



Full wwPDB X-ray Structure Validation Report ⓘ

Sep 13, 2020 – 11:17 AM BST

PDB ID : 3EUH
Title : Crystal Structure of the MukE-MukF Complex
Authors : Suh, M.K.; Ku, B.; Ha, N.C.; Woo, J.S.; Oh, B.H.
Deposited on : 2008-10-10
Resolution : 2.90 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 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 : 2.14.4.dev1
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) : 2.14.4.dev1

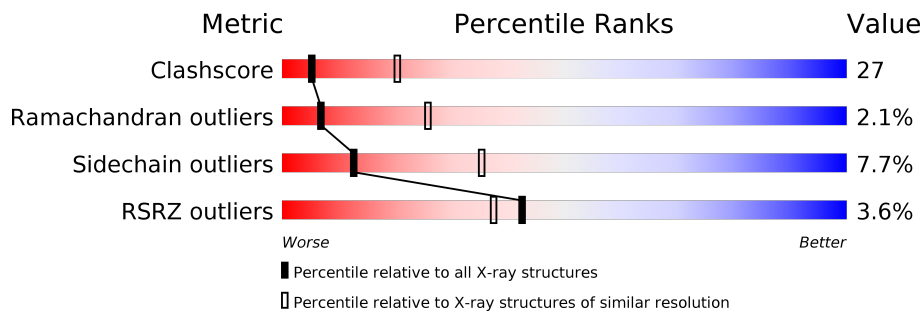
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.90 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	2172 (2.90-2.90)
Ramachandran outliers	138981	2115 (2.90-2.90)
Sidechain outliers	138945	2117 (2.90-2.90)
RSRZ outliers	127900	1906 (2.90-2.90)

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 on 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	A	440	
1	B	440	
2	C	234	
2	D	234	
2	E	234	
2	F	234	

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 11564 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 Chromosome partition protein mukF.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	315	Total	C	N	O	S	0	0	0
			2549	1598	454	489	8			
1	B	321	Total	C	N	O	S	0	0	0
			2596	1625	463	500	8			

- Molecule 2 is a protein called MukE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	C	206	Total	C	N	O	S	0	0	0
			1673	1058	298	309	8			
2	D	188	Total	C	N	O	S	0	0	0
			1542	984	274	277	7			
2	E	201	Total	C	N	O	S	0	0	0
			1629	1035	287	299	8			
2	F	182	Total	C	N	O	S	0	0	0
			1498	960	265	266	7			

- Molecule 3 is GLYCINE (three-letter code: GLY) (formula: C₂H₅NO₂).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	N	O	0	0
			5	2	1	2		
3	D	1	Total	C	N	O	0	0
			5	2	1	2		
3	D	1	Total	C	N	O	0	0
			5	2	1	2		
3	D	1	Total	C	N	O	0	0
			5	2	1	2		

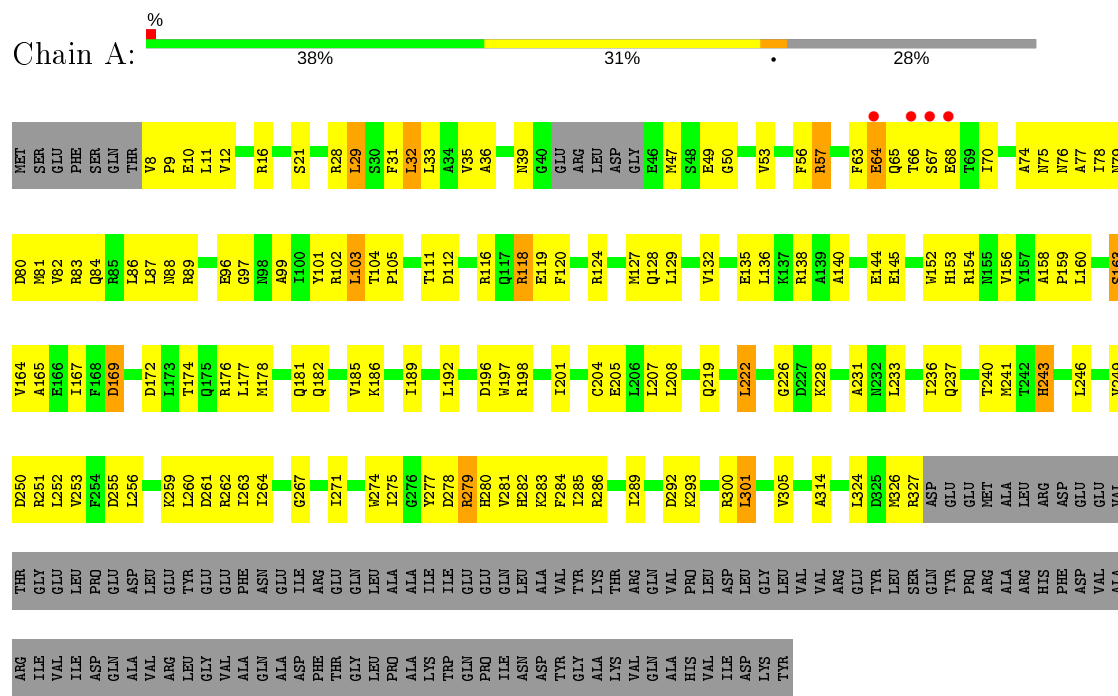
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	14	Total	O	0	0
			14	14		
4	B	11	Total	O	0	0
			11	11		
4	C	12	Total	O	0	0
			12	12		
4	D	10	Total	O	0	0
			10	10		
4	E	6	Total	O	0	0
			6	6		
4	F	4	Total	O	0	0
			4	4		

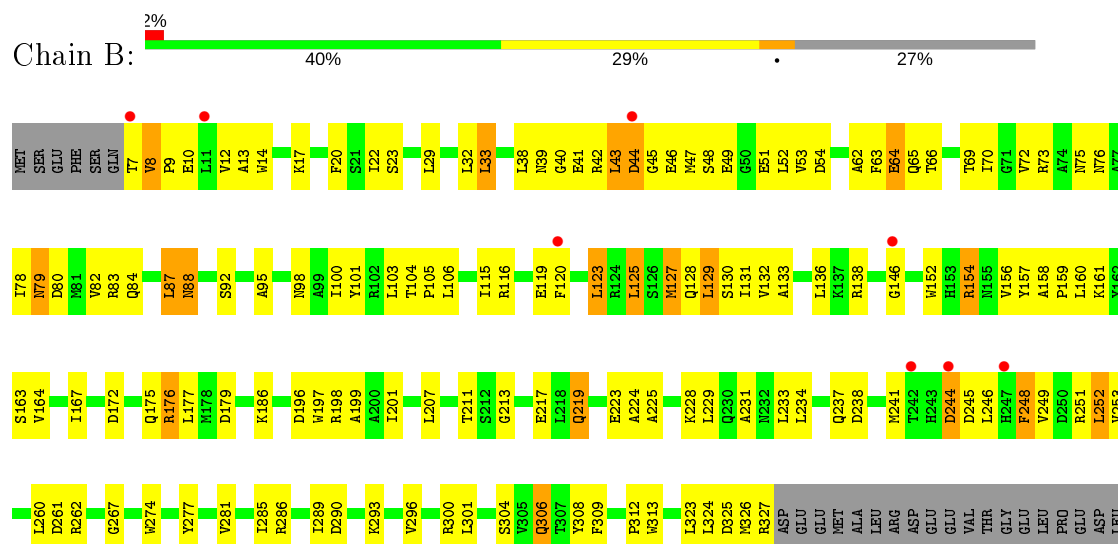
3 Residue-property plots [\(i\)](#)

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

- Molecule 1: Chromosome partition protein mukF



- Molecule 1: Chromosome partition protein mukF



GLU TYR LEU GLY PHE ASN ASN ILE ARG GLU GLY GLN LEU ALA ALA ILE ILE GLU GLY GLN LEU ALA ALA ILE ILE GLU GLY GLN LEU ALA ALA ILE ILE TRP TRP GLN GLY PRO ILE ILE ASN ASP VAL VAL TYR TYR LYS THR ARG GLN GLN ALA VAL HIS PRO LEU VAL ILE ASP LEU LEU GLY LEU VAL VAL ARG ARG ARG ARG HIS PHE HIS ASP VAL VAL ALA ARG ARG ILE ILE VAL VAL ILE ILE ASP GLN ALA

ARG LEU GLY VAL ASN GLN ALA ASP PHE THR GLY GLN LEU PRO ALA ALA TRP TRP GLN PRO ILE ASN ASP TYR TYR ALA LYS VAL VAL GLN ALA HIS PRO LEU VAL ILE ASP LEU LYS LEU TYR

• Molecule 2: MukE



MET SER SER THR ASN ASN ILE GLU GLN VAL M19 L134 K22 K23 L23 A26 L27 L28 R40 R43 R44 D48 E49 L50 F59 Y62 Y62 N71 L74 L75 L76 A77 P78 E79 G80 F81 F82 R87 T90 L91 R94 R94 E99 M103 I107 L108 C109 R117 L118

E121 T125 T126 Q127 L127 L129 L133 L134 T135 L136 L142 N148 R149 S150 T151 A152 S153 D154 V155 D156 R157 Q158 K159 L160 Q161 L168 M169 M180 G181 H182 A77 D183 S184 S185 K186 F187 R188 I189 T190 E191 V193 F194 R94 R195 V200 A202 G203 D204 D205 P206 R207 A209

Q210 R211 R212 L213 R214 D216 M220 P221 I222 E223 M224 HIS LEU GLN LEU ASN ASP THR GLU ASN PRO ASP SER GLY GLU GLU

• Molecule 2: MukE



MET SER SER THR ILE ILE GLU V18 F32 P33 A34 L35 D36 R40 R40 G42 R43 H44 L47 D48 E49 M52 F55 D58 Q60 E64 Y70 N71 V72 I75 F82 Y83 L84 R85 P86 R87 S88 T89 T90 S95 S96 L97 L100 D101 M102 M103

V104 G105 F106 I107 L108 G109 Y110 L111 Y112 P115 E116 R117 L118 T125 Q126 Q127 E128 L129 Y130 E132 L133 L134 T135 L136 A137 D138 E139 A140 K141 L142 L143 K144 L145 VAL ASN ASN ARG THR GLY SER ASP VAL ASN ASN ARG R157 Q158 K159 L160 E162 R165 S166 S167 R170 L171

R172 R173 L174 G175 M176 V177 W178 F179 M180 H181 H182 D183 S184 S185 K186 F187 R188 I189 T190 V193 F194 R195 F196 G197 R207 Q210 R211 T214 R215 D216 GLY ALA ARG MET PRO ILE GLU ASN HIS LEU LEU GLN LEU LEU VAL ASN ASN ASP THR GLU GLU GLU GLU Q161 E162 R165 S166 S167 R170 L171

GLU

• Molecule 2: MukE

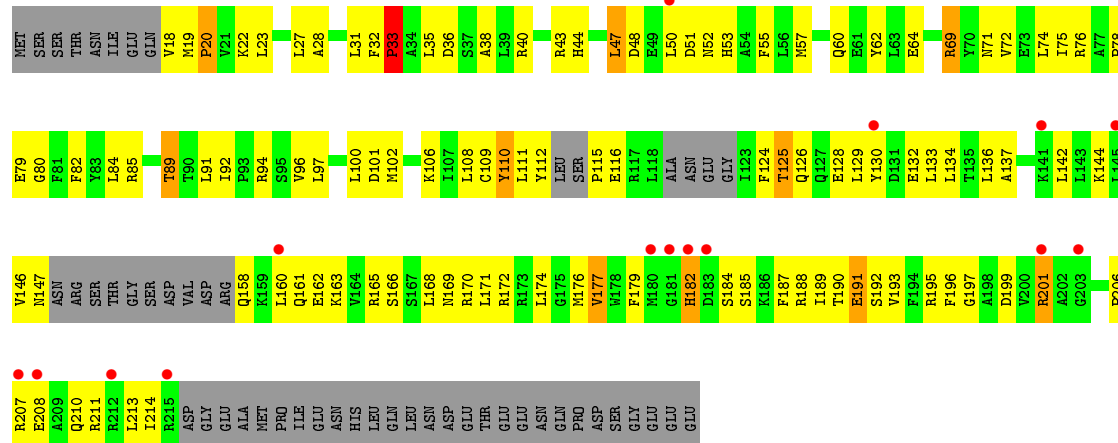


MET SER SER THR ASN ASN ILE GLU GLN V18 V21 K22 K23 L23 A26 L27 L28 N29 P30 F31 F32 P33 A34 D35 L36 S37 R43 H44 I45 E49 L50 D51 M57 D58 F59 Q60 E61 R69 Y70 N71 V72 E73 L74 L75 R76 R85 P86 R87 S88 T89 T90 L91 I92 P93 R94

S95 V96 L97 L100 M101 M102 M103 K106 I107 L118 T125 Q126 D127 E128 P30 Y130 D131 L134 T135 L136 E139 K141 L142 L143 L144 L145 VAL ASN ASN ARG MET PRO ILE GLU ASN HIS LEU LEU GLN LEU LEU VAL ASN ASN ASP THR GLU GLU GLU M169 R170 L171 R172 V177 W178 M180

G181 S184 S185 K186 T190 E191 S192 F193 F194 R195 F196 G197 A198 D199 R200 R201 A202 G203 D204 E208 A209 Q210 I214 R215 D216 M220 P221 I222 GLU HIS LEU GLN LEU ASN ARG MET PRO ILE GLU ASN THR GLU GLU ASN VAL ASN ASN ARG MET PRO ILE GLU ASN HIS LEU LEU GLN LEU LEU VAL ASN ASN ASP THR GLU GLU GLU M169 R170 L171 R172 V177 W178 M180

• Molecule 2: MukE



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	77.34Å 151.15Å 188.07Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	20.00 – 2.90 29.87 – 2.69	Depositor EDS
% Data completeness (in resolution range)	98.0 (20.00-2.90) 96.5 (29.87-2.69)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.55 (at 2.68Å)	Xtrriage
Refinement program	CNS	Depositor
R, R_{free}	0.225 , 0.274 0.240 , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å ²)	60.5	Xtrriage
Anisotropy	0.246	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 55.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	11564	wwPDB-VP
Average B, all atoms (Å ²)	68.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.15% 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](#)

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	0.39	0/2592	0.59	0/3506
1	B	0.37	0/2640	0.59	0/3572
2	C	0.46	0/1704	0.69	1/2296 (0.0%)
2	D	0.47	0/1571	0.70	0/2114
2	E	0.41	0/1659	0.64	0/2234
2	F	0.36	0/1525	0.61	0/2049
All	All	0.41	0/11691	0.63	1/15771 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	80	GLY	N-CA-C	5.18	126.05	113.10

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2549	0	2498	169	0
1	B	2596	0	2543	139	0
2	C	1673	0	1672	82	0
2	D	1542	0	1556	67	0
2	E	1629	0	1634	95	0
2	F	1498	0	1517	125	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	A	5	0	2	0	0
3	D	15	0	9	0	0
4	A	14	0	0	0	0
4	B	11	0	0	0	0
4	C	12	0	0	0	0
4	D	10	0	0	0	0
4	E	6	0	0	1	0
4	F	4	0	0	0	0
All	All	11564	0	11431	609	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 27.

All (609) 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:B:8:VAL:HB	1:B:9:PRO:HD3	1.28	1.09
2:E:125:THR:HG22	2:E:127:GLN:H	1.27	0.99
1:A:300:ARG:HH22	2:C:203:GLY:HA2	1.26	0.99
2:C:205:ASP:HB3	2:C:208:GLU:HB2	1.44	0.97
1:B:196:ASP:HB3	1:B:199:ALA:HB3	1.45	0.96
1:A:102:ARG:HH12	1:B:262:ARG:HH12	1.04	0.95
1:B:80:ASP:HA	1:B:83:ARG:HG2	1.48	0.95
2:D:100:LEU:O	2:D:104:VAL:HG23	1.67	0.94
2:F:75:ILE:HD11	2:F:85:ARG:CZ	1.99	0.93
1:B:23:SER:H	1:B:84:GLN:HE22	1.19	0.91
1:A:262:ARG:HE	1:B:42:ARG:HH11	1.19	0.91
2:E:90:THR:HG22	2:E:92:ILE:H	1.35	0.89
2:E:29:ASN:HD22	2:E:31:LEU:H	1.20	0.89
2:E:70:TYR:HA	2:E:91:LEU:HD12	1.53	0.89
1:B:23:SER:H	1:B:84:GLN:NE2	1.71	0.88
2:D:190:THR:O	2:D:193:VAL:HG23	1.72	0.88
1:B:125:LEU:HD22	1:B:129:LEU:HD22	1.56	0.87
1:B:198:ARG:HD2	1:B:293:LYS:HE3	1.55	0.87
2:E:141:LYS:O	2:E:144:LYS:HB3	1.74	0.87
2:E:126:GLN:HE22	2:E:165:ARG:HH11	1.18	0.86
2:E:134:LEU:HD22	2:E:139:GLU:HG3	1.56	0.86
1:A:102:ARG:NH1	1:B:262:ARG:HH12	1.72	0.86
2:F:47:LEU:H	2:F:47:LEU:HD12	1.39	0.85
2:E:125:THR:HB	2:E:128:GLU:HG3	1.57	0.85
2:C:44:HIS:HE1	2:C:195:ARG:HH11	1.17	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:176:MET:O	2:F:177:VAL:HG23	1.78	0.84
2:C:44:HIS:CE1	2:C:195:ARG:HH11	1.95	0.83
2:E:29:ASN:ND2	2:E:31:LEU:H	1.77	0.82
1:A:28:ARG:HG2	1:A:28:ARG:HH11	1.43	0.82
2:E:126:GLN:NE2	2:E:165:ARG:HH11	1.76	0.82
2:D:125:THR:OG1	2:D:128:GLU:HG3	1.80	0.81
1:A:118:ARG:HD2	1:A:120:PHE:H	1.43	0.81
1:B:219:GLN:HE21	1:B:267:GLY:HA3	1.43	0.81
2:C:23:LEU:HD22	2:C:27:LEU:HD22	1.62	0.80
1:A:262:ARG:HE	1:B:42:ARG:NH1	1.80	0.80
1:B:306:GLN:HE21	1:B:306:GLN:HA	1.47	0.80
1:B:72:VAL:HG12	1:B:76:ASN:HD21	1.47	0.80
1:A:118:ARG:HD3	1:A:120:PHE:CD2	2.16	0.79
1:A:102:ARG:HH12	1:B:262:ARG:NH1	1.80	0.79
2:C:159:LYS:HA	2:C:159:LYS:HE2	1.64	0.79
2:F:47:LEU:HD12	2:F:47:LEU:N	1.97	0.79
2:D:107:ILE:HD13	2:D:214:ILE:HD13	1.64	0.79
1:A:67:SER:HA	1:A:70:ILE:HG13	1.65	0.79
2:F:125:THR:HG23	2:F:128:GLU:HG3	1.65	0.79
1:A:300:ARG:CB	2:C:200:VAL:HG11	2.13	0.78
2:F:69:ARG:HH11	2:F:69:ARG:HG2	1.47	0.77
1:B:286:ARG:HA	1:B:290:ASP:OD2	1.86	0.76
2:F:197:GLY:HA2	2:F:210:GLN:OE1	1.85	0.76
2:F:32:PHE:HB3	2:F:33:PRO:HD3	1.67	0.76
2:F:146:VAL:HG21	2:F:160:LEU:HG	1.66	0.76
1:B:43:LEU:HD12	1:B:44:ASP:N	2.00	0.76
1:B:198:ARG:HD3	1:B:293:LYS:HG3	1.68	0.75
2:D:105:GLY:HA2	2:D:108:LEU:HD12	1.68	0.74
1:A:222:LEU:HD11	1:A:263:ILE:HG22	1.69	0.74
2:F:44:HIS:CE1	2:F:195:ARG:HH11	2.05	0.74
1:A:300:ARG:HB3	2:C:200:VAL:HG11	1.69	0.73
1:A:57:ARG:HH11	1:A:57:ARG:HB3	1.54	0.73
2:F:168:LEU:HD21	2:F:177:VAL:HG11	1.71	0.73
2:F:146:VAL:HG22	2:F:163:LYS:HD2	1.71	0.71
2:F:47:LEU:CD1	2:F:47:LEU:H	2.03	0.70
1:A:169:ASP:OD1	1:A:259:LYS:HE2	1.91	0.70
1:B:8:VAL:HB	1:B:9:PRO:CD	2.15	0.70
1:A:178:MET:HE1	1:A:181:GLN:HG2	1.73	0.70
1:B:163:SER:O	1:B:167:ILE:HG13	1.92	0.70
1:A:12:VAL:O	1:A:16:ARG:HG3	1.91	0.70
1:B:301:LEU:O	1:B:304:SER:HB3	1.91	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:327:ARG:H	2:F:102:MET:HE3	1.57	0.70
2:C:78:PRO:HG2	2:C:79:GLU:OE2	1.92	0.70
2:F:75:ILE:HG22	2:F:76:ARG:N	2.07	0.70
1:A:89:ARG:NH1	1:A:101:TYR:OH	2.25	0.69
2:C:107:ILE:HD13	2:C:133:LEU:HA	1.72	0.69
2:E:144:LYS:HG2	2:E:144:LYS:O	1.91	0.69
2:F:78:PRO:HG2	2:F:79:GLU:OE2	1.91	0.69
2:D:126:GLN:HG2	2:D:185:SER:O	1.91	0.69
2:E:198:ALA:HA	2:E:201:ARG:HD3	1.74	0.69
2:F:210:GLN:O	2:F:214:ILE:HG12	1.91	0.69
1:B:161:LYS:HB2	1:B:252:LEU:HD11	1.73	0.68
1:B:8:VAL:CB	1:B:9:PRO:HD3	2.15	0.68
1:A:249:VAL:HG12	1:A:249:VAL:O	1.92	0.68
1:A:118:ARG:HD2	1:A:119:GLU:N	2.09	0.68
2:C:157:ARG:O	2:C:161:GLN:HG3	1.94	0.68
2:F:69:ARG:NH1	2:F:69:ARG:HG2	2.09	0.68
1:A:136:LEU:HD13	1:A:164:VAL:HG21	1.77	0.67
1:A:135:GLU:OE1	1:A:163:SER:HB3	1.94	0.67
2:D:197:GLY:HA2	2:D:210:GLN:HE22	1.60	0.67
1:A:300:ARG:NH2	2:C:203:GLY:HA2	2.05	0.67
2:D:44:HIS:CE1	2:D:195:ARG:HH11	2.13	0.67
1:A:66:THR:HG22	1:A:68:GLU:H	1.60	0.67
1:A:118:ARG:CD	1:A:120:PHE:H	2.07	0.66
1:A:152:TRP:CZ3	1:A:246:LEU:HD13	2.30	0.66
1:B:300:ARG:NH1	2:E:203:GLY:HA2	2.11	0.66
1:A:165:ALA:HB2	1:A:256:LEU:HD21	1.77	0.66
2:D:142:LEU:HG	2:D:160:LEU:HD21	1.78	0.66
2:F:57:MET:SD	2:F:76:ARG:NH1	2.69	0.65
2:D:130:TYR:CZ	2:D:161:GLN:HG3	2.31	0.65
2:D:189:ILE:CG2	2:D:193:VAL:HG21	2.26	0.65
2:F:116:GLU:O	2:F:116:GLU:HG2	1.95	0.65
2:F:137:ALA:HB3	2:F:142:LEU:HD22	1.76	0.65
1:A:89:ARG:HG3	1:A:101:TYR:CE1	2.32	0.64
2:E:26:ALA:HB2	2:E:59:PHE:CD2	2.33	0.64
1:A:262:ARG:NE	1:B:42:ARG:HH11	1.92	0.64
2:D:48:ASP:CG	2:D:188:ARG:HH12	2.00	0.64
1:B:225:ALA:O	1:B:229:LEU:HD13	1.98	0.64
1:A:324:LEU:HD22	2:D:97:LEU:CD1	2.27	0.64
2:E:90:THR:HG22	2:E:92:ILE:N	2.11	0.64
2:D:101:ASP:OD2	2:D:170:ARG:NH2	2.31	0.64
1:B:198:ARG:CD	1:B:293:LYS:HE3	2.26	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:144:LYS:HG3	2:F:147:ASN:HD22	1.61	0.63
2:F:146:VAL:HA	2:F:163:LYS:HZ2	1.63	0.63
2:E:143:LEU:C	2:E:145:LEU:H	2.00	0.63
2:F:146:VAL:HA	2:F:163:LYS:NZ	2.14	0.63
1:A:324:LEU:HD22	2:D:97:LEU:HD12	1.80	0.63
1:A:35:VAL:HG13	1:A:47:MET:CE	2.28	0.63
1:B:42:ARG:CZ	1:B:46:GLU:OE2	2.47	0.63
1:A:222:LEU:HD13	1:A:264:ILE:HD13	1.80	0.63
1:B:87:LEU:CD1	1:B:103:LEU:HD23	2.29	0.62
1:B:158:ALA:HB3	1:B:159:PRO:HD3	1.80	0.62
2:C:220:MET:HA	2:C:220:MET:HE3	1.81	0.62
2:E:130:TYR:HE1	2:E:160:LEU:HD13	1.65	0.62
1:B:7:THR:HG22	1:B:8:VAL:H	1.64	0.62
1:A:74:ALA:O	1:A:78:ILE:HG13	1.99	0.62
1:A:262:ARG:HG3	1:B:42:ARG:CZ	2.29	0.62
1:B:72:VAL:HG12	1:B:76:ASN:ND2	2.13	0.62
2:C:211:ARG:HH11	2:C:211:ARG:HG3	1.64	0.62
1:A:32:LEU:HG	1:A:81:MET:CE	2.30	0.61
2:F:75:ILE:HD11	2:F:85:ARG:NH1	2.14	0.61
1:A:240:THR:CG2	1:A:250:ASP:HB2	2.29	0.61
1:A:49:GLU:O	1:A:53:VAL:HG23	2.00	0.61
2:F:71:ASN:HB3	2:F:89:THR:HG22	1.82	0.61
2:F:72:VAL:HG21	2:F:92:ILE:HD12	1.83	0.61
1:A:160:LEU:HB2	1:A:252:LEU:HD21	1.81	0.61
1:B:63:PHE:O	1:B:65:GLN:HG3	2.01	0.61
1:A:300:ARG:HB2	2:C:200:VAL:HG11	1.81	0.61
1:A:36:ALA:HB2	1:A:111:THR:HG21	1.83	0.61
2:C:125:THR:HG22	2:C:186:LYS:HG2	1.82	0.61
1:A:12:VAL:HG11	1:B:62:ALA:HB1	1.81	0.61
1:A:219:GLN:NE2	1:A:267:GLY:HA3	2.16	0.61
1:B:42:ARG:NH1	1:B:46:GLU:OE2	2.34	0.61
2:E:126:GLN:NE2	2:E:165:ARG:NH1	2.48	0.61
2:D:130:TYR:CE1	2:D:161:GLN:HG3	2.36	0.61
2:F:129:LEU:O	2:F:133:LEU:HB2	2.00	0.61
2:F:176:MET:SD	2:F:196:PHE:HE2	2.24	0.60
2:C:182:HIS:CD2	2:C:182:HIS:H	2.18	0.60
2:C:190:THR:HG22	2:C:191:GLU:N	2.15	0.60
1:B:23:SER:N	1:B:84:GLN:NE2	2.45	0.60
2:E:96:VAL:HG11	2:E:220:MET:HB2	1.82	0.60
1:A:28:ARG:O	1:A:31:PHE:HB3	2.02	0.60
2:D:32:PHE:HB3	2:D:33:PRO:HD3	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:69:ARG:HH12	2:F:28:ALA:HA	1.65	0.60
2:D:125:THR:HG23	2:D:128:GLU:OE2	2.02	0.60
1:A:176:ARG:HH22	1:A:262:ARG:NH2	1.99	0.59
2:E:33:PRO:HG2	4:E:245:HOH:O	2.02	0.59
2:F:158:GLN:HA	2:F:161:GLN:HB2	1.84	0.59
2:C:23:LEU:CD2	2:C:27:LEU:HD22	2.32	0.59
2:E:154:ASP:HA	2:E:157:ARG:HB2	1.83	0.59
2:F:72:VAL:CG1	2:F:84:LEU:HG	2.32	0.59
1:A:189:ILE:HG23	1:A:204:CYS:SG	2.42	0.59
1:B:23:SER:N	1:B:84:GLN:HE22	1.95	0.59
2:C:201:ARG:HH11	2:C:201:ARG:HG2	1.67	0.59
2:F:189:ILE:HG23	2:F:193:VAL:HG21	1.85	0.59
1:A:105:PRO:HG2	1:B:177:LEU:HD12	1.84	0.58
1:B:246:LEU:HD12	1:B:248:PHE:HE2	1.67	0.58
2:C:125:THR:OG1	2:C:128:GLU:HG3	2.02	0.58
2:D:72:VAL:CG1	2:D:84:LEU:HB3	2.34	0.58
2:D:47:LEU:C	2:D:49:GLU:H	2.06	0.58
1:A:104:THR:HB	1:A:105:PRO:CD	2.34	0.58
1:B:207:LEU:O	1:B:211:THR:HG23	2.03	0.58
2:F:71:ASN:ND2	2:F:89:THR:HG23	2.18	0.58
2:F:72:VAL:HG11	2:F:84:LEU:HG	1.85	0.58
1:B:213:GLY:O	1:B:217:GLU:HG3	2.03	0.58
2:F:111:LEU:HD21	2:F:132:GLU:HG3	1.86	0.58
1:A:28:ARG:HG2	1:A:28:ARG:NH1	2.12	0.58
1:A:32:LEU:HG	1:A:81:MET:HE1	1.86	0.58
1:B:219:GLN:HE21	1:B:267:GLY:CA	2.12	0.58
2:C:108:LEU:HB3	2:C:193:VAL:HG21	1.86	0.58
1:A:35:VAL:HG13	1:A:47:MET:HE3	1.85	0.57
1:A:50:GLY:HA3	1:A:96:GLU:HG2	1.86	0.57
2:E:210:GLN:O	2:E:214:ILE:HG13	2.05	0.57
1:B:43:LEU:HD12	1:B:44:ASP:H	1.69	0.57
2:D:87:ARG:O	2:D:90:THR:HG22	2.05	0.57
2:E:71:ASN:ND2	2:E:89:THR:O	2.36	0.57
2:E:86:PRO:CG	2:E:94:ARG:HB2	2.35	0.57
2:F:190:THR:O	2:F:193:VAL:HG23	2.04	0.57
1:B:49:GLU:O	1:B:53:VAL:HG23	2.04	0.56
2:E:200:VAL:O	2:E:200:VAL:HG12	2.04	0.56
2:E:31:LEU:HD11	2:E:51:ASP:HB3	1.86	0.56
1:B:286:ARG:O	1:B:286:ARG:HG2	2.05	0.56
1:B:38:LEU:O	1:B:41:GLU:HG2	2.06	0.56
2:C:200:VAL:O	2:C:200:VAL:HG12	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:156:VAL:O	1:B:159:PRO:HD2	2.05	0.56
2:E:86:PRO:HG3	2:E:94:ARG:HB2	1.86	0.56
2:F:108:LEU:O	2:F:189:ILE:HD13	2.05	0.56
2:F:168:LEU:CD2	2:F:177:VAL:HG11	2.35	0.56
1:B:327:ARG:HG2	2:F:96:VAL:HG12	1.87	0.56
1:A:153:HIS:HD2	1:B:127:MET:SD	2.29	0.56
2:C:182:HIS:CD2	2:C:182:HIS:N	2.74	0.56
1:A:241:MET:CE	1:A:241:MET:HA	2.36	0.56
1:A:260:LEU:O	1:A:264:ILE:HG12	2.05	0.56
1:A:67:SER:HA	1:A:70:ILE:CG1	2.36	0.56
1:B:48:SER:OG	1:B:51:GLU:HG3	2.06	0.56
1:A:136:LEU:HD21	1:A:233:LEU:HG	1.86	0.55
1:A:57:ARG:NH1	1:A:57:ARG:HB3	2.21	0.55
1:B:327:ARG:HG2	2:F:96:VAL:CG1	2.35	0.55
1:A:178:MET:HE1	1:A:181:GLN:CG	2.36	0.55
1:B:325:ASP:OD1	2:F:94:ARG:NH1	2.39	0.55
2:C:117:ARG:HG2	2:C:117:ARG:HH11	1.70	0.55
1:A:198:ARG:HD2	1:A:293:LYS:HG2	1.87	0.55
1:A:8:VAL:N	1:A:9:PRO:CD	2.69	0.55
1:A:140:ALA:O	1:A:144:GLU:HB2	2.06	0.55
1:B:326:MET:HA	2:F:102:MET:HE1	1.89	0.55
2:C:107:ILE:CD1	2:C:133:LEU:HA	2.36	0.55
2:E:125:THR:HG22	2:E:127:GLN:N	2.10	0.55
1:B:136:LEU:HD11	1:B:233:LEU:HD23	1.89	0.55
1:B:42:ARG:HG3	1:B:45:GLY:O	2.07	0.55
2:C:205:ASP:HB3	2:C:208:GLU:CB	2.27	0.55
1:A:240:THR:HG23	1:A:246:LEU:O	2.07	0.54
1:B:115:ILE:HG13	1:B:116:ARG:N	2.22	0.54
2:D:134:LEU:HD23	2:D:142:LEU:CD2	2.36	0.54
2:E:29:ASN:C	2:E:29:ASN:HD22	2.09	0.54
1:A:198:ARG:HG3	1:A:289:ILE:HG22	1.88	0.54
1:B:324:LEU:HB2	2:F:174:LEU:HD21	1.88	0.54
2:D:60:GLN:O	2:D:64:GLU:HB2	2.08	0.54
1:A:152:TRP:CE3	1:A:246:LEU:HD13	2.43	0.54
1:A:240:THR:HG21	1:A:250:ASP:HB2	1.89	0.54
1:B:152:TRP:CE3	1:B:246:LEU:HD21	2.43	0.54
2:F:38:ALA:O	2:F:43:ARG:HB3	2.08	0.54
1:A:102:ARG:HG2	1:A:102:ARG:HH11	1.73	0.54
2:D:126:GLN:NE2	2:D:184:SER:HB3	2.23	0.54
2:E:29:ASN:HD22	2:E:30:PRO:N	2.06	0.53
2:F:32:PHE:HB3	2:F:33:PRO:CD	2.37	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:119:GLU:HG3	1:A:174:THR:OG1	2.09	0.53
2:C:126:GLN:OE1	2:C:168:LEU:HD23	2.09	0.53
2:F:36:ASP:O	2:F:40:ARG:HG3	2.09	0.53
1:A:283:LYS:HA	1:A:286:ARG:NH2	2.23	0.53
2:D:177:VAL:HG12	2:D:178:TRP:N	2.22	0.53
2:F:71:ASN:ND2	2:F:89:THR:CG2	2.71	0.53
1:A:120:PHE:CE1	1:A:178:MET:HE2	2.44	0.53
1:A:156:VAL:O	1:A:160:LEU:HG	2.07	0.53
1:A:178:MET:CE	1:A:178:MET:HA	2.39	0.53
1:A:78:ILE:O	1:A:82:VAL:HG23	2.08	0.53
1:A:118:ARG:HD2	1:A:120:PHE:N	2.20	0.53
1:A:120:PHE:CE1	1:A:177:LEU:HB3	2.43	0.53
2:F:166:SER:O	2:F:169:ASN:HB3	2.08	0.53
2:F:38:ALA:HB1	2:F:43:ARG:HD3	1.90	0.53
1:A:49:GLU:CD	2:E:186:LYS:HZ1	2.12	0.53
2:F:75:ILE:CG2	2:F:76:ARG:N	2.71	0.53
2:E:27:LEU:O	2:F:69:ARG:NH2	2.39	0.53
2:F:89:THR:HG23	2:F:89:THR:O	2.08	0.52
1:A:29:LEU:HD22	1:A:33:LEU:HD11	1.90	0.52
1:B:244:ASP:O	1:B:246:LEU:N	2.42	0.52
2:C:180:MET:HA	2:C:180:MET:CE	2.40	0.52
2:F:208:GLU:HA	2:F:211:ARG:HB3	1.90	0.52
2:F:71:ASN:CB	2:F:89:THR:HG22	2.39	0.52
2:D:44:HIS:HE1	2:D:195:ARG:HH11	1.56	0.52
2:F:60:GLN:O	2:F:64:GLU:HB2	2.09	0.52
1:A:208:LEU:HD13	1:A:278:ASP:OD2	2.09	0.52
1:B:75:ASN:O	1:B:79:ASN:HB2	2.10	0.52
2:C:71:ASN:HB2	2:C:90:THR:HA	1.92	0.52
2:F:89:THR:CG2	2:F:89:THR:O	2.57	0.52
2:D:180:MET:CE	2:D:180:MET:HA	2.40	0.52
1:A:279:ARG:NH1	1:A:279:ARG:HG2	2.25	0.52
1:B:327:ARG:H	2:F:102:MET:CE	2.23	0.52
2:E:130:TYR:CZ	2:E:161:GLN:HG3	2.45	0.52
1:A:281:VAL:O	1:A:285:ILE:HG13	2.10	0.52
1:A:301:LEU:O	1:A:305:VAL:HG23	2.09	0.51
1:A:31:PHE:O	1:A:35:VAL:HG23	2.10	0.51
2:E:69:ARG:HH21	2:F:33:PRO:CD	2.23	0.51
1:B:128:GLN:O	1:B:132:VAL:HG23	2.10	0.51
2:E:193:VAL:O	2:E:196:PHE:HB2	2.09	0.51
1:A:158:ALA:HB3	1:A:159:PRO:HD3	1.93	0.51
2:D:112:TYR:HA	2:D:117:ARG:HG3	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:313:TRP:C	2:E:222:ILE:HD11	2.31	0.51
1:B:160:LEU:O	1:B:164:VAL:HB	2.11	0.51
2:F:44:HIS:HE1	2:F:195:ARG:HH11	1.57	0.51
1:A:197:TRP:CZ2	1:A:289:ILE:HG12	2.46	0.51
1:A:314:ALA:HB2	2:C:222:ILE:HD11	1.93	0.51
1:A:300:ARG:NE	2:C:200:VAL:HG13	2.24	0.51
1:A:104:THR:HB	1:A:105:PRO:HD2	1.92	0.51
1:A:198:ARG:HH11	1:A:198:ARG:HG2	1.76	0.51
1:B:309:PHE:HA	1:B:312:PRO:HG3	1.93	0.51
2:C:168:LEU:HD21	2:C:187:PHE:CD1	2.46	0.51
2:F:22:LYS:HB2	2:F:62:TYR:CE2	2.45	0.51
1:B:248:PHE:CE2	1:B:249:VAL:HG23	2.45	0.51
2:C:44:HIS:CE1	2:C:195:ARG:NH1	2.74	0.51
2:F:172:ARG:HG2	2:F:177:VAL:O	2.11	0.51
1:B:304:SER:OG	2:E:106:LYS:HE3	2.11	0.50
1:A:262:ARG:NE	1:B:42:ARG:NH1	2.54	0.50
2:C:211:ARG:HG3	2:C:211:ARG:NH1	2.25	0.50
2:F:20:PRO:O	2:F:23:LEU:HB3	2.12	0.50
1:A:186:LYS:HG2	1:A:277:TYR:CZ	2.46	0.50
1:A:222:LEU:HD11	1:A:263:ILE:CG2	2.39	0.50
2:D:107:ILE:HD13	2:D:214:ILE:CD1	2.38	0.50
1:A:279:ARG:HH11	1:A:279:ARG:HG2	1.77	0.50
2:D:36:ASP:O	2:D:40:ARG:HG3	2.12	0.50
1:A:156:VAL:O	1:A:159:PRO:HD2	2.12	0.50
1:A:241:MET:HE3	1:A:241:MET:HA	1.92	0.50
2:C:189:ILE:HG22	2:C:190:THR:N	2.26	0.50
1:A:327:ARG:H	2:D:102:MET:CE	2.25	0.50
2:F:137:ALA:CB	2:F:142:LEU:HD22	2.41	0.50
2:F:165:ARG:NH2	2:F:184:SER:HA	2.26	0.50
2:E:69:ARG:NH2	2:F:33:PRO:HD3	2.27	0.50
1:A:237:GLN:HB2	1:A:253:VAL:HG11	1.93	0.50
1:A:326:MET:HE3	2:D:196:PHE:CE1	2.47	0.49
2:E:201:ARG:HH11	2:E:201:ARG:CG	2.24	0.49
2:E:43:ARG:NH1	2:E:49:GLU:OE2	2.44	0.49
2:F:100:LEU:C	2:F:100:LEU:HD23	2.33	0.49
1:B:327:ARG:N	2:F:102:MET:HE3	2.25	0.49
1:A:112:ASP:HB3	1:A:116:ARG:HG3	1.95	0.49
1:A:178:MET:HE1	1:A:181:GLN:CB	2.42	0.49
1:B:296:VAL:HG12	1:B:300:ARG:HH21	1.77	0.49
1:B:323:LEU:C	1:B:323:LEU:HD23	2.33	0.49
2:F:134:LEU:HD23	2:F:142:LEU:HD21	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:279:ARG:HH11	1:A:279:ARG:CG	2.25	0.49
1:B:224:ALA:O	1:B:228:LYS:HE2	2.12	0.49
1:A:284:PHE:CG	2:C:118:LEU:HD21	2.47	0.49
2:C:22:LYS:HD3	2:C:62:TYR:CE1	2.48	0.49
2:D:70:TYR:O	2:D:71:ASN:HB2	2.12	0.49
2:E:143:LEU:C	2:E:145:LEU:N	2.65	0.49
2:E:72:VAL:CG2	2:E:90:THR:HG23	2.43	0.49
2:C:133:LEU:HD22	2:C:142:LEU:HD21	1.94	0.49
2:E:198:ALA:HA	2:E:201:ARG:CD	2.41	0.49
2:F:162:GLU:N	2:F:162:GLU:OE2	2.46	0.49
2:F:168:LEU:HD23	2:F:168:LEU:O	2.13	0.49
2:F:191:GLU:CD	2:F:191:GLU:H	2.15	0.49
1:B:104:THR:HB	1:B:105:PRO:CD	2.43	0.49
1:A:326:MET:O	1:A:327:ARG:HB2	2.12	0.49
2:D:126:GLN:CD	2:D:184:SER:HB3	2.33	0.49
2:E:181:GLY:O	2:E:184:SER:HB3	2.13	0.49
1:A:251:ARG:O	1:A:255:ASP:HB2	2.12	0.49
1:A:83:ARG:HB2	1:A:83:ARG:CZ	2.42	0.49
1:A:36:ALA:CB	1:A:111:THR:HG21	2.43	0.48
2:D:110:TYR:CE2	2:D:207:ARG:NH2	2.81	0.48
2:D:184:SER:O	2:D:185:SER:C	2.51	0.48
2:F:146:VAL:HG21	2:F:160:LEU:CG	2.42	0.48
2:F:18:VAL:HG12	2:F:19:MET:N	2.28	0.48
1:B:300:ARG:NH1	2:E:203:GLY:CA	2.75	0.48
2:D:177:VAL:CG1	2:D:178:TRP:N	2.76	0.48
1:B:238:ASP:HA	1:B:241:MET:HG2	1.95	0.48
1:B:308:TYR:CD2	2:E:103:MET:CE	2.96	0.48
1:A:236:ILE:HG22	1:A:253:VAL:HG21	1.96	0.48
1:A:128:GLN:O	1:A:132:VAL:HG23	2.13	0.48
1:A:66:THR:HG22	1:A:68:GLU:N	2.28	0.48
2:C:201:ARG:NH1	2:C:201:ARG:HG2	2.28	0.48
2:E:191:GLU:O	2:E:194:PHE:HD1	1.97	0.48
2:E:87:ARG:N	2:E:90:THR:OG1	2.46	0.48
2:F:126:GLN:NE2	2:F:165:ARG:HB2	2.28	0.48
2:F:48:ASP:OD1	2:F:188:ARG:NH2	2.47	0.48
2:F:75:ILE:CD1	2:F:85:ARG:CZ	2.82	0.48
1:A:243:HIS:N	1:A:243:HIS:ND1	2.60	0.48
2:C:133:LEU:CD2	2:C:142:LEU:HD21	2.44	0.48
1:A:77:ALA:O	1:A:80:ASP:HB2	2.13	0.48
2:F:101:ASP:OD1	2:F:170:ARG:NH2	2.39	0.48
1:A:153:HIS:CD2	1:B:127:MET:SD	3.07	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:49:GLU:HB2	1:A:99:ALA:HB3	1.96	0.48
1:B:176:ARG:O	1:B:179:ASP:HB2	2.14	0.48
2:D:48:ASP:HB2	2:D:178:TRP:HE1	1.78	0.48
2:E:200:VAL:CG1	2:E:200:VAL:O	2.61	0.48
2:E:220:MET:CE	2:E:221:PRO:HD2	2.43	0.48
2:D:110:TYR:CE2	2:D:136:LEU:HD21	2.50	0.47
1:A:29:LEU:HD22	1:A:33:LEU:CD1	2.44	0.47
2:D:103:MET:O	2:D:107:ILE:HG12	2.15	0.47
2:C:103:MET:HA	2:C:103:MET:HE2	1.95	0.47
2:D:207:ARG:O	2:D:211:ARG:HG2	2.13	0.47
2:F:168:LEU:HD22	2:F:179:PHE:HE2	1.79	0.47
2:C:44:HIS:HE1	2:C:195:ARG:NH1	1.98	0.47
2:F:168:LEU:HD11	2:F:187:PHE:CE1	2.49	0.47
2:F:50:LEU:HD12	2:F:50:LEU:H	1.80	0.47
2:F:76:ARG:HE	2:F:80:GLY:HA2	1.79	0.47
1:B:13:ALA:O	1:B:17:LYS:N	2.48	0.47
2:C:200:VAL:O	2:C:200:VAL:CG1	2.63	0.47
2:D:107:ILE:CD1	2:D:214:ILE:HD13	2.37	0.47
2:E:126:GLN:HE22	2:E:165:ARG:NH1	1.99	0.47
2:E:204:ASP:HB2	2:E:208:GLU:OE2	2.15	0.47
1:B:9:PRO:HA	1:B:12:VAL:HG23	1.96	0.47
1:B:219:GLN:O	1:B:223:GLU:HG3	2.15	0.47
2:C:152:GLY:O	2:C:153:SER:C	2.53	0.47
2:D:138:ASP:OD1	2:D:140:ALA:HB3	2.14	0.47
1:B:104:THR:HB	1:B:105:PRO:HD2	1.96	0.47
1:B:172:ASP:O	1:B:175:GLN:HB2	2.15	0.47
2:C:108:LEU:HD13	2:C:129:LEU:HD13	1.97	0.47
2:C:117:ARG:HH11	2:C:117:ARG:CG	2.28	0.47
2:C:79:GLU:HG2	2:C:81:PHE:CE1	2.50	0.47
2:F:109:CYS:O	2:F:112:TYR:HB3	2.15	0.47
1:A:138:ARG:NH2	1:B:138:ARG:HH11	2.12	0.46
1:B:14:TRP:CH2	1:B:20:PHE:HE1	2.33	0.46
1:B:7:THR:HB	1:B:10:GLU:HB3	1.97	0.46
1:A:160:LEU:HB2	1:A:252:LEU:CD2	2.43	0.46
1:A:84:GLN:HB3	1:A:86:LEU:CD2	2.45	0.46
2:C:81:PHE:CE2	2:C:192:SER:HA	2.50	0.46
2:C:76:ARG:HB2	2:C:82:PHE:CE2	2.51	0.46
2:D:75:ILE:O	2:D:82:PHE:HA	2.15	0.46
2:E:190:THR:O	2:E:193:VAL:HG22	2.15	0.46
2:E:203:GLY:O	2:E:204:ASP:HB3	2.14	0.46
2:D:197:GLY:HA2	2:D:210:GLN:NE2	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:278:ASP:OD2	1:A:282:HIS:CD2	2.69	0.46
1:B:136:LEU:HD11	1:B:233:LEU:CD2	2.44	0.46
2:F:94:ARG:NH2	2:F:96:VAL:HG22	2.31	0.46
1:A:271:ILE:O	1:A:275:ILE:HG13	2.15	0.46
2:C:79:GLU:HG2	2:C:81:PHE:HE1	1.79	0.46
1:B:308:TYR:CD2	2:E:103:MET:HE2	2.50	0.46
1:B:47:MET:O	1:B:100:ILE:HA	2.15	0.46
1:A:262:ARG:NE	1:B:42:ARG:HD3	2.30	0.46
1:B:300:ARG:HB3	2:E:200:VAL:CG1	2.46	0.46
2:C:210:GLN:O	2:C:214:ILE:HG13	2.15	0.46
2:F:125:THR:CG2	2:F:128:GLU:HG3	2.41	0.46
2:F:76:ARG:HB2	2:F:82:PHE:CE1	2.51	0.46
1:A:259:LYS:O	1:A:263:ILE:HG13	2.16	0.46
2:F:158:GLN:HG2	2:F:161:GLN:OE1	2.16	0.46
1:A:49:GLU:HB3	1:A:97:GLY:HA3	1.97	0.46
1:A:75:ASN:O	1:A:79:ASN:ND2	2.49	0.46
1:B:120:PHE:O	1:B:120:PHE:HD1	1.99	0.46
2:D:194:PHE:C	2:D:196:PHE:N	2.67	0.46
2:E:201:ARG:HG3	2:E:201:ARG:HH11	1.81	0.46
1:A:63:PHE:O	1:A:64:GLU:C	2.54	0.45
1:A:178:MET:HE2	1:A:178:MET:HA	1.98	0.45
1:B:172:ASP:OD1	1:B:176:ARG:NH1	2.49	0.45
2:E:57:MET:HE1	2:E:76:ARG:NH2	2.31	0.45
2:F:52:ASN:O	2:F:55:PHE:HB3	2.16	0.45
2:F:74:LEU:HG	2:F:74:LEU:O	2.16	0.45
2:F:53:HIS:HE1	2:F:80:GLY:O	2.00	0.45
1:A:33:LEU:HD23	1:A:111:THR:HG22	1.98	0.45
1:A:39:ASN:OD1	1:B:262:ARG:NH2	2.48	0.45
2:C:152:GLY:O	2:C:154:ASP:N	2.49	0.45
2:D:189:ILE:HG22	2:D:193:VAL:HG21	1.98	0.45
2:F:171:LEU:HD23	2:F:174:LEU:HD12	1.98	0.45
2:F:190:THR:HG22	2:F:191:GLU:CD	2.36	0.45
2:E:28:ALA:HA	2:F:69:ARG:NH2	2.31	0.45
1:A:219:GLN:NE2	1:A:219:GLN:HA	2.31	0.45
1:B:123:LEU:O	1:B:127:MET:HB2	2.16	0.45
2:F:94:ARG:CZ	2:F:96:VAL:HG22	2.46	0.45
2:E:154:ASP:C	2:E:156:ASP:N	2.70	0.45
2:F:168:LEU:HD22	2:F:179:PHE:CE2	2.52	0.45
2:F:71:ASN:CG	2:F:89:THR:CG2	2.85	0.45
2:C:201:ARG:O	2:C:201:ARG:HD3	2.17	0.45
2:F:97:LEU:HB3	2:F:101:ASP:HB2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:190:THR:O	2:D:193:VAL:CG2	2.56	0.45
1:B:152:TRP:CD2	1:B:246:LEU:HD21	2.52	0.45
1:B:29:LEU:CD1	1:B:33:LEU:HD22	2.47	0.45
1:B:40:GLY:C	1:B:42:ARG:H	2.19	0.45
2:D:47:LEU:C	2:D:49:GLU:N	2.69	0.45
1:A:197:TRP:CE2	1:A:289:ILE:HG12	2.52	0.45
1:A:56:PHE:O	1:A:56:PHE:CD1	2.70	0.45
1:A:21:SER:O	1:A:84:GLN:HG2	2.17	0.45
2:C:99:GLU:H	2:C:99:GLU:HG2	1.49	0.45
2:E:97:LEU:HB3	2:E:101:ASP:CB	2.47	0.45
2:E:165:ARG:HH11	2:E:165:ARG:HG3	1.81	0.45
2:E:172:ARG:HD3	2:E:179:PHE:CG	2.52	0.45
2:E:85:ARG:HD3	2:E:216:ASP:O	2.17	0.45
2:F:115:PRO:HD3	2:F:207:ARG:NH1	2.32	0.45
2:C:81:PHE:CZ	2:C:192:SER:HA	2.52	0.44
2:F:71:ASN:CG	2:F:89:THR:HG22	2.36	0.44
1:A:127:MET:SD	1:B:154:ARG:HD2	2.57	0.44
1:A:262:ARG:NH2	1:B:39:ASN:HD21	2.15	0.44
1:A:56:PHE:CD1	1:A:56:PHE:C	2.91	0.44
2:D:52:ASN:O	2:D:55:PHE:HB3	2.17	0.44
2:E:29:ASN:ND2	2:E:30:PRO:N	2.65	0.44
2:E:75:ILE:CD1	2:E:85:ARG:CZ	2.95	0.44
2:F:176:MET:SD	2:F:196:PHE:CE2	3.07	0.44
1:B:95:ALA:O	1:B:98:ASN:N	2.39	0.44
2:E:71:ASN:HB2	2:E:90:THR:HA	1.99	0.44
1:A:222:LEU:CD1	1:A:263:ILE:HG22	2.43	0.44
1:B:231:ALA:O	1:B:234:LEU:HB3	2.17	0.44
2:C:212:ARG:NH1	2:C:212:ARG:HG2	2.33	0.44
2:E:135:THR:HG22	2:E:136:LEU:HD12	2.00	0.44
1:A:132:VAL:CG2	1:A:167:ILE:HG21	2.47	0.44
1:B:63:PHE:O	1:B:64:GLU:C	2.55	0.44
2:C:103:MET:HA	2:C:103:MET:CE	2.47	0.44
2:E:43:ARG:HG2	2:E:45:ILE:HD13	2.00	0.44
1:A:283:LYS:HA	1:A:286:ARG:CZ	2.47	0.44
2:C:71:ASN:O	2:C:87:ARG:HG3	2.17	0.44
2:D:136:LEU:N	2:D:136:LEU:HD12	2.33	0.44
2:F:32:PHE:O	2:F:33:PRO:C	2.55	0.44
1:A:158:ALA:HB1	1:B:131:ILE:HD11	2.00	0.44
2:C:135:THR:HG22	2:C:136:LEU:HD23	2.00	0.44
1:B:300:ARG:HB3	2:E:200:VAL:HG11	1.98	0.44
2:F:52:ASN:O	2:F:55:PHE:N	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:52:LEU:HD23	1:B:52:LEU:HA	1.80	0.44
2:C:205:ASP:CB	2:C:208:GLU:HB2	2.32	0.44
2:D:42:GLY:O	2:D:174:LEU:HD22	2.18	0.44
2:E:107:ILE:HG21	2:E:129:LEU:HD23	1.99	0.44
2:C:190:THR:CG2	2:C:191:GLU:N	2.81	0.44
2:D:48:ASP:OD2	2:D:190:THR:HG22	2.17	0.44
2:F:106:LYS:HE2	2:F:213:LEU:HD21	2.00	0.44
1:A:301:LEU:HD11	2:C:109:CYS:SG	2.58	0.43
1:B:127:MET:HA	1:B:127:MET:HE2	2.00	0.43
1:B:92:SER:O	1:B:98:ASN:HA	2.18	0.43
2:D:111:LEU:HD11	2:D:132:GLU:HG3	1.99	0.43
1:B:300:ARG:HH11	2:E:203:GLY:HA2	1.82	0.43
1:B:325:ASP:HB3	2:F:94:ARG:NH1	2.33	0.43
1:A:8:VAL:C	1:A:10:GLU:H	2.21	0.43
2:C:125:THR:HG22	2:C:186:LYS:HE2	2.00	0.43
2:D:170:ARG:HG3	2:D:173:ARG:NH2	2.33	0.43
2:E:169:ASN:O	2:E:172:ARG:HB3	2.18	0.43
2:D:115:PRO:HG2	2:D:116:GLU:OE1	2.18	0.43
2:F:146:VAL:O	2:F:146:VAL:HG12	2.19	0.43
2:F:31:LEU:HD21	2:F:51:ASP:HB3	2.01	0.43
2:C:26:ALA:HB2	2:C:59:PHE:CD2	2.54	0.43
1:B:313:TRP:O	2:E:102:MET:HG3	2.19	0.43
1:A:89:ARG:HG3	1:A:101:TYR:CZ	2.54	0.43
1:A:198:ARG:HG3	1:A:289:ILE:CG2	2.49	0.43
2:C:43:ARG:HG3	2:C:43:ARG:HH11	1.84	0.43
2:F:44:HIS:HE1	2:F:195:ARG:HD2	1.83	0.43
2:C:212:ARG:NH1	2:C:216:ASP:OD1	2.52	0.43
2:C:212:ARG:HG2	2:C:212:ARG:HH11	1.84	0.43
2:E:204:ASP:OD2	2:E:209:ALA:N	2.50	0.43
1:B:281:VAL:O	1:B:285:ILE:HG13	2.18	0.42
1:A:12:VAL:HG11	1:B:62:ALA:CB	2.45	0.42
1:A:262:ARG:CG	1:B:42:ARG:NH1	2.82	0.42
1:B:29:LEU:HD13	1:B:33:LEU:HD22	2.01	0.42
1:B:300:ARG:HH12	2:E:203:GLY:CA	2.32	0.42
1:A:102:ARG:NH1	1:A:102:ARG:HG2	2.35	0.42
2:C:194:PHE:CD2	2:C:201:ARG:NH2	2.88	0.42
2:E:94:ARG:NH2	2:E:220:MET:SD	2.93	0.42
1:A:182:GLN:HG3	1:A:274:TRP:CE3	2.55	0.42
1:B:237:GLN:HB2	1:B:253:VAL:HG11	2.01	0.42
2:E:130:TYR:HE1	2:E:160:LEU:CD1	2.31	0.42
2:E:31:LEU:CD1	2:E:51:ASP:HB3	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:115:PRO:CD	2:F:207:ARG:NH1	2.82	0.42
1:A:249:VAL:CG1	1:A:249:VAL:O	2.63	0.42
2:F:177:VAL:HG13	2:F:187:PHE:HB2	2.02	0.42
1:A:324:LEU:HD22	2:D:97:LEU:HD13	1.98	0.42
1:B:129:LEU:HD12	1:B:129:LEU:HA	1.85	0.42
2:E:204:ASP:OD2	2:E:209:ALA:HB2	2.20	0.42
2:E:29:ASN:ND2	2:E:30:PRO:HD2	2.35	0.42
2:E:61:GLU:H	2:E:61:GLU:HG2	1.65	0.42
2:F:75:ILE:HD11	2:F:85:ARG:NE	2.32	0.42
1:A:201:ILE:O	1:A:205:GLU:HG3	2.19	0.42
1:B:211:THR:OG1	1:B:274:TRP:CE2	2.73	0.42
1:B:80:ASP:HB2	1:B:83:ARG:HE	1.83	0.42
1:A:185:VAL:HG13	1:A:207:LEU:HB3	2.01	0.42
1:A:240:THR:HG22	1:A:250:ASP:HB2	1.99	0.42
1:A:262:ARG:HG3	1:B:42:ARG:NH1	2.34	0.42
2:F:201:ARG:HD3	2:F:201:ARG:C	2.40	0.42
1:A:228:LYS:O	1:A:231:ALA:HB3	2.19	0.42
1:A:300:ARG:HB3	2:C:200:VAL:CG1	2.43	0.42
1:B:249:VAL:HG12	1:B:249:VAL:O	2.19	0.42
1:A:280:HIS:CD2	2:C:121:GLU:HA	2.55	0.42
2:D:135:THR:HB	2:D:136:LEU:HD12	2.02	0.42
2:F:126:GLN:HB2	2:F:185:SER:HB3	2.00	0.42
2:F:130:TYR:CZ	2:F:161:GLN:HG3	2.55	0.42
2:F:44:HIS:HE1	2:F:195:ARG:CD	2.33	0.42
1:A:182:GLN:HE21	1:A:182:GLN:HB2	1.60	0.41
2:C:220:MET:HA	2:C:220:MET:CE	2.49	0.41
1:A:84:GLN:HB3	1:A:86:LEU:HD21	2.02	0.41
1:B:98:ASN:HD21	2:C:180:MET:HB3	1.85	0.41
2:F:146:VAL:CG2	2:F:160:LEU:HG	2.43	0.41
1:B:130:SER:O	1:B:133:ALA:HB3	2.21	0.41
1:B:78:ILE:O	1:B:82:VAL:HG23	2.20	0.41
2:E:126:GLN:NE2	2:E:165:ARG:HG3	2.35	0.41
2:F:111:LEU:HB3	2:F:124:PHE:CE2	2.56	0.41
1:A:300:ARG:NH1	1:A:300:ARG:HG3	2.35	0.41
1:A:11:LEU:HD21	1:B:33:LEU:HB3	2.01	0.41
2:E:153:SER:OG	2:E:156:ASP:HB2	2.20	0.41
1:B:197:TRP:CE2	1:B:289:ILE:HG12	2.55	0.41
2:C:190:THR:HG22	2:C:191:GLU:H	1.82	0.41
2:C:48:ASP:OD2	2:C:190:THR:HG23	2.19	0.41
2:D:126:GLN:OE1	2:D:184:SER:HB3	2.21	0.41
2:E:127:GLN:NE2	2:E:131:ASP:OD1	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:94:ARG:NH2	2:F:96:VAL:CG2	2.84	0.41
1:A:119:GLU:HB2	1:A:124:ARG:CZ	2.51	0.41
1:B:186:LYS:HG2	1:B:277:TYR:CZ	2.55	0.41
1:B:73:ARG:HA	1:B:76:ASN:HD22	1.85	0.41
2:C:40:ARG:NH1	2:D:40:ARG:CZ	2.84	0.41
2:D:162:GLU:O	2:D:165:ARG:HB2	2.20	0.41
1:B:88:ASN:HA	1:B:88:ASN:HD22	1.57	0.41
2:C:205:ASP:O	2:C:208:GLU:N	2.35	0.41
2:E:154:ASP:HA	2:E:157:ARG:CB	2.49	0.41
1:A:84:GLN:HE21	1:A:84:GLN:HB2	1.71	0.41
2:F:176:MET:HG2	2:F:192:SER:HB2	2.03	0.41
1:A:86:LEU:N	1:A:86:LEU:HD22	2.36	0.41
1:B:306:GLN:HE21	1:B:306:GLN:CA	2.18	0.41
1:B:22:ILE:HA	1:B:84:GLN:HE21	1.86	0.41
1:B:88:ASN:O	1:B:101:TYR:HA	2.21	0.41
2:C:79:GLU:HG3	2:C:194:PHE:CD1	2.56	0.41
1:B:324:LEU:CB	2:F:174:LEU:HD21	2.51	0.41
2:C:183:ASP:CG	2:C:184:SER:H	2.24	0.41
2:C:91:LEU:HD13	2:D:33:PRO:HB2	2.03	0.41
2:E:29:ASN:HD22	2:E:31:LEU:N	2.01	0.41
2:E:75:ILE:HD13	2:E:85:ARG:CZ	2.50	0.41
2:F:36:ASP:OD1	2:F:40:ARG:NE	2.53	0.41
2:F:75:ILE:HG22	2:F:76:ARG:H	1.85	0.41
1:A:196:ASP:O	1:A:197:TRP:C	2.59	0.41
1:A:83:ARG:NH1	1:A:83:ARG:HB2	2.36	0.41
2:D:43:ARG:NH2	2:D:175:GLY:HA2	2.35	0.41
2:E:144:LYS:O	2:E:145:LEU:HG	2.20	0.41
1:A:36:ALA:HB2	1:A:103:LEU:HD21	2.02	0.40
2:F:136:LEU:CD1	2:F:211:ARG:HG3	2.51	0.40
2:F:19:MET:CG	2:F:23:LEU:HD23	2.50	0.40
1:B:198:ARG:O	1:B:201:ILE:HG13	2.21	0.40
2:C:205:ASP:O	2:C:206:PRO:C	2.59	0.40
2:D:167:SER:O	2:D:171:LEU:HG	2.20	0.40
2:E:198:ALA:C	2:E:200:VAL:H	2.25	0.40
1:A:120:PHE:CZ	1:A:177:LEU:HB3	2.56	0.40
1:A:198:ARG:NH1	1:A:198:ARG:HG2	2.36	0.40
2:D:134:LEU:HD23	2:D:142:LEU:HD21	2.01	0.40
2:D:177:VAL:CG1	2:D:187:PHE:HB2	2.51	0.40
2:E:201:ARG:NH1	2:E:201:ARG:CG	2.83	0.40
2:F:190:THR:HG22	2:F:191:GLU:OE2	2.20	0.40
1:A:177:LEU:HA	1:A:177:LEU:HD23	1.89	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:192:LEU:HD23	1:A:192:LEU:HA	1.94	0.40
1:B:87:LEU:HD12	1:B:103:LEU:HA	2.04	0.40
2:C:212:ARG:HG3	2:C:215:ARG:HH21	1.85	0.40
2:D:75:ILE:HD11	2:D:85:ARG:CZ	2.52	0.40
2:E:154:ASP:C	2:E:156:ASP:H	2.25	0.40
2:E:29:ASN:ND2	2:E:29:ASN:C	2.74	0.40
2:F:110:TYR:CB	2:F:210:GLN:HG2	2.52	0.40
1:A:129:LEU:HD23	1:A:129:LEU:HA	1.94	0.40
1:B:251:ARG:HA	1:B:251:ARG:HD3	1.86	0.40
2:E:204:ASP:OD1	2:E:209:ALA:HB2	2.22	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	
1	A	311/440 (71%)	287 (92%)	20 (6%)	4 (1%)	12	37
1	B	319/440 (72%)	282 (88%)	30 (9%)	7 (2%)	6	24
2	C	204/234 (87%)	186 (91%)	15 (7%)	3 (2%)	10	34
2	D	184/234 (79%)	171 (93%)	8 (4%)	5 (3%)	5	19
2	E	197/234 (84%)	176 (89%)	15 (8%)	6 (3%)	4	17
2	F	174/234 (74%)	144 (83%)	26 (15%)	4 (2%)	6	23
All	All	1389/1816 (76%)	1246 (90%)	114 (8%)	29 (2%)	7	26

All (29) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	D	185	SER
1	A	64	GLU

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Mol	Chain	Res	Type
1	A	145	GLU
1	A	292	ASP
1	B	146	GLY
1	B	245	ASP
2	C	153	SER
2	D	139	GLU
2	E	118	LEU
2	F	177	VAL
2	F	206	PRO
1	B	8	VAL
1	B	64	GLU
2	D	144	LYS
2	D	183	ASP
2	E	204	ASP
1	B	66	THR
2	C	118	LEU
2	E	27	LEU
2	E	50	LEU
2	E	144	LYS
1	B	157	TYR
2	D	138	ASP
2	F	182	HIS
2	C	203	GLY
1	A	226	GLY
1	B	70	ILE
2	E	21	VAL
2	F	33	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	
1	A	273/380 (72%)	255 (93%)	18 (7%)	16	44
1	B	278/380 (73%)	254 (91%)	24 (9%)	10	30
2	C	180/207 (87%)	163 (91%)	17 (9%)	8	26

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	D	165/207 (80%)	155 (94%)	10 (6%)	18	48
2	E	175/207 (84%)	163 (93%)	12 (7%)	15	41
2	F	161/207 (78%)	147 (91%)	14 (9%)	10	30
All	All	1232/1588 (78%)	1137 (92%)	95 (8%)	13	35

All (95) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	29	LEU
1	A	32	LEU
1	A	57	ARG
1	A	65	GLN
1	A	76	ASN
1	A	87	LEU
1	A	88	ASN
1	A	103	LEU
1	A	118	ARG
1	A	154	ARG
1	A	163	SER
1	A	169	ASP
1	A	172	ASP
1	A	222	LEU
1	A	243	HIS
1	A	261	ASP
1	A	279	ARG
1	A	301	LEU
1	B	32	LEU
1	B	33	LEU
1	B	43	LEU
1	B	44	ASP
1	B	54	ASP
1	B	69	THR
1	B	79	ASN
1	B	87	LEU
1	B	88	ASN
1	B	106	LEU
1	B	119	GLU
1	B	123	LEU
1	B	125	LEU
1	B	127	MET
1	B	129	LEU

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Mol	Chain	Res	Type
1	B	154	ARG
1	B	176	ARG
1	B	219	GLN
1	B	244	ASP
1	B	248	PHE
1	B	252	LEU
1	B	260	LEU
1	B	261	ASP
1	B	306	GLN
2	C	23	LEU
2	C	27	LEU
2	C	50	LEU
2	C	74	LEU
2	C	94	ARG
2	C	99	GLU
2	C	108	LEU
2	C	126	GLN
2	C	133	LEU
2	C	156	ASP
2	C	160	LEU
2	C	169	ASN
2	C	182	HIS
2	C	191	GLU
2	C	193	VAL
2	C	206	PRO
2	C	211	ARG
2	D	35	LEU
2	D	58	ASP
2	D	88	SER
2	D	90	THR
2	D	95	SER
2	D	129	LEU
2	D	133	LEU
2	D	162	GLU
2	D	180	MET
2	D	183	ASP
2	E	23	LEU
2	E	29	ASN
2	E	35	LEU
2	E	37	SER
2	E	74	LEU
2	E	100	LEU

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Mol	Chain	Res	Type
2	E	118	LEU
2	E	129	LEU
2	E	160	LEU
2	E	170	ARG
2	E	177	VAL
2	E	201	ARG
2	F	20	PRO
2	F	27	LEU
2	F	33	PRO
2	F	35	LEU
2	F	47	LEU
2	F	69	ARG
2	F	89	THR
2	F	91	LEU
2	F	110	TYR
2	F	125	THR
2	F	182	HIS
2	F	191	GLU
2	F	199	ASP
2	F	201	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (43) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	65	GLN
1	A	79	ASN
1	A	153	HIS
1	A	155	ASN
1	A	182	GLN
1	A	184	GLN
1	A	219	GLN
1	A	230	GLN
1	A	257	GLN
1	A	268	GLN
1	A	280	HIS
1	A	282	HIS
1	A	319	ASN
1	B	18	ASN
1	B	39	ASN
1	B	76	ASN
1	B	84	GLN
1	B	88	ASN

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Mol	Chain	Res	Type
1	B	94	GLN
1	B	98	ASN
1	B	219	GLN
1	B	230	GLN
1	B	257	GLN
1	B	269	GLN
1	B	299	GLN
1	B	306	GLN
2	C	44	HIS
2	C	52	ASN
2	C	182	HIS
2	D	25	GLN
2	D	44	HIS
2	D	60	GLN
2	D	210	GLN
2	E	25	GLN
2	E	29	ASN
2	E	52	ASN
2	E	60	GLN
2	E	126	GLN
2	E	127	GLN
2	F	25	GLN
2	F	44	HIS
2	F	126	GLN
2	F	147	ASN

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

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	GLY	D	245	-	1,4,4	0.13	0	0,4,4	0.00	-
3	GLY	D	244	-	1,4,4	0.14	0	0,4,4	0.00	-
3	GLY	A	441	-	1,4,4	0.10	0	0,4,4	0.00	-
3	GLY	D	1	-	1,4,4	0.14	0	0,4,4	0.00	-

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	GLY	D	245	-	-	0/0/2/2	-
3	GLY	D	244	-	-	0/0/2/2	-
3	GLY	A	441	-	-	0/0/2/2	-
3	GLY	D	1	-	-	0/0/2/2	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	315/440 (71%)	-0.22	4 (1%) 77 77	27, 60, 105, 132	0
1	B	321/440 (72%)	-0.05	8 (2%) 57 55	42, 68, 113, 127	0
2	C	206/234 (88%)	-0.26	7 (3%) 45 40	26, 48, 94, 119	0
2	D	188/234 (80%)	-0.18	11 (5%) 22 18	27, 51, 115, 152	0
2	E	201/234 (85%)	-0.15	6 (2%) 50 45	34, 56, 105, 119	0
2	F	182/234 (77%)	0.31	15 (8%) 11 9	40, 94, 143, 153	0
All	All	1413/1816 (77%)	-0.10	51 (3%) 42 37	26, 63, 122, 153	0

All (51) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	68	GLU	6.5
2	D	145	LEU	4.6
2	F	181	GLY	4.5
2	F	182	HIS	4.5
2	C	182	HIS	4.4
2	D	183	ASP	4.3
2	C	183	ASP	4.0
1	A	66	THR	3.9
1	B	242	THR	3.6
2	C	148	ASN	3.5
2	D	182	HIS	3.4
2	F	201	ARG	3.3
2	C	224	ASN	3.2
1	B	44	ASP	3.2
1	B	120	PHE	3.2
1	A	64	GLU	3.1
2	F	141	LYS	3.1
2	F	180	MET	3.0
2	E	155	VAL	2.8

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Mol	Chain	Res	Type	RSRZ
2	F	130	TYR	2.8
2	C	184	SER	2.8
2	F	145	LEU	2.8
1	B	7	THR	2.7
1	B	146	GLY	2.7
2	F	183	ASP	2.6
2	D	158	GLN	2.6
1	B	11	LEU	2.6
2	D	157	ARG	2.6
1	B	247	HIS	2.5
2	F	208	GLU	2.4
2	E	18	VAL	2.4
2	C	149	ARG	2.4
2	F	215	ARG	2.4
1	A	67	SER	2.4
2	D	216	ASP	2.3
2	E	144	LYS	2.3
2	E	184	SER	2.3
2	D	144	LYS	2.2
1	B	244	ASP	2.2
2	E	152	GLY	2.2
2	F	160	LEU	2.2
2	D	180	MET	2.2
2	D	138	ASP	2.2
2	E	151	THR	2.1
2	D	118	LEU	2.1
2	D	162	GLU	2.1
2	C	150	SER	2.1
2	F	50	LEU	2.1
2	F	207	ARG	2.1
2	F	203	GLY	2.1
2	F	212	ARG	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
3	GLY	D	244	5/5	0.77	0.30	78,80,80,80	0
3	GLY	D	245	5/5	0.93	0.21	83,84,84,85	0
3	GLY	A	441	5/5	0.93	0.17	76,78,78,79	0
3	GLY	D	1	5/5	0.93	0.24	73,74,74,75	0

6.5 Other polymers [i](#)

There are no such residues in this entry.