



# Full wwPDB X-ray Structure Validation Report ⓘ

Jun 12, 2024 – 08:35 PM EDT

PDB ID : 1FOE  
Title : CRYSTAL STRUCTURE OF RAC1 IN COMPLEX WITH THE GUANINE NUCLEOTIDE EXCHANGE REGION OF TIAM1  
Authors : Worthylake, D.K.; Rossman, K.L.; Sondek, J.  
Deposited on : 2000-08-27  
Resolution : 2.80 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](mailto: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>.

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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)  
Xtrriage (Phenix) : **NOT EXECUTED**  
EDS : **NOT EXECUTED**  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36.2

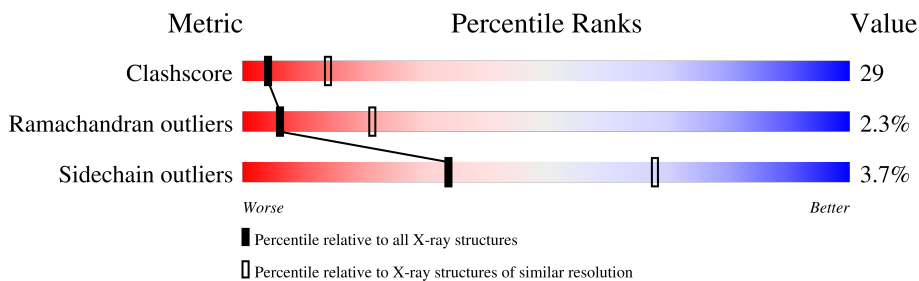
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.80 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))
Clashscore	141614	3569 (2.80-2.80)
Ramachandran outliers	138981	3498 (2.80-2.80)
Sidechain outliers	138945	3500 (2.80-2.80)

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  $\geq 3$ , 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  $\leq 5\%$

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	377	
1	C	377	
1	E	377	
1	G	377	
2	B	177	
2	D	177	
2	F	177	
2	H	177	

## 2 Entry composition i

There are 4 unique types of molecules in this entry. The entry contains 17570 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called T-LYMPHOMA INVASION AND METASTASIS INDUCING PROTEIN 1.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	S	Se			
1	A	368	2989	1918	509	550	6	6	369	0	0
1	C	366	2972	1907	506	547	6	6	309	0	0
1	E	367	2980	1913	507	548	6	6	369	0	0
1	G	367	2980	1913	507	548	6	6	307	0	0

There are 32 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1031	MSE	THR	MODIFIED RESIDUE	UNP Q60610
A	1032	GLY	THR	CLONING ARTIFACT	UNP Q60610
A	1063	MSE	MET	MODIFIED RESIDUE	UNP Q60610
A	1091	MSE	MET	MODIFIED RESIDUE	UNP Q60610
A	1224	MSE	MET	MODIFIED RESIDUE	UNP Q60610
A	1234	MSE	MET	MODIFIED RESIDUE	UNP Q60610
A	1264	MSE	MET	MODIFIED RESIDUE	UNP Q60610
A	1334	MSE	MET	MODIFIED RESIDUE	UNP Q60610
C	1031	MSE	THR	MODIFIED RESIDUE	UNP Q60610
C	1032	GLY	THR	CLONING ARTIFACT	UNP Q60610
C	1063	MSE	MET	MODIFIED RESIDUE	UNP Q60610
C	1091	MSE	MET	MODIFIED RESIDUE	UNP Q60610
C	1224	MSE	MET	MODIFIED RESIDUE	UNP Q60610
C	1234	MSE	MET	MODIFIED RESIDUE	UNP Q60610
C	1264	MSE	MET	MODIFIED RESIDUE	UNP Q60610
C	1334	MSE	MET	MODIFIED RESIDUE	UNP Q60610
E	1031	MSE	THR	MODIFIED RESIDUE	UNP Q60610
E	1032	GLY	THR	CLONING ARTIFACT	UNP Q60610
E	1063	MSE	MET	MODIFIED RESIDUE	UNP Q60610
E	1091	MSE	MET	MODIFIED RESIDUE	UNP Q60610

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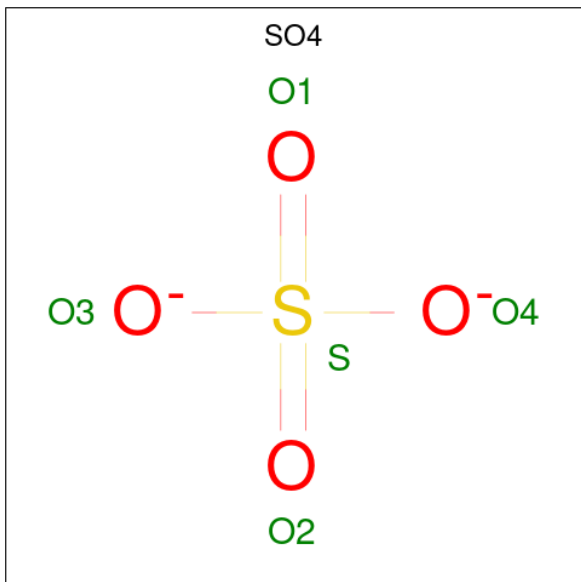
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Chain	Residue	Modelled	Actual	Comment	Reference
E	1224	MSE	MET	MODIFIED RESIDUE	UNP Q60610
E	1234	MSE	MET	MODIFIED RESIDUE	UNP Q60610
E	1264	MSE	MET	MODIFIED RESIDUE	UNP Q60610
E	1334	MSE	MET	MODIFIED RESIDUE	UNP Q60610
G	1031	MSE	THR	MODIFIED RESIDUE	UNP Q60610
G	1032	GLY	THR	CLONING ARTIFACT	UNP Q60610
G	1063	MSE	MET	MODIFIED RESIDUE	UNP Q60610
G	1091	MSE	MET	MODIFIED RESIDUE	UNP Q60610
G	1224	MSE	MET	MODIFIED RESIDUE	UNP Q60610
G	1234	MSE	MET	MODIFIED RESIDUE	UNP Q60610
G	1264	MSE	MET	MODIFIED RESIDUE	UNP Q60610
G	1334	MSE	MET	MODIFIED RESIDUE	UNP Q60610

- Molecule 2 is a protein called RAS-RELATED C3 BOTULINUM TOXIN SUBSTRATE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	177	Total 1384	C 889	N 228	O 259	S 8	14	0	0
2	D	177	Total 1384	C 889	N 228	O 259	S 8	14	0	0
2	F	177	Total 1384	C 889	N 228	O 259	S 8	14	0	0
2	H	177	Total 1384	C 889	N 228	O 259	S 8	14	0	0

- Molecule 3 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	B	1	Total	O	S	0	0
			5	4	1		
3	D	1	Total	O	S	0	0
			5	4	1		
3	F	1	Total	O	S	0	0
			5	4	1		
3	H	1	Total	O	S	0	0
			5	4	1		

- Molecule 4 is water.

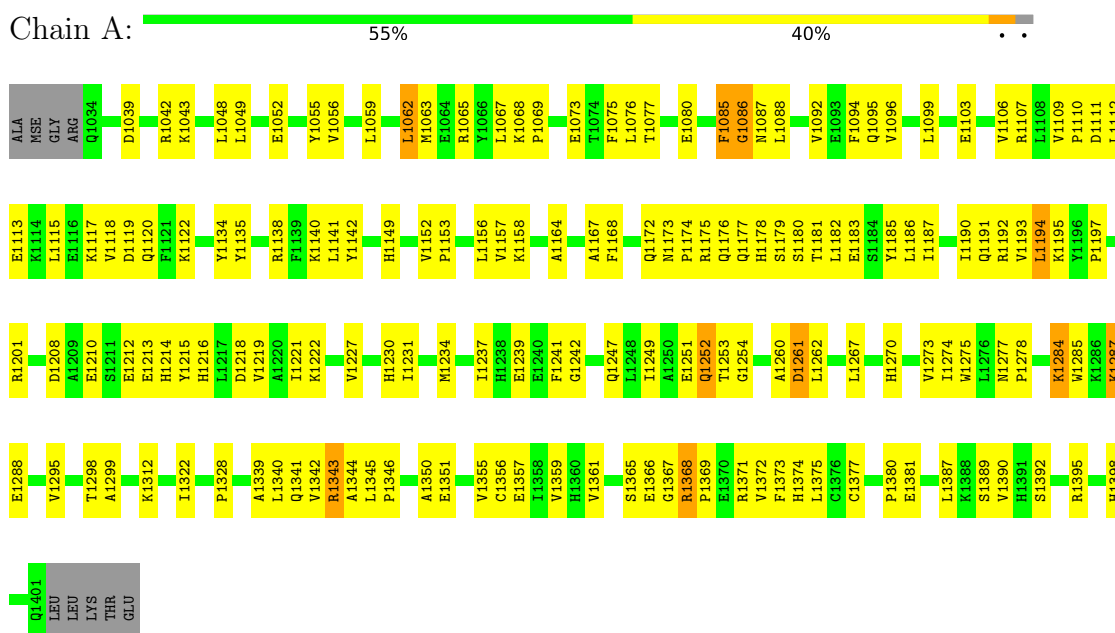
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	14	Total	O	0	0
			14	14		
4	B	6	Total	O	0	0
			6	6		
4	C	8	Total	O	0	0
			8	8		
4	D	6	Total	O	0	0
			6	6		
4	E	7	Total	O	0	0
			7	7		
4	F	7	Total	O	0	0
			7	7		
4	G	19	Total	O	0	0
			19	19		
4	H	26	Total	O	0	0
			26	26		

### 3 Residue-property plots [i](#)

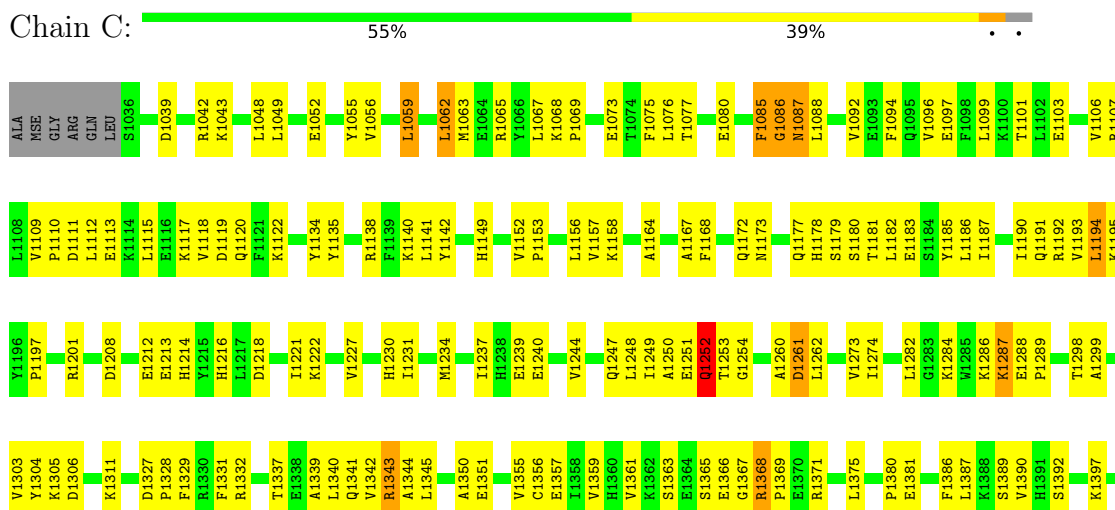
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded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

Note EDS was not executed.

- Molecule 1: T-LYMPHOMA INVASION AND METASTASIS INDUCING PROTEIN 1



- Molecule 1: T-LYMPHOMA INVASION AND METASTASIS INDUCING PROTEIN 1



Q1401
LEU
LEU
LYS
THR
GLU

• Molecule 1: T-LYMPHOMA INVASION AND METASTASIS INDUCING PROTEIN 1



ALA	MSE	GLY	ARG	THR	GLN	L1035	D1089	L1115	K1043	K1042	K1043	E1047	L1048	L1049	E1050	T1051	E1052	Y1055	V1056	L1059	L1062	M1063	E1064	R1065	Y1066	L1067	K1068	P1069	E1073	T1074	F1075	L1076	T1077	E1080	F1085	G1086	M1087	L1088	V1092	E1093	F1094	Q1095	V1096	E1097	L1098	F1099	L1102	E1103	V1106	R1107				
L1108	V1109	P1110	D1111	E1112	L1112	E1113	K1114	L1115	E1116	K1117	V1118	D1119	Q1120	Q1120	F1121	K1122	Y1134	Y1135	R1138	F1139	K1140	L1141	Y1142	H1149	V1152	P1153	L1248	L1249	I1250	V1156	V1157	K1158	A1164	A1167	F1168	Q1172	M1173	Q1177	H1178	S1179	S1180	T1181	L1182	E1183	S1184	Y1185	L1186	I1187	I1190	Q1191	R1192	V1193	L1194	K1195
Y1196	P1197	R1201	R1201	D1208	E1213	H1214	H1215	H1216	L1217	D1218	K1222	V1227	H1230	I1231	M1234	I1237	H1238	E1239	Q1247	L1248	I1249	A1250	E1251	Q1252	T1253	G1254	A1260	D1261	L1262	M1264	L1267	V1273	T1274	I1275	L1276	L1277	P1278	K1284	W1285	K1286	K1287	E1288	V1295	T1298										
A1299	K1305	D1306	K1313	E1325	W1326	D1327	F1331	R1332	H1333	A1339	L1340	Q1341	V1342	R1343	A1344	L1345	P1346	A1350	E1351	V1355	C1356	E1357	I1358	V1359	H1360	V1361	S1365	E1366	G1367	R1368	P1369	E1370	R1371	H1374	L1375	C1377	L1387	K1388	S1389	V1390	H1391	S1392	K1397	H1398	R1399	L1400	Q1401							

LEU
LEU
LYS
THR
GLU

• Molecule 1: T-LYMPHOMA INVASION AND METASTASIS INDUCING PROTEIN 1

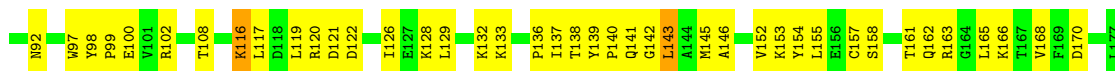


ALA	MSE	GLY	ARG	THR	GLN	L1035	S1036	D1039	R1042	K1043	L1048	L1049	E1052	Y1055	V1056	L1059	L1062	M1063	E1064	R1065	Y1066	K1067	L1068	P1069	E1073	T1074	F1075	L1076	T1077	E1080	F1085	G1086	M1087	L1088	V1092	E1093	F1094	Q1095	V1096	E1097	F1098	L1099	E1103	V1106	R1107	L1108	V1109			
P1110	D1111	L1112	E1113	K1114	L1115	E1116	K1117	V1118	D1119	Q1120	F1121	K1122	Y1134	Y1135	R1138	F1139	K1140	L1141	Y1142	H1149	V1152	P1153	L1156	L1157	K1158	A1164	A1167	F1168	Q1172	M1173	Q1176	Q1177	H1178	S1179	S1180	T1181	L1182	E1183	S1184	Y1185	L1186	I1187	I1190	Q1191	R1192	V1193	L1194	Y1196		
P1197	R1201	E1213	H1214	Y1215	H1216	L1217	D1218	V1219	A1220	K1222	V1227	H1230	I1231	M1234	I1237	H1238	E1239	V1244	Q1247	L1248	I1249	A1250	E1251	Q1252	G1254	A1260	D1261	L1262	M1264	L1267	V1273	I1274	L1282	G1283	K1284	W1285	K1286	K1287	E1288	P1289	V1295	T1298	A1299							
V1303	Y1304	K1305	D1306	G1307	S1308	K1311	K1312	K1313	D1319	E1324	W1326	D1327	P1328	F1329	R1330	F1331	R1332	A1339	L1340	Q1341	V1342	R1343	A1344	L1345	A1350	E1351	V1355	C1356	E1357	I1358	V1359	H1360	V1361	K1362	S1363	E1365	E1366	G1367	R1368	P1369	E1370	R1371	L1375	P1380	E1381	L1387	K1388	S1389	V1390	H1391
S1392	F1393	L1394	K1397	H1398	V7	R1399	R1400	Q1401	LEU	LEU	LYS	THR	GLU																																					

• Molecule 2: RAS-RELATED C3 BOTULINUM TOXIN SUBSTRATE



M1	I4	K5	C6	V7	V8	V9	G10	D11	G12	A13	T17	C18	L19	L20	I21	S22	Y23	T24	T25	F28	P29	Y40	S41	P50	L55	W56	D57	T58	Q61	E62	D65	R66	L67	R68	P69	L70	Q74	T75	D76	V77	F78	L79	S83	L84	V85	S86	P87	A88	S89
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- Molecule 2: RAS-RELATED C3 BOTULINUM TOXIN SUBSTRATE

Chain D: 53% 44%



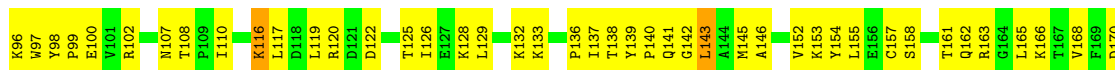
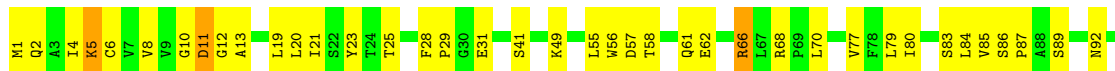
- Molecule 2: RAS-RELATED C3 BOTULINUM TOXIN SUBSTRATE

Chain F: 53% 45%



- Molecule 2: RAS-RELATED C3 BOTULINUM TOXIN SUBSTRATE

Chain H: 53% 44%





## 4 Data and refinement statistics

Xtrriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	186.95Å 149.27Å 149.21Å 90.00° 121.00° 90.00°	Depositor
Resolution (Å)	15.00 – 2.80	Depositor
% Data completeness (in resolution range)	93.8 (15.00-2.80)	Depositor
$R_{merge}$	0.07	Depositor
$R_{sym}$	(Not available)	Depositor
Refinement program	CNS 0.3	Depositor
R, $R_{free}$	0.262 , 0.293	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	17570	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	60.0	wwPDB-VP

## 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: SO4

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	A	0.42	0/3045	0.61	0/4095
1	C	0.41	0/3028	0.61	0/4072
1	E	0.41	0/3036	0.61	0/4083
1	G	0.45	1/3036 (0.0%)	0.62	0/4083
2	B	0.42	0/1414	0.79	3/1922 (0.2%)
2	D	0.40	0/1414	0.79	3/1922 (0.2%)
2	F	0.40	0/1414	0.79	3/1922 (0.2%)
2	H	0.51	0/1414	0.82	3/1922 (0.2%)
All	All	0.43	1/17801 (0.0%)	0.68	12/24021 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	G	1264	MSE	CG-SE	-5.10	1.78	1.95

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	5	LYS	N-CA-CB	-13.85	85.67	110.60
2	H	5	LYS	N-CA-CB	-13.35	86.58	110.60
2	D	5	LYS	N-CA-CB	-13.34	86.59	110.60
2	F	5	LYS	N-CA-CB	-13.23	86.79	110.60
2	D	4	ILE	CB-CA-C	-8.00	95.61	111.60
2	B	4	ILE	CB-CA-C	-7.96	95.69	111.60
2	H	4	ILE	CB-CA-C	-7.86	95.89	111.60
2	F	4	ILE	CB-CA-C	-7.81	95.99	111.60
2	F	4	ILE	N-CA-C	-6.73	92.82	111.00
2	H	4	ILE	N-CA-C	-6.55	93.32	111.00
2	D	4	ILE	N-CA-C	-6.53	93.36	111.00
2	B	4	ILE	N-CA-C	-6.33	93.92	111.00

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2989	0	3035	170	0
1	C	2972	0	3016	175	0
1	E	2980	0	3027	173	0
1	G	2980	0	3027	171	0
2	B	1384	0	1405	84	0
2	D	1384	0	1405	84	0
2	F	1384	0	1405	82	1
2	H	1384	0	1405	86	1
3	B	5	0	0	0	0
3	D	5	0	0	0	0
3	F	5	0	0	0	0
3	H	5	0	0	0	0
4	A	14	0	0	0	0
4	B	6	0	0	0	0
4	C	8	0	0	0	0
4	D	6	0	0	0	0
4	E	7	0	0	0	0
4	F	7	0	0	0	0
4	G	19	0	0	0	0
4	H	26	0	0	0	0
All	All	17570	0	17725	949	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 29.

All (949) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1285:TRP:HH2	2:D:102:ARG:HG2	1.01	1.09
1:A:1285:TRP:CH2	2:D:102:ARG:HG2	1.88	1.08
2:B:138:THR:H	2:B:141:GLN:HE21	1.09	1.00

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1248:LEU:HD21	1:C:1332:ARG:HG3	1.46	0.97
1:E:1249:ILE:HD12	1:E:1261:ASP:H	1.29	0.96
2:H:138:THR:H	2:H:141:GLN:HE21	0.99	0.95
2:F:138:THR:H	2:F:141:GLN:HE21	1.07	0.94
2:D:138:THR:H	2:D:141:GLN:HE21	1.08	0.93
1:C:1249:ILE:HD11	1:C:1262:LEU:HG	1.52	0.91
1:A:1249:ILE:HD11	1:A:1262:LEU:HG	1.53	0.89
1:C:1056:VAL:HG21	1:C:1099:LEU:HD22	1.55	0.89
1:G:1287:LYS:HG2	1:G:1288:GLU:HG2	1.53	0.89
1:E:1343:ARG:HD3	1:E:1357:GLU:HG3	1.54	0.88
1:C:1287:LYS:HG2	1:C:1288:GLU:HG2	1.56	0.87
1:C:1193:VAL:HG23	1:C:1194:LEU:HD13	1.57	0.87
1:A:1343:ARG:HD3	1:A:1357:GLU:HG3	1.55	0.87
1:C:1343:ARG:HD3	1:C:1357:GLU:HG3	1.57	0.87
1:G:1190:ILE:HD13	2:H:70:LEU:HD13	1.55	0.86
1:E:1193:VAL:HG23	1:E:1194:LEU:HD13	1.57	0.86
1:E:1039:ASP:HA	1:E:1042:ARG:HH12	1.40	0.86
1:A:1190:ILE:HD13	2:B:70:LEU:HD13	1.55	0.86
1:E:1287:LYS:HG2	1:E:1288:GLU:HG2	1.57	0.85
1:G:1343:ARG:HD3	1:G:1357:GLU:HG3	1.56	0.85
1:A:1287:LYS:HG2	1:A:1288:GLU:HG2	1.58	0.85
1:A:1039:ASP:HA	1:A:1042:ARG:HH12	1.42	0.85
1:A:1239:GLU:OE2	2:B:66:ARG:HG3	1.77	0.84
1:G:1193:VAL:HG23	1:G:1194:LEU:HD13	1.59	0.84
2:B:138:THR:OG1	2:B:141:GLN:HG3	1.78	0.84
1:E:1190:ILE:HD13	2:F:70:LEU:HD13	1.59	0.83
1:A:1056:VAL:HG21	1:A:1099:LEU:HD22	1.58	0.83
1:E:1260:ALA:O	1:E:1261:ASP:HB2	1.75	0.83
2:H:138:THR:OG1	2:H:141:GLN:HG3	1.78	0.83
1:E:1062:LEU:HD11	1:E:1186:LEU:HD23	1.60	0.83
1:G:1035:LEU:HD12	2:H:31:GLU:HB2	1.61	0.83
1:C:1039:ASP:HA	1:C:1042:ARG:HH12	1.42	0.82
1:E:1248:LEU:HD21	1:E:1332:ARG:HG2	1.61	0.82
1:A:1039:ASP:O	1:A:1043:LYS:HG2	1.78	0.82
1:A:1284:LYS:HB3	2:D:99:PRO:HB3	1.62	0.82
1:E:1368:ARG:HG3	1:E:1368:ARG:HH11	1.44	0.82
1:E:1056:VAL:HG21	1:E:1099:LEU:HD22	1.60	0.82
1:G:1039:ASP:HA	1:G:1042:ARG:HH12	1.43	0.82
1:G:1249:ILE:HD11	1:G:1262:LEU:HG	1.61	0.82
1:E:1039:ASP:O	1:E:1043:LYS:HG2	1.80	0.81
1:G:1039:ASP:O	1:G:1043:LYS:HG2	1.79	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1193:VAL:HG23	1:A:1194:LEU:HD13	1.59	0.81
1:C:1039:ASP:O	1:C:1043:LYS:HG2	1.81	0.81
1:E:1234:MSE:HE2	1:E:1234:MSE:HA	1.62	0.81
1:G:1234:MSE:HA	1:G:1234:MSE:HE2	1.64	0.80
1:C:1368:ARG:HG3	1:C:1368:ARG:HH11	1.47	0.79
1:E:1249:ILE:HD11	1:E:1262:LEU:HG	1.62	0.79
1:A:1249:ILE:HD12	1:A:1261:ASP:H	1.47	0.79
1:G:1056:VAL:HG21	1:G:1099:LEU:HD22	1.65	0.79
1:A:1062:LEU:HD11	1:A:1186:LEU:HD23	1.63	0.78
1:G:1368:ARG:HG3	1:G:1368:ARG:HH11	1.47	0.78
2:D:138:THR:OG1	2:D:141:GLN:HG3	1.83	0.78
1:C:1234:MSE:HE2	1:C:1234:MSE:HA	1.64	0.78
1:G:1248:LEU:HD21	1:G:1332:ARG:HG3	1.67	0.77
1:A:1368:ARG:HG3	1:A:1368:ARG:HH11	1.50	0.77
1:C:1249:ILE:HD12	1:C:1261:ASP:H	1.49	0.77
1:G:1062:LEU:HD11	1:G:1186:LEU:HD23	1.67	0.76
2:F:138:THR:OG1	2:F:141:GLN:HG3	1.85	0.76
1:C:1062:LEU:HD11	1:C:1186:LEU:HD23	1.65	0.76
1:A:1234:MSE:HE2	1:A:1234:MSE:HA	1.66	0.76
1:G:1304:TYR:HB3	1:G:1331:PHE:HB3	1.68	0.76
1:E:1285:TRP:HZ2	2:H:98:TYR:CE2	2.05	0.74
1:C:1190:ILE:HD13	2:D:70:LEU:HD13	1.70	0.74
1:G:1249:ILE:HG23	1:G:1260:ALA:HA	1.70	0.73
1:C:1287:LYS:HD2	1:G:1306:ASP:OD2	1.89	0.73
1:E:1287:LYS:HD3	1:E:1287:LYS:N	2.03	0.73
1:C:1075:PHE:HE1	1:C:1168:PHE:HB2	1.53	0.73
1:E:1039:ASP:HA	1:E:1042:ARG:NH1	2.04	0.72
2:D:66:ARG:HG3	2:D:66:ARG:HH11	1.54	0.72
1:A:1287:LYS:HD3	1:A:1287:LYS:N	2.04	0.72
2:F:21:ILE:O	2:F:25:THR:HG22	1.90	0.71
1:A:1039:ASP:HA	1:A:1042:ARG:NH1	2.05	0.71
1:C:1039:ASP:HA	1:C:1042:ARG:NH1	2.05	0.71
1:C:1287:LYS:HD3	1:C:1287:LYS:N	2.06	0.71
1:A:1075:PHE:HE1	1:A:1168:PHE:HB2	1.55	0.70
1:E:1251:GLU:O	1:E:1251:GLU:HG2	1.90	0.70
1:A:1092:VAL:O	1:A:1096:VAL:HG23	1.91	0.70
1:E:1075:PHE:HE1	1:E:1168:PHE:HB2	1.55	0.70
1:G:1092:VAL:O	1:G:1096:VAL:HG23	1.91	0.70
1:C:1240:GLU:OE2	1:C:1305:LYS:NZ	2.24	0.70
1:G:1039:ASP:HA	1:G:1042:ARG:NH1	2.05	0.69
2:H:21:ILE:O	2:H:25:THR:HG22	1.91	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1249:ILE:HD12	1:G:1261:ASP:H	1.57	0.69
1:A:1251:GLU:O	1:A:1251:GLU:HG2	1.91	0.69
2:F:66:ARG:HG3	2:F:66:ARG:HH11	1.56	0.69
1:G:1273:VAL:HG21	1:G:1375:LEU:HB3	1.73	0.69
1:A:1249:ILE:HG23	1:A:1260:ALA:HA	1.73	0.69
1:A:1157:VAL:O	1:A:1157:VAL:HG12	1.92	0.69
2:H:122:ASP:O	2:H:126:ILE:HG13	1.93	0.69
1:E:1249:ILE:HG23	1:E:1260:ALA:HA	1.74	0.69
1:E:1092:VAL:O	1:E:1096:VAL:HG23	1.92	0.68
1:G:1062:LEU:HD13	1:G:1088:LEU:HD11	1.74	0.68
1:C:1249:ILE:HG23	1:C:1260:ALA:HA	1.74	0.68
1:E:1157:VAL:HG12	1:E:1157:VAL:O	1.93	0.68
1:A:1062:LEU:HD13	1:A:1088:LEU:HD11	1.74	0.68
1:A:1260:ALA:O	1:A:1261:ASP:HB2	1.93	0.68
1:G:1251:GLU:HG2	1:G:1251:GLU:O	1.93	0.68
1:G:1287:LYS:HD3	1:G:1287:LYS:N	2.08	0.67
1:C:1157:VAL:HG12	1:C:1157:VAL:O	1.94	0.67
1:G:1157:VAL:HG12	1:G:1157:VAL:O	1.94	0.67
1:E:1194:LEU:HD23	2:F:61:GLN:HB3	1.76	0.67
2:D:21:ILE:O	2:D:25:THR:HG22	1.95	0.67
1:C:1092:VAL:O	1:C:1096:VAL:HG23	1.95	0.67
1:G:1075:PHE:HE1	1:G:1168:PHE:HB2	1.59	0.67
2:H:66:ARG:HG3	2:H:66:ARG:HH11	1.59	0.66
1:A:1239:GLU:OE1	2:B:66:ARG:NH1	2.28	0.66
2:B:66:ARG:HG3	2:B:66:ARG:HH11	1.58	0.66
1:C:1156:LEU:HD13	1:C:1183:GLU:HG3	1.76	0.66
1:C:1251:GLU:O	1:C:1251:GLU:HG2	1.96	0.66
1:E:1156:LEU:HD13	1:E:1183:GLU:HG3	1.78	0.66
2:F:139:TYR:HE2	2:F:143:LEU:HD12	1.61	0.66
2:F:161:THR:HG21	2:F:163:ARG:HD2	1.78	0.66
1:A:1218:ASP:O	1:A:1222:LYS:HD3	1.96	0.66
2:B:21:ILE:O	2:B:25:THR:HG22	1.96	0.66
1:E:1234:MSE:HE1	1:E:1267:LEU:HD23	1.77	0.66
2:D:116:LYS:HG3	2:D:119:LEU:HD23	1.77	0.66
2:B:116:LYS:HG3	2:B:119:LEU:HD23	1.77	0.65
2:B:128:LYS:HE2	2:B:132:LYS:HZ1	1.61	0.65
2:F:138:THR:H	2:F:141:GLN:NE2	1.89	0.65
2:F:102:ARG:NH2	2:F:108:THR:O	2.28	0.65
2:F:6:CYS:HB3	2:F:55:LEU:HD23	1.78	0.65
2:D:102:ARG:NH2	2:D:108:THR:O	2.29	0.65
2:H:102:ARG:NH2	2:H:108:THR:O	2.28	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1260:ALA:O	1:C:1261:ASP:HB2	1.95	0.65
1:C:1156:LEU:CD1	1:C:1183:GLU:HG3	2.26	0.65
2:F:128:LYS:HE2	2:F:132:LYS:HZ1	1.62	0.65
2:D:120:ARG:NH2	2:D:139:TYR:N	2.45	0.64
2:F:116:LYS:HG3	2:F:119:LEU:HD23	1.78	0.64
2:B:120:ARG:NH2	2:B:139:TYR:N	2.45	0.64
1:C:1062:LEU:HD13	1:C:1088:LEU:HD11	1.77	0.64
1:A:1346:PRO:HG3	1:E:1374:HIS:ND1	2.12	0.64
2:B:122:ASP:O	2:B:126:ILE:HG13	1.97	0.64
1:E:1239:GLU:OE2	2:F:66:ARG:HG3	1.97	0.64
2:F:120:ARG:NH2	2:F:139:TYR:N	2.45	0.64
1:G:1156:LEU:HD13	1:G:1183:GLU:HG3	1.79	0.64
2:D:161:THR:HG21	2:D:163:ARG:HD2	1.79	0.64
1:G:1176:GLN:NE2	2:H:1:MET:N	2.45	0.64
1:C:1140:LYS:HD2	1:C:1230:HIS:CD2	2.33	0.64
2:B:157:CYS:HB2	2:B:165:LEU:HD12	1.80	0.64
1:E:1179:SER:H	2:F:41:SER:HB2	1.63	0.63
2:B:102:ARG:NH2	2:B:108:THR:O	2.31	0.63
1:C:1273:VAL:HG21	1:C:1375:LEU:HB3	1.81	0.63
2:D:138:THR:H	2:D:141:GLN:NE2	1.90	0.63
1:E:1218:ASP:O	1:E:1222:LYS:HD3	1.98	0.63
1:E:1248:LEU:HD21	1:E:1332:ARG:CG	2.28	0.63
1:C:1056:VAL:HG21	1:C:1099:LEU:CD2	2.27	0.63
1:E:1062:LEU:HD13	1:E:1088:LEU:HD11	1.79	0.63
1:G:1086:GLY:O	1:G:1088:LEU:N	2.32	0.63
2:F:84:LEU:HD12	2:F:117:LEU:HA	1.81	0.63
1:E:1331:PHE:CZ	1:E:1333:HIS:HB2	2.34	0.63
2:B:84:LEU:HD12	2:B:117:LEU:HA	1.81	0.63
2:B:161:THR:HG21	2:B:163:ARG:HD2	1.81	0.63
2:H:128:LYS:HE2	2:H:132:LYS:HZ1	1.63	0.63
1:E:1156:LEU:CD1	1:E:1183:GLU:HG3	2.28	0.62
1:E:1260:ALA:O	1:E:1261:ASP:CB	2.45	0.62
1:G:1218:ASP:O	1:G:1222:LYS:HD3	1.99	0.62
1:E:1088:LEU:O	1:E:1092:VAL:HG23	2.00	0.62
1:C:1287:LYS:HG2	1:C:1288:GLU:N	2.15	0.62
2:D:84:LEU:HD12	2:D:117:LEU:HA	1.82	0.62
2:F:139:TYR:CE2	2:F:143:LEU:HD12	2.34	0.62
1:G:1178:HIS:HA	1:G:1181:THR:HG23	1.82	0.62
1:G:1287:LYS:HG2	1:G:1288:GLU:N	2.14	0.62
2:H:116:LYS:HG3	2:H:119:LEU:HD23	1.80	0.62
1:A:1086:GLY:O	1:A:1088:LEU:N	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1178:HIS:HA	1:C:1181:THR:HG23	1.82	0.61
2:D:122:ASP:O	2:D:126:ILE:HG13	1.99	0.61
1:G:1156:LEU:CD1	1:G:1183:GLU:HG3	2.29	0.61
1:C:1088:LEU:O	1:C:1092:VAL:HG23	1.99	0.61
1:C:1218:ASP:O	1:C:1222:LYS:HD3	2.00	0.61
2:D:139:TYR:HE2	2:D:143:LEU:HD12	1.65	0.61
1:G:1365:SER:O	1:G:1366:GLU:HB3	2.01	0.61
1:A:1178:HIS:HA	1:A:1181:THR:HG23	1.83	0.61
1:E:1140:LYS:HD2	1:E:1230:HIS:CD2	2.36	0.61
1:C:1112:LEU:HA	1:C:1115:LEU:HD13	1.83	0.61
1:G:1112:LEU:HA	1:G:1115:LEU:HD13	1.83	0.61
1:C:1304:TYR:HB3	1:C:1331:PHE:HB3	1.81	0.60
2:F:122:ASP:O	2:F:126:ILE:HG13	2.00	0.60
1:G:1140:LYS:HD2	1:G:1230:HIS:CD2	2.36	0.60
2:H:161:THR:HG21	2:H:163:ARG:HD2	1.82	0.60
1:C:1247:GLN:HB3	1:C:1332:ARG:NH1	2.16	0.60
2:D:157:CYS:HB2	2:D:165:LEU:HD12	1.83	0.60
2:H:6:CYS:HB3	2:H:55:LEU:HD23	1.83	0.60
2:B:138:THR:H	2:B:141:GLN:NE2	1.89	0.60
2:H:120:ARG:NH2	2:H:139:TYR:N	2.49	0.60
1:E:1365:SER:O	1:E:1366:GLU:HB3	2.02	0.60
2:B:6:CYS:HB3	2:B:55:LEU:HD23	1.83	0.60
1:E:1076:LEU:HB3	1:E:1080:GLU:HB2	1.84	0.60
1:G:1088:LEU:O	1:G:1092:VAL:HG23	2.02	0.60
1:A:1076:LEU:HB3	1:A:1080:GLU:HB2	1.82	0.60
1:C:1075:PHE:HE1	1:C:1168:PHE:CB	2.15	0.60
1:C:1365:SER:O	1:C:1366:GLU:HB3	2.02	0.60
2:F:157:CYS:HB2	2:F:165:LEU:HD12	1.82	0.60
2:H:138:THR:H	2:H:141:GLN:NE2	1.84	0.60
1:C:1179:SER:H	2:D:41:SER:HB2	1.67	0.60
2:F:154:TYR:C	2:F:155:LEU:HD12	2.23	0.60
1:E:1086:GLY:O	1:E:1088:LEU:N	2.35	0.59
1:E:1365:SER:C	1:E:1367:GLY:H	2.05	0.59
1:A:1140:LYS:HD2	1:A:1230:HIS:CD2	2.37	0.59
1:A:1194:LEU:HD23	2:B:61:GLN:HB3	1.84	0.59
1:C:1076:LEU:HB3	1:C:1080:GLU:HB2	1.83	0.59
1:G:1343:ARG:HD2	1:G:1343:ARG:N	2.17	0.59
2:D:154:TYR:C	2:D:155:LEU:HD12	2.23	0.59
1:E:1343:ARG:HD3	1:E:1357:GLU:CG	2.29	0.59
1:C:1103:GLU:O	1:C:1106:VAL:HG12	2.02	0.59
1:E:1042:ARG:HE	1:E:1113:GLU:HA	1.67	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1112:LEU:HA	1:E:1115:LEU:HD13	1.84	0.59
2:H:84:LEU:HD12	2:H:117:LEU:HA	1.83	0.59
2:F:83:SER:HB3	2:F:86:SER:HB3	1.84	0.59
1:G:1343:ARG:HD3	1:G:1357:GLU:CG	2.32	0.59
1:C:1042:ARG:HE	1:C:1113:GLU:HA	1.68	0.59
1:C:1343:ARG:HD2	1:C:1343:ARG:N	2.17	0.59
1:E:1274:ILE:HG21	1:E:1288:GLU:HB2	1.85	0.59
1:G:1076:LEU:HB3	1:G:1080:GLU:HB2	1.85	0.59
1:A:1365:SER:O	1:A:1366:GLU:HB3	2.03	0.58
1:C:1149:HIS:HA	1:C:1152:VAL:HG23	1.85	0.58
1:E:1117:LYS:HB2	1:E:1120:GLN:HG3	1.84	0.58
2:H:157:CYS:HB2	2:H:165:LEU:HD12	1.85	0.58
1:A:1212:GLU:CD	1:G:1097:GLU:HG2	2.23	0.58
1:A:1274:ILE:HG21	1:A:1288:GLU:HB2	1.85	0.58
2:D:139:TYR:CE2	2:D:143:LEU:HD12	2.39	0.58
1:E:1063:MSE:CE	1:E:1088:LEU:HD22	2.34	0.58
1:E:1178:HIS:HA	1:E:1181:THR:HG23	1.83	0.58
1:A:1042:ARG:HE	1:A:1113:GLU:HA	1.68	0.58
2:H:128:LYS:HE2	2:H:132:LYS:NZ	2.18	0.58
1:A:1343:ARG:CD	1:A:1357:GLU:HG3	2.32	0.58
1:C:1365:SER:C	1:C:1367:GLY:H	2.06	0.58
2:D:6:CYS:HB3	2:D:55:LEU:HD23	1.85	0.58
1:A:1365:SER:C	1:A:1367:GLY:H	2.06	0.58
1:C:1075:PHE:CE1	1:C:1168:PHE:HB2	2.36	0.58
1:G:1365:SER:C	1:G:1367:GLY:H	2.07	0.58
2:H:83:SER:HB3	2:H:86:SER:HB3	1.86	0.58
1:A:1149:HIS:HA	1:A:1152:VAL:HG23	1.84	0.57
1:E:1343:ARG:HD2	1:E:1343:ARG:N	2.19	0.57
2:F:128:LYS:HE2	2:F:132:LYS:NZ	2.18	0.57
1:A:1112:LEU:HA	1:A:1115:LEU:HD13	1.86	0.57
1:A:1287:LYS:HG2	1:A:1288:GLU:N	2.19	0.57
1:G:1176:GLN:HE22	2:H:1:MET:N	2.02	0.57
1:A:1117:LYS:HB2	1:A:1120:GLN:HG3	1.87	0.57
2:D:138:THR:N	2:D:141:GLN:HE21	1.91	0.57
1:E:1075:PHE:HE1	1:E:1168:PHE:CB	2.17	0.57
1:A:1103:GLU:O	1:A:1106:VAL:HG12	2.04	0.57
1:E:1149:HIS:HA	1:E:1152:VAL:HG23	1.86	0.57
1:E:1287:LYS:HG2	1:E:1288:GLU:N	2.19	0.57
1:C:1086:GLY:O	1:C:1088:LEU:N	2.38	0.57
1:C:1117:LYS:HB2	1:C:1120:GLN:HG3	1.87	0.57
1:C:1274:ILE:CG2	1:C:1288:GLU:HB2	2.35	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1274:ILE:CG2	1:E:1288:GLU:HB2	2.34	0.57
1:A:1067:LEU:HB3	1:A:1085:PHE:CZ	2.40	0.57
1:A:1075:PHE:HE1	1:A:1168:PHE:CB	2.17	0.57
1:A:1274:ILE:CG2	1:A:1288:GLU:HB2	2.35	0.57
1:A:1343:ARG:HD2	1:A:1343:ARG:N	2.20	0.57
1:C:1274:ILE:HG21	1:C:1288:GLU:HB2	1.86	0.57
1:E:1287:LYS:HZ2	1:E:1288:GLU:H	1.53	0.57
1:A:1056:VAL:HG21	1:A:1099:LEU:CD2	2.32	0.57
2:B:154:TYR:C	2:B:155:LEU:HD12	2.25	0.57
1:E:1343:ARG:CD	1:E:1357:GLU:HG3	2.31	0.57
1:G:1260:ALA:O	1:G:1261:ASP:HB2	2.05	0.57
1:C:1343:ARG:HD3	1:C:1357:GLU:CG	2.32	0.57
1:E:1177:GLN:HG3	2:F:41:SER:HB3	1.86	0.57
2:D:83:SER:HB3	2:D:86:SER:HB3	1.86	0.56
1:A:1088:LEU:O	1:A:1092:VAL:HG23	2.05	0.56
1:A:1287:LYS:HZ2	1:A:1288:GLU:H	1.53	0.56
1:C:1056:VAL:CG2	1:C:1099:LEU:HD22	2.32	0.56
1:G:1042:ARG:HE	1:G:1113:GLU:HA	1.69	0.56
2:H:87:PRO:HA	2:H:137:ILE:HD11	1.88	0.56
2:H:139:TYR:HE2	2:H:143:LEU:HD12	1.70	0.56
2:D:128:LYS:HE2	2:D:132:LYS:HZ1	1.70	0.56
2:D:128:LYS:HE2	2:D:132:LYS:NZ	2.20	0.56
2:D:87:PRO:HA	2:D:137:ILE:HD11	1.87	0.56
2:B:139:TYR:HE2	2:B:143:LEU:HD12	1.70	0.56
1:C:1287:LYS:CD	1:G:1306:ASP:OD2	2.54	0.56
1:G:1063:MSE:CE	1:G:1088:LEU:HD22	2.35	0.56
2:H:138:THR:N	2:H:141:GLN:HE21	1.84	0.56
1:C:1343:ARG:HD2	1:C:1343:ARG:H	1.71	0.56
1:E:1067:LEU:HB3	1:E:1085:PHE:CZ	2.41	0.56
1:G:1103:GLU:O	1:G:1106:VAL:HG12	2.06	0.56
1:A:1343:ARG:HD3	1:A:1357:GLU:CG	2.30	0.56
2:B:128:LYS:HE2	2:B:132:LYS:NZ	2.19	0.56
1:C:1247:GLN:O	1:C:1251:GLU:HB3	2.05	0.56
1:G:1345:LEU:HD12	1:G:1355:VAL:HG12	1.88	0.56
1:E:1075:PHE:CE1	1:E:1168:PHE:HB2	2.39	0.55
1:A:1190:ILE:HD13	2:B:70:LEU:CD1	2.35	0.55
2:B:87:PRO:HA	2:B:137:ILE:HD11	1.87	0.55
2:B:139:TYR:CE2	2:B:143:LEU:HD12	2.41	0.55
1:G:1343:ARG:HD2	1:G:1343:ARG:H	1.70	0.55
1:A:1295:VAL:HG11	1:A:1389:SER:OG	2.06	0.55
2:B:83:SER:HB3	2:B:86:SER:HB3	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1248:LEU:HD21	1:C:1332:ARG:CG	2.31	0.55
1:G:1111:ASP:OD2	1:G:1113:GLU:HB2	2.06	0.55
2:F:139:TYR:HB3	2:F:140:PRO:HD3	1.88	0.55
1:A:1173:ASN:HD21	1:A:1180:SER:HB2	1.72	0.55
1:C:1287:LYS:HD2	1:G:1306:ASP:CG	2.27	0.55
1:E:1109:VAL:HG13	1:E:1110:PRO:HD2	1.89	0.55
2:H:98:TYR:HB3	2:H:99:PRO:HD3	1.89	0.55
1:A:1215:TYR:OH	1:G:1138:ARG:HG3	2.07	0.55
2:B:98:TYR:OH	2:B:102:ARG:HD2	2.07	0.55
1:C:1063:MSE:CE	1:C:1088:LEU:HD22	2.37	0.55
1:C:1288:GLU:OE1	1:G:1308:SER:HB2	2.07	0.55
2:F:87:PRO:HA	2:F:137:ILE:HD11	1.88	0.55
1:G:1067:LEU:HB3	1:G:1085:PHE:CZ	2.42	0.55
1:A:1119:ASP:O	1:A:1122:LYS:HG3	2.07	0.55
1:C:1218:ASP:OD1	1:C:1222:LYS:HE3	2.06	0.55
1:C:1306:ASP:OD2	1:G:1287:LYS:N	2.31	0.55
1:A:1345:LEU:HD12	1:A:1355:VAL:HG12	1.89	0.54
1:C:1173:ASN:HD21	1:C:1180:SER:HB2	1.71	0.54
1:C:1227:VAL:O	1:C:1231:ILE:HG12	2.06	0.54
1:E:1035:LEU:HB2	1:E:1039:ASP:HB2	1.88	0.54
1:E:1343:ARG:HD2	1:E:1343:ARG:H	1.72	0.54
1:G:1179:SER:H	2:H:41:SER:HB2	1.71	0.54
2:H:139:TYR:CE2	2:H:143:LEU:HD12	2.42	0.54
2:B:138:THR:N	2:B:141:GLN:HE21	1.92	0.54
1:C:1216:HIS:HB3	1:E:1134:TYR:CE2	2.42	0.54
1:E:1247:GLN:O	1:E:1251:GLU:HB3	2.06	0.54
2:H:154:TYR:C	2:H:155:LEU:HD12	2.27	0.54
1:E:1103:GLU:O	1:E:1106:VAL:HG12	2.07	0.54
1:G:1176:GLN:NE2	2:H:1:MET:H3	2.03	0.54
2:B:139:TYR:HB3	2:B:140:PRO:HD3	1.89	0.54
1:C:1067:LEU:HB3	1:C:1085:PHE:CZ	2.41	0.54
1:E:1094:PHE:HE1	1:E:1135:TYR:HD2	1.55	0.54
1:G:1035:LEU:HD12	2:H:31:GLU:CB	2.35	0.54
1:G:1075:PHE:CE1	1:G:1168:PHE:HB2	2.43	0.54
1:G:1274:ILE:HG21	1:G:1288:GLU:HB2	1.88	0.54
1:A:1234:MSE:HE1	1:A:1267:LEU:HD23	1.90	0.54
1:A:1343:ARG:HD2	1:A:1343:ARG:H	1.72	0.54
1:C:1287:LYS:HZ2	1:C:1288:GLU:H	1.56	0.54
1:A:1247:GLN:O	1:A:1251:GLU:HB3	2.08	0.54
2:F:98:TYR:HB3	2:F:99:PRO:HD3	1.90	0.54
1:A:1075:PHE:CE1	1:A:1168:PHE:HB2	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1115:LEU:HD12	1:E:1115:LEU:N	2.23	0.54
1:A:1063:MSE:CE	1:A:1088:LEU:HD22	2.37	0.53
1:A:1218:ASP:OD1	1:A:1222:LYS:HE3	2.09	0.53
1:G:1117:LYS:HB2	1:G:1120:GLN:HG3	1.89	0.53
1:A:1135:TYR:CE2	1:A:1138:ARG:NH2	2.75	0.53
1:G:1094:PHE:HE1	1:G:1135:TYR:HD2	1.56	0.53
1:G:1343:ARG:CD	1:G:1357:GLU:HG3	2.33	0.53
1:A:1135:TYR:HE2	1:A:1138:ARG:NH2	2.05	0.53
1:A:1395:ARG:O	1:A:1398:HIS:HB3	2.07	0.53
2:F:8:VAL:HG22	2:F:79:LEU:HD12	1.90	0.53
2:H:138:THR:HG1	2:H:141:GLN:HG3	1.70	0.53
1:A:1111:ASP:OD2	1:A:1113:GLU:HB2	2.09	0.53
1:A:1260:ALA:O	1:A:1261:ASP:CB	2.55	0.53
1:C:1156:LEU:HD21	1:C:1182:LEU:HD23	1.91	0.53
1:G:1274:ILE:CG2	1:G:1288:GLU:HB2	2.38	0.53
1:A:1056:VAL:CG2	1:A:1099:LEU:HD22	2.36	0.53
1:E:1285:TRP:HH2	2:H:102:ARG:HG2	1.74	0.53
1:C:1368:ARG:HH11	1:C:1368:ARG:CG	2.19	0.53
1:E:1187:ILE:O	1:E:1191:GLN:HG3	2.09	0.53
1:A:1109:VAL:HG13	1:A:1110:PRO:HD2	1.89	0.53
1:E:1135:TYR:CE2	1:E:1138:ARG:NH2	2.77	0.53
1:G:1247:GLN:O	1:G:1251:GLU:HB3	2.09	0.53
1:C:1345:LEU:HD12	1:C:1355:VAL:HG12	1.90	0.53
1:C:1140:LYS:HD2	1:C:1230:HIS:HD2	1.74	0.53
1:C:1179:SER:H	2:D:41:SER:CB	2.22	0.53
1:G:1075:PHE:HE1	1:G:1168:PHE:CB	2.20	0.53
1:G:1140:LYS:HE2	1:G:1227:VAL:HA	1.89	0.53
1:A:1094:PHE:HE1	1:A:1135:TYR:HD2	1.58	0.52
1:A:1115:LEU:N	1:A:1115:LEU:HD12	2.24	0.52
1:A:1239:GLU:CD	2:B:66:ARG:NH1	2.63	0.52
2:B:57:ASP:OD1	2:B:58:THR:N	2.41	0.52
1:C:1115:LEU:HD12	1:C:1115:LEU:N	2.23	0.52
2:D:139:TYR:HB3	2:D:140:PRO:HD3	1.90	0.52
1:E:1035:LEU:HB2	1:E:1039:ASP:CB	2.39	0.52
1:G:1115:LEU:HD12	1:G:1115:LEU:N	2.23	0.52
1:C:1282:LEU:HG	1:C:1289:PRO:HG2	1.91	0.52
2:H:155:LEU:CD2	2:H:168:VAL:HA	2.39	0.52
1:A:1346:PRO:HG3	1:E:1374:HIS:CG	2.44	0.52
1:E:1298:THR:O	1:E:1299:ALA:HB2	2.08	0.52
2:F:12:GLY:O	2:F:13:ALA:HB3	2.10	0.52
1:C:1306:ASP:OD2	1:G:1286:LYS:HA	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1249:ILE:HD12	1:E:1261:ASP:N	2.12	0.52
1:G:1287:LYS:HG2	1:G:1288:GLU:H	1.72	0.52
1:C:1287:LYS:HG2	1:C:1288:GLU:H	1.74	0.52
1:C:1345:LEU:HD12	1:C:1355:VAL:CG1	2.40	0.52
1:G:1149:HIS:HA	1:G:1152:VAL:HG23	1.92	0.52
1:A:1177:GLN:HG3	2:B:41:SER:HB3	1.90	0.52
2:B:68:ARG:NH1	2:B:100:GLU:OE1	2.43	0.52
1:G:1287:LYS:HZ2	1:G:1288:GLU:H	1.55	0.52
1:C:1140:LYS:HE2	1:C:1227:VAL:HA	1.92	0.52
1:C:1343:ARG:CD	1:C:1357:GLU:HG3	2.33	0.52
1:A:1346:PRO:HG3	1:E:1374:HIS:CE1	2.45	0.52
1:C:1062:LEU:HG	1:C:1185:TYR:HB3	1.92	0.52
1:C:1109:VAL:HG13	1:C:1110:PRO:HD2	1.92	0.52
1:C:1234:MSE:HE2	1:C:1237:ILE:HD12	1.91	0.52
1:E:1056:VAL:HG21	1:E:1099:LEU:CD2	2.35	0.52
1:E:1285:TRP:CZ2	2:H:98:TYR:CE2	2.92	0.52
1:C:1094:PHE:HE1	1:C:1135:TYR:HD2	1.58	0.51
1:E:1273:VAL:HG21	1:E:1375:LEU:HB3	1.92	0.51
2:F:5:LYS:HE3	2:F:56:TRP:CE3	2.46	0.51
2:H:139:TYR:HB3	2:H:140:PRO:HD3	1.91	0.51
2:B:152:VAL:HG12	2:B:153:LYS:HG2	1.91	0.51
2:D:96:LYS:O	2:D:99:PRO:HD2	2.10	0.51
1:A:1187:ILE:O	1:A:1191:GLN:HG3	2.09	0.51
1:C:1191:GLN:O	1:C:1195:LYS:HG2	2.11	0.51
1:C:1194:LEU:HD23	2:D:61:GLN:HB3	1.93	0.51
1:C:1260:ALA:O	1:C:1261:ASP:CB	2.57	0.51
2:D:68:ARG:NH1	2:D:100:GLU:OE1	2.44	0.51
1:A:1183:GLU:CD	2:B:74:GLN:NE2	2.64	0.51
1:G:1109:VAL:HG13	1:G:1110:PRO:HD2	1.91	0.51
1:G:1398:HIS:C	1:G:1400:ARG:H	2.14	0.51
1:A:1345:LEU:HD12	1:A:1355:VAL:CG1	2.40	0.51
1:C:1111:ASP:OD2	1:C:1113:GLU:HB2	2.10	0.51
1:E:1140:LYS:HE2	1:E:1227:VAL:HA	1.91	0.51
1:G:1339:ALA:HB1	1:G:1361:VAL:HG22	1.92	0.51
1:A:1339:ALA:HB1	1:A:1361:VAL:HG22	1.92	0.51
1:E:1339:ALA:HB1	1:E:1361:VAL:HG22	1.93	0.51
2:B:8:VAL:HG22	2:B:79:LEU:HD12	1.93	0.51
2:B:58:THR:O	2:B:61:GLN:HG2	2.11	0.51
1:C:1119:ASP:O	1:C:1122:LYS:HG3	2.11	0.51
1:E:1218:ASP:OD1	1:E:1222:LYS:HE3	2.10	0.51
1:G:1194:LEU:HD23	2:H:61:GLN:HB3	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1368:ARG:HG3	1:E:1368:ARG:NH1	2.20	0.51
1:A:1173:ASN:ND2	1:A:1180:SER:HB2	2.26	0.50
2:B:142:GLY:HA3	2:B:154:TYR:CZ	2.46	0.50
2:F:138:THR:OG1	2:F:140:PRO:HD2	2.12	0.50
1:G:1282:LEU:HG	1:G:1289:PRO:HG2	1.93	0.50
1:A:1234:MSE:SE	1:A:1267:LEU:HD23	2.61	0.50
2:F:145:MET:CE	2:F:145:MET:HA	2.41	0.50
1:C:1339:ALA:HB1	1:C:1361:VAL:HG22	1.93	0.50
1:C:1341:GLN:HB3	1:C:1359:VAL:HB	1.93	0.50
1:E:1345:LEU:HD12	1:E:1355:VAL:HG12	1.93	0.50
1:G:1119:ASP:O	1:G:1122:LYS:HG3	2.11	0.50
1:C:1328:PRO:HG2	1:C:1329:PHE:CD1	2.46	0.50
1:G:1282:LEU:HD21	1:G:1289:PRO:HB3	1.94	0.50
1:A:1239:GLU:CD	2:B:66:ARG:HH11	2.15	0.50
2:B:138:THR:HG23	2:B:141:GLN:HE21	1.76	0.50
1:C:1282:LEU:HB2	1:G:1285:TRP:CE2	2.47	0.50
1:E:1135:TYR:HE2	1:E:1138:ARG:NH2	2.10	0.50
1:E:1142:TYR:CE2	1:E:1193:VAL:HG13	2.46	0.50
1:G:1187:ILE:O	1:G:1191:GLN:HG3	2.11	0.50
1:A:1140:LYS:HE2	1:A:1227:VAL:HA	1.94	0.50
2:D:66:ARG:HH11	2:D:66:ARG:CG	2.23	0.50
2:B:145:MET:HA	2:B:145:MET:CE	2.42	0.50
1:C:1177:GLN:HG3	2:D:41:SER:HB3	1.94	0.50
2:F:142:GLY:HA3	2:F:154:TYR:CZ	2.47	0.50
2:F:153:LYS:HB3	2:F:155:LEU:CD1	2.41	0.50
2:H:19:LEU:C	2:H:19:LEU:HD23	2.32	0.50
1:E:1062:LEU:HG	1:E:1185:TYR:HB3	1.94	0.50
1:E:1179:SER:H	2:F:41:SER:CB	2.24	0.50
1:E:1397:LYS:O	1:E:1401:GLN:HB2	2.12	0.50
1:G:1345:LEU:HD12	1:G:1355:VAL:CG1	2.40	0.50
2:H:10:GLY:HA2	2:H:97:TRP:CE2	2.47	0.50
2:D:138:THR:OG1	2:D:140:PRO:HD2	2.11	0.50
1:E:1368:ARG:HH11	1:E:1368:ARG:CG	2.17	0.50
1:G:1135:TYR:CE2	1:G:1138:ARG:NH2	2.79	0.50
2:H:28:PHE:CD1	2:H:29:PRO:HD2	2.46	0.50
2:H:152:VAL:HG12	2:H:153:LYS:HG2	1.94	0.50
1:C:1173:ASN:ND2	1:C:1180:SER:HB2	2.26	0.49
1:A:1273:VAL:HG21	1:A:1375:LEU:HB3	1.94	0.49
1:C:1287:LYS:CG	1:C:1288:GLU:N	2.75	0.49
1:C:1306:ASP:OD2	1:G:1287:LYS:HD2	2.13	0.49
2:D:155:LEU:CD2	2:D:168:VAL:HA	2.41	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:19:LEU:C	2:F:19:LEU:HD23	2.33	0.49
2:F:153:LYS:HB3	2:F:155:LEU:HD11	1.94	0.49
1:A:1212:GLU:OE1	1:G:1138:ARG:NH2	2.45	0.49
2:H:146:ALA:CB	2:H:154:TYR:HB2	2.42	0.49
1:C:1049:LEU:HD11	1:C:1106:VAL:HB	1.94	0.49
1:C:1350:ALA:O	1:C:1351:GLU:HB3	2.12	0.49
2:D:28:PHE:CD1	2:D:29:PRO:HD2	2.47	0.49
1:E:1049:LEU:HD11	1:E:1106:VAL:HB	1.94	0.49
2:F:155:LEU:HD12	2:F:155:LEU:N	2.27	0.49
1:A:1134:TYR:CE2	1:G:1216:HIS:HB3	2.47	0.49
2:B:28:PHE:CD1	2:B:29:PRO:HD2	2.47	0.49
2:D:153:LYS:HB3	2:D:155:LEU:CD1	2.43	0.49
2:D:153:LYS:HB3	2:D:155:LEU:HD11	1.94	0.49
1:E:1153:PRO:O	1:E:1157:VAL:HG23	2.13	0.49
2:H:12:GLY:O	2:H:13:ALA:HB3	2.13	0.49
2:B:98:TYR:HB3	2:B:99:PRO:HD3	1.94	0.49
2:B:145:MET:HA	2:B:145:MET:HE3	1.94	0.49
1:E:1111:ASP:OD2	1:E:1113:GLU:HB2	2.11	0.49
2:F:138:THR:N	2:F:141:GLN:HE21	1.91	0.49
2:H:153:LYS:HB3	2:H:155:LEU:CD1	2.42	0.49
1:A:1062:LEU:HG	1:A:1185:TYR:HB3	1.95	0.49
1:A:1340:LEU:HD11	1:A:1390:VAL:CG1	2.42	0.49
2:D:145:MET:HA	2:D:145:MET:CE	2.43	0.49
1:E:1195:LYS:NZ	2:F:59:ALA:HB3	2.28	0.49
2:F:155:LEU:CD2	2:F:168:VAL:HA	2.42	0.49
1:C:1282:LEU:HD21	1:C:1289:PRO:HB3	1.94	0.49
1:C:1340:LEU:HD11	1:C:1390:VAL:CG1	2.43	0.49
1:E:1227:VAL:O	1:E:1231:ILE:HG12	2.12	0.49
2:F:133:LYS:HD3	2:F:133:LYS:N	2.28	0.49
1:G:1173:ASN:ND2	1:G:1180:SER:HB2	2.28	0.49
1:A:1368:ARG:HH11	1:A:1368:ARG:CG	2.21	0.49
1:E:1273:VAL:HG23	1:E:1377:CYS:HA	1.95	0.49
2:F:146:ALA:CB	2:F:154:TYR:HB2	2.42	0.49
1:G:1173:ASN:HD21	1:G:1180:SER:HB2	1.77	0.49
1:G:1287:LYS:CG	1:G:1288:GLU:N	2.76	0.49
1:G:1341:GLN:HB3	1:G:1359:VAL:HB	1.94	0.49
1:G:1350:ALA:O	1:G:1351:GLU:HB3	2.13	0.49
1:C:1149:HIS:CE1	1:C:1186:LEU:O	2.66	0.49
1:C:1298:THR:O	1:C:1299:ALA:HB2	2.13	0.49
1:G:1049:LEU:HD11	1:G:1106:VAL:HB	1.93	0.49
1:G:1298:THR:O	1:G:1299:ALA:HB2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:145:MET:HA	2:H:145:MET:CE	2.43	0.49
1:E:1156:LEU:HD21	1:E:1182:LEU:HD23	1.94	0.48
1:E:1191:GLN:O	1:E:1195:LYS:HG2	2.13	0.48
1:A:1368:ARG:HG3	1:A:1368:ARG:NH1	2.25	0.48
1:C:1248:LEU:CD2	1:C:1332:ARG:HG3	2.32	0.48
2:F:66:ARG:HH11	2:F:66:ARG:CG	2.25	0.48
2:D:8:VAL:HG22	2:D:79:LEU:HD12	1.94	0.48
2:D:142:GLY:HA3	2:D:154:TYR:CZ	2.47	0.48
1:G:1328:PRO:HG2	1:G:1329:PHE:CD1	2.49	0.48
2:B:155:LEU:CD2	2:B:168:VAL:HA	2.43	0.48
2:D:161:THR:HB	2:D:163:ARG:HG2	1.94	0.48
1:G:1156:LEU:C	1:G:1158:LYS:H	2.16	0.48
2:B:12:GLY:O	2:B:13:ALA:HB3	2.13	0.48
1:C:1156:LEU:CD2	1:C:1182:LEU:HD23	2.44	0.48
1:G:1135:TYR:HE2	1:G:1138:ARG:NH2	2.11	0.48
1:G:1218:ASP:OD1	1:G:1222:LYS:HE3	2.13	0.48
1:C:1287:LYS:CG	1:C:1288:GLU:H	2.27	0.48
1:E:1035:LEU:HG	2:F:31:GLU:OE1	2.14	0.48
1:E:1340:LEU:HD11	1:E:1390:VAL:CG1	2.44	0.48
2:F:28:PHE:CD1	2:F:29:PRO:HD2	2.49	0.48
2:F:68:ARG:NH1	2:F:100:GLU:OE1	2.46	0.48
2:H:142:GLY:HA3	2:H:154:TYR:CZ	2.48	0.48
2:H:153:LYS:HB3	2:H:155:LEU:HD11	1.96	0.48
1:A:1052:GLU:OE2	1:A:1095:GLN:NE2	2.43	0.48
2:B:153:LYS:HB3	2:B:155:LEU:HD11	1.96	0.48
1:C:1135:TYR:CE2	1:C:1138:ARG:NH2	2.81	0.48
2:D:152:VAL:HG12	2:D:153:LYS:HG2	1.94	0.48
1:E:1341:GLN:HB3	1:E:1359:VAL:HB	1.96	0.48
1:G:1056:VAL:HG21	1:G:1099:LEU:CD2	2.40	0.48
1:C:1134:TYR:CE2	1:E:1216:HIS:HB3	2.48	0.48
2:D:19:LEU:HD23	2:D:19:LEU:C	2.34	0.48
2:D:146:ALA:CB	2:D:154:TYR:HB2	2.43	0.48
1:E:1119:ASP:O	1:E:1122:LYS:HG3	2.13	0.48
1:E:1350:ALA:O	1:E:1351:GLU:HB3	2.13	0.48
1:G:1164:ALA:O	1:G:1167:ALA:HB3	2.14	0.48
1:G:1176:GLN:HE22	2:H:1:MET:H3	1.61	0.48
2:B:10:GLY:HA2	2:B:97:TRP:CE2	2.49	0.48
1:A:1191:GLN:O	1:A:1195:LYS:HG2	2.14	0.47
1:A:1227:VAL:O	1:A:1231:ILE:HG12	2.14	0.47
1:A:1298:THR:O	1:A:1299:ALA:HB2	2.12	0.47
2:B:146:ALA:CB	2:B:154:TYR:HB2	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1368:ARG:HG3	1:C:1368:ARG:NH1	2.23	0.47
1:G:1179:SER:HB3	2:H:41:SER:HB2	1.96	0.47
2:H:5:LYS:HE3	2:H:56:TRP:CE3	2.49	0.47
2:H:96:LYS:O	2:H:99:PRO:HD2	2.14	0.47
1:A:1077:THR:OG1	1:A:1080:GLU:HG3	2.14	0.47
1:A:1350:ALA:O	1:A:1351:GLU:HB3	2.14	0.47
2:B:138:THR:HG23	2:B:141:GLN:NE2	2.29	0.47
2:B:153:LYS:HB3	2:B:155:LEU:CD1	2.43	0.47
1:E:1055:TYR:CD2	1:E:1192:ARG:HG2	2.49	0.47
2:B:161:THR:HB	2:B:163:ARG:HG2	1.96	0.47
2:D:58:THR:O	2:D:61:GLN:HG2	2.14	0.47
2:H:6:CYS:HB3	2:H:55:LEU:CD2	2.45	0.47
1:A:1142:TYR:CE2	1:A:1193:VAL:HG13	2.49	0.47
1:A:1216:HIS:HB3	1:G:1134:TYR:CE2	2.49	0.47
1:G:1153:PRO:O	1:G:1157:VAL:HG23	2.14	0.47
1:G:1227:VAL:O	1:G:1231:ILE:HG12	2.14	0.47
2:H:68:ARG:HD2	2:H:100:GLU:OE2	2.14	0.47
2:H:133:LYS:N	2:H:133:LYS:HD3	2.30	0.47
1:A:1055:TYR:CD2	1:A:1192:ARG:HG2	2.50	0.47
2:B:138:THR:OG1	2:B:140:PRO:HD2	2.14	0.47
1:C:1152:VAL:HB	1:C:1153:PRO:HD3	1.95	0.47
2:D:98:TYR:HB3	2:D:99:PRO:HD3	1.97	0.47
1:E:1052:GLU:O	1:E:1056:VAL:HG23	2.15	0.47
1:E:1287:LYS:N	1:E:1287:LYS:CD	2.76	0.47
1:A:1389:SER:O	1:A:1392:SER:HB3	2.14	0.47
2:B:66:ARG:HH11	2:B:66:ARG:CG	2.27	0.47
2:B:133:LYS:HD3	2:B:133:LYS:N	2.30	0.47
2:D:10:GLY:HA2	2:D:97:TRP:CE2	2.49	0.47
2:F:152:VAL:HG12	2:F:153:LYS:HG2	1.96	0.47
1:A:1049:LEU:HD11	1:A:1106:VAL:HB	1.96	0.47
2:B:6:CYS:HB3	2:B:55:LEU:CD2	2.45	0.47
2:B:19:LEU:C	2:B:19:LEU:HD23	2.35	0.47
1:C:1077:THR:OG1	1:C:1080:GLU:HG3	2.14	0.47
2:D:133:LYS:HD3	2:D:133:LYS:N	2.30	0.47
2:D:155:LEU:HD12	2:D:155:LEU:N	2.30	0.47
1:E:1067:LEU:CD1	1:E:1088:LEU:HD13	2.45	0.47
1:E:1164:ALA:O	1:E:1167:ALA:HB3	2.15	0.47
1:E:1287:LYS:HG2	1:E:1288:GLU:H	1.79	0.47
1:E:1345:LEU:HD12	1:E:1355:VAL:CG1	2.45	0.47
2:F:161:THR:HB	2:F:163:ARG:HG2	1.97	0.47
1:G:1287:LYS:CG	1:G:1288:GLU:H	2.27	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:8:VAL:HG22	2:H:79:LEU:HD12	1.97	0.47
2:H:68:ARG:NH1	2:H:100:GLU:OE1	2.47	0.47
1:C:1287:LYS:N	1:C:1287:LYS:CD	2.77	0.47
1:C:1337:THR:HG21	1:C:1397:LYS:HB2	1.97	0.47
2:F:10:GLY:HA2	2:F:97:TRP:CE2	2.49	0.47
1:G:1239:GLU:OE2	2:H:66:ARG:HG3	2.15	0.47
2:B:11:ASP:OD1	2:B:89:SER:HA	2.15	0.47
1:C:1055:TYR:CD2	1:C:1192:ARG:HG2	2.50	0.47
1:G:1138:ARG:O	1:G:1141:LEU:HG	2.15	0.47
1:C:1156:LEU:C	1:C:1158:LYS:H	2.18	0.47
1:E:1197:PRO:HB2	1:E:1201:ARG:HH12	1.80	0.47
1:A:1273:VAL:HG23	1:A:1377:CYS:HA	1.97	0.46
1:C:1234:MSE:CE	1:C:1237:ILE:HD12	2.45	0.46
1:C:1368:ARG:CG	1:C:1368:ARG:NH1	2.78	0.46
1:A:1157:VAL:O	1:A:1157:VAL:CG1	2.63	0.46
2:B:128:LYS:C	2:B:128:LYS:HD3	2.36	0.46
2:B:155:LEU:HD12	2:B:155:LEU:N	2.30	0.46
2:D:158:SER:O	2:D:162:GLN:N	2.47	0.46
1:E:1149:HIS:CE1	1:E:1186:LEU:O	2.68	0.46
2:D:137:ILE:HD12	2:D:137:ILE:N	2.31	0.46
2:F:58:THR:O	2:F:61:GLN:HG2	2.15	0.46
1:A:1179:SER:H	2:B:41:SER:HB2	1.80	0.46
1:A:1368:ARG:HD2	1:A:1369:PRO:O	2.15	0.46
1:G:1303:VAL:HG11	1:G:1329:PHE:HD2	1.81	0.46
1:G:1340:LEU:HD11	1:G:1390:VAL:CG1	2.45	0.46
2:D:57:ASP:OD1	2:D:58:THR:N	2.48	0.46
1:E:1234:MSE:HE2	1:E:1237:ILE:HD12	1.97	0.46
2:H:11:ASP:OD1	2:H:89:SER:HA	2.16	0.46
2:B:158:SER:O	2:B:162:GLN:N	2.49	0.46
1:C:1067:LEU:CD1	1:C:1088:LEU:HD13	2.44	0.46
2:D:129:LEU:HD12	2:D:136:PRO:HG3	1.97	0.46
2:D:155:LEU:CD1	2:D:155:LEU:N	2.79	0.46
2:F:128:LYS:HD3	2:F:128:LYS:C	2.36	0.46
2:F:137:ILE:N	2:F:137:ILE:HD12	2.31	0.46
1:A:1042:ARG:NE	1:A:1113:GLU:HA	2.31	0.46
1:A:1164:ALA:O	1:A:1167:ALA:HB3	2.15	0.46
1:A:1341:GLN:HB3	1:A:1359:VAL:HB	1.96	0.46
1:C:1115:LEU:HA	1:C:1120:GLN:NE2	2.30	0.46
1:C:1135:TYR:HE2	1:C:1138:ARG:NH2	2.13	0.46
2:D:128:LYS:HD3	2:D:128:LYS:C	2.36	0.46
1:E:1173:ASN:HD21	1:E:1180:SER:HB2	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1179:SER:H	2:H:41:SER:CB	2.28	0.46
1:A:1067:LEU:CD1	1:A:1088:LEU:HD13	2.45	0.46
1:E:1168:PHE:O	1:E:1172:GLN:HG2	2.16	0.46
1:E:1063:MSE:HE2	1:E:1088:LEU:HD22	1.98	0.46
1:E:1287:LYS:CG	1:E:1288:GLU:N	2.79	0.46
1:A:1287:LYS:CG	1:A:1288:GLU:N	2.79	0.46
1:C:1052:GLU:HG3	1:C:1099:LEU:HD13	1.97	0.46
1:C:1063:MSE:HE2	1:C:1088:LEU:HD22	1.97	0.46
1:E:1056:VAL:CG2	1:E:1099:LEU:HD22	2.38	0.46
1:E:1138:ARG:O	1:E:1141:LEU:HG	2.16	0.46
1:G:1152:VAL:HB	1:G:1153:PRO:HD3	1.97	0.46
1:A:1287:LYS:HG2	1:A:1288:GLU:H	1.81	0.45
1:C:1306:ASP:OD2	1:G:1287:LYS:CD	2.64	0.45
2:D:120:ARG:HH21	2:D:139:TYR:N	2.13	0.45
1:E:1077:THR:OG1	1:E:1080:GLU:HG3	2.16	0.45
2:B:121:ASP:HA	2:B:126:ILE:HD11	1.98	0.45
1:C:1164:ALA:O	1:C:1167:ALA:HB3	2.15	0.45
1:G:1062:LEU:HG	1:G:1185:TYR:HB3	1.98	0.45
1:A:1052:GLU:O	1:A:1056:VAL:HG23	2.16	0.45
2:F:121:ASP:HA	2:F:126:ILE:HD11	1.98	0.45
1:G:1248:LEU:HD21	1:G:1332:ARG:CG	2.42	0.45
2:D:23:TYR:HE1	2:D:166:LYS:HD3	1.81	0.45
1:G:1191:GLN:O	1:G:1195:LYS:HG2	2.16	0.45
2:B:155:LEU:CD1	2:B:155:LEU:N	2.80	0.45
1:C:1138:ARG:O	1:C:1141:LEU:HG	2.16	0.45
1:E:1156:LEU:CD2	1:E:1182:LEU:HD23	2.47	0.45
1:G:1190:ILE:HD13	2:H:70:LEU:CD1	2.38	0.45
1:A:1340:LEU:HD11	1:A:1390:VAL:HG13	1.99	0.45
2:H:80:ILE:HD12	2:H:110:ILE:HG21	1.98	0.45
2:H:137:ILE:N	2:H:137:ILE:HD12	2.31	0.45
1:A:1063:MSE:HE2	1:A:1088:LEU:HD22	1.98	0.45
1:A:1153:PRO:O	1:A:1157:VAL:HG23	2.17	0.45
1:A:1190:ILE:CD1	2:B:70:LEU:HD13	2.38	0.45
1:A:1212:GLU:HG3	1:G:1097:GLU:HG3	1.99	0.45
2:B:23:TYR:HE1	2:B:166:LYS:HD3	1.81	0.45
1:C:1086:GLY:O	1:C:1087:ASN:OD1	2.35	0.45
1:G:1067:LEU:CD1	1:G:1088:LEU:HD13	2.46	0.45
1:A:1156:LEU:C	1:A:1158:LYS:H	2.19	0.45
1:A:1183:GLU:CD	2:B:74:GLN:HE21	2.21	0.45
1:C:1355:VAL:HG12	1:C:1356:CYS:N	2.32	0.45
2:D:66:ARG:HG3	2:D:66:ARG:NH1	2.29	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1035:LEU:HD12	1:E:1035:LEU:O	2.17	0.45
1:E:1173:ASN:ND2	1:E:1180:SER:HB2	2.32	0.45
1:E:1365:SER:O	1:E:1367:GLY:N	2.50	0.45
2:F:11:ASP:OD1	2:F:92:ASN:ND2	2.45	0.45
2:F:155:LEU:CD1	2:F:155:LEU:N	2.79	0.45
1:G:1157:VAL:O	1:G:1157:VAL:CG1	2.64	0.45
1:C:1340:LEU:HD11	1:C:1390:VAL:HG13	1.99	0.45
2:D:121:ASP:HA	2:D:126:ILE:HD11	1.99	0.45
1:E:1115:LEU:HA	1:E:1120:GLN:NE2	2.31	0.45
2:F:6:CYS:HB3	2:F:55:LEU:CD2	2.43	0.45
2:F:120:ARG:HH21	2:F:139:TYR:N	2.13	0.45
2:F:138:THR:HG23	2:F:141:GLN:NE2	2.31	0.45
2:H:58:THR:O	2:H:61:GLN:HG2	2.16	0.45
1:A:1213:GLU:CD	1:A:1213:GLU:H	2.20	0.45
2:B:137:ILE:HD12	2:B:137:ILE:N	2.32	0.45
1:C:1073:GLU:HG2	1:C:1075:PHE:CD1	2.52	0.45
1:C:1142:TYR:CE2	1:C:1193:VAL:HG13	2.51	0.45
1:G:1063:MSE:HE2	1:G:1088:LEU:HD22	1.98	0.45
1:G:1142:TYR:CE2	1:G:1193:VAL:HG13	2.52	0.45
1:G:1177:GLN:HG3	2:H:41:SER:HB3	1.98	0.45
1:G:1368:ARG:HG3	1:G:1368:ARG:NH1	2.23	0.45
2:D:5:LYS:HE3	2:D:56:TRP:CE3	2.52	0.44
2:D:6:CYS:HB3	2:D:55:LEU:CD2	2.46	0.44
2:D:138:THR:HG23	2:D:141:GLN:NE2	2.32	0.44
1:E:1156:LEU:C	1:E:1158:LYS:H	2.19	0.44
2:F:158:SER:O	2:F:162:GLN:N	2.50	0.44
1:A:1344:ALA:HB2	1:A:1387:LEU:CD1	2.47	0.44
1:C:1103:GLU:O	1:C:1107:ARG:HG3	2.17	0.44
1:C:1212:GLU:CD	1:E:1097:GLU:HG2	2.37	0.44
2:D:138:THR:HG23	2:D:141:GLN:HE21	1.82	0.44
1:G:1042:ARG:NE	1:G:1113:GLU:HA	2.32	0.44
1:C:1287:LYS:HE2	1:G:1307:GLY:O	2.17	0.44
1:E:1068:LYS:N	1:E:1069:PRO:HD2	2.33	0.44
1:E:1152:VAL:HB	1:E:1153:PRO:HD3	2.00	0.44
1:E:1340:LEU:HD11	1:E:1390:VAL:HG13	1.99	0.44
2:F:23:TYR:HE1	2:F:166:LYS:HD3	1.82	0.44
2:H:138:THR:OG1	2:H:140:PRO:HD2	2.18	0.44
1:A:1052:GLU:HG3	1:A:1099:LEU:HD13	2.00	0.44
1:A:1285:TRP:HZ2	2:D:98:TYR:CE2	2.36	0.44
1:A:1374:HIS:ND1	1:E:1346:PRO:HG3	2.32	0.44
2:D:68:ARG:HD2	2:D:100:GLU:OE2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1368:ARG:HD2	1:E:1369:PRO:O	2.17	0.44
2:H:162:GLN:HG3	2:H:165:LEU:HD22	1.99	0.44
1:A:1115:LEU:HA	1:A:1120:GLN:NE2	2.33	0.44
1:A:1138:ARG:O	1:A:1141:LEU:HG	2.17	0.44
1:A:1215:TYR:O	1:A:1219:VAL:HG23	2.18	0.44
1:A:1368:ARG:CG	1:A:1368:ARG:NH1	2.80	0.44
1:E:1073:GLU:HG2	1:E:1075:PHE:CD1	2.52	0.44
2:H:1:MET:HG2	2:H:2:GLN:N	2.33	0.44
2:H:155:LEU:HD12	2:H:155:LEU:N	2.32	0.44
1:E:1140:LYS:HD2	1:E:1230:HIS:HD2	1.82	0.44
1:E:1234:MSE:CE	1:E:1237:ILE:HD12	2.47	0.44
1:E:1389:SER:O	1:E:1392:SER:HB3	2.17	0.44
1:G:1368:ARG:NH1	1:G:1368:ARG:CG	2.78	0.44
1:A:1073:GLU:HG2	1:A:1075:PHE:CD1	2.52	0.44
2:D:66:ARG:CG	2:D:66:ARG:NH1	2.80	0.44
1:G:1149:HIS:CE1	1:G:1186:LEU:O	2.71	0.44
2:H:158:SER:O	2:H:162:GLN:N	2.50	0.44
1:E:1344:ALA:HB2	1:E:1387:LEU:CD1	2.48	0.44
2:H:23:TYR:HE1	2:H:166:LYS:HD3	1.83	0.44
2:H:66:ARG:HG3	2:H:66:ARG:NH1	2.31	0.44
1:A:1208:ASP:O	1:A:1214:HIS:HB2	2.17	0.44
1:A:1277:ASN:OD1	1:A:1374:HIS:HB2	2.18	0.44
1:C:1153:PRO:O	1:C:1157:VAL:HG23	2.18	0.44
1:C:1168:PHE:O	1:C:1172:GLN:HG2	2.18	0.44
1:E:1052:GLU:HG3	1:E:1099:LEU:HD13	2.00	0.44
2:F:96:LYS:O	2:F:99:PRO:HD2	2.17	0.44
2:H:129:LEU:HD12	2:H:136:PRO:HG3	2.00	0.44
1:A:1068:LYS:N	1:A:1069:PRO:HD2	2.33	0.43
1:A:1149:HIS:CE1	1:A:1186:LEU:O	2.71	0.43
1:A:1201:ARG:HG2	1:A:1221:ILE:HD13	2.00	0.43
1:C:1247:GLN:HB3	1:C:1332:ARG:HH11	1.83	0.43
1:A:1042:ARG:HH11	1:A:1042:ARG:HB3	1.83	0.43
1:E:1365:SER:C	1:E:1367:GLY:N	2.70	0.43
1:C:1042:ARG:NE	1:C:1113:GLU:HA	2.31	0.43
1:C:1327:ASP:HA	1:C:1328:PRO:HD2	1.85	0.43
1:C:1368:ARG:HD2	1:C:1369:PRO:O	2.18	0.43
2:H:161:THR:HB	2:H:163:ARG:HG2	2.00	0.43
1:A:1287:LYS:N	1:A:1287:LYS:CD	2.76	0.43
2:F:17:THR:O	2:F:21:ILE:HG13	2.18	0.43
1:G:1201:ARG:HG2	1:G:1221:ILE:HD13	2.00	0.43
2:H:128:LYS:HD3	2:H:128:LYS:C	2.38	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1187:ILE:O	1:C:1191:GLN:HG3	2.19	0.43
1:C:1239:GLU:OE2	2:D:66:ARG:HG3	2.18	0.43
2:D:162:GLN:HG3	2:D:165:LEU:HD22	1.99	0.43
1:E:1042:ARG:HH11	1:E:1042:ARG:HB3	1.82	0.43
1:E:1234:MSE:CE	1:E:1267:LEU:HD23	2.47	0.43
1:E:1344:ALA:HB2	1:E:1387:LEU:HD13	2.00	0.43
1:G:1368:ARG:HD2	1:G:1369:PRO:O	2.18	0.43
2:H:155:LEU:CD1	2:H:155:LEU:N	2.82	0.43
1:A:1152:VAL:HB	1:A:1153:PRO:HD3	1.99	0.43
2:B:11:ASP:OD1	2:B:92:ASN:ND2	2.47	0.43
1:C:1213:GLU:CD	1:C:1213:GLU:H	2.22	0.43
2:F:85:VAL:HG11	2:F:125:THR:HG21	2.00	0.43
1:G:1156:LEU:HD21	1:G:1182:LEU:HD23	2.00	0.43
1:A:1197:PRO:HB2	1:A:1201:ARG:HH12	1.84	0.43
1:A:1344:ALA:HB2	1:A:1387:LEU:HD13	1.99	0.43
1:C:1052:GLU:O	1:C:1056:VAL:HG23	2.19	0.43
1:C:1363:SER:N	1:C:1368:ARG:O	2.49	0.43
1:E:1157:VAL:O	1:E:1157:VAL:CG1	2.64	0.43
1:E:1213:GLU:CD	1:E:1213:GLU:H	2.22	0.43
2:F:161:THR:HG22	2:F:163:ARG:HB3	2.00	0.43
1:G:1073:GLU:HG2	1:G:1075:PHE:CD1	2.54	0.43
1:G:1077:THR:OG1	1:G:1080:GLU:HG3	2.19	0.43
1:G:1086:GLY:O	1:G:1087:ASN:OD1	2.37	0.43
1:G:1365:SER:C	1:G:1367:GLY:N	2.72	0.43
1:A:1380:PRO:HG2	1:A:1381:GLU:OE2	2.19	0.43
2:F:68:ARG:HD2	2:F:100:GLU:OE2	2.19	0.43
1:C:1286:LYS:HB3	1:C:1289:PRO:HG3	2.01	0.43
1:A:1176:GLN:NE2	2:B:1:MET:N	2.67	0.43
2:B:8:VAL:HG21	2:B:20:LEU:HD21	2.01	0.43
1:C:1118:VAL:HG23	1:C:1119:ASP:N	2.34	0.43
2:D:137:ILE:HG23	2:D:141:GLN:HB2	2.00	0.43
1:E:1103:GLU:O	1:E:1107:ARG:HG3	2.18	0.43
1:G:1115:LEU:HA	1:G:1120:GLN:NE2	2.34	0.43
1:G:1118:VAL:HG23	1:G:1119:ASP:N	2.33	0.43
1:G:1260:ALA:O	1:G:1261:ASP:CB	2.66	0.43
1:G:1368:ARG:HA	1:G:1369:PRO:HD3	1.75	0.43
1:C:1365:SER:C	1:C:1367:GLY:N	2.71	0.42
1:E:1118:VAL:HG23	1:E:1119:ASP:N	2.34	0.42
2:F:66:ARG:HG3	2:F:66:ARG:NH1	2.30	0.42
1:A:1365:SER:O	1:A:1367:GLY:N	2.52	0.42
1:C:1282:LEU:HD21	1:C:1289:PRO:CB	2.48	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:129:LEU:HD12	2:F:136:PRO:HG3	2.01	0.42
1:G:1055:TYR:CD2	1:G:1192:ARG:HG2	2.54	0.42
2:H:66:ARG:HH11	2:H:66:ARG:CG	2.28	0.42
1:A:1275:TRP:O	1:A:1278:PRO:HD3	2.19	0.42
2:B:120:ARG:HH21	2:B:139:TYR:N	2.15	0.42
1:G:1168:PHE:O	1:G:1172:GLN:HG2	2.19	0.42
1:G:1234:MSE:HE2	1:G:1237:ILE:HD12	2.00	0.42
1:G:1389:SER:O	1:G:1392:SER:HB3	2.20	0.42
2:H:49:LYS:HD3	2:H:177:LEU:HD13	2.01	0.42
2:H:85:VAL:HG11	2:H:125:THR:HG21	2.01	0.42
1:A:1241:PHE:O	1:A:1242:GLY:C	2.57	0.42
1:A:1342:VAL:HG13	1:A:1342:VAL:O	2.20	0.42
1:C:1344:ALA:HB2	1:C:1387:LEU:CD1	2.49	0.42
1:C:1365:SER:O	1:C:1367:GLY:N	2.50	0.42
1:C:1389:SER:O	1:C:1392:SER:HB3	2.19	0.42
1:E:1042:ARG:NE	1:E:1113:GLU:HA	2.30	0.42
1:E:1065:ARG:HG2	1:E:1065:ARG:HH11	1.84	0.42
1:E:1094:PHE:CE1	1:E:1135:TYR:HD2	2.36	0.42
1:G:1380:PRO:HG2	1:G:1381:GLU:OE2	2.19	0.42
2:H:137:ILE:HG23	2:H:141:GLN:HB2	2.00	0.42
1:A:1118:VAL:HG23	1:A:1119:ASP:N	2.33	0.42
2:B:17:THR:O	2:B:21:ILE:HG13	2.20	0.42
2:D:120:ARG:NH2	2:D:139:TYR:H	2.16	0.42
1:E:1368:ARG:NH1	1:E:1368:ARG:CG	2.76	0.42
1:G:1036:SER:O	1:G:1039:ASP:N	2.53	0.42
1:A:1355:VAL:HG12	1:A:1356:CYS:N	2.34	0.42
2:B:5:LYS:HE3	2:B:56:TRP:CE3	2.53	0.42
1:C:1244:VAL:HG21	1:C:1329:PHE:CD2	2.55	0.42
2:D:160:LEU:C	2:D:160:LEU:HD13	2.40	0.42
1:E:1178:HIS:C	1:E:1180:SER:H	2.23	0.42
1:E:1234:MSE:O	1:E:1264:MSE:HE2	2.19	0.42
2:F:138:THR:HG23	2:F:141:GLN:HE21	1.84	0.42
1:E:1086:GLY:O	1:E:1087:ASN:OD1	2.38	0.42
1:G:1215:TYR:O	1:G:1219:VAL:HG23	2.20	0.42
1:A:1107:ARG:C	1:A:1109:VAL:H	2.23	0.42
1:C:1097:GLU:O	1:C:1101:THR:HG23	2.19	0.42
1:E:1107:ARG:C	1:E:1109:VAL:H	2.23	0.42
1:E:1239:GLU:OE1	2:F:66:ARG:NH1	2.53	0.42
2:F:146:ALA:HB2	2:F:154:TYR:HB2	2.02	0.42
1:G:1115:LEU:N	1:G:1115:LEU:CD1	2.83	0.42
1:G:1244:VAL:HG21	1:G:1329:PHE:CD2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:57:ASP:OD1	2:H:58:THR:N	2.53	0.42
1:A:1178:HIS:HA	1:A:1181:THR:CG2	2.50	0.42
2:B:5:LYS:HG3	2:B:75:THR:HA	2.00	0.42
1:C:1282:LEU:HD22	1:G:1285:TRP:CZ3	2.55	0.42
2:D:5:LYS:HG3	2:D:75:THR:HA	2.00	0.42
2:D:68:ARG:N	2:D:69:PRO:HD2	2.34	0.42
2:D:108:THR:HA	2:D:109:PRO:HD2	1.90	0.42
1:E:1287:LYS:CG	1:E:1288:GLU:H	2.32	0.42
2:F:108:THR:HA	2:F:109:PRO:HD2	1.92	0.42
1:G:1042:ARG:HB3	1:G:1042:ARG:HH11	1.85	0.42
1:G:1065:ARG:HG2	1:G:1065:ARG:HH11	1.84	0.42
1:G:1295:VAL:HG11	1:G:1389:SER:OG	2.20	0.42
1:G:1363:SER:N	1:G:1368:ARG:O	2.48	0.42
1:A:1115:LEU:N	1:A:1115:LEU:CD1	2.83	0.42
1:A:1168:PHE:O	1:A:1172:GLN:HG2	2.20	0.42
2:B:24:THR:HG22	2:B:40:TYR:CE2	2.55	0.42
1:C:1042:ARG:HH11	1:C:1042:ARG:HB3	1.85	0.42
1:C:1065:ARG:HG2	1:C:1065:ARG:HH11	1.85	0.42
1:C:1178:HIS:C	1:C:1180:SER:H	2.22	0.42
1:C:1201:ARG:HG2	1:C:1221:ILE:HD13	2.02	0.42
2:D:87:PRO:O	2:D:90:PHE:HB3	2.20	0.42
2:D:161:THR:HG22	2:D:161:THR:O	2.20	0.42
1:E:1275:TRP:O	1:E:1278:PRO:HD3	2.20	0.42
1:E:1295:VAL:HG11	1:E:1389:SER:OG	2.19	0.42
2:H:8:VAL:HG21	2:H:20:LEU:HD21	2.02	0.42
2:H:120:ARG:HH21	2:H:139:TYR:N	2.17	0.42
1:A:1373:PHE:HB3	1:A:1375:LEU:HD21	2.02	0.41
2:B:129:LEU:HD12	2:B:136:PRO:HG3	2.01	0.41
1:C:1197:PRO:HB2	1:C:1201:ARG:HH12	1.85	0.41
1:E:1115:LEU:N	1:E:1115:LEU:CD1	2.83	0.41
1:E:1115:LEU:H	1:E:1115:LEU:CD1	2.34	0.41
1:E:1277:ASN:OD1	1:E:1374:HIS:HB2	2.20	0.41
2:F:57:ASP:OD1	2:F:58:THR:N	2.51	0.41
1:G:1107:ARG:C	1:G:1109:VAL:H	2.23	0.41
2:H:146:ALA:HB2	2:H:154:TYR:HB2	2.02	0.41
1:A:1365:SER:C	1:A:1367:GLY:N	2.72	0.41
2:D:68:ARG:HB3	2:D:69:PRO:HD3	2.02	0.41
1:E:1063:MSE:HG3	1:E:1068:LYS:HE3	2.03	0.41
2:F:5:LYS:HG3	2:F:75:THR:HA	2.03	0.41
2:F:66:ARG:CG	2:F:66:ARG:NH1	2.82	0.41
2:B:146:ALA:HB2	2:B:154:TYR:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1240:GLU:CG	1:C:1305:LYS:NZ	2.82	0.41
2:D:17:THR:O	2:D:21:ILE:HG13	2.20	0.41
1:E:1094:PHE:HE1	1:E:1135:TYR:CD2	2.37	0.41
1:E:1399:ARG:C	1:E:1401:GLN:H	2.22	0.41
1:G:1197:PRO:HB2	1:G:1201:ARG:HH12	1.84	0.41
1:G:1304:TYR:CB	1:G:1331:PHE:HB3	2.43	0.41
1:A:1287:LYS:CG	1:A:1288:GLU:H	2.33	0.41
1:A:1359:VAL:HG22	1:A:1372:VAL:HG22	2.03	0.41
1:C:1059:LEU:HD12	1:C:1059:LEU:HA	1.94	0.41
2:D:12:GLY:O	2:D:13:ALA:HB3	2.21	0.41
2:D:85:VAL:HG11	2:D:125:THR:HG21	2.03	0.41
1:E:1368:ARG:HA	1:E:1369:PRO:HD3	1.76	0.41
1:G:1052:GLU:O	1:G:1056:VAL:HG23	2.21	0.41
1:G:1252:GLN:HE21	1:G:1252:GLN:HB2	1.66	0.41
2:B:162:GLN:HE21	2:B:162:GLN:HB2	1.66	0.41
2:B:161:THR:O	2:B:161:THR:HG22	2.20	0.41
2:F:158:SER:HB3	2:F:161:THR:HB	2.03	0.41
1:G:1327:ASP:HA	1:G:1328:PRO:HD2	1.86	0.41
1:A:1076:LEU:HA	1:A:1080:GLU:OE1	2.21	0.41
1:A:1174:PRO:HG2	1:A:1175:ARG:H	1.86	0.41
1:A:1177:GLN:HG3	2:B:41:SER:CB	2.50	0.41
1:A:1234:MSE:HE2	1:A:1237:ILE:HD12	2.02	0.41
1:C:1068:LYS:N	1:C:1069:PRO:HD2	2.35	0.41
2:D:11:ASP:OD1	2:D:92:ASN:ND2	2.51	0.41
2:F:87:PRO:O	2:F:90:PHE:HB3	2.20	0.41
1:G:1052:GLU:HG3	1:G:1099:LEU:HD13	2.03	0.41
1:G:1250:ALA:C	1:G:1252:GLN:N	2.73	0.41
1:A:1115:LEU:CD1	1:A:1115:LEU:H	2.34	0.41
2:F:37:PHE:HD2	2:F:57:ASP:HB2	1.86	0.41
2:F:137:ILE:HG23	2:F:141:GLN:HB2	2.02	0.41
1:G:1250:ALA:C	1:G:1252:GLN:H	2.22	0.41
2:H:66:ARG:NH1	2:H:66:ARG:CG	2.84	0.41
2:H:161:THR:O	2:H:161:THR:HG22	2.21	0.41
1:A:1065:ARG:HG2	1:A:1065:ARG:HH11	1.85	0.41
1:A:1178:HIS:C	1:A:1180:SER:H	2.24	0.41
2:B:66:ARG:NH1	2:B:66:ARG:CG	2.84	0.41
2:B:68:ARG:HB3	2:B:69:PRO:HD3	2.03	0.41
1:C:1115:LEU:N	1:C:1115:LEU:CD1	2.84	0.41
1:C:1115:LEU:H	1:C:1115:LEU:CD1	2.33	0.41
1:C:1208:ASP:O	1:C:1214:HIS:HB2	2.21	0.41
1:C:1250:ALA:C	1:C:1252:GLN:H	2.23	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1380:PRO:HG2	1:C:1381:GLU:OE2	2.20	0.41
2:D:146:ALA:HB2	2:D:154:TYR:HB2	2.03	0.41
1:E:1047:GLU:O	1:E:1051:THR:HG23	2.21	0.41
1:E:1106:VAL:CG2	1:E:1112:LEU:HD11	2.51	0.41
2:F:160:LEU:HD13	2:F:160:LEU:C	2.41	0.41
2:F:161:THR:HG22	2:F:161:THR:O	2.20	0.41
1:G:1213:GLU:H	1:G:1213:GLU:CD	2.23	0.41
1:G:1355:VAL:HG12	1:G:1356:CYS:N	2.36	0.41
1:A:1103:GLU:O	1:A:1107:ARG:HG3	2.21	0.41
1:A:1210:GLU:OE1	1:A:1210:GLU:HA	2.21	0.41
1:C:1252:GLN:HE21	1:C:1252:GLN:HB2	1.64	0.41
1:C:1345:LEU:H	1:C:1356:CYS:HA	1.86	0.41
1:E:1250:ALA:O	1:E:1251:GLU:HB3	2.20	0.41
1:E:1355:VAL:HG12	1:E:1356:CYS:N	2.36	0.41
1:G:1178:HIS:C	1:G:1180:SER:H	2.24	0.41
1:G:1340:LEU:HD12	1:G:1394:LEU:HD21	2.03	0.41
2:H:11:ASP:OD1	2:H:92:ASN:ND2	2.47	0.41
1:C:1344:ALA:HB2	1:C:1387:LEU:HD13	2.01	0.40
2:D:37:PHE:HD2	2:D:57:ASP:HB2	1.87	0.40
1:E:1086:GLY:C	1:E:1088:LEU:N	2.74	0.40
1:E:1098:PHE:CE2	1:E:1102:LEU:HD11	2.56	0.40
1:E:1208:ASP:O	1:E:1214:HIS:HB2	2.21	0.40
1:G:1086:GLY:C	1:G:1088:LEU:N	2.74	0.40
1:G:1287:LYS:N	1:G:1287:LYS:CD	2.80	0.40
1:G:1365:SER:O	1:G:1367:GLY:N	2.55	0.40
1:A:1346:PRO:HG2	1:E:1345:LEU:CD1	2.52	0.40
1:C:1303:VAL:CG1	1:C:1329:PHE:HD2	2.35	0.40
1:C:1342:VAL:HG13	1:C:1342:VAL:O	2.21	0.40
2:B:137:ILE:HG23	2:B:141:GLN:HB2	2.03	0.40
1:C:1106:VAL:CG2	1:C:1112:LEU:HD11	2.51	0.40
1:E:1249:ILE:CD1	1:E:1261:ASP:H	2.14	0.40
1:G:1344:ALA:HB2	1:G:1387:LEU:CD1	2.51	0.40
1:A:1237:ILE:HD11	1:A:1270:HIS:CD2	2.56	0.40
1:C:1273:VAL:CG2	1:C:1375:LEU:HB3	2.51	0.40
1:E:1085:PHE:O	1:E:1088:LEU:HB2	2.20	0.40
2:F:40:TYR:HB3	2:F:55:LEU:HB2	2.04	0.40
1:G:1340:LEU:HD11	1:G:1390:VAL:HG13	2.03	0.40
2:H:98:TYR:OH	2:H:102:ARG:HD2	2.21	0.40
1:A:1156:LEU:HD21	1:A:1182:LEU:HD23	2.03	0.40
1:A:1179:SER:HB3	2:B:41:SER:HB2	2.03	0.40
1:C:1234:MSE:HA	1:C:1234:MSE:CE	2.44	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1250:ALA:C	1:C:1252:GLN:N	2.75	0.40
1:C:1386:PHE:O	1:C:1390:VAL:HG23	2.21	0.40
1:G:1068:LYS:N	1:G:1069:PRO:HD2	2.35	0.40

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:139:TYR:OH	2:H:107:ASN:OD1[2_657]	2.06	0.14

## 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	
1	A	366/377 (97%)	313 (86%)	43 (12%)	10 (3%)	5	17
1	C	364/377 (97%)	315 (86%)	41 (11%)	8 (2%)	6	22
1	E	365/377 (97%)	322 (88%)	30 (8%)	13 (4%)	3	11
1	G	365/377 (97%)	322 (88%)	31 (8%)	12 (3%)	4	13
2	B	175/177 (99%)	164 (94%)	9 (5%)	2 (1%)	14	41
2	D	175/177 (99%)	164 (94%)	9 (5%)	2 (1%)	14	41
2	F	175/177 (99%)	162 (93%)	12 (7%)	1 (1%)	25	56
2	H	175/177 (99%)	163 (93%)	11 (6%)	1 (1%)	25	56
All	All	2160/2216 (98%)	1925 (89%)	186 (9%)	49 (2%)	6	21

All (49) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1087	ASN
1	A	1253	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1261	ASP
1	C	1087	ASN
1	C	1253	THR
1	C	1261	ASP
1	E	1087	ASN
1	E	1253	THR
1	E	1261	ASP
1	G	1087	ASN
1	G	1253	THR
1	G	1261	ASP
1	A	1086	GLY
1	A	1252	GLN
2	B	11	ASP
1	C	1086	GLY
1	C	1252	GLN
2	D	11	ASP
1	E	1086	GLY
1	E	1305	LYS
1	E	1306	ASP
2	F	11	ASP
1	G	1086	GLY
1	G	1252	GLN
1	G	1325	GLU
1	A	1085	PHE
1	A	1312	LYS
1	A	1322	ILE
1	C	1085	PHE
1	E	1085	PHE
1	E	1252	GLN
1	G	1085	PHE
2	H	11	ASP
1	C	1311	LYS
1	E	1325	GLU
1	A	1254	GLY
1	A	1328	PRO
1	C	1254	GLY
2	D	65	ASP
1	E	1254	GLY
1	G	1254	GLY
1	G	1324	GLU
1	G	1399	ARG
2	B	65	ASP

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Mol	Chain	Res	Type
1	E	1350	ALA
1	G	1311	LYS
1	E	1327	ASP
1	G	1157	VAL
1	E	1157	VAL

### 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	
1	A	332/332 (100%)	322 (97%)	10 (3%)	41	75
1	C	330/332 (99%)	320 (97%)	10 (3%)	41	75
1	E	331/332 (100%)	318 (96%)	13 (4%)	32	66
1	G	331/332 (100%)	319 (96%)	12 (4%)	35	69
2	B	153/153 (100%)	146 (95%)	7 (5%)	27	60
2	D	153/153 (100%)	146 (95%)	7 (5%)	27	60
2	F	153/153 (100%)	147 (96%)	6 (4%)	32	66
2	H	153/153 (100%)	147 (96%)	6 (4%)	32	66
All	All	1936/1940 (100%)	1865 (96%)	71 (4%)	34	68

All (71) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1048	LEU
1	A	1059	LEU
1	A	1062	LEU
1	A	1194	LEU
1	A	1252	GLN
1	A	1284	LYS
1	A	1287	LYS
1	A	1343	ARG
1	A	1368	ARG
1	A	1371	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	50	PRO
2	B	62	GLU
2	B	66	ARG
2	B	77	VAL
2	B	116	LYS
2	B	143	LEU
2	B	170	ASP
1	C	1048	LEU
1	C	1059	LEU
1	C	1062	LEU
1	C	1194	LEU
1	C	1252	GLN
1	C	1284	LYS
1	C	1287	LYS
1	C	1343	ARG
1	C	1368	ARG
1	C	1371	ARG
2	D	50	PRO
2	D	62	GLU
2	D	66	ARG
2	D	77	VAL
2	D	116	LYS
2	D	143	LEU
2	D	170	ASP
1	E	1035	LEU
1	E	1048	LEU
1	E	1059	LEU
1	E	1062	LEU
1	E	1173	ASN
1	E	1194	LEU
1	E	1252	GLN
1	E	1284	LYS
1	E	1287	LYS
1	E	1313	LYS
1	E	1343	ARG
1	E	1368	ARG
1	E	1371	ARG
2	F	50	PRO
2	F	62	GLU
2	F	66	ARG
2	F	77	VAL
2	F	116	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	F	170	ASP
1	G	1048	LEU
1	G	1059	LEU
1	G	1062	LEU
1	G	1194	LEU
1	G	1252	GLN
1	G	1284	LYS
1	G	1287	LYS
1	G	1313	LYS
1	G	1343	ARG
1	G	1368	ARG
1	G	1371	ARG
1	G	1397	LYS
2	H	62	GLU
2	H	66	ARG
2	H	77	VAL
2	H	116	LYS
2	H	143	LEU
2	H	170	ASP

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

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	1120	GLN
1	A	1149	HIS
1	A	1173	ASN
1	A	1176	GLN
1	A	1230	HIS
1	A	1235	GLN
1	A	1374	HIS
2	B	2	GLN
2	B	74	GLN
2	B	141	GLN
1	C	1120	GLN
1	C	1149	HIS
1	C	1173	ASN
1	C	1230	HIS
1	C	1235	GLN
1	C	1374	HIS
2	D	2	GLN
2	D	74	GLN
2	D	141	GLN

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Mol	Chain	Res	Type
1	E	1120	GLN
1	E	1149	HIS
1	E	1173	ASN
1	E	1176	GLN
1	E	1230	HIS
1	E	1235	GLN
1	E	1374	HIS
2	F	2	GLN
2	F	74	GLN
2	F	141	GLN
1	G	1120	GLN
1	G	1149	HIS
1	G	1173	ASN
1	G	1176	GLN
1	G	1230	HIS
1	G	1235	GLN
1	G	1374	HIS
2	H	2	GLN
2	H	74	GLN
2	H	141	GLN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

4 ligands are modelled in this entry.

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
3	SO4	D	4002	-	4,4,4	0.28	0	6,6,6	0.22	0
3	SO4	F	4003	-	4,4,4	0.23	0	6,6,6	0.14	0
3	SO4	H	4004	-	4,4,4	0.32	0	6,6,6	0.34	0
3	SO4	B	4001	-	4,4,4	0.30	0	6,6,6	0.13	0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers [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 [i](#)

### 6.1 Protein, DNA and RNA chains [i](#)

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

### 6.3 Carbohydrates [i](#)

EDS was not executed - this section is therefore empty.

### 6.4 Ligands [i](#)

EDS was not executed - this section is therefore empty.

### 6.5 Other polymers [i](#)

EDS was not executed - this section is therefore empty.