Full wwPDB X-ray Structure Validation Report ⓘ

Jun 1, 2026 – 12:13 PM EDT

PDB ID	:	9PVW / pdb_00009pvw
Title	:	RNA polymerase II elongation complex with dA at +1 site, 8-oxo-GMP added in Syn-conformation
Authors	:	Hou, P.; Oh, J.; Wang, D.
Deposited on	:	2025-08-03
Resolution	:	3.56 Å(reported)

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

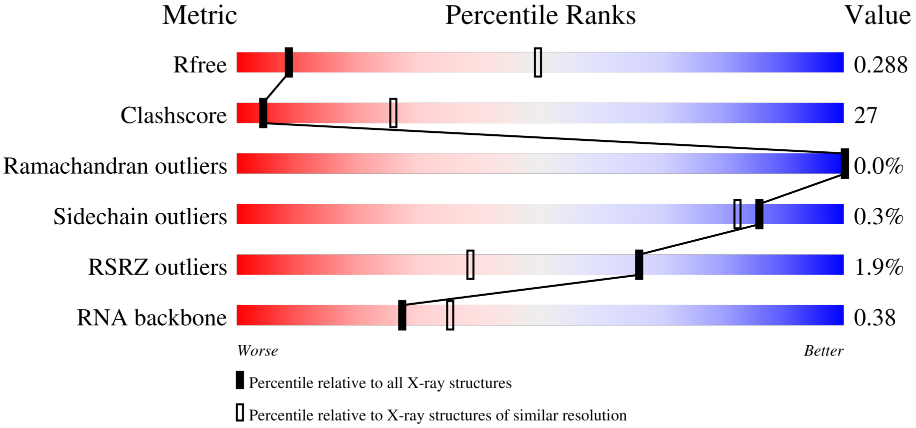
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

1 Overall quality at a glance ⓘ

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

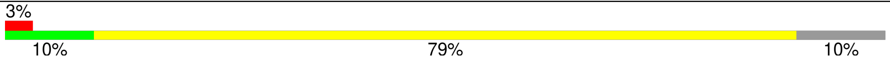
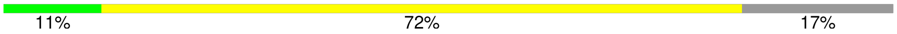
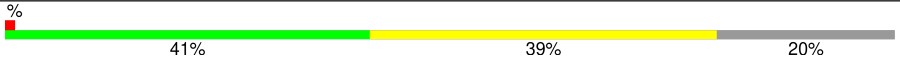
The reported resolution of this entry is 3.56 Å.

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}	180053	1410 (3.62-3.50)
Clashscore	190562	1480 (3.62-3.50)
Ramachandran outliers	187476	1440 (3.62-3.50)
Sidechain outliers	187428	1441 (3.62-3.50)
RSRZ outliers	180081	1409 (3.62-3.50)
RNA backbone	3983	1006 (4.02-3.06)

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% 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	R	10	
2	T	29	
3	N	18	
4	A	1733	

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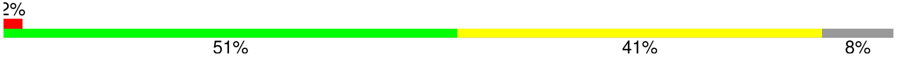
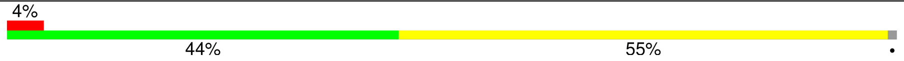
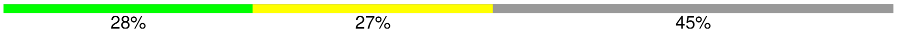
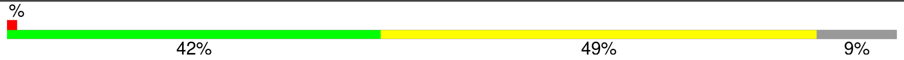
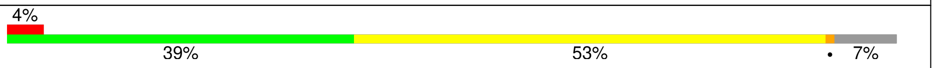
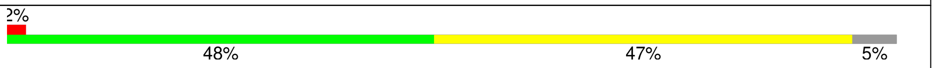
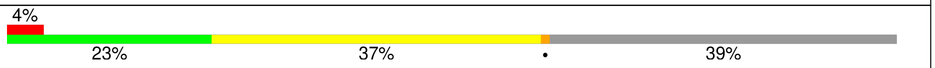
Mol	Chain	Length	Quality of chain
5	B	1224	
6	C	318	
7	E	215	
8	F	155	
9	H	146	
10	I	122	
11	J	70	
12	K	120	
13	L	70	

2 Entry composition ⓘ

There are 16 unique types of molecules in this entry. The entry contains 29080 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 RNA with 8-oxo-guanine added to 3' end. Syn-conformation..

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	R	10	219	98	45	67	9	0	0	0

- Molecule 2 is a DNA chain called Template strand DNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	T	26	519	250	80	163	26	0	0	0

- Molecule 3 is a DNA chain called Non-template strand DNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
3	N	15	317	148	71	83	15	0	0	0

- Molecule 4 is a protein called DNA-directed RNA polymerase II subunit RPB1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	A	1384	10828	6831	1896	2041	60	0	0	0

- Molecule 5 is a protein called DNA-directed RNA polymerase II subunit RPB2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	B	1123	8859	5607	1552	1647	53	0	0	0

- Molecule 6 is a protein called DNA-directed RNA polymerase II subunit RPB3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	C	267	2101	1320	349	419	13	0	0	0

- Molecule 7 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
7	E	212	1731	1100	305	315	11	0	0	0

- Molecule 8 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
8	F	86	684	437	115	129	3	0	0	0

- Molecule 9 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
9	H	133	1064	670	179	211	4	0	0	0

- Molecule 10 is a protein called DNA-directed RNA polymerase II subunit RPB9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	I	118	952	585	173	184	10	0	0	0

- Molecule 11 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
11	J	65	532	339	93	94	6	0	0	0

- Molecule 12 is a protein called DNA-directed RNA polymerase II subunit RPB11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
12	K	114	919	590	156	171	2	0	0	0

- Molecule 13 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
13	L	43	337	208	66	59	4	0	0	0

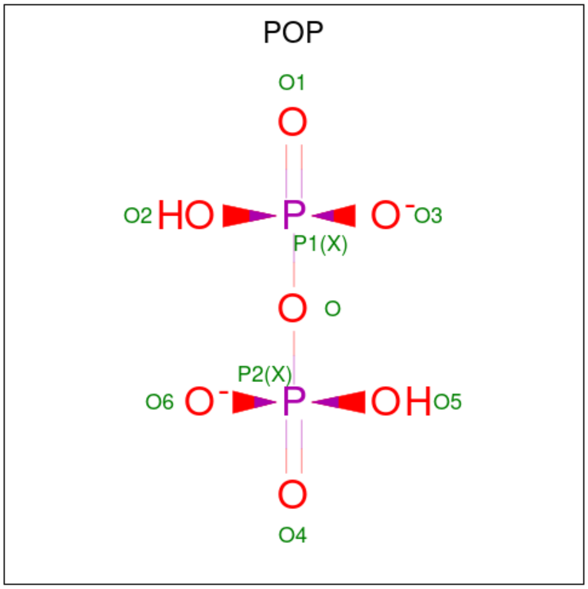
- Molecule 14 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
14	A	2	Total 2	Zn 2	0	0
14	B	1	Total 1	Zn 1	0	0
14	C	1	Total 1	Zn 1	0	0
14	I	2	Total 2	Zn 2	0	0
14	J	1	Total 1	Zn 1	0	0
14	L	1	Total 1	Zn 1	0	0

- Molecule 15 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
15	A	1	Total 1	Mg 1	0	0

- Molecule 16 is PYROPHOSPHATE 2- (CCD ID: POP) (formula: $H_2O_7P_2$).



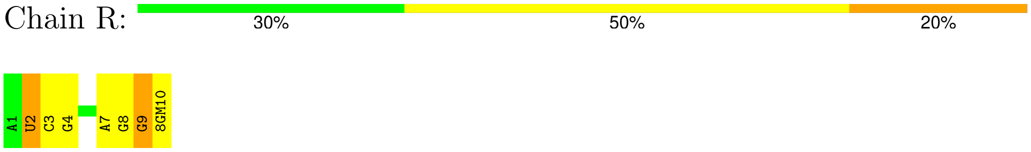
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
16	B	1	Total 9	O 7	P 2	0	0

3 Residue-property plots ⓘ

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.

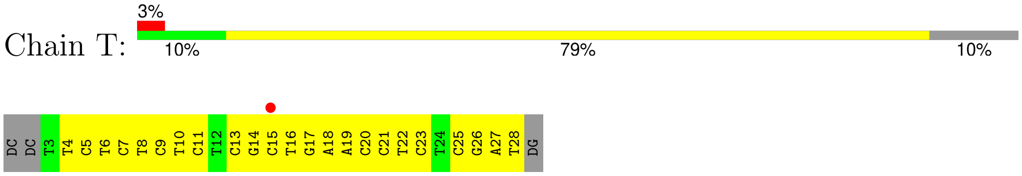
- Molecule 1: RNA with 8-oxo-guanine added to 3' end. Syn-conformation.

Chain R:



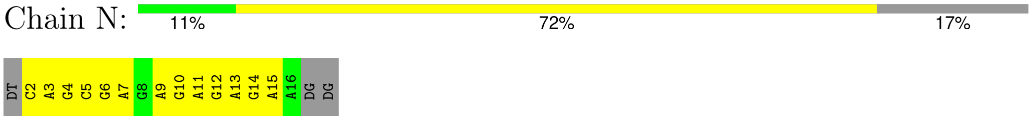
- Molecule 2: Template strand DNA

Chain T:



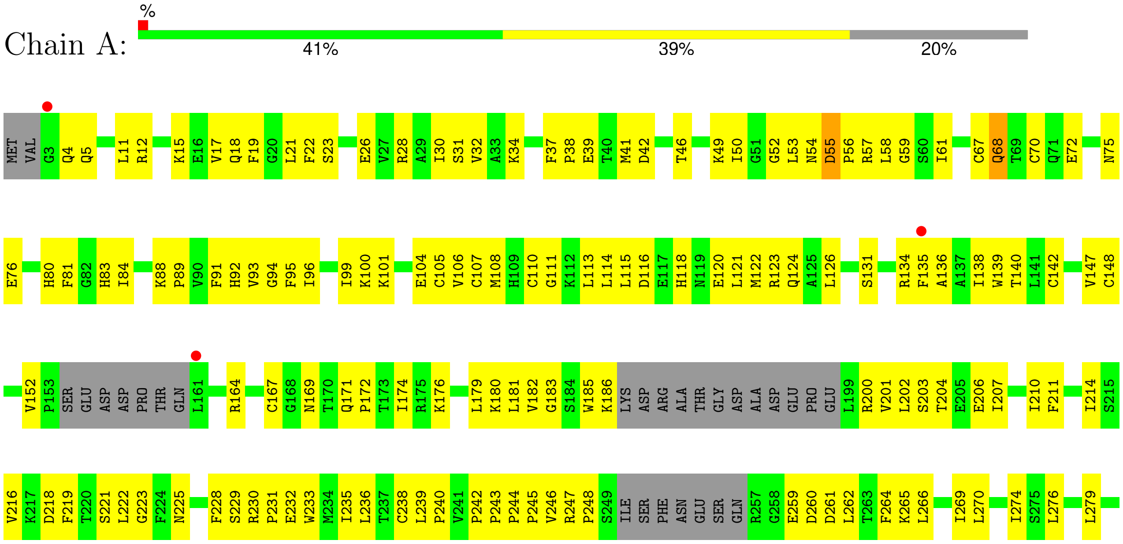
- Molecule 3: Non-template strand DNA

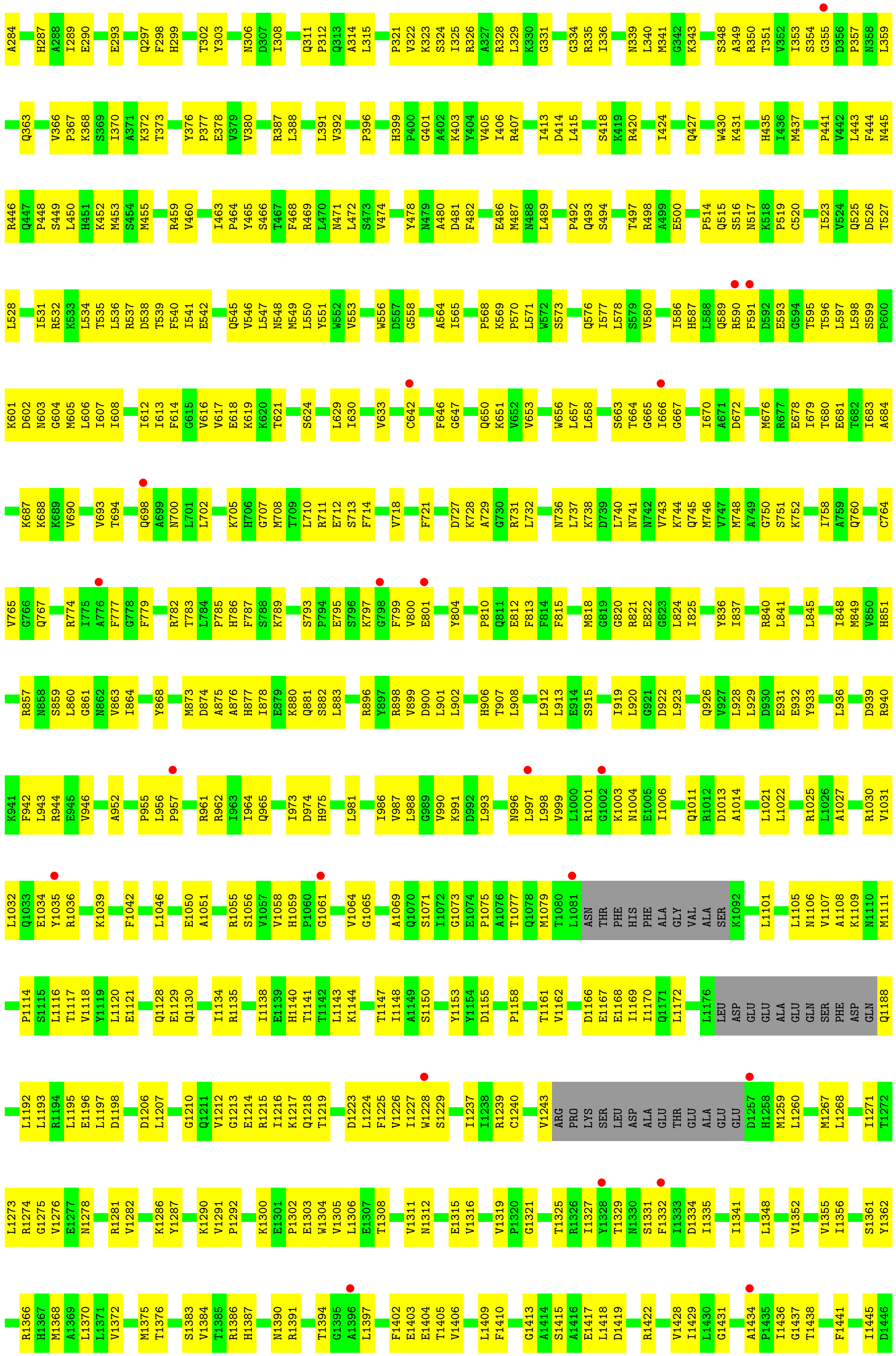
Chain N:

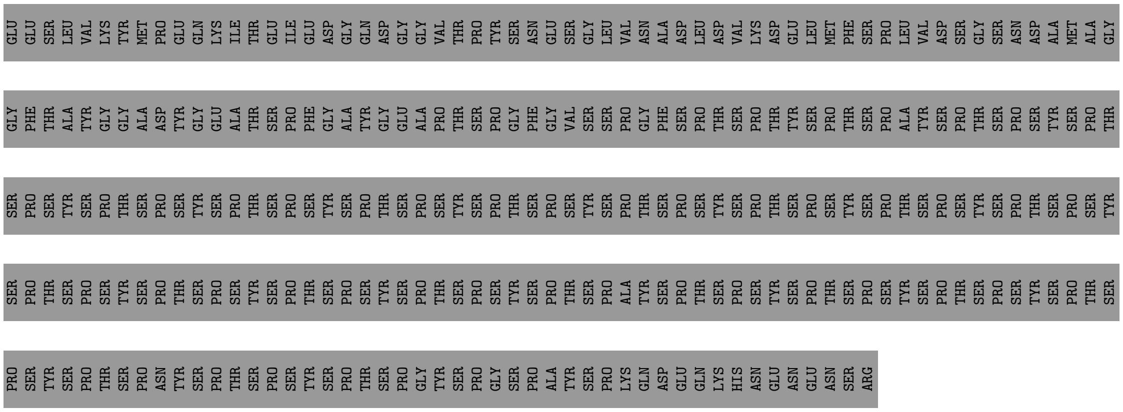


- Molecule 4: DNA-directed RNA polymerase II subunit RPB1

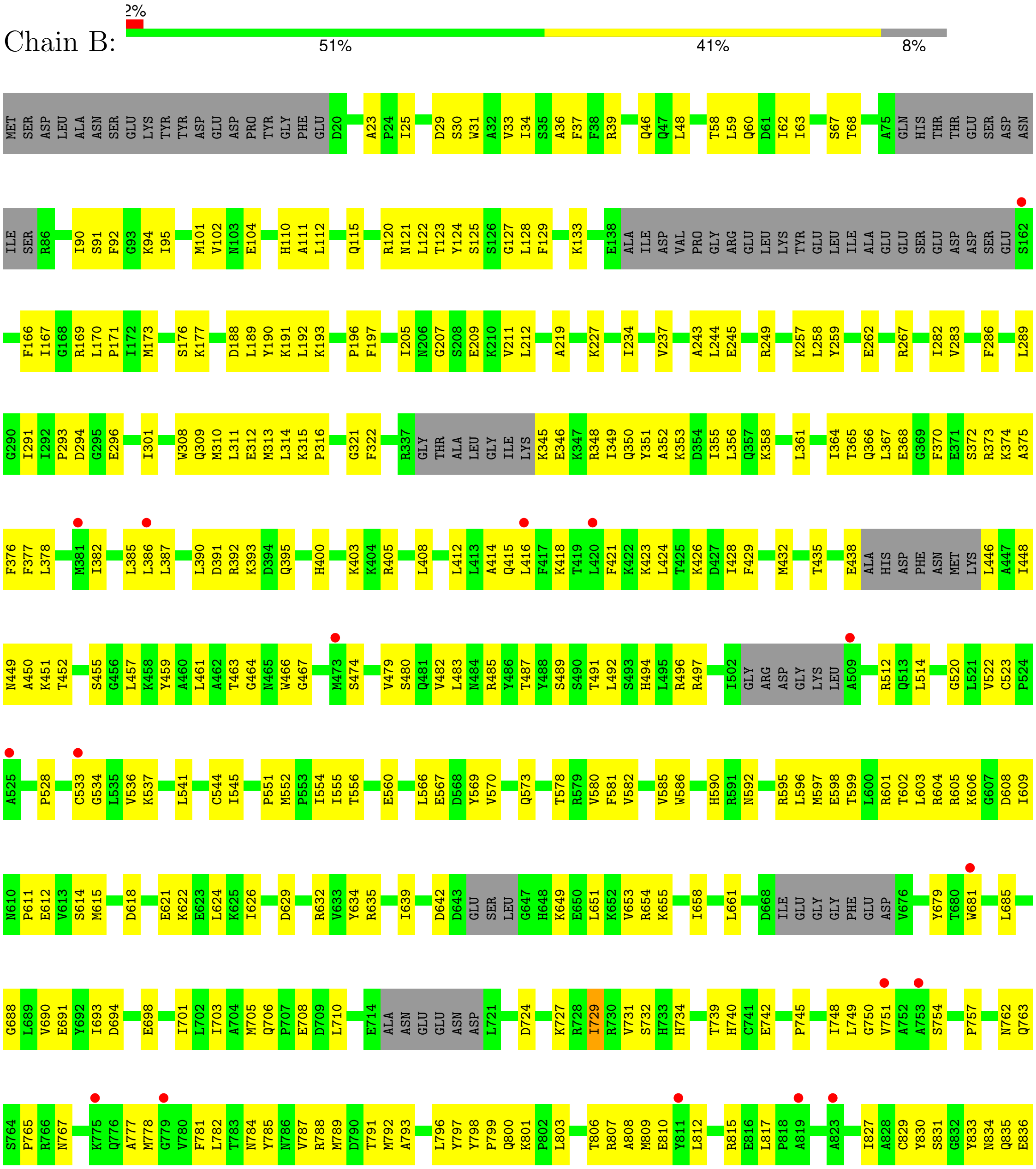
Chain A:

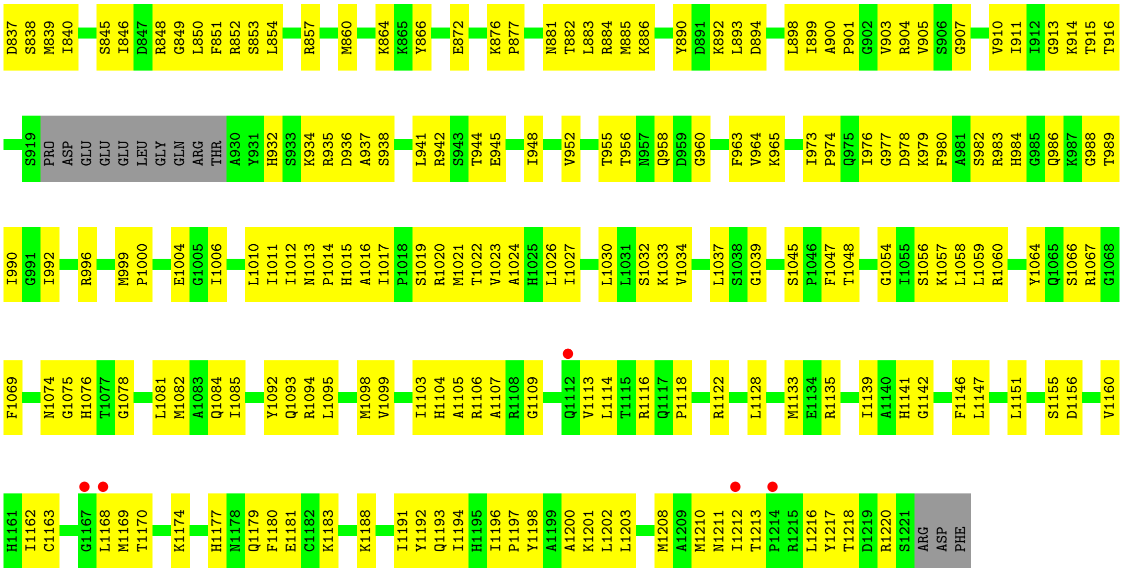



A284 H287 A288 I289 E290 E293 Q297 F298 H299 T302 Y303 N306 D307 I308 Q311 P312 Q313 A314 L315 P321 V322 K323 S324 I325 R326 A327 R328 L329 K330 G331 G334 R335 I336 N339 L340 M341 G342 K343 S348 A349 R350 T351 V352 I353 S354 G355 D356 P357 N358 L359
Q363 V366 P367 K368 S369 I370 A371 K372 T373 Y376 P377 E378 V379 V380 R387 L388 L391 V392 P396 H399 P400 G401 A402 K403 Y404 V405 I406 R407 I413 D414 L415 S418 K419 R420 I424 Q427 W430 K431 H435 I436 M437 P441 V442 L443 F444 N445
R446 Q447 P448 S449 L450 H451 K452 M453 S454 M455 R459 V460 I463 P464 Y465 S466 T467 F468 R469 L470 N471 L472 S473 V474 Y478 N479 A480 D481 F482 E486 M487 N488 L489 P492 Q493 S494 T497 R498 A499 E500 P514 Q515 S516 N517 K518 P519 C520 I523 V524 Q525 D526 T527
L528 I531 R532 K533 L534 T535 L536 R537 D538 T539 F540 I541 E542 Q545 V546 L547 N548 M549 L550 Y551 W552 V553 W556 D557 G558 A564 I565 P568 K569 P570 L571 W572 S573 Q576 I577 L578 S579 V580 I586 H587 L588 Q589 R590 F591 D592 E593 G594 T595 T596 L597 L598 S599 P600
K601 D602 N603 G604 M605 L606 I607 I608 I612 I613 F614 G615 V616 V617 E618 K619 K620 T621 S624 L629 I630 V633 C642 F646 G647 Q650 K651 V652 V653 W656 L657 L658 S663 T664 G665 I666 G667 I670 A671 D672 M676 R677 E678 I679 T680 E681 T682 I683 A684
K687 K688 K689 V690 V693 T694 Q698 A699 N700 L701 L702 K705 H706 G707 M708 T709 L710 R711 E712 S713 F714 V718 F721 D727 K728 A729 G730 R731 L732 N736 L737 K738 D739 L740 N741 N742 V743 K744 Q745 M746 V747 M748 A749 G750 S751 K752 I758 A759 Q760 C764
V765 G766 Q767 R774 I775 A776 F777 G778 F779 R782 T783 L784 P785 H786 F787 S788 K789 S793 P794 E795 S796 K797 G798 F799 V800 E801 Y804 P810 Q811 E812 F813 F814 F815 M818 G819 G820 R821 E822 G823 L824 I825 Y836 I837 R840 L841 L845 I848 M849 V850 H851
R857 N858 S859 L860 G861 N862 V863 I864 Y868 M873 D874 A875 A876 H877 I878 E879 K880 Q881 S882 L883 R896 Y897 R898 V899 D900 L901 L902 H906 T907 L908 L912 L913 E914 S915 I919 L920 G921 D922 L923 Q926 V927 L928 L929 D930 E931 E932 Y933 L936 D939 R940
K941 F942 L943 R944 E945 V946 A952 P955 L956 P957 R961 R962 I963 I964 Q965 I973 D974 H975 L981 I986 V987 L988 G989 V990 K991 D992 L993 N996 L997 L998 V999 L1000 R1001 G1002 K1003 N1004 E1005 I1006 Q1011 R1012 D1013 A1014 L1021 L1022 R1025 L1026 A1027 R1030 V1031
L1032 Q1033 E1034 Y1035 R1036 K1039 F1042 L1046 E1050 A1051 R1055 S1056 V1057 V1058 H1059 P1060 G1061 V1064 G1065 A1069 Q1070 S1071 I1072 G1073 E1074 P1075 A1076 T1077 Q1078 M1079 T1080 L1081 ASN THR PHE HIS PHE ALA GLY VAL ALA SER K1092 L1101 L1105 N1106 V1107 A1108 K1109 N1110 M1111
P1114 S1115 L1116 T1117 V1118 Y1119 L1120 E1121 Q1128 E1129 Q1130 I1134 R1135 I1138 E1139 H1140 T1141 T1142 K1143 K1144 T1147 I1148 A1149 S1150 Y1153 Y1154 D1155 P1158 T1161 V1162 D1166 E1167 E1168 K1169 I1170 Q1171 L1172 L1176 LEU ASP GLU GLU ALA GLU GLN SER PHE ASP GLN Q1188
L1192 L1193 R1194 L1195 E1196 L1197 D1198 D1206 L1207 G1210 Q1211 V1212 G1213 E1214 R1215 I1216 K1217 Q1218 T1219 D1223 L1224 F1225 V1226 I1227 W1228 S1229 I1237 T1238 R1239 C1240 V1243 ARG PRO LYS SER LEU ASP ALA GLU THR GLU ALA GLU GLU D1257 H1258 M1259 L1260 M1267 L1268 I1271 T1272
L1273 R1274 G1275 V1276 E1277 N1278 R1281 V1282 K1286 Y1287 K1290 V1291 P1292 K1300 E1301 P1302 E1303 W1304 V1305 L1306 E1307 T1308 V1311 N1312 E1315 V1316 V1319 P1320 G1321 T1325 R1326 I1327 Y1328 T1329 N1330 S1331 F1332 I1333 D1334 I1335 I1341 L1348 V1352 V1355 I1356 S1361 Y1362
R1366 H1367 M1368 A1369 L1370 L1371 V1372 M1375 T1376 S1383 V1384 T1385 R1386 H1387 N1390 R1391 T1394 G1395 A1396 L1397 F1402 E1403 E1404 T1405 V1406 L1409 F1410 G1413 A1414 S1415 A1416 E1417 L1418 D1419 R1422 V1428 I1429 L1430 G1431 A1434 P1435 I1436 G1437 T1438 F1441 I1445 D1446



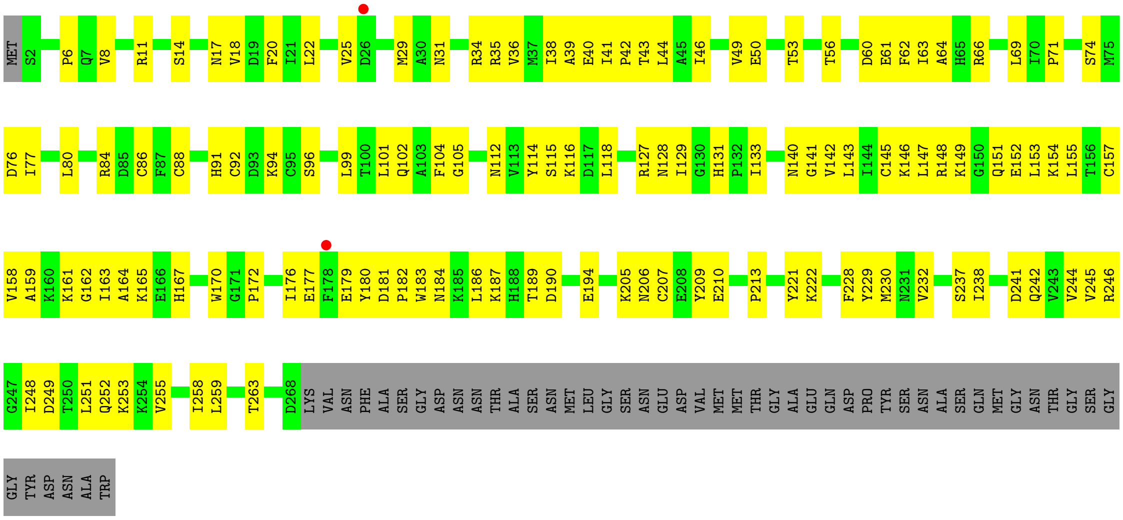
- Molecule 5: DNA-directed RNA polymerase II subunit RPB2





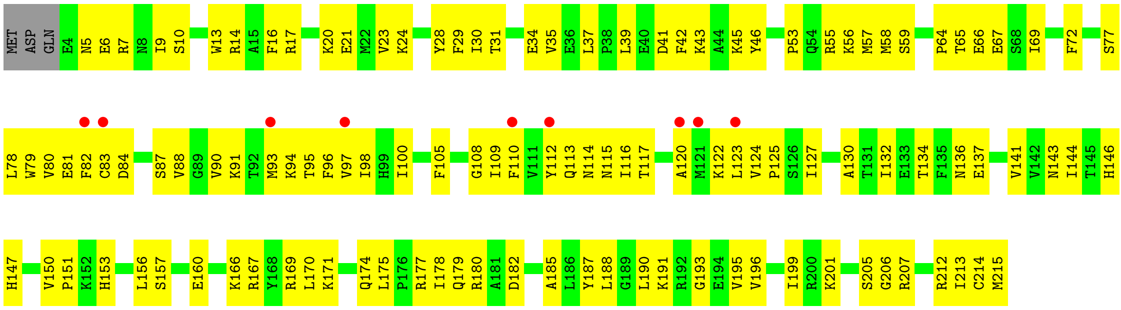
- Molecule 6: DNA-directed RNA polymerase II subunit RPB3

Chain C:

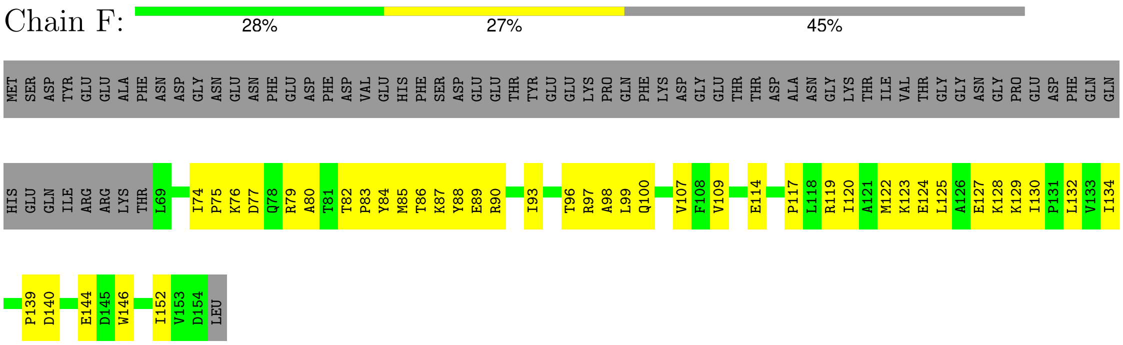


- Molecule 7: DNA-directed RNA polymerases I, II, and III subunit RPABC1

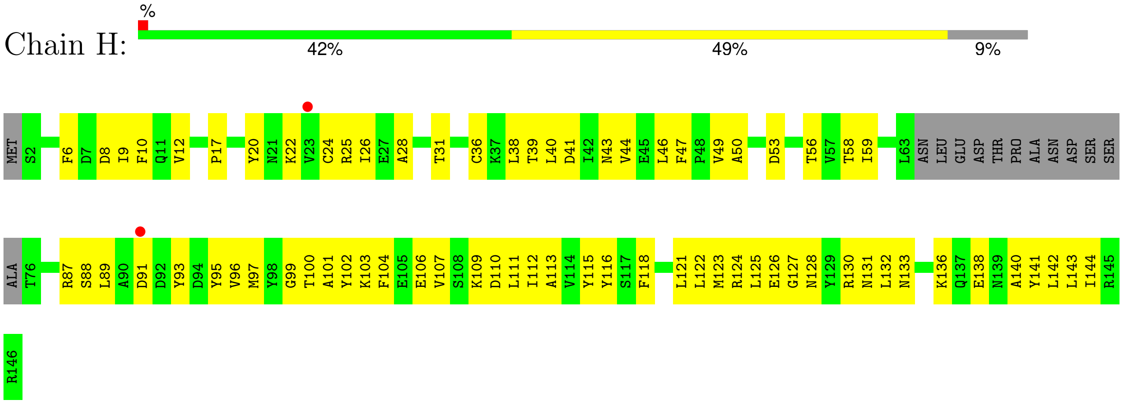
Chain E:



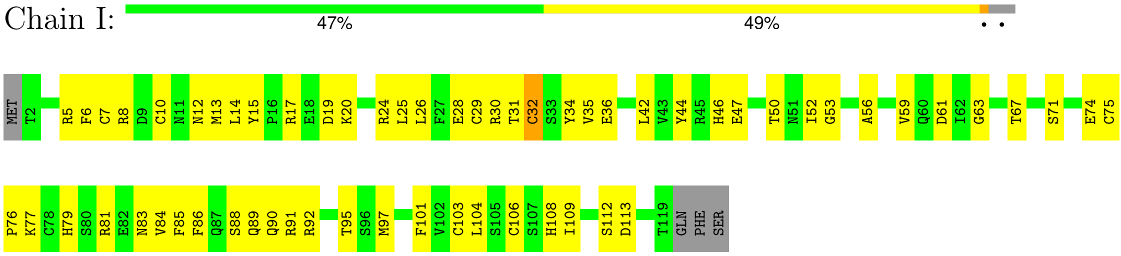
- Molecule 8: DNA-directed RNA polymerases I, II, and III subunit RPABC2



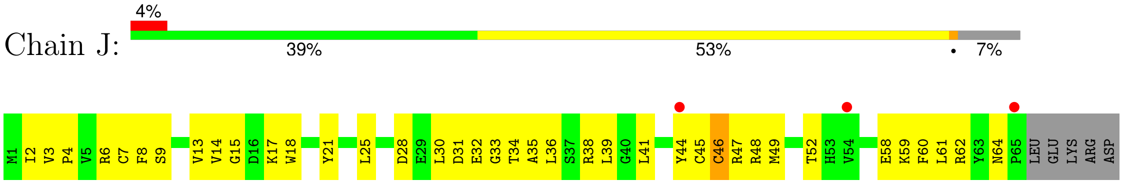
- Molecule 9: DNA-directed RNA polymerases I, II, and III subunit RPABC3



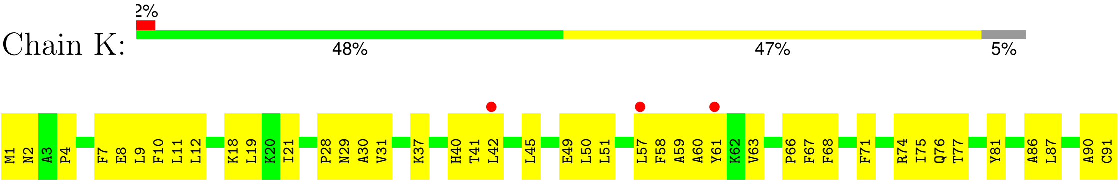
- Molecule 10: DNA-directed RNA polymerase II subunit RPB9



- Molecule 11: DNA-directed RNA polymerases I, II, and III subunit RPABC5

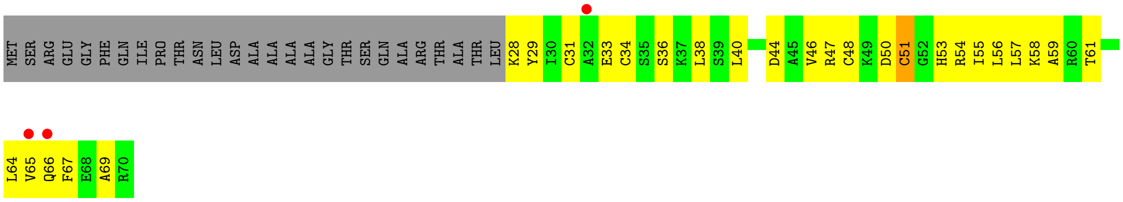


- Molecule 12: DNA-directed RNA polymerase II subunit RPB11



- Molecule 13: DNA-directed RNA polymerases I, II, and III subunit RPABC4

Chain L:



4 Data and refinement statistics ⓘ

Property	**Value**	**Source**
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	166.05Å 223.24Å 192.76Å 90.00° 100.48° 90.00°	Depositor
Resolution (Å)	49.37 – 3.56 49.37 – 3.56	Depositor EDS
% Data completeness (in resolution range)	99.7 (49.37-3.56) 99.7 (49.37-3.56)	Depositor EDS
R_{merge}	0.54	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.09 (at 3.57Å)	Xtriage
Refinement program	PHENIX (1.21.2_5419: ???)	Depositor
R, R_{free}	0.247 , 0.288 0.247 , 0.288	Depositor DCC
R_{free} test set	2000 reflections (2.42%)	wwPDB-VP
Wilson B-factor (Å^2)	103.6	Xtriage
Anisotropy	0.474	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.30 , 124.7	EDS
L-test for twinning[2]	$< \|L\| > = 0.38$, $< L^2 > = 0.21$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	29080	wwPDB-VP
Average B, all atoms (Å^2)	124.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.77% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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 ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, MG, POP, 8GM

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	R	0.15	0/219	0.33	0/341
2	T	0.23	0/576	0.43	0/884
3	N	0.23	0/359	0.39	0/553
4	A	0.23	0/11020	0.44	0/14907
5	B	0.24	1/9030 (0.0%)	0.41	0/12186
6	C	0.20	0/2139	0.39	0/2899
7	E	0.22	0/1767	0.43	0/2378
8	F	0.22	0/696	0.42	0/943
9	H	0.23	0/1082	0.49	0/1466
10	I	0.25	0/970	0.45	0/1308
11	J	0.21	0/541	0.36	0/727
12	K	0.21	0/937	0.41	0/1265
13	L	0.39	0/339	0.59	0/450
All	All	0.23	1/29675 (0.0%)	0.43	0/40307

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	729	ILE	CG1-CD1	10.89	1.94	1.51

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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	R	219	0	99	6	0
2	T	519	0	297	26	0
3	N	317	0	166	19	0
4	A	10828	0	10876	692	0
5	B	8859	0	8816	466	0
6	C	2101	0	2056	115	0
7	E	1731	0	1758	116	0
8	F	684	0	692	41	0
9	H	1064	0	1029	89	0
10	I	952	0	897	54	0
11	J	532	0	542	37	0
12	K	919	0	929	69	0
13	L	337	0	352	41	0
14	A	2	0	0	0	0
14	B	1	0	0	0	0
14	C	1	0	0	0	0
14	I	2	0	0	0	0
14	J	1	0	0	0	0
14	L	1	0	0	0	0
15	A	1	0	0	0	0
16	B	9	0	0	0	0
All	All	29080	0	28509	1547	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 27.

All (1547) 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)
5:B:729:ILE:CD1	5:B:729:ILE:CG1	1.94	1.45
4:A:1224:LEU:HD21	4:A:1240:CYS:HB3	1.32	1.09
4:A:339:ASN:O	4:A:343:LYS:HG2	1.54	1.07
4:A:1128:GLN:HG2	4:A:1304:TRP:NE1	1.68	1.06
6:C:56:THR:HG22	6:C:147:LEU:HD21	1.36	1.03
4:A:463:ILE:HD13	4:A:469:ARG:HG2	1.39	1.01
4:A:613:ILE:HG21	9:H:102:TYR:HB3	1.40	1.01
9:H:38:LEU:HB3	9:H:125:LEU:HD13	1.45	0.98
4:A:42:ASP:HA	4:A:50:ILE:HG23	1.42	0.98
12:K:61:TYR:HB2	12:K:71:PHE:HE1	1.31	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:1056:SER:HB3	5:B:1066:SER:HB2	1.48	0.94
6:C:61:GLU:HG2	13:L:67:PHE:HE1	1.31	0.93
13:L:40:LEU:HD13	13:L:44:ASP:CG	1.94	0.93
4:A:81:PHE:HE1	4:A:240:PRO:HB2	1.33	0.92
4:A:111:GLY:HA3	4:A:214:ILE:HA	1.50	0.92
6:C:39:ALA:HA	6:C:164:ALA:HB3	1.52	0.92
4:A:1128:GLN:HG2	4:A:1304:TRP:HE1	1.35	0.92
4:A:1282:VAL:HG22	4:A:1308:THR:HG22	1.52	0.90
4:A:1027:ALA:HB3	4:A:1030:ARG:HB2	1.51	0.90
4:A:795:GLU:HG2	5:B:731:VAL:HG11	1.54	0.89
4:A:37:PHE:HB2	4:A:52:GLY:HA3	1.53	0.89
4:A:801:GLU:CD	5:B:729:ILE:HD12	1.99	0.88
4:A:1278:ASN:HB2	4:A:1312:ASN:HB2	1.55	0.87
4:A:81:PHE:CE1	4:A:240:PRO:HB2	2.09	0.87
5:B:979:LYS:HG2	5:B:1095:LEU:HD12	1.56	0.87
13:L:40:LEU:HD13	13:L:44:ASP:CB	2.06	0.85
5:B:1162:ILE:HG22	5:B:1192:TYR:HB2	1.59	0.85
4:A:179:LEU:HD22	4:A:297:GLN:HG2	1.56	0.85
4:A:392:VAL:HG13	4:A:415:LEU:HD11	1.57	0.84
12:K:61:TYR:HB2	12:K:71:PHE:CE1	2.12	0.84
4:A:801:GLU:CD	5:B:729:ILE:CD1	2.51	0.83
10:I:50:THR:HG22	10:I:52:ILE:H	1.42	0.83
10:I:106:CYS:HB2	10:I:108:HIS:HD2	1.42	0.83
4:A:857:ARG:HH21	7:E:170:LEU:CD2	1.91	0.83
4:A:540:PHE:HB3	4:A:571:LEU:HD12	1.59	0.82
13:L:38:LEU:HD21	13:L:48:CYS:HA	1.60	0.82
4:A:877:HIS:CE1	4:A:1056:SER:HA	2.14	0.81
5:B:59:LEU:HG	5:B:95:ILE:HD13	1.62	0.81
5:B:121:ASN:HA	5:B:207:GLY:HA3	1.63	0.81
6:C:258:ILE:HD12	12:K:19:LEU:HD21	1.63	0.81
4:A:683:ILE:HG21	4:A:801:GLU:HG3	1.61	0.80
4:A:1013:ASP:HB3	7:E:207:ARG:HB2	1.63	0.80
5:B:1174:LYS:HG3	5:B:1177:HIS:HB2	1.63	0.80
4:A:975:HIS:HD2	4:A:1036:ARG:H	1.29	0.80
4:A:786:HIS:HE1	5:B:742:GLU:HG3	1.46	0.80
7:E:169:ARG:HB3	8:F:140:ASP:HB3	1.65	0.79
4:A:1192:LEU:HD22	4:A:1239:ARG:HH21	1.47	0.79
9:H:102:TYR:CZ	9:H:115:TYR:HB3	2.17	0.79
3:N:9:DA:H2”	3:N:10:DG:H5’	1.61	0.79
4:A:881:GLN:HA	4:A:961:ARG:HH21	1.47	0.79
4:A:336:ILE:HD11	5:B:1203:LEU:HD13	1.64	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:L:40:LEU:HD13	13:L:44:ASP:OD2	1.83	0.79
4:A:857:ARG:HH21	7:E:170:LEU:HD23	1.47	0.78
5:B:803:LEU:HD13	5:B:1032:SER:HB3	1.64	0.78
4:A:1225:PHE:CZ	4:A:1227:ILE:HG23	2.19	0.78
4:A:801:GLU:HB3	5:B:729:ILE:HD11	1.65	0.78
4:A:464:PRO:HB2	12:K:4:PRO:HD3	1.64	0.77
13:L:40:LEU:HD13	13:L:44:ASP:HB2	1.65	0.77
7:E:20:LYS:HD2	7:E:35:VAL:HA	1.65	0.77
4:A:308:ILE:HG13	4:A:312:PRO:HD2	1.65	0.77
7:E:77:SER:HB2	7:E:105:PHE:HA	1.66	0.77
4:A:801:GLU:CG	5:B:729:ILE:HD11	2.14	0.76
5:B:903:VAL:HG23	13:L:61:THR:HG21	1.67	0.76
4:A:57:ARG:HA	4:A:68:GLN:HG2	1.66	0.76
4:A:131:SER:HB3	4:A:223:GLY:HA3	1.65	0.76
7:E:83:CYS:HB2	7:E:110:PHE:HE1	1.50	0.76
5:B:115:GLN:HG2	5:B:193:LYS:HE3	1.66	0.76
10:I:10:CYS:HB3	10:I:32:CYS:HB3	1.67	0.76
4:A:339:ASN:O	4:A:343:LYS:CG	2.34	0.75
4:A:1116:LEU:HB3	4:A:1308:THR:OG1	1.85	0.75
4:A:392:VAL:HG11	4:A:424:ILE:HD11	1.67	0.75
4:A:767:GLN:HA	4:A:799:PHE:HA	1.69	0.75
5:B:258:LEU:HB2	5:B:385:LEU:HD21	1.66	0.75
6:C:102:GLN:HB3	6:C:154:LYS:HG3	1.69	0.75
5:B:25:ILE:HG12	5:B:651:LEU:HD11	1.67	0.75
4:A:997:LEU:HD21	4:A:1050:GLU:HA	1.69	0.75
6:C:25:VAL:HG23	6:C:228:PHE:CE2	2.22	0.75
7:E:188:LEU:HB2	7:E:190:LEU:CD2	2.16	0.75
6:C:36:VAL:HG23	6:C:40:GLU:HB2	1.69	0.75
4:A:550:LEU:HD22	4:A:577:ILE:CD1	2.17	0.74
6:C:69:LEU:HD12	11:J:6:ARG:HD2	1.69	0.74
4:A:239:LEU:HD12	4:A:240:PRO:HD2	1.70	0.74
8:F:119:ARG:HA	8:F:122:MET:HE2	1.70	0.74
4:A:1286:LYS:HE2	4:A:1302:PRO:HB3	1.69	0.74
4:A:550:LEU:HD22	4:A:577:ILE:HD13	1.70	0.74
5:B:1135:ARG:HG3	5:B:1147:LEU:HD11	1.70	0.74
3:N:9:DA:H2'	3:N:10:DG:C8	2.23	0.73
5:B:999:MET:HG3	5:B:1000:PRO:HD2	1.71	0.73
4:A:111:GLY:CA	4:A:214:ILE:HA	2.19	0.73
4:A:907:THR:HG21	4:A:920:LEU:HG	1.70	0.73
4:A:329:LEU:HD23	4:A:335:ARG:HD2	1.69	0.72
4:A:126:LEU:HA	4:A:134:ARG:HD3	1.69	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:I:26:LEU:HD12	10:I:35:VAL:HG11	1.70	0.72
6:C:61:GLU:HG2	13:L:67:PHE:CE1	2.19	0.72
5:B:661:LEU:HG	5:B:679:TYR:CD2	2.25	0.72
4:A:801:GLU:CB	5:B:729:ILE:HD11	2.20	0.71
4:A:987:VAL:HG12	4:A:991:LYS:HE2	1.71	0.71
5:B:642:ASP:HA	5:B:649:LYS:HA	1.71	0.71
4:A:302:THR:HG21	4:A:314:ALA:HB3	1.71	0.71
4:A:946:VAL:HG13	7:E:201:LYS:HB3	1.71	0.71
4:A:1386:ARG:HB3	4:A:1403:GLU:OE1	1.90	0.71
4:A:881:GLN:HB2	4:A:956:LEU:HD12	1.72	0.71
6:C:165:LYS:HB3	12:K:9:LEU:HD11	1.72	0.71
5:B:778:MET:HE2	5:B:1094:ARG:HB3	1.72	0.71
10:I:103:CYS:HB3	10:I:106:CYS:SG	2.31	0.71
4:A:446:ARG:HG3	4:A:448:PRO:HD2	1.71	0.71
5:B:603:LEU:HB2	5:B:609:ILE:HG12	1.71	0.71
12:K:61:TYR:CB	12:K:71:PHE:HE1	2.03	0.71
4:A:821:ARG:HH21	5:B:534:GLY:HA2	1.56	0.71
4:A:711:ARG:HD3	10:I:97:MET:HE2	1.72	0.71
8:F:127:GLU:HB3	8:F:129:LYS:HG2	1.72	0.71
4:A:597:LEU:HB3	9:H:102:TYR:HE2	1.55	0.70
5:B:29:ASP:HB3	5:B:658:ILE:HG21	1.73	0.70
5:B:570:VAL:HG23	5:B:573:GLN:HB2	1.73	0.70
5:B:829:CYS:HA	5:B:834:ASN:HD21	1.56	0.70
8:F:93:ILE:HG23	8:F:132:LEU:HD12	1.73	0.70
12:K:21:ILE:HG23	12:K:31:VAL:HG21	1.73	0.70
4:A:586:ILE:HD13	4:A:633:VAL:HG22	1.72	0.70
4:A:1227:ILE:HD11	4:A:1239:ARG:HD3	1.73	0.70
9:H:101:ALA:HA	9:H:116:TYR:HA	1.71	0.70
13:L:31:CYS:HB3	13:L:34:CYS:SG	2.31	0.70
4:A:179:LEU:HD22	4:A:297:GLN:CG	2.22	0.70
13:L:40:LEU:CD1	13:L:44:ASP:HB2	2.23	0.69
4:A:247:ARG:HD3	4:A:262:LEU:HD11	1.75	0.69
4:A:1118:VAL:HB	4:A:1306:LEU:HB2	1.74	0.69
4:A:444:PHE:CD2	4:A:487:MET:HE1	2.27	0.69
4:A:801:GLU:CG	5:B:729:ILE:CD1	2.70	0.69
9:H:116:TYR:HB2	9:H:123:MET:HE2	1.75	0.69
4:A:202:LEU:HB3	4:A:207:ILE:HD11	1.73	0.69
4:A:172:PRO:HG2	4:A:174:ILE:HD11	1.75	0.69
4:A:444:PHE:CE2	4:A:487:MET:CE	2.76	0.69
4:A:1329:THR:H	4:A:1335:ILE:HD11	1.56	0.69
5:B:900:ALA:HB3	13:L:61:THR:HG22	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:1114:LEU:HG	5:B:1202:LEU:HD11	1.75	0.69
7:E:112:TYR:HE1	7:E:134:THR:HA	1.57	0.69
4:A:96:ILE:HD11	4:A:181:LEU:HD11	1.74	0.69
4:A:214:ILE:HB	4:A:219:PHE:CE1	2.28	0.68
4:A:18:GLN:HB2	4:A:1418:LEU:HD12	1.74	0.68
4:A:526:ASP:H	5:B:835:GLN:HE21	1.40	0.68
4:A:1229:SER:HB3	4:A:1237:ILE:H	1.59	0.68
5:B:840:ILE:HG12	5:B:992:ILE:HG22	1.73	0.68
6:C:76:ASP:HB2	6:C:129:ILE:HG12	1.74	0.68
13:L:64:LEU:HD22	13:L:66:GLN:HE21	1.58	0.68
4:A:857:ARG:HH11	8:F:139:PRO:HG2	1.58	0.68
6:C:242:GLN:HB3	6:C:246:ARG:HE	1.58	0.68
6:C:249:ASP:CG	6:C:253:LYS:HZ1	2.02	0.68
4:A:22:PHE:CD2	5:B:1213:THR:HG22	2.28	0.68
5:B:188:ASP:HA	5:B:191:LYS:HD2	1.76	0.68
5:B:365:THR:HG21	5:B:370:PHE:HB2	1.76	0.68
5:B:977:GLY:HA2	5:B:989:THR:HG22	1.76	0.68
4:A:370:ILE:HD13	5:B:1105:ALA:HB2	1.75	0.68
10:I:74:GLU:OE1	10:I:79:HIS:HA	1.93	0.68
4:A:81:PHE:CD2	4:A:243:PRO:HD3	2.29	0.67
4:A:1111:MET:HB2	4:A:1114:PRO:HG3	1.75	0.67
5:B:877:PRO:HB2	5:B:882:THR:OG1	1.95	0.67
4:A:58:LEU:HB3	4:A:244:PRO:HG2	1.76	0.67
9:H:40:LEU:HB2	9:H:123:MET:HG3	1.77	0.67
4:A:1128:GLN:HG2	4:A:1304:TRP:CE2	2.30	0.67
4:A:857:ARG:NH1	8:F:139:PRO:HG2	2.09	0.67
5:B:494:HIS:HA	5:B:497:ARG:HE	1.59	0.67
4:A:702:LEU:HD13	4:A:710:LEU:HG	1.77	0.66
4:A:815:PHE:HA	4:A:818:MET:HE3	1.77	0.66
7:E:93:MET:HE3	7:E:97:VAL:HG23	1.76	0.66
7:E:199:ILE:HG21	7:E:207:ARG:HH21	1.58	0.66
4:A:549:MET:HE1	4:A:656:TRP:HD1	1.60	0.66
4:A:899:VAL:HG13	4:A:929:LEU:HD13	1.78	0.66
7:E:66:GLU:O	7:E:69:ILE:HG12	1.96	0.66
11:J:31:ASP:HB3	11:J:34:THR:HG23	1.77	0.66
6:C:34:ARG:HB2	6:C:176:ILE:HG21	1.78	0.66
6:C:50:GLU:HB3	13:L:64:LEU:HD21	1.78	0.66
6:C:88:CYS:HB3	6:C:92:CYS:HB3	1.78	0.66
4:A:34:LYS:HA	4:A:83:HIS:O	1.97	0.65
6:C:116:LYS:HD3	6:C:140:ASN:HA	1.76	0.65
12:K:29:ASN:O	12:K:76:GLN:HA	1.96	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:702:LEU:HD22	4:A:710:LEU:HD11	1.77	0.65
5:B:293:PRO:HB2	5:B:296:GLU:HB2	1.78	0.65
5:B:886:LYS:H	5:B:886:LYS:HD2	1.62	0.65
11:J:28:ASP:HB2	11:J:30:LEU:HG	1.79	0.65
13:L:34:CYS:HB3	13:L:51:CYS:HB3	1.77	0.65
4:A:444:PHE:CD2	4:A:487:MET:CE	2.79	0.65
13:L:64:LEU:HD23	13:L:65:VAL:N	2.11	0.65
4:A:860:LEU:HD11	4:A:1394:THR:HG22	1.79	0.65
4:A:913:LEU:HD21	4:A:1032:LEU:HD22	1.78	0.65
5:B:1160:VAL:HG23	5:B:1194:ILE:HG13	1.79	0.65
7:E:24:LYS:HB2	7:E:30:ILE:HG21	1.78	0.65
5:B:1054:GLY:HA2	5:B:1057:LYS:HD2	1.78	0.65
4:A:1117:THR:O	4:A:1327:ILE:HG13	1.95	0.64
5:B:234:ILE:HD12	5:B:237:VAL:HG22	1.79	0.64
6:C:259:LEU:HD11	12:K:91:CYS:HB2	1.79	0.64
12:K:10:PHE:CD2	12:K:11:LEU:HD13	2.31	0.64
4:A:786:HIS:CE1	5:B:742:GLU:HG3	2.30	0.64
4:A:993:LEU:HD22	4:A:1046:LEU:HG	1.79	0.64
5:B:59:LEU:CG	5:B:95:ILE:HD13	2.26	0.64
5:B:1059:LEU:HD22	5:B:1064:TYR:HB2	1.78	0.64
4:A:901:LEU:HA	4:A:907:THR:HG23	1.80	0.64
5:B:866:TYR:OH	5:B:872:GLU:HG3	1.97	0.64
11:J:3:VAL:HG11	11:J:18:TRP:HB2	1.78	0.64
5:B:423:LYS:HA	5:B:426:LYS:HD3	1.78	0.64
5:B:1106:ARG:NH1	5:B:1118:PRO:HB3	2.12	0.64
7:E:83:CYS:HB2	7:E:110:PHE:CE1	2.31	0.64
4:A:1147:THR:HG22	4:A:1197:LEU:HD22	1.78	0.64
4:A:1161:THR:HG23	4:A:1167:GLU:HG2	1.80	0.64
5:B:1024:ALA:HA	5:B:1027:ILE:HD12	1.80	0.64
9:H:112:ILE:HG21	9:H:131:ASN:HB3	1.78	0.64
4:A:534:LEU:HA	4:A:539:THR:HG21	1.78	0.64
4:A:789:LYS:HG3	10:I:67:THR:HB	1.78	0.64
4:A:108:MET:H	4:A:171:GLN:HE21	1.46	0.64
5:B:606:LYS:HD2	5:B:608:ASP:HB2	1.79	0.64
7:E:46:TYR:CZ	7:E:58:MET:HB2	2.33	0.64
7:E:108:GLY:O	7:E:132:ILE:HA	1.98	0.64
4:A:1192:LEU:HD11	4:A:1239:ARG:HB3	1.78	0.63
5:B:724:ASP:HB3	5:B:727:LYS:HE2	1.79	0.63
4:A:593:GLU:HG3	4:A:601:LYS:HZ2	1.63	0.63
5:B:839:MET:HE3	5:B:988:GLY:HA3	1.80	0.63
5:B:59:LEU:CD2	5:B:95:ILE:HD13	2.28	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:T:21:DC:H3’	2:T:22:DT:H71	1.79	0.63
5:B:890:TYR:CD2	5:B:910:VAL:HG21	2.33	0.63
4:A:877:HIS:HE1	4:A:1056:SER:HA	1.62	0.63
4:A:1267:MET:HA	4:A:1271:ILE:HD13	1.80	0.63
5:B:661:LEU:HG	5:B:679:TYR:HD2	1.62	0.63
4:A:1217:LYS:HG2	4:A:1226:VAL:HG21	1.81	0.63
5:B:757:PRO:HD3	5:B:983:ARG:HD2	1.80	0.63
4:A:21:LEU:HB2	4:A:229:SER:HA	1.80	0.62
4:A:91:PHE:CE1	4:A:235:ILE:HD12	2.34	0.62
4:A:335:ARG:HH12	5:B:1202:LEU:HD13	1.63	0.62
4:A:683:ILE:HG21	4:A:801:GLU:CG	2.30	0.62
7:E:59:SER:HB2	7:E:80:VAL:O	1.99	0.62
9:H:17:PRO:HA	9:H:24:CYS:SG	2.40	0.62
5:B:370:PHE:HD1	5:B:373:ARG:HD3	1.64	0.62
5:B:639:ILE:HD11	5:B:691:GLU:HB2	1.82	0.62
4:A:908:LEU:HD13	4:A:913:LEU:HB2	1.80	0.62
4:A:605:MET:SD	4:A:612:ILE:HD11	2.39	0.62
5:B:350:GLN:HA	5:B:353:LYS:HD3	1.80	0.62
12:K:10:PHE:CE2	12:K:11:LEU:HD13	2.34	0.62
13:L:40:LEU:CD1	13:L:44:ASP:CB	2.77	0.62
2:T:16:DT:H2”	2:T:17:DG:C8	2.34	0.62
4:A:999:VAL:H	4:A:1011:GLN:HE21	1.48	0.62
9:H:96:VAL:HA	9:H:142:LEU:O	2.00	0.62
4:A:1105:LEU:HB3	4:A:1384:VAL:HG21	1.82	0.62
7:E:93:MET:HE1	7:E:132:ILE:HG21	1.81	0.62
4:A:182:VAL:HG12	4:A:201:VAL:HA	1.82	0.62
6:C:8:VAL:HB	6:C:22:LEU:HD12	1.82	0.62
4:A:325:ILE:HA	4:A:328:ARG:HD3	1.82	0.61
4:A:981:LEU:HG	4:A:1039:LYS:HA	1.81	0.61
9:H:125:LEU:HG	9:H:130:ARG:CZ	2.29	0.61
4:A:225:ASN:HB3	4:A:228:PHE:HB2	1.82	0.61
4:A:444:PHE:CE2	4:A:487:MET:SD	2.93	0.61
5:B:1104:HIS:HB2	5:B:1122:ARG:HG3	1.81	0.61
7:E:7:ARG:HD3	7:E:7:ARG:H	1.64	0.61
4:A:568:PRO:HB2	9:H:46:LEU:HD22	1.83	0.61
5:B:283:VAL:HG21	5:B:321:GLY:CA	2.31	0.61
4:A:630:ILE:HD12	4:A:630:ILE:H	1.65	0.61
9:H:36:CYS:SG	9:H:130:ARG:NH2	2.73	0.61
4:A:72:GLU:HB3	4:A:76:GLU:HB3	1.82	0.61
4:A:214:ILE:HB	4:A:219:PHE:HE1	1.64	0.61
4:A:298:PHE:CZ	4:A:314:ALA:HB2	2.36	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:172:PRO:HB3	4:A:185:TRP:CD1	2.35	0.61
4:A:445:ASN:HB2	4:A:455:MET:HG2	1.83	0.61
5:B:599:THR:O	5:B:603:LEU:HG	2.00	0.61
6:C:77:ILE:N	6:C:129:ILE:HD11	2.16	0.61
4:A:1130:GLN:O	4:A:1134:ILE:HG12	2.00	0.61
5:B:701:ILE:HB	5:B:739:THR:OG1	2.00	0.61
4:A:243:PRO:HB2	4:A:245:PRO:HD2	1.82	0.61
5:B:95:ILE:HD11	5:B:128:LEU:HG	1.82	0.61
6:C:6:PRO:HB3	6:C:25:VAL:CG1	2.30	0.61
6:C:116:LYS:HG2	6:C:141:GLY:H	1.66	0.61
7:E:39:LEU:HD12	7:E:42:PHE:HD2	1.66	0.61
4:A:18:GLN:HB3	5:B:1217:TYR:HE2	1.65	0.61
4:A:993:LEU:HD23	4:A:1022:LEU:HD11	1.83	0.61
5:B:487:THR:HG22	5:B:489:SER:H	1.66	0.61
8:F:93:ILE:HD12	8:F:132:LEU:HD13	1.82	0.61
4:A:89:PRO:O	4:A:204:THR:HG21	2.01	0.60
4:A:1138:ILE:HA	4:A:1276:VAL:HG23	1.82	0.60
4:A:67:CYS:HB3	4:A:70:CYS:HB2	1.81	0.60
5:B:234:ILE:HD12	5:B:237:VAL:CG2	2.30	0.60
5:B:693:ILE:HG21	5:B:701:ILE:HD13	1.83	0.60
5:B:615:MET:HG2	5:B:626:ILE:HG23	1.83	0.60
5:B:980:PHE:CE1	5:B:990:ILE:HD11	2.36	0.60
4:A:666:ILE:HD11	5:B:1030:LEU:HD21	1.83	0.60
4:A:857:ARG:NH2	7:E:170:LEU:CD2	2.64	0.60
5:B:101:MET:HG2	5:B:111:ALA:HA	1.83	0.60
5:B:512:ARG:HB3	5:B:533:CYS:O	2.02	0.60
4:A:34:LYS:HE2	4:A:83:HIS:CE1	2.36	0.60
4:A:1128:GLN:CG	4:A:1304:TRP:HE1	2.11	0.60
7:E:87:SER:HA	7:E:115:ASN:HB2	1.83	0.60
3:N:6:DG:H2"	3:N:7:DA:H5"	1.84	0.60
4:A:801:GLU:HG2	5:B:729:ILE:HD11	1.84	0.60
11:J:25:LEU:HD21	11:J:32:GLU:HA	1.82	0.60
4:A:565:ILE:HG21	9:H:46:LEU:HD13	1.82	0.60
5:B:570:VAL:HG23	5:B:573:GLN:CB	2.32	0.60
4:A:997:LEU:CD2	4:A:1050:GLU:HA	2.32	0.60
4:A:1207:LEU:HG	4:A:1274:ARG:HE	1.67	0.60
5:B:102:VAL:HG22	5:B:112:LEU:HB2	1.82	0.60
6:C:133:ILE:CD1	6:C:237:SER:HA	2.32	0.60
5:B:1196:ILE:HD11	5:B:1201:LYS:HB2	1.83	0.59
10:I:44:TYR:CZ	10:I:46:HIS:HB2	2.37	0.59
13:L:28:LYS:HZ2	13:L:40:LEU:HA	1.66	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:162:GLY:HA3	6:C:170:TRP:CE2	2.38	0.59
4:A:998:LEU:HB2	4:A:1001:ARG:HH21	1.67	0.59
4:A:1325:THR:HA	7:E:147:HIS:HA	1.83	0.59
6:C:49:VAL:O	13:L:67:PHE:HB2	2.03	0.59
6:C:245:VAL:HG13	12:K:102:LYS:HD3	1.85	0.59
4:A:131:SER:CB	4:A:223:GLY:HA3	2.33	0.59
12:K:7:PHE:HA	12:K:10:PHE:CE1	2.38	0.59
5:B:597:MET:HE3	5:B:601:ARG:HH12	1.68	0.59
6:C:44:LEU:HB2	6:C:77:ILE:HD13	1.85	0.59
4:A:497:THR:HG23	5:B:1146:PHE:HA	1.85	0.59
4:A:665:GLY:HA3	5:B:1069:PHE:CE1	2.38	0.59
4:A:964:ILE:HG21	4:A:1035:TYR:CZ	2.38	0.59
6:C:259:LEU:HD11	12:K:91:CYS:CB	2.32	0.59
4:A:901:LEU:HD21	4:A:929:LEU:HD11	1.85	0.58
4:A:515:GLN:OE1	4:A:1071:SER:HA	2.03	0.58
5:B:592:ASN:ND2	5:B:595:ARG:HB3	2.17	0.58
3:N:2:DC:H2”	3:N:3:DA:O5’	2.03	0.58
4:A:902:LEU:HG	4:A:926:GLN:HG2	1.86	0.58
12:K:30:ALA:HA	12:K:75:ILE:O	2.04	0.58
4:A:1207:LEU:HD11	4:A:1273:LEU:HB2	1.85	0.58
5:B:604:ARG:NH2	5:B:614:SER:HA	2.18	0.58
7:E:17:ARG:O	7:E:21:GLU:OE1	2.22	0.58
4:A:115:LEU:HD23	4:A:142:CYS:HA	1.84	0.58
4:A:152:VAL:HG22	4:A:164:ARG:HG2	1.86	0.58
4:A:181:LEU:HB2	4:A:202:LEU:HD22	1.84	0.58
4:A:672:ASP:H	4:A:736:ASN:HD21	1.51	0.58
4:A:350:ARG:HB2	5:B:1128:LEU:HD11	1.85	0.58
5:B:1006:ILE:HD13	11:J:44:TYR:CZ	2.39	0.58
4:A:541:ILE:HD11	4:A:656:TRP:HE1	1.68	0.58
4:A:693:VAL:HG21	4:A:721:PHE:HE2	1.69	0.58
4:A:942:PHE:O	4:A:946:VAL:HG23	2.04	0.58
5:B:310:MET:HG3	5:B:386:LEU:HD13	1.85	0.58
5:B:416:LEU:HD23	5:B:457:LEU:HD23	1.86	0.58
13:L:36:SER:OG	13:L:50:ASP:OD2	2.21	0.58
4:A:548:ASN:HA	12:K:60:ALA:HB1	1.85	0.58
5:B:601:ARG:O	5:B:605:ARG:HD2	2.04	0.58
5:B:494:HIS:HA	5:B:497:ARG:NE	2.18	0.57
5:B:496:ARG:NH1	5:B:541:LEU:HA	2.19	0.57
4:A:23:SER:HB2	4:A:233:TRP:CH2	2.40	0.57
4:A:39:GLU:O	4:A:50:ILE:HD11	2.04	0.57
4:A:569:LYS:HG3	4:A:570:PRO:HD2	1.85	0.57

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Atom-1	**Atom-2**	**Interatomic distance (Å)**	**Clash overlap (Å)**
5:B:1135:ARG:O	5:B:1139:ILE:HG12	2.03	0.57
4:A:179:LEU:HD22	4:A:297:GLN:CD	2.29	0.57
4:A:269:ILE:HG12	4:A:299:HIS:HB3	1.85	0.57
4:A:515:GLN:O	4:A:515:GLN:HG3	2.04	0.57
4:A:901:LEU:HD22	4:A:919:ILE:HG22	1.86	0.57
5:B:806:THR:HG22	5:B:808:ALA:H	1.68	0.57
7:E:65:THR:HB	7:E:67:GLU:OE2	2.04	0.57
4:A:874:ASP:HB2	4:A:1058:VAL:HA	1.85	0.57
5:B:898:LEU:HD22	5:B:964:VAL:HG11	1.85	0.57
4:A:882:SER:H	4:A:961:ARG:NH2	2.03	0.57
4:A:1441:PHE:HB2	8:F:134:ILE:CG2	2.34	0.57
5:B:37:PHE:HB2	5:B:681:TRP:CE3	2.40	0.57
5:B:570:VAL:CG2	5:B:573:GLN:HB2	2.33	0.57
6:C:8:VAL:HG11	12:K:105:PHE:HB2	1.85	0.57
6:C:71:PRO:HB2	6:C:133:ILE:HD12	1.86	0.57
2:T:9:DC:H2”	2:T:10:DT:H5’	1.86	0.57
4:A:218:ASP:O	4:A:222:LEU:HG	2.04	0.57
4:A:614:PHE:HB3	9:H:122:LEU:HD21	1.85	0.57
4:A:676:MET:O	4:A:680:THR:HG23	2.04	0.57
4:A:915:SER:O	4:A:919:ILE:HG12	2.04	0.57
5:B:466:TRP:HE1	5:B:479:VAL:HG11	1.68	0.57
6:C:142:VAL:HG23	11:J:15:GLY:HA3	1.85	0.57
4:A:203:SER:HB3	4:A:206:GLU:HB3	1.86	0.57
5:B:308:TRP:HH2	10:I:47:GLU:HG3	1.69	0.57
12:K:28:PRO:HD2	12:K:76:GLN:HE22	1.69	0.57
4:A:303:TYR:CZ	4:A:325:ILE:HD11	2.39	0.57
9:H:100:THR:HG23	9:H:138:GLU:HA	1.86	0.57
4:A:494:SER:O	4:A:498:ARG:HG3	2.04	0.57
4:A:956:LEU:HD13	4:A:1021:LEU:HD22	1.85	0.57
4:A:1441:PHE:CZ	8:F:89:GLU:HA	2.40	0.57
5:B:435:THR:HG22	5:B:438:GLU:H	1.68	0.57
5:B:829:CYS:HA	5:B:834:ASN:ND2	2.18	0.57
7:E:39:LEU:HG	7:E:43:LYS:HD3	1.86	0.57
4:A:148:CYS:HB3	4:A:167:CYS:HB3	1.86	0.57
4:A:266:LEU:HA	4:A:269:ILE:HD12	1.87	0.57
4:A:387:ARG:O	4:A:391:LEU:HG	2.05	0.57
4:A:667:GLY:HA3	5:B:1067:ARG:HD2	1.86	0.57
2:T:25:DC:H2”	2:T:26:DG:H5’	1.85	0.56
4:A:463:ILE:HD13	4:A:469:ARG:CG	2.24	0.56
4:A:707:GLY:HA3	4:A:1281:ARG:HD2	1.86	0.56
4:A:801:GLU:OE1	5:B:729:ILE:HD12	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:898:ARG:HB2	4:A:933:TYR:CE1	2.39	0.56
5:B:757:PRO:HG2	5:B:984:HIS:CE1	2.39	0.56
5:B:1156:ASP:O	5:B:1197:PRO:HA	2.05	0.56
4:A:32:VAL:HG21	4:A:57:ARG:CB	2.35	0.56
5:B:703:ILE:HG22	5:B:740:HIS:HB2	1.87	0.56
9:H:126:GLU:C	9:H:130:ARG:HE	2.13	0.56
4:A:336:ILE:O	4:A:341:MET:HG2	2.05	0.56
4:A:482:PHE:CD2	5:B:836:GLU:HB2	2.41	0.56
5:B:308:TRP:H	5:B:308:TRP:CD1	2.23	0.56
6:C:25:VAL:HG23	6:C:228:PHE:HE2	1.68	0.56
6:C:182:PRO:HB2	6:C:207:CYS:SG	2.46	0.56
9:H:93:TYR:CG	9:H:143:LEU:HB3	2.40	0.56
11:J:7:CYS:HA	11:J:49:MET:HE3	1.86	0.56
4:A:23:SER:HB3	4:A:26:GLU:HB3	1.88	0.56
4:A:116:ASP:OD2	4:A:164:ARG:HD3	2.04	0.56
4:A:326:ARG:HG3	4:A:1406:VAL:HG11	1.85	0.56
4:A:851:HIS:CD2	8:F:139:PRO:HG3	2.40	0.56
5:B:167:ILE:O	5:B:450:ALA:HA	2.06	0.56
5:B:876:LYS:HG3	5:B:893:LEU:HB3	1.87	0.56
6:C:74:SER:HB2	6:C:238:ILE:HG13	1.86	0.56
4:A:373:THR:O	5:B:1107:ALA:HB2	2.05	0.56
4:A:800:VAL:HG13	4:A:812:GLU:CD	2.30	0.56
5:B:125:SER:HB2	5:B:169:ARG:HB3	1.88	0.56
9:H:39:THR:O	9:H:123:MET:HA	2.06	0.56
10:I:76:PRO:HD2	10:I:108:HIS:CE1	2.40	0.56
11:J:58:GLU:HA	11:J:61:LEU:HD12	1.87	0.56
4:A:913:LEU:HD21	4:A:1032:LEU:HD13	1.88	0.56
5:B:905:VAL:HB	5:B:941:LEU:HD12	1.87	0.56
4:A:204:THR:CG2	4:A:235:ILE:HD11	2.35	0.56
4:A:744:LYS:HB3	4:A:748:MET:HE2	1.87	0.56
5:B:520:GLY:HA3	5:B:635:ARG:HE	1.71	0.56
5:B:1060:ARG:HG2	5:B:1066:SER:HB3	1.87	0.56
9:H:91:ASP:OD2	9:H:96:VAL:HG21	2.06	0.56
7:E:188:LEU:HD12	7:E:190:LEU:HD21	1.87	0.56
4:A:752:LYS:HD2	5:B:1019:SER:HB3	1.86	0.56
5:B:449:ASN:HD22	5:B:452:THR:HG23	1.71	0.56
5:B:830:TYR:CE2	5:B:1000:PRO:HD3	2.40	0.56
11:J:41:LEU:HB3	11:J:46:CYS:HB2	1.88	0.56
13:L:47:ARG:NH2	13:L:54:ARG:HE	2.04	0.56
4:A:219:PHE:CE1	4:A:231:PRO:HG3	2.41	0.55
5:B:412:LEU:O	5:B:415:GLN:HG2	2.06	0.55

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Atom-1	**Atom-2**	**Interatomic distance (Å)**	**Clash overlap (Å)**
12:K:10:PHE:CD2	12:K:11:LEU:CD1	2.89	0.55
4:A:353:ILE:HG21	4:A:487:MET:HG3	1.88	0.55
5:B:830:TYR:H	5:B:834:ASN:HD21	1.52	0.55
6:C:101:LEU:HB2	6:C:118:LEU:HG	1.88	0.55
7:E:124:VAL:HG22	7:E:132:ILE:HB	1.88	0.55
4:A:176:LYS:HA	4:A:181:LEU:HA	1.88	0.55
4:A:396:PRO:HD3	4:A:415:LEU:HB3	1.88	0.55
4:A:1001:ARG:HD2	8:F:83:PRO:HD3	1.87	0.55
4:A:1140:HIS:HA	4:A:1275:GLY:HA3	1.89	0.55
4:A:1428:VAL:HG13	5:B:1151:LEU:HD21	1.89	0.55
12:K:108:GLU:O	12:K:112:GLN:HG2	2.06	0.55
4:A:114:LEU:HD22	4:A:148:CYS:HB2	1.88	0.55
4:A:463:ILE:CD1	4:A:469:ARG:HG2	2.25	0.55
4:A:472:LEU:HD12	4:A:650:GLN:NE2	2.21	0.55
4:A:912:LEU:O	4:A:913:LEU:HD22	2.06	0.55
7:E:90:VAL:HA	7:E:117:THR:HG21	1.88	0.55
4:A:351:THR:HG22	5:B:1103:ILE:HG23	1.88	0.55
4:A:1106:ASN:O	4:A:1107:VAL:HG22	2.07	0.55
5:B:120:ARG:NH1	13:L:54:ARG:HD3	2.22	0.55
5:B:364:ILE:HD13	5:B:585:VAL:HG22	1.87	0.55
9:H:38:LEU:HA	9:H:124:ARG:O	2.06	0.55
4:A:96:ILE:HA	4:A:99:ILE:HB	1.87	0.55
5:B:754:SER:HB2	5:B:812:LEU:HD11	1.89	0.55
8:F:83:PRO:HA	8:F:146:TRP:CZ3	2.41	0.55
4:A:93:VAL:O	4:A:96:ILE:HG22	2.07	0.55
5:B:901:PRO:O	13:L:61:THR:HG23	2.07	0.55
8:F:89:GLU:O	8:F:93:ILE:HG12	2.07	0.55
10:I:6:PHE:HD1	10:I:13:MET:HA	1.72	0.55
4:A:598:LEU:HB3	9:H:25:ARG:HH12	1.71	0.55
4:A:848:ILE:HG21	4:A:1370:LEU:HD11	1.89	0.55
11:J:58:GLU:O	11:J:62:ARG:HG2	2.07	0.55
7:E:13:TRP:CE3	7:E:39:LEU:HB2	2.42	0.54
12:K:40:HIS:NE2	12:K:63:VAL:HG11	2.22	0.54
4:A:105:CYS:CB	4:A:142:CYS:HB3	2.37	0.54
4:A:548:ASN:ND2	12:K:61:TYR:H	2.05	0.54
4:A:550:LEU:O	4:A:553:VAL:HG22	2.07	0.54
4:A:800:VAL:HG22	4:A:812:GLU:HG2	1.89	0.54
4:A:881:GLN:HA	4:A:961:ARG:NH2	2.19	0.54
4:A:993:LEU:HD11	4:A:1050:GLU:HB2	1.90	0.54
4:A:1195:LEU:HD11	4:A:1267:MET:HE1	1.88	0.54
5:B:837:ASP:O	5:B:988:GLY:HA2	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:94:LYS:HA	6:C:127:ARG:HH12	1.72	0.54
2:T:10:DT:H1’	2:T:11:DC:H5’	1.88	0.54
4:A:573:SER:HB3	4:A:576:GLN:HG3	1.89	0.54
4:A:714:PHE:CD2	10:I:97:MET:HE1	2.42	0.54
4:A:901:LEU:HG	4:A:926:GLN:OE1	2.08	0.54
4:A:1383:SER:HB2	4:A:1387:HIS:O	2.07	0.54
5:B:763:GLN:HG2	5:B:765:PRO:HD2	1.89	0.54
8:F:109:VAL:HB	8:F:124:GLU:HG2	1.90	0.54
9:H:89:LEU:HD13	9:H:91:ASP:C	2.32	0.54
4:A:53:LEU:HD21	4:A:266:LEU:HD11	1.89	0.54
4:A:134:ARG:HD2	4:A:221:SER:HA	1.89	0.54
4:A:519:PRO:O	4:A:624:SER:HB2	2.07	0.54
4:A:774:ARG:NH2	4:A:797:LYS:HG3	2.22	0.54
6:C:80:LEU:HG	6:C:94:LYS:O	2.07	0.54
7:E:23:VAL:HG13	7:E:28:TYR:HB2	1.89	0.54
5:B:219:ALA:HB2	5:B:405:ARG:HG2	1.90	0.54
5:B:827:ILE:HG12	5:B:1012:ILE:HD11	1.89	0.54
4:A:875:ALA:HB2	4:A:1366:ARG:HD2	1.90	0.54
4:A:901:LEU:HD22	4:A:919:ILE:CG2	2.37	0.54
4:A:1352:VAL:O	4:A:1356:ILE:HG12	2.08	0.54
12:K:90:ALA:O	12:K:94:ILE:HG13	2.08	0.54
4:A:96:ILE:HD13	4:A:179:LEU:CD1	2.38	0.54
4:A:407:ARG:HH11	4:A:413:ILE:HD11	1.73	0.54
4:A:845:LEU:O	4:A:1065:GLY:HA3	2.08	0.54
4:A:861:GLY:HA3	7:E:174:GLN:HE21	1.72	0.54
4:A:998:LEU:HA	4:A:1011:GLN:NE2	2.22	0.54
5:B:294:ASP:HB2	10:I:12:ASN:HA	1.90	0.54
6:C:84:ARG:HD3	12:K:11:LEU:HD21	1.90	0.54
6:C:94:LYS:HA	6:C:127:ARG:HH22	1.71	0.54
9:H:6:PHE:CZ	9:H:8:ASP:HB2	2.43	0.54
13:L:64:LEU:HD22	13:L:66:GLN:NE2	2.21	0.54
4:A:167:CYS:SG	4:A:169:ASN:HB2	2.48	0.54
4:A:727:ASP:O	4:A:731:ARG:HG2	2.08	0.54
5:B:996:ARG:HE	6:C:38:ILE:HG23	1.72	0.54
8:F:125:LEU:O	8:F:128:LYS:HD2	2.08	0.54
9:H:110:ASP:O	9:H:128:ASN:HB2	2.07	0.54
4:A:542:GLU:O	4:A:546:VAL:HG23	2.08	0.54
5:B:903:VAL:HG12	5:B:905:VAL:HG13	1.90	0.54
6:C:162:GLY:HA3	6:C:170:TRP:CD2	2.43	0.54
4:A:774:ARG:CZ	4:A:797:LYS:HG3	2.38	0.53
5:B:33:VAL:HG12	5:B:681:TRP:HZ3	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:115:TYR:CE2	9:H:124:ARG:HG3	2.43	0.53
5:B:996:ARG:HH21	6:C:38:ILE:HG12	1.72	0.53
5:B:1174:LYS:HG2	5:B:1179:GLN:O	2.07	0.53
10:I:106:CYS:CB	10:I:108:HIS:HD2	2.18	0.53
4:A:868:TYR:CE1	4:A:1064:VAL:HG11	2.43	0.53
5:B:416:LEU:HD13	5:B:466:TRP:HE3	1.73	0.53
7:E:177:ARG:HB3	7:E:215:MET:HG3	1.91	0.53
8:F:82:THR:HG22	8:F:84:TYR:H	1.72	0.53
2:T:26:DG:H2”	2:T:27:DA:H5”	1.91	0.53
5:B:864:LYS:HB3	5:B:872:GLU:CD	2.34	0.53
5:B:1116:ARG:HG3	5:B:1198:TYR:CD1	2.43	0.53
4:A:30:ILE:HD12	5:B:1170:THR:HG21	1.91	0.53
4:A:200:ARG:NH2	4:A:203:SER:H	2.07	0.53
4:A:743:VAL:HG12	4:A:758:ILE:CD1	2.39	0.53
4:A:841:LEU:HD21	4:A:1105:LEU:HD13	1.91	0.53
5:B:63:ILE:O	5:B:67:SER:HB3	2.09	0.53
5:B:914:LYS:HB3	5:B:937:ALA:HB3	1.89	0.53
5:B:166:PHE:HZ	5:B:169:ARG:HG3	1.74	0.53
5:B:523:CYS:HB2	5:B:750:GLY:HA3	1.90	0.53
5:B:1106:ARG:CZ	5:B:1109:GLY:HA3	2.39	0.53
10:I:47:GLU:HB2	10:I:50:THR:OG1	2.08	0.53
4:A:30:ILE:O	5:B:1183:LYS:HD3	2.08	0.53
4:A:31:SER:HB3	4:A:83:HIS:HB3	1.91	0.53
4:A:596:THR:HB	4:A:599:SER:H	1.74	0.53
7:E:117:THR:CG2	7:E:120:ALA:HB2	2.38	0.53
4:A:666:ILE:HG23	5:B:1026:LEU:HB3	1.90	0.53
4:A:1206:ASP:HB3	4:A:1274:ARG:CZ	2.38	0.53
5:B:1168:LEU:HD23	5:B:1208:MET:HE2	1.91	0.53
6:C:62:PHE:O	6:C:66:ARG:HG3	2.09	0.53
4:A:810:PRO:HG2	5:B:705:MET:HG2	1.91	0.53
4:A:1352:VAL:O	4:A:1355:VAL:HG22	2.09	0.53
5:B:466:TRP:NE1	5:B:479:VAL:HG11	2.24	0.53
4:A:230:ARG:HB2	4:A:233:TRP:CG	2.43	0.52
4:A:629:LEU:O	4:A:633:VAL:HG23	2.09	0.52
4:A:990:VAL:HG13	4:A:1022:LEU:HD21	1.90	0.52
4:A:420:ARG:O	4:A:424:ILE:HG23	2.10	0.52
5:B:582:VAL:HA	5:B:626:ILE:O	2.09	0.52
6:C:53:THR:O	6:C:153:LEU:HD12	2.10	0.52
11:J:21:TYR:CZ	11:J:25:LEU:HD11	2.45	0.52
4:A:340:LEU:HD13	4:A:1429:ILE:HG23	1.90	0.52
4:A:528:LEU:O	4:A:531:ILE:HG22	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:67:SER:HB2	5:B:92:PHE:CD1	2.45	0.52
6:C:105:GLY:O	6:C:149:LYS:HA	2.09	0.52
6:C:205:LYS:H	6:C:205:LYS:HD2	1.74	0.52
5:B:91:SER:OG	5:B:133:LYS:HB2	2.09	0.52
5:B:311:LEU:O	5:B:315:LYS:HG3	2.10	0.52
5:B:449:ASN:ND2	5:B:452:THR:HG23	2.24	0.52
5:B:520:GLY:HA2	5:B:748:ILE:HG22	1.91	0.52
6:C:148:ARG:CZ	11:J:64:ASN:HA	2.39	0.52
6:C:251:LEU:O	6:C:255:VAL:HG23	2.10	0.52
11:J:34:THR:O	11:J:38:ARG:HG2	2.10	0.52
4:A:1287:TYR:CD2	4:A:1305:VAL:HG21	2.45	0.52
5:B:405:ARG:NH2	5:B:632:ARG:HG3	2.25	0.52
5:B:580:VAL:HG12	5:B:624:LEU:HB3	1.90	0.52
4:A:75:ASN:HA	5:B:1116:ARG:HH22	1.74	0.52
4:A:181:LEU:O	4:A:202:LEU:HB2	2.10	0.52
5:B:762:ASN:HD21	5:B:984:HIS:HB3	1.75	0.52
6:C:164:ALA:HA	6:C:167:HIS:O	2.09	0.52
2:T:4:DT:H3	3:N:15:DA:H61	1.57	0.52
5:B:205:ILE:HG13	5:B:461:LEU:HB3	1.90	0.52
5:B:827:ILE:HG23	5:B:1012:ILE:HG13	1.91	0.52
5:B:852:ARG:HD2	5:B:973:ILE:HG23	1.92	0.52
6:C:91:HIS:HB3	6:C:96:SER:OG	2.09	0.52
12:K:45:LEU:HG	12:K:94:ILE:HD13	1.92	0.52
12:K:77:THR:HB	12:K:81:TYR:HB3	1.92	0.52
4:A:354:SER:O	4:A:469:ARG:HA	2.10	0.52
4:A:443:LEU:O	4:A:489:LEU:HA	2.10	0.52
5:B:60:GLN:CD	5:B:94:LYS:HA	2.34	0.52
5:B:351:TYR:O	5:B:355:ILE:HG12	2.10	0.52
6:C:163:ILE:HD11	12:K:10:PHE:CG	2.45	0.52
9:H:24:CYS:SG	9:H:44:VAL:HG21	2.50	0.52
4:A:57:ARG:HA	4:A:68:GLN:CG	2.37	0.52
4:A:975:HIS:O	4:A:1036:ARG:HG3	2.10	0.52
6:C:96:SER:HB2	6:C:158:VAL:HG13	1.91	0.52
7:E:46:TYR:HE1	7:E:57:MET:HB3	1.74	0.52
7:E:90:VAL:CA	7:E:117:THR:HG21	2.39	0.52
10:I:34:TYR:OH	10:I:36:GLU:HB3	2.10	0.52
4:A:1348:LEU:HD22	4:A:1372:VAL:HG22	1.91	0.52
1:R:3:C:H2'	1:R:4:G:H8	1.76	0.51
5:B:751:VAL:HG23	5:B:812:LEU:HD22	1.92	0.51
5:B:1033:LYS:HG2	5:B:1059:LEU:HD21	1.91	0.51
6:C:6:PRO:HB3	6:C:25:VAL:HG12	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:I:77:LYS:HB3	10:I:108:HIS:CD2	2.45	0.51
4:A:22:PHE:HE2	5:B:1208:MET:HA	1.75	0.51
5:B:346:GLU:HA	5:B:349:ILE:HD12	1.91	0.51
6:C:14:SER:HA	12:K:114:LEU:HD22	1.92	0.51
1:R:3:C:H2’	1:R:4:G:C8	2.46	0.51
4:A:172:PRO:HD3	4:A:185:TRP:HE1	1.73	0.51
4:A:538:ASP:CG	9:H:20:TYR:HB3	2.35	0.51
4:A:1226:VAL:HB	4:A:1228:TRP:CH2	2.45	0.51
4:A:1431:GLY:HA3	5:B:1197:PRO:HD3	1.92	0.51
5:B:639:ILE:HD12	5:B:688:GLY:O	2.10	0.51
5:B:992:ILE:HG13	12:K:67:PHE:HE1	1.75	0.51
6:C:99:LEU:HD12	6:C:118:LEU:HB3	1.91	0.51
10:I:86:PHE:CE2	10:I:89:GLN:HG2	2.45	0.51
4:A:38:PRO:O	4:A:53:LEU:HD12	2.10	0.51
4:A:804:TYR:OH	5:B:763:GLN:HG3	2.10	0.51
4:A:1031:VAL:O	4:A:1035:TYR:O	2.28	0.51
4:A:1148:ILE:HD11	4:A:1198:ASP:HA	1.93	0.51
5:B:629:ASP:N	5:B:632:ARG:HH12	2.09	0.51
6:C:183:TRP:CD2	6:C:213:PRO:HD3	2.45	0.51
9:H:127:GLY:N	9:H:130:ARG:HE	2.08	0.51
4:A:975:HIS:CD2	4:A:1036:ARG:H	2.18	0.51
6:C:183:TRP:CG	6:C:213:PRO:HD3	2.45	0.51
4:A:41:MET:HA	4:A:49:LYS:HA	1.92	0.51
4:A:1001:ARG:HB2	8:F:80:ALA:HA	1.91	0.51
4:A:1168:GLU:O	4:A:1172:LEU:HG	2.11	0.51
4:A:1436:ILE:HD12	5:B:1139:ILE:HG23	1.93	0.51
5:B:866:TYR:HH	5:B:872:GLU:HG3	1.76	0.51
4:A:248:PRO:HD3	5:B:1114:LEU:HD13	1.93	0.51
4:A:541:ILE:HD11	4:A:656:TRP:NE1	2.26	0.51
4:A:672:ASP:H	4:A:736:ASN:ND2	2.08	0.51
4:A:326:ARG:HB2	4:A:1406:VAL:HG21	1.92	0.51
8:F:83:PRO:HB2	8:F:152:ILE:HD13	1.93	0.51
9:H:6:PHE:HE2	9:H:125:LEU:HD21	1.75	0.51
12:K:51:LEU:CD1	12:K:59:ALA:HB3	2.40	0.51
4:A:206:GLU:O	4:A:210:ILE:HG13	2.11	0.51
4:A:367:PRO:HG2	4:A:370:ILE:HG13	1.92	0.51
4:A:376:TYR:CZ	4:A:498:ARG:HD2	2.46	0.51
4:A:752:LYS:HG2	5:B:1015:HIS:O	2.10	0.51
5:B:578:THR:HA	5:B:622:LYS:O	2.11	0.51
5:B:1034:VAL:HG22	5:B:1059:LEU:HG	1.93	0.51
4:A:298:PHE:HE1	4:A:312:PRO:HB2	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:863:VAL:CG2	7:E:170:LEU:HD21	2.40	0.51
4:A:1109:LYS:H	4:A:1109:LYS:HD2	1.76	0.51
5:B:1118:PRO:HD3	5:B:1155:SER:HB3	1.92	0.51
7:E:127:ILE:HB	7:E:130:ALA:HB3	1.92	0.51
4:A:378:GLU:HG2	4:A:388:LEU:HD11	1.92	0.50
4:A:1138:ILE:CG2	4:A:1282:VAL:HG21	2.41	0.50
5:B:36:ALA:HA	5:B:39:ARG:HD3	1.93	0.50
9:H:97:MET:HE2	9:H:118:PHE:HB2	1.94	0.50
11:J:41:LEU:HD23	11:J:46:CYS:HB3	1.92	0.50
4:A:11:LEU:HA	5:B:1193:GLN:O	2.11	0.50
5:B:257:LYS:HB2	5:B:259:TYR:CE1	2.47	0.50
4:A:185:TRP:O	4:A:186:LYS:HG2	2.11	0.50
4:A:243:PRO:HG2	4:A:246:VAL:HG23	1.94	0.50
4:A:325:ILE:O	4:A:329:LEU:HG	2.11	0.50
4:A:449:SER:HB2	5:B:1133:MET:HE3	1.93	0.50
6:C:60:ASP:HB2	13:L:67:PHE:CZ	2.47	0.50
6:C:91:HIS:CE1	6:C:158:VAL:HG11	2.45	0.50
7:E:117:THR:HG23	7:E:120:ALA:H	1.77	0.50
4:A:55:ASP:H	4:A:58:LEU:HD22	1.76	0.50
4:A:466:SER:HB2	5:B:1103:ILE:CD1	2.41	0.50
5:B:68:THR:HA	5:B:90:ILE:O	2.11	0.50
5:B:883:LEU:HD13	5:B:932:HIS:HB3	1.94	0.50
5:B:1169:MET:HE1	5:B:1201:LYS:HG2	1.94	0.50
10:I:26:LEU:HD23	10:I:26:LEU:H	1.77	0.50
11:J:39:LEU:HB2	11:J:41:LEU:HD12	1.94	0.50
4:A:760:GLN:HG2	4:A:765:VAL:HA	1.92	0.50
4:A:1224:LEU:HD23	4:A:1226:VAL:HG13	1.92	0.50
4:A:1438:THR:HA	4:A:1441:PHE:CE2	2.45	0.50
5:B:489:SER:HA	5:B:492:LEU:HD12	1.94	0.50
5:B:846:ILE:HG23	5:B:974:PRO:HD2	1.93	0.50
5:B:1054:GLY:O	5:B:1058:LEU:HG	2.12	0.50
7:E:24:LYS:HB2	7:E:30:ILE:CG2	2.42	0.50
4:A:105:CYS:SG	4:A:114:LEU:HB2	2.52	0.50
4:A:738:LYS:HZ3	6:C:194:GLU:HA	1.76	0.50
4:A:1259:MET:HE2	4:A:1259:MET:HA	1.94	0.50
5:B:800:GLN:HB3	11:J:52:THR:HB	1.94	0.50
7:E:175:LEU:HD23	7:E:213:ILE:HB	1.93	0.50
10:I:74:GLU:HB3	10:I:81:ARG:HD2	1.94	0.50
4:A:22:PHE:CG	5:B:1213:THR:HG22	2.46	0.50
4:A:1153:TYR:CD2	10:I:42:LEU:HB2	2.47	0.50
4:A:821:ARG:NH2	5:B:534:GLY:HA2	2.24	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1004:ASN:HD21	4:A:1006:ILE:HB	1.76	0.50
4:A:1213:GLY:HA3	4:A:1228:TRP:CH2	2.47	0.50
4:A:1267:MET:O	4:A:1271:ILE:HB	2.11	0.50
5:B:193:LYS:HD2	5:B:787:VAL:HG11	1.94	0.50
7:E:169:ARG:HD2	8:F:140:ASP:CG	2.36	0.50
9:H:6:PHE:CE2	9:H:125:LEU:HD21	2.47	0.50
1:R:9:G:H3’	1:R:10:8GM:N3	2.26	0.50
4:A:114:LEU:CD2	4:A:148:CYS:HB2	2.41	0.50
4:A:801:GLU:HB3	5:B:729:ILE:CD1	2.39	0.50
5:B:127:GLY:HA2	5:B:166:PHE:HE1	1.77	0.50
5:B:308:TRP:CZ3	5:B:309:GLN:HG2	2.47	0.50
5:B:952:VAL:HB	13:L:58:LYS:HB2	1.94	0.50
10:I:63:GLY:HA3	10:I:104:LEU:HD21	1.93	0.50
11:J:8:PHE:H	11:J:49:MET:HE3	1.77	0.50
4:A:366:VAL:HG21	4:A:460:VAL:HG22	1.94	0.49
4:A:1223:ASP:O	4:A:1243:VAL:HB	2.11	0.49
5:B:367:LEU:HD11	5:B:370:PHE:HE2	1.76	0.49
5:B:806:THR:H	5:B:809:MET:HE3	1.77	0.49
4:A:492:PRO:HB3	4:A:497:THR:HG22	1.94	0.49
5:B:313:MET:HE1	5:B:390:LEU:HG	1.94	0.49
5:B:416:LEU:HD22	5:B:466:TRP:HZ3	1.76	0.49
5:B:649:LYS:O	5:B:710:LEU:HD21	2.12	0.49
7:E:91:LYS:O	7:E:95:THR:HG23	2.11	0.49
7:E:144:ILE:HD11	7:E:187:TYR:HB2	1.94	0.49
10:I:63:GLY:HA2	10:I:84:VAL:HG21	1.94	0.49
11:J:4:PRO:O	11:J:14:VAL:HG23	2.13	0.49
4:A:135:PHE:HD2	4:A:222:LEU:HA	1.76	0.49
4:A:873:MET:SD	4:A:957:PRO:HB3	2.52	0.49
5:B:378:LEU:O	5:B:382:ILE:HG13	2.12	0.49
5:B:611:PRO:HB3	5:B:685:LEU:HD11	1.93	0.49
7:E:46:TYR:OH	7:E:55:ARG:HA	2.11	0.49
7:E:46:TYR:CE2	7:E:58:MET:HB2	2.46	0.49
8:F:87:LYS:HG3	8:F:88:TYR:N	2.27	0.49
4:A:42:ASP:HA	4:A:50:ILE:CG2	2.30	0.49
4:A:452:LYS:HB2	5:B:1141:HIS:CE1	2.47	0.49
9:H:40:LEU:HD13	9:H:123:MET:HB2	1.94	0.49
12:K:49:GLU:HG3	12:K:94:ILE:HG12	1.93	0.49
4:A:464:PRO:O	12:K:2:ASN:HB3	2.13	0.49
5:B:286:PHE:HA	5:B:289:LEU:HD12	1.94	0.49
5:B:757:PRO:HG3	5:B:983:ARG:CZ	2.42	0.49
5:B:893:LEU:HD21	5:B:911:ILE:O	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:1168:LEU:HD23	5:B:1208:MET:HG2	1.94	0.49
7:E:56:LYS:HE2	7:E:84:ASP:HB2	1.94	0.49
12:K:103:THR:O	12:K:107:THR:HG23	2.12	0.49
5:B:234:ILE:HG21	5:B:257:LYS:HB3	1.94	0.49
4:A:15:LYS:HG2	5:B:1218:THR:O	2.13	0.49
4:A:75:ASN:HA	5:B:1116:ARG:NH2	2.27	0.49
4:A:88:LYS:HD3	4:A:293:GLU:HG2	1.93	0.49
4:A:311:GLN:N	4:A:312:PRO:HD3	2.27	0.49
4:A:450:LEU:HD22	4:A:1077:THR:HG21	1.93	0.49
4:A:708:MET:HG2	4:A:713:SER:HB2	1.95	0.49
4:A:765:VAL:CG2	4:A:800:VAL:HB	2.43	0.49
4:A:793:SER:O	4:A:797:LYS:HG2	2.12	0.49
4:A:1213:GLY:HA3	4:A:1228:TRP:CZ2	2.47	0.49
5:B:313:MET:O	5:B:316:PRO:HD2	2.13	0.49
6:C:104:PHE:HD1	6:C:152:GLU:HB3	1.77	0.49
6:C:221:TYR:CE2	6:C:222:LYS:HG2	2.48	0.49
8:F:76:LYS:HE2	8:F:79:ARG:NH1	2.27	0.49
4:A:380:VAL:HG21	4:A:427:GLN:O	2.12	0.49
4:A:569:LYS:HD3	6:C:221:TYR:HB2	1.92	0.49
4:A:597:LEU:HB3	9:H:102:TYR:CE2	2.43	0.49
4:A:678:GLU:HA	4:A:681:GLU:HG3	1.95	0.49
4:A:693:VAL:HG21	4:A:721:PHE:CE2	2.48	0.49
4:A:962:ARG:HA	4:A:965:GLN:OE1	2.13	0.49
4:A:1073:GLY:O	4:A:1077:THR:HG23	2.13	0.49
4:A:1144:LYS:HG2	4:A:1268:LEU:HB3	1.95	0.49
5:B:1162:ILE:CG2	5:B:1192:TYR:HB2	2.36	0.49
9:H:22:LYS:HB3	9:H:43:ASN:HD21	1.77	0.49
4:A:176:LYS:HB2	4:A:181:LEU:HD23	1.93	0.49
4:A:1150:SER:OG	10:I:46:HIS:HB3	2.13	0.49
5:B:496:ARG:HH12	5:B:541:LEU:HA	1.78	0.49
1:R:8:G:H1	2:T:21:DC:H42	1.61	0.49
4:A:4:GLN:HG3	4:A:76:GLU:OE1	2.13	0.49
4:A:684:ALA:HA	4:A:687:LYS:HD3	1.94	0.49
5:B:177:LYS:HB3	5:B:177:LYS:HE2	1.71	0.49
6:C:60:ASP:HA	6:C:63:ILE:HD12	1.95	0.49
12:K:1:MET:HG3	12:K:2:ASN:H	1.78	0.49
4:A:658:LEU:HD21	5:B:1074:ASN:HD21	1.78	0.48
4:A:900:ASP:H	4:A:906:HIS:HB3	1.78	0.48
5:B:860:MET:HA	5:B:964:VAL:O	2.13	0.48
8:F:74:ILE:HG21	8:F:144:GLU:HG2	1.95	0.48
8:F:98:ALA:HB1	8:F:117:PRO:HB2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:265:LYS:HZ3	4:A:314:ALA:HB1	1.78	0.48
4:A:269:ILE:CG1	4:A:299:HIS:HB3	2.42	0.48
4:A:534:LEU:HD23	4:A:578:LEU:HD22	1.94	0.48
4:A:593:GLU:HG3	4:A:601:LYS:NZ	2.27	0.48
4:A:647:GLY:O	4:A:651:LYS:HG3	2.12	0.48
5:B:451:LYS:HG2	5:B:455:SER:HB3	1.94	0.48
4:A:336:ILE:HD12	5:B:1203:LEU:HD22	1.94	0.48
4:A:896:ARG:HH12	4:A:1030:ARG:HH11	1.60	0.48
4:A:915:SER:C	4:A:919:ILE:HG12	2.37	0.48
5:B:322:PHE:CZ	10:I:30:ARG:HB2	2.48	0.48
6:C:181:ASP:OD2	6:C:186:LEU:HB2	2.13	0.48
5:B:556:THR:O	5:B:560:GLU:HG2	2.14	0.48
5:B:618:ASP:HB3	5:B:621:GLU:HB2	1.95	0.48
5:B:1082:MET:HE2	6:C:190:ASP:HB2	1.94	0.48
5:B:1106:ARG:CZ	5:B:1118:PRO:HB3	2.43	0.48
7:E:185:ALA:HB1	7:E:190:LEU:HB2	1.96	0.48
9:H:28:ALA:HB3	9:H:38:LEU:CD2	2.43	0.48
4:A:407:ARG:NH1	4:A:413:ILE:HD11	2.27	0.48
4:A:908:LEU:CD1	4:A:913:LEU:HB2	2.42	0.48
4:A:1212:VAL:HA	4:A:1273:LEU:CD2	2.43	0.48
4:A:1217:LYS:HD2	4:A:1228:TRP:HZ2	1.77	0.48
5:B:785:TYR:HE1	11:J:60:PHE:CE1	2.30	0.48
12:K:21:ILE:HG23	12:K:31:VAL:CG2	2.43	0.48
2:T:13:DC:H42	3:N:5:DC:H42	1.61	0.48
4:A:857:ARG:HH21	7:E:170:LEU:HD21	1.75	0.48
4:A:1376:THR:HG22	7:E:212:ARG:HH21	1.79	0.48
5:B:528:PRO:HG2	5:B:536:VAL:HB	1.95	0.48
5:B:944:THR:HG21	5:B:1122:ARG:HH22	1.78	0.48
7:E:178:ILE:O	7:E:214:CYS:HA	2.13	0.48
9:H:12:VAL:HG21	9:H:26:ILE:HG13	1.96	0.48
13:L:31:CYS:HB2	13:L:56:LEU:HG	1.94	0.48
4:A:204:THR:HG23	4:A:235:ILE:HD11	1.96	0.48
4:A:1368:MET:O	4:A:1372:VAL:HG23	2.14	0.48
5:B:566:LEU:HD11	5:B:586:TRP:CE2	2.48	0.48
5:B:806:THR:HG23	5:B:1045:SER:HA	1.96	0.48
7:E:28:TYR:HA	7:E:64:PRO:HA	1.95	0.48
4:A:216:VAL:HA	4:A:219:PHE:CD2	2.49	0.48
4:A:765:VAL:HG11	4:A:804:TYR:CD1	2.49	0.48
4:A:1219:THR:HG21	4:A:1271:ILE:HG13	1.96	0.48
5:B:544:CYS:HB2	5:B:634:TYR:CE2	2.49	0.48
5:B:706:GLN:HG2	5:B:708:GLU:OE1	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:1081:LEU:HD13	5:B:1085:ILE:HD12	1.95	0.48
7:E:156:LEU:HD22	7:E:160:GLU:HB3	1.96	0.48
9:H:9:ILE:O	9:H:31:THR:HG22	2.13	0.48
11:J:14:VAL:HG12	11:J:41:LEU:HD21	1.95	0.48
4:A:28:ARG:HH21	4:A:238:CYS:HB3	1.78	0.48
4:A:265:LYS:HZ1	4:A:322:VAL:HG21	1.79	0.48
4:A:551:TYR:HB2	12:K:58:PHE:HZ	1.78	0.48
4:A:923:LEU:HD12	4:A:923:LEU:H	1.79	0.48
4:A:1138:ILE:HG23	4:A:1282:VAL:HG21	1.94	0.48
5:B:1078:GLY:HA3	6:C:31:ASN:HB2	1.95	0.48
5:B:1082:MET:HA	6:C:189:THR:HA	1.96	0.48
9:H:103:LYS:HD2	9:H:104:PHE:H	1.78	0.48
3:N:12:DG:H4’	3:N:13:DA:H5’	1.96	0.48
4:A:1193:LEU:HB2	4:A:1260:LEU:HD11	1.95	0.48
4:A:1331:SER:OG	4:A:1334:ASP:HB2	2.13	0.48
10:I:17:ARG:O	10:I:25:LEU:HD12	2.14	0.48
2:T:6:DT:H2”	2:T:7:DC:C5	2.49	0.47
4:A:42:ASP:OD2	4:A:46:THR:HB	2.14	0.47
4:A:72:GLU:OE1	4:A:76:GLU:HG2	2.14	0.47
4:A:81:PHE:CE2	4:A:242:PRO:HA	2.48	0.47
4:A:406:ILE:HB	4:A:431:LYS:HB2	1.95	0.47
7:E:120:ALA:HA	7:E:123:LEU:HG	1.96	0.47
8:F:75:PRO:HB2	8:F:77:ASP:OD1	2.14	0.47
8:F:99:LEU:HD23	8:F:99:LEU:HA	1.70	0.47
4:A:882:SER:HA	4:A:952:ALA:O	2.14	0.47
4:A:15:LYS:HB3	5:B:1220:ARG:HG2	1.96	0.47
4:A:96:ILE:HD13	4:A:179:LEU:HD12	1.96	0.47
4:A:355:GLY:HA3	4:A:482:PHE:CZ	2.49	0.47
4:A:478:TYR:CE2	4:A:487:MET:HE1	2.49	0.47
4:A:1356:ILE:HG22	4:A:1361:SER:O	2.14	0.47
5:B:170:LEU:HD12	5:B:171:PRO:HD2	1.97	0.47
5:B:301:ILE:HG12	5:B:382:ILE:HD12	1.96	0.47
5:B:777:ALA:HB1	5:B:1093:GLN:HB2	1.96	0.47
7:E:17:ARG:C	7:E:21:GLU:OE1	2.58	0.47
7:E:88:VAL:HG21	7:E:112:TYR:CD2	2.50	0.47
6:C:80:LEU:HD22	6:C:161:LYS:HB2	1.96	0.47
6:C:143:LEU:HD21	6:C:146:LYS:HG3	1.95	0.47
9:H:116:TYR:CE1	9:H:140:ALA:HB2	2.50	0.47
4:A:820:GLY:O	4:A:824:LEU:HG	2.14	0.47
4:A:1134:ILE:O	4:A:1138:ILE:HG22	2.14	0.47
4:A:1215:ARG:O	4:A:1218:GLN:HG2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:129:PHE:CZ	5:B:166:PHE:HB2	2.49	0.47
5:B:361:LEU:HD21	5:B:377:PHE:CD2	2.50	0.47
6:C:163:ILE:HD12	6:C:165:LYS:HB2	1.97	0.47
8:F:85:MET:HG3	8:F:89:GLU:HG3	1.95	0.47
10:I:71:SER:HB3	10:I:83:ASN:OD1	2.14	0.47
4:A:407:ARG:HA	4:A:430:TRP:CD1	2.50	0.47
4:A:587:HIS:HA	4:A:607:ILE:O	2.15	0.47
4:A:973:ILE:HG22	4:A:975:HIS:H	1.78	0.47
4:A:1116:LEU:HB2	4:A:1311:VAL:HG22	1.97	0.47
4:A:1169:ILE:HA	4:A:1172:LEU:HD12	1.96	0.47
4:A:1286:LYS:HA	4:A:1303:GLU:O	2.14	0.47
5:B:851:PHE:CG	5:B:980:PHE:HE2	2.33	0.47
9:H:102:TYR:CE1	9:H:122:LEU:HD23	2.50	0.47
2:T:22:DT:H2’	2:T:23:DC:C6	2.49	0.47
2:T:27:DA:C8	2:T:28:DT:H72	2.49	0.47
4:A:172:PRO:HB2	4:A:183:GLY:HA3	1.97	0.47
4:A:284:ALA:HB3	4:A:289:ILE:HD11	1.97	0.47
4:A:605:MET:HE1	4:A:616:VAL:C	2.40	0.47
4:A:702:LEU:HB3	4:A:710:LEU:HD21	1.96	0.47
4:A:1030:ARG:HG2	4:A:1034:GLU:HG3	1.97	0.47
5:B:211:VAL:HG13	5:B:483:LEU:HG	1.96	0.47
5:B:884:ARG:HD3	5:B:935:ARG:HD3	1.96	0.47
5:B:1114:LEU:HD12	5:B:1114:LEU:HA	1.70	0.47
6:C:80:LEU:CD2	6:C:161:LYS:HB2	2.44	0.47
4:A:315:LEU:HA	4:A:321:PRO:HA	1.96	0.47
4:A:810:PRO:HA	5:B:1047:PHE:CE1	2.50	0.47
4:A:1158:PRO:HG3	4:A:1188:GLN:CD	2.39	0.47
5:B:283:VAL:HG21	5:B:321:GLY:HA3	1.95	0.47
5:B:457:LEU:O	5:B:461:LEU:HD23	2.14	0.47
5:B:892:LYS:NZ	5:B:905:VAL:HA	2.30	0.47
6:C:114:TYR:CE2	6:C:140:ASN:HB3	2.50	0.47
7:E:20:LYS:HE2	7:E:37:LEU:HD11	1.97	0.47
3:N:4:DG:OP1	4:A:1108:ALA:HB1	2.15	0.47
4:A:70:CYS:SG	4:A:80:HIS:CE1	3.08	0.47
4:A:230:ARG:HB3	4:A:232:GLU:CD	2.40	0.47
4:A:359:LEU:HD23	4:A:359:LEU:HA	1.82	0.47
4:A:405:VAL:HG23	4:A:415:LEU:HD21	1.97	0.47
5:B:520:GLY:HA3	5:B:635:ARG:NE	2.29	0.47
5:B:834:ASN:O	5:B:1013:ASN:HB2	2.15	0.47
5:B:1084:GLN:CD	5:B:1084:GLN:H	2.23	0.47
7:E:93:MET:HG2	7:E:120:ALA:HB1	1.97	0.47

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Atom-1	**Atom-2**	**Interatomic distance (Å)**	**Clash overlap (Å)**
4:A:108:MET:CE	4:A:169:ASN:HB3	2.45	0.47
4:A:204:THR:HG22	4:A:235:ILE:HD11	1.96	0.47
4:A:537:ARG:HH12	9:H:25:ARG:HH21	1.63	0.47
5:B:393:LYS:HA	5:B:393:LYS:HD3	1.67	0.47
5:B:446:LEU:HB3	5:B:448:ILE:HD12	1.96	0.47
5:B:581:PHE:HA	5:B:585:VAL:O	2.15	0.47
5:B:883:LEU:HD12	5:B:883:LEU:HA	1.77	0.47
5:B:1168:LEU:HD12	5:B:1168:LEU:H	1.80	0.47
7:E:156:LEU:HD12	7:E:195:VAL:HB	1.97	0.47
9:H:99:GLY:HA3	9:H:118:PHE:HA	1.97	0.47
13:L:48:CYS:HB2	13:L:50:ASP:OD1	2.14	0.47
4:A:265:LYS:O	4:A:269:ILE:HG13	2.15	0.46
4:A:471:ASN:O	4:A:474:VAL:HG12	2.14	0.46
4:A:913:LEU:CD2	4:A:1032:LEU:HD13	2.44	0.46
4:A:986:ILE:HD11	4:A:1032:LEU:HD21	1.97	0.46
5:B:598:GLU:O	5:B:602:THR:HG23	2.14	0.46
6:C:43:THR:HG21	6:C:172:PRO:HB3	1.97	0.46
4:A:466:SER:HB2	5:B:1103:ILE:HD12	1.97	0.46
4:A:1213:GLY:CA	4:A:1228:TRP:CH2	2.98	0.46
5:B:424:LEU:HD11	5:B:449:ASN:H	1.80	0.46
6:C:241:ASP:HB3	12:K:109:TRP:NE1	2.29	0.46
7:E:112:TYR:CD1	7:E:116:ILE:HG12	2.50	0.46
9:H:110:ASP:O	9:H:111:LEU:HD12	2.15	0.46
4:A:708:MET:SD	4:A:712:GLU:HB3	2.55	0.46
4:A:795:GLU:HG2	5:B:731:VAL:CG1	2.37	0.46
4:A:840:ARG:HG2	4:A:1402:PHE:HE1	1.81	0.46
5:B:642:ASP:HB3	5:B:649:LYS:HE2	1.97	0.46
6:C:180:TYR:HB3	6:C:228:PHE:HD1	1.80	0.46
9:H:59:ILE:HA	9:H:141:TYR:O	2.15	0.46
9:H:142:LEU:HD22	9:H:144:ILE:HG13	1.97	0.46
4:A:541:ILE:HG22	4:A:546:VAL:HG23	1.96	0.46
4:A:665:GLY:HA3	5:B:1069:PHE:CZ	2.50	0.46
4:A:684:ALA:O	4:A:688:LYS:HG2	2.14	0.46
4:A:900:ASP:HB3	4:A:906:HIS:CB	2.45	0.46
4:A:1107:VAL:HA	4:A:1332:PHE:CZ	2.51	0.46
4:A:1116:LEU:HD13	4:A:1329:THR:OG1	2.16	0.46
5:B:881:ASN:HA	5:B:932:HIS:HA	1.98	0.46
6:C:259:LEU:O	6:C:263:THR:HG23	2.15	0.46
9:H:47:PHE:HB2	9:H:95:TYR:HD2	1.80	0.46
3:N:10:DG:H2”	3:N:11:DA:H8	1.81	0.46
4:A:31:SER:CB	4:A:83:HIS:HB3	2.44	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:526:ASP:HB3	4:A:657:LEU:CD2	2.45	0.46
5:B:361:LEU:HD21	5:B:377:PHE:HB3	1.98	0.46
5:B:392:ARG:HD3	10:I:53:GLY:HA3	1.97	0.46
12:K:12:LEU:HD21	12:K:18:LYS:HB2	1.98	0.46
12:K:49:GLU:HB2	12:K:90:ALA:HB1	1.97	0.46
4:A:148:CYS:SG	4:A:164:ARG:NH1	2.85	0.46
4:A:265:LYS:NZ	4:A:314:ALA:HB1	2.30	0.46
4:A:326:ARG:HA	4:A:329:LEU:HD12	1.98	0.46
4:A:593:GLU:HB3	4:A:603:ASN:HD22	1.80	0.46
4:A:663:SER:OG	5:B:1085:ILE:HA	2.15	0.46
4:A:845:LEU:HD12	4:A:1069:ALA:HB2	1.97	0.46
4:A:1329:THR:HB	4:A:1335:ILE:HG12	1.98	0.46
5:B:801:LYS:HB3	11:J:52:THR:O	2.16	0.46
6:C:56:THR:HB	6:C:145:CYS:SG	2.55	0.46
7:E:72:PHE:HE2	7:E:157:SER:CA	2.28	0.46
7:E:171:LYS:HB3	7:E:174:GLN:HG3	1.96	0.46
9:H:107:VAL:HG21	9:H:126:GLU:HG3	1.97	0.46
10:I:75:CYS:HB2	10:I:108:HIS:NE2	2.31	0.46
11:J:9:SER:HB2	11:J:45:CYS:HB2	1.98	0.46
12:K:50:LEU:HD21	12:K:87:LEU:HA	1.97	0.46
4:A:91:PHE:CD2	4:A:179:LEU:HD21	2.51	0.46
4:A:453:MET:HG2	4:A:520:CYS:SG	2.56	0.46
4:A:801:GLU:HG2	5:B:729:ILE:CD1	2.44	0.46
4:A:861:GLY:HA3	7:E:174:GLN:NE2	2.31	0.46
4:A:868:TYR:OH	4:A:1366:ARG:HD3	2.14	0.46
4:A:1128:GLN:CG	4:A:1304:TRP:NE1	2.59	0.46
5:B:46:GLN:HB2	5:B:408:LEU:HD11	1.97	0.46
5:B:243:ALA:HB1	5:B:249:ARG:HB2	1.96	0.46
5:B:551:PRO:O	5:B:554:ILE:HG22	2.15	0.46
5:B:552:MET:HA	5:B:555:ILE:HD12	1.97	0.46
5:B:916:THR:OG1	5:B:935:ARG:HB3	2.15	0.46
12:K:61:TYR:CB	12:K:71:PHE:CE1	2.88	0.46
12:K:95:ILE:HA	12:K:98:LEU:HD12	1.98	0.46
4:A:180:LYS:HA	4:A:180:LYS:HD3	1.73	0.46
4:A:200:ARG:HH22	4:A:203:SER:H	1.63	0.46
4:A:270:LEU:O	4:A:274:ILE:HG12	2.16	0.46
5:B:900:ALA:CB	13:L:61:THR:HG22	2.44	0.46
5:B:1037:LEU:HA	11:J:47:ARG:HH11	1.81	0.46
9:H:87:ARG:HH11	9:H:88:SER:N	2.14	0.46
13:L:38:LEU:HD22	13:L:56:LEU:HD21	1.97	0.46
4:A:779:PHE:CE2	4:A:785:PRO:HB3	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1155:ASP:OD1	4:A:1162:VAL:HG22	2.14	0.46
12:K:49:GLU:HG3	12:K:94:ILE:CG1	2.46	0.46
4:A:276:LEU:HD11	4:A:293:GLU:HG3	1.96	0.46
4:A:919:ILE:O	4:A:922:ASP:HB2	2.16	0.46
5:B:361:LEU:HD23	5:B:364:ILE:HG13	1.98	0.46
5:B:612:GLU:HG2	5:B:632:ARG:HH21	1.80	0.46
5:B:807:ARG:H	5:B:1045:SER:HG	1.62	0.46
13:L:54:ARG:H	13:L:54:ARG:HD2	1.80	0.46
4:A:57:ARG:CA	4:A:68:GLN:HG2	2.42	0.45
4:A:92:HIS:HB3	4:A:95:PHE:HB2	1.98	0.45
4:A:94:GLY:HA3	4:A:1410:PHE:HD2	1.81	0.45
4:A:700:ASN:HB3	10:I:113:ASP:OD1	2.16	0.45
4:A:777:PHE:CE1	4:A:783:THR:HG23	2.51	0.45
4:A:782:ARG:HD2	4:A:787:PHE:O	2.15	0.45
4:A:928:LEU:O	4:A:931:GLU:HG3	2.16	0.45
4:A:1129:GLU:CD	4:A:1129:GLU:H	2.23	0.45
5:B:197:PHE:CD2	5:B:817:LEU:HD11	2.51	0.45
5:B:310:MET:O	5:B:314:LEU:HG	2.16	0.45
5:B:882:THR:CG2	5:B:885:MET:HB3	2.46	0.45
5:B:1181:GLU:CD	5:B:1188:LYS:HE3	2.40	0.45
7:E:29:PHE:HD2	7:E:65:THR:HG22	1.82	0.45
7:E:156:LEU:HD23	7:E:156:LEU:HA	1.78	0.45
13:L:33:GLU:HG3	13:L:53:HIS:CE1	2.52	0.45
2:T:20:DC:H4’	5:B:1133:MET:HE2	1.98	0.45
4:A:22:PHE:HB2	5:B:1211:ASN:OD1	2.15	0.45
4:A:23:SER:HB2	4:A:233:TRP:CZ2	2.51	0.45
4:A:92:HIS:HB2	4:A:236:LEU:HD11	1.99	0.45
4:A:516:SER:OG	4:A:1362:TYR:O	2.30	0.45
4:A:1135:ARG:HA	4:A:1138:ILE:HG22	1.97	0.45
4:A:1316:VAL:O	4:A:1319:VAL:HB	2.16	0.45
5:B:244:LEU:O	5:B:249:ARG:HB3	2.17	0.45
5:B:703:ILE:HA	5:B:740:HIS:O	2.16	0.45
5:B:944:THR:HG23	5:B:945:GLU:HG3	1.98	0.45
9:H:41:ASP:HB2	9:H:121:LEU:HB3	1.99	0.45
4:A:111:GLY:HA3	4:A:214:ILE:CA	2.34	0.45
4:A:743:VAL:CG1	4:A:758:ILE:CD1	2.94	0.45
4:A:873:MET:HE3	4:A:873:MET:HB2	1.74	0.45
4:A:1210:GLY:O	4:A:1214:GLU:HG2	2.17	0.45
4:A:1215:ARG:O	4:A:1219:THR:HG23	2.16	0.45
5:B:545:ILE:HA	5:B:632:ARG:O	2.16	0.45
5:B:590:HIS:CD2	5:B:596:LEU:HD22	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:10:PHE:CE1	9:H:38:LEU:HD22	2.51	0.45
9:H:112:ILE:HG13	9:H:131:ASN:ND2	2.31	0.45
11:J:32:GLU:O	11:J:36:LEU:HG	2.16	0.45
4:A:108:MET:HE3	4:A:169:ASN:HB3	1.99	0.45
4:A:138:ILE:CD1	4:A:221:SER:HB2	2.46	0.45
5:B:25:ILE:CG1	5:B:651:LEU:HD11	2.42	0.45
9:H:87:ARG:HH11	9:H:88:SER:H	1.64	0.45
4:A:4:GLN:O	4:A:5:GLN:HB2	2.17	0.45
4:A:287:HIS:HA	4:A:290:GLU:HG3	1.99	0.45
4:A:667:GLY:CA	5:B:1067:ARG:HD2	2.46	0.45
4:A:738:LYS:HZ1	4:A:740:LEU:HD11	1.82	0.45
5:B:58:THR:O	5:B:62:ILE:HG12	2.15	0.45
5:B:778:MET:HE1	5:B:853:SER:HB3	1.99	0.45
7:E:10:SER:O	7:E:14:ARG:HG3	2.16	0.45
8:F:86:THR:O	8:F:89:GLU:HG2	2.16	0.45
2:T:15:DC:H2”	2:T:16:DT:O5’	2.15	0.45
4:A:545:GLN:HG2	4:A:549:MET:HE3	1.97	0.45
4:A:630:ILE:HG23	4:A:642:CYS:SG	2.57	0.45
4:A:1441:PHE:HE2	8:F:88:TYR:HB3	1.80	0.45
5:B:309:GLN:NE2	10:I:52:ILE:HG21	2.31	0.45
5:B:604:ARG:HH21	5:B:614:SER:HA	1.81	0.45
7:E:79:TRP:NE1	7:E:81:GLU:HB2	2.32	0.45
9:H:26:ILE:HD12	9:H:26:ILE:HA	1.86	0.45
3:N:5:DC:H4’	4:A:1391:ARG:HH12	1.81	0.45
4:A:19:PHE:HB3	4:A:1413:GLY:HA2	1.99	0.45
10:I:8:ARG:H	10:I:8:ARG:HG3	1.59	0.45
12:K:29:ASN:HB3	12:K:77:THR:OG1	2.17	0.45
4:A:399:HIS:HA	4:A:401:GLY:N	2.31	0.45
4:A:550:LEU:HD12	4:A:556:TRP:NE1	2.31	0.45
4:A:598:LEU:HD11	9:H:39:THR:HB	1.97	0.45
5:B:322:PHE:HZ	10:I:30:ARG:HB2	1.82	0.45
6:C:221:TYR:HD2	6:C:222:LYS:HE2	1.81	0.45
7:E:42:PHE:CE1	7:E:58:MET:HE2	2.52	0.45
7:E:124:VAL:HG13	7:E:132:ILE:HB	1.98	0.45
4:A:118:HIS:HE1	4:A:164:ARG:HB3	1.81	0.45
4:A:248:PRO:HD2	4:A:260:ASP:OD2	2.17	0.45
4:A:997:LEU:HD23	4:A:1050:GLU:HG3	1.99	0.45
4:A:1207:LEU:HG	4:A:1274:ARG:NE	2.29	0.45
5:B:520:GLY:HA3	5:B:635:ARG:HH21	1.80	0.45
7:E:16:PHE:CE2	7:E:20:LYS:HE3	2.52	0.45
4:A:185:TRP:CH2	4:A:200:ARG:HD3	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:547:LEU:HD22	12:K:58:PHE:HD1	1.82	0.45
5:B:405:ARG:HD2	5:B:405:ARG:HA	1.84	0.45
5:B:551:PRO:O	5:B:555:ILE:HG13	2.16	0.45
5:B:1142:GLY:HA3	8:F:88:TYR:HE1	1.82	0.45
6:C:184:ASN:O	6:C:187:LYS:HG3	2.17	0.45
7:E:96:PHE:O	7:E:100:ILE:HG12	2.16	0.45
7:E:153:HIS:CD2	7:E:196:VAL:HG11	2.51	0.45
7:E:190:LEU:HD11	7:E:196:VAL:HG22	1.99	0.45
8:F:76:LYS:HB2	8:F:76:LYS:HE3	1.84	0.45
8:F:114:GLU:HB2	8:F:120:ILE:HD11	1.99	0.45
10:I:56:ALA:HB3	10:I:89:GLN:HG3	1.98	0.45
13:L:55:ILE:O	13:L:56:LEU:HD12	2.17	0.45
4:A:101:LYS:HD3	4:A:139:TRP:CE2	2.51	0.44
6:C:177:GLU:O	6:C:230:MET:HA	2.17	0.44
7:E:55:ARG:HB2	7:E:82:PHE:HB2	1.99	0.44
7:E:178:ILE:HD11	7:E:182:ASP:CG	2.41	0.44
10:I:34:TYR:CZ	10:I:36:GLU:HB3	2.52	0.44
12:K:94:ILE:HA	12:K:97:LYS:HD2	1.97	0.44
4:A:185:TRP:CZ3	4:A:200:ARG:HD3	2.52	0.44
4:A:340:LEU:HD21	5:B:1200:ALA:N	2.32	0.44
4:A:514:PRO:O	4:A:875:ALA:HB1	2.17	0.44
4:A:1003:LYS:HE3	4:A:1003:LYS:HB2	1.71	0.44
5:B:62:ILE:HG23	5:B:418:LYS:HG2	1.99	0.44
5:B:358:LYS:HA	5:B:366:GLN:OE1	2.18	0.44
5:B:387:LEU:HD23	5:B:387:LEU:HA	1.82	0.44
5:B:632:ARG:HD2	5:B:694:ASP:HB2	1.99	0.44
4:A:1121:GLU:HB3	4:A:1321:GLY:C	2.42	0.44
5:B:849:GLY:C	5:B:852:ARG:HG3	2.42	0.44
5:B:952:VAL:O	13:L:57:LEU:HA	2.18	0.44
5:B:976:ILE:HG23	5:B:990:ILE:O	2.17	0.44
6:C:128:ASN:HA	6:C:131:HIS:CE1	2.53	0.44
7:E:166:LYS:HE3	7:E:167:ARG:HE	1.81	0.44
12:K:99:GLY:O	12:K:103:THR:HG23	2.17	0.44
1:R:9:G:H5”	1:R:10:8GM:N2	2.32	0.44
2:T:22:DT:H2’	2:T:23:DC:H6	1.83	0.44
4:A:122:MET:HE1	4:A:138:ILE:HA	2.00	0.44
4:A:446:ARG:HH12	4:A:480:ALA:N	2.15	0.44
4:A:482:PHE:HB2	5:B:838:SER:HB3	1.99	0.44
4:A:1386:ARG:HD2	4:A:1404:GLU:OE2	2.18	0.44
5:B:262:GLU:HA	5:B:267:ARG:CZ	2.48	0.44
5:B:282:ILE:HD13	5:B:301:ILE:HD11	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:464:GLY:HA2	5:B:480:SER:HB3	1.99	0.44
5:B:698:GLU:HG3	5:B:701:ILE:HD11	1.99	0.44
7:E:180:ARG:HG3	7:E:215:MET:OXT	2.17	0.44
2:T:17:DG:H2'	2:T:18:DA:C8	2.52	0.44
4:A:122:MET:O	4:A:126:LEU:HG	2.16	0.44
4:A:679:ILE:HG23	4:A:729:ALA:HB1	2.00	0.44
4:A:737:LEU:HB3	4:A:744:LYS:HD2	2.00	0.44
4:A:857:ARG:HD3	4:A:861:GLY:HA2	1.99	0.44
4:A:975:HIS:HA	4:A:1036:ARG:HB2	1.98	0.44
4:A:1143:LEU:HB3	4:A:1268:LEU:HA	1.98	0.44
4:A:1196:GLU:C	4:A:1197:LEU:HD23	2.43	0.44
4:A:1315:GLU:O	4:A:1319:VAL:HG23	2.18	0.44
5:B:653:VAL:O	5:B:654:ARG:HD3	2.16	0.44
5:B:796:LEU:HB3	5:B:799:PRO:HG3	1.99	0.44
5:B:850:LEU:HB2	11:J:8:PHE:CD2	2.53	0.44
5:B:978:ASP:OD1	5:B:1099:VAL:HG22	2.17	0.44
7:E:190:LEU:HD11	7:E:196:VAL:CG2	2.47	0.44
3:N:9:DA:H2'	3:N:10:DG:H8	1.77	0.44
4:A:517:ASN:HB2	4:A:878:ILE:O	2.17	0.44
5:B:212:LEU:HA	5:B:479:VAL:O	2.17	0.44
5:B:603:LEU:CB	5:B:609:ILE:HG12	2.42	0.44
5:B:784:ASN:CG	5:B:788:ARG:HD2	2.43	0.44
5:B:806:THR:O	5:B:809:MET:HB2	2.18	0.44
5:B:1045:SER:HB2	5:B:1048:THR:HG21	1.99	0.44
6:C:17:ASN:HA	6:C:232:VAL:O	2.18	0.44
6:C:258:ILE:HG23	12:K:19:LEU:HD11	1.99	0.44
7:E:122:LYS:O	7:E:125:PRO:HD2	2.17	0.44
10:I:12:ASN:ND2	10:I:31:THR:HG21	2.33	0.44
10:I:19:ASP:HB3	10:I:24:ARG:CG	2.48	0.44
12:K:40:HIS:CD2	12:K:63:VAL:HG11	2.52	0.44
4:A:100:LYS:O	4:A:104:GLU:N	2.51	0.44
4:A:377:PRO:HD3	4:A:493:GLN:OE1	2.18	0.44
4:A:532:ARG:O	4:A:536:LEU:HG	2.18	0.44
4:A:591:PHE:HD2	4:A:595:THR:HB	1.81	0.44
4:A:678:GLU:O	4:A:681:GLU:HG3	2.17	0.44
5:B:370:PHE:CD1	5:B:373:ARG:HD3	2.49	0.44
5:B:698:GLU:O	5:B:701:ILE:HG12	2.18	0.44
6:C:76:ASP:C	6:C:129:ILE:HD11	2.43	0.44
9:H:58:THR:HB	9:H:143:LEU:HB2	2.00	0.44
9:H:102:TYR:CE2	9:H:115:TYR:HB3	2.52	0.44
4:A:465:TYR:CD2	5:B:976:ILE:HD12	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:538:ASP:OD1	9:H:20:TYR:HB3	2.18	0.44
4:A:546:VAL:CG1	4:A:550:LEU:HD23	2.48	0.44
4:A:836:TYR:OH	4:A:1403:GLU:OE2	2.33	0.44
5:B:128:LEU:HB3	5:B:167:ILE:HD11	1.99	0.44
5:B:541:LEU:CD2	5:B:812:LEU:HD21	2.47	0.44
5:B:789:MET:HE3	5:B:965:LYS:HB3	2.00	0.44
5:B:808:ALA:O	5:B:812:LEU:HG	2.17	0.44
5:B:839:MET:SD	5:B:980:PHE:HB2	2.58	0.44
6:C:11:ARG:HH12	6:C:229:TYR:HD2	1.66	0.44
8:F:97:ARG:NH2	8:F:107:VAL:HA	2.32	0.44
9:H:26:ILE:O	9:H:39:THR:HA	2.18	0.44
9:H:106:GLU:OE2	9:H:109:LYS:HA	2.17	0.44
10:I:109:ILE:HD12	10:I:109:ILE:H	1.83	0.44
4:A:265:LYS:HG3	4:A:303:TYR:HB2	1.99	0.44
4:A:526:ASP:N	5:B:835:GLN:HE21	2.10	0.44
4:A:981:LEU:HD21	4:A:1042:PHE:HB3	1.99	0.44
4:A:1212:VAL:O	4:A:1216:ILE:HG13	2.18	0.44
5:B:372:SER:OG	5:B:567:GLU:HG3	2.18	0.44
5:B:376:PHE:HB3	5:B:586:TRP:CZ3	2.53	0.44
5:B:520:GLY:HA3	5:B:635:ARG:NH2	2.33	0.44
5:B:592:ASN:HD21	5:B:595:ARG:HE	1.65	0.44
5:B:904:ARG:NH2	5:B:948:ILE:HD11	2.33	0.44
6:C:29:MET:HB2	12:K:45:LEU:HD11	2.00	0.44
9:H:101:ALA:HB2	9:H:116:TYR:CE1	2.53	0.44
4:A:54:ASN:HA	4:A:58:LEU:CD2	2.47	0.43
4:A:101:LYS:HD3	4:A:139:TRP:NE1	2.33	0.43
4:A:464:PRO:HD3	12:K:68:PHE:HZ	1.83	0.43
4:A:738:LYS:NZ	4:A:740:LEU:HD11	2.33	0.43
4:A:880:LYS:HA	4:A:955:PRO:HA	1.99	0.43
4:A:1147:THR:HG22	4:A:1197:LEU:CD2	2.47	0.43
5:B:112:LEU:HD23	5:B:124:TYR:HA	1.99	0.43
5:B:190:TYR:CZ	5:B:196:PRO:HG2	2.54	0.43
5:B:815:ARG:H	5:B:815:ARG:HG3	1.53	0.43
5:B:963:PHE:HZ	5:B:965:LYS:HE3	1.82	0.43
5:B:1183:LYS:HE2	5:B:1183:LYS:HB3	1.76	0.43
6:C:244:VAL:O	6:C:248:ILE:HG13	2.18	0.43
9:H:12:VAL:HG21	9:H:26:ILE:CD1	2.48	0.43
10:I:5:ARG:HB2	10:I:14:LEU:HD12	1.99	0.43
4:A:57:ARG:HA	4:A:68:GLN:CB	2.49	0.43
4:A:606:LEU:HD11	4:A:608:ILE:HD11	2.00	0.43
4:A:804:TYR:HB3	5:B:1023:VAL:HG21	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:807:ARG:O	5:B:810:GLU:HG2	2.17	0.43
9:H:26:ILE:HD11	9:H:49:VAL:HG11	2.00	0.43
11:J:35:ALA:O	11:J:39:LEU:HG	2.18	0.43
12:K:81:TYR:CE2	12:K:86:ALA:HB2	2.53	0.43
4:A:105:CYS:HB3	4:A:142:CYS:HB3	2.00	0.43
4:A:108:MET:O	4:A:210:ILE:HG12	2.18	0.43
4:A:367:PRO:HD3	4:A:468:PHE:CD1	2.53	0.43
4:A:368:LYS:HB2	4:A:368:LYS:HE3	1.69	0.43
4:A:500:GLU:OE2	4:A:1438:THR:HG21	2.18	0.43
4:A:564:ALA:O	9:H:97:MET:HA	2.18	0.43
4:A:859:SER:HB2	4:A:1422:ARG:HB2	2.00	0.43
4:A:1051:ALA:O	4:A:1055:ARG:HG3	2.18	0.43
4:A:1415:SER:HB2	4:A:1417:GLU:HG2	2.00	0.43
5:B:745:PRO:HB2	5:B:1047:PHE:CD2	2.53	0.43
9:H:132:LEU:HD12	9:H:132:LEU:HA	1.88	0.43
13:L:28:LYS:C	13:L:29:TYR:HD1	2.26	0.43
1:R:2:U:H2’	1:R:3:C:C6	2.53	0.43
4:A:68:GLN:H	4:A:68:GLN:HG3	1.39	0.43
4:A:91:PHE:HD2	4:A:179:LEU:HD21	1.83	0.43
4:A:123:ARG:HA	4:A:126:LEU:HD12	1.99	0.43
4:A:306:ASN:N	4:A:324:SER:HB3	2.33	0.43
4:A:523:ILE:HG23	4:A:527:THR:HB	2.01	0.43
4:A:540:PHE:CD1	4:A:573:SER:HA	2.53	0.43
4:A:705:LYS:HG2	4:A:708:MET:HB3	2.01	0.43
5:B:23:ALA:O	5:B:654:ARG:HG3	2.17	0.43
5:B:986:GLN:NE2	5:B:1017:ILE:HD13	2.33	0.43
6:C:241:ASP:HB3	12:K:109:TRP:CE2	2.54	0.43
10:I:88:SER:OG	10:I:95:THR:HG21	2.18	0.43
12:K:31:VAL:O	12:K:74:ARG:HA	2.18	0.43
4:A:210:ILE:O	4:A:214:ILE:HG13	2.19	0.43
4:A:343:LYS:HD3	5:B:1156:ASP:OD2	2.19	0.43
4:A:414:ASP:O	4:A:418:SER:HB2	2.19	0.43
4:A:605:MET:HE1	4:A:616:VAL:O	2.19	0.43
4:A:857:ARG:NH2	7:E:170:LEU:HD23	2.23	0.43
4:A:940:ARG:O	4:A:944:ARG:HG2	2.18	0.43
5:B:173:MET:O	5:B:176:SER:HB3	2.19	0.43
5:B:749:LEU:HD23	5:B:749:LEU:HA	1.81	0.43
6:C:163:ILE:HD11	12:K:10:PHE:CD1	2.53	0.43
7:E:9:ILE:H	7:E:9:ILE:HG13	1.64	0.43
7:E:179:GLN:HG3	7:E:182:ASP:HB2	2.01	0.43
8:F:130:ILE:HG22	8:F:132:LEU:HG	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:28:ARG:NH2	4:A:238:CYS:HB3	2.34	0.43
4:A:121:LEU:HA	4:A:124:GLN:OE1	2.19	0.43
4:A:939:ASP:O	4:A:943:LEU:HG	2.18	0.43
4:A:1445:ILE:H	4:A:1445:ILE:HG13	1.67	0.43
5:B:59:LEU:HD21	5:B:128:LEU:HD21	2.01	0.43
5:B:428:ILE:O	5:B:432:MET:HG3	2.18	0.43
5:B:429:PHE:HD1	5:B:432:MET:HE3	1.84	0.43
6:C:50:GLU:OE1	13:L:66:GLN:HA	2.19	0.43
7:E:31:THR:HB	7:E:34:GLU:HB3	2.01	0.43
7:E:43:LYS:HB2	7:E:43:LYS:HE2	1.52	0.43
9:H:104:PHE:CZ	9:H:136:LYS:HA	2.54	0.43
11:J:21:TYR:HB2	11:J:39:LEU:HD11	2.00	0.43
3:N:2:DC:H4’	3:N:3:DA:OP1	2.19	0.43
4:A:22:PHE:HD2	5:B:1211:ASN:HA	1.82	0.43
4:A:70:CYS:O	4:A:72:GLU:HG2	2.19	0.43
4:A:120:GLU:O	4:A:124:GLN:HG3	2.19	0.43
4:A:683:ILE:HG21	4:A:801:GLU:CD	2.43	0.43
4:A:1227:ILE:CG1	4:A:1239:ARG:HB2	2.49	0.43
4:A:1405:THR:O	4:A:1409:LEU:HG	2.18	0.43
5:B:245:GLU:HA	5:B:249:ARG:NH1	2.34	0.43
5:B:345:LYS:N	5:B:348:ARG:HB2	2.34	0.43
5:B:408:LEU:O	5:B:412:LEU:HG	2.18	0.43
5:B:999:MET:SD	5:B:1011:ILE:HD11	2.59	0.43
5:B:1021:MET:HE2	5:B:1021:MET:HB2	1.93	0.43
6:C:206:ASN:HA	6:C:209:TYR:HD1	1.83	0.43
7:E:28:TYR:CZ	7:E:78:LEU:HB2	2.53	0.43
7:E:41:ASP:C	7:E:45:LYS:HZ2	2.26	0.43
7:E:195:VAL:HA	7:E:212:ARG:O	2.19	0.43
10:I:5:ARG:O	10:I:14:LEU:HB2	2.18	0.43
4:A:106:VAL:HG21	4:A:214:ILE:HG12	2.01	0.43
4:A:598:LEU:HD23	4:A:598:LEU:HA	1.74	0.43
4:A:666:ILE:CD1	5:B:1030:LEU:HD21	2.48	0.43
4:A:690:VAL:HG22	4:A:718:VAL:HG13	2.01	0.43
4:A:741:ASN:O	4:A:745:GLN:HG3	2.19	0.43
4:A:1014:ALA:O	7:E:205:SER:HB2	2.18	0.43
5:B:1020:ARG:HB3	5:B:1022:THR:HG23	2.01	0.43
6:C:46:ILE:HG12	6:C:157:CYS:HB3	2.00	0.43
6:C:115:SER:HA	6:C:118:LEU:HD13	2.00	0.43
9:H:125:LEU:HG	9:H:130:ARG:NH1	2.34	0.43
4:A:550:LEU:CD2	4:A:577:ILE:HD13	2.45	0.43
4:A:666:ILE:HG13	4:A:667:GLY:N	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:836:TYR:O	4:A:840:ARG:HG3	2.17	0.43
4:A:1120:LEU:HD12	4:A:1120:LEU:HA	1.80	0.43
4:A:1143:LEU:HG	4:A:1268:LEU:HD23	2.01	0.43
5:B:312:GLU:HG2	10:I:44:TYR:HE1	1.84	0.43
7:E:185:ALA:HA	7:E:190:LEU:HD23	2.01	0.43
2:T:21:DC:H2'	2:T:22:DT:O4'	2.19	0.43
3:N:3:DA:H1'	3:N:4:DG:C8	2.54	0.43
4:A:59:GLY:HA2	4:A:67:CYS:SG	2.58	0.43
4:A:896:ARG:HH22	4:A:1030:ARG:HH11	1.67	0.43
4:A:1075:PRO:O	4:A:1079:MET:HG3	2.19	0.43
4:A:1291:VAL:HG22	4:A:1292:PRO:HD2	2.01	0.43
5:B:124:TYR:O	5:B:171:PRO:HA	2.18	0.43
5:B:166:PHE:CZ	5:B:169:ARG:HG3	2.54	0.43
5:B:189:LEU:HA	5:B:192:LEU:HB2	2.00	0.43
5:B:400:HIS:HB3	5:B:403:LYS:HG2	2.00	0.43
5:B:429:PHE:HA	5:B:432:MET:HE2	2.00	0.43
5:B:913:GLY:HA2	5:B:938:SER:OG	2.17	0.43
9:H:113:ALA:HA	9:H:126:GLU:HA	2.00	0.43
12:K:8:GLU:O	12:K:37:LYS:HE3	2.19	0.43
13:L:64:LEU:HD23	13:L:64:LEU:C	2.44	0.43
3:N:5:DC:H2"	3:N:6:DG:C8	2.54	0.42
4:A:22:PHE:CE2	5:B:1213:THR:HG22	2.53	0.42
4:A:452:LYS:HG3	4:A:453:MET:SD	2.59	0.42
4:A:464:PRO:HD3	12:K:68:PHE:CZ	2.54	0.42
4:A:549:MET:HE1	4:A:656:TRP:CD1	2.49	0.42
4:A:556:TRP:CG	4:A:558:GLY:H	2.37	0.42
4:A:646:PHE:O	4:A:650:GLN:HG3	2.19	0.42
4:A:837:ILE:O	4:A:841:LEU:HG	2.18	0.42
4:A:848:ILE:CD1	4:A:864:ILE:HG13	2.49	0.42
5:B:367:LEU:HD12	5:B:368:GLU:O	2.18	0.42
5:B:597:MET:HE3	5:B:601:ARG:NH1	2.33	0.42
5:B:900:ALA:HB2	13:L:58:LYS:HE2	2.01	0.42
5:B:907:GLY:O	5:B:941:LEU:HB3	2.18	0.42
6:C:46:ILE:HA	6:C:159:ALA:HA	2.00	0.42
7:E:65:THR:O	7:E:69:ILE:HG23	2.19	0.42
7:E:143:ASN:HB3	7:E:146:HIS:CG	2.54	0.42
8:F:97:ARG:HD3	8:F:130:ILE:HG23	2.00	0.42
9:H:10:PHE:CD1	9:H:38:LEU:HD22	2.54	0.42
11:J:44:TYR:O	11:J:48:ARG:HG2	2.19	0.42
12:K:7:PHE:HA	12:K:10:PHE:CZ	2.54	0.42
12:K:40:HIS:HE2	12:K:63:VAL:HG11	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:743:VAL:CG1	4:A:758:ILE:HD12	2.49	0.42
5:B:809:MET:HE1	5:B:983:ARG:NH1	2.33	0.42
5:B:839:MET:HE2	5:B:1010:LEU:HD21	2.00	0.42
5:B:1039:GLY:HA3	11:J:33:GLY:N	2.34	0.42
6:C:180:TYR:CB	6:C:228:PHE:HD1	2.32	0.42
4:A:348:SER:HB2	5:B:1128:LEU:HB2	2.00	0.42
4:A:353:ILE:HD11	4:A:480:ALA:HB1	2.02	0.42
4:A:357:PRO:HG2	5:B:831:SER:O	2.19	0.42
4:A:883:LEU:HD12	4:A:952:ALA:O	2.18	0.42
4:A:1161:THR:HG21	4:A:1166:ASP:HB2	2.01	0.42
5:B:286:PHE:CE1	5:B:375:ALA:HB1	2.54	0.42
5:B:352:ALA:O	5:B:356:LEU:HG	2.20	0.42
5:B:1113:VAL:O	5:B:1116:ARG:HG2	2.19	0.42
7:E:95:THR:HA	7:E:98:ILE:HD12	2.01	0.42
7:E:169:ARG:HB3	8:F:140:ASP:CB	2.44	0.42
4:A:247:ARG:HB3	4:A:262:LEU:HD21	2.01	0.42
4:A:343:LYS:HE3	5:B:1151:LEU:HG	2.01	0.42
4:A:487:MET:HE2	4:A:487:MET:HB3	1.86	0.42
4:A:818:MET:HG3	5:B:514:LEU:HD23	2.01	0.42
4:A:1170:ILE:HD11	4:A:1239:ARG:NH1	2.34	0.42
4:A:1410:PHE:HZ	5:B:1210:MET:HE3	1.84	0.42
5:B:30:SER:O	5:B:34:ILE:HG13	2.19	0.42
5:B:127:GLY:CA	5:B:166:PHE:HE1	2.32	0.42
6:C:8:VAL:O	12:K:108:GLU:HG3	2.19	0.42
6:C:31:ASN:O	6:C:34:ARG:HG2	2.19	0.42
6:C:165:LYS:CB	12:K:9:LEU:HD11	2.44	0.42
10:I:44:TYR:OH	10:I:46:HIS:HB2	2.19	0.42
4:A:91:PHE:CG	4:A:96:ILE:HD12	2.55	0.42
4:A:298:PHE:HZ	4:A:314:ALA:HB2	1.83	0.42
5:B:639:ILE:CD1	5:B:691:GLU:HB2	2.48	0.42
5:B:992:ILE:HD11	12:K:66:PRO:HB2	2.02	0.42
5:B:1075:GLY:HA2	6:C:34:ARG:NH2	2.34	0.42
5:B:1168:LEU:CD2	5:B:1208:MET:HG2	2.49	0.42
7:E:90:VAL:O	7:E:94:LYS:HG3	2.20	0.42
4:A:22:PHE:HB2	5:B:1211:ASN:CG	2.44	0.42
4:A:368:LYS:O	4:A:372:LYS:HG3	2.19	0.42
4:A:441:PRO:HD2	4:A:498:ARG:NH2	2.35	0.42
4:A:1213:GLY:O	4:A:1217:LYS:HG3	2.20	0.42
5:B:123:THR:HG23	5:B:205:ILE:HA	2.00	0.42
5:B:876:LYS:HB2	5:B:894:ASP:O	2.19	0.42
5:B:914:LYS:HE3	5:B:937:ALA:CB	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:44:LEU:HD22	6:C:129:ILE:HG23	2.02	0.42
6:C:251:LEU:HD12	6:C:251:LEU:HA	1.81	0.42
7:E:80:VAL:HG23	7:E:109:ILE:HG22	2.02	0.42
9:H:36:CYS:HA	9:H:126:GLU:O	2.20	0.42
9:H:50:ALA:HB3	9:H:53:ASP:CG	2.45	0.42
10:I:85:PHE:HB3	10:I:101:PHE:CD2	2.55	0.42
2:T:7:DC:H1'	2:T:8:DT:C6	2.55	0.42
4:A:99:ILE:HG23	4:A:211:PHE:CZ	2.54	0.42
4:A:527:THR:O	4:A:653:VAL:HG11	2.20	0.42
4:A:1375:MET:H	4:A:1375:MET:HG3	1.66	0.42
4:A:1441:PHE:HB2	8:F:134:ILE:HG23	2.01	0.42
5:B:681:TRP:CZ2	5:B:690:VAL:HG11	2.55	0.42
5:B:797:TYR:HB3	5:B:798:TYR:CD2	2.54	0.42
6:C:147:LEU:HD23	6:C:147:LEU:HA	1.58	0.42
8:F:123:LYS:HD2	8:F:123:LYS:HA	1.77	0.42
9:H:56:THR:O	9:H:144:ILE:HA	2.20	0.42
9:H:112:ILE:HG13	9:H:131:ASN:HD22	1.83	0.42
2:T:4:DT:H3	3:N:15:DA:N6	2.17	0.42
4:A:17:VAL:HG13	5:B:1216:LEU:HG	2.01	0.42
4:A:147:VAL:HG23	4:A:169:ASN:C	2.45	0.42
4:A:547:LEU:HD13	12:K:58:PHE:HA	2.02	0.42
4:A:746:MET:HG2	5:B:1015:HIS:CE1	2.54	0.42
4:A:1143:LEU:O	4:A:1147:THR:HG23	2.20	0.42
4:A:1282:VAL:CG2	4:A:1308:THR:HG22	2.38	0.42
5:B:211:VAL:CG1	5:B:483:LEU:HG	2.49	0.42
5:B:365:THR:HG22	5:B:374:LYS:HE3	2.01	0.42
5:B:485:ARG:NH1	5:B:491:THR:HG21	2.35	0.42
5:B:899:ILE:O	5:B:952:VAL:HG21	2.20	0.42
6:C:41:ILE:HA	6:C:42:PRO:HD3	1.86	0.42
4:A:455:MET:HE2	4:A:455:MET:HB3	1.85	0.42
4:A:602:ASP:HB3	4:A:616:VAL:HG23	2.01	0.42
4:A:1217:LYS:CG	4:A:1226:VAL:HG21	2.50	0.42
5:B:31:TRP:HA	5:B:34:ILE:HD12	2.02	0.42
5:B:791:THR:O	5:B:857:ARG:HA	2.19	0.42
5:B:831:SER:OG	5:B:833:TYR:HD2	2.02	0.42
7:E:199:ILE:HG12	7:E:207:ARG:HH21	1.83	0.42
10:I:15:TYR:CE1	10:I:30:ARG:HG2	2.54	0.42
10:I:28:GLU:HB2	10:I:35:VAL:HG13	2.02	0.42
2:T:15:DC:H2'	2:T:16:DT:C5	2.55	0.42
2:T:15:DC:H2'	2:T:16:DT:C6	2.55	0.42
4:A:139:TRP:HA	4:A:142:CYS:HB2	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:279:LEU:HD22	4:A:284:ALA:HB2	2.01	0.42
4:A:331:GLY:C	4:A:334:GLY:H	2.28	0.42
4:A:387:ARG:HG3	4:A:388:LEU:N	2.34	0.42
4:A:437:MET:HB2	4:A:437:MET:HE3	1.81	0.42
4:A:666:ILE:HG12	5:B:1030:LEU:HD11	2.02	0.42
4:A:731:ARG:HA	4:A:731:ARG:HD3	1.93	0.42
4:A:821:ARG:HH21	5:B:534:GLY:CA	2.28	0.42
4:A:932:GLU:O	4:A:936:LEU:HG	2.19	0.42
5:B:459:TYR:CZ	5:B:463:THR:HG21	2.55	0.42
5:B:1098:MET:HE3	5:B:1098:MET:HB2	1.92	0.42
7:E:93:MET:CE	7:E:132:ILE:HG21	2.48	0.42
10:I:19:ASP:HB3	10:I:24:ARG:HG3	2.02	0.42
4:A:107:CYS:HB2	4:A:167:CYS:HB2	2.02	0.41
4:A:849:MET:HE3	4:A:1061:GLY:HA2	2.01	0.41
4:A:861:GLY:O	7:E:174:GLN:HB3	2.20	0.41
4:A:1101:LEU:O	4:A:1105:LEU:HG	2.20	0.41
4:A:1141:THR:HB	4:A:1273:LEU:O	2.19	0.41
5:B:25:ILE:HA	5:B:655:LYS:HD3	2.02	0.41
5:B:941:LEU:HD23	5:B:942:ARG:N	2.35	0.41
5:B:955:THR:HA	13:L:46:VAL:HG11	2.01	0.41
6:C:112:ASN:HB3	6:C:143:LEU:HD12	2.02	0.41
7:E:6:GLU:HA	7:E:9:ILE:HD12	2.02	0.41
8:F:85:MET:SD	8:F:90:ARG:HB2	2.59	0.41
4:A:12:ARG:HB2	5:B:1218:THR:HB	2.02	0.41
4:A:261:ASP:HA	4:A:264:PHE:CD2	2.55	0.41
4:A:597:LEU:HD13	4:A:597:LEU:HA	1.86	0.41
4:A:1436:ILE:HG22	4:A:1437:GLY:H	1.84	0.41
5:B:48:LEU:HD23	5:B:173:MET:SD	2.59	0.41
5:B:227:LYS:H	5:B:395:GLN:CD	2.28	0.41
5:B:467:GLY:HA3	5:B:474:SER:HB3	2.02	0.41
5:B:797:TYR:HE1	5:B:854:LEU:HG	1.84	0.41
5:B:860:MET:HE3	5:B:860:MET:HB3	1.90	0.41
6:C:210:GLU:HG2	6:C:229:TYR:OH	2.19	0.41
7:E:46:TYR:CD2	7:E:53:PRO:HB2	2.55	0.41
7:E:72:PHE:HE2	7:E:157:SER:HA	1.86	0.41
12:K:57:LEU:HD12	12:K:76:GLN:HG2	2.02	0.41
4:A:113:LEU:HD23	4:A:113:LEU:H	1.84	0.41
4:A:988:LEU:HA	4:A:991:LYS:HD2	2.02	0.41
5:B:193:LYS:HE3	5:B:193:LYS:HB2	1.82	0.41
5:B:197:PHE:CE2	11:J:59:LYS:HE3	2.55	0.41
5:B:956:THR:OG1	5:B:960:GLY:HA2	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:46:TYR:CE1	7:E:57:MET:HB3	2.55	0.41
9:H:40:LEU:HA	9:H:123:MET:HA	2.01	0.41
9:H:41:ASP:HB2	9:H:122:LEU:H	1.85	0.41
3:N:12:DG:H1’	3:N:13:DA:C4	2.55	0.41
4:A:18:GLN:HG2	4:A:228:PHE:CZ	2.56	0.41
4:A:54:ASN:HD22	4:A:61:ILE:HD11	1.85	0.41
4:A:760:GLN:HA	4:A:764:CYS:O	2.20	0.41
4:A:1341:ILE:HG13	4:A:1376:THR:HG23	2.02	0.41
4:A:1390:ASN:ND2	4:A:1402:PHE:HB3	2.36	0.41
5:B:654:ARG:O	5:B:658:ILE:HG12	2.20	0.41
5:B:982:SER:HB3	5:B:1092:TYR:CZ	2.55	0.41
7:E:113:GLN:HG3	7:E:114:ASN:ND2	2.35	0.41
9:H:12:VAL:CG2	9:H:26:ILE:HG13	2.50	0.41
9:H:118:PHE:CE1	9:H:142:LEU:HD12	2.55	0.41
4:A:464:PRO:HG2	4:A:465:TYR:CD1	2.56	0.41
4:A:481:ASP:OD1	5:B:837:ASP:HB2	2.19	0.41
5:B:209:GLU:O	5:B:482:VAL:HA	2.21	0.41
5:B:291:ILE:HD12	5:B:291:ILE:N	2.35	0.41
5:B:882:THR:HG21	5:B:885:MET:HB3	2.03	0.41
9:H:93:TYR:H	9:H:93:TYR:HD1	1.69	0.41
10:I:86:PHE:HE2	10:I:89:GLN:HG2	1.83	0.41
11:J:17:LYS:HG2	11:J:39:LEU:HB3	2.02	0.41
4:A:372:LYS:HA	4:A:435:HIS:CD2	2.55	0.41
4:A:444:PHE:CD2	4:A:487:MET:HE2	2.55	0.41
4:A:590:ARG:HG2	4:A:604:GLY:HA2	2.02	0.41
4:A:876:ALA:C	4:A:877:HIS:CG	2.98	0.41
5:B:122:LEU:HD21	5:B:958:GLN:H	1.86	0.41
5:B:901:PRO:HD2	13:L:59:ALA:O	2.19	0.41
7:E:100:ILE:HD13	7:E:100:ILE:HA	1.92	0.41
9:H:36:CYS:SG	9:H:125:LEU:HD11	2.61	0.41
2:T:17:DG:O5’	4:A:1403:GLU:HG2	2.20	0.41
2:T:25:DC:H5”	5:B:792:MET:HE3	2.02	0.41
3:N:7:DA:H5”	3:N:7:DA:H8	1.86	0.41
4:A:589:GLN:HG3	4:A:606:LEU:HD13	2.01	0.41
4:A:618:GLU:OE2	4:A:621:THR:HG23	2.20	0.41
4:A:619:LYS:HE3	4:A:750:GLY:HA3	2.02	0.41
4:A:694:THR:O	4:A:698:GLN:HG3	2.20	0.41
4:A:824:LEU:HD21	5:B:765:PRO:HB3	2.02	0.41
4:A:942:PHE:HZ	7:E:206:GLY:CA	2.34	0.41
4:A:964:ILE:HG12	4:A:1035:TYR:CE2	2.56	0.41
5:B:90:ILE:HD12	5:B:90:ILE:N	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:391:ASP:HB3	10:I:91:ARG:O	2.21	0.41
7:E:193:GLY:HA2	7:E:213:ILE:HD11	2.01	0.41
9:H:102:TYR:CE1	9:H:115:TYR:HB3	2.53	0.41
4:A:15:LYS:CB	5:B:1220:ARG:HG2	2.50	0.41
4:A:525:GLN:HA	5:B:1015:HIS:HD2	1.85	0.41
4:A:813:PHE:HZ	5:B:767:ASN:ND2	2.19	0.41
4:A:1166:ASP:O	4:A:1170:ILE:HG12	2.20	0.41
4:A:1413:GLY:HA3	5:B:1212:ILE:HG23	2.03	0.41
4:A:1434:ALA:HB3	4:A:1436:ILE:HG12	2.02	0.41
5:B:845:SER:HB3	11:J:8:PHE:HB3	2.03	0.41
5:B:915:THR:HG21	5:B:934:LYS:HD3	2.03	0.41
5:B:1004:GLU:HB2	5:B:1006:ILE:HD12	2.02	0.41
5:B:1075:GLY:HA2	6:C:34:ARG:HH21	1.85	0.41
6:C:248:ILE:HG23	12:K:98:LEU:HB3	2.02	0.41
7:E:180:ARG:HG2	7:E:214:CYS:SG	2.60	0.41
9:H:138:GLU:H	9:H:138:GLU:HG3	1.69	0.41
11:J:2:ILE:HD12	11:J:2:ILE:HA	1.92	0.41
4:A:538:ASP:OD1	9:H:22:LYS:HB2	2.20	0.41
4:A:550:LEU:HD11	4:A:580:VAL:HG21	2.02	0.41
4:A:598:LEU:HB3	9:H:25:ARG:NH1	2.34	0.41
4:A:664:THR:OG1	5:B:1014:PRO:HB3	2.21	0.41
4:A:1059:HIS:ND1	8:F:86:THR:HA	2.36	0.41
5:B:63:ILE:HA	5:B:421:PHE:CE2	2.56	0.41
5:B:314:LEU:HD21	5:B:386:LEU:HD11	2.03	0.41
5:B:522:VAL:HG11	5:B:537:LYS:HB3	2.03	0.41
5:B:566:LEU:O	5:B:569:TYR:HB3	2.21	0.41
6:C:101:LEU:HB3	6:C:155:LEU:HD11	2.03	0.41
7:E:112:TYR:O	7:E:136:ASN:HA	2.21	0.41
7:E:179:GLN:H	7:E:179:GLN:HG2	1.59	0.41
8:F:96:THR:O	8:F:100:GLN:HG2	2.21	0.41
8:F:97:ARG:HE	8:F:124:GLU:CD	2.29	0.41
9:H:47:PHE:HB2	9:H:95:TYR:CD2	2.56	0.41
9:H:89:LEU:HD13	9:H:91:ASP:O	2.21	0.41
10:I:59:VAL:HG12	10:I:61:ASP:H	1.85	0.41
12:K:42:LEU:HD12	12:K:42:LEU:HA	1.84	0.41
4:A:136:ALA:O	4:A:140:THR:HG23	2.21	0.41
4:A:349:ALA:HB1	4:A:370:ILE:HD12	2.03	0.41
4:A:353:ILE:HD13	4:A:487:MET:HG3	2.03	0.41
4:A:591:PHE:HA	4:A:595:THR:HG21	2.03	0.41
4:A:961:ARG:HE	4:A:1025:ARG:HH21	1.69	0.41
4:A:974:ASP:HB3	9:H:136:LYS:HE3	2.03	0.41

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Atom-1	**Atom-2**	**Interatomic distance (Å)**	**Clash overlap (Å)**
4:A:998:LEU:HB2	4:A:1001:ARG:NH2	2.36	0.41
5:B:104:GLU:HG2	5:B:110:HIS:CE1	2.55	0.41
5:B:781:PHE:HE1	5:B:793:ALA:HB1	1.86	0.41
6:C:64:ALA:HB1	13:L:69:ALA:HA	2.02	0.41
6:C:252:GLN:HG3	12:K:95:ILE:HG23	2.03	0.41
7:E:150:VAL:HA	7:E:151:PRO:HD3	1.89	0.41
2:T:5:DC:H1’	2:T:6:DT:H5’	2.02	0.40
3:N:14:DG:C6	3:N:15:DA:C6	3.09	0.40
4:A:56:PRO:O	4:A:58:LEU:HD13	2.21	0.40
4:A:822:GLU:HA	4:A:825:ILE:HD12	2.03	0.40
4:A:863:VAL:HG21	7:E:170:LEU:HD21	2.03	0.40
4:A:912:LEU:HD22	4:A:1036:ARG:NH2	2.36	0.40
5:B:46:GLN:O	5:B:408:LEU:HD13	2.20	0.40
5:B:885:MET:HA	5:B:936:ASP:HB2	2.03	0.40
5:B:1180:PHE:HD2	5:B:1191:ILE:HD13	1.86	0.40
7:E:5:ASN:HA	7:E:7:ARG:CZ	2.51	0.40
2:T:13:DC:C4	2:T:14:DG:C6	3.09	0.40
4:A:259:GLU:HB3	4:A:264:PHE:CZ	2.55	0.40
4:A:306:ASN:OD1	4:A:323:LYS:HA	2.21	0.40
4:A:350:ARG:NE	4:A:486:GLU:HB3	2.36	0.40
4:A:535:THR:HG21	4:A:617:VAL:HG23	2.03	0.40
4:A:667:GLY:HA2	4:A:670:ILE:HD12	2.02	0.40
4:A:728:LYS:O	4:A:732:LEU:HG	2.20	0.40
4:A:1290:LYS:HA	4:A:1300:LYS:HA	2.03	0.40
4:A:1397:LEU:HG	4:A:1419:ASP:OD2	2.22	0.40
7:E:147:HIS:HB3	7:E:150:VAL:HG23	2.03	0.40
10:I:20:LYS:H	10:I:20:LYS:HG2	1.66	0.40
13:L:55:ILE:O	13:L:55:ILE:HG13	2.21	0.40
2:T:19:DA:H3’	2:T:20:DC:C6	2.56	0.40
4:A:21:LEU:HD23	4:A:21:LEU:HA	1.77	0.40
4:A:55:ASP:N	4:A:58:LEU:HD22	2.37	0.40
4:A:363:GLN:HA	4:A:459:ARG:O	2.21	0.40
4:A:403:LYS:O	4:A:415:LEU:HB2	2.20	0.40
4:A:765:VAL:HG11	4:A:804:TYR:CE1	2.56	0.40
5:B:732:SER:HB3	5:B:734:HIS:NE2	2.37	0.40
5:B:899:ILE:HD12	5:B:899:ILE:HA	1.97	0.40
6:C:179:GLU:HG2	6:C:206:ASN:HB2	2.04	0.40
7:E:137:GLU:O	7:E:141:VAL:HG23	2.21	0.40
9:H:130:ARG:HA	9:H:133:ASN:OD1	2.21	0.40
11:J:6:ARG:HG2	11:J:13:VAL:HA	2.03	0.40
11:J:36:LEU:HA	11:J:39:LEU:HD12	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:956:LEU:HA	4:A:957:PRO:HD3	1.91	0.40
4:A:996:ASN:HB3	4:A:1050:GLU:OE2	2.21	0.40
5:B:364:ILE:H	5:B:364:ILE:HG12	1.67	0.40
5:B:414:ALA:O	5:B:418:LYS:HG3	2.21	0.40
5:B:1016:ALA:O	5:B:1020:ARG:HG2	2.22	0.40
6:C:18:VAL:HG12	6:C:20:PHE:HD1	1.85	0.40
3:N:5:DC:H2”	3:N:6:DG:OP2	2.21	0.40
4:A:84:ILE:CD1	4:A:270:LEU:HG	2.52	0.40
4:A:528:LEU:HD23	4:A:751:SER:HA	2.03	0.40
5:B:485:ARG:NH1	5:B:782:LEU:HD11	2.37	0.40
5:B:778:MET:HE2	5:B:778:MET:HB2	1.85	0.40
5:B:848:ARG:HD2	11:J:8:PHE:HA	2.03	0.40
5:B:1076:HIS:CG	12:K:40:HIS:ND1	2.90	0.40
6:C:35:ARG:HD3	12:K:41:THR:OG1	2.21	0.40
6:C:148:ARG:HB3	6:C:151:GLN:CD	2.47	0.40
7:E:191:LYS:O	7:E:214:CYS:HB3	2.22	0.40
9:H:28:ALA:HB3	9:H:38:LEU:HD21	2.03	0.40
9:H:93:TYR:HB3	9:H:144:ILE:O	2.21	0.40
10:I:90:GLN:NE2	10:I:92:ARG:HD3	2.37	0.40
10:I:101:PHE:HE1	10:I:112:SER:HB3	1.87	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	A	1370/1733 (79%)	1343 (98%)	26 (2%)	1 (0%)	48	79
5	B	1103/1224 (90%)	1092 (99%)	11 (1%)	0	100	100
6	C	265/318 (83%)	264 (100%)	1 (0%)	0	100	100
7	E	210/215 (98%)	207 (99%)	3 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	F	84/155 (54%)	81 (96%)	3 (4%)	0	100	100
9	H	129/146 (88%)	127 (98%)	2 (2%)	0	100	100
10	I	116/122 (95%)	115 (99%)	1 (1%)	0	100	100
11	J	63/70 (90%)	63 (100%)	0	0	100	100
12	K	112/120 (93%)	110 (98%)	2 (2%)	0	100	100
13	L	41/70 (59%)	40 (98%)	1 (2%)	0	100	100
All	All	3493/4173 (84%)	3442 (98%)	50 (1%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	A	55	ASP

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	
4	A	1194/1520 (79%)	1192 (100%)	2 (0%)	87	85
5	B	955/1061 (90%)	954 (100%)	1 (0%)	88	87
6	C	235/274 (86%)	234 (100%)	1 (0%)	84	80
7	E	193/197 (98%)	193 (100%)	0	100	100
8	F	73/137 (53%)	73 (100%)	0	100	100
9	H	116/128 (91%)	116 (100%)	0	100	100
10	I	110/116 (95%)	107 (97%)	3 (3%)	39	61
11	J	60/65 (92%)	59 (98%)	1 (2%)	53	69
12	K	99/102 (97%)	99 (100%)	0	100	100
13	L	37/57 (65%)	36 (97%)	1 (3%)	39	61
All	All	3072/3657 (84%)	3063 (100%)	9 (0%)	86	82

All (9) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	A	68	GLN
4	A	110	CYS
5	B	1163	CYS
6	C	86	CYS
10	I	7	CYS
10	I	29	CYS
10	I	32	CYS
11	J	46	CYS
13	L	51	CYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (39) such sidechains are listed below:

Mol	Chain	Res	Type
4	A	54	ASN
4	A	169	ASN
4	A	171	GLN
4	A	358	ASN
4	A	427	GLN
4	A	548	ASN
4	A	851	HIS
4	A	953	ASN
4	A	975	HIS
4	A	1004	ASN
4	A	1011	GLN
4	A	1033	GLN
4	A	1106	ASN
4	A	1171	GLN
4	A	1211	GLN
4	A	1265	ASN
4	A	1393	ASN
4	A	1427	ASN
5	B	206	ASN
5	B	278	GLN
5	B	309	GLN
5	B	350	GLN
5	B	395	GLN
5	B	465	ASN
5	B	592	ASN
5	B	657	HIS
5	B	835	GLN
5	B	1161	HIS
5	B	1178	ASN
5	B	1193	GLN

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Mol	Chain	Res	Type
6	C	206	ASN
7	E	99	HIS
7	E	146	HIS
10	I	60	GLN
10	I	90	GLN
10	I	108	HIS
11	J	64	ASN
12	K	76	GLN
13	L	66	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	R	8/10 (80%)	3 (37%)	0

All (3) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	R	2	U
1	R	7	A
1	R	9	G

There are no RNA pucker outliers to report.

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 oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 10 ligands modelled in this entry, 9 are monoatomic - leaving 1 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The

Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
16	POP	B	1302	-	6,8,8	0.74	0	12,13,13	0.97	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
16	POP	B	1302	-	-	0/6/6/6	-

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 ⓘ

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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	**Chain**	**Analysed**	**<RSRZ>**	**#RSRZ>2**			**OWAB(Å^{2})**	**Q<0.9**
1	R	9/10 (90%)	0.14	0	100	100	106, 122, 174, 191	0
2	T	26/29 (89%)	0.35	1 (3%)	44	24	131, 170, 243, 266	0
3	N	15/18 (83%)	0.33	0	100	100	192, 217, 255, 271	0
4	A	1384/1733 (79%)	0.23	24 (1%)	69	40	56, 118, 199, 291	0
5	B	1123/1224 (91%)	0.27	22 (1%)	65	37	50, 102, 175, 269	0
6	C	267/318 (83%)	0.15	2 (0%)	84	61	57, 105, 150, 202	0
7	E	212/215 (98%)	0.28	9 (4%)	40	21	93, 153, 234, 278	0
8	F	86/155 (55%)	-0.03	0	100	100	81, 117, 167, 191	0
9	H	133/146 (91%)	0.23	2 (1%)	72	44	97, 141, 198, 302	0
10	I	118/122 (96%)	0.15	0	100	100	71, 130, 176, 198	0
11	J	65/70 (92%)	0.28	3 (4%)	37	20	60, 93, 141, 194	0
12	K	114/120 (95%)	0.23	3 (2%)	57	32	70, 112, 157, 240	0
13	L	43/70 (61%)	0.50	3 (6%)	22	14	92, 186, 307, 371	0
All	All	3595/4230 (84%)	0.24	69 (1%)	66	38	50, 115, 197, 371	0

All (69) RSRZ outliers are listed below:

Mol	**Chain**	**Res**	**Type**	**RSRZ**
5	B	775	LYS	4.9
5	B	525	ALA	4.3
7	E	93	MET	4.1
13	L	32	ALA	4.0
7	E	112	TYR	3.8
7	E	110	PHE	3.7
4	A	1328	TYR	3.6
5	B	779	GLY	3.6
4	A	1434	ALA	3.4

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Mol	Chain	Res	Type	RSRZ
5	B	751	VAL	3.4
4	A	355	GLY	3.3
5	B	416	LEU	3.3
5	B	533	CYS	3.2
4	A	135	PHE	3.1
11	J	65	PRO	3.0
4	A	798	GLY	3.0
5	B	753	ALA	3.0
4	A	1035	TYR	3.0
13	L	65	VAL	2.9
13	L	66	GLN	2.8
9	H	23	VAL	2.8
5	B	823	ALA	2.8
5	B	162	SER	2.7
5	B	1168	LEU	2.7
4	A	3	GLY	2.7
4	A	776	ALA	2.7
5	B	819	ALA	2.7
7	E	123	LEU	2.7
5	B	1214	PRO	2.7
5	B	386	LEU	2.7
12	K	61	TYR	2.6
4	A	1332	PHE	2.6
4	A	1061	GLY	2.6
5	B	681	TRP	2.5
4	A	1257	ASP	2.5
4	A	1228	TRP	2.5
4	A	642	CYS	2.5
7	E	82	PHE	2.5
7	E	120	ALA	2.5
5	B	811	TYR	2.5
5	B	1212	ILE	2.5
12	K	57	LEU	2.5
11	J	54	VAL	2.5
4	A	161	LEU	2.4
7	E	121	MET	2.4
12	K	42	LEU	2.4
4	A	957	PRO	2.4
7	E	97	VAL	2.3
5	B	473	MET	2.3
4	A	698	GLN	2.3
5	B	420	LEU	2.3

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Mol	Chain	Res	Type	RSRZ
6	C	178	PHE	2.2
4	A	590	ARG	2.2
4	A	801	GLU	2.2
4	A	997	LEU	2.2
6	C	26	ASP	2.2
7	E	83	CYS	2.2
9	H	91	ASP	2.2
4	A	1002	GLY	2.2
2	T	15	DC	2.1
4	A	666	ILE	2.1
5	B	1167	GLY	2.1
4	A	1081	LEU	2.1
4	A	1396	ALA	2.1
4	A	591	PHE	2.1
5	B	1112	GLN	2.1
5	B	381	MET	2.1
11	J	44	TYR	2.0
5	B	509	ALA	2.0

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

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

6.3 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

6.4 Ligands ⓘ

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
16	POP	B	1302	9/9	0.59	0.10	125,155,169,176	0
14	ZN	L	101	1/1	0.84	0.10	300,300,300,300	0
15	MG	A	1803	1/1	0.92	0.17	160,160,160,160	0
14	ZN	A	1801	1/1	0.93	0.07	269,269,269,269	0
14	ZN	I	202	1/1	0.95	0.07	163,163,163,163	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($Å^2$)	Q<0.9
14	ZN	B	1301	1/1	0.97	0.05	200,200,200,200	0
14	ZN	I	201	1/1	0.97	0.06	144,144,144,144	0
14	ZN	A	1802	1/1	0.99	0.03	160,160,160,160	0
14	ZN	C	401	1/1	0.99	0.05	145,145,145,145	0
14	ZN	J	101	1/1	0.99	0.04	97,97,97,97	0

6.5 Other polymers

There are no such residues in this entry.