WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Oct 22, 2024 – 09:40 AM EDT

PDB ID	:	3U61
Title	:	Structure of T4 Bacteriophage Clamp Loader Bound To Closed Clamp, DNA and ATP Analog and ADP
Authors	:	Kelch, B.A.; Makino, D.L.; O'Donnell, M.; Kuriyan, J.
Deposited on	:	2011-10-11
Resolution	:	3.20 Å(reported)

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

MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.20.1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

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 3.20 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	Percentile Ranks	Value
Rfree		0.295
Clashscore		32
Ramachandran outliers		0.6%
Sidechain outliers		9.1%
RSRZ outliers		1.0%

Worse   *Better*

■ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution
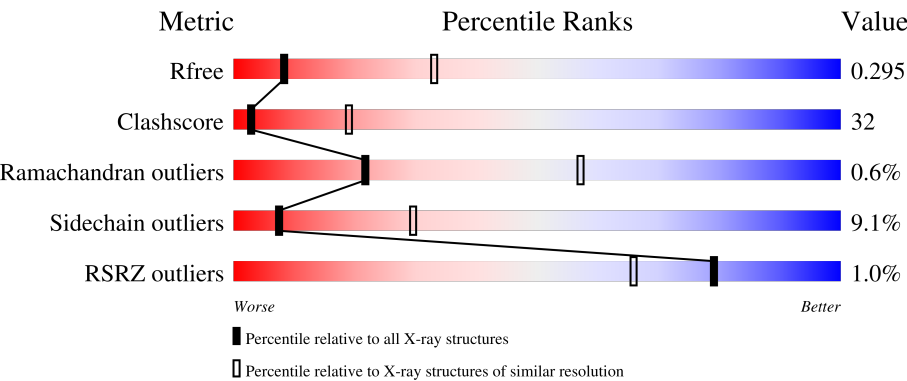
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	164625	1370 (3.20-3.20)
Clashscore	180529	1497 (3.20-3.20)
Ramachandran outliers	177936	1479 (3.20-3.20)
Sidechain outliers	177891	1478 (3.20-3.20)
RSRZ outliers	164620	1371 (3.20-3.20)

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	B	324	42% 48% · 6%
1	C	324	47% 45% 6% ·
1	D	324	49% 42% 8% ·
1	E	324	44% 42% 5% 9%
2	A	199	34% 53% ·· 11%

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Mol	Chain	Length	Quality of chain
3	F	228	64% 30%
3	G	228	% 61% 36%
3	H	228	66% 31%
4	I	20	20% 20% 60%
5	J	10	50% 30% 20%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
6	ADP	B	700	-	-	X	-

2 Entry composition ⓘ

There are 8 unique types of molecules in this entry. The entry contains 16748 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 protein called DNA polymerase accessory protein 44.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	B	305	Total	C	N	O	S	0	0	0
			2407	1525	412	454	16			
1	C	319	Total	C	N	O	S	0	0	0
			2503	1583	430	473	17			
1	D	320	Total	C	N	O	S	0	0	0
			2514	1590	432	475	17			
1	E	294	Total	C	N	O	S	0	0	0
			2292	1451	394	432	15			

There are 20 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-4	GLY	-	expression tag	UNP P04526
B	-3	PRO	-	expression tag	UNP P04526
B	-2	GLY	-	expression tag	UNP P04526
B	-1	GLY	-	expression tag	UNP P04526
B	0	SER	-	expression tag	UNP P04526
C	-4	GLY	-	expression tag	UNP P04526
C	-3	PRO	-	expression tag	UNP P04526
C	-2	GLY	-	expression tag	UNP P04526
C	-1	GLY	-	expression tag	UNP P04526
C	0	SER	-	expression tag	UNP P04526
D	-4	GLY	-	expression tag	UNP P04526
D	-3	PRO	-	expression tag	UNP P04526
D	-2	GLY	-	expression tag	UNP P04526
D	-1	GLY	-	expression tag	UNP P04526
D	0	SER	-	expression tag	UNP P04526
E	-4	GLY	-	expression tag	UNP P04526
E	-3	PRO	-	expression tag	UNP P04526
E	-2	GLY	-	expression tag	UNP P04526
E	-1	GLY	-	expression tag	UNP P04526
E	0	SER	-	expression tag	UNP P04526

• Molecule 2 is a protein called DNA polymerase accessory protein 62.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	A	178	Total 1416	C 909	N 233	O 268	S 6	0	0	0

There are 13 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	188	GLY	-	expression tag	UNP P04527
A	189	LEU	-	expression tag	UNP P04527
A	190	GLU	-	expression tag	UNP P04527
A	191	HIS	-	expression tag	UNP P04527
A	192	HIS	-	expression tag	UNP P04527
A	193	HIS	-	expression tag	UNP P04527
A	194	HIS	-	expression tag	UNP P04527
A	195	HIS	-	expression tag	UNP P04527
A	196	HIS	-	expression tag	UNP P04527
A	197	HIS	-	expression tag	UNP P04527
A	198	HIS	-	expression tag	UNP P04527
A	199	HIS	-	expression tag	UNP P04527
A	200	HIS	-	expression tag	UNP P04527

• Molecule 3 is a protein called DNA polymerase processivity component.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	G	228	Total 1750	C 1113	N 288	O 343	Se 6	0	0	0
3	H	228	Total 1750	C 1113	N 288	O 343	Se 6	0	0	0
3	F	222	Total 1699	C 1083	N 280	O 330	Se 6	0	0	0

• Molecule 4 is a DNA chain called Template DNA strand.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	I	8	Total 163	C 79	N 29	O 48	P 7	0	0	0

• Molecule 5 is a DNA chain called Primer DNA strand.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	J	8	Total 162	C 77	N 31	O 46	P 8	0	0	0

- Molecule 6 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).
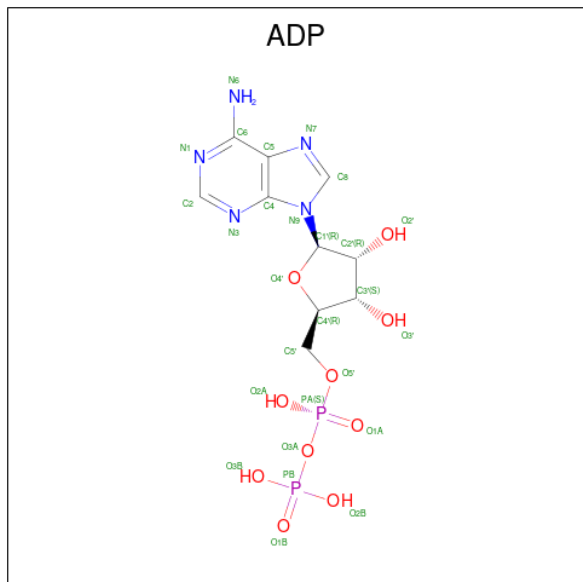
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
6	B	1	27	10	5	10	2	0	0

- Molecule 7 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mg		
7	B	1	1	1	0	0
7	C	1	1	1	0	0
7	D	1	1	1	0	0

- Molecule 8 is [[[(2R,3S,4R,5R)-5-(6-aminopurin-9-yl)-3,4-bis(oxidanyl)oxolan-2-yl]methoxy-oxidanyl-phosphoryl]oxy-oxidanyl-phosphoryl]oxy-tris(fluoranyl)beryllium (three-letter code: 08T) (formula: $C_{10}H_{14}BeF_3N_5O_{10}P_2$).
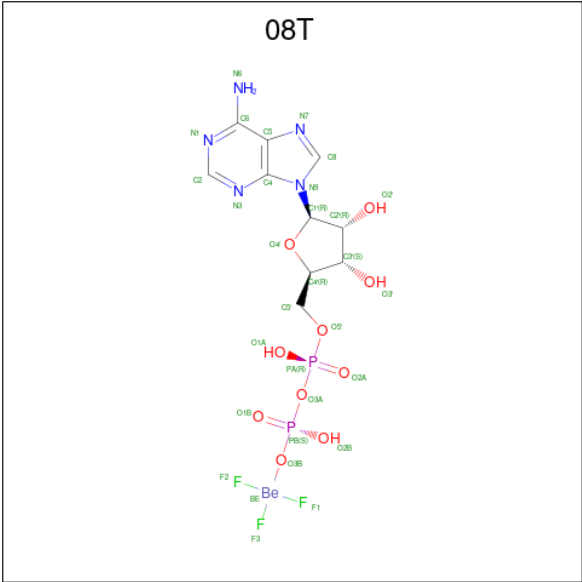
Mol	Chain	Residues	Atoms							ZeroOcc	AltConf
8	C	1	Total	Be	C	F	N	O	P	0	0
			31	1	10	3	5	10	2		
8	D	1	Total	Be	C	F	N	O	P	0	0
			31	1	10	3	5	10	2		

3 Residue-property plots (i)

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

• Molecule 1: DNA polymerase accessory protein 44

• Molecule 1: DNA polymerase accessory protein 44

W318 LYS

• Molecule 1: DNA polymerase accessory protein 44

Chain D:

• Molecule 1: DNA polymerase accessory protein 44

Chain E:

• Molecule 2: DNA polymerase accessory protein 62

Chain A:

Q71 E74 C75 M76 P77 A78 V79 Y80 A81 M82 N83 L84 I85 G86 S87 G88 L89 S90 D91 E92 A93 H94 F95 N96 Y97 L98 V102 P103 R104 G105 K106 R107 Y108 GLY LYS TRP ALA LYS LEU VAL GLU D117 S118 T119 E120 V121 L122 I123 I124 K125 L126 K129 R130 Y131 Q132 V133 N134

T135 N136 D137 A138 I139 N140 Y141 I144 L145 T146 K147 N148 G149 K150 L151 L155 L158 K159 G160 L161 V162 T163 F166 N173 K174 K175 E176 Q177 K178 Q179 L180 K181 K182 L183 A184 L185 E186 W187 GLY LEU GLU HIS HIS HIS HIS HIS HIS HIS HIS
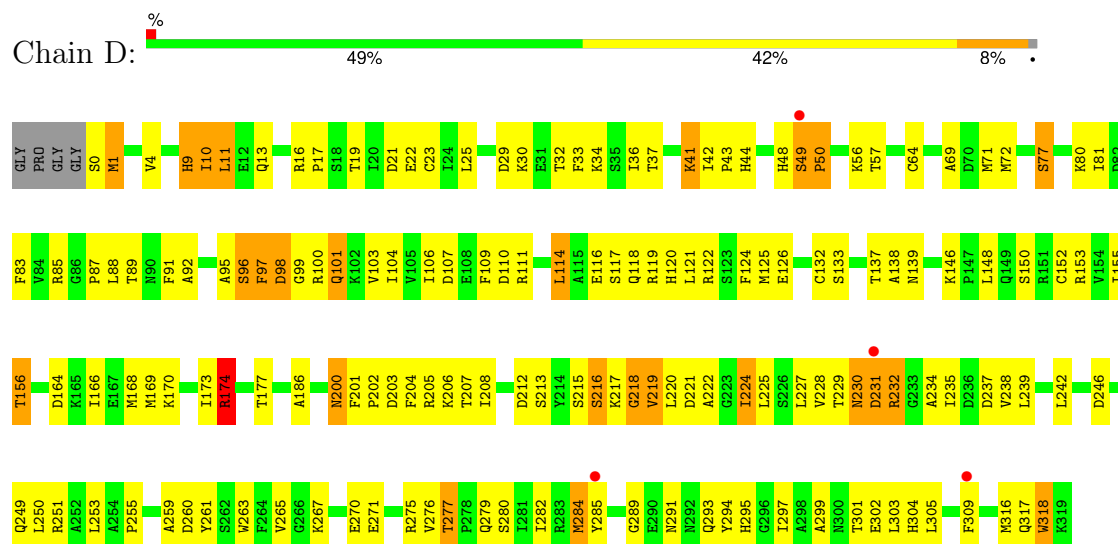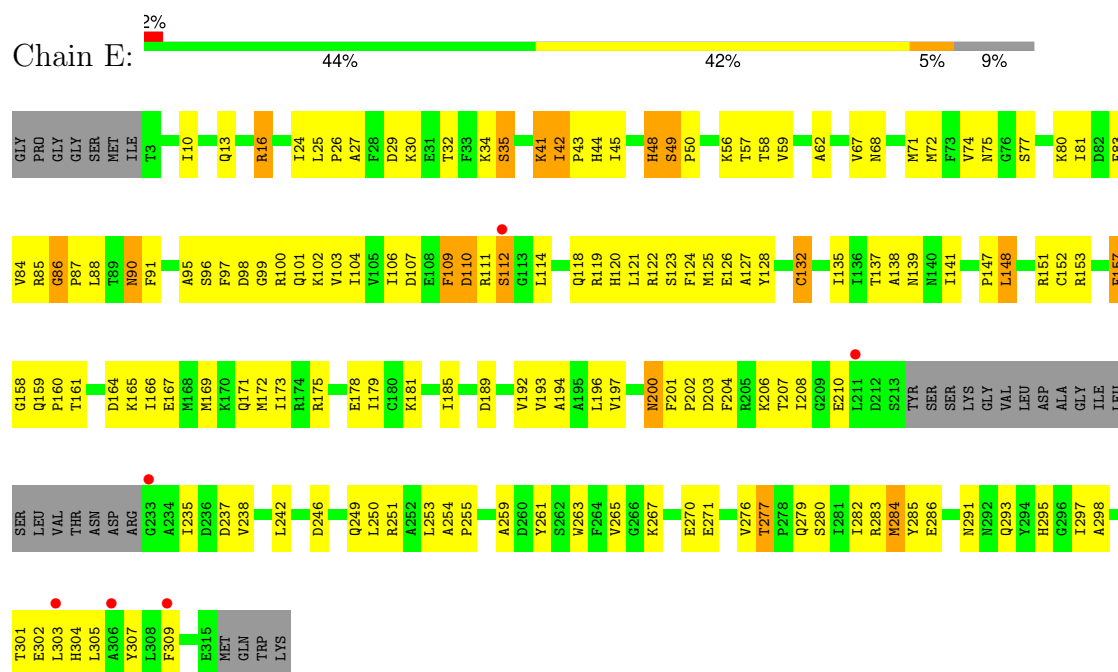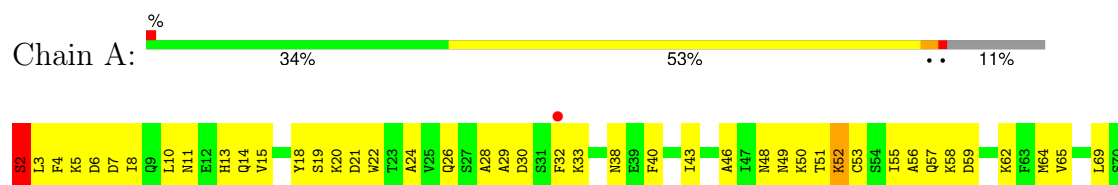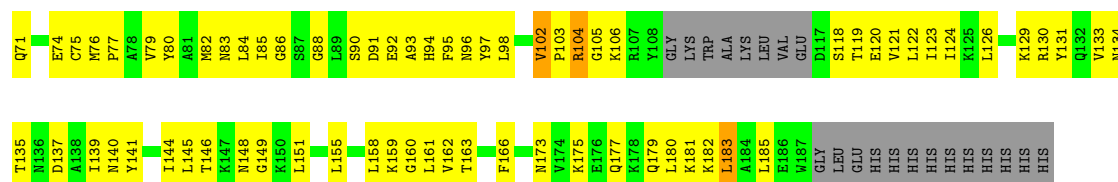
• Molecule 3: DNA polymerase processivity component

Chain G:

M1001 K1002 L1003 S1004 K1005 L1010 N1013 N1018 S1019 M1022 L1023 K1024 S1025 R1032 A1033 V1034 N1035 G1036 T1037 T1038 Y1039 A1040 E1041 A1042 V1047 F1050 D1051 V1052 L1057 L1061 G1062 I1063 N1068 D1069 D1070 I1073 E1077 D1078 G1079 N1080 D1085 A1086 R1087 S1088 T1089 I1090 F1091

W1092 P1093 A1094 A1095 D1096 P1097 S1098 T1099 P1103 N1104 K1105 P1106 P1110 V1115 Q1125 L1126 V1129 S1130 T1141 V1142 K1143 E1144 G1145 K1146 I1147 V1148 I1149 A1159 L1160 T1161 S1166 L1169 G1170 D1171 E1175 N1176 F1180 I1181 M1184 M1189 N1193 L1197 L1198 W1199 A1200

Q1204 G1205 A1206 A1214 N1215 Y1216 V1217 V1218 A1219 L1220 E1221 H1226 D1227 F1228

• Molecule 3: DNA polymerase processivity component

Chain H:

M2001 K2002 L2003 L2010 N2013 S2025 M2030 T2031 R2032 A2033 T2038 Y2039 A2042 V2047 F2050 D2051 V2052 L2057 L2061 G2062 I2063 L2064 V2067 N2068 D2069 D2070 I2073 E2077 D2085 A2086 R2087 S2088 T2089 I2090 F2091 W2092 P2093 D2096 P2097 S2098 T2099 P2103 N2104 K2105

P2110 V2115 Q2125 L2126 L2127 R2128 V2129 S2130 L2133 K2143 E2144 G2145 K2146 I2147 V2148 I2149 E2156 D2157 S2158 A2159 I2160 T2161 S2166 L2169 G2170 D2171 E2175 N2176 T2177 F2178 N2179 F2180 I2181 M2184 M2189 L2197 L2198 W2199 Q2204 G2205 A2206 A2214 N2215 Y2216 V2217 V2218

A2219 L2220 D2223 S2224 T2225 H2226 D2227 F2228

• Molecule 3: DNA polymerase processivity component

Chain F:

M3001 K3002 L3003 T3016 I3017 N3018 S3019 M3022 L3023 K3024 S3025 M3030 T3031 R3032 A3033 V3034 T3038 V3047 Y3055 D3056 L3057 L3061 V3067 N3068 D3069 D3070 I3073 E3077 D3085 A3086 R3087 S3088 T3089 I3090 F3091 W3092 P3093 D3096 P3097 S3098 T3099 A3102 P3103 N3104 K3105 P3110

V3115 Q3125 L3126 L3127 R3128 V3129 S3130 K3143 E3144 G3145 K3146 I3147 V3148 I3149 E3156 D3157 S3158 A3159 L3160 T3161 R3162 V3163 S3166 L3167 T3168 L3169 G3170 D3171 E3175 N3176 T3177 F3178 N3179 F3180 I3181 M3184 K3188 M3189 Y3194 L3197 L3198 W3199 F3209 E3210 G3211 V3218 A3219 L3220

E3221 A3222 ASP SER THR HIS ASP PHE

• Molecule 4: Template DNA strand

Chain I:

20%　　　20%　　　　　　　60%

DT DT DT DT DT DT DT DT DT G1 G2 T3 G4 T5 C6 T7 A8 DC DG

• Molecule 5: Primer DNA strand

Chain J:

50%　　　　　　　30%　　　　20%

DC DG T3 A4 G5 A6 C7 A8 C9 C10

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	82.30Å 137.27Å 222.78Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	47.65 – 3.20 47.65 – 3.20	Depositor EDS
% Data completeness (in resolution range)	96.2 (47.65-3.20) 96.1 (47.65-3.20)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.12	Depositor
$< I/\sigma(I) >$ [1]	1.81 (at 2.91Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.7.1_743)	Depositor
R, R_{free}	0.239 , 0.305 0.230 , 0.295	Depositor DCC
R_{free} test set	2918 reflections (7.14%)	wwPDB-VP
Wilson B-factor (Å^2)	73.1	Xtriage
Anisotropy	0.483	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 63.9	EDS
L-test for twinning[2]	$< |L| > = 0.48, < L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	16748	wwPDB-VP
Average B, all atoms (Å^2)	106.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.99% 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 (i)

5.1   Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, ADP, 08T

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	B	0.52	0/2450	0.71	0/3303
1	C	0.58	0/2546	0.75	1/3434 (0.0%)
1	D	0.54	0/2558	0.77	3/3449 (0.1%)
1	E	0.52	0/2331	0.73	1/3144 (0.0%)
2	A	0.48	0/1440	0.74	0/1938
3	F	0.52	0/1721	0.65	0/2324
3	G	0.59	0/1774	0.67	0/2395
3	H	0.50	0/1774	0.63	0/2395
4	I	1.03	0/182	1.86	7/280 (2.5%)
5	J	1.03	0/181	2.09	13/276 (4.7%)
All	All	0.55	0/16957	0.77	25/22938 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	1
1	D	0	1
1	E	0	2
2	A	0	2
3	F	0	1
All	All	0	7

There are no bond length outliers.

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	J	3	DT	O4'-C1'-N1	9.74	114.82	108.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	J	3	DT	C5-C4-O4	-8.25	119.12	124.90
5	J	7	DC	O4'-C1'-N1	8.20	113.74	108.00
5	J	8	DA	O4'-C1'-N9	7.47	113.23	108.00
5	J	5	DG	O4'-C1'-C2'	-7.41	99.97	105.90
5	J	5	DG	C4'-C3'-C2'	-7.33	96.50	103.10
5	J	9	DC	O4'-C1'-N1	7.31	113.12	108.00
5	J	3	DT	N3-C4-O4	6.91	124.05	119.90
5	J	5	DG	O4'-C1'-N9	6.68	112.68	108.00
4	I	6	DC	O4'-C1'-N1	6.68	112.68	108.00
1	C	97	PHE	CB-CA-C	-6.43	97.53	110.40
4	I	2	DG	C8-N9-C4	-6.36	103.86	106.40
5	J	4	DA	N1-C6-N6	6.35	122.41	118.60
4	I	4	DG	N3-C4-C5	-5.82	125.69	128.60
1	D	174	ARG	NE-CZ-NH1	5.70	123.15	120.30
4	I	3	DT	N3-C2-O2	-5.65	118.91	122.30
4	I	4	DG	N3-C4-N9	5.38	129.23	126.00
4	I	2	DG	N7-C8-N9	5.36	115.78	113.10
5	J	8	DA	O4'-C1'-C2'	-5.33	101.63	105.90
5	J	9	DC	C1'-O4'-C4'	-5.33	104.77	110.10
1	D	231	ASP	CB-CG-OD2	5.22	123.00	118.30
1	E	86	GLY	N-CA-C	5.20	126.11	113.10
1	D	114	LEU	CA-CB-CG	-5.13	103.51	115.30
5	J	9	DC	P-O5'-C5'	-5.03	112.85	120.90
4	I	2	DG	C6-C5-N7	-5.03	127.38	130.40

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	A	2	SER	Peptide
2	A	52	LYS	Peptide
1	C	128	TYR	Mainchain
1	D	217	LYS	Mainchain
1	E	157	PHE	Peptide
1	E	49	SER	Peptide
3	F	3220	LEU	Peptide

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	B	2407	0	2424	182	0
1	C	2503	0	2524	231	0
1	D	2514	0	2543	245	0
1	E	2292	0	2302	198	0
2	A	1416	0	1431	146	0
3	F	1699	0	1716	72	1
3	G	1750	0	1752	112	1
3	H	1750	0	1752	66	0
4	I	163	0	93	18	0
5	J	162	0	90	6	0
6	B	27	0	12	10	0
7	B	1	0	0	0	0
7	C	1	0	0	0	0
7	D	1	0	0	0	0
8	C	31	0	13	5	0
8	D	31	0	13	1	0
All	All	16748	0	16665	1056	1

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 32.

All (1056) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:97:PHE:CD1	3:G:1204:GLN:HB3	1.57	1.40
1:C:9:HIS:CD2	1:D:41:LYS:HB3	1.73	1.22
1:D:174:ARG:HH11	1:D:174:ARG:CB	1.53	1.20
1:D:174:ARG:HB3	1:D:174:ARG:NH1	1.55	1.20
1:C:174:ARG:HB3	1:C:174:ARG:NH1	1.55	1.18
1:C:174:ARG:HH11	1:C:174:ARG:CB	1.58	1.15
1:C:97:PHE:CE1	3:G:1199:TRP:HZ3	1.66	1.14
1:C:97:PHE:CE1	3:G:1199:TRP:CZ3	2.41	1.08
2:A:145:LEU:HB2	2:A:151:LEU:HD23	1.36	1.07
1:C:97:PHE:CE1	3:G:1204:GLN:HB3	1.88	1.06
1:D:77:SER:HB3	1:E:120:HIS:HD2	1.18	1.06
1:C:9:HIS:HD2	1:D:41:LYS:CB	1.68	1.06
1:D:299:ALA:HB2	1:E:295:HIS:HD2	1.20	1.06
2:A:48:ASN:OD1	2:A:104:ARG:NH2	1.88	1.06
1:C:299:ALA:HB2	1:D:295:HIS:HD2	1.19	1.05

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:293:GLN:NE2	2:A:84:LEU:O	1.90	1.05
1:C:96:SER:O	1:C:97:PHE:CB	2.02	1.04
1:D:299:ALA:HB2	1:E:295:HIS:CD2	1.92	1.04
1:C:96:SER:O	1:C:97:PHE:HB2	1.16	1.03
1:B:95:ALA:HB2	3:F:3096:ASP:HB2	1.38	1.03
1:C:97:PHE:CZ	3:G:1205:GLY:CA	2.41	1.03
1:B:48:HIS:CE1	1:B:156:THR:HG23	1.93	1.02
1:C:9:HIS:CD2	1:D:41:LYS:CB	2.42	1.00
1:C:97:PHE:CE2	3:G:1205:GLY:C	2.34	0.99
1:D:219:VAL:HG12	1:D:220:LEU:H	1.25	0.99
1:E:91:PHE:CE1	1:E:102:LYS:HD2	1.97	0.99
1:D:77:SER:HB3	1:E:120:HIS:CD2	1.98	0.98
1:C:232:ARG:HA	1:C:263:TRP:CZ2	2.00	0.97
1:C:111:ARG:NE	1:D:116:GLU:OE1	1.98	0.96
1:C:192:VAL:HG11	1:C:220:LEU:HB3	1.47	0.96
1:B:276:VAL:HA	1:B:318:TRP:HB3	1.50	0.94
1:B:299:ALA:HB1	1:C:262:SER:HB3	1.48	0.94
1:C:97:PHE:CZ	3:G:1199:TRP:CZ3	2.55	0.94
1:D:299:ALA:CB	1:E:295:HIS:HD2	1.80	0.94
1:D:97:PHE:CE2	3:G:1094:ALA:HB3	2.03	0.93
2:A:105:GLY:O	2:A:106:LYS:NZ	2.00	0.93
1:B:16:ARG:NH2	6:B:700:ADP:H5'2	1.84	0.92
1:B:277:THR:HG22	1:B:317:GLN:O	1.67	0.92
1:C:97:PHE:HD1	3:G:1204:GLN:HB3	1.15	0.92
2:A:120:GLU:HA	2:A:123:ILE:HD12	1.51	0.92
1:C:297:ILE:HD13	1:D:297:ILE:HD11	1.50	0.92
1:C:318:TRP:CZ2	1:C:318:TRP:CZ3	2.55	0.92
1:C:16:ARG:NH2	8:C:700:08T:O2A	2.03	0.91
2:A:155:LEU:CG	2:A:183:LEU:HD21	2.02	0.90
1:E:173:ILE:HG12	1:E:197:VAL:HG21	1.52	0.90
1:C:97:PHE:CZ	3:G:1205:GLY:C	2.46	0.89
1:C:48:HIS:NE2	1:C:156:THR:HB	1.87	0.89
1:C:275:ARG:O	1:C:318:TRP:HD1	1.56	0.89
1:E:303:LEU:HD21	2:A:79:VAL:HG12	1.54	0.89
1:E:77:SER:HA	1:E:111:ARG:HD3	1.53	0.89
1:C:299:ALA:HB2	1:D:295:HIS:CD2	2.07	0.89
1:E:99:GLY:HA3	3:H:2204:GLN:HG2	1.54	0.88
1:C:97:PHE:CZ	3:G:1199:TRP:HZ3	1.91	0.88
1:B:56:LYS:HE2	6:B:700:ADP:O3B	1.73	0.88
1:D:97:PHE:CE2	3:G:1079:GLY:O	2.27	0.88
1:E:172:MET:HE2	1:E:204:PHE:HD2	1.39	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:188:ALA:HB3	1:C:221:ASP:HA	1.55	0.87
1:E:111:ARG:HG2	1:E:112:SER:H	1.38	0.87
1:D:29:ASP:HA	1:D:32:THR:HG22	1.57	0.86
1:D:186:ALA:HB3	1:D:219:VAL:HG22	1.55	0.86
1:D:97:PHE:CE2	3:G:1079:GLY:C	2.49	0.86
1:B:56:LYS:NZ	1:B:108:GLU:OE2	2.09	0.86
1:D:48:HIS:NE2	1:D:156:THR:HB	1.90	0.86
1:C:318:TRP:N	1:C:318:TRP:HE3	1.73	0.85
1:C:97:PHE:CD1	3:G:1204:GLN:CB	2.53	0.85
1:E:83:PHE:O	1:E:87:PRO:HD2	1.77	0.85
3:F:3068:ASN:ND2	3:F:3085:ASP:OD2	2.10	0.84
1:C:9:HIS:HD2	1:D:41:LYS:HB2	1.41	0.84
2:A:145:LEU:HB3	2:A:151:LEU:HB3	1.59	0.84
1:B:183:GLU:HB3	1:B:185:ILE:HG13	1.59	0.84
1:C:29:ASP:HA	1:C:32:THR:HG22	1.58	0.84
1:D:174:ARG:HH11	1:D:174:ARG:HB3	0.71	0.84
2:A:155:LEU:HG	2:A:183:LEU:HD21	1.60	0.83
1:B:95:ALA:HB2	3:F:3096:ASP:CB	2.08	0.83
1:E:124:PHE:HE1	1:E:128:TYR:CE2	1.95	0.83
1:B:6:GLU:O	1:B:7:LYS:HG2	1.76	0.83
1:C:275:ARG:O	1:C:318:TRP:CD1	2.30	0.83
1:D:97:PHE:HE2	3:G:1094:ALA:CB	1.92	0.83
3:H:2068:ASN:ND2	3:H:2085:ASP:OD2	2.12	0.83
1:B:276:VAL:HA	1:B:318:TRP:CB	2.09	0.83
1:E:124:PHE:CE1	1:E:128:TYR:CE2	2.67	0.83
1:B:16:ARG:HH21	6:B:700:ADP:H5'2	1.41	0.82
1:B:126:GLU:OE2	1:B:151:ARG:NH2	2.10	0.82
1:D:97:PHE:CE2	3:G:1094:ALA:CB	2.62	0.82
1:D:275:ARG:O	1:D:318:TRP:HD1	1.62	0.82
1:B:71:MET:HE3	1:B:105:VAL:HG21	1.62	0.82
1:D:49:SER:HB3	1:D:50:PRO:C	2.00	0.82
1:D:116:GLU:OE2	1:D:119:ARG:NH1	2.13	0.81
2:A:13:HIS:CE1	2:A:32:PHE:CE2	2.69	0.81
1:B:186:ALA:HB3	1:B:219:VAL:HG22	1.64	0.80
1:E:91:PHE:HE1	1:E:102:LYS:HD2	1.44	0.80
1:C:49:SER:HB3	1:C:50:PRO:C	2.01	0.80
1:B:37:THR:HG21	1:B:66:ASP:HB3	1.61	0.80
1:B:55:GLY:O	1:B:59:VAL:HG23	1.83	0.79
1:E:109:PHE:CE2	1:E:118:GLN:HG2	2.16	0.79
2:A:80:TYR:CZ	2:A:84:LEU:HD11	2.17	0.78
1:B:293:GLN:HE22	2:A:84:LEU:C	1.86	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:124:PHE:CE1	1:E:128:TYR:HE2	2.01	0.78
1:E:119:ARG:HD3	1:E:122:ARG:HH21	1.49	0.78
2:A:69:LEU:HD12	2:A:98:LEU:HD22	1.65	0.78
1:E:13:GLN:HG2	2:A:131:TYR:CD1	2.19	0.78
2:A:55:ILE:HD11	2:A:92:GLU:HA	1.66	0.78
1:D:186:ALA:HB3	1:D:219:VAL:CG2	2.13	0.77
1:C:72:MET:HE1	3:G:1035:ASN:CB	2.14	0.77
1:C:97:PHE:CZ	3:G:1205:GLY:HA2	2.20	0.77
1:D:218:GLY:O	1:D:219:VAL:HB	1.83	0.77
3:G:1032:ARG:HG2	3:G:1103:PRO:HD3	1.66	0.77
1:D:186:ALA:N	1:D:219:VAL:HA	1.99	0.77
1:C:97:PHE:CE1	3:G:1205:GLY:N	2.53	0.77
1:D:72:MET:HE2	3:H:2156:GLU:HA	1.66	0.77
1:D:97:PHE:HB3	3:G:1078:ASP:O	1.85	0.77
1:E:251:ARG:HH21	2:A:71:GLN:NE2	1.83	0.77
1:C:97:PHE:CZ	3:G:1205:GLY:N	2.54	0.76
1:D:222:ALA:O	1:D:225:LEU:HB3	1.84	0.76
3:H:2143:LYS:HG2	3:H:2144:GLU:HG3	1.65	0.76
1:C:174:ARG:HB3	1:C:174:ARG:HH11	0.69	0.76
1:E:95:ALA:HB3	3:H:2220:LEU:O	1.85	0.76
1:D:219:VAL:HG12	1:D:220:LEU:N	2.00	0.76
1:C:318:TRP:HE3	1:C:318:TRP:H	1.32	0.76
1:E:173:ILE:HG23	1:E:193:VAL:HG11	1.68	0.76
1:B:95:ALA:HB2	3:F:3096:ASP:N	2.00	0.76
2:A:120:GLU:O	2:A:124:ILE:HG13	1.84	0.76
2:A:177:GLN:NE2	3:F:3156:GLU:HG2	2.02	0.75
2:A:177:GLN:HE21	3:F:3156:GLU:HG2	1.50	0.75
1:C:318:TRP:N	1:C:318:TRP:CE3	2.54	0.75
1:D:186:ALA:CB	1:D:219:VAL:HG22	2.16	0.75
1:E:172:MET:CE	1:E:204:PHE:HD2	2.00	0.75
3:F:3143:LYS:HG2	3:F:3144:GLU:HG3	1.67	0.75
1:C:119:ARG:HB3	1:C:122:ARG:NH1	2.01	0.75
1:D:119:ARG:HB3	1:D:122:ARG:NH1	2.01	0.75
1:C:89:THR:HA	1:C:124:PHE:HE2	1.52	0.74
1:E:121:LEU:O	1:E:125:MET:HG3	1.86	0.74
1:B:189:ASP:O	1:B:192:VAL:HG12	1.88	0.74
1:B:95:ALA:CB	3:F:3096:ASP:HB2	2.16	0.74
1:C:95:ALA:O	1:C:96:SER:C	2.26	0.74
1:C:97:PHE:HE2	3:G:1206:ALA:CB	2.00	0.74
1:C:97:PHE:CE2	3:G:1205:GLY:O	2.39	0.74
2:A:145:LEU:CB	2:A:151:LEU:HD23	2.14	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:97:PHE:CE1	3:G:1204:GLN:CB	2.70	0.74
1:D:85:ARG:NH2	4:I:6:DC:OP1	2.20	0.74
2:A:13:HIS:CE1	2:A:32:PHE:CZ	2.76	0.74
1:B:248:LYS:HG2	1:C:273:TYR:OH	1.87	0.74
1:D:219:VAL:CG1	1:D:220:LEU:H	1.98	0.74
3:F:3016:THR:O	3:F:3188:LYS:NZ	2.18	0.73
1:D:294:TYR:HD2	1:E:293:GLN:NE2	1.87	0.73
1:C:97:PHE:HA	3:G:1204:GLN:HG2	1.69	0.73
1:D:276:VAL:HG23	1:D:318:TRP:HB3	1.70	0.73
3:G:1068:ASN:ND2	3:G:1085:ASP:OD2	2.22	0.73
1:D:106:ILE:HG21	1:D:109:PHE:CD1	2.24	0.73
1:C:279:GLN:O	1:C:282:ILE:HG22	1.88	0.72
1:E:178:GLU:O	1:E:181:LYS:HB2	1.89	0.72
1:C:206:LYS:HE3	1:D:152:CYS:O	1.89	0.72
1:E:111:ARG:HG2	1:E:112:SER:N	2.04	0.72
2:A:155:LEU:HD11	2:A:183:LEU:HD11	1.71	0.72
1:D:97:PHE:C	1:D:99:GLY:H	1.90	0.72
1:E:121:LEU:HD23	1:E:124:PHE:HD2	1.54	0.72
2:A:129:LYS:HZ2	2:A:161:LEU:HD21	1.53	0.72
1:E:99:GLY:HA3	3:H:2204:GLN:CG	2.20	0.71
1:D:1:MET:HE2	1:D:1:MET:H	1.55	0.71
1:D:97:PHE:CZ	3:G:1079:GLY:O	2.43	0.71
1:E:173:ILE:HG23	1:E:193:VAL:CG1	2.19	0.71
1:E:251:ARG:HH21	2:A:71:GLN:HE22	1.36	0.71
1:E:99:GLY:CA	3:H:2204:GLN:HG2	2.20	0.71
2:A:14:GLN:HB3	2:A:18:TYR:CE2	2.25	0.71
1:C:97:PHE:HE2	3:G:1206:ALA:HB2	1.54	0.71
1:E:303:LEU:CD2	2:A:79:VAL:HG12	2.20	0.71
1:D:50:PRO:HA	1:D:139:ASN:O	1.91	0.71
1:E:49:SER:OG	1:E:50:PRO:HA	1.91	0.71
1:B:56:LYS:HA	1:B:157:PHE:HE2	1.55	0.70
1:C:97:PHE:CZ	3:G:1199:TRP:CE3	2.78	0.70
1:C:176:LEU:HD22	1:C:211:LEU:HD22	1.72	0.70
1:D:110:ASP:HB3	1:D:138:ALA:HB1	1.73	0.70
1:B:17:PRO:HG2	6:B:700:ADP:C2	2.27	0.70
1:C:106:ILE:HG21	1:C:109:PHE:CD1	2.26	0.70
1:D:95:ALA:HB2	3:G:1095:ALA:C	2.11	0.70
3:H:2013:ASN:OD1	3:H:2216:TYR:OH	2.07	0.70
1:B:314:CYS:SG	1:C:282:ILE:HD11	2.32	0.70
1:C:72:MET:HE2	3:G:1035:ASN:HA	1.73	0.70
1:C:119:ARG:HB3	1:C:122:ARG:HH12	1.55	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:186:ALA:HB3	1:D:219:VAL:HG13	1.73	0.70
1:E:251:ARG:NE	2:A:71:GLN:OE1	2.25	0.70
1:C:57:THR:CG2	1:C:137:THR:HG21	2.22	0.70
2:A:129:LYS:NZ	2:A:161:LEU:HD21	2.06	0.70
1:D:97:PHE:C	1:D:99:GLY:N	2.45	0.69
1:C:277:THR:HG22	1:C:317:GLN:O	1.93	0.69
1:D:279:GLN:O	1:D:282:ILE:HG22	1.91	0.69
1:E:279:GLN:O	1:E:282:ILE:HG22	1.92	0.69
1:C:225:LEU:O	1:C:225:LEU:HD12	1.93	0.69
2:A:146:THR:HG23	2:A:151:LEU:HD21	1.74	0.69
1:B:148:LEU:O	1:B:152:CYS:HB2	1.93	0.69
1:D:206:LYS:HE3	1:E:152:CYS:O	1.93	0.69
1:D:16:ARG:NH2	8:D:700:08T:O2A	2.26	0.69
1:D:218:GLY:O	1:D:219:VAL:CB	2.40	0.69
1:B:48:HIS:CE1	1:B:156:THR:CG2	2.75	0.68
1:B:162:ASP:O	1:B:166:ILE:HG13	1.94	0.68
2:A:162:VAL:HG12	2:A:162:VAL:O	1.92	0.68
1:D:11:LEU:HD22	1:D:212:ASP:HB2	1.75	0.68
1:B:279:GLN:O	1:B:282:ILE:HG22	1.93	0.68
1:E:121:LEU:HD23	1:E:124:PHE:CD2	2.28	0.68
2:A:13:HIS:HE1	2:A:32:PHE:CE2	2.12	0.68
1:D:89:THR:HA	1:D:124:PHE:HE2	1.59	0.68
2:A:82:MET:HG2	2:A:97:TYR:CD2	2.29	0.68
1:E:96:SER:HB3	1:E:102:LYS:NZ	2.09	0.67
2:A:15:VAL:O	2:A:19:SER:OG	2.12	0.67
1:D:216:SER:HB3	1:E:35:SER:OG	1.93	0.67
1:D:277:THR:HG22	1:D:317:GLN:O	1.94	0.67
1:E:119:ARG:HD3	1:E:122:ARG:NH2	2.10	0.67
1:B:85:ARG:HD3	2:A:22:TRP:CE3	2.30	0.67
1:B:316:MET:HB3	1:B:318:TRP:CZ3	2.29	0.67
3:G:1143:LYS:HG2	3:G:1144:GLU:HG3	1.75	0.67
1:C:50:PRO:HA	1:C:139:ASN:O	1.95	0.67
1:C:97:PHE:HZ	3:G:1205:GLY:HA2	1.59	0.67
1:E:200:ASN:OD1	1:E:200:ASN:N	2.26	0.67
1:B:8:GLU:HB3	1:B:14:LYS:HB2	1.76	0.67
1:B:37:THR:CG2	1:B:66:ASP:HB3	2.25	0.67
1:B:83:PHE:O	1:B:87:PRO:HD2	1.95	0.67
2:A:155:LEU:CD2	2:A:183:LEU:HD21	2.24	0.67
1:E:111:ARG:HB3	1:E:114:LEU:HD12	1.76	0.67
1:D:297:ILE:HG22	1:E:293:GLN:O	1.95	0.67
1:C:232:ARG:CA	1:C:263:TRP:CZ2	2.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:86:GLY:O	1:E:90:ASN:HB2	1.95	0.66
1:C:116:GLU:OE2	1:C:119:ARG:NH1	2.27	0.66
1:E:251:ARG:NH2	2:A:71:GLN:NE2	2.44	0.66
1:D:263:TRP:CZ2	1:D:267:LYS:HG3	2.31	0.66
1:E:30:LYS:O	1:E:34:LYS:HG2	1.94	0.66
1:C:263:TRP:CZ2	1:C:267:LYS:HG3	2.31	0.66
1:E:169:MET:O	1:E:173:ILE:HG13	1.96	0.66
2:A:177:GLN:NE2	2:A:181:LYS:HZ1	1.94	0.66
3:H:2176:ASN:HB3	3:H:2227:ASP:OD1	1.95	0.66
4:I:8:DA:H2	5:J:3:DT:H3	1.43	0.66
1:C:110:ASP:HB3	1:C:138:ALA:HB1	1.76	0.65
1:D:186:ALA:HB3	1:D:219:VAL:CG1	2.27	0.65
1:E:56:LYS:HD2	1:E:137:THR:HG23	1.77	0.65
1:E:189:ASP:O	1:E:192:VAL:HG12	1.95	0.65
2:A:30:ASP:O	2:A:33:LYS:HG2	1.95	0.65
3:H:2181:ILE:HD12	3:H:2223:ASP:HB2	1.77	0.65
1:B:285:TYR:CE1	2:A:93:ALA:HB1	2.31	0.65
1:E:124:PHE:HE1	1:E:128:TYR:CD2	2.14	0.65
1:C:97:PHE:HD1	3:G:1204:GLN:CB	2.02	0.65
3:H:2030:MSE:SE	3:H:2103:PRO:HG2	2.47	0.65
1:E:263:TRP:CZ2	1:E:267:LYS:HG3	2.31	0.65
1:D:95:ALA:HB2	3:G:1096:ASP:N	2.11	0.65
1:B:303:LEU:HD21	1:C:288:VAL:HG12	1.79	0.65
1:D:186:ALA:H	1:D:219:VAL:HA	1.59	0.65
1:E:91:PHE:CZ	1:E:102:LYS:HB3	2.32	0.65
1:B:172:MET:O	1:B:176:LEU:HG	1.96	0.64
1:D:57:THR:CG2	1:D:137:THR:HG21	2.26	0.64
1:D:297:ILE:HD13	1:E:297:ILE:HD11	1.79	0.64
1:B:75:ASN:OD1	1:B:76:GLY:N	2.29	0.64
4:I:1:DG:H2"	4:I:2:DG:C8	2.31	0.64
1:B:299:ALA:HB1	1:C:262:SER:CB	2.27	0.64
1:D:119:ARG:HB3	1:D:122:ARG:HH12	1.61	0.64
1:B:42:ILE:HD12	1:B:103:VAL:HG21	1.80	0.64
1:C:176:LEU:HD22	1:C:211:LEU:CD2	2.26	0.64
1:C:91:PHE:HB2	3:G:1035:ASN:HB2	1.78	0.64
1:C:21:ASP:HA	1:C:30:LYS:NZ	2.12	0.64
3:F:3096:ASP:HB3	3:F:3099:THR:HG23	1.79	0.64
1:B:276:VAL:HG23	1:B:318:TRP:HB3	1.80	0.64
3:G:1096:ASP:HB3	3:G:1099:THR:HG23	1.80	0.64
1:D:21:ASP:HA	1:D:30:LYS:NZ	2.13	0.64
1:D:72:MET:HE3	1:D:91:PHE:CG	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:218:GLY:O	1:B:219:VAL:HG23	1.97	0.63
1:C:204:PHE:C	1:C:207:THR:HG22	2.19	0.63
1:E:124:PHE:CE1	1:E:128:TYR:CD2	2.87	0.63
4:I:7:DT:H1'	4:I:8:DA:H5'	1.79	0.63
1:D:204:PHE:C	1:D:207:THR:HG22	2.19	0.63
1:D:276:VAL:HG23	1:D:318:TRP:CG	2.33	0.63
1:D:204:PHE:HA	1:D:207:THR:CG2	2.27	0.63
1:D:297:ILE:HG23	1:E:297:ILE:HG13	1.81	0.63
3:H:2159:ALA:HB3	3:H:2161:THR:HG22	1.81	0.63
1:B:95:ALA:HB2	3:F:3096:ASP:CA	2.28	0.63
1:C:297:ILE:HD13	1:D:297:ILE:CD1	2.27	0.63
1:D:57:THR:CG2	1:D:107:ASP:OD1	2.47	0.63
2:A:76:MET:N	2:A:77:PRO:HD2	2.13	0.63
1:D:97:PHE:CD2	3:G:1079:GLY:C	2.71	0.63
1:C:97:PHE:C	1:C:99:GLY:N	2.51	0.62
2:A:82:MET:O	2:A:86:GLY:HA3	1.99	0.62
1:C:204:PHE:HA	1:C:207:THR:CG2	2.29	0.62
1:D:9:HIS:HD2	1:E:41:LYS:CB	2.11	0.62
2:A:155:LEU:HG	2:A:183:LEU:CD2	2.29	0.62
1:D:77:SER:CB	1:E:120:HIS:CD2	2.81	0.62
1:D:109:PHE:HE2	1:D:118:GLN:HG2	1.64	0.62
1:E:75:ASN:ND2	2:A:135:THR:HG23	2.14	0.62
3:H:2226:HIS:ND1	3:H:2228:PHE:HB2	2.15	0.62
1:C:72:MET:HE1	3:G:1035:ASN:HB2	1.79	0.62
1:D:224:ILE:HA	1:D:227:LEU:HG	1.82	0.62
3:F:3001:MSE:HE3	3:F:3003:LEU:HD21	1.81	0.62
3:G:1159:ALA:HB3	3:G:1161:THR:HG22	1.80	0.62
1:D:49:SER:N	1:D:56:LYS:HD3	2.15	0.62
1:C:49:SER:N	1:C:56:LYS:HD3	2.14	0.62
1:B:95:ALA:HB2	3:F:3096:ASP:H	1.65	0.61
2:A:133:VAL:HG12	2:A:134:ASN:N	2.15	0.61
1:B:93:SER:OG	3:F:3055:TYR:CE1	2.42	0.61
1:E:298:ALA:HB1	2:A:83:ASN:ND2	2.15	0.61
2:A:49:ASN:O	2:A:50:LYS:HG2	2.00	0.61
1:D:294:TYR:CD2	1:E:293:GLN:NE2	2.68	0.61
2:A:155:LEU:HD21	2:A:183:LEU:HD21	1.82	0.61
1:B:263:TRP:CZ2	1:B:267:LYS:HG3	2.35	0.61
1:C:44:HIS:CD2	1:C:125:MET:HE2	2.36	0.61
1:E:110:ASP:OD1	1:E:138:ALA:HA	2.01	0.61
1:B:111:ARG:HB3	1:B:114:LEU:HD12	1.81	0.61
2:A:122:LEU:O	2:A:126:LEU:HB2	2.01	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:276:VAL:HG23	1:D:318:TRP:CB	2.30	0.61
2:A:74:GLU:CD	2:A:104:ARG:HD3	2.21	0.61
1:D:200:ASN:N	1:D:200:ASN:OD1	2.33	0.60
2:A:177:GLN:NE2	2:A:181:LYS:NZ	2.49	0.60
3:H:2096:ASP:HB3	3:H:2099:THR:HG23	1.82	0.60
3:F:3030:MSE:SE	3:F:3103:PRO:HG2	2.51	0.60
3:F:3159:ALA:HB3	3:F:3161:THR:HG22	1.83	0.60
4:I:1:DG:H2"	4:I:2:DG:H8	1.65	0.60
1:C:57:THR:CG2	1:C:107:ASP:OD1	2.49	0.60
1:E:284:MET:HG3	1:E:285:TYR:N	2.16	0.60
1:E:307:TYR:CD2	2:A:80:TYR:CD1	2.88	0.60
2:A:126:LEU:HD21	2:A:158:LEU:HB3	1.83	0.60
1:E:167:GLU:O	1:E:171:GLN:HG3	2.02	0.60
1:E:235:ILE:O	1:E:235:ILE:HG22	2.02	0.60
2:A:130:ARG:HG2	2:A:158:LEU:HD11	1.83	0.60
1:B:110:ASP:OD1	1:B:110:ASP:N	2.28	0.60
1:D:97:PHE:HE2	3:G:1094:ALA:HB2	1.65	0.60
1:C:97:PHE:C	1:C:99:GLY:H	2.04	0.59
1:D:44:HIS:CE1	1:D:133:SER:HA	2.37	0.59
1:E:111:ARG:CG	1:E:112:SER:H	2.13	0.59
1:B:65:HIS:O	1:B:68:ASN:N	2.22	0.59
1:C:5:ASN:O	1:C:7:LYS:N	2.34	0.59
1:D:44:HIS:HE1	1:D:133:SER:HA	1.67	0.59
1:D:80:LYS:NZ	1:E:85:ARG:HH12	1.99	0.59
1:D:97:PHE:CD1	3:G:1079:GLY:HA3	2.37	0.59
1:E:75:ASN:HD21	2:A:135:THR:HG23	1.67	0.59
1:B:91:PHE:O	1:B:102:LYS:NZ	2.35	0.59
1:C:229:THR:O	1:C:233:GLY:CA	2.50	0.59
2:A:19:SER:HB3	3:F:3034:VAL:HB	1.84	0.59
1:B:151:ARG:HG2	1:B:151:ARG:O	2.02	0.59
1:D:200:ASN:HD22	1:D:206:LYS:HB3	1.67	0.59
1:D:232:ARG:O	1:D:263:TRP:CZ2	2.56	0.59
2:A:69:LEU:CD1	2:A:98:LEU:HD22	2.31	0.59
3:G:1226:HIS:ND1	3:G:1228:PHE:HB2	2.18	0.59
1:B:289:GLY:C	2:A:85:ILE:HG23	2.23	0.59
1:D:72:MET:HE2	3:H:2156:GLU:CA	2.33	0.59
1:E:109:PHE:HE2	1:E:118:GLN:HG2	1.65	0.59
2:A:22:TRP:O	2:A:26:GLN:HB2	2.03	0.59
1:D:277:THR:HG23	1:D:280:SER:HB2	1.84	0.59
1:E:111:ARG:HB3	1:E:114:LEU:CD1	2.32	0.59
1:B:109:PHE:CE2	1:B:118:GLN:HG2	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:97:PHE:CE2	3:G:1206:ALA:HB2	2.35	0.59
1:D:29:ASP:HA	1:D:32:THR:CG2	2.33	0.59
1:D:297:ILE:O	1:E:295:HIS:O	2.20	0.59
3:F:3096:ASP:O	3:F:3099:THR:HG23	2.03	0.59
1:B:71:MET:HE1	1:B:73:PHE:HD2	1.68	0.59
1:C:310:ILE:HG12	1:D:285:TYR:CD2	2.38	0.59
1:E:166:ILE:O	1:E:169:MET:HB2	2.03	0.59
1:D:205:ARG:NH2	1:E:151:ARG:NH1	2.50	0.58
1:B:292:ASN:ND2	2:A:88:GLY:O	2.36	0.58
3:G:1110:PRO:HB2	3:G:1199:TRP:CD1	2.38	0.58
1:C:277:THR:HG21	1:C:317:GLN:HG2	1.85	0.58
1:B:85:ARG:HH21	1:B:120:HIS:HE1	1.50	0.58
1:C:97:PHE:CD1	3:G:1199:TRP:HZ3	2.20	0.58
1:C:97:PHE:CE2	3:G:1206:ALA:N	2.71	0.58
2:A:71:GLN:OE1	2:A:71:GLN:HA	2.03	0.58
3:H:2110:PRO:HB2	3:H:2199:TRP:CD1	2.38	0.58
1:B:299:ALA:HB2	1:C:295:HIS:HD2	1.69	0.58
3:F:3146:LYS:HA	3:F:3171:ASP:HA	1.85	0.58
1:B:89:THR:CG2	3:F:3055:TYR:OH	2.52	0.57
1:E:122:ARG:HB3	1:E:151:ARG:HH21	1.67	0.57
3:H:2032:ARG:HG2	3:H:2103:PRO:HD3	1.85	0.57
1:B:289:GLY:HA3	2:A:85:ILE:CG2	2.34	0.57
2:A:173:ASN:OD1	2:A:175:LYS:HB3	2.04	0.57
1:C:109:PHE:HE2	1:C:118:GLN:HG2	1.69	0.57
1:D:57:THR:HG22	1:D:107:ASP:OD1	2.04	0.57
1:D:284:MET:HG3	1:D:285:TYR:N	2.20	0.57
1:E:56:LYS:HD2	1:E:137:THR:CG2	2.34	0.57
3:F:3180:PHE:HD2	3:F:3198:LEU:HD13	1.70	0.57
1:C:72:MET:HE1	3:G:1035:ASN:HB3	1.85	0.57
1:B:20:ILE:HD12	1:B:20:ILE:O	2.03	0.57
2:A:2:SER:O	2:A:3:LEU:HB3	2.04	0.57
1:C:297:ILE:O	1:D:295:HIS:O	2.23	0.57
2:A:82:MET:HG2	2:A:97:TYR:HD2	1.69	0.57
3:H:2176:ASN:OD1	3:H:2176:ASN:N	2.37	0.57
1:E:48:HIS:CD2	1:E:141:ILE:HD11	2.40	0.57
1:E:81:ILE:HG21	4:I:3:DT:H3'	1.85	0.57
1:E:107:ASP:HA	1:E:137:THR:HB	1.86	0.57
1:C:109:PHE:CE2	1:C:118:GLN:HG2	2.40	0.57
1:D:299:ALA:CB	1:E:295:HIS:CD2	2.68	0.57
1:B:4:VAL:HG23	1:B:4:VAL:O	2.04	0.56
1:C:95:ALA:HB2	3:G:1220:LEU:O	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:188:ALA:HB3	1:C:220:LEU:O	2.04	0.56
1:D:80:LYS:HE2	1:E:85:ARG:CZ	2.35	0.56
3:G:1146:LYS:HA	3:G:1171:ASP:HA	1.86	0.56
1:D:204:PHE:HA	1:D:207:THR:HG22	1.86	0.56
3:H:2001:MSE:HE3	3:H:2003:LEU:HD21	1.86	0.56
3:H:2146:LYS:HA	3:H:2171:ASP:HA	1.86	0.56
1:B:46:ILE:HG12	1:B:136:ILE:HB	1.88	0.56
1:D:235:ILE:HG22	1:D:235:ILE:O	2.03	0.56
1:E:303:LEU:HD21	2:A:79:VAL:CG1	2.32	0.56
3:G:1057:LEU:O	3:G:1061:LEU:HG	2.04	0.56
3:F:3110:PRO:HB2	3:F:3199:TRP:CD1	2.40	0.56
1:D:80:LYS:NZ	1:E:85:ARG:NH1	2.52	0.56
1:D:80:LYS:HB3	4:I:5:DT:OP2	2.05	0.56
1:C:32:THR:O	1:C:36:ILE:HG13	2.06	0.56
1:E:172:MET:HE3	1:E:204:PHE:HB2	1.86	0.56
1:C:29:ASP:HA	1:C:32:THR:CG2	2.34	0.56
1:C:90:ASN:HB2	3:G:1035:ASN:ND2	2.21	0.56
1:D:316:MET:O	1:D:318:TRP:CZ3	2.59	0.56
1:E:277:THR:HG23	1:E:280:SER:HB2	1.88	0.56
1:C:57:THR:HG22	1:C:107:ASP:OD1	2.06	0.56
1:D:9:HIS:HD2	1:E:41:LYS:HB2	1.71	0.56
1:D:97:PHE:CD2	3:G:1080:ASN:N	2.74	0.56
1:D:228:VAL:HG12	1:D:229:THR:N	2.20	0.56
1:B:16:ARG:NH2	6:B:700:ADP:C5'	2.65	0.55
1:C:44:HIS:HE1	1:C:133:SER:HA	1.71	0.55
2:A:43:ILE:HG23	2:A:95:PHE:HE1	1.71	0.55
1:C:77:SER:HB3	1:D:120:HIS:ND1	2.21	0.55
1:C:90:ASN:O	3:G:1037:THR:HG21	2.06	0.55
1:E:16:ARG:HG3	1:E:58:THR:HG23	1.87	0.55
2:A:75:CYS:C	2:A:77:PRO:HD2	2.25	0.55
1:B:125:MET:HG2	1:B:134:ILE:HD12	1.88	0.55
1:C:235:ILE:HG22	1:C:235:ILE:O	2.06	0.55
1:D:119:ARG:O	1:D:122:ARG:HG2	2.06	0.55
1:E:83:PHE:CE2	1:E:88:LEU:HD11	2.42	0.55
1:E:307:TYR:HB2	2:A:76:MET:HE1	1.87	0.55
1:C:33:PHE:O	1:C:37:THR:HG23	2.06	0.55
1:C:44:HIS:CE1	1:C:133:SER:HA	2.42	0.55
3:G:1147:ILE:HG22	3:G:1169:LEU:HD12	1.88	0.55
1:B:85:ARG:NH2	2:A:26:GLN:HG2	2.21	0.55
1:D:80:LYS:HZ1	1:E:85:ARG:HH12	1.54	0.55
1:E:172:MET:HB3	1:E:204:PHE:HE2	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:155:LEU:CD1	2:A:183:LEU:HD21	2.36	0.55
3:G:1042:ALA:HB2	3:G:1214:ALA:HB2	1.89	0.55
1:B:111:ARG:CB	1:B:114:LEU:HD12	2.37	0.55
1:C:246:ASP:OD2	1:C:249:GLN:HG3	2.07	0.55
1:D:297:ILE:CG2	1:E:293:GLN:O	2.53	0.55
1:B:3:THR:HG23	1:B:22:GLU:OE1	2.06	0.55
1:C:97:PHE:CE1	3:G:1204:GLN:C	2.80	0.55
1:D:44:HIS:CD2	1:D:125:MET:HE2	2.41	0.55
1:D:98:ASP:HB2	1:D:100:ARG:HG3	1.88	0.55
3:G:1200:ALA:HB1	3:G:1226:HIS:NE2	2.22	0.55
1:C:201:PHE:O	1:C:202:PRO:C	2.45	0.55
1:D:216:SER:CB	1:E:35:SER:OG	2.54	0.55
1:E:24:ILE:O	1:E:25:LEU:HD23	2.07	0.55
1:B:277:THR:HG23	1:B:280:SER:HB2	1.88	0.55
1:C:204:PHE:O	1:C:207:THR:HG22	2.06	0.55
2:A:55:ILE:O	2:A:56:ALA:HB3	2.06	0.55
5:J:6:DA:H2"	5:J:7:DC:O5'	2.06	0.55
1:E:68:ASN:O	1:E:100:ARG:HB3	2.06	0.54
1:D:205:ARG:NH2	1:E:151:ARG:HH12	2.05	0.54
2:A:57:GLN:HG3	2:A:58:LYS:HG3	1.88	0.54
2:A:182:LYS:O	2:A:185:LEU:HB3	2.06	0.54
1:B:237:ASP:OD1	1:B:237:ASP:N	2.40	0.54
1:C:72:MET:CE	3:G:1035:ASN:CB	2.83	0.54
1:C:72:MET:CE	3:G:1035:ASN:HA	2.37	0.54
1:C:284:MET:HG3	1:C:285:TYR:N	2.21	0.54
1:C:57:THR:HG22	1:C:137:THR:HG21	1.89	0.54
1:C:110:ASP:OD1	1:D:122:ARG:NH2	2.41	0.54
3:H:2033:ALA:HB2	3:H:2038:THR:HG23	1.89	0.54
3:H:2180:PHE:HD2	3:H:2198:LEU:HD13	1.73	0.54
1:D:33:PHE:O	1:D:37:THR:HG23	2.08	0.54
1:D:291:ASN:ND2	1:D:304:HIS:CE1	2.76	0.54
1:B:284:MET:HG3	1:B:285:TYR:N	2.23	0.54
1:D:109:PHE:CE2	1:D:118:GLN:HG2	2.43	0.54
1:E:59:VAL:HG21	1:E:157:PHE:CZ	2.43	0.54
1:E:158:GLY:O	1:E:159:GLN:HG2	2.07	0.54
1:B:235:ILE:O	1:B:235:ILE:HG22	2.08	0.54
1:C:192:VAL:CG1	1:C:220:LEU:HB3	2.28	0.54
3:H:2067:VAL:HG12	3:H:2085:ASP:OD2	2.08	0.54
1:B:275:ARG:O	1:B:318:TRP:HB2	2.08	0.53
1:B:163:GLU:HA	1:B:166:ILE:HD12	1.90	0.53
1:E:48:HIS:CE1	1:E:141:ILE:HG13	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:96:SER:HB3	1:E:102:LYS:CE	2.38	0.53
1:C:49:SER:HB3	1:C:50:PRO:O	2.08	0.53
1:E:237:ASP:N	1:E:237:ASP:OD1	2.41	0.53
1:C:97:PHE:O	3:G:1204:GLN:OE1	2.26	0.53
3:G:1090:ILE:HG23	3:H:2133:LEU:HD11	1.89	0.53
3:H:2225:THR:O	3:H:2226:HIS:HB3	2.08	0.53
1:C:277:THR:HG23	1:C:280:SER:HB2	1.91	0.53
1:D:201:PHE:O	1:D:202:PRO:C	2.46	0.53
1:B:85:ARG:HH21	2:A:26:GLN:HG2	1.74	0.53
1:C:119:ARG:CB	1:C:122:ARG:NH1	2.71	0.53
1:D:69:ALA:HB1	1:D:103:VAL:HG23	1.90	0.53
1:D:204:PHE:O	1:D:207:THR:HG22	2.09	0.53
1:D:250:LEU:HD13	1:D:309:PHE:HB3	1.90	0.53
1:E:172:MET:HB3	1:E:204:PHE:CE2	2.44	0.53
1:E:307:TYR:CE2	2:A:80:TYR:CZ	2.97	0.53
1:B:56:LYS:HA	1:B:157:PHE:CE2	2.42	0.53
1:C:237:ASP:N	1:C:237:ASP:OD1	2.41	0.53
1:C:250:LEU:HD13	1:C:309:PHE:HB3	1.89	0.53
1:C:277:THR:CG2	1:C:317:GLN:HG2	2.39	0.53
1:B:80:LYS:O	1:B:84:VAL:HG23	2.09	0.53
1:B:85:ARG:HD3	2:A:22:TRP:CD2	2.44	0.53
1:C:10:ILE:CG2	1:C:13:GLN:HB2	2.39	0.53
1:C:294:TYR:HD2	1:D:293:GLN:NE2	2.07	0.53
1:C:303:LEU:CD2	1:D:265:VAL:HG12	2.39	0.53
1:E:201:PHE:HB3	1:E:202:PRO:HD3	1.90	0.53
1:E:203:ASP:CG	1:E:206:LYS:HB2	2.29	0.53
1:C:191:LYS:HB2	1:C:225:LEU:HD22	1.90	0.52
1:C:3:THR:HG21	1:C:18:SER:HB3	1.91	0.52
1:C:21:ASP:HA	1:C:30:LYS:HZ3	1.72	0.52
1:C:204:PHE:HA	1:C:207:THR:HG22	1.92	0.52
3:H:2096:ASP:O	3:H:2099:THR:HG23	2.09	0.52
1:C:2:ILE:HG13	1:C:178:GLU:HG2	1.91	0.52
1:C:13:GLN:NE2	1:D:126:GLU:HG2	2.24	0.52
1:E:172:MET:CE	1:E:204:PHE:CD2	2.89	0.52
1:B:242:LEU:HD12	1:B:250:LEU:HD11	1.91	0.52
1:C:229:THR:O	1:C:233:GLY:HA3	2.10	0.52
1:D:169:MET:O	1:D:173:ILE:HG13	2.09	0.52
1:E:80:LYS:O	1:E:84:VAL:HG23	2.09	0.52
3:G:1176:ASN:OD1	3:G:1176:ASN:N	2.42	0.52
3:F:3022:MSE:HE3	3:F:3023:LEU:O	2.09	0.52
3:F:3096:ASP:HB3	3:F:3099:THR:CG2	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:32:THR:O	1:B:36:ILE:HG13	2.10	0.52
1:C:64:CYS:SG	1:C:71:MET:HG3	2.50	0.52
1:E:99:GLY:N	3:H:2204:GLN:HG2	2.25	0.52
1:E:250:LEU:HD13	1:E:309:PHE:HB3	1.91	0.52
1:D:95:ALA:O	1:D:96:SER:C	2.48	0.52
3:H:2147:ILE:HG22	3:H:2169:LEU:HD12	1.92	0.52
1:B:72:MET:HE3	1:B:91:PHE:CG	2.45	0.52
1:B:316:MET:CB	1:B:318:TRP:CZ3	2.93	0.52
1:E:44:HIS:ND1	1:E:125:MET:HE3	2.24	0.52
3:G:1001:MSE:HE3	3:G:1003:LEU:HD21	1.91	0.52
3:H:2057:LEU:O	3:H:2061:LEU:HG	2.10	0.52
3:F:3092:TRP:CG	3:F:3093:PRO:HD2	2.44	0.52
1:D:276:VAL:HA	1:D:318:TRP:HB2	1.92	0.52
1:B:250:LEU:HD13	1:B:309:PHE:HB3	1.92	0.52
1:C:42:ILE:H	1:C:101:GLN:HE22	1.57	0.52
1:E:307:TYR:HE2	2:A:80:TYR:CZ	2.28	0.52
1:C:53:GLY:O	8:C:700:08T:H14	2.09	0.51
2:A:2:SER:O	2:A:3:LEU:CB	2.58	0.51
1:B:277:THR:HG23	1:B:280:SER:CB	2.41	0.51
1:C:291:ASN:ND2	1:C:304:HIS:CE1	2.78	0.51
1:D:72:MET:HE1	3:H:2156:GLU:HG2	1.92	0.51
1:D:208:ILE:HG22	1:D:208:ILE:O	2.10	0.51
2:A:135:THR:O	2:A:139:ILE:HG12	2.10	0.51
1:C:192:VAL:HG13	1:C:220:LEU:HD23	1.92	0.51
1:D:10:ILE:CG2	1:D:13:GLN:HB2	2.39	0.51
1:E:97:PHE:HD2	3:H:2206:ALA:HB2	1.76	0.51
1:E:307:TYR:CD2	2:A:80:TYR:CE1	2.98	0.51
1:E:45:ILE:HB	1:E:135:ILE:HG12	1.92	0.51
3:H:2087:ARG:O	3:F:3168:THR:N	2.39	0.51
1:B:29:ASP:O	1:B:33:PHE:CD2	2.64	0.51
1:B:90:ASN:O	1:B:94:ALA:N	2.34	0.51
1:D:80:LYS:HZ1	1:E:85:ARG:NH1	2.09	0.51
1:D:277:THR:HG23	1:D:280:SER:CB	2.41	0.51
1:E:42:ILE:HG22	1:E:43:PRO:O	2.11	0.51
1:C:96:SER:O	1:C:97:PHE:CG	2.63	0.51
1:C:89:THR:HA	1:C:124:PHE:CE2	2.40	0.51
1:D:119:ARG:CB	1:D:122:ARG:NH1	2.74	0.51
1:E:26:PRO:HB2	1:E:29:ASP:HB2	1.93	0.51
3:H:2001:MSE:HG3	3:H:2073:ILE:HB	1.92	0.51
1:C:98:ASP:HB2	1:C:100:ARG:HG3	1.91	0.51
1:D:186:ALA:CB	1:D:219:VAL:HG13	2.39	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:11:ASN:OD1	2:A:14:GLN:HG3	2.10	0.51
5:J:10:DC:C5'	5:J:10:DC:H6	2.24	0.51
1:B:111:ARG:HB3	1:B:114:LEU:CD1	2.40	0.51
1:C:94:ALA:O	1:C:131:ASN:ND2	2.43	0.51
1:D:9:HIS:HD1	1:D:10:ILE:N	2.09	0.51
1:E:298:ALA:HA	2:A:84:LEU:HA	1.93	0.51
3:H:2067:VAL:CG1	3:H:2085:ASP:OD2	2.59	0.51
1:B:294:TYR:OH	1:E:297:ILE:HD13	2.11	0.50
2:A:140:ASN:O	2:A:144:ILE:HG13	2.10	0.50
1:C:57:THR:HG21	1:C:107:ASP:OD1	2.11	0.50
1:D:57:THR:HG21	1:D:107:ASP:OD1	2.09	0.50
1:E:96:SER:HB3	1:E:102:LYS:HE2	1.91	0.50
1:B:243:LYS:HG2	1:B:318:TRP:NE1	2.26	0.50
1:B:291:ASN:ND2	1:B:304:HIS:CE1	2.79	0.50
1:C:251:ARG:NH2	1:D:270:GLU:HG3	2.26	0.50
1:D:204:PHE:CA	1:D:207:THR:HG22	2.41	0.50
1:C:242:LEU:HD12	1:C:250:LEU:HD11	1.92	0.50
1:D:13:GLN:HE22	1:E:126:GLU:HB3	1.76	0.50
1:E:25:LEU:HB2	1:E:30:LYS:HG3	1.93	0.50
2:A:52:LYS:O	2:A:53:CYS:HB3	2.10	0.50
3:F:3001:MSE:HG3	3:F:3073:ILE:HB	1.94	0.50
1:B:307:TYR:CG	1:C:289:GLY:HA3	2.46	0.50
1:D:237:ASP:OD1	1:D:237:ASP:N	2.43	0.50
1:D:242:LEU:HD12	1:D:250:LEU:HD11	1.94	0.50
1:D:246:ASP:OD2	1:D:249:GLN:HG3	2.12	0.50
3:G:1032:ARG:HD3	3:G:1103:PRO:HA	1.94	0.50
1:C:13:GLN:HE21	1:C:16:ARG:NH1	2.09	0.50
1:E:307:TYR:CE2	2:A:80:TYR:CE2	3.00	0.50
3:G:1001:MSE:HG3	3:G:1073:ILE:HB	1.93	0.50
1:C:69:ALA:HB1	1:C:103:VAL:HG23	1.94	0.50
1:C:299:ALA:CB	1:D:295:HIS:HD2	2.07	0.50
1:D:80:LYS:NZ	4:I:4:DG:OP2	2.44	0.50
3:H:2042:ALA:HB2	3:H:2214:ALA:HB2	1.93	0.50
1:D:64:CYS:SG	1:D:71:MET:HG3	2.52	0.50
1:D:164:ASP:O	1:D:168:MET:HG3	2.11	0.50
1:D:261:TYR:CZ	1:D:265:VAL:HG21	2.46	0.50
1:E:124:PHE:CD1	1:E:128:TYR:CE2	3.00	0.50
2:A:133:VAL:HG12	2:A:134:ASN:H	1.76	0.50
3:F:3057:LEU:O	3:F:3061:LEU:HG	2.12	0.50
1:B:67:VAL:HG12	1:B:67:VAL:O	2.12	0.50
1:B:293:GLN:CD	2:A:85:ILE:HA	2.32	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:13:GLN:NE2	1:E:126:GLU:HB3	2.27	0.50
1:D:221:ASP:OD1	1:D:224:ILE:HG13	2.12	0.50
1:E:24:ILE:HD13	1:E:172:MET:HG2	1.93	0.50
1:E:298:ALA:HB1	2:A:83:ASN:HD21	1.77	0.50
3:H:2125:GLN:O	3:H:2129:VAL:HG23	2.12	0.50
1:B:59:VAL:HG21	1:B:157:PHE:HZ	1.77	0.49
1:B:131:ASN:O	1:B:132:CYS:HB3	2.12	0.49
1:B:58:THR:OG1	6:B:700:ADP:O1A	2.23	0.49
1:B:95:ALA:CB	3:F:3096:ASP:N	2.73	0.49
1:C:13:GLN:HE21	1:C:16:ARG:HH12	1.59	0.49
1:C:97:PHE:HE2	3:G:1206:ALA:N	2.11	0.49
1:C:297:ILE:CD1	1:D:297:ILE:HD11	2.32	0.49
1:D:49:SER:HB3	1:D:50:PRO:O	2.12	0.49
1:E:59:VAL:HG21	1:E:157:PHE:HZ	1.77	0.49
1:E:59:VAL:O	1:E:62:ALA:HB3	2.12	0.49
3:G:1189:MSE:H	3:G:1189:MSE:SE	2.46	0.49
1:B:83:PHE:CE1	1:B:88:LEU:HD13	2.47	0.49
1:B:91:PHE:CZ	1:B:102:LYS:HB3	2.46	0.49
1:C:203:ASP:OD1	1:C:205:ARG:N	2.44	0.49
1:E:81:ILE:HG22	4:I:3:DT:P	2.53	0.49
1:E:101:GLN:HG2	1:E:103:VAL:HG23	1.94	0.49
1:E:242:LEU:HD12	1:E:250:LEU:HD11	1.94	0.49
3:G:1096:ASP:OD2	3:G:1098:SER:OG	2.28	0.49
3:H:2092:TRP:CG	3:H:2093:PRO:HD2	2.47	0.49
1:B:97:PHE:O	1:B:98:ASP:OD1	2.30	0.49
1:C:49:SER:HB2	1:C:56:LYS:CE	2.43	0.49
1:B:4:VAL:O	1:B:4:VAL:CG2	2.60	0.49
1:D:186:ALA:HB3	1:D:219:VAL:CB	2.41	0.49
1:E:276:VAL:HG22	1:E:277:THR:H	1.78	0.49
1:D:276:VAL:CG2	1:D:318:TRP:HB3	2.38	0.49
1:E:122:ARG:HB3	1:E:151:ARG:NH2	2.27	0.49
2:A:5:LYS:O	2:A:6:ASP:HB2	2.13	0.49
3:H:2089:THR:HB	3:F:3166:SER:HB3	1.93	0.49
3:F:3127:LEU:HD23	3:F:3184:MSE:HE1	1.94	0.49
1:B:285:TYR:OH	2:A:93:ALA:HA	2.11	0.49
1:C:10:ILE:HG22	1:C:13:GLN:HB2	1.95	0.49
1:C:29:ASP:CA	1:C:32:THR:HG22	2.37	0.49
1:C:106:ILE:CG2	1:C:109:PHE:CD1	2.96	0.49
1:C:261:TYR:CZ	1:C:265:VAL:HG21	2.48	0.49
1:D:10:ILE:HG22	1:D:13:GLN:HB2	1.95	0.49
1:D:21:ASP:HA	1:D:30:LYS:HZ1	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:104:ARG:CZ	2:A:105:GLY:HA2	2.43	0.49
2:A:159:LYS:O	2:A:162:VAL:HG23	2.13	0.49
3:H:2089:THR:N	3:F:3166:SER:O	2.35	0.49
1:B:71:MET:CE	1:B:105:VAL:HG21	2.37	0.48
1:B:246:ASP:OD2	1:B:249:GLN:HG3	2.12	0.48
1:B:261:TYR:CZ	1:B:265:VAL:HG21	2.48	0.48
1:D:174:ARG:CB	1:D:174:ARG:NH1	2.37	0.48
2:A:93:ALA:O	2:A:96:ASN:N	2.46	0.48
1:B:83:PHE:HE1	1:B:88:LEU:HD13	1.78	0.48
6:B:700:ADP:N3	6:B:700:ADP:H2'	2.26	0.48
1:C:203:ASP:OD1	1:C:203:ASP:C	2.51	0.48
1:E:124:PHE:O	1:E:127:ALA:N	2.46	0.48
1:E:291:ASN:ND2	1:E:304:HIS:CE1	2.81	0.48
8:C:700:08T:N3	8:C:700:08T:C2'	2.72	0.48
1:E:67:VAL:HG12	1:E:67:VAL:O	2.13	0.48
1:C:5:ASN:C	1:C:7:LYS:H	2.17	0.48
1:D:277:THR:CG2	1:D:317:GLN:O	2.62	0.48
3:G:1018:ASN:C	3:G:1018:ASN:OD1	2.52	0.48
3:F:3033:ALA:HB2	3:F:3038:THR:HG23	1.95	0.48
3:F:3115:VAL:HG22	3:F:3197:LEU:HD22	1.96	0.48
1:C:111:ARG:CZ	1:D:116:GLU:OE1	2.61	0.48
1:C:164:ASP:O	1:C:168:MET:HG3	2.13	0.48
3:F:3147:ILE:HG22	3:F:3169:LEU:HD12	1.96	0.48
3:F:3149:ILE:O	3:F:3166:SER:HA	2.13	0.48
1:B:93:SER:O	3:F:3099:THR:HG21	2.13	0.48
1:B:169:MET:SD	1:B:197:VAL:HG12	2.53	0.48
2:A:74:GLU:OE1	2:A:104:ARG:HD3	2.13	0.48
1:B:189:ASP:OD1	1:B:191:LYS:HG3	2.13	0.48
1:C:42:ILE:H	1:C:101:GLN:NE2	2.12	0.48
1:D:13:GLN:HE21	1:D:16:ARG:HH12	1.60	0.48
1:D:17:PRO:HB3	1:D:22:GLU:HG2	1.94	0.48
1:D:106:ILE:CG2	1:D:109:PHE:CD1	2.95	0.48
1:E:261:TYR:CZ	1:E:265:VAL:HG21	2.48	0.48
3:H:2115:VAL:HG22	3:H:2197:LEU:HD22	1.96	0.48
3:G:1085:ASP:OD1	3:G:1086:ALA:N	2.47	0.48
3:G:1115:VAL:HG22	3:G:1197:LEU:HD22	1.96	0.48
1:B:2:ILE:HD13	1:B:178:GLU:HG2	1.95	0.48
1:C:200:ASN:OD1	1:C:200:ASN:N	2.46	0.48
1:E:148:LEU:HD12	1:E:148:LEU:HA	1.74	0.48
2:A:82:MET:HE2	2:A:97:TYR:CD2	2.49	0.48
3:G:1050:PHE:CE2	3:G:1052:VAL:HB	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:20:ILE:HG12	1:B:33:PHE:HB2	1.96	0.47
1:C:204:PHE:CA	1:C:207:THR:HG22	2.44	0.47
1:D:33:PHE:CE1	1:D:155:ILE:HD13	2.49	0.47
2:A:155:LEU:HD11	2:A:183:LEU:HD21	1.96	0.47
3:G:1180:PHE:HD2	3:G:1198:LEU:HD13	1.78	0.47
3:F:3002:LYS:O	3:F:3003:LEU:HD23	2.14	0.47
3:F:3096:ASP:OD2	3:F:3098:SER:OG	2.32	0.47
4:I:2:DG:N2	5:J:9:DC:N3	2.60	0.47
1:B:55:GLY:HA2	6:B:700:ADP:O1A	2.14	0.47
3:F:3090:ILE:HG22	3:F:3091:PHE:N	2.29	0.47
1:C:276:VAL:HG22	1:C:277:THR:H	1.79	0.47
1:E:13:GLN:HG2	2:A:131:TYR:HD1	1.72	0.47
3:G:1077:GLU:CD	3:G:1077:GLU:H	2.18	0.47
1:B:64:CYS:SG	1:B:71:MET:HG3	2.54	0.47
1:B:85:ARG:O	1:B:89:THR:HB	2.14	0.47
3:H:2096:ASP:HB3	3:H:2099:THR:CG2	2.44	0.47
1:D:21:ASP:HA	1:D:30:LYS:HZ3	1.79	0.47
1:D:97:PHE:CE2	3:G:1080:ASN:HA	2.49	0.47
1:D:166:ILE:O	1:D:170:LYS:HG3	2.14	0.47
1:E:255:PRO:HA	1:E:302:GLU:HG3	1.97	0.47
3:H:2180:PHE:CE2	3:H:2198:LEU:HB3	2.50	0.47
1:B:31:GLU:O	1:B:35:SER:HB2	2.15	0.47
1:C:91:PHE:HD1	3:G:1035:ASN:O	1.98	0.47
1:C:277:THR:HG23	1:C:280:SER:CB	2.45	0.47
8:C:700:08T:N3	8:C:700:08T:H6	2.30	0.47
1:E:98:ASP:OD2	1:E:100:ARG:NH2	2.48	0.47
1:E:277:THR:HG23	1:E:280:SER:CB	2.45	0.47
3:G:1096:ASP:HB3	3:G:1099:THR:CG2	2.43	0.47
3:F:3085:ASP:OD1	3:F:3086:ALA:N	2.47	0.47
3:F:3189:MSE:SE	3:F:3189:MSE:H	2.48	0.47
4:I:1:DG:C2	4:I:2:DG:C4	3.03	0.47
1:E:172:MET:HE2	1:E:204:PHE:CD2	2.32	0.47
1:C:200:ASN:HD22	1:C:206:LYS:HB3	1.80	0.47
1:D:218:GLY:O	1:D:219:VAL:HG23	2.14	0.47
1:E:49:SER:OG	1:E:139:ASN:HA	2.15	0.47
1:E:72:MET:HE3	1:E:91:PHE:CG	2.50	0.47
1:B:20:ILE:HG22	1:B:66:ASP:OD2	2.16	0.47
1:C:17:PRO:HB3	1:C:22:GLU:HG2	1.97	0.47
1:C:49:SER:HB2	1:C:56:LYS:NZ	2.30	0.47
2:A:10:LEU:HA	2:A:14:GLN:OE1	2.15	0.47
1:B:16:ARG:O	1:B:17:PRO:C	2.52	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:85:ARG:O	1:D:89:THR:HB	2.15	0.46
1:D:276:VAL:HG22	1:D:277:THR:H	1.80	0.46
3:G:1092:TRP:CG	3:G:1093:PRO:HD2	2.50	0.46
3:F:3159:ALA:O	3:F:3160:LEU:HB2	2.15	0.46
1:B:37:THR:HG22	1:B:37:THR:O	2.16	0.46
1:B:83:PHE:HA	1:B:87:PRO:HD2	1.96	0.46
1:C:12:GLU:O	8:C:700:08T:O3'	2.28	0.46
1:D:303:LEU:CD2	1:E:265:VAL:HG12	2.46	0.46
3:H:2226:HIS:CE1	3:H:2228:PHE:HB2	2.49	0.46
1:B:293:GLN:OE1	2:A:85:ILE:HA	2.16	0.46
1:D:49:SER:HB2	1:D:56:LYS:NZ	2.31	0.46
5:J:10:DC:H6	5:J:10:DC:H5"	1.81	0.46
1:B:255:PRO:HA	1:B:302:GLU:HG3	1.98	0.46
1:C:188:ALA:CB	1:C:221:ASP:HA	2.37	0.46
1:C:276:VAL:HG22	1:C:277:THR:N	2.31	0.46
1:E:246:ASP:OD2	1:E:249:GLN:HG3	2.16	0.46
2:A:13:HIS:CE1	2:A:32:PHE:HE2	2.29	0.46
2:A:151:LEU:CD1	2:A:151:LEU:O	2.64	0.46
1:C:52:PRO:HG3	1:D:150:SER:HB2	1.97	0.46
1:D:13:GLN:HE21	1:D:16:ARG:NH1	2.13	0.46
1:D:29:ASP:CA	1:D:32:THR:HG22	2.37	0.46
1:E:56:LYS:CB	1:E:137:THR:HG23	2.46	0.46
1:E:303:LEU:HD11	2:A:76:MET:SD	2.54	0.46
3:G:1125:GLN:O	3:G:1129:VAL:HG23	2.16	0.46
1:B:145:ILE:HB	1:B:147:PRO:HD2	1.98	0.46
2:A:102:VAL:HA	2:A:103:PRO:HD3	1.77	0.46
1:C:97:PHE:HA	3:G:1204:GLN:CG	2.40	0.46
3:F:3001:MSE:CE	3:F:3003:LEU:HD21	2.45	0.46
1:B:17:PRO:HB3	1:B:22:GLU:HG2	1.98	0.46
1:E:56:LYS:HB3	1:E:137:THR:HG23	1.97	0.46
1:E:111:ARG:CG	1:E:112:SER:N	2.75	0.46
1:E:276:VAL:HG22	1:E:277:THR:N	2.31	0.46
3:F:3180:PHE:CE2	3:F:3198:LEU:HB3	2.50	0.46
1:B:90:ASN:O	1:B:94:ALA:CB	2.64	0.45
1:C:204:PHE:HA	1:C:207:THR:HG21	1.98	0.45
1:D:232:ARG:O	1:D:263:TRP:CH2	2.69	0.45
1:D:239:LEU:HD13	1:D:275:ARG:NH1	2.31	0.45
1:E:67:VAL:O	1:E:67:VAL:CG1	2.64	0.45
1:E:147:PRO:O	1:E:151:ARG:HG3	2.15	0.45
1:C:12:GLU:OE1	1:D:153:ARG:NH1	2.49	0.45
1:D:81:ILE:N	4:I:5:DT:OP1	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:74:VAL:HG12	1:E:75:ASN:O	2.16	0.45
3:G:1068:ASN:HB2	3:G:1070:ASP:OD1	2.16	0.45
3:F:3030:MSE:HE3	3:F:3103:PRO:HG2	1.97	0.45
1:B:46:ILE:HB	1:B:154:VAL:HG22	1.98	0.45
1:B:285:TYR:CZ	2:A:93:ALA:HB1	2.51	0.45
1:B:316:MET:CB	1:B:318:TRP:HZ3	2.29	0.45
1:C:95:ALA:O	1:C:97:PHE:N	2.49	0.45
1:C:163:GLU:CD	1:C:163:GLU:H	2.20	0.45
2:A:102:VAL:O	2:A:102:VAL:HG22	2.17	0.45
3:F:3018:ASN:C	3:F:3018:ASN:OD1	2.54	0.45
1:B:219:VAL:CG1	1:B:220:LEU:N	2.78	0.45
1:C:261:TYR:CD1	1:C:295:HIS:CD2	3.04	0.45
1:C:307:TYR:CG	1:D:289:GLY:HA3	2.52	0.45
3:G:1022:MSE:HE3	3:G:1023:LEU:O	2.17	0.45
3:G:1033:ALA:HB2	3:G:1038:THR:HG23	1.99	0.45
3:H:2085:ASP:OD1	3:H:2086:ALA:N	2.49	0.45
1:B:146:LYS:N	1:B:147:PRO:CD	2.78	0.45
1:B:276:VAL:HG22	1:B:277:THR:H	1.81	0.45
1:D:42:ILE:H	1:D:101:GLN:HE22	1.64	0.45
1:D:186:ALA:H	1:D:219:VAL:CA	2.27	0.45
3:G:1141:THR:OG1	3:G:1142:VAL:N	2.50	0.45
3:F:3125:GLN:O	3:F:3129:VAL:HG23	2.16	0.45
1:B:44:HIS:HE2	1:B:129:SER:HB3	1.81	0.45
1:C:255:PRO:HB3	1:C:302:GLU:CD	2.37	0.45
1:B:61:LYS:HG3	1:B:71:MET:HE1	1.98	0.45
1:B:76:GLY:N	1:B:107:ASP:O	2.49	0.45
1:C:49:SER:CB	1:C:56:LYS:HZ2	2.29	0.45
1:C:251:ARG:HH21	1:D:270:GLU:HG3	1.82	0.45
1:D:205:ARG:HD3	1:E:151:ARG:HA	1.98	0.45
1:E:161:THR:N	1:E:164:ASP:HB2	2.31	0.45
2:A:50:LYS:HE2	2:A:103:PRO:O	2.17	0.45
3:G:1189:MSE:HE3	3:G:1189:MSE:HB3	1.90	0.45
1:B:22:GLU:HG2	1:B:22:GLU:O	2.16	0.45
1:D:49:SER:HB2	1:D:56:LYS:CE	2.47	0.45
3:H:2096:ASP:OD2	3:H:2098:SER:OG	2.32	0.45
3:H:2127:LEU:HD23	3:H:2184:MSE:HE1	1.98	0.45
3:F:3130:SER:CB	3:F:3184:MSE:HE2	2.46	0.45
1:C:121:LEU:HA	1:C:124:PHE:HB3	1.98	0.45
1:D:218:GLY:O	1:D:219:VAL:CG2	2.65	0.45
1:E:42:ILE:HG12	1:E:67:VAL:HG21	1.99	0.45
1:E:106:ILE:HG21	1:E:109:PHE:CE1	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:124:PHE:O	1:E:127:ALA:HB3	2.17	0.45
1:B:59:VAL:HG21	1:B:157:PHE:CZ	2.52	0.45
1:C:12:GLU:CD	1:D:153:ARG:HH12	2.20	0.45
1:D:242:LEU:CD1	1:D:250:LEU:HD21	2.47	0.45
2:A:80:TYR:OH	2:A:84:LEU:HD11	2.17	0.45
2:A:163:THR:O	2:A:166:PHE:N	2.46	0.45
1:C:215:SER:O	1:C:216:SER:C	2.55	0.44
1:D:206:LYS:HD2	1:D:206:LYS:HA	1.56	0.44
1:D:219:VAL:O	1:D:220:LEU:HD12	2.18	0.44
1:D:255:PRO:HA	1:D:302:GLU:HG3	1.99	0.44
2:A:24:ALA:O	2:A:28:ALA:N	2.50	0.44
3:G:1130:SER:CB	3:G:1184:MSE:HE2	2.46	0.44
1:B:276:VAL:HG22	1:B:277:THR:N	2.32	0.44
1:C:176:LEU:HD23	1:C:176:LEU:HA	1.71	0.44
1:C:294:TYR:HB3	1:D:293:GLN:HG2	2.00	0.44
2:A:160:GLY:O	3:H:2099:THR:HG22	2.17	0.44
3:H:2130:SER:CB	3:H:2184:MSE:HE2	2.47	0.44
3:F:3018:ASN:OD1	3:F:3019:SER:N	2.50	0.44
1:B:238:VAL:HG22	1:B:253:LEU:HD13	1.99	0.44
1:C:114:LEU:HD23	1:C:114:LEU:HA	1.62	0.44
1:D:23:CYS:O	1:D:30:LYS:HE2	2.17	0.44
3:G:1096:ASP:O	3:G:1099:THR:HG23	2.17	0.44
1:B:119:ARG:HE	2:A:33:LYS:HB3	1.82	0.44
1:B:243:LYS:HG2	1:B:318:TRP:HE1	1.82	0.44
1:D:97:PHE:CZ	3:G:1079:GLY:C	2.91	0.44
2:A:62:LYS:HG2	2:A:94:HIS:CD2	2.52	0.44
2:A:177:GLN:O	2:A:177:GLN:HG2	2.18	0.44
3:G:1160:LEU:CD1	3:G:1181:ILE:HD13	2.47	0.44
3:G:1221:GLU:H	3:G:1221:GLU:HG2	1.60	0.44
1:B:168:MET:O	1:B:169:MET:C	2.54	0.44
1:C:280:SER:HB3	1:C:316:MET:SD	2.58	0.44
1:D:9:HIS:CD2	1:E:41:LYS:CB	2.98	0.44
2:A:40:PHE:CE2	2:A:64:MET:HG3	2.52	0.44
2:A:151:LEU:O	2:A:151:LEU:HD12	2.15	0.44
2:A:162:VAL:O	2:A:162:VAL:CG1	2.61	0.44
1:C:34:LYS:HD2	1:C:34:LYS:HA	1.66	0.44
1:C:44:HIS:CD2	1:C:125:MET:CE	3.00	0.44
1:D:83:PHE:O	1:D:87:PRO:HD2	2.17	0.44
2:A:149:GLY:C	2:A:151:LEU:H	2.20	0.44
2:A:163:THR:O	2:A:166:PHE:HB3	2.18	0.44
3:F:3176:ASN:OD1	3:F:3176:ASN:N	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:120:HIS:CD2	2:A:29:ALA:CB	3.01	0.44
1:B:239:LEU:O	1:B:243:LYS:HG3	2.18	0.44
1:B:261:TYR:CD1	1:B:295:HIS:CD2	3.05	0.44
1:B:275:ARG:O	1:B:318:TRP:CD1	2.71	0.44
1:C:21:ASP:HA	1:C:30:LYS:HZ1	1.80	0.44
1:C:174:ARG:NH1	1:C:174:ARG:CB	2.41	0.44
1:C:239:LEU:HD13	1:C:275:ARG:NH1	2.33	0.44
1:D:148:LEU:HD23	1:D:148:LEU:HA	1.77	0.44
2:A:92:GLU:O	2:A:95:PHE:HB3	2.18	0.44
3:G:1126:LEU:O	3:G:1130:SER:HB2	2.17	0.44
3:H:2157:ASP:OD1	3:H:2161:THR:HG23	2.17	0.44
3:F:3194:TYR:CE1	3:F:3211:GLY:HA3	2.53	0.44
1:C:297:ILE:CG2	1:D:297:ILE:HG13	2.47	0.44
1:D:72:MET:CE	3:H:2156:GLU:HA	2.42	0.44
1:D:81:ILE:HG21	4:I:5:DT:H3'	1.99	0.44
1:D:318:TRP:N	1:D:318:TRP:CE3	2.85	0.44
3:G:1180:PHE:CE2	3:G:1198:LEU:HB3	2.53	0.44
1:B:48:HIS:HE1	1:B:156:THR:CG2	2.30	0.44
1:C:91:PHE:CZ	1:C:102:LYS:HD3	2.53	0.44
1:C:174:ARG:O	1:C:177:THR:HB	2.18	0.44
1:C:297:ILE:HG23	1:D:297:ILE:HG13	1.99	0.44
1:D:42:ILE:H	1:D:101:GLN:NE2	2.16	0.44
1:D:77:SER:OG	1:D:111:ARG:HD3	2.18	0.44
1:D:174:ARG:O	1:D:177:THR:HB	2.17	0.44
1:D:204:PHE:HA	1:D:207:THR:HG21	1.98	0.44
1:D:261:TYR:CD1	1:D:295:HIS:CD2	3.06	0.44
1:D:213:SER:OG	1:E:153:ARG:NE	2.50	0.43
1:D:318:TRP:N	1:D:318:TRP:HE3	2.16	0.43
1:E:83:PHE:CE2	1:E:88:LEU:CD1	3.00	0.43
1:E:261:TYR:CD1	1:E:295:HIS:CD2	3.06	0.43
3:H:2042:ALA:HB2	3:H:2214:ALA:CB	2.47	0.43
3:F:3090:ILE:CG2	3:F:3091:PHE:N	2.81	0.43
1:C:255:PRO:HA	1:C:302:GLU:HG3	2.00	0.43
1:D:32:THR:O	1:D:36:ILE:HG13	2.18	0.43
1:D:230:ASN:HD22	1:D:231:ASP:H	1.66	0.43
2:A:69:LEU:O	2:A:71:GLN:N	2.51	0.43
3:H:2091:PHE:CD2	3:F:3163:VAL:O	2.71	0.43
3:F:3022:MSE:HB3	3:F:3102:ALA:HB2	2.00	0.43
1:B:105:VAL:HG22	1:B:135:ILE:HD12	2.00	0.43
1:D:203:ASP:OD1	1:D:205:ARG:N	2.44	0.43
1:D:276:VAL:HG22	1:D:277:THR:N	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:204:PHE:HE1	1:E:208:ILE:HD11	1.83	0.43
2:A:80:TYR:O	2:A:83:ASN:HB3	2.18	0.43
3:G:1041:GLU:HG2	3:G:1215:ASN:HB2	2.00	0.43
3:H:2063:ILE:HA	3:H:2063:ILE:HD13	1.82	0.43
1:C:200:ASN:HD21	1:C:210:GLU:HG3	1.83	0.43
1:B:162:ASP:O	1:B:166:ILE:CG1	2.65	0.43
1:D:186:ALA:O	1:D:219:VAL:HA	2.18	0.43
3:F:3189:MSE:HE2	3:F:3209:PHE:CG	2.53	0.43
1:D:88:LEU:HD22	1:D:104:ILE:HD13	2.01	0.43
1:D:251:ARG:NH2	1:E:270:GLU:HG3	2.33	0.43
1:E:27:ALA:N	1:E:164:ASP:OD1	2.46	0.43
2:A:118:SER:OG	2:A:119:THR:N	2.52	0.43
2:A:120:GLU:HG2	2:A:124:ILE:HD11	1.99	0.43
1:B:73:PHE:CD1	1:B:73:PHE:C	2.91	0.43
1:B:93:SER:CB	3:F:3055:TYR:CE1	3.01	0.43
1:B:136:ILE:CG2	1:B:137:THR:N	2.82	0.43
1:C:2:ILE:HG13	1:C:178:GLU:CG	2.49	0.43
1:D:4:VAL:HG23	1:D:4:VAL:O	2.18	0.43
1:D:85:ARG:HH22	4:I:6:DC:P	2.40	0.43
1:E:173:ILE:HD13	1:E:194:ALA:HB2	1.99	0.43
2:A:144:ILE:O	2:A:144:ILE:HG22	2.18	0.43
3:G:1018:ASN:OD1	3:G:1019:SER:N	2.51	0.43
3:G:1063:ILE:HD13	3:G:1063:ILE:HA	1.80	0.43
3:F:3128:ARG:HG3	3:F:3128:ARG:HH11	1.83	0.43
1:B:176:LEU:HA	1:B:176:LEU:HD23	1.75	0.43
2:A:90:SER:C	2:A:92:GLU:N	2.71	0.43
2:A:145:LEU:HB2	2:A:151:LEU:CD2	2.26	0.43
3:F:3077:GLU:H	3:F:3077:GLU:CD	2.21	0.43
1:B:121:LEU:O	1:B:124:PHE:HB3	2.19	0.43
1:B:141:ILE:HD12	1:B:154:VAL:HG11	2.01	0.43
1:B:162:ASP:OD1	1:B:162:ASP:N	2.51	0.43
1:B:276:VAL:HA	1:B:318:TRP:HB2	1.94	0.43
1:C:297:ILE:CG2	1:D:293:GLN:O	2.67	0.43
1:E:165:LYS:O	1:E:169:MET:CG	2.67	0.43
1:E:242:LEU:HD12	1:E:250:LEU:HD21	2.00	0.43
2:A:3:LEU:HG	2:A:3:LEU:O	2.19	0.43
3:G:1010:LEU:HA	3:G:1010:LEU:HD23	1.82	0.43
1:B:283:ARG:NH1	1:B:286:GLU:OE1	2.51	0.43
3:G:1110:PRO:HB2	3:G:1199:TRP:NE1	2.34	0.43
1:C:276:VAL:HA	1:C:318:TRP:HB3	2.01	0.42
1:D:33:PHE:CZ	1:D:155:ILE:HD13	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:44:HIS:CD2	1:D:125:MET:CE	3.01	0.42
1:E:124:PHE:CD1	1:E:128:TYR:HE2	2.33	0.42
3:G:1149:ILE:O	3:G:1166:SER:HA	2.19	0.42
1:C:97:PHE:HZ	3:G:1205:GLY:CA	2.11	0.42
1:C:314:CYS:SG	1:D:282:ILE:HD11	2.59	0.42
1:D:80:LYS:CE	1:E:85:ARG:NH1	2.82	0.42
1:D:260:ASP:OD1	1:D:260:ASP:N	2.50	0.42
1:D:289:GLY:O	1:D:293:GLN:HB2	2.19	0.42
3:H:2010:LEU:HA	3:H:2010:LEU:HD23	1.75	0.42
4:I:2:DG:H1	5:J:9:DC:H42	1.67	0.42
1:B:121:LEU:C	1:B:121:LEU:HD23	2.39	0.42
1:D:9:HIS:ND1	1:D:10:ILE:N	2.67	0.42
1:B:294:TYR:HD1	1:B:297:ILE:HD12	1.84	0.42
1:D:92:ALA:HB2	1:D:124:PHE:CZ	2.54	0.42
2:A:145:LEU:O	2:A:148:ASN:N	2.52	0.42
3:F:3092:TRP:CD1	3:F:3093:PRO:HD2	2.54	0.42
1:B:26:PRO:HB3	1:B:160:PRO:HA	2.00	0.42
1:C:119:ARG:O	1:C:122:ARG:HG2	2.19	0.42
1:D:0:SER:OG	1:D:1:MET:CE	2.67	0.42
1:D:242:LEU:HD12	1:D:250:LEU:HD21	2.01	0.42
1:E:84:VAL:HG13	1:E:88:LEU:HD22	2.00	0.42
1:E:159:GLN:O	1:E:160:PRO:C	2.57	0.42
3:H:2189:MSE:HE3	3:H:2189:MSE:HB3	1.99	0.42
1:C:208:ILE:O	1:C:208:ILE:HG22	2.19	0.42
1:E:165:LYS:HE3	1:E:165:LYS:HB2	1.88	0.42
2:A:65:VAL:HG11	2:A:98:LEU:HD13	2.01	0.42
3:G:1039:TYR:O	3:G:1216:TYR:HA	2.19	0.42
3:H:2068:ASN:HB2	3:H:2070:ASP:OD1	2.20	0.42
1:D:114:LEU:HA	1:D:114:LEU:HD23	1.64	0.42
1:E:102:LYS:O	1:E:132:CYS:HA	2.19	0.42
3:H:2064:LEU:HD23	3:H:2064:LEU:HA	1.86	0.42
4:I:1:DG:N2	4:I:2:DG:C4	2.88	0.42
1:B:285:TYR:HE2	2:A:96:ASN:HB2	1.84	0.42
1:C:93:SER:OG	3:G:1221:GLU:OE1	2.24	0.42
1:C:222:ALA:HA	1:C:225:LEU:HB3	2.02	0.42
1:E:119:ARG:CD	1:E:122:ARG:HH21	2.27	0.42
3:G:1003:LEU:HD23	3:G:1003:LEU:HA	1.80	0.42
1:C:169:MET:O	1:C:173:ILE:HG13	2.20	0.42
1:E:283:ARG:NH1	1:E:286:GLU:OE1	2.53	0.42
2:A:137:ASP:O	2:A:141:TYR:N	2.52	0.42
1:B:98:ASP:OD1	1:B:99:GLY:N	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:148:LEU:HD23	1:B:148:LEU:HA	1.76	0.42
1:B:304:HIS:CE1	1:C:293:GLN:HG3	2.55	0.42
1:D:97:PHE:CB	3:G:1078:ASP:O	2.61	0.42
1:E:10:ILE:HD13	2:A:141:TYR:CD2	2.55	0.42
1:E:119:ARG:HA	1:E:122:ARG:HE	1.85	0.42
1:E:242:LEU:CD1	1:E:250:LEU:HD21	2.49	0.42
2:A:46:ALA:O	2:A:50:LYS:HA	2.20	0.42
3:H:2128:ARG:HG3	3:H:2128:ARG:NH1	2.35	0.42
1:C:304:HIS:CE1	1:D:293:GLN:HG3	2.55	0.41
1:D:34:LYS:HD2	1:D:34:LYS:HA	1.77	0.41
1:D:119:ARG:CA	1:D:122:ARG:HH11	2.33	0.41
1:E:167:GLU:OE1	1:E:167:GLU:HA	2.20	0.41
2:A:4:PHE:CG	3:F:3032:ARG:NH1	2.88	0.41
2:A:181:LYS:HZ1	3:F:3156:GLU:HA	1.85	0.41
3:H:2077:GLU:CD	3:H:2077:GLU:H	2.24	0.41
3:H:2149:ILE:O	3:H:2166:SER:HA	2.20	0.41
1:B:6:GLU:O	1:B:7:LYS:CG	2.59	0.41
1:B:72:MET:HE1	1:B:91:PHE:HB2	2.02	0.41
1:C:88:LEU:HD22	1:C:104:ILE:HD13	2.01	0.41
1:E:254:ALA:N	1:E:255:PRO:HD2	2.36	0.41
3:H:2128:ARG:HG3	3:H:2128:ARG:HH11	1.84	0.41
3:F:3067:VAL:HG12	3:F:3085:ASP:OD2	2.20	0.41
3:F:3147:ILE:CD1	3:F:3178:PHE:HZ	2.32	0.41
4:I:1:DG:H8	4:I:1:DG:H5'	1.85	0.41
1:B:85:ARG:HH21	1:B:120:HIS:CE1	2.34	0.41
1:B:171:GLN:O	1:B:175:ARG:HB2	2.20	0.41
1:D:42:ILE:HG22	1:D:43:PRO:O	2.21	0.41
1:C:239:LEU:O	1:C:243:LYS:HG3	2.20	0.41
1:E:42:ILE:CG1	1:E:67:VAL:HG21	2.51	0.41
1:E:83:PHE:HE2	1:E:88:LEU:HD11	1.84	0.41
2:A:177:GLN:HE21	2:A:181:LYS:HZ1	1.67	0.41
3:H:2088:SER:HA	3:F:3166:SER:O	2.20	0.41
3:F:3160:LEU:CD1	3:F:3181:ILE:HD13	2.50	0.41
1:B:219:VAL:HG12	1:B:220:LEU:N	2.36	0.41
1:B:289:GLY:C	2:A:85:ILE:CG2	2.88	0.41
1:C:4:VAL:HG23	1:C:4:VAL:O	2.19	0.41
3:G:1005:LYS:H	3:G:1005:LYS:HG2	1.70	0.41
3:G:1198:LEU:N	3:G:1198:LEU:HD23	2.35	0.41
1:B:205:ARG:NH2	6:B:700:ADP:O2B	2.53	0.41
1:C:199:LYS:HE2	1:C:232:ARG:HE	1.86	0.41
1:C:206:LYS:HD2	1:C:206:LYS:HA	1.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:9:HIS:CD2	1:E:41:LYS:HB2	2.52	0.41
1:E:83:PHE:CD1	1:E:87:PRO:HG2	2.56	0.41
1:B:121:LEU:HD23	1:B:125:MET:HG3	2.02	0.41
1:D:316:MET:O	1:D:318:TRP:HZ3	2.03	0.41
3:G:1130:SER:OG	3:G:1184:MSE:HE2	2.20	0.41
3:H:2088:SER:HA	3:F:3167:LEU:HA	2.02	0.41
1:C:23:CYS:O	1:C:30:LYS:HE2	2.21	0.41
1:C:94:ALA:HB1	3:G:1219:ALA:CB	2.51	0.41
1:C:283:ARG:NH1	1:C:286:GLU:OE1	2.52	0.41
1:D:88:LEU:HD23	1:D:88:LEU:HA	1.87	0.41
2:A:19:SER:O	2:A:20:LYS:HB2	2.20	0.41
3:G:1032:ARG:HG2	3:G:1103:PRO:CD	2.42	0.41
3:H:2039:TYR:CD1	3:H:2039:TYR:C	2.94	0.41
3:H:2147:ILE:CD1	3:H:2178:PHE:HZ	2.33	0.41
1:B:99:GLY:O	1:B:100:ARG:C	2.58	0.41
1:B:116:GLU:HA	1:B:119:ARG:NH1	2.36	0.41
1:E:104:ILE:HG22	1:E:106:ILE:HG13	2.02	0.41
1:E:238:VAL:HG22	1:E:253:LEU:HD13	2.02	0.41
2:A:4:PHE:CD2	3:F:3032:ARG:NH1	2.89	0.41
2:A:133:VAL:CG1	2:A:137:ASP:OD2	2.69	0.41
3:G:1002:LYS:O	3:G:1003:LEU:HD23	2.21	0.41
3:F:3068:ASN:HB2	3:F:3070:ASP:OD1	2.21	0.41
1:E:106:ILE:HG21	1:E:109:PHE:CD1	2.56	0.41
2:A:74:GLU:OE1	2:A:104:ARG:HG2	2.21	0.41
3:F:3128:ARG:HG3	3:F:3128:ARG:NH1	2.36	0.41
3:F:3157:ASP:OD1	3:F:3161:THR:HG23	2.21	0.41
1:B:64:CYS:O	1:B:65:HIS:C	2.58	0.40
1:C:10:ILE:O	1:C:10:ILE:HG23	2.20	0.40
1:E:173:ILE:HG23	1:E:193:VAL:HG12	1.99	0.40
1:E:238:VAL:HA	1:E:253:LEU:HD13	2.03	0.40
3:G:1010:LEU:O	3:G:1013:ASN:HB3	2.21	0.40
1:C:3:THR:OG1	1:C:22:GLU:OE1	2.33	0.40
1:C:119:ARG:CA	1:C:122:ARG:HH11	2.34	0.40
1:D:238:VAL:HG22	1:D:253:LEU:HD13	2.03	0.40
1:D:261:TYR:CE1	1:D:265:VAL:HG21	2.56	0.40
2:A:179:GLN:O	2:A:180:LEU:C	2.59	0.40
1:B:83:PHE:HE1	1:B:88:LEU:CD1	2.33	0.40
1:B:238:VAL:HA	1:B:253:LEU:HD13	2.04	0.40
1:B:284:MET:O	1:B:284:MET:CE	2.70	0.40
1:C:118:GLN:HB3	1:C:145:ILE:CD1	2.51	0.40
1:D:215:SER:O	1:D:216:SER:C	2.59	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:34:LYS:HE3	1:E:34:LYS:HB3	1.72	0.40
2:A:123:ILE:H	2:A:123:ILE:HG13	1.75	0.40
3:H:2050:PHE:CE2	3:H:2052:VAL:HB	2.56	0.40
1:B:57:THR:HG23	6:B:700:ADP:O3B	2.22	0.40
1:B:243:LYS:O	1:B:245:LYS:HG3	2.21	0.40
1:C:189:ASP:OD1	1:C:191:LYS:HG3	2.22	0.40
1:D:238:VAL:HA	1:D:253:LEU:HD13	2.04	0.40
2:A:55:ILE:O	2:A:56:ALA:CB	2.70	0.40
1:B:89:THR:HG22	3:F:3055:TYR:OH	2.21	0.40
1:B:289:GLY:CA	2:A:85:ILE:CG2	3.00	0.40
1:C:33:PHE:CZ	1:C:155:ILE:HD13	2.57	0.40
1:C:98:ASP:OD1	1:C:98:ASP:N	2.53	0.40
1:E:71:MET:O	1:E:71:MET:HG2	2.21	0.40
1:E:112:SER:C	1:E:114:LEU:H	2.25	0.40
1:E:196:LEU:HD23	1:E:196:LEU:HA	1.75	0.40
4:I:1:DG:C2	4:I:2:DG:C5	3.10	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:1193:ASN:OD1	3:F:3176:ASN:ND2[4_445]	2.12	0.08

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	
1	B	301/324 (93%)	282 (94%)	18 (6%)	1 (0%)	37	69
1	C	317/324 (98%)	302 (95%)	11 (4%)	4 (1%)	10	41
1	D	318/324 (98%)	300 (94%)	13 (4%)	5 (2%)	8	37
1	E	290/324 (90%)	277 (96%)	12 (4%)	1 (0%)	37	69

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	A	174/199 (87%)	140 (80%)	33 (19%)	1 (1%)	22	57
3	F	220/228 (96%)	217 (99%)	3 (1%)	0	100	100
3	G	226/228 (99%)	223 (99%)	3 (1%)	0	100	100
3	H	226/228 (99%)	222 (98%)	4 (2%)	0	100	100
All	All	2072/2179 (95%)	1963 (95%)	97 (5%)	12 (1%)	22	57

All (12) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	219	VAL
1	C	97	PHE
1	D	234	ALA
1	B	259	ALA
1	C	259	ALA
1	E	259	ALA
1	D	259	ALA
1	D	218	GLY
1	C	233	GLY
2	A	8	ILE
1	C	50	PRO
1	D	50	PRO

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	
1	B	266/279 (95%)	239 (90%)	27 (10%)	6	26
1	C	276/279 (99%)	244 (88%)	32 (12%)	4	21
1	D	278/279 (100%)	248 (89%)	30 (11%)	5	23
1	E	250/279 (90%)	225 (90%)	25 (10%)	6	26
2	A	154/174 (88%)	143 (93%)	11 (7%)	12	42
3	F	183/183 (100%)	170 (93%)	13 (7%)	12	42

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	G	189/183 (103%)	177 (94%)	12 (6%)	15	46
3	H	189/183 (103%)	177 (94%)	12 (6%)	15	46
All	All	1785/1839 (97%)	1623 (91%)	162 (9%)	7	29

All (162) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	6	GLU
1	B	12	GLU
1	B	20	ILE
1	B	21	ASP
1	B	29	ASP
1	B	35	SER
1	B	45	ILE
1	B	47	LEU
1	B	57	THR
1	B	77	SER
1	B	110	ASP
1	B	111	ARG
1	B	150	SER
1	B	155	ILE
1	B	157	PHE
1	B	162	ASP
1	B	182	HIS
1	B	191	LYS
1	B	196	LEU
1	B	200	ASN
1	B	216	SER
1	B	237	ASP
1	B	271	GLU
1	B	277	THR
1	B	284	MET
1	B	301	THR
1	B	305	LEU
1	C	9	HIS
1	C	10	ILE
1	C	11	LEU
1	C	19	THR
1	C	25	LEU
1	C	41	LYS
1	C	49	SER

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Mol	Chain	Res	Type
1	C	77	SER
1	C	97	PHE
1	C	98	ASP
1	C	101	GLN
1	C	117	SER
1	C	121	LEU
1	C	130	SER
1	C	132	CYS
1	C	137	THR
1	C	146	LYS
1	C	156	THR
1	C	174	ARG
1	C	200	ASN
1	C	216	SER
1	C	217	LYS
1	C	221	ASP
1	C	231	ASP
1	C	237	ASP
1	C	271	GLU
1	C	277	THR
1	C	284	MET
1	C	301	THR
1	C	305	LEU
1	C	317	GLN
1	C	318	TRP
1	D	1	MET
1	D	9	HIS
1	D	10	ILE
1	D	11	LEU
1	D	19	THR
1	D	25	LEU
1	D	41	LYS
1	D	49	SER
1	D	77	SER
1	D	96	SER
1	D	97	PHE
1	D	98	ASP
1	D	101	GLN
1	D	117	SER
1	D	121	LEU
1	D	132	CYS
1	D	146	LYS

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Mol	Chain	Res	Type
1	D	156	THR
1	D	174	ARG
1	D	200	ASN
1	D	216	SER
1	D	224	ILE
1	D	230	ASN
1	D	232	ARG
1	D	271	GLU
1	D	277	THR
1	D	284	MET
1	D	301	THR
1	D	305	LEU
1	D	318	TRP
1	E	16	ARG
1	E	32	THR
1	E	35	SER
1	E	41	LYS
1	E	42	ILE
1	E	48	HIS
1	E	57	THR
1	E	90	ASN
1	E	109	PHE
1	E	110	ASP
1	E	112	SER
1	E	123	SER
1	E	132	CYS
1	E	148	LEU
1	E	175	ARG
1	E	179	ILE
1	E	185	ILE
1	E	200	ASN
1	E	207	THR
1	E	210	GLU
1	E	271	GLU
1	E	277	THR
1	E	284	MET
1	E	301	THR
1	E	305	LEU
2	A	2	SER
2	A	7	ASP
2	A	21	ASP
2	A	38	ASN

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Mol	Chain	Res	Type
2	A	51	THR
2	A	59	ASP
2	A	91	ASP
2	A	102	VAL
2	A	104	ARG
2	A	121	VAL
2	A	183	LEU
3	G	1025	SER
3	G	1038	THR
3	G	1047	VAL
3	G	1088	SER
3	G	1099	THR
3	G	1105	LYS
3	G	1161	THR
3	G	1175	GLU
3	G	1176	ASN
3	G	1189	MSE
3	G	1218	VAL
3	G	1227	ASP
3	H	2025	SER
3	H	2038	THR
3	H	2047	VAL
3	H	2068	ASN
3	H	2088	SER
3	H	2099	THR
3	H	2105	LYS
3	H	2161	THR
3	H	2175	GLU
3	H	2176	ASN
3	H	2189	MSE
3	H	2218	VAL
3	F	3025	SER
3	F	3038	THR
3	F	3047	VAL
3	F	3068	ASN
3	F	3088	SER
3	F	3099	THR
3	F	3105	LYS
3	F	3161	THR
3	F	3175	GLU
3	F	3176	ASN
3	F	3189	MSE

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Mol	Chain	Res	Type
3	F	3218	VAL
3	F	3220	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (26) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	48	HIS
1	B	292	ASN
1	B	293	GLN
1	B	295	HIS
1	B	304	HIS
1	C	9	HIS
1	C	101	GLN
1	C	295	HIS
1	C	304	HIS
1	D	13	GLN
1	D	44	HIS
1	D	101	GLN
1	D	230	ASN
1	D	293	GLN
1	D	295	HIS
1	E	48	HIS
1	E	120	HIS
1	E	293	GLN
1	E	295	HIS
2	A	13	HIS
2	A	177	GLN
3	G	1068	ASN
3	G	1190	GLN
3	H	2068	ASN
3	H	2190	GLN
3	F	3068	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 6 ligands modelled in this entry, 3 are monoatomic - leaving 3 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	#$|Z| > 2$
6	ADP	B	700	-	24,29,29	1.39	2 (8%)	29,45,45	1.45	4 (13%)
8	08T	C	700	7	27,33,33	2.91	11 (40%)	27,52,52	4.67	6 (22%)
8	08T	D	700	7	27,33,33	3.02	12 (44%)	27,52,52	5.24	7 (25%)

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
6	ADP	B	700	-	-	7/12/32/32	0/3/3/3
8	08T	C	700	7	-	1/12/38/38	0/3/3/3
8	08T	D	700	7	-	2/12/38/38	0/3/3/3

All (25) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	C	700	08T	F1-BE	-8.12	1.35	1.54
8	D	700	08T	F1-BE	-7.49	1.37	1.54
8	C	700	08T	F3-BE	-6.27	1.39	1.54
8	D	700	08T	F2-BE	-6.15	1.40	1.54
8	D	700	08T	F3-BE	-6.03	1.40	1.54
8	C	700	08T	F2-BE	-5.77	1.41	1.54
8	D	700	08T	C2'-C3'	-5.51	1.38	1.53
6	B	700	ADP	PA-O3A	5.34	1.65	1.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	C	700	08T	C2'-C3'	-4.94	1.40	1.53
8	D	700	08T	PB-O3A	-4.76	1.54	1.59
8	D	700	08T	C3'-C4'	-3.52	1.44	1.53
8	D	700	08T	C2-N3	3.35	1.37	1.32
8	C	700	08T	C3'-C4'	-3.16	1.45	1.53
8	C	700	08T	PB-O3A	-3.08	1.56	1.59
8	D	700	08T	C6-N6	3.03	1.44	1.34
8	C	700	08T	C6-N6	2.86	1.44	1.34
8	D	700	08T	C1'-N9	-2.79	1.43	1.49
8	C	700	08T	O4'-C4'	-2.58	1.39	1.45
8	C	700	08T	PA-O5'	-2.56	1.49	1.59
8	C	700	08T	C4-N3	2.49	1.39	1.35
8	C	700	08T	C2-N3	2.37	1.35	1.32
8	D	700	08T	O4'-C4'	-2.36	1.39	1.45
8	D	700	08T	C4-N3	2.34	1.38	1.35
8	D	700	08T	PA-O5'	-2.22	1.50	1.59
6	B	700	ADP	O4'-C1'	2.10	1.43	1.40

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	D	700	08T	C1'-N9-C4	-25.14	82.46	126.64
8	C	700	08T	C1'-N9-C4	-22.41	87.26	126.64
8	D	700	08T	O4'-C1'-N9	-6.03	100.75	108.75
8	C	700	08T	N3-C2-N1	-5.28	121.51	128.67
8	D	700	08T	N3-C2-N1	-4.90	122.02	128.67
8	D	700	08T	C6-C5-C4	4.28	126.22	117.90
6	B	700	ADP	N3-C2-N1	-3.83	123.47	128.67
8	C	700	08T	C6-C5-C4	3.81	125.30	117.90
8	C	700	08T	C4'-O4'-C1'	3.32	112.97	109.92
8	C	700	08T	O5'-C5'-C4'	3.19	119.85	108.99
6	B	700	ADP	N6-C6-N1	2.98	124.69	118.33
8	D	700	08T	O5'-C5'-C4'	2.63	117.95	108.99
6	B	700	ADP	O2A-PA-O1A	2.52	124.17	112.44
8	D	700	08T	O4'-C4'-C5'	2.30	116.69	109.33
8	D	700	08T	C5'-C4'-C3'	-2.22	107.21	115.21
8	C	700	08T	O4'-C1'-N9	-2.06	106.01	108.75
6	B	700	ADP	O5'-PA-O1A	-2.06	100.77	108.94

There are no chirality outliers.

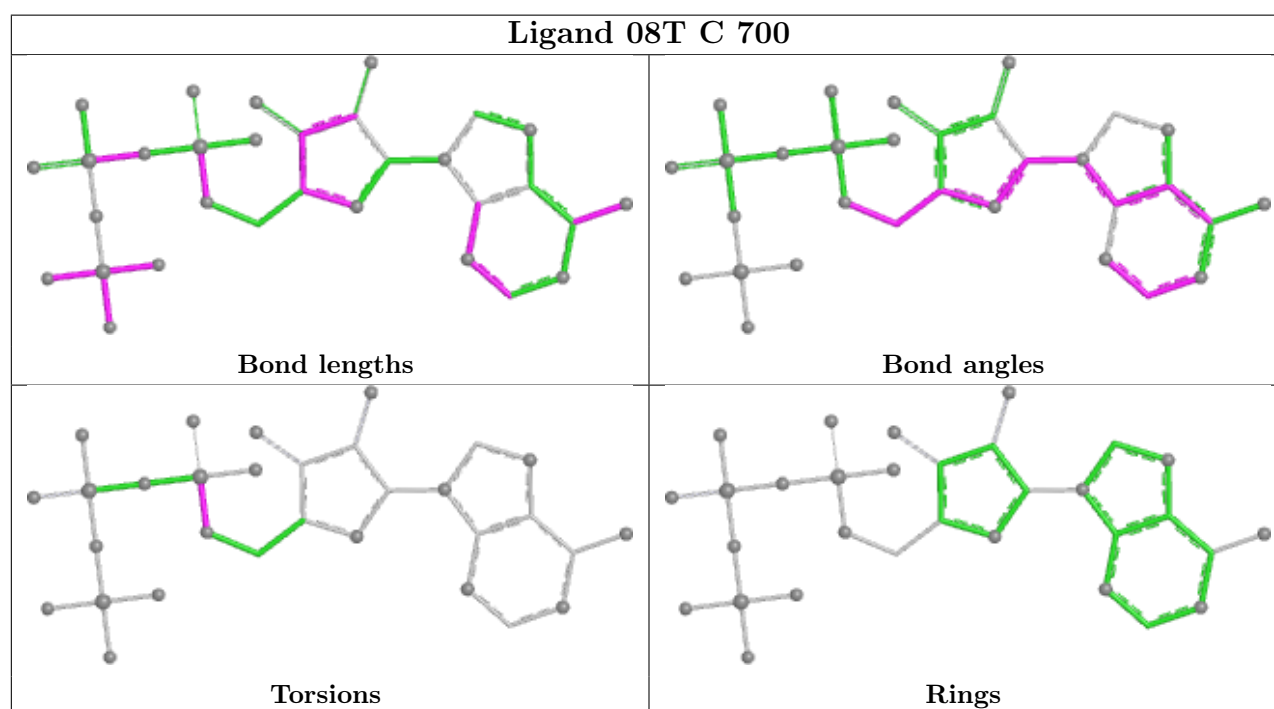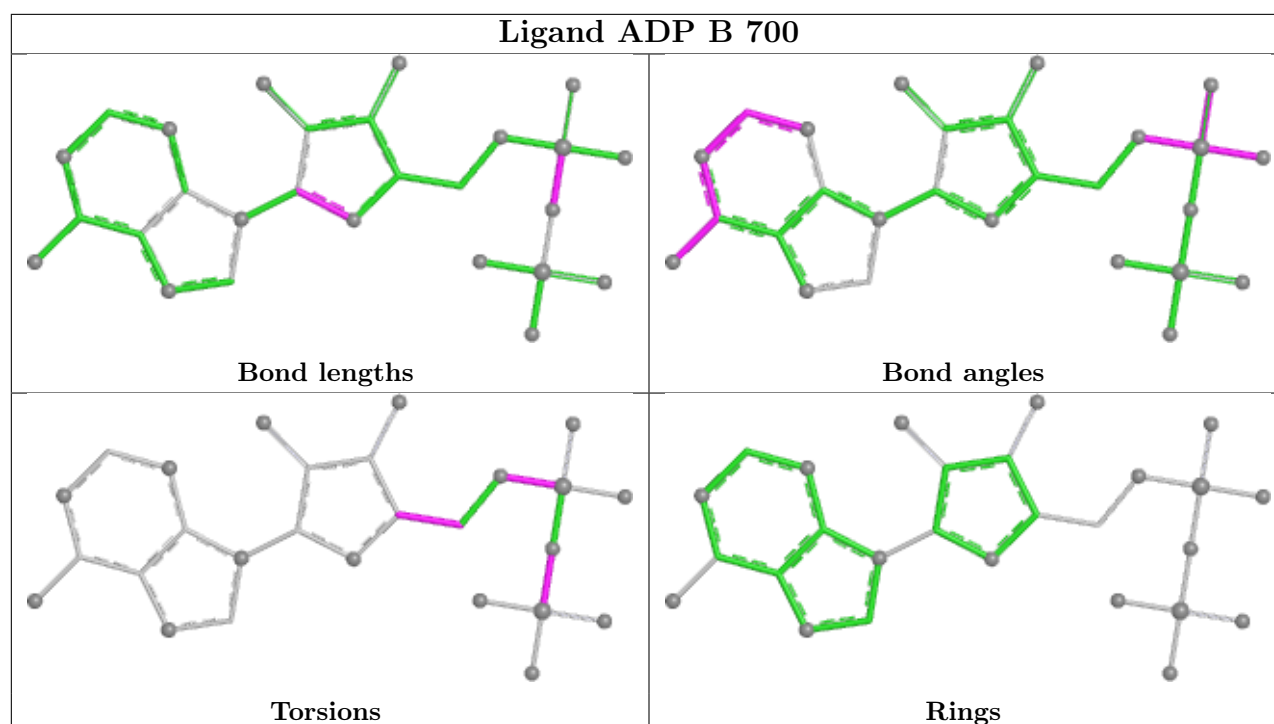All (10) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	B	700	ADP	PA-O3A-PB-O2B
6	B	700	ADP	PA-O3A-PB-O3B
6	B	700	ADP	C5'-O5'-PA-O1A
6	B	700	ADP	C5'-O5'-PA-O2A
6	B	700	ADP	C5'-O5'-PA-O3A
6	B	700	ADP	O4'-C4'-C5'-O5'
6	B	700	ADP	C3'-C4'-C5'-O5'
8	D	700	08T	O4'-C4'-C5'-O5'
8	D	700	08T	C3'-C4'-C5'-O5'
8	C	700	08T	C5'-O5'-PA-O1A

There are no ring outliers.

3 monomers are involved in 16 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	B	700	ADP	10	0
8	C	700	08T	5	0
8	D	700	08T	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand ADP B 700

Bond lengths

Bond angles

Torsions

Rings

Ligand 08T C 700

Bond lengths

Bond angles

Torsions

Rings

Ligand 08T D 700

Bond lengths

Bond angles

Torsions

Rings
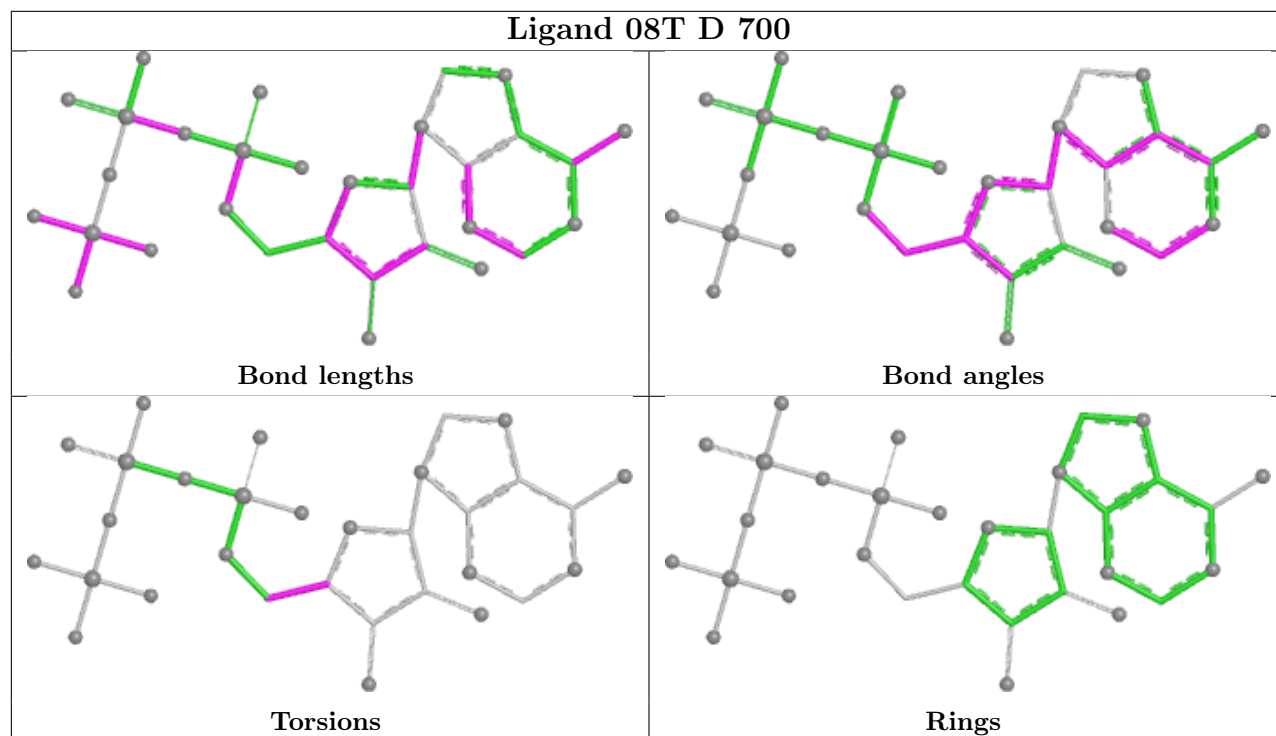
5.7 Other polymers ⓘ

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(Å²)	Q<0.9
1	B	305/324 (94%)	-0.16	3 (0%)	79	66	81, 104, 150, 221	0
1	C	319/324 (98%)	-0.20	2 (0%)	85	76	57, 95, 144, 211	0
1	D	320/324 (98%)	-0.16	4 (1%)	74	60	54, 89, 179, 232	0
1	E	294/324 (90%)	-0.15	6 (2%)	64	49	69, 117, 189, 246	0
2	A	178/199 (89%)	-0.08	1 (0%)	85	76	81, 120, 181, 223	0
3	F	216/228 (94%)	-0.16	1 (0%)	87	78	70, 96, 159, 252	0
3	G	222/228 (97%)	-0.25	2 (0%)	81	68	58, 84, 130, 188	0
3	H	222/228 (97%)	-0.27	1 (0%)	87	78	71, 95, 143, 200	0
4	I	8/20 (40%)	-0.30	0	100	100	83, 92, 123, 127	0
5	J	8/10 (80%)	-0.39	0	100	100	107, 118, 140, 160	0
All	All	2092/2209 (94%)	-0.18	20 (0%)	79	66	54, 100, 167, 252	0

All (20) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	303	LEU	3.9
1	B	81	ILE	3.3
3	G	1099	THR	3.2
1	E	306	ALA	3.0
1	D	231	ASP	2.8
1	C	97	PHE	2.6
1	E	211	LEU	2.6
1	C	90	ASN	2.5
1	D	309	PHE	2.4
1	D	285	TYR	2.3
1	D	49	SER	2.2
3	G	1106	PRO	2.2
1	E	233	GLY	2.1

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Mol	Chain	Res	Type	RSRZ
1	E	309	PHE	2.1
3	F	3222	ALA	2.1
1	B	2	ILE	2.1
3	H	2205	GLY	2.0
1	E	112	SER	2.0
1	B	214	TYR	2.0
2	A	32	PHE	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 monosaccharides 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
7	MG	D	800	1/1	0.76	0.28	83,83,83,83	0
7	MG	B	800	1/1	0.77	0.09	83,83,83,83	0
7	MG	C	800	1/1	0.87	0.18	83,83,83,83	0
6	ADP	B	700	27/27	0.90	0.07	83,83,83,83	0
8	08T	D	700	31/31	0.95	0.09	83,83,83,83	0
8	08T	C	700	31/31	0.96	0.09	83,83,83,83	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.
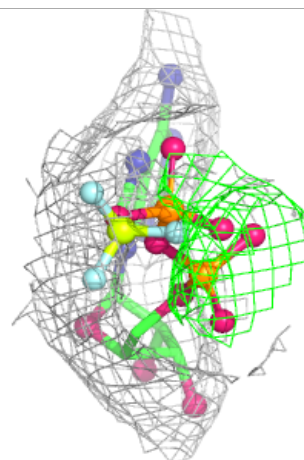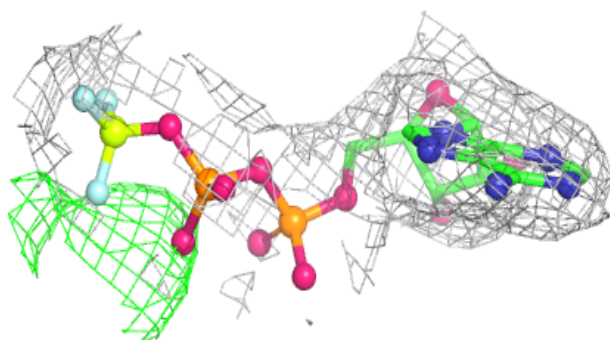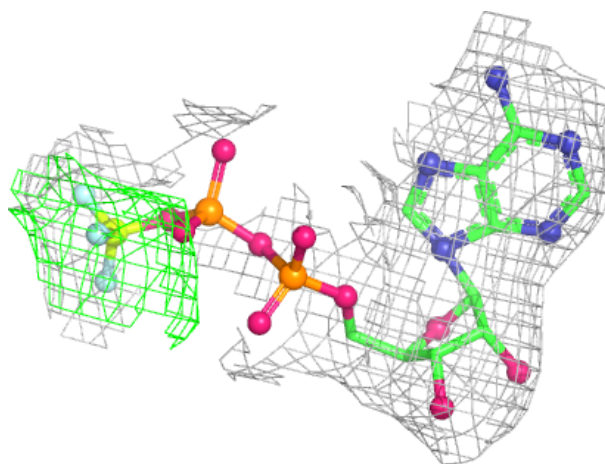
Electron density around ADP B 700:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
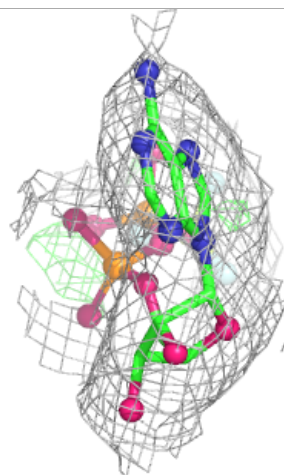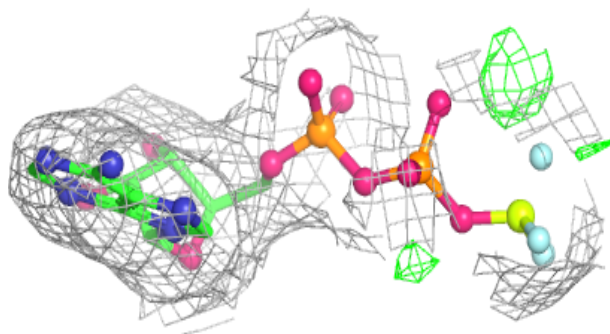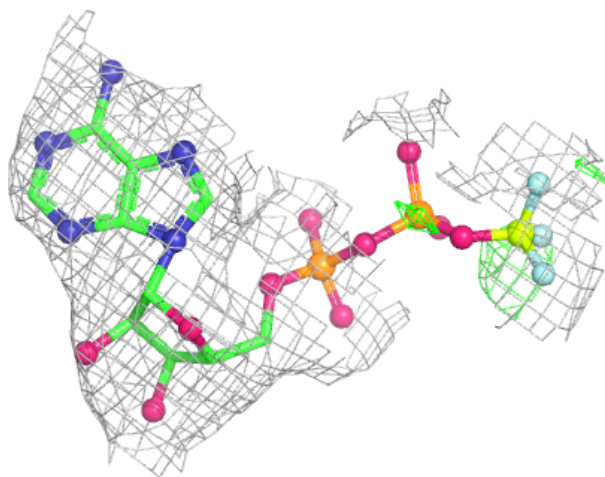and green (positive)
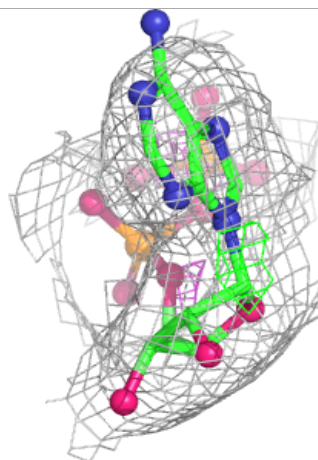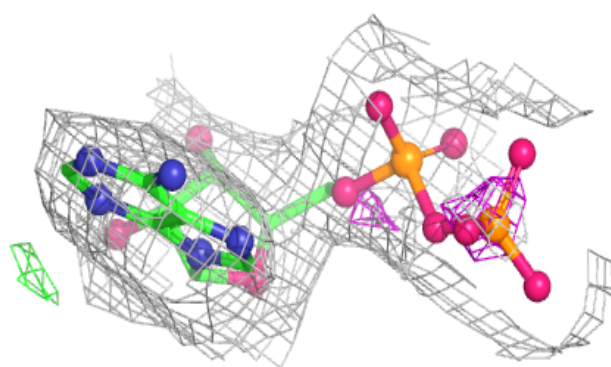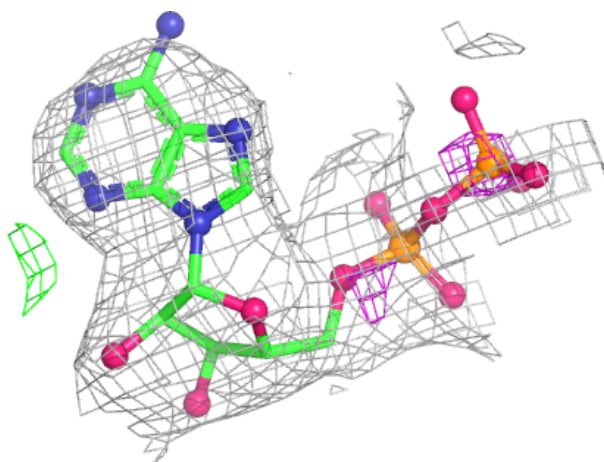
Electron density around 08T D 700:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around 08T C 700:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)

6.5 Other polymers ⓘ

There are no such residues in this entry.