



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 19, 2023 – 06:58 AM EDT

PDB ID : 2NVX
Title : RNA polymerase II elongation complex in 5 mM Mg+2 with 2'-dUTP
Authors : Wang, D.; Bushnell, D.A.; Westover, K.D.; Kaplan, C.D.; Kornberg, R.D.
Deposited on : 2006-11-13
Resolution : 3.60 Å(reported)

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The 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:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.36
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

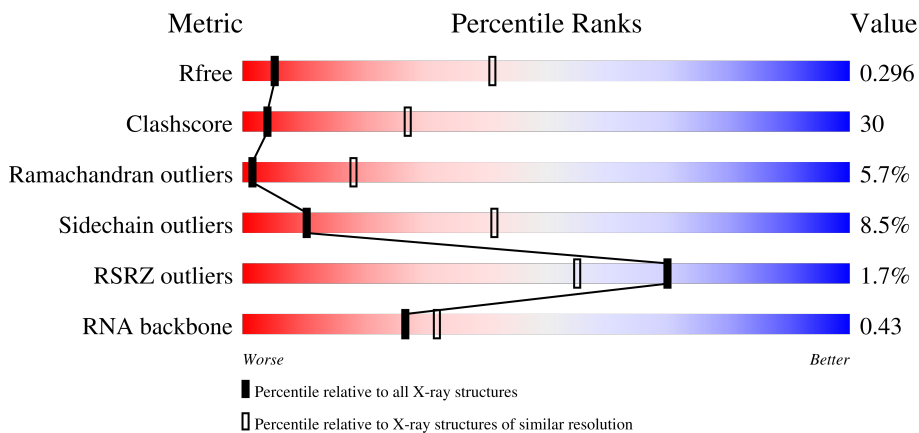
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.60 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1257 (3.70-3.50)
Clashscore	141614	1353 (3.70-3.50)
Ramachandran outliers	138981	1307 (3.70-3.50)
Sidechain outliers	138945	1307 (3.70-3.50)
RSRZ outliers	127900	1161 (3.70-3.50)
RNA backbone	3102	1017 (4.20-3.00)

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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	R	10	 20% 70% 10%
2	N	14	 21% 93% 7%
3	T	28	 25% 46% 32% 21%
4	A	1733	 44% 29% 6% 19%

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Mol	Chain	Length	Quality of chain
5	B	1224	<p>%</p> <p>48% 35% 7% 9%</p>
6	C	318	<p>48% 30% 5% 16%</p>
7	E	215	<p>2%</p> <p>72% 27%</p>
8	F	155	<p>38% 15% 43%</p>
9	H	146	<p>3%</p> <p>55% 31% 6% 8%</p>
10	I	122	<p>%</p> <p>71% 24%</p>
11	J	70	<p>53% 33% 7% 7%</p>
12	K	120	<p>67% 27% 5%</p>
13	L	70	<p>3%</p> <p>40% 21% 34%</p>

2 Entry composition [i](#)

There are 16 unique types of molecules in this entry. The entry contains 29436 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 5'-R(*AP*UP*CP*GP*AP*GP*AP*GP*GP*A)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	R	10	216	98	45	64	9	0	0	0

- Molecule 2 is a DNA chain called 5'-D(*CP*TP*GP*CP*TP*TP*AP*TP*CP*GP*GP*TP*AP*G)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	N	14	284	137	49	85	13	0	0	0

- Molecule 3 is a DNA chain called 28-MER DNA template strand.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
3	T	28	566	271	104	164	27	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	A	1402	11028	6950	1934	2083	61	0	0	0

- Molecule 5 is a protein called DNA-directed RNA polymerase II 140 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	B	1114	8856	5605	1553	1644	54	0	0	0

- Molecule 6 is a protein called DNA-directed RNA polymerase II 45 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	C	266	2095	1317	348	417	13	0	0	0

- Molecule 7 is a protein called DNA-directed RNA polymerases I, II, and III 27 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
7	E	214	1752	1111	309	321	11	0	0	0

- Molecule 8 is a protein called DNA-directed RNA polymerases I, II, and III 23 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
8	F	88	712	455	120	134	3	0	0	0

- Molecule 9 is a protein called DNA-directed RNA polymerases I, II, and III 14.5 kDa polypeptide.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
9	H	134	1076	678	181	212	5	0	0	0

- Molecule 10 is a protein called DNA-directed RNA polymerase II subunit 9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	I	119	971	596	179	186	10	0	0	0

- Molecule 11 is a protein called DNA-directed RNA polymerases I/II/III subunit 10.

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

- Molecule 12 is a protein called DNA-directed RNA polymerase II 13.6 kDa polypeptide.

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

- Molecule 13 is a protein called DNA-directed RNA polymerases I, II, and III 7.7 kDa polypeptide.

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	L	46	Total	C	N	O	S	0	0	0
			364	224	72	64	4			

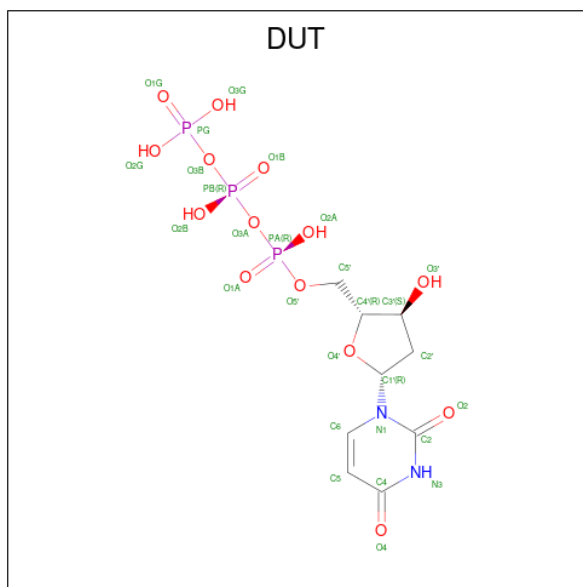
- Molecule 14 is ZINC ION (three-letter code: ZN) (formula: Zn).

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

- Molecule 15 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

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

- Molecule 16 is DEOXYURIDINE-5'-TRIPHOSPHATE (three-letter code: DUT) (formula: C₉H₁₅N₂O₁₄P₃).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
16	B	1	56	18	4	28	6	0	1

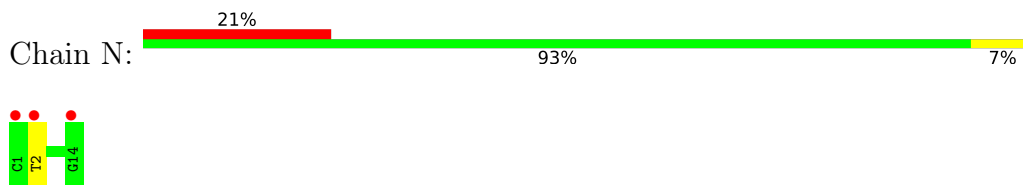
3 Residue-property plots

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

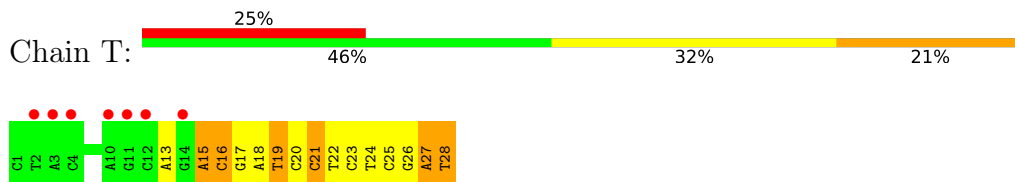
- Molecule 1: 5'-R(*AP*UP*CP*GP*AP*GP*AP*GP*GP*A)-3'



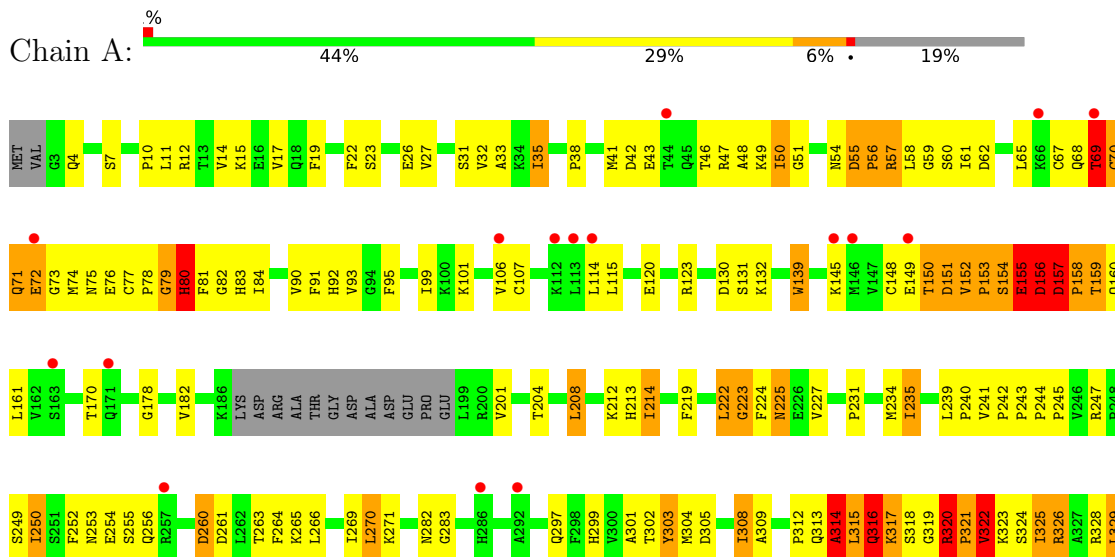
- Molecule 2: 5'-D(*CP*TP*GP*CP*TP*TP*AP*TP*CP*GP*GP*TP*AP*G)-3'



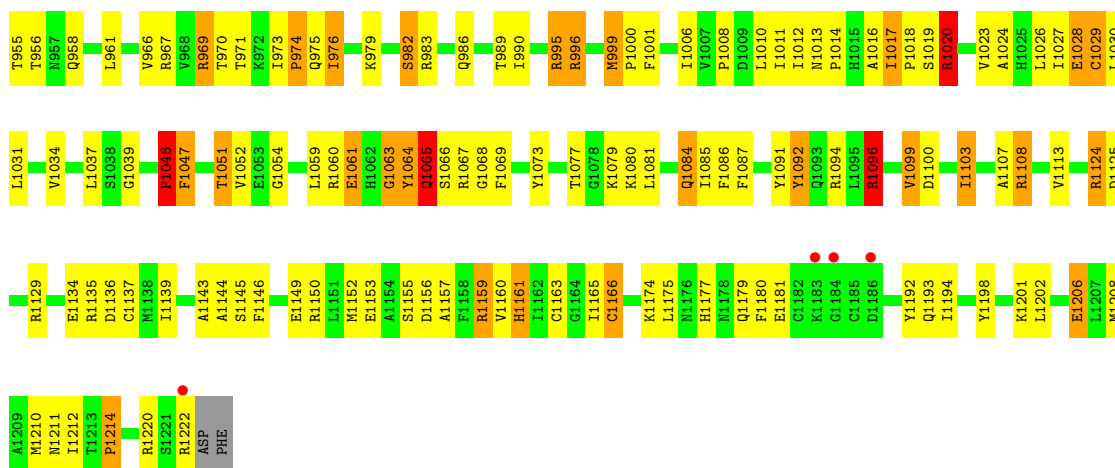
- Molecule 3: 28-MER DNA template strand



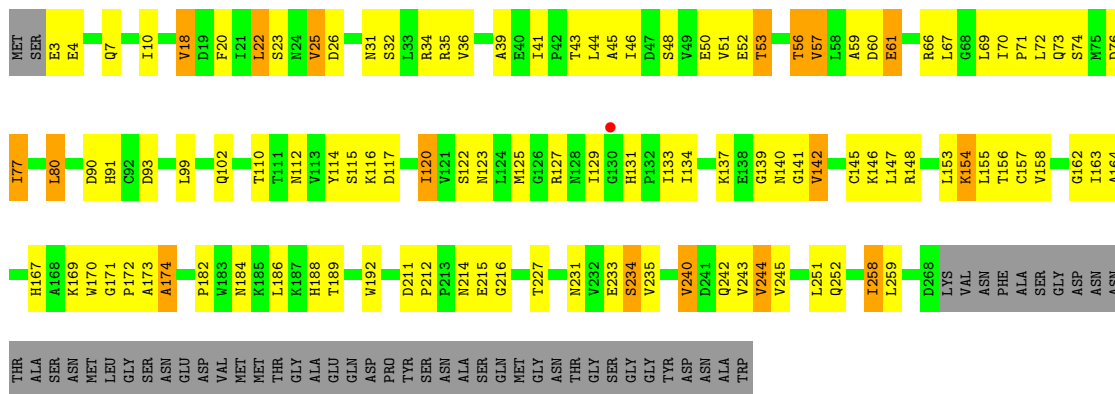
- Molecule 4: DNA-directed RNA polymerase II largest subunit



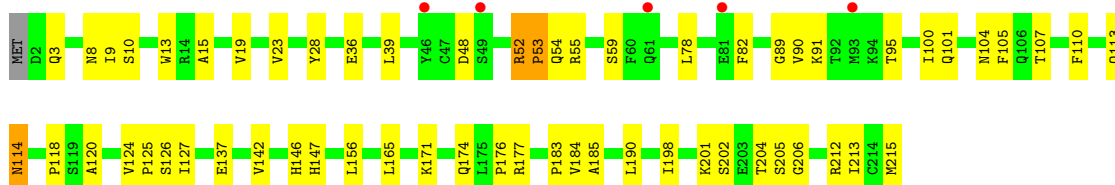
SER	C1400	Y1298	I1227	R1135	T1028	E918	V680	V765	V653	G574	E495	L415	SER	V1299	V1298	I1227	R1135	T1028	E918	V680	V765	V653	G574	E495	L415	SER	V1300	V1299	I1228	S1136	T1029	R1029	R1919	V681	V766	V654	G575	E496	L416	SER	V1301	V1299	I1229	S1137	R1030	R1920	V682	V767	V655	G576	E496	L416	SER	V1302	V1300	I1230	I1138	V1031	R1031	D853	R775	V656	G577	E497	L417	SER	V1303	V1301	I1231	K1144	Y1035	R1032	R854	A776	V657	G578	E498	L418	SER	V1304	V1302	I1232	S1150	Y1036	R1033	D855	F777	V658	G579	E499	L419	SER	V1305	V1303	I1233	E1151	R1034	R1034	R856	F778	V659	G580	E500	L420	SER	V1306	V1304	I1234	Y1152	S1047	R1035	R857	F779	V660	G581	E501	L421	SER	V1307	V1305	I1235	Y1153	S1048	R1036	R858	F780	V661	G582	E502	L422	SER	V1308	V1306	I1236	Y1154	S1049	R1037	R859	F781	V662	G583	E503	L423	SER	V1309	V1307	I1237	D1155	L1084	R1038	R860	F782	V663	G584	E504	L424	SER	V1310	V1308	I1238	T1161	V1084	R1039	R861	F783	V664	G585	E505	L425	SER	V1311	V1309	I1239	I1162	V1085	R1040	R862	F784	V665	G586	E506	L426	SER	V1312	V1310	I1240	I1163	V1086	R1041	R863	F785	V666	G587	E507	L427	SER	V1313	V1311	I1241	R1166	P1060	R1042	R864	F786	V667	G588	E508	L428	SER	V1314	V1312	I1242	E1167	M1063	R1043	R865	F787	V668	G589	E509	L429	SER	V1315	V1313	I1243	E1168	V1064	R1044	R866	F788	V669	G590	E510	L430	SER	V1316	V1314	I1244	E1169	V1065	R1045	R867	F789	V670	G591	E511	L431	SER	V1317	V1315	I1245	E1170	V1066	R1046	R868	F790	V671	G592	E512	L432	SER	V1318	V1316	I1246	Q1171	G1067	R1047	R869	F791	V672	G593	E513	L433	SER	V1319	V1317	I1247	Q1172	G1068	R1048	R870	F792	V673	G594	E514	L434	SER	V1320	V1318	I1248	H1173	A1069	R1049	R871	F793	V674	G595	E515	L435	SER	V1321	V1319	I1249	F1174	A1070	R1050	R872	F794	V675	G596	E516	L436	SER	V1322	V1320	I1250	S1175	E1074	R1051	R873	F795	V676	G597	E517	L437	SER	V1323	V1321	I1251	L1176	E877	R1052	R874	F796	V677	G598	E518	L438	SER	V1324	V1322	I1252	L1177	E878	R1053	R875	F797	V678	G599	E519	L439	SER	V1325	V1323	I1253	L1178	E879	R1054	R876	F798	V679	G600	E520	L440	SER	V1326	V1324	I1254	LEU	M1079	R1055	R877	F799	V680	G601	E521	L441	SER	V1327	V1325	I1255	ASP	M1080	R1056	R878	F800	V681	G602	E522	L442	SER	V1328	V1326	I1256	GLU	M1081	R1057	R879	F801	V682	G603	E523	L443	SER	V1329	V1327	I1257	GLU	M1082	R1058	R880	F802	V683	G604	E524	L444	SER	V1330	V1328	I1258	THR	M1083	R1059	R881	F803	V684	G605	E525	L445	SER	V1331	V1329	I1259	THR	M1084	R1060	R882	F804	V685	G606	E526	L446	SER	V1332	V1330	I1260	GLU	M1085	R1061	R883	F805	V686	G607	E527	L447	SER	V1333	V1331	I1261	ASP	M1086	R1062	R884	F806	V687	G608	E528	L448	SER	V1334	V1332	I1262	GLU	M1087	R1063	R885	F807	V688	G609	E529	L449	SER	V1335	V1333	I1263	GLU	M1088	R1064	R886	F808	V689	G610	E530	L450	SER	V1336	V1334	I1264	GLU	M1089	R1065	R887	F809	V690	G611	E531	L451	SER	V1337	V1335	I1265	GLU	M1090	R1066	R888	F810	V691	G612	E532	L452	SER	V1338	V1336	I1266	ASP	M1091	R1067	R889	F811	V692	G613	E533	L453	SER	V1339	V1337	I1267	ASP	M1092	R1068	R890	F812	V693	G614	E534	L454	SER	V1340	V1338	I1268	GLU	M1093	R1069	R891	F813	V694	G615	E535	L455	SER	V1341	V1339	I1269	GLU	M1094	R1070	R892	F814	V695	G616	E536	L456	SER	V1342	V1340	I1270	GLU	M1095	R1071	R893	F815	V696	G617	E537	L457	SER	V1343	V1341	I1271	GLU	M1096	R1072	R894	F816	V697	G618	E538	L458	SER	V1344	V1342	I1272	GLU	M1097	R1073	R895	F817	V698	G619	E539	L459	SER	V1345	V1343	I1273	GLU	M1098	R1074	R896	F818	V699	G620	E540	L460	SER	V1346	V1344	I1274	GLU	M1099	R1075	R897	F819	V700	G621	E541	L461	SER	V1347	V1345	I1275	GLU	M1100	R1076	R898	F820	V701	G622	E542	L462	SER	V1348	V1346	I1276	GLU	M1101	R1077	R899	F821	V702	G623	E543	L463	SER	V1349	V1347	I1277	GLU	M1102	R1078	R900	F822	V703	G624	E544	L464	SER	V1350	V1348	I1278	GLU	M1103	R1079	R901	F823	V704	G625	E545	L465	SER	V1351	V1349	I1279	GLU	M1104	R1080	R902	F824	V705	G626	E546	L466	SER	V1352	V1350	I1280	GLU	M1105	R1081	R903	F825	V706	G627	E547	L467	SER	V1353	V1351	I1281	GLU	M1106	R1082	R904	F826	V707	G628	E548	L468	SER	V1354	V1352	I1282	GLU	M1107	R1083	R905	F827	V708	G629	E549	L469	SER	V1355	V1353	I1283	GLU	M1108	R1084	R906	F828	V709	G630	E550	L470	SER	V1356	V1354	I1284	GLU	M1109	R1085	R907	F829	V710	G631	E551	L471	SER	V1357	V1355	I1285	GLU	M1110	R1086	R908	F830	V711	G632	E552	L472	SER	V1358	V1356	I1286	GLU	M1111	R1087	R909	F831	V712	G633	E553	L473	SER	V1359	V1357	I1287	GLU	M1112	R1088	R910	F832	V713	G634	E554	L474	SER	V1360	V1358	I1288	GLU	M1113	R1089	R911	F833	V714	G635	E555	L475	SER	V1361	V1359	I1289	GLU	M1114	R1090	R912	F834	V715	G636	E556	L476	SER	V1362	V1360	I1290	GLU	M1115	R1091	R913	F835	V716	G637	E557	L477	SER	V1363	V1361	I1291	GLU	M1116	R1092	R914	F836	V717	G638	E558	L478	SER	V1364	V1362	I1292	GLU	M1117	R1093	R915	F837	V718	G639	E559	L479	SER	V1365	V1363	I1293	GLU	M1118	R1094	R916	F838	V719	G640	E560	L480	SER	V1366	V1364	I1294	GLU	M1119	R1095	R917	F839	V720	G641	E561	L481	SER	V1367	V1365	I1295	GLU	M1120	R1096	R918	F840	V721	G642	E562	L482	SER	V1368	V1366	I1296	GLU	M1121	R1097	R919	F841	V722	G643	E563	L483	SER	V1369	V1367	I1297	GLU	M1122	R1098	R920	F842	V723	G644	E564	L484	SER	V1370	V1368	I1298	GLU	M1123	R1099	R921	F843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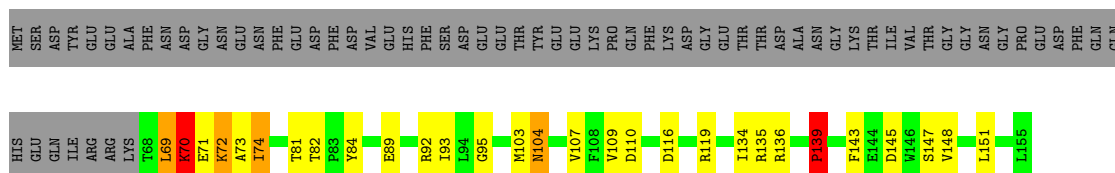
• Molecule 6: DNA-directed RNA polymerase II 45 kDa polypeptide



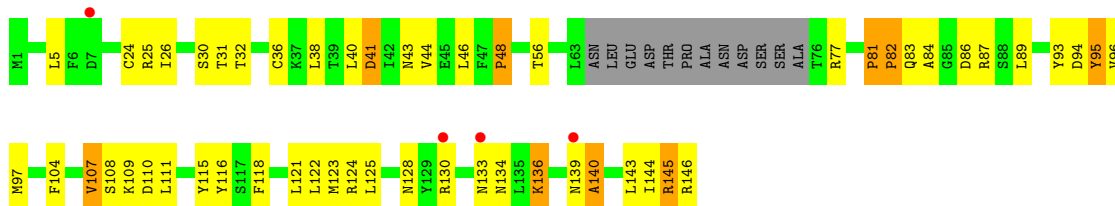
• Molecule 7: DNA-directed RNA polymerases I, II, and III 27 kDa polypeptide



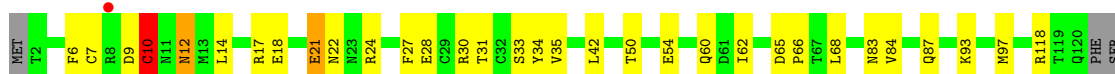
• Molecule 8: DNA-directed RNA polymerases I, II, and III 23 kDa polypeptide



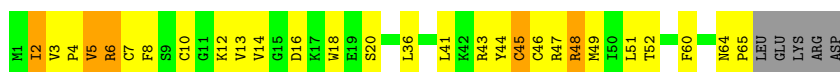
- Molecule 9: DNA-directed RNA polymerases I, II, and III 14.5 kDa polypeptide



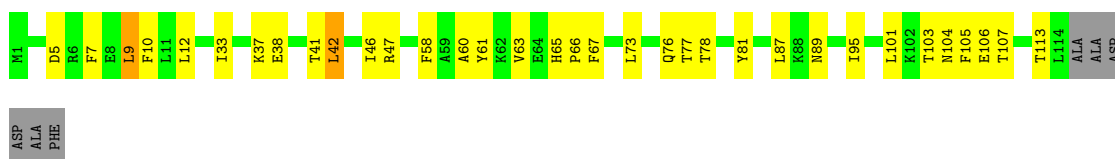
- Molecule 10: DNA-directed RNA polymerase II subunit 9



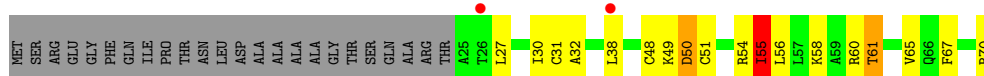
- Molecule 11: DNA-directed RNA polymerases I/II/III subunit 10



- Molecule 12: DNA-directed RNA polymerase II 13.6 kDa polypeptide



- Molecule 13: DNA-directed RNA polymerases I, II, and III 7.7 kDa polypeptide



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	168.72Å 222.41Å 193.07Å 90.00° 101.29° 90.00°	Depositor
Resolution (Å)	50.00 – 3.60 44.25 – 3.60	Depositor EDS
% Data completeness (in resolution range)	91.5 (50.00-3.60) 91.6 (44.25-3.60)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.13	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.22 (at 3.57Å)	Xtrriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.285 , 0.304 0.282 , 0.296	Depositor DCC
R_{free} test set	3721 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å ²)	104.2	Xtrriage
Anisotropy	0.228	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.26 , 59.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.28$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.88	EDS
Total number of atoms	29436	wwPDB-VP
Average B, all atoms (Å ²)	109.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.33% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ 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, ZN, DUT

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	R	1.16	1/243 (0.4%)	1.75	6/378 (1.6%)
2	N	0.74	0/317	1.27	0/488
3	T	1.18	4/634 (0.6%)	1.76	18/975 (1.8%)
4	A	0.68	8/11224 (0.1%)	0.67	2/15176 (0.0%)
5	B	0.82	11/9027 (0.1%)	0.73	3/12172 (0.0%)
6	C	0.71	0/2133	0.69	0/2891
7	E	0.58	1/1788 (0.1%)	0.61	0/2406
8	F	0.60	0/724	0.72	0/977
9	H	0.57	0/1094	0.65	0/1480
10	I	0.75	2/989 (0.2%)	0.68	0/1331
11	J	0.69	0/541	0.68	0/727
12	K	0.66	0/937	0.65	0/1265
13	L	0.70	0/366	0.78	0/485
All	All	0.74	27/30017 (0.1%)	0.76	29/40751 (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
4	A	0	32
5	B	0	12
8	F	0	1
All	All	0	45

All (27) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	764	SER	CB-OG	13.86	1.60	1.42
5	B	490	SER	CB-OG	9.83	1.55	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	879	GLU	CD-OE1	7.99	1.34	1.25
3	T	19	DT	C5-C7	7.74	1.54	1.50
5	B	404	LYS	CE-NZ	7.54	1.67	1.49
3	T	23	DC	C1'-N1	7.16	1.58	1.49
5	B	1061	GLU	CD-OE1	6.57	1.32	1.25
5	B	1029	CYS	CB-SG	-6.50	1.71	1.82
5	B	114	PRO	N-CD	6.24	1.56	1.47
7	E	126	SER	CB-OG	6.17	1.50	1.42
5	B	546	SER	CB-OG	6.13	1.50	1.42
4	A	797	LYS	CD-CE	5.94	1.66	1.51
10	I	21	GLU	CD-OE1	5.88	1.32	1.25
3	T	24	DT	C5-C7	5.62	1.53	1.50
10	I	21	GLU	CD-OE2	5.51	1.31	1.25
5	B	836	GLU	CD-OE1	5.48	1.31	1.25
3	T	17	DG	C3'-O3'	-5.41	1.36	1.44
4	A	398	GLU	CD-OE1	5.36	1.31	1.25
4	A	951	GLU	CD-OE1	5.31	1.31	1.25
5	B	623	GLU	CD-OE2	5.31	1.31	1.25
5	B	1206	GLU	CD-OE2	5.29	1.31	1.25
4	A	271	LYS	CE-NZ	5.24	1.62	1.49
1	R	10	A	N9-C4	5.18	1.41	1.37
4	A	546	VAL	CB-CG1	5.17	1.63	1.52
4	A	879	GLU	CD-OE2	5.10	1.31	1.25
5	B	1100	ASP	CG-OD1	5.07	1.37	1.25
4	A	500	GLU	CD-OE1	5.06	1.31	1.25

All (29) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	T	19	DT	C4-C5-C7	10.26	125.16	119.00
3	T	19	DT	C6-C5-C7	-9.91	116.95	122.90
3	T	19	DT	N3-C2-O2	-9.91	116.36	122.30
3	T	16	DC	O4'-C1'-N1	9.72	114.80	108.00
3	T	28	DT	O4'-C1'-N1	8.42	113.89	108.00
1	R	10	A	O4'-C1'-N9	8.33	114.86	108.20
3	T	22	DT	O4'-C4'-C3'	-8.00	101.20	106.00
3	T	22	DT	C6-C5-C7	-7.56	118.36	122.90
1	R	9	G	O5'-P-OP1	7.45	119.64	110.70
1	R	10	A	C5-C6-N6	-7.03	118.08	123.70
3	T	27	DA	O4'-C4'-C3'	-6.77	101.79	104.50
3	T	15	DA	C1'-O4'-C4'	-6.57	103.53	110.10
1	R	10	A	N1-C6-N6	6.41	122.44	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	805	LEU	CA-CB-CG	6.36	129.92	115.30
5	B	996	ARG	NE-CZ-NH2	-6.34	117.13	120.30
3	T	15	DA	P-O3'-C3'	5.95	126.84	119.70
1	R	8	G	N1-C6-O6	5.74	123.35	119.90
5	B	766	ARG	NE-CZ-NH2	-5.63	117.48	120.30
3	T	22	DT	C5-C4-O4	-5.56	121.01	124.90
3	T	19	DT	C2-N3-C4	-5.47	123.92	127.20
3	T	25	DC	C6-N1-C2	5.46	122.49	120.30
1	R	8	G	C5-C6-O6	-5.46	125.32	128.60
3	T	21	DC	O5'-P-OP1	5.37	117.14	110.70
4	A	546	VAL	CG1-CB-CG2	-5.35	102.35	110.90
3	T	21	DC	OP1-P-OP2	-5.34	111.58	119.60
3	T	21	DC	C4'-C3'-C2'	-5.12	98.49	103.10
3	T	22	DT	N1-C2-N3	-5.10	111.54	114.60
3	T	22	DT	N3-C4-O4	5.08	122.95	119.90
5	B	782	LEU	CA-CB-CG	5.07	126.97	115.30

There are no chirality outliers.

All (45) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	A	1020	CYS	Peptide
4	A	1022	LEU	Peptide
4	A	1023	ARG	Peptide
4	A	1024	SER	Peptide
4	A	1219	THR	Peptide
4	A	1220	PHE	Peptide
4	A	1230	GLU	Peptide
4	A	1231	ASP	Peptide
4	A	1232	ASN	Peptide
4	A	1233	ASP	Peptide
4	A	1236	LEU	Peptide
4	A	1263	ILE	Peptide
4	A	1264	GLU	Peptide
4	A	153	PRO	Peptide
4	A	154	SER	Peptide
4	A	155	GLU	Peptide
4	A	156	ASP	Peptide
4	A	249	SER	Peptide
4	A	314	ALA	Peptide
4	A	315	LEU	Peptide
4	A	316	GLN	Peptide

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Mol	Chain	Res	Type	Group
4	A	320	ARG	Peptide
4	A	416	ARG	Peptide
4	A	451	HIS	Peptide
4	A	70	CYS	Peptide
4	A	71	GLN	Peptide
4	A	778	GLY	Peptide
4	A	79	GLY	Peptide
4	A	80	HIS	Peptide
4	A	850	VAL	Peptide
4	A	851	HIS	Peptide
4	A	852	TYR	Peptide
5	B	1063	GLY	Peptide
5	B	1065	GLN	Peptide
5	B	176	SER	Peptide
5	B	178	ASN	Peptide
5	B	179	CYS	Peptide
5	B	180	TYR	Peptide
5	B	201	GLY	Peptide
5	B	202	TYR	Peptide
5	B	203	PHE	Peptide
5	B	678	GLU	Peptide
5	B	810	GLU	Peptide
5	B	919	SER	Peptide
8	F	69	LEU	Peptide

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	R	216	0	109	7	0
2	N	284	0	161	1	0
3	T	566	0	316	11	0
4	A	11028	0	11120	901	0
5	B	8856	0	8897	724	0
6	C	2095	0	2051	80	0
7	E	1752	0	1776	33	0
8	F	712	0	738	47	0
9	H	1076	0	1052	40	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
10	I	971	0	930	21	0
11	J	532	0	542	41	0
12	K	919	0	929	20	0
13	L	364	0	387	20	0
14	A	2	0	0	1	0
14	B	1	0	0	1	0
14	C	1	0	0	0	0
14	I	2	0	0	0	0
14	J	1	0	0	0	0
14	L	1	0	0	0	0
15	A	1	0	0	0	0
16	B	56	0	22	1	0
All	All	29436	0	29030	1745	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 30.

All (1745) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:404:LYS:NZ	5:B:404:LYS:CE	1.67	1.52
4:A:1287:TYR:CD2	4:A:1305:VAL:HB	1.59	1.36
4:A:1229:SER:HB2	4:A:1236:LEU:CD1	1.59	1.33
4:A:1229:SER:CB	4:A:1236:LEU:HD12	1.64	1.27
5:B:203:PHE:CA	5:B:204:ILE:HD12	1.63	1.27
4:A:810:PRO:HA	5:B:1047:PHE:CE2	1.69	1.26
4:A:1287:TYR:CE2	4:A:1305:VAL:HB	1.72	1.25
4:A:1174:PHE:HA	4:A:1175:SER:CB	1.65	1.25
5:B:728:ARG:HD2	5:B:730:ARG:NH2	1.52	1.24
4:A:315:LEU:CA	4:A:320:ARG:HH12	1.51	1.23
4:A:1215:ARG:O	4:A:1219:THR:HG23	1.35	1.22
5:B:200:GLY:HA2	5:B:202:TYR:CE2	1.73	1.22
5:B:204:ILE:O	5:B:205:ILE:HD13	1.40	1.22
5:B:302:CYS:CB	5:B:310:MET:HE3	1.70	1.21
5:B:175:ARG:HH11	5:B:182:SER:CA	1.56	1.19
5:B:302:CYS:SG	5:B:310:MET:CE	2.31	1.18
8:F:71:GLU:HA	8:F:72:LYS:HB2	1.25	1.17
4:A:157:ASP:HB2	4:A:158:PRO:CD	1.71	1.16
4:A:810:PRO:CA	5:B:1047:PHE:HE2	1.57	1.16
4:A:1025:ARG:HG3	4:A:1025:ARG:HH11	1.02	1.14
5:B:175:ARG:NH1	5:B:182:SER:HA	1.62	1.14

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1153:TYR:HE1	10:I:42:LEU:HD13	1.04	1.14
4:A:1231:ASP:HA	4:A:1233:ASP:OD1	1.45	1.14
4:A:78:PRO:HB3	5:B:1201:LYS:HE2	1.27	1.13
5:B:302:CYS:HB2	5:B:310:MET:HE3	1.15	1.13
4:A:58:LEU:HD23	4:A:59:GLY:H	1.09	1.13
4:A:857:ARG:NH2	8:F:139:PRO:HG2	1.61	1.13
4:A:857:ARG:HG2	4:A:863:VAL:HA	1.23	1.13
4:A:1022:LEU:O	4:A:1023:ARG:HG3	1.48	1.13
4:A:320:ARG:N	4:A:320:ARG:HD2	1.56	1.13
5:B:1065:GLN:NE2	5:B:1067:ARG:H	1.47	1.12
4:A:567:LYS:HB2	4:A:568:PRO:HD2	1.12	1.12
4:A:1170:ILE:HB	4:A:1171:GLN:HA	1.13	1.12
4:A:857:ARG:HH21	8:F:139:PRO:HG2	1.05	1.12
4:A:316:GLN:HE21	4:A:317:LYS:CG	1.63	1.11
4:A:153:PRO:HA	4:A:154:SER:OG	1.50	1.11
5:B:1159:ARG:HB3	5:B:1159:ARG:HH11	1.11	1.11
4:A:315:LEU:HB2	4:A:320:ARG:HH22	1.09	1.11
4:A:1153:TYR:CE1	10:I:42:LEU:HD13	1.86	1.11
4:A:1231:ASP:HA	4:A:1233:ASP:CG	1.70	1.10
5:B:1065:GLN:NE2	5:B:1068:GLY:H	1.50	1.10
4:A:316:GLN:HA	4:A:318:SER:H	1.17	1.10
5:B:224:GLN:HB3	5:B:226:PHE:HE1	1.12	1.10
5:B:969:ARG:NH2	6:C:59:ALA:HB1	1.65	1.10
4:A:1244:ARG:HH11	4:A:1244:ARG:CB	1.65	1.09
5:B:637:LEU:HD13	5:B:740:HIS:ND1	1.65	1.09
5:B:1124:ARG:H	5:B:1124:ARG:HD2	0.95	1.09
4:A:31:SER:HB2	4:A:82:GLY:HA2	1.29	1.09
7:E:53:PRO:CB	7:E:54:GLN:HA	1.83	1.08
4:A:58:LEU:CD2	4:A:59:GLY:H	1.66	1.08
4:A:1287:TYR:CD2	4:A:1305:VAL:CB	2.34	1.08
5:B:807:ARG:HG3	5:B:807:ARG:HH11	1.18	1.08
4:A:316:GLN:HE21	4:A:317:LYS:HG3	1.16	1.08
4:A:316:GLN:HG2	4:A:317:LYS:HA	1.22	1.08
4:A:316:GLN:HG2	4:A:317:LYS:CA	1.84	1.08
4:A:857:ARG:HH21	8:F:139:PRO:CG	1.67	1.07
4:A:1030:ARG:HD3	4:A:1035:TYR:CE1	1.89	1.07
4:A:1244:ARG:HB2	4:A:1244:ARG:NH1	1.69	1.07
4:A:1030:ARG:HH11	4:A:1030:ARG:HG3	1.11	1.07
4:A:302:THR:HG21	4:A:313:GLN:NE2	1.69	1.07
4:A:1025:ARG:HH11	4:A:1025:ARG:CG	1.67	1.07
7:E:53:PRO:HB2	7:E:54:GLN:CA	1.84	1.07

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:586:ILE:HD11	4:A:637:LYS:HD3	1.13	1.07
4:A:1024:SER:HB3	4:A:1025:ARG:O	1.54	1.07
5:B:1124:ARG:HD2	5:B:1124:ARG:N	1.66	1.07
5:B:919:SER:HB3	5:B:920:PRO:HA	1.09	1.06
4:A:1265:ASN:HD21	5:B:265:SER:HB3	1.20	1.06
5:B:879:ARG:O	5:B:882:THR:HG22	1.55	1.06
4:A:1172:LEU:HB3	4:A:1173:HIS:HA	1.29	1.05
5:B:175:ARG:N	5:B:179:CYS:SG	2.30	1.05
5:B:969:ARG:HH21	6:C:59:ALA:HB1	0.97	1.05
5:B:1124:ARG:H	5:B:1124:ARG:CD	1.70	1.05
5:B:174:LEU:C	5:B:179:CYS:SG	2.35	1.04
4:A:315:LEU:HA	4:A:320:ARG:HH12	1.15	1.04
4:A:1026:LEU:HD13	4:A:1026:LEU:N	1.69	1.04
5:B:982:SER:HA	5:B:1092:TYR:CD2	1.92	1.04
5:B:1016:ALA:O	5:B:1017:ILE:HG13	1.55	1.04
5:B:48:LEU:HD22	5:B:175:ARG:O	1.58	1.04
4:A:157:ASP:HB2	4:A:158:PRO:HD3	1.07	1.04
4:A:151:ASP:CA	4:A:152:VAL:HB	1.86	1.03
4:A:810:PRO:HA	5:B:1047:PHE:HE2	0.91	1.03
4:A:451:HIS:HB3	4:A:453:MET:H	1.19	1.02
4:A:567:LYS:CB	4:A:568:PRO:HD2	1.86	1.02
4:A:1174:PHE:CA	4:A:1175:SER:HB2	1.89	1.02
5:B:982:SER:HB3	5:B:1092:TYR:CE2	1.95	1.02
5:B:1124:ARG:HG2	5:B:1124:ARG:HH11	1.19	1.02
4:A:1244:ARG:HH11	4:A:1244:ARG:HB2	0.86	1.02
5:B:302:CYS:SG	5:B:310:MET:HE2	2.00	1.02
4:A:151:ASP:HA	4:A:152:VAL:CB	1.85	1.01
4:A:956:LEU:HD13	4:A:1021:LEU:HD22	1.41	1.01
4:A:67:CYS:O	4:A:68:GLN:HG3	1.61	1.01
4:A:1021:LEU:H	4:A:1024:SER:CB	1.73	1.01
5:B:203:PHE:CE1	5:B:461:LEU:HD21	1.96	1.01
4:A:779:PHE:CE2	4:A:785:PRO:HG3	1.96	1.00
5:B:176:SER:N	5:B:179:CYS:SG	2.33	1.00
7:E:52:ARG:HB2	7:E:53:PRO:HD3	1.37	1.00
4:A:830:LYS:NZ	4:A:1080:THR:HA	1.77	1.00
4:A:1233:ASP:HB3	4:A:1235:LYS:O	1.61	1.00
5:B:203:PHE:HD1	5:B:204:ILE:N	1.59	1.00
5:B:302:CYS:CB	5:B:310:MET:CE	2.38	1.00
4:A:417:TYR:O	4:A:418:SER:HB3	1.59	1.00
5:B:224:GLN:HB3	5:B:226:PHE:CE1	1.97	0.99
4:A:1174:PHE:CA	4:A:1175:SER:CB	2.40	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1167:GLU:O	4:A:1170:ILE:HG12	1.62	0.99
4:A:1174:PHE:HA	4:A:1175:SER:HB2	1.01	0.99
5:B:203:PHE:HA	5:B:204:ILE:HD12	1.01	0.98
5:B:299:GLU:HG2	5:B:571:PRO:HG2	1.46	0.98
4:A:666:ILE:CG2	5:B:1026:LEU:HB3	1.94	0.98
5:B:64:CYS:O	5:B:65:GLU:HG3	1.63	0.97
5:B:1065:GLN:HE22	5:B:1067:ARG:N	1.61	0.97
5:B:174:LEU:HA	5:B:179:CYS:SG	2.04	0.97
4:A:542:GLU:HG3	4:A:544:ASP:OD1	1.65	0.97
4:A:666:ILE:HD12	5:B:1052:VAL:HG13	1.44	0.97
4:A:852:TYR:CD2	4:A:1060:PRO:HB3	1.99	0.97
8:F:72:LYS:HB3	8:F:73:ALA:HA	1.46	0.97
4:A:1021:LEU:H	4:A:1024:SER:HB2	1.28	0.96
5:B:273:LEU:O	5:B:276:ILE:HG22	1.66	0.96
4:A:1265:ASN:ND2	5:B:265:SER:HB3	1.80	0.96
4:A:541:ILE:HD12	4:A:546:VAL:HG22	1.47	0.96
4:A:302:THR:HG21	4:A:313:GLN:HE22	1.22	0.95
5:B:177:LYS:HE2	5:B:178:ASN:ND2	1.81	0.95
5:B:175:ARG:HH11	5:B:182:SER:HA	0.81	0.95
4:A:253:ASN:HD22	4:A:256:GLN:H	1.05	0.95
5:B:174:LEU:CA	5:B:179:CYS:SG	2.55	0.95
5:B:200:GLY:HA2	5:B:202:TYR:CD2	2.01	0.95
4:A:1021:LEU:N	4:A:1024:SER:HB2	1.82	0.95
5:B:879:ARG:NH2	5:B:885:MET:SD	2.38	0.95
4:A:315:LEU:HA	4:A:320:ARG:NH1	1.81	0.95
4:A:779:PHE:HE2	4:A:785:PRO:CD	1.80	0.95
4:A:315:LEU:HB2	4:A:320:ARG:NH2	1.80	0.94
5:B:711:GLU:H	5:B:712:PRO:CD	1.80	0.94
4:A:151:ASP:HA	4:A:152:VAL:HB	0.96	0.94
4:A:586:ILE:CD1	4:A:637:LYS:HD3	1.97	0.94
4:A:1025:ARG:HD3	4:A:1030:ARG:NH2	1.83	0.94
4:A:535:THR:HG21	4:A:617:VAL:H	1.32	0.94
4:A:1364:ASN:ND2	4:A:1366:ARG:HG2	1.81	0.94
5:B:203:PHE:HA	5:B:204:ILE:CD1	1.95	0.94
4:A:779:PHE:HE2	4:A:785:PRO:HD3	1.31	0.94
4:A:779:PHE:HE1	5:B:517:THR:HG22	1.31	0.94
4:A:779:PHE:CE2	4:A:785:PRO:HD3	2.02	0.93
4:A:1287:TYR:CE2	4:A:1305:VAL:CB	2.51	0.93
4:A:451:HIS:HB3	4:A:453:MET:N	1.82	0.93
5:B:577:ALA:HB1	5:B:589:VAL:CG1	1.97	0.93
5:B:1084:GLN:HE22	6:C:192:TRP:H	1.10	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:1159:ARG:HB3	5:B:1159:ARG:NH1	1.82	0.93
4:A:1025:ARG:HG3	4:A:1025:ARG:NH1	1.70	0.93
9:H:81:PRO:CB	9:H:82:PRO:HD2	1.97	0.93
4:A:586:ILE:HD11	4:A:637:LYS:CD	1.98	0.93
4:A:1172:LEU:CB	4:A:1173:HIS:HA	1.94	0.93
4:A:1026:LEU:N	4:A:1026:LEU:CD1	2.31	0.93
5:B:825:VAL:HG23	5:B:1010:LEU:HB3	1.50	0.92
4:A:633:VAL:O	4:A:637:LYS:HG2	1.69	0.92
8:F:69:LEU:HB2	8:F:70:LYS:HB2	1.50	0.92
5:B:200:GLY:HA2	5:B:202:TYR:HE2	1.30	0.92
4:A:779:PHE:HE2	4:A:785:PRO:CG	1.82	0.92
5:B:211:VAL:O	5:B:480:SER:HA	1.68	0.92
4:A:1364:ASN:HD21	4:A:1366:ARG:HH11	1.10	0.91
5:B:955:THR:HG22	5:B:956:THR:H	1.31	0.91
5:B:919:SER:CB	5:B:920:PRO:HA	1.98	0.91
4:A:1016:THR:O	4:A:1020:CYS:SG	2.27	0.91
4:A:500:GLU:OE1	5:B:1145:SER:HB2	1.70	0.91
4:A:319:GLY:C	4:A:320:ARG:HD2	1.89	0.91
4:A:852:TYR:CE2	4:A:1060:PRO:HB2	2.05	0.91
4:A:1153:TYR:HE1	10:I:42:LEU:CD1	1.82	0.91
4:A:1209:MET:SD	4:A:1236:LEU:HD21	2.09	0.91
4:A:779:PHE:CE2	4:A:785:PRO:CG	2.54	0.91
4:A:1231:ASP:HA	4:A:1233:ASP:OD2	1.70	0.91
4:A:1287:TYR:HD2	4:A:1305:VAL:HB	1.25	0.90
4:A:636:GLU:HB3	4:A:637:LYS:HD2	1.52	0.90
4:A:250:ILE:HD11	4:A:254:GLU:OE2	1.71	0.90
4:A:666:ILE:HG22	5:B:1026:LEU:HB3	1.53	0.90
5:B:203:PHE:HE1	5:B:461:LEU:HD21	1.34	0.90
4:A:58:LEU:HD23	4:A:59:GLY:N	1.87	0.90
5:B:1065:GLN:HE22	5:B:1068:GLY:H	1.12	0.90
4:A:1170:ILE:CB	4:A:1171:GLN:HA	1.96	0.89
5:B:173:MET:O	5:B:179:CYS:SG	2.30	0.89
4:A:78:PRO:CB	5:B:1201:LYS:HE2	2.01	0.89
4:A:362:ASP:OD2	4:A:459:ARG:HD3	1.73	0.89
4:A:569:LYS:HD2	4:A:571:LEU:HD11	1.52	0.89
5:B:276:ILE:HG13	5:B:277:LYS:H	1.37	0.89
4:A:569:LYS:O	4:A:571:LEU:HD12	1.72	0.89
5:B:969:ARG:HH21	6:C:59:ALA:CB	1.85	0.89
4:A:852:TYR:CD2	4:A:1060:PRO:CB	2.56	0.89
5:B:1065:GLN:HE22	5:B:1067:ARG:H	0.91	0.89
11:J:45:CYS:SG	11:J:46:CYS:N	2.46	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:33:ALA:HB3	4:A:82:GLY:HA3	1.53	0.88
4:A:264:PHE:HE1	4:A:317:LYS:HG3	1.38	0.88
5:B:336:ARG:HD2	5:B:336:ARG:O	1.74	0.88
4:A:157:ASP:O	4:A:158:PRO:O	1.92	0.88
4:A:1345:ARG:HG3	4:A:1346:ALA:N	1.89	0.88
5:B:849:GLY:HA2	5:B:852:ARG:HD2	1.55	0.88
5:B:919:SER:HB3	5:B:920:PRO:CA	2.00	0.88
4:A:587:HIS:NE2	4:A:969:GLN:NE2	2.22	0.87
5:B:129:PHE:HE1	5:B:166:PHE:HD1	1.17	0.87
5:B:516:ASN:HD22	5:B:516:ASN:H	1.17	0.87
4:A:857:ARG:HH11	4:A:863:VAL:HG22	1.38	0.87
5:B:299:GLU:CG	5:B:571:PRO:HG2	2.05	0.87
4:A:777:PHE:CE1	4:A:782:ARG:HA	2.10	0.87
4:A:1030:ARG:HG3	4:A:1030:ARG:NH1	1.87	0.87
4:A:777:PHE:HB3	4:A:780:VAL:O	1.74	0.87
4:A:1030:ARG:HD3	4:A:1035:TYR:HE1	1.38	0.87
4:A:830:LYS:HZ3	4:A:1080:THR:HA	1.33	0.87
4:A:316:GLN:NE2	4:A:317:LYS:HG3	1.90	0.87
4:A:810:PRO:CA	5:B:1047:PHE:CE2	2.43	0.87
7:E:53:PRO:HB2	7:E:54:GLN:HA	0.92	0.86
4:A:416:ARG:NH2	4:A:417:TYR:CE2	2.43	0.86
4:A:541:ILE:HD11	4:A:577:ILE:HG12	1.57	0.86
5:B:48:LEU:CD2	5:B:175:ARG:O	2.24	0.86
5:B:173:MET:HA	5:B:203:PHE:HB3	1.56	0.86
4:A:315:LEU:CA	4:A:320:ARG:NH1	2.35	0.86
5:B:203:PHE:HE1	5:B:461:LEU:CD2	1.87	0.86
7:E:52:ARG:CB	7:E:53:PRO:HD3	2.05	0.86
4:A:1345:ARG:HG3	4:A:1346:ALA:H	1.40	0.86
4:A:149:GLU:HB3	4:A:152:VAL:HG21	1.58	0.86
4:A:754:SER:H	4:A:757:ASN:HD22	1.22	0.86
4:A:809:THR:HB	4:A:810:PRO:HD2	1.55	0.85
4:A:1026:LEU:O	4:A:1030:ARG:CB	2.24	0.85
5:B:64:CYS:C	5:B:65:GLU:HG3	1.92	0.85
5:B:565:PRO:HB2	5:B:567:GLU:OE1	1.76	0.85
4:A:320:ARG:N	4:A:320:ARG:CD	2.34	0.85
4:A:1234:GLU:C	4:A:1235:LYS:HD3	1.97	0.84
5:B:1016:ALA:O	5:B:1017:ILE:CG1	2.25	0.84
8:F:72:LYS:HB3	8:F:73:ALA:CA	2.06	0.84
4:A:1229:SER:HB2	4:A:1236:LEU:HD12	0.87	0.84
9:H:81:PRO:HB3	9:H:82:PRO:HD2	1.59	0.84
4:A:1030:ARG:CD	4:A:1035:TYR:HE1	1.91	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:129:PHE:CE1	5:B:166:PHE:HD1	1.96	0.83
5:B:638:PHE:O	5:B:740:HIS:HB2	1.78	0.83
5:B:203:PHE:HD1	5:B:204:ILE:H	1.24	0.83
4:A:1030:ARG:CD	4:A:1035:TYR:CE1	2.60	0.83
11:J:10:CYS:SG	11:J:43:ARG:HD2	2.18	0.83
8:F:71:GLU:HA	8:F:72:LYS:CB	2.02	0.83
4:A:567:LYS:HB2	4:A:568:PRO:CD	2.03	0.83
5:B:203:PHE:C	5:B:203:PHE:CD1	2.48	0.83
4:A:58:LEU:CG	4:A:80:HIS:O	2.26	0.83
4:A:353:ILE:HD13	4:A:487:MET:CE	2.09	0.83
4:A:783:THR:HG21	4:A:815:PHE:HE1	1.44	0.82
4:A:1118:VAL:HG23	4:A:1306:LEU:HB2	1.61	0.82
5:B:174:LEU:H	5:B:203:PHE:H	1.26	0.82
5:B:203:PHE:CE1	5:B:461:LEU:CD2	2.61	0.82
5:B:1084:GLN:NE2	6:C:192:TRP:H	1.77	0.82
13:L:60:ARG:HG3	13:L:61:THR:H	1.43	0.82
4:A:1441:PHE:CE2	8:F:89:GLU:HG3	2.14	0.82
4:A:153:PRO:CA	4:A:154:SER:OG	2.28	0.82
4:A:1312:ASN:O	4:A:1316:VAL:HG23	1.79	0.82
5:B:982:SER:CB	5:B:1092:TYR:CE2	2.63	0.82
5:B:269:ILE:HD11	5:B:386:LEU:HD21	1.60	0.82
5:B:982:SER:CA	5:B:1092:TYR:CE2	2.62	0.82
4:A:637:LYS:HB3	4:A:637:LYS:HZ3	1.45	0.82
4:A:316:GLN:HA	4:A:318:SER:N	1.94	0.81
4:A:873:MET:HG2	4:A:957:PRO:HG3	1.62	0.81
5:B:203:PHE:CD1	5:B:204:ILE:N	2.47	0.81
5:B:202:TYR:O	5:B:202:TYR:CG	2.33	0.81
4:A:316:GLN:CA	4:A:318:SER:H	1.92	0.81
4:A:450:LEU:O	4:A:451:HIS:CG	2.33	0.81
5:B:728:ARG:CD	5:B:730:ARG:NH2	2.39	0.81
5:B:986:GLN:HE22	5:B:1020:ARG:HD2	1.46	0.81
4:A:1153:TYR:CE1	10:I:42:LEU:CD1	2.62	0.81
4:A:65:LEU:HD22	4:A:72:GLU:C	2.01	0.80
5:B:1124:ARG:HG2	5:B:1124:ARG:NH1	1.93	0.80
4:A:482:PHE:HD2	5:B:836:GLU:O	1.63	0.80
4:A:153:PRO:HB2	4:A:154:SER:C	2.01	0.80
4:A:1170:ILE:HB	4:A:1171:GLN:CA	2.06	0.80
4:A:1287:TYR:CD2	4:A:1305:VAL:CG2	2.65	0.80
5:B:899:ILE:HD11	5:B:911:ILE:HG12	1.62	0.80
4:A:299:HIS:HA	4:A:302:THR:HG22	1.61	0.80
4:A:666:ILE:HG22	5:B:1026:LEU:CB	2.12	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1206:ASP:HB2	4:A:1274:ARG:HH12	1.46	0.80
5:B:172:ILE:O	5:B:203:PHE:HB3	1.82	0.80
5:B:982:SER:CA	5:B:1092:TYR:CD2	2.65	0.80
4:A:868:TYR:CE1	4:A:1064:VAL:HG11	2.16	0.80
6:C:102:GLN:HG2	6:C:154:LYS:HD2	1.64	0.80
5:B:567:GLU:H	5:B:567:GLU:CD	1.84	0.80
4:A:14:VAL:H	4:A:1432:GLN:HE22	1.30	0.79
8:F:71:GLU:CA	8:F:72:LYS:HB2	2.10	0.79
4:A:636:GLU:CB	4:A:637:LYS:HD2	2.12	0.79
4:A:453:MET:HE3	4:A:520:CYS:SG	2.22	0.79
4:A:1234:GLU:O	4:A:1235:LYS:HD3	1.81	0.79
4:A:541:ILE:CD1	4:A:577:ILE:HG12	2.11	0.79
4:A:1364:ASN:HD21	4:A:1366:ARG:NH1	1.80	0.79
5:B:202:TYR:O	5:B:204:ILE:HD11	1.82	0.79
4:A:67:CYS:O	4:A:68:GLN:CG	2.30	0.79
4:A:157:ASP:CB	4:A:158:PRO:HD3	2.02	0.79
5:B:1065:GLN:NE2	5:B:1068:GLY:N	2.30	0.79
4:A:777:PHE:CB	4:A:780:VAL:O	2.31	0.79
4:A:779:PHE:CE1	5:B:517:THR:HG22	2.17	0.79
4:A:1231:ASP:CA	4:A:1233:ASP:OD2	2.31	0.79
5:B:202:TYR:O	5:B:202:TYR:CD1	2.36	0.79
5:B:225:VAL:C	5:B:226:PHE:HD1	1.86	0.79
4:A:353:ILE:HD13	4:A:487:MET:HE3	1.64	0.78
5:B:652:LYS:O	5:B:654:ARG:HD3	1.83	0.78
9:H:26:ILE:HG22	9:H:40:LEU:O	1.83	0.78
4:A:316:GLN:HE21	4:A:317:LYS:HG2	1.45	0.78
4:A:1234:GLU:HB3	4:A:1235:LYS:HD3	1.65	0.78
5:B:879:ARG:HH12	5:B:885:MET:CE	1.96	0.78
4:A:777:PHE:CD1	4:A:782:ARG:CA	2.67	0.78
6:C:99:LEU:HD23	6:C:120:ILE:HA	1.67	0.78
4:A:500:GLU:OE2	5:B:1143:ALA:CA	2.31	0.77
4:A:1025:ARG:HD3	4:A:1030:ARG:CZ	2.15	0.77
5:B:104:GLU:OE2	13:L:54:ARG:CZ	2.32	0.77
5:B:1160:VAL:HG12	5:B:1161:HIS:H	1.47	0.77
4:A:90:VAL:HG13	4:A:297:GLN:CD	2.04	0.77
4:A:500:GLU:OE2	5:B:1143:ALA:HA	1.85	0.77
4:A:1345:ARG:CG	4:A:1346:ALA:N	2.47	0.77
5:B:299:GLU:HG2	5:B:571:PRO:CG	2.13	0.77
6:C:186:LEU:HB3	6:C:188:HIS:HD2	1.49	0.77
13:L:60:ARG:HG3	13:L:61:THR:N	1.98	0.77
4:A:325:ILE:HG21	5:B:1210:MET:SD	2.25	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1220:PHE:O	4:A:1221:LYS:HB2	1.84	0.77
5:B:851:PHE:HB3	5:B:1094:ARG:HD2	1.65	0.77
4:A:607:ILE:HG12	4:A:612:ILE:HG22	1.67	0.77
4:A:1021:LEU:N	4:A:1024:SER:CB	2.43	0.77
4:A:315:LEU:N	4:A:320:ARG:HH12	1.82	0.77
4:A:381:THR:OG1	4:A:382:PRO:HD2	1.85	0.77
4:A:637:LYS:HB3	4:A:637:LYS:NZ	2.00	0.77
4:A:666:ILE:HD12	5:B:1052:VAL:CG1	2.14	0.77
5:B:807:ARG:HG3	5:B:807:ARG:NH1	1.98	0.76
4:A:645:LEU:HD11	4:A:649:ILE:HD11	1.68	0.76
4:A:154:SER:HA	4:A:155:GLU:O	1.85	0.76
5:B:1065:GLN:NE2	5:B:1065:GLN:C	2.38	0.76
4:A:329:LEU:HD13	4:A:336:ILE:HD11	1.65	0.76
4:A:544:ASP:CG	4:A:545:GLN:H	1.89	0.76
4:A:775:ILE:HG13	4:A:798:GLY:HA3	1.65	0.76
4:A:91:PHE:HA	4:A:235:ILE:HG22	1.66	0.76
4:A:93:VAL:HG22	4:A:301:ALA:HA	1.68	0.76
5:B:797:TYR:HB3	5:B:798:TYR:CD1	2.21	0.76
8:F:72:LYS:CB	8:F:73:ALA:HA	2.11	0.76
4:A:1026:LEU:O	4:A:1030:ARG:HB3	1.86	0.76
5:B:800:GLN:HB3	11:J:52:THR:CG2	2.15	0.76
4:A:1231:ASP:CA	4:A:1233:ASP:OD1	2.30	0.76
5:B:56:ASP:C	5:B:57:TYR:HD1	1.89	0.76
5:B:577:ALA:HB1	5:B:589:VAL:HG11	1.66	0.76
4:A:821:ARG:HH12	5:B:514:LEU:HD13	1.51	0.75
5:B:129:PHE:HE1	5:B:166:PHE:CD1	2.02	0.75
5:B:177:LYS:C	5:B:177:LYS:HD2	2.07	0.75
5:B:638:PHE:CE2	5:B:743:ILE:HD13	2.21	0.75
4:A:1234:GLU:HB3	4:A:1235:LYS:CD	2.16	0.75
4:A:777:PHE:HD1	4:A:782:ARG:C	1.89	0.75
5:B:172:ILE:O	5:B:203:PHE:CB	2.34	0.75
4:A:65:LEU:HD22	4:A:72:GLU:CA	2.16	0.75
4:A:79:GLY:O	4:A:243:PRO:HG3	1.87	0.75
5:B:637:LEU:CD1	5:B:740:HIS:ND1	2.48	0.75
4:A:1233:ASP:CB	4:A:1235:LYS:O	2.35	0.75
5:B:728:ARG:HD2	5:B:730:ARG:CZ	2.16	0.75
4:A:416:ARG:NH2	4:A:417:TYR:HE2	1.84	0.75
5:B:654:ARG:H	5:B:657:HIS:HD2	1.35	0.75
3:T:28:DT:H1'	4:A:317:LYS:O	1.87	0.74
4:A:253:ASN:HD22	4:A:256:GLN:N	1.82	0.74
4:A:1155:ASP:OD2	4:A:1161:THR:HG23	1.87	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:417:TYR:O	4:A:418:SER:CB	2.35	0.74
5:B:204:ILE:O	5:B:205:ILE:CD1	2.30	0.74
5:B:807:ARG:HH11	5:B:807:ARG:CG	1.98	0.74
4:A:1345:ARG:HD2	4:A:1346:ALA:HA	1.69	0.74
4:A:302:THR:CG2	4:A:313:GLN:HE22	2.00	0.74
4:A:58:LEU:HG	4:A:80:HIS:O	1.87	0.74
4:A:347:PHE:HE1	4:A:375:THR:HG22	1.52	0.74
4:A:157:ASP:CB	4:A:158:PRO:CD	2.57	0.74
5:B:177:LYS:HE2	5:B:178:ASN:HD21	1.53	0.74
5:B:577:ALA:HB1	5:B:589:VAL:HG13	1.70	0.74
4:A:1174:PHE:HB3	4:A:1175:SER:HB3	1.68	0.74
5:B:1047:PHE:N	5:B:1047:PHE:CD1	2.53	0.74
4:A:316:GLN:HG2	4:A:317:LYS:N	2.02	0.73
4:A:361:LEU:HD13	4:A:646:PHE:CD2	2.23	0.73
4:A:446:ARG:HH12	4:A:448:PRO:HD2	1.54	0.73
5:B:57:TYR:HD1	5:B:57:TYR:N	1.85	0.73
4:A:1024:SER:CB	4:A:1025:ARG:O	2.34	0.73
4:A:857:ARG:HD3	4:A:863:VAL:HG22	1.71	0.73
4:A:779:PHE:CE2	4:A:785:PRO:CD	2.62	0.73
4:A:869:GLY:O	7:E:204:THR:HG21	1.89	0.73
4:A:31:SER:HB2	4:A:82:GLY:CA	2.16	0.72
5:B:56:ASP:C	5:B:57:TYR:CD1	2.61	0.72
4:A:316:GLN:CG	4:A:317:LYS:HA	2.11	0.72
4:A:852:TYR:HD2	4:A:1060:PRO:HB3	1.53	0.72
5:B:40:GLU:OE2	5:B:681:TRP:HB3	1.88	0.72
4:A:51:GLY:HA2	4:A:56:PRO:HG3	1.71	0.72
4:A:1101:LEU:HD13	4:A:1355:VAL:HG11	1.71	0.72
5:B:176:SER:OG	5:B:177:LYS:HB3	1.89	0.72
5:B:1065:GLN:CD	5:B:1066:SER:N	2.42	0.72
13:L:32:ALA:HB3	13:L:55:ILE:HD12	1.71	0.72
4:A:1323:ASP:OD1	4:A:1325:THR:HG22	1.88	0.72
5:B:290:GLY:CA	5:B:327:ARG:NH1	2.52	0.72
4:A:596:THR:O	4:A:598:LEU:N	2.21	0.72
4:A:1027:ALA:O	4:A:1030:ARG:N	2.22	0.72
5:B:1065:GLN:C	5:B:1065:GLN:CD	2.47	0.72
5:B:1063:GLY:C	5:B:1064:TYR:HD1	1.93	0.72
5:B:1065:GLN:CD	5:B:1067:ARG:H	1.91	0.72
4:A:1209:MET:CG	4:A:1236:LEU:HD21	2.20	0.72
4:A:1287:TYR:HD2	4:A:1305:VAL:CB	1.87	0.72
4:A:1342:GLU:HG3	7:E:198:ILE:HD13	1.71	0.72
5:B:344:LYS:HD3	5:B:348:ARG:HB3	1.71	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:875:ALA:HB2	4:A:1366:ARG:HD2	1.72	0.72
4:A:1407:GLU:CD	4:A:1407:GLU:H	1.92	0.72
5:B:179:CYS:O	5:B:181:LEU:HD12	1.90	0.72
4:A:69:THR:HG21	5:B:1174:LYS:HE3	1.72	0.71
4:A:222:LEU:O	4:A:224:PHE:CD2	2.42	0.71
5:B:60:GLN:HE22	5:B:94:LYS:HA	1.55	0.71
5:B:701:ILE:HD12	5:B:740:HIS:NE2	2.05	0.71
4:A:857:ARG:CG	4:A:863:VAL:HA	2.12	0.71
5:B:1166:CYS:SG	14:B:1307:ZN:ZN	1.78	0.71
5:B:57:TYR:N	5:B:57:TYR:CD1	2.56	0.71
4:A:35:ILE:CG2	4:A:84:ILE:HD13	2.21	0.71
4:A:58:LEU:HD21	4:A:80:HIS:O	1.89	0.71
5:B:203:PHE:CA	5:B:204:ILE:CD1	2.57	0.71
4:A:250:ILE:CD1	4:A:254:GLU:OE2	2.38	0.71
4:A:855:THR:HG23	4:A:856:THR:N	2.04	0.71
5:B:711:GLU:H	5:B:712:PRO:HD2	1.53	0.71
4:A:857:ARG:HH21	8:F:139:PRO:CB	2.04	0.71
4:A:335:ARG:HD2	5:B:1202:LEU:HD22	1.72	0.71
8:F:69:LEU:CB	8:F:70:LYS:HB2	2.21	0.71
4:A:19:PHE:HD2	4:A:1412:ALA:HB1	1.54	0.71
5:B:203:PHE:HD1	5:B:203:PHE:C	1.89	0.71
5:B:851:PHE:O	5:B:974:PRO:HD3	1.90	0.71
11:J:45:CYS:O	11:J:48:ARG:HG3	1.90	0.71
4:A:463:ILE:HD13	4:A:469:ARG:HG3	1.72	0.71
4:A:1173:HIS:O	4:A:1174:PHE:CG	2.44	0.71
5:B:336:ARG:HH11	5:B:336:ARG:H	1.36	0.71
5:B:770:GLN:OE1	5:B:983:ARG:HA	1.90	0.70
4:A:264:PHE:CE1	4:A:317:LYS:N	2.58	0.70
4:A:590:ARG:HH22	4:A:592:ASP:CG	1.94	0.70
4:A:636:GLU:HB3	4:A:637:LYS:CD	2.22	0.70
4:A:1364:ASN:ND2	4:A:1366:ARG:HH11	1.87	0.70
5:B:55:VAL:HG11	5:B:177:LYS:NZ	2.06	0.70
4:A:852:TYR:CE2	4:A:1060:PRO:CB	2.73	0.70
5:B:806:THR:H	5:B:809:MET:HE3	1.57	0.70
4:A:41:MET:C	4:A:50:ILE:HD11	2.12	0.70
6:C:56:THR:HG21	6:C:145:CYS:SG	2.30	0.70
4:A:83:HIS:CA	4:A:241:VAL:HG23	2.21	0.70
4:A:590:ARG:NH2	4:A:592:ASP:CG	2.45	0.70
4:A:637:LYS:HD2	4:A:637:LYS:N	2.06	0.70
4:A:857:ARG:HD3	4:A:863:VAL:CG2	2.22	0.70
4:A:1025:ARG:C	4:A:1026:LEU:HD13	2.11	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:83:HIS:HA	4:A:241:VAL:HG23	1.71	0.70
4:A:1231:ASP:CA	4:A:1233:ASP:CG	2.55	0.70
5:B:104:GLU:OE1	5:B:120:ARG:NH2	2.20	0.70
6:C:186:LEU:HB3	6:C:188:HIS:CD2	2.26	0.70
4:A:55:ASP:O	4:A:58:LEU:N	2.25	0.70
4:A:795:GLU:OE2	5:B:731:VAL:HG11	1.91	0.70
4:A:1098:VAL:N	4:A:1099:PRO:HD2	2.06	0.70
4:A:1174:PHE:HA	4:A:1175:SER:HB3	1.70	0.70
5:B:225:VAL:C	5:B:226:PHE:CD1	2.65	0.70
4:A:795:GLU:OE2	5:B:731:VAL:CG1	2.40	0.70
5:B:703:ILE:HG12	5:B:740:HIS:CE1	2.26	0.70
11:J:8:PHE:H	11:J:49:MET:HE3	1.57	0.70
4:A:596:THR:C	4:A:598:LEU:H	1.96	0.69
4:A:1364:ASN:HD22	4:A:1366:ARG:HG2	1.56	0.69
5:B:653:VAL:HG22	5:B:689:LEU:HB3	1.74	0.69
4:A:68:GLN:C	4:A:70:CYS:H	1.96	0.69
4:A:1172:LEU:HA	4:A:1174:PHE:H	1.57	0.69
6:C:39:ALA:HA	6:C:164:ALA:HB3	1.74	0.69
4:A:90:VAL:HA	4:A:297:GLN:OE1	1.91	0.69
4:A:302:THR:CG2	4:A:313:GLN:NE2	2.53	0.69
4:A:567:LYS:CB	4:A:568:PRO:CD	2.65	0.69
5:B:299:GLU:OE2	5:B:571:PRO:HD2	1.92	0.69
5:B:1068:GLY:HA3	5:B:1086:PHE:CD1	2.28	0.69
8:F:93:ILE:HD11	8:F:134:ILE:HD11	1.73	0.69
4:A:90:VAL:HG13	4:A:297:GLN:OE1	1.92	0.69
5:B:1084:GLN:HE22	6:C:192:TRP:N	1.87	0.69
6:C:67:LEU:HA	6:C:70:ILE:HD12	1.72	0.69
5:B:637:LEU:CD1	5:B:740:HIS:CE1	2.75	0.69
6:C:142:VAL:H	11:J:16:ASP:HB3	1.55	0.69
4:A:156:ASP:CG	4:A:156:ASP:O	2.30	0.69
4:A:672:ASP:H	4:A:736:ASN:HD21	1.41	0.69
4:A:809:THR:HB	4:A:810:PRO:CD	2.22	0.69
4:A:1287:TYR:HE2	4:A:1305:VAL:HB	1.51	0.69
4:A:222:LEU:O	4:A:224:PHE:HD2	1.74	0.69
4:A:264:PHE:CE1	4:A:317:LYS:HG3	2.25	0.69
4:A:482:PHE:HE2	5:B:836:GLU:HB2	1.57	0.69
4:A:1172:LEU:HB3	4:A:1173:HIS:CA	2.15	0.69
5:B:290:GLY:HA2	5:B:327:ARG:HH11	1.57	0.69
5:B:879:ARG:HH12	5:B:885:MET:HE1	1.56	0.69
4:A:777:PHE:CD1	4:A:782:ARG:HA	2.28	0.69
4:A:78:PRO:HB3	5:B:1201:LYS:CE	2.16	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:637:LEU:HD13	5:B:740:HIS:HD1	1.57	0.69
4:A:65:LEU:HD22	4:A:72:GLU:N	2.08	0.69
5:B:20:ASP:OD2	5:B:21:GLU:HG2	1.93	0.69
4:A:482:PHE:CE2	5:B:836:GLU:HB2	2.28	0.68
4:A:1026:LEU:O	4:A:1030:ARG:HB2	1.92	0.68
4:A:795:GLU:OE1	5:B:731:VAL:HG22	1.93	0.68
4:A:22:PHE:CD2	5:B:1211:ASN:HA	2.28	0.68
4:A:453:MET:CE	4:A:520:CYS:SG	2.81	0.68
8:F:69:LEU:HB2	8:F:70:LYS:CB	2.24	0.68
4:A:58:LEU:CD2	4:A:80:HIS:O	2.42	0.68
4:A:58:LEU:CD2	4:A:59:GLY:N	2.50	0.68
4:A:793:SER:HB2	4:A:794:PRO:HD2	1.76	0.68
4:A:852:TYR:HE2	4:A:1060:PRO:HB2	1.56	0.68
4:A:888:GLY:O	4:A:940:ARG:NH2	2.27	0.68
4:A:1199:ARG:NH2	4:A:1232:ASN:OD1	2.27	0.68
5:B:778:MET:HE3	5:B:794:ASN:HB3	1.74	0.68
4:A:67:CYS:HB3	4:A:70:CYS:HB3	1.76	0.68
4:A:765:VAL:HG22	4:A:800:VAL:HB	1.75	0.68
5:B:792:MET:HE1	5:B:857:ARG:CZ	2.24	0.68
9:H:81:PRO:CB	9:H:82:PRO:CD	2.71	0.67
5:B:40:GLU:OE2	5:B:682:SER:N	2.26	0.67
5:B:203:PHE:CZ	5:B:461:LEU:HD21	2.29	0.67
4:A:1287:TYR:HD2	4:A:1305:VAL:CG2	2.06	0.67
5:B:258:LEU:HD13	5:B:269:ILE:HG12	1.75	0.67
5:B:177:LYS:CE	5:B:178:ASN:ND2	2.55	0.67
4:A:909:ASP:OD1	4:A:910:PRO:HD2	1.93	0.67
5:B:302:CYS:HA	5:B:310:MET:HE1	1.77	0.67
5:B:398:ARG:HD3	5:B:509:ALA:HB2	1.75	0.67
5:B:483:LEU:HD11	5:B:491:THR:HG23	1.77	0.67
5:B:569:TYR:CE1	5:B:589:VAL:HG21	2.29	0.67
5:B:476:ARG:O	5:B:478:GLY:N	2.27	0.67
9:H:84:ALA:HB1	9:H:89:LEU:HD11	1.76	0.67
5:B:217:ARG:NH1	5:B:407:ASP:OD1	2.27	0.67
5:B:516:ASN:H	5:B:516:ASN:ND2	1.93	0.67
5:B:1047:PHE:N	5:B:1047:PHE:HD1	1.90	0.67
6:C:22:LEU:HD22	6:C:25:VAL:HG21	1.77	0.66
4:A:148:CYS:SG	14:A:1734:ZN:ZN	1.84	0.66
4:A:852:TYR:HD2	4:A:1060:PRO:CB	2.07	0.66
5:B:64:CYS:C	5:B:65:GLU:CG	2.63	0.66
5:B:655:LYS:HA	5:B:658:ILE:HD12	1.75	0.66
4:A:182:VAL:HG22	4:A:201:VAL:HG13	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:666:ILE:HG23	5:B:1026:LEU:HB3	1.74	0.66
5:B:711:GLU:H	5:B:712:PRO:HD3	1.61	0.66
5:B:793:ALA:HB3	5:B:856:PHE:HB2	1.77	0.66
5:B:1063:GLY:O	5:B:1064:TYR:CD1	2.49	0.66
5:B:40:GLU:CD	5:B:681:TRP:HB3	2.16	0.66
5:B:982:SER:N	5:B:1092:TYR:CE2	2.64	0.66
4:A:315:LEU:CB	4:A:320:ARG:HH12	2.07	0.66
4:A:535:THR:CG2	4:A:617:VAL:H	2.06	0.66
4:A:1199:ARG:CZ	4:A:1232:ASN:OD1	2.44	0.66
5:B:614:SER:H	5:B:632:ARG:HH12	1.42	0.66
4:A:41:MET:C	4:A:50:ILE:CD1	2.64	0.66
4:A:567:LYS:HZ1	9:H:43:ASN:HB3	1.61	0.66
4:A:1136:SER:O	4:A:1274:ARG:HD2	1.95	0.66
5:B:637:LEU:HD13	5:B:740:HIS:CE1	2.31	0.66
5:B:879:ARG:HB3	5:B:879:ARG:HH11	1.59	0.66
5:B:1065:GLN:HE22	5:B:1068:GLY:N	1.89	0.66
4:A:360:GLU:HB2	4:A:363:GLN:HG3	1.78	0.66
5:B:378:LEU:O	5:B:382:ILE:HG12	1.96	0.66
5:B:979:LYS:HA	5:B:989:THR:HG22	1.78	0.66
4:A:41:MET:CA	4:A:50:ILE:HD12	2.24	0.66
4:A:319:GLY:C	4:A:320:ARG:HH11	1.98	0.66
5:B:236:HIS:HD2	5:B:389:ALA:HB2	1.59	0.66
5:B:728:ARG:HD2	5:B:730:ARG:HH22	1.55	0.66
5:B:1016:ALA:O	5:B:1017:ILE:CB	2.42	0.66
6:C:7:GLN:HB2	6:C:23:SER:HB2	1.78	0.66
1:R:4:G:H2'	1:R:5:A:H8	1.61	0.65
4:A:1400:CYS:SG	4:A:1409:LEU:HG	2.35	0.65
5:B:177:LYS:HD2	5:B:177:LYS:O	1.96	0.65
5:B:360:PHE:CE2	5:B:361:LEU:HD13	2.31	0.65
9:H:81:PRO:HB2	9:H:82:PRO:HD2	1.77	0.65
4:A:1021:LEU:CA	4:A:1024:SER:HB2	2.26	0.65
4:A:153:PRO:HB2	4:A:154:SER:O	1.96	0.65
4:A:1231:ASP:CG	4:A:1232:ASN:H	1.99	0.65
5:B:952:VAL:HG22	5:B:966:VAL:HG13	1.78	0.65
4:A:47:ARG:NH1	5:B:920:PRO:HB2	2.12	0.65
4:A:648:ASN:O	4:A:652:VAL:HG23	1.97	0.65
4:A:850:VAL:HG12	4:A:851:HIS:N	2.10	0.65
4:A:981:LEU:HD13	4:A:986:ILE:HD11	1.78	0.65
4:A:1287:TYR:CE2	4:A:1305:VAL:CG1	2.79	0.65
4:A:1441:PHE:CE2	8:F:89:GLU:CG	2.80	0.65
5:B:322:PHE:C	5:B:322:PHE:CD2	2.70	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:35:ILE:HG22	4:A:84:ILE:HD13	1.79	0.65
4:A:153:PRO:HA	4:A:154:SER:CB	2.26	0.65
4:A:754:SER:N	4:A:757:ASN:HD22	1.92	0.65
4:A:1134:ILE:O	4:A:1138:ILE:HG12	1.97	0.65
4:A:457:ALA:O	4:A:507:VAL:HG23	1.97	0.65
4:A:779:PHE:CD2	4:A:785:PRO:HG3	2.32	0.65
4:A:1206:ASP:HB2	4:A:1274:ARG:NH1	2.11	0.65
11:J:48:ARG:HH21	11:J:49:MET:HE1	1.60	0.65
4:A:717:ASN:O	4:A:721:PHE:CD2	2.50	0.65
5:B:57:TYR:O	5:B:60:GLN:N	2.30	0.65
5:B:879:ARG:N	5:B:879:ARG:NE	2.45	0.65
4:A:68:GLN:O	4:A:70:CYS:N	2.30	0.64
5:B:30:SER:O	5:B:34:ILE:HD12	1.96	0.64
6:C:50:GLU:HB3	6:C:156:THR:HB	1.79	0.64
9:H:116:TYR:HB2	9:H:123:MET:HB3	1.78	0.64
11:J:48:ARG:HH21	11:J:49:MET:CE	2.10	0.64
4:A:337:ARG:HH21	4:A:839:ARG:HD2	1.63	0.64
4:A:717:ASN:O	4:A:721:PHE:HD2	1.80	0.64
5:B:969:ARG:NH2	6:C:59:ALA:CB	2.53	0.64
4:A:536:LEU:HB2	4:A:539:THR:HG22	1.79	0.64
4:A:1236:LEU:C	4:A:1237:ILE:HG13	2.18	0.64
5:B:376:PHE:HE2	5:B:569:TYR:HD2	1.45	0.64
5:B:982:SER:N	5:B:1092:TYR:HE2	1.96	0.64
5:B:1065:GLN:NE2	5:B:1065:GLN:O	2.30	0.64
5:B:176:SER:O	5:B:178:ASN:N	2.30	0.64
6:C:46:ILE:HD12	6:C:157:CYS:HB3	1.80	0.64
4:A:727:ASP:O	4:A:731:ARG:HG3	1.98	0.64
5:B:634:TYR:CD2	5:B:692:TYR:CD1	2.86	0.64
9:H:95:TYR:HE2	9:H:97:MET:CG	2.11	0.64
4:A:81:PHE:HE2	4:A:240:PRO:HB2	1.62	0.64
4:A:351:THR:HB	4:A:468:PHE:CD2	2.33	0.64
4:A:830:LYS:NZ	4:A:1080:THR:CA	2.57	0.64
4:A:664:THR:OG1	5:B:1014:PRO:HB3	1.97	0.64
5:B:175:ARG:NH1	5:B:181:LEU:O	2.31	0.64
5:B:1060:ARG:O	5:B:1063:GLY:N	2.29	0.64
4:A:1021:LEU:CA	4:A:1024:SER:CB	2.77	0.63
4:A:58:LEU:HD11	4:A:80:HIS:O	1.97	0.63
4:A:361:LEU:HD13	4:A:646:PHE:HD2	1.60	0.63
5:B:169:ARG:HB2	5:B:454:THR:HG23	1.79	0.63
4:A:324:SER:O	4:A:326:ARG:N	2.31	0.63
4:A:821:ARG:O	4:A:825:ILE:HG12	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:203:PHE:N	5:B:204:ILE:HD12	2.13	0.63
5:B:986:GLN:HE22	5:B:1020:ARG:CD	2.10	0.63
5:B:1073:TYR:HE2	5:B:1080:LYS:HG3	1.63	0.63
4:A:68:GLN:CG	4:A:68:GLN:O	2.46	0.63
4:A:666:ILE:CD1	5:B:1052:VAL:HG13	2.24	0.63
4:A:830:LYS:HD3	4:A:1079:MET:O	1.98	0.63
4:A:779:PHE:HE1	5:B:517:THR:CG2	2.09	0.63
5:B:290:GLY:HA3	5:B:327:ARG:NH1	2.14	0.63
4:A:1021:LEU:N	4:A:1024:SER:OG	2.32	0.63
5:B:879:ARG:N	5:B:879:ARG:CZ	2.62	0.63
4:A:1441:PHE:CZ	8:F:89:GLU:HA	2.34	0.63
5:B:200:GLY:CA	5:B:202:TYR:HE2	2.09	0.63
5:B:903:VAL:HG12	5:B:904:ARG:H	1.64	0.63
6:C:46:ILE:O	6:C:169:LYS:HE3	1.99	0.63
6:C:56:THR:HG23	6:C:147:LEU:HD23	1.81	0.63
13:L:50:ASP:HA	13:L:51:CYS:C	2.19	0.63
4:A:830:LYS:HZ2	4:A:1080:THR:HA	1.60	0.63
5:B:202:TYR:HD1	5:B:209:GLU:HB3	1.63	0.63
5:B:336:ARG:O	5:B:336:ARG:CD	2.47	0.63
5:B:1064:TYR:HD1	5:B:1064:TYR:N	1.96	0.63
5:B:1099:VAL:O	5:B:1103:ILE:HG12	1.98	0.63
4:A:41:MET:HA	4:A:50:ILE:HD12	1.81	0.63
4:A:351:THR:HG22	4:A:352:VAL:N	2.14	0.63
4:A:541:ILE:CD1	4:A:546:VAL:HG22	2.27	0.63
4:A:947:PHE:CE1	4:A:954:TRP:CE2	2.86	0.63
5:B:40:GLU:OE2	5:B:681:TRP:N	2.32	0.63
4:A:11:LEU:HA	5:B:1193:GLN:O	1.99	0.62
5:B:982:SER:HA	5:B:1092:TYR:HD2	1.57	0.62
4:A:159:THR:CB	4:A:160:GLN:HA	2.30	0.62
4:A:853:ASP:O	4:A:855:THR:N	2.30	0.62
4:A:155:GLU:HG3	4:A:156:ASP:N	2.12	0.62
4:A:1209:MET:HE2	4:A:1236:LEU:HD11	1.81	0.62
6:C:112:ASN:ND2	6:C:146:LYS:HG2	2.14	0.62
5:B:181:LEU:C	5:B:183:GLU:H	2.03	0.62
4:A:101:LYS:HG2	4:A:139:TRP:CZ3	2.35	0.62
4:A:628:GLY:O	4:A:632:VAL:HG23	2.00	0.62
5:B:706:GLN:H	5:B:710:LEU:HD12	1.64	0.62
5:B:200:GLY:CA	5:B:202:TYR:CE2	2.68	0.62
4:A:795:GLU:OE1	5:B:731:VAL:HG13	2.00	0.62
4:A:963:ILE:HD13	4:A:1048:ASN:HB3	1.80	0.62
4:A:1026:LEU:O	4:A:1027:ALA:HB3	1.98	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:173:MET:HA	5:B:203:PHE:CD2	2.33	0.62
6:C:45:ALA:HA	6:C:72:LEU:HD12	1.82	0.62
11:J:41:LEU:HD22	11:J:46:CYS:O	2.00	0.62
4:A:523:ILE:O	4:A:528:LEU:HB2	1.99	0.62
4:A:636:GLU:CG	4:A:637:LYS:HD2	2.30	0.62
4:A:1025:ARG:C	4:A:1026:LEU:CD1	2.67	0.62
10:I:6:PHE:O	10:I:14:LEU:HD13	2.00	0.62
5:B:345:LYS:HG3	5:B:348:ARG:HH21	1.64	0.62
5:B:370:PHE:HD1	5:B:373:ARG:HG3	1.65	0.62
5:B:404:LYS:NZ	5:B:404:LYS:CD	2.61	0.62
5:B:515:HIS:H	5:B:518:HIS:HD2	1.48	0.62
5:B:969:ARG:NH2	6:C:60:ASP:H	1.98	0.62
6:C:35:ARG:HB2	12:K:41:THR:HG23	1.80	0.62
4:A:54:ASN:O	4:A:55:ASP:CB	2.48	0.61
4:A:446:ARG:NH1	4:A:448:PRO:HD2	2.14	0.61
4:A:590:ARG:HG3	4:A:605:MET:HB3	1.82	0.61
4:A:605:MET:SD	4:A:617:VAL:HG22	2.40	0.61
4:A:902:LEU:O	4:A:903:ASN:HB2	1.99	0.61
5:B:1017:ILE:HD13	5:B:1026:LEU:HD21	1.81	0.61
4:A:58:LEU:CD1	4:A:80:HIS:O	2.48	0.61
4:A:546:VAL:HG13	4:A:577:ILE:HG21	1.82	0.61
5:B:879:ARG:O	5:B:882:THR:CG2	2.40	0.61
5:B:1017:ILE:HB	5:B:1018:PRO:CD	2.30	0.61
8:F:136:ARG:O	8:F:143:PHE:HA	1.99	0.61
5:B:51:PHE:HD2	5:B:176:SER:HG	1.47	0.61
5:B:211:VAL:CG2	5:B:483:LEU:HD22	2.31	0.61
5:B:890:TYR:CD1	5:B:910:VAL:HG21	2.36	0.61
4:A:588:LEU:HD23	4:A:607:ILE:HD12	1.82	0.61
4:A:1063:MET:HG3	4:A:1436:ILE:HG23	1.83	0.61
5:B:710:LEU:O	5:B:711:GLU:HB3	2.00	0.61
11:J:10:CYS:SG	11:J:43:ARG:CD	2.87	0.61
4:A:49:LYS:HZ1	4:A:61:ILE:H	1.48	0.61
4:A:777:PHE:HD1	4:A:782:ARG:CA	2.13	0.61
4:A:1172:LEU:CB	4:A:1173:HIS:CA	2.75	0.61
9:H:44:VAL:HG13	9:H:48:PRO:HA	1.82	0.61
5:B:848:ARG:HA	6:C:69:LEU:HD21	1.81	0.61
12:K:47:ARG:HD2	12:K:60:ALA:HA	1.81	0.61
4:A:93:VAL:CG2	4:A:301:ALA:HA	2.31	0.61
4:A:1174:PHE:CB	4:A:1175:SER:HB3	2.30	0.61
5:B:180:TYR:O	5:B:182:SER:N	2.33	0.61
5:B:805:THR:HG22	5:B:809:MET:SD	2.41	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:15:LYS:HE2	5:B:1220:ARG:HG2	1.83	0.60
4:A:668:ASP:HB3	4:A:743:VAL:HG23	1.82	0.60
4:A:669:THR:HG22	4:A:761:MET:HE3	1.82	0.60
1:R:3:C:H2'	1:R:4:G:C8	2.36	0.60
5:B:302:CYS:SG	5:B:310:MET:HE1	2.34	0.60
4:A:31:SER:OG	4:A:83:HIS:CD2	2.53	0.60
5:B:173:MET:CA	5:B:203:PHE:HD2	2.15	0.60
5:B:176:SER:O	5:B:179:CYS:N	2.30	0.60
4:A:332:LYS:HG3	4:A:333:GLU:HG2	1.83	0.60
5:B:57:TYR:O	5:B:59:LEU:N	2.33	0.60
5:B:706:GLN:O	5:B:710:LEU:HB2	2.01	0.60
4:A:315:LEU:N	4:A:320:ARG:NH1	2.47	0.60
4:A:1206:ASP:CB	4:A:1274:ARG:HH12	2.12	0.60
4:A:131:SER:HB3	4:A:223:GLY:HA2	1.83	0.60
5:B:541:LEU:HB2	5:B:747:MET:HE3	1.84	0.60
5:B:1064:TYR:CD1	5:B:1064:TYR:N	2.67	0.60
3:T:15:DA:H2''	3:T:16:DC:O5'	2.02	0.60
4:A:456:MET:HB2	4:A:478:TYR:OH	2.02	0.60
5:B:918:ILE:HD12	5:B:935:ARG:HD2	1.84	0.60
5:B:1073:TYR:CE2	5:B:1080:LYS:HG3	2.37	0.60
4:A:567:LYS:NZ	9:H:43:ASN:HB3	2.16	0.60
4:A:765:VAL:HG13	4:A:802:ASN:O	2.02	0.60
4:A:811:GLN:HB3	4:A:815:PHE:HE2	1.67	0.60
4:A:1170:ILE:HD12	4:A:1171:GLN:HG3	1.83	0.60
4:A:1345:ARG:HD2	4:A:1346:ALA:CA	2.31	0.60
4:A:666:ILE:CG2	5:B:1026:LEU:CB	2.74	0.60
4:A:1020:CYS:N	4:A:1021:LEU:O	2.35	0.60
4:A:1295:THR:HB	4:A:1297:GLU:OE1	2.02	0.60
5:B:592:ASN:HD21	5:B:595:ARG:HD2	1.65	0.59
4:A:857:ARG:HD2	4:A:861:GLY:C	2.22	0.59
4:A:35:ILE:HG13	4:A:241:VAL:HG21	1.84	0.59
4:A:313:GLN:O	4:A:321:PRO:HA	2.02	0.59
4:A:855:THR:HG23	4:A:856:THR:H	1.68	0.59
5:B:684:LEU:HD23	5:B:689:LEU:HD12	1.83	0.59
5:B:835:GLN:HA	5:B:1013:ASN:HD22	1.66	0.59
4:A:676:MET:HA	4:A:679:ILE:HD12	1.84	0.59
4:A:1022:LEU:HA	4:A:1026:LEU:CD1	2.32	0.59
13:L:30:ILE:O	13:L:56:LEU:HA	2.02	0.59
4:A:1390:ASN:O	4:A:1399:ARG:HD2	2.03	0.59
5:B:634:TYR:HD2	5:B:692:TYR:CD1	2.21	0.59
7:E:15:ALA:O	7:E:19:VAL:HG23	2.03	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1023:ARG:N	4:A:1025:ARG:O	2.35	0.59
4:A:1352:VAL:O	4:A:1355:VAL:HG12	2.03	0.59
4:A:115:LEU:HD21	4:A:145:LYS:HD2	1.84	0.59
4:A:598:LEU:HD13	9:H:25:ARG:HH22	1.68	0.59
4:A:1150:SER:HA	4:A:1195:LEU:HD23	1.85	0.59
4:A:1209:MET:CE	4:A:1236:LEU:HD11	2.32	0.59
5:B:202:TYR:OH	5:B:485:ARG:NH2	2.36	0.59
5:B:807:ARG:NH1	5:B:807:ARG:CG	2.62	0.59
5:B:1160:VAL:HG12	5:B:1161:HIS:N	2.18	0.59
4:A:508:PRO:O	4:A:511:ILE:HG13	2.03	0.59
4:A:814:PHE:CE1	5:B:514:LEU:HD21	2.38	0.59
5:B:857:ARG:NH2	5:B:942:ARG:NH1	2.50	0.59
3:T:20:DC:H2'	3:T:21:DC:O4'	2.03	0.59
4:A:1170:ILE:CD1	4:A:1171:GLN:HG3	2.32	0.59
4:A:1424:VAL:HG13	4:A:1436:ILE:HD11	1.85	0.59
5:B:800:GLN:HB3	11:J:52:THR:HG22	1.83	0.59
4:A:465:TYR:HB3	5:B:976:ILE:HG21	1.85	0.58
4:A:1174:PHE:CA	4:A:1175:SER:HB3	2.29	0.58
4:A:1231:ASP:CG	4:A:1232:ASN:N	2.55	0.58
4:A:779:PHE:CE1	5:B:517:THR:HA	2.37	0.58
5:B:179:CYS:O	5:B:181:LEU:CG	2.51	0.58
8:F:69:LEU:H	8:F:70:LYS:HB2	1.68	0.58
9:H:84:ALA:HA	9:H:87:ARG:HB2	1.83	0.58
4:A:69:THR:HA	4:A:71:GLN:HG3	1.84	0.58
4:A:314:ALA:HA	4:A:320:ARG:HB3	1.85	0.58
4:A:1025:ARG:CD	4:A:1030:ARG:NH2	2.61	0.58
4:A:1244:ARG:HH11	4:A:1244:ARG:CG	2.16	0.58
4:A:54:ASN:O	4:A:55:ASP:HB2	2.02	0.58
5:B:982:SER:HB3	5:B:1092:TYR:CZ	2.36	0.58
8:F:69:LEU:N	8:F:70:LYS:HB2	2.18	0.58
4:A:463:ILE:CD1	4:A:469:ARG:HG3	2.33	0.58
4:A:472:LEU:HD13	5:B:835:GLN:OE1	2.04	0.58
4:A:1018:PHE:O	4:A:1021:LEU:HB3	2.03	0.58
5:B:276:ILE:HG13	5:B:277:LYS:N	2.13	0.58
6:C:66:ARG:NH2	11:J:3:VAL:O	2.36	0.58
4:A:92:HIS:ND1	4:A:95:PHE:HD2	2.02	0.58
4:A:396:PRO:HB3	4:A:403:LYS:HB3	1.84	0.58
4:A:810:PRO:N	5:B:1047:PHE:HE2	1.99	0.58
4:A:830:LYS:HZ2	4:A:1080:THR:CB	2.16	0.58
5:B:37:PHE:O	5:B:38:PHE:HB2	2.03	0.58
5:B:1063:GLY:C	5:B:1064:TYR:CD1	2.77	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:482:PHE:CD2	5:B:836:GLU:O	2.50	0.58
4:A:779:PHE:N	4:A:779:PHE:CD1	2.68	0.58
4:A:1392:SER:O	4:A:1394:THR:N	2.37	0.58
5:B:711:GLU:N	5:B:712:PRO:CD	2.56	0.58
5:B:1084:GLN:OE1	5:B:1084:GLN:N	2.36	0.58
5:B:406:LEU:HD12	5:B:633:VAL:CG2	2.33	0.58
5:B:578:THR:OG1	5:B:593:PRO:HG3	2.03	0.58
12:K:33:ILE:HD13	12:K:87:LEU:HD22	1.86	0.58
4:A:316:GLN:CG	4:A:317:LYS:N	2.67	0.57
4:A:519:PRO:HB2	4:A:630:ILE:HD12	1.85	0.57
5:B:219:ALA:HB2	5:B:405:ARG:HG2	1.86	0.57
5:B:1001:PHE:CE1	6:C:34:ARG:CZ	2.87	0.57
8:F:73:ALA:O	8:F:74:ILE:HB	2.04	0.57
8:F:116:ASP:HB3	8:F:119:ARG:HB2	1.86	0.57
4:A:80:HIS:ND1	4:A:80:HIS:N	2.51	0.57
4:A:690:VAL:HG21	4:A:718:VAL:HG13	1.86	0.57
4:A:851:HIS:N	4:A:851:HIS:CD2	2.72	0.57
4:A:1022:LEU:C	4:A:1023:ARG:HG3	2.22	0.57
5:B:1039:GLY:HA2	11:J:51:LEU:HD22	1.86	0.57
6:C:67:LEU:HD11	6:C:155:LEU:HD13	1.85	0.57
8:F:147:SER:O	8:F:151:LEU:HD12	2.04	0.57
11:J:3:VAL:HG21	11:J:18:TRP:CB	2.33	0.57
4:A:545:GLN:HB3	4:A:549:MET:CE	2.35	0.57
4:A:588:LEU:HD13	4:A:632:VAL:HG21	1.85	0.57
5:B:173:MET:HA	5:B:203:PHE:HD2	1.69	0.57
4:A:22:PHE:CD1	4:A:26:GLU:OE2	2.57	0.57
4:A:159:THR:HB	4:A:160:GLN:HA	1.87	0.57
4:A:618:GLU:CD	4:A:619:LYS:N	2.58	0.57
5:B:203:PHE:C	5:B:204:ILE:HD12	2.23	0.57
5:B:314:LEU:HD23	5:B:317:CYS:SG	2.44	0.57
4:A:1101:LEU:HB2	4:A:1355:VAL:HG21	1.85	0.57
5:B:175:ARG:HH11	5:B:182:SER:N	2.03	0.57
5:B:178:ASN:C	5:B:180:TYR:N	2.58	0.57
4:A:500:GLU:OE2	5:B:1143:ALA:C	2.43	0.57
4:A:1345:ARG:HD2	4:A:1346:ALA:N	2.19	0.57
4:A:316:GLN:NE2	4:A:317:LYS:CG	2.48	0.57
5:B:292:ILE:H	5:B:293:PRO:HD2	1.70	0.57
5:B:731:VAL:HG12	5:B:732:SER:N	2.19	0.57
4:A:1161:THR:HG22	4:A:1162:VAL:N	2.20	0.57
5:B:202:TYR:C	5:B:203:PHE:O	2.42	0.57
5:B:1068:GLY:HA3	5:B:1086:PHE:CE1	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:I:7:CYS:SG	10:I:9:ASP:O	2.62	0.57
11:J:6:ARG:HA	11:J:12:LYS:O	2.04	0.57
5:B:685:LEU:HD11	5:B:692:TYR:CE2	2.39	0.57
5:B:698:GLU:HA	5:B:701:ILE:CD1	2.35	0.57
4:A:399:HIS:CE1	4:A:462:VAL:HG21	2.40	0.57
5:B:637:LEU:HD13	5:B:740:HIS:CG	2.37	0.57
5:B:800:GLN:HB3	11:J:52:THR:HG21	1.85	0.57
5:B:995:ARG:HH22	12:K:9:LEU:HD11	1.69	0.57
4:A:1234:GLU:C	4:A:1235:LYS:CD	2.72	0.56
4:A:1344:GLY:O	4:A:1345:ARG:O	2.22	0.56
5:B:824:ILE:HG12	11:J:48:ARG:HH12	1.70	0.56
4:A:49:LYS:O	4:A:50:ILE:HB	2.04	0.56
5:B:361:LEU:HD21	5:B:377:PHE:HD2	1.71	0.56
5:B:744:HIS:CD2	5:B:746:SER:H	2.23	0.56
8:F:69:LEU:CA	8:F:70:LYS:HB2	2.35	0.56
4:A:10:PRO:O	5:B:1193:GLN:HB3	2.05	0.56
4:A:90:VAL:CA	4:A:297:GLN:OE1	2.52	0.56
4:A:157:ASP:O	4:A:158:PRO:C	2.44	0.56
4:A:354:SER:HA	4:A:482:PHE:HD1	1.71	0.56
4:A:544:ASP:CG	4:A:545:GLN:N	2.56	0.56
4:A:939:ASP:OD1	4:A:1023:ARG:NH1	2.39	0.56
4:A:1017:LEU:HB2	7:E:205:SER:HA	1.85	0.56
5:B:785:TYR:CE1	11:J:60:PHE:CE1	2.94	0.56
5:B:983:ARG:HD2	5:B:1091:TYR:HB3	1.88	0.56
5:B:1019:SER:C	5:B:1020:ARG:HG2	2.26	0.56
7:E:202:SER:OG	7:E:204:THR:HG22	2.04	0.56
5:B:301:ILE:O	5:B:303:TYR:CE2	2.59	0.56
5:B:1066:SER:C	5:B:1067:ARG:HG2	2.26	0.56
6:C:173:ALA:O	6:C:233:GLU:O	2.23	0.56
4:A:225:ASN:HD22	4:A:227:VAL:H	1.54	0.56
4:A:476:SER:N	4:A:477:PRO:HD2	2.20	0.56
4:A:524:VAL:HG12	4:A:525:GLN:N	2.20	0.56
5:B:217:ARG:NH1	5:B:407:ASP:CG	2.58	0.56
5:B:226:PHE:HD2	5:B:398:ARG:NH2	2.03	0.56
11:J:64:ASN:HB3	11:J:65:PRO:HD3	1.87	0.56
4:A:11:LEU:HD12	5:B:1194:ILE:HA	1.87	0.56
4:A:353:ILE:HD13	4:A:487:MET:HE1	1.84	0.56
4:A:777:PHE:CD1	4:A:782:ARG:N	2.73	0.56
5:B:124:TYR:OH	5:B:179:CYS:C	2.44	0.56
5:B:202:TYR:O	5:B:204:ILE:CD1	2.52	0.56
5:B:523:CYS:SG	5:B:750:GLY:N	2.78	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:1065:GLN:NE2	5:B:1067:ARG:N	2.30	0.56
5:B:1124:ARG:NH1	5:B:1124:ARG:CG	2.65	0.56
7:E:52:ARG:CB	7:E:53:PRO:CD	2.80	0.56
4:A:47:ARG:HH12	5:B:920:PRO:HB2	1.69	0.56
4:A:883:LEU:HD22	4:A:1020:CYS:O	2.06	0.56
4:A:1187:GLN:HE21	4:A:1187:GLN:N	2.03	0.56
5:B:341:LEU:HB2	5:B:344:LYS:HE3	1.88	0.56
4:A:956:LEU:HD11	4:A:1017:LEU:HD22	1.87	0.56
5:B:173:MET:CA	5:B:203:PHE:HB3	2.32	0.56
5:B:969:ARG:NE	6:C:61:GLU:OE1	2.39	0.56
4:A:1024:SER:HB3	4:A:1025:ARG:C	2.25	0.56
5:B:797:TYR:HB3	5:B:798:TYR:CE1	2.39	0.56
4:A:81:PHE:O	4:A:241:VAL:O	2.23	0.56
4:A:351:THR:CG2	4:A:352:VAL:N	2.69	0.56
5:B:292:ILE:HD12	5:B:327:ARG:H	1.70	0.56
5:B:291:ILE:HG12	5:B:300:HIS:CE1	2.41	0.55
5:B:542:MET:HB3	5:B:636:PRO:HD3	1.87	0.55
5:B:851:PHE:CD1	5:B:1094:ARG:HB2	2.39	0.55
5:B:1160:VAL:O	5:B:1161:HIS:ND1	2.40	0.55
4:A:351:THR:HG21	4:A:466:SER:O	2.06	0.55
5:B:637:LEU:HD11	5:B:740:HIS:CE1	2.41	0.55
4:A:826:ASP:O	4:A:830:LYS:N	2.37	0.55
5:B:201:GLY:N	5:B:202:TYR:HD2	2.03	0.55
4:A:315:LEU:HG	4:A:316:GLN:HB2	1.89	0.55
5:B:179:CYS:O	5:B:181:LEU:CD1	2.54	0.55
9:H:82:PRO:O	9:H:83:GLN:HB2	2.06	0.55
4:A:1011:GLN:O	4:A:1015:VAL:HG23	2.05	0.55
4:A:1027:ALA:O	4:A:1028:THR:C	2.44	0.55
4:A:1161:THR:HG21	4:A:1239:ARG:HH22	1.70	0.55
5:B:301:ILE:HG21	5:B:314:LEU:HD11	1.87	0.55
5:B:955:THR:HG22	5:B:956:THR:N	2.12	0.55
7:E:124:VAL:HB	7:E:125:PRO:HD3	1.88	0.55
10:I:7:CYS:SG	10:I:10:CYS:O	2.65	0.55
4:A:857:ARG:NH2	8:F:139:PRO:CG	2.42	0.55
4:A:1287:TYR:OH	4:A:1307:GLU:CD	2.45	0.55
4:A:1363:VAL:HB	4:A:1368:MET:CE	2.37	0.55
5:B:234:ILE:HA	5:B:259:TYR:HA	1.89	0.55
5:B:879:ARG:HB3	5:B:879:ARG:NH1	2.21	0.55
5:B:104:GLU:OE2	13:L:54:ARG:NH1	2.39	0.55
11:J:3:VAL:HG21	11:J:18:TRP:CG	2.42	0.55
4:A:810:PRO:N	5:B:1047:PHE:CE2	2.74	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:172:ILE:O	5:B:203:PHE:HB2	2.04	0.55
5:B:996:ARG:NH2	6:C:174:ALA:O	2.40	0.55
5:B:1179:GLN:O	5:B:1180:PHE:CD1	2.60	0.55
4:A:1232:ASN:HA	4:A:1233:ASP:O	2.07	0.55
5:B:766:ARG:HH21	5:B:1020:ARG:HB3	1.72	0.55
5:B:824:ILE:HG12	11:J:48:ARG:NH1	2.22	0.55
9:H:95:TYR:HE2	9:H:97:MET:HG3	1.72	0.55
4:A:1234:GLU:O	4:A:1235:LYS:CD	2.54	0.55
5:B:173:MET:O	5:B:176:SER:HB3	2.07	0.55
5:B:879:ARG:NE	5:B:879:ARG:H	2.03	0.55
4:A:91:PHE:N	4:A:297:GLN:OE1	2.40	0.54
4:A:587:HIS:NE2	4:A:969:GLN:CD	2.60	0.54
4:A:1027:ALA:HB3	4:A:1030:ARG:HB2	1.88	0.54
5:B:290:GLY:CA	5:B:327:ARG:HH11	2.17	0.54
5:B:290:GLY:HA2	5:B:327:ARG:NH1	2.18	0.54
11:J:5:VAL:O	11:J:6:ARG:O	2.25	0.54
12:K:65:HIS:CD2	12:K:66:PRO:HD2	2.42	0.54
4:A:65:LEU:CD2	4:A:72:GLU:C	2.74	0.54
5:B:803:LEU:HD12	5:B:822:ASN:OD1	2.06	0.54
8:F:72:LYS:HB3	8:F:73:ALA:CB	2.36	0.54
4:A:253:ASN:ND2	4:A:256:GLN:H	1.89	0.54
4:A:590:ARG:O	4:A:591:PHE:HB2	2.07	0.54
5:B:33:VAL:HG21	5:B:638:PHE:CZ	2.43	0.54
5:B:890:TYR:CE1	5:B:910:VAL:HG21	2.42	0.54
6:C:99:LEU:HB2	6:C:157:CYS:HB2	1.89	0.54
6:C:99:LEU:CD2	6:C:120:ILE:HA	2.36	0.54
6:C:244:VAL:HG21	12:K:105:PHE:CZ	2.42	0.54
4:A:68:GLN:HG3	4:A:68:GLN:O	2.08	0.54
4:A:1171:GLN:OE1	4:A:1171:GLN:N	2.41	0.54
4:A:51:GLY:HA2	4:A:56:PRO:CG	2.37	0.54
5:B:363:HIS:HD2	5:B:585:VAL:HG22	1.71	0.54
5:B:1077:THR:HG23	5:B:1079:LYS:H	1.72	0.54
4:A:441:PRO:HD3	4:A:498:ARG:HH21	1.72	0.54
4:A:841:LEU:HD23	4:A:1384:VAL:HG11	1.90	0.54
4:A:868:TYR:HE1	4:A:1064:VAL:HG11	1.71	0.54
5:B:798:TYR:CD2	11:J:4:PRO:HG3	2.43	0.54
13:L:38:LEU:HD21	13:L:49:LYS:HG2	1.89	0.54
4:A:14:VAL:H	4:A:1432:GLN:NE2	2.03	0.54
4:A:315:LEU:HB2	4:A:320:ARG:CZ	2.37	0.54
5:B:114:PRO:HG3	5:B:181:LEU:HD11	1.88	0.54
5:B:302:CYS:CA	5:B:310:MET:CE	2.85	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:69:LEU:H	8:F:70:LYS:CB	2.20	0.54
9:H:104:PHE:CZ	9:H:136:LYS:HA	2.43	0.54
4:A:642:CYS:O	4:A:645:LEU:HB3	2.07	0.54
4:A:690:VAL:CG2	4:A:718:VAL:HG13	2.37	0.54
5:B:290:GLY:HA3	5:B:327:ARG:HH12	1.71	0.54
5:B:302:CYS:SG	5:B:310:MET:HE3	2.23	0.54
4:A:68:GLN:C	4:A:70:CYS:N	2.61	0.54
4:A:1291:VAL:HG13	4:A:1292:PRO:HD2	1.90	0.54
4:A:1019:CYS:C	4:A:1021:LEU:O	2.47	0.53
4:A:1340:GLY:HA3	7:E:184:VAL:HG23	1.90	0.53
5:B:55:VAL:HG11	5:B:177:LYS:HZ2	1.73	0.53
5:B:809:MET:HE1	5:B:983:ARG:NH2	2.23	0.53
5:B:1023:VAL:O	5:B:1027:ILE:HG13	2.08	0.53
7:E:177:ARG:HG2	7:E:215:MET:HG3	1.90	0.53
4:A:17:VAL:HB	4:A:1419:ASP:HB3	1.90	0.53
4:A:1196:GLU:HG2	4:A:1197:LEU:N	2.23	0.53
5:B:302:CYS:HA	5:B:310:MET:CE	2.38	0.53
5:B:698:GLU:HA	5:B:701:ILE:HD13	1.89	0.53
4:A:635:ARG:HH21	4:A:877:HIS:HA	1.73	0.53
4:A:855:THR:OG1	4:A:865:GLN:O	2.24	0.53
4:A:1363:VAL:HB	4:A:1368:MET:HE3	1.89	0.53
5:B:29:ASP:HB3	5:B:658:ILE:HD13	1.89	0.53
4:A:1364:ASN:HD22	4:A:1366:ARG:CG	2.22	0.53
5:B:175:ARG:NH1	5:B:182:SER:CA	2.40	0.53
6:C:214:ASN:O	6:C:216:GLY:N	2.41	0.53
7:E:171:LYS:HB2	7:E:174:GLN:HG3	1.90	0.53
5:B:181:LEU:O	5:B:183:GLU:N	2.42	0.53
5:B:710:LEU:O	5:B:711:GLU:CB	2.56	0.53
5:B:809:MET:HE1	5:B:983:ARG:HH22	1.73	0.53
4:A:22:PHE:HD2	5:B:1211:ASN:HA	1.74	0.53
5:B:181:LEU:C	5:B:183:GLU:N	2.62	0.53
5:B:912:ILE:HD11	5:B:966:VAL:HG23	1.90	0.53
6:C:242:GLN:HA	6:C:245:VAL:HB	1.90	0.53
5:B:101:MET:HG3	5:B:169:ARG:HH12	1.74	0.53
5:B:238:ALA:HB3	5:B:256:VAL:HB	1.90	0.53
5:B:1163:CYS:SG	5:B:1166:CYS:SG	2.99	0.53
4:A:23:SER:O	4:A:27:VAL:HG23	2.07	0.53
4:A:518:LYS:HB2	4:A:519:PRO:HD2	1.91	0.53
4:A:853:ASP:C	4:A:855:THR:H	2.12	0.53
5:B:33:VAL:HG21	5:B:638:PHE:CE1	2.44	0.53
5:B:640:VAL:HG23	5:B:740:HIS:HA	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:354:SER:HA	4:A:482:PHE:CD1	2.45	0.53
4:A:370:ILE:HG22	4:A:374:LEU:HD12	1.90	0.53
4:A:403:LYS:HA	4:A:415:LEU:HB2	1.91	0.53
4:A:497:THR:HG21	5:B:1146:PHE:HD1	1.74	0.53
4:A:1023:ARG:O	4:A:1024:SER:HB2	2.09	0.53
5:B:67:SER:HB2	5:B:92:PHE:HB2	1.91	0.53
5:B:516:ASN:HD22	5:B:516:ASN:N	1.97	0.53
5:B:567:GLU:OE1	5:B:567:GLU:N	2.42	0.53
10:I:68:LEU:HB3	10:I:84:VAL:CG1	2.39	0.53
4:A:4:GLN:OE1	5:B:1159:ARG:NH1	2.42	0.52
4:A:22:PHE:HE2	5:B:1212:ILE:H	1.56	0.52
4:A:579:SER:HB3	4:A:611:GLN:HA	1.91	0.52
4:A:830:LYS:HZ3	4:A:1081:LEU:H	1.57	0.52
4:A:1021:LEU:HA	4:A:1024:SER:OG	2.10	0.52
4:A:1026:LEU:HD13	4:A:1026:LEU:H	1.65	0.52
5:B:51:PHE:HD2	5:B:176:SER:OG	1.92	0.52
5:B:315:LYS:N	5:B:316:PRO:HD2	2.23	0.52
5:B:986:GLN:NE2	5:B:1020:ARG:CD	2.72	0.52
1:R:9:G:C2	3:T:21:DC:O2	2.63	0.52
4:A:1207:LEU:HG	4:A:1274:ARG:NH2	2.25	0.52
4:A:1317:MET:HA	4:A:1322:ILE:HD11	1.91	0.52
4:A:22:PHE:CE2	5:B:1212:ILE:N	2.78	0.52
4:A:777:PHE:HE1	4:A:782:ARG:HA	1.66	0.52
5:B:40:GLU:OE2	5:B:681:TRP:CB	2.58	0.52
7:E:52:ARG:HB2	7:E:53:PRO:CD	2.26	0.52
5:B:619:ILE:HG13	10:I:65:ASP:HB2	1.92	0.52
5:B:986:GLN:NE2	5:B:1020:ARG:HD2	2.21	0.52
5:B:1065:GLN:NE2	5:B:1066:SER:N	2.57	0.52
9:H:93:TYR:HA	9:H:145:ARG:HB3	1.91	0.52
4:A:542:GLU:O	4:A:546:VAL:HG23	2.09	0.52
4:A:850:VAL:CG1	4:A:851:HIS:N	2.72	0.52
4:A:545:GLN:HB3	4:A:549:MET:HE1	1.92	0.52
5:B:634:TYR:CE2	5:B:692:TYR:CD1	2.98	0.52
5:B:1034:VAL:HG22	5:B:1059:LEU:HD13	1.91	0.52
5:B:1073:TYR:HE2	5:B:1080:LYS:CG	2.22	0.52
4:A:153:PRO:CB	4:A:154:SER:O	2.58	0.52
4:A:1234:GLU:HB3	4:A:1235:LYS:CE	2.39	0.52
5:B:202:TYR:HE1	5:B:209:GLU:CD	2.13	0.52
4:A:22:PHE:HE2	5:B:1212:ILE:N	2.08	0.52
4:A:58:LEU:HD22	4:A:59:GLY:H	1.68	0.52
11:J:36:LEU:HD11	11:J:51:LEU:HB2	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:2:DT:H3	3:T:13:DA:H61	1.55	0.52
4:A:472:LEU:O	4:A:475:THR:HB	2.10	0.52
4:A:666:ILE:HD11	5:B:1030:LEU:HD22	1.91	0.52
4:A:779:PHE:O	4:A:780:VAL:C	2.48	0.52
4:A:939:ASP:CG	4:A:1023:ARG:HH11	2.12	0.52
5:B:1047:PHE:HD1	5:B:1047:PHE:H	1.58	0.52
4:A:845:LEU:O	4:A:846:GLU:C	2.47	0.52
4:A:852:TYR:CE1	8:F:136:ARG:HG2	2.45	0.52
5:B:226:PHE:CD1	5:B:226:PHE:N	2.78	0.52
4:A:252:PHE:O	4:A:252:PHE:CD2	2.63	0.51
4:A:587:HIS:CD2	4:A:609:ASP:H	2.28	0.51
4:A:901:LEU:H	4:A:926:GLN:NE2	2.08	0.51
4:A:1035:TYR:CD2	4:A:1035:TYR:O	2.64	0.51
5:B:642:ASP:O	5:B:644:GLU:N	2.42	0.51
5:B:803:LEU:HD12	5:B:822:ASN:CG	2.30	0.51
5:B:1001:PHE:CD1	6:C:34:ARG:NH2	2.78	0.51
8:F:93:ILE:CD1	8:F:134:ILE:HD11	2.40	0.51
4:A:447:GLN:HA	4:A:448:PRO:C	2.30	0.51
4:A:707:GLY:HA3	4:A:1281:ARG:HG3	1.91	0.51
4:A:731:ARG:HG2	4:A:755:PHE:CZ	2.45	0.51
5:B:684:LEU:HD23	5:B:689:LEU:CD1	2.40	0.51
4:A:496:GLU:HG2	8:F:95:GLY:O	2.11	0.51
4:A:596:THR:C	4:A:598:LEU:N	2.64	0.51
4:A:1266:THR:HG22	4:A:1266:THR:O	2.10	0.51
4:A:544:ASP:OD2	4:A:545:GLN:HG3	2.10	0.51
4:A:1229:SER:OG	4:A:1236:LEU:HD12	2.06	0.51
6:C:114:TYR:CD2	6:C:140:ASN:HB3	2.45	0.51
4:A:239:LEU:HD12	4:A:240:PRO:HD2	1.92	0.51
4:A:316:GLN:CA	4:A:318:SER:N	2.64	0.51
4:A:1170:ILE:CB	4:A:1171:GLN:CA	2.77	0.51
5:B:361:LEU:HD21	5:B:377:PHE:CD2	2.46	0.51
4:A:265:LYS:HD2	4:A:303:TYR:HA	1.92	0.51
4:A:795:GLU:OE1	5:B:731:VAL:CG2	2.58	0.51
4:A:1209:MET:HG3	4:A:1230:GLU:O	2.11	0.51
5:B:839:MET:HE3	5:B:1010:LEU:HD11	1.91	0.51
4:A:845:LEU:HD12	4:A:1069:ALA:HB2	1.93	0.51
5:B:40:GLU:OE2	5:B:681:TRP:CA	2.58	0.51
6:C:77:ILE:O	6:C:77:ILE:HD13	2.10	0.51
4:A:406:ILE:HB	4:A:431:LYS:HB2	1.93	0.51
4:A:569:LYS:HD2	4:A:571:LEU:CD1	2.32	0.51
4:A:587:HIS:CE1	4:A:969:GLN:CD	2.84	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1434:ALA:O	4:A:1436:ILE:N	2.43	0.51
5:B:177:LYS:C	5:B:177:LYS:CD	2.75	0.51
5:B:202:TYR:CZ	5:B:485:ARG:NH2	2.78	0.51
5:B:203:PHE:C	5:B:204:ILE:CG1	2.79	0.51
4:A:151:ASP:CA	4:A:152:VAL:CB	2.65	0.51
4:A:313:GLN:OE1	4:A:322:VAL:HG11	2.10	0.51
4:A:365:GLY:HA3	4:A:469:ARG:HB2	1.92	0.51
4:A:1162:VAL:C	4:A:1163:ILE:HG13	2.32	0.51
5:B:55:VAL:HG11	5:B:177:LYS:HZ3	1.75	0.51
4:A:337:ARG:NH2	4:A:839:ARG:HD2	2.25	0.50
4:A:567:LYS:CG	4:A:568:PRO:HD2	2.40	0.50
4:A:1287:TYR:CD2	4:A:1305:VAL:HG21	2.42	0.50
4:A:1345:ARG:CD	4:A:1346:ALA:N	2.74	0.50
4:A:1364:ASN:ND2	4:A:1366:ARG:CG	2.66	0.50
6:C:167:HIS:CD2	13:L:70:ARG:HB3	2.45	0.50
4:A:821:ARG:NH1	5:B:514:LEU:HD13	2.23	0.50
4:A:852:TYR:CZ	8:F:136:ARG:HG2	2.46	0.50
4:A:457:ALA:HB3	4:A:506:ALA:HA	1.93	0.50
4:A:1193:LEU:O	4:A:1193:LEU:HG	2.10	0.50
5:B:120:ARG:HG2	5:B:955:THR:HG21	1.92	0.50
4:A:325:ILE:CG2	5:B:1210:MET:SD	2.99	0.50
8:F:82:THR:HG22	8:F:84:TYR:H	1.77	0.50
9:H:95:TYR:CE2	9:H:97:MET:HG3	2.46	0.50
4:A:355:GLY:N	4:A:482:PHE:CE1	2.79	0.50
5:B:373:ARG:HA	5:B:566:LEU:HD23	1.93	0.50
5:B:1017:ILE:HB	5:B:1018:PRO:HD2	1.94	0.50
6:C:31:ASN:O	6:C:35:ARG:HG3	2.12	0.50
1:R:4:G:H2'	1:R:5:A:C8	2.45	0.50
5:B:200:GLY:CA	5:B:202:TYR:CD2	2.85	0.50
5:B:950:ASP:OD2	5:B:967:ARG:NH2	2.29	0.50
6:C:93:ASP:OD1	6:C:122:SER:HB2	2.11	0.50
10:I:33:SER:O	10:I:35:VAL:HG23	2.11	0.50
4:A:468:PHE:CE1	4:A:489:LEU:HD13	2.47	0.50
4:A:631:HIS:CE1	4:A:879:GLU:HG2	2.47	0.50
5:B:63:ILE:HD11	5:B:95:ILE:HD12	1.92	0.50
5:B:226:PHE:HD1	5:B:226:PHE:N	2.08	0.50
5:B:785:TYR:CE1	11:J:60:PHE:HE1	2.30	0.50
7:E:113:GLN:HB3	7:E:137:GLU:OE1	2.12	0.50
4:A:899:VAL:HB	4:A:929:LEU:HD12	1.93	0.50
5:B:234:ILE:HD13	5:B:257:LYS:HD3	1.94	0.50
5:B:376:PHE:CE2	5:B:569:TYR:HD2	2.29	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:1017:ILE:CB	5:B:1018:PRO:CD	2.89	0.50
7:E:89:GLY:O	7:E:91:LYS:N	2.45	0.50
10:I:27:PHE:O	10:I:35:VAL:HG13	2.12	0.49
4:A:497:THR:CG2	5:B:1146:PHE:HD1	2.25	0.49
4:A:1339:LEU:HD13	7:E:147:HIS:CD2	2.47	0.49
4:A:106:VAL:HG11	4:A:214:ILE:HD11	1.93	0.49
4:A:336:ILE:H	4:A:336:ILE:HD12	1.77	0.49
4:A:612:ILE:O	4:A:612:ILE:HG13	2.11	0.49
4:A:1436:ILE:HD13	5:B:1139:ILE:HG23	1.93	0.49
5:B:515:HIS:H	5:B:518:HIS:CD2	2.29	0.49
9:H:38:LEU:HD11	9:H:123:MET:CE	2.43	0.49
5:B:334:ILE:O	5:B:336:ARG:HG3	2.13	0.49
5:B:797:TYR:HE1	5:B:854:LEU:HG	1.76	0.49
6:C:43:THR:OG1	6:C:44:LEU:N	2.45	0.49
7:E:89:GLY:HA2	7:E:120:ALA:HB2	1.95	0.49
4:A:381:THR:O	4:A:383:TYR:N	2.45	0.49
4:A:779:PHE:O	4:A:782:ARG:O	2.30	0.49
4:A:947:PHE:CD1	4:A:954:TRP:CE2	3.00	0.49
5:B:749:LEU:HD22	5:B:753:ALA:HB1	1.95	0.49
5:B:1155:SER:OG	5:B:1156:ASP:N	2.45	0.49
8:F:71:GLU:HB3	8:F:72:LYS:O	2.12	0.49
4:A:99:ILE:HG13	4:A:234:MET:SD	2.53	0.49
4:A:153:PRO:CB	4:A:154:SER:C	2.76	0.49
4:A:334:GLY:O	4:A:336:ILE:N	2.45	0.49
5:B:728:ARG:CD	5:B:730:ARG:HH22	2.17	0.49
4:A:830:LYS:HZ2	4:A:1080:THR:CA	2.21	0.49
5:B:179:CYS:O	5:B:181:LEU:HG	2.13	0.49
5:B:322:PHE:C	5:B:322:PHE:HD2	2.14	0.49
7:E:176:PRO:O	7:E:212:ARG:HA	2.13	0.49
4:A:22:PHE:HB2	5:B:1211:ASN:OD1	2.13	0.49
4:A:830:LYS:HZ3	4:A:1080:THR:CA	2.14	0.49
5:B:57:TYR:O	5:B:58:THR:C	2.51	0.49
5:B:203:PHE:HE1	5:B:461:LEU:HD22	1.76	0.49
5:B:515:HIS:N	5:B:518:HIS:HD2	2.10	0.49
5:B:976:ILE:O	5:B:990:ILE:O	2.31	0.49
7:E:19:VAL:O	7:E:23:VAL:HG23	2.12	0.49
4:A:1030:ARG:NH1	4:A:1030:ARG:CG	2.65	0.49
5:B:204:ILE:C	5:B:205:ILE:HD13	2.24	0.49
5:B:226:PHE:CD2	5:B:398:ARG:NH2	2.81	0.49
6:C:184:ASN:HD21	6:C:189:THR:H	1.61	0.49
13:L:31:CYS:HB2	13:L:48:CYS:SG	2.53	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:266:LEU:HA	4:A:269:ILE:HD12	1.94	0.48
4:A:795:GLU:OE2	5:B:731:VAL:HG13	2.11	0.48
4:A:795:GLU:CD	5:B:731:VAL:CG1	2.81	0.48
4:A:993:LEU:HD22	4:A:1046:LEU:HG	1.94	0.48
5:B:341:LEU:HD12	5:B:344:LYS:CE	2.42	0.48
5:B:824:ILE:HD12	11:J:44:TYR:HE1	1.78	0.48
5:B:1064:TYR:O	5:B:1065:GLN:O	2.30	0.48
6:C:3:GLU:HB3	12:K:104:ASN:OD1	2.12	0.48
4:A:35:ILE:HG21	4:A:84:ILE:HD13	1.94	0.48
4:A:413:ILE:N	4:A:413:ILE:HD12	2.28	0.48
4:A:565:ILE:CG2	4:A:567:LYS:HG2	2.43	0.48
4:A:1022:LEU:HA	4:A:1026:LEU:HD11	1.95	0.48
4:A:1441:PHE:HE2	8:F:89:GLU:HG3	1.73	0.48
5:B:98:THR:OG1	5:B:126:SER:HB2	2.13	0.48
5:B:217:ARG:HH11	5:B:407:ASP:CG	2.16	0.48
5:B:756:ILE:HG12	5:B:770:GLN:HG2	1.95	0.48
6:C:91:HIS:CE1	6:C:158:VAL:HG21	2.47	0.48
4:A:90:VAL:HG13	4:A:297:GLN:NE2	2.28	0.48
4:A:315:LEU:O	4:A:316:GLN:HB3	2.12	0.48
4:A:857:ARG:HG2	4:A:863:VAL:CA	2.16	0.48
5:B:25:ILE:HG22	5:B:26:THR:N	2.28	0.48
5:B:302:CYS:CA	5:B:310:MET:HE1	2.41	0.48
5:B:322:PHE:HE1	10:I:30:ARG:HD2	1.78	0.48
5:B:363:HIS:O	5:B:364:ILE:HB	2.13	0.48
5:B:732:SER:HB3	5:B:734:HIS:CD2	2.49	0.48
5:B:851:PHE:HD1	5:B:1094:ARG:HB2	1.78	0.48
5:B:1202:LEU:C	5:B:1202:LEU:HD23	2.34	0.48
4:A:1244:ARG:CB	4:A:1244:ARG:NH1	2.50	0.48
5:B:955:THR:HG23	13:L:54:ARG:O	2.13	0.48
4:A:567:LYS:HB3	9:H:96:VAL:H	1.79	0.48
4:A:795:GLU:OE1	5:B:731:VAL:CG1	2.62	0.48
5:B:252:SER:HB3	5:B:362:PRO:HG2	1.95	0.48
5:B:294:ASP:HA	5:B:297:ILE:CG1	2.43	0.48
5:B:569:TYR:CZ	5:B:589:VAL:HG21	2.48	0.48
5:B:1028:GLU:O	5:B:1031:LEU:N	2.46	0.48
5:B:1212:ILE:O	5:B:1214:PRO:HD3	2.14	0.48
4:A:1026:LEU:O	4:A:1027:ALA:CB	2.61	0.48
5:B:44:VAL:CG1	5:B:495:LEU:HD13	2.42	0.48
5:B:515:HIS:HD2	5:B:517:THR:OG1	1.97	0.48
11:J:3:VAL:HG21	11:J:18:TRP:HB2	1.94	0.48
4:A:795:GLU:CD	5:B:731:VAL:HG13	2.33	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:199:MET:N	5:B:199:MET:SD	2.83	0.48
5:B:357:GLN:HA	5:B:374:LYS:NZ	2.28	0.48
4:A:308:ILE:CG1	4:A:309:ALA:H	2.27	0.48
4:A:633:VAL:HG13	4:A:637:LYS:HG3	1.96	0.48
4:A:842:VAL:HG11	5:B:1136:ASP:OD2	2.14	0.48
4:A:1116:LEU:CD2	4:A:1311:VAL:HA	2.44	0.48
5:B:199:MET:SD	5:B:200:GLY:N	2.86	0.48
6:C:148:ARG:NH1	11:J:64:ASN:HA	2.29	0.48
7:E:185:ALA:HA	7:E:190:LEU:HD23	1.95	0.48
4:A:598:LEU:HB3	9:H:25:ARG:HH22	1.78	0.48
4:A:790:ASP:HB3	10:I:87:GLN:HG3	1.96	0.48
4:A:1151:GLU:O	4:A:1193:LEU:HD12	2.13	0.48
5:B:198:ASP:CG	5:B:202:TYR:HH	2.17	0.48
4:A:1271:ILE:O	4:A:1271:ILE:HG22	2.13	0.47
4:A:1384:VAL:C	4:A:1389:PHE:HE1	2.17	0.47
5:B:459:TYR:C	5:B:459:TYR:CD2	2.88	0.47
5:B:703:ILE:HA	5:B:740:HIS:O	2.14	0.47
6:C:71:PRO:HB2	6:C:133:ILE:HD13	1.96	0.47
4:A:76:GLU:OE2	5:B:1159:ARG:NH1	2.45	0.47
4:A:326:ARG:HG2	4:A:1406:VAL:HG21	1.96	0.47
5:B:175:ARG:NH1	5:B:181:LEU:C	2.67	0.47
5:B:259:TYR:OH	5:B:279:ASP:OD2	2.32	0.47
5:B:542:MET:HG2	5:B:747:MET:HB3	1.96	0.47
4:A:1144:LYS:HD2	4:A:1269:GLU:OE2	2.14	0.47
5:B:492:LEU:HB2	5:B:751:VAL:HG11	1.96	0.47
9:H:93:TYR:CD1	9:H:143:LEU:HD22	2.49	0.47
9:H:110:ASP:OD2	9:H:110:ASP:N	2.48	0.47
10:I:54:GLU:OE2	10:I:118:ARG:NH1	2.47	0.47
4:A:563:PRO:HB3	4:A:572:TRP:CE2	2.48	0.47
4:A:577:ILE:H	4:A:577:ILE:HG13	1.60	0.47
5:B:660:LYS:HE3	5:B:679:TYR:CD1	2.50	0.47
5:B:830:TYR:CZ	5:B:1000:PRO:HD3	2.49	0.47
5:B:879:ARG:CZ	5:B:879:ARG:CA	2.92	0.47
5:B:1159:ARG:HD3	5:B:1193:GLN:HG3	1.96	0.47
5:B:1202:LEU:HD21	5:B:1206:GLU:OE2	2.15	0.47
4:A:41:MET:C	4:A:50:ILE:HD12	2.33	0.47
4:A:474:VAL:HG12	4:A:478:TYR:CE2	2.48	0.47
4:A:637:LYS:CD	4:A:637:LYS:N	2.72	0.47
4:A:856:THR:HB	4:A:865:GLN:HB2	1.96	0.47
5:B:999:MET:HG2	5:B:1008:PRO:HD2	1.97	0.47
5:B:1065:GLN:OE1	5:B:1067:ARG:N	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:R:9:G:N2	3:T:21:DC:HI'	2.29	0.47
4:A:404:TYR:HA	4:A:413:ILE:O	2.14	0.47
4:A:777:PHE:CD1	4:A:782:ARG:C	2.77	0.47
4:A:807:GLY:HA3	5:B:728:ARG:HH12	1.77	0.47
4:A:1428:VAL:HG21	5:B:1135:ARG:HD2	1.97	0.47
5:B:483:LEU:O	5:B:484:ASN:CB	2.62	0.47
6:C:52:GLU:HB3	6:C:154:LYS:HB3	1.95	0.47
4:A:569:LYS:O	4:A:571:LEU:CD1	2.54	0.47
4:A:588:LEU:HB3	4:A:607:ILE:HB	1.96	0.47
4:A:1244:ARG:NH1	4:A:1244:ARG:CG	2.76	0.47
5:B:292:ILE:N	5:B:293:PRO:HD2	2.29	0.47
5:B:337:ARG:HD3	5:B:337:ARG:HA	1.55	0.47
5:B:350:GLN:HE22	5:B:353:LYS:HD3	1.79	0.47
5:B:364:ILE:HD13	5:B:585:VAL:HG13	1.96	0.47
5:B:999:MET:HG3	5:B:1000:PRO:HD2	1.96	0.47
5:B:1024:ALA:HA	5:B:1027:ILE:HD12	1.97	0.47
5:B:1073:TYR:CE2	5:B:1080:LYS:CG	2.98	0.47
4:A:526:ASP:HB2	5:B:835:GLN:NE2	2.30	0.47
4:A:675:THR:HG22	4:A:679:ILE:HD11	1.96	0.47
4:A:1418:LEU:HD13	5:B:1222:ARG:HD2	1.97	0.47
5:B:177:LYS:HE2	5:B:178:ASN:CG	2.34	0.47
5:B:839:MET:HB3	5:B:1012:ILE:HG22	1.96	0.47
5:B:1063:GLY:O	5:B:1064:TYR:HD1	1.92	0.47
7:E:114:ASN:HD22	7:E:114:ASN:HA	1.54	0.47
4:A:43:GLU:HG3	4:A:43:GLU:O	2.15	0.47
5:B:203:PHE:CE1	5:B:461:LEU:HD22	2.46	0.47
5:B:323:VAL:HG12	5:B:324:ILE:HG12	1.96	0.47
5:B:546:SER:OG	5:B:631:GLY:N	2.42	0.47
5:B:857:ARG:NH2	5:B:942:ARG:HH12	2.11	0.47
6:C:162:GLY:HA3	6:C:170:TRP:CD2	2.50	0.47
4:A:78:PRO:HA	5:B:1201:LYS:HE3	1.96	0.47
4:A:451:HIS:NE2	4:A:1074:GLU:HG3	2.29	0.47
4:A:1234:GLU:CB	4:A:1235:LYS:HD3	2.40	0.47
5:B:294:ASP:HA	5:B:297:ILE:HG13	1.97	0.47
4:A:476:SER:N	4:A:477:PRO:CD	2.77	0.46
4:A:490:HIS:HB3	5:B:1150:ARG:NH2	2.31	0.46
4:A:857:ARG:NH2	8:F:139:PRO:CB	2.76	0.46
5:B:337:ARG:O	5:B:339:THR:N	2.48	0.46
5:B:470:LYS:C	5:B:472:ALA:H	2.18	0.46
10:I:65:ASP:HA	10:I:66:PRO:HD3	1.67	0.46
4:A:1364:ASN:HD21	4:A:1366:ARG:HG2	1.74	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:236:HIS:CD2	5:B:389:ALA:HB2	2.44	0.46
5:B:321:GLY:O	5:B:323:VAL:N	2.48	0.46
4:A:483:ASP:OD1	4:A:485:ASP:OD1	2.33	0.46
4:A:589:GLN:HB3	4:A:961:ARG:NH2	2.30	0.46
4:A:810:PRO:HG3	5:B:1047:PHE:CD2	2.51	0.46
5:B:547:VAL:HG12	5:B:612:GLU:OE2	2.15	0.46
5:B:635:ARG:HB2	5:B:636:PRO:CD	2.45	0.46
6:C:73:GLN:O	6:C:129:ILE:HD12	2.15	0.46
8:F:81:THR:HG21	8:F:136:ARG:HD3	1.98	0.46
8:F:135:ARG:HG2	8:F:145:ASP:OD1	2.15	0.46
12:K:12:LEU:H	12:K:12:LEU:HD12	1.80	0.46
4:A:68:GLN:O	4:A:68:GLN:CD	2.54	0.46
4:A:347:PHE:CE1	4:A:375:THR:HG22	2.43	0.46
4:A:523:ILE:HG23	4:A:527:THR:HB	1.97	0.46
4:A:547:LEU:HD22	12:K:58:PHE:HD1	1.80	0.46
4:A:1021:LEU:CA	4:A:1024:SER:OG	2.63	0.46
4:A:1344:GLY:O	4:A:1345:ARG:C	2.54	0.46
5:B:202:TYR:HA	5:B:203:PHE:O	2.15	0.46
5:B:376:PHE:HB3	5:B:586:TRP:CZ3	2.50	0.46
5:B:973:ILE:HG23	5:B:974:PRO:HD2	1.97	0.46
4:A:73:GLY:O	4:A:76:GLU:N	2.48	0.46
4:A:519:PRO:HG3	4:A:630:ILE:HG13	1.97	0.46
4:A:575:LYS:HB3	4:A:612:ILE:HD11	1.98	0.46
4:A:1284:MET:HG2	4:A:1306:LEU:CD2	2.46	0.46
5:B:224:GLN:HA	5:B:396:ASP:OD2	2.16	0.46
5:B:1149:GLU:HG3	5:B:1153:GLU:OE1	2.14	0.46
8:F:107:VAL:HG12	8:F:109:VAL:H	1.80	0.46
13:L:48:CYS:SG	13:L:51:CYS:SG	3.14	0.46
4:A:530:GLY:O	4:A:534:LEU:N	2.46	0.46
4:A:624:SER:HA	4:A:630:ILE:HD11	1.97	0.46
5:B:650:GLU:HG3	5:B:651:LEU:N	2.31	0.46
5:B:878:GLN:HA	5:B:879:ARG:HH21	1.79	0.46
5:B:1175:LEU:C	5:B:1177:HIS:H	2.19	0.46
1:R:3:C:H4'	4:A:323:LYS:NZ	2.30	0.46
4:A:67:CYS:CB	4:A:70:CYS:HB3	2.44	0.46
4:A:907:THR:HG22	4:A:908:LEU:N	2.30	0.46
5:B:325:GLN:HE22	10:I:12:ASN:HD21	1.64	0.46
5:B:518:HIS:CE1	5:B:537:LYS:HE2	2.50	0.46
5:B:526:GLU:HG2	5:B:538:ASN:ND2	2.31	0.46
5:B:1179:GLN:O	5:B:1180:PHE:HD1	1.98	0.46
12:K:37:LYS:O	12:K:38:GLU:HG2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1173:HIS:O	4:A:1174:PHE:CD1	2.68	0.46
4:A:1345:ARG:O	4:A:1346:ALA:C	2.54	0.46
5:B:911:ILE:HG22	5:B:912:ILE:HG13	1.98	0.46
4:A:495:GLU:O	4:A:498:ARG:HB2	2.16	0.46
4:A:587:HIS:CE1	4:A:969:GLN:NE2	2.82	0.46
4:A:649:ILE:O	4:A:653:VAL:HG23	2.16	0.46
4:A:1209:MET:HE3	4:A:1228:TRP:HB2	1.97	0.46
4:A:1243:VAL:HG12	4:A:1244:ARG:H	1.81	0.46
4:A:1327:ILE:O	4:A:1327:ILE:HG23	2.16	0.46
5:B:37:PHE:O	5:B:38:PHE:CB	2.64	0.46
5:B:1017:ILE:N	5:B:1018:PRO:HD2	2.30	0.46
5:B:1202:LEU:HD23	5:B:1202:LEU:O	2.16	0.46
6:C:115:SER:OG	6:C:141:GLY:O	2.21	0.46
4:A:315:LEU:O	4:A:316:GLN:CB	2.64	0.46
4:A:886:ILE:HD11	4:A:943:LEU:HB3	1.97	0.46
5:B:115:GLN:HG2	5:B:193:LYS:HB2	1.98	0.46
9:H:82:PRO:C	9:H:84:ALA:H	2.18	0.46
13:L:48:CYS:SG	13:L:49:LYS:N	2.88	0.46
4:A:496:GLU:HG2	8:F:95:GLY:C	2.35	0.45
4:A:855:THR:CG2	4:A:856:THR:N	2.72	0.45
4:A:1116:LEU:HD22	4:A:1311:VAL:HA	1.97	0.45
4:A:1279:ILE:HA	4:A:1310:GLY:HA3	1.97	0.45
5:B:102:VAL:O	5:B:102:VAL:HG12	2.16	0.45
5:B:785:TYR:HE1	11:J:60:PHE:CZ	2.34	0.45
5:B:1016:ALA:O	5:B:1017:ILE:HB	2.16	0.45
6:C:134:ILE:HD13	6:C:139:GLY:O	2.16	0.45
4:A:545:GLN:HB3	4:A:549:MET:HE3	1.99	0.45
11:J:48:ARG:NH2	11:J:49:MET:HE1	2.30	0.45
3:T:27:DA:H2'	3:T:27:DA:N3	2.32	0.45
4:A:830:LYS:NZ	4:A:1080:THR:HG23	2.32	0.45
4:A:851:HIS:O	4:A:853:ASP:OD1	2.34	0.45
4:A:939:ASP:CG	4:A:1023:ARG:NH1	2.70	0.45
4:A:1022:LEU:O	4:A:1022:LEU:HD23	2.16	0.45
5:B:483:LEU:CD1	5:B:491:THR:HG23	2.46	0.45
5:B:486:TYR:OH	5:B:1096:ARG:HB3	2.16	0.45
5:B:1051:THR:O	5:B:1054:GLY:N	2.49	0.45
9:H:5:LEU:HD22	9:H:133:ASN:O	2.17	0.45
10:I:33:SER:O	10:I:34:TYR:C	2.55	0.45
4:A:58:LEU:HG	4:A:80:HIS:C	2.36	0.45
4:A:156:ASP:C	4:A:157:ASP:CG	2.74	0.45
5:B:113:TYR:HB3	5:B:114:PRO:HD2	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:177:LYS:HG3	5:B:178:ASN:N	2.31	0.45
5:B:329:THR:O	5:B:332:ASP:HB3	2.17	0.45
5:B:744:HIS:HD2	5:B:746:SER:CB	2.29	0.45
5:B:1027:ILE:O	5:B:1028:GLU:C	2.54	0.45
6:C:80:LEU:HD12	6:C:127:ARG:NH2	2.32	0.45
10:I:68:LEU:HB3	10:I:84:VAL:HG13	1.99	0.45
12:K:58:PHE:HB3	12:K:76:GLN:HB3	1.97	0.45
4:A:1345:ARG:O	4:A:1347:ALA:N	2.49	0.45
5:B:175:ARG:CA	5:B:179:CYS:SG	3.04	0.45
5:B:955:THR:CG2	5:B:956:THR:H	2.10	0.45
9:H:38:LEU:HD11	9:H:123:MET:HE2	1.99	0.45
4:A:590:ARG:NH2	4:A:592:ASP:OD2	2.30	0.45
4:A:608:ILE:HG12	4:A:613:ILE:HG13	1.98	0.45
4:A:666:ILE:HG22	5:B:1026:LEU:HB2	1.96	0.45
4:A:775:ILE:O	4:A:797:LYS:HE2	2.16	0.45
4:A:784:LEU:HB3	4:A:786:HIS:HD2	1.82	0.45
4:A:1209:MET:SD	4:A:1236:LEU:CD2	2.94	0.45
4:A:1216:ILE:O	4:A:1219:THR:OG1	2.33	0.45
4:A:1236:LEU:O	4:A:1237:ILE:HG13	2.16	0.45
5:B:405:ARG:CZ	5:B:632:ARG:HG2	2.47	0.45
5:B:903:VAL:HG12	5:B:904:ARG:N	2.29	0.45
5:B:1065:GLN:HG2	5:B:1069:PHE:HB2	1.98	0.45
5:B:1160:VAL:CG1	5:B:1161:HIS:H	2.22	0.45
6:C:51:VAL:HG22	6:C:155:LEU:CD2	2.47	0.45
4:A:208:LEU:HD22	4:A:212:LYS:HG3	1.99	0.45
4:A:447:GLN:H	4:A:447:GLN:HG2	1.67	0.45
4:A:857:ARG:HH11	4:A:863:VAL:CG2	2.19	0.45
4:A:1288:ASP:OD1	4:A:1300:LYS:NZ	2.49	0.45
5:B:299:GLU:OE2	5:B:571:PRO:HG2	2.17	0.45
5:B:827:ILE:HG23	5:B:1012:ILE:HD12	1.98	0.45
5:B:956:THR:HA	5:B:961:LEU:O	2.17	0.45
5:B:1037:LEU:O	11:J:47:ARG:NH1	2.50	0.45
9:H:139:ASN:O	9:H:140:ALA:HB2	2.17	0.45
13:L:32:ALA:HB3	13:L:55:ILE:CD1	2.44	0.45
4:A:308:ILE:HG13	4:A:309:ALA:H	1.81	0.45
4:A:646:PHE:O	4:A:647:GLY:C	2.55	0.45
5:B:343:ILE:O	5:B:344:LYS:HG3	2.16	0.45
5:B:1084:GLN:N	5:B:1084:GLN:CD	2.70	0.45
5:B:1107:ALA:O	5:B:1108:ARG:HB3	2.17	0.45
8:F:82:THR:HG22	8:F:84:TYR:HB2	1.99	0.45
4:A:49:LYS:HZ2	4:A:60:SER:HA	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:316:GLN:C	4:A:318:SER:N	2.70	0.45
4:A:453:MET:HE1	4:A:520:CYS:SG	2.57	0.45
4:A:809:THR:H	4:A:812:GLU:HB2	1.82	0.45
4:A:1100:ARG:HH21	4:A:1351:GLU:HG2	1.81	0.45
4:A:1169:ILE:HG22	4:A:1169:ILE:O	2.17	0.45
6:C:18:VAL:CG2	6:C:240:VAL:HB	2.47	0.45
9:H:30:SER:HB2	9:H:36:CYS:SG	2.57	0.45
4:A:19:PHE:CD2	4:A:1412:ALA:HB1	2.43	0.45
4:A:451:HIS:CE1	4:A:1074:GLU:HG3	2.52	0.45
4:A:463:ILE:HD13	4:A:469:ARG:CG	2.46	0.45
4:A:598:LEU:O	4:A:599:SER:C	2.56	0.45
4:A:946:VAL:HG22	7:E:201:LYS:HB3	1.99	0.45
5:B:115:GLN:HE21	5:B:119:LEU:HD11	1.82	0.45
5:B:464:GLY:HA2	5:B:479:VAL:O	2.18	0.45
5:B:792:MET:CE	5:B:857:ARG:CZ	2.95	0.45
5:B:1068:GLY:HA3	5:B:1086:PHE:HD1	1.79	0.45
4:A:31:SER:CB	4:A:82:GLY:HA2	2.21	0.44
4:A:120:GLU:HG3	4:A:123:ARG:HD3	1.99	0.44
4:A:1031:VAL:HG13	4:A:1037:LEU:HD12	1.98	0.44
4:A:1231:ASP:C	4:A:1233:ASP:N	2.71	0.44
5:B:1028:GLU:O	5:B:1029:CYS:C	2.55	0.44
6:C:235:VAL:HG21	11:J:6:ARG:HH21	1.81	0.44
4:A:325:ILE:HG22	4:A:326:ARG:N	2.31	0.44
4:A:453:MET:HE1	4:A:520:CYS:HB3	2.00	0.44
5:B:494:HIS:HD2	5:B:497:ARG:NH1	2.15	0.44
5:B:1087:PHE:CE2	11:J:44:TYR:OH	2.70	0.44
5:B:1124:ARG:O	5:B:1125:ASP:C	2.54	0.44
4:A:325:ILE:O	4:A:328:ARG:N	2.33	0.44
4:A:586:ILE:HD11	4:A:637:LYS:CE	2.47	0.44
4:A:810:PRO:HD3	5:B:1047:PHE:HD2	1.82	0.44
4:A:1063:MET:CG	4:A:1436:ILE:HG23	2.46	0.44
5:B:31:TRP:HA	5:B:34:ILE:HD13	1.99	0.44
5:B:201:GLY:HA3	5:B:495:LEU:HD22	1.99	0.44
6:C:169:LYS:HZ2	13:L:70:ARG:HG3	1.82	0.44
4:A:33:ALA:O	4:A:83:HIS:CD2	2.70	0.44
4:A:38:PRO:HA	4:A:270:LEU:HD13	2.00	0.44
4:A:449:SER:OG	5:B:1134:GLU:OE2	2.21	0.44
4:A:666:ILE:HA	5:B:1026:LEU:HD13	1.99	0.44
5:B:202:TYR:CD1	5:B:209:GLU:HB3	2.48	0.44
12:K:65:HIS:CG	12:K:66:PRO:HD2	2.53	0.44
4:A:22:PHE:HZ	5:B:1208:MET:HG2	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:260:ASP:OD1	4:A:261:ASP:N	2.50	0.44
4:A:304:MET:HE3	5:B:1210:MET:HG3	2.00	0.44
4:A:533:LYS:HB2	4:A:533:LYS:HE2	1.65	0.44
4:A:566:ILE:HG22	4:A:566:ILE:O	2.18	0.44
4:A:855:THR:OG1	4:A:866:PHE:HA	2.17	0.44
4:A:1206:ASP:C	4:A:1274:ARG:HH22	2.20	0.44
4:A:1436:ILE:O	4:A:1437:GLY:C	2.54	0.44
3:T:20:DC:H5''	5:B:1129:ARG:HD3	1.98	0.44
4:A:452:LYS:NZ	4:A:1067:LEU:HD22	2.32	0.44
4:A:553:VAL:HG13	4:A:648:ASN:HB3	1.98	0.44
4:A:779:PHE:N	4:A:779:PHE:HD1	2.13	0.44
4:A:810:PRO:CD	5:B:1047:PHE:HD2	2.31	0.44
4:A:1154:TYR:CE1	10:I:18:GLU:HG3	2.52	0.44
4:A:1400:CYS:O	4:A:1402:PHE:N	2.42	0.44
5:B:834:ASN:O	5:B:1013:ASN:HB2	2.17	0.44
9:H:145:ARG:HD2	9:H:146:ARG:HD2	1.99	0.44
4:A:92:HIS:NE2	4:A:304:MET:CE	2.81	0.44
5:B:341:LEU:HD12	5:B:344:LYS:HE3	2.00	0.44
5:B:550:ASP:OD1	5:B:551:PRO:HD2	2.18	0.44
5:B:792:MET:HE3	5:B:857:ARG:NE	2.33	0.44
4:A:73:GLY:C	4:A:75:ASN:N	2.70	0.44
4:A:264:PHE:HE1	4:A:317:LYS:H	1.54	0.44
4:A:316:GLN:NE2	4:A:317:LYS:HG2	2.23	0.44
4:A:455:MET:HG3	5:B:1137:CYS:CB	2.48	0.44
4:A:1424:VAL:HG11	5:B:1139:ILE:HD13	2.00	0.44
5:B:34:ILE:HD11	5:B:743:ILE:HG22	1.98	0.44
5:B:224:GLN:O	5:B:238:ALA:HA	2.18	0.44
5:B:258:LEU:HB2	5:B:385:LEU:HD21	1.99	0.44
5:B:468:GLU:HB3	5:B:469:GLN:H	1.53	0.44
5:B:810:GLU:O	5:B:811:TYR:C	2.56	0.44
5:B:1060:ARG:HA	5:B:1060:ARG:HD2	1.71	0.44
6:C:73:GLN:HE21	6:C:74:SER:H	1.65	0.44
12:K:65:HIS:HD2	12:K:67:PHE:H	1.65	0.44
4:A:244:PRO:HD2	4:A:245:PRO:HD3	1.99	0.44
4:A:320:ARG:CD	4:A:320:ARG:H	2.23	0.44
4:A:588:LEU:CB	4:A:607:ILE:HB	2.48	0.44
4:A:618:GLU:O	4:A:622:VAL:HG12	2.17	0.44
4:A:857:ARG:CD	4:A:863:VAL:HG22	2.44	0.44
4:A:918:GLU:OE2	4:A:918:GLU:C	2.57	0.44
5:B:744:HIS:CD2	5:B:746:SER:HB3	2.52	0.44
6:C:184:ASN:ND2	6:C:189:THR:O	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:H:115:TYR:CE2	9:H:124:ARG:HG3	2.52	0.44
9:H:118:PHE:HB2	9:H:121:LEU:HB2	2.00	0.44
4:A:56:PRO:O	4:A:57:ARG:HB2	2.17	0.43
4:A:107:CYS:HB3	4:A:114:LEU:HD21	1.99	0.43
4:A:777:PHE:HB2	4:A:780:VAL:O	2.16	0.43
5:B:254:LEU:HD12	5:B:272:THR:O	2.18	0.43
5:B:754:SER:O	5:B:806:THR:OG1	2.26	0.43
5:B:872:GLU:HG2	5:B:916:THR:HB	2.00	0.43
5:B:1013:ASN:OD1	5:B:1014:PRO:HD2	2.18	0.43
5:B:1156:ASP:OD2	5:B:1198:TYR:N	2.50	0.43
7:E:100:ILE:HG23	7:E:105:PHE:HB2	2.00	0.43
10:I:87:GLN:HE22	10:I:97:MET:HG3	1.83	0.43
4:A:41:MET:HA	4:A:50:ILE:CD1	2.46	0.43
4:A:783:THR:HG21	4:A:815:PHE:CE1	2.36	0.43
4:A:837:ILE:HD13	4:A:840:ARG:HH12	1.83	0.43
5:B:1006:ILE:CD1	11:J:43:ARG:HB2	2.48	0.43
4:A:93:VAL:HG21	4:A:304:MET:HB2	2.00	0.43
4:A:315:LEU:HB2	4:A:320:ARG:NH1	2.33	0.43
4:A:355:GLY:CA	4:A:482:PHE:CE1	3.02	0.43
4:A:807:GLY:HA3	5:B:728:ARG:NH1	2.33	0.43
4:A:1153:TYR:HD2	4:A:1163:ILE:HD11	1.84	0.43
5:B:45:SER:OG	5:B:46:GLN:N	2.49	0.43
8:F:72:LYS:CE	8:F:72:LYS:HA	2.48	0.43
4:A:41:MET:CA	4:A:50:ILE:CD1	2.93	0.43
4:A:159:THR:HB	4:A:160:GLN:HG3	2.00	0.43
4:A:1021:LEU:HA	4:A:1024:SER:CB	2.46	0.43
5:B:350:GLN:NE2	5:B:353:LYS:HD3	2.34	0.43
5:B:766:ARG:HD3	5:B:766:ARG:HA	1.80	0.43
5:B:899:ILE:HD11	5:B:911:ILE:CG1	2.42	0.43
6:C:53:THR:O	6:C:153:LEU:HA	2.18	0.43
9:H:56:THR:O	9:H:144:ILE:HA	2.19	0.43
4:A:1017:LEU:O	4:A:1017:LEU:HD23	2.18	0.43
4:A:1230:GLU:HB3	4:A:1231:ASP:H	1.68	0.43
5:B:48:LEU:HD22	5:B:175:ARG:C	2.35	0.43
5:B:202:TYR:CA	5:B:203:PHE:O	2.66	0.43
5:B:429:PHE:O	5:B:433:GLN:HG3	2.19	0.43
5:B:890:TYR:HB3	5:B:893:LEU:HD12	2.01	0.43
5:B:1081:LEU:HD13	5:B:1085:ILE:HD11	2.00	0.43
6:C:60:ASP:HB3	13:L:67:PHE:CE1	2.54	0.43
7:E:9:ILE:O	7:E:13:TRP:N	2.43	0.43
11:J:8:PHE:CD1	11:J:49:MET:CE	3.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:709:THR:HG21	10:I:93:LYS:O	2.18	0.43
4:A:875:ALA:HA	4:A:878:ILE:HD12	1.99	0.43
4:A:1161:THR:CG2	4:A:1162:VAL:N	2.82	0.43
5:B:28:GLU:O	5:B:30:SER:N	2.51	0.43
5:B:800:GLN:CB	11:J:52:THR:HG22	2.48	0.43
5:B:1136:ASP:HA	5:B:1139:ILE:HD12	2.00	0.43
4:A:7:SER:HB2	5:B:1193:GLN:OE1	2.19	0.43
4:A:873:MET:HB3	4:A:878:ILE:HD11	2.00	0.43
4:A:1064:VAL:O	4:A:1065:GLY:C	2.56	0.43
4:A:1098:VAL:N	4:A:1099:PRO:CD	2.77	0.43
5:B:54:PHE:HA	5:B:58:THR:HB	1.99	0.43
5:B:285:ILE:O	5:B:288:ALA:HB3	2.18	0.43
5:B:335:GLY:HA3	5:B:336:ARG:HA	1.71	0.43
5:B:801:LYS:O	11:J:52:THR:HG23	2.18	0.43
5:B:835:GLN:HA	5:B:1013:ASN:ND2	2.34	0.43
4:A:150:THR:O	4:A:151:ASP:CG	2.57	0.43
4:A:153:PRO:CB	4:A:154:SER:OG	2.67	0.43
4:A:779:PHE:HB2	4:A:782:ARG:O	2.18	0.43
4:A:873:MET:HG2	4:A:957:PRO:CG	2.39	0.43
4:A:915:SER:O	4:A:918:GLU:HG3	2.18	0.43
5:B:48:LEU:HD23	5:B:173:MET:SD	2.59	0.43
5:B:67:SER:HB2	5:B:92:PHE:HD2	1.84	0.43
5:B:326:ASP:O	5:B:327:ARG:C	2.56	0.43
5:B:876:LYS:HA	5:B:877:PRO:HD3	1.78	0.43
6:C:35:ARG:NH1	12:K:41:THR:OG1	2.51	0.43
4:A:12:ARG:NH1	5:B:1192:TYR:CE1	2.87	0.43
4:A:694:THR:HA	4:A:714:PHE:HE1	1.83	0.43
4:A:779:PHE:HA	5:B:699:GLU:OE1	2.18	0.43
5:B:287:ARG:HA	5:B:291:ILE:O	2.19	0.43
5:B:954:VAL:O	13:L:55:ILE:O	2.37	0.43
5:B:1027:ILE:HG13	5:B:1027:ILE:H	1.71	0.43
9:H:38:LEU:HD13	9:H:125:LEU:HD13	2.01	0.43
4:A:264:PHE:CE1	4:A:317:LYS:CG	3.01	0.43
4:A:775:ILE:H	4:A:775:ILE:HG12	1.53	0.43
5:B:128:LEU:O	5:B:129:PHE:CD1	2.72	0.43
5:B:174:LEU:C	5:B:176:SER:H	2.23	0.43
5:B:203:PHE:C	5:B:204:ILE:HG13	2.38	0.43
5:B:1152:MET:O	5:B:1157:ALA:HB2	2.19	0.43
7:E:205:SER:O	7:E:206:GLY:C	2.56	0.43
9:H:41:ASP:OD2	9:H:122:LEU:N	2.49	0.43
4:A:49:LYS:HZ1	4:A:61:ILE:N	2.14	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:308:ILE:HG13	4:A:309:ALA:N	2.34	0.42
4:A:618:GLU:OE1	4:A:619:LYS:N	2.52	0.42
12:K:61:TYR:HB3	12:K:73:LEU:HD12	2.01	0.42
3:T:28:DT:C1'	4:A:317:LYS:O	2.62	0.42
4:A:319:GLY:CA	4:A:320:ARG:HD2	2.49	0.42
4:A:399:HIS:O	4:A:401:GLY:N	2.44	0.42
4:A:841:LEU:HD21	4:A:1105:LEU:HD22	2.00	0.42
4:A:983:ILE:HD13	4:A:983:ILE:HA	1.81	0.42
4:A:1220:PHE:HD1	4:A:1220:PHE:HA	1.72	0.42
5:B:40:GLU:CD	5:B:682:SER:H	2.19	0.42
5:B:112:LEU:HD12	5:B:116:GLU:HB3	2.00	0.42
5:B:1010:LEU:HD12	5:B:1010:LEU:HA	1.81	0.42
6:C:57:VAL:HG11	11:J:60:PHE:HB3	2.00	0.42
9:H:125:LEU:HG	9:H:130:ARG:NH1	2.35	0.42
4:A:73:GLY:O	4:A:75:ASN:N	2.52	0.42
4:A:78:PRO:HA	5:B:1201:LYS:CE	2.49	0.42
4:A:635:ARG:HD3	4:A:635:ARG:HA	1.76	0.42
4:A:1279:ILE:HG13	4:A:1308:THR:HG21	2.00	0.42
5:B:44:VAL:O	5:B:45:SER:C	2.58	0.42
5:B:301:ILE:HG22	5:B:302:CYS:N	2.33	0.42
5:B:759:PRO:CG	5:B:1046:PRO:HG3	2.49	0.42
11:J:8:PHE:N	11:J:49:MET:HE3	2.30	0.42
4:A:65:LEU:HB3	4:A:72:GLU:H	1.85	0.42
4:A:155:GLU:HG3	4:A:156:ASP:HB3	2.02	0.42
5:B:209:GLU:OE1	5:B:485:ARG:NE	2.45	0.42
5:B:1008:PRO:HG2	5:B:1011:ILE:HD11	2.00	0.42
5:B:1060:ARG:O	5:B:1061:GLU:C	2.57	0.42
5:B:1159:ARG:HH11	5:B:1159:ARG:CB	2.03	0.42
6:C:36:VAL:HG21	6:C:251:LEU:HD13	2.01	0.42
6:C:41:ILE:HD11	6:C:243:VAL:HG13	2.01	0.42
4:A:376:TYR:HA	4:A:377:PRO:HD2	1.95	0.42
4:A:1024:SER:HB3	4:A:1025:ARG:CA	2.50	0.42
6:C:123:ASN:HD22	6:C:125:MET:HG2	1.84	0.42
6:C:252:GLN:HG3	12:K:95:ILE:HG23	2.02	0.42
4:A:335:ARG:H	4:A:335:ARG:HE	1.67	0.42
4:A:417:TYR:OH	5:B:887:HIS:NE2	2.31	0.42
4:A:741:ASN:C	4:A:741:ASN:ND2	2.73	0.42
5:B:260:GLY:O	5:B:267:ARG:HD3	2.20	0.42
5:B:830:TYR:CE2	5:B:1000:PRO:HD3	2.54	0.42
4:A:534:LEU:O	4:A:574:GLY:HA3	2.20	0.42
4:A:567:LYS:HB2	9:H:95:TYR:HA	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:741:ASN:HD22	4:A:744:LYS:H	1.68	0.42
4:A:898:ARG:HB2	4:A:933:TYR:CE1	2.54	0.42
4:A:947:PHE:CD1	4:A:954:TRP:CZ2	3.07	0.42
4:A:1022:LEU:HA	4:A:1026:LEU:HD13	2.01	0.42
5:B:62:ILE:HD12	5:B:418:LYS:HE2	2.01	0.42
5:B:179:CYS:O	5:B:181:LEU:HB2	2.19	0.42
5:B:198:ASP:OD1	5:B:485:ARG:NH2	2.52	0.42
5:B:841:MET:SD	5:B:990:ILE:HD11	2.59	0.42
6:C:18:VAL:HG22	6:C:240:VAL:HB	2.01	0.42
4:A:80:HIS:O	4:A:243:PRO:HB3	2.19	0.42
4:A:399:HIS:NE2	4:A:462:VAL:HG21	2.34	0.42
4:A:412:ARG:NH2	4:A:433:GLU:OE2	2.52	0.42
4:A:547:LEU:HB3	12:K:58:PHE:CE1	2.55	0.42
9:H:109:LYS:HD2	9:H:111:LEU:HD12	2.02	0.42
3:T:18:DA:H2'	3:T:19:DT:C6	2.55	0.42
4:A:69:THR:CA	4:A:71:GLN:HG3	2.47	0.42
4:A:242:PRO:O	4:A:247:ARG:NH2	2.52	0.42
4:A:500:GLU:OE2	5:B:1144:ALA:N	2.53	0.42
4:A:541:ILE:HD13	4:A:577:ILE:HG12	1.99	0.42
4:A:618:GLU:CD	4:A:618:GLU:C	2.78	0.42
4:A:1187:GLN:N	4:A:1187:GLN:NE2	2.67	0.42
4:A:1274:ARG:HE	4:A:1274:ARG:HB2	1.69	0.42
5:B:203:PHE:C	5:B:204:ILE:CD1	2.87	0.42
5:B:710:LEU:HD23	5:B:733:HIS:HA	2.01	0.42
5:B:840:ILE:HB	5:B:1011:ILE:HB	2.00	0.42
4:A:482:PHE:C	4:A:484:GLY:H	2.24	0.42
4:A:523:ILE:O	4:A:523:ILE:HG22	2.19	0.42
4:A:679:ILE:O	4:A:682:THR:HB	2.19	0.42
5:B:1037:LEU:CD2	11:J:44:TYR:HB3	2.49	0.42
13:L:55:ILE:O	13:L:56:LEU:HB2	2.19	0.42
4:A:78:PRO:CA	5:B:1201:LYS:HE2	2.50	0.41
4:A:1441:PHE:HE1	8:F:92:ARG:HD3	1.85	0.41
5:B:225:VAL:HG13	5:B:385:LEU:HD12	2.01	0.41
5:B:299:GLU:OE2	5:B:571:PRO:CD	2.64	0.41
6:C:10:ILE:HD13	6:C:20:PHE:HB3	2.02	0.41
7:E:28:TYR:HE1	7:E:78:LEU:HD13	1.84	0.41
8:F:72:LYS:HB3	8:F:73:ALA:HB2	2.02	0.41
4:A:529:CYS:O	4:A:533:LYS:HG2	2.20	0.41
4:A:1441:PHE:HZ	8:F:89:GLU:HA	1.79	0.41
5:B:812:LEU:HD22	5:B:812:LEU:HA	1.84	0.41
5:B:896:ASP:OD2	13:L:58:LYS:HE2	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:171:GLY:HA2	6:C:172:PRO:HD3	1.82	0.41
8:F:81:THR:HG22	8:F:82:THR:N	2.34	0.41
1:R:6:G:H2'	1:R:7:A:H8	1.85	0.41
4:A:69:THR:CG2	5:B:1174:LYS:HE3	2.47	0.41
4:A:452:LYS:O	4:A:455:MET:HB2	2.20	0.41
4:A:474:VAL:HG12	4:A:474:VAL:O	2.19	0.41
4:A:500:GLU:OE2	5:B:1143:ALA:CB	2.68	0.41
4:A:779:PHE:CE1	5:B:517:THR:CG2	2.95	0.41
4:A:1170:ILE:HG13	4:A:1171:GLN:HG3	2.02	0.41
5:B:345:LYS:CG	5:B:348:ARG:HH21	2.33	0.41
5:B:420:LEU:HD21	5:B:456:GLY:HA3	2.02	0.41
5:B:918:ILE:HG22	5:B:920:PRO:HD3	2.02	0.41
6:C:32:SER:O	6:C:36:VAL:HG23	2.20	0.41
4:A:156:ASP:O	4:A:157:ASP:CG	2.58	0.41
4:A:451:HIS:CB	4:A:453:MET:N	2.70	0.41
4:A:525:GLN:HG3	5:B:836:GLU:HG2	2.02	0.41
4:A:897:TYR:HE1	4:A:1024:SER:O	2.04	0.41
4:A:1209:MET:HE1	4:A:1236:LEU:HG	2.02	0.41
5:B:63:ILE:O	5:B:67:SER:HB3	2.21	0.41
5:B:287:ARG:HG2	5:B:292:ILE:HA	2.01	0.41
5:B:356:LEU:HA	5:B:360:PHE:HB3	2.03	0.41
5:B:899:ILE:HD11	5:B:911:ILE:HA	2.02	0.41
5:B:955:THR:CG2	5:B:956:THR:N	2.78	0.41
5:B:983:ARG:HD2	5:B:1091:TYR:HD2	1.85	0.41
6:C:48:SER:HB3	6:C:158:VAL:HB	2.01	0.41
7:E:55:ARG:HB3	7:E:82:PHE:HB3	2.02	0.41
4:A:77:CYS:HA	4:A:78:PRO:HD3	1.85	0.41
4:A:474:VAL:CG1	4:A:478:TYR:HE2	2.34	0.41
4:A:567:LYS:O	4:A:569:LYS:N	2.53	0.41
4:A:779:PHE:HE1	5:B:517:THR:HA	1.85	0.41
4:A:853:ASP:O	4:A:853:ASP:OD1	2.39	0.41
4:A:1173:HIS:O	4:A:1174:PHE:CB	2.67	0.41
5:B:38:PHE:O	5:B:42:GLY:N	2.52	0.41
5:B:526:GLU:HG2	5:B:538:ASN:HD22	1.84	0.41
5:B:636:PRO:O	5:B:637:LEU:HG	2.21	0.41
5:B:711:GLU:N	5:B:712:PRO:HD2	2.28	0.41
5:B:785:TYR:CE1	11:J:60:PHE:CZ	3.08	0.41
5:B:841:MET:SD	5:B:846:ILE:HD11	2.61	0.41
9:H:130:ARG:HB3	9:H:134:ASN:HB2	2.03	0.41
4:A:132:LYS:NZ	4:A:1399:ARG:HH12	2.19	0.41
4:A:598:LEU:HA	9:H:122:LEU:HD13	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:715:GLU:OE2	4:A:774:ARG:HD3	2.21	0.41
4:A:840:ARG:HE	4:A:1385:THR:HG22	1.86	0.41
4:A:846:GLU:C	4:A:848:ILE:H	2.24	0.41
4:A:1234:GLU:HB3	4:A:1235:LYS:HE2	2.03	0.41
4:A:1316:VAL:O	4:A:1322:ILE:HD11	2.21	0.41
5:B:483:LEU:HB3	5:B:484:ASN:H	1.63	0.41
5:B:554:ILE:HD11	5:B:609:ILE:HG23	2.01	0.41
5:B:879:ARG:O	5:B:880:THR:OG1	2.34	0.41
7:E:23:VAL:HG12	7:E:28:TYR:HB2	2.02	0.41
3:T:26:DG:C2	3:T:27:DA:C8	3.09	0.41
4:A:470:LEU:C	4:A:470:LEU:HD12	2.41	0.41
4:A:1170:ILE:CG1	4:A:1171:GLN:HG3	2.51	0.41
4:A:1340:GLY:H	7:E:183:PRO:HG2	1.86	0.41
5:B:315:LYS:N	5:B:316:PRO:CD	2.83	0.41
5:B:549:THR:HG22	5:B:550:ASP:H	1.85	0.41
5:B:773:MET:O	5:B:776:GLN:N	2.47	0.41
6:C:114:TYR:CG	6:C:140:ASN:HB3	2.56	0.41
8:F:70:LYS:HD3	8:F:70:LYS:HA	1.84	0.41
8:F:103:MET:O	8:F:104:ASN:C	2.59	0.41
12:K:7:PHE:HA	12:K:10:PHE:CE2	2.56	0.41
4:A:414:ASP:O	4:A:417:TYR:O	2.39	0.41
4:A:586:ILE:CD1	4:A:637:LYS:HE3	2.50	0.41
4:A:846:GLU:O	4:A:848:ILE:N	2.53	0.41
4:A:1022:LEU:CA	4:A:1025:ARG:O	2.69	0.41
4:A:1271:ILE:HG22	4:A:1273:LEU:HD12	2.03	0.41
4:A:1277:GLU:O	4:A:1278:ASN:HB2	2.21	0.41
4:A:1293:SER:HB2	4:A:1299:VAL:HG23	2.03	0.41
4:A:1410:PHE:HD2	5:B:1212:ILE:HD11	1.86	0.41
5:B:170:LEU:HA	5:B:171:PRO:HD2	1.84	0.41
5:B:310:MET:O	5:B:313:MET:HB2	2.20	0.41
5:B:324:ILE:HG22	5:B:324:ILE:O	2.20	0.41
5:B:333:PHE:O	5:B:333:PHE:CG	2.73	0.41
5:B:879:ARG:NH1	5:B:879:ARG:CB	2.83	0.41
5:B:970:THR:HG22	5:B:971:THR:O	2.21	0.41
5:B:1161:HIS:CE1	5:B:1193:GLN:HB2	2.55	0.41
6:C:73:GLN:HB3	6:C:131:HIS:H	1.86	0.41
13:L:48:CYS:CB	13:L:51:CYS:SG	3.08	0.41
4:A:380:VAL:HG22	4:A:388:LEU:HD13	2.02	0.41
5:B:174:LEU:C	5:B:176:SER:N	2.73	0.41
5:B:292:ILE:N	5:B:293:PRO:CD	2.84	0.41
5:B:1019:SER:OG	16:B:1308[A]:DUT:H2'1	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:315:LEU:HD12	4:A:316:GLN:HA	2.03	0.40
4:A:381:THR:C	4:A:383:TYR:N	2.75	0.40
4:A:909:ASP:C	4:A:911:SER:H	2.24	0.40
4:A:1231:ASP:O	4:A:1233:ASP:N	2.53	0.40
5:B:173:MET:HG2	5:B:174:LEU:O	2.21	0.40
5:B:410:GLY:O	5:B:413:LEU:N	2.54	0.40
5:B:479:VAL:O	5:B:480:SER:HB3	2.21	0.40
5:B:819:ALA:O	5:B:1091:TYR:OH	2.38	0.40
9:H:24:CYS:HB2	9:H:44:VAL:CG2	2.50	0.40
4:A:302:THR:HA	4:A:305:ASP:O	2.20	0.40
4:A:315:LEU:HB2	4:A:320:ARG:HH12	1.83	0.40
4:A:367:PRO:HB3	4:A:465:TYR:O	2.20	0.40
4:A:741:ASN:C	4:A:741:ASN:HD22	2.24	0.40
4:A:1345:ARG:O	4:A:1348:LEU:N	2.54	0.40
5:B:563:MET:O	5:B:563:MET:HG3	2.21	0.40
12:K:77:THR:HB	12:K:81:TYR:HB3	2.03	0.40
4:A:91:PHE:N	4:A:297:GLN:HE22	2.19	0.40
4:A:219:PHE:HE1	4:A:231:PRO:HD2	1.86	0.40
4:A:244:PRO:HB2	4:A:245:PRO:HD3	2.03	0.40
4:A:351:THR:HB	4:A:468:PHE:HD2	1.83	0.40
4:A:365:GLY:N	4:A:469:ARG:O	2.47	0.40
4:A:463:ILE:CD1	4:A:469:ARG:CG	2.99	0.40
6:C:234:SER:HB3	6:C:240:VAL:HG13	2.02	0.40
4:A:58:LEU:HD22	4:A:244:PRO:CD	2.50	0.40
4:A:282:ASN:HB3	4:A:283:GLY:H	1.74	0.40
4:A:344:ARG:HA	5:B:1129:ARG:HA	2.03	0.40
4:A:414:ASP:OD1	4:A:416:ARG:HD3	2.20	0.40
4:A:443:LEU:HD12	5:B:1146:PHE:CE2	2.56	0.40
4:A:685:GLU:O	4:A:689:LYS:HB2	2.21	0.40
4:A:737:LEU:HD11	4:A:758:ILE:CG2	2.50	0.40
5:B:37:PHE:HD1	5:B:681:TRP:CE2	2.40	0.40
5:B:384:ARG:NH2	5:B:623:GLU:OE1	2.53	0.40
5:B:635:ARG:HH22	5:B:742:GLU:CD	2.24	0.40
6:C:116:LYS:HG2	6:C:116:LYS:O	2.21	0.40
4:A:59:GLY:HA2	4:A:67:CYS:SG	2.61	0.40
4:A:79:GLY:O	4:A:243:PRO:CG	2.64	0.40
4:A:757:ASN:O	4:A:761:MET:HG3	2.21	0.40
5:B:744:HIS:HD2	5:B:746:SER:H	1.64	0.40
5:B:826:ALA:HB3	5:B:1011:ILE:HG13	2.03	0.40
5:B:859:TYR:OH	5:B:941:LEU:HD22	2.22	0.40
6:C:211:ASP:HA	6:C:212:PRO:HD3	1.91	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:258:ILE:HD13	12:K:42:LEU:HD21	2.02	0.40
7:E:78:LEU:HD12	7:E:107:THR:HB	2.02	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	A	1392/1733 (80%)	1118 (80%)	182 (13%)	92 (7%)	1	16
5	B	1096/1224 (90%)	897 (82%)	124 (11%)	75 (7%)	1	15
6	C	264/318 (83%)	229 (87%)	28 (11%)	7 (3%)	5	35
7	E	212/215 (99%)	190 (90%)	15 (7%)	7 (3%)	4	31
8	F	86/155 (56%)	75 (87%)	6 (7%)	5 (6%)	1	18
9	H	130/146 (89%)	105 (81%)	18 (14%)	7 (5%)	2	19
10	I	117/122 (96%)	96 (82%)	18 (15%)	3 (3%)	5	35
11	J	63/70 (90%)	53 (84%)	8 (13%)	2 (3%)	4	31
12	K	112/120 (93%)	107 (96%)	5 (4%)	0	100	100
13	L	44/70 (63%)	29 (66%)	13 (30%)	2 (4%)	2	23
All	All	3516/4173 (84%)	2899 (82%)	417 (12%)	200 (6%)	1	18

All (200) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	A	55	ASP
4	A	56	PRO
4	A	74	MET
4	A	157	ASP
4	A	158	PRO

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Mol	Chain	Res	Type
4	A	308	ILE
4	A	316	GLN
4	A	317	LYS
4	A	321	PRO
4	A	335	ARG
4	A	418	SER
4	A	544	ASP
4	A	597	LEU
4	A	1022	LEU
4	A	1023	ARG
4	A	1024	SER
4	A	1175	SER
4	A	1221	LYS
4	A	1232	ASN
4	A	1393	ASN
5	B	45	SER
5	B	64	CYS
5	B	179	CYS
5	B	202	TYR
5	B	203	PHE
5	B	274	PRO
5	B	338	GLY
5	B	477	ALA
5	B	484	ASN
5	B	531	GLN
5	B	636	PRO
5	B	643	ASP
5	B	711	GLU
5	B	728	ARG
5	B	810	GLU
5	B	811	TYR
5	B	883	LEU
5	B	1017	ILE
5	B	1065	GLN
6	C	215	GLU
7	E	52	ARG
7	E	59	SER
7	E	90	VAL
8	F	104	ASN
9	H	81	PRO
9	H	82	PRO
11	J	2	ILE

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Mol	Chain	Res	Type
11	J	6	ARG
4	A	50	ILE
4	A	69	THR
4	A	80	HIS
4	A	178	GLY
4	A	223	GLY
4	A	255	SER
4	A	260	ASP
4	A	623	GLY
4	A	647	GLY
4	A	779	PHE
4	A	780	VAL
4	A	851	HIS
4	A	852	TYR
4	A	903	ASN
4	A	1027	ALA
4	A	1220	PHE
4	A	1233	ASP
4	A	1345	ARG
4	A	1388	GLY
4	A	1401	SER
4	A	1437	GLY
5	B	175	ARG
5	B	182	SER
5	B	229	ALA
5	B	260	GLY
5	B	294	ASP
5	B	322	PHE
5	B	327	ARG
5	B	410	GLY
5	B	471	LYS
5	B	563	MET
5	B	731	VAL
5	B	734	HIS
5	B	774	GLY
5	B	943	SER
5	B	958	GLN
5	B	982	SER
5	B	1181	GLU
6	C	90	ASP
6	C	142	VAL
7	E	3	GLN

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Mol	Chain	Res	Type
8	F	70	LYS
9	H	108	SER
9	H	140	ALA
13	L	55	ILE
4	A	214	ILE
4	A	314	ALA
4	A	404	TYR
4	A	451	HIS
4	A	483	ASP
4	A	568	PRO
4	A	846	GLU
4	A	854	ASN
4	A	855	THR
4	A	922	ASP
4	A	958	VAL
4	A	1021	LEU
4	A	1170	ILE
4	A	1234	GLU
5	B	180	TYR
5	B	337	ARG
5	B	344	LYS
5	B	476	ARG
5	B	478	GLY
5	B	483	LEU
5	B	894	ASP
5	B	1020	ARG
6	C	110	THR
6	C	174	ALA
7	E	53	PRO
8	F	74	ILE
10	I	10	CYS
10	I	60	GLN
4	A	46	THR
4	A	48	ALA
4	A	57	ARG
4	A	62	ASP
4	A	150	THR
4	A	152	VAL
4	A	312	PRO
4	A	333	GLU
4	A	423	ASP
4	A	424	ILE

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Mol	Chain	Res	Type
4	A	517	ASN
4	A	543	LEU
4	A	567	LYS
4	A	895	LYS
4	A	1025	ARG
4	A	1028	THR
4	A	1065	GLY
4	A	1229	SER
5	B	38	PHE
5	B	467	GLY
5	B	468	GLU
5	B	637	LEU
5	B	647	GLY
5	B	792	MET
5	B	864	LYS
5	B	1096	ARG
9	H	128	ASN
4	A	130	ASP
4	A	151	ASP
4	A	213	HIS
4	A	325	ILE
4	A	591	PHE
4	A	972	HIS
4	A	1243	VAL
4	A	1424	VAL
4	A	1433	MET
5	B	65	GLU
5	B	204	ILE
5	B	247	GLY
5	B	474	SER
5	B	480	SER
5	B	974	PRO
5	B	1028	GLU
5	B	1046	PRO
5	B	1108	ARG
7	E	36	GLU
8	F	148	VAL
9	H	77	ARG
10	I	12	ASN
13	L	50	ASP
4	A	35	ILE
4	A	72	GLU

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Mol	Chain	Res	Type
4	A	250	ILE
4	A	1270	ASN
5	B	201	GLY
5	B	259	TYR
5	B	466	TRP
5	B	631	GLY
5	B	851	PHE
6	C	227	THR
4	A	910	PRO
5	B	802	PRO
5	B	920	PRO
5	B	1214	PRO
9	H	107	VAL
5	B	100	PRO
5	B	276	ILE
5	B	335	GLY
5	B	1165	ILE
4	A	1384	VAL
4	A	322	VAL
4	A	599	SER
4	A	837	ILE
4	A	1435	PRO
5	B	200	GLY
8	F	139	PRO
5	B	1103	ILE
6	C	182	PRO
7	E	118	PRO

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
4	A	1225/1520 (81%)	1128 (92%)	97 (8%)	12 44
5	B	967/1061 (91%)	886 (92%)	81 (8%)	11 42
6	C	234/274 (85%)	211 (90%)	23 (10%)	8 36

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
7	E	196/197 (100%)	181 (92%)	15 (8%)	13	45
8	F	78/137 (57%)	74 (95%)	4 (5%)	24	58
9	H	118/128 (92%)	107 (91%)	11 (9%)	9	38
10	I	113/116 (97%)	103 (91%)	10 (9%)	10	40
11	J	60/65 (92%)	52 (87%)	8 (13%)	4	23
12	K	99/102 (97%)	87 (88%)	12 (12%)	5	26
13	L	40/57 (70%)	36 (90%)	4 (10%)	7	35
All	All	3130/3657 (86%)	2865 (92%)	265 (8%)	10	41

All (265) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	A	32	VAL
4	A	42	ASP
4	A	69	THR
4	A	80	HIS
4	A	139	TRP
4	A	155	GLU
4	A	156	ASP
4	A	157	ASP
4	A	159	THR
4	A	161	LEU
4	A	170	THR
4	A	204	THR
4	A	208	LEU
4	A	222	LEU
4	A	225	ASN
4	A	235	ILE
4	A	263	THR
4	A	270	LEU
4	A	303	TYR
4	A	320	ARG
4	A	322	VAL
4	A	326	ARG
4	A	329	LEU
4	A	335	ARG
4	A	388	LEU
4	A	391	LEU
4	A	409	SER
4	A	416	ARG

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Mol	Chain	Res	Type
4	A	443	LEU
4	A	447	GLN
4	A	485	ASP
4	A	504	LEU
4	A	535	THR
4	A	539	THR
4	A	569	LYS
4	A	590	ARG
4	A	592	ASP
4	A	596	THR
4	A	602	ASP
4	A	618	GLU
4	A	637	LYS
4	A	703	THR
4	A	709	THR
4	A	740	LEU
4	A	741	ASN
4	A	743	VAL
4	A	765	VAL
4	A	775	ILE
4	A	821	ARG
4	A	851	HIS
4	A	852	TYR
4	A	854	ASN
4	A	859	SER
4	A	871	ASP
4	A	889	SER
4	A	890	ASP
4	A	896	ARG
4	A	902	LEU
4	A	913	LEU
4	A	915	SER
4	A	918	GLU
4	A	920	LEU
4	A	953	ASN
4	A	961	ARG
4	A	982	THR
4	A	1017	LEU
4	A	1025	ARG
4	A	1026	LEU
4	A	1029	ARG
4	A	1030	ARG

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Mol	Chain	Res	Type
4	A	1048	ASN
4	A	1054	LEU
4	A	1058	VAL
4	A	1064	VAL
4	A	1094	VAL
4	A	1116	LEU
4	A	1118	VAL
4	A	1128	GLN
4	A	1174	PHE
4	A	1187	GLN
4	A	1220	PHE
4	A	1227	ILE
4	A	1231	ASP
4	A	1232	ASN
4	A	1233	ASP
4	A	1234	GLU
4	A	1235	LYS
4	A	1244	ARG
4	A	1258	HIS
4	A	1265	ASN
4	A	1308	THR
4	A	1309	ASP
4	A	1314	SER
4	A	1345	ARG
4	A	1366	ARG
4	A	1391	ARG
4	A	1394	THR
5	B	22	SER
5	B	44	VAL
5	B	57	TYR
5	B	65	GLU
5	B	68	THR
5	B	108	VAL
5	B	121	ASN
5	B	198	ASP
5	B	199	MET
5	B	203	PHE
5	B	206	ASN
5	B	210	LYS
5	B	217	ARG
5	B	226	PHE
5	B	235	SER

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Mol	Chain	Res	Type
5	B	268	THR
5	B	272	THR
5	B	322	PHE
5	B	336	ARG
5	B	337	ARG
5	B	382	ILE
5	B	384	ARG
5	B	388	CYS
5	B	396	ASP
5	B	436	VAL
5	B	461	LEU
5	B	465	ASN
5	B	466	TRP
5	B	471	LYS
5	B	482	VAL
5	B	483	LEU
5	B	516	ASN
5	B	527	THR
5	B	539	LEU
5	B	549	THR
5	B	556	THR
5	B	563	MET
5	B	567	GLU
5	B	570	VAL
5	B	620	ARG
5	B	635	ARG
5	B	654	ARG
5	B	666	TYR
5	B	667	GLN
5	B	723	VAL
5	B	732	SER
5	B	736	THR
5	B	737	THR
5	B	764	SER
5	B	791	THR
5	B	792	MET
5	B	806	THR
5	B	807	ARG
5	B	812	LEU
5	B	838	SER
5	B	850	LEU
5	B	861	ASP

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Mol	Chain	Res	Type
5	B	873	THR
5	B	879	ARG
5	B	916	THR
5	B	948	ILE
5	B	969	ARG
5	B	975	GLN
5	B	976	ILE
5	B	995	ARG
5	B	999	MET
5	B	1020	ARG
5	B	1046	PRO
5	B	1047	PHE
5	B	1051	THR
5	B	1064	TYR
5	B	1065	GLN
5	B	1084	GLN
5	B	1092	TYR
5	B	1096	ARG
5	B	1099	VAL
5	B	1113	VAL
5	B	1124	ARG
5	B	1159	ARG
5	B	1161	HIS
5	B	1166	CYS
6	C	4	GLU
6	C	18	VAL
6	C	22	LEU
6	C	25	VAL
6	C	26	ASP
6	C	53	THR
6	C	56	THR
6	C	57	VAL
6	C	61	GLU
6	C	76	ASP
6	C	77	ILE
6	C	80	LEU
6	C	117	ASP
6	C	120	ILE
6	C	137	LYS
6	C	154	LYS
6	C	163	ILE
6	C	231	ASN

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Mol	Chain	Res	Type
6	C	234	SER
6	C	240	VAL
6	C	244	VAL
6	C	258	ILE
6	C	259	LEU
7	E	8	ASN
7	E	10	SER
7	E	39	LEU
7	E	48	ASP
7	E	95	THR
7	E	101	GLN
7	E	104	ASN
7	E	110	PHE
7	E	114	ASN
7	E	127	ILE
7	E	142	VAL
7	E	146	HIS
7	E	156	LEU
7	E	165	LEU
7	E	213	ILE
8	F	70	LYS
8	F	72	LYS
8	F	110	ASP
8	F	139	PRO
9	H	31	THR
9	H	32	THR
9	H	41	ASP
9	H	46	LEU
9	H	48	PRO
9	H	86	ASP
9	H	94	ASP
9	H	95	TYR
9	H	107	VAL
9	H	136	LYS
9	H	145	ARG
10	I	10	CYS
10	I	17	ARG
10	I	21	GLU
10	I	22	ASN
10	I	24	ARG
10	I	28	GLU
10	I	31	THR

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Mol	Chain	Res	Type
10	I	50	THR
10	I	62	ILE
10	I	83	ASN
11	J	2	ILE
11	J	5	VAL
11	J	7	CYS
11	J	13	VAL
11	J	14	VAL
11	J	20	SER
11	J	45	CYS
11	J	48	ARG
12	K	5	ASP
12	K	9	LEU
12	K	42	LEU
12	K	46	ILE
12	K	63	VAL
12	K	78	THR
12	K	89	ASN
12	K	101	LEU
12	K	103	THR
12	K	106	GLU
12	K	107	THR
12	K	113	THR
13	L	27	LEU
13	L	55	ILE
13	L	61	THR
13	L	65	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (68) such sidechains are listed below:

Mol	Chain	Res	Type
4	A	80	HIS
4	A	83	HIS
4	A	225	ASN
4	A	253	ASN
4	A	306	ASN
4	A	316	GLN
4	A	339	ASN
4	A	435	HIS
4	A	503	GLN
4	A	631	HIS
4	A	736	ASN

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Mol	Chain	Res	Type
4	A	741	ASN
4	A	742	ASN
4	A	757	ASN
4	A	768	GLN
4	A	851	HIS
4	A	926	GLN
4	A	969	GLN
4	A	1106	ASN
4	A	1218	GLN
4	A	1265	ASN
4	A	1364	ASN
4	A	1427	ASN
4	A	1432	GLN
5	B	121	ASN
5	B	178	ASN
5	B	215	GLN
5	B	300	HIS
5	B	325	GLN
5	B	350	GLN
5	B	363	HIS
5	B	366	GLN
5	B	415	GLN
5	B	484	ASN
5	B	494	HIS
5	B	515	HIS
5	B	516	ASN
5	B	518	HIS
5	B	592	ASN
5	B	657	HIS
5	B	686	ASN
5	B	734	HIS
5	B	744	HIS
5	B	822	ASN
5	B	984	HIS
5	B	986	GLN
5	B	1015	HIS
5	B	1062	HIS
5	B	1065	GLN
5	B	1084	GLN
5	B	1195	HIS
6	C	73	GLN
6	C	91	HIS

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Mol	Chain	Res	Type
6	C	112	ASN
6	C	123	ASN
6	C	188	HIS
7	E	61	GLN
7	E	101	GLN
7	E	104	ASN
7	E	114	ASN
9	H	33	GLN
9	H	83	GLN
9	H	137	GLN
10	I	46	HIS
10	I	83	ASN
10	I	90	GLN
10	I	116	ASN
12	K	65	HIS

5.3.3 RNA [i](#)

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

There are no RNA backbone outliers to report.

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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 11 ligands modelled in this entry, 9 are monoatomic - leaving 2 for Mogul analysis.

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
16	DUT	B	1308[A]	-	25,29,29	0.93	1 (4%)	37,45,45	1.59	6 (16%)
16	DUT	B	1308[B]	15	25,29,29	1.05	2 (8%)	37,45,45	1.73	7 (18%)

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. '2' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
16	DUT	B	1308[A]	-	-	6/22/34/34	0/2/2/2
16	DUT	B	1308[B]	15	-	4/22/34/34	0/2/2/2

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	B	1308[A]	DUT	C6-C5	2.26	1.40	1.35
16	B	1308[B]	DUT	C2-N1	-2.20	1.34	1.38
16	B	1308[B]	DUT	C4-N3	-2.03	1.34	1.38

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
16	B	1308[B]	DUT	N3-C2-N1	4.57	120.95	114.89
16	B	1308[B]	DUT	C4-N3-C2	-4.27	120.95	126.58
16	B	1308[A]	DUT	N3-C2-N1	4.14	120.39	114.89
16	B	1308[A]	DUT	C4-N3-C2	-3.90	121.44	126.58
16	B	1308[A]	DUT	O4-C4-C5	-3.46	119.07	125.16
16	B	1308[B]	DUT	C5-C4-N3	3.10	119.48	114.84
16	B	1308[B]	DUT	PB-O3B-PG	-2.88	122.94	132.83
16	B	1308[B]	DUT	O4'-C1'-N1	2.82	112.90	107.86
16	B	1308[A]	DUT	C5-C4-N3	2.77	118.98	114.84
16	B	1308[B]	DUT	C2'-C1'-N1	-2.18	108.75	113.77
16	B	1308[A]	DUT	O2-C2-N1	-2.18	119.89	122.79
16	B	1308[A]	DUT	O3G-PG-O2G	2.14	115.81	107.64
16	B	1308[B]	DUT	O4-C4-C5	-2.09	121.48	125.16

There are no chirality outliers.

All (10) torsion outliers are listed below:

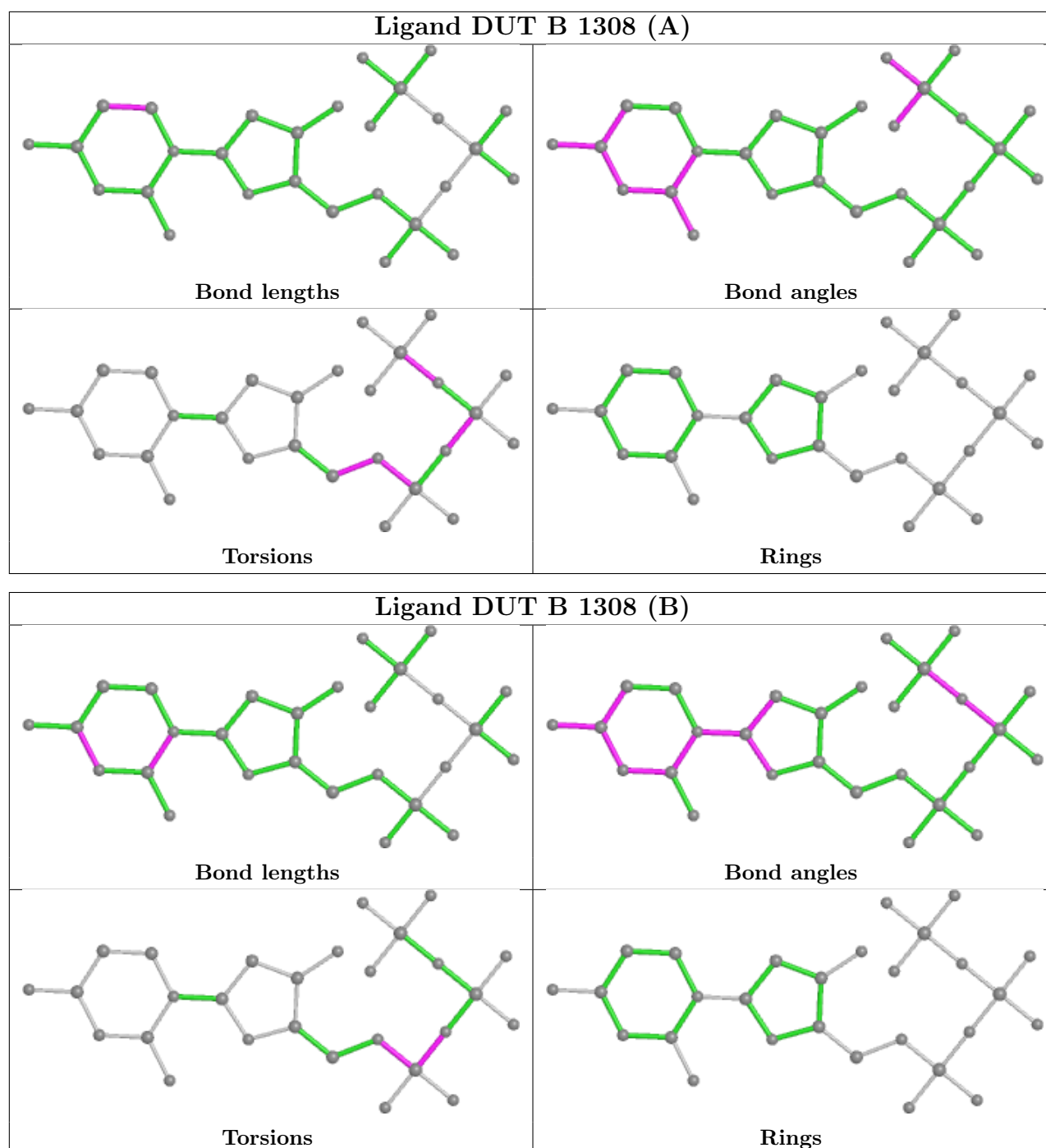
Mol	Chain	Res	Type	Atoms
16	B	1308[B]	DUT	C5'-O5'-PA-O1A
16	B	1308[B]	DUT	C5'-O5'-PA-O2A
16	B	1308[A]	DUT	PB-O3B-PG-O1G
16	B	1308[A]	DUT	C4'-C5'-O5'-PA
16	B	1308[A]	DUT	PB-O3B-PG-O2G
16	B	1308[A]	DUT	PB-O3B-PG-O3G
16	B	1308[A]	DUT	C5'-O5'-PA-O3A
16	B	1308[B]	DUT	C5'-O5'-PA-O3A
16	B	1308[A]	DUT	PA-O3A-PB-O2B
16	B	1308[B]	DUT	PB-O3A-PA-O2A

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
16	B	1308[A]	DUT	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 than 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.



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.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	R	10/10 (100%)	-0.58	0 100 100	85, 109, 154, 170	0
2	N	14/14 (100%)	1.46	3 (21%) 0 0	178, 182, 198, 202	0
3	T	28/28 (100%)	0.74	7 (25%) 0 0	93, 173, 189, 192	0
4	A	1402/1733 (80%)	-0.04	21 (1%) 73 60	75, 103, 150, 163	0
5	B	1114/1224 (91%)	-0.05	17 (1%) 73 60	26, 102, 133, 143	0
6	C	266/318 (83%)	-0.23	1 (0%) 92 86	81, 100, 128, 144	0
7	E	214/215 (99%)	0.07	5 (2%) 60 44	91, 131, 165, 167	0
8	F	88/155 (56%)	-0.12	0 100 100	84, 104, 130, 137	0
9	H	134/146 (91%)	0.12	4 (2%) 50 34	100, 119, 152, 155	0
10	I	119/122 (97%)	-0.08	1 (0%) 86 75	87, 104, 122, 138	0
11	J	65/70 (92%)	-0.28	0 100 100	92, 102, 122, 125	0
12	K	114/120 (95%)	-0.28	0 100 100	82, 105, 119, 120	0
13	L	46/70 (65%)	0.31	2 (4%) 35 22	108, 145, 156, 157	0
All	All	3614/4225 (85%)	-0.04	61 (1%) 70 55	26, 104, 150, 202	0

All (61) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
4	A	69	THR	5.0
4	A	72	GLU	4.8
5	B	338	GLY	4.0
7	E	46	TYR	4.0
4	A	44	THR	3.9
5	B	339	THR	3.9
4	A	146	MET	3.8
13	L	38	LEU	3.4
2	N	2	DT	3.4

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Mol	Chain	Res	Type	RSRZ
4	A	286	HIS	3.4
5	B	429	PHE	3.4
3	T	11	DG	3.4
7	E	93	MET	3.3
5	B	1183	LYS	3.2
5	B	1222	ARG	3.2
2	N	14	DG	3.1
2	N	1	DC	3.1
4	A	171	GLN	3.0
4	A	1166	ASP	3.0
3	T	4	DC	2.9
4	A	1169	ILE	2.8
3	T	10	DA	2.7
5	B	1186	ASP	2.7
7	E	81	GLU	2.7
5	B	248	SER	2.6
4	A	113	LEU	2.6
5	B	92	PHE	2.6
4	A	66	LYS	2.5
5	B	645	SER	2.5
5	B	425	THR	2.5
3	T	14	DG	2.5
5	B	883	LEU	2.4
4	A	163	SER	2.4
7	E	49	SER	2.4
5	B	341	LEU	2.4
4	A	292	ALA	2.4
3	T	12	DC	2.3
4	A	885	THR	2.3
5	B	921	ASP	2.3
9	H	139	ASN	2.3
4	A	257	ARG	2.3
4	A	114	LEU	2.3
13	L	26	THR	2.3
4	A	112	LYS	2.3
4	A	426	LEU	2.2
5	B	165	VAL	2.2
5	B	1184	GLY	2.2
4	A	1176	LEU	2.2
3	T	2	DT	2.2
6	C	130	GLY	2.2
4	A	106	VAL	2.2

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Mol	Chain	Res	Type	RSRZ
3	T	3	DA	2.1
9	H	130	ARG	2.1
4	A	145	LYS	2.1
7	E	61	GLN	2.1
9	H	133	ASN	2.1
4	A	149	GLU	2.1
5	B	91	SER	2.0
5	B	643	ASP	2.0
10	I	8	ARG	2.0
9	H	7	ASP	2.0

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

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

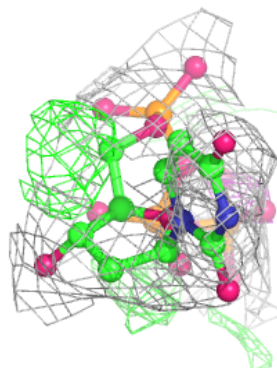
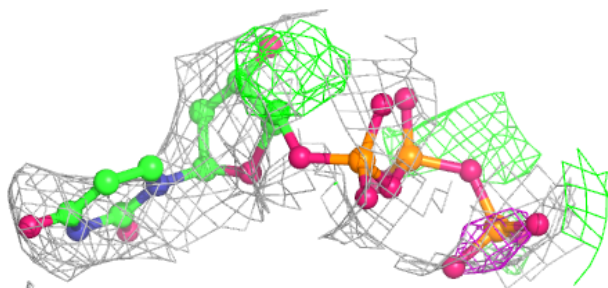
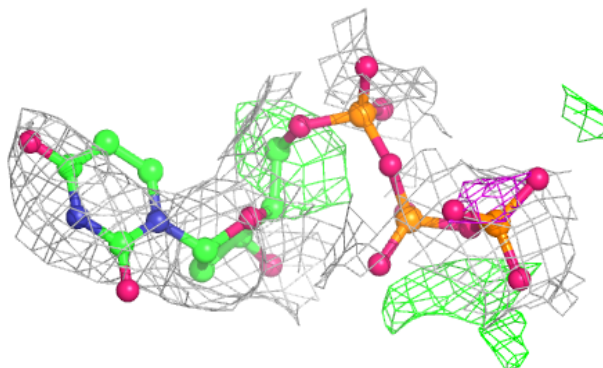
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
16	DUT	B	1308[A]	28/28	0.79	0.35	131,133,149,150	28
16	DUT	B	1308[B]	28/28	0.79	0.35	57,59,61,62	28
14	ZN	A	1734	1/1	0.89	0.05	159,159,159,159	0
14	ZN	I	203	1/1	0.93	0.07	97,97,97,97	0
14	ZN	B	1307	1/1	0.96	0.10	126,126,126,126	0
15	MG	A	2000	1/1	0.97	0.22	74,74,74,74	0
14	ZN	I	204	1/1	0.97	0.09	107,107,107,107	0
14	ZN	L	105	1/1	0.97	0.06	181,181,181,181	0
14	ZN	A	1735	1/1	0.98	0.09	142,142,142,142	0
14	ZN	J	101	1/1	0.98	0.12	149,149,149,149	0
14	ZN	C	319	1/1	0.99	0.06	104,104,104,104	0

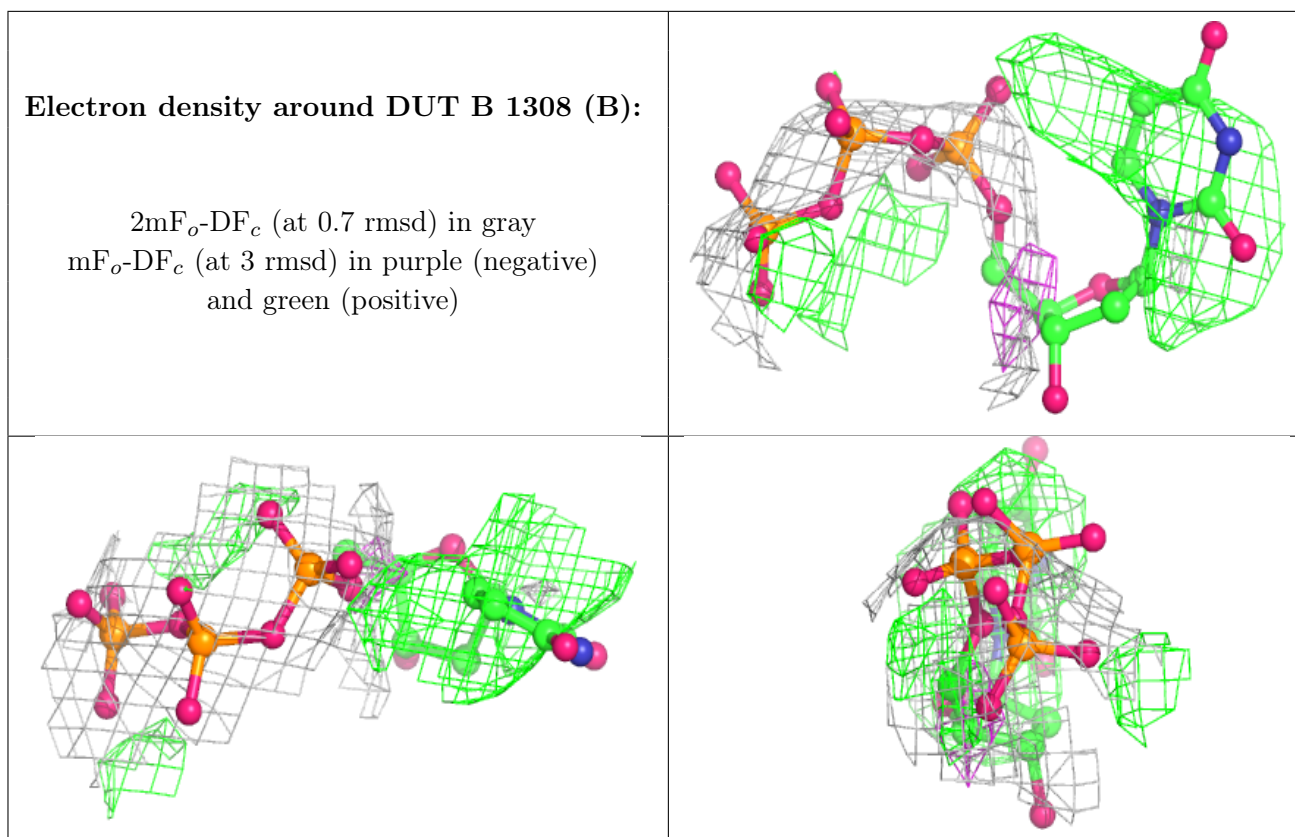
The following is a graphical depiction of the model fit to experimental electron density of all

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 DUT B 1308 (A):

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





6.5 Other polymers [i](#)

There are no such residues in this entry.