



# Full wwPDB X-ray Structure Validation Report ⓘ

Oct 18, 2023 – 07:35 PM EDT

PDB ID : 1J2B  
Title : Crystal Structure Of Archaeosine tRNA-Guanine Transglycosylase Complexed With lambda-form tRNA(Val)  
Authors : Ishitani, R.; Nureki, O.; Nameki, N.; Okada, N.; Nishimura, S.; Yokoyama, S.; RIKEN Structural Genomics/Proteomics Initiative (RSGI)  
Deposited on : 2002-12-29  
Resolution : 3.30 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4.02b-467  
Xtriage (Phenix) : 1.13  
EDS : 2.36  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36

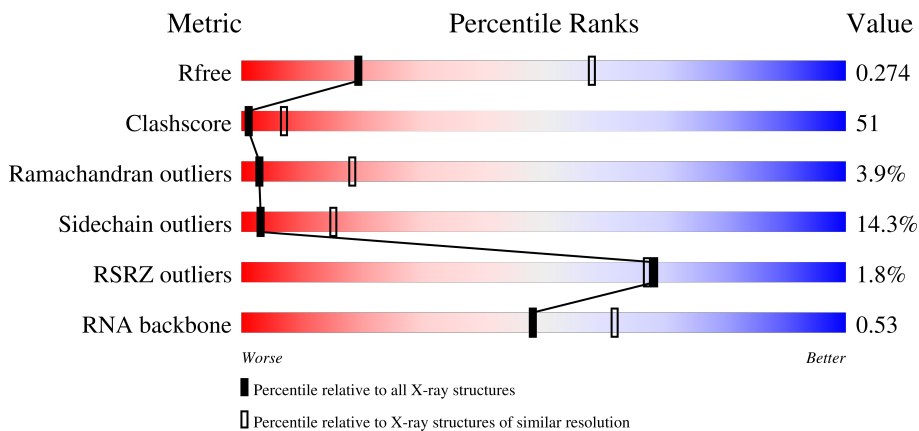
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.30 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	130704	1149 (3.34-3.26)
Clashscore	141614	1205 (3.34-3.26)
Ramachandran outliers	138981	1183 (3.34-3.26)
Sidechain outliers	138945	1182 (3.34-3.26)
RSRZ outliers	127900	1115 (3.34-3.26)
RNA backbone	3102	1117 (3.70-2.90)

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

Mol	Chain	Length	Quality of chain
1	C	77	 22% 48% 23% 6%
1	D	77	 17% 22% 43% 27% 8%
2	A	582	 31% 56% 12% .
2	B	582	 29% 56% 14% .

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

<b>Mol</b>	<b>Type</b>	<b>Chain</b>	<b>Res</b>	<b>Chirality</b>	<b>Geometry</b>	<b>Clashes</b>	<b>Electron density</b>
3	MG	B	1601	-	-	-	X

## 2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 12495 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 RNA chain called tRNA(Val).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	C	77	Total 1645	C 731	N 294	O 543	P 77	0	0	0
1	D	71	Total 1517	C 674	N 272	O 500	P 71	0	0	0

- Molecule 2 is a protein called Archaeosine tRNA-guanine transglycosylase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	A	576	Total 4643	C 2964	N 813	O 847	S 19	0	0	0
2	B	576	Total 4643	C 2964	N 813	O 847	S 19	0	0	0

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

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

- Molecule 4 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total 1	Zn 1	0	0
4	B	1	Total 1	Zn 1	0	0

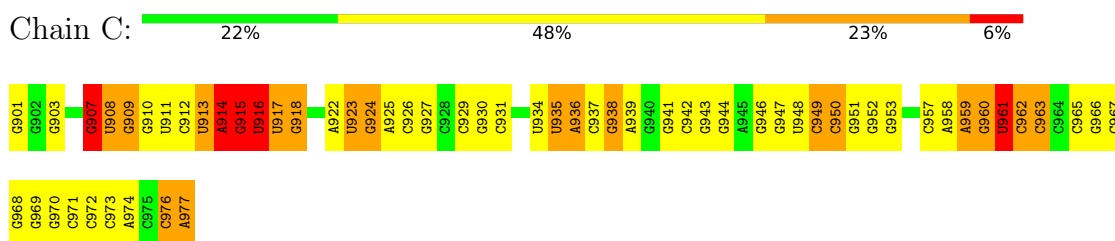
- Molecule 5 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	C	9	Total O 9 9	0	0
5	D	8	Total O 8 8	0	0
5	A	11	Total O 11 11	0	0
5	B	13	Total O 13 13	0	0

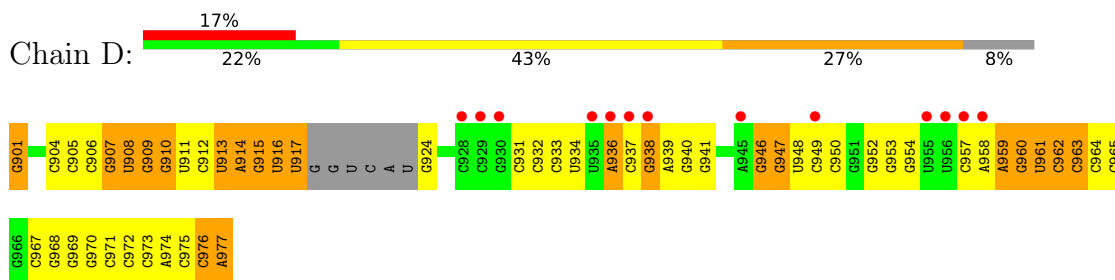
### 3 Residue-property plots i

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

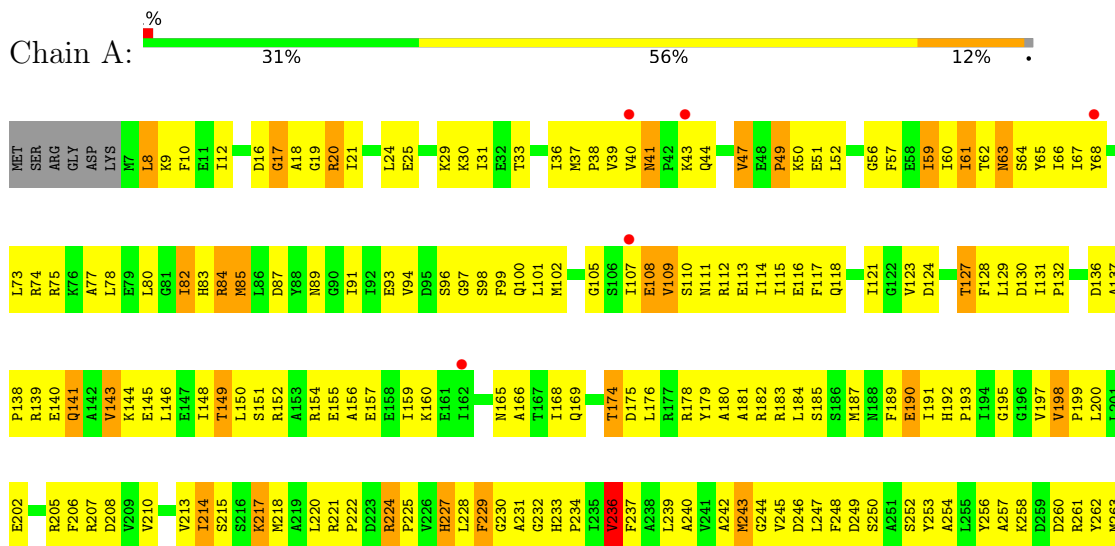
- Molecule 1: tRNA(Val)



- Molecule 1: tRNA(Val)



- Molecule 2: Archaeosine tRNA-guanine transglycosylase





## 4 Data and refinement statistics i

Property	Value	Source
Space group	H 3 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	230.83Å 230.83Å 269.25Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	48.54 – 3.30 48.54 – 3.16	Depositor EDS
% Data completeness (in resolution range)	99.7 (48.54-3.30) 99.0 (48.54-3.16)	Depositor EDS
$R_{merge}$	0.10	Depositor
$R_{sym}$	0.10	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.66 (at 3.19Å)	Xtriage
Refinement program	CNS 1.0	Depositor
R, $R_{free}$	0.225 , 0.288 0.221 , 0.274	Depositor DCC
$R_{free}$ test set	4151 reflections (8.85%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	80.5	Xtriage
Anisotropy	0.059	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.28 , 73.7	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.43$ , $\langle L^2 \rangle = 0.25$	Xtriage
Estimated twinning fraction	0.038 for $-2/3^*h-1/3^*k+2/3^*l,-1/3^*h-2/3^*k-2/3^*l,2/3^*h-2/3^*k+1/3^*l$ 0.035 for $-h,1/3^*h-1/3^*k+2/3^*l,2/3^*h+4/3^*k+1/3^*l$ 0.038 for $-1/3^*h+1/3^*k-2/3^*l,-k,-4/3^*h-2/3^*k+1/3^*l$	Xtriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	12495	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	88.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.62% of the height of the origin peak. No significant pseudotranslation is detected.*

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

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



## 5 Model quality

### 5.1 Standard geometry

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

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	C	0.63	1/1836 (0.1%)	0.84	4/2860 (0.1%)
1	D	0.55	1/1692 (0.1%)	0.80	1/2633 (0.0%)
2	A	0.63	0/4736	0.80	2/6380 (0.0%)
2	B	0.64	0/4736	0.81	0/6380
All	All	0.62	2/13000 (0.0%)	0.81	7/18253 (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	C	0	5
2	A	0	1
All	All	0	6

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	901	G	OP3-P	-7.11	1.52	1.61
1	D	901	G	OP3-P	-6.99	1.52	1.61

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	961	U	N1-C1'-C2'	7.38	123.60	114.00
1	C	916	U	N1-C1'-C2'	7.24	123.41	114.00
2	A	274	LEU	CA-CB-CG	5.85	128.76	115.30
2	A	236	VAL	CB-CA-C	-5.79	100.39	111.40
1	C	914	A	C1'-O4'-C4'	-5.59	105.43	109.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	907	G	N9-C1'-C2'	5.56	121.22	114.00
1	D	924	G	OP1-P-OP2	-5.15	111.88	119.60

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	A	410	TYR	Sidechain
1	C	911	U	Sidechain
1	C	915	G	Sidechain
1	C	916	U	Sidechain
1	C	923	U	Sidechain
1	C	961	U	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	C	1645	0	835	91	0
1	D	1517	0	772	94	0
2	A	4643	0	4735	522	0
2	B	4643	0	4734	568	0
3	A	1	0	0	0	0
3	B	2	0	0	0	0
3	C	1	0	0	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
5	A	11	0	0	0	0
5	B	13	0	0	0	0
5	C	9	0	0	1	0
5	D	8	0	0	0	0
All	All	12495	0	11076	1202	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 51.

All (1202) 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)
2:B:525:ASP:HA	2:B:577:VAL:HG23	1.28	1.15
2:A:166:ALA:HB1	2:A:184:LEU:HD12	1.24	1.07
1:D:937:C:H3'	1:D:938:G:H5''	1.06	1.05
2:B:439:TYR:O	2:B:443:ILE:HG12	1.58	1.04
2:A:362:ILE:HD12	2:A:383:ARG:NH2	1.71	1.04
2:A:511:VAL:HG22	2:A:533:PHE:O	1.57	1.04
2:A:40:VAL:HG23	2:A:62:THR:HG22	1.40	1.03
2:A:413:LEU:HD12	2:A:413:LEU:H	1.21	1.02
2:A:82:ILE:HD12	2:A:83:HIS:H	1.22	1.01
2:B:290:GLN:HG3	2:B:291:GLU:H	1.26	1.01
1:C:915:G:H5''	2:B:230:GLY:HA2	1.40	0.99
1:C:953:G:H1	1:C:963:C:H42	0.99	0.98
1:D:937:C:H3'	1:D:938:G:C5'	1.93	0.98
2:A:493:ILE:HG23	2:A:494:GLU:H	1.27	0.97
2:A:210:VAL:HG22	2:A:243:MET:HE2	1.47	0.96
1:C:957:C:H2'	1:C:958:A:H5'	1.46	0.96
2:A:477:LYS:HZ2	2:A:478:ARG:H	1.08	0.96
2:B:150:LEU:HD22	2:B:183:ARG:HG2	1.48	0.94
2:B:133:THR:HG22	2:B:145:GLU:OE2	1.67	0.94
2:A:470:ARG:NH1	2:A:484:ALA:HA	1.82	0.93
2:A:210:VAL:HA	2:A:243:MET:HE1	1.48	0.93
2:B:547:VAL:CG1	2:B:551:ASP:HA	1.99	0.92
2:A:37:MET:SD	2:A:59:ILE:HD11	2.10	0.92
2:A:198:VAL:HG23	2:A:199:PRO:HD3	1.52	0.92
2:A:297:LYS:HZ2	2:A:297:LYS:HB3	1.35	0.92
2:A:321:GLN:HE21	2:B:275:ASP:H	1.06	0.92
1:D:914:A:H8	2:A:232:GLY:H	1.09	0.92
2:B:547:VAL:HG11	2:B:551:ASP:HA	1.52	0.91
2:A:431:PRO:HG3	2:A:469:PRO:HG3	1.52	0.91
2:A:470:ARG:HH12	2:A:484:ALA:HA	1.31	0.91
2:B:290:GLN:HG3	2:B:291:GLU:N	1.83	0.91
2:B:63:ASN:HD22	2:B:66:ILE:H	1.15	0.91
2:B:162:ILE:HD12	2:B:163:PRO:HD2	1.53	0.91
2:B:483:ARG:HH22	2:B:558:GLN:HE22	1.12	0.90
2:B:470:ARG:NH1	2:B:484:ALA:HA	1.86	0.90
1:D:914:A:O2'	2:A:250:SER:HB2	1.71	0.90
2:A:200:LEU:HD22	2:A:205:ARG:HD3	1.53	0.90
1:D:968:G:OP1	2:B:478:ARG:HD2	1.71	0.90
2:B:474:VAL:HG13	2:B:479:LEU:HD21	1.52	0.89
2:A:187:MET:HB3	2:A:189:PHE:HE1	1.35	0.89
2:B:45:MET:HE3	2:B:48:GLU:HA	1.55	0.89
2:B:286:LYS:HG3	2:B:287:TYR:CD1	2.08	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:321:GLN:NE2	2:B:275:ASP:H	1.69	0.89
2:A:109:VAL:HG21	2:A:114:ILE:HG23	1.54	0.88
2:A:406:ARG:H	2:A:406:ARG:HD2	1.39	0.88
2:A:288:THR:OG1	2:A:291:GLU:HG2	1.72	0.87
2:B:355:PHE:HD2	2:B:356:LEU:HD23	1.40	0.87
2:A:433:LYS:HD3	2:A:433:LYS:N	1.88	0.87
2:B:528:ALA:O	2:B:531:VAL:HG23	1.73	0.87
2:B:391:ILE:HG21	2:B:411:LEU:CD2	2.04	0.87
1:C:937:C:H3'	1:C:938:G:H5''	1.55	0.86
2:B:9:LYS:HG3	2:B:571:TYR:CD1	2.10	0.86
2:B:473:LYS:HB3	2:B:478:ARG:HA	1.57	0.86
2:A:110:SER:HB3	2:A:113:GLU:HG3	1.57	0.86
2:A:290:GLN:OE1	2:A:293:ARG:HD2	1.75	0.86
2:B:483:ARG:NH2	2:B:558:GLN:HE22	1.72	0.86
1:D:961:U:H5''	1:D:962:C:H5	1.39	0.86
1:D:937:C:C3'	1:D:938:G:H5''	2.01	0.85
2:A:433:LYS:HD3	2:A:433:LYS:H	1.40	0.85
2:B:370:LYS:HE3	2:B:376:LEU:HD11	1.56	0.85
1:D:915:G:O6	2:A:132:PRO:HB3	1.75	0.85
2:B:538:ILE:HG22	2:B:563:GLY:N	1.92	0.85
2:A:505:TYR:CA	2:A:509:ARG:HH21	1.89	0.85
2:A:548:ASN:HD21	2:A:550:ASN:HB2	1.41	0.84
1:C:953:G:H1	1:C:963:C:N4	1.75	0.84
2:B:392:ASN:HD21	2:B:407:VAL:HA	1.42	0.83
2:B:525:ASP:HA	2:B:577:VAL:CG2	2.08	0.83
2:A:493:ILE:HG23	2:A:494:GLU:N	1.91	0.83
2:B:517:GLU:HG3	2:B:554:LEU:HD11	1.60	0.83
2:A:187:MET:HB3	2:A:189:PHE:CE1	2.14	0.83
2:B:358:GLU:O	2:B:539:ARG:HD3	1.79	0.83
2:A:362:ILE:HA	2:A:383:ARG:NH2	1.94	0.82
2:A:290:GLN:O	2:A:293:ARG:HG2	1.79	0.82
2:A:413:LEU:HD12	2:A:413:LEU:N	1.91	0.82
2:A:117:PHE:CZ	2:A:121:ILE:HD11	2.14	0.82
1:D:913:U:H5''	2:A:256:TYR:OH	1.79	0.81
1:D:968:G:P	2:B:478:ARG:HD2	2.20	0.81
2:B:378:TRP:O	2:B:381:VAL:HG23	1.81	0.81
2:B:534:ALA:N	2:B:567:ILE:HD11	1.96	0.81
2:A:362:ILE:HA	2:A:383:ARG:HH22	1.46	0.81
2:B:186:SER:HA	2:B:221:ARG:HH21	1.47	0.80
2:A:84:ARG:HA	2:A:84:ARG:CZ	2.11	0.80
2:B:123:VAL:HG22	2:B:124:ASP:H	1.47	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:117:PHE:CE1	2:A:121:ILE:HD11	2.16	0.80
2:A:151:SER:HA	2:A:154:ARG:NH1	1.96	0.80
2:B:223:ASP:HA	2:B:569:PHE:CE2	2.16	0.80
2:B:198:VAL:HA	2:B:201:LEU:HD12	1.62	0.80
2:B:519:PHE:HD1	2:B:519:PHE:H	1.28	0.80
1:D:961:U:H5''	1:D:962:C:C5	2.15	0.80
2:B:286:LYS:HG3	2:B:287:TYR:HD1	1.43	0.80
2:B:561:LEU:HD13	2:B:569:PHE:HD1	1.47	0.80
2:A:336:ALA:HA	2:A:342:LEU:CD2	2.11	0.79
2:B:534:ALA:H	2:B:567:ILE:HD11	1.46	0.79
2:B:265:PRO:HB3	2:B:335:ARG:HE	1.47	0.79
2:A:505:TYR:N	2:A:509:ARG:HH21	1.78	0.79
2:A:439:TYR:O	2:A:443:ILE:HG13	1.82	0.79
2:B:181:ALA:HB1	2:B:220:LEU:HD23	1.64	0.79
2:A:82:ILE:HD12	2:A:83:HIS:N	1.97	0.79
2:A:566:MET:HG2	2:A:574:ALA:HB1	1.64	0.78
2:B:483:ARG:HH22	2:B:558:GLN:NE2	1.81	0.78
2:A:500:HIS:HE1	2:A:551:ASP:OD1	1.66	0.78
2:B:407:VAL:HG21	2:B:417:PHE:CD2	2.17	0.78
1:C:937:C:H3'	1:C:938:G:C5'	2.13	0.78
2:A:181:ALA:HB1	2:A:220:LEU:HD23	1.65	0.78
2:B:166:ALA:HB3	2:B:192:HIS:ND1	1.99	0.78
2:B:250:SER:HB3	2:B:252:SER:OG	1.83	0.78
2:B:392:ASN:HD22	2:B:398:LEU:HD22	1.47	0.77
2:A:563:GLY:HA2	2:A:566:MET:CE	2.14	0.77
2:B:279:CYS:HB3	2:B:284:CYS:SG	2.24	0.77
2:A:477:LYS:NZ	2:A:478:ARG:H	1.82	0.77
2:B:355:PHE:CD2	2:B:356:LEU:HD23	2.17	0.77
2:B:258:LYS:HD2	2:B:301:THR:HG21	1.66	0.77
1:C:915:G:H5''	2:B:230:GLY:CA	2.15	0.77
2:B:146:LEU:HD21	2:B:180:ALA:HB2	1.65	0.77
1:C:937:C:H5'	1:C:938:G:OP2	1.86	0.76
2:A:40:VAL:CG2	2:A:62:THR:HG22	2.15	0.76
1:D:907:G:O2'	1:D:908:U:OP2	2.02	0.76
2:A:155:GLU:O	2:A:159:ILE:HG22	1.84	0.76
2:B:254:ALA:O	2:B:258:LYS:HG2	1.85	0.76
2:A:138:PRO:HD2	2:A:141:GLN:HE21	1.51	0.75
2:B:517:GLU:HG3	2:B:554:LEU:CD1	2.17	0.75
1:C:909:G:N2	2:A:418:ALA:O	2.17	0.75
2:B:398:LEU:HD23	2:B:408:SER:CA	2.17	0.75
2:A:74:ARG:O	2:A:78:LEU:HD12	1.86	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:221:ARG:HE	2:A:224:ARG:CD	2.00	0.75
2:A:493:ILE:CG2	2:A:494:GLU:H	1.99	0.75
2:B:227:HIS:HB2	2:B:247:LEU:HB2	1.68	0.75
2:A:232:GLY:HA3	2:A:250:SER:OG	1.86	0.74
1:C:960:G:H2'	1:C:961:U:H5'	1.69	0.74
2:A:286:LYS:HG3	2:A:286:LYS:O	1.86	0.74
2:B:80:LEU:H	2:B:80:LEU:HD23	1.51	0.74
2:A:141:GLN:O	2:A:145:GLU:HB2	1.87	0.74
2:B:57:PHE:HE2	2:B:313:LYS:HG3	1.50	0.74
1:C:943:G:O2'	1:C:944:G:H5'	1.86	0.74
2:A:101:LEU:HD23	2:A:101:LEU:O	1.87	0.73
2:A:146:LEU:HD21	2:A:180:ALA:HB2	1.69	0.73
2:B:403:ILE:HD12	2:B:403:ILE:N	2.03	0.73
1:C:907:G:H4'	1:C:908:U:C6	2.23	0.73
2:B:561:LEU:HD13	2:B:569:PHE:CD1	2.23	0.73
2:A:500:HIS:ND1	2:A:509:ARG:NH1	2.36	0.73
1:C:907:G:H4'	1:C:908:U:H6	1.54	0.72
2:A:29:LYS:HE2	2:A:83:HIS:HE2	1.53	0.72
2:A:432:THR:HB	2:A:433:LYS:HE2	1.70	0.72
2:B:493:ILE:HG23	2:B:494:GLU:N	2.04	0.72
2:B:559:ALA:O	2:B:560:LEU:HD12	1.89	0.72
2:B:359:PHE:HD2	2:B:359:PHE:N	1.87	0.72
1:C:977:A:N7	2:A:530:PHE:CE1	2.57	0.72
2:B:101:LEU:HD12	2:B:105:GLY:O	1.90	0.72
2:A:138:PRO:HD2	2:A:141:GLN:NE2	2.04	0.72
2:A:386:GLU:HA	2:A:389:LYS:HE3	1.71	0.72
2:B:121:ILE:HD11	2:B:123:VAL:HB	1.71	0.72
1:D:939:A:H2'	1:D:940:G:O4'	1.88	0.72
1:D:957:C:H2'	1:D:958:A:H5'	1.72	0.72
2:A:117:PHE:O	2:A:121:ILE:HG13	1.90	0.72
2:A:579:LYS:HE2	2:A:579:LYS:HA	1.70	0.72
2:B:253:TYR:CD1	2:B:254:ALA:N	2.57	0.72
2:B:539:ARG:O	2:B:542:ASP:HB2	1.90	0.72
2:A:227:HIS:HB2	2:A:247:LEU:HB2	1.71	0.72
1:D:937:C:H5'	1:D:938:G:OP2	1.90	0.72
2:B:36:ILE:HD12	2:B:37:MET:N	2.05	0.72
2:B:206:PHE:CG	2:B:342:LEU:HD12	2.25	0.72
1:C:957:C:C2'	1:C:958:A:H5'	2.19	0.71
2:A:560:LEU:HD21	2:A:576:LYS:HD3	1.72	0.71
2:A:513:ASN:OD1	2:A:515:GLU:HB3	1.91	0.71
2:A:151:SER:HA	2:A:154:ARG:HH12	1.55	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:148:ILE:O	2:A:152:ARG:HG3	1.91	0.71
2:B:45:MET:CE	2:B:49:PRO:HD3	2.21	0.71
2:B:398:LEU:HD23	2:B:408:SER:HA	1.72	0.71
1:D:911:U:O2'	1:D:912:C:H5'	1.91	0.70
2:A:127:THR:HG23	2:A:165:ASN:HB2	1.72	0.70
2:A:505:TYR:HA	2:A:509:ARG:HH21	1.56	0.70
2:B:492:GLY:O	2:B:494:GLU:N	2.25	0.70
2:B:141:GLN:O	2:B:145:GLU:HB2	1.92	0.70
2:B:63:ASN:ND2	2:B:66:ILE:HG12	2.07	0.70
1:D:914:A:H8	2:A:232:GLY:N	1.88	0.70
2:A:362:ILE:HG22	2:A:363:THR:HG22	1.72	0.70
2:B:578:ARG:HG3	2:B:578:ARG:HH11	1.56	0.70
2:A:97:GLY:HA2	2:A:100:GLN:OE1	1.91	0.70
2:B:416:PRO:HD2	2:B:417:PHE:CE1	2.26	0.69
1:C:915:G:H2'	1:C:916:U:OP1	1.90	0.69
2:A:504:PRO:C	2:A:509:ARG:HH21	1.96	0.69
2:A:483:ARG:HD2	2:A:486:ASP:OD1	1.93	0.69
2:A:111:ASN:O	2:A:115:ILE:HG13	1.92	0.69
1:D:914:A:H1'	2:A:252:SER:HB3	1.73	0.69
2:A:510:VAL:HG23	2:A:546:VAL:HA	1.74	0.69
2:A:548:ASN:ND2	2:A:550:ASN:H	1.91	0.69
2:B:101:LEU:HD21	2:B:131:ILE:HG13	1.75	0.69
2:B:490:THR:HG22	2:B:578:ARG:NH2	2.07	0.69
2:B:358:GLU:HG2	2:B:359:PHE:CD2	2.28	0.69
2:A:68:TYR:HA	2:A:74:ARG:HD3	1.74	0.68
2:A:131:ILE:H	2:A:149:THR:HG23	1.58	0.68
1:C:976:C:OP2	1:C:976:C:H6	1.75	0.68
2:A:274:LEU:HD12	2:A:276:TYR:O	1.93	0.68
2:B:57:PHE:CE2	2:B:313:LYS:HG3	2.27	0.68
2:A:197:VAL:HG21	2:A:228:LEU:HD11	1.74	0.68
2:A:221:ARG:HH21	2:A:224:ARG:HD2	1.58	0.68
2:A:200:LEU:CD2	2:A:205:ARG:HD3	2.23	0.68
2:A:65:TYR:CE1	2:A:107:ILE:HG23	2.29	0.68
2:A:174:THR:HG22	2:A:215:SER:HB2	1.76	0.68
2:A:168:ILE:HD12	2:A:168:ILE:H	1.58	0.68
2:B:167:THR:OG1	2:B:193:PRO:HG2	1.93	0.68
2:A:82:ILE:HA	2:A:85:MET:HG2	1.76	0.68
2:A:406:ARG:HD2	2:A:406:ARG:N	2.07	0.68
1:D:976:C:H5''	1:D:977:A:N3	2.09	0.68
2:B:391:ILE:HG21	2:B:411:LEU:HD22	1.76	0.68
2:A:437:ILE:HG23	2:A:438:LYS:N	2.07	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:470:ARG:CZ	2:B:484:ALA:HA	2.23	0.67
2:B:570:GLN:HE21	2:B:570:GLN:HA	1.59	0.67
2:B:103:LYS:HE2	2:B:104:TYR:CE2	2.29	0.67
2:B:181:ALA:HB1	2:B:220:LEU:CD2	2.25	0.67
2:B:392:ASN:HD22	2:B:398:LEU:CD2	2.06	0.67
1:D:977:A:OP2	2:B:530:PHE:HZ	1.77	0.67
2:B:417:PHE:HD1	2:B:417:PHE:H	1.42	0.67
2:B:417:PHE:N	2:B:417:PHE:CD1	2.61	0.67
1:D:967:C:O2'	2:B:478:ARG:NH1	2.26	0.67
2:B:31:ILE:HD11	2:B:59:ILE:HG21	1.76	0.67
2:B:193:PRO:HA	2:B:227:HIS:O	1.94	0.67
2:A:280:SER:O	2:B:281:CYS:HA	1.95	0.67
2:B:31:ILE:CD1	2:B:59:ILE:HG21	2.25	0.67
2:B:70:ASP:HB3	2:B:73:LEU:HD12	1.77	0.67
2:B:330:ARG:HH11	2:B:330:ARG:HB3	1.59	0.67
2:B:370:LYS:HE3	2:B:376:LEU:CD1	2.25	0.67
2:A:510:VAL:CG2	2:A:546:VAL:HA	2.26	0.66
1:C:959:A:H4'	1:C:960:G:OP1	1.95	0.66
2:A:498:ARG:O	2:A:502:VAL:HG23	1.94	0.66
2:B:8:LEU:C	2:B:8:LEU:HD23	2.15	0.66
1:D:908:U:OP1	2:B:465:LYS:HG2	1.96	0.66
2:A:140:GLU:HG2	2:A:141:GLN:N	2.09	0.66
2:B:82:ILE:HG23	2:B:83:HIS:N	2.10	0.66
2:B:193:PRO:HB2	2:B:229:PHE:CD2	2.31	0.66
1:C:962:C:H2'	1:C:963:C:C6	2.31	0.66
2:A:99:PHE:HE1	2:A:198:VAL:HG21	1.60	0.66
2:A:504:PRO:C	2:A:509:ARG:NH2	2.49	0.66
2:B:111:ASN:C	2:B:111:ASN:HD22	1.99	0.66
2:B:186:SER:CA	2:B:221:ARG:HH21	2.09	0.66
1:D:913:U:O3'	2:A:256:TYR:HE2	1.79	0.66
2:B:185:SER:OG	2:B:221:ARG:HD3	1.96	0.66
2:B:253:TYR:CE1	2:B:254:ALA:HB2	2.31	0.65
2:A:8:LEU:HD12	2:A:190:GLU:HB2	1.77	0.65
1:C:961:U:O2'	1:C:962:C:OP1	2.09	0.65
2:A:131:ILE:O	2:A:169:GLN:HG2	1.96	0.65
2:A:328:LEU:O	2:A:332:VAL:HG23	1.97	0.65
2:A:362:ILE:HD12	2:A:383:ARG:CZ	2.26	0.65
2:B:123:VAL:HG22	2:B:124:ASP:N	2.10	0.65
2:B:359:PHE:N	2:B:359:PHE:CD2	2.58	0.65
2:B:111:ASN:OD1	2:B:152:ARG:HB3	1.96	0.65
2:A:36:ILE:HG13	2:A:248:PHE:HB2	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:358:GLU:OE2	2:B:359:PHE:HE2	1.79	0.65
1:D:916:U:C5	2:A:41:ASN:HB2	2.32	0.65
1:C:968:G:O5'	2:A:478:ARG:HD3	1.96	0.65
2:B:53:GLU:HB2	2:B:88:TYR:HE1	1.62	0.65
2:A:492:GLY:O	2:A:494:GLU:N	2.30	0.64
2:A:215:SER:HA	2:A:218:MET:HE2	1.78	0.64
2:B:493:ILE:CG2	2:B:494:GLU:N	2.60	0.64
2:B:165:ASN:OD1	2:B:191:ILE:CG2	2.46	0.64
1:C:977:A:N7	2:A:530:PHE:HE1	1.96	0.64
2:B:53:GLU:HB2	2:B:88:TYR:CE1	2.32	0.64
2:A:233:HIS:ND1	2:A:234:PRO:HD2	2.13	0.64
2:B:414:THR:HG23	2:B:487:GLY:O	1.97	0.64
2:B:497:LYS:HD3	2:B:553:LEU:HD23	1.78	0.64
1:D:909:G:OP1	2:B:466:THR:HG21	1.97	0.64
2:A:210:VAL:HG22	2:A:243:MET:CE	2.26	0.64
2:B:306:LEU:HA	2:B:309:LEU:HD12	1.80	0.64
2:A:500:HIS:CE1	2:A:551:ASP:OD1	2.50	0.64
1:C:908:U:OP1	2:A:465:LYS:HE3	1.97	0.63
2:B:63:ASN:HD22	2:B:66:ILE:N	1.92	0.63
2:B:418:ALA:HB3	2:B:419:GLN:OE1	1.99	0.63
2:A:281:CYS:HA	2:B:280:SER:O	1.98	0.63
2:B:290:GLN:HG3	2:B:291:GLU:HG3	1.79	0.63
2:B:358:GLU:HA	2:B:539:ARG:NE	2.13	0.63
2:B:460:LYS:HZ3	2:B:475:ASN:H	1.47	0.63
2:A:391:ILE:HD12	2:A:391:ILE:H	1.64	0.63
1:C:929:C:O2'	1:C:930:G:H5'	1.99	0.63
2:A:10:PHE:CD2	2:A:225:PRO:HG3	2.34	0.63
2:A:483:ARG:NH1	2:A:486:ASP:OD1	2.31	0.63
2:A:159:ILE:HG13	2:A:159:ILE:O	1.99	0.62
2:A:537:GLY:HA2	2:A:539:ARG:NH1	2.14	0.62
2:B:131:ILE:CG2	2:B:145:GLU:HG2	2.29	0.62
1:D:962:C:H2'	1:D:963:C:C6	2.34	0.62
2:A:187:MET:CB	2:A:189:PHE:HE1	2.11	0.62
2:A:513:ASN:HA	2:A:532:ILE:HD11	1.81	0.62
2:A:168:ILE:HD12	2:A:168:ILE:N	2.14	0.62
2:B:553:LEU:O	2:B:581:VAL:HG11	1.99	0.62
1:D:916:U:OP1	2:A:99:PHE:HB3	1.98	0.62
2:A:207:ARG:HD2	2:A:348:ARG:NH1	2.13	0.62
2:B:115:ILE:HD13	2:B:115:ILE:O	2.00	0.62
2:B:165:ASN:OD1	2:B:191:ILE:HG22	2.00	0.62
2:B:462:GLU:CD	2:B:471:GLN:HB2	2.19	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:80:LEU:HD23	2:B:80:LEU:N	2.14	0.62
2:B:98:SER:O	2:B:101:LEU:HB3	1.99	0.62
2:B:381:VAL:HG12	2:B:404:PHE:CE2	2.35	0.62
2:B:446:TYR:CD1	2:B:446:TYR:C	2.73	0.62
2:A:581:VAL:HG13	2:A:582:GLU:HG3	1.82	0.62
2:A:477:LYS:HA	2:A:477:LYS:HZ3	1.64	0.62
2:B:281:CYS:O	2:B:285:SER:HB2	1.99	0.62
2:A:242:ALA:HB2	2:A:328:LEU:HD21	1.82	0.61
2:A:114:ILE:HD11	2:A:129:LEU:HB2	1.82	0.61
2:B:12:ILE:HG22	2:B:12:ILE:O	2.00	0.61
2:B:10:PHE:CG	2:B:225:PRO:HG3	2.36	0.61
2:B:449:GLY:HA3	2:B:507:ARG:HH12	1.65	0.61
2:A:82:ILE:HG23	2:A:121:ILE:HG22	1.81	0.61
2:A:365:LYS:N	2:A:365:LYS:HD3	2.14	0.61
2:A:239:LEU:HD23	2:A:239:LEU:C	2.20	0.61
2:B:473:LYS:HB3	2:B:478:ARG:CA	2.28	0.61
1:C:950:C:O5'	1:C:950:C:H6	1.83	0.61
2:A:578:ARG:O	2:A:579:LYS:HE2	2.01	0.61
2:B:150:LEU:O	2:B:154:ARG:HG3	2.00	0.61
2:B:287:TYR:HE2	2:B:295:MET:CE	2.14	0.61
2:B:547:VAL:HG22	2:B:553:LEU:HA	1.83	0.61
2:A:215:SER:HA	2:A:218:MET:CE	2.31	0.61
2:B:402:PRO:C	2:B:403:ILE:HD12	2.21	0.61
2:A:197:VAL:O	2:A:200:LEU:HB2	2.01	0.61
2:B:197:VAL:CG1	2:B:209:VAL:HG22	2.31	0.61
2:B:473:LYS:CB	2:B:478:ARG:HA	2.31	0.61
2:A:287:TYR:HA	2:A:291:GLU:OE1	2.00	0.60
2:B:36:ILE:HG22	2:B:316:ILE:CD1	2.31	0.60
2:B:411:LEU:HD11	2:B:446:TYR:CD2	2.36	0.60
2:A:290:GLN:O	2:A:293:ARG:CG	2.49	0.60
2:B:459:ALA:HA	2:B:474:VAL:HG12	1.83	0.60
2:B:563:GLY:O	2:B:565:GLU:N	2.34	0.60
2:A:370:LYS:HE3	2:A:423:GLU:OE1	2.00	0.60
2:B:130:ASP:OD2	2:B:167:THR:HB	2.01	0.60
2:B:135:PRO:HG2	2:B:200:LEU:HD13	1.83	0.60
2:B:286:LYS:HG3	2:B:287:TYR:CE1	2.36	0.60
2:B:562:SER:O	2:B:565:GLU:HB2	2.02	0.60
2:A:82:ILE:HG23	2:A:121:ILE:CG2	2.31	0.60
2:B:570:GLN:HA	2:B:570:GLN:NE2	2.16	0.60
2:B:162:ILE:CD1	2:B:163:PRO:HD2	2.28	0.60
2:A:529:LYS:HG2	2:A:570:GLN:HG3	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:168:ILE:HD11	2:B:220:LEU:HD11	1.84	0.60
2:A:307:HIS:CD2	2:A:308:ASN:ND2	2.70	0.59
2:A:563:GLY:HA2	2:A:566:MET:HE3	1.84	0.59
2:B:21:ILE:HA	2:B:33:THR:O	2.02	0.59
2:B:290:GLN:O	2:B:294:GLU:HG2	2.02	0.59
2:B:462:GLU:HG2	2:B:471:GLN:O	2.02	0.59
2:A:68:TYR:HA	2:A:74:ARG:CD	2.32	0.59
2:A:168:ILE:HD11	2:A:192:HIS:HB3	1.83	0.59
2:A:271:LEU:HD21	2:A:292:LEU:HD23	1.84	0.59
2:B:450:GLU:O	2:B:507:ARG:NH2	2.34	0.59
2:B:63:ASN:ND2	2:B:66:ILE:H	1.92	0.59
2:B:191:ILE:HG12	2:B:225:PRO:HB2	1.83	0.59
2:B:316:ILE:HG22	2:B:320:LYS:HE3	1.84	0.59
2:B:511:VAL:CG1	2:B:532:ILE:HG22	2.32	0.59
1:D:909:G:C5	2:B:428:ILE:HD11	2.38	0.59
2:A:118:GLN:O	2:A:123:VAL:HG22	2.02	0.59
2:A:217:LYS:HE3	2:A:244:GLY:HA3	1.84	0.59
2:B:480:ALA:HB2	2:B:491:LEU:HD23	1.83	0.59
2:B:63:ASN:HB3	2:B:66:ILE:HG13	1.83	0.59
2:B:156:ALA:HA	2:B:159:ILE:HG22	1.85	0.59
2:B:315:GLU:O	2:B:319:VAL:HG23	2.02	0.59
2:A:110:SER:O	2:A:114:ILE:HG12	2.02	0.59
2:A:193:PRO:HA	2:A:227:HIS:O	2.02	0.59
2:A:206:PHE:HE1	2:A:236:VAL:HG13	1.67	0.59
2:B:410:TYR:H	2:B:410:TYR:HD1	1.49	0.59
2:B:460:LYS:NZ	2:B:475:ASN:H	2.00	0.59
2:B:490:THR:HG22	2:B:578:ARG:HH21	1.67	0.59
2:B:553:LEU:C	2:B:554:LEU:HD23	2.22	0.59
2:B:159:ILE:HG12	2:B:159:ILE:O	2.03	0.59
2:B:166:ALA:HB3	2:B:192:HIS:CE1	2.38	0.59
2:B:175:ASP:OD2	2:B:176:LEU:HD23	2.03	0.59
2:B:446:TYR:C	2:B:446:TYR:HD1	2.06	0.59
2:B:259:ASP:OD2	2:B:261:ARG:NH1	2.36	0.58
2:B:548:ASN:OD1	2:B:552:GLU:N	2.33	0.58
1:C:915:G:H1'	2:B:229:PHE:CD1	2.38	0.58
2:A:240:ALA:O	2:A:243:MET:HB2	2.02	0.58
2:B:403:ILE:HD11	2:B:422:ALA:HB2	1.84	0.58
2:B:432:THR:O	2:B:434:GLU:N	2.36	0.58
2:A:546:VAL:HG12	2:A:554:LEU:HB2	1.85	0.58
2:B:113:GLU:O	2:B:116:GLU:HG2	2.04	0.58
2:B:168:ILE:HD11	2:B:220:LEU:HD21	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:931:C:H1'	5:C:28:HOH:O	2.02	0.58
2:A:85:MET:HE2	2:A:85:MET:O	2.04	0.58
2:A:295:MET:SD	2:A:296:PRO:CD	2.91	0.58
1:C:918:G:H4'	2:B:41:ASN:HD21	1.67	0.58
2:A:97:GLY:O	2:A:100:GLN:HB2	2.03	0.58
2:B:24:LEU:HB3	2:B:31:ILE:HG23	1.86	0.58
2:B:431:PRO:HG3	2:B:469:PRO:HG3	1.86	0.58
1:D:914:A:C8	2:A:232:GLY:N	2.67	0.58
2:A:297:LYS:HB3	2:A:297:LYS:NZ	2.13	0.58
2:A:433:LYS:N	2:A:433:LYS:CD	2.61	0.58
2:A:539:ARG:O	2:A:542:ASP:HB2	2.04	0.58
2:A:279:CYS:SG	2:A:280:SER:N	2.76	0.58
2:A:432:THR:O	2:A:434:GLU:N	2.36	0.58
2:A:297:LYS:HZ2	2:A:297:LYS:CB	2.12	0.58
2:A:391:ILE:HD12	2:A:391:ILE:N	2.19	0.58
2:B:268:THR:O	2:B:269:LYS:HD3	2.04	0.58
2:B:31:ILE:HG12	2:B:32:GLU:N	2.19	0.57
2:B:435:ASP:O	2:B:437:ILE:N	2.37	0.57
2:B:460:LYS:O	2:B:472:VAL:HA	2.03	0.57
2:A:137:ALA:HB1	2:A:141:GLN:NE2	2.19	0.57
1:D:959:A:H2'	1:D:961:U:OP2	2.04	0.57
2:A:321:GLN:O	2:A:325:GLU:HG3	2.04	0.57
1:D:946:G:O2'	1:D:947:G:C8	2.58	0.57
2:A:21:ILE:HA	2:A:33:THR:O	2.04	0.57
2:A:260:ASP:OD1	2:A:300:ARG:HD2	2.05	0.57
2:A:431:PRO:HB3	2:A:439:TYR:CE1	2.40	0.57
2:B:204:TYR:CD1	2:B:206:PHE:HE1	2.22	0.57
2:A:166:ALA:HB1	2:A:184:LEU:CD1	2.17	0.57
2:B:319:VAL:O	2:B:322:ALA:HB3	2.04	0.57
2:A:237:PHE:N	2:A:237:PHE:CD2	2.70	0.57
2:A:221:ARG:HE	2:A:224:ARG:HD2	1.69	0.57
2:B:496:ALA:HB2	2:B:556:THR:OG1	2.04	0.57
2:A:61:ILE:HA	2:A:93:GLU:O	2.05	0.57
2:A:307:HIS:CD2	2:A:308:ASN:HD22	2.23	0.57
2:A:348:ARG:HH11	2:A:348:ARG:HB2	1.68	0.57
2:B:227:HIS:HB2	2:B:247:LEU:CB	2.33	0.57
2:B:232:GLY:HA3	2:B:250:SER:HB2	1.86	0.57
1:D:967:C:H6	1:D:967:C:O5'	1.88	0.57
2:B:135:PRO:HG2	2:B:200:LEU:CD1	2.35	0.57
1:C:926:C:H2'	1:C:927:G:C8	2.40	0.56
2:B:112:ARG:O	2:B:115:ILE:HG22	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:410:TYR:CD1	2:B:410:TYR:N	2.73	0.56
1:C:960:G:N3	1:C:960:G:H5'	2.20	0.56
2:A:65:TYR:HB2	2:A:96:SER:O	2.05	0.56
2:A:74:ARG:O	2:A:77:ALA:HB3	2.06	0.56
2:A:140:GLU:HA	2:A:143:VAL:HG23	1.87	0.56
2:B:512:VAL:HG22	2:B:547:VAL:O	2.05	0.56
1:C:965:C:O2'	1:C:966:G:H5'	2.06	0.56
2:A:231:ALA:O	2:A:248:PHE:HB3	2.05	0.56
2:A:474:VAL:HG11	2:A:498:ARG:HH12	1.70	0.56
2:B:217:LYS:HD2	2:B:244:GLY:HA3	1.87	0.56
1:C:915:G:C2'	1:C:916:U:OP1	2.54	0.56
1:D:946:G:HO2'	1:D:947:G:H8	1.52	0.56
2:A:37:MET:CG	2:A:59:ILE:HD11	2.35	0.56
2:A:567:ILE:HG22	2:A:568:VAL:CG1	2.36	0.56
2:B:511:VAL:HG12	2:B:532:ILE:HG22	1.87	0.56
2:A:297:LYS:NZ	2:A:301:THR:HG23	2.21	0.56
2:A:315:GLU:O	2:A:318:ARG:HB3	2.04	0.56
2:B:414:THR:OG1	2:B:443:ILE:HD12	2.06	0.56
2:A:477:LYS:NZ	2:A:477:LYS:HA	2.20	0.56
2:A:511:VAL:HG12	2:A:547:VAL:CG2	2.35	0.56
2:B:36:ILE:HG22	2:B:316:ILE:HD11	1.87	0.56
2:B:61:ILE:HA	2:B:93:GLU:O	2.06	0.56
1:C:914:A:H8	2:B:232:GLY:H	1.51	0.56
2:A:82:ILE:CD1	2:A:83:HIS:ND1	2.69	0.56
2:B:246:ASP:O	2:B:247:LEU:HD12	2.05	0.56
2:B:191:ILE:CG1	2:B:225:PRO:HB2	2.36	0.56
2:B:497:LYS:NZ	2:B:553:LEU:H	2.04	0.56
1:C:946:G:O2'	1:C:947:G:C8	2.57	0.56
1:D:952:G:N2	1:D:965:C:C2	2.74	0.56
2:B:186:SER:HA	2:B:221:ARG:NH2	2.20	0.56
2:B:231:ALA:O	2:B:248:PHE:HB3	2.06	0.56
2:B:290:GLN:HA	2:B:293:ARG:HH12	1.70	0.56
2:B:507:ARG:C	2:B:508:MET:HG2	2.27	0.56
2:A:8:LEU:HD12	2:A:190:GLU:CB	2.36	0.55
1:C:937:C:C5	1:C:938:G:C8	2.94	0.55
2:A:262:TYR:CZ	2:A:307:HIS:CE1	2.95	0.55
2:B:8:LEU:HG	2:B:26:VAL:HG22	1.86	0.55
2:B:396:GLY:O	2:B:408:SER:HB2	2.06	0.55
2:B:493:ILE:CG2	2:B:494:GLU:H	2.19	0.55
1:D:952:G:N2	1:D:965:C:O2	2.39	0.55
1:D:976:C:O2'	1:D:977:A:OP2	2.17	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:297:LYS:NZ	2:A:297:LYS:CB	2.70	0.55
2:B:392:ASN:ND2	2:B:407:VAL:HA	2.18	0.55
1:C:936:A:N1	1:C:937:C:C5	2.75	0.55
2:A:535:ASP:HB3	2:A:538:ILE:HG13	1.88	0.55
2:B:53:GLU:OE2	2:B:89:ASN:OD1	2.25	0.55
2:B:414:THR:HG22	2:B:488:LEU:HD13	1.87	0.55
2:B:31:ILE:HG12	2:B:32:GLU:H	1.72	0.55
2:B:329:TRP:HA	2:B:332:VAL:HG23	1.88	0.55
2:A:63:ASN:OD1	2:A:66:ILE:HG13	2.07	0.55
2:B:286:LYS:O	2:B:287:TYR:CD1	2.60	0.55
2:B:422:ALA:O	2:B:423:GLU:C	2.44	0.55
2:B:476:GLY:O	2:B:478:ARG:NH2	2.40	0.55
1:C:951:G:H2'	1:C:952:G:H8	1.72	0.55
1:D:946:G:O2'	1:D:947:G:H8	1.90	0.55
2:B:131:ILE:HG21	2:B:145:GLU:HG2	1.89	0.55
2:B:519:PHE:CD1	2:B:519:PHE:N	2.68	0.55
2:B:146:LEU:CD2	2:B:180:ALA:HB2	2.37	0.54
2:B:367:ALA:HB1	2:B:419:GLN:O	2.07	0.54
2:A:169:GLN:HE22	2:A:195:GLY:C	2.10	0.54
2:A:325:GLU:O	2:A:365:LYS:HG2	2.07	0.54
2:B:571:TYR:N	2:B:571:TYR:CD2	2.73	0.54
1:C:938:G:N2	2:B:207:ARG:HH12	2.05	0.54
2:A:210:VAL:HG13	2:A:243:MET:SD	2.48	0.54
2:B:412:SER:O	2:B:428:ILE:HG22	2.07	0.54
2:B:139:ARG:NH2	2:B:175:ASP:OD1	2.41	0.54
2:B:223:ASP:HA	2:B:569:PHE:HE2	1.71	0.54
2:B:470:ARG:HH12	2:B:484:ALA:HA	1.70	0.54
2:B:388:ALA:O	2:B:392:ASN:OD1	2.26	0.54
2:B:403:ILE:N	2:B:403:ILE:CD1	2.70	0.54
2:A:435:ASP:O	2:A:437:ILE:N	2.41	0.54
2:B:112:ARG:HA	2:B:115:ILE:HG22	1.89	0.54
2:B:198:VAL:CA	2:B:201:LEU:HD12	2.35	0.54
2:B:360:GLU:HB3	2:B:383:ARG:HH22	1.72	0.54
2:B:403:ILE:HD11	2:B:422:ALA:CB	2.38	0.54
2:B:335:ARG:HH11	2:B:335:ARG:HG2	1.73	0.54
2:B:337:ARG:HH22	2:B:372:SER:HB2	1.72	0.54
1:D:917:U:O2'	2:A:43:LYS:NZ	2.40	0.54
2:A:295:MET:SD	2:A:296:PRO:HD2	2.48	0.54
2:A:407:VAL:HG21	2:A:417:PHE:CD2	2.43	0.54
2:A:407:VAL:HG21	2:A:417:PHE:CE2	2.43	0.54
2:A:529:LYS:CG	2:A:570:GLN:HG3	2.37	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:559:ALA:O	2:A:560:LEU:HD23	2.08	0.54
2:B:29:LYS:NZ	2:B:83:HIS:CD2	2.76	0.54
2:B:270:ARG:O	2:B:273:GLU:HB3	2.08	0.54
2:A:403:ILE:CD1	2:A:420:SER:HB2	2.38	0.54
2:B:98:SER:HB2	2:B:132:PRO:HD3	1.90	0.54
2:B:507:ARG:O	2:B:508:MET:HG2	2.07	0.54
1:C:903:G:C2	1:C:972:C:O2	2.60	0.53
1:D:953:G:N2	1:D:964:C:C2	2.76	0.53
2:A:37:MET:HG2	2:A:59:ILE:HD11	1.89	0.53
1:D:953:G:H2'	1:D:954:G:O4'	2.08	0.53
2:A:563:GLY:O	2:A:565:GLU:N	2.41	0.53
2:B:13:LYS:CG	2:B:23:LYS:HG3	2.39	0.53
2:B:455:ALA:HB2	2:B:502:VAL:HG11	1.90	0.53
2:A:263:MET:CE	2:A:308:ASN:HB3	2.38	0.53
2:A:295:MET:SD	2:A:296:PRO:HD3	2.48	0.53
2:B:178:ARG:NH1	2:B:178:ARG:HB2	2.24	0.53
2:B:330:ARG:NH1	2:B:331:LEU:N	2.57	0.53
2:B:358:GLU:HA	2:B:539:ARG:CZ	2.39	0.53
2:B:437:ILE:HG23	2:B:438:LYS:N	2.23	0.53
1:C:917:U:C6	2:B:104:TYR:CE1	2.96	0.53
2:B:131:ILE:CG2	2:B:131:ILE:O	2.56	0.53
2:B:167:THR:OG1	2:B:193:PRO:CG	2.56	0.53
1:C:912:C:H4'	2:B:204:TYR:CE2	2.44	0.53
1:D:915:G:H5''	2:A:230:GLY:CA	2.38	0.53
2:B:74:ARG:O	2:B:77:ALA:HB3	2.08	0.53
2:B:163:PRO:HA	2:B:190:GLU:CD	2.29	0.53
2:A:185:SER:O	2:A:224:ARG:NH2	2.42	0.53
2:A:505:TYR:N	2:A:509:ARG:NH2	2.52	0.53
2:B:20:ARG:N	2:B:20:ARG:CD	2.72	0.53
2:B:162:ILE:HG13	2:B:163:PRO:N	2.24	0.53
2:B:478:ARG:H	2:B:478:ARG:HE	1.54	0.53
1:C:938:G:H21	2:B:207:ARG:HH22	1.56	0.53
2:A:37:MET:HG2	2:A:59:ILE:CD1	2.39	0.53
2:A:154:ARG:O	2:A:157:GLU:HB3	2.09	0.53
2:A:270:ARG:O	2:A:271:LEU:C	2.47	0.53
2:A:339:HIS:HD2	2:A:341:LYS:H	1.56	0.53
2:A:516:ALA:C	2:A:518:PRO:HD2	2.29	0.53
2:A:566:MET:HG2	2:A:574:ALA:CB	2.36	0.53
2:B:454:ARG:HA	2:B:457:ASP:OD1	2.09	0.53
2:A:339:HIS:CD2	2:A:341:LYS:H	2.27	0.53
2:B:24:LEU:O	2:B:31:ILE:HG22	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:82:ILE:HG23	2:B:83:HIS:H	1.74	0.53
2:B:101:LEU:O	2:B:105:GLY:HA2	2.09	0.53
2:B:127:THR:OG1	2:B:165:ASN:HB2	2.09	0.53
2:B:398:LEU:HA	2:B:408:SER:HA	1.91	0.53
2:B:471:GLN:HG3	2:B:481:THR:HG23	1.90	0.53
1:C:970:G:H2'	1:C:971:C:C6	2.45	0.52
2:A:67:ILE:HG23	2:A:73:LEU:HB3	1.90	0.52
1:D:957:C:C2'	1:D:958:A:H5'	2.38	0.52
2:A:242:ALA:HB2	2:A:328:LEU:CD2	2.40	0.52
1:C:934:U:H2'	1:C:936:A:H2	1.74	0.52
1:C:967:C:O5'	1:C:967:C:H6	1.92	0.52
2:A:156:ALA:HA	2:A:159:ILE:CG2	2.38	0.52
2:A:258:LYS:HA	2:A:301:THR:HG21	1.91	0.52
2:B:121:ILE:CD1	2:B:123:VAL:HB	2.38	0.52
2:B:455:ALA:CB	2:B:499:LEU:HD12	2.40	0.52
1:C:976:C:H4'	1:C:977:A:OP2	2.08	0.52
2:A:16:ASP:OD2	2:A:17:GLY:N	2.36	0.52
2:A:112:ARG:HG2	2:A:116:GLU:OE1	2.09	0.52
2:A:346:TYR:CZ	2:A:350:LEU:HD11	2.45	0.52
2:A:423:GLU:OE2	2:A:423:GLU:N	2.42	0.52
2:A:392:ASN:OD1	2:A:408:SER:N	2.40	0.52
2:A:403:ILE:HD12	2:A:420:SER:HB2	1.92	0.52
2:A:365:LYS:HD3	2:A:365:LYS:H	1.73	0.52
2:A:548:ASN:OD1	2:A:552:GLU:HB2	2.10	0.52
2:A:567:ILE:HG22	2:A:568:VAL:HG13	1.92	0.52
2:A:131:ILE:HG21	2:A:145:GLU:HG2	1.90	0.52
2:A:272:ASP:HA	2:A:293:ARG:HH12	1.75	0.52
2:B:223:ASP:CA	2:B:569:PHE:CE2	2.91	0.52
2:B:554:LEU:HD23	2:B:554:LEU:N	2.25	0.52
2:A:182:ARG:HA	2:A:185:SER:OG	2.10	0.52
2:A:469:PRO:O	2:A:482:VAL:HB	2.10	0.52
2:B:548:ASN:HB3	2:B:554:LEU:HD11	1.92	0.52
1:D:962:C:N3	1:D:963:C:N4	2.58	0.51
2:A:19:GLY:HA2	2:A:244:GLY:HA2	1.92	0.51
2:B:29:LYS:NZ	2:B:83:HIS:NE2	2.57	0.51
2:B:355:PHE:HD2	2:B:356:LEU:CD2	2.18	0.51
2:A:108:GLU:O	2:A:109:VAL:HB	2.10	0.51
2:A:299:GLU:HA	2:A:299:GLU:OE2	2.11	0.51
2:A:560:LEU:C	2:A:561:LEU:HD12	2.30	0.51
2:B:110:SER:OG	2:B:113:GLU:HG3	2.10	0.51
2:B:410:TYR:HE2	2:B:438:LYS:HD3	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:268:THR:O	2:A:269:LYS:HD3	2.10	0.51
2:B:290:GLN:CG	2:B:291:GLU:H	2.09	0.51
2:B:407:VAL:HG21	2:B:417:PHE:CE2	2.45	0.51
2:B:124:ASP:C	2:B:162:ILE:HD11	2.30	0.51
2:B:315:GLU:O	2:B:318:ARG:HB2	2.10	0.51
2:A:9:LYS:HG3	2:A:571:TYR:CD2	2.45	0.51
2:A:365:LYS:H	2:A:365:LYS:CD	2.24	0.51
2:A:84:ARG:NH2	2:A:87:ASP:HA	2.26	0.51
2:A:519:PHE:O	2:A:522:LYS:N	2.43	0.51
2:A:9:LYS:O	2:A:24:LEU:HD12	2.11	0.51
2:A:269:LYS:HB3	2:A:274:LEU:HD21	1.93	0.51
2:B:64:SER:HB3	2:B:94:VAL:HG11	1.92	0.51
2:B:168:ILE:CD1	2:B:220:LEU:HD11	2.41	0.51
2:B:176:LEU:HD23	2:B:176:LEU:N	2.25	0.51
2:B:197:VAL:O	2:B:200:LEU:HB2	2.11	0.51
2:B:217:LYS:HD2	2:B:244:GLY:O	2.11	0.51
2:B:506:PRO:O	2:B:535:ASP:HB2	2.11	0.51
1:D:953:G:C2	1:D:964:C:C2	2.99	0.51
2:A:80:LEU:O	2:A:84:ARG:HB2	2.11	0.51
2:A:258:LYS:HA	2:A:301:THR:CG2	2.41	0.51
2:A:287:TYR:CD2	2:A:292:LEU:HD12	2.46	0.51
2:B:148:ILE:O	2:B:152:ARG:HG3	2.10	0.51
2:B:175:ASP:CG	2:B:176:LEU:HD23	2.31	0.51
2:B:441:MET:O	2:B:444:ALA:HB3	2.11	0.51
1:D:936:A:H3'	1:D:936:A:N3	2.26	0.51
1:D:976:C:C2	2:B:527:PHE:HD2	2.29	0.51
2:B:12:ILE:HG13	2:B:20:ARG:CG	2.41	0.51
2:B:45:MET:HE1	2:B:49:PRO:CD	2.41	0.51
2:B:131:ILE:HG23	2:B:145:GLU:HG2	1.93	0.51
2:A:47:VAL:HB	2:A:51:GLU:OE1	2.11	0.51
2:A:31:ILE:HG21	2:A:59:ILE:HG22	1.93	0.50
2:A:286:LYS:O	2:A:286:LYS:CG	2.59	0.50
2:A:422:ALA:O	2:A:423:GLU:C	2.49	0.50
1:D:932:C:C2	1:D:941:G:N2	2.79	0.50
1:D:962:C:H2'	1:D:963:C:C5	2.46	0.50
2:A:519:PHE:O	2:A:520:ALA:C	2.48	0.50
2:A:525:ASP:HA	2:A:577:VAL:HG23	1.93	0.50
2:A:562:SER:O	2:A:565:GLU:HB2	2.11	0.50
2:B:79:GLU:HB3	2:B:80:LEU:HD23	1.92	0.50
2:B:404:PHE:N	2:B:404:PHE:CD1	2.78	0.50
1:D:914:A:H2	2:A:202:GLU:HA	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:144:LYS:O	2:A:148:ILE:HG13	2.12	0.50
2:A:287:TYR:HD2	2:A:292:LEU:HB2	1.75	0.50
2:B:82:ILE:CG2	2:B:83:HIS:N	2.74	0.50
2:B:538:ILE:HG22	2:B:563:GLY:H	1.74	0.50
2:A:168:ILE:H	2:A:168:ILE:CD1	2.24	0.50
2:A:401:HIS:N	2:A:405:GLY:O	2.36	0.50
2:A:517:GLU:N	2:A:518:PRO:CD	2.75	0.50
2:B:337:ARG:NH1	2:B:343:TYR:CE1	2.79	0.50
2:B:358:GLU:HG2	2:B:359:PHE:HD2	1.75	0.50
2:A:382:ARG:NH1	2:A:382:ARG:HG3	2.25	0.50
1:C:907:G:O2'	1:C:908:U:OP2	2.21	0.50
2:B:330:ARG:HH12	2:B:331:LEU:CA	2.24	0.50
1:C:922:A:H2'	1:C:923:U:O4'	2.11	0.50
1:C:959:A:C2	1:C:962:C:C5	3.00	0.50
1:D:916:U:OP1	2:A:99:PHE:CD2	2.64	0.50
2:A:279:CYS:SG	2:A:281:CYS:SG	3.10	0.50
2:B:270:ARG:O	2:B:271:LEU:C	2.50	0.50
2:B:454:ARG:HA	2:B:457:ASP:CG	2.32	0.50
2:A:174:THR:HG22	2:A:215:SER:CB	2.41	0.50
2:A:101:LEU:O	2:A:105:GLY:HA2	2.12	0.50
2:A:359:PHE:N	2:A:359:PHE:CD1	2.79	0.50
2:A:431:PRO:HB3	2:A:439:TYR:CD1	2.46	0.50
2:A:437:ILE:CG2	2:A:438:LYS:N	2.73	0.50
2:B:33:THR:HA	2:B:34:PRO:C	2.32	0.50
2:B:76:LYS:HE2	2:B:85:MET:HG3	1.94	0.50
2:B:414:THR:CG2	2:B:488:LEU:HD13	2.42	0.50
2:B:431:PRO:CG	2:B:469:PRO:HD3	2.42	0.50
2:A:38:PRO:HD2	2:A:60:ILE:HG22	1.94	0.49
2:A:381:VAL:HG13	2:A:404:PHE:CE2	2.47	0.49
2:A:401:HIS:CD2	2:A:426:PHE:CD1	3.00	0.49
2:B:10:PHE:CD1	2:B:24:LEU:HD12	2.47	0.49
2:B:400:GLU:HA	2:B:405:GLY:O	2.12	0.49
1:D:959:A:H1'	1:D:961:U:C5	2.47	0.49
1:D:969:G:C6	1:D:970:G:N7	2.80	0.49
2:A:100:GLN:HB3	2:A:107:ILE:HD11	1.94	0.49
2:A:401:HIS:HD2	2:A:426:PHE:CD1	2.29	0.49
2:B:165:ASN:OD1	2:B:191:ILE:HG21	2.12	0.49
2:A:9:LYS:HE2	2:A:571:TYR:CE2	2.47	0.49
2:A:260:ASP:OD1	2:A:300:ARG:CD	2.60	0.49
2:A:437:ILE:HG23	2:A:438:LYS:H	1.74	0.49
2:B:9:LYS:HA	2:B:571:TYR:CE1	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:45:MET:CE	2:B:48:GLU:HG2	2.41	0.49
2:B:67:ILE:HG22	2:B:68:TYR:N	2.27	0.49
2:B:108:GLU:O	2:B:109:VAL:HB	2.13	0.49
2:B:308:ASN:O	2:B:312:ILE:HG13	2.12	0.49
2:B:538:ILE:HD11	2:B:544:VAL:HG11	1.93	0.49
2:B:547:VAL:CG1	2:B:548:ASN:N	2.74	0.49
1:C:934:U:H5'	1:C:935:U:OP2	2.12	0.49
1:C:960:G:H2'	1:C:961:U:C5'	2.39	0.49
2:A:414:THR:HG21	2:A:443:ILE:HG12	1.94	0.49
2:A:151:SER:HA	2:A:154:ARG:CZ	2.42	0.49
2:A:473:LYS:HB3	2:A:478:ARG:HA	1.94	0.49
2:B:45:MET:CE	2:B:49:PRO:CD	2.90	0.49
2:B:350:LEU:HD11	2:B:378:TRP:HA	1.94	0.49
2:A:37:MET:HG2	2:A:59:ILE:HG12	1.94	0.49
2:A:181:ALA:HB1	2:A:220:LEU:CD2	2.39	0.49
2:B:13:LYS:HD3	2:B:23:LYS:HG3	1.95	0.49
2:B:64:SER:O	2:B:67:ILE:HB	2.11	0.49
2:B:154:ARG:HH12	2:B:183:ARG:HE	1.59	0.49
2:B:38:PRO:HG2	2:B:57:PHE:CD1	2.47	0.49
2:B:65:TYR:HB2	2:B:96:SER:O	2.13	0.49
2:B:139:ARG:HH21	2:B:176:LEU:HD21	1.77	0.49
2:B:329:TRP:CZ2	2:B:356:LEU:HD13	2.48	0.49
2:A:178:ARG:O	2:A:181:ALA:HB3	2.13	0.48
2:B:297:LYS:O	2:B:298:GLU:C	2.50	0.48
2:B:458:ASP:O	2:B:474:VAL:HG12	2.13	0.48
2:A:37:MET:O	2:A:249:ASP:HA	2.12	0.48
2:A:287:TYR:CD2	2:A:292:LEU:HB2	2.48	0.48
2:A:513:ASN:ND2	2:A:515:GLU:H	2.10	0.48
2:B:37:MET:HG2	2:B:248:PHE:O	2.12	0.48
2:B:135:PRO:CG	2:B:200:LEU:HD13	2.43	0.48
2:B:360:GLU:HB3	2:B:383:ARG:NH2	2.28	0.48
2:B:547:VAL:HG13	2:B:552:GLU:N	2.27	0.48
2:B:554:LEU:C	2:B:581:VAL:HG13	2.34	0.48
1:C:926:C:O2'	2:A:466:THR:O	2.31	0.48
1:C:957:C:N4	1:C:958:A:C6	2.81	0.48
2:A:114:ILE:CD1	2:A:129:LEU:HB2	2.43	0.48
2:A:227:HIS:HD1	2:A:228:LEU:N	2.11	0.48
2:A:281:CYS:HB2	2:A:282:PRO:CD	2.42	0.48
2:A:381:VAL:HG13	2:A:404:PHE:HE2	1.79	0.48
2:B:131:ILE:HG22	2:B:149:THR:OG1	2.12	0.48
2:B:401:HIS:HE1	2:B:403:ILE:HD13	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:533:PHE:HA	2:B:567:ILE:CG1	2.43	0.48
2:B:154:ARG:HG2	2:B:187:MET:CE	2.43	0.48
2:B:185:SER:HB3	2:B:221:ARG:HE	1.76	0.48
2:B:250:SER:CB	2:B:252:SER:OG	2.58	0.48
2:B:415:TYR:CE2	2:B:416:PRO:HB3	2.47	0.48
2:B:497:LYS:HD3	2:B:553:LEU:HB3	1.96	0.48
2:A:82:ILE:CD1	2:A:83:HIS:N	2.73	0.48
2:A:391:ILE:H	2:A:391:ILE:CD1	2.26	0.48
2:B:519:PHE:O	2:B:522:LYS:N	2.46	0.48
1:C:913:U:O2'	1:C:914:A:P	2.71	0.48
2:A:36:ILE:HG21	2:A:312:ILE:CG2	2.43	0.48
2:A:261:ARG:HG2	2:A:270:ARG:HD2	1.96	0.48
2:A:262:TYR:CE1	2:A:307:HIS:CE1	3.02	0.48
2:A:321:GLN:NE2	2:B:274:LEU:HA	2.28	0.48
2:A:521:ARG:HD3	2:A:582:GLU:OE1	2.13	0.48
2:B:37:MET:HG3	2:B:249:ASP:CB	2.44	0.48
2:B:396:GLY:O	2:B:408:SER:CB	2.61	0.48
2:B:491:LEU:HD11	2:B:499:LEU:HD22	1.95	0.48
2:B:517:GLU:N	2:B:518:PRO:CD	2.76	0.48
1:D:961:U:O2'	1:D:962:C:OP1	2.26	0.48
2:A:548:ASN:CA	2:A:554:LEU:HD11	2.43	0.48
2:B:204:TYR:CD1	2:B:206:PHE:CE1	3.01	0.48
1:C:959:A:O2'	1:C:960:G:O5'	2.31	0.48
1:D:915:G:H5''	2:A:230:GLY:HA2	1.95	0.48
2:A:44:GLN:O	2:A:44:GLN:HG3	2.14	0.48
2:B:128:PHE:HE2	2:B:166:ALA:HA	1.77	0.48
2:B:454:ARG:HB2	2:B:502:VAL:HG21	1.96	0.48
2:B:570:GLN:HE21	2:B:570:GLN:CA	2.26	0.48
2:A:65:TYR:CE2	2:A:107:ILE:HG13	2.48	0.48
2:A:206:PHE:CE1	2:A:236:VAL:HG13	2.48	0.48
1:C:917:U:H4'	2:B:66:ILE:CD1	2.44	0.48
2:A:65:TYR:CZ	2:A:107:ILE:HG13	2.49	0.48
2:A:165:ASN:HD22	2:A:191:ILE:HB	1.79	0.48
2:A:313:LYS:O	2:A:316:ILE:HG22	2.14	0.48
2:A:340:PRO:HB3	2:B:422:ALA:HA	1.96	0.48
2:B:111:ASN:O	2:B:115:ILE:HB	2.13	0.48
2:B:246:ASP:C	2:B:247:LEU:HD12	2.34	0.48
2:B:507:ARG:O	2:B:508:MET:CG	2.62	0.48
2:B:519:PHE:O	2:B:520:ALA:C	2.51	0.48
1:D:908:U:O2'	1:D:909:G:H5'	2.14	0.47
2:A:94:VAL:O	2:A:127:THR:OG1	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:140:GLU:HA	2:A:143:VAL:CG2	2.44	0.47
2:A:140:GLU:HB2	2:A:144:LYS:HE2	1.96	0.47
2:B:395:PHE:N	2:B:395:PHE:CD1	2.81	0.47
2:B:416:PRO:HD2	2:B:417:PHE:CD1	2.48	0.47
2:B:578:ARG:HH11	2:B:578:ARG:CG	2.26	0.47
2:A:68:TYR:HD1	2:A:117:PHE:CD2	2.31	0.47
2:A:343:TYR:CZ	2:A:347:LYS:HD3	2.48	0.47
2:B:36:ILE:CG2	2:B:316:ILE:HD11	2.43	0.47
2:B:163:PRO:HB3	2:B:190:GLU:HG3	1.95	0.47
2:B:401:HIS:CE1	2:B:403:ILE:HD13	2.49	0.47
2:B:548:ASN:OD1	2:B:552:GLU:HB2	2.15	0.47
2:A:511:VAL:HG12	2:A:547:VAL:HG23	1.95	0.47
2:B:397:GLU:HB2	2:B:410:TYR:HE1	1.80	0.47
1:D:905:C:N3	1:D:906:C:C5	2.83	0.47
1:D:976:C:N1	2:B:527:PHE:HD2	2.12	0.47
2:A:159:ILE:O	2:A:159:ILE:CG1	2.62	0.47
2:A:339:HIS:HD2	2:A:341:LYS:N	2.11	0.47
2:A:477:LYS:HZ2	2:A:478:ARG:N	1.92	0.47
2:B:287:TYR:HE2	2:B:295:MET:HE3	1.79	0.47
2:A:9:LYS:HE2	2:A:571:TYR:CD2	2.50	0.47
2:A:61:ILE:HG12	2:A:62:THR:N	2.29	0.47
2:A:253:TYR:CG	2:A:254:ALA:N	2.82	0.47
2:B:111:ASN:C	2:B:111:ASN:ND2	2.66	0.47
2:B:398:LEU:HD23	2:B:408:SER:N	2.29	0.47
2:B:469:PRO:O	2:B:482:VAL:HB	2.14	0.47
2:B:478:ARG:H	2:B:478:ARG:NE	2.12	0.47
2:B:561:LEU:CD1	2:B:569:PHE:CD1	2.95	0.47
2:A:451:GLY:O	2:A:453:SER:N	2.48	0.47
2:A:516:ALA:C	2:A:518:PRO:CD	2.83	0.47
2:B:70:ASP:CB	2:B:73:LEU:HD12	2.44	0.47
2:B:85:MET:O	2:B:85:MET:HG2	2.14	0.47
2:B:136:ASP:H	2:B:172:THR:HG1	1.58	0.47
1:C:951:G:H2'	1:C:952:G:C8	2.49	0.47
2:A:214:ILE:HG22	2:A:215:SER:N	2.30	0.47
2:A:286:LYS:NZ	2:A:287:TYR:CE1	2.83	0.47
2:A:401:HIS:CE1	2:A:403:ILE:HB	2.50	0.47
2:A:463:LEU:HD23	2:A:469:PRO:HA	1.97	0.47
2:A:505:TYR:HA	2:A:509:ARG:HE	1.79	0.47
2:B:40:VAL:HG22	2:B:61:ILE:O	2.14	0.47
2:B:348:ARG:HA	2:B:351:GLU:HG3	1.97	0.47
2:B:415:TYR:HB2	2:B:419:GLN:HE21	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:474:VAL:CG1	2:B:479:LEU:HD21	2.34	0.47
2:B:511:VAL:HB	2:B:533:PHE:O	2.14	0.47
2:B:461:VAL:HG22	2:B:472:VAL:HG12	1.97	0.47
2:A:98:SER:HB2	2:A:130:ASP:O	2.15	0.47
2:A:130:ASP:C	2:A:131:ILE:HD13	2.35	0.47
2:B:14:ALA:HB3	2:B:21:ILE:HG13	1.96	0.47
2:B:63:ASN:ND2	2:B:66:ILE:N	2.58	0.47
1:C:968:G:H5'	2:A:478:ARG:NH1	2.29	0.46
2:A:336:ALA:HA	2:A:342:LEU:HD22	1.93	0.46
2:B:330:ARG:HH12	2:B:331:LEU:HA	1.80	0.46
2:B:411:LEU:O	2:B:413:LEU:N	2.47	0.46
2:B:533:PHE:HA	2:B:567:ILE:HG13	1.96	0.46
2:A:38:PRO:CG	2:A:57:PHE:CD2	2.99	0.46
2:A:263:MET:HE2	2:A:308:ASN:HB3	1.97	0.46
2:B:24:LEU:HB3	2:B:31:ILE:CG2	2.44	0.46
2:A:316:ILE:CG2	2:A:317:LYS:N	2.78	0.46
2:B:8:LEU:HD23	2:B:9:LYS:N	2.30	0.46
2:B:19:GLY:HA2	2:B:244:GLY:HA2	1.97	0.46
2:B:164:MET:H	2:B:190:GLU:CG	2.28	0.46
2:B:362:ILE:HD12	2:B:542:ASP:OD1	2.15	0.46
1:C:924:G:C6	1:C:925:A:C6	3.03	0.46
1:D:936:A:N1	1:D:937:C:C5	2.83	0.46
2:A:102:MET:HB2	2:A:132:PRO:HG2	1.97	0.46
2:A:398:LEU:HD23	2:A:398:LEU:N	2.29	0.46
2:A:413:LEU:HA	2:A:418:ALA:HB2	1.96	0.46
2:A:474:VAL:O	2:A:475:ASN:HB2	2.14	0.46
1:C:970:G:H2'	1:C:971:C:H6	1.81	0.46
1:D:967:C:C6	1:D:967:C:H3'	2.50	0.46
2:A:183:ARG:CZ	2:A:183:ARG:HA	2.45	0.46
2:A:297:LYS:O	2:A:298:GLU:C	2.53	0.46
2:A:394:ARG:HG3	2:A:394:ARG:HH11	1.81	0.46
2:A:415:TYR:HB2	2:A:486:ASP:HB2	1.98	0.46
2:B:10:PHE:CD2	2:B:225:PRO:HG3	2.49	0.46
2:B:328:LEU:O	2:B:332:VAL:HG23	2.15	0.46
1:C:913:U:O2'	1:C:914:A:O5'	2.33	0.46
2:A:277:PHE:HA	2:A:278:PRO:HD2	1.82	0.46
2:A:546:VAL:HB	2:A:555:ALA:O	2.16	0.46
2:B:178:ARG:HG2	2:B:219:ALA:HB2	1.96	0.46
1:D:915:G:H5''	2:A:230:GLY:HA3	1.98	0.46
2:A:24:LEU:HD23	2:A:31:ILE:HD11	1.97	0.46
2:A:39:VAL:HA	2:A:61:ILE:HG23	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:98:SER:CB	2:A:130:ASP:O	2.64	0.46
2:B:128:PHE:CE2	2:B:166:ALA:HA	2.51	0.46
2:B:311:VAL:O	2:B:312:ILE:C	2.54	0.46
1:D:971:C:H2'	1:D:972:C:C6	2.51	0.46
2:A:154:ARG:HA	2:A:187:MET:CE	2.46	0.46
2:A:233:HIS:ND1	2:A:234:PRO:CD	2.76	0.46
2:A:262:TYR:CE1	2:A:307:HIS:NE2	2.84	0.46
2:A:403:ILE:HD12	2:A:420:SER:CB	2.46	0.46
2:A:454:ARG:C	2:A:456:PHE:H	2.18	0.46
2:A:548:ASN:HB3	2:A:554:LEU:HD21	1.96	0.46
1:D:957:C:H6	1:D:957:C:O5'	1.99	0.46
2:A:59:ILE:HG13	2:A:60:ILE:N	2.29	0.46
2:A:139:ARG:O	2:A:143:VAL:HG23	2.16	0.46
2:B:343:TYR:CE2	2:B:347:LYS:HE2	2.51	0.46
2:A:503:LEU:HA	2:A:504:PRO:HD2	1.75	0.46
2:A:533:PHE:HA	2:A:567:ILE:CG1	2.46	0.46
2:B:253:TYR:CD1	2:B:253:TYR:C	2.88	0.46
1:C:948:U:O2'	1:C:949:C:H5'	2.16	0.45
2:B:409:ARG:HA	2:B:412:SER:HB3	1.98	0.45
2:B:554:LEU:O	2:B:555:ALA:HB2	2.16	0.45
1:C:916:U:C2'	1:C:917:U:OP1	2.64	0.45
2:A:157:GLU:O	2:A:160:LYS:HG2	2.15	0.45
2:A:187:MET:CB	2:A:189:PHE:CE1	2.92	0.45
2:B:131:ILE:O	2:B:131:ILE:HG23	2.14	0.45
2:B:454:ARG:C	2:B:456:PHE:H	2.19	0.45
1:D:931:C:O2'	1:D:932:C:H5'	2.15	0.45
2:A:187:MET:O	2:A:224:ARG:NH2	2.43	0.45
2:A:505:TYR:HA	2:A:509:ARG:NH2	2.29	0.45
2:B:45:MET:HE1	2:B:49:PRO:HD2	1.98	0.45
2:B:434:GLU:CD	2:B:434:GLU:H	2.18	0.45
2:A:84:ARG:HH22	2:A:87:ASP:HA	1.82	0.45
2:A:533:PHE:CD1	2:A:567:ILE:HD11	2.51	0.45
2:B:497:LYS:CD	2:B:553:LEU:HD23	2.46	0.45
2:B:545:LEU:N	2:B:545:LEU:HD23	2.32	0.45
2:B:568:VAL:HG12	2:B:568:VAL:O	2.15	0.45
1:C:912:C:O3'	2:B:204:TYR:CE2	2.69	0.45
1:D:909:G:C5	2:B:428:ILE:CD1	2.99	0.45
2:A:237:PHE:N	2:A:237:PHE:HD2	2.14	0.45
2:A:348:ARG:O	2:A:351:GLU:HB2	2.17	0.45
2:B:183:ARG:O	2:B:187:MET:HG3	2.16	0.45
2:B:214:ILE:O	2:B:215:SER:C	2.55	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:358:GLU:O	2:B:539:ARG:CD	2.57	0.45
2:B:359:PHE:O	2:B:361:PRO:HD3	2.17	0.45
2:B:437:ILE:O	2:B:440:VAL:N	2.50	0.45
1:C:907:G:C4'	1:C:908:U:C6	2.99	0.45
2:B:206:PHE:O	2:B:210:VAL:HG23	2.16	0.45
2:B:491:LEU:HB2	2:B:556:THR:HG21	1.99	0.45
2:A:221:ARG:NH2	2:A:224:ARG:HD2	2.27	0.45
2:A:269:LYS:HB3	2:A:274:LEU:CD2	2.47	0.45
2:A:339:HIS:CD2	2:A:339:HIS:C	2.90	0.45
2:A:474:VAL:HG11	2:A:498:ARG:NH1	2.32	0.45
2:B:233:HIS:O	2:B:236:VAL:HG23	2.16	0.45
2:B:337:ARG:NH2	2:B:372:SER:HB2	2.32	0.45
2:B:455:ALA:HB2	2:B:502:VAL:CG1	2.47	0.45
2:B:493:ILE:HG23	2:B:494:GLU:H	1.80	0.45
2:B:563:GLY:C	2:B:565:GLU:N	2.69	0.45
2:A:29:LYS:O	2:A:91:ILE:HD11	2.16	0.45
2:A:99:PHE:CE1	2:A:198:VAL:HG21	2.47	0.45
2:A:264:THR:O	2:A:266:GLU:N	2.50	0.45
1:C:935:U:H2'	1:C:936:A:C4	2.52	0.45
1:C:939:A:O5'	1:C:939:A:H8	2.00	0.45
2:A:252:SER:OG	2:A:253:TYR:N	2.50	0.45
2:A:400:GLU:HA	2:A:405:GLY:O	2.17	0.45
2:B:339:HIS:HE1	2:B:341:LYS:HG2	1.81	0.45
2:A:128:PHE:CD1	2:A:128:PHE:C	2.90	0.44
2:A:435:ASP:O	2:A:436:ALA:C	2.55	0.44
2:A:503:LEU:HA	2:A:503:LEU:HD23	1.80	0.44
2:A:554:LEU:O	2:A:555:ALA:HB2	2.17	0.44
2:B:162:ILE:HD12	2:B:163:PRO:CD	2.34	0.44
2:B:339:HIS:CG	2:B:340:PRO:HD2	2.52	0.44
2:B:529:LYS:HG2	2:B:530:PHE:CZ	2.52	0.44
2:B:538:ILE:O	2:B:562:SER:HA	2.17	0.44
1:D:915:G:C2	2:A:229:PHE:CE1	3.05	0.44
2:B:37:MET:HB2	2:B:61:ILE:HG22	1.99	0.44
2:B:63:ASN:HB3	2:B:66:ILE:CG1	2.45	0.44
2:B:350:LEU:HD12	2:B:377:ARG:O	2.17	0.44
2:B:549:GLU:O	2:B:549:GLU:HG2	2.16	0.44
2:A:18:ALA:HB3	2:A:242:ALA:O	2.17	0.44
2:A:51:GLU:O	2:A:52:LEU:C	2.54	0.44
2:A:80:LEU:HD13	2:A:84:ARG:HD3	2.00	0.44
2:A:112:ARG:NH2	2:A:159:ILE:HD13	2.33	0.44
2:A:175:ASP:OD1	2:A:176:LEU:HG	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:214:ILE:O	2:A:215:SER:C	2.55	0.44
2:A:356:LEU:H	2:A:356:LEU:HD22	1.82	0.44
2:B:448:PHE:HB2	2:B:452:ALA:CB	2.47	0.44
1:C:914:A:H2'	2:B:230:GLY:O	2.17	0.44
1:D:961:U:C2'	1:D:962:C:OP1	2.66	0.44
2:B:98:SER:O	2:B:101:LEU:N	2.50	0.44
2:B:98:SER:HA	2:B:101:LEU:HB3	1.99	0.44
1:C:957:C:H2'	1:C:958:A:C5'	2.34	0.44
2:A:36:ILE:HG13	2:A:248:PHE:CB	2.47	0.44
2:A:111:ASN:O	2:A:115:ILE:CG1	2.63	0.44
2:A:179:TYR:C	2:A:181:ALA:N	2.70	0.44
2:A:262:TYR:CD1	2:A:307:HIS:NE2	2.85	0.44
2:A:448:PHE:HB2	2:A:452:ALA:HB2	2.00	0.44
2:B:47:VAL:HG12	2:B:52:LEU:CD1	2.47	0.44
2:B:516:ALA:C	2:B:518:PRO:HD2	2.36	0.44
1:C:908:U:OP1	2:A:465:LYS:HG2	2.18	0.44
2:A:9:LYS:HB3	2:A:25:GLU:HB3	1.99	0.44
2:A:137:ALA:HB1	2:A:141:GLN:HE22	1.83	0.44
2:A:227:HIS:ND1	2:A:247:LEU:O	2.50	0.44
2:A:249:ASP:O	2:A:250:SER:HB3	2.17	0.44
2:A:290:GLN:HA	2:A:293:ARG:CD	2.47	0.44
2:B:130:ASP:OD2	2:B:167:THR:CB	2.64	0.44
2:B:270:ARG:HH12	2:B:272:ASP:CG	2.16	0.44
2:B:500:HIS:HD1	2:B:500:HIS:C	2.20	0.44
2:B:525:ASP:OD1	2:B:577:VAL:N	2.51	0.44
1:D:959:A:H4'	1:D:960:G:OP1	2.18	0.44
2:A:362:ILE:HD12	2:A:362:ILE:HA	1.87	0.44
2:B:221:ARG:HB3	2:B:223:ASP:OD1	2.17	0.44
2:B:322:ALA:CB	2:B:328:LEU:HD22	2.48	0.44
2:B:496:ALA:CB	2:B:556:THR:OG1	2.66	0.44
2:B:499:LEU:O	2:B:502:VAL:N	2.48	0.44
2:A:263:MET:HE1	2:A:308:ASN:HB3	2.00	0.44
2:A:297:LYS:HA	2:A:297:LYS:HZ3	1.83	0.44
2:A:297:LYS:HZ1	2:A:301:THR:CG2	2.31	0.44
2:B:413:LEU:HD21	2:B:429:GLU:O	2.18	0.44
2:B:419:GLN:OE1	2:B:419:GLN:N	2.51	0.44
2:B:435:ASP:O	2:B:436:ALA:C	2.56	0.44
2:B:503:LEU:CD2	2:B:508:MET:SD	3.06	0.44
1:C:967:C:H2'	2:A:471:GLN:HE22	1.82	0.44
2:A:460:LYS:O	2:A:472:VAL:HA	2.17	0.44
2:B:174:THR:OG1	2:B:215:SER:HB2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:916:U:H2'	1:C:916:U:O2	2.18	0.43
2:A:83:HIS:HE1	2:A:124:ASP:OD2	2.00	0.43
2:A:316:ILE:HG22	2:A:317:LYS:N	2.33	0.43
2:A:382:ARG:HG3	2:A:382:ARG:HH11	1.83	0.43
2:A:411:LEU:O	2:A:413:LEU:N	2.51	0.43
2:A:525:ASP:OD1	2:A:576:LYS:HA	2.18	0.43
2:A:527:PHE:O	2:A:529:LYS:N	2.51	0.43
2:B:560:LEU:O	2:B:561:LEU:HD23	2.17	0.43
1:C:913:U:O3'	2:B:256:TYR:CE2	2.71	0.43
1:D:909:G:N2	1:D:910:G:H1'	2.34	0.43
1:D:916:U:OP1	2:A:99:PHE:CB	2.65	0.43
2:A:20:ARG:NH2	2:A:217:LYS:NZ	2.66	0.43
2:A:38:PRO:HD3	2:A:57:PHE:CD2	2.52	0.43
2:A:175:ASP:OD1	2:A:176:LEU:N	2.51	0.43
2:A:493:ILE:O	2:A:496:ALA:HB3	2.18	0.43
2:B:52:LEU:HD12	2:B:52:LEU:H	1.83	0.43
2:B:178:ARG:NH1	2:B:178:ARG:CB	2.81	0.43
2:B:256:TYR:O	2:B:257:ALA:C	2.56	0.43
2:B:436:ALA:HB1	2:B:461:VAL:HB	1.99	0.43
1:C:946:G:H2'	1:C:947:G:OP2	2.18	0.43
1:D:940:G:H21	2:A:136:ASP:HB3	1.83	0.43
2:A:372:SER:O	2:A:375:SER:HB3	2.18	0.43
2:B:51:GLU:O	2:B:54:LYS:N	2.50	0.43
2:B:147:GLU:OE2	2:B:179:TYR:OH	2.33	0.43
1:D:912:C:H2'	1:D:913:U:C6	2.53	0.43
1:D:933:C:H1'	2:A:136:ASP:HB3	2.01	0.43
2:A:246:ASP:O	2:A:247:LEU:HD23	2.18	0.43
2:A:560:LEU:HD11	2:A:576:LYS:CD	2.48	0.43
2:B:37:MET:HG3	2:B:249:ASP:HB2	2.00	0.43
2:B:48:GLU:O	2:B:52:LEU:HD12	2.18	0.43
2:B:431:PRO:HG3	2:B:469:PRO:CG	2.48	0.43
1:C:914:A:H5''	2:B:202:GLU:OE2	2.18	0.43
1:D:948:U:H2'	1:D:949:C:O4'	2.18	0.43
2:A:38:PRO:HD3	2:A:57:PHE:HD2	1.82	0.43
2:A:200:LEU:HD23	2:A:200:LEU:HA	1.82	0.43
2:A:394:ARG:HG3	2:A:394:ARG:NH1	2.33	0.43
2:A:497:LYS:HA	2:A:553:LEU:HD22	2.01	0.43
1:C:968:G:O4'	2:A:471:GLN:NE2	2.52	0.43
1:D:949:C:N4	1:D:960:G:H21	2.16	0.43
2:A:49:PRO:O	2:A:50:LYS:C	2.57	0.43
2:A:132:PRO:HA	2:A:169:GLN:CD	2.39	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:321:GLN:NE2	2:B:275:ASP:N	2.51	0.43
2:B:511:VAL:HG12	2:B:532:ILE:CG2	2.49	0.43
1:D:974:A:C6	1:D:975:C:N4	2.87	0.43
2:A:37:MET:HG2	2:A:59:ILE:CG1	2.48	0.43
2:A:214:ILE:HD13	2:A:214:ILE:HA	1.78	0.43
2:A:286:LYS:NZ	2:A:287:TYR:HE1	2.16	0.43
2:A:395:PHE:CD1	2:A:395:PHE:N	2.86	0.43
2:A:578:ARG:HG2	2:A:578:ARG:HH11	1.84	0.43
1:C:962:C:H2'	1:C:963:C:H6	1.79	0.43
2:A:75:ARG:C	2:A:77:ALA:N	2.71	0.43
2:A:179:TYR:C	2:A:181:ALA:H	2.22	0.43
2:A:411:LEU:HD23	2:A:411:LEU:HA	1.86	0.43
2:A:515:GLU:O	2:A:518:PRO:HD2	2.18	0.43
2:A:529:LYS:HG3	2:A:570:GLN:O	2.19	0.43
2:B:12:ILE:HG13	2:B:20:ARG:HG3	2.01	0.43
2:B:448:PHE:CA	2:B:508:MET:HE1	2.48	0.43
2:B:495:GLY:O	2:B:498:ARG:HB2	2.19	0.43
2:B:515:GLU:O	2:B:518:PRO:HD2	2.17	0.43
1:D:960:G:N3	1:D:960:G:H5'	2.34	0.43
2:A:290:GLN:HA	2:A:293:ARG:HD2	2.00	0.43
2:B:251:ALA:HB3	2:B:255:LEU:HD12	1.99	0.43
1:C:909:G:N2	1:C:910:G:H1'	2.34	0.43
1:C:918:G:H2'	1:C:918:G:N3	2.32	0.43
1:D:914:A:H1'	2:A:252:SER:CB	2.45	0.43
2:A:98:SER:HB2	2:A:132:PRO:CD	2.49	0.43
2:A:303:LEU:HD23	2:A:306:LEU:HD12	2.01	0.43
2:A:311:VAL:O	2:A:312:ILE:C	2.58	0.43
2:A:456:PHE:O	2:A:457:ASP:C	2.56	0.43
2:A:567:ILE:HG22	2:A:568:VAL:HG12	2.01	0.43
2:B:75:ARG:C	2:B:77:ALA:N	2.71	0.43
2:B:224:ARG:HA	2:B:225:PRO:HD3	1.91	0.43
2:B:321:GLN:O	2:B:325:GLU:HG2	2.19	0.43
2:B:335:ARG:HG2	2:B:335:ARG:NH1	2.32	0.43
2:B:538:ILE:HG22	2:B:538:ILE:O	2.19	0.43
2:A:131:ILE:HD13	2:A:131:ILE:N	2.33	0.42
2:B:178:ARG:HB2	2:B:178:ARG:CZ	2.49	0.42
2:B:272:ASP:HA	2:B:293:ARG:HE	1.84	0.42
2:B:333:ASP:OD2	2:B:337:ARG:NH2	2.45	0.42
2:B:337:ARG:NH2	2:B:372:SER:CB	2.82	0.42
2:B:448:PHE:HB2	2:B:452:ALA:HB2	2.00	0.42
2:B:486:ASP:C	2:B:486:ASP:OD2	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:529:LYS:HG2	2:B:530:PHE:CE2	2.53	0.42
2:B:538:ILE:HG22	2:B:562:SER:C	2.38	0.42
1:D:953:G:C2	1:D:964:C:N3	2.87	0.42
2:A:12:ILE:HG12	2:A:20:ARG:HG3	2.00	0.42
2:A:357:GLU:OE1	2:A:383:ARG:HD3	2.19	0.42
2:A:488:LEU:HD23	2:A:488:LEU:HA	1.60	0.42
2:B:132:PRO:HA	2:B:169:GLN:CD	2.39	0.42
2:B:179:TYR:C	2:B:181:ALA:N	2.70	0.42
2:B:283:VAL:HG13	2:B:303:LEU:HD22	2.01	0.42
2:B:443:ILE:HG22	2:B:489:LEU:HD22	2.00	0.42
2:B:563:GLY:C	2:B:565:GLU:H	2.22	0.42
2:A:448:PHE:HB2	2:A:452:ALA:CB	2.49	0.42
2:B:31:ILE:HD12	2:B:59:ILE:CG2	2.50	0.42
2:B:37:MET:O	2:B:249:ASP:HA	2.19	0.42
2:B:265:PRO:CB	2:B:335:ARG:HE	2.26	0.42
1:C:968:G:H4'	2:A:471:GLN:HE21	1.84	0.42
1:D:906:C:O2'	1:D:907:G:H5'	2.19	0.42
2:A:261:ARG:CG	2:A:270:ARG:HH11	2.32	0.42
2:A:266:GLU:HG2	2:B:330:ARG:NH2	2.33	0.42
2:A:327:GLU:O	2:A:328:LEU:C	2.57	0.42
2:A:468:MET:HA	2:A:469:PRO:HD3	1.83	0.42
2:B:322:ALA:HA	2:B:327:GLU:HG2	2.02	0.42
2:B:346:TYR:CE2	2:B:374:GLU:HG2	2.54	0.42
1:C:970:G:O2'	1:C:971:C:H5'	2.19	0.42
1:D:901:G:O5'	1:D:901:G:H8	2.02	0.42
1:D:938:G:O2'	2:B:425:ASP:HB2	2.19	0.42
2:A:18:ALA:HB2	2:A:356:LEU:HD12	2.02	0.42
2:A:213:VAL:HB	2:A:243:MET:CE	2.49	0.42
2:A:468:MET:CE	2:A:470:ARG:NH2	2.82	0.42
2:A:563:GLY:C	2:A:565:GLU:N	2.70	0.42
2:B:497:LYS:HD3	2:B:553:LEU:CB	2.50	0.42
1:C:913:U:O3'	2:B:256:TYR:HE2	2.02	0.42
2:A:83:HIS:CE1	2:A:124:ASP:OD2	2.73	0.42
2:B:325:GLU:O	2:B:366:SER:OG	2.35	0.42
2:B:409:ARG:O	2:B:412:SER:N	2.52	0.42
2:B:468:MET:CE	2:B:470:ARG:NH2	2.83	0.42
2:A:67:ILE:O	2:A:74:ARG:HG2	2.19	0.42
2:A:80:LEU:HD23	2:A:80:LEU:HA	1.91	0.42
2:A:359:PHE:H	2:A:359:PHE:HD1	1.67	0.42
2:B:402:PRO:HB2	2:B:403:ILE:HD12	2.02	0.42
2:B:409:ARG:O	2:B:412:SER:HB3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:913:U:H5''	2:B:256:TYR:OH	2.20	0.42
2:A:261:ARG:HG3	2:A:270:ARG:NH1	2.34	0.42
2:B:322:ALA:HB3	2:B:328:LEU:HD22	2.01	0.42
2:B:328:LEU:HD22	2:B:328:LEU:HA	1.68	0.42
2:B:410:TYR:CE2	2:B:438:LYS:HD3	2.54	0.42
2:B:435:ASP:O	2:B:438:LYS:N	2.53	0.42
2:B:514:LYS:HG3	2:B:515:GLU:N	2.35	0.42
2:B:559:ALA:C	2:B:560:LEU:HD12	2.40	0.42
2:A:503:LEU:O	2:A:509:ARG:NH2	2.45	0.42
2:B:175:ASP:HA	2:B:178:ARG:HH12	1.84	0.42
2:B:264:THR:O	2:B:266:GLU:N	2.52	0.42
2:B:290:GLN:CG	2:B:291:GLU:N	2.63	0.42
2:B:318:ARG:HH11	2:B:318:ARG:HB3	1.84	0.42
2:B:329:TRP:HB3	2:B:378:TRP:CE2	2.55	0.42
2:B:442:ALA:C	2:B:444:ALA:N	2.72	0.42
2:A:82:ILE:HD12	2:A:83:HIS:ND1	2.35	0.42
2:A:234:PRO:HB2	2:A:265:PRO:HA	2.02	0.42
2:A:415:TYR:HA	2:A:419:GLN:OE1	2.19	0.42
2:A:432:THR:HB	2:A:433:LYS:CE	2.44	0.42
2:A:433:LYS:HG2	2:A:434:GLU:OE2	2.19	0.42
2:B:327:GLU:O	2:B:328:LEU:C	2.58	0.42
2:B:401:HIS:CD2	2:B:404:PHE:HD1	2.38	0.42
2:A:245:VAL:CG1	2:A:246:ASP:N	2.82	0.41
2:A:554:LEU:O	2:A:581:VAL:HG12	2.19	0.41
2:B:131:ILE:O	2:B:169:GLN:HG3	2.20	0.41
2:B:449:GLY:O	2:B:451:GLY:N	2.53	0.41
2:B:470:ARG:HA	2:B:482:VAL:HB	2.02	0.41
1:C:948:U:H6	1:C:948:U:O5'	2.02	0.41
1:C:969:G:C2	1:C:970:G:C8	3.08	0.41
1:D:914:A:O2'	1:D:915:G:P	2.78	0.41
1:D:947:G:H5'	1:D:948:U:OP2	2.20	0.41
2:A:207:ARG:HD2	2:A:348:ARG:HH12	1.81	0.41
2:A:560:LEU:HD11	2:A:576:LYS:HG3	2.02	0.41
2:B:31:ILE:HD12	2:B:59:ILE:HG21	1.99	0.41
2:B:456:PHE:O	2:B:457:ASP:C	2.58	0.41
2:B:462:GLU:OE2	2:B:471:GLN:HB2	2.20	0.41
1:D:901:G:N2	1:D:973:C:O2	2.52	0.41
1:D:936:A:N6	1:D:937:C:N3	2.68	0.41
1:D:967:C:C6	1:D:967:C:C3'	3.03	0.41
2:A:470:ARG:NH1	2:A:484:ALA:CA	2.70	0.41
2:B:62:THR:O	2:B:94:VAL:HG12	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:386:GLU:O	2:B:389:LYS:HB2	2.20	0.41
2:B:392:ASN:ND2	2:B:408:SER:H	2.18	0.41
1:C:946:G:O2'	1:C:947:G:H8	2.02	0.41
2:A:85:MET:HE3	2:A:85:MET:HB2	1.95	0.41
2:A:560:LEU:HD11	2:A:576:LYS:HD2	2.02	0.41
2:B:323:ILE:HG12	2:B:328:LEU:HD23	2.01	0.41
1:C:916:U:C6	2:B:251:ALA:HB1	2.56	0.41
1:D:931:C:C2'	1:D:932:C:H5'	2.50	0.41
2:A:218:MET:HE2	2:A:218:MET:HB2	1.95	0.41
2:A:478:ARG:O	2:A:478:ARG:HG3	2.21	0.41
2:A:541:TYR:HA	2:A:558:GLN:HG3	2.01	0.41
2:B:181:ALA:HB3	2:B:219:ALA:HB3	2.03	0.41
2:B:536:PRO:C	2:B:538:ILE:H	2.22	0.41
2:B:538:ILE:CG2	2:B:563:GLY:N	2.74	0.41
2:B:548:ASN:O	2:B:550:ASN:N	2.54	0.41
2:A:80:LEU:HD13	2:A:84:ARG:HB3	2.02	0.41
2:A:245:VAL:HG12	2:A:246:ASP:N	2.34	0.41
2:A:264:THR:C	2:A:266:GLU:N	2.72	0.41
2:A:437:ILE:CG2	2:A:438:LYS:H	2.33	0.41
2:A:454:ARG:C	2:A:456:PHE:N	2.74	0.41
2:A:540:PRO:C	2:A:541:TYR:CD1	2.94	0.41
2:B:12:ILE:O	2:B:12:ILE:CG2	2.68	0.41
2:B:327:GLU:O	2:B:327:GLU:HG3	2.20	0.41
1:C:936:A:C2	1:C:937:C:C5	3.08	0.41
1:C:941:G:C6	1:C:942:C:C4	3.09	0.41
1:D:905:C:C2	1:D:906:C:C6	3.09	0.41
1:D:962:C:C2	1:D:963:C:C4	3.09	0.41
2:A:109:VAL:HG22	2:A:110:SER:N	2.35	0.41
2:A:150:LEU:HD23	2:A:184:LEU:HD21	2.01	0.41
2:A:266:GLU:OE1	2:B:334:GLU:OE2	2.38	0.41
2:A:370:LYS:HA	2:A:375:SER:OG	2.21	0.41
2:A:514:LYS:O	2:A:518:PRO:HD3	2.20	0.41
2:B:51:GLU:O	2:B:52:LEU:C	2.59	0.41
1:D:904:C:O2'	1:D:905:C:H5'	2.21	0.41
1:D:967:C:H4'	2:B:478:ARG:NH1	2.36	0.41
2:B:454:ARG:C	2:B:456:PHE:N	2.74	0.41
2:B:460:LYS:NZ	2:B:475:ASN:N	2.67	0.41
1:C:903:G:C2	1:C:972:C:C2	3.08	0.41
1:D:934:U:C4	1:D:936:A:H5'	2.55	0.41
2:A:29:LYS:HB2	2:A:91:ILE:HG12	2.03	0.41
2:A:183:ARG:HA	2:A:183:ARG:NE	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:183:ARG:HH11	2:A:183:ARG:HG2	1.86	0.41
2:A:256:TYR:O	2:A:257:ALA:C	2.58	0.41
2:A:257:ALA:O	2:A:301:THR:HG22	2.20	0.41
2:A:314:GLU:OE1	2:B:279:CYS:HA	2.20	0.41
2:A:357:GLU:OE1	2:A:383:ARG:CD	2.68	0.41
2:A:357:GLU:CD	2:A:357:GLU:C	2.79	0.41
2:A:503:LEU:HD21	2:A:507:ARG:NH2	2.36	0.41
2:A:511:VAL:HG22	2:A:533:PHE:C	2.36	0.41
2:A:581:VAL:O	2:A:581:VAL:HG22	2.20	0.41
2:B:8:LEU:C	2:B:8:LEU:CD2	2.87	0.41
2:B:82:ILE:CG2	2:B:83:HIS:H	2.31	0.41
2:B:83:HIS:H	2:B:83:HIS:HD1	1.69	0.41
2:B:179:TYR:C	2:B:181:ALA:H	2.24	0.41
2:B:256:TYR:CD1	2:B:263:MET:HE3	2.56	0.41
2:B:258:LYS:HA	2:B:301:THR:HG23	2.01	0.41
2:B:339:HIS:HA	2:B:340:PRO:HD3	1.91	0.41
2:B:455:ALA:HB3	2:B:499:LEU:HD12	2.03	0.41
2:B:511:VAL:HG11	2:B:532:ILE:HG22	2.03	0.41
2:B:514:LYS:O	2:B:518:PRO:HD3	2.21	0.41
2:A:413:LEU:N	2:A:413:LEU:CD1	2.61	0.41
2:A:470:ARG:HD3	2:A:470:ARG:HA	1.88	0.41
2:A:474:VAL:O	2:A:474:VAL:HG13	2.21	0.41
2:B:48:GLU:HB2	2:B:51:GLU:OE1	2.21	0.41
2:B:135:PRO:CG	2:B:200:LEU:CD1	2.98	0.41
1:C:973:C:H2'	1:C:974:A:C8	2.56	0.40
1:D:914:A:H3'	2:A:198:VAL:HG12	2.03	0.40
2:A:63:ASN:HB3	2:A:66:ILE:HD12	2.02	0.40
2:A:564:ARG:HE	2:A:564:ARG:HB3	1.43	0.40
2:B:47:VAL:HG12	2:B:52:LEU:HD12	2.03	0.40
2:B:480:ALA:HB1	2:B:490:THR:O	2.21	0.40
2:A:82:ILE:O	2:A:83:HIS:C	2.59	0.40
2:A:283:VAL:O	2:A:287:TYR:HB2	2.21	0.40
2:A:401:HIS:HE1	2:A:403:ILE:HB	1.86	0.40
2:B:297:LYS:O	2:B:300:ARG:N	2.54	0.40
2:B:451:GLY:O	2:B:453:SER:N	2.54	0.40
1:D:914:A:H2'	2:A:230:GLY:O	2.21	0.40
2:A:499:LEU:O	2:A:502:VAL:N	2.54	0.40
2:B:167:THR:O	2:B:167:THR:HG22	2.21	0.40
2:B:233:HIS:HA	2:B:234:PRO:HD3	1.89	0.40
2:A:140:GLU:CA	2:A:143:VAL:HG23	2.50	0.40
2:A:145:GLU:O	2:A:149:THR:OG1	2.38	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:154:ARG:HG2	2:B:187:MET:HE1	2.01	0.40
2:B:415:TYR:CD2	2:B:415:TYR:C	2.94	0.40
2:B:499:LEU:O	2:B:501:ARG:N	2.55	0.40
2:A:356:LEU:HD22	2:A:356:LEU:N	2.37	0.40
2:A:538:ILE:O	2:A:562:SER:HA	2.20	0.40
2:B:44:GLN:HE21	2:B:44:GLN:HB3	1.57	0.40
2:B:109:VAL:HG21	2:B:114:ILE:HB	2.03	0.40
2:B:223:ASP:HB3	2:B:569:PHE:CD2	2.56	0.40
2:B:330:ARG:HH11	2:B:330:ARG:CB	2.29	0.40
2:B:456:PHE:N	2:B:456:PHE:CD1	2.90	0.40
2:B:458:ASP:O	2:B:474:VAL:CG1	2.69	0.40
2:B:485:ASP:OD1	2:B:486:ASP:N	2.53	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

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

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	A	574/582 (99%)	467 (81%)	86 (15%)	21 (4%)	<b>3</b> <b>20</b>
2	B	574/582 (99%)	472 (82%)	78 (14%)	24 (4%)	<b>3</b> <b>17</b>
All	All	1148/1164 (99%)	939 (82%)	164 (14%)	45 (4%)	<b>3</b> <b>18</b>

All (45) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	A	412	SER
2	A	433	LYS
2	A	452	ALA
2	A	493	ILE
2	A	528	ALA
2	B	412	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	433	LYS
2	B	436	ALA
2	B	452	ALA
2	B	493	ILE
2	A	109	VAL
2	A	436	ALA
2	A	564	ARG
2	B	109	VAL
2	B	423	GLU
2	B	528	ALA
2	B	549	GLU
2	A	297	LYS
2	A	423	GLU
2	A	457	ASP
2	B	297	LYS
2	B	298	GLU
2	B	457	ASP
2	B	500	HIS
2	B	564	ARG
2	A	272	ASP
2	A	273	GLU
2	A	361	PRO
2	A	383	ARG
2	B	204	TYR
2	B	361	PRO
2	A	298	GLU
2	A	555	ALA
2	B	272	ASP
2	B	555	ALA
2	A	17	GLY
2	A	281	CYS
2	B	103	LYS
2	B	273	GLU
2	B	518	PRO
2	B	56	GLY
2	B	312	ILE
2	A	56	GLY
2	A	143	VAL
2	B	281	CYS

### 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	
2	A	498/503 (99%)	432 (87%)	66 (13%)	4	17
2	B	498/503 (99%)	422 (85%)	76 (15%)	2	12
All	All	996/1006 (99%)	854 (86%)	142 (14%)	3	15

All (142) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	A	8	LEU
2	A	20	ARG
2	A	30	LYS
2	A	41	ASN
2	A	47	VAL
2	A	49	PRO
2	A	59	ILE
2	A	61	ILE
2	A	63	ASN
2	A	64	SER
2	A	82	ILE
2	A	84	ARG
2	A	85	MET
2	A	89	ASN
2	A	108	GLU
2	A	127	THR
2	A	141	GLN
2	A	149	THR
2	A	174	THR
2	A	190	GLU
2	A	198	VAL
2	A	208	ASP
2	A	214	ILE
2	A	217	LYS
2	A	222	PRO
2	A	224	ARG
2	A	227	HIS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	A	229	PHE
2	A	236	VAL
2	A	243	MET
2	A	264	THR
2	A	268	THR
2	A	277	PHE
2	A	279	CYS
2	A	285	SER
2	A	286	LYS
2	A	287	TYR
2	A	290	GLN
2	A	294	GLU
2	A	304	LEU
2	A	307	HIS
2	A	337	ARG
2	A	340	PRO
2	A	348	ARG
2	A	357	GLU
2	A	359	PHE
2	A	363	THR
2	A	365	LYS
2	A	368	LEU
2	A	370	LYS
2	A	372	SER
2	A	394	ARG
2	A	406	ARG
2	A	407	VAL
2	A	413	LEU
2	A	414	THR
2	A	416	PRO
2	A	433	LYS
2	A	441	MET
2	A	453	SER
2	A	458	ASP
2	A	472	VAL
2	A	499	LEU
2	A	513	ASN
2	A	542	ASP
2	A	570	GLN
2	B	7	MET
2	B	12	ILE
2	B	20	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	21	ILE
2	B	36	ILE
2	B	44	GLN
2	B	80	LEU
2	B	94	VAL
2	B	111	ASN
2	B	115	ILE
2	B	119	HIS
2	B	147	GLU
2	B	163	PRO
2	B	172	THR
2	B	175	ASP
2	B	178	ARG
2	B	183	ARG
2	B	185	SER
2	B	191	ILE
2	B	201	LEU
2	B	217	LYS
2	B	221	ARG
2	B	227	HIS
2	B	229	PHE
2	B	236	VAL
2	B	249	ASP
2	B	252	SER
2	B	260	ASP
2	B	270	ARG
2	B	275	ASP
2	B	277	PHE
2	B	285	SER
2	B	292	LEU
2	B	295	MET
2	B	302	ARG
2	B	306	LEU
2	B	311	VAL
2	B	318	ARG
2	B	328	LEU
2	B	330	ARG
2	B	332	VAL
2	B	350	LEU
2	B	359	PHE
2	B	361	PRO
2	B	362	ILE

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Mol	Chain	Res	Type
2	B	363	THR
2	B	370	LYS
2	B	380	VAL
2	B	381	VAL
2	B	397	GLU
2	B	402	PRO
2	B	406	ARG
2	B	411	LEU
2	B	412	SER
2	B	413	LEU
2	B	414	THR
2	B	416	PRO
2	B	417	PHE
2	B	421	GLU
2	B	435	ASP
2	B	446	TYR
2	B	453	SER
2	B	465	LYS
2	B	478	ARG
2	B	479	LEU
2	B	488	LEU
2	B	490	THR
2	B	501	ARG
2	B	519	PHE
2	B	529	LYS
2	B	531	VAL
2	B	532	ILE
2	B	538	ILE
2	B	540	PRO
2	B	542	ASP
2	B	570	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (21) such sidechains are listed below:

Mol	Chain	Res	Type
2	A	41	ASN
2	A	89	ASN
2	A	118	GLN
2	A	141	GLN
2	A	165	ASN
2	A	169	GLN
2	A	308	ASN

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Mol	Chain	Res	Type
2	A	321	GLN
2	A	339	HIS
2	A	471	GLN
2	A	475	ASN
2	A	570	GLN
2	B	41	ASN
2	B	44	GLN
2	B	63	ASN
2	B	141	GLN
2	B	392	ASN
2	B	471	GLN
2	B	475	ASN
2	B	558	GLN
2	B	570	GLN

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	C	76/77 (98%)	19 (25%)	9 (11%)
1	D	69/77 (89%)	18 (26%)	6 (8%)
All	All	145/154 (94%)	37 (25%)	15 (10%)

All (37) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	C	908	U
1	C	909	G
1	C	914	A
1	C	915	G
1	C	916	U
1	C	917	U
1	C	918	G
1	C	924	G
1	C	935	U
1	C	936	A
1	C	938	G
1	C	949	C
1	C	950	C
1	C	960	G
1	C	961	U
1	C	962	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	963	C
1	C	976	C
1	C	977	A
1	D	908	U
1	D	909	G
1	D	910	G
1	D	914	A
1	D	915	G
1	D	916	U
1	D	917	U
1	D	936	A
1	D	938	G
1	D	946	G
1	D	947	G
1	D	950	C
1	D	960	G
1	D	961	U
1	D	962	C
1	D	963	C
1	D	976	C
1	D	977	A

All (15) RNA pucker outliers are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	907	G
1	C	913	U
1	C	914	A
1	C	915	G
1	C	916	U
1	C	949	C
1	C	959	A
1	C	961	U
1	C	976	C
1	D	907	G
1	D	913	U
1	D	914	A
1	D	916	U
1	D	959	A
1	D	976	C

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

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

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

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

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.



## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	C	77/77 (100%)	-0.42	0 <span style="border: 1px solid blue; padding: 2px;">100</span> <span style="border: 1px solid blue; padding: 2px;">100</span>	56, 108, 141, 168	0
1	D	71/77 (92%)	0.59	13 (18%) <span style="border: 1px solid red; padding: 2px;">1</span> <span style="border: 1px solid red; padding: 2px;">1</span>	76, 150, 198, 200	0
2	A	576/582 (98%)	-0.17	5 (0%) <span style="border: 1px solid blue; padding: 2px;">84</span> <span style="border: 1px solid blue; padding: 2px;">84</span>	32, 74, 121, 162	0
2	B	576/582 (98%)	-0.16	5 (0%) <span style="border: 1px solid blue; padding: 2px;">84</span> <span style="border: 1px solid blue; padding: 2px;">84</span>	27, 70, 115, 142	0
All	All	1300/1318 (98%)	-0.14	23 (1%) <span style="border: 1px solid blue; padding: 2px;">68</span> <span style="border: 1px solid blue; padding: 2px;">67</span>	27, 76, 137, 200	0

All (23) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	937	C	4.1
1	D	935	U	3.7
1	D	957	C	3.5
2	B	84	ARG	3.2
1	D	958	A	3.2
2	B	474	VAL	3.0
1	D	938	G	3.0
1	D	956	U	3.0
1	D	955	U	2.9
2	A	68	TYR	2.8
1	D	928	C	2.8
1	D	929	C	2.7
1	D	936	A	2.6
1	D	930	G	2.6
2	A	107	ILE	2.5
2	A	162	ILE	2.4
2	B	473	LYS	2.4
2	A	40	VAL	2.3
1	D	945	A	2.2
2	B	286	LYS	2.2
2	A	43	LYS	2.0

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Mol	Chain	Res	Type	RSRZ
2	B	582	GLU	2.0
1	D	949	C	2.0

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

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

## 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q < 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
3	MG	B	1601	1/1	0.67	0.41	83,83,83,83	0
3	MG	C	1602	1/1	0.85	0.29	52,52,52,52	0
3	MG	B	602	1/1	0.95	0.29	38,38,38,38	0
3	MG	A	601	1/1	0.96	0.15	85,85,85,85	0
4	ZN	A	600	1/1	0.99	0.16	76,76,76,76	0
4	ZN	B	600	1/1	1.00	0.13	70,70,70,70	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.