



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 15, 2017 – 05:29 am GMT

PDB ID : 2DY4
Title : Crystal structure of RB69 GP43 in complex with DNA containing Thymine Glycol
Authors : Aller, P.; Rould, M.A.; Hogg, M.; Wallace, S.S.; Doublie, S.
Deposited on : 2006-09-06
Resolution : 2.65 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

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

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7.2 (RC1), CSD as538be (2017)
Xtrriage (Phenix) : 1.9-1692
EDS : trunk28620
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) : recalc28949

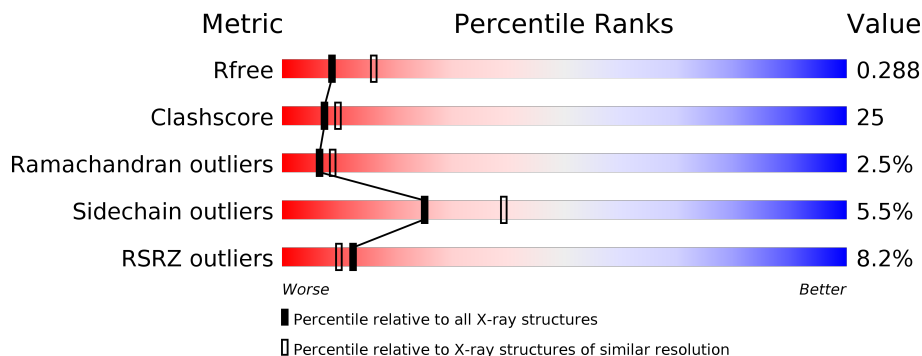
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.65 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	3491 (2.70-2.62)
Clashscore	112137	1026 (2.68-2.64)
Ramachandran outliers	110173	1010 (2.68-2.64)
Sidechain outliers	110143	1010 (2.68-2.64)
RSRZ outliers	101464	3511 (2.70-2.62)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	E	18	
1	G	18	
1	I	18	
1	K	18	
2	F	15	
2	H	15	

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Mol	Chain	Length	Quality of chain
2	J	15	
2	L	15	
3	A	903	
3	B	903	
3	C	903	
3	D	903	

2 Entry composition i

There are 4 unique types of molecules in this entry. The entry contains 31943 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*(CTG)P*GP*GP*AP*AP*TP*GP*A*CP*AP*GP*CP*CP*GP*CP*G)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	E	17	Total	C	N	O	P	0	0	0
			348	165	69	99	15			
1	G	18	Total	C	N	O	P	0	0	0
			372	175	74	106	17			
1	I	18	Total	C	N	O	P	0	0	0
			372	175	74	106	17			
1	K	18	Total	C	N	O	P	0	0	0
			372	175	74	106	17			

- Molecule 2 is a DNA chain called 5'-D(*GP*CP*GP*GP*CP*TP*GP*T*CP*AP*TP*TP*CP*CP*A)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	F	14	Total	C	N	O	P	0	0	0
			276	133	51	80	12			
2	H	15	Total	C	N	O	P	0	0	0
			299	143	53	89	14			
2	J	15	Total	C	N	O	P	0	0	0
			299	143	53	89	14			
2	L	15	Total	C	N	O	P	0	0	0
			299	143	53	89	14			

- Molecule 3 is a protein called DNA polymerase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
3	A	902	Total	C	N	O	S	Se	0	0	0
			7302	4689	1213	1367	8	25			
3	B	888	Total	C	N	O	S	Se	0	0	0
			7175	4608	1193	1341	8	25			
3	C	900	Total	C	N	O	S	Se	0	0	0
			7300	4683	1214	1370	8	25			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
			Total	C	N	O	S				Se
3	D	890	6923	4449	1130	1313	8	23	0	0	0

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	222	ALA	ASP	ENGINEERED	UNP Q38087
A	327	ALA	ASP	ENGINEERED	UNP Q38087
B	222	ALA	ASP	ENGINEERED	UNP Q38087
B	327	ALA	ASP	ENGINEERED	UNP Q38087
C	222	ALA	ASP	ENGINEERED	UNP Q38087
C	327	ALA	ASP	ENGINEERED	UNP Q38087
D	222	ALA	ASP	ENGINEERED	UNP Q38087
D	327	ALA	ASP	ENGINEERED	UNP Q38087

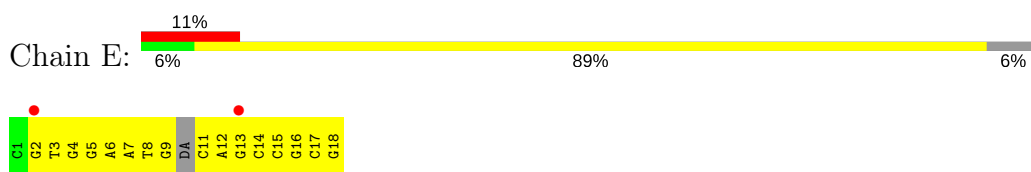
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	E	9	Total 9	O 9	0	0
4	F	5	Total 5	O 5	0	0
4	G	18	Total 18	O 18	0	0
4	H	9	Total 9	O 9	0	0
4	I	17	Total 17	O 17	0	0
4	J	4	Total 4	O 4	0	0
4	K	5	Total 5	O 5	0	0
4	L	2	Total 2	O 2	0	0
4	A	117	Total 117	O 117	0	0
4	B	205	Total 205	O 205	0	0
4	C	160	Total 160	O 160	0	0
4	D	55	Total 55	O 55	0	0

3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

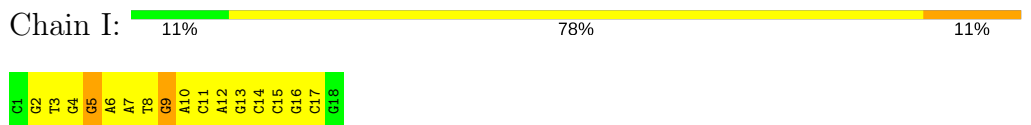
- Molecule 1: 5'-D(*CP*GP*(CTG)P*GP*GP*AP*AP*TP*GP*A*CP*AP*GP*CP*CP*GP*CP*G)-3'



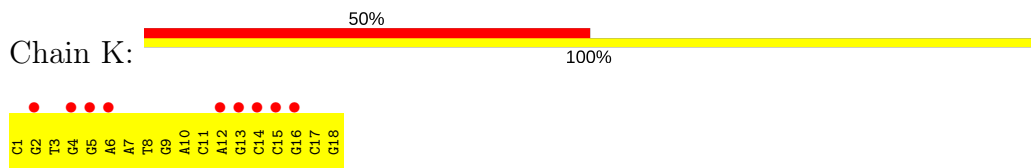
- Molecule 1: 5'-D(*CP*GP*(CTG)P*GP*GP*AP*AP*TP*GP*A*CP*AP*GP*CP*CP*GP*CP*G)-3'



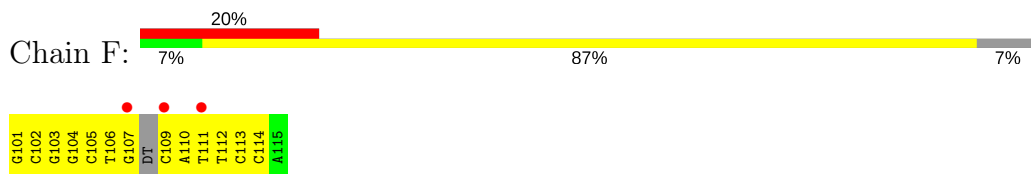
- Molecule 1: 5'-D(*CP*GP*(CTG)P*GP*GP*AP*AP*TP*GP*A*CP*AP*GP*CP*CP*GP*CP*G)-3'



- Molecule 1: 5'-D(*CP*GP*(CTG)P*GP*GP*AP*AP*TP*GP*A*CP*AP*GP*CP*CP*GP*CP*G)-3'



- Molecule 2: 5'-D(*GP*CP*GP*GP*CP*TP*GP*T*CP*AP*TP*TP*CP*CP*A)-3'



- Molecule 2: 5'-D(*GP*CP*GP*GP*CP*TP*GP*T*CP*AP*TP*TP*CP*CP*A)-3'

Chain H: 



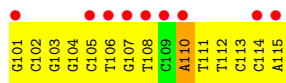
- Molecule 2: 5'-D(*GP*CP*GP*GP*CP*TP*GP*T*CP*AP*TP*TP*CP*CP*A)-3'

Chain J: 



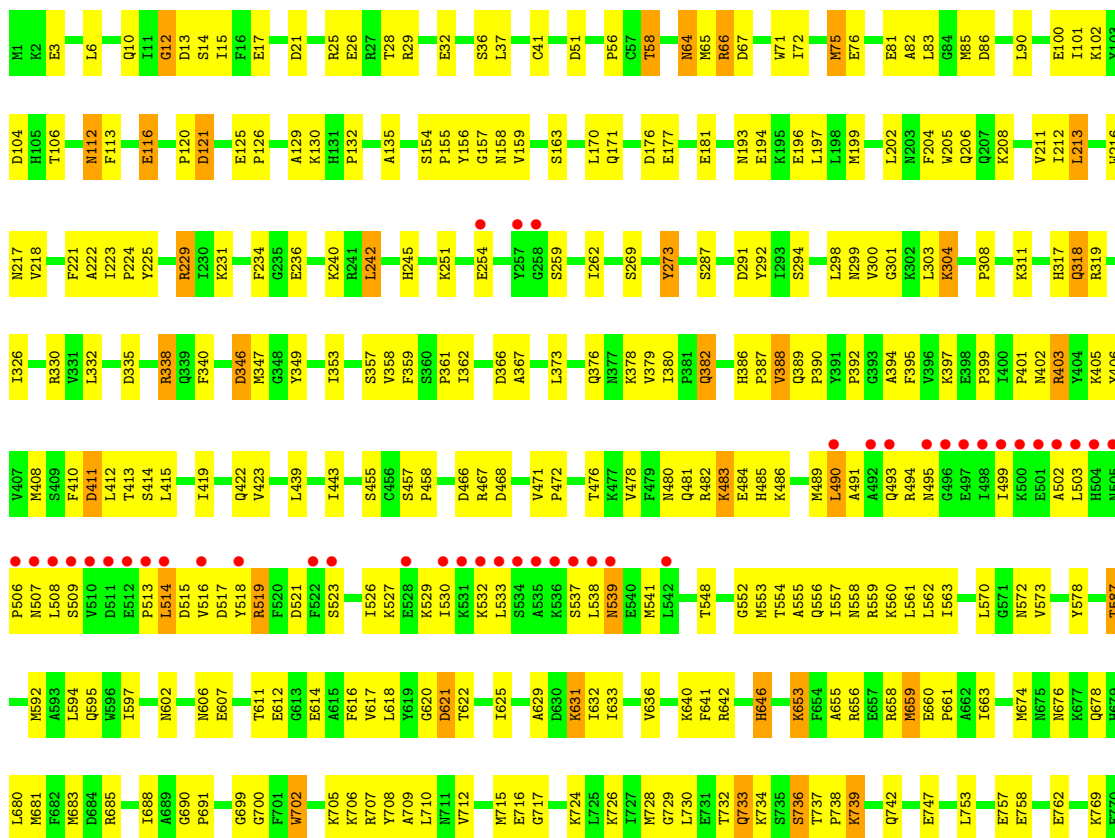
- Molecule 2: 5'-D(*GP*CP*GP*GP*CP*TP*GP*T*CP*AP*TP*TP*CP*CP*A)-3'

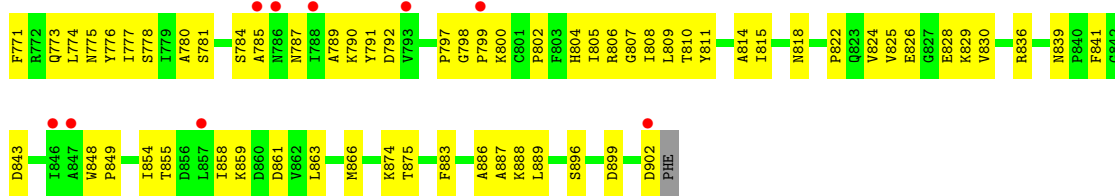
Chain L: 



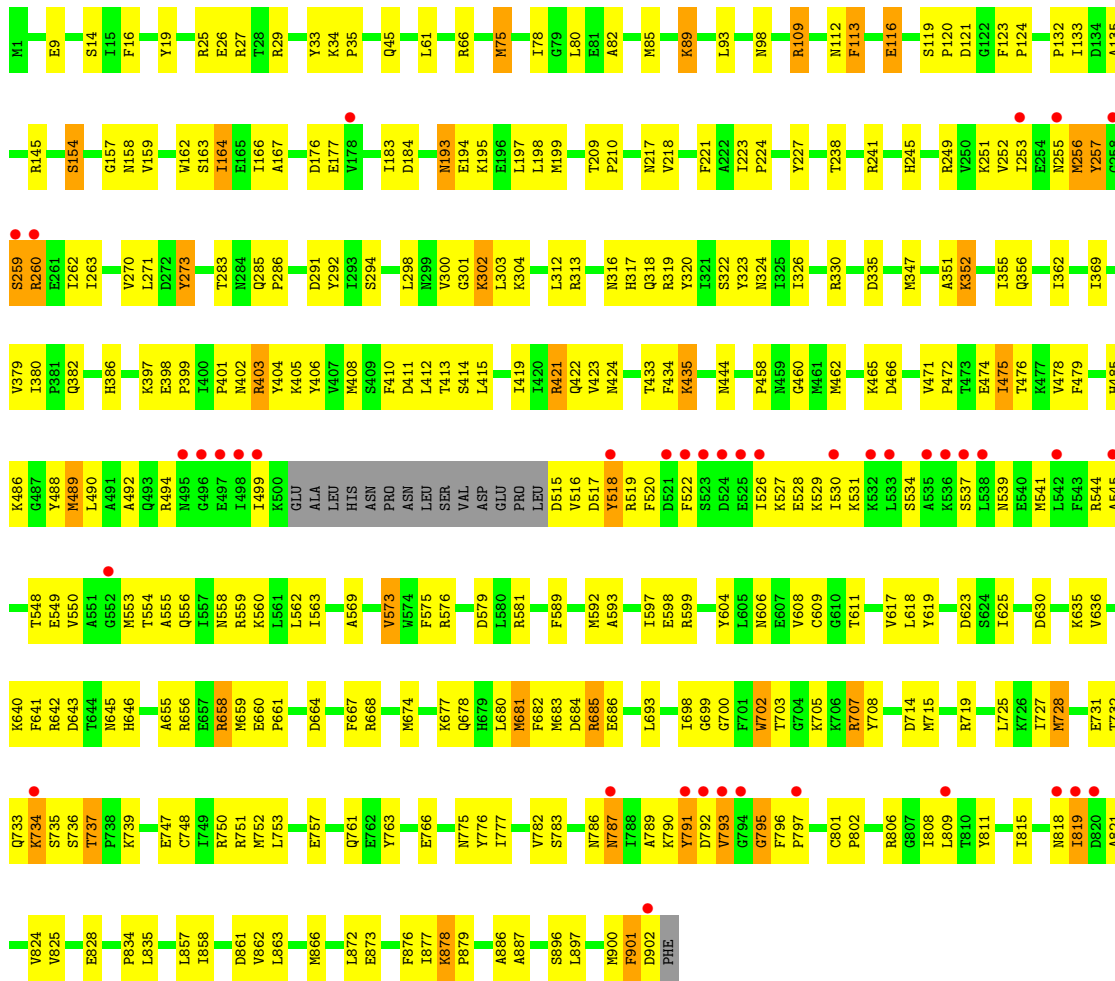
- Molecule 3: DNA polymerase

Chain A: 

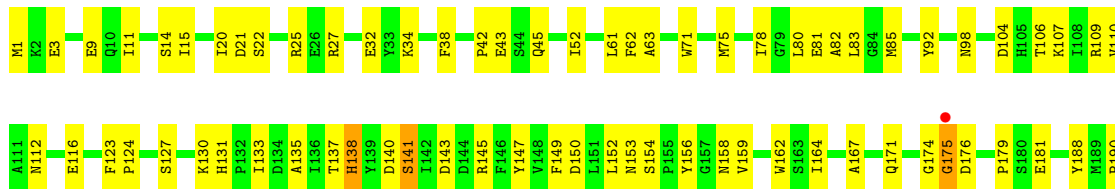


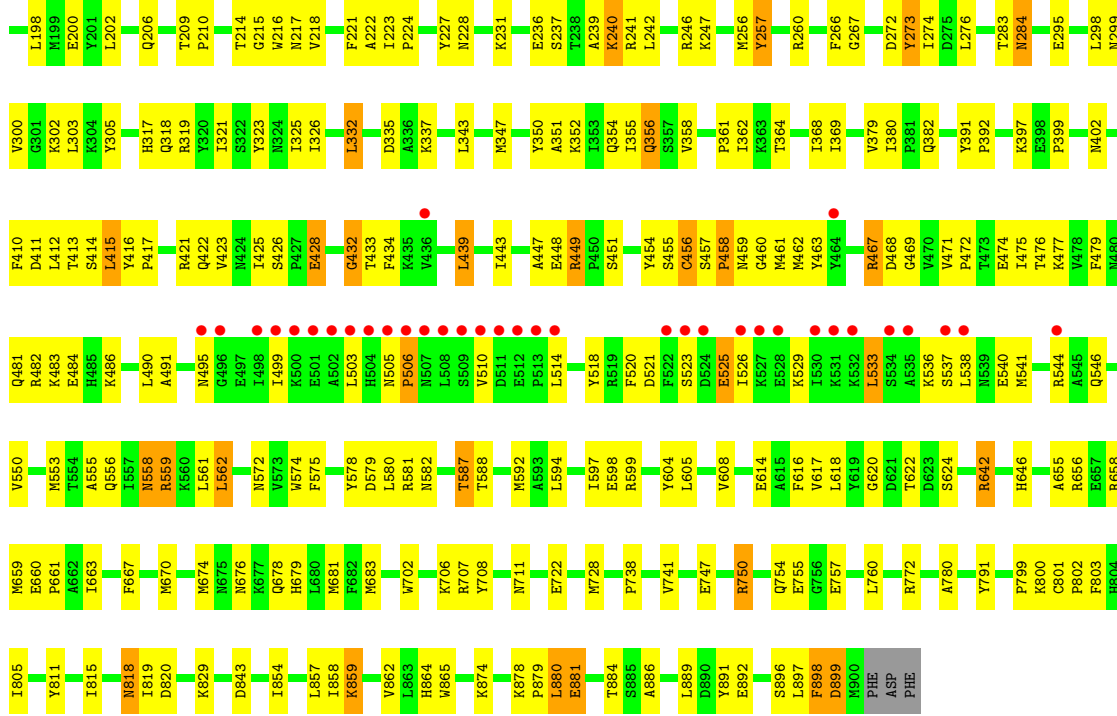


• Molecule 3: DNA polymerase

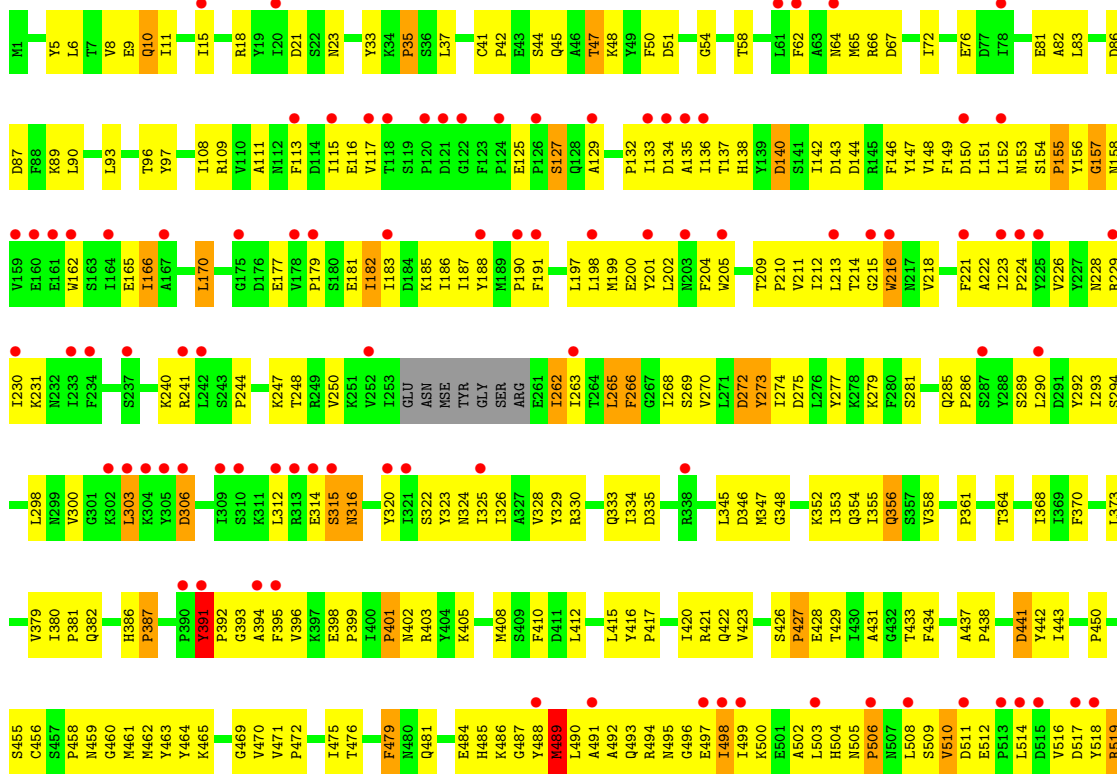


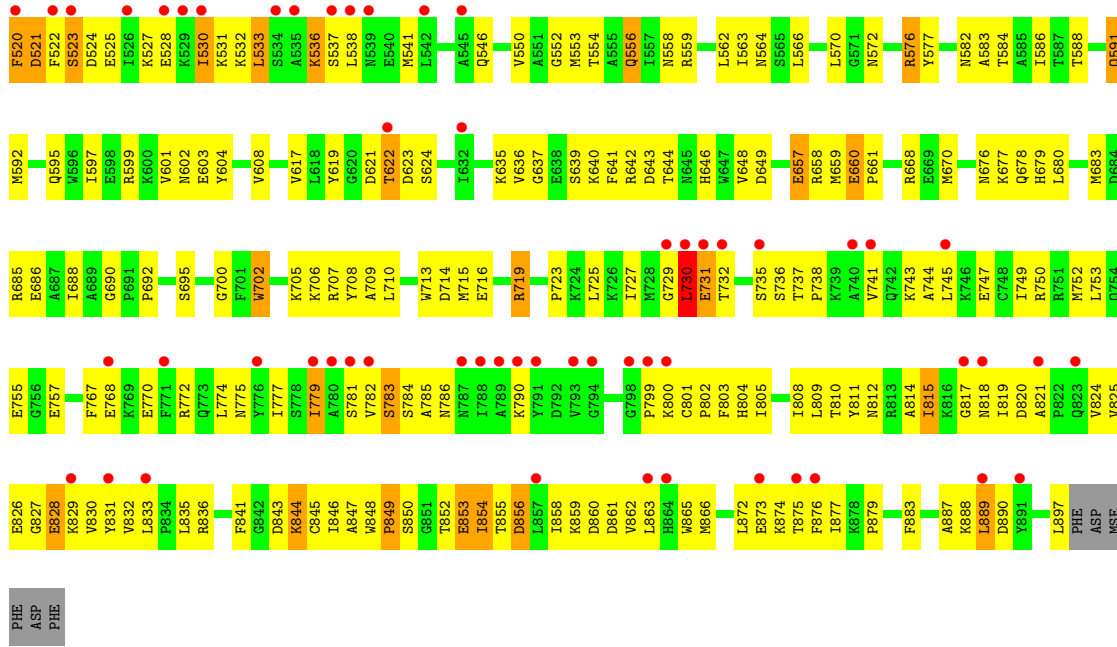
• Molecule 3: DNA polymerase





• Molecule 3: DNA polymerase





4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	132.61Å 122.63Å 168.69Å 90.00° 96.31° 90.00°	Depositor
Resolution (Å)	50.00 – 2.65 49.49 – 2.60	Depositor EDS
% Data completeness (in resolution range)	88.3 (50.00-2.65) 93.6 (49.49-2.60)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.54 (at 2.61Å)	Xtrriage
Refinement program	CNS	Depositor
R, R_{free}	0.229 , 0.281 0.239 , 0.288	Depositor DCC
R_{free} test set	14047 reflections (10.41%)	DCC
Wilson B-factor (Å ²)	47.3	Xtrriage
Anisotropy	0.252	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 56.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	31943	wwPDB-VP
Average B, all atoms (Å ²)	66.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.13% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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	0.41	0/365	1.28	0/558
1	G	0.52	0/393	1.33	1/603 (0.2%)
1	I	0.60	0/393	1.31	2/603 (0.3%)
1	K	0.73	0/393	1.31	0/603
2	F	0.41	0/307	1.24	0/468
2	H	0.57	0/333	1.37	1/510 (0.2%)
2	J	0.54	0/333	1.30	1/510 (0.2%)
2	L	0.79	0/333	1.27	1/510 (0.2%)
3	A	0.39	0/7457	0.57	0/10050
3	B	0.42	0/7326	0.62	1/9873 (0.0%)
3	C	0.41	0/7454	0.59	1/10045 (0.0%)
3	D	0.30	0/7072	0.50	0/9590
All	All	0.41	0/32159	0.68	8/43923 (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	G	1	0
2	H	0	1
All	All	1	1

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	255	ASN	N-CA-C	-5.75	95.47	111.00
1	G	12	DA	C4'-C3'-O3'	5.52	123.50	109.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L	110	DA	C4'-C3'-C2'	5.47	108.03	103.10
2	J	113	DC	C4'-C3'-C2'	5.39	107.95	103.10
3	C	750	ARG	NE-CZ-NH2	-5.35	117.62	120.30
1	I	5	DG	O4'-C1'-C2'	5.18	110.05	105.90
1	I	9	DG	N9-C1'-C2'	5.18	122.44	112.60
2	H	108	DT	O4'-C1'-C2'	5.12	110.00	105.90

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	G	12	DA	C3'

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	H	115	DA	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	348	0	195	40	0
1	G	372	0	204	26	0
1	I	372	0	204	39	0
1	K	372	0	204	38	0
2	F	276	0	155	22	0
2	H	299	0	165	22	0
2	J	299	0	165	28	0
2	L	299	0	165	26	0
3	A	7302	0	7141	309	0
3	B	7175	0	6995	306	0
3	C	7300	0	7144	254	0
3	D	6923	0	6512	420	0
4	A	117	0	0	28	0
4	B	205	0	0	17	0
4	C	160	0	0	14	0
4	D	55	0	0	25	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	E	9	0	0	2	0
4	F	5	0	0	1	0
4	G	18	0	0	0	0
4	H	9	0	0	2	0
4	I	17	0	0	3	0
4	J	4	0	0	0	0
4	K	5	0	0	1	0
4	L	2	0	0	0	0
All	All	31943	0	29249	1491	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 25.

All (1491) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:14:DC:H2''	1:I:15:DC:H5''	1.21	1.17
2:J:111:DT:H2''	2:J:112:DT:H5'	1.16	1.13
3:B:164:ILE:H	3:B:164:ILE:HD12	1.13	1.09
2:L:104:DG:H2''	2:L:105:DC:H5''	1.32	1.07
1:G:11:DC:H2''	1:G:12:DA:H5''	1.34	1.05
3:B:347:MSE:HE1	3:B:562:LEU:HD11	1.43	1.00
3:B:556:GLN:HB3	4:B:990:HOH:O	1.61	0.99
3:D:212:ILE:HD11	3:D:345:LEU:HD21	1.45	0.98
1:I:15:DC:H2''	1:I:16:DG:H5'	1.45	0.97
3:D:619:TYR:HE1	3:D:621:ASP:HB2	1.30	0.96
3:B:82:ALA:H	3:B:382:GLN:HE21	1.06	0.96
2:J:111:DT:H2''	2:J:112:DT:C5'	1.95	0.95
3:C:112:ASN:HB3	3:C:214:THR:HG23	1.49	0.95
1:I:17:DC:H1'	4:I:435:HOH:O	1.67	0.94
3:C:897:LEU:H	3:C:897:LEU:HD23	1.31	0.94
3:D:218:VAL:HG12	3:D:223:ILE:HG13	1.48	0.93
3:D:356:GLN:HE21	3:D:356:GLN:H	0.94	0.93
3:A:863:LEU:HA	3:A:866:MSE:HE3	1.48	0.93
3:D:214:THR:HG22	3:D:215:GLY:H	1.30	0.93
3:D:356:GLN:NE2	3:D:356:GLN:H	1.66	0.92
3:B:736:SER:HA	4:B:910:HOH:O	1.68	0.92
3:B:793:VAL:HB	3:B:796:PHE:HB2	1.49	0.91
3:A:642:ARG:H	3:A:646:HIS:HD2	1.20	0.90
3:D:686:GLU:HB3	3:D:715:MSE:HE1	1.54	0.89
3:B:405:LYS:HA	3:B:699:GLY:HA3	1.55	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:10:DA:H2''	1:I:11:DC:H5'	1.55	0.89
3:B:530:ILE:HG13	3:B:531:LYS:H	1.38	0.89
3:B:732:THR:HG23	3:B:733:GLN:HE21	1.38	0.88
1:G:11:DC:C2'	1:G:12:DA:H5''	2.04	0.87
3:D:356:GLN:N	3:D:356:GLN:HE21	1.71	0.87
3:C:112:ASN:HD21	3:C:332:LEU:HD11	1.37	0.86
3:D:619:TYR:CE1	3:D:621:ASP:HB2	2.09	0.86
3:D:844:LYS:H	3:D:844:LYS:HD3	1.38	0.86
3:C:572:ASN:ND2	3:C:574:TRP:H	1.73	0.86
3:D:854:ILE:HD11	3:D:858:ILE:HD11	1.56	0.86
2:L:112:DT:H2''	2:L:113:DC:H5''	1.55	0.86
2:L:112:DT:C2'	2:L:113:DC:H5''	2.04	0.86
3:D:597:ILE:O	3:D:601:VAL:HG23	1.73	0.86
3:D:873:GLU:HA	3:D:877:ILE:HG12	1.57	0.85
3:A:495:ASN:HD21	3:A:521:ASP:HA	1.41	0.85
3:C:553:MSE:HA	4:C:1026:HOH:O	1.75	0.85
1:I:9:DG:H2''	1:I:10:DA:H5''	1.59	0.85
3:B:253:ILE:HD11	3:B:260:ARG:CZ	2.07	0.84
3:A:655:ALA:HA	3:A:659:MSE:HG3	1.60	0.84
1:E:6:DA:H2''	1:E:7:DA:C8	2.12	0.84
3:B:863:LEU:HA	3:B:866:MSE:HE3	1.60	0.84
3:D:489:MSE:HE3	3:D:490:LEU:HB2	1.57	0.84
1:G:7:DA:H2''	1:G:8:DT:H5'	1.58	0.84
3:D:6:LEU:HD22	3:D:211:VAL:HG11	1.60	0.83
3:A:90:LEU:HD22	3:A:353:ILE:HG22	1.59	0.83
2:J:104:DG:H2'	2:J:105:DC:C6	2.12	0.83
1:K:5:DG:H2''	1:K:6:DA:H5'	1.59	0.83
3:A:728:MSE:HG3	4:A:986:HOH:O	1.77	0.83
3:D:154:SER:HB3	3:D:155:PRO:HD2	1.60	0.83
3:D:137:THR:HB	3:D:328:VAL:HG21	1.58	0.83
1:I:14:DC:C2'	1:I:15:DC:H5''	2.07	0.83
2:L:105:DC:H2'	2:L:106:DT:H72	1.59	0.83
3:B:386:HIS:HB2	3:B:573:VAL:HG22	1.60	0.83
3:C:660:GLU:HB2	3:C:661:PRO:HD3	1.60	0.83
3:D:412:LEU:HD12	3:D:623:ASP:HA	1.61	0.82
3:A:486:LYS:HE3	3:A:556:GLN:HG2	1.62	0.82
3:B:75:MSE:HA	3:B:75:MSE:HE3	1.61	0.82
2:L:104:DG:H2''	2:L:105:DC:C5'	2.08	0.82
3:A:499:ILE:HD13	3:A:541:MSE:HG2	1.61	0.81
3:D:303:LEU:HD23	3:D:303:LEU:H	1.44	0.81
1:K:8:DT:H2''	1:K:9:DG:H5'	1.62	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:121:ASP:HA	3:B:819:ILE:HG21	1.62	0.81
3:C:592:MSE:HE3	3:C:670:MSE:SE	2.30	0.81
1:I:12:DA:H2''	1:I:13:DG:C8	2.14	0.81
3:A:660:GLU:HB2	3:A:661:PRO:HD3	1.63	0.81
3:A:738:PRO:HB3	3:A:780:ALA:O	1.80	0.80
3:C:412:LEU:HG	3:C:683:MSE:HE3	1.64	0.80
2:F:106:DT:H2''	2:F:107:DG:H5''	1.63	0.80
3:D:484:GLU:HG2	3:D:488:TYR:HE1	1.46	0.80
3:A:408:MSE:HE1	3:A:655:ALA:HB2	1.62	0.80
3:B:154:SER:HB3	3:B:313:ARG:HH12	1.46	0.80
1:I:9:DG:H2''	1:I:10:DA:C5'	2.12	0.80
3:C:503:LEU:HA	3:C:506:PRO:HG3	1.64	0.80
2:J:111:DT:C2'	2:J:112:DT:H5'	2.08	0.79
3:A:483:LYS:HE3	3:A:483:LYS:HA	1.64	0.79
3:C:392:PRO:O	3:C:587:THR:HG21	1.83	0.79
1:I:5:DG:H2''	1:I:6:DA:C5'	2.12	0.79
2:J:109:DC:H2''	2:J:110:DA:H5'	1.65	0.79
3:B:732:THR:HG23	3:B:733:GLN:NE2	1.98	0.78
3:C:240:LYS:HE3	3:C:246:ARG:HB3	1.64	0.78
1:I:5:DG:H2''	1:I:6:DA:H5'	1.65	0.77
3:A:347:MSE:HB2	3:A:558:ASN:HD21	1.50	0.77
3:D:137:THR:HG22	3:D:138:HIS:H	1.48	0.77
3:B:159:VAL:HG21	3:B:317:HIS:CD2	2.20	0.77
3:B:157:GLY:C	3:B:158:ASN:HD22	1.87	0.77
1:I:8:DT:H4'	4:I:192:HOH:O	1.86	0.76
3:B:224:PRO:HA	3:B:263:ILE:HD12	1.66	0.76
1:G:9:DG:H2''	1:G:10:DA:H5'	1.68	0.76
3:A:739:LYS:HD3	3:A:778:SER:HA	1.65	0.76
1:E:13:DG:O5'	3:A:800:LYS:HG2	1.85	0.76
3:D:833:LEU:HD22	3:D:866:MSE:HE3	1.68	0.76
1:K:13:DG:H2''	1:K:14:DC:H5'	1.65	0.76
3:A:176:ASP:HA	3:A:319:ARG:HH21	1.51	0.75
3:C:523:SER:HB2	3:C:525:GLU:HG2	1.68	0.75
3:A:700:GLY:HA2	3:A:753:LEU:HD22	1.69	0.75
3:C:454:TYR:HD2	3:C:462:MSE:HE2	1.51	0.75
3:D:136:ILE:HG23	3:D:149:PHE:HB2	1.66	0.75
3:A:775:ASN:HD21	3:A:777:ILE:HB	1.51	0.75
3:D:784:SER:HA	3:D:829:LYS:HA	1.67	0.75
1:K:8:DT:H2'	1:K:9:DG:C8	2.22	0.75
3:A:514:LEU:HD21	3:A:529:LYS:HE2	1.67	0.75
3:C:221:PHE:O	3:C:224:PRO:HD2	1.86	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:824:VAL:HA	3:D:849:PRO:HB3	1.69	0.75
3:D:399:PRO:HB3	3:D:619:TYR:HD2	1.52	0.74
3:A:100:GLU:HG2	3:A:102:LYS:HE2	1.67	0.74
1:I:10:DA:H2''	1:I:11:DC:C5'	2.16	0.74
2:J:114:DC:H2''	2:J:115:DA:H5''	1.68	0.74
3:A:848:TRP:HB2	3:A:849:PRO:HD2	1.69	0.74
1:K:8:DT:H2'	1:K:9:DG:H8	1.52	0.74
3:B:116:GLU:HB2	3:B:135:ALA:HB3	1.69	0.74
3:B:735:SER:HB3	3:B:737:THR:HG23	1.67	0.74
3:A:739:LYS:CD	3:A:739:LYS:H	1.99	0.74
3:B:818:ASN:ND2	3:B:821:ALA:HB2	2.02	0.74
3:D:700:GLY:HA2	3:D:753:LEU:HD22	1.69	0.74
3:A:213:LEU:HD13	3:A:223:ILE:HD11	1.68	0.74
3:B:298:LEU:O	3:B:300:VAL:HG23	1.88	0.74
1:I:6:DA:H2''	1:I:7:DA:C8	2.23	0.73
3:D:730:LEU:H	3:D:730:LEU:HD23	1.52	0.73
3:A:392:PRO:O	3:A:587:THR:HG21	1.88	0.73
3:D:300:VAL:HG21	3:D:330:ARG:HH12	1.52	0.73
3:D:514:LEU:HB3	3:D:516:VAL:HG13	1.69	0.73
3:A:631:LYS:HB2	3:A:631:LYS:NZ	2.04	0.73
3:D:218:VAL:HG13	3:D:222:ALA:HB3	1.69	0.73
1:I:13:DG:H2''	1:I:14:DC:H5'	1.71	0.73
3:A:112:ASN:HB2	4:A:987:HOH:O	1.89	0.73
3:B:700:GLY:HA2	3:B:753:LEU:HD22	1.70	0.72
3:D:250:VAL:HG13	3:D:263:ILE:HG12	1.71	0.72
3:A:776:TYR:HB2	3:A:866:MSE:HE1	1.71	0.72
3:B:732:THR:CG2	3:B:733:GLN:HE21	2.03	0.72
2:H:104:DG:H2''	2:H:105:DC:O5'	1.88	0.72
2:L:106:DT:H2''	2:L:107:DG:H5''	1.72	0.72
3:A:443:ILE:HD13	3:A:595:GLN:HB2	1.71	0.72
3:B:163:SER:H	3:B:318:GLN:HE22	1.37	0.72
3:D:492:ALA:HA	3:D:495:ASN:HB3	1.72	0.72
3:D:790:LYS:HD3	3:D:790:LYS:O	1.89	0.72
3:B:223:ILE:HB	3:B:224:PRO:HD3	1.70	0.72
2:F:106:DT:H2''	2:F:107:DG:C5'	2.20	0.72
3:C:153:ASN:HD22	3:C:158:ASN:CG	1.93	0.71
3:D:523:SER:HB2	3:D:527:LYS:CB	2.20	0.71
3:A:592:MSE:HE1	3:A:674:MSE:HG3	1.71	0.71
3:B:589:PHE:HE1	3:B:681:MSE:HE2	1.55	0.71
3:D:405:LYS:O	3:D:690:GLY:HA2	1.91	0.71
3:D:604:TYR:OH	3:D:658:ARG:HG3	1.89	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:347:MSE:HG2	3:D:358:VAL:HG13	1.72	0.71
3:A:422:GLN:HE22	3:A:681:MSE:HG2	1.56	0.71
3:A:507:ASN:C	3:A:508:LEU:HD22	2.10	0.71
3:A:468:ASP:HA	4:A:997:HOH:O	1.90	0.71
3:B:253:ILE:O	3:B:259:SER:HA	1.90	0.71
3:C:295:GLU:O	3:C:299:ASN:HA	1.91	0.71
3:D:202:LEU:HB3	3:D:241:ARG:HD3	1.72	0.71
3:B:435:LYS:H	3:B:435:LYS:HD3	1.54	0.70
3:D:486:LYS:HA	4:D:916:HOH:O	1.91	0.70
3:D:702:TRP:CE2	3:D:708:TYR:HB3	2.27	0.70
3:B:303:LEU:HD13	3:B:319:ARG:HD2	1.72	0.70
3:B:408:MSE:HE1	3:B:655:ALA:HB2	1.73	0.70
3:C:572:ASN:HD22	3:C:574:TRP:H	1.38	0.70
3:C:104:ASP:OD1	3:C:106:THR:HB	1.91	0.70
3:C:21:ASP:OD2	3:C:25:ARG:HG3	1.92	0.70
3:B:164:ILE:H	3:B:164:ILE:CD1	1.90	0.70
3:B:735:SER:CB	3:B:737:THR:HG23	2.22	0.70
2:L:110:DA:H2''	2:L:111:DT:O4'	1.92	0.70
3:D:370:PHE:HA	3:D:380:ILE:HD11	1.73	0.69
3:D:730:LEU:HG	3:D:731:GLU:H	1.57	0.69
3:A:218:VAL:HG23	3:A:222:ALA:HB3	1.74	0.69
3:D:803:PHE:CZ	3:D:845:CYS:HB3	2.27	0.69
3:D:326:ILE:O	3:D:330:ARG:HG2	1.92	0.69
3:D:802:PRO:HB2	3:D:804:HIS:CE1	2.27	0.69
3:A:347:MSE:HE1	3:A:562:LEU:HD11	1.75	0.69
3:B:435:LYS:N	3:B:435:LYS:HD3	2.08	0.69
3:B:797:PRO:HG3	3:B:806:ARG:NH1	2.08	0.69
3:D:213:LEU:HB3	3:D:270:VAL:HG12	1.73	0.69
3:D:731:GLU:OE2	3:D:879:PRO:HB3	1.92	0.69
2:H:107:DG:H5'	4:H:306:HOH:O	1.92	0.69
3:B:733:GLN:O	3:B:734:LYS:C	2.30	0.69
3:C:343:LEU:HG	4:C:1053:HOH:O	1.92	0.69
3:C:604:TYR:OH	3:C:658:ARG:HB3	1.93	0.69
3:D:779:ILE:HD11	3:D:866:MSE:HE1	1.73	0.69
3:D:8:VAL:HG11	3:D:93:LEU:HD13	1.75	0.69
1:K:5:DG:H2''	1:K:6:DA:C5'	2.21	0.69
3:D:117:VAL:HG12	3:D:133:ILE:HA	1.73	0.69
3:B:303:LEU:HD12	3:B:323:TYR:HA	1.74	0.68
3:C:412:LEU:HD13	3:C:415:LEU:HD13	1.75	0.68
3:D:109:ARG:HB2	3:D:211:VAL:HG23	1.75	0.68
2:H:110:DA:H2''	2:H:111:DT:H5'	1.74	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:90:LEU:HG	3:D:353:ILE:HG22	1.75	0.68
2:F:106:DT:C2'	2:F:107:DG:H5''	2.22	0.68
3:C:482:ARG:C	3:C:484:GLU:H	1.96	0.68
3:C:81:GLU:HG2	3:C:83:LEU:HD22	1.73	0.68
2:F:111:DT:H1'	4:F:577:HOH:O	1.93	0.68
3:A:642:ARG:H	3:A:646:HIS:CD2	2.08	0.68
3:D:458:PRO:HG3	3:D:592:MSE:SE	2.43	0.68
3:A:739:LYS:HD2	3:A:778:SER:O	1.94	0.68
1:I:13:DG:H2''	1:I:14:DC:C5'	2.24	0.68
3:C:881:GLU:HG3	3:C:891:TYR:HE1	1.59	0.68
3:D:737:THR:HG22	3:D:875:THR:HB	1.76	0.68
3:B:75:MSE:HA	3:B:75:MSE:CE	2.23	0.67
3:D:427:PRO:HG2	4:D:953:HOH:O	1.94	0.67
4:E:449:HOH:O	2:F:110:DA:H1'	1.93	0.67
3:B:326:ILE:CG2	3:B:330:ARG:HE	2.06	0.67
3:C:52:ILE:HD12	3:C:428:GLU:HG3	1.77	0.67
3:D:830:VAL:HA	3:D:850:SER:H	1.58	0.67
3:A:485:HIS:HB3	3:A:556:GLN:HE21	1.58	0.67
1:I:9:DG:C2'	1:I:10:DA:H5''	2.23	0.67
3:C:171:GLN:HA	3:C:175:GLY:HA2	1.77	0.67
3:C:495:ASN:O	3:C:499:ILE:HG12	1.94	0.67
3:A:602:ASN:HD21	3:A:617:VAL:H	1.42	0.67
3:C:152:LEU:HD11	3:C:190:PRO:HB2	1.76	0.67
3:D:132:PRO:HB3	3:D:229:ARG:NH2	2.10	0.67
3:A:403:ARG:HD2	3:A:887:ALA:O	1.95	0.67
3:C:175:GLY:HA3	3:C:319:ARG:HH21	1.59	0.66
2:J:105:DC:H2''	2:J:106:DT:H5'	1.77	0.66
3:D:821:ALA:HB1	3:D:855:THR:HG21	1.78	0.66
3:A:559:ARG:O	3:A:563:ILE:HG13	1.94	0.66
3:C:130:LYS:HE3	3:C:131:HIS:CE1	2.29	0.66
3:B:82:ALA:H	3:B:382:GLN:NE2	1.88	0.66
3:D:471:VAL:HB	3:D:472:PRO:HD3	1.77	0.66
2:L:105:DC:H2'	2:L:106:DT:C7	2.24	0.66
3:B:164:ILE:HD12	3:B:164:ILE:N	1.98	0.66
3:C:298:LEU:HB2	3:C:300:VAL:HG12	1.78	0.66
1:E:18:DG:H3'	1:E:18:DG:OP1	1.96	0.66
2:H:107:DG:H2''	2:H:108:DT:O5'	1.94	0.66
2:H:110:DA:H2''	2:H:111:DT:C5'	2.26	0.66
3:A:338:ARG:HB3	3:A:340:PHE:CE1	2.30	0.66
3:C:78:ILE:HG13	3:C:80:LEU:HD23	1.77	0.66
1:E:2:DG:OP1	3:A:361:PRO:HD2	1.96	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:527:LYS:HA	3:B:530:ILE:HD11	1.76	0.66
3:C:391:TYR:HB2	3:C:392:PRO:HD2	1.76	0.66
1:I:16:DG:H2''	1:I:17:DC:O5'	1.94	0.66
1:K:8:DT:OP1	1:K:8:DT:H4'	1.96	0.66
3:B:458:PRO:HG3	3:B:592:MSE:SE	2.46	0.66
3:C:556:GLN:HB3	4:C:1026:HOH:O	1.96	0.66
3:B:326:ILE:O	3:B:330:ARG:HG2	1.95	0.65
3:B:593:ALA:CB	3:B:681:MSE:HE3	2.25	0.65
3:D:191:PHE:HE2	3:D:200:GLU:HG3	1.61	0.65
3:C:540:GLU:O	3:C:544:ARG:HG2	1.96	0.65
3:A:170:LEU:HA	3:A:177:GLU:HG2	1.79	0.65
3:A:874:LYS:HB3	4:A:964:HOH:O	1.96	0.65
3:A:810:THR:OG1	3:A:843:ASP:HB2	1.96	0.65
1:G:9:DG:H2''	1:G:10:DA:C5'	2.26	0.65
3:D:768:GLU:HG2	3:D:872:LEU:HD21	1.79	0.65
2:L:112:DT:H2''	2:L:113:DC:O4'	1.97	0.65
3:D:244:PRO:HD3	3:D:268:ILE:HD11	1.79	0.64
3:A:193:ASN:HD21	3:A:196:GLU:HG3	1.61	0.64
3:A:555:ALA:N	4:A:960:HOH:O	2.30	0.64
3:B:422:GLN:HG3	3:B:678:GLN:O	1.96	0.64
3:B:516:VAL:H	3:B:544:ARG:NH1	1.94	0.64
3:C:439:LEU:HD21	3:C:588:THR:HG23	1.78	0.64
1:E:5:DG:C2'	1:E:6:DA:H5''	2.27	0.64
3:C:458:PRO:HB2	3:C:588:THR:HG22	1.79	0.64
1:K:3:CTG:H2''	1:K:4:DG:C8	2.32	0.64
3:C:231:LYS:HE3	3:C:236:GLU:HG3	1.79	0.64
3:C:455:SER:OG	3:C:676:ASN:HA	1.98	0.64
3:D:592:MSE:HE3	3:D:670:MSE:SE	2.48	0.64
3:D:649:ASP:CG	3:D:719:ARG:HH22	2.01	0.64
3:B:541:MSE:HE3	3:B:544:ARG:NH2	2.12	0.64
3:C:218:VAL:HG22	3:C:223:ILE:HG13	1.80	0.64
3:D:492:ALA:HA	3:D:495:ASN:CB	2.27	0.64
3:D:355:ILE:O	3:D:358:VAL:HG23	1.97	0.64
3:D:484:GLU:HG2	3:D:488:TYR:CE1	2.29	0.64
3:D:504:HIS:C	3:D:506:PRO:HD3	2.17	0.64
2:L:112:DT:H2''	2:L:113:DC:C5'	2.27	0.64
3:A:738:PRO:HB3	3:A:780:ALA:C	2.18	0.64
3:A:811:TYR:OH	3:A:822:PRO:HG2	1.98	0.64
3:B:668:ARG:HG3	3:B:668:ARG:HH11	1.62	0.64
3:D:416:TYR:O	3:D:420:ILE:HG13	1.98	0.64
3:D:668:ARG:HB2	3:D:668:ARG:NH1	2.12	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:83:LEU:HD12	3:A:83:LEU:H	1.62	0.64
3:B:757:GLU:O	3:B:761:GLN:HG3	1.97	0.64
2:F:106:DT:H1'	2:F:107:DG:H5''	1.80	0.64
2:H:113:DC:O5'	3:B:734:LYS:HB2	1.98	0.63
3:A:822:PRO:HD2	3:A:855:THR:HB	1.80	0.63
3:D:856:ASP:HA	3:D:859:LYS:HB3	1.80	0.63
1:K:8:DT:H2''	1:K:9:DG:C5'	2.28	0.63
3:A:13:ASP:OD1	3:A:66:ARG:HB2	1.98	0.63
3:A:231:LYS:HG3	3:A:236:GLU:HA	1.79	0.63
3:B:598:GLU:HG3	3:B:617:VAL:HG11	1.80	0.63
3:B:397:LYS:HD3	3:B:619:TYR:HA	1.81	0.63
1:E:11:DC:H2''	1:E:12:DA:H5'	1.79	0.63
3:A:251:LYS:HD2	3:A:262:ILE:HD11	1.80	0.63
3:B:403:ARG:HH11	3:B:403:ARG:CB	2.12	0.63
3:B:658:ARG:NE	3:D:897:LEU:HD11	2.13	0.63
1:E:9:DG:H2'	1:E:11:DC:C6	2.34	0.63
3:A:387:PRO:HB2	4:A:998:HOH:O	1.98	0.63
1:K:9:DG:H2''	1:K:10:DA:O5'	1.99	0.63
3:B:304:LYS:N	3:B:304:LYS:HD2	2.12	0.63
3:A:620:GLY:O	3:A:621:ASP:HB2	1.99	0.63
3:D:273:TYR:OH	3:D:335:ASP:HA	1.99	0.63
3:D:41:CYS:HB2	3:D:42:PRO:HD2	1.81	0.62
3:D:642:ARG:HG2	3:D:646:HIS:HD2	1.63	0.62
3:D:398:GLU:OE1	3:D:705:LYS:HE3	1.98	0.62
3:A:304:LYS:O	3:A:319:ARG:HD3	1.99	0.62
3:C:467:ARG:HD3	3:C:467:ARG:H	1.64	0.62
1:G:14:DC:H2''	1:G:15:DC:H5'	1.81	0.62
2:H:101:DG:H8	2:H:101:DG:HO5'	1.47	0.62
3:D:166:ILE:HB	4:D:934:HOH:O	1.99	0.62
1:I:2:DG:OP2	3:C:361:PRO:HD2	2.00	0.62
3:B:403:ARG:HH11	3:B:403:ARG:HB3	1.64	0.62
3:A:655:ALA:HA	3:A:659:MSE:CG	2.27	0.62
3:A:685:ARG:NH1	3:A:688:ILE:HG13	2.15	0.62
3:B:589:PHE:CE1	3:B:681:MSE:HE2	2.33	0.62
3:D:272:ASP:OD2	3:D:274:ILE:HG22	1.99	0.62
3:D:725:LEU:HD11	3:D:750:ARG:HG3	1.82	0.62
3:A:839:ASN:HD22	3:A:841:PHE:HB2	1.63	0.62
3:C:818:ASN:OD1	3:C:857:LEU:HD11	2.00	0.62
1:E:14:DC:H2''	1:E:15:DC:H5'	1.81	0.62
3:B:790:LYS:HE2	3:B:802:PRO:HD3	1.81	0.62
3:D:841:PHE:HZ	3:D:861:ASP:HB3	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:103:DG:H2''	2:J:104:DG:O5'	1.99	0.62
1:K:16:DG:H2''	1:K:17:DC:H5''	1.82	0.62
3:A:130:LYS:HE2	4:A:956:HOH:O	2.00	0.62
3:C:520:PHE:HA	4:C:937:HOH:O	2.00	0.61
3:D:520:PHE:HA	4:D:931:HOH:O	2.00	0.61
3:B:162:TRP:CZ3	3:B:164:ILE:HG13	2.35	0.61
1:E:12:DA:H2''	1:E:13:DG:O5'	2.00	0.61
1:G:7:DA:H2''	1:G:8:DT:C5'	2.29	0.61
2:J:108:DT:H2''	2:J:109:DC:H5'	1.82	0.61
3:A:82:ALA:O	3:A:382:GLN:HG3	2.00	0.61
3:C:164:ILE:N	4:C:983:HOH:O	2.27	0.61
3:B:303:LEU:HB2	3:B:323:TYR:CD1	2.36	0.61
3:B:541:MSE:HE3	3:B:544:ARG:HH22	1.65	0.61
3:C:421:ARG:HD3	3:C:476:THR:OG1	1.99	0.61
3:D:686:GLU:CB	3:D:715:MSE:HE1	2.28	0.61
1:E:11:DC:H2''	1:E:12:DA:C5'	2.31	0.61
3:B:257:TYR:CE1	3:B:786:ASN:HB3	2.35	0.61
3:D:496:GLY:O	3:D:499:ILE:HB	2.01	0.61
3:A:443:ILE:HD13	3:A:595:GLN:CB	2.30	0.61
3:D:277:TYR:O	3:D:281:SER:HB2	2.01	0.61
3:D:553:MSE:O	3:D:556:GLN:HG3	2.00	0.61
3:D:825:VAL:HB	3:D:828:GLU:HB2	1.81	0.61
3:A:85:MSE:HE1	3:A:366:ASP:OD2	2.01	0.61
3:A:606:ASN:OD1	3:A:616:PHE:HE1	1.84	0.61
3:A:707:ARG:HD3	3:A:729:GLY:HA3	1.83	0.60
3:D:402:ASN:CG	3:D:403:ARG:H	2.04	0.60
3:D:465:LYS:HD2	3:D:677:LYS:HA	1.83	0.60
2:L:114:DC:H2''	2:L:115:DA:O4'	2.01	0.60
3:B:132:PRO:HA	3:B:194:GLU:OE2	2.01	0.60
3:B:421:ARG:HD3	3:B:475:ILE:HD12	1.82	0.60
3:C:343:LEU:HD11	3:C:558:ASN:ND2	2.15	0.60
1:K:13:DG:H2''	1:K:14:DC:C5'	2.32	0.60
3:A:347:MSE:HB2	3:A:558:ASN:ND2	2.16	0.60
3:B:159:VAL:HG11	3:B:317:HIS:HB2	1.83	0.60
3:D:214:THR:HG22	3:D:215:GLY:N	2.10	0.60
1:K:2:DG:O6	3:D:279:LYS:HD2	2.01	0.60
3:D:714:ASP:HB2	3:D:719:ARG:HD3	1.83	0.60
3:D:9:GLU:O	3:D:15:ILE:HG13	2.01	0.60
3:D:262:ILE:N	3:D:262:ILE:HD12	2.16	0.60
1:E:6:DA:H2''	1:E:7:DA:N7	2.15	0.60
3:A:606:ASN:HD21	3:A:614:GLU:H	1.47	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:494:ARG:HH11	3:B:494:ARG:CB	2.15	0.60
3:C:112:ASN:HD21	3:C:332:LEU:CD1	2.14	0.60
3:C:791:TYR:CD2	3:C:801:CYS:HA	2.36	0.60
3:D:142:ILE:HD12	3:D:143:ASP:N	2.17	0.60
3:A:405:LYS:HA	3:A:699:GLY:HA3	1.84	0.60
3:D:434:PHE:CZ	3:D:460:GLY:HA2	2.36	0.60
2:H:106:DT:H2''	2:H:107:DG:H5'	1.83	0.60
1:I:7:DA:H2''	1:I:8:DT:O5'	2.02	0.60
3:B:294:SER:HB2	3:B:301:GLY:HA2	1.82	0.60
2:F:111:DT:H2''	2:F:112:DT:C5'	2.31	0.60
1:G:12:DA:H2''	1:G:13:DG:C8	2.36	0.60
3:A:502:ALA:HA	3:A:538:LEU:HD23	1.82	0.60
3:A:554:THR:C	4:A:960:HOH:O	2.41	0.60
3:A:784:SER:HB3	3:A:829:LYS:HG2	1.81	0.60
3:C:711:ASN:ND2	3:C:754:GLN:HE21	2.00	0.60
3:D:890:ASP:HB3	4:D:949:HOH:O	2.02	0.60
3:A:386:HIS:HB2	3:A:573:VAL:HB	1.84	0.59
3:A:625:ILE:HG12	3:A:683:MSE:HE1	1.83	0.59
3:C:655:ALA:O	3:C:660:GLU:HG2	2.02	0.59
3:B:285:GLN:HG3	3:B:286:PRO:HD2	1.84	0.59
3:B:636:VAL:O	3:B:640:LYS:HG3	2.02	0.59
3:D:730:LEU:HD12	3:D:883:PHE:CZ	2.37	0.59
3:A:81:GLU:OE2	3:A:83:LEU:HG	2.03	0.59
3:C:112:ASN:HB3	3:C:214:THR:CG2	2.30	0.59
3:B:303:LEU:C	3:B:304:LYS:HD2	2.23	0.59
2:F:102:DC:H2''	2:F:103:DG:OP2	2.02	0.59
2:J:101:DG:HO5'	2:J:101:DG:H8	1.50	0.59
3:A:791:TYR:O	3:A:798:GLY:N	2.36	0.59
3:D:510:VAL:O	3:D:533:LEU:HD13	2.02	0.59
1:I:6:DA:H2''	1:I:7:DA:H8	1.66	0.59
1:K:3:CTG:H2''	1:K:4:DG:H8	1.66	0.59
3:A:194:GLU:OE1	3:A:229:ARG:HD2	2.02	0.59
2:J:105:DC:H2''	2:J:106:DT:C5'	2.32	0.59
1:K:13:DG:H2'	1:K:14:DC:C6	2.38	0.59
3:C:273:TYR:OH	3:C:335:ASP:HA	2.02	0.59
3:D:731:GLU:N	4:D:925:HOH:O	2.35	0.59
3:B:82:ALA:N	3:B:382:GLN:HE21	1.90	0.59
3:C:1:MSE:HE1	3:C:107:LYS:HE3	1.84	0.59
1:K:1:DC:H4'	3:D:572:ASN:HD21	1.68	0.59
3:B:731:GLU:HB3	3:B:737:THR:HG21	1.85	0.58
3:D:708:TYR:O	3:D:730:LEU:HD22	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:105:DC:H4'	2:L:105:DC:OP1	2.03	0.58
3:C:757:GLU:HB2	3:C:889:LEU:HD22	1.84	0.58
3:A:90:LEU:CD2	3:A:353:ILE:HG22	2.31	0.58
3:A:513:PRO:HG3	3:A:537:SER:HB3	1.84	0.58
3:D:202:LEU:HD13	3:D:241:ARG:HD2	1.86	0.58
3:D:306:ASP:HB2	3:D:315:SER:OG	2.03	0.58
3:D:330:ARG:O	3:D:334:ILE:HG13	2.02	0.58
3:D:844:LYS:N	3:D:844:LYS:HD3	2.15	0.58
3:A:791:TYR:HA	3:A:799:PRO:HD2	1.84	0.58
3:A:807:GLY:HA3	4:A:972:HOH:O	2.03	0.58
3:D:642:ARG:HG3	3:D:643:ASP:OD2	2.03	0.58
3:D:832:VAL:HB	4:D:957:HOH:O	2.02	0.58
1:I:2:DG:H2''	1:I:3:CTG:OP2	2.04	0.58
1:I:8:DT:H2'	1:I:9:DG:C8	2.37	0.58
3:A:896:SER:HB3	3:A:899:ASP:OD1	2.03	0.58
3:D:392:PRO:HD2	3:D:584:THR:HG22	1.86	0.58
3:D:496:GLY:HA2	3:D:499:ILE:HD12	1.84	0.58
3:A:129:ALA:HA	3:A:225:TYR:CE1	2.39	0.58
3:A:784:SER:HA	3:A:829:LYS:HA	1.85	0.58
3:A:734:LYS:HE2	3:A:737:THR:OG1	2.04	0.58
3:A:485:HIS:HB3	3:A:556:GLN:NE2	2.18	0.58
3:D:422:GLN:HG3	3:D:678:GLN:O	2.04	0.58
3:B:386:HIS:CD2	4:B:1064:HOH:O	2.56	0.58
3:D:10:GLN:HG3	3:D:65:MSE:SE	2.53	0.58
3:D:830:VAL:HG22	3:D:831:TYR:H	1.69	0.58
3:A:489:MSE:HE2	3:A:490:LEU:HG	1.86	0.58
3:A:64:ASN:ND2	3:A:67:ASP:H	2.02	0.58
3:B:435:LYS:O	3:B:435:LYS:HG2	2.04	0.58
3:C:897:LEU:H	3:C:897:LEU:CD2	2.11	0.58
3:A:775:ASN:ND2	3:A:777:ILE:HB	2.16	0.57
3:A:776:TYR:CB	3:A:866:MSE:HE1	2.34	0.57
3:B:271:LEU:HD11	3:B:356:GLN:HA	1.85	0.57
3:D:495:ASN:HD22	3:D:521:ASP:HA	1.68	0.57
3:D:51:ASP:HA	3:D:379:VAL:HG22	1.85	0.57
1:E:4:DG:H2''	1:E:5:DG:O5'	2.05	0.57
1:G:14:DC:H2''	1:G:15:DC:C5'	2.34	0.57
1:G:7:DA:H2'	1:G:8:DT:H72	1.86	0.57
2:L:103:DG:H2''	2:L:104:DG:C8	2.39	0.57
3:A:739:LYS:CD	3:A:739:LYS:N	2.68	0.57
3:B:158:ASN:HD22	3:B:158:ASN:N	2.02	0.57
2:H:114:DC:OP1	3:B:728:MSE:HE3	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:52:ILE:HB	3:C:428:GLU:HG2	1.85	0.57
1:I:5:DG:H2''	1:I:6:DA:H5''	1.86	0.57
3:B:421:ARG:HD2	3:B:476:THR:OG1	2.03	0.57
3:B:534:SER:OG	3:B:537:SER:HB2	2.05	0.57
3:B:685:ARG:NH2	3:B:714:ASP:OD1	2.37	0.57
3:C:555:ALA:O	3:C:559:ARG:HG2	2.04	0.57
3:D:509:SER:HB2	3:D:533:LEU:HA	1.87	0.57
3:B:183:ILE:HG23	3:B:184:ASP:N	2.19	0.57
3:B:227:TYR:CD2	3:B:263:ILE:HD13	2.40	0.57
3:B:312:LEU:HD12	3:B:320:TYR:HB2	1.86	0.57
3:B:703:THR:OG1	3:B:707:ARG:HD3	2.05	0.57
3:C:711:ASN:HD21	3:C:754:GLN:HE21	1.51	0.57
3:D:514:LEU:HD23	3:D:541:MSE:HE1	1.87	0.57
3:A:471:VAL:HB	3:A:472:PRO:CD	2.34	0.57
3:A:800:LYS:NZ	3:A:800:LYS:HB2	2.20	0.57
3:B:245:HIS:HE1	4:B:961:HOH:O	1.85	0.57
3:C:477:LYS:O	3:C:481:GLN:HG3	2.04	0.57
3:D:730:LEU:N	3:D:730:LEU:HD23	2.19	0.57
3:A:806:ARG:HA	3:A:809:LEU:HD12	1.86	0.57
3:D:396:VAL:HG21	3:D:706:LYS:HE2	1.86	0.57
3:D:833:LEU:CD2	3:D:866:MSE:HE3	2.35	0.57
3:B:593:ALA:HB1	3:B:681:MSE:HE3	1.87	0.57
1:E:9:DG:H2''	1:E:11:DC:O4'	2.05	0.57
3:A:807:GLY:CA	4:A:972:HOH:O	2.52	0.57
3:C:42:PRO:HG2	3:C:45:GLN:HG3	1.86	0.57
3:D:300:VAL:HG21	3:D:330:ARG:NH1	2.20	0.57
3:A:597:ILE:HD11	3:A:663:ILE:HG23	1.86	0.56
3:A:6:LEU:CD1	3:A:26:GLU:HG3	2.35	0.56
3:A:771:PHE:HA	3:A:774:LEU:HD12	1.86	0.56
3:B:478:VAL:HG13	3:B:559:ARG:HG3	1.87	0.56
3:C:750:ARG:NH2	3:C:755:GLU:OE1	2.38	0.56
3:D:147:TYR:HA	3:D:187:ILE:HG23	1.87	0.56
3:D:831:TYR:HB2	3:D:848:TRP:CB	2.35	0.56
2:L:106:DT:H5''	2:L:106:DT:H6	1.70	0.56
3:A:163:SER:N	3:A:318:GLN:OE1	2.35	0.56
3:A:685:ARG:HH11	3:A:688:ILE:HG13	1.69	0.56
3:B:410:PHE:HB3	3:B:683:MSE:HG2	1.87	0.56
3:C:218:VAL:HA	3:C:222:ALA:HB3	1.86	0.56
3:D:35:PRO:HD2	3:D:64:ASN:O	2.06	0.56
1:E:14:DC:H2'	1:E:15:DC:C6	2.40	0.56
3:A:157:GLY:C	3:A:158:ASN:HD22	2.09	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:116:GLU:HB3	3:D:135:ALA:HB3	1.87	0.56
3:D:212:ILE:CD1	3:D:345:LEU:HD21	2.29	0.56
3:D:873:GLU:HG2	3:D:877:ILE:CD1	2.35	0.56
3:A:101:ILE:HG21	3:A:349:TYR:HB3	1.88	0.56
3:B:660:GLU:HB3	3:B:661:PRO:HD3	1.87	0.56
3:C:181:GLU:CD	3:C:181:GLU:H	2.08	0.56
3:C:523:SER:CB	3:C:525:GLU:HG2	2.35	0.56
3:C:599:ARG:HA	4:C:920:HOH:O	2.06	0.56
1:K:11:DC:H2''	1:K:12:DA:H5'	1.87	0.56
3:B:351:ALA:O	3:B:352:LYS:HB2	2.05	0.56
3:B:530:ILE:HG13	3:B:531:LYS:N	2.15	0.56
3:C:216:TRP:O	3:C:217:ASN:HB2	2.06	0.56
3:C:503:LEU:HD21	3:C:538:LEU:HB3	1.86	0.56
3:D:530:ILE:HD13	3:D:530:ILE:N	2.19	0.56
3:D:803:PHE:CE1	3:D:845:CYS:HB3	2.41	0.56
1:E:2:DG:OP2	3:A:362:ILE:HD12	2.05	0.56
3:A:712:VAL:HG22	3:A:724:LYS:O	2.06	0.56
3:B:221:PHE:O	3:B:224:PRO:HD2	2.05	0.56
3:D:546:GLN:HA	3:D:546:GLN:OE1	2.05	0.56
2:L:106:DT:H2''	2:L:107:DG:C5'	2.35	0.56
3:A:231:LYS:O	3:A:234:PHE:O	2.23	0.56
3:A:410:PHE:HZ	3:A:659:MSE:HE3	1.69	0.56
3:C:175:GLY:CA	3:C:319:ARG:HH21	2.19	0.56
3:C:434:PHE:CE1	3:C:460:GLY:HA2	2.40	0.56
3:D:223:ILE:HB	3:D:224:PRO:HD3	1.86	0.56
3:D:416:TYR:N	4:D:958:HOH:O	2.32	0.56
2:F:111:DT:H2''	2:F:112:DT:H5'	1.87	0.56
1:K:5:DG:H2'	1:K:6:DA:C8	2.40	0.56
3:B:494:ARG:HH11	3:B:494:ARG:HB3	1.70	0.56
3:D:752:MSE:HE3	3:D:889:LEU:HD12	1.87	0.56
3:B:245:HIS:HD2	4:B:957:HOH:O	1.88	0.56
3:C:150:ASP:OD2	3:C:321:ILE:HG13	2.06	0.56
3:C:171:GLN:NE2	3:C:303:LEU:HD22	2.21	0.56
3:D:222:ALA:O	3:D:226:VAL:HG23	2.06	0.56
3:D:216:TRP:CZ2	3:D:293:ILE:HD13	2.41	0.56
3:D:329:TYR:O	3:D:333:GLN:HG3	2.05	0.56
3:D:421:ARG:NE	3:D:476:THR:OG1	2.39	0.56
3:A:362:ILE:HD11	3:A:572:ASN:CG	2.26	0.55
3:B:197:LEU:HD23	3:B:197:LEU:C	2.26	0.55
3:D:588:THR:O	3:D:591:GLN:HB2	2.05	0.55
3:A:116:GLU:HB2	3:A:135:ALA:HB3	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:739:LYS:HD2	3:A:739:LYS:N	2.21	0.55
3:D:146:PHE:HB2	3:D:186:ILE:HG22	1.88	0.55
3:D:348:GLY:HA2	3:D:353:ILE:CD1	2.37	0.55
1:E:13:DG:H2''	1:E:14:DC:O5'	2.06	0.55
1:E:18:DG:N3	1:E:18:DG:H2'	2.22	0.55
3:A:113:PHE:CE1	3:A:218:VAL:HG21	2.41	0.55
3:C:482:ARG:HG3	3:C:559:ARG:HB2	1.86	0.55
3:D:566:LEU:O	3:D:570:LEU:HD23	2.06	0.55
3:D:801:CYS:SG	3:D:802:PRO:HD2	2.47	0.55
3:D:873:GLU:HG2	3:D:877:ILE:HD13	1.87	0.55
3:B:322:SER:O	3:B:326:ILE:HG12	2.07	0.55
3:C:25:ARG:HD2	4:C:958:HOH:O	2.06	0.55
3:D:493:GLN:HG2	3:D:546:GLN:HE22	1.72	0.55
3:A:394:ALA:N	4:A:1011:HOH:O	2.37	0.55
3:D:402:ASN:CG	3:D:403:ARG:N	2.60	0.55
3:B:253:ILE:HD11	3:B:260:ARG:NH1	2.21	0.55
3:C:143:ASP:O	3:C:145:ARG:HG2	2.07	0.55
3:D:511:ASP:O	3:D:533:LEU:HD11	2.07	0.55
3:A:287:SER:HB3	3:A:292:TYR:CD1	2.41	0.55
3:C:457:SER:O	3:C:459:ASN:N	2.39	0.55
3:C:818:ASN:HD22	3:C:818:ASN:C	2.10	0.55
3:D:470:VAL:HG13	3:D:471:VAL:N	2.20	0.55
3:D:887:ALA:O	3:D:888:LYS:HB3	2.05	0.55
1:I:4:DG:H2''	1:I:5:DG:O5'	2.07	0.55
3:A:485:HIS:CB	3:A:556:GLN:HE21	2.19	0.55
3:A:726:LYS:HE3	3:A:728:MSE:CG	2.37	0.55
3:C:422:GLN:HG3	3:C:678:GLN:O	2.07	0.55
3:D:426:SER:O	3:D:428:GLU:N	2.40	0.55
3:D:443:ILE:HD13	3:D:595:GLN:HB2	1.89	0.55
3:A:221:PHE:O	3:A:224:PRO:HD2	2.07	0.55
3:B:776:TYR:HB2	3:B:866:MSE:HE1	1.89	0.55
3:B:121:ASP:HA	3:B:819:ILE:CG2	2.34	0.55
3:D:188:TYR:CD2	3:D:190:PRO:HD3	2.42	0.55
3:C:52:ILE:HG12	4:C:926:HOH:O	2.07	0.55
3:D:617:VAL:O	3:D:617:VAL:HG23	2.07	0.55
3:C:223:ILE:HB	3:C:224:PRO:HD3	1.89	0.54
3:C:237:SER:O	3:C:240:LYS:HG2	2.07	0.54
3:A:592:MSE:HE1	3:A:674:MSE:CG	2.37	0.54
3:D:137:THR:HG22	3:D:138:HIS:N	2.19	0.54
3:D:455:SER:OG	3:D:676:ASN:HA	2.06	0.54
3:D:64:ASN:HD21	3:D:67:ASP:H	1.55	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:37:LEU:HD21	3:A:72:ILE:HD11	1.88	0.54
3:A:631:LYS:HB2	3:A:631:LYS:HZ3	1.72	0.54
3:D:151:LEU:HD22	3:D:152:LEU:H	1.71	0.54
3:D:497:GLU:C	3:D:499:ILE:H	2.11	0.54
3:B:405:LYS:HA	3:B:699:GLY:CA	2.34	0.54
3:B:700:GLY:HA2	3:B:753:LEU:CD2	2.36	0.54
1:K:4:DG:H4'	3:D:391:TYR:O	2.07	0.54
3:D:403:ARG:HA	4:D:917:HOH:O	2.08	0.54
3:D:485:HIS:HB3	3:D:556:GLN:HB3	1.90	0.54
2:J:101:DG:H2''	2:J:102:DC:H6	1.72	0.54
3:A:376:GLN:HG3	3:A:378:LYS:HG3	1.90	0.54
3:C:443:ILE:O	3:C:599:ARG:NH2	2.33	0.54
3:A:482:ARG:HE	3:A:560:LYS:HB2	1.72	0.54
3:B:291:ASP:HB2	3:B:302:LYS:HG3	1.89	0.54
3:C:656:ARG:HA	3:C:660:GLU:HG3	1.90	0.54
3:C:482:ARG:HG2	3:C:556:GLN:HG2	1.90	0.54
3:D:348:GLY:HA2	3:D:353:ILE:HD11	1.90	0.54
3:D:81:GLU:CD	3:D:83:LEU:HD21	2.28	0.54
2:L:106:DT:H2''	2:L:107:DG:O4'	2.07	0.54
3:B:256:MSE:HG2	3:B:257:TYR:CD2	2.42	0.54
3:B:818:ASN:HD22	3:B:857:LEU:CD1	2.20	0.54
3:C:167:ALA:HA	3:C:176:ASP:CB	2.38	0.54
3:C:587:THR:HG22	3:C:588:THR:N	2.21	0.54
3:D:599:ARG:HB3	3:D:599:ARG:NH1	2.23	0.54
3:B:433:THR:O	3:B:462:MSE:HE2	2.08	0.54
3:B:775:ASN:HD21	3:B:777:ILE:HB	1.73	0.54
3:D:685:ARG:NH1	3:D:688:ILE:HG13	2.23	0.54
2:F:104:DG:H2''	2:F:105:DC:O5'	2.08	0.54
1:G:12:DA:C2'	1:G:13:DG:C8	2.90	0.54
1:G:12:DA:H2''	1:G:13:DG:H8	1.71	0.54
3:D:637:GLY:HA2	4:D:956:HOH:O	2.07	0.54
3:D:64:ASN:HD22	3:D:66:ARG:H	1.56	0.54
1:K:12:DA:H2''	1:K:13:DG:O5'	2.07	0.54
3:D:744:ALA:HB2	3:D:767:PHE:CE2	2.43	0.53
1:E:6:DA:H2''	1:E:7:DA:H8	1.69	0.53
3:A:132:PRO:HD2	4:A:963:HOH:O	2.07	0.53
3:B:251:LYS:HB3	3:B:262:ILE:HG13	1.89	0.53
3:C:15:ILE:HD11	3:C:92:TYR:CZ	2.43	0.53
3:D:111:ALA:HB3	3:D:210:PRO:HB3	1.90	0.53
3:D:582:ASN:O	3:D:586:ILE:HG13	2.07	0.53
2:F:103:DG:H2''	2:F:104:DG:O5'	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:373:LEU:HD12	3:A:380:ILE:HG22	1.90	0.53
3:B:163:SER:N	3:B:318:GLN:HE22	2.06	0.53
3:D:125:GLU:O	3:D:129:ALA:HB2	2.08	0.53
3:D:155:PRO:C	3:D:157:GLY:H	2.12	0.53
3:D:487:GLY:C	4:D:938:HOH:O	2.46	0.53
2:L:105:DC:OP1	2:L:105:DC:C4'	2.57	0.53
3:A:389:GLN:HB2	4:A:998:HOH:O	2.07	0.53
3:B:645:ASN:OD1	3:B:719:ARG:NH1	2.42	0.53
3:C:526:ILE:HG23	3:C:529:LYS:HD3	1.90	0.53
3:D:459:ASN:HD21	3:D:461:MSE:HB2	1.73	0.53
3:D:524:ASP:HB3	3:D:525:GLU:OE2	2.07	0.53
3:D:642:ARG:H	3:D:646:HIS:CD2	2.26	0.53
2:F:112:DT:H2''	2:F:113:DC:O5'	2.08	0.53
2:J:109:DC:H2''	2:J:110:DA:C5'	2.37	0.53
3:A:213:LEU:CD1	3:A:223:ILE:HD11	2.37	0.53
3:A:739:LYS:H	3:A:739:LYS:HD2	1.74	0.53
3:B:303:LEU:HB2	3:B:323:TYR:HD1	1.72	0.53
3:C:14:SER:HB3	3:C:32:GLU:OE1	2.09	0.53
3:D:533:LEU:HD12	3:D:537:SER:OG	2.08	0.53
3:D:730:LEU:CD2	3:D:730:LEU:H	2.21	0.53
3:D:809:LEU:HA	3:D:812:ASN:ND2	2.23	0.53
3:D:87:ASP:CG	3:D:90:LEU:HD13	2.28	0.53
3:A:552:GLY:O	3:A:555:ALA:HB3	2.09	0.53
3:B:435:LYS:CD	3:B:435:LYS:H	2.21	0.53
3:D:490:LEU:HD23	3:D:490:LEU:O	2.08	0.53
2:J:115:DA:OP1	3:C:708:TYR:OH	2.23	0.53
1:K:2:DG:H1'	1:K:3:CTG:O5	2.07	0.53
3:A:825:VAL:HG23	3:A:828:GLU:HB2	1.90	0.53
3:D:247:LYS:O	3:D:266:PHE:HB2	2.09	0.53
3:D:679:HIS:O	3:D:680:LEU:HG	2.09	0.53
3:D:700:GLY:CA	3:D:753:LEU:HD22	2.38	0.53
3:A:738:PRO:HD3	3:A:781:SER:HA	1.91	0.53
3:B:154:SER:HB3	3:B:313:ARG:NH1	2.20	0.53
3:C:858:ILE:O	3:C:862:VAL:HG23	2.08	0.53
1:G:16:DG:H2''	1:G:17:DC:H5''	1.90	0.53
2:H:107:DG:H8	4:H:306:HOH:O	1.92	0.53
3:A:254:GLU:CD	3:A:259:SER:HB2	2.29	0.53
3:D:602:ASN:HD21	3:D:617:VAL:HG22	1.74	0.53
3:D:782:VAL:HG12	3:D:783:SER:N	2.24	0.53
3:B:133:ILE:HD12	3:B:198:LEU:HD21	1.90	0.53
3:C:461:MSE:HE3	3:C:581:ARG:HB3	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:351:ALA:O	3:C:352:LYS:HB2	2.08	0.52
3:C:355:ILE:O	3:C:358:VAL:HG13	2.08	0.52
1:E:13:DG:OP1	3:A:800:LYS:HA	2.10	0.52
3:C:681:MSE:HA	3:C:681:MSE:HE2	1.92	0.52
3:A:12:GLY:O	3:A:13:ASP:HB2	2.10	0.52
3:A:902:ASP:HA	4:A:1014:HOH:O	2.10	0.52
3:B:465:LYS:HE3	3:B:677:LYS:HA	1.92	0.52
2:L:114:DC:H1'	3:D:706:LYS:HD3	1.90	0.52
2:J:112:DT:H2''	2:J:113:DC:OP2	2.09	0.52
3:A:64:ASN:HD22	3:A:67:ASP:H	1.57	0.52
3:D:47:THR:HG22	3:D:48:LYS:H	1.74	0.52
2:F:104:DG:H2'	2:F:105:DC:C6	2.44	0.52
3:A:709:ALA:O	3:A:710:LEU:HD23	2.09	0.52
3:A:739:LYS:H	3:A:739:LYS:CE	2.22	0.52
3:B:791:TYR:HA	4:B:1086:HOH:O	2.10	0.52
3:C:145:ARG:HB2	3:C:147:TYR:CE1	2.45	0.52
3:D:21:ASP:HB3	3:D:23:ASN:OD1	2.09	0.52
1:E:7:DA:H2'	1:E:8:DT:H72	1.91	0.52
1:G:6:DA:H2''	1:G:7:DA:OP2	2.10	0.52
2:H:110:DA:H1'	2:H:111:DT:H5''	1.90	0.52
1:K:7:DA:H2'	1:K:8:DT:C6	2.44	0.52
3:A:557:ILE:HB	4:A:960:HOH:O	2.10	0.52
3:B:34:LYS:NZ	3:B:61:LEU:HD11	2.24	0.52
3:B:592:MSE:HE1	3:B:674:MSE:HG3	1.91	0.52
3:C:34:LYS:HE3	3:C:63:ALA:HA	1.91	0.52
3:C:369:ILE:HG12	3:C:474:GLU:HG3	1.92	0.52
3:C:898:PHE:O	3:C:899:ASP:HB3	2.09	0.52
3:A:527:LYS:O	3:A:530:ILE:HG12	2.09	0.52
3:C:221:PHE:C	3:C:224:PRO:HD2	2.29	0.52
3:C:659:MSE:O	3:C:663:ILE:HG13	2.09	0.52
1:E:11:DC:H2''	1:E:12:DA:O5'	2.10	0.52
1:K:17:DC:H5'	1:K:17:DC:H6	1.74	0.52
3:A:346:ASP:HB3	4:A:965:HOH:O	2.10	0.52
3:A:51:ASP:HB2	4:A:908:HOH:O	2.09	0.52
3:A:896:SER:HB3	3:A:899:ASP:CG	2.29	0.52
3:B:193:ASN:HD22	3:B:194:GLU:N	2.08	0.52
3:B:727:ILE:HG21	3:B:732:THR:HG21	1.91	0.52
3:D:116:GLU:HB2	3:D:324:ASN:HD22	1.74	0.52
3:B:528:GLU:C	3:B:530:ILE:H	2.14	0.52
3:B:486:LYS:HA	3:B:556:GLN:OE1	2.09	0.52
3:A:486:LYS:CE	3:A:556:GLN:HG2	2.38	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:434:PHE:CE2	3:B:460:GLY:HA2	2.45	0.52
3:C:397:LYS:O	3:C:399:PRO:HD3	2.10	0.52
3:D:364:THR:O	3:D:368:ILE:HG13	2.09	0.52
3:D:713:TRP:CZ3	3:D:723:PRO:HD3	2.45	0.52
3:C:110:VAL:O	3:C:141:SER:HB3	2.10	0.51
3:C:240:LYS:HD2	3:C:246:ARG:O	2.10	0.51
3:D:285:GLN:HE21	3:D:286:PRO:HD2	1.75	0.51
3:D:50:PHE:HD2	3:D:54:GLY:O	1.93	0.51
3:D:735:SER:HA	4:D:930:HOH:O	2.09	0.51
1:I:9:DG:H2''	1:I:10:DA:H5'	1.92	0.51
3:A:822:PRO:HB2	3:A:849:PRO:HG3	1.91	0.51
3:B:641:PHE:HD1	3:B:646:HIS:CD2	2.28	0.51
3:D:218:VAL:HG12	3:D:223:ILE:CG1	2.31	0.51
3:D:410:PHE:O	3:D:624:SER:HA	2.10	0.51
3:A:739:LYS:NZ	3:A:780:ALA:O	2.43	0.51
3:C:20:ILE:HA	3:C:25:ARG:O	2.10	0.51
3:C:451:SER:HB3	3:C:456:CYS:SG	2.50	0.51
3:C:594:LEU:O	3:C:597:ILE:HG22	2.10	0.51
3:D:485:HIS:HA	3:D:488:TYR:HD1	1.74	0.51
1:E:9:DG:O3'	3:A:874:LYS:HE3	2.11	0.51
3:A:458:PRO:HG3	3:A:592:MSE:SE	2.60	0.51
3:A:518:TYR:HE2	3:A:541:MSE:HG3	1.76	0.51
3:D:517:ASP:C	3:D:519:ARG:H	2.12	0.51
3:B:555:ALA:O	3:B:559:ARG:HD3	2.10	0.51
3:B:597:ILE:HD12	3:B:598:GLU:N	2.26	0.51
3:C:750:ARG:HH22	3:C:755:GLU:CD	2.13	0.51
3:C:811:TYR:CE2	3:C:815:ILE:HD13	2.45	0.51
3:D:757:GLU:HB2	3:D:889:LEU:HD22	1.92	0.51
1:I:16:DG:H2''	1:I:17:DC:C5'	2.41	0.51
3:A:757:GLU:HB2	3:A:889:LEU:HD22	1.92	0.51
3:B:401:PRO:O	3:B:402:ASN:HB2	2.11	0.51
3:B:75:MSE:HE2	3:B:78:ILE:HG21	1.92	0.51
3:C:11:ILE:HD13	3:C:247:LYS:HD2	1.92	0.51
3:C:116:GLU:HB2	3:C:135:ALA:HB3	1.92	0.51
3:C:159:VAL:HG21	3:C:317:HIS:CD2	2.45	0.51
3:C:112:ASN:ND2	3:C:332:LEU:HD11	2.17	0.51
3:C:598:GLU:HG3	3:C:617:VAL:HG11	1.92	0.51
3:D:410:PHE:HB3	3:D:683:MSE:HE2	1.93	0.51
3:D:846:ILE:HD13	3:D:862:VAL:HG21	1.93	0.51
3:A:526:ILE:O	3:A:530:ILE:HG23	2.11	0.51
3:B:581:ARG:HD2	4:B:999:HOH:O	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:137:THR:HG21	3:C:325:ILE:HA	1.92	0.51
3:C:482:ARG:C	3:C:484:GLU:N	2.64	0.51
3:D:485:HIS:CG	4:D:918:HOH:O	2.63	0.51
3:D:489:MSE:HA	4:D:936:HOH:O	2.09	0.51
3:D:494:ARG:O	3:D:494:ARG:HG2	2.10	0.51
3:D:505:ASN:N	3:D:506:PRO:HD3	2.26	0.51
3:D:781:SER:HB2	4:D:957:HOH:O	2.10	0.51
3:B:589:PHE:HE1	3:B:681:MSE:CE	2.24	0.51
3:B:793:VAL:O	3:B:796:PHE:HD2	1.93	0.51
3:B:402:ASN:HA	3:B:886:ALA:O	2.10	0.51
3:C:738:PRO:HG2	3:C:741:VAL:HB	1.93	0.51
3:D:841:PHE:CZ	3:D:861:ASP:HB3	2.44	0.51
3:B:398:GLU:OE2	3:B:705:LYS:HE3	2.11	0.51
3:B:89:LYS:NZ	3:B:89:LYS:HB2	2.25	0.51
3:C:362:ILE:HD12	3:C:575:PHE:HB2	1.93	0.51
3:C:518:TYR:HA	4:C:1027:HOH:O	2.10	0.51
3:C:620:GLY:HA2	3:C:624:SER:O	2.11	0.51
3:D:354:GLN:HB3	3:D:356:GLN:NE2	2.26	0.51
3:D:599:ARG:O	3:D:603:GLU:HG3	2.11	0.51
1:G:16:DG:H2''	1:G:17:DC:C5'	2.41	0.51
3:A:489:MSE:C	3:A:491:ALA:H	2.14	0.51
3:A:700:GLY:HA2	3:A:753:LEU:CD2	2.41	0.51
3:B:241:ARG:NH2	4:B:1087:HOH:O	2.44	0.51
3:C:572:ASN:HD22	3:C:574:TRP:N	2.07	0.51
3:D:599:ARG:HH11	3:D:599:ARG:HB3	1.76	0.51
3:A:298:LEU:O	3:A:299:ASN:HB3	2.11	0.50
3:C:162:TRP:HB3	3:C:188:TYR:CZ	2.46	0.50
3:D:469:GLY:C	3:D:472:PRO:HD2	2.31	0.50
3:D:811:TYR:CZ	3:D:815:ILE:HD11	2.47	0.50
3:D:819:ILE:HG13	3:D:819:ILE:O	2.11	0.50
3:D:322:SER:O	3:D:326:ILE:HG23	2.11	0.50
1:E:7:DA:H2''	1:E:8:DT:O5'	2.12	0.50
2:L:103:DG:H2''	2:L:104:DG:H8	1.74	0.50
3:A:839:ASN:ND2	3:A:841:PHE:HB2	2.26	0.50
3:B:405:LYS:O	3:B:630:ASP:OD2	2.29	0.50
3:B:522:PHE:HB2	3:B:526:ILE:HD12	1.92	0.50
3:C:133:ILE:HD12	3:C:198:LEU:HD21	1.92	0.50
3:D:64:ASN:ND2	3:D:67:ASP:H	2.09	0.50
3:B:658:ARG:HG2	3:D:897:LEU:HD21	1.94	0.50
3:B:790:LYS:HA	4:B:1052:HOH:O	2.10	0.50
3:C:260:ARG:HH11	3:C:260:ARG:HG2	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:182:ILE:O	3:D:186:ILE:HG23	2.11	0.50
3:D:381:PRO:O	3:D:576:ARG:HD2	2.11	0.50
3:A:171:GLN:HE22	3:A:319:ARG:HH12	1.60	0.50
3:A:526:ILE:HA	3:A:529:LYS:HB3	1.92	0.50
3:B:599:ARG:HA	4:B:1083:HOH:O	2.11	0.50
3:C:447:ALA:HA	4:C:927:HOH:O	2.11	0.50
3:C:284:ASN:HD21	3:C:829:LYS:HZ1	1.58	0.50
2:J:108:DT:H2''	2:J:109:DC:C5'	2.42	0.50
3:A:221:PHE:C	3:A:224:PRO:HD2	2.32	0.50
3:A:730:LEU:HD13	3:A:883:PHE:CE1	2.46	0.50
3:D:487:GLY:O	3:D:491:ALA:N	2.37	0.50
1:K:11:DC:H2''	1:K:12:DA:C5'	2.42	0.50
3:A:245:HIS:HE1	4:A:949:HOH:O	1.94	0.50
3:A:733:GLN:HE21	3:A:733:GLN:N	2.09	0.50
3:B:608:VAL:HG11	3:D:897:LEU:HD22	1.94	0.50
3:D:479:PHE:CE1	3:D:563:ILE:HD13	2.47	0.50
1:K:1:DC:H4'	3:D:572:ASN:ND2	2.27	0.50
2:F:106:DT:C1'	2:F:107:DG:H5''	2.41	0.50
3:A:236:GLU:HG2	3:A:240:LYS:HE2	1.93	0.50
3:A:439:LEU:HD22	4:A:988:HOH:O	2.12	0.50
3:B:218:VAL:HG22	3:B:223:ILE:HG13	1.94	0.50
3:B:326:ILE:HG23	3:B:330:ARG:HE	1.76	0.50
3:D:488:TYR:O	3:D:552:GLY:HA3	2.11	0.50
1:I:10:DA:OP1	3:C:874:LYS:HD2	2.11	0.50
2:J:101:DG:H2''	2:J:102:DC:C6	2.46	0.50
3:A:653:LYS:HD2	3:A:653:LYS:C	2.32	0.50
3:C:818:ASN:HD22	3:C:819:ILE:N	2.09	0.50
3:D:144:ASP:OD1	3:D:185:LYS:HD3	2.11	0.50
3:D:854:ILE:HD11	3:D:858:ILE:CD1	2.37	0.50
2:J:104:DG:H2'	2:J:105:DC:C5	2.47	0.50
1:K:2:DG:OP2	3:D:361:PRO:HD2	2.11	0.50
3:B:471:VAL:O	3:B:475:ILE:HG22	2.11	0.49
3:D:213:LEU:HD23	3:D:213:LEU:C	2.32	0.49
3:D:642:ARG:HG2	3:D:646:HIS:CD2	2.46	0.49
3:D:809:LEU:HA	3:D:812:ASN:HD22	1.76	0.49
3:A:154:SER:HB2	3:A:155:PRO:HD2	1.94	0.49
3:A:338:ARG:HB3	3:A:340:PHE:CZ	2.47	0.49
3:C:179:PRO:HB3	3:C:181:GLU:OE1	2.12	0.49
3:D:274:ILE:HG23	3:D:275:ASP:N	2.27	0.49
3:B:797:PRO:HG3	3:B:806:ARG:HH12	1.74	0.49
3:D:51:ASP:HB2	4:D:909:HOH:O	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:380:ILE:HD12	3:D:577:TYR:OH	2.11	0.49
1:E:14:DC:H6	1:E:14:DC:H5''	1.78	0.49
3:B:355:ILE:N	3:B:355:ILE:HD12	2.26	0.49
3:D:518:TYR:C	3:D:520:PHE:H	2.14	0.49
3:B:116:GLU:CB	3:B:135:ALA:HB3	2.41	0.49
3:B:362:ILE:HD12	3:B:575:PHE:HB2	1.94	0.49
3:D:202:LEU:HD21	3:D:230:ILE:HD13	1.95	0.49
3:D:428:GLU:N	4:D:953:HOH:O	2.44	0.49
3:D:484:GLU:C	3:D:486:LYS:H	2.14	0.49
3:B:154:SER:CB	3:B:313:ARG:HH12	2.21	0.49
3:B:423:VAL:O	3:B:424:ASN:HB3	2.11	0.49
3:B:486:LYS:O	3:B:489:MSE:HG3	2.12	0.49
3:C:302:LYS:HE2	3:C:326:ILE:HG21	1.94	0.49
3:C:707:ARG:HD3	4:C:905:HOH:O	2.12	0.49
3:D:115:ILE:HD13	3:D:226:VAL:HG23	1.94	0.49
3:A:491:ALA:C	3:A:493:GLN:H	2.15	0.49
3:A:629:ALA:HA	3:A:632:ILE:HD12	1.94	0.49
3:B:183:ILE:CG2	3:B:184:ASP:N	2.76	0.49
3:B:218:VAL:O	3:B:223:ILE:HG13	2.13	0.49
3:B:499:ILE:HG22	4:B:1054:HOH:O	2.12	0.49
3:B:863:LEU:O	3:B:863:LEU:HD23	2.12	0.49
3:C:167:ALA:O	3:C:176:ASP:O	2.31	0.49
3:C:284:ASN:ND2	3:C:829:LYS:HZ1	2.11	0.49
3:D:639:SER:C	3:D:641:PHE:H	2.16	0.49
3:A:415:LEU:O	3:A:419:ILE:HG13	2.13	0.49
3:B:609:CYS:HA	3:B:635:LYS:HE3	1.94	0.49
3:C:272:ASP:OD1	3:C:274:ILE:HG22	2.13	0.49
3:B:645:ASN:HB2	4:B:1063:HOH:O	2.13	0.49
3:B:808:ILE:HD13	3:B:824:VAL:HG11	1.95	0.49
3:D:197:LEU:HD12	3:D:197:LEU:H	1.78	0.49
3:D:285:GLN:NE2	3:D:286:PRO:HD2	2.27	0.49
3:D:399:PRO:HB3	3:D:619:TYR:CD2	2.41	0.49
3:B:193:ASN:ND2	3:B:194:GLU:N	2.61	0.49
3:C:61:LEU:HD23	3:C:62:PHE:N	2.28	0.49
3:D:11:ILE:O	3:D:11:ILE:HG23	2.13	0.49
2:J:104:DG:H2'	2:J:105:DC:H6	1.73	0.49
3:C:471:VAL:HB	3:C:472:PRO:HD3	1.95	0.48
3:C:52:ILE:HD12	3:C:428:GLU:CG	2.41	0.48
3:C:533:LEU:HB2	3:C:537:SER:HB2	1.95	0.48
3:C:880:LEU:HD22	3:C:884:THR:HG23	1.94	0.48
3:D:316:ASN:H	3:D:316:ASN:HD22	1.60	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:824:VAL:HG22	3:D:825:VAL:N	2.28	0.48
1:E:12:DA:O3'	3:A:800:LYS:HA	2.14	0.48
3:B:123:PHE:CD1	3:B:124:PRO:HD2	2.48	0.48
3:B:789:ALA:C	3:B:791:TYR:H	2.16	0.48
3:D:830:VAL:HG22	3:D:831:TYR:N	2.28	0.48
3:A:159:VAL:HG21	3:A:317:HIS:CD2	2.48	0.48
3:A:685:ARG:NH2	3:A:717:GLY:H	2.10	0.48
3:A:739:LYS:H	3:A:739:LYS:HE3	1.78	0.48
3:C:605:LEU:HA	3:C:608:VAL:HG22	1.94	0.48
1:G:8:DT:H2''	1:G:9:DG:C8	2.48	0.48
3:C:347:MSE:HE2	3:C:558:ASN:ND2	2.29	0.48
3:C:410:PHE:HB3	3:C:683:MSE:HG2	1.95	0.48
3:C:416:TYR:HB2	3:C:417:PRO:HD3	1.95	0.48
3:D:116:GLU:CB	3:D:135:ALA:HB3	2.43	0.48
3:A:776:TYR:CD1	3:A:863:LEU:HD11	2.49	0.48
3:B:727:ILE:HG21	3:B:732:THR:CG2	2.43	0.48
3:D:530:ILE:HG12	3:D:531:LYS:N	2.29	0.48
3:A:113:PHE:CE1	3:A:218:VAL:CG2	2.97	0.48
3:A:347:MSE:N	4:A:965:HOH:O	2.46	0.48
3:B:415:LEU:HD11	3:B:419:ILE:HD11	1.95	0.48
3:B:597:ILE:HG21	3:B:667:PHE:CE2	2.49	0.48
3:B:734:LYS:O	3:B:735:SER:OG	2.30	0.48
3:B:901:PHE:HB2	3:D:608:VAL:O	2.13	0.48
3:C:149:PHE:N	3:C:149:PHE:CD1	2.81	0.48
3:C:34:LYS:HB3	3:C:61:LEU:HD21	1.96	0.48
3:C:803:PHE:HA	4:C:922:HOH:O	2.14	0.48
3:D:213:LEU:HD21	3:D:218:VAL:HG11	1.95	0.48
3:D:64:ASN:ND2	3:D:66:ARG:H	2.12	0.48
3:D:804:HIS:CD2	3:D:805:ILE:HG13	2.48	0.48
3:A:405:LYS:O	3:A:690:GLY:HA2	2.13	0.48
3:A:347:MSE:CB	3:A:558:ASN:HD21	2.23	0.48
3:C:486:LYS:O	3:C:490:LEU:HG	2.12	0.48
3:C:706:LYS:C	3:C:707:ARG:HG2	2.34	0.48
3:B:900:MSE:SE	3:D:636:VAL:HA	2.64	0.48
3:D:727:ILE:HG13	3:D:732:THR:HG21	1.96	0.48
3:D:732:THR:HG23	4:D:914:HOH:O	2.13	0.48
3:A:158:ASN:HD22	3:A:158:ASN:N	2.12	0.48
3:D:316:ASN:N	3:D:316:ASN:HD22	2.11	0.48
1:E:3:CTG:H2'	1:E:3:CTG:O6	2.12	0.48
3:A:211:VAL:HG21	4:A:957:HOH:O	2.14	0.48
3:A:6:LEU:HD11	3:A:26:GLU:HG3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:475:ILE:C	3:B:475:ILE:HD13	2.33	0.48
3:B:560:LYS:HE3	4:B:979:HOH:O	2.13	0.48
3:B:642:ARG:H	3:B:646:HIS:CD2	2.31	0.48
3:C:302:LYS:HD2	3:C:323:TYR:CE1	2.48	0.48
3:C:3:GLU:HG2	3:C:22:SER:N	2.29	0.48
3:C:592:MSE:HE1	3:C:674:MSE:HG3	1.96	0.48
3:D:487:GLY:O	3:D:491:ALA:HB3	2.13	0.48
3:D:528:GLU:C	3:D:530:ILE:HD13	2.34	0.48
2:L:107:DG:H2'	2:L:108:DT:C6	2.49	0.48
3:A:636:VAL:O	3:A:640:LYS:HG3	2.14	0.48
3:A:706:LYS:O	3:A:707:ARG:HD3	2.14	0.48
3:B:163:SER:HB3	3:B:166:ILE:HD12	1.95	0.48
3:B:85:MSE:HA	3:B:380:ILE:HD11	1.96	0.48
3:B:471:VAL:HB	3:B:472:PRO:CD	2.44	0.48
3:C:104:ASP:OD1	3:C:107:LYS:HG2	2.14	0.48
3:D:503:LEU:O	3:D:506:PRO:HG3	2.13	0.48
3:D:62:PHE:HB3	3:D:67:ASP:OD2	2.12	0.48
1:K:10:DA:H3'	4:K:146:HOH:O	2.14	0.48
3:C:481:GLN:HE21	3:C:559:ARG:HD2	1.78	0.47
3:D:484:GLU:C	3:D:486:LYS:N	2.67	0.47
1:I:13:DG:H2''	1:I:14:DC:O5'	2.13	0.47
3:A:502:ALA:O	3:A:506:PRO:HB3	2.14	0.47
3:B:748:CYS:O	3:B:752:MSE:HG3	2.14	0.47
3:C:878:LYS:HB3	3:C:879:PRO:CD	2.45	0.47
3:D:248:THR:HG22	3:D:265:LEU:HA	1.96	0.47
1:E:16:DG:H2''	1:E:17:DC:O5'	2.14	0.47
3:B:858:ILE:O	3:B:862:VAL:HG23	2.13	0.47
3:C:667:PHE:HB3	3:C:679:HIS:HE1	1.77	0.47
1:G:5:DG:H1'	1:G:6:DA:H5'	1.96	0.47
3:A:790:LYS:HD3	3:A:791:TYR:CE1	2.49	0.47
3:B:403:ARG:NH1	3:B:887:ALA:O	2.47	0.47
3:C:81:GLU:HG2	3:C:83:LEU:CD2	2.44	0.47
3:D:660:GLU:CB	3:D:661:PRO:HD3	2.43	0.47
2:J:102:DC:H2''	2:J:103:DG:O5'	2.15	0.47
2:J:111:DT:C2'	2:J:112:DT:C5'	2.79	0.47
3:B:167:ALA:HA	3:B:176:ASP:HB2	1.97	0.47
3:B:664:ASP:OD2	3:B:668:ARG:NH1	2.48	0.47
3:D:197:LEU:C	3:D:199:MSE:H	2.17	0.47
3:D:824:VAL:HG22	3:D:825:VAL:H	1.80	0.47
1:E:5:DG:H2'	1:E:6:DA:H5''	1.97	0.47
3:A:112:ASN:C	3:A:112:ASN:HD22	2.18	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:72:ILE:HG22	3:A:76:GLU:OE1	2.15	0.47
3:B:494:ARG:NH1	3:B:494:ARG:CB	2.77	0.47
3:C:305:TYR:HB3	3:C:323:TYR:OH	2.14	0.47
3:D:154:SER:HB3	3:D:155:PRO:CD	2.39	0.47
3:D:82:ALA:N	3:D:382:GLN:OE1	2.43	0.47
3:D:856:ASP:HA	3:D:859:LYS:CB	2.45	0.47
1:G:3:CTG:H2'	1:G:3:CTG:O6	2.15	0.47
3:A:202:LEU:O	3:A:206:GLN:HG2	2.15	0.47
3:A:774:LEU:HB3	4:A:1004:HOH:O	2.14	0.47
3:B:787:ASN:C	3:B:789:ALA:N	2.68	0.47
3:D:201:TYR:O	3:D:204:PHE:HB3	2.15	0.47
3:A:797:PRO:N	3:A:809:LEU:HD13	2.30	0.47
3:B:732:THR:CG2	3:B:733:GLN:N	2.77	0.47
2:H:112:DT:H2''	2:H:113:DC:OP2	2.15	0.47
3:A:822:PRO:HD3	4:A:933:HOH:O	2.15	0.47
3:A:887:ALA:O	3:A:888:LYS:HB2	2.15	0.47
1:I:2:DG:C8	3:C:361:PRO:HG2	2.50	0.47
3:D:197:LEU:HD12	3:D:197:LEU:N	2.30	0.47
3:D:399:PRO:O	3:D:401:PRO:HD3	2.15	0.47
3:A:347:MSE:HG2	3:A:358:VAL:HG23	1.96	0.47
3:C:15:ILE:HD11	3:C:92:TYR:CE2	2.49	0.47
3:C:451:SER:OG	3:C:462:MSE:HE3	2.14	0.47
3:D:151:LEU:HD22	3:D:152:LEU:N	2.30	0.47
3:D:170:LEU:HA	3:D:177:GLU:HG2	1.97	0.47
3:D:109:ARG:HD2	3:D:209:THR:O	2.14	0.47
3:D:290:LEU:HD21	3:D:330:ARG:HB2	1.96	0.47
3:D:644:THR:O	3:D:648:VAL:HG23	2.15	0.47
3:D:730:LEU:HD11	3:D:749:ILE:HD13	1.97	0.47
3:A:197:LEU:HD23	3:A:197:LEU:C	2.35	0.47
3:A:730:LEU:HD22	3:A:883:PHE:HE1	1.80	0.47
3:B:362:ILE:HD13	3:B:569:ALA:HB1	1.96	0.47
3:D:153:ASN:HA	3:D:158:ASN:OD1	2.15	0.47
3:D:752:MSE:HG2	3:D:889:LEU:HD13	1.97	0.47
2:H:104:DG:C2'	2:H:105:DC:O5'	2.61	0.47
3:A:607:GLU:HG2	3:A:607:GLU:O	2.14	0.46
3:A:412:LEU:HG	3:A:683:MSE:HG2	1.96	0.46
3:B:818:ASN:ND2	3:B:857:LEU:CD1	2.78	0.46
3:D:202:LEU:HD21	3:D:230:ILE:CD1	2.45	0.46
3:D:808:ILE:HA	3:D:847:ALA:HB3	1.96	0.46
1:E:15:DC:H2''	1:E:16:DG:C8	2.50	0.46
3:B:249:ARG:HG2	3:B:249:ARG:HH11	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:415:LEU:HD22	3:B:623:ASP:HB3	1.97	0.46
3:B:489:MSE:HE2	3:B:490:LEU:HG	1.97	0.46
3:B:787:ASN:O	3:B:789:ALA:N	2.48	0.46
3:D:386:HIS:HB3	3:D:387:PRO:HD2	1.96	0.46
3:A:875:THR:HA	4:A:955:HOH:O	2.15	0.46
3:B:641:PHE:HA	3:B:646:HIS:HD2	1.80	0.46
3:D:151:LEU:HD13	3:D:151:LEU:C	2.35	0.46
3:D:416:TYR:HB2	3:D:417:PRO:HD3	1.96	0.46
3:D:511:ASP:C	3:D:533:LEU:HD11	2.35	0.46
3:A:482:ARG:HH11	3:A:483:LYS:NZ	2.13	0.46
3:C:138:HIS:CD2	3:C:138:HIS:C	2.88	0.46
3:C:412:LEU:HD13	3:C:415:LEU:CD1	2.43	0.46
3:C:514:LEU:HD23	3:C:541:MSE:HE1	1.98	0.46
3:C:482:ARG:HD2	3:C:556:GLN:HE21	1.79	0.46
3:D:33:TYR:HB3	3:D:65:MSE:CE	2.45	0.46
3:D:517:ASP:C	3:D:519:ARG:N	2.69	0.46
3:D:730:LEU:O	3:D:731:GLU:HB2	2.15	0.46
3:B:319:ARG:HD3	3:B:319:ARG:HA	1.73	0.46
3:B:312:LEU:HD12	3:B:320:TYR:CB	2.45	0.46
3:B:347:MSE:HB2	3:B:558:ASN:HD21	1.80	0.46
3:B:793:VAL:C	3:B:795:GLY:H	2.18	0.46
3:C:579:ASP:HB3	3:C:582:ASN:HB2	1.96	0.46
1:K:16:DG:H2''	1:K:17:DC:C5'	2.43	0.46
3:A:326:ILE:O	3:A:330:ARG:HG2	2.15	0.46
3:A:523:SER:HB3	3:A:526:ILE:HG12	1.96	0.46
1:E:13:DG:P	3:A:800:LYS:HA	2.56	0.46
3:B:285:GLN:HG3	3:B:292:TYR:HE2	1.80	0.46
3:B:386:HIS:HD2	4:B:1064:HOH:O	1.98	0.46
3:C:162:TRP:HB3	3:C:188:TYR:CE1	2.50	0.46
3:D:730:LEU:HG	3:D:732:THR:H	1.80	0.46
3:D:10:GLN:H	3:D:89:LYS:HE2	1.80	0.46
1:E:14:DC:H2'	1:E:15:DC:C5	2.50	0.46
3:A:797:PRO:HD3	3:A:809:LEU:HD13	1.98	0.46
3:C:881:GLU:HG3	3:C:891:TYR:CE1	2.44	0.46
3:D:391:TYR:CZ	3:D:583:ALA:HB1	2.51	0.46
3:D:490:LEU:HD23	3:D:490:LEU:C	2.36	0.46
3:D:660:GLU:HB3	3:D:661:PRO:HD3	1.96	0.46
2:H:105:DC:H2''	2:H:106:DT:H5'	1.98	0.46
3:A:824:VAL:HG22	3:A:849:PRO:HD3	1.98	0.46
3:B:492:ALA:HB1	3:B:545:ALA:O	2.14	0.46
3:B:702:TRP:CD1	3:B:708:TYR:HB3	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:75:MSE:HE2	3:B:78:ILE:CG2	2.46	0.46
3:B:811:TYR:O	3:B:815:ILE:HG12	2.16	0.46
3:C:154:SER:C	3:C:156:TYR:H	2.18	0.46
3:C:127:SER:HA	3:C:228:ASN:ND2	2.31	0.46
1:E:14:DC:H2''	1:E:15:DC:C5'	2.46	0.46
1:K:16:DG:C2'	1:K:17:DC:H5''	2.44	0.46
1:K:7:DA:H2'	1:K:8:DT:H6	1.81	0.46
2:L:101:DG:N3	2:L:102:DC:C5	2.84	0.46
3:A:514:LEU:HB3	3:A:541:MSE:SE	2.65	0.46
3:B:252:VAL:O	3:B:252:VAL:HG23	2.15	0.46
3:B:747:GLU:OE2	3:B:750:ARG:NH2	2.49	0.46
3:C:526:ILE:O	3:C:526:ILE:HG22	2.15	0.46
3:D:183:ILE:O	3:D:186:ILE:HG12	2.15	0.46
3:D:216:TRP:CZ3	3:D:274:ILE:HD12	2.51	0.46
3:D:394:ALA:HB1	4:D:945:HOH:O	2.15	0.46
2:J:101:DG:H2''	2:J:102:DC:O5'	2.16	0.46
3:A:205:TRP:CE2	3:A:242:LEU:HD12	2.51	0.46
3:A:455:SER:OG	3:A:676:ASN:HA	2.15	0.46
3:A:758:GLU:O	3:A:762:GLU:HG3	2.16	0.46
3:B:415:LEU:O	3:B:419:ILE:HG13	2.16	0.46
3:B:9:GLU:HA	3:B:89:LYS:HD2	1.98	0.46
3:C:491:ALA:HB1	3:C:521:ASP:N	2.31	0.46
3:C:347:MSE:CE	3:C:562:LEU:HD13	2.46	0.46
3:D:136:ILE:HD11	3:D:201:TYR:CE2	2.51	0.46
3:D:293:ILE:HG13	3:D:294:SER:N	2.31	0.46
3:D:546:GLN:O	3:D:550:VAL:HG23	2.16	0.46
1:G:16:DG:H2''	1:G:17:DC:O5'	2.16	0.46
3:A:691:PRO:HD3	3:A:699:GLY:HA2	1.98	0.45
3:B:347:MSE:SE	3:B:562:LEU:HG	2.66	0.45
3:D:226:VAL:O	3:D:230:ILE:HG13	2.16	0.45
3:D:428:GLU:OE2	3:D:470:VAL:HG12	2.15	0.45
3:D:775:ASN:OD1	3:D:777:ILE:HG12	2.16	0.45
1:E:12:DA:H61	2:F:106:DT:H3	1.64	0.45
3:A:308:PRO:CG	3:A:311:LYS:HD2	2.47	0.45
3:C:167:ALA:HA	3:C:176:ASP:HB3	1.98	0.45
3:C:239:ALA:C	3:C:241:ARG:H	2.20	0.45
3:C:738:PRO:HG2	3:C:741:VAL:CG2	2.46	0.45
3:C:854:ILE:CG2	3:C:859:LYS:HD3	2.47	0.45
3:D:113:PHE:HE1	3:D:213:LEU:HD21	1.81	0.45
3:D:429:THR:O	3:D:463:TYR:HA	2.16	0.45
3:D:443:ILE:HD13	3:D:595:GLN:CB	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:37:LEU:HD11	3:D:72:ILE:HD11	1.97	0.45
3:A:495:ASN:ND2	3:A:521:ASP:HA	2.21	0.45
3:B:14:SER:HG	3:B:16:PHE:HE1	1.62	0.45
3:B:369:ILE:HG12	3:B:474:GLU:HG3	1.98	0.45
3:B:897:LEU:O	3:B:900:MSE:HG3	2.16	0.45
3:D:410:PHE:CB	3:D:683:MSE:HE2	2.46	0.45
3:A:642:ARG:HG3	3:A:646:HIS:CD2	2.52	0.45
3:B:835:LEU:HD23	3:B:866:MSE:HA	1.98	0.45
3:B:873:GLU:HA	3:B:877:ILE:HG13	1.98	0.45
3:D:155:PRO:O	3:D:156:TYR:HB2	2.16	0.45
3:D:433:THR:N	3:D:462:MSE:HE2	2.31	0.45
1:I:5:DG:C2'	1:I:6:DA:H5''	2.46	0.45
3:A:481:GLN:HA	3:A:484:GLU:HG2	1.99	0.45
3:A:422:GLN:NE2	3:A:680:LEU:H	2.14	0.45
3:B:273:TYR:OH	3:B:335:ASP:HA	2.16	0.45
3:B:516:VAL:H	3:B:544:ARG:CZ	2.29	0.45
3:B:548:THR:C	3:B:550:VAL:H	2.19	0.45
3:B:818:ASN:ND2	3:B:857:LEU:HD12	2.32	0.45
1:E:13:DG:O4'	3:A:800:LYS:HD3	2.16	0.45
3:A:843:ASP:HA	4:A:1009:HOH:O	2.16	0.45
3:A:769:LYS:HD2	4:A:994:HOH:O	2.16	0.45
3:A:810:THR:HG22	4:A:999:HOH:O	2.16	0.45
3:B:221:PHE:C	3:B:224:PRO:HD2	2.37	0.45
3:D:127:SER:C	3:D:129:ALA:H	2.20	0.45
3:D:412:LEU:HD23	3:D:683:MSE:HG2	1.99	0.45
3:A:732:THR:C	3:A:733:GLN:HE21	2.18	0.45
3:B:413:THR:O	3:B:414:SER:C	2.55	0.45
3:C:109:ARG:NH1	3:C:140:ASP:OD2	2.40	0.45
3:C:660:GLU:HB2	3:C:661:PRO:CD	2.39	0.45
3:A:594:LEU:HD21	3:A:621:ASP:H	1.82	0.45
3:A:810:THR:HG23	3:A:841:PHE:O	2.17	0.45
3:B:193:ASN:ND2	3:B:195:LYS:H	2.14	0.45
3:B:435:LYS:O	3:B:435:LYS:CG	2.64	0.45
3:D:533:LEU:HD12	3:D:537:SER:CB	2.47	0.45
3:D:692:PRO:HG3	3:D:713:TRP:HZ2	1.82	0.45
3:D:858:ILE:O	3:D:862:VAL:HG23	2.16	0.45
1:E:4:DG:OP1	3:A:390:PRO:HA	2.16	0.45
1:K:18:DG:O4'	3:A:36:SER:HB2	2.17	0.45
3:A:402:ASN:HA	3:A:886:ALA:O	2.17	0.45
3:A:471:VAL:HG11	3:A:570:LEU:HD11	1.99	0.45
3:B:901:PHE:HD2	3:D:635:LYS:HG2	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:709:ALA:HB1	3:D:727:ILE:HG22	1.99	0.45
3:D:786:ASN:OD1	3:D:805:ILE:HD11	2.17	0.45
2:J:104:DG:H2''	2:J:105:DC:O5'	2.17	0.45
3:A:71:TRP:CZ2	3:A:75:MSE:HE2	2.53	0.44
3:B:113:PHE:CE1	3:B:218:VAL:CG2	3.00	0.44
3:B:735:SER:HB2	3:B:737:THR:HG23	1.97	0.44
3:C:425:ILE:HG23	3:C:463:TYR:CE2	2.52	0.44
3:D:289:SER:HB2	3:D:292:TYR:CB	2.47	0.44
3:D:470:VAL:HG13	3:D:471:VAL:H	1.81	0.44
1:G:5:DG:H2''	1:G:6:DA:O5'	2.17	0.44
1:I:7:DA:H2'	1:I:8:DT:H71	1.98	0.44
3:A:747:GLU:HA	4:A:916:HOH:O	2.16	0.44
3:B:435:LYS:HG3	4:B:1082:HOH:O	2.16	0.44
3:B:751:ARG:NE	3:B:763:TYR:HB2	2.33	0.44
3:B:872:LEU:HD12	3:B:876:PHE:HB3	1.99	0.44
3:D:240:LYS:HE2	3:D:248:THR:OG1	2.16	0.44
3:D:250:VAL:HG22	3:D:263:ILE:HG23	2.00	0.44
1:I:11:DC:H2''	1:I:12:DA:O5'	2.18	0.44
2:J:109:DC:O4'	3:C:800:LYS:NZ	2.50	0.44
3:A:15:ILE:HG12	3:A:65:MSE:HE1	2.00	0.44
3:B:421:ARG:HB3	3:B:680:LEU:CD1	2.47	0.44
3:B:608:VAL:HG13	3:D:897:LEU:HB2	1.99	0.44
3:C:214:THR:OG1	3:C:215:GLY:N	2.50	0.44
3:D:33:TYR:HB3	3:D:65:MSE:HE1	1.99	0.44
3:D:741:VAL:O	3:D:745:LEU:HD13	2.18	0.44
2:F:111:DT:H2''	2:F:112:DT:H5''	1.99	0.44
2:F:112:DT:H1'	2:F:113:DC:H5'	1.99	0.44
3:B:408:MSE:CE	3:B:655:ALA:HB2	2.45	0.44
3:B:792:ASP:CG	3:B:793:VAL:H	2.20	0.44
3:C:469:GLY:C	3:C:472:PRO:HD2	2.38	0.44
3:C:558:ASN:HA	3:C:558:ASN:HD22	1.62	0.44
3:C:738:PRO:HB3	3:C:780:ALA:O	2.18	0.44
3:D:150:ASP:HB3	3:D:188:TYR:CE1	2.53	0.44
3:D:434:PHE:CE1	3:D:460:GLY:HA2	2.53	0.44
2:H:111:DT:H2''	2:H:112:DT:C5'	2.47	0.44
3:A:176:ASP:OD2	3:A:318:GLN:NE2	2.51	0.44
3:A:406:TYR:CD2	3:A:633:ILE:HG13	2.53	0.44
3:A:507:ASN:O	3:A:508:LEU:HD22	2.17	0.44
3:A:553:MSE:HA	3:A:556:GLN:OE1	2.18	0.44
3:A:641:PHE:HA	3:A:646:HIS:CD2	2.52	0.44
3:A:715:MSE:O	3:A:716:GLU:HB2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:257:TYR:N	3:B:257:TYR:CD2	2.85	0.44
3:D:290:LEU:O	3:D:290:LEU:HD23	2.16	0.44
3:D:873:GLU:HB3	3:D:877:ILE:HD11	2.00	0.44
3:A:787:ASN:N	3:A:826:GLU:OE1	2.47	0.44
3:A:854:ILE:HG23	3:A:859:LYS:HB2	2.00	0.44
3:B:193:ASN:C	3:B:193:ASN:ND2	2.71	0.44
3:D:434:PHE:CE2	3:D:450:PRO:HB3	2.53	0.44
3:A:539:ASN:HD22	3:A:539:ASN:HA	1.61	0.44
3:A:800:LYS:HB2	3:A:800:LYS:HZ2	1.82	0.44
3:B:270:VAL:O	3:B:271:LEU:HD12	2.18	0.44
3:B:825:VAL:HB	3:B:828:GLU:CD	2.38	0.44
3:B:818:ASN:HD22	3:B:857:LEU:HD13	1.82	0.44
3:C:198:LEU:O	3:C:202:LEU:HB2	2.18	0.44
3:C:154:SER:O	3:C:156:TYR:N	2.51	0.44
3:C:284:ASN:ND2	3:C:829:LYS:NZ	2.66	0.44
3:C:491:ALA:O	3:C:495:ASN:HB2	2.18	0.44
3:C:71:TRP:O	3:C:75:MSE:HG2	2.17	0.44
3:C:83:LEU:HB3	3:C:379:VAL:CG1	2.48	0.44
3:D:151:LEU:HD23	3:D:191:PHE:O	2.18	0.44
3:A:777:ILE:HD13	3:A:848:TRP:HZ2	1.83	0.44
3:C:482:ARG:O	3:C:484:GLU:N	2.50	0.44
3:D:314:GLU:HG3	3:D:314:GLU:O	2.18	0.44
3:D:481:GLN:HB3	3:D:559:ARG:HE	1.83	0.44
3:D:749:ILE:O	3:D:753:LEU:HG	2.18	0.44
3:D:848:TRP:CB	4:D:932:HOH:O	2.65	0.44
3:D:8:VAL:HG11	3:D:93:LEU:CD1	2.46	0.44
1:I:15:DC:H2''	1:I:16:DG:C8	2.53	0.44
2:L:112:DT:H2''	2:L:113:DC:C4'	2.47	0.44
3:B:686:GLU:HG3	3:B:715:MSE:SE	2.68	0.43
3:D:499:ILE:O	3:D:502:ALA:HB3	2.18	0.43
3:D:602:ASN:HD21	3:D:617:VAL:CG2	2.31	0.43
3:D:685:ARG:HD2	3:D:686:GLU:N	2.33	0.43
3:D:849:PRO:HG2	3:D:852:THR:OG1	2.18	0.43
3:D:853:GLU:O	3:D:854:ILE:HB	2.18	0.43
2:F:113:DC:H2''	2:F:114:DC:OP2	2.18	0.43
1:G:15:DC:H6	1:G:15:DC:H5'	1.81	0.43
2:J:105:DC:H2''	2:J:106:DT:O5'	2.17	0.43
3:A:218:VAL:HG23	3:A:222:ALA:CB	2.46	0.43
3:A:734:LYS:HG2	3:A:736:SER:OG	2.17	0.43
3:A:814:ALA:HB1	3:A:858:ILE:HG21	2.00	0.43
3:B:494:ARG:NH1	3:B:494:ARG:HB2	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:606:ASN:HA	3:B:611:THR:OG1	2.19	0.43
3:B:703:THR:HG1	3:B:707:ARG:HD3	1.82	0.43
3:C:455:SER:HG	3:C:676:ASN:HA	1.83	0.43
3:A:516:VAL:HG22	3:A:517:ASP:N	2.33	0.43
3:A:737:THR:O	3:A:742:GLN:NE2	2.51	0.43
3:C:283:THR:O	3:C:283:THR:HG23	2.17	0.43
3:C:818:ASN:ND2	3:C:818:ASN:C	2.71	0.43
3:C:864:HIS:HD2	3:C:865:TRP:NE1	2.16	0.43
3:D:147:TYR:HA	3:D:187:ILE:CG2	2.48	0.43
3:D:438:PRO:HG2	3:D:441:ASP:CG	2.37	0.43
3:D:487:GLY:HA2	3:D:490:LEU:HB3	2.00	0.43
3:B:901:PHE:CD2	3:D:635:LYS:HG2	2.53	0.43
3:B:791:TYR:CD1	3:B:809:LEU:HD22	2.53	0.43
3:C:227:TYR:HD1	3:C:242:LEU:HD12	1.82	0.43
3:D:503:LEU:HA	3:D:538:LEU:HD13	2.01	0.43
3:D:700:GLY:HA2	3:D:753:LEU:CD2	2.44	0.43
3:A:401:PRO:O	3:A:402:ASN:HB2	2.17	0.43
3:A:83:LEU:HD12	3:A:83:LEU:N	2.31	0.43
3:B:604:TYR:O	3:B:608:VAL:HG23	2.17	0.43
3:B:643:ASP:OD2	3:B:646:HIS:HB2	2.18	0.43
3:B:660:GLU:CB	3:B:661:PRO:HD3	2.47	0.43
3:B:878:LYS:HB3	3:B:879:PRO:CD	2.48	0.43
3:D:485:HIS:N	4:D:918:HOH:O	2.51	0.43
3:D:514:LEU:C	3:D:516:VAL:H	2.21	0.43
3:D:730:LEU:HB2	3:D:883:PHE:CE2	2.54	0.43
3:D:744:ALA:HB1	3:D:876:PHE:CE1	2.54	0.43
3:A:36:SER:O	3:A:37:LEU:HD12	2.19	0.43
3:B:643:ASP:HB2	4:B:1024:HOH:O	2.18	0.43
3:B:834:PRO:O	3:B:866:MSE:HA	2.19	0.43
3:D:181:GLU:O	3:D:185:LYS:HD2	2.18	0.43
3:D:437:ALA:HB3	3:D:442:TYR:CE2	2.54	0.43
2:H:105:DC:H2'	2:H:106:DT:C6	2.53	0.43
3:A:606:ASN:OD1	3:A:616:PHE:CE1	2.69	0.43
3:B:668:ARG:HG3	3:B:668:ARG:NH1	2.30	0.43
3:C:25:ARG:HH21	3:C:27:ARG:HG2	1.84	0.43
1:I:2:DG:P	3:C:361:PRO:HD2	2.59	0.43
3:D:228:ASN:HA	3:D:231:LYS:HD3	2.00	0.43
3:D:408:MSE:HE1	3:D:659:MSE:SE	2.69	0.43
3:D:738:PRO:HG2	3:D:741:VAL:HG23	2.00	0.43
3:D:846:ILE:HG21	3:D:862:VAL:CG1	2.48	0.43
2:H:105:DC:H2''	2:H:106:DT:C5'	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:386:HIS:HA	3:A:387:PRO:HD3	1.88	0.43
3:A:830:VAL:HG12	3:A:849:PRO:HA	2.01	0.43
3:B:145:ARG:HD3	3:B:145:ARG:HA	1.75	0.43
3:B:656:ARG:HD3	4:B:970:HOH:O	2.18	0.43
3:C:112:ASN:ND2	3:C:332:LEU:CD1	2.80	0.43
3:D:140:ASP:OD2	3:D:142:ILE:HD11	2.18	0.43
3:D:641:PHE:HB3	3:D:646:HIS:HB3	2.00	0.43
1:K:6:DA:H5''	3:D:705:LYS:HD3	1.99	0.43
3:D:835:LEU:HA	3:D:865:TRP:O	2.19	0.43
3:A:199:MSE:HG2	3:A:234:PHE:CZ	2.53	0.43
3:A:353:ILE:HG21	3:A:367:ALA:HB2	2.01	0.43
3:A:41:CYS:O	3:A:56:PRO:HG2	2.19	0.43
3:B:541:MSE:CE	3:B:544:ARG:NH2	2.82	0.43
3:B:782:VAL:HG12	3:B:783:SER:N	2.33	0.43
3:C:818:ASN:ND2	3:C:820:ASP:H	2.16	0.43
3:C:878:LYS:HB3	3:C:879:PRO:HD3	2.00	0.43
3:D:421:ARG:HD2	3:D:475:ILE:HG23	2.01	0.43
3:A:489:MSE:C	3:A:491:ALA:N	2.71	0.43
3:B:643:ASP:HA	3:B:693:LEU:HD23	2.00	0.43
3:B:698:ILE:HG12	3:B:752:MSE:O	2.19	0.43
3:C:240:LYS:O	3:C:246:ARG:HA	2.18	0.43
3:D:214:THR:CG2	3:D:215:GLY:N	2.78	0.43
3:D:312:LEU:HG	3:D:320:TYR:CD2	2.54	0.43
3:D:511:ASP:OD1	3:D:536:LYS:HG2	2.18	0.43
3:D:642:ARG:H	3:D:646:HIS:HD2	1.67	0.43
3:D:710:LEU:HA	3:D:753:LEU:HD13	2.01	0.43
2:J:101:DG:O5'	2:J:101:DG:H8	2.02	0.43
3:A:17:GLU:O	3:A:28:THR:HA	2.19	0.42
3:A:422:GLN:HG3	3:A:678:GLN:O	2.19	0.42
3:A:785:ALA:HB2	3:A:808:ILE:HD11	1.99	0.42
3:B:19:TYR:HE1	3:B:29:ARG:HG2	1.84	0.42
3:B:423:VAL:O	3:B:424:ASN:CB	2.67	0.42
3:C:123:PHE:CD1	3:C:124:PRO:HD2	2.54	0.42
3:D:499:ILE:HD11	3:D:522:PHE:CE1	2.54	0.42
3:D:747:GLU:HA	3:D:747:GLU:OE2	2.19	0.42
1:E:15:DC:H2''	1:E:16:DG:O5'	2.18	0.42
2:H:107:DG:H1'	2:H:108:DT:H5'	2.01	0.42
1:K:4:DG:H2'	1:K:5:DG:H8	1.84	0.42
2:L:113:DC:H2''	2:L:114:DC:O5'	2.19	0.42
3:A:388:VAL:HG23	3:A:388:VAL:O	2.19	0.42
3:A:411:ASP:O	3:A:683:MSE:HA	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:532:LYS:O	3:A:533:LEU:HD22	2.18	0.42
3:A:728:MSE:HA	3:A:728:MSE:HE2	2.01	0.42
3:C:3:GLU:HG2	3:C:21:ASP:C	2.38	0.42
3:D:564:ASN:N	3:D:564:ASN:HD22	2.15	0.42
3:D:715:MSE:O	3:D:716:GLU:HB2	2.18	0.42
2:J:107:DG:H2''	2:J:108:DT:O5'	2.19	0.42
2:J:113:DC:H2'	2:J:114:DC:C6	2.54	0.42
3:A:3:GLU:CG	3:A:21:ASP:HA	2.49	0.42
3:A:514:LEU:HD23	3:A:533:LEU:HD21	2.00	0.42
3:A:802:PRO:HG2	3:A:805:ILE:HD12	2.01	0.42
3:A:836:ARG:HG3	3:A:836:ARG:HH11	1.84	0.42
3:C:200:GLU:HA	3:C:200:GLU:OE2	2.19	0.42
3:C:350:TYR:OH	3:C:481:GLN:NE2	2.43	0.42
3:D:423:VAL:HG12	3:D:423:VAL:O	2.19	0.42
3:D:500:LYS:HA	4:D:942:HOH:O	2.19	0.42
3:D:743:LYS:HA	4:D:951:HOH:O	2.19	0.42
1:E:2:DG:H2''	1:E:3:CTG:OP2	2.19	0.42
1:E:9:DG:N2	4:E:449:HOH:O	2.52	0.42
2:H:111:DT:H2''	2:H:112:DT:O5'	2.19	0.42
3:A:597:ILE:HD12	3:A:597:ILE:HA	1.82	0.42
3:A:10:GLN:HG3	3:A:65:MSE:SE	2.68	0.42
3:C:176:ASP:OD1	3:C:318:GLN:HG3	2.20	0.42
3:C:799:PRO:HD2	4:C:952:HOH:O	2.19	0.42
3:D:707:ARG:HA	3:D:729:GLY:HA3	2.02	0.42
3:D:785:ALA:HB3	3:D:827:GLY:H	1.84	0.42
1:E:6:DA:OP1	3:A:705:LYS:NZ	2.52	0.42
1:K:14:DC:C4	1:K:15:DC:N4	2.88	0.42
3:A:573:VAL:HG12	3:A:578:TYR:CZ	2.54	0.42
3:B:75:MSE:CE	3:B:80:LEU:HD12	2.50	0.42
3:B:857:LEU:O	3:B:857:LEU:HD23	2.18	0.42
3:C:402:ASN:HA	3:C:886:ALA:O	2.20	0.42
3:D:323:TYR:HA	3:D:326:ILE:HG12	2.02	0.42
1:K:5:DG:P	3:D:393:GLY:H	2.43	0.42
3:D:472:PRO:O	3:D:475:ILE:HG22	2.20	0.42
3:D:810:THR:HG23	3:D:841:PHE:O	2.19	0.42
3:A:413:THR:O	3:A:414:SER:C	2.57	0.42
3:A:476:THR:HG22	3:A:480:ASN:ND2	2.34	0.42
3:A:519:ARG:HA	3:A:548:THR:HG21	2.01	0.42
3:B:238:THR:O	3:B:241:ARG:HB2	2.20	0.42
3:B:362:ILE:CD1	3:B:575:PHE:HB2	2.49	0.42
3:B:515:ASP:HA	3:B:544:ARG:HH12	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:725:LEU:HD11	3:B:750:ARG:HG2	2.02	0.42
3:C:354:GLN:HB3	3:C:356:GLN:OE1	2.18	0.42
3:C:642:ARG:HG3	3:C:646:HIS:CD2	2.55	0.42
3:C:85:MSE:HA	3:C:380:ILE:HD11	2.00	0.42
3:D:298:LEU:HD13	3:D:333:GLN:OE1	2.20	0.42
3:D:685:ARG:C	3:D:685:ARG:HD2	2.40	0.42
3:D:6:LEU:HB2	3:D:18:ARG:O	2.19	0.42
3:D:6:LEU:HD21	3:D:108:ILE:HG12	2.00	0.42
3:D:824:VAL:HG13	3:D:826:GLU:H	1.84	0.42
1:E:13:DG:P	3:A:800:LYS:HG2	2.60	0.42
3:B:113:PHE:CE1	3:B:218:VAL:HG21	2.54	0.42
3:B:421:ARG:HG2	3:B:421:ARG:HH11	1.85	0.42
3:B:479:PHE:CE2	3:B:563:ILE:HD13	2.54	0.42
3:C:472:PRO:O	3:C:475:ILE:HG22	2.20	0.42
3:C:392:PRO:C	3:C:587:THR:HG21	2.39	0.42
3:C:656:ARG:HA	3:C:660:GLU:CG	2.48	0.42
3:C:83:LEU:HD22	3:C:83:LEU:N	2.34	0.42
3:D:205:TRP:HH2	3:D:213:LEU:HD12	1.84	0.42
3:D:373:LEU:HD12	3:D:380:ILE:CD1	2.49	0.42
3:D:456:CYS:SG	3:D:462:MSE:HG2	2.60	0.42
3:D:770:GLU:O	3:D:774:LEU:HD23	2.19	0.42
3:D:811:TYR:O	3:D:814:ALA:HB3	2.20	0.42
2:H:101:DG:H2''	2:H:102:DC:O5'	2.18	0.42
1:I:9:DG:H1'	1:I:10:DA:H5''	2.01	0.42
3:B:283:THR:O	3:B:283:THR:HG23	2.20	0.42
3:B:655:ALA:HA	3:B:659:MSE:HB2	2.01	0.42
3:C:423:VAL:HB	3:C:425:ILE:HG13	2.02	0.42
3:C:529:LYS:HE3	4:C:1047:HOH:O	2.20	0.42
1:I:11:DC:H5'	1:I:11:DC:H6	1.85	0.42
3:A:254:GLU:OE1	3:A:259:SER:HB2	2.20	0.42
3:A:357:SER:C	3:A:359:PHE:N	2.72	0.42
3:A:494:ARG:NH2	3:A:521:ASP:OD1	2.53	0.42
3:A:789:ALA:HA	3:A:792:ASP:HB3	2.01	0.42
3:B:787:ASN:C	3:B:789:ALA:H	2.21	0.42
3:C:482:ARG:CD	3:C:556:GLN:HE21	2.33	0.42
3:C:605:LEU:HD21	3:C:659:MSE:HE3	2.02	0.42
3:C:898:PHE:N	3:C:898:PHE:CD2	2.83	0.42
3:D:262:ILE:N	3:D:262:ILE:CD1	2.82	0.42
3:D:818:ASN:C	3:D:820:ASP:H	2.22	0.42
3:D:859:LYS:O	3:D:863:LEU:HD13	2.20	0.42
1:G:15:DC:H2''	1:G:16:DG:O5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:775:ASN:HB3	3:A:778:SER:OG	2.20	0.42
3:B:466:ASP:N	3:B:466:ASP:OD1	2.53	0.42
3:B:790:LYS:HE2	3:B:801:CYS:HA	2.02	0.42
3:C:38:PHE:N	3:C:38:PHE:CD1	2.87	0.42
3:D:148:VAL:HG21	3:D:325:ILE:CD1	2.50	0.42
3:D:431:ALA:HA	3:D:464:TYR:CE1	2.55	0.42
3:D:72:ILE:HG22	3:D:76:GLU:OE2	2.20	0.42
3:A:338:ARG:HD2	3:A:340:PHE:CZ	2.54	0.41
3:B:119:SER:HA	3:B:120:PRO:HD2	1.91	0.41
3:B:326:ILE:HG22	3:B:330:ARG:HG2	2.02	0.41
2:H:113:DC:O5'	3:B:734:LYS:O	2.37	0.41
3:C:448:GLU:O	3:C:449:ARG:C	2.57	0.41
3:C:503:LEU:HD21	3:C:538:LEU:CB	2.50	0.41
3:D:214:THR:CG2	3:D:215:GLY:H	2.11	0.41
3:D:352:LYS:O	3:D:353:ILE:HG23	2.19	0.41
3:D:368:ILE:CD1	3:D:562:LEU:HD21	2.50	0.41
3:D:489:MSE:CE	3:D:490:LEU:HB2	2.39	0.41
3:D:492:ALA:HA	3:D:495:ASN:HB2	2.02	0.41
3:D:779:ILE:CD1	3:D:866:MSE:HE1	2.45	0.41
3:D:96:THR:HB	3:D:97:TYR:CD1	2.54	0.41
2:F:109:DC:H2''	2:F:110:DA:O5'	2.20	0.41
3:C:510:VAL:O	3:C:533:LEU:HB3	2.19	0.41
3:D:433:THR:OG1	3:D:434:PHE:N	2.53	0.41
1:G:6:DA:H1'	1:G:7:DA:C8	2.55	0.41
3:A:120:PRO:HG2	3:A:156:TYR:CE1	2.55	0.41
3:B:195:LYS:O	3:B:199:MSE:HB2	2.20	0.41
3:B:355:ILE:N	3:B:355:ILE:CD1	2.83	0.41
3:C:239:ALA:O	3:C:241:ARG:N	2.53	0.41
3:A:101:ILE:CG2	3:A:349:TYR:HB3	2.50	0.41
3:A:382:GLN:HE21	3:A:382:GLN:HB3	1.62	0.41
3:A:51:ASP:HA	3:A:379:VAL:HG22	2.01	0.41
3:A:797:PRO:CD	3:A:809:LEU:HD13	2.50	0.41
3:A:811:TYR:HH	3:A:822:PRO:HG2	1.83	0.41
3:B:489:MSE:SE	3:B:553:MSE:SE	3.38	0.41
3:B:380:ILE:HD12	3:B:576:ARG:CZ	2.50	0.41
3:B:404:TYR:CD1	3:B:618:LEU:HD22	2.55	0.41
3:C:458:PRO:CG	3:C:592:MSE:SE	3.18	0.41
3:D:146:PHE:CE2	3:D:182:ILE:HG13	2.55	0.41
3:D:5:TYR:HB3	3:D:97:TYR:CE1	2.55	0.41
3:A:423:VAL:HG12	3:A:423:VAL:O	2.19	0.41
3:A:478:VAL:HG13	3:A:559:ARG:HD2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:702:TRP:NE1	3:A:708:TYR:CD1	2.88	0.41
3:B:291:ASP:HA	3:B:302:LYS:HG3	2.02	0.41
3:B:579:ASP:OD1	3:B:581:ARG:HB2	2.20	0.41
3:C:364:THR:O	3:C:368:ILE:HG13	2.21	0.41
3:C:413:THR:O	3:C:414:SER:C	2.59	0.41
3:C:467:ARG:CD	3:C:467:ARG:H	2.31	0.41
3:D:827:GLY:HA2	4:D:921:HOH:O	2.21	0.41
3:A:100:GLU:CG	3:A:102:LYS:HE2	2.44	0.41
3:A:104:ASP:OD2	3:A:106:THR:HB	2.20	0.41
3:A:129:ALA:HA	3:A:225:TYR:CZ	2.55	0.41
3:A:212:ILE:HD13	3:A:269:SER:HB2	2.02	0.41
3:A:466:ASP:N	3:A:466:ASP:OD2	2.53	0.41
3:A:804:HIS:O	3:A:808:ILE:HG13	2.20	0.41
3:B:516:VAL:HB	3:B:544:ARG:NH2	2.36	0.41
3:C:414:SER:O	3:C:415:LEU:C	2.59	0.41
3:C:546:GLN:O	3:C:550:VAL:HG23	2.21	0.41
3:C:854:ILE:HD13	3:C:862:VAL:HG21	2.03	0.41
3:D:621:ASP:O	3:D:622:THR:HB	2.19	0.41
2:F:102:DC:H1'	2:F:103:DG:C8	2.55	0.41
1:G:15:DC:H2''	1:G:16:DG:C8	2.55	0.41
2:L:104:DG:H1'	2:L:105:DC:O4'	2.20	0.41
3:B:209:THR:HA	3:B:210:PRO:HD3	1.94	0.41
3:B:82:ALA:O	3:B:382:GLN:HG3	2.21	0.41
3:B:444:ASN:HA	3:B:599:ARG:NE	2.35	0.41
3:C:9:GLU:OE2	3:C:266:PHE:HA	2.20	0.41
3:C:802:PRO:HB2	3:C:805:ILE:HG12	2.03	0.41
3:A:216:TRP:O	3:A:217:ASN:HB2	2.21	0.41
3:A:739:LYS:CD	3:A:778:SER:HA	2.42	0.41
3:A:811:TYR:O	3:A:815:ILE:HG12	2.20	0.41
3:B:109:ARG:HH11	3:B:109:ARG:HB2	1.86	0.41
3:B:435:LYS:N	3:B:435:LYS:CD	2.82	0.41
3:B:492:ALA:HB1	3:B:549:GLU:HB2	2.02	0.41
3:C:432:GLY:C	3:C:433:THR:HG23	2.40	0.41
3:C:458:PRO:HG2	3:C:592:MSE:SE	2.71	0.41
3:D:6:LEU:CD2	3:D:108:ILE:HG12	2.51	0.41
3:D:429:THR:O	3:D:464:TYR:HD1	2.03	0.41
2:F:101:DG:H2''	2:F:102:DC:C6	2.55	0.41
3:A:21:ASP:OD1	3:A:25:ARG:HG2	2.20	0.41
3:C:82:ALA:O	3:C:382:GLN:HB2	2.21	0.41
3:C:891:TYR:CD2	3:C:892:GLU:HG3	2.55	0.41
3:A:273:TYR:OH	3:A:335:ASP:HA	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:308:PRO:HG3	3:A:311:LYS:HD2	2.03	0.41
3:A:41:CYS:HB3	3:A:58:THR:HG22	2.01	0.41
3:B:257:TYR:HE1	3:B:786:ASN:CG	2.24	0.41
3:B:25:ARG:O	3:B:27:ARG:HG2	2.21	0.41
3:B:294:SER:CB	3:B:301:GLY:HA2	2.49	0.41
3:B:485:HIS:HA	3:B:488:TYR:CD2	2.56	0.41
3:B:517:ASP:C	3:B:519:ARG:H	2.24	0.41
3:B:731:GLU:N	3:B:731:GLU:OE2	2.38	0.41
3:D:228:ASN:HD22	3:D:231:LYS:HD3	1.86	0.41
3:D:657:GLU:O	3:D:661:PRO:HG2	2.21	0.41
3:A:125:GLU:HA	3:A:126:PRO:HD3	1.91	0.41
3:A:204:PHE:CE1	3:A:208:LYS:HD2	2.56	0.41
3:A:395:PHE:CE2	3:A:595:GLN:HG2	2.56	0.41
3:B:19:TYR:CE1	3:B:29:ARG:HG2	2.56	0.41
3:B:320:TYR:O	3:B:323:TYR:HB3	2.21	0.41
3:B:528:GLU:C	3:B:530:ILE:N	2.74	0.41
3:B:554:THR:O	3:B:558:ASN:HB2	2.21	0.41
3:B:818:ASN:HD22	3:B:821:ALA:HB2	1.83	0.41
3:C:21:ASP:CG	3:C:25:ARG:HG3	2.40	0.41
3:C:9:GLU:HG3	3:C:267:GLY:N	2.36	0.41
3:D:346:ASP:OD2	3:D:554:THR:HG22	2.22	0.41
3:D:668:ARG:CZ	3:D:668:ARG:HB2	2.51	0.41
2:F:105:DC:H2'	2:F:106:DT:H72	2.03	0.41
1:I:12:DA:H2''	1:I:13:DG:N7	2.35	0.41
1:I:8:DT:P	4:I:192:HOH:O	2.79	0.41
3:A:405:LYS:O	3:A:699:GLY:HA3	2.22	0.40
3:B:33:TYR:O	3:B:35:PRO:HD3	2.21	0.40
3:B:412:LEU:HA	3:B:682:PHE:O	2.21	0.40
3:B:792:ASP:CG	3:B:793:VAL:N	2.75	0.40
3:C:202:LEU:O	3:C:206:GLN:HG2	2.20	0.40
3:C:109:ARG:HD2	3:C:209:THR:O	2.21	0.40
3:C:433:THR:O	3:C:462:MSE:SE	2.88	0.40
3:C:505:ASN:N	3:C:506:PRO:HD3	2.36	0.40
3:D:426:SER:C	3:D:428:GLU:H	2.25	0.40
3:D:702:TRP:NE1	3:D:708:TYR:HB3	2.35	0.40
3:A:176:ASP:HA	3:A:319:ARG:NH2	2.27	0.40
3:A:294:SER:HB3	3:A:301:GLY:HA2	2.03	0.40
3:B:379:VAL:HG13	3:B:379:VAL:O	2.21	0.40
3:B:593:ALA:HB2	3:B:681:MSE:HE3	2.00	0.40
3:C:454:TYR:HD2	3:C:462:MSE:CE	2.27	0.40
3:D:508:LEU:N	3:D:508:LEU:HD22	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:12:DA:H2''	1:G:13:DG:O5'	2.21	0.40
1:K:6:DA:C2	1:K:7:DA:N6	2.90	0.40
3:A:457:SER:HA	3:A:458:PRO:HD3	1.94	0.40
3:C:614:GLU:HB2	3:C:616:PHE:HE1	1.86	0.40
1:K:8:DT:C2'	1:K:9:DG:C8	2.99	0.40
2:L:101:DG:H2'	2:L:102:DC:C5	2.57	0.40
3:A:494:ARG:HE	3:A:494:ARG:HB2	1.75	0.40
3:A:514:LEU:HD13	3:A:515:ASP:N	2.36	0.40
3:A:660:GLU:HB2	3:A:661:PRO:CD	2.42	0.40
3:B:901:PHE:HB2	3:B:902:ASP:H	1.65	0.40
3:C:257:TYR:N	3:C:257:TYR:CD2	2.86	0.40
3:C:302:LYS:HD2	3:C:323:TYR:CD1	2.56	0.40
3:C:578:TYR:CD1	3:C:578:TYR:C	2.95	0.40
3:D:157:GLY:O	3:D:158:ASN:HB3	2.21	0.40
3:D:433:THR:O	3:D:462:MSE:HE2	2.21	0.40
3:D:730:LEU:N	4:D:925:HOH:O	2.54	0.40
1:G:8:DT:H6	1:G:8:DT:H5'	1.86	0.40
1:I:15:DC:C2'	1:I:16:DG:H5'	2.33	0.40
3:A:397:LYS:O	3:A:399:PRO:HD3	2.21	0.40
3:B:158:ASN:N	3:B:158:ASN:ND2	2.68	0.40
3:B:397:LYS:O	3:B:399:PRO:HD3	2.21	0.40
3:B:518:TYR:CB	3:B:544:ARG:HG2	2.52	0.40
3:B:597:ILE:HD13	3:B:625:ILE:HD13	2.02	0.40
3:B:857:LEU:CD2	3:B:858:ILE:HG23	2.52	0.40
3:C:209:THR:HA	3:C:210:PRO:HD3	1.85	0.40
3:C:392:PRO:O	3:C:587:THR:CG2	2.62	0.40
3:C:772:ARG:HG3	3:C:772:ARG:HH11	1.87	0.40
3:D:188:TYR:CE2	3:D:190:PRO:HD3	2.55	0.40
3:D:887:ALA:C	3:D:889:LEU:H	2.25	0.40
2:H:110:DA:C2'	2:H:111:DT:C5'	2.98	0.40
1:K:11:DC:N3	2:L:107:DG:O6	2.55	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	A	900/903 (100%)	804 (89%)	84 (9%)	12 (1%)	14	22
3	B	884/903 (98%)	802 (91%)	70 (8%)	12 (1%)	13	20
3	C	898/903 (99%)	830 (92%)	56 (6%)	12 (1%)	14	22
3	D	886/903 (98%)	701 (79%)	131 (15%)	54 (6%)	2	1
All	All	3568/3612 (99%)	3137 (88%)	341 (10%)	90 (2%)	6	9

All (90) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	A	519	ARG
3	A	611	THR
3	A	621	ASP
3	B	177	GLU
3	C	256	MSE
3	C	458	PRO
3	C	899	ASP
3	D	44	SER
3	D	170	LEU
3	D	265	LEU
3	D	489	MSE
3	D	498	ILE
3	D	521	ASP
3	D	532	LYS
3	D	731	GLU
3	D	736	SER
3	D	815	ILE
3	D	853	GLU
3	A	12	GLY
3	A	121	ASP
3	A	300	VAL
3	B	45	GLN
3	D	127	SER
3	D	155	PRO
3	D	165	GLU
3	D	179	PRO
3	D	221	PHE
3	D	387	PRO
3	D	427	PRO
3	D	506	PRO

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Mol	Chain	Res	Type
3	D	523	SER
3	D	533	LEU
3	D	536	LYS
3	D	695	SER
3	D	800	LYS
3	D	817	GLY
3	D	836	ARG
3	D	854	ILE
3	A	303	LEU
3	B	352	LYS
3	B	406	TYR
3	B	518	TYR
3	B	795	GLY
3	C	432	GLY
3	C	483	LYS
3	C	533	LEU
3	C	622	THR
3	D	45	GLN
3	D	140	ASP
3	D	315	SER
3	D	415	LEU
3	D	622	THR
3	D	843	ASP
3	D	874	LYS
3	A	338	ARG
3	A	490	LEU
3	A	509	SER
3	B	520	PHE
3	B	734	LYS
3	B	793	VAL
3	B	896	SER
3	C	174	GLY
3	C	415	LEU
3	C	506	PRO
3	D	198	LEU
3	D	262	ILE
3	D	272	ASP
3	D	401	PRO
3	D	512	GLU
3	D	640	LYS
3	D	730	LEU
3	D	783	SER

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Mol	Chain	Res	Type
3	D	849	PRO
3	D	889	LEU
3	C	240	LYS
3	D	182	ILE
3	D	269	SER
3	D	391	TYR
3	D	395	PHE
3	D	510	VAL
3	A	622	THR
3	B	302	LYS
3	B	529	LYS
3	D	157	GLY
3	D	35	PRO
3	D	799	PRO
3	C	175	GLY
3	A	388	VAL
3	D	166	ILE
3	D	779	ILE

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	A	785/775 (101%)	739 (94%)	46 (6%)	23	36
3	B	767/775 (99%)	722 (94%)	45 (6%)	23	36
3	C	786/775 (101%)	744 (95%)	42 (5%)	26	42
3	D	711/775 (92%)	675 (95%)	36 (5%)	28	43
All	All	3049/3100 (98%)	2880 (94%)	169 (6%)	25	39

All (169) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	A	14	SER
3	A	29	ARG
3	A	32	GLU

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Mol	Chain	Res	Type
3	A	58	THR
3	A	64	ASN
3	A	66	ARG
3	A	75	MSE
3	A	86	ASP
3	A	112	ASN
3	A	116	GLU
3	A	121	ASP
3	A	181	GLU
3	A	213	LEU
3	A	229	ARG
3	A	242	LEU
3	A	273	TYR
3	A	291	ASP
3	A	304	LYS
3	A	318	GLN
3	A	332	LEU
3	A	346	ASP
3	A	382	GLN
3	A	403	ARG
3	A	411	ASP
3	A	467	ARG
3	A	483	LYS
3	A	503	LEU
3	A	514	LEU
3	A	539	ASN
3	A	561	LEU
3	A	587	THR
3	A	612	GLU
3	A	618	LEU
3	A	631	LYS
3	A	646	HIS
3	A	653	LYS
3	A	656	ARG
3	A	658	ARG
3	A	659	MSE
3	A	702	TRP
3	A	733	GLN
3	A	736	SER
3	A	739	LYS
3	A	773	GLN
3	A	818	ASN

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Mol	Chain	Res	Type
3	A	861	ASP
3	B	26	GLU
3	B	66	ARG
3	B	75	MSE
3	B	89	LYS
3	B	93	LEU
3	B	98	ASN
3	B	109	ARG
3	B	112	ASN
3	B	113	PHE
3	B	116	GLU
3	B	154	SER
3	B	164	ILE
3	B	193	ASN
3	B	217	ASN
3	B	256	MSE
3	B	257	TYR
3	B	259	SER
3	B	260	ARG
3	B	273	TYR
3	B	316	ASN
3	B	324	ASN
3	B	403	ARG
3	B	411	ASP
3	B	421	ARG
3	B	435	LYS
3	B	475	ILE
3	B	489	MSE
3	B	539	ASN
3	B	573	VAL
3	B	658	ARG
3	B	681	MSE
3	B	684	ASP
3	B	685	ARG
3	B	702	TRP
3	B	707	ARG
3	B	728	MSE
3	B	737	THR
3	B	739	LYS
3	B	766	GLU
3	B	787	ASN
3	B	791	TYR

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Mol	Chain	Res	Type
3	B	819	ILE
3	B	861	ASP
3	B	878	LYS
3	B	901	PHE
3	C	43	GLU
3	C	98	ASN
3	C	138	HIS
3	C	141	SER
3	C	257	TYR
3	C	273	TYR
3	C	276	LEU
3	C	284	ASN
3	C	332	LEU
3	C	337	LYS
3	C	356	GLN
3	C	411	ASP
3	C	426	SER
3	C	428	GLU
3	C	439	LEU
3	C	449	ARG
3	C	456	CYS
3	C	467	ARG
3	C	468	ASP
3	C	479	PHE
3	C	525	GLU
3	C	536	LYS
3	C	558	ASN
3	C	559	ARG
3	C	561	LEU
3	C	562	LEU
3	C	580	LEU
3	C	587	THR
3	C	618	LEU
3	C	642	ARG
3	C	702	TRP
3	C	722	GLU
3	C	728	MSE
3	C	747	GLU
3	C	760	LEU
3	C	818	ASN
3	C	843	ASP
3	C	859	LYS

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Mol	Chain	Res	Type
3	C	880	LEU
3	C	881	GLU
3	C	896	SER
3	C	898	PHE
3	D	10	GLN
3	D	47	THR
3	D	58	THR
3	D	86	ASP
3	D	134	ASP
3	D	162	TRP
3	D	216	TRP
3	D	266	PHE
3	D	273	TYR
3	D	303	LEU
3	D	306	ASP
3	D	316	ASN
3	D	356	GLN
3	D	391	TYR
3	D	441	ASP
3	D	479	PHE
3	D	489	MSE
3	D	498	ILE
3	D	519	ARG
3	D	520	PHE
3	D	530	ILE
3	D	556	GLN
3	D	558	ASN
3	D	576	ARG
3	D	591	GLN
3	D	657	GLU
3	D	660	GLU
3	D	702	TRP
3	D	719	ARG
3	D	730	LEU
3	D	755	GLU
3	D	772	ARG
3	D	828	GLU
3	D	844	LYS
3	D	856	ASP
3	D	860	ASP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (92) such sidechains are listed below:

Mol	Chain	Res	Type
3	A	64	ASN
3	A	153	ASN
3	A	158	ASN
3	A	206	GLN
3	A	245	HIS
3	A	284	ASN
3	A	285	GLN
3	A	376	GLN
3	A	382	GLN
3	A	422	GLN
3	A	480	ASN
3	A	485	HIS
3	A	493	GLN
3	A	495	ASN
3	A	505	ASN
3	A	539	ASN
3	A	556	GLN
3	A	558	ASN
3	A	602	ASN
3	A	606	ASN
3	A	646	HIS
3	A	678	GLN
3	A	733	GLN
3	A	742	GLN
3	A	773	GLN
3	A	775	ASN
3	B	70	GLN
3	B	98	ASN
3	B	153	ASN
3	B	158	ASN
3	B	193	ASN
3	B	203	ASN
3	B	217	ASN
3	B	245	HIS
3	B	316	ASN
3	B	318	GLN
3	B	324	ASN
3	B	376	GLN
3	B	382	GLN
3	B	389	GLN
3	B	493	GLN
3	B	646	HIS
3	B	733	GLN

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Mol	Chain	Res	Type
3	B	742	GLN
3	B	775	ASN
3	B	818	ASN
3	C	45	GLN
3	C	98	ASN
3	C	112	ASN
3	C	131	HIS
3	C	153	ASN
3	C	158	ASN
3	C	171	GLN
3	C	173	GLN
3	C	203	ASN
3	C	207	GLN
3	C	284	ASN
3	C	285	GLN
3	C	376	GLN
3	C	481	GLN
3	C	495	ASN
3	C	539	ASN
3	C	556	GLN
3	C	558	ASN
3	C	572	ASN
3	C	675	ASN
3	C	676	ASN
3	C	678	GLN
3	C	679	HIS
3	C	711	ASN
3	C	818	ASN
3	C	864	HIS
3	D	10	GLN
3	D	64	ASN
3	D	70	GLN
3	D	228	ASN
3	D	285	GLN
3	D	316	ASN
3	D	339	GLN
3	D	342	ASN
3	D	356	GLN
3	D	440	HIS
3	D	444	ASN
3	D	485	HIS
3	D	495	ASN

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Mol	Chain	Res	Type
3	D	505	ASN
3	D	564	ASN
3	D	591	GLN
3	D	646	HIS
3	D	742	GLN
3	D	761	GLN
3	D	812	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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	CTG	E	3	1,2	18,23,24	0.76	0	21,35,38	1.01	2 (9%)
1	CTG	G	3	1,2	18,23,24	0.90	1 (5%)	21,35,38	1.02	1 (4%)
1	CTG	I	3	1,2	18,23,24	0.90	1 (5%)	21,35,38	1.08	2 (9%)
1	CTG	K	3	1	18,23,24	1.02	1 (5%)	21,35,38	1.02	2 (9%)

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	CTG	E	3	1,2	-	0/7/45/46	0/2/2/2
1	CTG	G	3	1,2	-	0/7/45/46	0/2/2/2
1	CTG	I	3	1,2	-	0/7/45/46	0/2/2/2
1	CTG	K	3	1	-	0/7/45/46	0/2/2/2

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	G	3	CTG	C1'-N1	2.04	1.48	1.45
1	I	3	CTG	C1'-N1	2.41	1.48	1.45
1	K	3	CTG	C5-C4	2.82	1.55	1.52

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	3	CTG	N3-C2-N1	-2.40	114.20	116.69
1	K	3	CTG	N3-C2-N1	-2.32	114.28	116.69
1	E	3	CTG	N3-C2-N1	-2.14	114.48	116.69
1	I	3	CTG	N3-C2-N1	-2.07	114.54	116.69
1	K	3	CTG	O3'-C3'-C2'	2.23	118.95	110.83
1	E	3	CTG	O3'-C3'-C2'	2.50	119.92	110.83
1	I	3	CTG	O3'-C3'-C2'	2.74	120.79	110.83

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

4 monomers are involved in 7 short contacts:

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

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	E	16/18 (88%)	0.74	2 (12%) 4 3	87, 109, 126, 131	0
1	G	17/18 (94%)	-0.26	0 100 100	34, 47, 76, 79	0
1	I	17/18 (94%)	-0.06	0 100 100	35, 50, 84, 91	0
1	K	17/18 (94%)	1.92	9 (52%) 0 0	65, 80, 81, 81	0
2	F	14/15 (93%)	1.08	3 (21%) 1 1	106, 125, 133, 135	0
2	H	15/15 (100%)	-0.36	0 100 100	36, 49, 100, 100	0
2	J	15/15 (100%)	-0.09	0 100 100	33, 65, 112, 113	0
2	L	15/15 (100%)	2.29	9 (60%) 0 0	78, 80, 82, 82	0
3	A	877/903 (97%)	0.20	51 (5%) 24 22	23, 51, 125, 141	0
3	B	863/903 (95%)	0.04	40 (4%) 33 30	16, 44, 116, 139	0
3	C	875/903 (96%)	0.07	36 (4%) 38 35	17, 47, 114, 142	0
3	D	867/903 (96%)	0.90	146 (16%) 2 1	54, 102, 140, 153	0
All	All	3608/3744 (96%)	0.32	296 (8%) 12 10	16, 58, 131, 153	0

All (296) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	A	503	LEU	9.5
3	C	503	LEU	9.1
3	D	309	ILE	9.1
3	D	135	ALA	8.8
3	D	498	ILE	8.8
3	D	534	SER	8.3
3	D	313	ARG	8.0
3	A	504	HIS	7.8
3	C	510	VAL	7.8
3	A	532	LYS	7.6
3	B	538	LEU	6.9

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Mol	Chain	Res	Type	RSRZ
3	D	118	THR	6.7
3	A	505	ASN	6.7
3	A	502	ALA	6.6
3	B	497	GLU	6.6
3	B	258	GLY	6.5
3	D	303	LEU	6.4
3	A	511	ASP	6.4
3	C	531	LYS	6.2
3	A	509	SER	6.2
3	D	514	LEU	6.1
3	D	535	ALA	6.1
3	C	505	ASN	6.0
3	D	315	SER	6.0
3	B	794	GLY	6.0
3	D	115	ILE	6.0
3	D	542	LEU	5.9
3	D	829	LYS	5.9
3	C	511	ASP	5.8
3	D	164	ILE	5.8
3	D	305	TYR	5.7
3	A	499	ILE	5.7
3	A	506	PRO	5.6
3	D	538	LEU	5.6
3	A	846	ILE	5.6
3	D	526	ILE	5.6
3	A	496	GLY	5.5
3	D	875	THR	5.4
3	D	517	ASP	5.4
2	L	108	DT	5.4
3	B	793	VAL	5.4
3	A	508	LEU	5.3
3	C	495	ASN	5.3
3	C	504	HIS	5.3
3	B	498	ILE	5.2
3	D	522	PHE	5.2
2	L	109	DC	5.2
3	D	817	GLY	5.1
3	B	792	ASP	5.1
3	C	498	ILE	5.0
3	C	507	ASN	4.8
3	A	536	LYS	4.8
3	D	121	ASP	4.7

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Mol	Chain	Res	Type	RSRZ
3	C	508	LEU	4.7
3	B	791	TYR	4.7
3	C	512	GLU	4.6
3	A	257	TYR	4.6
3	D	523	SER	4.6
3	D	730	LEU	4.6
3	C	509	SER	4.5
3	D	314	GLU	4.5
3	D	230	ILE	4.5
3	D	491	ALA	4.4
3	A	500	LYS	4.4
3	A	530	ILE	4.4
3	D	252	VAL	4.3
3	C	522	PHE	4.3
3	D	782	VAL	4.3
3	B	819	ILE	4.3
3	A	514	LEU	4.3
3	D	508	LEU	4.2
3	B	524	ASP	4.2
3	B	542	LEU	4.2
3	C	530	ILE	4.1
3	D	320	TYR	4.1
3	C	499	ILE	4.1
3	A	498	ILE	4.1
3	C	506	PRO	4.1
3	A	510	VAL	4.1
3	D	539	ASN	4.1
3	C	496	GLY	4.0
3	D	529	LYS	4.0
2	L	101	DG	4.0
3	C	527	LYS	3.9
3	B	820	ASP	3.9
3	D	818	ASN	3.9
3	D	787	ASN	3.8
3	A	497	GLU	3.8
3	A	513	PRO	3.8
3	D	203	ASN	3.8
3	D	159	VAL	3.8
3	D	150	ASP	3.8
3	D	216	TRP	3.8
3	D	321	ILE	3.8
3	D	794	GLY	3.7

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Mol	Chain	Res	Type	RSRZ
1	K	2	DG	3.7
3	B	259	SER	3.7
3	D	134	ASP	3.7
3	D	78	ILE	3.6
2	L	107	DG	3.6
3	D	133	ILE	3.6
3	A	535	ALA	3.6
3	D	789	ALA	3.6
3	D	136	ILE	3.6
3	A	534	SER	3.5
3	D	537	SER	3.5
3	A	538	LEU	3.5
3	D	225	TYR	3.5
3	C	502	ALA	3.5
3	B	533	LEU	3.5
3	D	306	ASP	3.5
3	B	253	ILE	3.5
3	A	799	PRO	3.5
3	D	191	PHE	3.4
3	D	263	ILE	3.4
3	D	234	PHE	3.4
3	B	523	SER	3.4
3	A	507	ASN	3.4
3	D	821	ALA	3.3
3	A	539	ASN	3.3
3	D	779	ILE	3.3
3	D	518	TYR	3.3
3	A	528	GLU	3.3
3	D	798	GLY	3.2
3	B	525	GLU	3.2
3	D	126	PRO	3.2
3	D	304	LYS	3.2
3	A	501	GLU	3.2
3	D	876	PHE	3.2
3	D	160	GLU	3.2
3	D	190	PRO	3.2
3	B	734	LYS	3.2
3	C	513	PRO	3.2
3	D	545	ALA	3.1
3	A	533	LEU	3.1
3	D	735	SER	3.1
1	K	15	DC	3.1

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Mol	Chain	Res	Type	RSRZ
3	C	538	LEU	3.1
3	A	537	SER	3.1
3	D	15	ILE	3.1
3	D	124	PRO	3.1
3	D	745	LEU	3.1
3	D	223	ILE	3.1
3	D	741	VAL	3.0
3	B	536	LYS	3.0
3	D	497	GLU	3.0
3	D	201	TYR	3.0
3	D	873	GLU	3.0
3	D	152	LEU	3.0
3	D	506	PRO	3.0
3	D	793	VAL	3.0
3	B	495	ASN	3.0
3	D	229	ARG	3.0
3	C	523	SER	3.0
3	C	544	ARG	2.9
3	D	161	GLU	2.9
3	C	528	GLU	2.9
3	D	215	GLY	2.9
3	A	518	TYR	2.9
3	A	254	GLU	2.9
3	C	175	GLY	2.8
3	D	62	PHE	2.8
3	D	120	PRO	2.8
3	A	788	ILE	2.8
3	A	857	LEU	2.8
3	D	857	LEU	2.8
3	B	902	ASP	2.8
3	D	113	PHE	2.8
3	D	515	ASP	2.8
3	A	258	GLY	2.8
3	D	499	ILE	2.8
3	D	511	ASP	2.8
3	D	310	SER	2.8
3	A	495	ASN	2.8
3	D	61	LEU	2.8
3	D	162	TRP	2.7
3	A	516	VAL	2.7
3	D	129	ALA	2.7
3	D	771	PHE	2.7

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Mol	Chain	Res	Type	RSRZ
3	D	488	TYR	2.7
3	B	526	ILE	2.7
3	D	788	ILE	2.7
3	D	117	VAL	2.7
3	D	889	LEU	2.7
3	D	394	ALA	2.7
3	D	213	LEU	2.7
3	B	518	TYR	2.7
3	B	818	ASN	2.7
2	F	111	DT	2.7
3	D	198	LEU	2.7
1	K	13	DG	2.7
3	C	532	LYS	2.7
3	B	530	ILE	2.6
3	D	831	TYR	2.6
3	A	542	LEU	2.6
3	D	891	TYR	2.6
3	D	863	LEU	2.6
3	D	790	LYS	2.6
3	C	526	ILE	2.6
3	D	183	ILE	2.6
3	B	255	ASN	2.6
3	D	122	GLY	2.6
3	D	233	ILE	2.6
3	D	167	ALA	2.6
2	L	106	DT	2.6
3	B	496	GLY	2.5
3	B	552	GLY	2.5
1	K	12	DA	2.5
3	C	537	SER	2.5
3	A	786	ASN	2.5
3	D	513	PRO	2.5
3	A	902	ASP	2.5
3	D	221	PHE	2.5
3	D	179	PRO	2.5
3	D	391	TYR	2.5
3	B	499	ILE	2.5
3	B	260	ARG	2.5
3	D	242	LEU	2.5
3	C	534	SER	2.5
3	D	237	SER	2.5
3	D	799	PRO	2.5

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Mol	Chain	Res	Type	RSRZ
3	B	797	PRO	2.4
3	A	785	ALA	2.4
3	B	545	ALA	2.4
3	D	390	PRO	2.4
3	D	325	ILE	2.4
3	B	787	ASN	2.4
2	L	110	DA	2.4
1	K	4	DG	2.4
3	D	528	GLU	2.4
3	B	521	ASP	2.4
3	D	776	TYR	2.4
3	A	490	LEU	2.4
3	D	175	GLY	2.4
3	C	514	LEU	2.4
3	D	781	SER	2.4
3	A	512	GLU	2.4
3	C	524	ASP	2.3
3	D	20	ILE	2.3
2	F	107	DG	2.3
3	D	287	SER	2.3
3	A	492	ALA	2.3
3	B	809	LEU	2.3
3	A	522	PHE	2.3
2	L	114	DC	2.3
3	D	729	GLY	2.3
3	D	791	TYR	2.3
3	B	522	PHE	2.3
3	D	338	ARG	2.3
2	F	109	DC	2.3
3	A	493	GLN	2.3
3	D	823	GLN	2.3
1	K	5	DG	2.3
1	K	16	DG	2.3
3	A	531	LYS	2.3
3	D	800	LYS	2.3
3	D	864	HIS	2.2
3	D	731	GLU	2.2
3	D	740	ALA	2.2
3	D	780	ALA	2.2
1	E	13	DG	2.2
3	B	178	VAL	2.2
3	B	537	SER	2.2

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Mol	Chain	Res	Type	RSRZ
2	L	115	DA	2.2
3	D	768	GLU	2.2
3	D	530	ILE	2.2
3	D	224	PRO	2.2
3	D	312	LEU	2.2
3	D	520	PHE	2.2
3	A	523	SER	2.2
2	L	105	DC	2.2
3	D	64	ASN	2.1
3	D	290	LEU	2.1
3	C	535	ALA	2.1
1	K	14	DC	2.1
3	D	395	PHE	2.1
3	A	793	VAL	2.1
3	C	436	VAL	2.1
3	D	178	VAL	2.1
3	C	464	TYR	2.1
3	D	188	TYR	2.1
3	D	503	LEU	2.1
3	D	622	THR	2.1
3	D	833	LEU	2.1
3	B	532	LYS	2.1
3	C	501	GLU	2.1
3	B	535	ALA	2.1
3	D	205	TRP	2.1
1	E	2	DG	2.0
3	A	847	ALA	2.0
3	D	241	ARG	2.0
3	D	632	ILE	2.0
3	D	302	LYS	2.0
3	D	732	THR	2.0
1	K	6	DA	2.0
3	C	500	LYS	2.0

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

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, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q < 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(\AA^2)	Q<0.9
1	CTG	K	3	22/23	0.81	0.42	-	75,79,85,88	0
1	CTG	E	3	22/23	0.82	0.23	-	110,111,113,114	0
1	CTG	G	3	22/23	0.98	0.13	-	32,41,42,43	0
1	CTG	I	3	22/23	0.96	0.17	-	58,61,62,63	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.