:PHE:O	3:C:224:PRO:HD2	2.10	0.52
3:C:642:ARG:HH11	3:C:646:HIS:CD2	2.27	0.52
3:C:78:ILE:CD1	3:C:80:LEU:HD23	2.39	0.52
3:B:491:ALA:HA	3:B:494:ARG:HH11	1.73	0.52
3:C:81:GLU:HG2	3:C:83:LEU:HD11	1.91	0.52
3:D:36:SER:HB3	3:D:59:ARG:HD3	1.92	0.52
3:D:594:LEU:O	3:D:597:ILE:HG22	2.09	0.52
3:C:495:ASN:ND2	3:C:522:PHE:H	2.05	0.52
3:D:167:ALA:HB2	3:D:318:GLN:HE22	1.74	0.52
3:A:566:LEU:O	3:A:570:LEU:HD23	2.10	0.51
3:B:441:ASP:HB3	3:B:447:ALA:HB2	1.91	0.51
3:D:148:VAL:HG21	3:D:325:ILE:HD11	1.93	0.51
3:D:403:ARG:HD2	3:D:887:ALA:O	2.10	0.51
3:B:316:ASN:C	3:B:318:GLN:H	2.14	0.51
1:E:15:DC:H2''	1:E:16:DG:O5'	2.09	0.51
3:D:793:VAL:HG22	3:D:796:PHE:O	2.10	0.51
3:D:863:LEU:HD22	3:D:863:LEU:H	1.74	0.51
3:B:700:GLY:HA3	3:B:710:LEU:HD23	1.92	0.51
3:B:818:ASN:HD21	3:B:857:LEU:HD11	1.74	0.51
3:A:556:GLN:NE2	3:A:557:ILE:HD13	2.26	0.51
3:D:109:ARG:NH1	3:D:142:ILE:HD11	2.25	0.51
3:A:356:GLN:NE2	3:A:356:GLN:H	2.08	0.51
3:B:163:SER:H	3:B:318:GLN:HE21	1.57	0.51
3:C:760:LEU:HD13	3:C:891:TYR:HA	1.92	0.51
3:D:802:PRO:HD2	3:D:805:ILE:HG13	1.92	0.51
2:H:114:DG:H2''	2:H:115:DA:C8	2.46	0.51
2:J:113:DA:H2''	2:J:114:DG:H5''	1.93	0.51
3:C:284:ASN:HD21	3:C:829:LYS:NZ	2.07	0.51
3:D:475:ILE:O	3:D:475:ILE:HD13	2.10	0.51
3:B:560:LYS:NZ	4:B:1071:HOH:O	2.36	0.51
3:D:517:ASP:OD2	3:D:519:ARG:HB2	2.09	0.51
3:A:698:ILE:O	3:A:698:ILE:CG1	2.54	0.51
3:C:221:PHE:C	3:C:224:PRO:HD2	2.31	0.51
3:D:132:PRO:HG2	4:D:920:HOH:O	2.09	0.51
1:G:7:DA:H2'	1:G:8:DT:H72	1.93	0.51
3:A:730:LEU:HD22	3:A:883:PHE:CE1	2.46	0.50
3:B:356:GLN:O	3:B:357:SER:HB2	2.11	0.50
3:B:450:PRO:HG2	4:B:965:HOH:O	2.09	0.50
3:C:451:SER:HB3	3:C:456:CYS:SG	2.51	0.50
3:C:179:PRO:HB3	3:C:181:GLU:OE1	2.10	0.50
3:C:555:ALA:O	3:C:559:ARG:HG2	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:273:TYR:OH	3:D:335:ASP:HA	2.10	0.50
3:B:731:GLU:HG3	3:B:879:PRO:HB3	1.93	0.50
3:C:645:ASN:ND2	3:C:719:ARG:HH11	2.09	0.50
3:A:482:ARG:HG2	3:A:482:ARG:HH11	1.76	0.50
3:B:313:ARG:HG2	3:B:313:ARG:HH11	1.77	0.50
3:D:277:TYR:O	3:D:281:SER:HB2	2.12	0.50
3:D:47:THR:HG21	3:D:57:CYS:H	1.75	0.50
3:D:637:GLY:O	3:D:640:LYS:HB2	2.11	0.50
3:D:72:ILE:HG22	3:D:76:GLU:OE2	2.11	0.50
3:A:412:LEU:HG	3:A:683:MET:HG2	1.93	0.50
3:C:424:ASN:HD22	3:C:472:PRO:HG2	1.77	0.50
3:D:197:LEU:O	3:D:197:LEU:HD23	2.12	0.50
3:D:439:LEU:O	3:D:443:ILE:HG13	2.12	0.50
3:D:508:LEU:N	3:D:508:LEU:HD22	2.27	0.50
3:D:7:THR:HG22	3:D:18:ARG:HB2	1.92	0.50
2:H:109:DC:H2''	2:H:110:DA:C5'	2.42	0.50
3:B:499:ILE:HA	3:B:530:ILE:CD1	2.37	0.50
3:C:726:LYS:HE3	4:C:1054:HOH:O	2.12	0.50
3:A:517:ASP:OD2	3:A:519:ARG:HB2	2.11	0.50
3:C:171:GLN:HE22	3:C:303:LEU:HB3	1.77	0.50
3:D:863:LEU:N	3:D:863:LEU:HD22	2.27	0.50
2:H:102:DC:H2''	2:H:103:DG:C8	2.46	0.50
3:A:221:PHE:O	3:A:224:PRO:HD2	2.12	0.50
3:C:496:GLY:O	3:C:500:LYS:HG2	2.12	0.50
3:D:109:ARG:HD2	3:D:209:THR:O	2.12	0.50
3:D:330:ARG:O	3:D:334:ILE:HG13	2.12	0.50
3:D:458:PRO:HG3	3:D:592:MET:SD	2.51	0.50
1:K:11:DC:H4'	3:D:803:PHE:HB2	1.94	0.50
2:F:108:DT:H2''	2:F:109:DC:O5'	2.12	0.50
3:A:48:LYS:HZ1	3:A:377:ASN:ND2	2.10	0.50
3:B:356:GLN:C	3:B:358:VAL:H	2.14	0.50
3:C:302:LYS:HD2	3:C:326:ILE:HD13	1.93	0.50
3:D:542:LEU:O	3:D:546:GLN:HG3	2.11	0.50
3:B:273:TYR:HA	3:B:276:LEU:HB2	1.94	0.49
3:B:660:GLU:HB3	3:B:661:PRO:HD3	1.93	0.49
3:B:159:VAL:HG13	3:B:313:ARG:HH12	1.78	0.49
2:J:112:DA:H2''	2:J:113:DA:H5'	1.94	0.49
3:D:411:ASP:HB2	3:D:686:GLU:OE1	2.11	0.49
3:C:191:PHE:CD2	3:C:196:GLU:HG3	2.46	0.49
3:D:422:GLN:HG3	3:D:678:GLN:O	2.13	0.49
3:B:483:LYS:NZ	3:B:483:LYS:HB3	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:555:ALA:O	3:B:559:ARG:HG2	2.13	0.49
3:C:300:VAL:HG13	3:C:300:VAL:O	2.11	0.49
3:C:322:SER:O	3:C:326:ILE:HG23	2.12	0.49
3:C:362:ILE:HD13	3:C:569:ALA:HB1	1.95	0.49
2:H:112:DA:C2'	2:H:113:DA:H5'	2.41	0.49
3:A:481:GLN:HE21	3:A:559:ARG:NE	2.07	0.49
3:D:145:ARG:HG2	3:D:187:ILE:HD11	1.93	0.49
3:D:831:TYR:CD1	3:D:850:SER:HA	2.48	0.49
3:B:707:ARG:HD2	4:B:1050:HOH:O	2.12	0.49
3:D:165:GLU:CD	3:D:165:GLU:H	2.15	0.49
3:D:469:GLY:C	3:D:472:PRO:HD2	2.33	0.49
3:A:101:ILE:HG12	4:A:1047:HOH:O	2.12	0.49
3:D:222:ALA:O	3:D:226:VAL:HG23	2.11	0.49
3:D:633:ILE:HG13	3:D:651:LEU:HD21	1.94	0.49
3:D:71:TRP:O	3:D:75:MET:HG2	2.12	0.49
3:A:731:GLU:HG3	3:A:879:PRO:CB	2.43	0.49
3:D:191:PHE:HB2	3:D:197:LEU:HD12	1.94	0.49
1:E:12:DA:H2''	1:E:13:DG:O5'	2.13	0.49
3:A:856:ASP:O	3:A:857:LEU:HB2	2.13	0.49
3:B:405:LYS:HA	3:B:698:ILE:O	2.12	0.49
3:C:488:TYR:CD1	3:C:519:ARG:HB3	2.48	0.49
3:B:303:LEU:H	3:B:303:LEU:HD22	1.78	0.48
3:B:458:PRO:HG3	3:B:592:MET:SD	2.52	0.48
3:D:204:PHE:HE1	3:D:208:LYS:HD2	1.78	0.48
3:D:313:ARG:HD3	3:D:320:TYR:CE2	2.48	0.48
3:D:509:SER:HA	3:D:534:SER:CB	2.43	0.48
3:D:362:ILE:HD11	3:D:572:ASN:HD22	1.78	0.48
3:D:727:ILE:HG23	3:D:730:LEU:HD12	1.95	0.48
3:A:530:ILE:HA	3:A:533:LEU:HD13	1.95	0.48
3:B:372:SER:O	3:B:375:GLU:HG2	2.13	0.48
3:C:453:VAL:HG23	3:C:454:TYR:CG	2.48	0.48
1:K:14:DC:H2''	1:K:15:DC:O5'	2.14	0.48
3:A:405:LYS:O	3:A:690:GLY:HA2	2.14	0.48
3:D:137:THR:HG21	3:D:325:ILE:HA	1.95	0.48
3:A:757:GLU:HB2	3:A:889:LEU:HD22	1.93	0.48
3:C:361:PRO:HG3	4:C:1143:HOH:O	2.12	0.48
3:A:362:ILE:CD1	3:A:569:ALA:HA	2.43	0.48
3:D:813:ARG:NH2	3:D:842:GLY:HA3	2.28	0.48
1:G:2:DG:H5'	1:G:3:3DR:H5'	1.95	0.48
2:F:115:DA:H62	3:A:282:PHE:HE2	1.62	0.48
3:C:11:ILE:HD12	3:C:16:PHE:CD2	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:3:3DR:H2''	1:G:4:DC:O4'	2.13	0.48
3:A:802:PRO:HG2	3:A:805:ILE:HD12	1.94	0.48
3:B:193:ASN:ND2	3:B:196:GLU:H	2.12	0.48
3:B:355:ILE:C	3:B:356:GLN:O	2.51	0.48
3:D:102:LYS:O	3:D:102:LYS:HD3	2.14	0.48
1:G:10:DA:H1'	1:G:11:DC:H5'	1.94	0.48
2:L:102:DC:H2''	2:L:103:DG:C8	2.49	0.48
3:A:902:ASP:O	3:A:903:PHE:HB2	2.14	0.48
3:D:219:GLU:HG2	3:D:219:GLU:O	2.14	0.48
3:D:300:VAL:O	3:D:300:VAL:HG13	2.14	0.48
3:B:124:PRO:HB2	3:B:225:TYR:CE1	2.47	0.48
3:B:554:THR:O	3:B:557:ILE:HG22	2.14	0.48
3:C:52:ILE:HB	3:C:428:GLU:HG2	1.95	0.48
3:D:450:PRO:HB2	3:D:456:CYS:SG	2.53	0.48
3:B:401:PRO:O	3:B:402:ASN:HB2	2.13	0.48
3:B:45:GLN:HG3	3:B:45:GLN:O	2.14	0.48
3:C:12:GLY:O	3:C:13:ASP:HB2	2.13	0.48
3:D:750:ARG:HG3	3:D:754:GLN:NE2	2.29	0.48
3:C:382:GLN:HG2	3:C:383:GLY:N	2.28	0.47
3:C:495:ASN:HD21	3:C:522:PHE:N	2.04	0.47
3:D:402:ASN:ND2	3:D:403:ARG:N	2.59	0.47
3:D:503:LEU:HG	3:D:538:LEU:HB3	1.95	0.47
2:H:108:DT:H5''	4:H:575:HOH:O	2.13	0.47
1:K:13:DG:H2''	1:K:14:DC:C6	2.48	0.47
3:B:354:GLN:HG3	4:B:907:HOH:O	2.14	0.47
4:K:745:HOH:O	3:D:361:PRO:HD2	2.14	0.47
3:D:41:CYS:CB	3:D:45:GLN:HG3	2.43	0.47
3:D:481:GLN:HB3	3:D:559:ARG:HE	1.79	0.47
3:D:38:PHE:CZ	3:D:59:ARG:HG2	2.48	0.47
3:D:61:LEU:HD23	3:D:62:PHE:N	2.29	0.47
1:E:4:DC:H2'	1:E:5:DT:H71	1.96	0.47
3:B:164:ILE:HG23	3:B:165:GLU:OE1	2.14	0.47
3:B:277:TYR:O	3:B:281:SER:HB2	2.15	0.47
3:B:660:GLU:CB	3:B:661:PRO:HD3	2.44	0.47
2:H:110:DA:H2'	2:H:111:DT:H71	1.96	0.47
3:A:369:ILE:HG12	3:A:474:GLU:HG2	1.96	0.47
3:B:164:ILE:HG13	3:B:183:ILE:HD11	1.96	0.47
3:C:202:LEU:O	3:C:206:GLN:HG2	2.14	0.47
3:D:52:ILE:HD12	3:D:428:GLU:HG3	1.96	0.47
3:D:484:GLU:HG2	4:D:927:HOH:O	2.15	0.47
3:A:415:LEU:HD22	3:A:623:ASP:HB3	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:27:ARG:NH1	3:C:27:ARG:HB3	2.30	0.47
2:H:112:DA:H2"	2:H:113:DA:H5"	1.97	0.47
3:B:355:ILE:O	3:B:356:GLN:O	2.32	0.47
3:B:529:LYS:O	3:B:533:LEU:HG	2.15	0.47
3:C:20:ILE:HD13	3:C:26:GLU:HA	1.97	0.47
3:C:137:THR:OG1	3:C:324:ASN:ND2	2.48	0.47
3:C:362:ILE:HD12	3:C:575:PHE:HB2	1.96	0.47
3:C:402:ASN:HA	3:C:886:ALA:O	2.14	0.47
3:D:362:ILE:HD11	3:D:572:ASN:ND2	2.29	0.47
3:D:423:VAL:HB	3:D:425:ILE:HG13	1.96	0.47
2:J:105:DC:H2'	2:J:106:DT:C6	2.50	0.47
3:B:272:ASP:OD1	3:B:274:ILE:HG22	2.15	0.47
3:D:455:SER:OG	3:D:676:ASN:HA	2.13	0.47
1:K:10:DA:OP1	3:D:878:LYS:HG2	2.14	0.47
3:C:731:GLU:CD	3:C:731:GLU:H	2.17	0.47
3:D:18:ARG:HH12	3:D:209:THR:HB	1.80	0.47
3:D:819:ILE:HG22	3:D:820:ASP:N	2.23	0.47
2:F:113:DA:H2'	2:F:114:DG:C8	2.50	0.47
3:B:596:TRP:CE2	3:B:670:MET:HB2	2.50	0.47
3:B:351:ALA:O	3:B:352:LYS:HB2	2.14	0.47
3:D:180:SER:O	3:D:183:ILE:HG22	2.14	0.47
3:D:459:ASN:HD22	3:D:459:ASN:N	2.13	0.47
3:D:38:PHE:CE2	3:D:59:ARG:HG2	2.49	0.47
3:D:834:PRO:HD2	3:D:871:LEU:HD13	1.97	0.47
1:G:4:DC:H2'	1:G:5:DT:C6	2.50	0.47
3:C:231:LYS:HG3	3:C:236:GLU:CA	2.42	0.46
1:E:7:DA:H2"	1:E:8:DT:C6	2.51	0.46
3:A:269:SER:OG	3:A:356:GLN:NE2	2.48	0.46
3:C:731:GLU:HA	3:C:734:LYS:HG3	1.98	0.46
3:C:83:LEU:HB3	3:C:379:VAL:HG12	1.97	0.46
3:D:810:THR:HG23	3:D:813:ARG:HH21	1.81	0.46
3:D:52:ILE:HG12	4:D:912:HOH:O	2.15	0.46
3:C:481:GLN:NE2	3:C:559:ARG:HE	2.12	0.46
3:C:660:GLU:CB	3:C:661:PRO:HD3	2.45	0.46
3:D:458:PRO:HG2	3:D:589:PHE:HA	1.96	0.46
1:K:6:DT:O2	3:D:706:LYS:HE3	2.15	0.46
3:D:775:ASN:OD1	3:D:777:ILE:HG13	2.14	0.46
3:B:151:LEU:HD23	3:B:152:LEU:N	2.30	0.46
3:B:252:VAL:HG12	3:B:252:VAL:O	2.16	0.46
3:B:362:ILE:HD11	3:B:572:ASN:HB3	1.98	0.46
3:B:52:ILE:HD12	3:B:428:GLU:CG	2.44	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:303:LEU:CD2	3:C:303:LEU:H	2.23	0.46
3:D:281:SER:OG	3:D:283:THR:HG22	2.14	0.46
3:D:159:VAL:HB	3:D:317:HIS:CD2	2.51	0.46
3:D:412:LEU:HD13	3:D:415:LEU:HD13	1.98	0.46
1:K:4:DC:H2'	1:K:5:DT:C6	2.51	0.46
3:A:263:ILE:N	3:A:263:ILE:HD12	2.31	0.46
3:A:247:LYS:HG3	3:A:266:PHE:CD1	2.50	0.46
3:A:494:ARG:HD2	3:A:521:ASP:OD1	2.16	0.46
3:B:633:ILE:O	3:B:636:VAL:HG22	2.15	0.46
3:C:458:PRO:HG3	3:C:592:MET:SD	2.55	0.46
3:C:284:ASN:ND2	3:C:829:LYS:HZ2	2.12	0.46
3:D:191:PHE:HZ	3:D:200:GLU:HG2	1.81	0.46
3:A:241:ARG:NE	4:A:1105:HOH:O	2.49	0.46
3:A:566:LEU:HD13	3:A:570:LEU:HD23	1.98	0.46
3:B:514:LEU:HB2	3:B:541:MET:HE3	1.97	0.46
3:B:791:TYR:CD2	3:B:801:CYS:HA	2.50	0.46
3:C:170:LEU:HD23	4:C:1112:HOH:O	2.15	0.46
3:C:594:LEU:HD22	3:C:622:THR:O	2.16	0.46
3:D:391:TYR:HB2	3:D:392:PRO:HD2	1.97	0.46
3:D:512:GLU:CG	3:D:513:PRO:HD2	2.44	0.46
3:A:206:GLN:HE21	3:A:241:ARG:HE	1.63	0.46
3:B:494:ARG:HG3	3:B:495:ASN:N	2.30	0.46
3:B:568:GLY:HA3	4:B:1016:HOH:O	2.16	0.46
3:D:41:CYS:SG	3:D:45:GLN:HG3	2.56	0.46
3:A:129:ALA:HA	3:A:225:TYR:CE1	2.51	0.46
3:A:811:TYR:O	3:A:815:ILE:HG12	2.16	0.46
3:C:893:LYS:HE3	4:C:1134:HOH:O	2.16	0.46
3:D:206:GLN:NE2	3:D:241:ARG:HE	2.13	0.46
3:D:430:ILE:HG22	4:D:936:HOH:O	2.16	0.46
3:D:807:GLY:HA2	3:D:845:CYS:O	2.15	0.46
1:K:13:DG:H2''	1:K:14:DC:H6	1.81	0.46
3:D:453:VAL:HG23	3:D:454:TYR:CD2	2.51	0.46
1:K:10:DA:H2''	1:K:11:DC:O5'	2.15	0.46
3:A:636:VAL:O	3:A:636:VAL:HG12	2.16	0.45
3:A:86:ASP:OD1	3:A:86:ASP:N	2.49	0.45
3:D:544:ARG:HH11	3:D:544:ARG:HG3	1.81	0.45
1:G:6:DT:C3'	1:G:7:DA:H5''	2.46	0.45
3:A:352:LYS:CE	4:A:1069:HOH:O	2.63	0.45
3:D:145:ARG:HG3	3:D:185:LYS:O	2.17	0.45
3:D:34:LYS:HG3	3:D:64:ASN:HA	1.98	0.45
3:D:516:VAL:HG11	3:D:526:ILE:CG2	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:625:ILE:O	3:D:625:ILE:HG13	2.16	0.45
2:J:113:DA:H2'	4:J:629:HOH:O	2.17	0.45
3:B:180:SER:O	3:B:183:ILE:HG22	2.16	0.45
3:B:231:LYS:HG3	3:B:236:GLU:CA	2.43	0.45
3:B:471:VAL:N	3:B:472:PRO:HD2	2.31	0.45
3:D:644:THR:O	3:D:648:VAL:HG23	2.17	0.45
3:D:398:GLU:HA	3:D:705:LYS:HE2	1.98	0.45
3:A:533:LEU:HB3	3:A:537:SER:OG	2.16	0.45
3:B:494:ARG:HG3	3:B:495:ASN:ND2	2.32	0.45
3:C:149:PHE:N	3:C:149:PHE:CD1	2.84	0.45
3:C:558:ASN:HD22	3:C:558:ASN:HA	1.66	0.45
3:D:295:GLU:CG	3:D:301:GLY:HA2	2.42	0.45
3:D:451:SER:HB3	3:D:456:CYS:SG	2.56	0.45
3:D:422:GLN:NE2	3:D:680:LEU:H	2.13	0.45
3:B:251:LYS:HG3	3:B:252:VAL:H	1.82	0.45
3:D:429:THR:O	3:D:464:TYR:HD1	1.99	0.45
2:F:104:DG:H2''	2:F:105:DC:O5'	2.15	0.45
1:G:6:DT:C2'	1:G:7:DA:C5'	2.80	0.45
3:D:439:LEU:HD11	3:D:592:MET:HB2	1.98	0.45
3:D:738:PRO:HB3	3:D:780:ALA:C	2.36	0.45
3:D:738:PRO:HB3	3:D:780:ALA:O	2.17	0.45
2:H:103:DG:H2''	2:H:104:DG:C5'	2.40	0.45
3:B:684:ASP:HB2	4:B:1051:HOH:O	2.16	0.45
3:B:771:PHE:CE2	3:B:872:LEU:HB2	2.52	0.45
3:D:85:MET:HG2	3:D:91:ALA:HB2	1.99	0.45
3:A:745:LEU:HD13	3:A:876:PHE:CD1	2.52	0.45
3:B:573:VAL:HG13	4:B:989:HOH:O	2.16	0.45
3:B:749:ILE:O	3:B:753:LEU:HG	2.17	0.45
3:D:365:TRP:CE2	3:D:566:LEU:HD23	2.52	0.45
3:D:433:THR:CG2	3:D:461:MET:HE1	2.47	0.45
3:D:800:LYS:N	3:D:800:LYS:HD2	2.32	0.45
3:A:802:PRO:CG	3:A:805:ILE:HD12	2.48	0.45
3:B:273:TYR:HE2	3:B:341:ILE:HG12	1.82	0.45
3:C:405:LYS:O	3:C:690:GLY:HA2	2.17	0.45
3:D:278:LYS:HG2	3:D:288:TYR:CE2	2.52	0.45
3:D:830:VAL:HG22	3:D:831:TYR:N	2.31	0.45
1:I:7:DA:H2'	1:I:8:DT:C7	2.46	0.45
3:B:104:ASP:OD1	3:B:106:THR:OG1	2.31	0.44
3:B:119:SER:HB2	3:B:124:PRO:HB3	1.99	0.44
3:B:339:GLN:HB2	4:B:1092:HOH:O	2.16	0.44
3:B:472:PRO:HA	3:B:475:ILE:HG22	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:546:GLN:O	3:B:550:VAL:HG23	2.16	0.44
3:C:302:LYS:CG	3:C:330:ARG:HH12	2.28	0.44
3:D:112:ASN:HB3	3:D:214:THR:CG2	2.38	0.44
3:D:655:ALA:O	3:D:660:GLU:HG3	2.17	0.44
2:L:111:DT:H2''	2:L:112:DA:C8	2.52	0.44
3:A:231:LYS:O	3:A:234:PHE:O	2.35	0.44
3:A:653:LYS:HD3	4:A:1043:HOH:O	2.17	0.44
3:D:4:PHE:HB3	3:D:101:ILE:CG2	2.48	0.44
2:H:113:DA:H5'	4:H:758:HOH:O	2.15	0.44
1:K:13:DG:H2''	1:K:14:DC:O5'	2.15	0.44
2:L:108:DT:H2''	2:L:109:DC:O5'	2.17	0.44
3:B:3:GLU:HG3	3:B:20:ILE:O	2.18	0.44
3:C:130:LYS:HG3	3:C:131:HIS:N	2.31	0.44
3:D:20:ILE:HD11	3:D:24:GLY:HA2	1.99	0.44
3:D:486:LYS:O	3:D:490:LEU:HG	2.18	0.44
1:I:7:DA:H2''	1:I:8:DT:C6	2.53	0.44
1:K:6:DT:H2''	1:K:7:DA:O5'	2.18	0.44
2:L:114:DG:H2''	2:L:115:DA:O5'	2.17	0.44
3:A:745:LEU:HD12	3:A:745:LEU:HA	1.83	0.44
3:D:109:ARG:HH12	3:D:142:ILE:HD11	1.83	0.44
3:D:6:LEU:HB2	3:D:18:ARG:O	2.17	0.44
3:D:779:ILE:O	3:D:871:LEU:HD21	2.17	0.44
2:F:105:DC:H2'	2:F:106:DT:H72	1.99	0.44
3:A:506:PRO:HG3	4:A:1153:HOH:O	2.16	0.44
3:A:698:ILE:HG12	3:A:752:MET:O	2.17	0.44
3:B:6:LEU:CD1	3:B:26:GLU:HG3	2.48	0.44
3:C:125:GLU:HG3	4:C:1142:HOH:O	2.17	0.44
3:D:163:SER:HB3	3:D:165:GLU:OE1	2.17	0.44
3:D:566:LEU:C	3:D:566:LEU:HD13	2.37	0.44
3:D:652:ASP:OD1	3:D:656:ARG:NH1	2.46	0.44
2:L:101:DG:H2''	2:L:102:DC:C6	2.53	0.44
3:B:876:PHE:O	3:B:879:PRO:HG2	2.18	0.44
3:C:818:ASN:ND2	3:C:857:LEU:HD11	2.32	0.44
3:D:841:PHE:CZ	3:D:862:VAL:HG22	2.52	0.44
2:F:113:DA:H3'	2:F:114:DG:C5'	2.45	0.44
3:A:277:TYR:C	3:A:279:LYS:H	2.20	0.44
3:A:101:ILE:HD12	3:A:349:TYR:HD1	1.83	0.44
3:B:326:ILE:HG23	3:B:330:ARG:HE	1.81	0.44
3:C:197:LEU:C	3:C:197:LEU:HD23	2.38	0.44
2:L:115:DA:H2''	3:D:567:TYR:HD2	1.82	0.44
3:A:322:SER:O	3:A:326:ILE:HG12	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:338:ARG:HB3	3:A:340:PHE:CD1	2.53	0.44
3:C:512:GLU:HB3	3:C:513:PRO:HD2	1.99	0.44
3:D:40:HIS:ND1	3:D:83:LEU:HD11	2.32	0.44
3:D:731:GLU:HG3	3:D:879:PRO:CB	2.46	0.44
3:D:844:LYS:N	3:D:844:LYS:HD3	2.33	0.44
3:A:660:GLU:HB2	3:A:661:PRO:HD3	1.99	0.44
3:B:594:LEU:O	3:B:597:ILE:HG22	2.18	0.44
3:B:811:TYR:O	3:B:815:ILE:HG12	2.17	0.44
3:D:525:GLU:O	3:D:529:LYS:HG3	2.17	0.44
3:D:63:ALA:HB3	3:D:66:ARG:HG2	1.99	0.44
3:D:783:SER:O	3:D:829:LYS:HB3	2.17	0.44
1:E:14:DC:H2'	1:E:15:DC:C5	2.53	0.44
3:A:48:LYS:NZ	3:A:377:ASN:CG	2.71	0.43
3:B:858:ILE:O	3:B:862:VAL:HG23	2.17	0.43
3:D:178:VAL:HG11	3:D:186:ILE:HD11	1.99	0.43
1:E:8:DT:H4'	3:A:707:ARG:CD	2.47	0.43
1:G:10:DA:H2''	1:G:11:DC:O5'	2.18	0.43
1:G:16:DG:H2''	1:G:17:DC:O5'	2.18	0.43
1:G:7:DA:H2'	1:G:8:DT:C7	2.48	0.43
3:A:36:SER:O	3:A:37:LEU:HD23	2.18	0.43
3:A:85:MET:HE3	3:A:576:ARG:NH2	2.33	0.43
3:B:42:PRO:HG2	3:B:45:GLN:HG2	2.00	0.43
3:C:186:ILE:HG23	4:C:1125:HOH:O	2.18	0.43
3:C:251:LYS:HB2	3:C:262:ILE:HG13	1.99	0.43
3:C:380:ILE:HD12	3:C:576:ARG:NE	2.32	0.43
3:C:10:GLN:HG3	3:C:65:MET:CE	2.48	0.43
3:D:495:ASN:O	3:D:499:ILE:HG13	2.18	0.43
3:D:530:ILE:O	3:D:533:LEU:HB2	2.18	0.43
3:D:597:ILE:HD11	3:D:663:ILE:HG23	2.00	0.43
3:D:14:SER:HA	3:D:65:MET:HG2	1.99	0.43
3:B:245:HIS:O	3:B:247:LYS:HG2	2.18	0.43
3:D:151:LEU:HD23	3:D:153:ASN:H	1.82	0.43
3:D:143:ASP:OD2	3:D:208:LYS:HE2	2.16	0.43
3:D:114:ASP:HB3	3:D:328:VAL:HG13	2.00	0.43
3:D:459:ASN:HD22	3:D:459:ASN:H	1.66	0.43
3:D:72:ILE:O	3:D:76:GLU:HG3	2.18	0.43
3:A:730:LEU:HB3	3:A:883:PHE:CZ	2.53	0.43
3:C:81:GLU:HG2	3:C:83:LEU:HD12	1.99	0.43
3:D:117:VAL:HG13	3:D:124:PRO:HG3	2.00	0.43
3:D:221:PHE:O	3:D:225:TYR:HB2	2.19	0.43
3:D:410:PHE:CD2	3:D:685:ARG:HA	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:111:DT:H2''	2:J:112:DA:C8	2.51	0.43
3:A:300:VAL:O	3:A:300:VAL:HG23	2.18	0.43
3:B:410:PHE:HB3	3:B:683:MET:HG2	1.99	0.43
3:B:795:GLY:O	3:B:813:ARG:HD3	2.19	0.43
3:D:160:GLU:HB3	3:D:161:GLU:H	1.62	0.43
1:E:8:DT:H4'	3:A:707:ARG:HD2	2.00	0.43
3:A:249:ARG:HG2	3:A:250:VAL:N	2.33	0.43
3:D:878:LYS:N	3:D:879:PRO:HD2	2.33	0.43
2:H:113:DA:H2''	2:H:114:DG:O5'	2.18	0.43
3:B:111:ALA:HB1	3:B:138:HIS:NE2	2.33	0.43
3:C:205:TRP:HH2	3:C:213:LEU:HD11	1.84	0.43
3:C:461:MET:CE	3:C:581:ARG:HD2	2.49	0.43
3:D:555:ALA:O	3:D:559:ARG:HG2	2.18	0.43
3:B:271:LEU:HB3	3:B:276:LEU:HD11	2.01	0.43
3:B:279:LYS:HE3	3:B:280:PHE:CE2	2.54	0.43
3:C:105:HIS:HA	3:C:108:ILE:HD12	2.01	0.43
3:C:416:TYR:HB2	3:C:417:PRO:HD3	2.00	0.43
3:D:477:LYS:O	3:D:481:GLN:HG3	2.18	0.43
2:H:113:DA:H3'	4:H:758:HOH:O	2.18	0.43
3:A:458:PRO:HG3	3:A:592:MET:SD	2.59	0.43
3:A:596:TRP:CE2	3:A:670:MET:HB2	2.54	0.43
3:A:700:GLY:HA2	3:A:753:LEU:HD22	2.00	0.43
3:B:131:HIS:HB2	3:B:225:TYR:OH	2.19	0.43
3:C:495:ASN:HD21	3:C:521:ASP:HA	1.83	0.43
3:C:532:LYS:N	3:C:532:LYS:HD2	2.34	0.43
3:D:458:PRO:HB2	3:D:588:THR:CG2	2.42	0.43
3:A:214:THR:OG1	3:A:215:GLY:N	2.51	0.43
3:A:405:LYS:HA	4:A:998:HOH:O	2.19	0.43
3:A:494:ARG:O	3:A:498:ILE:HG12	2.19	0.43
3:B:356:GLN:O	3:B:358:VAL:N	2.52	0.43
3:B:830:VAL:HB	3:B:848:TRP:O	2.18	0.43
3:C:262:ILE:O	3:C:262:ILE:HG13	2.19	0.43
3:C:391:TYR:HB2	3:C:392:PRO:HD2	1.99	0.43
3:D:559:ARG:O	3:D:563:ILE:HG13	2.19	0.43
3:A:482:ARG:HG2	3:A:482:ARG:NH1	2.34	0.42
3:B:251:LYS:C	3:B:253:GLY:H	2.22	0.42
3:B:244:PRO:HG2	3:B:267:GLY:HA3	2.01	0.42
3:C:284:ASN:ND2	3:C:829:LYS:NZ	2.66	0.42
3:D:15:ILE:HD13	3:D:15:ILE:C	2.40	0.42
3:D:340:PHE:HD1	3:D:343:LEU:HD12	1.84	0.42
3:D:381:PRO:HG3	4:D:912:HOH:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:456:CYS:HA	3:D:461:MET:O	2.18	0.42
3:D:394:ALA:HB1	3:D:622:THR:HA	2.01	0.42
3:A:129:ALA:HA	3:A:225:TYR:CZ	2.54	0.42
3:A:391:TYR:HB2	3:A:392:PRO:HD2	2.00	0.42
3:B:739:LYS:HD3	3:B:742:GLN:OE1	2.19	0.42
4:K:745:HOH:O	3:D:362:ILE:HG13	2.18	0.42
1:I:6:DT:H2''	1:I:7:DA:H5''	2.01	0.42
1:K:2:DG:H3'	1:K:3:3DR:H5'	2.01	0.42
2:L:104:DG:H2''	2:L:105:DC:O5'	2.19	0.42
2:L:106:DT:H2''	2:L:107:DG:C8	2.54	0.42
3:A:221:PHE:C	3:A:224:PRO:HD2	2.39	0.42
3:B:202:LEU:HD23	3:B:241:ARG:HH21	1.83	0.42
3:B:313:ARG:NH1	3:B:313:ARG:HG2	2.33	0.42
3:B:468:ASP:HB2	4:B:957:HOH:O	2.20	0.42
3:B:422:GLN:HG3	3:B:678:GLN:O	2.20	0.42
3:A:170:LEU:HB2	3:A:173:GLN:HE21	1.84	0.42
3:A:380:ILE:HD12	3:A:576:ARG:CZ	2.49	0.42
3:B:186:ILE:HG22	4:B:1053:HOH:O	2.18	0.42
3:B:806:ARG:HD3	3:B:843:ASP:OD1	2.20	0.42
3:D:102:LYS:HB2	3:D:102:LYS:HZ3	1.83	0.42
3:D:230:ILE:HG23	3:D:234:PHE:CD2	2.51	0.42
3:D:500:LYS:O	3:D:503:LEU:HB2	2.19	0.42
3:A:822:PRO:HA	4:A:1106:HOH:O	2.18	0.42
3:C:449:ARG:HA	3:C:450:PRO:HD2	1.88	0.42
3:D:732:THR:HG22	3:D:745:LEU:HB2	1.99	0.42
3:D:804:HIS:O	3:D:808:ILE:HG13	2.20	0.42
2:H:104:DG:H2''	2:H:105:DC:C5'	2.49	0.42
2:L:107:DG:H2''	2:L:108:DT:O5'	2.20	0.42
3:A:197:LEU:HD23	3:A:197:LEU:C	2.39	0.42
3:A:126:PRO:HB3	3:A:224:PRO:HB2	2.00	0.42
3:A:485:HIS:C	3:A:487:GLY:H	2.21	0.42
3:B:229:ARG:O	3:B:233:ILE:HG13	2.20	0.42
3:D:65:MET:O	3:D:65:MET:HG3	2.19	0.42
1:E:2:DG:OP2	3:A:361:PRO:HD2	2.19	0.42
3:B:494:ARG:O	3:B:498:ILE:HG12	2.19	0.42
3:C:153:ASN:HB2	3:C:192:ASP:O	2.18	0.42
3:A:422:GLN:HE21	3:A:422:GLN:HB2	1.70	0.42
3:C:162:TRP:HB3	3:C:188:TYR:CE1	2.55	0.42
3:D:191:PHE:CZ	3:D:200:GLU:HG2	2.55	0.42
1:E:5:DT:C6	1:E:6:DT:H72	2.54	0.42
2:L:113:DA:H4'	3:D:728:MET:HE2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:653:LYS:HG3	3:B:657:GLU:OE2	2.19	0.42
3:B:856:ASP:HA	3:B:859:LYS:HB2	2.02	0.42
3:C:40:HIS:HE1	3:C:51:ASP:OD2	2.03	0.42
3:D:119:SER:OG	3:D:124:PRO:HD3	2.20	0.42
1:G:8:DT:H2''	1:G:9:DG:H5'	2.00	0.42
1:I:15:DC:P	4:I:440:HOH:O	2.78	0.42
3:A:426:SER:OG	3:A:427:PRO:HD2	2.19	0.42
1:I:6:DT:H2''	1:I:7:DA:C5'	2.50	0.42
3:A:352:LYS:NZ	4:A:1069:HOH:O	2.53	0.41
3:A:803:PHE:CZ	3:A:845:CYS:HB3	2.55	0.41
3:C:500:LYS:HE3	3:C:542:LEU:HD11	2.02	0.41
2:L:103:DG:H2''	2:L:104:DG:C8	2.55	0.41
2:L:105:DC:H2'	2:L:106:DT:C7	2.50	0.41
3:A:741:VAL:HG12	3:A:745:LEU:HD22	2.02	0.41
3:B:159:VAL:HG13	3:B:313:ARG:NH1	2.35	0.41
3:B:37:LEU:HD12	3:B:37:LEU:HA	1.79	0.41
3:C:179:PRO:O	3:C:183:ILE:HG12	2.20	0.41
3:C:633:ILE:HA	3:C:633:ILE:HD13	1.87	0.41
3:D:142:ILE:HG13	3:D:143:ASP:OD1	2.20	0.41
3:D:216:TRP:CD1	3:D:290:LEU:HB2	2.54	0.41
3:D:430:ILE:HG13	3:D:430:ILE:H	1.55	0.41
3:D:440:HIS:HA	3:D:443:ILE:HD12	2.02	0.41
3:D:664:ASP:OD1	3:D:668:ARG:HD2	2.21	0.41
3:A:486:LYS:HG2	3:A:486:LYS:O	2.19	0.41
3:B:436:VAL:HG12	4:B:1021:HOH:O	2.20	0.41
3:B:739:LYS:HA	3:B:739:LYS:HD3	1.87	0.41
3:B:891:TYR:CD2	3:B:892:GLU:HG3	2.55	0.41
3:C:524:ASP:HA	3:C:527:LYS:HE3	2.00	0.41
3:D:241:ARG:HB3	4:D:929:HOH:O	2.19	0.41
3:D:74:ARG:O	3:D:78:ILE:HG13	2.21	0.41
3:A:162:TRP:HB3	3:A:188:TYR:CE1	2.55	0.41
3:A:273:TYR:OH	3:A:335:ASP:HA	2.20	0.41
3:A:558:ASN:O	3:A:562:LEU:HD13	2.20	0.41
3:B:125:GLU:HA	3:B:126:PRO:HD3	1.94	0.41
3:B:562:LEU:HA	3:B:562:LEU:HD12	1.88	0.41
3:D:15:ILE:HD13	3:D:15:ILE:O	2.20	0.41
3:D:491:ALA:HA	3:D:521:ASP:OD1	2.20	0.41
3:D:878:LYS:HB3	3:D:879:PRO:HD3	2.01	0.41
3:A:292:TYR:HB2	4:A:1131:HOH:O	2.20	0.41
3:A:499:ILE:CG2	3:A:541:MET:HB3	2.50	0.41
3:A:854:ILE:CD1	3:A:862:VAL:HG11	2.49	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:355:ILE:HD13	3:B:355:ILE:HA	1.80	0.41
3:B:499:ILE:HD12	3:B:530:ILE:HG13	2.03	0.41
3:C:228:ASN:HD22	3:C:228:ASN:HA	1.64	0.41
3:C:326:ILE:HD11	4:C:1076:HOH:O	2.20	0.41
3:C:10:GLN:HG3	3:C:65:MET:HE1	2.01	0.41
3:C:897:LEU:HD13	4:C:1114:HOH:O	2.20	0.41
3:D:183:ILE:HG23	3:D:184:ASP:N	2.36	0.41
3:D:382:GLN:HG2	3:D:383:GLY:N	2.35	0.41
3:D:475:ILE:HD11	3:D:563:ILE:HG23	2.01	0.41
3:D:398:GLU:CD	3:D:705:LYS:HE3	2.40	0.41
3:D:770:GLU:O	3:D:774:LEU:HG	2.20	0.41
3:D:796:PHE:HB3	3:D:797:PRO:HD2	2.03	0.41
3:D:812:ASN:CA	3:D:815:ILE:HG12	2.50	0.41
3:D:9:GLU:O	3:D:15:ILE:HG12	2.21	0.41
1:E:16:DG:H2''	1:E:17:DC:C6	2.56	0.41
3:B:873:GLU:O	3:B:878:LYS:HB2	2.20	0.41
3:D:64:ASN:O	3:D:65:MET:HB2	2.19	0.41
3:D:846:ILE:HG12	3:D:847:ALA:N	2.36	0.41
1:I:4:DC:H2'	1:I:5:DT:H72	2.03	0.41
3:A:356:GLN:HE21	3:A:356:GLN:H	1.69	0.41
3:A:457:SER:HA	3:A:458:PRO:HD3	1.92	0.41
3:B:558:ASN:HD22	3:B:558:ASN:HA	1.57	0.41
3:B:731:GLU:HG3	3:B:879:PRO:HB2	2.03	0.41
3:C:182:ILE:O	3:C:186:ILE:HG13	2.21	0.41
3:C:16:PHE:HB3	3:C:245:HIS:CE1	2.55	0.41
3:A:150:ASP:OD2	3:A:321:ILE:HD11	2.21	0.41
3:A:171:GLN:HE22	3:A:319:ARG:HH12	1.69	0.41
3:A:339:GLN:HE21	3:A:339:GLN:HB3	1.68	0.41
3:B:1:MET:HG2	3:B:2:LYS:N	2.36	0.41
3:B:884:THR:HB	3:B:889:LEU:O	2.20	0.41
3:C:321:ILE:O	3:C:325:ILE:HG13	2.20	0.41
3:D:686:GLU:HB3	3:D:687:ALA:H	1.75	0.41
3:A:125:GLU:HA	3:A:126:PRO:HD3	1.94	0.41
3:A:204:PHE:CE1	3:A:208:LYS:HD2	2.56	0.41
3:B:113:PHE:H	3:B:113:PHE:HD1	1.68	0.41
3:B:113:PHE:CE1	3:B:213:LEU:HD11	2.55	0.41
3:D:241:ARG:HH12	3:D:246:ARG:CB	2.33	0.41
3:D:700:GLY:HA2	3:D:753:LEU:CD2	2.48	0.41
2:F:107:DG:C8	2:F:108:DT:H72	2.56	0.41
3:A:507:ASN:HD22	3:A:532:LYS:CA	2.34	0.41
3:A:663:ILE:HG21	3:A:683:MET:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:303:LEU:HD22	3:B:303:LEU:N	2.35	0.41
3:B:514:LEU:HD11	3:B:529:LYS:HB3	2.03	0.41
3:B:776:TYR:OH	3:B:854:ILE:HG22	2.20	0.41
3:D:145:ARG:NH2	3:D:185:LYS:HG2	2.36	0.41
3:B:124:PRO:HB2	3:B:225:TYR:HE1	1.86	0.41
3:B:124:PRO:HG2	3:B:221:PHE:HE2	1.86	0.41
3:B:477:LYS:O	3:B:481:GLN:HG3	2.21	0.41
3:C:458:PRO:CG	3:C:592:MET:SD	3.09	0.41
3:C:731:GLU:HG3	3:C:879:PRO:CB	2.51	0.41
3:D:421:ARG:HD3	3:D:475:ILE:HG23	2.03	0.41
3:D:597:ILE:HA	3:D:597:ILE:HD12	1.86	0.41
3:D:747:GLU:HA	3:D:747:GLU:OE2	2.21	0.41
2:F:108:DT:H1'	2:F:109:DC:H5'	2.03	0.41
2:J:113:DA:H2''	2:J:114:DG:C5'	2.51	0.41
3:A:597:ILE:HB	3:A:667:PHE:CZ	2.56	0.40
3:A:730:LEU:HD22	3:A:883:PHE:HE1	1.86	0.40
3:B:216:TRP:HE3	4:B:1083:HOH:O	2.04	0.40
3:C:506:PRO:C	3:C:507:ASN:HD22	2.25	0.40
3:C:578:TYR:C	3:C:578:TYR:CD1	2.95	0.40
3:D:250:VAL:HG12	3:D:263:ILE:CD1	2.50	0.40
3:D:43:GLU:HA	3:D:56:PRO:HG3	2.02	0.40
3:D:870:VAL:O	3:D:874:LYS:HG2	2.22	0.40
2:L:110:DA:H2''	2:L:111:DT:O5'	2.21	0.40
3:A:509:SER:O	3:A:534:SER:HB3	2.21	0.40
3:B:502:ALA:HB3	3:B:530:ILE:HG12	2.03	0.40
3:B:736:SER:HA	3:B:782:VAL:HB	2.03	0.40
3:C:530:ILE:HG23	3:C:538:LEU:CD2	2.48	0.40
3:D:118:THR:HG21	3:D:313:ARG:CB	2.48	0.40
3:D:42:PRO:HG2	3:D:45:GLN:HG2	2.03	0.40
3:A:416:TYR:HB2	3:A:417:PRO:HD3	2.02	0.40
3:A:455:SER:OG	3:A:676:ASN:HA	2.22	0.40
3:A:530:ILE:C	3:A:532:LYS:H	2.24	0.40
3:A:478:VAL:HG13	3:A:559:ARG:HD2	2.04	0.40
3:A:839:ASN:HA	3:A:840:PRO:HD3	1.92	0.40
3:A:822:PRO:HB2	3:A:849:PRO:HG3	2.04	0.40
3:B:494:ARG:HD2	3:B:521:ASP:CG	2.42	0.40
3:C:149:PHE:HB3	3:C:197:LEU:HG	2.03	0.40
3:D:239:ALA:C	3:D:241:ARG:H	2.24	0.40
3:D:654:PHE:O	3:D:658:ARG:HB2	2.21	0.40
1:E:10:DA:H2''	1:E:11:DC:C5'	2.51	0.40
3:A:409:SER:HB3	3:A:626:TYR:CD2	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:149:PHE:N	3:B:149:PHE:CD1	2.90	0.40
3:B:216:TRP:CH2	3:B:293:ILE:HG21	2.56	0.40
3:B:643:ASP:OD1	3:B:646:HIS:HB2	2.20	0.40
2:J:105:DC:H6	2:J:105:DC:H5''	1.85	0.40
2:J:114:DG:H2'	4:J:750:HOH:O	2.21	0.40
3:A:738:PRO:HB3	3:A:780:ALA:O	2.22	0.40
3:B:138:HIS:ND1	3:B:204:PHE:HE2	2.20	0.40
3:C:42:PRO:HD2	3:C:45:GLN:HE21	1.87	0.40
3:C:811:TYR:O	3:C:815:ILE:HG12	2.21	0.40
3:D:501:GLU:HA	3:D:504:HIS:HD2	1.87	0.40
3:D:878:LYS:HB3	3:D:879:PRO:CD	2.52	0.40
2:F:111:DT:H2''	2:F:112:DA:O5'	2.21	0.40
2:L:106:DT:H2''	2:L:107:DG:H8	1.86	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	
3	A	894/896 (100%)	838 (94%)	51 (6%)	5 (1%)	28	39
3	B	894/896 (100%)	815 (91%)	69 (8%)	10 (1%)	17	22
3	C	890/896 (99%)	841 (94%)	45 (5%)	4 (0%)	38	51
3	D	889/896 (99%)	746 (84%)	116 (13%)	27 (3%)	5	4
All	All	3567/3584 (100%)	3240 (91%)	281 (8%)	46 (1%)	14	18

All (46) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	D	65	MET
3	D	117	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	304	LYS
3	D	450	PRO
3	D	819	ILE
3	A	699	GLY
3	B	117	VAL
3	B	160	GLU
3	B	252	VAL
3	B	356	GLN
3	D	127	SER
3	D	160	GLU
3	D	281	SER
3	D	460	GLY
3	A	284	ASN
3	A	506	PRO
3	B	136	ILE
3	B	173	GLN
3	C	622	THR
3	D	63	ALA
3	D	121	ASP
3	D	169	LYS
3	D	622	THR
3	D	818	ASN
3	D	826	GLU
3	D	415	LEU
3	D	857	LEU
3	A	282	PHE
3	B	175	GLY
3	B	262	ILE
3	C	172	GLU
3	C	458	PRO
3	D	252	VAL
3	D	315	SER
3	D	789	ALA
3	D	799	PRO
3	D	825	VAL
3	A	637	GLY
3	B	622	THR
3	D	157	GLY
3	C	12	GLY
3	D	510	VAL
3	B	819	ILE
3	D	120	PRO

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Mol	Chain	Res	Type
3	D	788	ILE
3	D	795	GLY

### 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
3	A	785/793 (99%)	756 (96%)	29 (4%)	39 57
3	B	774/793 (98%)	750 (97%)	24 (3%)	45 64
3	C	781/793 (98%)	741 (95%)	40 (5%)	28 41
3	D	770/793 (97%)	746 (97%)	24 (3%)	45 64
All	All	3110/3172 (98%)	2993 (96%)	117 (4%)	38 55

All (117) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	A	2	LYS
3	A	58	THR
3	A	128	GLN
3	A	200	GLU
3	A	242	LEU
3	A	246	ARG
3	A	264	THR
3	A	314	GLU
3	A	319	ARG
3	A	342	ASN
3	A	352	LYS
3	A	356	GLN
3	A	384	ARG
3	A	403	ARG
3	A	474	GLU
3	A	479	PHE
3	A	536	LYS
3	A	544	ARG
3	A	558	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	A	566	LEU
3	A	668	ARG
3	A	702	TRP
3	A	731	GLU
3	A	745	LEU
3	A	770	GLU
3	A	787	ASN
3	A	826	GLU
3	A	843	ASP
3	A	861	ASP
3	B	37	LEU
3	B	61	LEU
3	B	113	PHE
3	B	165	GLU
3	B	176	ASP
3	B	181	GLU
3	B	273	TYR
3	B	305	TYR
3	B	324	ASN
3	B	428	GLU
3	B	544	ARG
3	B	558	ASN
3	B	562	LEU
3	B	566	LEU
3	B	580	LEU
3	B	660	GLU
3	B	702	TRP
3	B	731	GLU
3	B	755	GLU
3	B	760	LEU
3	B	773	GLN
3	B	820	ASP
3	B	843	ASP
3	B	897	LEU
3	C	14	SER
3	C	27	ARG
3	C	90	LEU
3	C	100	GLU
3	C	128	GLN
3	C	151	LEU
3	C	213	LEU
3	C	220	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	C	228	ASN
3	C	284	ASN
3	C	303	LEU
3	C	356	GLN
3	C	384	ARG
3	C	399	PRO
3	C	411	ASP
3	C	413	THR
3	C	424	ASN
3	C	428	GLU
3	C	440	HIS
3	C	466	ASP
3	C	474	GLU
3	C	475	ILE
3	C	479	PHE
3	C	507	ASN
3	C	532	LYS
3	C	562	LEU
3	C	566	LEU
3	C	580	LEU
3	C	660	GLU
3	C	702	TRP
3	C	731	GLU
3	C	733	GLN
3	C	739	LYS
3	C	760	LEU
3	C	773	GLN
3	C	820	ASP
3	C	843	ASP
3	C	863	LEU
3	C	896	SER
3	C	898	PHE
3	D	15	ILE
3	D	40	HIS
3	D	59	ARG
3	D	99	TYR
3	D	102	LYS
3	D	145	ARG
3	D	161	GLU
3	D	165	GLU
3	D	176	ASP
3	D	199	MET

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	305	TYR
3	D	402	ASN
3	D	428	GLU
3	D	459	ASN
3	D	475	ILE
3	D	479	PHE
3	D	614	GLU
3	D	649	ASP
3	D	702	TRP
3	D	755	GLU
3	D	760	LEU
3	D	844	LYS
3	D	848	TRP
3	D	859	LYS

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (95) such sidechains are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	A	98	ASN
3	A	173	GLN
3	A	206	GLN
3	A	245	HIS
3	A	339	GLN
3	A	342	ASN
3	A	356	GLN
3	A	371	ASN
3	A	377	ASN
3	A	422	GLN
3	A	481	GLN
3	A	495	ASN
3	A	507	ASN
3	A	546	GLN
3	A	556	GLN
3	A	558	ASN
3	A	602	ASN
3	A	678	GLN
3	A	786	ASN
3	A	812	ASN
3	A	839	ASN
3	B	40	HIS
3	B	112	ASN
3	B	153	ASN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	B	203	ASN
3	B	206	GLN
3	B	228	ASN
3	B	285	GLN
3	B	299	ASN
3	B	316	ASN
3	B	318	GLN
3	B	324	ASN
3	B	339	GLN
3	B	354	GLN
3	B	481	GLN
3	B	495	ASN
3	B	546	GLN
3	B	558	ASN
3	B	591	GLN
3	B	606	ASN
3	B	773	GLN
3	B	812	ASN
3	B	818	ASN
3	C	45	GLN
3	C	173	GLN
3	C	203	ASN
3	C	228	ASN
3	C	232	ASN
3	C	245	HIS
3	C	284	ASN
3	C	299	ASN
3	C	317	HIS
3	C	318	GLN
3	C	324	ASN
3	C	356	GLN
3	C	377	ASN
3	C	424	ASN
3	C	481	GLN
3	C	495	ASN
3	C	507	ASN
3	C	546	GLN
3	C	556	GLN
3	C	558	ASN
3	C	591	GLN
3	C	645	ASN
3	C	818	ASN

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Mol	Chain	Res	Type
3	C	864	HIS
3	D	45	GLN
3	D	70	GLN
3	D	131	HIS
3	D	173	GLN
3	D	206	GLN
3	D	207	GLN
3	D	232	ASN
3	D	284	ASN
3	D	285	GLN
3	D	318	GLN
3	D	324	ASN
3	D	339	GLN
3	D	342	ASN
3	D	389	GLN
3	D	402	ASN
3	D	422	GLN
3	D	444	ASN
3	D	459	ASN
3	D	504	HIS
3	D	505	ASN
3	D	546	GLN
3	D	558	ASN
3	D	564	ASN
3	D	572	ASN
3	D	591	GLN
3	D	606	ASN
3	D	676	ASN
3	D	679	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](#)

4 non-standard protein/DNA/RNA residues 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
1	3DR	E	3	1	8,11,12	0.62	0	8,14,17	1.76	1 (12%)
1	3DR	G	3	1	8,11,12	0.65	0	8,14,17	1.94	1 (12%)
1	3DR	I	3	1	8,11,12	0.58	0	8,14,17	1.81	1 (12%)
1	3DR	K	3	1	8,11,12	0.60	0	8,14,17	1.73	1 (12%)

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
1	3DR	E	3	1	-	0/3/15/16	0/1/1/1
1	3DR	G	3	1	-	0/3/15/16	0/1/1/1
1	3DR	I	3	1	-	0/3/15/16	0/1/1/1
1	3DR	K	3	1	-	0/3/15/16	0/1/1/1

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	3	3DR	O3'-C3'-C2'	3.65	119.98	111.60
1	K	3	3DR	O3'-C3'-C2'	3.66	120.00	111.60
1	I	3	3DR	O3'-C3'-C2'	3.91	120.58	111.60
1	G	3	3DR	O3'-C3'-C2'	4.20	121.23	111.60

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

3 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	G	3	3DR	2	0
1	I	3	3DR	1	0
1	K	3	3DR	2	0

## 5.5 Carbohydrates [i](#)

There are no carbohydrates 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, 95<sup>th</sup> 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 <sup>2</sup> )	Q < 0.9
1	E	17/18 (94%)	0.22	1 (5%) 23 25	54, 75, 126, 146	0
1	G	17/18 (94%)	0.14	1 (5%) 23 25	45, 57, 133, 148	0
1	I	17/18 (94%)	0.08	1 (5%) 23 25	35, 42, 101, 115	0
1	K	17/18 (94%)	1.16	3 (17%) 2 1	45, 123, 161, 169	0
2	F	15/15 (100%)	0.59	1 (6%) 19 19	68, 99, 128, 141	0
2	H	15/15 (100%)	0.37	2 (13%) 4 4	56, 71, 126, 153	0
2	J	15/15 (100%)	0.08	0 100 100	38, 57, 91, 96	0
2	L	15/15 (100%)	1.50	5 (33%) 0 0	126, 131, 153, 157	0
3	A	896/896 (100%)	0.48	58 (6%) 20 20	30, 47, 125, 149	0
3	B	896/896 (100%)	1.01	154 (17%) 2 2	28, 62, 154, 165	0
3	C	892/896 (99%)	0.37	23 (2%) 56 58	23, 48, 83, 106	0
3	D	891/896 (99%)	1.51	254 (28%) 1 0	53, 117, 153, 160	0
All	All	3703/3716 (99%)	0.83	503 (13%) 3 4	23, 62, 148, 169	0

All (503) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	B	516	VAL	13.3
3	A	530	ILE	13.1
3	D	514	LEU	12.6
3	B	508	LEU	11.2
3	D	117	VAL	10.8
3	D	157	GLY	10.6
3	B	511	ASP	10.1
3	B	507	ASN	9.5
3	A	542	LEU	9.4
3	D	99	TYR	8.9
3	B	514	LEU	8.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	D	64	ASN	8.3
3	B	510	VAL	8.1
3	B	509	SER	8.0
3	B	538	LEU	8.0
3	B	819	ILE	7.9
3	B	502	ALA	7.7
3	B	541	MET	7.5
3	D	809	LEU	7.4
3	D	831	TYR	7.4
3	B	503	LEU	7.2
3	D	538	LEU	7.2
3	B	178	VAL	7.1
3	D	539	ASN	7.1
3	B	134	ASP	7.0
3	D	535	ALA	6.8
3	D	788	ILE	6.7
3	B	498	ILE	6.6
3	D	173	GLN	6.6
3	D	65	MET	6.5
3	B	156	TYR	6.4
3	B	303	LEU	6.4
3	D	799	PRO	6.4
3	B	535	ALA	6.3
3	B	545	ALA	6.3
3	B	530	ILE	6.3
3	D	393	GLY	6.3
3	B	528	GLU	6.3
3	D	120	PRO	6.3
3	D	282	PHE	6.3
3	B	522	PHE	6.1
3	B	542	LEU	6.1
3	B	518	TYR	6.0
3	B	183	ILE	6.0
3	D	160	GLU	6.0
3	A	522	PHE	6.0
3	D	796	PHE	5.9
3	B	277	TYR	5.9
3	B	820	ASP	5.9
3	A	503	LEU	5.9
3	D	548	THR	5.8
3	D	794	GLY	5.8
3	B	527	LYS	5.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	A	498	ILE	5.8
3	D	498	ILE	5.8
3	D	159	VAL	5.7
3	D	849	PRO	5.7
3	B	520	PHE	5.7
3	A	504	HIS	5.7
3	B	504	HIS	5.7
3	D	504	HIS	5.7
3	B	490	LEU	5.6
3	A	252	VAL	5.6
3	C	303	LEU	5.5
1	K	2	DG	5.5
3	A	507	ASN	5.5
3	B	519	ARG	5.5
3	B	309	ILE	5.5
3	B	513	PRO	5.5
3	B	492	ALA	5.4
3	D	178	VAL	5.4
3	D	801	CYS	5.4
3	A	541	MET	5.3
3	D	510	VAL	5.3
3	B	539	ASN	5.3
3	D	541	MET	5.3
3	D	833	LEU	5.3
3	B	857	LEU	5.3
3	D	520	PHE	5.2
3	D	544	ARG	5.2
3	B	505	ASN	5.2
3	B	525	GLU	5.2
3	B	496	GLY	5.1
3	D	811	TYR	5.1
3	D	147	TYR	5.1
3	D	503	LEU	5.0
3	B	172	GLU	5.0
3	D	512	GLU	5.0
3	B	523	SER	5.0
3	B	506	PRO	4.9
3	A	501	GLU	4.9
3	D	47	THR	4.9
3	D	8	VAL	4.9
3	A	508	LEU	4.9
3	D	530	ILE	4.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	B	524	ASP	4.8
3	C	46	ALA	4.8
3	D	846	ILE	4.8
3	D	192	ASP	4.7
3	B	176	ASP	4.7
3	B	170	LEU	4.7
3	D	145	ARG	4.7
3	D	523	SER	4.7
3	D	802	PRO	4.7
3	B	179	PRO	4.6
3	D	265	LEU	4.6
3	D	20	ILE	4.6
3	B	818	ASN	4.6
3	D	516	VAL	4.6
3	B	160	GLU	4.5
3	B	515	ASP	4.5
3	B	166	ILE	4.5
3	D	44	SER	4.5
3	D	119	SER	4.5
3	C	508	LEU	4.4
3	A	497	GLU	4.4
3	B	497	GLU	4.4
3	D	508	LEU	4.4
3	D	786	ASN	4.4
3	A	535	ALA	4.4
3	D	175	GLY	4.3
3	D	857	LEU	4.3
3	D	252	VAL	4.3
3	B	861	ASP	4.3
3	D	251	LYS	4.3
3	A	509	SER	4.3
3	B	157	GLY	4.3
3	A	854	ILE	4.2
3	D	779	ILE	4.2
3	D	118	THR	4.2
3	D	855	THR	4.2
3	B	115	ILE	4.2
3	D	194	GLU	4.2
3	D	526	ILE	4.2
3	D	847	ALA	4.2
3	C	304	LYS	4.2
3	D	234	PHE	4.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	A	536	LYS	4.1
3	C	252	VAL	4.1
3	D	793	VAL	4.1
3	B	512	GLU	4.1
3	D	250	VAL	4.1
3	B	135	ALA	4.1
3	B	532	LYS	4.1
3	D	513	PRO	4.1
3	C	530	ILE	4.1
3	A	821	ALA	4.0
3	D	71	TRP	4.0
3	A	499	ILE	4.0
3	B	526	ILE	4.0
3	D	174	GLY	4.0
3	B	127	SER	4.0
3	B	817	GLY	4.0
3	B	153	ASN	4.0
3	A	506	PRO	4.0
3	B	501	GLU	4.0
3	B	493	GLN	4.0
3	B	117	VAL	3.9
3	D	790	LYS	3.9
3	D	61	LEU	3.9
3	A	537	SER	3.9
3	D	198	LEU	3.9
3	D	201	TYR	3.8
3	B	494	ARG	3.8
1	E	2	DG	3.8
3	A	514	LEU	3.8
3	B	821	ALA	3.8
3	D	28	THR	3.8
3	B	549	GLU	3.8
1	G	2	DG	3.8
3	D	522	PHE	3.8
3	A	528	GLU	3.8
3	D	524	ASP	3.8
3	B	540	GLU	3.8
3	B	865	TRP	3.8
3	D	182	ILE	3.7
3	D	32	GLU	3.7
3	D	303	LEU	3.7
3	B	547	ARG	3.7

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	C	302	LYS	3.7
3	B	552	GLY	3.7
3	C	166	ILE	3.6
3	D	72	ILE	3.6
3	D	830	VAL	3.6
3	D	771	PHE	3.6
3	D	792	ASP	3.6
3	B	321	ILE	3.6
3	D	24	GLY	3.6
3	D	820	ASP	3.6
3	D	789	ALA	3.6
3	B	306	ASP	3.6
3	D	153	ASN	3.6
3	A	857	LEU	3.5
3	D	863	LEU	3.5
3	D	131	HIS	3.5
3	B	233	ILE	3.5
3	A	490	LEU	3.5
3	D	491	ALA	3.5
3	B	537	SER	3.5
3	D	183	ILE	3.5
3	D	517	ASP	3.5
3	D	832	VAL	3.5
3	D	46	ALA	3.5
3	D	776	TYR	3.5
3	B	533	LEU	3.4
2	H	115	DA	3.4
3	B	315	SER	3.4
3	B	325	ILE	3.4
3	B	302	LYS	3.4
3	A	538	LEU	3.4
3	D	78	ILE	3.4
3	D	191	PHE	3.4
3	D	304	LYS	3.4
3	D	490	LEU	3.4
3	A	253	GLY	3.4
3	D	488	TYR	3.4
3	B	815	ILE	3.4
3	D	113	PHE	3.4
3	D	164	ILE	3.4
3	D	305	TYR	3.4
2	L	114	DG	3.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	B	171	GLN	3.3
3	D	176	ASP	3.3
3	D	546	GLN	3.3
3	A	505	ASN	3.3
3	A	502	ALA	3.3
3	D	866	MET	3.3
3	B	543	PHE	3.3
3	B	797	PRO	3.3
3	B	322	SER	3.3
3	D	288	TYR	3.3
3	D	515	ASP	3.3
3	A	261	GLU	3.3
3	B	544	ARG	3.3
3	D	543	PHE	3.2
3	A	526	ILE	3.2
3	B	201	TYR	3.2
3	B	234	PHE	3.2
3	D	45	GLN	3.2
3	D	226	VAL	3.2
3	D	309	ILE	3.2
3	D	223	ILE	3.1
3	D	784	SER	3.1
3	D	854	ILE	3.1
3	B	159	VAL	3.1
3	D	868	TYR	3.1
3	D	848	TRP	3.1
3	D	170	LEU	3.1
3	D	199	MET	3.1
3	D	100	GLU	3.1
3	D	395	PHE	3.1
3	D	518	TYR	3.1
3	B	517	ASP	3.1
3	A	491	ALA	3.1
3	C	510	VAL	3.0
3	D	495	ASN	3.0
3	D	63	ALA	3.0
3	D	391	TYR	3.0
3	D	797	PRO	3.0
3	B	186	ILE	3.0
3	D	509	SER	3.0
3	D	829	LYS	3.0
3	B	521	ASP	3.0

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	A	533	LEU	3.0
3	D	566	LEU	3.0
3	D	205	TRP	3.0
3	B	247	LYS	3.0
3	A	518	TYR	2.9
3	D	202	LEU	2.9
3	D	390	PRO	2.9
3	D	840	PRO	2.9
3	B	232	ASN	2.9
3	D	501	GLU	2.9
3	A	543	PHE	2.9
3	D	111	ALA	2.9
3	C	522	PHE	2.9
3	B	536	LYS	2.9
3	D	562	LEU	2.9
3	B	499	ILE	2.9
3	B	317	HIS	2.9
3	D	489	MET	2.9
3	B	812	ASN	2.8
2	F	115	DA	2.8
3	D	317	HIS	2.8
3	C	174	GLY	2.8
3	D	80	LEU	2.8
3	D	769	LYS	2.8
3	C	309	ILE	2.8
3	D	313	ARG	2.8
3	A	496	GLY	2.8
3	B	534	SER	2.8
3	D	850	SER	2.8
3	D	172	GLU	2.8
3	D	816	LYS	2.8
3	A	280	PHE	2.8
3	D	803	PHE	2.8
3	C	301	GLY	2.8
3	D	479	PHE	2.8
3	B	120	PRO	2.8
3	B	271	LEU	2.8
3	D	497	GLU	2.8
3	D	248	THR	2.8
3	D	476	THR	2.8
3	D	128	GLN	2.8
3	B	152	LEU	2.7

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	D	92	TYR	2.7
3	D	532	LYS	2.7
3	A	494	ARG	2.7
3	D	193	ASN	2.7
3	B	291	ASP	2.7
3	C	323	TYR	2.7
3	D	135	ALA	2.7
3	B	862	VAL	2.7
3	D	115	ILE	2.7
3	D	2	LYS	2.7
3	B	305	TYR	2.7
3	D	379	VAL	2.7
3	D	550	VAL	2.7
3	D	507	ASN	2.7
3	A	512	GLU	2.7
3	D	25	ARG	2.7
3	D	70	GLN	2.7
3	B	249	ARG	2.7
3	D	570	LEU	2.7
3	D	162	TRP	2.6
3	B	244	PRO	2.6
3	A	788	ILE	2.6
3	B	320	TYR	2.6
3	B	841	PHE	2.6
3	B	192	ASP	2.6
3	C	500	LYS	2.6
3	A	262	ILE	2.6
3	A	789	ALA	2.6
3	A	500	LYS	2.6
3	B	197	LEU	2.6
3	D	782	VAL	2.6
3	B	206	GLN	2.6
2	L	115	DA	2.6
3	D	844	LYS	2.6
3	A	511	ASP	2.6
3	B	868	TYR	2.6
3	C	44	SER	2.6
3	D	88	PHE	2.6
3	D	180	SER	2.6
3	D	487	GLY	2.6
3	D	151	LEU	2.6
1	I	2	DG	2.6

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	D	203	ASN	2.6
3	A	531	LYS	2.6
3	D	240	LYS	2.6
3	B	774	LEU	2.5
3	B	123	PHE	2.5
3	B	149	PHE	2.5
3	B	792	ASP	2.5
3	D	511	ASP	2.5
3	B	311	LYS	2.5
3	B	136	ILE	2.5
3	B	283	THR	2.5
3	D	274	ILE	2.5
3	D	67	ASP	2.5
3	B	316	ASN	2.5
3	D	233	ILE	2.5
3	B	242	LEU	2.5
3	A	495	ASN	2.5
3	D	33	TYR	2.5
3	D	563	ILE	2.5
3	C	175	GLY	2.5
3	D	242	LEU	2.5
3	A	250	VAL	2.5
3	B	167	ALA	2.5
3	B	180	SER	2.5
3	A	548	THR	2.5
3	D	238	THR	2.5
3	D	212	ILE	2.5
3	B	174	GLY	2.5
3	D	93	LEU	2.5
3	D	542	LEU	2.5
3	D	62	PHE	2.5
3	D	266	PHE	2.5
3	D	315	SER	2.5
3	B	165	GLU	2.5
3	B	488	TYR	2.4
3	D	225	TYR	2.4
3	B	213	LEU	2.4
3	A	799	PRO	2.4
3	D	637	GLY	2.4
3	B	811	TYR	2.4
3	D	454	TYR	2.4
3	D	791	TYR	2.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	D	325	ILE	2.4
3	D	815	ILE	2.4
3	D	527	LYS	2.4
3	D	851	GLY	2.4
3	A	524	ASP	2.4
3	D	314	GLU	2.4
3	C	151	LEU	2.4
3	D	229	ARG	2.4
3	B	901	PHE	2.4
3	D	795	GLY	2.4
3	D	774	LEU	2.4
3	D	450	PRO	2.4
3	D	188	TYR	2.3
3	B	276	LEU	2.3
3	B	304	LYS	2.3
3	D	116	GLU	2.3
3	B	128	GLN	2.3
3	D	673	TYR	2.3
3	B	839	ASN	2.3
3	D	783	SER	2.3
3	A	550	VAL	2.3
3	B	282	PHE	2.3
3	D	241	ARG	2.3
3	D	897	LEU	2.3
3	A	283	THR	2.3
3	D	565	SER	2.3
3	B	113	PHE	2.3
3	D	221	PHE	2.3
3	D	286	PRO	2.3
3	D	161	GLU	2.3
3	B	548	THR	2.3
3	B	280	PHE	2.3
3	D	841	PHE	2.3
3	B	813	ARG	2.3
3	D	136	ILE	2.3
3	B	227	TYR	2.3
3	B	546	GLN	2.3
3	D	860	ASP	2.3
3	B	126	PRO	2.3
2	L	103	DG	2.3
3	D	321	ILE	2.3
3	D	49	TYR	2.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
3	C	251	LYS	2.2
3	D	787	ASN	2.2
3	C	155	PRO	2.2
3	D	766	GLU	2.2
3	D	302	LYS	2.2
3	D	312	LEU	2.2
3	D	154	SER	2.2
2	H	114	DG	2.2
3	D	780	ALA	2.2
3	D	819	ILE	2.2
3	D	179	PRO	2.2
3	D	500	LYS	2.2
3	D	123	PHE	2.2
3	D	283	THR	2.2
3	D	785	ALA	2.2
3	B	531	LYS	2.2
3	A	513	PRO	2.2
3	A	516	VAL	2.2
3	B	300	VAL	2.2
3	D	328	VAL	2.2
3	D	824	VAL	2.2
3	B	193	ASN	2.2
3	C	558	ASN	2.2
3	D	818	ASN	2.2
3	D	301	GLY	2.2
3	B	284	ASN	2.2
3	D	564	ASN	2.2
2	L	107	DG	2.2
3	B	212	ILE	2.2
3	D	800	LYS	2.1
1	K	7	DA	2.1
3	D	146	PHE	2.1
3	B	847	ALA	2.1
3	D	6	LEU	2.1
3	B	251	LYS	2.1
3	D	149	PHE	2.1
3	A	819	ILE	2.1
3	D	580	LEU	2.1
3	D	502	ALA	2.1
3	B	294	SER	2.1
3	B	334	ILE	2.1
3	D	311	LYS	2.1

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Mol	Chain	Res	Type	RSRZ
1	K	11	DC	2.1
3	C	515	ASP	2.1
3	D	156	TYR	2.1
3	D	158	ASN	2.1
3	B	290	LEU	2.1
2	L	109	DC	2.1
3	D	184	ASP	2.1
3	C	535	ALA	2.1
3	D	284	ASN	2.1
3	D	536	LYS	2.1
3	A	846	ILE	2.1
3	A	493	GLN	2.1
3	D	1	MET	2.1
3	D	547	ARG	2.1
3	D	195	LYS	2.1
3	D	31	VAL	2.1
3	D	79	GLY	2.1
3	A	523	SER	2.0
3	D	307	GLY	2.0
3	D	827	GLY	2.0
3	B	281	SER	2.0
3	D	121	ASP	2.0
3	D	292	TYR	2.0
3	A	276	LEU	2.0
3	B	182	ILE	2.0
3	D	11	ILE	2.0
3	D	18	ARG	2.0
3	D	29	ARG	2.0
3	D	74	ARG	2.0
3	D	384	ARG	2.0

## 6.2 Non-standard residues in protein, DNA, RNA chains [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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95<sup>th</sup> 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	LLDF	B-factors(Å <sup>2</sup> )	Q<0.9
1	3DR	E	3	11/12	0.75	0.35	-	138,143,147,147	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors( $\text{\AA}^2$ )	Q<0.9
1	3DR	K	3	11/12	0.72	0.38	-	165,167,169,169	0
1	3DR	I	3	11/12	0.81	0.19	-	102,105,111,112	0
1	3DR	G	3	11/12	0.76	0.27	-	132,137,146,147	0

### 6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

### 6.4 Ligands [i](#)

There are no ligands in this entry.

### 6.5 Other polymers [i](#)

There are no such residues in this entry.