



Full wwPDB EM Validation Report ⓘ

Jul 16, 2025 – 01:24 AM JST

PDB ID : 8K58 / pdb_00008k58
EMDB ID : EMD-36897
Title : The cryo-EM map of close TIEA-TEC complex
Authors : Zhang, K.N.; Liu, Y.; Chen, M.; Wang, Y.; Lin, W.; Li, M.; Zhang, X.; Gao, Y.; Gong, Q.; Chen, H.; Steve, M.; Li, S.; Zhang, K.; Liu, B.
Deposited on : 2023-07-21
Resolution : 3.15 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : **FAILED**
MolProbity : 4-5-2 with Phenix2.0rc1
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

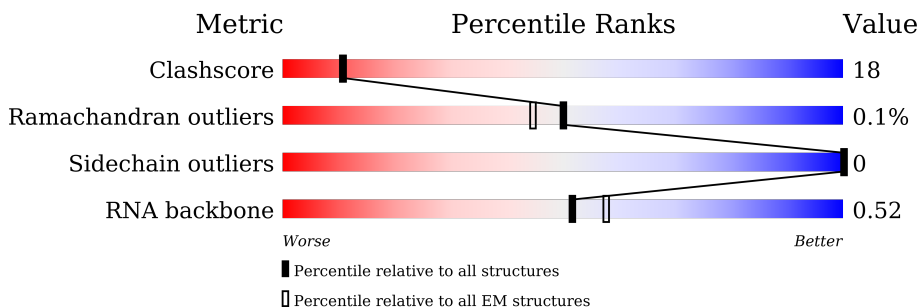
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.15 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)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the 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 $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	C	1340	64% 36%
2	D	1363	62% 37% .
3	E	76	58% 42%
4	A	231	60% 40%
4	B	231	61% 38% .
5	G	129	57% 42% .
6	I	29	10% 66% 24%
7	H	29	24% 76%

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Mol	Chain	Length	Quality of chain
8	J	10	 40% 60%

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 27505 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, 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-directed RNA polymerase subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	C	1340	Total	C	N	O	S	0	0
			10570	6631	1841	2055	43		

- Molecule 2 is a protein called DNA-directed RNA polymerase subunit beta'.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	1352	Total	C	N	O	S	0	0
			10494	6587	1869	1988	50		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	E	76	Total	C	N	O	S	0	0
			606	368	115	122	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
4	A	230	Total	C	N	O	S	0	0
			1788	1112	317	353	6		
4	B	228	Total	C	N	O	S	0	0
			1767	1100	312	349	6		

- Molecule 5 is a protein called 15 kDa RNA polymerase-binding protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	G	129	Total	C	N	O	S	0	0
			1031	637	188	200	6		

- Molecule 6 is a DNA chain called DNA (29-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
6	I	22	Total	C	N	O	P	0	0
			448	214	89	125	20		

- Molecule 7 is a DNA chain called DNA (29-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
7	H	29	Total	C	N	O	P	0	0
			583	279	99	177	28		

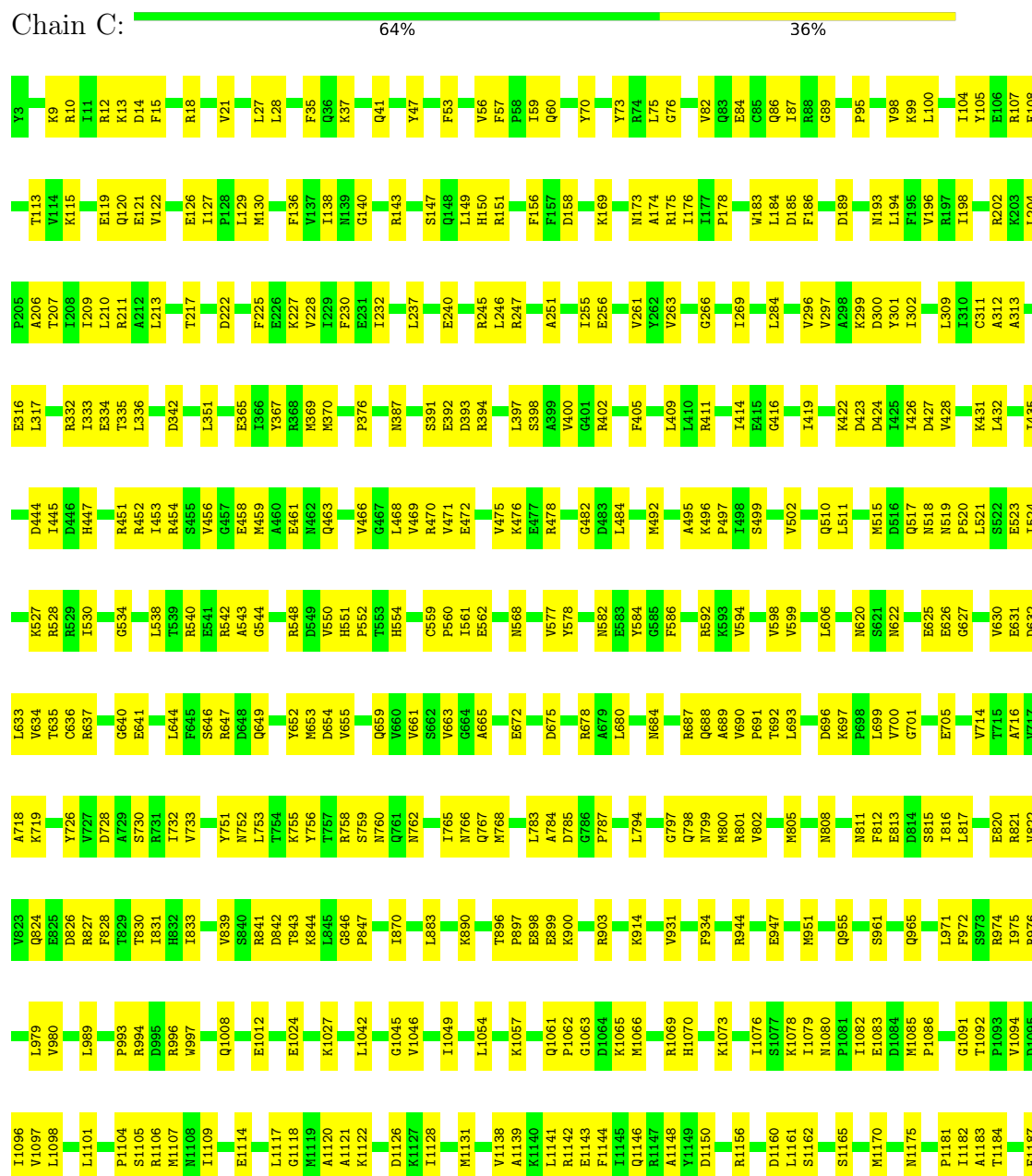
- Molecule 8 is a RNA chain called RNA (5'-R(*CP*GP*GP*AP*GP*AP*GP*GP*UP*A)-3').

Mol	Chain	Residues	Atoms					AltConf	Trace
8	J	10	Total	C	N	O	P	0	0
			218	98	45	66	9		

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. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: DNA-directed RNA polymerase subunit beta

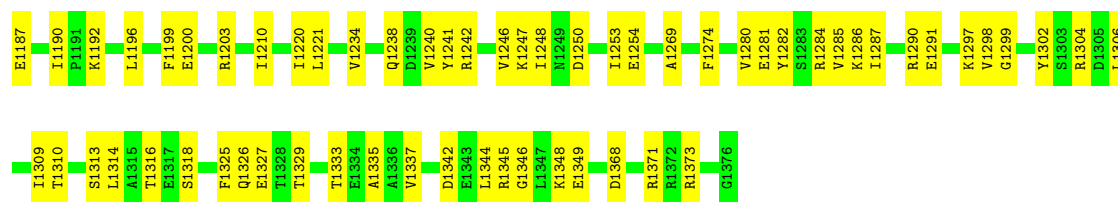


D1188	G1189	A1283	G1282	F1265
K1190	A1284	A1285	A1283	G1266
E1191	Y1285	L1286	A1284	G1267
E1192	L1287	Q1288	Y1285	Q1268
L1199	Q1288	E1289	R1269	R1269
L1212	M1290	M1290	F1270	G1271
Y1213	V1293	V1293	E1272	E1272
G1215	G1294	S1295	M1273	M1273
R1216	R1216	D1296	V1275	V1275
T1217	T1217	V1297	A1276	A1276
G1218	G1218	N1299	M1277	M1277
F1221	F1221	G1300	L1278	L1278
Y1229	Y1229	R1301	E1279	E1279
M1230	M1230	M1304	A1280	A1280
Y1231	Y1231	I1308	L1281	L1281
M1232	M1232	H1313		
K1234	K1234	Q1314		
L1235	L1235	M1315		
N1236	N1236	S1322		
H1237	H1237	V1325		
Y1239	Y1239	L1326		
D1240	D1240	I1330		
M1243	M1243	L1333		
H1244	H1244	M1336		
A1245	A1245	I1337		
R1246	R1246	E1340		
Y1251	Y1251	D1341		
V1254	V1254	E1342		
T1255	T1255			
Q1256	Q1256			
Q1257	Q1257			

• Molecule 2: DNA-directed RNA polymerase subunit beta'

Chain D:  62% 37%

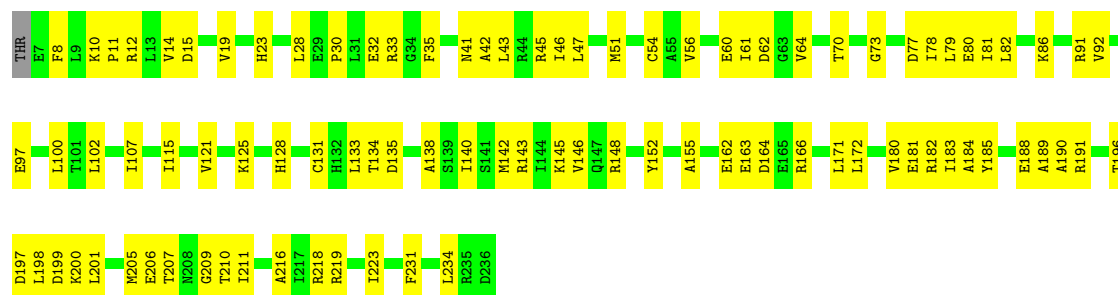
T14	T111	Q186	N294	I394	A476	V550	A659	R764	D878	S969	L1078
A19	I114	A187	E295	K395	Q477	R551	E663	L767	A879	T975	K1079
I22	W115	L188	W298	A397	L478	Y555	I664	N768	V880	I1080	V1081
S26	L120	L189	L299	K398	A480	L563	F668	V769	R881	R978	D1087
M29	L121	E199	V303	K400	A482	S568	R678	L770	R883	E981	Q1098
R31	S122	Q200	D304	R403	L483	L569	Y679	Q771	S984	L982	Y1099
R31	I124	R202	R311	A406	S486	K570	W686	T776	D891	D986	F1100
S34	G125	N206	R312	V408	T487	L578	Q702	K789	V894	R990	P1102
F35	L126	K213	R314	V408	N488	L579	T705	R798	C895	T991	T1106
G36	D129	R214	A315	W409	N489	M581	L800	R799	A896	K992	Q1114
E37	M130	K215	I316	D410	L411	P584	N708	L800	H897	E993	R1123
V38	P131	K216	T317	L412	L491	K585	R709	V801	R901	I1115	L1101
K39	L132	L217	P323	V415	N495	P588	D710	D802	A904	S994	S1116
K40	R133	I221	L324	L416	E497	F588	D710	V803	R905	P998	S1117
T44	D134	E225	L327	R417	P496	L591	E713	A804	G905	V1011	A1122
N45	E136	R137	L327	E418	L499	V591	V717	D806	H907	A1012	R1123
T48	R137	P234	K334	H419	S502	V501	V717	L807	N910	G1013	I1124
K50	F141	N237	Q335	N424	S503	P502	F719	C814	A914	G1014	T1135
P51	Y144	I238	G336	R425	Q504	L596	N720	T820	I918	V1017	V1141
L56	V146	L239	R337	A426	V506	G597	S721	N820	T918	M1025	F1145
F57	I147	T240	R339	T428	G509	K598	W723	N822	I923	P1026	R1148
C58	E148	L241	N341	L429	L510	L601	N724	N823	T924	V1027	R1149
A59	G149	L242	L342	H430	Y511	M604	N725	P824	G924	T1028	
R60	G150	V244	L343	R431	M513	L606	A726	V825	E925	P1029	
I61	M151	L245	G344	L432	M514	N606	D727	L826	P926	E1030	
F62	N153	P246	K345	F437	T514	V609	R731	V831	T931	G1033	P1153
G63	L154	L249	R346	E438	D516	R610	G732	K832	N932	F1034	A1154
C70	R156	R250	V347	P439	C517	T611	A734	E833	ARG	V1035	I1155
Y75	Q157	L252	D348	T442	V516	L612	A735	P834	THR	R1036	L1156
L78	L160	L255	Y349	K445	V526	F620	Q736	L835	PHE	I1036	G1161
R81	L166	R259	T356	A446	V526	F620	R737	R836	HIS	I1046	T1162
V90	A168	F260	V357	A446	V526	F620	R738	D837	ILE	V1163	S1163
Q94	F172	L262	K372	L447	V526	F620	Q739	R838	GLY	T1047	S1164
K96	G173	S263	A373	Q448	V526	F620	L740	V843	GLY	R1048	F1165
Y97	D174	Y269	E374	L449	V526	F620	R744	E846	ALA	Q1049	G1166
R98	E175	R270	E375	H450	V526	F620	G745	E946	ALA	S1058	T1169
R99	F176	R275	F377	P451	V526	F620	L746	L849	ARG	L1059	K1170
M102	K179	N276	K378	L452	V526	F620	L746	V849	A944	V1060	G1171
T105	M180	R278	P379	V453	V526	F620	T760	A854	Q951	V1061	R1172
E106	G181	L279	F380	L472	V526	F620	A761	L863	V952	L1062	R1173
L107	E183	T290	I381	T473	V526	F620	L474	V864	K953	R1067	R1174
			T393	E475	V526	F620	V548	V877	K954	T1068	L1175
					V526	F620	K549		V955	V1176	V1176
					V526	F620			K956	I1177	I1177
					V526	F620			K957	G1071	T1178
					V526	F620			K958	M1072	P1179
					V526	F620			S959	K1075	G1182
					V526	F620			N968	P1076	
					V526	F620				A1077	Y1186



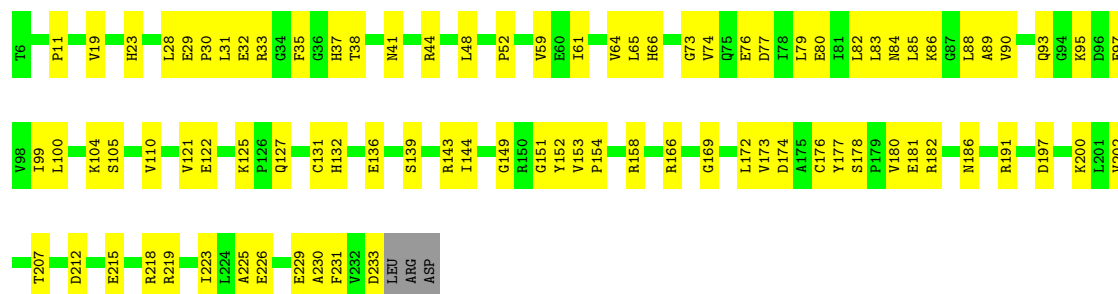
• Molecule 3: DNA-directed RNA polymerase subunit omega



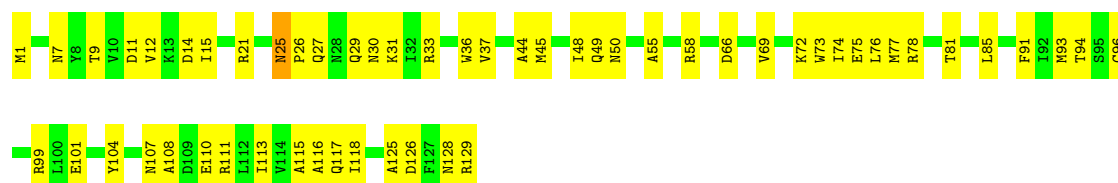
• Molecule 4: DNA-directed RNA polymerase subunit alpha



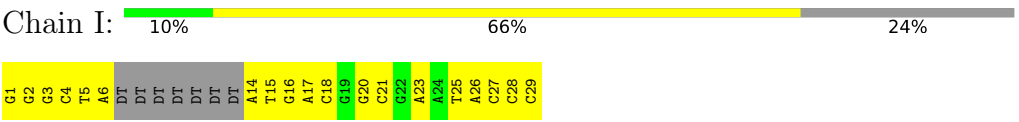
• Molecule 4: DNA-directed RNA polymerase subunit alpha



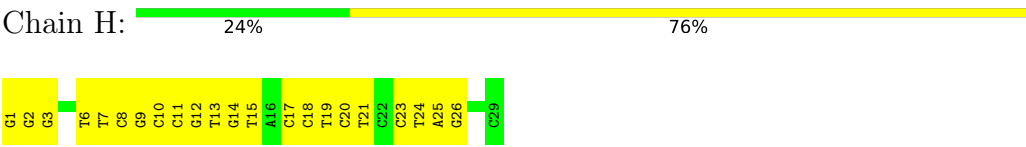
• Molecule 5: 15 kDa RNA polymerase-binding protein



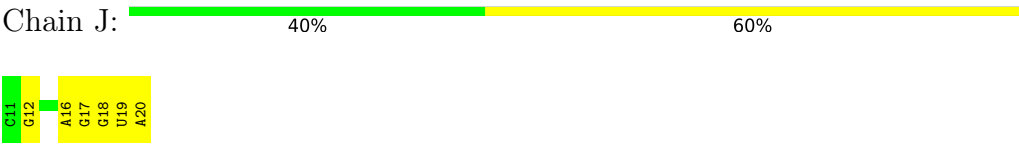
● Molecule 6: DNA (29-MER)



● Molecule 7: DNA (29-MER)



● Molecule 8: RNA (5'-R(*CP*GP*GP*AP*GP*AP*GP*GP*UP*A)-3')



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	414172	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	C	0.17	0/10739	0.41	2/14489 (0.0%)
2	D	0.17	0/10652	0.44	1/14382 (0.0%)
3	E	0.22	0/608	0.64	0/817
4	A	0.15	0/1810	0.40	0/2451
4	B	0.16	0/1789	0.45	0/2425
5	G	0.12	0/1046	0.44	0/1411
6	I	0.16	0/503	0.32	0/773
7	H	0.18	0/650	0.34	0/1000
8	J	0.09	0/245	0.15	0/382
All	All	0.17	0/28042	0.43	3/38130 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	414	ILE	N-CA-C	-5.82	107.45	113.10
1	C	1162	SER	N-CA-C	-5.67	106.99	114.31
2	D	251	PRO	CA-N-CD	-5.31	104.56	112.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	10570	0	10582	383	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	10494	0	10712	442	0
3	E	606	0	612	29	0
4	A	1788	0	1810	82	0
4	B	1767	0	1789	79	0
5	G	1031	0	1026	56	0
6	I	448	0	249	20	0
7	H	583	0	329	20	0
8	J	218	0	111	8	0
All	All	27505	0	27220	979	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 18.

All (979) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:549:LYS:HE3	2:D:569:LEU:HB3	1.53	0.91
4:A:107:ILE:HA	4:A:133:LEU:O	1.77	0.85
1:C:697:LYS:HD2	1:C:1181:PRO:HG3	1.62	0.82
1:C:463:GLN:HE22	1:C:502:VAL:HG22	1.46	0.81
1:C:515:MET:SD	1:C:527:LYS:NZ	2.55	0.80
2:D:510:LEU:HA	2:D:513:MET:HE2	1.64	0.80
2:D:335:GLN:HE21	7:H:13:DT:H5"	1.46	0.80
2:D:873:GLU:HA	2:D:990:ARG:HH22	1.45	0.79
4:B:44:ARG:HH12	4:B:48:LEU:HD22	1.47	0.79
1:C:808:ASN:H	2:D:633:ALA:HB2	1.47	0.79
2:D:606:ASN:HB3	2:D:610:ARG:HH22	1.47	0.79
1:C:637:ARG:HD2	2:D:770:LEU:HD21	1.64	0.79
2:D:275:ARG:HD2	2:D:298:MET:HG3	1.66	0.78
2:D:1326:GLN:HG3	2:D:1327:GLU:H	1.48	0.77
2:D:502:PRO:HG2	2:D:601:ILE:HG21	1.65	0.77
1:C:1086:PRO:HA	1:C:1215:GLY:H	1.50	0.76
2:D:216:LYS:HE3	5:G:26:PRO:HG2	1.66	0.76
4:A:10:LYS:HZ3	4:B:230:ALA:H	1.34	0.76
4:B:89:ALA:HB3	4:B:125:LYS:HB2	1.67	0.75
2:D:442:ILE:HD13	2:D:448:GLN:HG3	1.67	0.75
1:C:1274:GLU:HG2	2:D:424:ASN:HD21	1.51	0.74
2:D:114:ILE:HD12	2:D:304:ASP:HB3	1.69	0.74
1:C:700:VAL:O	1:C:1069:ARG:NH1	2.21	0.73
2:D:535:ARG:NH2	4:B:178:SER:OG	2.22	0.73
1:C:552:PRO:HB3	1:C:640:GLY:HA3	1.69	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1240:ASP:OD1	2:D:445:LYS:NZ	2.21	0.72
2:D:259:ARG:HD3	7:H:23:DC:H5''	1.71	0.72
2:D:883:ARG:NH2	2:D:895:CYS:SG	2.63	0.72
1:C:599:VAL:HG11	1:C:653:MET:HE3	1.69	0.72
2:D:156:ARG:HD2	5:G:33:ARG:HD2	1.72	0.72
2:D:134:ASP:OD1	2:D:137:ARG:NH2	2.21	0.72
1:C:519:ASN:ND2	1:C:689:ALA:O	2.23	0.72
1:C:1073:LYS:NZ	8:J:20:A:OP1	2.22	0.72
2:D:739:GLN:HB2	2:D:744:ARG:HB3	1.71	0.72
2:D:528:THR:HG23	2:D:551:ARG:HE	1.55	0.71
2:D:304:ASP:OD2	2:D:312:ARG:NH1	2.23	0.71
1:C:812:PHE:O	2:D:504:GLN:NE2	2.22	0.71
2:D:506:VAL:HG23	2:D:628:GLY:HA3	1.73	0.71
2:D:803:VAL:HG11	2:D:1309:ILE:HD12	1.72	0.71
4:A:190:ALA:HB2	4:A:200:LYS:HG2	1.71	0.70
5:G:21:ARG:NH2	5:G:27:GLN:O	2.25	0.70
2:D:22:ILE:HG21	2:D:1335:ALA:HB1	1.74	0.70
4:A:10:LYS:HE2	4:B:230:ALA:HB3	1.72	0.70
2:D:568:SER:OG	2:D:570:LYS:NZ	2.20	0.70
1:C:84:GLU:HA	1:C:87:ILE:HG12	1.72	0.69
2:D:910:ASN:ND2	3:E:15:ASN:OD1	2.25	0.69
1:C:176:ILE:HB	1:C:184:LEU:HB3	1.74	0.69
2:D:1221:LEU:HD13	2:D:1306:LEU:HB2	1.74	0.69
2:D:591:ILE:HB	2:D:604:MET:HG2	1.73	0.69
1:C:817:LEU:HB3	1:C:1097:VAL:HB	1.75	0.69
2:D:346:ARG:NH1	7:H:17:DC:OP1	2.25	0.69
5:G:72:LYS:HZ3	5:G:76:LEU:HD11	1.57	0.69
1:C:560:PRO:HB2	2:D:776:THR:HG21	1.74	0.69
1:C:1065:LYS:HG2	1:C:1235:LEU:HD12	1.75	0.69
2:D:1163:VAL:HG23	2:D:1177:ILE:HG12	1.75	0.69
2:D:278:ARG:NH2	6:I:6:DA:OP1	2.26	0.68
2:D:341:ASN:HD21	2:D:1325:PHE:HZ	1.40	0.68
4:A:54:CYS:SG	4:A:148:ARG:NH1	2.65	0.68
1:C:1062:PRO:HB3	1:C:1078:LYS:HA	1.74	0.68
1:C:301:TYR:HB2	1:C:311:CYS:HB2	1.76	0.68
4:B:153:VAL:O	4:B:158:ARG:NH1	2.28	0.67
1:C:230:PHE:HB2	1:C:333:ILE:HB	1.77	0.67
2:D:495:ASN:ND2	2:D:1247:LYS:O	2.28	0.67
4:B:104:LYS:HD2	4:B:110:VAL:HG22	1.77	0.67
6:I:4:DC:H2''	6:I:5:DT:H5'	1.76	0.67
2:D:1242:ARG:HH12	2:D:1247:LYS:HA	1.60	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:968:ASN:HB2	2:D:1117:SER:HB3	1.76	0.67
1:C:18:ARG:NH1	1:C:1188:ASP:OD1	2.27	0.66
4:A:60:GLU:HB3	4:A:143:ARG:HB2	1.75	0.66
2:D:317:THR:HB	2:D:324:LEU:HD21	1.78	0.65
4:A:100:LEU:HD21	4:A:121:VAL:HG11	1.76	0.65
1:C:60:GLN:O	1:C:476:LYS:NZ	2.30	0.65
1:C:699:LEU:N	1:C:799:ASN:OD1	2.26	0.65
2:D:1368:ASP:HA	2:D:1371:ARG:HE	1.61	0.65
2:D:206:ASN:ND2	5:G:81:THR:OG1	2.30	0.65
1:C:204:LEU:HD21	1:C:369:MET:HG2	1.78	0.65
2:D:1076:PRO:HB2	2:D:1101:LEU:HD12	1.79	0.65
2:D:734:ALA:O	2:D:738:ARG:HB2	1.97	0.65
1:C:459:MET:HE1	1:C:511:LEU:HD12	1.79	0.64
2:D:528:THR:N	2:D:532:GLU:OE2	2.27	0.64
2:D:1148:ARG:NH1	6:I:21:DC:OP2	2.31	0.64
1:C:211:ARG:NH2	1:C:217:THR:OG1	2.29	0.64
1:C:1160:ASP:HB2	1:C:1161:LEU:HA	1.78	0.64
2:D:969:SER:OG	2:D:1117:SER:O	2.14	0.64
4:B:61:ILE:HG21	4:B:65:LEU:HA	1.78	0.64
1:C:678:ARG:HH12	1:C:1106:ARG:HH11	1.45	0.64
1:C:1313:HIS:HB2	2:D:474:LEU:HD22	1.79	0.64
2:D:513:MET:HE1	2:D:579:LEU:HD13	1.80	0.64
1:C:1083:GLU:HB2	4:A:45:ARG:HD2	1.80	0.64
2:D:513:MET:HA	2:D:544:LEU:HD21	1.78	0.64
4:A:56:VAL:HG12	4:A:146:VAL:HG22	1.79	0.64
1:C:28:LEU:HD22	1:C:527:LYS:HD2	1.80	0.64
1:C:247:ARG:NE	1:C:342:ASP:OD2	2.25	0.64
2:D:953:LYS:HA	2:D:1014:GLY:H	1.62	0.64
2:D:213:LYS:HG2	2:D:216:LYS:HZ3	1.63	0.63
1:C:972:PHE:HA	1:C:975:ILE:HG12	1.79	0.63
2:D:129:ASP:OD2	5:G:27:GLN:NE2	2.31	0.63
2:D:410:ASP:OD1	4:B:191:ARG:NH2	2.31	0.63
2:D:367:GLY:HA3	2:D:448:GLN:HB2	1.81	0.63
2:D:814:CYS:SG	2:D:883:ARG:NH2	2.72	0.63
3:E:26:ARG:O	3:E:30:MET:HG2	1.98	0.63
6:I:28:DC:N3	7:H:3:DG:N2	2.47	0.63
2:D:910:ASN:ND2	3:E:15:ASN:O	2.32	0.63
2:D:141:PHE:CD2	2:D:180:MET:HB3	2.34	0.62
2:D:1284:ARG:HA	2:D:1287:ILE:HG12	1.81	0.62
5:G:21:ARG:NH1	5:G:25:ASN:O	2.32	0.62
2:D:353:SER:OG	2:D:372:MET:SD	2.57	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:825:VAL:HB	2:D:833:GLU:HG3	1.81	0.62
4:B:44:ARG:NH1	4:B:48:LEU:HD22	2.14	0.62
1:C:839:VAL:HG12	1:C:1049:ILE:HG12	1.81	0.62
3:E:63:ILE:HG22	3:E:67:ARG:HH12	1.63	0.62
1:C:178:PRO:HA	1:C:397:LEU:HD23	1.81	0.62
2:D:502:PRO:HB3	2:D:506:VAL:HG13	1.82	0.62
4:A:62:ASP:HB2	4:A:143:ARG:HH12	1.65	0.62
2:D:641:ILE:O	2:D:764:ARG:NH2	2.30	0.61
1:C:105:TYR:HA	1:C:113:THR:HA	1.80	0.61
2:D:686:TRP:HB3	2:D:746:LEU:HD11	1.83	0.61
1:C:812:PHE:HB3	2:D:357:VAL:HG21	1.83	0.61
3:E:25:ARG:HH22	3:E:29:GLN:HE22	1.46	0.61
4:A:133:LEU:HD22	4:A:140:ILE:HG12	1.83	0.61
1:C:151:ARG:HH21	1:C:156:PHE:HD1	1.48	0.61
1:C:625:GLU:CD	1:C:626:GLU:H	2.09	0.61
1:C:1216:ARG:HG3	4:B:37:HIS:CE1	2.35	0.61
1:C:842:ASP:HA	1:C:847:PRO:HA	1.83	0.61
1:C:844:LYS:HE2	2:D:49:PHE:H	1.66	0.61
1:C:592:ARG:HG3	1:C:655:VAL:HG12	1.83	0.61
2:D:105:ILE:HD11	2:D:242:LEU:HD23	1.83	0.61
1:C:632:ASP:HA	1:C:647:ARG:HE	1.64	0.60
4:B:180:VAL:HG22	4:B:207:THR:HG22	1.81	0.60
1:C:151:ARG:HB3	1:C:156:PHE:HE1	1.66	0.60
1:C:213:LEU:O	1:C:422:LYS:NZ	2.34	0.60
2:D:849:LEU:HD13	2:D:854:ALA:HA	1.83	0.60
4:A:82:LEU:HD11	4:A:171:LEU:HD23	1.83	0.60
1:C:178:PRO:HD2	1:C:183:TRP:HD1	1.65	0.60
8:J:16:A:H2'	8:J:17:G:C8	2.37	0.60
1:C:1246:ARG:HD3	1:C:1267:GLY:N	2.17	0.60
2:D:337:ARG:HG3	2:D:340:GLN:HG2	1.83	0.60
2:D:515:ARG:NH2	2:D:717:VAL:O	2.35	0.60
2:D:535:ARG:NH1	4:B:176:CYS:SG	2.74	0.59
2:D:144:TYR:N	2:D:160:LEU:O	2.35	0.59
1:C:816:ILE:HG12	1:C:1098:LEU:HD23	1.84	0.59
2:D:154:LEU:HD11	2:D:176:PHE:HE1	1.66	0.59
2:D:114:ILE:HD11	2:D:311:ARG:HB2	1.83	0.59
2:D:1238:GLN:NE2	2:D:1250:ASP:OD1	2.32	0.59
8:J:16:A:H2'	8:J:17:G:H8	1.67	0.59
1:C:1289:GLU:HA	1:C:1293:VAL:HG12	1.84	0.59
2:D:502:PRO:O	2:D:598:LYS:NZ	2.35	0.59
2:D:591:ILE:HG13	2:D:592:VAL:HG13	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:12:ARG:H	4:A:30:PRO:HD2	1.68	0.59
1:C:332:ARG:CZ	1:C:334:GLU:HG2	2.32	0.59
2:D:221:ILE:O	2:D:225:GLU:HG2	2.03	0.59
4:A:42:ALA:O	4:A:46:ILE:HG12	2.02	0.59
1:C:256:GLU:HA	1:C:261:VAL:HA	1.84	0.59
1:C:1105:SER:O	2:D:736:GLN:NE2	2.34	0.59
2:D:430:HIS:CE1	2:D:432:LEU:HB2	2.38	0.59
2:D:740:LEU:O	2:D:762:ASN:ND2	2.27	0.59
1:C:1325:VAL:HG13	2:D:249:LEU:HD23	1.84	0.58
1:C:14:ASP:HA	1:C:1183:ALA:HB3	1.85	0.58
1:C:53:PHE:HE2	1:C:98:VAL:HG21	1.67	0.58
1:C:672:GLU:HB2	2:D:767:LEU:H	1.68	0.58
1:C:705:GLU:HB3	1:C:794:LEU:H	1.68	0.58
1:C:821:ARG:HB2	1:C:1082:ILE:HD13	1.84	0.58
2:D:78:LEU:O	2:D:81:ARG:NH2	2.37	0.58
1:C:41:GLN:NE2	1:C:73:TYR:O	2.33	0.58
1:C:1066:MET:HE3	1:C:1232:MET:HB3	1.86	0.58
2:D:496:GLY:O	2:D:497:GLU:HG3	2.04	0.58
2:D:749:LYS:HB3	2:D:755:ILE:HG13	1.86	0.58
4:A:91:ARG:NH2	4:A:209:GLY:O	2.35	0.58
1:C:232:ILE:HA	1:C:237:LEU:HD22	1.84	0.58
2:D:400:MET:SD	2:D:403:ARG:NH2	2.77	0.58
2:D:481:ARG:O	2:D:488:ASN:ND2	2.36	0.58
4:A:14:VAL:HG22	4:A:15:ASP:H	1.68	0.58
5:G:29:GLN:O	5:G:31:LYS:NZ	2.37	0.58
1:C:178:PRO:HD2	1:C:183:TRP:CD1	2.39	0.58
1:C:453:ILE:HD12	1:C:530:ILE:HD12	1.86	0.58
1:C:1024:GLU:HA	1:C:1027:LYS:HZ3	1.68	0.58
1:C:478:ARG:NH1	1:C:482:GLY:HA3	2.19	0.58
1:C:732:ILE:HG12	1:C:753:LEU:HD21	1.85	0.58
2:D:45:ASN:HB3	2:D:48:THR:HB	1.85	0.58
4:A:11:PRO:HB2	4:A:28:LEU:HD12	1.85	0.58
4:A:155:ALA:HB1	4:A:172:LEU:HB3	1.86	0.58
5:G:27:GLN:O	5:G:31:LYS:NZ	2.29	0.58
2:D:26:SER:HB3	2:D:29:MET:HG3	1.85	0.57
2:D:709:ARG:O	2:D:709:ARG:NH1	2.34	0.57
1:C:444:ASP:HB2	1:C:447:HIS:HB2	1.85	0.57
1:C:701:GLY:O	1:C:1184:THR:N	2.37	0.57
1:C:813:GLU:HA	2:D:504:GLN:NE2	2.19	0.57
2:D:432:LEU:HD13	2:D:499:ILE:HG21	1.87	0.57
2:D:1280:VAL:HG21	2:D:1304:ARG:HE	1.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:472:GLU:HA	1:C:475:VAL:HG12	1.86	0.57
1:C:1065:LYS:HE2	2:D:463:GLY:HA3	1.86	0.57
2:D:1282:TYR:HD2	2:D:1286:LYS:HZ1	1.53	0.57
1:C:1042:LEU:HD23	1:C:1046:VAL:HG23	1.86	0.57
5:G:25:ASN:HB3	5:G:27:GLN:OE1	2.05	0.57
5:G:33:ARG:HA	5:G:36:TRP:CD1	2.40	0.57
4:B:74:VAL:HG12	4:B:76:GLU:H	1.69	0.57
2:D:1155:ILE:HG23	2:D:1210:ILE:HB	1.86	0.57
1:C:196:VAL:HG23	1:C:206:ALA:HA	1.87	0.57
1:C:1333:LEU:HD11	2:D:327:LEU:HB3	1.87	0.57
4:A:125:LYS:HG3	4:A:128:HIS:HB2	1.87	0.56
5:G:73:TRP:HE1	5:G:111:ARG:HB2	1.69	0.56
4:B:99:ILE:HD12	4:B:143:ARG:HD3	1.86	0.56
1:C:813:GLU:HA	2:D:504:GLN:HE22	1.70	0.56
1:C:174:ALA:HB2	1:C:432:LEU:HD13	1.86	0.56
2:D:417:ARG:NH1	3:E:44:ASP:OD1	2.38	0.56
2:D:596:LEU:HD13	2:D:604:MET:HE1	1.88	0.56
1:C:528:ARG:HH12	1:C:577:VAL:HA	1.68	0.56
1:C:714:VAL:HB	1:C:787:PRO:HD2	1.88	0.56
1:C:1216:ARG:HG3	4:B:37:HIS:HE1	1.70	0.56
2:D:425:ARG:HG3	2:D:427:PRO:HD2	1.86	0.56
4:B:93:GLN:HE22	4:B:122:GLU:HB3	1.71	0.56
2:D:1047:THR:HG23	2:D:1062:LEU:HD21	1.87	0.56
1:C:1271:GLY:N	1:C:1274:GLU:OE1	2.39	0.56
1:C:1304:MET:HE3	1:C:1308:ILE:HD12	1.88	0.56
2:D:506:VAL:HG21	2:D:625:MET:HA	1.86	0.56
4:B:52:PRO:O	4:B:219:ARG:NH2	2.39	0.56
2:D:1145:PHE:O	2:D:1309:ILE:HG12	2.06	0.56
1:C:726:TYR:HB3	1:C:733:VAL:HB	1.88	0.55
3:E:25:ARG:HH22	3:E:29:GLN:NE2	2.03	0.55
5:G:125:ALA:O	5:G:129:ARG:NH1	2.39	0.55
2:D:495:ASN:HD22	2:D:1247:LYS:HG3	1.71	0.55
1:C:27:LEU:HB2	1:C:524:ILE:HD11	1.87	0.55
1:C:149:LEU:HD11	1:C:451:ARG:HB3	1.88	0.55
2:D:870:ASP:O	2:D:873:GLU:N	2.37	0.55
5:G:55:ALA:HA	5:G:58:ARG:HE	1.71	0.55
1:C:1274:GLU:HG2	2:D:424:ASN:ND2	2.21	0.55
2:D:406:ALA:HA	2:D:409:TRP:HD1	1.71	0.55
1:C:719:LYS:N	1:C:751:TYR:OH	2.37	0.55
2:D:952:VAL:O	2:D:1014:GLY:N	2.39	0.55
2:D:955:LYS:O	2:D:992:LYS:NZ	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:147:SER:HB2	1:C:530:ILE:HD13	1.89	0.55
2:D:314:ARG:HG3	2:D:323:PRO:HG3	1.88	0.55
2:D:417:ARG:NH1	3:E:42:GLU:O	2.36	0.55
1:C:1244:HIS:CD2	1:C:1265:PHE:HB3	2.41	0.55
4:B:85:LEU:HD11	4:B:173:VAL:HG21	1.88	0.55
1:C:765:ILE:HB	1:C:787:PRO:HG3	1.88	0.54
1:C:1156:ARG:HD2	1:C:1156:ARG:O	2.07	0.54
1:C:1101:LEU:HD22	2:D:504:GLN:HB2	1.88	0.54
1:C:993:PRO:HD2	1:C:996:ARG:HD3	1.88	0.54
4:A:234:LEU:HD12	4:B:218:ARG:HH21	1.72	0.54
1:C:768:MET:HE2	4:A:80:GLU:OE1	2.08	0.54
1:C:1217:THR:OG1	4:B:41:ASN:ND2	2.39	0.54
2:D:56:LEU:HD12	2:D:270:ARG:HG3	1.90	0.54
2:D:96:LYS:HD2	2:D:99:ARG:HH12	1.73	0.54
1:C:625:GLU:OE1	1:C:626:GLU:HG2	2.07	0.54
1:C:1289:GLU:HG3	1:C:1315:MET:SD	2.48	0.54
5:G:101:GLU:HB2	5:G:104:TYR:HD2	1.73	0.54
1:C:1313:HIS:HB3	2:D:473:THR:HA	1.89	0.54
2:D:182:ALA:HB1	2:D:238:ILE:HD11	1.88	0.54
4:B:28:LEU:HD23	4:B:31:LEU:HD21	1.90	0.54
2:D:837:ASP:OD1	2:D:838:ARG:N	2.40	0.54
2:D:733:SER:H	2:D:736:GLN:HB3	1.73	0.54
3:E:61:ASN:OD1	3:E:62:GLN:N	2.41	0.54
1:C:1101:LEU:HD13	2:D:504:GLN:HG3	1.89	0.54
2:D:1175:LEU:HD22	2:D:1190:ILE:HD11	1.90	0.54
4:A:43:LEU:O	4:A:47:LEU:HG	2.08	0.54
1:C:1079:ILE:HG13	1:C:1079:ILE:O	2.07	0.53
2:D:836:ARG:NH1	2:D:870:ASP:OD1	2.33	0.53
2:D:1173:ARG:NE	2:D:1192:LYS:HZ3	2.06	0.53
1:C:1245:ALA:HB3	2:D:375:GLU:OE2	2.09	0.53
2:D:538:ARG:NH2	2:D:631:TYR:OH	2.41	0.53
2:D:1062:LEU:HB2	2:D:1067:ARG:HG2	1.90	0.53
1:C:56:VAL:HG11	1:C:468:LEU:HD13	1.89	0.53
1:C:752:ASN:OD1	1:C:955:GLN:NE2	2.41	0.53
1:C:1106:ARG:NH2	2:D:462:ASP:OD1	2.41	0.53
2:D:154:LEU:HD11	2:D:176:PHE:CE1	2.43	0.53
1:C:1214:ASP:HB2	1:C:1221:PHE:CE1	2.43	0.53
1:C:1284:ALA:N	2:D:479:GLU:OE1	2.39	0.53
2:D:483:LEU:HD21	3:E:17:PHE:HE1	1.74	0.53
7:H:26:DG:H5'	7:H:26:DG:C8	2.44	0.53
2:D:419:HIS:HB2	3:E:45:LYS:HE3	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:207:THR:HG23	4:A:209:GLY:H	1.74	0.53
1:C:189:ASP:OD1	1:C:193:ASN:N	2.25	0.53
1:C:843:THR:OG1	1:C:846:GLY:O	2.25	0.53
1:C:1131:MET:HE2	1:C:1141:LEU:HD23	1.90	0.53
3:E:69:ARG:HA	3:E:69:ARG:NH1	2.23	0.53
4:A:64:VAL:HG21	4:A:78:ILE:HG13	1.91	0.53
1:C:365:GLU:O	1:C:369:MET:HG3	2.09	0.53
2:D:926:PRO:HB3	2:D:1246:VAL:HG11	1.91	0.53
2:D:983:LYS:HD2	2:D:991:THR:HG21	1.91	0.53
2:D:1298:VAL:N	2:D:1299:GLY:HA3	2.24	0.53
4:B:215:GLU:HA	4:B:218:ARG:HG2	1.90	0.53
2:D:200:GLN:HE21	5:G:73:TRP:HZ3	1.55	0.53
2:D:511:TYR:O	2:D:515:ARG:HG3	2.09	0.53
2:D:611:ILE:HG22	2:D:612:LEU:HD22	1.90	0.53
1:C:400:VAL:HG21	1:C:452:ARG:HD2	1.90	0.53
1:C:432:LEU:O	1:C:435:ILE:HG22	2.08	0.53
1:C:661:VAL:HB	1:C:665:ALA:HB3	1.90	0.53
1:C:1276:TRP:CD1	2:D:801:VAL:HG11	2.44	0.53
2:D:338:PHE:HA	2:D:343:LEU:N	2.23	0.53
2:D:1269:ALA:H	2:D:1274:PHE:HE1	1.56	0.53
2:D:527:LEU:HD23	2:D:532:GLU:HG2	1.91	0.52
3:E:26:ARG:HD2	3:E:35:LYS:HE3	1.91	0.52
7:H:14:DG:H3'	7:H:15:DT:H71	1.90	0.52
1:C:228:VAL:HB	1:C:335:THR:HG23	1.91	0.52
2:D:416:ILE:HD11	2:D:439:PRO:HB2	1.92	0.52
1:C:802:VAL:HG22	1:C:1096:ILE:HB	1.91	0.52
2:D:255:LEU:HD12	2:D:261:ALA:HB3	1.91	0.52
2:D:537:TYR:HE1	2:D:544:LEU:HB2	1.73	0.52
2:D:338:PHE:HA	2:D:343:LEU:H	1.73	0.52
2:D:513:MET:SD	2:D:631:TYR:HD2	2.33	0.52
2:D:538:ARG:HH22	2:D:631:TYR:HE1	1.57	0.52
3:E:71:GLU:HA	3:E:74:GLU:CD	2.34	0.52
5:G:21:ARG:NH2	5:G:29:GLN:O	2.30	0.52
1:C:21:VAL:HG21	1:C:592:ARG:CZ	2.39	0.52
1:C:520:PRO:HG3	1:C:714:VAL:HG21	1.90	0.52
1:C:1070:HIS:NE2	1:C:1114:GLU:OE1	2.42	0.52
2:D:527:LEU:HD21	2:D:536:LEU:HD22	1.92	0.52
1:C:411:ARG:NH2	1:C:424:ASP:OD1	2.40	0.52
2:D:1282:TYR:HA	2:D:1285:VAL:HG22	1.92	0.52
2:D:1298:VAL:H	2:D:1299:GLY:HA3	1.74	0.52
2:D:538:ARG:HG2	4:B:44:ARG:CZ	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1217:THR:O	4:A:41:ASN:ND2	2.43	0.52
7:H:1:DG:H2'	7:H:2:DG:C8	2.45	0.52
2:D:551:ARG:NH2	4:B:84:ASN:OD1	2.43	0.52
2:D:822:MET:O	2:D:879:ALA:HA	2.09	0.52
2:D:885:VAL:HG12	2:D:894:VAL:HG11	1.92	0.52
2:D:1029:THR:HG21	2:D:1115:ILE:HD12	1.91	0.52
5:G:44:ALA:O	5:G:48:ILE:HG12	2.10	0.52
5:G:94:THR:OG1	5:G:96:CYS:SG	2.65	0.52
1:C:801:ARG:HG2	1:C:1094:VAL:HA	1.91	0.52
8:J:18:G:H2'	8:J:19:U:C6	2.45	0.52
1:C:802:VAL:HG11	1:C:1098:LEU:HD12	1.92	0.51
1:C:841:ARG:HA	1:C:1046:VAL:HA	1.93	0.51
2:D:606:ASN:HB3	2:D:610:ARG:NH2	2.21	0.51
2:D:803:VAL:HB	2:D:1309:ILE:HG23	1.91	0.51
2:D:965:SER:HB3	2:D:975:ILE:HA	1.90	0.51
4:A:73:GLY:O	4:A:134:THR:N	2.36	0.51
2:D:115:TRP:HB3	2:D:1333:THR:HG21	1.92	0.51
2:D:213:LYS:HA	2:D:216:LYS:NZ	2.25	0.51
2:D:1034:PHE:HB2	2:D:1036:ARG:NH1	2.25	0.51
3:E:16:ARG:HA	3:E:19:LEU:HB3	1.92	0.51
1:C:524:ILE:HG23	1:C:663:VAL:HG21	1.91	0.51
2:D:843:VAL:HG11	2:D:897:HIS:HB3	1.91	0.51
4:B:32:GLU:HB2	4:B:35:PHE:CD2	2.45	0.51
1:C:186:PHE:CD1	1:C:196:VAL:HG22	2.46	0.51
1:C:207:THR:HA	1:C:210:LEU:HD12	1.93	0.51
1:C:768:MET:O	1:C:785:ASP:N	2.39	0.51
1:C:1268:GLN:CD	2:D:352:ARG:HE	2.18	0.51
2:D:504:GLN:OE1	2:D:731:ARG:HD3	2.09	0.51
5:G:36:TRP:HA	5:G:116:ALA:HB1	1.92	0.51
2:D:44:ILE:HA	2:D:51:PRO:HA	1.92	0.51
2:D:537:TYR:CE1	2:D:544:LEU:HB2	2.46	0.51
4:A:10:LYS:NZ	4:B:230:ALA:H	2.06	0.51
1:C:718:ALA:HB2	1:C:783:LEU:HD21	1.92	0.51
1:C:896:THR:HB	1:C:899:GLU:HG3	1.93	0.51
2:D:768:ASN:HB3	2:D:771:GLN:HG3	1.93	0.51
4:B:186:ASN:OD1	4:B:202:VAL:HB	2.11	0.51
2:D:1164:SER:HA	2:D:1200:GLU:HG2	1.92	0.51
1:C:1091:GLY:HA3	4:A:184:ALA:HB2	1.92	0.51
1:C:1322:SER:OG	2:D:339:ARG:HG2	2.11	0.51
2:D:141:PHE:HD2	2:D:180:MET:HB3	1.75	0.51
2:D:555:TYR:CD1	2:D:585:LYS:HD2	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:19:VAL:HB	4:A:23:HIS:HB3	1.92	0.51
2:D:710:ASP:OD1	2:D:710:ASP:N	2.43	0.51
2:D:1033:GLY:O	2:D:1115:ILE:HG12	2.11	0.51
4:A:133:LEU:HD13	4:A:140:ILE:HD11	1.93	0.51
4:B:105:SER:HA	4:B:139:SER:HA	1.92	0.51
4:B:131:CYS:SG	4:B:132:HIS:N	2.83	0.51
1:C:684:ASN:O	1:C:688:GLN:NE2	2.44	0.51
1:C:696:ASP:OD1	1:C:696:ASP:N	2.43	0.51
2:D:412:LEU:HA	2:D:415:VAL:HG22	1.92	0.51
2:D:923:ILE:HG21	2:D:1145:PHE:HE2	1.75	0.51
2:D:1046:ILE:HG22	2:D:1061:VAL:HA	1.93	0.51
1:C:897:PRO:HA	1:C:900:LYS:HD2	1.93	0.50
1:C:1290:MET:HG3	2:D:347:VAL:HG21	1.91	0.50
1:C:211:ARG:HH21	1:C:351:LEU:HD22	1.76	0.50
1:C:797:GLY:N	1:C:1231:TYR:OH	2.43	0.50
2:D:1077:ALA:HB1	2:D:1098:GLN:HG2	1.93	0.50
1:C:1276:TRP:CH2	2:D:798:ARG:HA	2.47	0.50
2:D:179:LYS:O	2:D:180:MET:HE2	2.10	0.50
2:D:214:ARG:HA	2:D:217:LEU:HD12	1.94	0.50
2:D:279:LEU:HD13	2:D:295:GLU:HB3	1.93	0.50
2:D:872:LEU:HD22	2:D:877:VAL:HG11	1.93	0.50
1:C:820:GLU:O	1:C:824:GLN:HG2	2.10	0.50
2:D:133:ARG:O	2:D:136:GLU:HG3	2.11	0.50
2:D:720:ASN:OD1	2:D:722:ILE:HG22	2.11	0.50
2:D:1067:ARG:HH12	2:D:1075:ARG:HG3	1.74	0.50
4:A:185:TYR:HB2	4:A:201:LEU:HD11	1.93	0.50
2:D:144:TYR:O	2:D:160:LEU:N	2.37	0.50
2:D:526:VAL:HB	4:B:83:LEU:HD21	1.94	0.50
3:E:21:LEU:O	3:E:25:ARG:HG2	2.12	0.50
1:C:900:LYS:HA	1:C:903:ARG:HG2	1.94	0.50
2:D:986:ASP:HB3	2:D:992:LYS:HD3	1.92	0.50
1:C:1122:LYS:HG2	1:C:1229:TYR:CZ	2.47	0.50
2:D:174:ASP:OD2	5:G:58:ARG:NH2	2.45	0.50
4:A:33:ARG:HE	4:A:197:ASP:C	2.19	0.50
1:C:176:ILE:HD11	1:C:428:VAL:HG21	1.93	0.50
1:C:198:ILE:HB	1:C:370:MET:HE1	1.92	0.50
1:C:209:ILE:O	1:C:213:LEU:N	2.45	0.50
1:C:801:ARG:NH1	1:C:1092:THR:OG1	2.44	0.50
1:C:1024:GLU:HA	1:C:1027:LYS:NZ	2.26	0.50
1:C:1340:GLU:HG3	2:D:19:ALA:HB3	1.92	0.50
2:D:789:LYS:HE2	2:D:931:THR:HA	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:978:ARG:HD2	2:D:998:PRO:HA	1.94	0.50
4:A:162:GLU:HG2	4:A:166:ARG:NH1	2.27	0.50
1:C:826:ASP:HB2	4:A:86:LYS:HZ3	1.77	0.50
2:D:334:LYS:H	2:D:338:PHE:HE1	1.59	0.50
2:D:535:ARG:HG3	4:B:48:LEU:HD11	1.94	0.50
2:D:923:ILE:O	2:D:1241:TYR:OH	2.28	0.50
2:D:1049:GLN:HG2	2:D:1058:SER:HB2	1.93	0.50
5:G:1:MET:HG3	5:G:50:ASN:HB2	1.93	0.50
4:B:19:VAL:HB	4:B:23:HIS:HB3	1.94	0.50
1:C:28:LEU:HD21	1:C:524:ILE:HG13	1.93	0.49
1:C:53:PHE:CE2	1:C:98:VAL:HG21	2.46	0.49
2:D:664:ILE:HG22	2:D:678:ARG:HG2	1.93	0.49
4:B:86:LYS:NZ	4:B:174:ASP:HB2	2.26	0.49
7:H:14:DG:H2'	7:H:15:DT:O4'	2.12	0.49
1:C:654:ASP:OD2	1:C:659:GLN:NE2	2.46	0.49
2:D:56:LEU:HD21	2:D:269:TYR:HB3	1.94	0.49
2:D:186:GLN:HG3	2:D:238:ILE:HG21	1.95	0.49
2:D:341:ASN:HA	2:D:345:LYS:HB2	1.92	0.49
2:D:38:VAL:HG21	2:D:244:VAL:HG11	1.93	0.49
2:D:1060:VAL:HG22	2:D:1106:ILE:HG12	1.94	0.49
5:G:75:GLU:O	5:G:78:ARG:HG3	2.12	0.49
1:C:699:LEU:O	1:C:1182:ILE:N	2.40	0.49
1:C:194:LEU:HB3	1:C:206:ALA:HB2	1.94	0.49
2:D:491:LEU:HB2	2:D:904:ALA:HA	1.94	0.49
2:D:654:ILE:O	2:D:658:GLU:HG2	2.12	0.49
4:A:54:CYS:SG	4:A:92:VAL:HG12	2.53	0.49
4:A:102:LEU:HD12	4:A:115:ILE:HG12	1.94	0.49
1:C:606:LEU:HD21	1:C:652:TYR:CZ	2.47	0.49
1:C:826:ASP:HB2	4:A:86:LYS:NZ	2.28	0.49
2:D:514:THR:HG21	2:D:596:LEU:HG	1.95	0.49
5:G:33:ARG:HA	5:G:36:TRP:NE1	2.27	0.49
1:C:841:ARG:HH11	1:C:843:THR:HA	1.76	0.49
1:C:1282:GLY:H	2:D:483:LEU:HD22	1.77	0.49
1:C:1326:LEU:O	1:C:1330:ILE:HG12	2.13	0.49
1:C:297:VAL:HB	1:C:317:LEU:HD21	1.93	0.49
2:D:437:PHE:CZ	2:D:453:VAL:HG11	2.47	0.49
5:G:33:ARG:O	5:G:37:VAL:HG23	2.12	0.49
7:H:10:DC:H1'	7:H:11:DC:H5'	1.95	0.49
1:C:150:HIS:CD2	1:C:454:ARG:HG3	2.48	0.49
1:C:633:LEU:HB3	1:C:644:LEU:HD12	1.95	0.49
1:C:646:SER:HB2	1:C:649:GLN:HG2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1065:LYS:HB3	1:C:1237:HIS:HB2	1.94	0.49
1:C:1146:GLN:NE2	1:C:1150:ASP:OD2	2.46	0.49
1:C:1161:LEU:HD21	1:C:1165:SER:HA	1.93	0.49
4:A:28:LEU:HD11	4:B:231:PHE:HZ	1.78	0.49
4:B:11:PRO:HG3	4:B:28:LEU:HD21	1.93	0.49
4:B:64:VAL:HG12	4:B:66:HIS:H	1.78	0.49
1:C:225:PHE:HD2	1:C:336:LEU:HD22	1.78	0.49
2:D:668:PHE:HB2	2:D:678:ARG:HG3	1.94	0.49
4:A:28:LEU:HD11	4:B:231:PHE:CZ	2.48	0.49
4:A:182:ARG:HB3	4:A:206:GLU:HB2	1.95	0.49
1:C:1257:GLN:NE2	1:C:1296:ASP:OD1	2.46	0.48
1:C:1333:LEU:HD22	2:D:115:TRP:CH2	2.48	0.48
2:D:800:LEU:HD21	2:D:1145:PHE:CD2	2.48	0.48
2:D:1156:LEU:HD11	2:D:1220:ILE:HD13	1.94	0.48
2:D:1238:GLN:O	2:D:1242:ARG:HG2	2.13	0.48
1:C:691:PRO:O	1:C:830:THR:HG23	2.13	0.48
1:C:870:ILE:HD12	1:C:944:ARG:HG2	1.95	0.48
1:C:1254:VAL:HG23	2:D:249:LEU:HA	1.95	0.48
2:D:1161:GLY:HA2	2:D:1203:ARG:HH21	1.78	0.48
1:C:104:ILE:HB	1:C:115:LYS:HG2	1.94	0.48
1:C:693:LEU:HD11	4:A:79:LEU:HD11	1.96	0.48
1:C:768:MET:N	1:C:785:ASP:O	2.28	0.48
1:C:1214:ASP:OD2	1:C:1216:ARG:HB3	2.14	0.48
1:C:1256:GLN:HG3	1:C:1298:VAL:HB	1.95	0.48
4:A:33:ARG:HH21	4:A:197:ASP:HA	1.79	0.48
1:C:13:LYS:O	1:C:1183:ALA:N	2.30	0.48
1:C:59:ILE:HG21	1:C:475:VAL:HG13	1.94	0.48
1:C:802:VAL:HA	1:C:1096:ILE:O	2.13	0.48
1:C:1230:MET:HG2	1:C:1232:MET:SD	2.53	0.48
1:C:1256:GLN:HB3	1:C:1301:ARG:HH21	1.77	0.48
2:D:437:PHE:HZ	2:D:453:VAL:HG11	1.76	0.48
2:D:478:LEU:HD22	3:E:47:THR:HG23	1.94	0.48
2:D:644:MET:O	2:D:764:ARG:NE	2.46	0.48
2:D:1026:PRO:HB3	2:D:1123:ARG:CZ	2.43	0.48
6:I:25:DT:H2"	6:I:26:DA:H8	1.77	0.48
1:C:994:ARG:HA	1:C:997:TRP:CE2	2.48	0.48
2:D:511:TYR:OH	2:D:727:ASP:OD1	2.22	0.48
4:A:231:PHE:CE1	4:B:28:LEU:HD22	2.49	0.48
4:B:83:LEU:HA	4:B:86:LYS:HG2	1.94	0.48
1:C:95:PRO:HA	1:C:126:GLU:HG2	1.96	0.48
1:C:816:ILE:HD13	1:C:1066:MET:HE2	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:934:PHE:HB2	1:C:1049:ILE:HB	1.94	0.48
2:D:1081:VAL:HG12	2:D:1087:ASP:HA	1.94	0.48
2:D:1287:ILE:HA	2:D:1290:ARG:HG2	1.95	0.48
1:C:755:LYS:NZ	1:C:767:GLN:O	2.40	0.48
2:D:400:MET:HE3	2:D:408:VAL:HG13	1.94	0.48
2:D:538:ARG:HG2	4:B:44:ARG:NH2	2.29	0.48
2:D:1318:SER:OG	2:D:1342:ASP:OD2	2.31	0.48
2:D:798:ARG:HH12	2:D:1325:PHE:HD1	1.59	0.48
4:B:59:VAL:HG12	4:B:144:ILE:HG22	1.96	0.48
1:C:971:LEU:O	1:C:975:ILE:HG23	2.14	0.48
2:D:123:ARG:HD2	2:D:1337:VAL:HG21	1.95	0.48
2:D:214:ARG:HD2	5:G:96:CYS:SG	2.54	0.48
5:G:72:LYS:NZ	5:G:118:ILE:HD12	2.29	0.48
1:C:730:SER:OG	4:A:70:THR:OG1	2.26	0.48
1:C:1281:TYR:CZ	2:D:431:ARG:HG3	2.48	0.48
2:D:290:ILE:O	2:D:294:ASN:ND2	2.47	0.48
2:D:905:ARG:HE	2:D:907:HIS:HB2	1.78	0.48
3:E:69:ARG:HH12	3:E:72:GLN:HG3	1.79	0.48
4:A:191:ARG:HH12	4:A:196:THR:HA	1.79	0.48
1:C:240:GLU:HG2	1:C:284:LEU:HG	1.96	0.47
2:D:1165:PHE:H	2:D:1200:GLU:HG2	1.79	0.47
1:C:158:ASP:OD1	1:C:173:ASN:HB3	2.13	0.47
2:D:471:PRO:HB3	2:D:476:ALA:HB1	1.96	0.47
4:A:32:GLU:HB2	4:A:35:PHE:CD2	2.50	0.47
4:A:211:ILE:HD12	4:A:216:ALA:HB2	1.96	0.47
1:C:961:SER:O	1:C:965:GLN:HG2	2.14	0.47
2:D:511:TYR:CE1	2:D:724:MET:HG2	2.49	0.47
1:C:217:THR:HG23	1:C:351:LEU:HD13	1.96	0.47
1:C:620:ASN:OD1	2:D:768:ASN:ND2	2.40	0.47
2:D:149:GLY:O	5:G:33:ARG:NH1	2.47	0.47
2:D:367:GLY:O	2:D:448:GLN:N	2.34	0.47
1:C:1272:GLU:OE2	2:D:798:ARG:NH1	2.48	0.47
2:D:251:PRO:O	2:D:263:SER:OG	2.30	0.47
2:D:377:PHE:O	2:D:381:ILE:HG12	2.14	0.47
2:D:510:LEU:HD13	2:D:601:ILE:HG12	1.95	0.47
2:D:538:ARG:HG2	4:B:44:ARG:NH1	2.30	0.47
2:D:549:LYS:HG3	2:D:569:LEU:HD12	1.96	0.47
2:D:1179:PRO:HB2	2:D:1182:GLY:H	1.79	0.47
2:D:1190:ILE:HD13	2:D:1196:LEU:HD21	1.96	0.47
1:C:578:TYR:CD2	1:C:659:GLN:HB3	2.50	0.47
1:C:635:THR:HG22	2:D:770:LEU:HD12	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1139:ALA:O	1:C:1143:GLU:OE1	2.32	0.47
2:D:120:LEU:HB3	6:I:23:DA:H5'	1.97	0.47
2:D:189:LEU:HD23	2:D:234:PRO:O	2.15	0.47
2:D:740:LEU:HD23	2:D:763:PHE:HD2	1.79	0.47
3:E:51:LEU:O	3:E:55:GLU:HG3	2.14	0.47
4:A:51:MET:HE3	4:A:51:MET:HA	1.96	0.47
4:A:60:GLU:HG2	4:A:143:ARG:NH2	2.30	0.47
4:A:64:VAL:HG11	4:A:78:ILE:HG13	1.95	0.47
5:G:9:THR:HA	5:G:117:GLN:HG2	1.97	0.47
4:B:79:LEU:O	4:B:83:LEU:HD23	2.15	0.47
1:C:367:TYR:HD2	1:C:376:PRO:HB3	1.80	0.47
1:C:521:LEU:HA	1:C:524:ILE:HG22	1.97	0.47
2:D:437:PHE:HE2	2:D:486:SER:HB2	1.80	0.47
2:D:1176:VAL:HG22	2:D:1187:GLU:HB3	1.97	0.47
5:G:126:ASP:HA	5:G:129:ARG:NH2	2.30	0.47
1:C:98:VAL:O	1:C:122:VAL:HG12	2.15	0.47
1:C:550:VAL:HG23	1:C:554:HIS:CD2	2.49	0.47
1:C:409:LEU:HD12	1:C:411:ARG:HH21	1.80	0.47
1:C:728:ASP:OD1	4:A:73:GLY:N	2.48	0.47
1:C:870:ILE:HG21	1:C:931:VAL:HG11	1.97	0.47
1:C:883:LEU:HD11	1:C:1054:LEU:HD11	1.96	0.47
2:D:31:ARG:HE	2:D:241:VAL:HG11	1.79	0.47
2:D:416:ILE:HG13	2:D:439:PRO:HG2	1.97	0.47
4:B:33:ARG:HD2	4:B:197:ASP:HB2	1.96	0.47
1:C:518:ASN:O	1:C:691:PRO:HD3	2.16	0.46
1:C:1278:LEU:O	1:C:1283:ALA:HB3	2.15	0.46
2:D:535:ARG:CZ	4:B:152:TYR:HB2	2.45	0.46
2:D:1176:VAL:HA	2:D:1187:GLU:HA	1.97	0.46
2:D:1290:ARG:NH1	2:D:1291:GLU:OE2	2.48	0.46
1:C:255:ILE:HB	1:C:263:VAL:HB	1.97	0.46
1:C:1105:SER:HB2	2:D:731:ARG:HG2	1.97	0.46
2:D:702:GLN:HA	2:D:723:TYR:CZ	2.50	0.46
2:D:846:GLU:HG3	2:D:881:LYS:HB3	1.97	0.46
1:C:397:LEU:O	1:C:398:SER:OG	2.27	0.46
1:C:478:ARG:HH12	1:C:482:GLY:HA3	1.79	0.46
1:C:805:MET:HE1	1:C:1086:PRO:HG2	1.98	0.46
2:D:1234:VAL:HA	2:D:1253:ILE:HG21	1.97	0.46
2:D:1373:ARG:HA	2:D:1373:ARG:NE	2.31	0.46
1:C:202:ARG:NH2	7:H:9:DG:OP2	2.49	0.46
2:D:429:LEU:HB3	2:D:925:GLU:HA	1.97	0.46
1:C:971:LEU:HD12	1:C:974:ARG:HD2	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:342:LEU:HG	2:D:343:LEU:HD12	1.98	0.46
3:E:30:MET:HE1	3:E:53:GLU:OE2	2.16	0.46
7:H:6:DT:H2'	7:H:7:DT:C6	2.50	0.46
1:C:1297:ASP:CG	1:C:1300:GLY:H	2.24	0.46
2:D:863:LEU:HD11	2:D:901:ARG:HG2	1.96	0.46
5:G:75:GLU:HG2	5:G:78:ARG:HE	1.80	0.46
5:G:85:LEU:HD21	5:G:91:PHE:HE1	1.81	0.46
1:C:598:VAL:HG13	1:C:627:GLY:HA3	1.98	0.46
4:A:218:ARG:HH11	4:B:233:ASP:HB2	1.79	0.46
1:C:107:ARG:HA	1:C:108:GLU:HA	1.68	0.46
1:C:1120:ALA:HB2	1:C:1199:LEU:HD23	1.97	0.46
1:C:1290:MET:HA	1:C:1294:LYS:HE3	1.97	0.46
2:D:901:ARG:HB2	2:D:907:HIS:O	2.16	0.46
5:G:94:THR:HG21	5:G:99:ARG:HE	1.80	0.46
1:C:183:TRP:HZ3	6:I:15:DT:H2''	1.81	0.46
1:C:542:ARG:NH2	6:I:18:DC:OP1	2.49	0.46
1:C:831:ILE:HG12	1:C:1057:LYS:HE2	1.98	0.46
2:D:495:ASN:ND2	2:D:1247:LYS:HG3	2.31	0.46
2:D:1100:PHE:HB2	2:D:1199:PHE:HB3	1.97	0.46
2:D:1282:TYR:O	2:D:1286:LYS:HG2	2.16	0.46
1:C:1118:GLY:HA3	1:C:1229:TYR:O	2.16	0.45
2:D:166:LEU:O	2:D:169:LEU:N	2.48	0.45
2:D:275:ARG:HG2	2:D:299:LEU:HA	1.97	0.45
2:D:708:ASN:HA	2:D:713:GLU:HA	1.98	0.45
2:D:1099:TYR:HE1	2:D:1199:PHE:HE2	1.63	0.45
4:A:181:GLU:OE1	4:A:181:GLU:N	2.48	0.45
1:C:641:GLU:N	1:C:641:GLU:OE1	2.49	0.45
1:C:1280:ALA:HB3	2:D:431:ARG:HB3	1.97	0.45
2:D:168:ALA:O	2:D:172:PHE:N	2.32	0.45
2:D:1027:VAL:HG21	2:D:1099:TYR:CZ	2.52	0.45
2:D:1149:ARG:HH11	2:D:1153:PRO:HG3	1.79	0.45
4:A:188:GLU:HB3	4:A:200:LYS:HE3	1.98	0.45
4:B:35:PHE:O	4:B:38:THR:OG1	2.30	0.45
1:C:56:VAL:HG13	1:C:57:PHE:CD2	2.51	0.45
1:C:544:GLY:O	1:C:548:ARG:HG2	2.16	0.45
1:C:1214:ASP:O	1:C:1218:GLY:N	2.35	0.45
2:D:58:CYS:HB3	2:D:61:ILE:HB	1.98	0.45
4:A:180:VAL:HG12	4:A:207:THR:HB	1.97	0.45
8:J:18:G:H2'	8:J:19:U:H6	1.81	0.45
1:C:119:GLU:HG3	1:C:122:VAL:HB	1.97	0.45
1:C:561:ILE:HD11	1:C:665:ALA:HB1	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1061:GLN:HB2	1:C:1062:PRO:HD2	1.97	0.45
2:D:597:GLY:O	2:D:601:ILE:HD12	2.17	0.45
2:D:944:ALA:N	2:D:951:GLN:H	2.14	0.45
7:H:19:DT:H2'	7:H:20:DC:C6	2.51	0.45
1:C:300:ASP:HA	1:C:312:ALA:HA	1.98	0.45
1:C:475:VAL:HG23	1:C:492:MET:HG2	1.99	0.45
2:D:646:ILE:HG13	2:D:650:LYS:HD3	1.98	0.45
5:G:9:THR:HB	5:G:117:GLN:HB3	1.99	0.45
5:G:21:ARG:HE	5:G:30:ASN:HB2	1.82	0.45
5:G:45:MET:O	5:G:49:GLN:HG2	2.16	0.45
5:G:91:PHE:HB3	5:G:93:MET:HE3	1.99	0.45
4:B:29:GLU:HB3	4:B:200:LYS:HD3	1.98	0.45
4:B:166:ARG:HH22	4:B:172:LEU:HD22	1.82	0.45
1:C:302:ILE:HG22	1:C:309:LEU:HA	1.99	0.45
1:C:692:THR:HG21	1:C:798:GLN:CD	2.42	0.45
2:D:394:ILE:O	2:D:398:LYS:HG2	2.16	0.45
2:D:1329:THR:O	2:D:1333:THR:HG23	2.16	0.45
4:A:11:PRO:HA	4:A:30:PRO:HG2	1.98	0.45
4:B:225:ALA:O	4:B:229:GLU:HB2	2.16	0.45
1:C:1336:ASN:O	1:C:1337:ILE:HD13	2.16	0.45
2:D:535:ARG:HH12	4:B:176:CYS:HA	1.81	0.45
2:D:826:ILE:HG21	2:D:993:GLU:HA	1.99	0.45
2:D:955:LYS:HG3	2:D:1012:ALA:HA	1.99	0.45
2:D:1173:ARG:H	2:D:1192:LYS:HD3	1.81	0.45
1:C:35:PHE:HE2	1:C:129:LEU:HD12	1.82	0.45
1:C:245:ARG:HA	1:C:247:ARG:HH11	1.82	0.45
1:C:496:LYS:HB2	1:C:496:LYS:HE2	1.81	0.45
2:D:130:MET:HE2	2:D:135:ILE:HD13	1.99	0.45
2:D:255:LEU:HB3	2:D:259:ARG:HE	1.82	0.45
2:D:373:ALA:HB1	2:D:412:LEU:HD21	1.99	0.45
1:C:841:ARG:NH1	1:C:843:THR:HA	2.31	0.45
1:C:1138:VAL:HG12	1:C:1170:MET:HE1	1.99	0.45
1:C:1283:ALA:HA	2:D:479:GLU:OE1	2.17	0.45
2:D:144:TYR:CD2	2:D:180:MET:HE3	2.52	0.45
2:D:343:LEU:HA	2:D:344:GLY:HA2	1.60	0.45
2:D:625:MET:HE2	2:D:625:MET:HB3	1.87	0.45
5:G:73:TRP:HZ2	5:G:108:ALA:HB1	1.82	0.45
4:B:61:ILE:HB	4:B:169:GLY:HA2	1.98	0.45
1:C:89:GLY:HA2	1:C:140:GLY:HA3	1.98	0.45
1:C:470:ARG:NH1	1:C:497:PRO:HB3	2.32	0.45
1:C:1142:ARG:HH11	1:C:1161:LEU:HD22	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:26:ARG:NE	3:E:53:GLU:OE1	2.50	0.45
5:G:74:ILE:HA	5:G:77:MET:HE2	1.99	0.45
1:C:10:ARG:CZ	1:C:697:LYS:HD3	2.48	0.44
1:C:18:ARG:NH2	1:C:620:ASN:HA	2.32	0.44
1:C:692:THR:HG22	1:C:693:LEU:H	1.82	0.44
1:C:811:ASN:HA	1:C:815:SER:HB2	1.99	0.44
2:D:341:ASN:ND2	2:D:1325:PHE:HZ	2.12	0.44
2:D:1325:PHE:CD2	2:D:1348:LYS:HD3	2.52	0.44
1:C:768:MET:HE1	4:A:77:ASP:CG	2.41	0.44
2:D:1284:ARG:HG2	2:D:1284:ARG:HH11	1.82	0.44
1:C:469:VAL:O	1:C:472:GLU:HG2	2.18	0.44
2:D:393:THR:HG23	2:D:396:ALA:H	1.82	0.44
2:D:515:ARG:HD2	2:D:724:MET:HG2	1.99	0.44
2:D:659:ALA:O	2:D:663:GLU:HG3	2.17	0.44
2:D:1079:LYS:HG3	2:D:1081:VAL:HG13	2.00	0.44
3:E:69:ARG:HA	3:E:69:ARG:CZ	2.47	0.44
4:B:127:GLN:HA	4:B:127:GLN:OE1	2.17	0.44
4:B:212:ASP:HB2	4:B:215:GLU:HG2	1.98	0.44
1:C:577:VAL:HG23	1:C:661:VAL:O	2.18	0.44
1:C:753:LEU:HD12	1:C:767:GLN:HB2	1.99	0.44
2:D:1141:VAL:HG23	2:D:1240:VAL:HG11	1.99	0.44
4:A:61:ILE:HG12	4:A:142:MET:HG2	1.98	0.44
1:C:423:ASP:HA	1:C:426:ILE:HG12	2.00	0.44
1:C:1187:PHE:CD2	2:D:769:VAL:HG22	2.52	0.44
2:D:925:GLU:HB3	2:D:926:PRO:HD3	1.99	0.44
4:B:95:LYS:HD3	4:B:97:GLU:H	1.82	0.44
1:C:548:ARG:HH12	1:C:568:ASN:HA	1.82	0.44
2:D:59:ALA:HB1	2:D:90:VAL:HG13	1.99	0.44
2:D:199:GLU:HA	2:D:202:ARG:HG2	1.98	0.44
2:D:1173:ARG:HE	2:D:1192:LYS:HZ3	1.64	0.44
2:D:1238:GLN:NE2	2:D:1248:ILE:O	2.42	0.44
1:C:296:VAL:HG22	1:C:316:GLU:HA	2.00	0.44
1:C:393:ASP:OD1	1:C:394:ARG:HG2	2.18	0.44
1:C:690:VAL:HG22	1:C:830:THR:HG21	2.00	0.44
1:C:756:TYR:H	1:C:766:ASN:HB3	1.83	0.44
2:D:1310:THR:O	2:D:1314:LEU:HG	2.18	0.44
2:D:1326:GLN:HG3	2:D:1327:GLU:HG2	1.98	0.44
5:G:107:ASN:HB3	5:G:110:GLU:OE1	2.18	0.44
6:I:16:DG:H4'	6:I:17:DA:H4'	2.00	0.44
1:C:150:HIS:NE2	1:C:454:ARG:HG3	2.32	0.44
1:C:402:ARG:HE	1:C:416:GLY:HA3	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:678:ARG:NH1	1:C:1106:ARG:HH11	2.13	0.44
1:C:808:ASN:N	2:D:633:ALA:HB2	2.26	0.44
1:C:1218:GLY:HA3	4:A:41:ASN:ND2	2.33	0.44
2:D:111:THR:HG21	2:D:303:VAL:HB	1.99	0.44
2:D:145:VAL:HG22	2:D:159:ILE:HA	1.98	0.44
2:D:746:LEU:HD23	2:D:754:ILE:HG21	2.00	0.44
2:D:1025:MET:HE3	2:D:1124:ILE:HD12	2.00	0.44
2:D:1169:THR:HG22	6:I:29:DC:H4'	1.99	0.44
2:D:1170:LYS:HD3	2:D:1174:ARG:HH21	1.83	0.44
4:A:73:GLY:HA3	4:A:135:ASP:HB2	2.00	0.44
4:A:189:ALA:HA	4:A:199:ASP:OD1	2.18	0.44
4:B:152:TYR:HE2	4:B:154:PRO:HG3	1.82	0.44
1:C:202:ARG:HD2	7:H:8:DC:OP2	2.18	0.44
1:C:468:LEU:HA	1:C:471:VAL:HG12	1.99	0.44
1:C:1269:ARG:HH12	2:D:343:LEU:HD23	1.83	0.44
2:D:377:PHE:HE1	2:D:419:HIS:CD2	2.35	0.44
2:D:535:ARG:NH1	4:B:152:TYR:HD1	2.14	0.44
2:D:981:GLU:OE2	2:D:994:SER:OG	2.29	0.44
2:D:1046:ILE:HD12	2:D:1059:LEU:HB3	2.00	0.44
4:A:47:LEU:HA	4:A:51:MET:SD	2.58	0.44
4:B:82:LEU:O	4:B:85:LEU:HG	2.18	0.44
1:C:828:PHE:HZ	1:C:1232:MET:HB2	1.83	0.43
2:D:1011:VAL:HG11	2:D:1017:VAL:HG12	2.00	0.43
4:B:151:GLY:O	4:B:177:TYR:HB2	2.18	0.43
1:C:75:LEU:HD11	1:C:127:ILE:HD11	2.00	0.43
2:D:375:GLU:HA	2:D:378:LYS:HG3	1.99	0.43
2:D:555:TYR:HB3	2:D:563:LEU:HD12	2.00	0.43
2:D:1344:LEU:HD12	2:D:1349:GLU:HB3	2.00	0.43
4:A:166:ARG:HD3	4:A:166:ARG:H	1.82	0.43
7:H:11:DC:H2''	7:H:12:DG:C8	2.52	0.43
1:C:798:GLN:OE1	1:C:827:ARG:HB2	2.18	0.43
1:C:833:ILE:HA	1:C:1054:LEU:O	2.18	0.43
2:D:70:CYS:HB3	2:D:75:TYR:HB2	2.00	0.43
2:D:705:THR:HG21	2:D:719:PHE:CD1	2.53	0.43
2:D:984:LEU:HD23	2:D:992:LYS:HG3	2.01	0.43
2:D:1100:PHE:CE1	2:D:1200:GLU:HB2	2.53	0.43
2:D:1166:GLY:HA3	2:D:1174:ARG:HG3	2.01	0.43
2:D:1284:ARG:HH21	2:D:1304:ARG:CZ	2.30	0.43
4:B:52:PRO:HB2	4:B:219:ARG:HH22	1.83	0.43
1:C:630:VAL:HG23	1:C:631:GLU:HG3	1.99	0.43
1:C:705:GLU:HB3	1:C:794:LEU:N	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:976:ARG:O	1:C:980:VAL:HG23	2.19	0.43
1:C:470:ARG:HH11	1:C:497:PRO:HB3	1.83	0.43
1:C:582:ASN:N	1:C:586:PHE:O	2.39	0.43
2:D:94:GLN:HE21	2:D:96:LYS:HG3	1.84	0.43
5:G:7:ASN:HB3	5:G:9:THR:HG23	2.00	0.43
4:B:95:LYS:NZ	4:B:97:GLU:HB2	2.34	0.43
1:C:120:GLN:HG2	1:C:121:GLU:HG2	2.00	0.43
1:C:185:ASP:O	1:C:196:VAL:HA	2.17	0.43
1:C:452:ARG:HH12	1:C:458:GLU:CD	2.27	0.43
1:C:517:GLN:CG	1:C:759:SER:HB2	2.48	0.43
1:C:800:MET:HE1	1:C:822:VAL:HG13	2.01	0.43
1:C:1094:VAL:HG21	1:C:1212:LEU:HD11	2.01	0.43
2:D:342:LEU:HA	2:D:343:LEU:HA	1.75	0.43
2:D:346:ARG:NH2	7:H:17:DC:OP2	2.50	0.43
2:D:821:MET:HE3	2:D:821:MET:HA	1.99	0.43
4:B:149:GLY:HA3	4:B:177:TYR:CD2	2.54	0.43
1:C:27:LEU:CB	1:C:524:ILE:HD11	2.48	0.43
1:C:138:ILE:HG13	1:C:143:ARG:HD3	2.01	0.43
1:C:517:GLN:NE2	1:C:523:GLU:OE2	2.52	0.43
1:C:1122:LYS:O	1:C:1126:ASP:N	2.46	0.43
1:C:1128:ILE:HB	1:C:1144:PHE:HE2	1.83	0.43
1:C:176:ILE:HG23	1:C:405:PHE:HE2	1.83	0.43
1:C:687:ARG:HH22	8:J:18:G:H5"	1.83	0.43
1:C:1080:ASN:HB2	1:C:1085:MET:CE	2.49	0.43
4:B:86:LYS:HE3	4:B:174:ASP:O	2.19	0.43
4:B:100:LEU:HD21	4:B:121:VAL:HG11	2.00	0.43
1:C:758:ARG:HD2	1:C:762:ASN:OD1	2.18	0.43
1:C:890:LYS:HE2	1:C:914:LYS:HD3	2.01	0.43
2:D:490:ILE:HD11	2:D:609:TYR:CE2	2.53	0.43
4:A:47:LEU:O	4:A:51:MET:HG2	2.19	0.43
4:A:191:ARG:HD2	4:A:191:ARG:HA	1.74	0.43
5:G:110:GLU:HA	5:G:113:ILE:HG12	2.01	0.43
1:C:15:PHE:CD2	1:C:1190:ALA:HB2	2.54	0.43
1:C:1139:ALA:O	1:C:1142:ARG:HB3	2.19	0.43
2:D:131:PRO:O	2:D:135:ILE:HG12	2.19	0.43
2:D:460:ASP:O	2:D:462:ASP:N	2.51	0.43
2:D:474:LEU:O	2:D:478:LEU:HD23	2.19	0.43
2:D:513:MET:HE3	2:D:513:MET:HB2	1.75	0.43
2:D:1075:ARG:HH21	2:D:1102:PRO:HA	1.84	0.43
1:C:458:GLU:O	1:C:461:GLU:HG3	2.18	0.42
1:C:538:LEU:HD12	1:C:542:ARG:HG2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:157:GLN:N	5:G:30:ASN:OD1	2.48	0.42
2:D:337:ARG:NH1	2:D:338:PHE:HB2	2.35	0.42
2:D:824:PRO:HD3	2:D:835:LEU:HB2	2.01	0.42
2:D:1313:SER:O	2:D:1316:THR:OG1	2.22	0.42
1:C:246:LEU:HB3	1:C:269:ILE:HG21	2.01	0.42
1:C:427:ASP:O	1:C:431:LYS:HE2	2.19	0.42
1:C:606:LEU:HD21	1:C:652:TYR:CE2	2.54	0.42
1:C:699:LEU:HD23	1:C:1121:ALA:HB3	2.01	0.42
1:C:1104:PRO:HG3	2:D:725:MET:HG2	2.00	0.42
2:D:120:LEU:HD11	7:H:9:DG:H21	1.84	0.42
2:D:1033:GLY:HA2	2:D:1114:GLN:HE22	1.84	0.42
3:E:70:GLN:HA	3:E:73:GLN:OE1	2.18	0.42
1:C:12:ARG:HG3	1:C:1181:PRO:HB2	2.01	0.42
1:C:37:LYS:HE3	1:C:47:TYR:HB2	2.01	0.42
1:C:76:GLY:N	1:C:95:PRO:O	2.49	0.42
1:C:466:VAL:O	1:C:470:ARG:HG3	2.19	0.42
1:C:701:GLY:N	1:C:1182:ILE:O	2.43	0.42
1:C:1255:THR:CB	2:D:339:ARG:HD3	2.49	0.42
2:D:275:ARG:NH1	2:D:298:MET:O	2.52	0.42
2:D:349:TYR:HE1	2:D:379:PRO:HG2	1.84	0.42
2:D:515:ARG:NH2	2:D:717:VAL:HG13	2.34	0.42
2:D:932:MET:HE1	2:D:1135:THR:HA	2.02	0.42
4:B:37:HIS:CD2	4:B:37:HIS:O	2.72	0.42
1:C:299:LYS:HA	1:C:313:ALA:HB2	2.00	0.42
1:C:947:GLU:O	1:C:951:MET:HE2	2.18	0.42
1:C:1218:GLY:HA3	4:A:41:ASN:HD22	1.84	0.42
2:D:450:HIS:HE1	2:D:452:LEU:HD12	1.83	0.42
2:D:530:PRO:HB2	4:B:182:ARG:HH21	1.84	0.42
2:D:968:ASN:HD22	2:D:1030:GLU:HA	1.83	0.42
4:A:33:ARG:HE	4:A:198:LEU:N	2.18	0.42
4:A:133:LEU:HD11	4:A:138:ALA:HB3	2.01	0.42
4:A:231:PHE:CZ	4:B:28:LEU:HD22	2.55	0.42
6:I:1:DG:H2"	6:I:2:DG:C8	2.54	0.42
2:D:1326:GLN:CG	2:D:1327:GLU:H	2.26	0.42
5:G:76:LEU:HD12	5:G:115:ALA:HB2	2.02	0.42
1:C:196:VAL:HG11	1:C:209:ILE:HD12	2.00	0.42
1:C:540:ARG:HH12	8:J:16:A:P	2.42	0.42
1:C:947:GLU:O	1:C:951:MET:HG2	2.20	0.42
1:C:1083:GLU:HG3	4:A:45:ARG:HE	1.85	0.42
2:D:242:LEU:HD12	2:D:243:PRO:HD2	2.01	0.42
2:D:755:ILE:HD12	2:D:755:ILE:H	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:G:125:ALA:HA	5:G:128:ASN:ND2	2.34	0.42
4:B:77:ASP:O	4:B:80:GLU:HG3	2.19	0.42
6:I:25:DT:H2"	6:I:26:DA:C8	2.53	0.42
1:C:245:ARG:HA	1:C:247:ARG:NH1	2.34	0.42
1:C:594:VAL:HG22	1:C:599:VAL:HG22	2.02	0.42
1:C:824:GLN:HE22	4:A:152:TYR:HB2	1.84	0.42
1:C:890:LYS:HD3	1:C:914:LYS:HB2	2.01	0.42
1:C:896:THR:HG22	1:C:898:GLU:H	1.84	0.42
2:D:601:ILE:HA	2:D:604:MET:HE3	2.01	0.42
2:D:824:PRO:HB3	2:D:835:LEU:N	2.34	0.42
2:D:826:ILE:HA	2:D:831:VAL:HA	2.00	0.42
3:E:68:GLU:O	3:E:71:GLU:HG3	2.20	0.42
4:A:10:LYS:NZ	4:B:226:GLU:O	2.40	0.42
5:G:94:THR:C	5:G:96:CYS:H	2.27	0.42
2:D:63:GLY:O	2:D:98:ARG:NH1	2.49	0.42
2:D:406:ALA:HA	2:D:409:TRP:CD1	2.52	0.42
2:D:884:SER:OG	2:D:1254:GLU:OE1	2.32	0.42
4:B:100:LEU:HD11	4:B:121:VAL:HG11	2.01	0.42
1:C:136:PHE:CZ	1:C:456:VAL:HG21	2.54	0.42
2:D:124:ILE:HG13	2:D:237:MET:CE	2.50	0.42
2:D:760:THR:OG1	2:D:771:GLN:NE2	2.52	0.42
2:D:807:LEU:HD12	2:D:807:LEU:HA	1.86	0.42
2:D:1027:VAL:HG21	2:D:1099:TYR:OH	2.20	0.42
2:D:1068:THR:OG1	2:D:1071:GLY:N	2.44	0.42
3:E:68:GLU:O	3:E:72:GLN:HG2	2.19	0.42
4:A:15:ASP:OD1	4:A:15:ASP:N	2.53	0.42
4:B:86:LYS:HZ1	4:B:174:ASP:HB2	1.84	0.42
1:C:452:ARG:NH1	1:C:584:TYR:O	2.48	0.42
2:D:124:ILE:HG13	2:D:237:MET:HE2	2.01	0.42
2:D:536:LEU:HB3	2:D:542:ALA:HB3	2.01	0.42
2:D:679:TYR:OH	2:D:754:ILE:O	2.35	0.42
2:D:891:ASP:HA	2:D:1281:GLU:OE1	2.20	0.42
2:D:1297:LYS:HA	2:D:1298:VAL:HA	1.58	0.42
5:G:11:ASP:HB2	5:G:14:ASP:CG	2.45	0.42
5:G:73:TRP:CD2	5:G:77:MET:HE1	2.55	0.42
1:C:495:ALA:O	1:C:499:SER:HB3	2.19	0.41
5:G:72:LYS:HZ2	5:G:118:ILE:HD12	1.84	0.41
4:B:73:GLY:HA2	4:B:136:GLU:HB2	2.01	0.41
4:B:90:VAL:HG23	4:B:121:VAL:HG13	2.01	0.41
1:C:634:VAL:HG13	1:C:636:CYS:SG	2.59	0.41
2:D:475:GLU:OE2	3:E:28:ARG:NH2	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:869:CYS:O	2:D:873:GLU:HG3	2.20	0.41
6:I:5:DT:O2	7:H:26:DG:N2	2.52	0.41
1:C:158:ASP:HB3	1:C:445:ILE:HD11	2.01	0.41
1:C:451:ARG:NH1	6:I:16:DG:O6	2.44	0.41
1:C:1063:GLY:N	1:C:1076:ILE:O	2.54	0.41
1:C:1187:PHE:HD2	2:D:769:VAL:HG22	1.84	0.41
1:C:1251:TYR:OH	2:D:348:ASP:OD2	2.27	0.41
1:C:1281:TYR:C	1:C:1283:ALA:H	2.26	0.41
1:C:1313:HIS:HB2	2:D:474:LEU:CD2	2.48	0.41
2:D:578:ILE:O	2:D:581:MET:HG3	2.21	0.41
2:D:820:ILE:HG12	2:D:884:SER:HB2	2.03	0.41
3:E:65:ASP:O	3:E:69:ARG:HG2	2.21	0.41
4:A:8:PHE:HE2	4:B:223:ILE:HG12	1.85	0.41
5:G:29:GLN:O	5:G:30:ASN:HB2	2.21	0.41
6:I:14:DA:H2''	6:I:15:DT:C5	2.55	0.41
1:C:9:LYS:O	1:C:1175:ASN:ND2	2.29	0.41
1:C:561:ILE:HG21	2:D:772:TYR:CE2	2.55	0.41
1:C:726:TYR:CZ	1:C:728:ASP:HB2	2.56	0.41
1:C:1109:ILE:HD11	2:D:763:PHE:O	2.20	0.41
2:D:107:LEU:HA	2:D:276:ASN:ND2	2.35	0.41
2:D:213:LYS:HA	2:D:216:LYS:HZ3	1.85	0.41
3:E:6:VAL:HG12	3:E:6:VAL:O	2.20	0.41
3:E:15:ASN:HB3	3:E:18:ASP:OD1	2.20	0.41
6:I:20:DG:H1'	6:I:21:DC:H5'	2.01	0.41
1:C:222:ASP:HA	1:C:227:LYS:NZ	2.36	0.41
1:C:559:CYS:HB3	1:C:562:GLU:HB3	2.02	0.41
1:C:979:LEU:HD23	1:C:989:LEU:HD11	2.01	0.41
1:C:1268:GLN:NE2	2:D:352:ARG:HB3	2.36	0.41
1:C:1285:TYR:HB2	2:D:479:GLU:OE2	2.21	0.41
2:D:1171:GLY:C	2:D:1172:LYS:HD2	2.45	0.41
2:D:1284:ARG:NH1	2:D:1302:TYR:OH	2.54	0.41
2:D:1326:GLN:HG3	2:D:1327:GLU:N	2.27	0.41
1:C:175:ARG:NH1	1:C:175:ARG:HB2	2.35	0.41
1:C:543:ALA:N	1:C:544:GLY:HA3	2.35	0.41
1:C:551:HIS:H	1:C:554:HIS:HB2	1.85	0.41
1:C:675:ASP:HB2	1:C:1107:MET:HB2	2.02	0.41
2:D:111:THR:O	2:D:239:LEU:HB2	2.21	0.41
2:D:490:ILE:HG22	2:D:500:ILE:HD11	2.02	0.41
2:D:509:GLY:O	2:D:513:MET:HG3	2.20	0.41
2:D:805:GLN:HE22	2:D:1346:GLY:HA3	1.85	0.41
4:A:163:GLU:O	4:A:164:ASP:HB2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:18:DC:H2'	7:H:19:DT:C6	2.56	0.41
1:C:18:ARG:HG2	1:C:622:ASN:HD22	1.86	0.41
1:C:104:ILE:HG12	1:C:484:LEU:O	2.21	0.41
1:C:151:ARG:HG3	6:I:16:DG:N7	2.35	0.41
1:C:548:ARG:NH1	1:C:568:ASN:HA	2.35	0.41
1:C:678:ARG:NH1	1:C:1106:ARG:HD3	2.35	0.41
1:C:841:ARG:HG2	1:C:1045:GLY:O	2.21	0.41
1:C:1192:GLU:OE2	2:D:764:ARG:NH1	2.54	0.41
2:D:38:VAL:HB	2:D:105:ILE:HG22	2.03	0.41
2:D:58:CYS:SG	2:D:60:ARG:HB3	2.61	0.41
2:D:123:ARG:NH1	2:D:126:LEU:HD12	2.36	0.41
1:C:35:PHE:CD2	1:C:130:MET:HB3	2.55	0.41
2:D:152:THR:HG21	2:D:176:PHE:HD1	1.85	0.41
2:D:252:LEU:HD23	2:D:254:PRO:HD3	2.03	0.41
2:D:275:ARG:HB3	2:D:299:LEU:HD13	2.03	0.41
2:D:314:ARG:HB3	2:D:316:ILE:HD11	2.03	0.41
4:B:85:LEU:HA	4:B:88:LEU:HD23	2.03	0.41
6:I:2:DG:H2''	6:I:3:DG:N7	2.36	0.41
1:C:70:TYR:HA	1:C:100:LEU:HD23	2.02	0.41
1:C:82:VAL:O	1:C:86:GLN:HG3	2.20	0.41
1:C:99:LYS:HE3	1:C:120:GLN:HG3	2.03	0.41
1:C:183:TRP:CZ3	6:I:15:DT:H2''	2.56	0.41
1:C:251:ALA:O	1:C:266:GLY:N	2.49	0.41
1:C:387:ASN:HA	1:C:391:SER:HB3	2.02	0.41
1:C:515:MET:O	1:C:760:ASN:ND2	2.52	0.41
1:C:1073:LYS:HD3	2:D:462:ASP:HB3	2.02	0.41
1:C:1216:ARG:O	4:A:45:ARG:NH1	2.54	0.41
1:C:1243:MET:HG3	2:D:353:SER:OG	2.20	0.41
2:D:121:PRO:HB2	2:D:123:ARG:HH12	1.85	0.41
2:D:147:ILE:O	2:D:147:ILE:HG13	2.21	0.41
2:D:179:LYS:NZ	2:D:183:GLU:HG3	2.35	0.41
2:D:334:LYS:HA	2:D:335:GLN:HA	1.62	0.41
2:D:518:VAL:HA	2:D:547:ARG:NH1	2.36	0.41
2:D:531:LYS:HD2	4:B:181:GLU:HG3	2.02	0.41
2:D:588:PRO:O	2:D:591:ILE:HG12	2.21	0.41
2:D:926:PRO:HB2	2:D:1241:TYR:CE1	2.56	0.41
1:C:392:GLU:HG2	1:C:419:ILE:CG2	2.51	0.41
1:C:1288:GLN:CD	1:C:1315:MET:HE1	2.46	0.41
2:D:151:MET:HA	5:G:37:VAL:HG21	2.04	0.41
2:D:356:THR:OG1	2:D:448:GLN:HG2	2.21	0.41
2:D:726:ALA:HB2	2:D:737:ILE:HG13	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:751:ASP:OD1	2:D:751:ASP:C	2.64	0.41
4:A:97:GLU:OE2	4:A:145:LYS:NZ	2.47	0.41
4:A:183:ILE:HD11	4:A:205:MET:HG3	2.03	0.41
4:A:219:ARG:O	4:A:223:ILE:HG12	2.21	0.41
4:B:99:ILE:HG23	4:B:143:ARG:HD3	2.03	0.41
7:H:20:DC:H2'	7:H:21:DT:C6	2.56	0.41
1:C:104:ILE:HD13	1:C:115:LYS:HD2	2.03	0.40
1:C:561:ILE:HA	1:C:680:LEU:HD12	2.03	0.40
1:C:1008:GLN:O	1:C:1012:GLU:HG2	2.21	0.40
2:D:34:SER:OG	2:D:36:GLY:O	2.39	0.40
2:D:245:LEU:HD23	2:D:246:PRO:O	2.21	0.40
2:D:1242:ARG:HH22	2:D:1246:VAL:C	2.29	0.40
7:H:24:DT:H2'	7:H:25:DA:C4	2.56	0.40
8:J:17:G:H2'	8:J:18:G:C8	2.55	0.40
1:C:10:ARG:NH1	1:C:697:LYS:HB3	2.36	0.40
1:C:716:ALA:HB3	1:C:784:ALA:HB3	2.02	0.40
2:D:107:LEU:HA	2:D:276:ASN:HD22	1.86	0.40
2:D:517:CYS:O	2:D:547:ARG:NH1	2.55	0.40
2:D:1067:ARG:HG3	2:D:1072:LYS:HE2	2.03	0.40
4:A:91:ARG:HE	4:A:210:THR:HA	1.86	0.40
4:B:11:PRO:HA	4:B:30:PRO:HD2	2.02	0.40
1:C:692:THR:HG22	1:C:693:LEU:N	2.36	0.40
1:C:1342:GLU:OE2	2:D:1373:ARG:NH1	2.54	0.40
2:D:34:SER:HA	2:D:102:MET:O	2.21	0.40
2:D:959:LYS:HG3	2:D:985:ILE:HG13	2.03	0.40
2:D:1099:TYR:HE2	2:D:1122:ALA:HB3	1.85	0.40
2:D:1290:ARG:NH2	2:D:1299:GLY:O	2.55	0.40
4:A:77:ASP:O	4:A:81:ILE:HG12	2.20	0.40
4:A:81:ILE:CD1	4:A:131:CYS:HB3	2.52	0.40
5:G:12:VAL:O	5:G:15:ILE:HG22	2.22	0.40
5:G:66:ASP:O	5:G:69:VAL:HG22	2.22	0.40
5:G:85:LEU:HD21	5:G:91:PHE:CE1	2.56	0.40
1:C:13:LYS:NZ	1:C:1148:ALA:O	2.37	0.40
1:C:1239:VAL:HG21	2:D:446:ALA:HB2	2.03	0.40
1:C:1278:LEU:HB2	1:C:1287:LEU:HD21	2.04	0.40
2:D:40:LYS:O	2:D:55:GLY:HA2	2.21	0.40
2:D:147:ILE:HG22	2:D:188:LEU:CD1	2.52	0.40
2:D:157:GLN:HB2	5:G:30:ASN:HD21	1.87	0.40
2:D:200:GLN:NE2	5:G:73:TRP:HZ3	2.19	0.40
2:D:244:VAL:HG22	2:D:250:ARG:HH21	1.86	0.40
2:D:473:THR:HG23	2:D:476:ALA:H	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:584:PRO:HG3	2:D:620:PHE:HB2	2.02	0.40
2:D:914:ALA:O	2:D:918:ILE:HG13	2.21	0.40
2:D:1177:ILE:O	2:D:1186:TYR:HB3	2.22	0.40
2:D:1287:ILE:HD13	2:D:1302:TYR:HE2	1.86	0.40
6:I:27:DC:C2	6:I:28:DC:N4	2.89	0.40
1:C:510:GLN:CD	1:C:534:GLY:HA2	2.47	0.40
1:C:690:VAL:HG12	1:C:1234:LYS:O	2.22	0.40
1:C:975:ILE:HG13	1:C:976:ARG:N	2.36	0.40
1:C:1117:LEU:HD21	1:C:1182:ILE:HG21	2.03	0.40
2:D:290:ILE:HG22	2:D:294:ASN:HD21	1.86	0.40
2:D:341:ASN:HA	2:D:345:LYS:CB	2.52	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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	C	1338/1340 (100%)	1273 (95%)	64 (5%)	1 (0%)	48	77
2	D	1348/1363 (99%)	1275 (95%)	71 (5%)	2 (0%)	48	77
3	E	74/76 (97%)	71 (96%)	3 (4%)	0	100	100
4	A	228/231 (99%)	218 (96%)	10 (4%)	0	100	100
4	B	226/231 (98%)	222 (98%)	4 (2%)	0	100	100
5	G	127/129 (98%)	118 (93%)	8 (6%)	1 (1%)	16	47
All	All	3341/3370 (99%)	3177 (95%)	160 (5%)	4 (0%)	50	77

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	D	1345	ARG

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Mol	Chain	Res	Type
5	G	25	ASN
1	C	169	LYS
2	D	497	GLU

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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	C	1155/1155 (100%)	1155 (100%)	0	100	100
2	D	1129/1136 (99%)	1129 (100%)	0	100	100
3	E	65/65 (100%)	65 (100%)	0	100	100
4	A	198/199 (100%)	198 (100%)	0	100	100
4	B	196/199 (98%)	196 (100%)	0	100	100
5	G	112/112 (100%)	112 (100%)	0	100	100
All	All	2855/2866 (100%)	2855 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (47) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	46	GLN
1	C	258	ASN
1	C	314	ASN
1	C	551	HIS
1	C	554	HIS
1	C	573	ASN
1	C	613	ASN
1	C	649	GLN
1	C	752	ASN
1	C	932	GLN
1	C	952	GLN
1	C	955	GLN
1	C	1010	GLN

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Mol	Chain	Res	Type
1	C	1135	GLN
1	C	1312	ASN
2	D	80	HIS
2	D	94	GLN
2	D	200	GLN
2	D	206	ASN
2	D	232	ASN
2	D	274	ASN
2	D	276	ASN
2	D	335	GLN
2	D	430	HIS
2	D	435	GLN
2	D	465	GLN
2	D	477	GLN
2	D	488	ASN
2	D	594	GLN
2	D	651	HIS
2	D	667	GLN
2	D	907	HIS
2	D	962	ASN
2	D	1114	GLN
2	D	1195	GLN
3	E	7	GLN
3	E	29	GLN
4	A	18	GLN
4	A	41	ASN
4	A	117	HIS
4	A	128	HIS
5	G	28	ASN
5	G	128	ASN
4	B	41	ASN
4	B	75	GLN
4	B	93	GLN
4	B	227	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
8	J	9/10 (90%)	1 (11%)	0

All (1) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
8	J	12	G

There are no RNA pucker outliers to report.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.