Full wwPDB X-ray Structure Validation Report ⓘ

May 27, 2020 – 02:03 am BST

PDB ID	:	2PI5
Title	:	T7 RNA polymerase complexed with a phi10 promoter
Authors	:	Kennedy, W.P.; Momand, J.R.; Yin, Y.W.
Deposited on	:	2007-04-12
Resolution	:	2.90 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 ①) were used in the production of this report:

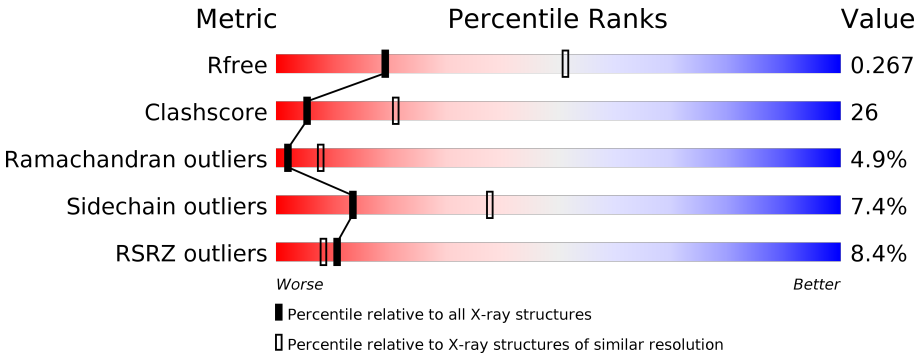
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.11
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.11

1 Overall quality at a glance

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

The reported resolution of this entry is 2.90 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	1957 (2.90-2.90)
Clashscore	141614	2172 (2.90-2.90)
Ramachandran outliers	138981	2115 (2.90-2.90)
Sidechain outliers	138945	2117 (2.90-2.90)
RSRZ outliers	127900	1906 (2.90-2.90)

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 on 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% 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	T	22	9% 18% 64% 18%
2	P	14	7% 29% 64% 7%
3	A	878	8% 54% 37% 7%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 7451 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a DNA chain called 5'-D(*CP*TP*TP*C*CP*TP*AP*TP*AP*GP*TP*GP*AP*GP*TP*CP*GP*TP*AP*TP*TP*A)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	T	18	368	178	65	108	17	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	P	14	280	136	50	81	13	0	0	0

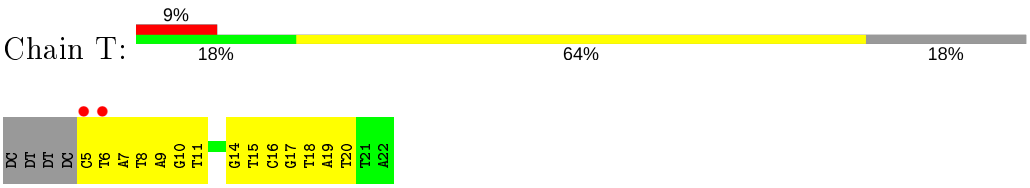
- Molecule 3 is a protein called DNA-directed RNA polymerase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	A	862	6803	4334	1178	1254	37	0	0	0

3 Residue-property plots (i)

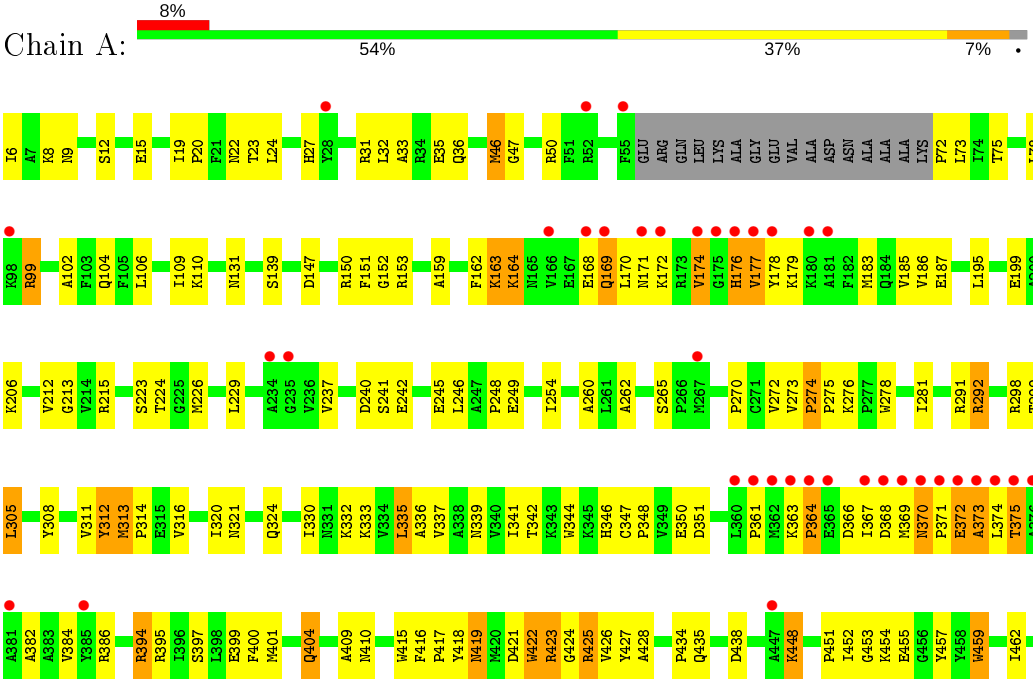
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are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

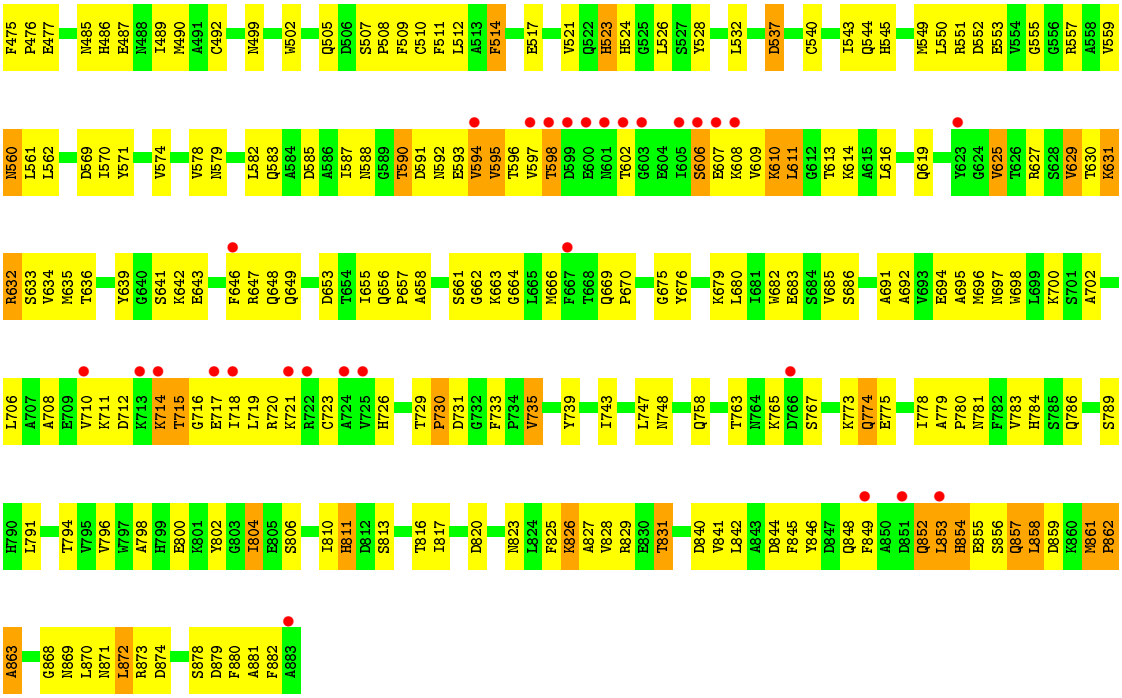
• Molecule 1: 5'-D(*CP*TP*TP*C*CP*TP*AP*TP*AP*GP*TP*GP*AP*GP*TP*CP*GP*TP*AP*TP*TP*A)-3'



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

• Molecule 3: DNA-directed RNA polymerase




F475 P476 E477 N485 H486 E487 N488 I489 M490 A491 C492 N499 W502 Q505 D506 S507 P508 F509 C510 F511 L512 A513 F514 E517 V521 Q522 H523 H524 G525 L526 S527 Y528 L532 D537 C540 I543 Q544 H545 M549 L550 R551 D552 E553 V554 G555 G556 R557 A558 V559
N560 L561 L562 D569 I570 Y571 V574 V578 N579 L582 Q583 A584 D585 A586 I587 N588 G589 T590 D591 N592 E593 V594 V595 T596 V597 T598 D599 E600 N601 T602 G603 E604 I605 S606 E607 K608 V609 K610 L611 G612 T613 K614 A615 L616 Q619 Y623 G624 V625 T626 R627 S628 V629 T630 K631
R632 S633 V634 M635 T636 Y639 G640 S641 K642 E643 F646 R647 Q648 Q649 D653 T654 I655 Q656 P657 A658 S661 G662 K663 G664 L665 M666 F667 T668 Q669 P670 G675 Y676 K679 L680 I681 W682 E683 S684 V685 S686 A691 A692 V693 E694 A695 M696 N697 W698 L699 K700 S701 A702
L706 A707 A708 E709 V710 K711 D712 K713 K714 T715 G716 E717 I718 L719 R720 K721 R722 C723 A724 V725 H726 T729 P730 D731 G732 F733 P734 V735 Y739 I743 L747 N748 Q758 T763 N764 K765 D766 S767 K773 Q774 E775 I778 A779 P780 N781 F782 V783 H784 S785 Q786 S789
H790 L791 T794 V795 V796 W797 A798 H799 E800 K801 Y802 G803 I804 E805 S806 I810 H811 D812 S813 T816 I817 D820 N823 L824 F825 K826 A827 V828 R829 E830 T831 D840 V841 L842 A843 D844 F845 Y846 D847 Q848 F849 A850 D851 Q852 L853 H854 E855 S856 Q857 L858 D859 K860 M861 P862
A863 G868 N869 L870 N871 L872 R873 D874 S878 D879 F880 A881 F882 A883

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	224.45Å 73.79Å 80.31Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	39.04 – 2.90 39.18 – 2.90	Depositor EDS
% Data completeness (in resolution range)	89.4 (39.04-2.90) 89.5 (39.18-2.90)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.13	Depositor
$< I/\sigma(I) >$ [1]	1.78 (at 2.90Å)	Xtriage
Refinement program	CNS 1.2	Depositor
R, R_{free}	0.249 , 0.268 0.249 , 0.267	Depositor DCC
R_{free} test set	1306 reflections (4.40%)	wwPDB-VP
Wilson B-factor (Å^2)	73.8	Xtriage
Anisotropy	0.167	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 38.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	7451	wwPDB-VP
Average B, all atoms (Å^2)	84.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.74% 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	T	0.69	0/412	0.82	0/635
2	P	0.59	0/313	0.93	1/480 (0.2%)
3	A	0.49	0/6959	0.64	0/9416
All	All	0.50	0/7684	0.67	1/10531 (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	T	0	3
2	P	0	1
All	All	0	4

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	P	106	DC	O4'-C1'-N1	5.39	111.77	108.00

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	P	106	DC	Sidechain
1	T	10	DG	Sidechain
1	T	11	DT	Sidechain
1	T	9	DA	Sidechain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	T	368	0	207	12	0
2	P	280	0	160	9	0
3	A	6803	0	6764	362	0
All	All	7451	0	7131	379	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 26.

All (379) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:473:VAL:HG22	3:A:474:PRO:HD2	1.20	1.18
3:A:804:ILE:HG12	3:A:820:ASP:HB3	1.48	0.94
3:A:278:TRP:H	3:A:321:ASN:HD21	0.92	0.91
3:A:595:VAL:HG12	3:A:608:LYS:HA	1.51	0.90
3:A:774:GLN:HA	3:A:774:GLN:HE21	1.36	0.90
3:A:816:THR:HG22	3:A:817:ILE:H	1.39	0.87
3:A:425:ARG:HH21	3:A:811:HIS:HB3	1.39	0.87
3:A:473:VAL:CG2	3:A:474:PRO:HD2	2.06	0.85
2:P:103:DA:H2"	2:P:104:DT:H5'	1.57	0.85
3:A:305:LEU:HD22	3:A:305:LEU:O	1.76	0.85
3:A:663:LYS:HG2	3:A:664:GLY:H	1.40	0.85
3:A:595:VAL:HG23	3:A:597:VAL:H	1.40	0.85
3:A:278:TRP:H	3:A:321:ASN:ND2	1.74	0.84
3:A:367:ILE:HD12	3:A:374:LEU:HD21	1.60	0.81
3:A:594:VAL:HG13	3:A:595:VAL:H	1.46	0.81
3:A:278:TRP:N	3:A:321:ASN:HD21	1.76	0.80
3:A:324:GLN:HE21	3:A:418:TYR:H	1.31	0.79
1:T:5:DC:H4'	3:A:422:TRP:HZ3	1.49	0.78
3:A:170:LEU:O	3:A:174:VAL:HG23	1.84	0.78
2:P:108:DA:H2"	2:P:109:DC:H5'	1.65	0.77
3:A:729:THR:HG22	3:A:733:PHE:O	1.85	0.77
3:A:427:TYR:HA	3:A:435:GLN:HE22	1.50	0.76
3:A:636:THR:HA	3:A:639:TYR:HD2	1.50	0.76
3:A:590:THR:HB	3:A:613:THR:H	1.49	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:846:TYR:HA	3:A:849:PHE:CE1	2.22	0.75
3:A:829:ARG:NH1	3:A:878:SER:O	2.19	0.75
3:A:706:LEU:HD21	3:A:849:PHE:HB2	1.68	0.74
3:A:585:ASP:O	3:A:614:LYS:HA	1.88	0.74
3:A:841:VAL:HG23	3:A:842:LEU:HD22	1.70	0.74
3:A:454:LYS:N	3:A:526:LEU:HD13	2.04	0.73
3:A:544:GLN:HG2	3:A:559:VAL:HG11	1.69	0.72
1:T:5:DC:H4'	3:A:422:TRP:CZ3	2.24	0.72
3:A:729:THR:CG2	3:A:733:PHE:HB3	2.19	0.72
3:A:861:MET:H	3:A:862:PRO:HD2	1.53	0.71
3:A:281:ILE:HD11	3:A:305:LEU:HD13	1.72	0.71
3:A:669:GLN:HE21	3:A:669:GLN:HA	1.54	0.71
3:A:632:ARG:HA	3:A:635:MET:HG2	1.71	0.71
3:A:594:VAL:HG22	3:A:595:VAL:HG22	1.73	0.70
3:A:106:LEU:HA	3:A:109:ILE:HD12	1.72	0.70
3:A:386:ARG:NH1	3:A:386:ARG:HB2	2.06	0.70
3:A:854:HIS:CG	3:A:855:GLU:N	2.60	0.69
3:A:616:LEU:HD23	3:A:676:TYR:HB2	1.75	0.69
3:A:397:SER:O	3:A:401:MET:HG2	1.93	0.68
3:A:778:ILE:HG23	3:A:779:ALA:H	1.59	0.68
3:A:425:ARG:NH2	3:A:811:HIS:HB3	2.09	0.67
3:A:596:THR:HG23	3:A:607:GLU:HB3	1.76	0.67
3:A:871:ASN:HB3	3:A:874:ASP:OD2	1.95	0.67
3:A:50:ARG:NH1	3:A:50:ARG:HB2	2.08	0.67
3:A:6:ILE:HD12	3:A:8:LYS:HD2	1.76	0.67
3:A:550:LEU:HD11	3:A:695:ALA:HB2	1.78	0.66
3:A:540:CYS:SG	3:A:543:ILE:HD12	2.35	0.66
3:A:853:LEU:HD13	3:A:854:HIS:HB3	1.77	0.66
3:A:6:ILE:HG21	3:A:8:LYS:HZ3	1.59	0.66
3:A:416:PHE:CE2	3:A:434:PRO:HD3	2.30	0.66
3:A:311:VAL:O	3:A:312:TYR:HB3	1.94	0.66
3:A:849:PHE:O	3:A:853:LEU:HB3	1.96	0.65
3:A:692:ALA:O	3:A:696:MET:HG3	1.97	0.65
3:A:854:HIS:NE2	3:A:856:SER:C	2.50	0.65
3:A:730:PRO:CD	3:A:786:GLN:HE22	2.08	0.65
3:A:731:ASP:OD1	3:A:789:SER:HB2	1.97	0.65
3:A:50:ARG:HH11	3:A:50:ARG:HB2	1.61	0.64
3:A:669:GLN:NE2	3:A:669:GLN:HA	2.11	0.64
3:A:794:THR:OG1	3:A:831:THR:HG21	1.97	0.64
3:A:428:ALA:H	3:A:435:GLN:HE21	1.44	0.64
3:A:630:THR:O	3:A:634:VAL:HG12	1.98	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:729:THR:HG21	3:A:733:PHE:HB3	1.78	0.64
3:A:185:VAL:HG22	3:A:186:VAL:N	2.13	0.64
3:A:366:ASP:HB3	3:A:369:MET:HG2	1.80	0.64
3:A:452:ILE:HG23	3:A:453:GLY:N	2.13	0.63
3:A:169:GLN:HE21	3:A:171:ASN:HB2	1.64	0.63
2:P:108:DA:H2"	2:P:109:DC:C5'	2.28	0.62
3:A:425:ARG:HH21	3:A:811:HIS:CB	2.13	0.62
3:A:8:LYS:O	3:A:9:ASN:HB3	1.98	0.62
3:A:798:ALA:O	3:A:804:ILE:HB	1.99	0.61
3:A:438:ASP:OD2	3:A:509:PHE:HB2	2.00	0.61
3:A:647:ARG:HE	3:A:675:GLY:HA2	1.66	0.61
3:A:594:VAL:HG22	3:A:595:VAL:N	2.14	0.61
3:A:594:VAL:HG13	3:A:595:VAL:N	2.14	0.61
3:A:778:ILE:HG23	3:A:779:ALA:N	2.15	0.61
3:A:150:ARG:O	3:A:152:GLY:N	2.34	0.60
3:A:706:LEU:HG	3:A:853:LEU:HG	1.83	0.60
3:A:164:LYS:HD2	3:A:164:LYS:C	2.21	0.60
2:P:103:DA:H2"	2:P:104:DT:C5'	2.31	0.60
1:T:19:DA:H1'	1:T:20:DT:H5'	1.84	0.60
3:A:551:ARG:O	3:A:868:GLY:HA3	2.00	0.60
3:A:853:LEU:HD22	3:A:854:HIS:N	2.16	0.60
3:A:625:VAL:HA	3:A:629:VAL:HG21	1.84	0.60
1:T:7:DA:H2'	1:T:8:DT:H72	1.84	0.60
1:T:5:DC:H2"	1:T:6:DT:H5'	1.83	0.59
3:A:702:ALA:O	3:A:706:LEU:HD12	2.02	0.59
3:A:609:VAL:HG11	3:A:669:GLN:OE1	2.02	0.59
3:A:739:TYR:CD1	3:A:773:LYS:HE3	2.38	0.59
3:A:473:VAL:HG22	3:A:474:PRO:CD	2.12	0.59
3:A:395:ARG:O	3:A:399:GLU:HG2	2.02	0.59
3:A:452:ILE:HG12	3:A:457:TYR:N	2.18	0.58
3:A:425:ARG:HH11	3:A:784:HIS:CG	2.21	0.58
3:A:386:ARG:HH11	3:A:386:ARG:HB2	1.67	0.58
3:A:594:VAL:HG11	3:A:598:THR:HG21	1.86	0.58
3:A:633:SER:HA	3:A:649:GLN:OE1	2.02	0.58
3:A:743:ILE:HD11	3:A:767:SER:HB3	1.84	0.58
3:A:862:PRO:O	3:A:863:ALA:CB	2.52	0.58
3:A:335:LEU:HD22	3:A:335:LEU:O	2.03	0.58
3:A:590:THR:HG22	3:A:591:ASP:N	2.19	0.58
3:A:335:LEU:HD22	3:A:339:ASN:ND2	2.20	0.57
2:P:102:DA:H1'	2:P:103:DA:C8	2.39	0.57
3:A:747:LEU:O	3:A:758:GLN:HA	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:73:LEU:HG	3:A:260:ALA:HB1	1.86	0.57
3:A:853:LEU:HD22	3:A:854:HIS:H	1.68	0.57
3:A:643:GLU:CD	3:A:679:LYS:HD2	2.24	0.57
3:A:147:ASP:OD1	3:A:292:ARG:HD2	2.04	0.56
3:A:861:MET:HB3	3:A:862:PRO:CD	2.35	0.56
3:A:862:PRO:O	3:A:863:ALA:HB3	2.05	0.56
3:A:452:ILE:HG23	3:A:453:GLY:H	1.70	0.56
3:A:806:SER:O	3:A:816:THR:HG23	2.04	0.56
3:A:106:LEU:HD21	3:A:212:VAL:HG13	1.88	0.56
3:A:159:ALA:HA	3:A:162:PHE:CE2	2.41	0.56
3:A:560:ASN:O	3:A:881:ALA:HB2	2.05	0.56
3:A:796:VAL:O	3:A:800:GLU:HG3	2.06	0.56
3:A:139:SER:OG	3:A:206:LYS:HE2	2.05	0.56
3:A:569:ASP:OD2	3:A:627:ARG:HD2	2.06	0.56
3:A:427:TYR:HA	3:A:435:GLN:NE2	2.19	0.55
3:A:12:SER:OG	3:A:15:GLU:HG3	2.07	0.55
3:A:366:ASP:CB	3:A:369:MET:HG2	2.37	0.55
3:A:639:TYR:HA	3:A:780:PRO:HB3	1.89	0.55
3:A:592:ASN:OD1	3:A:611:LEU:HA	2.07	0.55
3:A:845:PHE:O	3:A:848:GLN:HB2	2.07	0.55
3:A:763:THR:HG22	3:A:765:LYS:H	1.72	0.55
1:T:6:DT:OP2	1:T:7:DA:H4'	2.07	0.55
3:A:311:VAL:O	3:A:312:TYR:CB	2.54	0.54
3:A:551:ARG:HH11	3:A:551:ARG:HG3	1.72	0.54
3:A:281:ILE:HD11	3:A:305:LEU:O	2.07	0.54
3:A:324:GLN:HE21	3:A:418:TYR:N	2.04	0.54
3:A:804:ILE:HG23	3:A:816:THR:HG21	1.89	0.54
3:A:176:HIS:CD2	3:A:177:VAL:H	2.25	0.54
3:A:386:ARG:HH11	3:A:386:ARG:CB	2.20	0.54
3:A:424:GLY:O	3:A:425:ARG:C	2.46	0.54
3:A:647:ARG:HH11	3:A:647:ARG:HG2	1.73	0.54
3:A:473:VAL:HG21	3:A:477:GLU:CD	2.28	0.54
1:T:17:DG:H1'	1:T:18:DT:H5'	1.89	0.54
3:A:643:GLU:OE1	3:A:679:LYS:HD2	2.08	0.54
3:A:679:LYS:HG3	3:A:683:GLU:OE2	2.08	0.54
3:A:364:PRO:C	3:A:366:ASP:H	2.09	0.53
3:A:632:ARG:O	3:A:636:THR:HG23	2.09	0.53
3:A:720:ARG:HD2	3:A:721:LYS:O	2.10	0.52
3:A:324:GLN:NE2	3:A:418:TYR:H	2.05	0.52
3:A:619:GLN:NE2	3:A:666:MET:O	2.42	0.52
3:A:6:ILE:HG21	3:A:8:LYS:NZ	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:459:TRP:HA	3:A:462:ILE:HB	1.91	0.52
3:A:502:TRP:CE3	3:A:512:LEU:HB2	2.45	0.52
3:A:367:ILE:HG23	3:A:368:ASP:OD1	2.10	0.51
3:A:186:VAL:HG12	3:A:187:GLU:N	2.25	0.51
3:A:254:ILE:HG22	3:A:399:GLU:HG3	1.91	0.51
3:A:486:HIS:CE1	3:A:490:MET:HG3	2.45	0.51
3:A:570:ILE:HG23	3:A:571:TYR:CD1	2.45	0.51
3:A:861:MET:HB3	3:A:862:PRO:HD3	1.92	0.51
3:A:272:VAL:O	3:A:415:TRP:HZ3	1.93	0.51
3:A:871:ASN:C	3:A:873:ARG:H	2.14	0.51
3:A:711:LYS:HG2	3:A:712:ASP:N	2.25	0.51
3:A:729:THR:HG23	3:A:733:PHE:H	1.75	0.51
3:A:802:TYR:OH	3:A:826:LYS:HE3	2.09	0.51
3:A:579:ASN:HA	3:A:582:LEU:HD12	1.91	0.51
1:T:14:DG:H1'	1:T:15:DT:H5"	1.93	0.51
3:A:153:ARG:HH11	3:A:153:ARG:HG2	1.76	0.51
3:A:370:ASN:ND2	3:A:375:THR:OG1	2.44	0.51
3:A:685:VAL:HG23	3:A:686:SER:N	2.26	0.51
3:A:816:THR:HG22	3:A:817:ILE:N	2.17	0.51
3:A:570:ILE:HG23	3:A:571:TYR:N	2.26	0.51
3:A:861:MET:O	3:A:862:PRO:O	2.29	0.50
1:T:14:DG:H2"	1:T:15:DT:H5'	1.92	0.50
3:A:593:GLU:HG3	3:A:594:VAL:H	1.77	0.50
3:A:636:THR:HA	3:A:639:TYR:CD2	2.40	0.50
3:A:593:GLU:HB3	3:A:610:LYS:CB	2.41	0.50
3:A:710:VAL:HG13	3:A:719:LEU:HB2	1.92	0.50
3:A:507:SER:HB3	3:A:510:CYS:HB2	1.94	0.50
3:A:199:GLU:OE2	3:A:199:GLU:HA	2.11	0.49
3:A:19:ILE:HB	3:A:20:PRO:HD3	1.93	0.49
3:A:574:VAL:O	3:A:578:VAL:HG23	2.12	0.49
3:A:99:ARG:HG2	3:A:99:ARG:HH11	1.77	0.49
3:A:537:ASP:OD1	3:A:813:SER:OG	2.11	0.49
3:A:163:LYS:HA	3:A:163:LYS:NZ	2.28	0.49
3:A:176:HIS:O	3:A:179:LYS:HE2	2.12	0.49
3:A:169:GLN:HG2	3:A:172:LYS:NZ	2.27	0.49
3:A:370:ASN:N	3:A:371:PRO:CD	2.76	0.49
3:A:857:GLN:O	3:A:858:LEU:HB3	2.13	0.49
3:A:607:GLU:C	3:A:609:VAL:H	2.15	0.49
3:A:72:PRO:HB3	3:A:262:ALA:HB3	1.93	0.49
3:A:641:SER:HB3	3:A:646:PHE:CE1	2.48	0.49
2:P:107:DG:H2"	2:P:108:DA:H5'	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:421:ASP:OD2	3:A:423:ARG:HD3	2.13	0.48
3:A:224:THR:O	3:A:226:MET:N	2.41	0.48
3:A:523:HIS:O	3:A:524:HIS:ND1	2.46	0.48
3:A:6:ILE:HD12	3:A:8:LYS:CD	2.42	0.48
3:A:337:VAL:HG21	3:A:512:LEU:HD21	1.96	0.48
3:A:147:ASP:CG	3:A:292:ARG:HD2	2.34	0.48
3:A:6:ILE:HB	3:A:8:LYS:HZ2	1.78	0.48
2:P:106:DC:H2"	3:A:748:ASN:HB3	1.96	0.48
3:A:240:ASP:OD1	3:A:241:SER:N	2.46	0.48
3:A:511:PHE:O	3:A:514:PHE:N	2.46	0.48
3:A:367:ILE:HD12	3:A:374:LEU:CD2	2.37	0.48
3:A:595:VAL:CG1	3:A:608:LYS:HA	2.34	0.48
3:A:823:ASN:O	3:A:826:LYS:HG2	2.14	0.48
3:A:853:LEU:HD13	3:A:853:LEU:C	2.34	0.48
3:A:337:VAL:O	3:A:341:ILE:HG12	2.14	0.48
3:A:475:PHE:O	3:A:476:PRO:C	2.52	0.48
3:A:729:THR:CG2	3:A:733:PHE:H	2.27	0.48
3:A:229:LEU:HG	3:A:242:GLU:HG3	1.96	0.47
3:A:544:GLN:CG	3:A:559:VAL:HG11	2.40	0.47
3:A:561:LEU:O	3:A:878:SER:HB2	2.13	0.47
3:A:698:TRP:HZ3	3:A:863:ALA:N	2.12	0.47
3:A:24:LEU:HD11	3:A:273:VAL:HG21	1.96	0.47
3:A:308:TYR:HA	3:A:311:VAL:HG23	1.95	0.47
3:A:201:TRP:HB2	3:A:302:LYS:HD3	1.95	0.47
3:A:422:TRP:CD2	3:A:423:ARG:HD2	2.49	0.47
3:A:201:TRP:HZ2	3:A:299:THR:O	1.98	0.47
3:A:363:LYS:HG2	3:A:364:PRO:HD2	1.96	0.47
3:A:36:GLN:NE2	3:A:273:VAL:HG22	2.30	0.47
3:A:559:VAL:O	3:A:560:ASN:CB	2.63	0.47
3:A:590:THR:HB	3:A:613:THR:N	2.25	0.47
3:A:827:ALA:O	3:A:831:THR:HG22	2.14	0.47
3:A:308:TYR:HA	3:A:311:VAL:CG2	2.44	0.47
3:A:783:VAL:HG23	3:A:784:HIS:H	1.79	0.47
3:A:46:MET:HG3	3:A:47:GLY:N	2.29	0.47
3:A:517:GLU:HG3	3:A:532:LEU:HB2	1.97	0.47
3:A:710:VAL:HG12	3:A:720:ARG:O	2.14	0.47
3:A:663:LYS:HG2	3:A:664:GLY:N	2.20	0.47
3:A:679:LYS:HE2	3:A:683:GLU:OE1	2.15	0.47
3:A:361:PRO:HD3	3:A:384:VAL:HG21	1.96	0.46
3:A:451:PRO:HA	3:A:528:TYR:O	2.15	0.46
3:A:719:LEU:HD22	3:A:719:LEU:N	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:371:PRO:O	3:A:372:GLU:HG2	2.15	0.46
3:A:502:TRP:O	3:A:505:GLN:HG2	2.15	0.46
3:A:453:GLY:HA2	3:A:526:LEU:HB3	1.96	0.46
3:A:726:HIS:HD2	3:A:735:VAL:O	1.98	0.46
3:A:852:GLN:O	3:A:853:LEU:HB2	2.15	0.46
3:A:159:ALA:O	3:A:163:LYS:HG2	2.15	0.46
3:A:452:ILE:CG2	3:A:453:GLY:N	2.78	0.46
3:A:185:VAL:HG22	3:A:186:VAL:H	1.78	0.46
3:A:562:LEU:HD21	3:A:870:LEU:CD1	2.46	0.46
3:A:22:ASN:C	3:A:24:LEU:N	2.69	0.46
3:A:632:ARG:HA	3:A:635:MET:CG	2.44	0.46
3:A:272:VAL:HG12	3:A:272:VAL:O	2.15	0.46
3:A:425:ARG:NH1	3:A:784:HIS:CG	2.83	0.46
3:A:593:GLU:HB3	3:A:610:LYS:HB2	1.98	0.46
3:A:775:GLU:O	3:A:778:ILE:HG22	2.16	0.46
3:A:224:THR:O	3:A:224:THR:OG1	2.34	0.46
3:A:648:GLN:CD	3:A:648:GLN:H	2.19	0.46
3:A:199:GLU:HA	3:A:302:LYS:HZ3	1.80	0.45
3:A:455:GLU:OE1	3:A:455:GLU:HA	2.16	0.45
3:A:631:LYS:O	3:A:634:VAL:HG12	2.15	0.45
3:A:857:GLN:NE2	3:A:857:GLN:HA	2.30	0.45
1:T:6:DT:OP2	1:T:7:DA:C4'	2.63	0.45
3:A:347:CYS:SG	3:A:348:PRO:HD2	2.56	0.45
3:A:169:GLN:HG2	3:A:172:LYS:HZ3	1.80	0.45
3:A:474:PRO:HA	3:A:880:PHE:CZ	2.52	0.45
3:A:664:GLY:HA2	3:A:666:MET:SD	2.56	0.45
3:A:841:VAL:HG23	3:A:842:LEU:N	2.32	0.45
3:A:783:VAL:HG23	3:A:784:HIS:N	2.32	0.45
3:A:12:SER:HG	3:A:15:GLU:HG3	1.82	0.45
3:A:23:THR:O	3:A:27:HIS:HD2	1.98	0.45
3:A:656:GLN:HA	3:A:656:GLN:OE1	2.17	0.45
3:A:606:SER:O	3:A:607:GLU:C	2.53	0.45
3:A:457:TYR:CD1	3:A:521:VAL:HG11	2.52	0.45
3:A:663:LYS:CG	3:A:664:GLY:H	2.19	0.45
3:A:186:VAL:HG12	3:A:187:GLU:H	1.82	0.44
3:A:404:GLN:CA	3:A:404:GLN:HE21	2.31	0.44
3:A:846:TYR:C	3:A:848:GLN:H	2.20	0.44
2:P:111:DC:H2"	2:P:112:DA:C8	2.52	0.44
3:A:246:LEU:HD21	3:A:254:ILE:HD12	1.98	0.44
3:A:22:ASN:C	3:A:24:LEU:H	2.20	0.44
1:T:16:DC:H2"	1:T:17:DG:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:454:LYS:C	3:A:454:LYS:HD3	2.37	0.44
3:A:102:ALA:CB	3:A:215:ARG:HG3	2.48	0.44
3:A:696:MET:O	3:A:700:LYS:HG3	2.17	0.44
3:A:871:ASN:O	3:A:873:ARG:N	2.50	0.44
3:A:557:ARG:NH1	3:A:557:ARG:HG2	2.31	0.44
3:A:729:THR:OG1	3:A:789:SER:HB3	2.18	0.44
3:A:829:ARG:NH2	3:A:882:PHE:HD1	2.15	0.44
3:A:237:VAL:HG12	3:A:237:VAL:O	2.18	0.44
3:A:316:VAL:O	3:A:320:ILE:HG12	2.18	0.44
3:A:594:VAL:HG11	3:A:598:THR:CG2	2.47	0.44
1:T:20:DT:O2	3:A:97:GLY:HA2	2.18	0.44
3:A:344:TRP:CE3	3:A:348:PRO:HD3	2.52	0.44
3:A:559:VAL:O	3:A:560:ASN:CG	2.57	0.43
3:A:561:LEU:HD22	3:A:561:LEU:N	2.33	0.43
3:A:574:VAL:HG12	3:A:574:VAL:O	2.17	0.43
2:P:110:DT:H1'	2:P:111:DC:H5"	2.00	0.43
3:A:330:ILE:HB	3:A:409:ALA:HA	1.99	0.43
3:A:333:LYS:O	3:A:336:ALA:HB3	2.19	0.43
3:A:871:ASN:C	3:A:873:ARG:N	2.71	0.43
3:A:656:GLN:HB3	3:A:657:PRO:CD	2.49	0.43
3:A:169:GLN:NE2	3:A:171:ASN:HB2	2.31	0.43
3:A:855:GLU:OE2	3:A:856:SER:HB3	2.18	0.43
3:A:404:GLN:NE2	3:A:404:GLN:HA	2.33	0.43
3:A:739:TYR:H	3:A:774:GLN:HE22	1.66	0.43
3:A:698:TRP:CZ3	3:A:862:PRO:HA	2.54	0.43
3:A:853:LEU:HD13	3:A:854:HIS:CB	2.48	0.43
3:A:781:ASN:HA	3:A:781:ASN:HD22	1.65	0.43
3:A:842:LEU:O	3:A:845:PHE:HB3	2.19	0.43
3:A:281:ILE:HD11	3:A:305:LEU:CD1	2.44	0.43
3:A:452:ILE:CG2	3:A:453:GLY:H	2.31	0.43
3:A:523:HIS:C	3:A:524:HIS:ND1	2.72	0.43
3:A:553:GLU:OE2	3:A:869:ASN:N	2.52	0.43
3:A:854:HIS:CD2	3:A:858:LEU:N	2.87	0.43
3:A:774:GLN:HA	3:A:774:GLN:NE2	2.17	0.43
3:A:344:TRP:C	3:A:346:HIS:H	2.23	0.43
3:A:594:VAL:HG22	3:A:595:VAL:H	1.80	0.43
3:A:342:THR:O	3:A:395:ARG:NH2	2.48	0.42
3:A:730:PRO:HD2	3:A:786:GLN:HE22	1.84	0.42
3:A:791:LEU:HD23	3:A:791:LEU:C	2.40	0.42
3:A:706:LEU:HA	3:A:853:LEU:CD2	2.49	0.42
3:A:570:ILE:HG23	3:A:571:TYR:H	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:697:ASN:HD22	3:A:697:ASN:HA	1.63	0.42
3:A:779:ALA:N	3:A:780:PRO:HD2	2.34	0.42
3:A:783:VAL:O	3:A:784:HIS:C	2.55	0.42
3:A:185:VAL:CG2	3:A:186:VAL:N	2.80	0.42
3:A:19:ILE:HG22	3:A:195:LEU:HD21	2.00	0.42
3:A:416:PHE:CD2	3:A:434:PRO:HD3	2.54	0.42
3:A:669:GLN:HA	3:A:670:PRO:HD2	1.85	0.42
3:A:164:LYS:O	3:A:164:LYS:HD2	2.19	0.42
3:A:324:GLN:HE21	3:A:417:PRO:HA	1.83	0.42
3:A:828:VAL:O	3:A:831:THR:HG23	2.19	0.42
3:A:109:ILE:HG22	3:A:110:LYS:N	2.35	0.42
3:A:159:ALA:O	3:A:163:LYS:CG	2.68	0.42
3:A:428:ALA:H	3:A:435:GLN:NE2	2.13	0.42
3:A:492:CYS:HA	3:A:499:ASN:HB2	2.02	0.42
3:A:691:ALA:O	3:A:692:ALA:C	2.58	0.42
3:A:72:PRO:O	3:A:75:THR:OG1	2.37	0.42
3:A:854:HIS:NE2	3:A:856:SER:O	2.52	0.42
3:A:676:TYR:O	3:A:680:LEU:HD13	2.20	0.42
3:A:176:HIS:CG	3:A:177:VAL:H	2.38	0.42
3:A:379:ARG:O	3:A:382:ALA:HB3	2.20	0.41
3:A:298:ARG:HH12	3:A:427:TYR:HB2	1.85	0.41
3:A:551:ARG:NH1	3:A:551:ARG:HG3	2.35	0.41
3:A:717:GLU:O	3:A:719:LEU:HD22	2.20	0.41
3:A:870:LEU:C	3:A:870:LEU:HD23	2.40	0.41
3:A:583:GLN:O	3:A:587:ILE:HG12	2.20	0.41
3:A:856:SER:O	3:A:857:GLN:C	2.59	0.41
3:A:274:PRO:HA	3:A:275:PRO:HD3	1.76	0.41
3:A:32:LEU:O	3:A:33:ALA:C	2.56	0.41
3:A:448:LYS:H	3:A:448:LYS:HD2	1.85	0.41
3:A:590:THR:CG2	3:A:591:ASP:N	2.82	0.41
3:A:177:VAL:O	3:A:179:LYS:HG2	2.20	0.41
3:A:739:TYR:HD1	3:A:773:LYS:HE3	1.84	0.41
3:A:609:VAL:CG2	3:A:611:LEU:HG	2.50	0.41
3:A:857:GLN:HE21	3:A:857:GLN:HA	1.84	0.41
3:A:710:VAL:O	3:A:710:VAL:HG13	2.20	0.41
3:A:714:LYS:O	3:A:715:THR:OG1	2.35	0.41
3:A:78:LEU:O	3:A:82:ILE:HG13	2.20	0.41
3:A:394:ARG:HG2	3:A:394:ARG:HH11	1.86	0.41
3:A:712:ASP:OD2	3:A:715:THR:HB	2.20	0.41
3:A:715:THR:O	3:A:717:GLU:N	2.53	0.41
3:A:551:ARG:HE	3:A:872:LEU:HD11	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:366:ASP:N	3:A:366:ASP:OD2	2.52	0.41
3:A:6:ILE:HD12	3:A:8:LYS:CE	2.50	0.41
3:A:718:ILE:HG21	3:A:721:LYS:HG3	2.03	0.41
3:A:557:ARG:HH11	3:A:557:ARG:HG2	1.85	0.41
3:A:655:ILE:O	3:A:658:ALA:HB3	2.20	0.41
3:A:691:ALA:O	3:A:694:GLU:N	2.54	0.41
3:A:551:ARG:HB2	3:A:868:GLY:H	1.86	0.41
3:A:6:ILE:CG2	3:A:8:LYS:NZ	2.84	0.41
3:A:840:ASP:O	3:A:844:ASP:OD2	2.39	0.41
3:A:373:ALA:C	3:A:375:THR:H	2.24	0.40
3:A:545:HIS:O	3:A:549:MET:HG2	2.21	0.40
3:A:579:ASN:O	3:A:583:GLN:HG2	2.21	0.40
3:A:552:ASP:HB2	3:A:691:ALA:HB2	2.03	0.40
3:A:419:ASN:HA	3:A:419:ASN:HD22	1.49	0.40
3:A:719:LEU:H	3:A:719:LEU:CD2	2.34	0.40
3:A:485:ASN:O	3:A:489:ILE:HG13	2.20	0.40
3:A:555:GLY:O	3:A:559:VAL:HG23	2.21	0.40
3:A:313:MET:N	3:A:314:PRO:HD3	2.37	0.40
3:A:332:LYS:HE2	3:A:409:ALA:O	2.22	0.40
3:A:421:ASP:HB3	3:A:427:TYR:CE1	2.57	0.40
3:A:642:LYS:HA	3:A:642:LYS:HD3	1.96	0.40
3:A:661:SER:OG	3:A:662:GLY:N	2.53	0.40
3:A:204:TRP:O	3:A:205:HIS:C	2.58	0.40
3:A:682:TRP:HA	3:A:685:VAL:HG22	2.03	0.40
3:A:739:TYR:HD2	3:A:774:GLN:NE2	2.18	0.40
3:A:825:PHE:CE1	3:A:829:ARG:NH2	2.90	0.40
3:A:842:LEU:HA	3:A:842:LEU:HD13	1.93	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
3	A	858/878 (98%)	693 (81%)	123 (14%)	42 (5%)	2 8

All (42) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	A	168	GLU
3	A	176	HIS
3	A	373	ALA
3	A	560	ASN
3	A	594	VAL
3	A	606	SER
3	A	611	LEU
3	A	857	GLN
3	A	859	ASP
3	A	862	PRO
3	A	863	ALA
3	A	151	PHE
3	A	372	GLU
3	A	602	THR
3	A	715	THR
3	A	104	GLN
3	A	169	GLN
3	A	174	VAL
3	A	177	VAL
3	A	178	TYR
3	A	270	PRO
3	A	312	TYR
3	A	350	GLU
3	A	508	PRO
3	A	631	LYS
3	A	861	MET
3	A	872	LEU
3	A	248	PRO
3	A	425	ARG
3	A	595	VAL
3	A	708	ALA
3	A	716	GLY
3	A	811	HIS
3	A	858	LEU
3	A	590	THR
3	A	588	ASN
3	A	625	VAL
3	A	629	VAL

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Mol	Chain	Res	Type
3	A	810	ILE
3	A	213	GLY
3	A	364	PRO
3	A	804	ILE

5.3.2 Protein sidechains

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
3	A	714/724 (99%)	661 (93%)	53 (7%)	13 38

All (53) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	A	31	ARG
3	A	35	GLU
3	A	46	MET
3	A	99	ARG
3	A	131	ASN
3	A	163	LYS
3	A	164	LYS
3	A	183	MET
3	A	223	SER
3	A	245	GLU
3	A	249	GLU
3	A	265	SER
3	A	274	PRO
3	A	276	LYS
3	A	291	ARG
3	A	292	ARG
3	A	305	LEU
3	A	313	MET
3	A	335	LEU
3	A	351	ASP
3	A	370	ASN
3	A	375	THR

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Mol	Chain	Res	Type
3	A	394	ARG
3	A	400	PHE
3	A	404	GLN
3	A	410	ASN
3	A	419	ASN
3	A	422	TRP
3	A	423	ARG
3	A	426	VAL
3	A	448	LYS
3	A	459	TRP
3	A	471	ASP
3	A	473	VAL
3	A	487	GLU
3	A	514	PHE
3	A	523	HIS
3	A	537	ASP
3	A	598	THR
3	A	610	LYS
3	A	632	ARG
3	A	653	ASP
3	A	714	LYS
3	A	723	CYS
3	A	730	PRO
3	A	735	VAL
3	A	774	GLN
3	A	826	LYS
3	A	831	THR
3	A	852	GLN
3	A	853	LEU
3	A	854	HIS
3	A	879	ASP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (38) such sidechains are listed below:

Mol	Chain	Res	Type
3	A	22	ASN
3	A	27	HIS
3	A	86	ASN
3	A	131	ASN
3	A	165	ASN
3	A	169	GLN
3	A	171	ASN

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Mol	Chain	Res	Type
3	A	176	HIS
3	A	269	GLN
3	A	289	ASN
3	A	321	ASN
3	A	324	GLN
3	A	370	ASN
3	A	404	GLN
3	A	410	ASN
3	A	411	HIS
3	A	419	ASN
3	A	435	GLN
3	A	463	HIS
3	A	485	ASN
3	A	486	HIS
3	A	544	GLN
3	A	619	GLN
3	A	669	GLN
3	A	672	GLN
3	A	697	ASN
3	A	726	HIS
3	A	737	GLN
3	A	744	GLN
3	A	764	ASN
3	A	774	GLN
3	A	781	ASN
3	A	786	GLN
3	A	823	ASN
3	A	848	GLN
3	A	852	GLN
3	A	857	GLN
3	A	869	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no carbohydrates 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

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^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	T	18/22 (81%)	-0.06	2 (11%) 5 4	64, 72, 123, 136	0
2	P	14/14 (100%)	-0.05	1 (7%) 16 12	53, 70, 106, 147	0
3	A	862/878 (98%)	0.53	72 (8%) 11 8	48, 81, 129, 149	0
All	All	894/914 (97%)	0.51	75 (8%) 11 8	48, 81, 129, 149	0

All (75) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	A	602	THR	10.4
3	A	180	LYS	9.0
3	A	598	THR	7.9
3	A	601	ASN	7.5
3	A	599	ASP	6.7
3	A	608	LYS	6.6
3	A	600	GLU	6.4
3	A	175	GLY	6.3
3	A	361	PRO	6.3
3	A	362	MET	5.9
3	A	607	GLU	5.7
3	A	603	GLY	5.5
3	A	374	LEU	5.4
3	A	368	ASP	5.4
3	A	606	SER	5.1
3	A	883	ALA	5.1
3	A	597	VAL	4.9
3	A	360	LEU	4.5
3	A	714	LYS	4.5
3	A	367	ILE	4.3
3	A	370	ASN	4.3
3	A	181	ALA	4.2
3	A	385	TYR	4.1

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Mol	Chain	Res	Type	RSRZ
3	A	378	LYS	4.1
3	A	377	TRP	4.0
3	A	178	TYR	3.9
3	A	169	GLN	3.7
3	A	166	VAL	3.7
2	P	114	DT	3.6
3	A	177	VAL	3.5
3	A	168	GLU	3.4
3	A	853	LEU	3.4
3	A	849	PHE	3.4
3	A	174	VAL	3.3
3	A	363	LYS	3.3
3	A	235	GLY	3.2
3	A	766	ASP	3.2
3	A	725	VAL	3.1
3	A	171	ASN	3.1
3	A	375	THR	3.1
3	A	372	GLU	3.1
3	A	176	HIS	2.9
3	A	369	MET	2.9
3	A	364	PRO	2.8
1	T	6	DT	2.8
3	A	300	HIS	2.7
3	A	376	ALA	2.7
3	A	28	TYR	2.7
3	A	381	ALA	2.7
3	A	98	LYS	2.7
3	A	55	PHE	2.6
3	A	605	ILE	2.6
3	A	667	PHE	2.6
3	A	851	ASP	2.6
3	A	371	PRO	2.5
3	A	721	LYS	2.5
3	A	380	ALA	2.5
3	A	713	LYS	2.4
3	A	646	PHE	2.4
3	A	234	ALA	2.4
3	A	52	ARG	2.3
3	A	594	VAL	2.3
3	A	724	ALA	2.3
3	A	447	ALA	2.3
3	A	623	TYR	2.3

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Mol	Chain	Res	Type	RSRZ
3	A	718	ILE	2.2
3	A	717	GLU	2.2
3	A	172	LYS	2.2
3	A	722	ARG	2.1
3	A	379	ARG	2.1
1	T	5	DC	2.1
3	A	373	ALA	2.1
3	A	267	MET	2.1
3	A	365	GLU	2.0
3	A	710	VAL	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 carbohydrates in this entry.

6.4 Ligands (i)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.