Full wwPDB X-ray Structure Validation Report ⓘ

Oct 12, 2021 – 09:34 AM EDT

PDB ID	:	1XHZ
Title	:	Phi29 DNA polymerase, orthorhombic crystal form, ssDNA complex
Authors	:	Kamtekar, S.; Berman, A.J.; Wang, J.; Lazaro, J.M.; de Vega, M.; Blanco, L.; Salas, M.; Steitz, T.A.
Deposited on	:	2004-09-21
Resolution	:	2.70 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

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

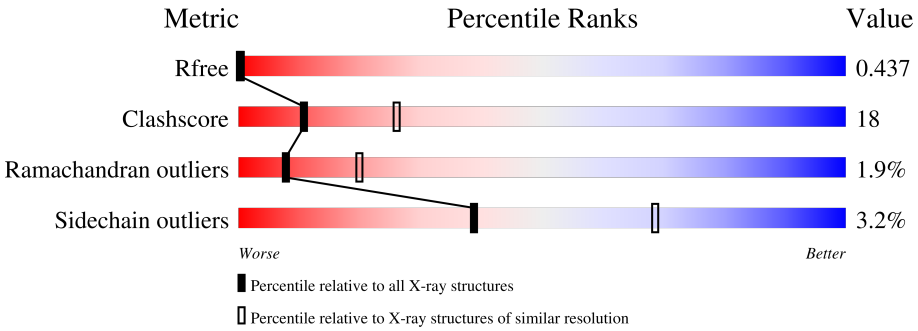
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.23.2
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.23.2

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.70 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	2808 (2.70-2.70)
Clashscore	141614	3122 (2.70-2.70)
Ramachandran outliers	138981	3069 (2.70-2.70)
Sidechain outliers	138945	3069 (2.70-2.70)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5%

Mol	Chain	Length	Quality of chain
1	E	5	100%
1	F	5	20% 20% 60%
1	G	5	100%
1	H	5	100%
2	A	575	61% 35%
2	B	575	64% 34%
2	C	575	66% 29%

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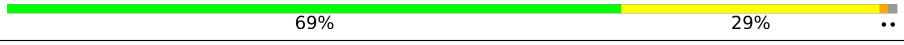
Mol	Chain	Length	Quality of chain
2	D	575	

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 19512 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(*TP*TP*TP*TP*T)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	E	5	Total	C	N	O	P	0	0	0
			97	50	10	33	4			
1	F	2	Total	C	N	O	P	0	0	0
			37	20	4	12	1			
1	G	5	Total	C	N	O	P	0	0	0
			97	50	10	33	4			
1	H	5	Total	C	N	O	P	0	0	0
			97	50	10	33	4			

- Molecule 2 is a protein called DNA polymerase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	A	571	Total	C	N	O	S	0	0	0
			4668	3041	754	852	21			
2	B	571	Total	C	N	O	S	0	0	0
			4668	3041	754	852	21			
2	C	571	Total	C	N	O	S	0	0	0
			4668	3041	754	852	21			
2	D	571	Total	C	N	O	S	0	0	0
			4668	3041	754	852	21			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	12	ALA	ASP	engineered mutation	UNP P03680
A	66	ALA	ASP	engineered mutation	UNP P03680
B	12	ALA	ASP	engineered mutation	UNP P03680
B	66	ALA	ASP	engineered mutation	UNP P03680
C	12	ALA	ASP	engineered mutation	UNP P03680
C	66	ALA	ASP	engineered mutation	UNP P03680
D	12	ALA	ASP	engineered mutation	UNP P03680
D	66	ALA	ASP	engineered mutation	UNP P03680

- Molecule 3 is water.

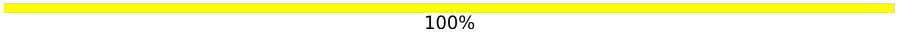
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	G	1	Total O 1 1	0	0
3	H	2	Total O 2 2	0	0
3	A	124	Total O 124 124	0	0
3	B	129	Total O 129 129	0	0
3	C	140	Total O 140 140	0	0
3	D	116	Total O 116 116	0	0

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. 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. 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(*TP*TP*TP*TP*T)-3'

Chain E:

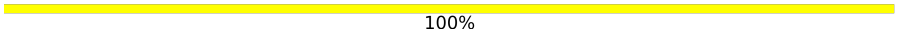


- Molecule 1: 5'-D(*TP*TP*TP*TP*T)-3'

Chain F:

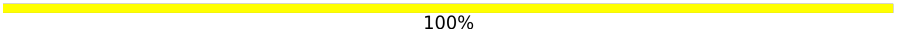
- Molecule 1: 5'-D(*TP*TP*TP*TP*T)-3'

Chain G:



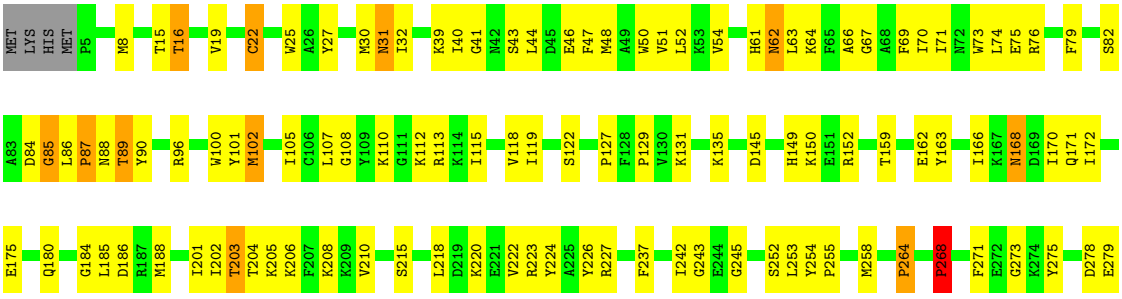
- Molecule 1: 5'-D(*TP*TP*TP*TP*T)-3'

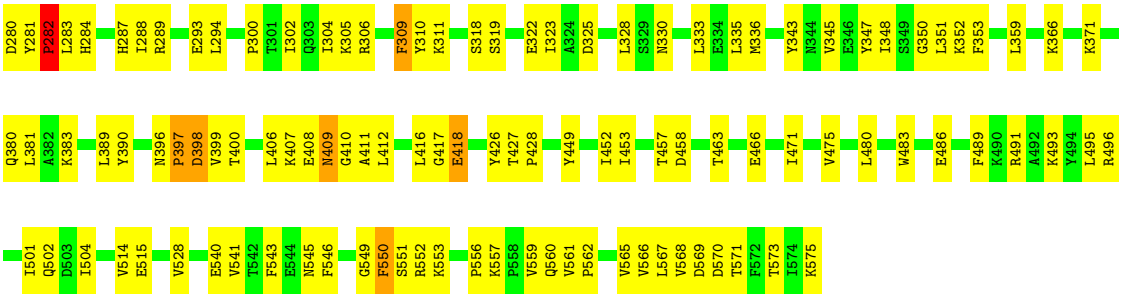
Chain H:



- Molecule 2: DNA polymerase

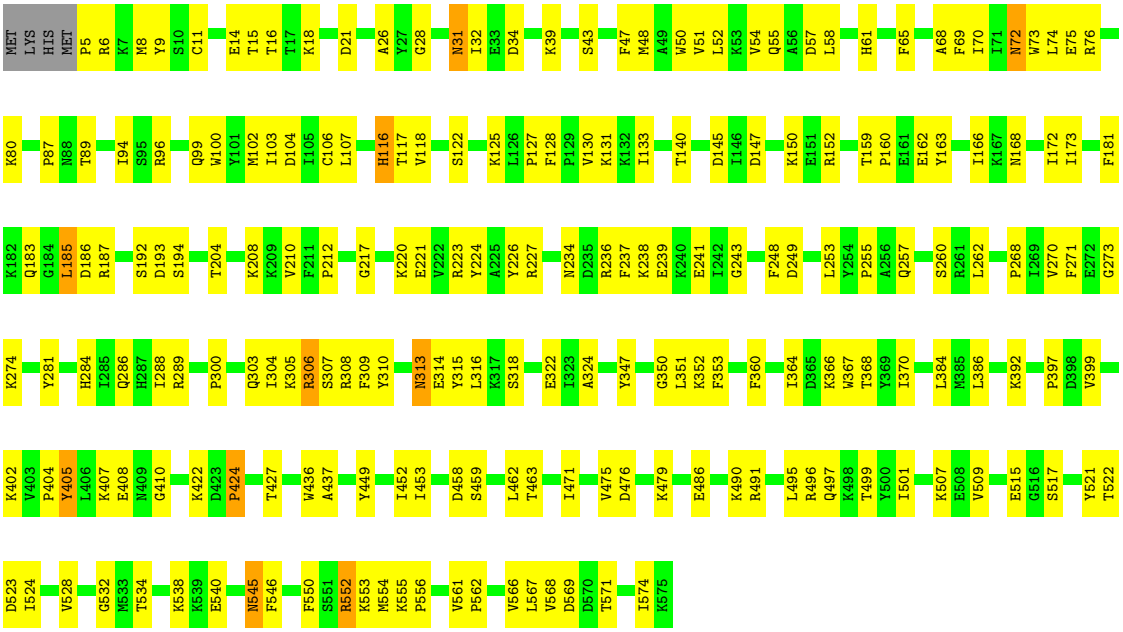
Chain A:





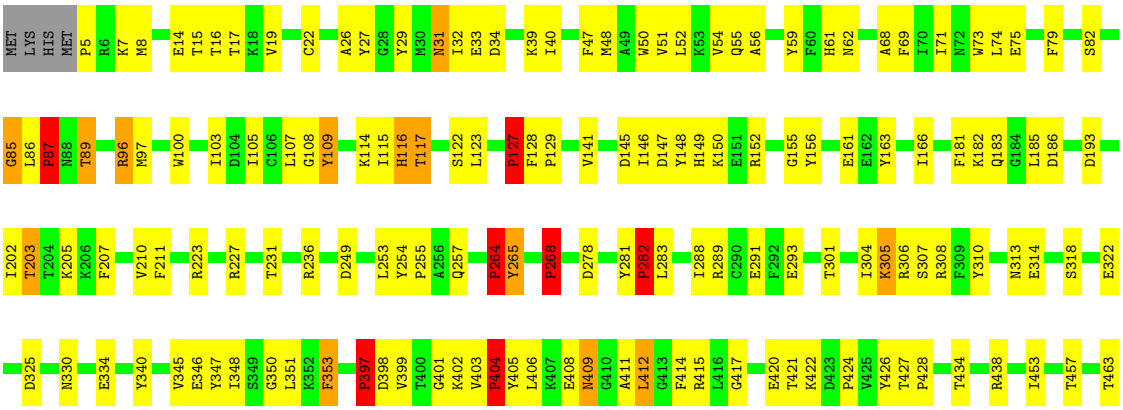
• Molecule 2: DNA polymerase

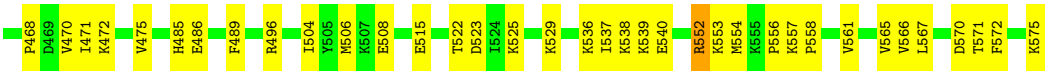
Chain B:



• Molecule 2: DNA polymerase

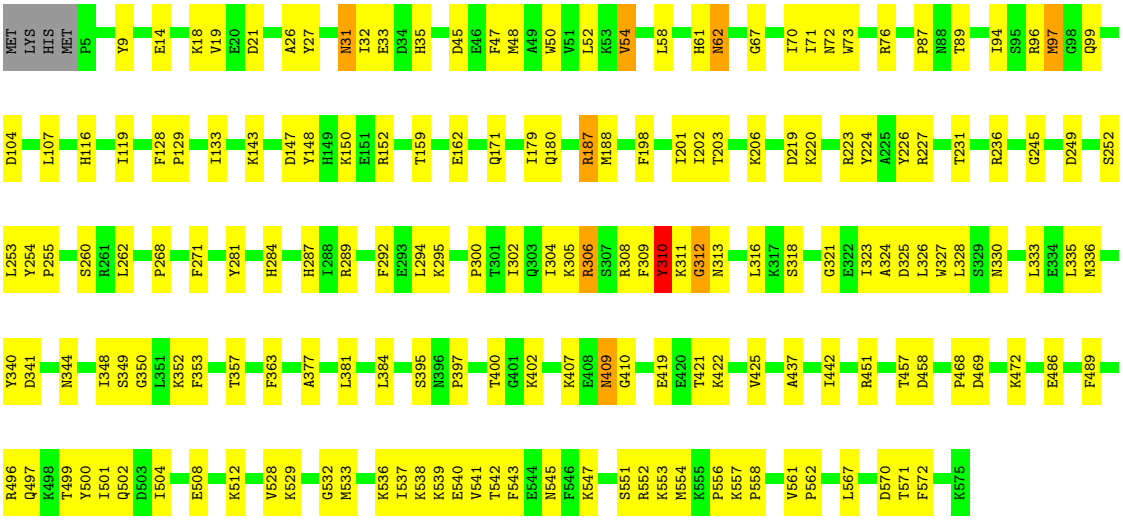
Chain C:





• Molecule 2: DNA polymerase

Chain D:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	96.66Å 150.40Å 198.32Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	19.99 – 2.70 48.33 – 2.34	Depositor EDS
% Data completeness (in resolution range)	97.7 (19.99-2.70) 98.5 (48.33-2.34)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.82 (at 2.34Å)	Xtriage
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.219 , 0.268 0.301 , 0.437	Depositor DCC
R_{free} test set	41700 reflections (34.77%)	wwPDB-VP
Wilson B-factor (Å^2)	42.9	Xtriage
Anisotropy	0.250	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 46.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.88	EDS
Total number of atoms	19512	wwPDB-VP
Average B, all atoms (Å^2)	61.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.64% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ 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

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	0.34	0/106	0.79	0/162
1	F	0.32	0/40	0.80	0/60
1	G	0.62	0/106	0.86	0/162
1	H	0.46	0/106	0.78	0/162
2	A	0.41	0/4788	0.69	4/6459 (0.1%)
2	B	0.39	0/4788	0.64	0/6459
2	C	0.43	0/4788	0.78	7/6459 (0.1%)
2	D	0.40	0/4788	0.65	0/6459
All	All	0.41	0/19510	0.70	11/26382 (0.0%)

There are no bond length outliers.

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	C	268	PRO	CA-N-CD	-16.41	88.52	111.50
2	C	264	PRO	CA-N-CD	-13.88	92.07	111.50
2	C	404	PRO	CA-N-CD	-13.55	92.53	111.50
2	A	397	PRO	CA-N-CD	-11.68	95.15	111.50
2	C	127	PRO	CA-N-CD	-11.42	95.51	111.50
2	C	397	PRO	CA-N-CD	-10.07	97.40	111.50
2	C	282	PRO	CA-N-CD	-9.53	98.15	111.50
2	A	282	PRO	CA-N-CD	-8.94	98.98	111.50
2	A	264	PRO	CA-N-CD	-8.27	99.92	111.50
2	A	268	PRO	CA-N-CD	-7.53	100.96	111.50
2	C	87	PRO	CA-N-CD	-7.21	101.40	111.50

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	E	97	0	62	10	0
1	F	37	0	26	1	0
1	G	97	0	62	13	0
1	H	97	0	62	12	0
2	A	4668	0	4676	189	0
2	B	4668	0	4676	149	0
2	C	4668	0	4676	195	0
2	D	4668	0	4676	152	0
3	A	124	0	0	4	0
3	B	129	0	0	6	0
3	C	140	0	0	2	0
3	D	116	0	0	6	0
3	G	1	0	0	0	0
3	H	2	0	0	0	0
All	All	19512	0	18916	692	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 18.

All (692) 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:A:264:PRO:HD3	2:A:283:LEU:CD1	1.41	1.47
2:A:264:PRO:CD	2:A:283:LEU:HD12	1.60	1.28
2:A:264:PRO:CD	2:A:283:LEU:CD1	2.18	1.18
1:G:3:DT:H5'	2:C:129:PRO:HG3	1.24	1.13
2:B:453:ILE:HD11	2:B:463:THR:HG23	1.20	1.12
1:H:3:DT:H5'	2:D:129:PRO:HG3	1.28	1.10
1:E:3:DT:H5'	2:A:129:PRO:HG3	1.27	1.10
2:C:434:THR:HG22	2:C:438:ARG:NH1	1.68	1.09
2:C:404:PRO:HD3	2:C:414:PHE:HD2	1.19	1.03
1:H:1:DT:H3'	1:H:2:DT:H5'	1.39	1.02
2:A:86:LEU:O	2:A:89:THR:HB	1.62	0.98
2:C:87:PRO:HG3	2:C:108:GLY:HA2	1.44	0.98
2:A:52:LEU:HD22	2:A:107:LEU:HD21	1.42	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:278:ASP:O	2:C:282:PRO:HD3	1.64	0.96
2:A:82:SER:HB3	2:A:89:THR:HG23	1.46	0.95
2:A:323:ILE:HD12	2:B:307:SER:HB3	1.48	0.95
1:H:4:DT:H4'	1:H:4:DT:OP1	1.67	0.93
2:C:96:ARG:HH11	2:C:96:ARG:HB2	1.34	0.92
2:D:306:ARG:H	2:D:311:LYS:HD3	1.33	0.92
2:C:404:PRO:HD3	2:C:414:PHE:CD2	2.05	0.92
2:C:55:GLN:HE21	2:C:115:ILE:HG23	1.35	0.92
2:D:311:LYS:HG3	2:D:312:GLY:H	1.34	0.91
2:C:96:ARG:HH11	2:C:96:ARG:CB	1.82	0.91
2:C:288:ILE:HD11	2:C:345:VAL:HG13	1.54	0.90
2:C:96:ARG:HB2	2:C:96:ARG:NH1	1.87	0.89
2:C:289:ARG:HG3	2:C:348:ILE:HD11	1.52	0.89
2:D:304:ILE:HB	2:D:309:PHE:HE1	1.38	0.89
2:C:522:THR:HG22	2:C:523:ASP:OD2	1.72	0.88
2:C:223:ARG:NH2	2:C:397:PRO:HG2	1.87	0.88
1:G:1:DT:H3'	1:G:2:DT:H5'	1.54	0.87
2:C:404:PRO:HG3	2:C:414:PHE:CE2	2.11	0.86
2:A:398:ASP:OD1	2:A:398:ASP:O	1.94	0.85
2:A:268:PRO:HG3	2:A:353:PHE:CE2	2.12	0.84
2:A:15:THR:HG22	2:A:16:THR:N	1.93	0.83
2:D:19:VAL:O	2:D:561:VAL:HG11	1.79	0.83
2:D:306:ARG:N	2:D:311:LYS:HD3	1.93	0.82
2:B:553:LYS:HA	2:B:571:THR:HA	1.62	0.82
2:A:220:LYS:HE2	2:A:224:TYR:OH	1.81	0.80
2:A:86:LEU:HB2	2:A:89:THR:OG1	1.79	0.80
2:D:305:LYS:HA	2:D:311:LYS:CB	2.13	0.79
2:B:471:ILE:O	2:B:475:VAL:HG23	1.82	0.79
2:C:264:PRO:HD3	2:C:283:LEU:HD12	1.64	0.79
2:A:30:MET:HB2	2:A:170:ILE:HD12	1.63	0.79
2:B:55:GLN:HA	2:B:116:HIS:O	1.83	0.79
2:A:264:PRO:HD3	2:A:283:LEU:HD12	0.79	0.78
2:A:82:SER:HB3	2:A:89:THR:CG2	2.14	0.78
2:C:264:PRO:HD3	2:C:283:LEU:CD1	2.14	0.78
2:A:278:ASP:O	2:A:282:PRO:HD3	1.82	0.78
2:A:493:LYS:HE2	2:A:495:LEU:HD21	1.65	0.78
2:C:434:THR:HG22	2:C:438:ARG:HH12	1.49	0.77
1:E:1:DT:H3'	1:E:2:DT:H5'	1.67	0.77
1:G:4:DT:H4'	1:G:4:DT:OP1	1.85	0.77
2:C:146:ILE:HD12	2:C:146:ILE:H	1.50	0.77
2:B:162:GLU:O	2:B:166:ILE:HG12	1.85	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:1:DT:H3'	1:H:2:DT:C5'	2.16	0.76
2:D:305:LYS:HA	2:D:311:LYS:HB2	1.67	0.76
2:B:183:GLN:HB2	2:B:185:LEU:HD22	1.67	0.76
2:B:159:THR:OG1	2:B:162:GLU:HG3	1.87	0.75
2:D:96:ARG:O	2:D:402:LYS:HE3	1.87	0.75
2:A:345:VAL:HB	2:B:322:GLU:HG3	1.67	0.75
2:C:61:HIS:O	2:C:123:LEU:HB2	1.86	0.75
2:B:168:ASN:O	2:B:172:ILE:HG12	1.87	0.75
1:G:3:DT:H2"	1:G:4:DT:O5'	1.86	0.74
2:C:289:ARG:HE	2:C:348:ILE:HD11	1.51	0.74
2:C:350:GLY:O	2:C:351:LEU:HD23	1.88	0.74
2:D:409:ASN:N	2:D:409:ASN:HD22	1.83	0.74
2:A:264:PRO:HD3	2:A:283:LEU:HD11	1.65	0.74
2:B:31:ASN:HD22	2:B:32:ILE:N	1.86	0.74
2:C:308:ARG:H	2:C:308:ARG:HD2	1.52	0.74
2:A:202:ILE:O	2:A:203:THR:HB	1.87	0.73
2:B:226:TYR:HD2	2:B:306:ARG:HH21	1.36	0.73
2:B:183:GLN:HB2	2:B:185:LEU:CD2	2.18	0.73
2:D:48:MET:O	2:D:52:LEU:HG	1.88	0.73
2:A:74:LEU:O	2:A:79:PHE:HB2	1.89	0.73
1:H:1:DT:C3'	1:H:2:DT:H5'	2.18	0.72
2:A:496:ARG:HG3	2:A:496:ARG:HH11	1.55	0.72
2:A:204:THR:HG22	2:A:208:LYS:HE2	1.71	0.72
2:B:5:PRO:HG2	2:C:5:PRO:HG3	1.72	0.72
1:H:4:DT:OP1	1:H:4:DT:C4'	2.37	0.71
2:A:264:PRO:CG	2:A:283:LEU:HD12	2.20	0.71
2:B:366:LYS:O	2:B:370:ILE:HG12	1.91	0.71
2:B:304:ILE:HD12	2:B:314:GLU:OE1	1.91	0.71
2:C:301:THR:HB	2:C:340:TYR:HE1	1.56	0.71
2:C:85:GLY:HA3	2:C:114:LYS:NZ	2.04	0.71
2:C:293:GLU:OE2	2:C:318:SER:HB2	1.90	0.71
2:C:223:ARG:HH12	2:C:227:ARG:HH22	1.39	0.70
1:G:1:DT:H3'	1:G:2:DT:C5'	2.20	0.70
2:A:560:GLN:HG2	2:A:565:VAL:HG22	1.73	0.70
2:B:47:PHE:O	2:B:51:VAL:HG23	1.91	0.70
2:C:306:ARG:HD3	2:C:310:TYR:HB3	1.74	0.70
2:A:293:GLU:OE2	2:A:318:SER:HB2	1.91	0.70
2:D:304:ILE:HB	2:D:309:PHE:CE1	2.24	0.70
2:A:15:THR:HG22	2:A:16:THR:H	1.57	0.70
2:D:67:GLY:O	2:D:71:ILE:HG12	1.92	0.69
2:B:14:GLU:HB2	2:B:26:ALA:HB3	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:202:ILE:O	2:C:203:THR:HB	1.89	0.69
2:D:542:THR:H	2:D:545:ASN:HD22	1.39	0.69
2:C:29:TYR:CZ	2:C:39:LYS:HB3	2.27	0.69
2:D:302:ILE:HD11	2:D:336:MET:SD	2.33	0.69
2:A:87:PRO:HG3	2:A:108:GLY:HA2	1.74	0.69
2:C:453:ILE:HD11	2:C:463:THR:HG23	1.73	0.69
2:D:304:ILE:HD11	2:D:326:LEU:HD21	1.73	0.69
2:A:264:PRO:CD	2:A:283:LEU:HD13	2.21	0.68
2:A:273:GLY:HA2	2:A:347:TYR:O	1.93	0.68
2:C:71:ILE:HB	2:C:412:LEU:HD11	1.75	0.68
2:A:501:ILE:HG22	2:A:528:VAL:HG13	1.75	0.68
2:B:286:GLN:HG3	2:B:288:ILE:CG2	2.23	0.68
2:B:210:VAL:O	2:B:212:PRO:HD3	1.93	0.68
2:C:399:VAL:HG12	2:C:399:VAL:O	1.91	0.68
1:E:3:DT:H2"	1:E:4:DT:O5'	1.94	0.67
2:D:220:LYS:HE2	2:D:224:TYR:OH	1.94	0.67
2:D:496:ARG:HH11	2:D:496:ARG:HG3	1.58	0.67
2:A:15:THR:HG21	2:A:69:PHE:CZ	2.29	0.67
2:D:289:ARG:HG3	2:D:348:ILE:HD11	1.76	0.67
2:D:143:LYS:HE3	3:D:601:HOH:O	1.95	0.67
2:A:15:THR:CG2	2:A:16:THR:H	2.07	0.67
2:A:15:THR:CG2	2:A:16:THR:N	2.57	0.67
2:C:289:ARG:HG2	2:C:325:ASP:OD1	1.95	0.67
2:A:281:TYR:N	2:A:282:PRO:CD	2.58	0.67
2:A:67:GLY:O	2:A:71:ILE:HG12	1.95	0.66
2:B:130:VAL:HG22	2:B:173:ILE:HD11	1.77	0.66
2:B:289:ARG:HA	2:B:324:ALA:O	1.95	0.66
2:D:311:LYS:CG	2:D:312:GLY:H	2.01	0.66
2:A:61:HIS:HA	2:A:122:SER:OG	1.95	0.66
2:C:52:LEU:HD22	2:C:107:LEU:HD21	1.77	0.66
2:D:561:VAL:CG1	2:D:562:PRO:HD2	2.26	0.66
2:B:220:LYS:HE2	2:B:224:TYR:OH	1.96	0.66
2:A:215:SER:OG	2:A:218:LEU:HB2	1.96	0.65
2:B:50:TRP:CE2	2:B:54:VAL:HG11	2.32	0.65
2:C:408:GLU:CD	2:C:408:GLU:H	2.00	0.65
2:C:434:THR:CG2	2:C:438:ARG:NH1	2.53	0.65
2:B:226:TYR:CD2	2:B:306:ARG:NH2	2.63	0.65
2:C:50:TRP:CE2	2:C:54:VAL:HG11	2.32	0.65
2:A:302:ILE:HD11	2:A:336:MET:SD	2.37	0.65
2:A:226:TYR:O	2:A:227:ARG:HG3	1.97	0.64
2:B:253:LEU:HD21	2:B:437:ALA:HB1	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:55:GLN:NE2	2:C:115:ILE:HG23	2.10	0.64
2:C:403:VAL:HG23	2:C:417:GLY:HA3	1.78	0.64
2:C:146:ILE:HD12	2:C:146:ILE:N	2.11	0.64
2:A:323:ILE:HD11	2:B:305:LYS:HB2	1.78	0.64
2:A:19:VAL:HG13	2:A:561:VAL:HG11	1.80	0.64
2:B:522:THR:HG22	2:B:523:ASP:OD2	1.96	0.64
2:B:545:ASN:HD21	2:B:550:PHE:HD1	1.45	0.64
2:A:75:GLU:HB3	2:A:406:LEU:HD11	1.78	0.63
2:D:180:GLN:HE21	2:D:381:LEU:HD13	1.62	0.63
2:C:87:PRO:HG3	2:C:108:GLY:CA	2.24	0.63
2:C:264:PRO:O	2:C:265:TYR:HB3	1.98	0.63
2:C:434:THR:HG22	2:C:438:ARG:HH11	1.63	0.63
2:A:203:THR:HG22	2:A:205:LYS:H	1.63	0.63
1:E:4:DT:H4'	1:E:4:DT:OP1	1.99	0.63
2:A:206:LYS:O	2:A:210:VAL:HG23	1.99	0.63
2:C:61:HIS:HA	2:C:122:SER:OG	1.99	0.63
2:C:289:ARG:NE	2:C:348:ILE:HD11	2.13	0.62
2:D:542:THR:N	2:D:545:ASN:HD22	1.97	0.62
2:A:252:SER:HA	3:A:690:HOH:O	1.99	0.62
1:H:2:DT:OP1	2:D:532:GLY:N	2.31	0.62
2:A:224:TYR:HA	2:A:305:LYS:NZ	2.14	0.62
2:B:286:GLN:HG3	2:B:288:ILE:HG22	1.81	0.62
2:B:399:VAL:HG21	2:B:422:LYS:HG3	1.80	0.62
2:B:453:ILE:HD11	2:B:463:THR:CG2	2.12	0.62
2:C:55:GLN:HA	2:C:116:HIS:O	1.99	0.62
2:C:404:PRO:HG3	2:C:414:PHE:HE2	1.60	0.62
2:A:131:LYS:O	2:A:135:LYS:HG3	2.00	0.62
2:C:506:MET:HG3	2:C:525:LYS:HB2	1.81	0.62
2:A:150:LYS:O	2:A:152:ARG:HG3	1.99	0.61
2:B:52:LEU:HD22	2:B:107:LEU:HD21	1.81	0.61
1:G:4:DT:H5"	1:G:4:DT:H6	1.64	0.61
2:C:96:ARG:O	2:C:402:LYS:HE3	2.00	0.61
2:C:289:ARG:HE	2:C:348:ILE:CD1	2.13	0.61
2:D:561:VAL:HG12	2:D:562:PRO:HD2	1.81	0.61
2:C:288:ILE:HD11	2:C:345:VAL:CG1	2.30	0.61
2:A:184:GLY:O	2:A:186:ASP:N	2.34	0.61
2:B:308:ARG:O	2:B:309:PHE:HB2	2.01	0.61
2:C:31:ASN:ND2	2:C:33:GLU:H	1.99	0.61
2:D:311:LYS:HG3	2:D:312:GLY:N	2.13	0.61
1:H:4:DT:H5"	1:H:4:DT:H6	1.66	0.60
2:A:268:PRO:HG3	2:A:353:PHE:CD2	2.37	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:453:ILE:HD11	2:A:463:THR:CG2	2.31	0.60
2:A:15:THR:HG21	2:A:69:PHE:CE2	2.36	0.60
2:D:409:ASN:N	2:D:409:ASN:ND2	2.49	0.60
2:D:504:ILE:N	2:D:504:ILE:HD12	2.15	0.60
2:C:31:ASN:HD22	2:C:34:ASP:H	1.48	0.60
2:C:223:ARG:NH1	2:C:227:ARG:HH22	1.99	0.60
2:D:31:ASN:C	2:D:31:ASN:HD22	2.05	0.60
2:B:192:SER:HA	2:B:392:LYS:HE3	1.84	0.60
2:D:19:VAL:HG13	2:D:561:VAL:HG21	1.84	0.60
2:B:310:TYR:OH	2:B:314:GLU:HB3	2.01	0.59
2:C:223:ARG:NH2	2:C:424:PRO:HG3	2.17	0.59
2:B:399:VAL:HG12	2:B:399:VAL:O	2.02	0.59
2:B:52:LEU:O	2:B:107:LEU:HD11	2.02	0.59
2:C:96:ARG:NH1	2:C:398:ASP:OD1	2.35	0.59
2:A:553:LYS:HA	2:A:571:THR:HA	1.84	0.59
2:C:210:VAL:HG13	2:C:265:TYR:HB2	1.83	0.59
2:C:82:SER:HB3	2:C:89:THR:CG2	2.33	0.59
2:D:50:TRP:CE2	2:D:54:VAL:HG11	2.38	0.59
1:E:1:DT:H3'	1:E:2:DT:C5'	2.31	0.59
2:A:453:ILE:HD11	2:A:463:THR:HG22	1.84	0.59
2:D:305:LYS:O	2:D:306:ARG:HB2	2.03	0.59
2:D:409:ASN:ND2	2:D:409:ASN:H	1.99	0.59
2:A:171:GLN:O	2:A:175:GLU:HG3	2.03	0.59
2:B:495:LEU:HG	2:B:546:PHE:CE2	2.38	0.59
2:D:325:ASP:O	2:D:326:LEU:HD23	2.02	0.59
2:A:284:HIS:CE1	2:A:330:ASN:HB3	2.38	0.59
2:A:281:TYR:N	2:A:282:PRO:HD2	2.18	0.58
2:B:540:GLU:OE2	2:B:552:ARG:HD3	2.04	0.58
2:C:409:ASN:N	2:C:409:ASN:HD22	1.99	0.58
2:D:9:TYR:HB2	2:D:58:LEU:HD22	1.86	0.58
2:D:31:ASN:ND2	2:D:33:GLU:H	2.01	0.58
2:D:305:LYS:HA	2:D:311:LYS:HB3	1.86	0.58
2:D:327:TRP:O	2:D:328:LEU:HD23	2.04	0.58
2:C:97:MET:CE	2:C:308:ARG:HB3	2.32	0.58
2:C:268:PRO:HG3	2:C:353:PHE:CE2	2.39	0.58
2:D:504:ILE:HD12	2:D:504:ILE:H	1.68	0.58
2:B:496:ARG:HH11	2:B:496:ARG:HG2	1.68	0.57
2:C:19:VAL:HG13	2:C:561:VAL:HG11	1.86	0.57
2:A:271:PHE:CZ	2:A:275:TYR:HB2	2.39	0.57
2:A:328:LEU:HD12	2:A:333:LEU:HD13	1.86	0.57
2:D:310:TYR:CE1	2:D:316:LEU:HD23	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:87:PRO:O	2:B:89:THR:HG23	2.04	0.57
1:E:5:DT:C2	2:A:567:LEU:HD12	2.39	0.57
2:D:147:ASP:O	2:D:152:ARG:NH2	2.37	0.57
2:C:31:ASN:HD22	2:C:31:ASN:C	2.08	0.57
2:C:540:GLU:OE1	2:C:552:ARG:HD3	2.05	0.57
2:A:302:ILE:HD11	2:A:336:MET:HG3	1.86	0.57
2:B:5:PRO:HG2	2:C:5:PRO:CG	2.35	0.57
2:B:227:ARG:HD2	2:B:303:GLN:HE21	1.68	0.57
2:D:541:VAL:HA	2:D:545:ASN:ND2	2.20	0.56
2:B:367:TRP:HB2	2:B:386:LEU:HD21	1.87	0.56
2:C:289:ARG:HG3	2:C:348:ILE:CD1	2.29	0.56
2:D:253:LEU:HD21	2:D:437:ALA:HB1	1.86	0.56
2:D:262:LEU:HA	2:D:357:THR:HG22	1.88	0.56
2:C:85:GLY:HA3	2:C:114:LYS:HZ3	1.69	0.56
2:C:291:GLU:HG2	2:C:322:GLU:O	2.05	0.56
2:D:249:ASP:CG	2:D:486:GLU:HG3	2.24	0.56
2:A:416:LEU:HD12	2:A:417:GLY:H	1.70	0.56
2:B:68:ALA:O	2:B:72:ASN:HB2	2.05	0.56
2:D:50:TRP:O	2:D:54:VAL:HG22	2.05	0.56
2:C:306:ARG:HD3	2:C:310:TYR:CB	2.36	0.56
2:C:14:GLU:HB2	2:C:26:ALA:HB3	1.88	0.56
2:B:75:GLU:OE2	2:B:80:LYS:HA	2.06	0.56
2:B:102:MET:HG2	2:B:103:ILE:N	2.20	0.56
2:A:168:ASN:O	2:A:172:ILE:HG13	2.05	0.56
2:C:427:THR:OG1	2:C:428:PRO:HD3	2.05	0.56
2:C:554:MET:O	2:C:556:PRO:HD3	2.05	0.56
1:E:1:DT:C3'	1:E:2:DT:H5'	2.36	0.55
2:A:202:ILE:O	2:A:203:THR:CB	2.55	0.55
2:C:96:ARG:CB	2:C:96:ARG:NH1	2.55	0.55
2:D:180:GLN:NE2	2:D:381:LEU:HD13	2.20	0.55
2:A:294:LEU:HD22	2:A:300:PRO:HG3	1.89	0.55
2:D:407:LYS:HB2	2:D:409:ASN:HD21	1.70	0.55
2:B:210:VAL:C	2:B:212:PRO:HD3	2.27	0.55
1:H:5:DT:C2	2:D:567:LEU:HD12	2.42	0.55
2:A:162:GLU:O	2:A:166:ILE:HG13	2.07	0.55
2:A:495:LEU:O	2:A:496:ARG:HG3	2.06	0.55
2:C:31:ASN:ND2	2:C:33:GLU:N	2.55	0.55
2:D:543:PHE:C	2:D:545:ASN:H	2.10	0.55
2:A:159:THR:OG1	2:A:162:GLU:HG3	2.07	0.55
2:D:159:THR:OG1	2:D:162:GLU:HG3	2.07	0.55
2:D:302:ILE:HD11	2:D:336:MET:HG3	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:253:LEU:HD22	2:A:458:ASP:HB3	1.88	0.55
2:C:31:ASN:ND2	2:C:34:ASP:H	2.04	0.55
2:C:453:ILE:HD11	2:C:463:THR:CG2	2.37	0.55
2:A:287:HIS:HE1	2:A:325:ASP:OD1	1.90	0.55
2:D:409:ASN:HD22	2:D:409:ASN:H	1.49	0.55
2:D:538:LYS:C	2:D:540:GLU:H	2.09	0.55
2:C:51:VAL:O	2:C:117:THR:HG21	2.07	0.55
2:C:150:LYS:HD3	2:C:152:ARG:NH1	2.22	0.54
2:C:223:ARG:NH2	2:C:424:PRO:CG	2.70	0.54
2:D:31:ASN:HD22	2:D:33:GLU:H	1.56	0.54
2:B:217:GLY:O	2:B:221:GLU:HG3	2.07	0.54
2:C:223:ARG:HH21	2:C:424:PRO:CG	2.20	0.54
2:D:536:LYS:HG2	2:D:554:MET:HE2	1.89	0.54
2:D:496:ARG:HG3	2:D:496:ARG:NH1	2.23	0.54
2:D:501:ILE:HG22	2:D:528:VAL:HG13	1.89	0.54
2:A:410:GLY:O	2:A:562:PRO:HA	2.08	0.54
2:A:350:GLY:O	2:A:351:LEU:HD23	2.08	0.54
2:C:223:ARG:NH2	2:C:397:PRO:CG	2.67	0.54
2:C:289:ARG:CG	2:C:348:ILE:HD11	2.32	0.54
2:A:27:TYR:CE2	2:A:41:GLY:HA3	2.43	0.54
2:B:545:ASN:ND2	2:B:550:PHE:HD1	2.04	0.54
2:C:231:THR:HB	2:C:313:ASN:HD22	1.73	0.54
2:A:471:ILE:HG22	2:A:475:VAL:CG2	2.38	0.54
2:C:420:GLU:O	2:C:421:THR:OG1	2.23	0.54
2:C:489:PHE:HB3	2:C:504:ILE:HD13	1.90	0.54
2:D:14:GLU:HB2	2:D:26:ALA:HB3	1.89	0.54
2:D:397:PRO:HA	2:D:422:LYS:HG2	1.89	0.54
2:B:5:PRO:HG2	2:C:5:PRO:CB	2.37	0.54
2:C:31:ASN:HD22	2:C:33:GLU:N	2.05	0.54
2:C:305:LYS:HB3	2:D:344:ASN:CG	2.27	0.53
2:A:47:PHE:CD2	2:A:48:MET:HE2	2.43	0.53
2:D:253:LEU:HD22	2:D:458:ASP:HB3	1.90	0.53
2:C:421:THR:HG22	2:C:422:LYS:N	2.24	0.53
2:D:202:ILE:O	2:D:206:LYS:HB3	2.08	0.53
2:D:554:MET:O	2:D:556:PRO:HD3	2.09	0.53
2:C:281:TYR:N	2:C:282:PRO:CD	2.71	0.53
2:D:284:HIS:CE1	2:D:330:ASN:HB3	2.44	0.53
2:B:424:PRO:HB3	2:B:427:THR:HG23	1.91	0.53
2:A:501:ILE:HG23	2:A:546:PHE:CE2	2.44	0.53
2:B:501:ILE:HG22	2:B:528:VAL:HG22	1.90	0.53
2:D:500:TYR:CZ	2:D:529:LYS:HG3	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:203:THR:HG22	2:A:205:LYS:N	2.23	0.52
2:A:289:ARG:NH2	2:B:309:PHE:HB3	2.25	0.52
2:B:253:LEU:O	2:B:257:GLN:HG2	2.10	0.52
2:D:202:ILE:HB	2:D:206:LYS:HD3	1.92	0.52
2:B:160:PRO:O	2:B:163:TYR:HB3	2.10	0.52
2:B:550:PHE:HB3	2:B:574:ILE:HD12	1.91	0.52
2:D:295:LYS:HE3	2:D:340:TYR:O	2.09	0.52
2:A:407:LYS:O	2:A:409:ASN:N	2.42	0.52
2:B:140:THR:O	2:B:172:ILE:HD11	2.09	0.52
2:C:31:ASN:HD21	2:C:33:GLU:HB2	1.74	0.52
2:D:179:ILE:HD12	2:D:377:ALA:HB1	1.92	0.52
2:A:31:ASN:C	2:A:31:ASN:HD22	2.13	0.52
2:A:466:GLU:CD	2:A:466:GLU:H	2.12	0.52
2:C:185:LEU:HD22	2:C:193:ASP:HB3	1.91	0.52
2:D:311:LYS:O	2:D:313:ASN:N	2.43	0.52
2:B:236:ARG:NH1	3:B:601:HOH:O	2.42	0.52
2:C:50:TRP:CZ2	2:C:54:VAL:HG11	2.44	0.52
2:C:434:THR:CG2	2:C:438:ARG:HH12	2.20	0.52
2:A:31:ASN:HD22	2:A:32:ILE:N	2.08	0.52
2:A:549:GLY:O	2:A:573:THR:HG23	2.10	0.52
2:B:271:PHE:CZ	2:B:350:GLY:HA3	2.45	0.51
2:B:281:TYR:HB3	2:B:352:LYS:HB3	1.93	0.51
2:C:399:VAL:O	2:C:399:VAL:CG1	2.58	0.51
2:D:451:ARG:NH1	2:D:468:PRO:HG3	2.25	0.51
2:C:405:TYR:CE2	2:C:415:ARG:HG3	2.46	0.51
2:D:198:PHE:O	2:D:201:ILE:HG22	2.11	0.51
2:A:180:GLN:HE21	2:A:381:LEU:HD22	1.75	0.51
2:A:502:GLN:HB2	2:A:504:ILE:HD11	1.93	0.51
2:B:51:VAL:HG13	2:B:117:THR:HG21	1.93	0.51
2:A:223:ARG:HG2	2:A:427:THR:HG21	1.92	0.51
2:C:305:LYS:HD3	2:D:344:ASN:ND2	2.25	0.51
2:A:222:VAL:HG11	2:A:428:PRO:HG3	1.91	0.51
2:A:79:PHE:CE2	2:A:88:ASN:HA	2.45	0.51
2:D:333:LEU:CD1	2:D:336:MET:HE1	2.40	0.51
2:A:71:ILE:HG23	2:A:90:TYR:OH	2.11	0.51
2:B:257:GLN:OE1	2:B:436:TRP:HB3	2.11	0.51
2:D:281:TYR:HB3	2:D:352:LYS:HB3	1.91	0.51
2:D:469:ASP:HA	2:D:472:LYS:HG3	1.92	0.51
2:D:538:LYS:O	2:D:540:GLU:N	2.44	0.51
2:A:25:TRP:CD2	2:A:152:ARG:HD3	2.46	0.51
2:A:541:VAL:HG22	2:A:550:PHE:CZ	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:85:GLY:HA3	2:C:114:LYS:HZ2	1.74	0.51
2:C:468:PRO:O	2:C:472:LYS:HG3	2.10	0.51
2:A:201:ILE:HD11	2:A:366:LYS:HD3	1.93	0.51
2:B:9:TYR:HB2	2:B:58:LEU:HD22	1.93	0.51
2:B:360:PHE:O	2:B:364:ILE:HG12	2.11	0.51
2:C:223:ARG:NH1	2:C:227:ARG:NH2	2.59	0.51
2:C:540:GLU:OE2	2:C:554:MET:SD	2.68	0.51
2:D:48:MET:HG3	2:D:73:TRP:CD2	2.46	0.51
2:A:74:LEU:HD21	2:A:105:ILE:HD13	1.93	0.50
2:A:264:PRO:HD2	2:A:283:LEU:CD1	2.32	0.50
2:B:226:TYR:HD2	2:B:306:ARG:NH2	2.02	0.50
2:C:146:ILE:HG22	2:C:147:ASP:N	2.26	0.50
2:D:50:TRP:CZ2	2:D:54:VAL:HG11	2.45	0.50
2:C:47:PHE:O	2:C:51:VAL:HG23	2.11	0.50
2:C:249:ASP:HB2	2:C:486:GLU:HG2	1.92	0.50
2:A:8:MET:HB3	2:A:32:ILE:HD12	1.94	0.50
2:A:471:ILE:HG22	2:A:475:VAL:HG23	1.91	0.50
2:D:333:LEU:HD12	2:D:336:MET:CE	2.41	0.50
2:A:96:ARG:HB2	2:A:400:THR:O	2.10	0.50
2:D:52:LEU:O	2:D:107:LEU:CD1	2.60	0.50
2:D:70:ILE:HD13	2:D:119:ILE:HD13	1.93	0.50
2:D:499:THR:HA	2:D:529:LYS:O	2.11	0.50
2:B:274:LYS:HE2	3:B:631:HOH:O	2.12	0.50
2:D:31:ASN:HD22	2:D:32:ILE:N	2.10	0.50
2:C:161:GLU:HB2	3:C:603:HOH:O	2.11	0.50
2:C:506:MET:CG	2:C:525:LYS:HB2	2.42	0.50
2:A:86:LEU:HB2	2:A:89:THR:CB	2.40	0.50
2:C:75:GLU:OE1	2:C:75:GLU:HA	2.11	0.50
2:C:146:ILE:H	2:C:146:ILE:CD1	2.22	0.50
2:C:353:PHE:CD1	2:C:353:PHE:N	2.80	0.50
2:B:234:ASN:OD1	2:B:236:ARG:HG2	2.12	0.50
2:C:304:ILE:O	2:C:306:ARG:N	2.45	0.49
2:D:542:THR:OG1	2:D:545:ASN:HB3	2.12	0.49
1:G:5:DT:H5'	2:C:14:GLU:OE1	2.12	0.49
2:C:202:ILE:O	2:C:203:THR:CB	2.59	0.49
2:B:147:ASP:OD2	2:B:150:LYS:HE3	2.11	0.49
2:C:404:PRO:CD	2:C:414:PHE:CD2	2.88	0.49
2:A:281:TYR:HB3	2:A:352:LYS:HB3	1.94	0.49
2:C:508:GLU:HB2	2:C:522:THR:HG21	1.94	0.49
2:D:150:LYS:HD3	2:D:152:ARG:HH12	1.76	0.49
2:A:279:GLU:O	2:A:282:PRO:CD	2.61	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:6:ARG:HH22	2:B:118:VAL:HG23	1.78	0.49
2:C:86:LEU:O	2:C:89:THR:HG22	2.12	0.49
2:C:203:THR:HG22	2:C:205:LYS:N	2.28	0.49
2:B:273:GLY:HA2	2:B:347:TYR:O	2.13	0.49
2:B:476:ASP:OD2	2:B:479:LYS:HE3	2.12	0.49
1:G:1:DT:C3'	1:G:2:DT:H5'	2.35	0.49
2:A:496:ARG:HG3	2:A:496:ARG:NH1	2.22	0.49
2:D:245:GLY:HA3	2:D:489:PHE:CZ	2.48	0.49
2:A:224:TYR:HA	2:A:305:LYS:HZ2	1.76	0.49
2:A:549:GLY:O	2:A:550:PHE:C	2.50	0.49
2:B:227:ARG:HG2	2:B:227:ARG:HH11	1.78	0.49
2:A:8:MET:CB	2:A:32:ILE:HD12	2.43	0.48
2:C:68:ALA:CB	2:C:565:VAL:HG23	2.42	0.48
2:D:268:PRO:HG3	2:D:353:PHE:CE2	2.48	0.48
2:D:561:VAL:HG12	2:D:562:PRO:CD	2.43	0.48
2:A:245:GLY:HA3	2:A:489:PHE:CZ	2.48	0.48
2:C:74:LEU:HD11	2:C:105:ILE:CD1	2.43	0.48
2:C:570:ASP:OD1	2:C:571:THR:N	2.46	0.48
2:A:557:LYS:O	2:A:559:VAL:HG23	2.13	0.48
2:C:281:TYR:N	2:C:282:PRO:HD2	2.29	0.48
2:C:409:ASN:N	2:C:409:ASN:ND2	2.61	0.48
2:D:410:GLY:O	2:D:562:PRO:HA	2.13	0.48
2:D:502:GLN:HB2	2:D:504:ILE:HD11	1.95	0.48
2:A:100:TRP:N	2:A:100:TRP:CD1	2.81	0.48
2:A:400:THR:HG23	2:A:418:GLU:O	2.13	0.48
2:B:532:GLY:O	2:B:555:LYS:HE2	2.13	0.48
2:D:304:ILE:O	2:D:311:LYS:HB3	2.14	0.48
2:B:18:LYS:HB2	2:B:21:ASP:HB3	1.96	0.48
1:G:4:DT:H1'	2:C:62:ASN:HD22	1.79	0.48
2:B:125:LYS:NZ	2:B:193:ASP:OD2	2.46	0.48
2:C:7:LYS:O	2:C:56:ALA:HB1	2.14	0.48
2:A:399:VAL:HG12	2:A:399:VAL:O	2.14	0.48
2:C:82:SER:HB3	2:C:89:THR:HG23	1.94	0.48
2:A:252:SER:HB2	2:A:480:LEU:HD12	1.95	0.48
2:D:252:SER:HA	3:D:629:HOH:O	2.14	0.48
2:A:39:LYS:HG3	2:A:40:ILE:N	2.27	0.48
2:A:40:ILE:HD12	2:A:163:TYR:CE1	2.47	0.48
2:A:380:GLN:HE22	2:A:383:LYS:NZ	2.12	0.48
2:B:255:PRO:HD3	3:B:612:HOH:O	2.13	0.48
2:C:22:CYS:SG	2:C:566:VAL:HG23	2.54	0.48
2:C:203:THR:HG22	2:C:205:LYS:H	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:330:ASN:O	2:C:334:GLU:HG2	2.13	0.47
2:C:406:LEU:HD12	2:C:411:ALA:O	2.14	0.47
2:C:453:ILE:HD11	2:C:463:THR:N	2.29	0.47
2:D:150:LYS:HD3	2:D:152:ARG:NH1	2.29	0.47
2:D:302:ILE:HD11	2:D:336:MET:CG	2.44	0.47
2:A:48:MET:HE2	2:A:51:VAL:HG21	1.95	0.47
2:D:561:VAL:CG1	2:D:562:PRO:CD	2.92	0.47
2:B:31:ASN:HD22	2:B:31:ASN:C	2.13	0.47
2:B:300:PRO:HB2	2:B:315:TYR:HB2	1.97	0.47
2:C:470:VAL:HG23	2:C:471:ILE:HG23	1.95	0.47
2:A:61:HIS:O	2:A:62:ASN:CB	2.62	0.47
2:B:11:CYS:HA	2:B:28:GLY:O	2.14	0.47
2:B:268:PRO:HG3	2:B:353:PHE:CE2	2.49	0.47
2:C:207:PHE:CE1	2:C:211:PHE:HD1	2.33	0.47
1:G:4:DT:C1'	2:C:62:ASN:HD22	2.28	0.47
2:A:302:ILE:HD11	2:A:336:MET:CG	2.45	0.47
2:C:538:LYS:C	2:C:540:GLU:H	2.17	0.47
2:D:561:VAL:HG13	2:D:562:PRO:HD2	1.95	0.47
2:A:62:ASN:O	2:A:63:LEU:C	2.53	0.47
2:B:94:ILE:HG23	2:B:100:TRP:CD1	2.50	0.47
2:B:303:GLN:NE2	3:B:639:HOH:O	2.47	0.47
2:C:48:MET:CE	2:C:51:VAL:HG21	2.45	0.47
2:C:223:ARG:HH21	2:C:424:PRO:HG2	1.80	0.47
2:A:50:TRP:CE2	2:A:54:VAL:HG11	2.50	0.47
2:A:86:LEU:C	2:A:89:THR:HB	2.33	0.47
2:A:319:SER:HB2	2:A:322:GLU:O	2.14	0.47
2:C:403:VAL:CG2	2:C:417:GLY:HA3	2.42	0.47
2:D:551:SER:O	2:D:552:ARG:CG	2.63	0.47
2:B:61:HIS:HA	2:B:122:SER:OG	2.14	0.47
2:A:514:VAL:HG12	2:A:515:GLU:N	2.30	0.46
2:B:5:PRO:HG2	2:C:5:PRO:HB3	1.97	0.46
2:B:73:TRP:CE3	2:B:74:LEU:HD23	2.50	0.46
2:B:73:TRP:HE3	2:B:74:LEU:HD23	1.80	0.46
2:C:288:ILE:HD13	2:C:347:TYR:CE2	2.49	0.46
2:D:254:TYR:HB2	2:D:255:PRO:HD3	1.97	0.46
2:A:66:ALA:O	2:A:70:ILE:HG13	2.15	0.46
2:B:9:TYR:HB2	2:B:58:LEU:CD2	2.45	0.46
2:B:106:CYS:HA	2:B:116:HIS:HB3	1.97	0.46
2:B:238:LYS:HG2	2:B:239:GLU:HG3	1.97	0.46
2:A:52:LEU:CD2	2:A:107:LEU:HD21	2.30	0.46
2:A:75:GLU:HB3	2:A:406:LEU:CD1	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:101:TYR:HB3	2:A:188:MET:CE	2.45	0.46
2:D:287:HIS:HE1	2:D:325:ASP:OD1	1.98	0.46
2:A:570:ASP:OD1	2:A:571:THR:N	2.38	0.46
2:B:561:VAL:HG13	2:B:562:PRO:HD2	1.96	0.46
2:B:568:VAL:HG12	2:B:569:ASP:N	2.31	0.46
2:C:350:GLY:C	2:C:351:LEU:HD23	2.35	0.46
2:D:52:LEU:O	2:D:107:LEU:HD11	2.16	0.46
2:D:76:ARG:NH2	2:D:410:GLY:O	2.49	0.46
2:D:305:LYS:O	2:D:306:ARG:CB	2.63	0.46
2:A:102:MET:HG3	2:A:118:VAL:CG1	2.46	0.46
2:A:281:TYR:HA	2:A:353:PHE:O	2.15	0.46
2:B:405:TYR:CE1	2:B:407:LYS:HA	2.50	0.46
2:B:515:GLU:H	2:B:515:GLU:CD	2.19	0.46
2:B:534:THR:O	2:B:538:LYS:HG3	2.15	0.46
2:D:333:LEU:CD1	2:D:336:MET:CE	2.93	0.46
2:C:109:TYR:N	2:C:109:TYR:CD1	2.83	0.46
2:B:187:ARG:HB3	2:B:192:SER:HB2	1.98	0.46
2:A:556:PRO:HA	2:A:568:VAL:O	2.16	0.46
2:A:110:LYS:HG3	2:A:115:ILE:HD11	1.98	0.45
2:C:17:THR:HG21	2:C:149:HIS:CE1	2.51	0.45
2:C:254:TYR:HB2	2:C:255:PRO:HD3	1.97	0.45
2:D:570:ASP:OD1	2:D:571:THR:N	2.41	0.45
2:A:43:SER:O	2:A:46:GLU:HB3	2.15	0.45
2:A:101:TYR:O	2:A:102:MET:HB2	2.16	0.45
2:A:540:GLU:O	2:A:545:ASN:ND2	2.48	0.45
2:A:565:VAL:HG12	2:A:566:VAL:N	2.30	0.45
2:C:268:PRO:HG3	2:C:353:PHE:HE2	1.79	0.45
2:D:397:PRO:O	2:D:421:THR:HA	2.16	0.45
2:A:64:LYS:HA	2:A:100:TRP:CD1	2.51	0.45
2:A:553:LYS:HA	2:A:570:ASP:O	2.16	0.45
1:E:3:DT:H5'	2:A:129:PRO:CG	2.20	0.45
2:A:309:PHE:O	2:A:309:PHE:CD2	2.69	0.45
2:B:55:GLN:CA	2:B:116:HIS:O	2.61	0.45
2:B:237:PHE:CE1	2:B:453:ILE:HD12	2.51	0.45
2:C:31:ASN:ND2	2:C:31:ASN:C	2.69	0.45
2:C:48:MET:HE2	2:C:51:VAL:HG21	1.97	0.45
2:B:486:GLU:O	2:B:515:GLU:HG2	2.16	0.45
2:C:8:MET:HB3	2:C:32:ILE:HD12	1.97	0.45
2:D:226:TYR:O	2:D:227:ARG:HG3	2.16	0.45
2:C:27:TYR:CD2	2:C:47:PHE:HB2	2.51	0.45
2:A:252:SER:HB2	2:A:480:LEU:CD1	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:288:ILE:HG12	2:A:289:ARG:N	2.32	0.45
2:C:150:LYS:O	2:C:152:ARG:HG3	2.17	0.45
2:A:76:ARG:NH2	2:A:410:GLY:O	2.50	0.45
2:D:533:MET:HG2	2:D:537:ILE:HB	1.98	0.45
2:A:22:CYS:O	2:A:22:CYS:SG	2.75	0.45
2:A:101:TYR:HB3	2:A:188:MET:HE3	1.99	0.45
2:C:86:LEU:O	2:C:89:THR:CG2	2.65	0.45
2:C:40:ILE:HD12	2:C:166:ILE:CG2	2.47	0.44
2:C:253:LEU:O	2:C:257:GLN:HG2	2.17	0.44
2:A:271:PHE:CZ	2:A:350:GLY:HA3	2.52	0.44
2:A:412:LEU:HD23	2:A:560:GLN:NE2	2.32	0.44
2:A:575:LYS:OXT	2:A:575:LYS:HG3	2.17	0.44
2:B:384:LEU:HD23	2:B:384:LEU:HA	1.81	0.44
2:C:496:ARG:NH1	2:C:575:LYS:OXT	2.49	0.44
2:B:48:MET:CE	2:B:70:ILE:HG12	2.47	0.44
2:C:109:TYR:CZ	2:C:114:LYS:HG2	2.52	0.44
2:C:289:ARG:HB2	2:C:346:GLU:HB2	2.00	0.44
2:B:150:LYS:O	2:B:152:ARG:HG3	2.17	0.44
2:B:308:ARG:O	2:B:309:PHE:CB	2.65	0.44
2:C:150:LYS:HD3	2:C:152:ARG:HH12	1.82	0.44
2:D:231:THR:HG22	2:D:497:GLN:HB3	1.99	0.44
2:A:264:PRO:CG	2:A:283:LEU:CD1	2.89	0.44
2:C:307:SER:HA	2:D:323:ILE:HD12	1.99	0.44
2:D:553:LYS:C	2:D:554:MET:HG3	2.38	0.44
2:B:243:GLY:O	2:B:491:ARG:HA	2.18	0.44
2:D:400:THR:OG1	2:D:419:GLU:HA	2.18	0.44
2:A:243:GLY:O	2:A:491:ARG:HA	2.16	0.44
2:B:241:GLU:HG2	3:B:607:HOH:O	2.17	0.44
2:D:541:VAL:HA	2:D:545:ASN:HD21	1.80	0.44
2:B:96:ARG:O	2:B:402:LYS:HE3	2.18	0.44
2:B:303:GLN:OE1	2:B:313:ASN:ND2	2.51	0.44
2:B:313:ASN:HB2	2:B:497:GLN:OE1	2.18	0.44
2:C:289:ARG:NH2	2:D:341:ASP:OD1	2.50	0.44
2:C:305:LYS:HB3	2:D:344:ASN:OD1	2.18	0.43
2:D:236:ARG:NH1	3:D:619:HOH:O	2.51	0.43
2:D:538:LYS:C	2:D:540:GLU:N	2.71	0.43
2:B:522:THR:HG22	2:B:523:ASP:CG	2.37	0.43
2:C:181:PHE:C	2:C:183:GLN:H	2.22	0.43
2:B:262:LEU:HB2	3:B:618:HOH:O	2.18	0.43
2:A:245:GLY:HA3	2:A:489:PHE:CE1	2.53	0.43
2:A:551:SER:O	2:A:552:ARG:CD	2.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:264:PRO:O	2:C:265:TYR:CB	2.64	0.43
2:D:536:LYS:HG2	2:D:554:MET:CE	2.48	0.43
2:B:8:MET:HA	2:B:57:ASP:O	2.19	0.43
2:C:97:MET:HE3	2:C:308:ARG:HB3	1.99	0.43
2:C:141:VAL:O	2:C:141:VAL:HG13	2.19	0.43
2:A:48:MET:HG3	2:A:73:TRP:CD2	2.54	0.43
2:A:70:ILE:HD13	2:A:119:ILE:CD1	2.49	0.43
2:C:529:LYS:HD3	2:C:529:LYS:HA	1.74	0.43
1:G:4:DT:OP1	1:G:4:DT:C4'	2.60	0.43
2:A:64:LYS:HG3	2:A:100:TRP:NE1	2.34	0.43
2:A:84:ASP:O	2:A:85:GLY:O	2.36	0.43
2:A:304:ILE:O	2:A:305:LYS:C	2.57	0.43
2:C:403:VAL:HG23	2:C:417:GLY:CA	2.48	0.43
2:D:308:ARG:HD2	2:D:308:ARG:HA	1.62	0.43
2:A:475:VAL:HA	2:A:483:TRP:O	2.19	0.43
2:B:76:ARG:NH2	2:B:410:GLY:O	2.49	0.43
2:B:556:PRO:HA	2:B:568:VAL:O	2.19	0.43
2:C:486:GLU:O	2:C:515:GLU:HG2	2.18	0.43
2:A:19:VAL:HG23	3:A:579:HOH:O	2.19	0.43
2:C:536:LYS:HE2	2:C:554:MET:CE	2.49	0.43
2:D:128:PHE:HB2	2:D:133:ILE:HG13	2.01	0.43
2:A:19:VAL:CG1	2:A:561:VAL:HG11	2.49	0.42
2:C:100:TRP:CZ3	2:C:103:ILE:HD11	2.54	0.42
2:A:201:ILE:HD11	2:A:366:LYS:CD	2.49	0.42
2:D:87:PRO:O	2:D:89:THR:HG23	2.19	0.42
2:A:310:TYR:OH	2:A:322:GLU:HB2	2.19	0.42
2:A:411:ALA:HA	2:A:562:PRO:HA	2.01	0.42
2:A:566:VAL:HG12	2:A:567:LEU:N	2.35	0.42
2:B:15:THR:HG21	2:B:69:PHE:CZ	2.54	0.42
2:B:31:ASN:HB3	2:B:34:ASP:O	2.19	0.42
2:B:397:PRO:O	2:B:399:VAL:HG23	2.18	0.42
2:C:471:ILE:O	2:C:475:VAL:HG23	2.19	0.42
2:D:508:GLU:HG3	2:D:512:LYS:O	2.19	0.42
2:A:48:MET:CE	2:A:51:VAL:HG21	2.49	0.42
2:B:181:PHE:CE2	2:B:186:ASP:HA	2.54	0.42
2:B:284:HIS:HA	2:B:351:LEU:O	2.18	0.42
2:B:404:PRO:O	2:B:405:TYR:HB3	2.19	0.42
2:C:310:TYR:HE1	2:D:289:ARG:HD2	1.84	0.42
2:D:18:LYS:HB2	2:D:21:ASP:HB3	2.01	0.42
2:D:219:ASP:O	2:D:223:ARG:HB2	2.20	0.42
1:G:5:DT:H2'	2:C:148:TYR:CD1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:254:TYR:HB2	2:A:255:PRO:HD3	2.02	0.42
2:B:507:LYS:HG3	2:B:509:VAL:HG23	1.99	0.42
2:C:59:TYR:HB3	2:C:122:SER:HB3	2.01	0.42
2:D:201:ILE:HD13	2:D:363:PHE:HA	2.02	0.42
2:D:294:LEU:HD22	2:D:300:PRO:HG3	2.01	0.42
2:B:304:ILE:HG12	2:B:316:LEU:HG	2.02	0.42
2:B:517:SER:O	2:B:521:TYR:HB3	2.20	0.42
2:B:566:VAL:HG12	2:B:567:LEU:N	2.34	0.42
2:C:31:ASN:ND2	2:C:34:ASP:N	2.67	0.42
2:C:307:SER:HG	2:C:310:TYR:HD1	1.65	0.42
2:D:27:TYR:CD1	2:D:27:TYR:C	2.92	0.42
2:D:171:GLN:NE2	3:D:606:HOH:O	2.53	0.42
2:D:289:ARG:HA	2:D:324:ALA:O	2.20	0.42
2:A:110:LYS:HD2	2:A:113:ARG:NH2	2.34	0.42
2:C:71:ILE:HG21	2:C:412:LEU:HD21	2.00	0.42
2:C:155:GLY:O	2:C:156:TYR:C	2.58	0.42
2:D:50:TRP:NE1	2:D:54:VAL:CG1	2.82	0.42
2:D:547:LYS:HB2	3:D:622:HOH:O	2.19	0.42
2:A:52:LEU:O	2:A:107:LEU:HD11	2.20	0.42
2:A:466:GLU:CD	2:A:466:GLU:N	2.72	0.42
2:B:50:TRP:NE1	2:B:54:VAL:HG11	2.34	0.42
2:B:248:PHE:O	2:B:459:SER:HA	2.20	0.42
2:B:424:PRO:CB	2:B:427:THR:HG23	2.50	0.42
2:C:453:ILE:CD1	2:C:463:THR:N	2.83	0.42
2:D:187:ARG:HD2	2:D:187:ARG:HA	1.80	0.42
1:E:2:DT:H5"	1:E:2:DT:H6	1.84	0.42
1:H:1:DT:C3'	1:H:2:DT:C5'	2.90	0.42
2:B:281:TYR:HB2	2:B:352:LYS:HD2	2.02	0.42
2:C:40:ILE:HB	2:C:163:TYR:CE1	2.55	0.42
2:C:100:TRP:HZ3	2:C:103:ILE:HD11	1.85	0.42
1:E:3:DT:C2'	1:E:4:DT:O5'	2.60	0.41
2:C:236:ARG:NH2	3:C:618:HOH:O	2.52	0.41
2:D:305:LYS:NZ	3:D:615:HOH:O	2.53	0.41
2:A:50:TRP:O	2:A:54:VAL:HG22	2.20	0.41
2:A:237:PHE:HD2	2:A:242:ILE:HG21	1.85	0.41
2:D:72:ASN:O	2:D:76:ARG:HG3	2.19	0.41
2:D:94:ILE:HA	2:D:99:GLN:O	2.20	0.41
2:A:289:ARG:CD	2:A:348:ILE:HD11	2.50	0.41
2:A:310:TYR:O	2:A:311:LYS:C	2.58	0.41
2:C:48:MET:HG3	2:C:73:TRP:CD2	2.55	0.41
2:C:74:LEU:O	2:C:79:PHE:HB2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:86:LEU:O	2:C:87:PRO:C	2.59	0.41
2:B:204:THR:O	2:B:208:LYS:HG3	2.20	0.41
2:B:286:GLN:CG	2:B:288:ILE:CG2	2.96	0.41
1:H:5:DT:H2'	2:D:148:TYR:CD2	2.55	0.41
2:C:15:THR:HG21	2:C:69:PHE:CZ	2.56	0.41
2:D:271:PHE:CZ	2:D:350:GLY:HA3	2.56	0.41
2:D:287:HIS:HB3	2:D:349:SER:O	2.21	0.41
2:A:86:LEU:O	2:A:87:PRO:C	2.57	0.41
2:A:258:MET:HE1	2:A:389:LEU:HD23	2.01	0.41
2:A:491:ARG:HG3	2:A:543:PHE:CZ	2.55	0.41
2:B:270:VAL:HG12	2:B:271:PHE:N	2.35	0.41
2:B:306:ARG:HB2	2:B:307:SER:H	1.71	0.41
2:B:501:ILE:HG22	2:B:528:VAL:HG13	2.02	0.41
2:D:333:LEU:HD12	2:D:336:MET:HE2	2.01	0.41
2:D:551:SER:HA	2:D:572:PHE:O	2.20	0.41
2:A:371:LYS:HE3	3:A:637:HOH:O	2.19	0.41
2:B:94:ILE:HA	2:B:99:GLN:O	2.21	0.41
2:B:227:ARG:HD2	2:B:303:GLN:NE2	2.34	0.41
2:B:253:LEU:HD22	2:B:458:ASP:HB3	2.01	0.41
1:H:2:DT:H6	1:H:2:DT:H5"	1.85	0.41
2:B:187:ARG:HB3	2:B:192:SER:CB	2.50	0.41
2:C:223:ARG:NH1	2:C:397:PRO:HD2	2.36	0.41
2:D:35:HIS:N	2:D:35:HIS:CD2	2.88	0.41
2:D:304:ILE:HD12	2:D:309:PHE:CE1	2.55	0.41
2:A:44:LEU:CD1	2:A:48:MET:HG2	2.51	0.41
2:A:218:LEU:O	2:A:222:VAL:HG23	2.21	0.41
2:A:449:TYR:O	2:A:452:ILE:HG22	2.20	0.41
2:B:11:CYS:SG	2:B:58:LEU:HB3	2.61	0.41
2:C:553:LYS:O	2:C:554:MET:HG3	2.21	0.41
2:D:304:ILE:CD1	2:D:326:LEU:HD21	2.45	0.41
2:D:551:SER:C	2:D:552:ARG:HG3	2.40	0.41
1:G:5:DT:C2	2:C:567:LEU:HD12	2.56	0.41
2:A:453:ILE:HD11	2:A:463:THR:HG23	2.02	0.41
2:B:490:LYS:HD2	2:B:524:ILE:HD13	2.02	0.41
2:B:28:GLY:HA2	2:B:39:LYS:O	2.21	0.40
2:B:364:ILE:O	2:B:368:THR:OG1	2.26	0.40
2:B:496:ARG:NH1	2:B:499:THR:OG1	2.54	0.40
2:B:554:MET:O	2:B:556:PRO:HD3	2.21	0.40
2:D:61:HIS:O	2:D:62:ASN:HB3	2.21	0.40
2:A:486:GLU:O	2:A:515:GLU:HG2	2.20	0.40
2:C:52:LEU:HB3	2:C:107:LEU:HD11	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:223:ARG:HH21	2:C:424:PRO:HG3	1.81	0.40
2:C:408:GLU:CD	2:C:408:GLU:N	2.71	0.40
2:C:537:ILE:HG21	2:C:572:PHE:CE2	2.56	0.40
2:D:292:PHE:O	2:D:318:SER:HA	2.22	0.40
2:A:280:ASP:C	2:A:282:PRO:HD2	2.41	0.40
2:B:449:TYR:O	2:B:452:ILE:HG22	2.21	0.40
2:C:557:LYS:HA	2:C:558:PRO:HD3	1.92	0.40
2:D:47:PHE:O	2:D:50:TRP:HB3	2.21	0.40
2:D:104:ASP:OD2	2:D:116:HIS:HD2	2.04	0.40
2:A:89:THR:CG2	2:A:90:TYR:N	2.83	0.40
2:A:359:LEU:HB2	3:A:688:HOH:O	2.21	0.40
2:A:501:ILE:O	2:A:501:ILE:HG13	2.20	0.40
2:B:102:MET:HE3	2:B:104:ASP:HB2	2.03	0.40
2:B:452:ILE:HA	2:B:462:LEU:HD23	2.01	0.40
2:D:335:LEU:HD21	2:D:442:ILE:HD12	2.03	0.40
1:F:4:DT:O2	2:B:65:PHE:HB2	2.22	0.40
2:A:224:TYR:HD2	2:A:305:LYS:HZ2	1.70	0.40
2:A:343:TYR:CE2	2:B:289:ARG:HD3	2.57	0.40
2:A:540:GLU:HB3	2:A:552:ARG:HH12	1.85	0.40
2:B:128:PHE:HB2	2:B:133:ILE:HG13	2.03	0.40
2:C:288:ILE:HD12	2:C:346:GLU:O	2.22	0.40
2:C:334:GLU:HA	2:C:334:GLU:OE1	2.20	0.40
2:D:557:LYS:HA	2:D:558:PRO:HD3	1.88	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	569/575 (99%)	506 (89%)	47 (8%)	16 (3%)	5 11
2	B	569/575 (99%)	513 (90%)	51 (9%)	5 (1%)	17 40

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	C	569/575 (99%)	518 (91%)	39 (7%)	12 (2%)	7 18
2	D	569/575 (99%)	519 (91%)	39 (7%)	11 (2%)	8 20
All	All	2276/2300 (99%)	2056 (90%)	176 (8%)	44 (2%)	8 20

All (44) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	A	62	ASN
2	A	85	GLY
2	A	309	PHE
2	A	408	GLU
2	A	185	LEU
2	A	306	ARG
2	A	409	ASN
2	A	418	GLU
2	B	306	ARG
2	B	408	GLU
2	C	85	GLY
2	C	182	LYS
2	D	312	GLY
2	D	395	SER
2	D	539	LYS
2	A	426	TYR
2	A	569	ASP
2	C	117	THR
2	C	305	LYS
2	C	397	PRO
2	D	62	ASN
2	D	97	MET
2	D	310	TYR
2	A	550	PHE
2	C	203	THR
2	C	401	GLY
2	C	426	TYR
2	C	457	THR
2	D	203	THR
2	D	306	ARG
2	D	457	THR
2	A	127	PRO
2	A	457	THR
2	B	127	PRO

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Mol	Chain	Res	Type
2	B	405	TYR
2	C	539	LYS
2	A	102	MET
2	A	112	LYS
2	A	203	THR
2	C	127	PRO
2	D	425	VAL
2	D	321	GLY
2	C	87	PRO
2	B	424	PRO

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	502/506 (99%)	487 (97%)	15 (3%)	41	70
2	B	502/506 (99%)	486 (97%)	16 (3%)	39	68
2	C	502/506 (99%)	479 (95%)	23 (5%)	27	54
2	D	502/506 (99%)	492 (98%)	10 (2%)	55	81
All	All	2008/2024 (99%)	1944 (97%)	64 (3%)	39	68

All (64) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	A	16	THR
2	A	22	CYS
2	A	31	ASN
2	A	87	PRO
2	A	89	THR
2	A	145	ASP
2	A	149	HIS
2	A	168	ASN
2	A	268	PRO
2	A	282	PRO
2	A	335	LEU

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Mol	Chain	Res	Type
2	A	390	TYR
2	A	396	ASN
2	A	397	PRO
2	A	398	ASP
2	B	16	THR
2	B	31	ASN
2	B	43	SER
2	B	72	ASN
2	B	116	HIS
2	B	131	LYS
2	B	145	ASP
2	B	185	LEU
2	B	194	SER
2	B	223	ARG
2	B	249	ASP
2	B	260	SER
2	B	313	ASN
2	B	318	SER
2	B	545	ASN
2	B	552	ARG
2	C	16	THR
2	C	31	ASN
2	C	87	PRO
2	C	89	THR
2	C	96	ARG
2	C	109	TYR
2	C	116	HIS
2	C	127	PRO
2	C	128	PHE
2	C	145	ASP
2	C	186	ASP
2	C	264	PRO
2	C	265	TYR
2	C	268	PRO
2	C	282	PRO
2	C	314	GLU
2	C	353	PHE
2	C	397	PRO
2	C	404	PRO
2	C	409	ASN
2	C	412	LEU
2	C	485	HIS

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Mol	Chain	Res	Type
2	C	552	ARG
2	D	31	ASN
2	D	45	ASP
2	D	54	VAL
2	D	97	MET
2	D	187	ARG
2	D	188	MET
2	D	260	SER
2	D	310	TYR
2	D	384	LEU
2	D	409	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (31) such sidechains are listed below:

Mol	Chain	Res	Type
2	A	31	ASN
2	A	171	GLN
2	A	180	GLN
2	A	287	HIS
2	A	380	GLN
2	A	485	HIS
2	B	31	ASN
2	B	171	GLN
2	B	287	HIS
2	B	303	GLN
2	B	313	ASN
2	B	396	ASN
2	B	545	ASN
2	C	31	ASN
2	C	35	HIS
2	C	55	GLN
2	C	62	ASN
2	C	171	GLN
2	C	313	ASN
2	C	380	GLN
2	C	409	ASN
2	C	502	GLN
2	D	31	ASN
2	D	35	HIS
2	D	171	GLN
2	D	180	GLN
2	D	287	HIS

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Mol	Chain	Res	Type
2	D	396	ASN
2	D	409	ASN
2	D	485	HIS
2	D	545	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers

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

6.1 Protein, DNA and RNA chains

Unable to reproduce the depositors R factor - this section is therefore empty.

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

Unable to reproduce the depositors R factor - this section is therefore empty.

6.3 Carbohydrates

Unable to reproduce the depositors R factor - this section is therefore empty.

6.4 Ligands

Unable to reproduce the depositors R factor - this section is therefore empty.

6.5 Other polymers

Unable to reproduce the depositors R factor - this section is therefore empty.