



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 8, 2023 – 06:12 AM EDT

PDB ID : 1OTU
Title : Structure of the Escherichia coli ClC Chloride channel E148Q mutant and Fab Complex
Authors : Dutzler, R.; Campbell, E.B.; MacKinnon, R.
Deposited on : 2003-03-23
Resolution : 3.30 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Xtriage (Phenix) : 1.13
EDS : 2.35
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) : 2.35

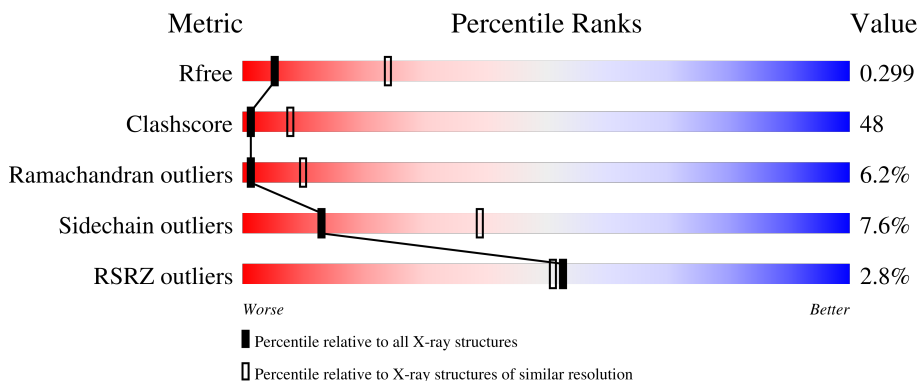
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.30 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1149 (3.34-3.26)
Clashscore	141614	1205 (3.34-3.26)
Ramachandran outliers	138981	1183 (3.34-3.26)
Sidechain outliers	138945	1182 (3.34-3.26)
RSRZ outliers	127900	1115 (3.34-3.26)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	465	 4% 30% 57% 8% 5%
1	B	465	 3% 29% 57% 7% 5%
2	C	222	 39% 50% 10%
2	E	222	 % 44% 45% 10%
3	D	211	 3% 45% 49% 6%

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Mol	Chain	Length	Quality of chain
3	F	211	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	CL	A	467	-	-	X	-
4	CL	B	466	-	-	X	-
4	CL	B	467	-	-	X	-

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 13229 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 Voltage-gated ClC-type chloride channel eriC.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	444	3333	2190	561	562	20	0	0	0
1	B	441	3304	2174	554	556	20	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	148	GLN	GLU	engineered mutation	UNP P37019
B	148	GLN	GLU	engineered mutation	UNP P37019

- Molecule 2 is a protein called Fab fragment (Heavy chain).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	C	221	1672	1077	274	315	6	0	0	0
2	E	221	1672	1077	274	315	6	0	0	0

- Molecule 3 is a protein called Fab fragment (Light chain).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	D	211	1621	1008	271	334	8	0	0	0
3	F	211	1621	1008	271	334	8	0	0	0

- Molecule 4 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	3	Total Cl 3 3	0	0

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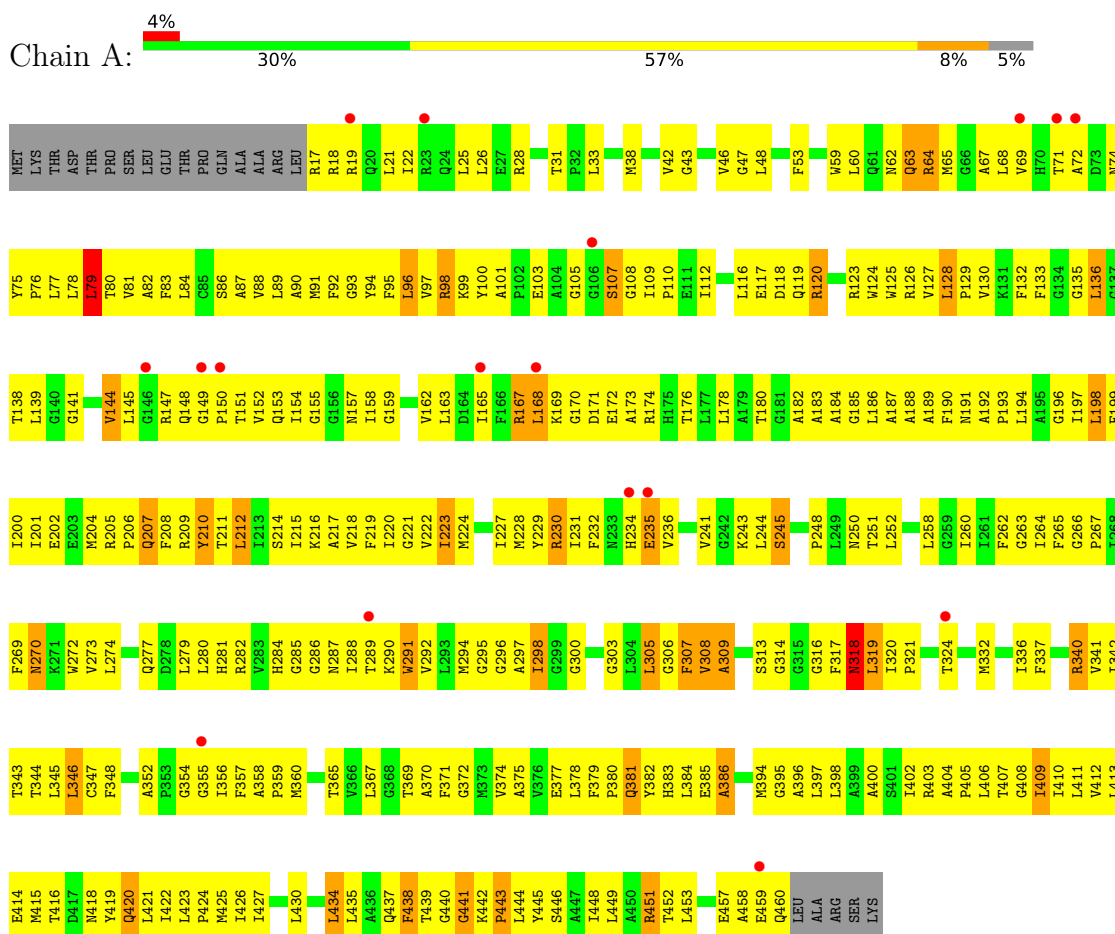
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	B	3	Total 3	Cl 3	0	0

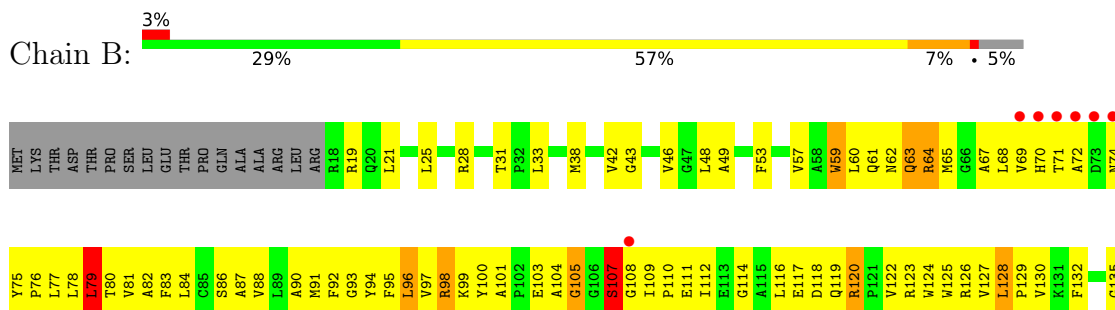
3 Residue-property plots i

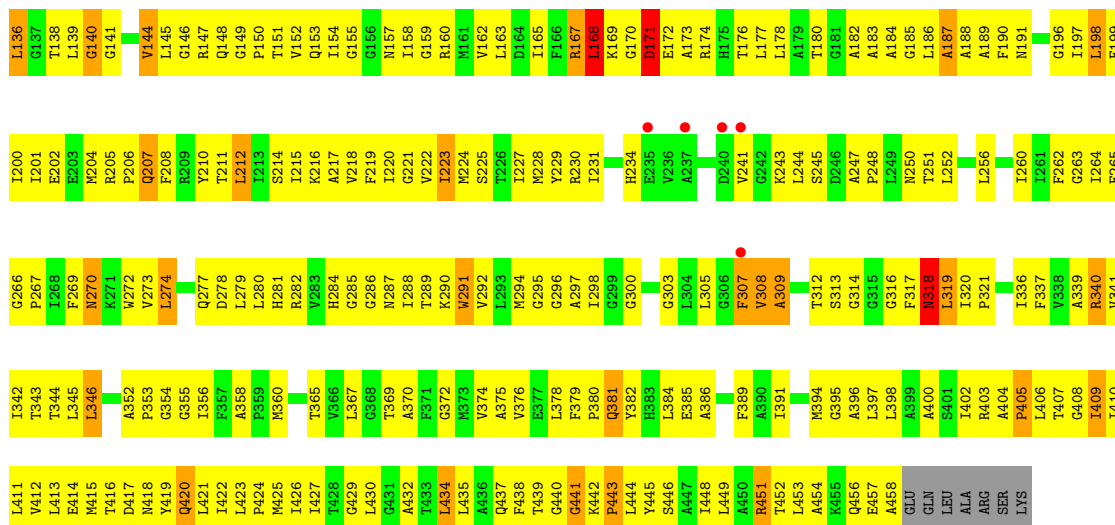
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: Voltage-gated ClC-type chloride channel eriC

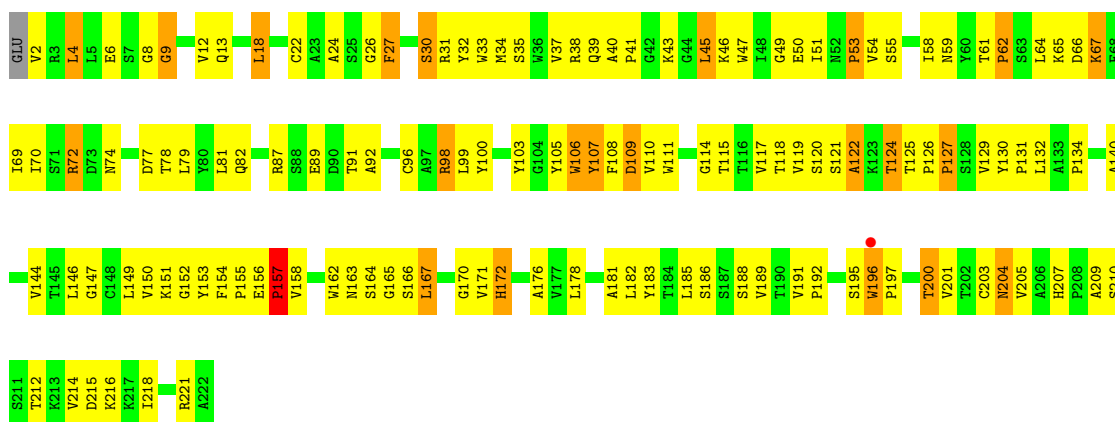


- Molecule 1: Voltage-gated ClC-type chloride channel eriC

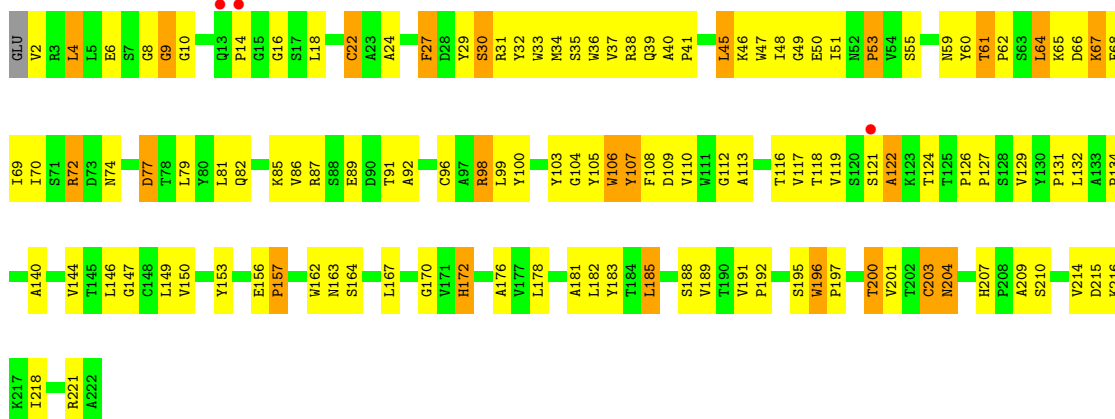




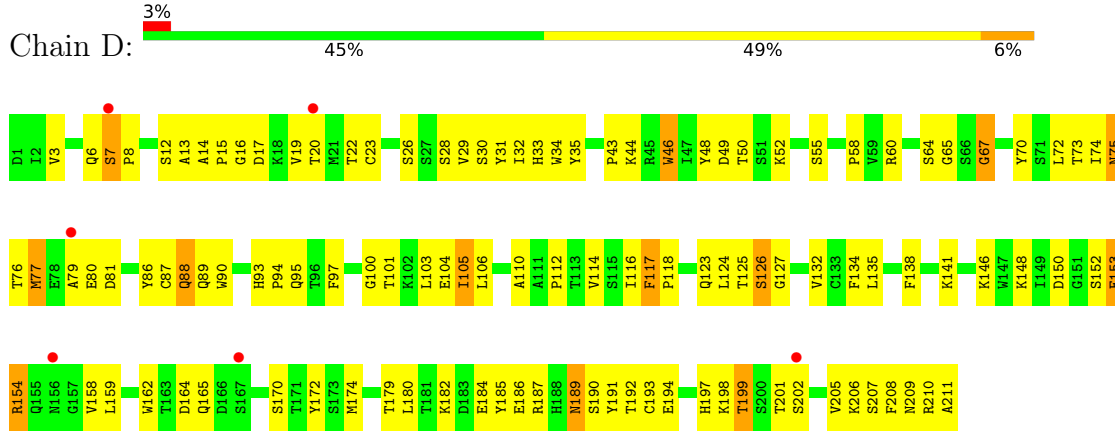
• Molecule 2: Fab fragment (Heavy chain)



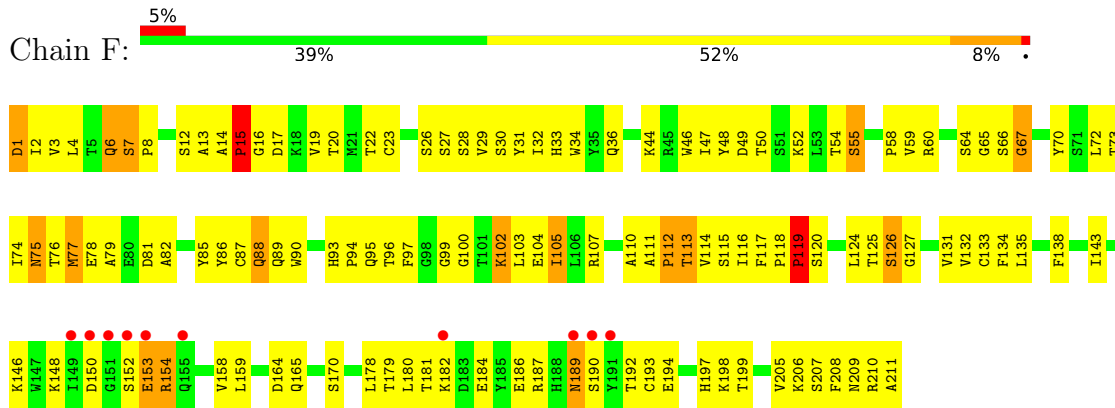
• Molecule 2: Fab fragment (Heavy chain)



• Molecule 3: Fab fragment (Light chain)



• Molecule 3: Fab fragment (Light chain)



4 Data and refinement statistics i

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	232.11Å 96.09Å 170.28Å 90.00° 131.39° 90.00°	Depositor
Resolution (Å)	24.85 – 3.30 33.89 – 3.30	Depositor EDS
% Data completeness (in resolution range)	97.0 (24.85-3.30) 97.0 (33.89-3.30)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.59 (at 3.32Å)	Xtrriage
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.294 , 0.325 0.270 , 0.299	Depositor DCC
R_{free} test set	2006 reflections (4.86%)	wwPDB-VP
Wilson B-factor (Å ²)	95.6	Xtrriage
Anisotropy	0.520	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.26 , 36.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	0.013 for h,-k,-h-l	Xtrriage
F_o, F_c correlation	0.89	EDS
Total number of atoms	13229	wwPDB-VP
Average B, all atoms (Å ²)	79.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.19% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: CL

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	0.48	0/3405	0.67	0/4621
1	B	0.51	0/3376	0.70	2/4583 (0.0%)
2	C	0.54	0/1721	0.74	0/2355
2	E	0.57	0/1721	0.77	0/2355
3	D	0.44	0/1660	0.67	0/2257
3	F	0.51	0/1660	0.71	0/2257
All	All	0.51	0/13543	0.71	2/18428 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	171	ASP	CB-CG-OD1	-7.83	111.25	118.30
1	B	168	LEU	N-CA-C	-5.62	95.81	111.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3333	0	3486	418	1
1	B	3304	0	3459	419	0
2	C	1672	0	1654	146	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	E	1672	0	1654	130	0
3	D	1621	0	1546	115	1
3	F	1621	0	1546	145	0
4	A	3	0	0	3	0
4	B	3	0	0	5	0
All	All	13229	0	13345	1284	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 48.

All (1284) 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)
3:D:16:GLY:HA2	3:D:76:THR:HG23	1.26	1.16
1:B:144:VAL:HG21	1:B:343:THR:HB	1.28	1.12
1:A:381:GLN:HE21	1:A:381:GLN:N	1.49	1.09
1:A:144:VAL:HG21	1:A:343:THR:HB	1.25	1.08
1:A:381:GLN:H	1:A:381:GLN:NE2	1.52	1.07
1:A:223:ILE:HD11	1:B:426:ILE:HG22	1.38	1.04
1:B:381:GLN:HE21	1:B:381:GLN:N	1.56	1.03
3:F:194:GLU:HG2	3:F:205:VAL:HG12	1.41	1.02
1:A:220:ILE:HG12	1:B:430:LEU:HD21	1.42	1.00
1:B:120:ARG:HB3	1:B:120:ARG:HH11	1.27	0.99
3:F:16:GLY:HA2	3:F:76:THR:HG23	1.38	0.99
1:B:381:GLN:H	1:B:381:GLN:NE2	1.60	0.99
3:D:194:GLU:HG2	3:D:205:VAL:HG12	1.47	0.96
3:F:192:THR:HA	3:F:207:SER:HB3	1.45	0.95
3:D:192:THR:HA	3:D:207:SER:HB3	1.47	0.95
2:C:45:LEU:HD12	2:C:45:LEU:H	1.33	0.94
3:F:7:SER:HB3	3:F:8:PRO:HD3	1.45	0.94
1:B:108:GLY:CA	1:B:153:GLN:NE2	2.32	0.93
2:E:45:LEU:HD12	2:E:45:LEU:H	1.31	0.92
1:A:180:THR:HG22	1:A:218:VAL:HA	1.53	0.91
3:D:7:SER:HB3	3:D:8:PRO:HD3	1.53	0.90
1:B:198:LEU:HD12	1:B:406:LEU:HG	1.53	0.89
1:B:274:LEU:O	1:B:277:GLN:HG2	1.73	0.89
1:A:430:LEU:HD21	1:B:220:ILE:HG12	1.54	0.89
3:F:110:ALA:O	3:F:138:PHE:HA	1.71	0.89
1:B:101:ALA:HB3	1:B:130:VAL:HG11	1.54	0.89
1:A:17:ARG:HH21	1:B:119:GLN:NE2	1.72	0.88
1:A:108:GLY:CA	1:A:153:GLN:NE2	2.37	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:75:TYR:HB3	1:B:76:PRO:HD3	1.53	0.88
2:C:172:HIS:HB2	2:C:188:SER:HB3	1.56	0.88
1:A:120:ARG:HH11	1:A:120:ARG:HB3	1.38	0.87
2:C:12:VAL:HG23	2:C:119:VAL:HG22	1.57	0.87
1:A:108:GLY:HA3	1:A:153:GLN:NE2	1.90	0.87
1:A:274:LEU:O	1:A:277:GLN:HG2	1.74	0.86
1:A:108:GLY:CA	1:A:153:GLN:HE21	1.87	0.86
3:F:2:ILE:HD11	3:F:27:SER:HB2	1.56	0.86
1:B:451:ARG:HB3	1:B:451:ARG:HH11	1.41	0.86
1:B:186:LEU:HD23	1:B:196:GLY:HA2	1.56	0.86
1:A:422:ILE:HA	1:A:425:MET:HE3	1.58	0.86
2:C:127:PRO:HB3	2:C:153:TYR:HB3	1.55	0.85
2:E:127:PRO:HB3	2:E:153:TYR:HB3	1.56	0.85
1:B:120:ARG:HB3	1:B:120:ARG:NH1	1.92	0.84
2:E:107:TYR:HB3	3:F:33:HIS:CD2	2.11	0.84
1:B:260:ILE:HG23	1:B:435:LEU:HG	1.60	0.84
3:D:189:ASN:HD21	3:D:211:ALA:H	1.26	0.84
1:A:75:TYR:HB3	1:A:76:PRO:HD3	1.59	0.84
1:A:403:ARG:HH22	1:A:437:GLN:HB2	1.40	0.83
3:F:82:ALA:HB2	3:F:105:ILE:HD11	1.60	0.83
1:A:124:TRP:HA	1:A:157:ASN:HD22	1.43	0.83
3:D:95:GLN:OE1	3:D:95:GLN:N	2.11	0.83
1:B:108:GLY:HA2	1:B:153:GLN:NE2	1.91	0.82
1:A:320:ILE:HG23	1:A:365:THR:HG21	1.61	0.82
1:A:458:ALA:N	1:A:460:GLN:HE22	1.76	0.82
1:B:250:ASN:HD22	2:E:105:TYR:HE1	1.28	0.82
1:B:124:TRP:HA	1:B:157:ASN:HD22	1.44	0.81
1:A:101:ALA:HB3	1:A:130:VAL:HG11	1.61	0.81
1:A:223:ILE:HD11	1:B:426:ILE:CG2	2.10	0.81
1:A:451:ARG:HH11	1:A:451:ARG:HB3	1.46	0.81
1:A:198:LEU:HD11	1:B:198:LEU:HD21	1.63	0.80
1:A:108:GLY:HA3	1:A:153:GLN:HE21	1.45	0.80
1:B:287:ASN:HD22	1:B:290:LYS:H	1.29	0.80
2:C:207:HIS:HE1	2:C:209:ALA:HB3	1.47	0.80
1:A:426:ILE:HG22	1:B:223:ILE:HD11	1.62	0.79
1:B:320:ILE:HG23	1:B:365:THR:HG21	1.64	0.79
1:A:198:LEU:HD12	1:A:406:LEU:HG	1.62	0.79
1:A:120:ARG:HB3	1:A:120:ARG:NH1	1.98	0.79
2:E:207:HIS:CE1	2:E:209:ALA:HB3	2.18	0.79
1:B:108:GLY:CA	1:B:153:GLN:HE21	1.96	0.79
3:F:14:ALA:O	3:F:17:ASP:HB2	1.83	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:397:LEU:HD13	1:A:397:LEU:O	1.83	0.79
1:B:421:LEU:O	1:B:424:PRO:HD2	1.83	0.79
3:F:189:ASN:HD21	3:F:211:ALA:H	1.29	0.79
1:B:171:ASP:HB3	1:B:212:LEU:HD22	1.65	0.78
2:E:207:HIS:HE1	2:E:209:ALA:HB3	1.47	0.78
1:B:287:ASN:HD22	1:B:290:LYS:N	1.81	0.78
1:A:144:VAL:HG21	1:A:343:THR:CB	2.13	0.78
1:A:186:LEU:HD23	1:A:196:GLY:HA2	1.64	0.78
1:B:180:THR:HG22	1:B:218:VAL:HA	1.64	0.78
2:C:207:HIS:CE1	2:C:209:ALA:HB3	2.18	0.78
1:A:444:LEU:O	1:A:444:LEU:HD13	1.83	0.78
1:B:120:ARG:HH11	1:B:120:ARG:CB	1.98	0.77
3:D:14:ALA:O	3:D:17:ASP:HB2	1.84	0.77
1:B:163:LEU:HD12	1:B:168:LEU:HD12	1.65	0.77
2:C:45:LEU:HD11	3:D:86:TYR:CD1	2.20	0.77
1:B:59:TRP:CE3	1:B:60:LEU:HD23	2.19	0.76
1:B:144:VAL:HG21	1:B:343:THR:CB	2.13	0.76
2:C:2:VAL:HA	2:C:26:GLY:HA3	1.66	0.76
2:E:91:THR:OG1	2:E:119:VAL:HG23	1.84	0.76
2:C:107:TYR:HB3	3:D:33:HIS:CD2	2.20	0.76
1:A:395:GLY:O	1:A:398:LEU:HB2	1.86	0.76
1:B:119:GLN:HB3	1:B:453:LEU:HD11	1.68	0.76
1:A:98:ARG:HD3	1:A:291:TRP:CE3	2.20	0.76
1:A:119:GLN:HB3	1:A:453:LEU:HD11	1.66	0.75
1:A:159:GLY:O	1:A:162:VAL:HG22	1.85	0.75
3:F:95:GLN:N	3:F:95:GLN:OE1	2.18	0.75
1:A:260:ILE:HG23	1:A:435:LEU:HG	1.68	0.75
3:F:111:ALA:N	3:F:199:THR:HG21	2.02	0.75
2:C:51:ILE:HD11	2:C:55:SER:HB3	1.67	0.75
1:B:38:MET:HG3	1:B:168:LEU:HD21	1.69	0.75
1:B:279:LEU:O	1:B:279:LEU:HD23	1.87	0.75
2:C:124:THR:HG22	2:C:125:THR:N	2.00	0.74
3:D:150:ASP:HA	3:D:190:SER:HB3	1.69	0.74
1:B:98:ARG:HD3	1:B:291:TRP:CE3	2.23	0.74
2:C:132:LEU:HB2	2:C:147:GLY:O	1.88	0.74
3:F:150:ASP:HA	3:F:190:SER:HB3	1.69	0.74
1:B:68:LEU:HD21	1:B:82:ALA:HB2	1.69	0.73
2:E:172:HIS:HB2	2:E:188:SER:HB3	1.69	0.73
3:F:7:SER:HB3	3:F:8:PRO:CD	2.17	0.73
3:D:148:LYS:HB2	3:D:192:THR:OG1	1.89	0.73
1:A:53:PHE:HE2	1:A:147:ARG:HB2	1.51	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:227:ILE:O	1:B:231:ILE:HG12	1.89	0.73
3:F:1:ASP:HB3	3:F:94:PRO:HD2	1.69	0.73
3:F:179:THR:O	3:F:180:LEU:HD23	1.89	0.73
1:B:397:LEU:HD13	1:B:397:LEU:O	1.88	0.73
2:E:45:LEU:HD11	3:F:86:TYR:CD1	2.24	0.72
2:E:41:PRO:HD3	2:E:92:ALA:HA	1.70	0.72
1:A:430:LEU:HD22	1:B:223:ILE:HD12	1.70	0.72
2:C:72:ARG:NH1	2:C:74:ASN:OD1	2.22	0.72
3:D:65:GLY:HA3	3:D:70:TYR:HA	1.71	0.72
3:F:77:MET:SD	3:F:103:LEU:HD21	2.29	0.72
1:B:48:LEU:H	1:B:48:LEU:HD22	1.55	0.72
2:E:18:LEU:HD23	2:E:18:LEU:H	1.55	0.71
3:F:192:THR:CA	3:F:207:SER:HB3	2.20	0.71
1:A:163:LEU:HD12	1:A:168:LEU:HD12	1.72	0.71
2:C:124:THR:HG22	2:C:125:THR:H	1.55	0.71
1:A:212:LEU:N	1:A:212:LEU:HD12	2.05	0.71
1:B:403:ARG:HH22	1:B:437:GLN:HB2	1.55	0.71
3:D:182:LYS:HG2	3:D:186:GLU:OE1	1.90	0.71
2:C:41:PRO:HD3	2:C:92:ALA:HA	1.71	0.71
1:A:19:ARG:HH22	1:B:457:GLU:CD	1.93	0.71
1:A:59:TRP:CE3	1:A:60:LEU:HD23	2.26	0.71
2:E:24:ALA:HB1	2:E:27:PHE:HE1	1.55	0.71
1:B:149:GLY:HA3	4:B:467:CL:CL	2.28	0.70
2:E:126:PRO:HB3	2:E:210:SER:OG	1.92	0.70
1:B:116:LEU:HD23	1:B:178:LEU:HD23	1.73	0.70
1:B:171:ASP:CB	1:B:212:LEU:HD22	2.21	0.70
3:F:111:ALA:HB2	3:F:199:THR:HB	1.74	0.70
3:F:22:THR:HG22	3:F:23:CYS:N	2.06	0.70
1:A:18:ARG:HH21	1:B:456:GLN:NE2	1.90	0.70
1:A:198:LEU:HD21	1:B:198:LEU:HD11	1.74	0.70
3:D:192:THR:CA	3:D:207:SER:HB3	2.22	0.70
3:F:7:SER:CB	3:F:8:PRO:HD3	2.21	0.70
1:A:48:LEU:H	1:A:48:LEU:HD22	1.57	0.70
1:A:148:GLN:HG3	1:A:190:PHE:CZ	2.27	0.69
1:B:65:MET:C	1:B:67:ALA:H	1.96	0.69
1:B:94:TYR:O	1:B:98:ARG:HG2	1.92	0.69
1:B:284:HIS:HA	1:B:290:LYS:HB3	1.74	0.69
2:C:192:PRO:O	2:C:195:SER:HB3	1.92	0.69
3:F:148:LYS:HA	3:F:152:SER:O	1.93	0.69
1:A:116:LEU:HD23	1:A:178:LEU:HD23	1.74	0.69
2:E:134:PRO:O	2:E:221:ARG:HG3	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:120:ARG:HH11	1:A:120:ARG:CB	2.04	0.69
2:C:185:LEU:O	2:C:185:LEU:HD12	1.93	0.69
3:F:65:GLY:HA3	3:F:70:TYR:HA	1.75	0.69
3:F:88:GLN:HB2	3:F:97:PHE:CD1	2.27	0.69
1:A:65:MET:C	1:A:67:ALA:H	1.94	0.69
1:B:108:GLY:HA3	1:B:153:GLN:NE2	2.06	0.69
1:B:305:LEU:HA	1:B:308:VAL:HG22	1.74	0.69
1:A:171:ASP:CB	1:A:212:LEU:HD22	2.23	0.69
1:A:284:HIS:HA	1:A:290:LYS:HB3	1.74	0.69
1:A:182:ALA:HB1	1:A:204:MET:HE2	1.74	0.68
1:A:287:ASN:HD22	1:A:290:LYS:N	1.91	0.68
1:B:212:LEU:HD12	1:B:212:LEU:N	2.08	0.68
3:F:30:SER:HA	3:F:70:TYR:OH	1.94	0.68
1:A:18:ARG:HH21	1:B:456:GLN:HE21	1.41	0.68
1:A:68:LEU:HD21	1:A:82:ALA:HB2	1.76	0.68
1:A:305:LEU:HA	1:A:308:VAL:HG22	1.76	0.68
2:C:189:VAL:HG13	2:C:189:VAL:O	1.94	0.68
2:E:39:GLN:O	2:E:92:ALA:HB1	1.93	0.68
2:E:49:GLY:HA3	2:E:70:ILE:CD1	2.23	0.68
1:B:337:PHE:O	1:B:341:VAL:HG23	1.93	0.68
3:D:30:SER:HA	3:D:70:TYR:OH	1.94	0.68
1:A:210:TYR:H	1:B:210:TYR:HB2	1.59	0.67
1:B:59:TRP:HE3	1:B:60:LEU:HD23	1.59	0.67
2:C:126:PRO:HB3	2:C:210:SER:OG	1.94	0.67
1:A:216:LYS:HD3	1:B:434:LEU:CD2	2.24	0.67
2:E:132:LEU:HB2	2:E:147:GLY:O	1.95	0.67
3:F:148:LYS:HB2	3:F:192:THR:OG1	1.93	0.67
1:B:187:ALA:O	1:B:189:ALA:N	2.26	0.67
1:A:220:ILE:CG1	1:B:430:LEU:HD21	2.23	0.67
1:B:103:GLU:OE1	1:B:123:ARG:HB2	1.93	0.67
2:E:45:LEU:HD12	2:E:45:LEU:N	2.08	0.67
1:A:274:LEU:HD12	1:A:277:GLN:NE2	2.09	0.67
1:B:198:LEU:CD1	1:B:406:LEU:HG	2.25	0.67
1:B:305:LEU:HA	1:B:308:VAL:CG2	2.25	0.67
3:F:111:ALA:HB2	3:F:199:THR:CB	2.25	0.67
1:A:298:ILE:CG2	1:A:346:LEU:HG	2.25	0.66
1:B:298:ILE:HG21	1:B:346:LEU:HG	1.77	0.66
1:A:96:LEU:O	1:A:130:VAL:HG13	1.94	0.66
1:A:139:LEU:HD13	1:A:147:ARG:HB3	1.78	0.66
2:C:45:LEU:HD12	2:C:45:LEU:N	2.09	0.66
2:E:204:ASN:HB3	2:E:215:ASP:OD1	1.95	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:18:ARG:NH1	1:B:457:GLU:HB3	2.09	0.66
1:B:374:VAL:HG12	1:B:378:LEU:CD1	2.25	0.66
1:A:305:LEU:HA	1:A:308:VAL:CG2	2.25	0.66
3:F:116:ILE:HD13	3:F:193:CYS:HB2	1.78	0.66
1:A:123:ARG:HA	1:A:125:TRP:CH2	2.30	0.66
1:A:287:ASN:HD22	1:A:290:LYS:H	1.42	0.66
3:D:114:VAL:HG22	3:D:135:LEU:CD2	2.25	0.66
1:A:298:ILE:HG21	1:A:346:LEU:HG	1.78	0.66
1:B:287:ASN:ND2	1:B:290:LYS:H	1.94	0.66
2:C:35:SER:HB2	2:C:49:GLY:O	1.96	0.66
1:B:72:ALA:HA	1:B:78:LEU:HD21	1.79	0.65
3:D:7:SER:HB3	3:D:8:PRO:CD	2.26	0.65
3:D:210:ARG:HG2	3:D:210:ARG:HH11	1.62	0.65
3:F:194:GLU:CG	3:F:205:VAL:HG12	2.23	0.65
1:A:78:LEU:HD13	1:A:307:PHE:CZ	2.32	0.65
1:B:53:PHE:HE2	1:B:147:ARG:HB2	1.62	0.65
1:B:182:ALA:HB1	1:B:204:MET:HE2	1.79	0.65
2:C:149:LEU:HD12	2:C:150:VAL:N	2.11	0.65
2:E:189:VAL:HG13	2:E:189:VAL:O	1.96	0.65
1:A:17:ARG:HD2	1:A:17:ARG:O	1.97	0.65
1:A:403:ARG:HH22	1:A:437:GLN:CB	2.10	0.65
2:E:72:ARG:NH1	2:E:74:ASN:OD1	2.29	0.65
1:A:18:ARG:NH2	1:B:456:GLN:HE21	1.94	0.65
2:C:196:TRP:HB3	2:C:197:PRO:HD3	1.79	0.65
1:A:103:GLU:OE1	1:A:123:ARG:HB2	1.97	0.65
1:A:200:ILE:HD12	1:A:204:MET:HG3	1.78	0.64
1:A:281:HIS:HA	1:A:284:HIS:CE1	2.32	0.64
1:B:298:ILE:CG2	1:B:346:LEU:HG	2.28	0.64
1:A:274:LEU:HD12	1:A:277:GLN:HE21	1.62	0.64
2:E:192:PRO:O	2:E:195:SER:HB3	1.98	0.64
1:A:180:THR:HG22	1:A:218:VAL:CA	2.25	0.64
1:A:200:ILE:HG22	1:A:201:ILE:HG23	1.79	0.64
1:A:212:LEU:HD12	1:A:212:LEU:H	1.62	0.64
1:B:318:ASN:HD22	1:B:319:LEU:H	1.46	0.64
1:B:207:GLN:HB3	1:B:208:PHE:CE1	2.33	0.64
1:B:423:LEU:O	1:B:427:ILE:HG13	1.98	0.64
1:A:421:LEU:O	1:A:425:MET:HG3	1.97	0.64
1:A:426:ILE:CG2	1:B:223:ILE:HD11	2.28	0.64
3:F:192:THR:HA	3:F:207:SER:CB	2.26	0.64
1:B:38:MET:HG3	1:B:168:LEU:CD2	2.28	0.64
1:B:266:GLY:HA3	1:B:400:ALA:HB1	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:129:VAL:HG21	2:E:214:VAL:CG2	2.28	0.64
2:C:129:VAL:HG21	2:C:214:VAL:CG2	2.27	0.63
3:D:194:GLU:CG	3:D:205:VAL:HG12	2.27	0.63
2:E:51:ILE:CD1	2:E:72:ARG:HD2	2.28	0.63
2:C:178:LEU:HB2	2:C:183:TYR:CE2	2.32	0.63
1:B:94:TYR:CZ	1:B:352:ALA:HB2	2.33	0.63
1:B:281:HIS:HA	1:B:284:HIS:CE1	2.33	0.63
1:A:135:GLY:HA2	1:A:138:THR:OG1	1.99	0.63
1:B:108:GLY:HA2	1:B:153:GLN:HE22	1.62	0.63
1:B:267:PRO:O	1:B:270:ASN:HB2	1.99	0.63
1:A:279:LEU:HD23	1:A:279:LEU:O	1.97	0.63
2:C:91:THR:HG23	2:C:118:THR:HA	1.79	0.63
1:A:403:ARG:NH2	1:A:437:GLN:HB2	2.13	0.63
1:A:180:THR:CG2	1:A:218:VAL:HA	2.27	0.63
1:A:266:GLY:HA3	1:A:400:ALA:HB1	1.80	0.63
1:A:320:ILE:HB	1:A:321:PRO:HD3	1.79	0.63
1:B:408:GLY:O	1:B:411:LEU:N	2.32	0.63
3:D:13:ALA:HB3	3:D:77:MET:CE	2.29	0.63
2:E:6:GLU:HA	2:E:22:CYS:HA	1.79	0.63
1:A:320:ILE:HG21	1:A:394:MET:CE	2.29	0.63
1:B:320:ILE:HB	1:B:321:PRO:HD3	1.81	0.63
3:D:148:LYS:HA	3:D:152:SER:O	1.98	0.63
2:E:51:ILE:HD11	2:E:55:SER:HB3	1.81	0.63
1:A:84:LEU:O	1:A:88:VAL:HG23	1.98	0.62
1:A:163:LEU:HD13	1:A:173:ALA:O	1.98	0.62
1:A:398:LEU:O	1:A:402:ILE:HG22	1.98	0.62
1:B:243:LYS:HE2	1:B:420:GLN:OE1	1.99	0.62
1:A:78:LEU:O	1:A:80:THR:N	2.31	0.62
1:A:53:PHE:CD1	1:A:136:LEU:CD1	2.82	0.62
1:A:108:GLY:HA2	1:A:153:GLN:NE2	2.13	0.62
1:B:211:THR:HG22	1:B:212:LEU:H	1.63	0.62
3:D:29:VAL:CG2	3:D:32:ILE:HD11	2.29	0.62
2:E:38:ARG:HH21	2:E:46:LYS:HZ2	1.47	0.62
1:A:163:LEU:HD12	1:A:168:LEU:CD1	2.29	0.62
1:A:94:TYR:O	1:A:98:ARG:HG2	1.99	0.62
1:A:168:LEU:HD12	1:A:168:LEU:O	1.98	0.62
1:A:124:TRP:HA	1:A:157:ASN:ND2	2.15	0.62
1:B:370:ALA:O	1:B:374:VAL:HG23	2.00	0.62
1:A:28:ARG:HD2	1:B:207:GLN:HG2	1.80	0.62
1:A:112:ILE:HG13	1:A:153:GLN:HA	1.82	0.62
1:B:117:GLU:HG2	1:B:206:PRO:HB3	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:159:GLY:O	1:B:162:VAL:HG22	1.99	0.62
1:A:46:VAL:HG11	1:A:185:GLY:N	2.15	0.62
1:A:86:SER:OG	1:A:303:GLY:HA3	1.99	0.62
1:A:423:LEU:HB3	1:A:424:PRO:HD3	1.82	0.62
1:B:19:ARG:HG2	1:B:19:ARG:HH11	1.65	0.62
3:F:197:HIS:ND1	3:F:198:LYS:N	2.48	0.62
1:B:163:LEU:HD12	1:B:168:LEU:CD1	2.30	0.61
1:B:90:ALA:HB3	1:B:296:GLY:HA2	1.80	0.61
1:B:320:ILE:HG21	1:B:394:MET:CE	2.30	0.61
1:B:457:GLU:O	1:B:458:ALA:HB3	2.00	0.61
1:A:219:PHE:HZ	1:B:406:LEU:HD13	1.64	0.61
2:C:6:GLU:HA	2:C:22:CYS:HA	1.81	0.61
3:D:22:THR:HG22	3:D:23:CYS:N	2.15	0.61
2:E:91:THR:HG23	2:E:118:THR:HA	1.81	0.61
3:F:134:PHE:O	3:F:135:LEU:HD23	2.00	0.61
1:A:72:ALA:HA	1:A:78:LEU:HD21	1.80	0.61
1:A:216:LYS:HD3	1:B:434:LEU:HD22	1.82	0.61
3:D:192:THR:HA	3:D:207:SER:CB	2.26	0.61
1:A:117:GLU:HG2	1:A:206:PRO:HB3	1.82	0.61
1:A:198:LEU:CD1	1:A:406:LEU:HG	2.29	0.61
1:B:124:TRP:HA	1:B:157:ASN:ND2	2.15	0.61
2:E:30:SER:C	2:E:32:TYR:H	2.02	0.61
1:B:451:ARG:HH11	1:B:451:ARG:CB	2.12	0.61
1:A:423:LEU:O	1:A:427:ILE:HG13	2.01	0.61
1:B:86:SER:OG	1:B:303:GLY:HA3	2.00	0.61
2:E:2:VAL:HG23	2:E:2:VAL:O	2.01	0.61
1:B:109:ILE:HD12	1:B:445:TYR:HE2	1.65	0.61
1:B:144:VAL:HG12	1:B:144:VAL:O	2.01	0.61
2:E:127:PRO:HB3	2:E:153:TYR:CB	2.30	0.61
3:F:15:PRO:HD3	3:F:105:ILE:HG22	1.82	0.61
1:A:38:MET:HG3	1:A:168:LEU:CD2	2.31	0.60
1:A:182:ALA:HB3	1:A:200:ILE:HD11	1.83	0.60
1:B:163:LEU:HD13	1:B:173:ALA:O	2.01	0.60
1:B:403:ARG:HH22	1:B:437:GLN:CB	2.14	0.60
1:B:421:LEU:C	1:B:424:PRO:HD2	2.21	0.60
3:D:7:SER:CB	3:D:8:PRO:HD3	2.31	0.60
1:A:171:ASP:HB2	1:A:212:LEU:HD22	1.82	0.60
1:A:287:ASN:ND2	1:A:290:LYS:H	1.99	0.60
1:B:96:LEU:O	1:B:130:VAL:HG13	2.02	0.60
1:B:395:GLY:O	1:B:398:LEU:HB2	2.02	0.60
2:C:12:VAL:CG2	2:C:119:VAL:HG22	2.29	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:30:SER:C	2:C:32:TYR:H	2.04	0.60
1:A:269:PHE:O	1:A:273:VAL:HG12	2.02	0.60
1:A:199:PHE:HA	1:A:407:THR:OG1	2.02	0.60
3:F:182:LYS:HG2	3:F:186:GLU:OE1	2.01	0.60
1:A:243:LYS:HE2	1:A:420:GLN:CG	2.32	0.60
1:A:252:LEU:HD22	1:A:427:ILE:HD12	1.84	0.60
1:A:262:PHE:HE2	1:A:397:LEU:HB2	1.66	0.60
1:A:434:LEU:CD2	1:B:216:LYS:HD3	2.32	0.60
1:B:243:LYS:HE2	1:B:420:GLN:CG	2.31	0.60
2:E:18:LEU:HD23	2:E:18:LEU:N	2.17	0.60
1:B:135:GLY:HA2	1:B:138:THR:OG1	2.01	0.60
2:E:49:GLY:HA3	2:E:70:ILE:HD12	1.83	0.60
1:A:374:VAL:HG12	1:A:378:LEU:CD1	2.31	0.60
3:D:179:THR:O	3:D:180:LEU:HD23	2.02	0.60
2:E:178:LEU:HB2	2:E:183:TYR:CE2	2.37	0.60
1:A:144:VAL:CG2	1:A:343:THR:HB	2.18	0.60
1:B:374:VAL:HG12	1:B:378:LEU:HD11	1.82	0.60
1:A:38:MET:HG3	1:A:168:LEU:HD21	1.84	0.59
1:B:199:PHE:HA	1:B:407:THR:OG1	2.02	0.59
1:A:31:THR:H	1:B:437:GLN:NE2	2.00	0.59
1:B:128:LEU:HB2	1:B:129:PRO:CD	2.32	0.59
1:B:398:LEU:O	1:B:402:ILE:HG22	2.02	0.59
1:B:408:GLY:O	1:B:409:ILE:C	2.41	0.59
1:A:109:ILE:HD12	1:A:445:TYR:HE2	1.65	0.59
1:A:171:ASP:HB3	1:A:212:LEU:HD22	1.83	0.59
1:A:191:ASN:HB2	1:A:229:TYR:CE2	2.36	0.59
1:A:396:ALA:C	1:A:398:LEU:H	2.05	0.59
1:B:123:ARG:HA	1:B:125:TRP:CH2	2.37	0.59
1:B:123:ARG:O	1:B:127:VAL:HG23	2.03	0.59
2:C:125:THR:HG22	2:C:126:PRO:O	2.01	0.59
2:C:132:LEU:HD21	3:D:132:VAL:HG21	1.84	0.59
2:E:51:ILE:HD13	2:E:72:ARG:HD2	1.85	0.59
1:B:63:GLN:C	1:B:65:MET:H	2.05	0.59
1:B:139:LEU:HD13	1:B:147:ARG:HB3	1.83	0.59
2:E:185:LEU:HD12	2:E:185:LEU:O	2.02	0.59
1:A:199:PHE:CD1	1:A:407:THR:HG21	2.37	0.59
1:A:241:VAL:HG11	1:A:324:THR:HG21	1.84	0.59
1:A:250:ASN:HD22	2:C:105:TYR:HE1	1.46	0.59
1:B:90:ALA:O	1:B:94:TYR:HD1	1.85	0.59
1:B:287:ASN:ND2	1:B:290:LYS:N	2.49	0.59
2:C:100:TYR:HB3	2:C:107:TYR:CE1	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:337:PHE:O	1:A:341:VAL:HG23	2.03	0.59
3:D:114:VAL:HG22	3:D:135:LEU:HD22	1.83	0.59
1:B:318:ASN:HD22	1:B:319:LEU:N	2.00	0.59
2:C:18:LEU:HD23	2:C:18:LEU:H	1.67	0.59
2:C:61:THR:OG1	2:C:62:PRO:CD	2.50	0.59
3:D:197:HIS:ND1	3:D:198:LYS:N	2.51	0.59
2:C:204:ASN:HB3	2:C:215:ASP:OD1	2.02	0.59
1:B:78:LEU:HD13	1:B:307:PHE:CZ	2.37	0.59
3:F:32:ILE:HG22	3:F:33:HIS:N	2.17	0.59
1:B:182:ALA:HB3	1:B:200:ILE:HD11	1.83	0.58
1:A:91:MET:HG3	1:A:296:GLY:HA3	1.85	0.58
1:A:382:TYR:HB3	1:A:384:LEU:HD21	1.84	0.58
1:A:383:HIS:HD2	2:C:33:TRP:CE3	2.21	0.58
1:B:109:ILE:N	1:B:110:PRO:CD	2.65	0.58
2:E:40:ALA:HA	2:E:92:ALA:CB	2.33	0.58
1:A:207:GLN:HG2	1:B:28:ARG:HD2	1.83	0.58
1:A:53:PHE:CE2	1:A:147:ARG:HB2	2.37	0.58
1:B:79:LEU:HD23	1:B:79:LEU:H	1.68	0.58
1:B:94:TYR:OH	1:B:352:ALA:HB2	2.03	0.58
1:B:112:ILE:HG13	1:B:153:GLN:HA	1.85	0.58
2:C:124:THR:CG2	2:C:125:THR:N	2.66	0.58
2:C:196:TRP:O	2:C:197:PRO:C	2.42	0.58
1:A:59:TRP:CZ3	1:A:60:LEU:HD23	2.39	0.58
1:A:191:ASN:O	1:A:191:ASN:ND2	2.36	0.58
1:A:227:ILE:O	1:A:231:ILE:HG12	2.03	0.58
1:B:84:LEU:O	1:B:88:VAL:HG23	2.04	0.58
1:B:412:VAL:HG13	1:B:416:THR:HG21	1.85	0.58
1:A:59:TRP:O	1:A:62:ASN:HB3	2.04	0.58
1:A:79:LEU:H	1:A:79:LEU:HD23	1.69	0.58
1:B:180:THR:HG22	1:B:218:VAL:CA	2.33	0.58
1:A:444:LEU:O	1:A:448:ILE:HG13	2.03	0.58
1:B:95:PHE:O	1:B:97:VAL:N	2.36	0.58
2:C:146:LEU:HD12	2:C:201:VAL:HG11	1.85	0.58
2:E:146:LEU:HD13	2:E:218:ILE:HG21	1.86	0.58
1:A:205:ARG:HH22	1:B:205:ARG:NH2	2.02	0.58
2:E:10:GLY:N	2:E:116:THR:O	2.36	0.58
1:A:219:PHE:CZ	1:B:406:LEU:HD13	2.39	0.57
1:B:200:ILE:HG22	1:B:201:ILE:HG23	1.86	0.57
1:A:75:TYR:CE2	1:A:79:LEU:HG	2.39	0.57
1:A:150:PRO:O	1:A:154:ILE:HG13	2.04	0.57
1:A:250:ASN:ND2	2:C:105:TYR:CD1	2.73	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:440:GLY:O	1:B:441:GLY:O	2.21	0.57
2:E:98:ARG:NH1	2:E:109:ASP:OD2	2.29	0.57
1:A:64:ARG:CZ	1:A:141:GLY:O	2.53	0.57
1:B:211:THR:HG22	1:B:212:LEU:N	2.19	0.57
2:C:124:THR:CG2	2:C:125:THR:H	2.17	0.57
1:A:109:ILE:N	1:A:110:PRO:CD	2.67	0.57
3:D:117:PHE:CD1	3:D:117:PHE:N	2.72	0.57
3:F:29:VAL:CG2	3:F:32:ILE:HD11	2.34	0.57
2:E:196:TRP:HB3	2:E:197:PRO:HD3	1.86	0.57
1:A:408:GLY:O	1:A:409:ILE:C	2.42	0.57
2:C:51:ILE:HD13	2:C:72:ARG:HD2	1.86	0.57
1:A:408:GLY:O	1:A:411:LEU:N	2.37	0.57
1:B:453:LEU:O	1:B:456:GLN:HB3	2.03	0.57
2:C:185:LEU:HD12	2:C:185:LEU:C	2.24	0.57
3:D:95:GLN:H	3:D:95:GLN:CD	2.08	0.57
2:E:132:LEU:HD21	3:F:132:VAL:HG21	1.87	0.57
2:E:207:HIS:ND1	2:E:210:SER:HB3	2.20	0.57
1:A:434:LEU:HD22	1:B:216:LYS:HD3	1.86	0.57
1:A:457:GLU:HA	1:A:460:GLN:OE1	2.04	0.57
1:B:87:ALA:O	1:B:91:MET:HG3	2.04	0.57
1:A:211:THR:HG22	1:A:212:LEU:H	1.70	0.57
2:C:111:TRP:CE3	3:D:43:PRO:HD2	2.40	0.57
2:E:51:ILE:HG23	2:E:51:ILE:O	2.05	0.57
3:F:114:VAL:HG13	3:F:135:LEU:HD23	1.86	0.57
1:A:79:LEU:H	1:A:79:LEU:CD2	2.18	0.56
1:A:149:GLY:HA3	4:A:467:CL:CL	2.42	0.56
2:E:127:PRO:CB	2:E:153:TYR:HB3	2.31	0.56
3:F:190:SER:HA	3:F:209:ASN:OD1	2.05	0.56
1:A:144:VAL:HG12	1:A:144:VAL:O	2.05	0.56
1:A:148:GLN:O	1:A:149:GLY:C	2.44	0.56
2:C:51:ILE:CD1	2:C:72:ARG:HD2	2.35	0.56
2:C:127:PRO:CB	2:C:153:TYR:HB3	2.33	0.56
1:A:197:ILE:HD13	1:A:219:PHE:CD1	2.41	0.56
2:E:38:ARG:HE	2:E:46:LYS:NZ	2.03	0.56
2:C:156:GLU:HG2	2:C:183:TYR:CE1	2.40	0.56
2:E:129:VAL:CG2	2:E:214:VAL:HG21	2.36	0.56
1:A:355:GLY:HA3	4:A:467:CL:CL	2.42	0.56
1:B:53:PHE:CD1	1:B:136:LEU:HD12	2.40	0.56
1:B:180:THR:CG2	1:B:218:VAL:HA	2.32	0.56
1:B:199:PHE:CD1	1:B:407:THR:HG21	2.41	0.56
1:A:406:LEU:HD13	1:B:219:PHE:HZ	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:88:GLN:HB2	3:D:97:PHE:CD1	2.41	0.56
3:D:184:GLU:O	3:D:187:ARG:HG2	2.06	0.56
3:F:158:VAL:O	3:F:159:LEU:HD23	2.06	0.56
1:A:267:PRO:O	1:A:270:ASN:HB2	2.06	0.56
1:B:154:ILE:O	1:B:158:ILE:HG12	2.06	0.56
1:A:457:GLU:C	1:A:460:GLN:HE22	2.09	0.56
1:B:78:LEU:O	1:B:80:THR:N	2.39	0.56
1:B:95:PHE:C	1:B:97:VAL:H	2.09	0.56
2:C:61:THR:OG1	2:C:62:PRO:HD2	2.06	0.56
2:C:99:LEU:HD21	2:C:108:PHE:CD2	2.41	0.56
3:D:77:MET:SD	3:D:103:LEU:HD21	2.45	0.56
3:F:95:GLN:H	3:F:95:GLN:CD	2.09	0.56
2:C:18:LEU:HD23	2:C:18:LEU:N	2.21	0.56
3:D:104:GLU:OE2	3:D:165:GLN:HB2	2.06	0.56
2:E:34:MET:HB3	2:E:79:LEU:HD22	1.88	0.56
3:F:111:ALA:CA	3:F:199:THR:HG21	2.35	0.56
1:A:25:LEU:HD11	1:B:449:LEU:HD23	1.87	0.55
1:A:318:ASN:HD22	1:A:319:LEU:H	1.53	0.55
1:B:53:PHE:CE2	1:B:147:ARG:HB2	2.41	0.55
3:F:114:VAL:HG22	3:F:135:LEU:HD22	1.86	0.55
1:B:191:ASN:HB2	1:B:229:TYR:CE2	2.42	0.55
3:F:7:SER:CB	3:F:8:PRO:CD	2.84	0.55
1:B:274:LEU:HD12	1:B:277:GLN:NE2	2.21	0.55
3:F:210:ARG:HH11	3:F:210:ARG:HG2	1.70	0.55
1:B:64:ARG:CZ	1:B:141:GLY:O	2.55	0.55
3:D:20:THR:HG23	3:D:73:THR:OG1	2.05	0.55
3:D:190:SER:HA	3:D:209:ASN:OD1	2.05	0.55
2:E:129:VAL:HG21	2:E:214:VAL:HG21	1.88	0.55
1:B:109:ILE:HD12	1:B:445:TYR:CE2	2.42	0.55
1:B:109:ILE:CD1	1:B:445:TYR:HE2	2.20	0.55
1:B:422:ILE:HA	1:B:425:MET:HE3	1.89	0.55
2:C:87:ARG:HG3	2:C:89:GLU:OE2	2.07	0.55
2:E:144:VAL:O	2:E:144:VAL:HG13	2.06	0.55
3:F:72:LEU:C	3:F:72:LEU:HD23	2.26	0.55
1:A:109:ILE:CD1	1:A:445:TYR:HE2	2.20	0.55
3:D:158:VAL:O	3:D:159:LEU:HD23	2.06	0.55
3:F:114:VAL:HG12	3:F:115:SER:N	2.22	0.55
1:B:91:MET:HG3	1:B:296:GLY:HA3	1.88	0.55
1:B:294:MET:O	1:B:297:ALA:HB3	2.06	0.55
2:C:129:VAL:HG21	2:C:214:VAL:HG21	1.89	0.55
3:D:205:VAL:O	3:D:206:LYS:HG2	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:205:ARG:NH2	1:B:205:ARG:HH22	2.05	0.55
2:C:156:GLU:OE2	2:C:176:ALA:HB3	2.07	0.55
3:F:116:ILE:HD13	3:F:193:CYS:CB	2.37	0.55
3:F:73:THR:HG22	3:F:74:ILE:N	2.22	0.55
1:B:148:GLN:HG3	1:B:190:PHE:CZ	2.42	0.54
2:C:124:THR:O	2:C:125:THR:OG1	2.23	0.54
3:D:105:ILE:HB	3:D:170:SER:OG	2.07	0.54
1:B:403:ARG:NH2	1:B:437:GLN:HB2	2.20	0.54
2:C:163:ASN:ND2	2:C:167:LEU:HD23	2.22	0.54
2:C:210:SER:OG	2:C:212:THR:HG23	2.07	0.54
1:A:17:ARG:HD2	1:A:17:ARG:C	2.28	0.54
1:A:109:ILE:HD12	1:A:445:TYR:CE2	2.42	0.54
1:A:211:THR:HG22	1:A:212:LEU:N	2.22	0.54
1:A:403:ARG:C	1:A:405:PRO:HD3	2.28	0.54
3:D:112:PRO:HB3	3:D:138:PHE:HB3	1.89	0.54
3:F:59:VAL:HG12	3:F:59:VAL:O	2.07	0.54
1:A:374:VAL:HG12	1:A:378:LEU:HD11	1.89	0.54
2:C:2:VAL:O	2:C:2:VAL:HG13	2.07	0.54
3:D:46:TRP:HA	3:D:46:TRP:CE3	2.42	0.54
1:A:63:GLN:C	1:A:65:MET:H	2.11	0.54
1:A:94:TYR:CZ	1:A:352:ALA:HB2	2.42	0.54
1:B:200:ILE:HD12	1:B:204:MET:HG3	1.90	0.54
2:E:107:TYR:HB3	3:F:33:HIS:NE2	2.21	0.54
3:F:58:PRO:C	3:F:60:ARG:H	2.09	0.54
3:F:102:LYS:NZ	3:F:102:LYS:HB3	2.23	0.54
3:D:3:VAL:HB	3:D:26:SER:HB3	1.90	0.54
1:A:192:ALA:HB1	1:A:414:GLU:OE2	2.08	0.54
1:A:406:LEU:HD13	1:B:219:PHE:CZ	2.43	0.54
2:E:39:GLN:C	2:E:92:ALA:HB1	2.28	0.54
3:F:82:ALA:HB2	3:F:105:ILE:CD1	2.35	0.54
1:A:163:LEU:HD21	1:A:174:ARG:HG3	1.89	0.54
2:E:24:ALA:HB1	2:E:27:PHE:CE1	2.39	0.54
2:E:40:ALA:HA	2:E:92:ALA:HB2	1.90	0.54
2:E:106:TRP:HD1	2:E:106:TRP:H	1.50	0.54
1:B:79:LEU:H	1:B:79:LEU:CD2	2.21	0.54
1:B:355:GLY:HA3	4:B:467:CL:CL	2.45	0.54
1:A:183:ALA:O	1:A:184:ALA:C	2.47	0.53
1:A:437:GLN:O	1:A:439:THR:N	2.42	0.53
1:B:138:THR:HG21	1:B:353:PRO:HD2	1.90	0.53
2:C:124:THR:HG23	2:C:154:PHE:O	2.09	0.53
3:F:116:ILE:CD1	3:F:193:CYS:HB2	2.37	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:59:TRP:HE3	1:A:60:LEU:HD23	1.72	0.53
1:A:316:GLY:HA2	1:A:319:LEU:HD21	1.89	0.53
2:C:129:VAL:CG2	2:C:214:VAL:HG21	2.37	0.53
2:C:178:LEU:HB2	2:C:183:TYR:HE2	1.72	0.53
1:B:197:ILE:HD13	1:B:219:PHE:CD1	2.43	0.53
1:B:250:ASN:ND2	2:E:105:TYR:CD1	2.76	0.53
1:A:17:ARG:NH2	1:B:119:GLN:NE2	2.51	0.53
1:A:206:PRO:HG2	1:A:211:THR:OG1	2.09	0.53
1:A:78:LEU:C	1:A:80:THR:N	2.62	0.53
1:A:90:ALA:O	1:A:94:TYR:HD1	1.91	0.53
1:A:291:TRP:O	1:A:294:MET:N	2.42	0.53
1:B:150:PRO:O	1:B:154:ILE:HG13	2.08	0.53
2:E:196:TRP:O	2:E:197:PRO:C	2.44	0.53
3:F:20:THR:HG23	3:F:73:THR:OG1	2.09	0.53
1:A:124:TRP:CA	1:A:157:ASN:HD22	2.20	0.53
1:B:163:LEU:HD21	1:B:174:ARG:HG3	1.90	0.53
2:E:207:HIS:CE1	2:E:210:SER:H	2.26	0.53
1:A:243:LYS:HE2	1:A:420:GLN:HG2	1.90	0.53
1:B:214:SER:O	1:B:217:ALA:HB3	2.08	0.53
2:C:34:MET:HB3	2:C:79:LEU:HD22	1.91	0.53
3:D:12:SER:HB3	3:D:106:LEU:HB2	1.89	0.53
3:F:79:ALA:HA	3:F:105:ILE:HD13	1.90	0.53
1:A:313:SER:OG	1:A:314:GLY:N	2.41	0.53
1:A:60:LEU:C	1:A:62:ASN:N	2.61	0.53
1:A:64:ARG:NE	1:A:141:GLY:O	2.42	0.53
1:A:68:LEU:HD13	1:A:307:PHE:CD2	2.44	0.53
1:B:75:TYR:CE2	1:B:79:LEU:HG	2.44	0.53
1:B:269:PHE:O	1:B:273:VAL:HG12	2.09	0.53
1:B:369:THR:O	1:B:372:GLY:N	2.42	0.53
2:C:127:PRO:HB3	2:C:153:TYR:CB	2.32	0.53
3:F:4:LEU:HD12	3:F:96:THR:O	2.09	0.53
3:F:22:THR:CG2	3:F:23:CYS:N	2.71	0.53
1:A:87:ALA:O	1:A:91:MET:HG3	2.09	0.53
1:A:205:ARG:NH2	1:B:205:ARG:NH2	2.56	0.53
1:A:207:GLN:HB3	1:A:208:PHE:CE1	2.44	0.53
1:B:183:ALA:O	1:B:184:ALA:C	2.47	0.53
1:A:78:LEU:HD13	1:A:307:PHE:CE2	2.44	0.52
1:A:128:LEU:HB2	1:A:129:PRO:CD	2.39	0.52
1:A:356:ILE:O	1:A:360:MET:HG3	2.09	0.52
1:B:144:VAL:CG1	1:B:344:THR:HA	2.40	0.52
1:B:243:LYS:HE2	1:B:420:GLN:HG2	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:153:GLU:HG3	3:F:154:ARG:H	1.74	0.52
1:A:210:TYR:N	1:B:210:TYR:HB2	2.22	0.52
1:B:396:ALA:C	1:B:398:LEU:H	2.11	0.52
2:C:40:ALA:HA	2:C:92:ALA:CB	2.39	0.52
2:E:87:ARG:HG3	2:E:89:GLU:OE2	2.08	0.52
1:A:65:MET:C	1:A:67:ALA:N	2.62	0.52
1:A:370:ALA:O	1:A:374:VAL:HG23	2.09	0.52
1:B:212:LEU:HD12	1:B:212:LEU:H	1.73	0.52
3:F:115:SER:HB3	3:F:117:PHE:CE1	2.44	0.52
1:A:172:GLU:O	1:A:176:THR:HB	2.08	0.52
1:B:168:LEU:HD12	1:B:168:LEU:O	2.09	0.52
1:B:180:THR:HG22	1:B:218:VAL:HG22	1.91	0.52
2:C:91:THR:HA	2:C:117:VAL:O	2.08	0.52
2:C:130:TYR:CD2	3:D:123:GLN:HB2	2.43	0.52
3:F:19:VAL:HG12	3:F:74:ILE:HB	1.92	0.52
1:A:287:ASN:ND2	1:A:290:LYS:N	2.54	0.52
1:A:318:ASN:HD22	1:A:319:LEU:N	2.06	0.52
1:B:75:TYR:HB3	1:B:76:PRO:CD	2.33	0.52
1:B:263:GLY:HA3	1:B:435:LEU:HB2	1.92	0.52
3:D:127:GLY:O	3:D:182:LYS:N	2.36	0.52
2:E:49:GLY:HA3	2:E:70:ILE:HD11	1.92	0.52
1:B:75:TYR:O	1:B:78:LEU:HB2	2.10	0.52
1:B:172:GLU:O	1:B:176:THR:HB	2.09	0.52
2:C:200:THR:HG22	2:C:200:THR:O	2.07	0.52
3:D:201:THR:HG23	3:D:202:SER:N	2.25	0.52
3:F:189:ASN:ND2	3:F:211:ALA:H	2.03	0.52
1:B:59:TRP:CZ3	1:B:60:LEU:HD23	2.43	0.52
1:B:262:PHE:HE2	1:B:397:LEU:HB2	1.74	0.52
1:B:422:ILE:HD12	1:B:425:MET:HE3	1.90	0.52
2:E:149:LEU:HD12	2:E:150:VAL:N	2.25	0.52
3:F:29:VAL:O	3:F:67:GLY:HA2	2.09	0.52
1:B:146:GLY:HA3	4:B:466:CL:CL	2.47	0.52
1:B:241:VAL:HG12	1:B:244:LEU:HD21	1.92	0.52
3:D:105:ILE:HG22	3:D:105:ILE:O	2.09	0.52
1:A:440:GLY:O	1:A:441:GLY:O	2.27	0.52
3:F:13:ALA:HB3	3:F:77:MET:CE	2.39	0.52
3:F:88:GLN:HB2	3:F:97:PHE:HD1	1.70	0.52
1:A:17:ARG:HH21	1:B:119:GLN:HE22	1.54	0.52
1:A:95:PHE:C	1:A:97:VAL:H	2.14	0.52
1:A:443:PRO:HB2	1:A:446:SER:HB2	1.92	0.52
1:A:340:ARG:HA	1:A:343:THR:OG1	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:51:ILE:HD11	2:C:55:SER:CB	2.39	0.51
2:C:109:ASP:OD2	2:C:110:VAL:HG23	2.09	0.51
2:E:16:GLY:O	2:E:86:VAL:HG13	2.10	0.51
2:E:30:SER:O	2:E:32:TYR:N	2.43	0.51
1:B:57:VAL:HG12	1:B:61:GLN:OE1	2.11	0.51
2:C:30:SER:O	2:C:32:TYR:N	2.43	0.51
2:C:70:ILE:HG12	2:C:81:LEU:HD13	1.92	0.51
3:D:29:VAL:O	3:D:67:GLY:HA2	2.10	0.51
2:E:29:TYR:CD2	2:E:77:ASP:HA	2.46	0.51
3:D:29:VAL:HG21	3:D:32:ILE:HD11	1.92	0.51
1:A:314:GLY:O	1:A:340:ARG:NH2	2.43	0.51
2:C:170:GLY:O	2:C:189:VAL:HA	2.11	0.51
2:E:35:SER:HB2	2:E:49:GLY:O	2.10	0.51
1:A:270:ASN:CG	1:A:444:LEU:HD23	2.31	0.51
3:D:134:PHE:O	3:D:135:LEU:HD23	2.11	0.51
3:F:205:VAL:O	3:F:206:LYS:HG2	2.10	0.51
1:A:21:LEU:HD23	1:A:25:LEU:HG	1.92	0.51
1:B:60:LEU:C	1:B:62:ASN:N	2.64	0.51
3:F:6:GLN:HG3	3:F:100:GLY:H	1.76	0.51
1:A:148:GLN:HG2	1:A:358:ALA:HB2	1.93	0.51
1:B:53:PHE:CE1	1:B:136:LEU:HD12	2.45	0.51
1:B:266:GLY:N	1:B:267:PRO:HD2	2.24	0.51
2:C:196:TRP:HD1	2:C:201:VAL:HG23	1.75	0.51
1:A:91:MET:HG2	1:A:296:GLY:H	1.76	0.51
1:A:270:ASN:HA	1:A:273:VAL:CG1	2.41	0.51
1:B:312:THR:HG22	1:B:339:ALA:CB	2.41	0.51
1:B:411:LEU:O	1:B:415:MET:HG2	2.11	0.51
1:B:457:GLU:O	1:B:458:ALA:CB	2.59	0.51
2:C:22:CYS:O	2:C:78:THR:HG23	2.11	0.51
3:D:153:GLU:O	3:D:154:ARG:HB2	2.11	0.51
2:E:29:TYR:OH	2:E:34:MET:HG3	2.10	0.51
1:A:223:ILE:HD12	1:B:430:LEU:HD22	1.93	0.51
1:A:272:TRP:N	1:A:272:TRP:CD1	2.77	0.51
2:C:131:PRO:HD3	2:C:216:LYS:HG2	1.93	0.50
3:D:58:PRO:C	3:D:60:ARG:H	2.14	0.50
2:E:30:SER:C	2:E:32:TYR:N	2.65	0.50
1:A:198:LEU:HG	1:A:410:ILE:HD12	1.94	0.50
1:B:91:MET:HG2	1:B:296:GLY:H	1.76	0.50
1:B:423:LEU:HB3	1:B:424:PRO:HD3	1.91	0.50
1:A:202:GLU:HG2	1:A:202:GLU:O	2.12	0.50
1:A:287:ASN:HB3	1:A:290:LYS:HB2	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:294:MET:O	1:A:298:ILE:HG13	2.11	0.50
1:A:162:VAL:HG23	1:A:163:LEU:N	2.27	0.50
1:A:210:TYR:HB2	1:B:210:TYR:N	2.27	0.50
1:B:148:GLN:O	1:B:149:GLY:C	2.49	0.50
3:D:29:VAL:HG23	3:D:70:TYR:CE1	2.46	0.50
2:E:32:TYR:O	2:E:72:ARG:NH2	2.45	0.50
3:F:29:VAL:HG21	3:F:32:ILE:HD11	1.92	0.50
1:A:18:ARG:NE	1:B:456:GLN:HE21	2.09	0.50
1:A:95:PHE:O	1:A:97:VAL:N	2.44	0.50
1:A:200:ILE:HG22	1:A:201:ILE:CG2	2.41	0.50
1:B:46:VAL:HG11	1:B:185:GLY:N	2.27	0.50
2:C:12:VAL:O	2:C:119:VAL:HA	2.11	0.50
3:D:114:VAL:O	3:D:206:LYS:HD2	2.11	0.50
3:D:153:GLU:HG3	3:D:154:ARG:H	1.76	0.50
2:E:163:ASN:ND2	2:E:167:LEU:HD23	2.27	0.50
1:A:31:THR:H	1:B:437:GLN:HE22	1.58	0.50
1:A:62:ASN:O	1:A:65:MET:N	2.44	0.50
1:A:116:LEU:CD2	1:A:178:LEU:HD23	2.42	0.50
1:A:163:LEU:CD2	1:A:174:ARG:HG3	2.41	0.50
1:A:199:PHE:HD1	1:A:407:THR:HG21	1.74	0.50
1:A:416:THR:O	1:A:418:ASN:ND2	2.44	0.50
3:D:22:THR:HG22	3:D:23:CYS:H	1.77	0.50
3:D:125:THR:O	3:D:126:SER:HB3	2.11	0.50
2:E:67:LYS:HE2	2:E:85:LYS:O	2.11	0.50
2:E:146:LEU:HD12	2:E:201:VAL:HG11	1.93	0.50
3:F:29:VAL:HG23	3:F:70:TYR:CE1	2.46	0.50
1:A:182:ALA:CB	1:A:200:ILE:HD11	2.41	0.50
1:A:284:HIS:CA	1:A:290:LYS:HB3	2.42	0.50
1:B:78:LEU:C	1:B:80:THR:N	2.65	0.50
1:A:98:ARG:HB3	1:A:98:ARG:NH1	2.27	0.50
1:A:266:GLY:N	1:A:267:PRO:HD2	2.26	0.50
1:B:144:VAL:CG2	1:B:343:THR:HB	2.20	0.50
2:C:24:ALA:HB1	2:C:27:PHE:HE1	1.76	0.50
3:F:34:TRP:CE2	3:F:72:LEU:HB2	2.47	0.50
3:F:65:GLY:CA	3:F:70:TYR:HA	2.42	0.50
1:A:94:TYR:OH	1:A:352:ALA:HB2	2.11	0.50
1:A:190:PHE:CE2	1:A:411:LEU:HD21	2.47	0.50
1:A:357:PHE:HB3	4:A:466:CL:CL	2.49	0.50
1:B:59:TRP:O	1:B:62:ASN:HB3	2.11	0.50
1:B:198:LEU:HG	1:B:410:ILE:HD12	1.93	0.50
1:B:381:GLN:HE21	1:B:381:GLN:H	0.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:156:GLU:OE1	2:C:157:PRO:HA	2.12	0.50
3:D:90:TRP:CG	3:D:95:GLN:HB3	2.47	0.50
2:E:61:THR:HB	2:E:62:PRO:CD	2.41	0.50
3:F:89:GLN:C	3:F:89:GLN:CD	2.70	0.50
1:B:272:TRP:N	1:B:272:TRP:CD1	2.77	0.49
3:F:93:HIS:CG	3:F:94:PRO:HA	2.47	0.49
3:F:115:SER:O	3:F:133:CYS:HA	2.12	0.49
1:A:182:ALA:CB	1:A:204:MET:HE2	2.42	0.49
1:B:65:MET:C	1:B:67:ALA:N	2.63	0.49
1:B:291:TRP:O	1:B:294:MET:N	2.44	0.49
3:F:34:TRP:CZ3	3:F:87:CYS:HB3	2.47	0.49
3:F:54:THR:HG22	3:F:55:SER:N	2.27	0.49
3:F:111:ALA:H	3:F:199:THR:HG21	1.76	0.49
1:A:18:ARG:HE	1:B:456:GLN:HE21	1.59	0.49
1:B:116:LEU:CD2	1:B:178:LEU:HD23	2.40	0.49
1:B:294:MET:O	1:B:298:ILE:HG13	2.12	0.49
2:C:106:TRP:H	2:C:106:TRP:HD1	1.60	0.49
3:D:73:THR:HG22	3:D:74:ILE:N	2.27	0.49
1:A:154:ILE:O	1:A:158:ILE:HG12	2.12	0.49
1:A:336:ILE:O	1:A:340:ARG:HG3	2.12	0.49
1:A:148:GLN:O	1:A:151:THR:N	2.41	0.49
1:A:241:VAL:HG12	1:A:244:LEU:HD21	1.94	0.49
3:D:189:ASN:ND2	3:D:211:ALA:H	2.02	0.49
3:F:114:VAL:HG22	3:F:135:LEU:CD2	2.43	0.49
2:C:66:ASP:O	2:C:67:LYS:C	2.50	0.49
1:A:263:GLY:HA3	1:A:435:LEU:HB2	1.94	0.49
2:C:30:SER:C	2:C:32:TYR:N	2.66	0.49
2:C:132:LEU:HD21	3:D:132:VAL:CG2	2.42	0.49
3:D:7:SER:HB2	3:D:22:THR:HB	1.94	0.49
1:A:78:LEU:C	1:A:80:THR:H	2.15	0.49
1:B:444:LEU:HD13	1:B:444:LEU:O	2.12	0.49
3:F:143:ILE:HG13	3:F:197:HIS:HB2	1.95	0.49
1:B:79:LEU:CD2	1:B:79:LEU:N	2.75	0.49
1:B:262:PHE:CZ	1:B:367:LEU:HD23	2.48	0.49
1:B:273:VAL:HA	1:B:345:LEU:HD22	1.95	0.49
3:F:2:ILE:CD1	3:F:27:SER:HB2	2.36	0.49
1:A:404:ALA:N	1:A:405:PRO:HD3	2.28	0.49
1:B:403:ARG:C	1:B:405:PRO:HD3	2.33	0.49
3:F:64:SER:OG	3:F:65:GLY:N	2.45	0.48
3:D:32:ILE:HG22	3:D:33:HIS:N	2.28	0.48
3:F:113:THR:HG22	3:F:113:THR:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:262:PHE:CE2	1:A:397:LEU:HB2	2.48	0.48
1:A:459:GLU:H	1:A:460:GLN:NE2	2.12	0.48
1:B:224:MET:O	1:B:228:MET:HG2	2.13	0.48
1:B:264:ILE:HG13	1:B:265:PHE:N	2.27	0.48
1:B:420:GLN:H	1:B:420:GLN:HG3	1.30	0.48
1:B:127:VAL:HB	1:B:157:ASN:ND2	2.27	0.48
3:D:64:SER:OG	3:D:65:GLY:N	2.45	0.48
1:A:17:ARG:HG3	1:A:17:ARG:HH11	1.78	0.48
1:A:60:LEU:C	1:A:62:ASN:H	2.16	0.48
1:A:69:VAL:HA	1:A:72:ALA:HB2	1.96	0.48
1:A:369:THR:O	1:A:372:GLY:N	2.46	0.48
1:B:31:THR:HG21	1:B:214:SER:OG	2.14	0.48
1:B:206:PRO:HG2	1:B:211:THR:OG1	2.12	0.48
1:B:320:ILE:HG23	1:B:365:THR:CG2	2.38	0.48
1:B:412:VAL:O	1:B:416:THR:HG23	2.13	0.48
2:E:4:LEU:HB3	2:E:112:GLY:CA	2.44	0.48
3:F:7:SER:HB2	3:F:22:THR:HB	1.96	0.48
1:A:316:GLY:HA2	1:A:319:LEU:CD2	2.43	0.48
1:B:452:THR:HG22	1:B:452:THR:O	2.13	0.48
2:E:79:LEU:HD23	2:E:96:CYS:HB2	1.94	0.48
2:E:100:TYR:HB3	2:E:107:TYR:CE1	2.48	0.48
2:E:170:GLY:O	2:E:189:VAL:HA	2.14	0.48
1:B:252:LEU:HD22	1:B:427:ILE:HD12	1.96	0.48
1:B:437:GLN:O	1:B:439:THR:N	2.47	0.48
1:B:21:LEU:HD23	1:B:25:LEU:HG	1.95	0.48
1:B:99:LYS:C	1:B:100:TYR:CD1	2.87	0.48
1:B:111:GLU:O	1:B:114:GLY:N	2.43	0.48
1:B:287:ASN:HB3	1:B:290:LYS:HB2	1.95	0.48
3:D:164:ASP:O	3:D:165:GLN:C	2.52	0.48
1:A:79:LEU:CD2	1:A:79:LEU:N	2.75	0.48
1:A:418:ASN:N	1:A:418:ASN:HD22	2.12	0.48
1:A:421:LEU:O	1:A:424:PRO:HD2	2.14	0.48
1:B:170:GLY:O	1:B:171:ASP:C	2.52	0.48
1:B:457:GLU:CD	1:B:457:GLU:O	2.52	0.48
3:F:93:HIS:CD2	3:F:94:PRO:HA	2.48	0.48
1:A:78:LEU:HD13	1:A:307:PHE:HZ	1.79	0.48
1:A:372:GLY:O	1:A:375:ALA:N	2.46	0.48
1:B:78:LEU:HD13	1:B:307:PHE:CE2	2.48	0.48
1:B:295:GLY:C	1:B:297:ALA:H	2.17	0.48
1:B:449:LEU:O	1:B:453:LEU:HB2	2.14	0.48
2:C:51:ILE:HG23	2:C:51:ILE:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:162:TRP:CD1	3:D:174:MET:HB2	2.48	0.48
2:E:200:THR:HG22	2:E:200:THR:O	2.14	0.48
1:A:139:LEU:CD1	1:A:147:ARG:HB3	2.44	0.47
1:B:74:ASN:CG	1:B:77:LEU:HB2	2.34	0.47
1:B:139:LEU:C	1:B:141:GLY:H	2.17	0.47
1:B:372:GLY:O	1:B:375:ALA:N	2.47	0.47
1:A:248:PRO:HG2	1:A:251:THR:HG23	1.95	0.47
1:A:413:LEU:CD1	1:A:422:ILE:HD13	2.44	0.47
1:B:71:THR:O	1:B:78:LEU:HG	2.13	0.47
1:B:77:LEU:O	1:B:81:VAL:HG13	2.14	0.47
1:B:443:PRO:HB2	1:B:446:SER:HB2	1.94	0.47
2:E:18:LEU:N	2:E:18:LEU:CD2	2.77	0.47
3:F:127:GLY:O	3:F:182:LYS:N	2.38	0.47
3:F:153:GLU:HG3	3:F:154:ARG:N	2.29	0.47
1:A:18:ARG:CZ	1:B:456:GLN:HE21	2.26	0.47
1:A:18:ARG:O	1:A:18:ARG:HG2	2.14	0.47
1:A:77:LEU:O	1:A:81:VAL:HG13	2.14	0.47
1:A:124:TRP:C	1:A:126:ARG:H	2.16	0.47
1:A:210:TYR:HB2	1:B:210:TYR:H	1.78	0.47
1:A:288:ILE:CG2	1:A:289:THR:N	2.77	0.47
1:B:147:ARG:HG3	1:B:147:ARG:HH11	1.80	0.47
2:C:146:LEU:HD11	2:C:196:TRP:CD1	2.49	0.47
2:E:132:LEU:HD21	3:F:132:VAL:CG2	2.44	0.47
1:A:449:LEU:HD23	1:B:25:LEU:HD11	1.96	0.47
1:B:104:ALA:O	1:B:105:GLY:C	2.52	0.47
1:B:124:TRP:C	1:B:126:ARG:H	2.18	0.47
1:B:288:ILE:CG2	1:B:289:THR:N	2.77	0.47
1:B:320:ILE:HG21	1:B:394:MET:HE3	1.95	0.47
1:A:306:GLY:O	1:A:307:PHE:HB2	2.14	0.47
1:B:187:ALA:C	1:B:189:ALA:N	2.68	0.47
1:B:340:ARG:HA	1:B:343:THR:OG1	2.14	0.47
1:B:380:PRO:HD2	1:B:381:GLN:NE2	2.30	0.47
3:D:32:ILE:HG12	3:D:70:TYR:CE2	2.49	0.47
1:A:123:ARG:O	1:A:127:VAL:HG23	2.13	0.47
1:A:430:LEU:HD22	1:B:223:ILE:CD1	2.43	0.47
1:B:191:ASN:ND2	1:B:191:ASN:O	2.46	0.47
1:B:270:ASN:O	1:B:273:VAL:CG1	2.62	0.47
2:C:162:TRP:C	2:C:164:SER:N	2.67	0.47
2:C:196:TRP:HD1	2:C:201:VAL:CG2	2.28	0.47
3:D:104:GLU:OE1	3:D:172:TYR:OH	2.33	0.47
1:A:22:ILE:HD13	1:B:454:ALA:HB2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:31:THR:HG21	1:A:214:SER:OG	2.14	0.47
1:A:270:ASN:HA	1:A:273:VAL:HG12	1.96	0.47
1:A:437:GLN:NE2	1:B:31:THR:H	2.13	0.47
1:B:117:GLU:O	1:B:118:ASP:HB2	2.15	0.47
1:B:148:GLN:O	1:B:151:THR:N	2.47	0.47
2:C:39:GLN:O	2:C:92:ALA:HB1	2.14	0.47
2:C:79:LEU:HD23	2:C:96:CYS:HB2	1.96	0.47
3:D:6:GLN:HG3	3:D:100:GLY:H	1.80	0.47
3:D:35:TYR:HE1	3:D:88:GLN:HB3	1.80	0.47
3:D:48:TYR:CE1	3:D:52:LYS:HD2	2.50	0.47
2:E:27:PHE:HE2	2:E:98:ARG:HG3	1.80	0.47
2:E:50:GLU:OE1	3:F:90:TRP:CZ2	2.67	0.47
1:A:124:TRP:C	1:A:126:ARG:N	2.68	0.47
1:A:174:ARG:O	1:A:178:LEU:HB2	2.15	0.47
1:A:294:MET:O	1:A:297:ALA:HB3	2.14	0.47
1:A:420:GLN:HE21	1:A:420:GLN:HB2	1.56	0.47
2:C:13:GLN:HA	2:C:120:SER:O	2.15	0.47
2:C:149:LEU:HD12	2:C:150:VAL:H	1.79	0.47
3:D:33:HIS:CE1	3:D:49:ASP:H	2.32	0.47
2:E:108:PHE:CD1	3:F:88:GLN:NE2	2.82	0.47
1:A:33:LEU:C	1:A:33:LEU:HD23	2.36	0.47
1:B:163:LEU:CD2	1:B:174:ARG:HG3	2.45	0.47
1:B:165:ILE:O	1:B:165:ILE:CG2	2.62	0.47
1:B:197:ILE:CG1	1:B:222:VAL:HG21	2.45	0.47
1:B:419:TYR:O	1:B:419:TYR:CD2	2.68	0.47
2:C:121:SER:O	2:C:122:ALA:O	2.33	0.47
2:E:103:TYR:HD2	3:F:31:TYR:CE2	2.32	0.47
1:B:123:ARG:HE	1:B:126:ARG:HD2	1.79	0.47
1:B:413:LEU:CD1	1:B:422:ILE:HD13	2.45	0.47
2:C:24:ALA:HB1	2:C:27:PHE:CE1	2.50	0.47
2:C:49:GLY:HA3	2:C:70:ILE:CD1	2.45	0.47
2:C:107:TYR:HB3	3:D:33:HIS:NE2	2.30	0.47
2:E:134:PRO:HD3	2:E:146:LEU:CD2	2.45	0.47
2:E:178:LEU:HD12	2:E:182:LEU:O	2.14	0.47
3:D:19:VAL:HG12	3:D:74:ILE:HB	1.97	0.46
3:D:34:TRP:CZ3	3:D:87:CYS:HB3	2.50	0.46
2:E:70:ILE:HG12	2:E:81:LEU:HD13	1.96	0.46
3:F:79:ALA:C	3:F:81:ASP:H	2.17	0.46
3:F:117:PHE:HA	3:F:118:PRO:HD3	1.77	0.46
1:A:197:ILE:HD13	1:A:219:PHE:CE1	2.50	0.46
1:B:308:VAL:O	1:B:309:ALA:HB2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:318:ASN:N	1:B:318:ASN:ND2	2.62	0.46
2:E:66:ASP:O	2:E:67:LYS:C	2.53	0.46
1:A:209:ARG:O	1:A:209:ARG:HG3	2.14	0.46
1:A:437:GLN:C	1:A:439:THR:H	2.18	0.46
1:B:78:LEU:C	1:B:80:THR:H	2.19	0.46
1:B:108:GLY:C	1:B:153:GLN:HE21	2.19	0.46
1:B:284:HIS:C	1:B:286:GLY:H	2.18	0.46
3:D:86:TYR:CE2	3:D:100:GLY:HA3	2.51	0.46
1:B:124:TRP:C	1:B:126:ARG:N	2.69	0.46
1:B:274:LEU:HD12	1:B:274:LEU:HA	1.68	0.46
1:B:307:PHE:O	1:B:308:VAL:HG13	2.16	0.46
2:E:150:VAL:HB	2:E:185:LEU:HD12	1.97	0.46
2:E:163:ASN:O	2:E:164:SER:HB2	2.15	0.46
1:A:18:ARG:HE	1:B:456:GLN:NE2	2.13	0.46
1:A:75:TYR:HB3	1:A:76:PRO:CD	2.39	0.46
1:A:145:LEU:HD21	1:A:347:CYS:HB3	1.96	0.46
1:A:280:LEU:O	1:A:284:HIS:CE1	2.67	0.46
1:B:212:LEU:N	1:B:212:LEU:CD1	2.77	0.46
2:C:32:TYR:CE2	2:C:98:ARG:HD3	2.49	0.46
2:C:130:TYR:CE2	3:D:123:GLN:HG3	2.51	0.46
3:D:124:LEU:O	3:D:182:LYS:HD2	2.14	0.46
3:F:164:ASP:O	3:F:165:GLN:C	2.53	0.46
1:A:212:LEU:N	1:A:212:LEU:CD1	2.75	0.46
1:A:412:VAL:HG13	1:A:416:THR:HG21	1.98	0.46
1:B:443:PRO:O	1:B:446:SER:N	2.49	0.46
2:C:2:VAL:O	2:C:2:VAL:CG1	2.64	0.46
2:C:37:VAL:HG22	2:C:47:TRP:HA	1.97	0.46
2:C:40:ALA:HA	2:C:92:ALA:HB2	1.96	0.46
2:C:189:VAL:O	2:C:189:VAL:CG1	2.63	0.46
2:E:18:LEU:HD11	2:E:117:VAL:CG2	2.45	0.46
3:F:47:ILE:HG22	3:F:48:TYR:N	2.30	0.46
1:A:208:PHE:HA	1:B:210:TYR:CE1	2.51	0.46
1:B:93:GLY:O	1:B:97:VAL:HG23	2.16	0.46
1:B:445:TYR:OH	4:B:467:CL:CL	2.70	0.46
2:C:38:ARG:HE	2:C:46:LYS:NZ	2.14	0.46
1:A:74:ASN:CG	1:A:77:LEU:HB2	2.36	0.46
1:B:356:ILE:O	1:B:360:MET:HG3	2.16	0.46
1:B:437:GLN:C	1:B:439:THR:H	2.19	0.46
2:E:64:LEU:N	2:E:64:LEU:HD23	2.31	0.46
3:F:107:ARG:HD3	3:F:170:SER:O	2.15	0.46
1:A:421:LEU:C	1:A:424:PRO:HD2	2.36	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:457:GLU:C	1:A:459:GLU:N	2.67	0.46
1:B:190:PHE:CE2	1:B:411:LEU:HD21	2.50	0.46
2:C:49:GLY:HA3	2:C:70:ILE:HD12	1.97	0.46
3:D:93:HIS:CD2	3:D:94:PRO:HA	2.51	0.46
2:E:107:TYR:CB	3:F:33:HIS:CD2	2.92	0.46
3:F:115:SER:CB	3:F:117:PHE:HE1	2.28	0.46
1:A:180:THR:HG22	1:A:218:VAL:HG22	1.96	0.46
1:A:307:PHE:CG	1:A:307:PHE:O	2.68	0.46
1:B:274:LEU:HD12	1:B:277:GLN:HE21	1.79	0.46
3:D:79:ALA:C	3:D:81:ASP:H	2.20	0.46
2:E:185:LEU:HD12	2:E:185:LEU:C	2.37	0.46
3:F:36:GLN:HG3	3:F:85:TYR:CE2	2.50	0.46
3:F:75:ASN:O	3:F:76:THR:HB	2.16	0.46
3:F:153:GLU:O	3:F:154:ARG:HB2	2.16	0.46
1:A:47:GLY:O	1:A:48:LEU:C	2.55	0.45
1:A:224:MET:O	1:A:228:MET:HG2	2.15	0.45
1:A:273:VAL:HG13	1:A:274:LEU:N	2.31	0.45
1:B:99:LYS:HB2	1:B:288:ILE:HD11	1.99	0.45
2:C:167:LEU:HD21	2:C:191:VAL:HG11	1.98	0.45
3:D:110:ALA:C	3:D:199:THR:HG21	2.36	0.45
3:F:124:LEU:O	3:F:182:LYS:HD2	2.16	0.45
1:A:46:VAL:HG22	1:A:155:GLY:HA2	1.97	0.45
1:A:377:GLU:HG3	1:A:378:LEU:N	2.31	0.45
1:B:279:LEU:HA	1:B:282:ARG:HH11	1.81	0.45
2:C:192:PRO:O	2:C:195:SER:N	2.42	0.45
3:D:118:PRO:HB3	3:D:208:PHE:CE1	2.51	0.45
3:F:178:LEU:HD12	3:F:179:THR:N	2.31	0.45
1:B:62:ASN:O	1:B:65:MET:HB2	2.17	0.45
2:C:53:PRO:C	2:C:55:SER:H	2.19	0.45
3:D:141:LYS:HB3	3:D:172:TYR:CD1	2.51	0.45
3:F:114:VAL:HG13	3:F:135:LEU:CD2	2.46	0.45
1:A:101:ALA:HB2	1:A:130:VAL:HG21	1.99	0.45
1:A:214:SER:O	1:A:217:ALA:HB3	2.17	0.45
1:A:411:LEU:O	1:A:415:MET:HG2	2.16	0.45
1:A:453:LEU:HD23	1:B:21:LEU:HD22	1.97	0.45
1:B:382:TYR:HB3	1:B:384:LEU:HD21	1.99	0.45
2:C:144:VAL:O	2:C:144:VAL:HG13	2.16	0.45
2:E:18:LEU:HD11	2:E:117:VAL:CG1	2.47	0.45
1:A:144:VAL:CG1	1:A:344:THR:HA	2.47	0.45
1:A:270:ASN:ND2	1:A:444:LEU:HD23	2.32	0.45
1:B:109:ILE:N	1:B:110:PRO:HD3	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:149:GLY:N	4:B:466:CL:CL	2.87	0.45
1:B:250:ASN:ND2	2:E:105:TYR:CE1	2.71	0.45
1:A:273:VAL:HA	1:A:345:LEU:HD22	1.99	0.45
1:A:458:ALA:H	1:A:460:GLN:HE22	1.61	0.45
1:B:145:LEU:HD13	1:B:354:GLY:HA3	1.98	0.45
1:B:218:VAL:O	1:B:221:GLY:N	2.50	0.45
1:B:313:SER:OG	1:B:314:GLY:N	2.49	0.45
2:C:72:ARG:HG3	2:C:74:ASN:OD1	2.16	0.45
3:F:86:TYR:CE2	3:F:100:GLY:HA3	2.52	0.45
3:F:125:THR:O	3:F:125:THR:HG22	2.16	0.45
1:A:83:PHE:CD1	1:A:83:PHE:C	2.90	0.45
1:A:191:ASN:O	1:A:191:ASN:CG	2.55	0.45
1:A:264:ILE:HG13	1:A:265:PHE:N	2.31	0.45
1:A:279:LEU:HA	1:A:282:ARG:HH11	1.81	0.45
1:B:69:VAL:HA	1:B:72:ALA:HB2	1.98	0.45
1:B:162:VAL:HG23	1:B:163:LEU:N	2.32	0.45
1:B:284:HIS:CA	1:B:290:LYS:HB3	2.45	0.45
2:C:38:ARG:HE	2:C:46:LYS:HE3	1.80	0.45
2:C:69:ILE:HB	2:C:82:GLN:HB2	1.99	0.45
2:E:29:TYR:CZ	2:E:34:MET:HG3	2.52	0.45
3:F:187:ARG:HG3	3:F:187:ARG:O	2.16	0.45
1:A:284:HIS:C	1:A:286:GLY:H	2.20	0.45
1:B:273:VAL:HG13	1:B:274:LEU:N	2.32	0.45
1:B:418:ASN:N	1:B:418:ASN:HD22	2.14	0.45
2:E:162:TRP:CZ3	2:E:203:CYS:HB3	2.51	0.45
3:F:119:PRO:HD3	3:F:131:VAL:HG22	1.98	0.45
1:B:107:SER:OG	1:B:108:GLY:N	2.49	0.45
1:B:170:GLY:O	1:B:173:ALA:N	2.49	0.45
1:B:187:ALA:C	1:B:189:ALA:H	2.20	0.45
1:B:307:PHE:O	1:B:307:PHE:CG	2.68	0.45
2:C:163:ASN:O	2:C:164:SER:HB2	2.17	0.45
3:D:7:SER:CB	3:D:22:THR:HB	2.47	0.45
3:D:7:SER:CB	3:D:8:PRO:CD	2.93	0.45
3:F:48:TYR:CE1	3:F:52:LYS:HD2	2.52	0.45
3:F:49:ASP:O	3:F:50:THR:HB	2.17	0.45
3:F:125:THR:O	3:F:126:SER:HB3	2.17	0.45
1:B:162:VAL:CG2	1:B:177:LEU:HD13	2.47	0.45
3:D:116:ILE:HD12	3:D:193:CYS:HB2	1.99	0.45
1:B:336:ILE:O	1:B:340:ARG:HG3	2.18	0.44
3:D:8:PRO:O	3:D:101:THR:HG23	2.17	0.44
3:F:116:ILE:HD12	3:F:133:CYS:HB2	1.97	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:332:MET:O	1:A:336:ILE:HG13	2.17	0.44
2:E:131:PRO:HD3	2:E:216:LYS:HG2	1.98	0.44
2:E:167:LEU:HD21	2:E:191:VAL:HG11	1.99	0.44
1:A:107:SER:N	1:A:348:PHE:HE1	2.15	0.44
1:A:449:LEU:O	1:A:453:LEU:HB2	2.17	0.44
1:A:452:THR:HG22	1:A:452:THR:O	2.17	0.44
1:B:46:VAL:O	1:B:49:ALA:HB3	2.17	0.44
1:B:53:PHE:CD1	1:B:136:LEU:CD1	3.01	0.44
1:B:165:ILE:O	1:B:165:ILE:HG22	2.16	0.44
2:E:36:TRP:CE2	2:E:81:LEU:HB2	2.52	0.44
1:B:83:PHE:CD1	1:B:83:PHE:C	2.90	0.44
1:B:139:LEU:O	1:B:141:GLY:N	2.49	0.44
1:B:284:HIS:O	1:B:286:GLY:N	2.48	0.44
2:C:4:LEU:HD12	2:C:4:LEU:HA	1.83	0.44
2:C:40:ALA:HB3	2:C:43:LYS:HB2	1.99	0.44
1:A:89:LEU:O	1:A:90:ALA:C	2.54	0.44
1:A:91:MET:O	1:A:92:PHE:C	2.54	0.44
1:A:270:ASN:O	1:A:273:VAL:HG13	2.17	0.44
1:B:337:PHE:C	1:B:341:VAL:HG23	2.37	0.44
3:D:44:LYS:HE2	3:D:44:LYS:HB2	1.82	0.44
1:A:108:GLY:HA2	1:A:153:GLN:HE22	1.81	0.44
1:A:123:ARG:HA	1:A:125:TRP:CZ3	2.52	0.44
1:B:101:ALA:HB2	1:B:130:VAL:HG21	1.98	0.44
1:B:241:VAL:CG1	1:B:244:LEU:HD21	2.47	0.44
1:B:404:ALA:N	1:B:405:PRO:HD3	2.32	0.44
2:C:152:GLY:HA2	2:C:182:LEU:HD13	2.00	0.44
2:E:8:GLY:O	2:E:9:GLY:O	2.36	0.44
2:E:109:ASP:OD2	2:E:110:VAL:HG23	2.17	0.44
2:E:121:SER:O	2:E:122:ALA:O	2.35	0.44
3:F:3:VAL:HB	3:F:26:SER:HB3	1.99	0.44
3:F:60:ARG:HD3	3:F:78:GLU:HG2	1.99	0.44
1:B:420:GLN:HE21	1:B:420:GLN:HB2	1.47	0.44
2:C:146:LEU:HD13	2:C:218:ILE:HG21	2.00	0.44
1:B:148:GLN:HG2	1:B:358:ALA:HB2	1.99	0.44
1:B:284:HIS:HA	1:B:290:LYS:CB	2.43	0.44
2:C:111:TRP:N	2:C:111:TRP:CD1	2.84	0.44
3:F:189:ASN:ND2	3:F:210:ARG:N	2.66	0.44
1:A:241:VAL:CG1	1:A:244:LEU:HD21	2.48	0.44
1:A:318:ASN:N	1:A:318:ASN:ND2	2.66	0.44
1:B:429:GLY:O	1:B:432:ALA:HB3	2.17	0.44
2:C:134:PRO:HD3	2:C:146:LEU:CD2	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:6:GLN:HE21	3:D:6:GLN:HB3	1.60	0.44
3:D:76:THR:HG22	3:D:76:THR:O	2.18	0.44
3:F:73:THR:CG2	3:F:74:ILE:N	2.80	0.44
1:A:99:LYS:C	1:A:100:TYR:CD1	2.91	0.43
1:A:274:LEU:HD12	1:A:274:LEU:HA	1.76	0.43
1:A:413:LEU:HD11	1:A:419:TYR:HD1	1.83	0.43
1:B:402:ILE:HD11	1:B:445:TYR:CD2	2.53	0.43
1:B:417:ASP:C	1:B:418:ASN:HD22	2.22	0.43
2:E:27:PHE:CE2	2:E:98:ARG:HG3	2.53	0.43
2:E:104:GLY:O	2:E:106:TRP:HD1	2.00	0.43
3:F:86:TYR:HE2	3:F:100:GLY:HA3	1.83	0.43
3:F:118:PRO:HG3	3:F:208:PHE:CD1	2.53	0.43
1:A:422:ILE:CG2	1:A:423:LEU:N	2.80	0.43
3:F:184:GLU:O	3:F:187:ARG:HG2	2.17	0.43
1:A:212:LEU:H	1:A:212:LEU:CD1	2.28	0.43
1:A:264:ILE:CG1	1:A:265:PHE:N	2.81	0.43
3:F:22:THR:HG22	3:F:23:CYS:H	1.78	0.43
1:B:68:LEU:HD13	1:B:307:PHE:CD2	2.53	0.43
1:B:270:ASN:HA	1:B:273:VAL:CG1	2.49	0.43
1:B:270:ASN:HA	1:B:273:VAL:HG12	1.99	0.43
1:B:270:ASN:HD21	1:B:444:LEU:HB2	1.82	0.43
1:B:443:PRO:C	1:B:445:TYR:N	2.72	0.43
2:C:99:LEU:HD21	2:C:108:PHE:CE2	2.53	0.43
3:D:75:ASN:O	3:D:76:THR:HB	2.17	0.43
3:D:89:GLN:CD	3:D:89:GLN:C	2.76	0.43
3:D:124:LEU:HD22	3:D:182:LYS:HG3	1.99	0.43
3:F:58:PRO:C	3:F:60:ARG:N	2.72	0.43
1:B:21:LEU:HD23	1:B:21:LEU:C	2.39	0.43
1:B:38:MET:O	1:B:42:VAL:HG23	2.19	0.43
1:B:101:ALA:CB	1:B:130:VAL:HG21	2.49	0.43
1:B:110:PRO:O	1:B:449:LEU:HD13	2.17	0.43
1:B:118:ASP:CG	1:B:174:ARG:HH21	2.22	0.43
1:B:360:MET:SD	1:B:397:LEU:HD13	2.59	0.43
3:F:29:VAL:HG11	3:F:89:GLN:HG2	2.00	0.43
1:A:133:PHE:O	1:A:136:LEU:HB2	2.19	0.43
1:A:145:LEU:HD13	1:A:354:GLY:HA3	1.99	0.43
1:A:197:ILE:CG1	1:A:222:VAL:HG21	2.48	0.43
1:A:267:PRO:HB3	1:A:441:GLY:HA3	2.01	0.43
1:A:381:GLN:HE21	1:A:381:GLN:H	0.67	0.43
1:B:160:ARG:O	1:B:163:LEU:HB3	2.18	0.43
2:C:8:GLY:O	2:C:9:GLY:O	2.36	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:185:TYR:HD1	3:D:191:TYR:HH	1.64	0.43
3:F:6:GLN:HG3	3:F:99:GLY:N	2.33	0.43
3:F:93:HIS:CD2	3:F:94:PRO:CA	3.01	0.43
1:A:53:PHE:CE1	1:A:136:LEU:CD1	3.02	0.43
1:A:86:SER:HB2	1:A:300:GLY:HA2	1.99	0.43
1:A:151:THR:O	1:A:152:VAL:C	2.57	0.43
1:A:172:GLU:HG3	1:A:212:LEU:HB3	2.01	0.43
1:A:396:ALA:C	1:A:398:LEU:N	2.71	0.43
1:B:174:ARG:O	1:B:178:LEU:HB2	2.19	0.43
1:B:318:ASN:HD22	1:B:318:ASN:N	2.16	0.43
2:C:165:GLY:C	2:C:167:LEU:N	2.72	0.43
2:C:185:LEU:C	2:C:185:LEU:CD1	2.87	0.43
2:E:221:ARG:HH22	3:F:120:SER:HA	1.84	0.43
3:F:111:ALA:O	3:F:112:PRO:O	2.36	0.43
1:A:91:MET:O	1:A:93:GLY:N	2.52	0.43
1:A:208:PHE:CZ	1:B:28:ARG:HG3	2.54	0.43
1:A:441:GLY:C	1:A:442:LYS:HG3	2.38	0.43
1:B:64:ARG:NE	1:B:141:GLY:O	2.50	0.43
1:B:265:PHE:O	1:B:265:PHE:CG	2.72	0.43
3:D:153:GLU:HG3	3:D:154:ARG:N	2.33	0.43
2:E:109:ASP:CG	2:E:110:VAL:HG23	2.39	0.43
2:E:162:TRP:CZ3	2:E:203:CYS:CB	3.02	0.43
1:A:380:PRO:HD2	1:A:381:GLN:NE2	2.34	0.43
1:B:95:PHE:C	1:B:97:VAL:N	2.71	0.43
1:B:202:GLU:O	1:B:202:GLU:HG2	2.19	0.43
1:B:380:PRO:HD2	1:B:381:GLN:HE22	1.83	0.43
2:C:210:SER:O	2:C:212:THR:HG23	2.19	0.43
3:D:125:THR:O	3:D:125:THR:HG22	2.19	0.43
3:D:201:THR:CG2	3:D:202:SER:N	2.82	0.43
1:A:91:MET:HG2	1:A:292:VAL:O	2.19	0.43
1:A:230:ARG:HH11	1:A:230:ARG:CG	2.32	0.43
1:A:356:ILE:HA	1:A:359:PRO:HG2	2.00	0.43
1:B:186:LEU:O	1:B:189:ALA:HB3	2.18	0.43
2:E:69:ILE:O	2:E:69:ILE:HG22	2.18	0.43
1:A:22:ILE:HG21	1:B:454:ALA:HB2	2.00	0.42
1:A:26:LEU:HA	1:B:442:LYS:HD3	2.00	0.42
1:A:187:ALA:O	1:A:189:ALA:N	2.52	0.42
1:A:209:ARG:O	1:A:210:TYR:C	2.57	0.42
1:A:262:PHE:CZ	1:A:367:LEU:HD23	2.54	0.42
1:B:60:LEU:C	1:B:62:ASN:H	2.20	0.42
1:B:63:GLN:C	1:B:65:MET:N	2.71	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:99:LYS:HG3	1:B:99:LYS:O	2.19	0.42
1:B:122:VAL:O	1:B:124:TRP:N	2.51	0.42
1:B:270:ASN:O	1:B:273:VAL:HG13	2.18	0.42
2:C:196:TRP:CB	2:C:197:PRO:HD3	2.47	0.42
1:A:232:PHE:CD1	1:A:232:PHE:N	2.87	0.42
1:B:86:SER:HB2	1:B:300:GLY:HA2	2.01	0.42
1:B:171:ASP:HB2	1:B:212:LEU:HD22	1.97	0.42
2:C:165:GLY:C	2:C:167:LEU:H	2.23	0.42
2:E:37:VAL:HG22	2:E:47:TRP:HA	2.00	0.42
3:F:32:ILE:HG22	3:F:33:HIS:H	1.82	0.42
1:A:316:GLY:O	1:A:319:LEU:HG	2.19	0.42
1:A:356:ILE:HG12	1:A:360:MET:HG3	2.02	0.42
1:B:247:ALA:HA	1:B:248:PRO:HD2	1.73	0.42
2:C:67:LYS:HA	2:C:67:LYS:HD3	1.71	0.42
3:D:93:HIS:CD2	3:D:94:PRO:CA	3.03	0.42
1:A:248:PRO:HG2	1:A:251:THR:CG2	2.50	0.42
1:A:279:LEU:HD23	1:A:279:LEU:C	2.39	0.42
1:B:172:GLU:HG3	1:B:212:LEU:HB3	2.01	0.42
1:B:278:ASP:C	1:B:280:LEU:N	2.72	0.42
3:D:22:THR:CG2	3:D:23:CYS:N	2.83	0.42
3:D:152:SER:O	3:D:153:GLU:O	2.38	0.42
1:A:53:PHE:CE1	1:A:136:LEU:HD12	2.54	0.42
1:A:210:TYR:CE1	1:B:208:PHE:HA	2.54	0.42
1:A:284:HIS:CB	1:A:290:LYS:HB3	2.50	0.42
1:A:340:ARG:C	1:A:342:ILE:N	2.72	0.42
1:A:458:ALA:N	1:A:460:GLN:NE2	2.56	0.42
1:A:208:PHE:HZ	1:B:28:ARG:HG3	1.85	0.42
1:A:272:TRP:O	1:A:273:VAL:C	2.57	0.42
1:A:295:GLY:C	1:A:297:ALA:H	2.22	0.42
1:A:457:GLU:HG3	1:A:458:ALA:N	2.34	0.42
1:B:389:PHE:C	1:B:391:ILE:H	2.23	0.42
2:C:181:ALA:O	2:C:182:LEU:HD23	2.20	0.42
2:E:4:LEU:HB3	2:E:112:GLY:HA2	2.01	0.42
2:E:181:ALA:O	2:E:182:LEU:HD23	2.18	0.42
3:F:32:ILE:HG12	3:F:70:TYR:CE2	2.54	0.42
1:A:245:SER:O	1:A:420:GLN:NE2	2.52	0.42
1:A:284:HIS:O	1:A:286:GLY:N	2.52	0.42
1:B:402:ILE:HD11	1:B:445:TYR:CE2	2.54	0.42
1:B:441:GLY:C	1:B:442:LYS:HG3	2.40	0.42
2:E:66:ASP:N	2:E:66:ASP:OD2	2.53	0.42
2:E:104:GLY:O	2:E:106:TRP:CD1	2.73	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:91:MET:C	1:A:93:GLY:N	2.72	0.42
1:A:307:PHE:O	1:A:308:VAL:HG13	2.20	0.42
1:B:33:LEU:HD23	1:B:33:LEU:C	2.40	0.42
1:B:124:TRP:CE3	1:B:125:TRP:N	2.88	0.42
1:B:139:LEU:C	1:B:141:GLY:N	2.73	0.42
1:B:295:GLY:C	1:B:297:ALA:N	2.73	0.42
2:C:51:ILE:HG13	2:C:58:ILE:HG12	2.02	0.42
2:C:151:LYS:HB2	2:C:151:LYS:HE3	1.85	0.42
2:E:50:GLU:OE1	3:F:90:TRP:HZ2	2.03	0.42
2:E:108:PHE:HE1	3:F:88:GLN:HE21	1.62	0.42
1:A:62:ASN:O	1:A:65:MET:HB2	2.19	0.42
1:A:127:VAL:HB	1:A:157:ASN:ND2	2.35	0.42
1:A:305:LEU:CA	1:A:308:VAL:HG22	2.47	0.42
1:B:139:LEU:CD2	1:B:145:LEU:O	2.68	0.42
1:B:307:PHE:O	1:B:308:VAL:CG1	2.68	0.42
1:B:444:LEU:O	1:B:448:ILE:HG13	2.19	0.42
2:C:50:GLU:OE1	3:D:90:TRP:CZ2	2.73	0.42
1:A:216:LYS:HZ1	1:B:403:ARG:HH21	1.65	0.42
1:A:219:PHE:O	1:A:220:ILE:C	2.58	0.42
1:A:457:GLU:C	1:A:459:GLU:H	2.23	0.42
1:B:151:THR:O	1:B:152:VAL:C	2.59	0.42
1:B:340:ARG:C	1:B:342:ILE:N	2.70	0.42
3:D:93:HIS:CG	3:D:94:PRO:HA	2.55	0.42
3:F:6:GLN:HE21	3:F:6:GLN:HB3	1.48	0.42
1:A:218:VAL:O	1:A:221:GLY:N	2.53	0.41
1:A:284:HIS:HA	1:A:290:LYS:CB	2.46	0.41
1:A:422:ILE:HG23	1:A:423:LEU:N	2.35	0.41
1:A:451:ARG:HH11	1:A:451:ARG:CB	2.23	0.41
1:B:98:ARG:HG2	1:B:98:ARG:H	1.71	0.41
1:B:139:LEU:CD1	1:B:147:ARG:HB3	2.49	0.41
2:E:108:PHE:CE1	3:F:88:GLN:NE2	2.85	0.41
2:E:162:TRP:C	2:E:164:SER:N	2.72	0.41
1:A:169:LYS:HG2	1:A:170:GLY:N	2.34	0.41
1:A:198:LEU:CD2	1:B:198:LEU:HD11	2.46	0.41
1:A:380:PRO:HD2	1:A:381:GLN:HE22	1.85	0.41
1:B:91:MET:HG2	1:B:292:VAL:O	2.20	0.41
1:B:119:GLN:O	1:B:120:ARG:HD2	2.20	0.41
1:B:256:LEU:O	1:B:260:ILE:HG13	2.20	0.41
1:B:316:GLY:HA2	1:B:319:LEU:HD21	2.00	0.41
1:B:421:LEU:O	1:B:424:PRO:CD	2.61	0.41
2:C:171:VAL:C	2:C:172:HIS:HD1	2.24	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:72:ARG:HG3	2:E:74:ASN:OD1	2.20	0.41
2:E:99:LEU:HD21	2:E:108:PHE:CD2	2.55	0.41
3:F:12:SER:HA	3:F:104:GLU:O	2.20	0.41
1:A:28:ARG:NE	1:B:443:PRO:HG2	2.35	0.41
1:A:123:ARG:HE	1:A:126:ARG:HD2	1.84	0.41
1:A:187:ALA:C	1:A:189:ALA:N	2.74	0.41
1:A:273:VAL:HG13	1:A:274:LEU:H	1.85	0.41
1:B:124:TRP:O	1:B:126:ARG:N	2.53	0.41
1:B:405:PRO:O	1:B:408:GLY:N	2.52	0.41
2:E:156:GLU:OE2	2:E:176:ALA:HB3	2.19	0.41
3:F:79:ALA:CA	3:F:105:ILE:HD13	2.50	0.41
1:A:99:LYS:O	1:A:99:LYS:HG3	2.21	0.41
1:B:42:VAL:O	1:B:43:GLY:C	2.59	0.41
1:B:67:ALA:O	1:B:70:HIS:HB3	2.20	0.41
1:B:243:LYS:HE2	1:B:420:GLN:CD	2.40	0.41
2:C:6:GLU:CD	2:C:114:GLY:HA2	2.41	0.41
2:C:32:TYR:O	2:C:72:ARG:NH2	2.54	0.41
1:A:295:GLY:C	1:A:297:ALA:N	2.73	0.41
2:C:69:ILE:O	2:C:69:ILE:HG22	2.21	0.41
3:D:49:ASP:O	3:D:50:THR:HB	2.20	0.41
1:A:124:TRP:O	1:A:126:ARG:N	2.53	0.41
1:A:308:VAL:O	1:A:309:ALA:HB2	2.20	0.41
1:B:248:PRO:HG2	1:B:251:THR:HG23	2.01	0.41
2:C:87:ARG:CG	2:C:89:GLU:OE2	2.69	0.41
2:C:150:VAL:HG22	2:C:205:VAL:HG21	2.03	0.41
2:C:207:HIS:CE1	2:C:210:SER:H	2.38	0.41
1:A:198:LEU:HD21	1:B:198:LEU:HD21	2.03	0.41
1:B:78:LEU:HB3	1:B:307:PHE:HE2	1.84	0.41
1:B:262:PHE:CE1	1:B:367:LEU:HD23	2.55	0.41
3:D:34:TRP:CE2	3:D:72:LEU:HB2	2.56	0.41
2:E:53:PRO:C	2:E:55:SER:H	2.23	0.41
1:A:95:PHE:C	1:A:97:VAL:N	2.74	0.41
1:A:101:ALA:CB	1:A:130:VAL:HG21	2.51	0.41
1:A:193:PRO:O	1:A:194:LEU:C	2.59	0.41
1:B:278:ASP:C	1:B:280:LEU:H	2.24	0.41
2:C:72:ARG:HG3	2:C:72:ARG:HH11	1.86	0.41
2:C:163:ASN:O	2:C:164:SER:CB	2.69	0.41
2:C:196:TRP:CD1	2:C:201:VAL:CG2	3.04	0.41
2:E:60:TYR:CD1	2:E:60:TYR:N	2.88	0.41
1:A:21:LEU:HD22	1:B:453:LEU:HD23	2.03	0.41
1:A:71:THR:O	1:A:78:LEU:HG	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:258:LEU:HD13	1:A:371:PHE:CG	2.55	0.41
1:A:270:ASN:O	1:A:273:VAL:CG1	2.69	0.41
1:B:169:LYS:HG2	1:B:170:GLY:N	2.35	0.41
1:B:305:LEU:CA	1:B:308:VAL:HG22	2.47	0.41
3:D:74:ILE:CG2	3:D:77:MET:HA	2.51	0.41
3:F:22:THR:CG2	3:F:23:CYS:H	2.33	0.41
3:F:114:VAL:HG12	3:F:115:SER:H	1.82	0.41
3:F:192:THR:CB	3:F:207:SER:HB3	2.50	0.41
1:A:42:VAL:O	1:A:43:GLY:C	2.59	0.41
1:A:99:LYS:HB2	1:A:288:ILE:HD11	2.03	0.41
1:A:117:GLU:O	1:A:118:ASP:HB2	2.20	0.41
1:A:279:LEU:HA	1:A:282:ARG:NH1	2.36	0.41
2:C:18:LEU:N	2:C:18:LEU:CD2	2.82	0.41
2:C:64:LEU:N	2:C:64:LEU:HD23	2.36	0.41
2:C:103:TYR:HD2	3:D:31:TYR:CE2	2.39	0.41
2:C:172:HIS:N	2:C:188:SER:O	2.51	0.41
3:D:32:ILE:HG12	3:D:70:TYR:CD2	2.56	0.41
3:D:162:TRP:CD2	3:D:174:MET:HG3	2.57	0.41
2:E:176:ALA:HA	2:E:185:LEU:HB3	2.03	0.41
1:A:110:PRO:HG2	1:A:448:ILE:HG21	2.03	0.40
1:A:165:ILE:O	1:A:165:ILE:CG2	2.69	0.40
1:A:270:ASN:O	1:A:274:LEU:HB2	2.21	0.40
1:A:356:ILE:O	1:A:356:ILE:HG12	2.22	0.40
1:A:385:GLU:O	1:A:386:ALA:C	2.59	0.40
1:B:92:PHE:O	1:B:96:LEU:HD23	2.21	0.40
1:B:98:ARG:NH1	1:B:98:ARG:HB3	2.36	0.40
1:B:124:TRP:CA	1:B:157:ASN:HD22	2.23	0.40
1:B:385:GLU:O	1:B:386:ALA:C	2.60	0.40
2:E:69:ILE:HB	2:E:82:GLN:HB2	2.02	0.40
3:F:7:SER:CB	3:F:22:THR:HB	2.51	0.40
3:F:60:ARG:NH1	3:F:81:ASP:OD1	2.54	0.40
3:F:127:GLY:HA2	3:F:182:LYS:HB2	2.02	0.40
1:A:402:ILE:HD11	1:A:445:TYR:CD2	2.56	0.40
1:A:437:GLN:OE1	1:A:438:PHE:CE1	2.74	0.40
1:B:78:LEU:HD13	1:B:307:PHE:HZ	1.84	0.40
1:B:144:VAL:HG11	1:B:344:THR:HA	2.04	0.40
1:B:434:LEU:HD22	1:B:434:LEU:HA	1.86	0.40
1:B:441:GLY:O	1:B:442:LYS:HG3	2.21	0.40
1:B:443:PRO:O	1:B:445:TYR:N	2.53	0.40
2:C:109:ASP:CG	2:C:110:VAL:HG23	2.41	0.40
3:D:65:GLY:CA	3:D:70:TYR:HA	2.47	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:74:ILE:HG21	3:D:77:MET:HA	2.04	0.40
3:D:185:TYR:HD1	3:D:191:TYR:CZ	2.38	0.40
2:E:6:GLU:HB3	2:E:22:CYS:HB2	2.03	0.40
2:E:48:ILE:HD12	2:E:68:PHE:CZ	2.57	0.40
3:F:86:TYR:HD2	3:F:100:GLY:HA2	1.86	0.40
1:A:190:PHE:CD1	1:A:190:PHE:N	2.89	0.40
1:A:235:GLU:O	1:A:236:VAL:HG23	2.21	0.40
1:B:91:MET:C	1:B:93:GLY:N	2.75	0.40
1:B:225:SER:O	1:B:228:MET:HB2	2.21	0.40
2:C:158:VAL:CG2	2:C:185:LEU:HD21	2.51	0.40
3:F:44:LYS:HB2	3:F:44:LYS:HE2	1.91	0.40
3:F:90:TRP:CG	3:F:95:GLN:HB3	2.56	0.40
3:F:181:THR:OG1	3:F:184:GLU:HB3	2.22	0.40
1:A:17:ARG:C	1:A:19:ARG:N	2.75	0.40
1:A:250:ASN:ND2	2:C:105:TYR:HD1	2.15	0.40
1:B:423:LEU:HD12	1:B:423:LEU:HA	1.87	0.40
3:D:86:TYR:HE2	3:D:100:GLY:HA3	1.87	0.40
2:E:33:TRP:O	2:E:99:LEU:HB2	2.22	0.40
1:A:46:VAL:HG11	1:A:184:ALA:C	2.42	0.40
1:A:235:GLU:O	1:A:236:VAL:CG2	2.69	0.40
1:B:46:VAL:HG22	1:B:155:GLY:HA2	2.03	0.40
1:B:60:LEU:HD12	1:B:140:GLY:HA3	2.03	0.40
2:C:72:ARG:O	2:C:72:ARG:HG2	2.20	0.40
3:D:79:ALA:HB1	3:D:105:ILE:CD1	2.52	0.40
2:E:38:ARG:HE	2:E:46:LYS:CE	2.35	0.40
2:E:96:CYS:O	2:E:96:CYS:SG	2.79	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)
1:A:171:ASP:OD1	3:D:210:ARG:NH2[3_545]	2.19	0.01

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	442/465 (95%)	292 (66%)	123 (28%)	27 (6%)	1	10
1	B	439/465 (94%)	283 (64%)	124 (28%)	32 (7%)	1	7
2	C	219/222 (99%)	177 (81%)	27 (12%)	15 (7%)	1	8
2	E	219/222 (99%)	178 (81%)	28 (13%)	13 (6%)	1	10
3	D	209/211 (99%)	174 (83%)	25 (12%)	10 (5%)	2	14
3	F	209/211 (99%)	163 (78%)	35 (17%)	11 (5%)	2	12
All	All	1737/1796 (97%)	1267 (73%)	362 (21%)	108 (6%)	1	10

All (108) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	132	PHE
1	A	167	ARG
1	A	307	PHE
1	A	309	ALA
1	A	438	PHE
1	A	441	GLY
1	B	132	PHE
1	B	167	ARG
1	B	171	ASP
1	B	188	ALA
1	B	307	PHE
1	B	309	ALA
1	B	438	PHE
1	B	441	GLY
2	C	65	LYS
2	C	106	TRP
2	C	122	ALA
2	C	140	ALA
3	D	7	SER
3	D	67	GLY
3	D	105	ILE
3	D	126	SER
2	E	65	LYS
2	E	106	TRP
2	E	122	ALA
2	E	140	ALA
3	F	7	SER

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Mol	Chain	Res	Type
3	F	112	PRO
3	F	126	SER
1	A	79	LEU
1	A	96	LEU
1	A	105	GLY
1	A	107	SER
1	A	235	GLU
1	A	308	VAL
1	A	318	ASN
1	A	409	ILE
1	B	79	LEU
1	B	96	LEU
1	B	105	GLY
1	B	187	ALA
1	B	234	HIS
1	B	308	VAL
1	B	318	ASN
2	C	9	GLY
3	D	153	GLU
2	E	9	GLY
3	F	67	GLY
1	A	64	ARG
1	A	234	HIS
1	B	64	ARG
1	B	107	SER
1	B	245	SER
2	C	31	ARG
2	C	53	PRO
2	C	124	THR
2	C	196	TRP
3	D	55	SER
3	D	154	ARG
3	D	199	THR
2	E	31	ARG
2	E	64	LEU
3	F	15	PRO
3	F	113	THR
3	F	153	GLU
1	A	188	ALA
1	B	59	TRP
1	B	274	LEU
1	B	346	LEU

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Mol	Chain	Res	Type
1	B	409	ILE
1	B	414	GLU
2	C	109	ASP
2	C	166	SER
3	D	15	PRO
3	D	80	GLU
2	E	30	SER
2	E	53	PRO
2	E	196	TRP
3	F	66	SER
3	F	154	ARG
1	A	210	TYR
1	A	245	SER
1	A	346	LEU
1	A	386	ALA
1	A	443	PRO
1	B	285	GLY
1	B	443	PRO
2	C	30	SER
2	E	113	ALA
3	F	55	SER
1	B	223	ILE
1	B	405	PRO
1	A	128	LEU
1	A	215	ILE
1	A	223	ILE
1	A	285	GLY
1	B	128	LEU
2	C	62	PRO
2	E	14	PRO
1	A	144	VAL
1	B	140	GLY
1	B	144	VAL
1	B	376	VAL
2	C	54	VAL
3	F	119	PRO
1	B	215	ILE
2	C	157	PRO
2	E	157	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	335/353 (95%)	311 (93%)	24 (7%)	14	41
1	B	332/353 (94%)	309 (93%)	23 (7%)	15	44
2	C	181/182 (100%)	160 (88%)	21 (12%)	5	22
2	E	181/182 (100%)	163 (90%)	18 (10%)	8	28
3	D	185/185 (100%)	177 (96%)	8 (4%)	29	59
3	F	185/185 (100%)	172 (93%)	13 (7%)	15	43
All	All	1399/1440 (97%)	1292 (92%)	107 (8%)	13	39

All (107) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	63	GLN
1	A	79	LEU
1	A	98	ARG
1	A	120	ARG
1	A	136	LEU
1	A	167	ARG
1	A	168	LEU
1	A	198	LEU
1	A	207	GLN
1	A	212	LEU
1	A	230	ARG
1	A	270	ASN
1	A	291	TRP
1	A	298	ILE
1	A	305	LEU
1	A	317	PHE
1	A	318	ASN
1	A	319	LEU
1	A	340	ARG
1	A	379	PHE
1	A	381	GLN
1	A	420	GLN

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Mol	Chain	Res	Type
1	A	434	LEU
1	A	451	ARG
1	B	63	GLN
1	B	79	LEU
1	B	98	ARG
1	B	107	SER
1	B	120	ARG
1	B	136	LEU
1	B	167	ARG
1	B	168	LEU
1	B	198	LEU
1	B	207	GLN
1	B	212	LEU
1	B	230	ARG
1	B	270	ASN
1	B	291	TRP
1	B	317	PHE
1	B	318	ASN
1	B	319	LEU
1	B	340	ARG
1	B	379	PHE
1	B	381	GLN
1	B	420	GLN
1	B	434	LEU
1	B	451	ARG
2	C	4	LEU
2	C	18	LEU
2	C	27	PHE
2	C	45	LEU
2	C	59	ASN
2	C	67	LYS
2	C	72	ARG
2	C	77	ASP
2	C	98	ARG
2	C	107	TYR
2	C	115	THR
2	C	127	PRO
2	C	155	PRO
2	C	157	PRO
2	C	167	LEU
2	C	172	HIS
2	C	186	SER

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Mol	Chain	Res	Type
2	C	200	THR
2	C	203	CYS
2	C	204	ASN
2	C	221	ARG
3	D	28	SER
3	D	46	TRP
3	D	75	ASN
3	D	77	MET
3	D	88	GLN
3	D	117	PHE
3	D	146	LYS
3	D	189	ASN
2	E	4	LEU
2	E	22	CYS
2	E	27	PHE
2	E	45	LEU
2	E	59	ASN
2	E	61	THR
2	E	67	LYS
2	E	72	ARG
2	E	77	ASP
2	E	98	ARG
2	E	107	TYR
2	E	124	THR
2	E	157	PRO
2	E	172	HIS
2	E	185	LEU
2	E	200	THR
2	E	203	CYS
2	E	204	ASN
3	F	1	ASP
3	F	6	GLN
3	F	15	PRO
3	F	28	SER
3	F	46	TRP
3	F	75	ASN
3	F	77	MET
3	F	88	GLN
3	F	102	LYS
3	F	105	ILE
3	F	119	PRO
3	F	146	LYS

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Mol	Chain	Res	Type
3	F	189	ASN

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

Mol	Chain	Res	Type
1	A	62	ASN
1	A	157	ASN
1	A	207	GLN
1	A	233	ASN
1	A	270	ASN
1	A	277	GLN
1	A	284	HIS
1	A	287	ASN
1	A	318	ASN
1	A	327	ASN
1	A	381	GLN
1	A	383	HIS
1	A	420	GLN
1	A	437	GLN
1	A	456	GLN
1	A	460	GLN
1	B	62	ASN
1	B	119	GLN
1	B	153	GLN
1	B	157	ASN
1	B	207	GLN
1	B	233	ASN
1	B	270	ASN
1	B	277	GLN
1	B	284	HIS
1	B	287	ASN
1	B	318	ASN
1	B	327	ASN
1	B	381	GLN
1	B	420	GLN
1	B	437	GLN
1	B	456	GLN
2	C	163	ASN
3	D	93	HIS
3	D	136	ASN
3	D	137	ASN
3	D	189	ASN

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Mol	Chain	Res	Type
2	E	163	ASN
3	F	93	HIS
3	F	136	ASN
3	F	137	ASN
3	F	155	GLN
3	F	189	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 [i](#)

Of 6 ligands modelled in this entry, 6 are monoatomic - leaving 0 for Mogul analysis.

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

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	444/465 (95%)	-0.01	17 (3%) 40 37	52, 79, 102, 112	0
1	B	441/465 (94%)	-0.06	12 (2%) 54 52	48, 77, 105, 122	0
2	C	221/222 (99%)	-0.10	1 (0%) 91 91	45, 76, 96, 127	0
2	E	221/222 (99%)	-0.12	3 (1%) 75 75	42, 77, 97, 118	0
3	D	211/211 (100%)	0.11	6 (2%) 53 51	58, 87, 99, 105	0
3	F	211/211 (100%)	0.07	10 (4%) 31 29	42, 73, 100, 112	0
All	All	1749/1796 (97%)	-0.02	49 (2%) 53 51	42, 79, 101, 127	0

All (49) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	D	79	ALA	5.0
1	B	70	HIS	5.0
1	B	235	GLU	4.7
1	B	71	THR	4.3
1	A	72	ALA	4.2
1	A	235	GLU	4.0
1	B	72	ALA	3.8
1	B	73	ASP	3.7
2	E	13	GLN	3.6
3	F	153	GLU	3.5
3	F	190	SER	3.3
3	D	20	THR	3.2
3	F	155	GLN	3.2
1	A	23	ARG	3.2
1	B	240	ASP	3.1
3	F	149	ILE	3.1
2	C	196	TRP	2.9
1	A	168	LEU	2.7
1	A	234	HIS	2.7

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Mol	Chain	Res	Type	RSRZ
2	E	14	PRO	2.7
1	A	146	GLY	2.6
1	B	74	ASN	2.6
3	F	189	ASN	2.4
1	A	69	VAL	2.4
3	D	167	SER	2.4
1	A	459	GLU	2.4
3	F	191	TYR	2.4
1	A	165	ILE	2.4
1	A	149	GLY	2.3
3	F	150	ASP	2.3
1	A	71	THR	2.3
1	B	69	VAL	2.3
1	B	307	PHE	2.3
1	A	19	ARG	2.3
1	A	150	PRO	2.3
1	A	324	THR	2.3
3	D	202	SER	2.3
3	F	152	SER	2.2
1	A	355	GLY	2.2
3	D	156	ASN	2.2
1	B	241	VAL	2.2
1	B	237	ALA	2.2
3	F	151	GLY	2.1
3	F	182	LYS	2.1
3	D	7	SER	2.1
1	A	289	THR	2.1
1	A	106	GLY	2.1
2	E	121	SER	2.0
1	B	108	GLY	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
4	CL	B	467	1/1	0.84	0.41	65,65,65,65	0
4	CL	A	468	1/1	0.88	0.24	75,75,75,75	0
4	CL	A	466	1/1	0.88	0.43	55,55,55,55	0
4	CL	A	467	1/1	0.93	0.32	65,65,65,65	0
4	CL	B	468	1/1	0.94	0.26	75,75,75,75	0
4	CL	B	466	1/1	0.97	0.25	55,55,55,55	0

6.5 Other polymers [i](#)

There are no such residues in this entry.