Full wwPDB X-ray Structure Validation Report ⓘ

Dec 2, 2023 – 03:04 pm GMT

PDB ID	:	1USV
Title	:	The Structure of the complex between Aha1 and HSP90
Authors	:	Meyer, P.; Roe, S.M.; Pearl, L.H.
Deposited on	:	2003-12-01
Resolution	:	2.70 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:

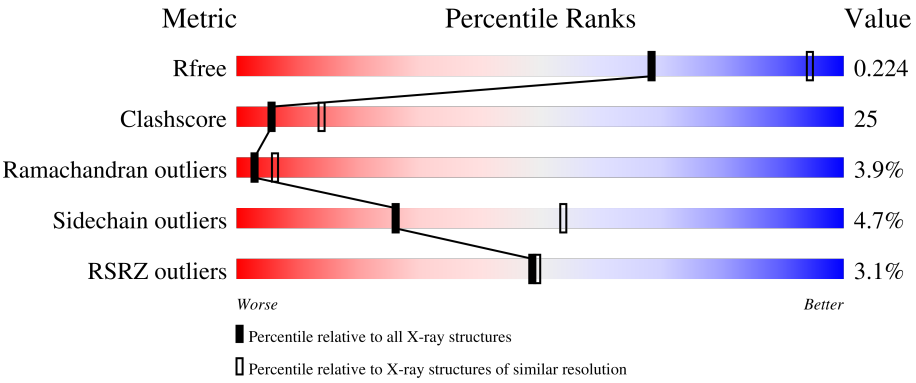
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation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

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.70 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	2808 (2.70-2.70)
Clashscore	141614	3122 (2.70-2.70)
Ramachandran outliers	138981	3069 (2.70-2.70)
Sidechain outliers	138945	3069 (2.70-2.70)
RSRZ outliers	127900	2737 (2.70-2.70)

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 <=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	260	2% 56% 36% 5% ·
1	C	260	% 61% 30% · 5%
1	E	260	3% 53% 39% · ·
1	G	260	% 50% 41% 5% 5%
2	B	170	4% 42% 38% · 16%

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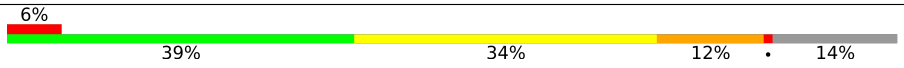
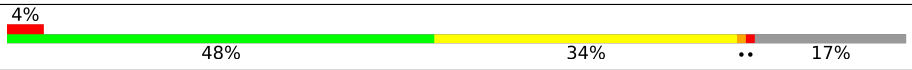
Mol	Chain	Length	Quality of chain
2	D	170	
2	F	170	
2	H	170	

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 12783 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 HEAT SHOCK PROTEIN HSP82.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	251	Total	C	N	O	S	0	0	0
			2080	1345	338	394	3			
1	C	247	Total	C	N	O	S	0	0	0
			2041	1320	332	387	2			
1	E	251	Total	C	N	O	S	0	0	0
			2078	1342	339	394	3			
1	G	248	Total	C	N	O	S	0	0	0
			2050	1325	335	387	3			

- Molecule 2 is a protein called AHA1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	143	Total	C	N	O	S	0	0	0
			1124	719	185	218	2			
2	D	142	Total	C	N	O	S	0	0	0
			1107	707	183	215	2			
2	F	146	Total	C	N	O	S	0	0	1
			1146	735	191	218	2			
2	H	141	Total	C	N	O	S	0	0	0
			1099	703	181	213	2			

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	16	Total	O	0	0
			16	16		
3	B	4	Total	O	0	0
			4	4		
3	C	13	Total	O	0	0
			13	13		
3	D	2	Total	O	0	0
			2	2		

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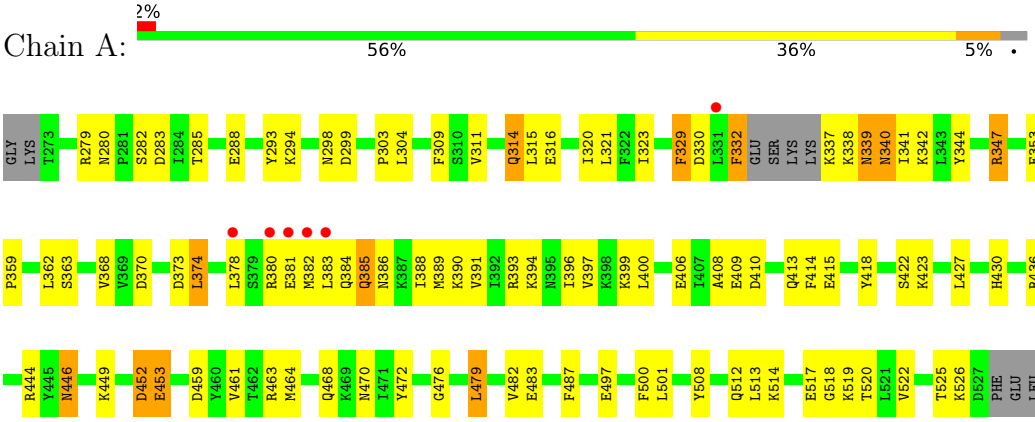
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	E	7	Total O 7 7	0	0
3	F	2	Total O 2 2	0	0
3	G	11	Total O 11 11	0	0
3	H	3	Total O 3 3	0	0

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.

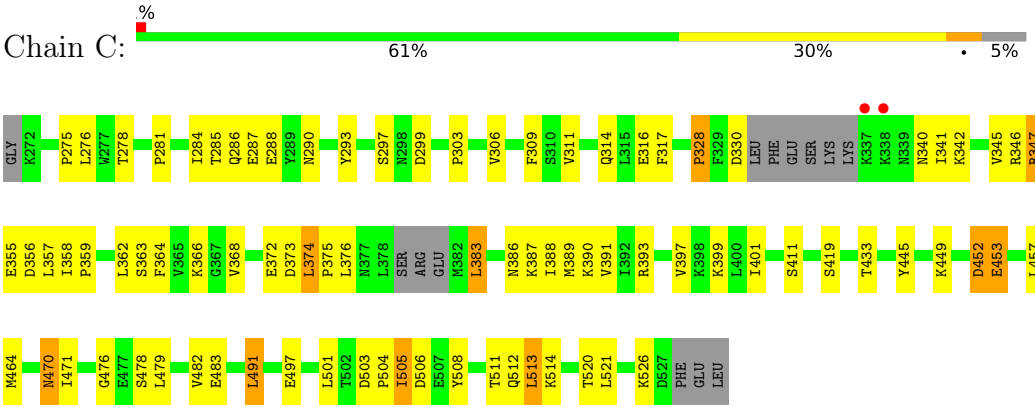
• Molecule 1: HEAT SHOCK PROTEIN HSP82

Chain A:



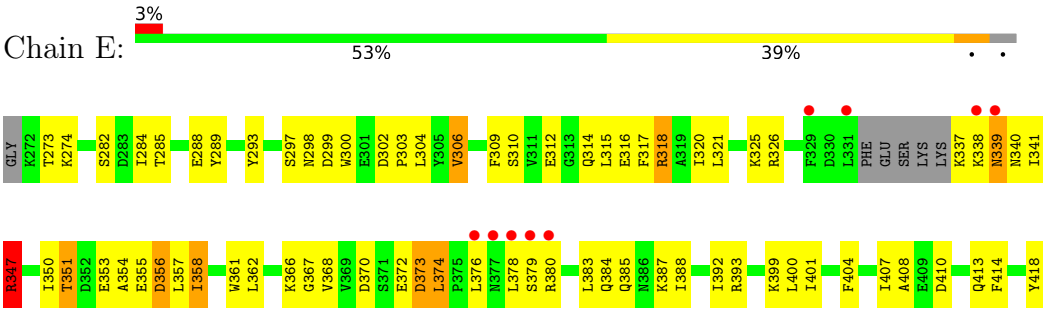
• Molecule 1: HEAT SHOCK PROTEIN HSP82

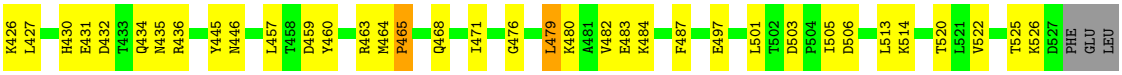
Chain C:



• Molecule 1: HEAT SHOCK PROTEIN HSP82

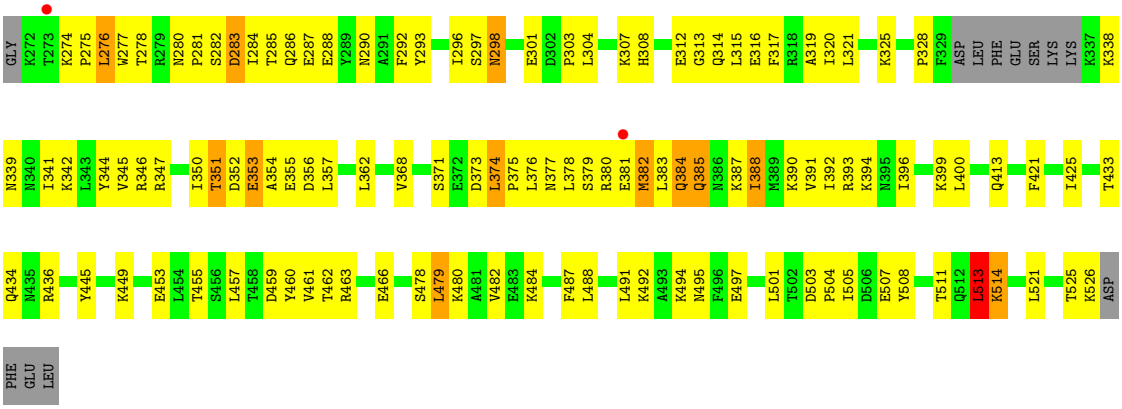
Chain E:





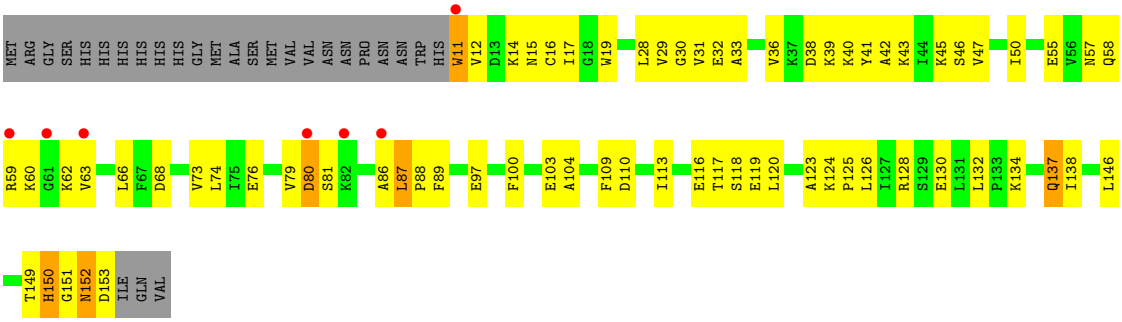
• Molecule 1: HEAT SHOCK PROTEIN HSP82

Chain G:



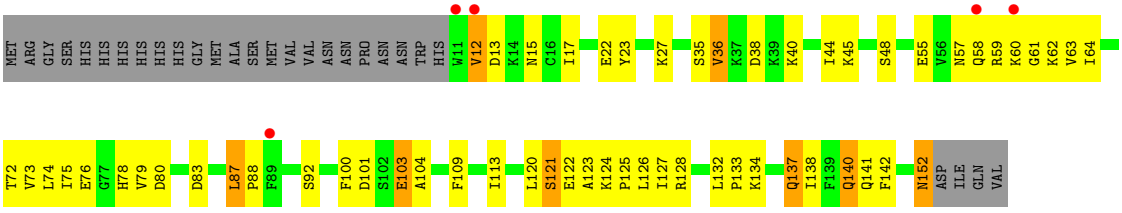
• Molecule 2: AHA1

Chain B:



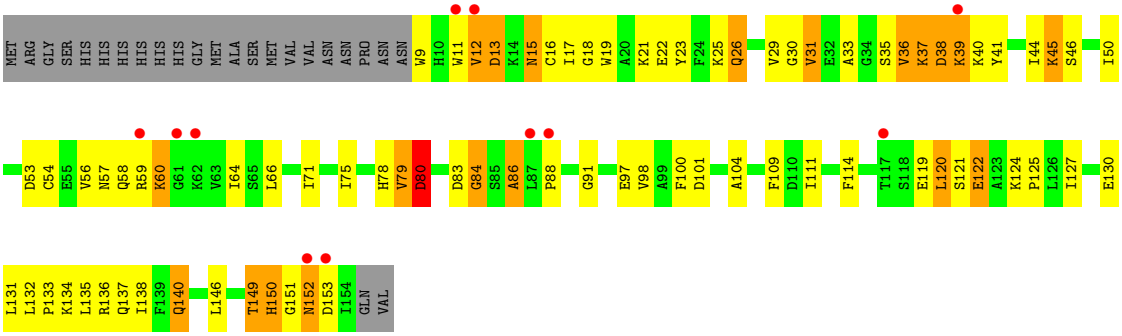
• Molecule 2: AHA1

Chain D:

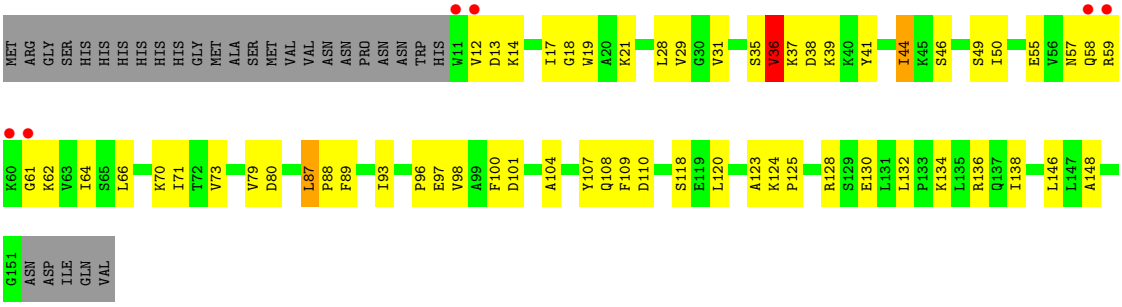


• Molecule 2: AHA1

Chain F:



• Molecule 2: AHA1



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	58.40Å 207.93Å 84.45Å 90.00° 97.68° 90.00°	Depositor
Resolution (Å)	34.26 – 2.70 34.26 – 2.70	Depositor EDS
% Data completeness (in resolution range)	97.8 (34.26-2.70) 97.9 (34.26-2.70)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.85 (at 2.68Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.229 , 0.298 0.222 , 0.224	Depositor DCC
R_{free} test set	2720 reflections (5.09%)	wwPDB-VP
Wilson B-factor (Å^2)	51.6	Xtriage
Anisotropy	0.444	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 45.4	EDS
L-test for twinning[2]	$< \|L\| > = 0.45$, $< L^2 > = 0.28$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	12783	wwPDB-VP
Average B, all atoms (Å^2)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.81% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

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	0.46	0/2124	0.64	0/2867
1	C	0.48	0/2083	0.66	0/2811
1	E	0.44	0/2121	0.65	0/2862
1	G	0.44	0/2093	0.64	0/2825
2	B	0.40	0/1144	0.65	0/1537
2	D	0.43	0/1125	0.67	0/1510
2	F	0.39	0/1169	0.60	0/1573
2	H	0.41	0/1117	0.67	0/1499
All	All	0.44	0/12976	0.65	0/17484

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2080	0	2083	91	0
1	C	2041	0	2044	92	0
1	E	2078	0	2087	112	0
1	G	2050	0	2057	116	0
2	B	1124	0	1132	74	0
2	D	1107	0	1120	51	0
2	F	1146	0	1147	79	0
2	H	1099	0	1114	51	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	A	16	0	0	0	0
3	B	4	0	0	0	0
3	C	13	0	0	1	0
3	D	2	0	0	0	0
3	E	7	0	0	1	0
3	F	2	0	0	0	0
3	G	11	0	0	0	0
3	H	3	0	0	0	0
All	All	12783	0	12784	647	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 25.

All (647) 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:G:280:ASN:HD22	1:G:283:ASP:HB2	1.13	1.11
1:G:380:ARG:HG2	1:G:381:GLU:H	1.23	1.03
1:C:390:LYS:HA	1:C:393:ARG:HH12	1.25	0.98
1:C:386:ASN:HD22	1:C:389:MET:H	1.05	0.97
2:F:78:HIS:HB2	2:F:86:ALA:HB1	1.47	0.95
2:F:11:TRP:HE1	1:G:280:ASN:HB2	1.33	0.92
2:F:91:GLY:HA2	2:F:114:PHE:HD1	1.34	0.92
1:A:342:LYS:HB2	1:A:368:VAL:HG22	1.52	0.91
2:F:12:VAL:HG12	2:F:13:ASP:H	1.35	0.91
2:D:140:GLN:HE21	2:D:140:GLN:HA	1.36	0.90
1:E:407:ILE:HG23	1:E:413:GLN:HG2	1.51	0.89
2:F:91:GLY:HA2	2:F:114:PHE:CD1	2.08	0.87
2:D:58:GLN:HG2	2:D:63:VAL:HG22	1.55	0.87
1:C:505:ILE:N	1:C:505:ILE:HD12	1.89	0.87
1:A:464:MET:HG2	1:A:468:GLN:NE2	1.90	0.86
1:A:390:LYS:HE2	1:A:394:LYS:HE3	1.57	0.85
2:H:29:VAL:HG22	2:H:46:SER:HA	1.58	0.85
1:G:503:ASP:OD1	1:G:504:PRO:HD2	1.76	0.85
1:E:350:ILE:HG22	1:E:351:THR:HG22	1.60	0.84
1:C:505:ILE:HD12	1:C:505:ILE:H	1.44	0.83
2:B:39:LYS:HD2	2:B:86:ALA:HB2	1.61	0.82
2:B:117:THR:H	2:B:120:LEU:HD12	1.43	0.82
1:G:503:ASP:OD2	1:G:505:ILE:HD13	1.80	0.82
1:C:511:THR:HG22	1:C:512:GLN:HE21	1.45	0.82
2:F:35:SER:O	2:F:36:VAL:HG23	1.81	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:386:ASN:ND2	1:C:389:MET:H	1.78	0.81
1:G:374:LEU:HD12	1:G:375:PRO:HD2	1.63	0.80
2:F:39:LYS:HB3	2:F:80:ASP:HB3	1.64	0.80
2:F:11:TRP:NE1	1:G:280:ASN:HB2	1.98	0.79
1:A:386:ASN:HD22	1:A:389:MET:H	1.29	0.79
1:C:390:LYS:HA	1:C:393:ARG:NH1	1.99	0.78
2:F:86:ALA:O	2:F:88:PRO:HD3	1.83	0.78
1:G:280:ASN:ND2	1:G:283:ASP:HB2	1.96	0.78
1:C:355:GLU:O	1:C:356:ASP:HB2	1.84	0.78
1:C:287:GLU:HA	1:C:290:ASN:HD22	1.50	0.77
1:C:355:GLU:HG3	1:C:356:ASP:H	1.47	0.77
1:A:459:ASP:HB3	1:A:463:ARG:HH12	1.48	0.76
1:C:386:ASN:HD21	1:C:388:ILE:HB	1.50	0.76
2:F:15:ASN:HD22	2:F:16:CYS:H	1.32	0.76
1:A:378:LEU:HB2	1:A:383:LEU:HB2	1.68	0.76
1:C:505:ILE:H	1:C:505:ILE:CD1	1.99	0.75
2:D:134:LYS:O	2:D:137:GLN:HG3	1.88	0.74
1:C:503:ASP:CG	1:C:505:ILE:HD13	2.07	0.74
2:H:17:ILE:HG13	2:H:21:LYS:HE3	1.70	0.74
1:C:314:GLN:HE21	2:D:64:ILE:HB	1.52	0.73
1:A:315:LEU:HD22	1:A:391:VAL:CG1	2.18	0.73
1:A:381:GLU:O	1:A:385:GLN:HG2	1.87	0.73
2:H:104:ALA:O	2:H:136:ARG:HD3	1.87	0.73
2:D:35:SER:HB3	2:D:38:ASP:OD2	1.89	0.72
1:C:449:LYS:HD2	1:C:497:GLU:HB2	1.72	0.72
2:D:87:LEU:H	2:D:87:LEU:HD23	1.55	0.72
2:H:58:GLN:O	2:H:59:ARG:HD2	1.89	0.72
1:G:355:GLU:C	1:G:357:LEU:H	1.93	0.71
2:B:58:GLN:HG2	2:B:63:VAL:HG13	1.71	0.71
1:E:346:ARG:HA	1:E:347:ARG:CZ	2.20	0.71
2:B:39:LYS:HE2	2:B:81:SER:H	1.56	0.71
1:G:479:LEU:HD13	1:G:479:LEU:O	1.90	0.71
1:A:355:GLU:O	1:A:356:ASP:HB2	1.89	0.70
2:B:134:LYS:O	2:B:137:GLN:HG3	1.91	0.70
1:E:318:ARG:HH11	1:E:318:ARG:HG2	1.54	0.70
1:C:471:ILE:HB	1:C:521:LEU:HD23	1.72	0.70
1:E:315:LEU:HD11	1:E:388:ILE:HD12	1.72	0.70
1:C:460:TYR:CE2	1:C:471:ILE:HG23	2.26	0.70
1:G:350:ILE:HG22	1:G:351:THR:HG22	1.72	0.70
1:G:507:GLU:O	1:G:511:THR:HG23	1.93	0.69
2:B:12:VAL:O	2:B:14:LYS:HG3	1.93	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:33:ALA:HB2	2:F:131:LEU:HB2	1.74	0.68
1:G:513:LEU:O	1:G:514:LYS:HB2	1.93	0.68
2:F:15:ASN:ND2	2:F:16:CYS:H	1.91	0.68
2:B:30:GLY:HA2	2:B:43:LYS:NZ	2.08	0.68
1:C:513:LEU:O	1:C:514:LYS:HB2	1.94	0.68
2:F:131:LEU:O	2:F:135:LEU:HG	1.94	0.68
2:D:140:GLN:HA	2:D:140:GLN:NE2	2.09	0.67
1:E:423:LYS:NZ	1:E:503:ASP:OD1	2.27	0.67
1:E:376:LEU:HD12	1:E:376:LEU:H	1.60	0.67
1:E:501:LEU:HB3	1:E:506:ASP:HB3	1.75	0.67
2:F:132:LEU:N	2:F:133:PRO:HD2	2.10	0.67
1:G:390:LYS:HG3	1:G:393:ARG:NH2	2.09	0.67
1:A:329:PHE:CG	1:A:330:ASP:N	2.63	0.66
2:B:116:GLU:HA	2:B:120:LEU:HD12	1.75	0.66
2:F:40:LYS:HD3	2:F:79:VAL:HG13	1.76	0.66
2:F:134:LYS:O	2:F:138:ILE:HG13	1.96	0.66
1:G:287:GLU:CD	1:G:287:GLU:H	1.99	0.66
1:G:377:ASN:O	1:G:378:LEU:HD23	1.95	0.66
2:F:37:LYS:H	2:F:37:LYS:CD	2.08	0.66
1:G:380:ARG:HG2	1:G:381:GLU:N	2.04	0.66
1:A:378:LEU:HD13	1:A:383:LEU:HA	1.77	0.66
1:C:357:LEU:O	1:C:393:ARG:HG3	1.96	0.66
1:A:386:ASN:HD21	1:A:388:ILE:HB	1.61	0.65
1:E:487:PHE:CG	1:E:525:THR:HG22	2.31	0.65
1:C:311:VAL:O	1:C:316:GLU:HA	1.96	0.65
1:C:374:LEU:HD12	1:C:375:PRO:HD2	1.77	0.65
1:G:280:ASN:O	1:G:284:ILE:HG13	1.96	0.65
2:B:39:LYS:HE2	2:B:80:ASP:HA	1.79	0.65
2:F:80:ASP:HA	2:F:86:ALA:H	1.61	0.65
1:G:356:ASP:O	1:G:393:ARG:HD3	1.97	0.64
1:G:320:ILE:O	1:G:320:ILE:HG23	1.97	0.64
1:G:315:LEU:HD13	2:H:66:LEU:HD11	1.80	0.64
1:G:356:ASP:OD2	1:G:384:GLN:HG2	1.97	0.64
1:A:464:MET:HE2	1:A:519:LYS:HE2	1.79	0.64
1:G:503:ASP:OD1	1:G:504:PRO:CD	2.44	0.64
1:E:427:LEU:O	1:E:430:HIS:HB2	1.97	0.64
2:F:29:VAL:HG13	2:F:45:LYS:O	1.98	0.64
1:G:342:LYS:HB3	1:G:344:TYR:HE2	1.62	0.64
2:F:38:ASP:C	2:F:40:LYS:H	1.99	0.64
2:F:133:PRO:O	2:F:137:GLN:HG3	1.97	0.64
1:C:511:THR:HG22	1:C:512:GLN:NE2	2.12	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:346:ARG:HH22	1:E:376:LEU:HD11	1.64	0.63
2:F:15:ASN:ND2	2:F:16:CYS:N	2.47	0.63
2:H:58:GLN:HG3	2:H:62:LYS:O	1.98	0.63
1:C:359:PRO:HG2	1:C:362:LEU:HD12	1.81	0.63
1:E:273:THR:HG22	1:E:274:LYS:H	1.63	0.63
1:A:315:LEU:HD22	1:A:391:VAL:HG12	1.80	0.62
2:B:15:ASN:HD22	2:B:16:CYS:H	1.46	0.62
1:A:452:ASP:O	1:A:453:GLU:HB3	1.99	0.62
1:G:392:ILE:O	1:G:396:ILE:HG13	1.98	0.62
1:E:351:THR:HG23	1:E:354:ALA:HB2	1.81	0.62
1:G:449:LYS:HD2	1:G:497:GLU:HB2	1.80	0.62
1:A:356:ASP:OD2	1:A:384:GLN:HB3	1.99	0.62
1:A:464:MET:CE	1:A:519:LYS:HE2	2.30	0.62
1:E:340:ASN:OD1	1:E:366:LYS:HE2	2.00	0.62
2:F:75:ILE:HD12	2:F:75:ILE:O	2.00	0.62
1:E:379:SER:O	1:E:383:LEU:HB3	2.00	0.61
1:A:315:LEU:HD22	1:A:391:VAL:HG11	1.83	0.61
1:E:318:ARG:HG2	1:E:318:ARG:NH1	2.14	0.61
1:G:277:TRP:CE3	1:G:368:VAL:HG11	2.35	0.61
1:C:286:GLN:HG3	1:C:290:ASN:HD21	1.64	0.61
2:B:55:GLU:HG2	2:B:57:ASN:HD21	1.64	0.61
2:F:15:ASN:HD22	2:F:16:CYS:N	1.96	0.61
2:D:120:LEU:O	2:D:122:GLU:N	2.34	0.61
2:H:37:LYS:HG3	2:H:38:ASP:N	2.15	0.61
1:C:293:TYR:CD2	1:C:303:PRO:HD3	2.36	0.60
2:B:124:LYS:HB2	2:B:125:PRO:HD3	1.84	0.60
1:A:384:GLN:O	1:A:385:GLN:HB3	2.01	0.60
1:C:470:ASN:HB3	1:C:520:THR:O	2.00	0.60
1:A:526:LYS:HE3	1:C:526:LYS:NZ	2.15	0.60
2:F:111:ILE:HG21	2:F:124:LYS:HG2	1.84	0.60
2:H:98:VAL:HA	2:H:107:TYR:HE2	1.66	0.60
1:G:281:PRO:C	1:G:283:ASP:H	2.05	0.60
1:G:445:TYR:O	1:G:455:THR:HG22	2.02	0.60
1:E:401:ILE:CD1	1:E:435:ASN:HB3	2.32	0.60
1:A:293:TYR:CD2	1:A:303:PRO:HD3	2.36	0.60
2:B:47:VAL:HA	2:B:73:VAL:HG12	1.83	0.60
1:E:289:TYR:CD2	1:E:306:VAL:HG21	2.37	0.60
1:E:408:ALA:HA	1:E:414:PHE:CD2	2.37	0.60
1:G:347:ARG:HD3	1:G:347:ARG:N	2.16	0.60
1:A:386:ASN:ND2	1:A:388:ILE:HB	2.16	0.59
2:B:117:THR:N	2:B:120:LEU:HD12	2.15	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:80:ASP:HB2	2:F:84:GLY:HA2	1.83	0.59
1:A:294:LYS:HD2	1:A:299:ASP:O	2.01	0.59
1:C:340:ASN:ND2	1:C:366:LYS:HG2	2.17	0.59
1:G:387:LYS:HE3	1:G:391:VAL:HG23	1.85	0.59
1:G:457:LEU:O	1:G:461:VAL:HG23	2.02	0.59
1:G:505:ILE:O	1:G:508:TYR:HB3	2.03	0.59
2:B:57:ASN:HB3	2:B:59:ARG:CZ	2.32	0.59
2:B:87:LEU:HD12	2:B:87:LEU:H	1.68	0.59
1:E:383:LEU:HD22	1:E:384:GLN:HG3	1.84	0.59
2:H:87:LEU:O	2:H:87:LEU:HD12	2.02	0.59
2:F:119:GLU:O	2:F:120:LEU:HG	2.03	0.59
1:G:304:LEU:HD11	1:G:413:GLN:HG2	1.83	0.59
2:D:15:ASN:ND2	2:D:17:ILE:HG22	2.18	0.58
1:E:482:VAL:HG23	1:E:483:GLU:N	2.16	0.58
1:G:505:ILE:HD12	1:G:505:ILE:N	2.18	0.58
1:C:501:LEU:HB3	1:C:506:ASP:HB3	1.85	0.58
1:E:320:ILE:O	1:E:321:LEU:HD23	2.03	0.58
1:G:362:LEU:HD13	1:G:400:LEU:HD13	1.85	0.58
2:B:15:ASN:ND2	2:B:16:CYS:H	2.00	0.58
2:B:134:LYS:O	2:B:138:ILE:HG13	2.03	0.58
2:F:44:ILE:HA	2:F:75:ILE:HG22	1.86	0.58
2:H:17:ILE:O	2:H:21:LYS:HG3	2.04	0.58
2:F:79:VAL:O	2:F:86:ALA:HB2	2.03	0.58
1:G:320:ILE:HG22	1:G:368:VAL:HG12	1.86	0.58
1:G:313:GLY:C	1:G:315:LEU:H	2.07	0.58
1:A:449:LYS:HD2	1:A:497:GLU:HB2	1.86	0.57
2:B:57:ASN:HB3	2:B:59:ARG:NE	2.18	0.57
2:F:64:ILE:HD12	2:F:64:ILE:O	2.03	0.57
2:B:149:THR:C	2:B:151:GLY:H	2.06	0.57
1:G:378:LEU:HB3	1:G:382:MET:SD	2.44	0.57
2:H:109:PHE:CD2	2:H:132:LEU:HD22	2.39	0.57
1:G:286:GLN:HG3	1:G:290:ASN:HD21	1.69	0.57
1:E:309:PHE:CZ	1:E:399:LYS:HG3	2.38	0.57
2:F:124:LYS:HB2	2:F:125:PRO:HD3	1.86	0.57
1:C:503:ASP:OD2	1:C:504:PRO:HD2	2.05	0.57
1:E:297:SER:O	1:E:298:ASN:HB2	2.04	0.57
2:B:36:VAL:N	2:B:41:TYR:CE1	2.71	0.57
2:B:50:ILE:HG22	2:B:50:ILE:O	2.02	0.57
1:A:339:ASN:O	1:A:339:ASN:CG	2.43	0.57
2:F:149:THR:HG22	2:F:149:THR:O	2.05	0.57
1:G:320:ILE:CG2	1:G:368:VAL:HG12	2.35	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:487:PHE:CG	1:G:525:THR:HG22	2.40	0.56
1:C:478:SER:O	1:C:482:VAL:HG22	2.05	0.56
2:D:133:PRO:O	2:D:137:GLN:HG2	2.04	0.56
2:H:87:LEU:HD13	2:H:120:LEU:HD23	1.86	0.56
2:H:35:SER:O	2:H:36:VAL:HG22	2.05	0.56
2:F:130:GLU:O	2:F:134:LYS:HG2	2.06	0.56
1:G:297:SER:O	1:G:298:ASN:HB2	2.06	0.56
1:A:337:LYS:HE2	1:A:339:ASN:OD1	2.05	0.56
2:D:13:ASP:HB3	2:D:57:ASN:OD1	2.05	0.56
1:E:337:LYS:NZ	1:E:338:LYS:HB2	2.20	0.56
1:E:460:TYR:CE2	1:E:471:ILE:HG23	2.41	0.56
1:G:292:PHE:O	1:G:296:ILE:HG12	2.06	0.56
1:A:320:ILE:HG23	1:A:320:ILE:O	2.07	0.55
1:A:508:TYR:O	1:A:512:GLN:HG2	2.06	0.55
1:G:276:LEU:HD11	1:G:284:ILE:CG2	2.36	0.55
1:C:355:GLU:O	1:C:356:ASP:CB	2.54	0.55
1:C:340:ASN:HD21	1:C:366:LYS:HE2	1.70	0.55
1:A:378:LEU:HD13	1:A:382:MET:O	2.07	0.55
1:G:277:TRP:HA	1:G:308:HIS:NE2	2.22	0.55
1:G:346:ARG:HA	1:G:347:ARG:HH21	1.71	0.55
1:E:357:LEU:O	1:E:357:LEU:HG	2.06	0.55
1:G:351:THR:OG1	1:G:352:ASP:N	2.40	0.55
1:E:445:TYR:CE2	1:E:501:LEU:HD22	2.42	0.55
2:B:55:GLU:HG2	2:B:57:ASN:ND2	2.21	0.55
2:F:57:ASN:HB2	2:F:64:ILE:CD1	2.37	0.55
2:F:71:ILE:HD12	2:F:98:VAL:HG21	1.88	0.55
1:A:500:PHE:C	1:A:501:LEU:HD23	2.28	0.55
1:G:274:LYS:HB2	1:G:278:THR:OG1	2.07	0.55
1:A:311:VAL:O	1:A:316:GLU:HA	2.07	0.54
1:A:337:LYS:HE2	1:A:339:ASN:CG	2.28	0.54
1:E:418:TYR:O	1:E:422:SER:HB3	2.06	0.54
1:A:304:LEU:HB3	1:A:323:ILE:O	2.07	0.54
2:D:87:LEU:HD23	2:D:87:LEU:N	2.22	0.54
2:B:28:LEU:O	2:B:31:VAL:HG23	2.07	0.54
1:C:342:LYS:HB2	1:C:368:VAL:HG22	1.90	0.54
1:G:513:LEU:O	1:G:514:LYS:CB	2.55	0.54
2:B:15:ASN:ND2	2:B:16:CYS:N	2.56	0.54
2:H:61:GLY:O	2:H:62:LYS:HG3	2.08	0.54
1:E:460:TYR:CE1	1:E:497:GLU:HB3	2.42	0.54
1:E:476:GLY:HA3	1:E:482:VAL:CG1	2.38	0.54
1:G:345:VAL:HG11	1:G:376:LEU:HD21	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:362:LEU:HD22	1:A:400:LEU:HD13	1.90	0.54
1:A:406:GLU:HA	1:A:409:GLU:OE2	2.08	0.54
2:B:59:ARG:O	2:B:60:LYS:HB2	2.08	0.53
1:E:346:ARG:HA	1:E:347:ARG:NH1	2.22	0.53
2:F:120:LEU:O	2:F:122:GLU:N	2.39	0.53
1:A:408:ALA:HA	1:A:414:PHE:CD2	2.43	0.53
1:E:356:ASP:O	1:E:393:ARG:NH1	2.41	0.53
1:G:421:PHE:O	1:G:425:ILE:HG12	2.08	0.53
2:B:12:VAL:HB	2:B:58:GLN:HB2	1.90	0.53
1:G:276:LEU:HD11	1:G:284:ILE:HG21	1.90	0.53
2:F:50:ILE:HG22	2:F:50:ILE:O	2.09	0.53
2:F:54:CYS:SG	2:F:146:LEU:HD21	2.49	0.53
1:G:342:LYS:HB3	1:G:344:TYR:CE2	2.43	0.53
2:D:152:ASN:C	2:D:152:ASN:HD22	2.10	0.53
1:G:355:GLU:C	1:G:357:LEU:N	2.61	0.53
1:G:494:LYS:O	1:G:495:ASN:HB3	2.08	0.53
1:C:355:GLU:HG3	1:C:356:ASP:N	2.21	0.53
1:E:476:GLY:HA3	1:E:482:VAL:HG13	1.91	0.53
1:A:353:GLU:O	1:A:353:GLU:HG3	2.09	0.53
1:G:287:GLU:CD	1:G:287:GLU:N	2.61	0.53
1:A:373:ASP:O	1:A:374:LEU:HB3	2.09	0.52
2:B:30:GLY:HA2	2:B:43:LYS:HZ2	1.73	0.52
2:B:66:LEU:HA	2:B:100:PHE:CD2	2.44	0.52
1:C:373:ASP:O	1:C:374:LEU:CB	2.55	0.52
1:C:393:ARG:CZ	1:C:393:ARG:HB3	2.39	0.52
2:D:40:LYS:HZ3	2:D:122:GLU:HB3	1.74	0.52
2:F:12:VAL:HG12	2:F:13:ASP:N	2.14	0.52
2:H:17:ILE:HG23	2:H:18:GLY:N	2.24	0.52
1:G:308:HIS:HD2	1:G:319:ALA:O	1.92	0.52
2:H:134:LYS:O	2:H:138:ILE:HG13	2.10	0.52
2:D:78:HIS:HA	2:D:88:PRO:HA	1.91	0.52
1:G:505:ILE:HD12	1:G:505:ILE:H	1.75	0.52
2:H:64:ILE:C	2:H:64:ILE:HD12	2.29	0.52
1:C:501:LEU:HB3	1:C:506:ASP:CB	2.39	0.52
2:H:35:SER:C	2:H:36:VAL:HG22	2.30	0.52
1:G:304:LEU:CD1	1:G:413:GLN:HG2	2.40	0.52
1:C:461:VAL:HA	1:C:464:MET:SD	2.50	0.52
1:A:344:TYR:O	1:A:370:ASP:HA	2.10	0.52
2:B:45:LYS:HB2	2:B:76:GLU:HG3	1.91	0.52
2:B:117:THR:C	2:B:119:GLU:H	2.13	0.52
1:E:338:LYS:O	1:E:339:ASN:HB2	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:376:LEU:HD12	1:E:376:LEU:N	2.23	0.52
1:A:461:VAL:O	1:A:464:MET:HB2	2.10	0.51
1:A:461:VAL:HA	1:A:464:MET:SD	2.50	0.51
1:E:378:LEU:O	1:E:383:LEU:HD12	2.10	0.51
2:H:58:GLN:C	2:H:59:ARG:HD2	2.31	0.51
2:B:39:LYS:CG	2:B:80:ASP:HA	2.40	0.51
1:E:378:LEU:HB3	1:E:383:LEU:HB2	1.91	0.51
2:H:28:LEU:O	2:H:31:VAL:HG23	2.11	0.51
1:A:436:ARG:HD3	1:A:513:LEU:HA	1.93	0.51
1:C:513:LEU:HD13	1:C:521:LEU:HD11	1.92	0.51
2:F:22:GLU:O	2:F:25:LYS:HB3	2.10	0.51
1:G:315:LEU:HD11	1:G:388:ILE:HD12	1.92	0.51
1:G:478:SER:O	1:G:482:VAL:HG22	2.10	0.51
1:A:463:ARG:HG3	1:A:463:ARG:HH11	1.75	0.51
2:D:48:SER:OG	2:D:72:THR:HG22	2.10	0.51
2:D:109:PHE:CD2	2:D:132:LEU:HD22	2.46	0.51
1:E:302:ASP:O	1:E:325:LYS:HE3	2.10	0.51
1:E:357:LEU:O	1:E:358:ILE:HB	2.11	0.51
1:G:275:PRO:O	1:G:277:TRP:N	2.44	0.51
1:C:293:TYR:HD2	1:C:303:PRO:HD3	1.75	0.51
1:C:508:TYR:O	1:C:511:THR:HB	2.11	0.51
2:B:39:LYS:CE	2:B:80:ASP:HA	2.39	0.51
1:C:445:TYR:CE2	1:C:501:LEU:HD22	2.45	0.51
1:A:378:LEU:HD12	1:A:383:LEU:CD1	2.41	0.51
1:C:479:LEU:O	1:C:483:GLU:HB2	2.10	0.51
2:F:44:ILE:HG23	2:F:44:ILE:O	2.10	0.51
1:E:346:ARG:NH2	1:E:376:LEU:HD11	2.24	0.51
1:G:281:PRO:HG2	1:G:282:SER:H	1.76	0.51
2:B:109:PHE:CG	2:B:132:LEU:HD22	2.46	0.50
2:D:134:LYS:O	2:D:138:ILE:HG13	2.11	0.50
1:E:312:GLU:HA	1:E:316:GLU:HG2	1.92	0.50
2:D:23:TYR:CZ	2:D:27:LYS:HD2	2.47	0.50
2:F:31:VAL:O	2:F:44:ILE:HG22	2.11	0.50
2:H:12:VAL:O	2:H:14:LYS:HG3	2.10	0.50
1:E:299:ASP:OD2	1:E:300:TRP:N	2.44	0.50
2:F:100:PHE:CD1	2:F:101:ASP:N	2.79	0.50
2:B:15:ASN:ND2	2:B:17:ILE:H	2.09	0.50
2:B:39:LYS:HG3	2:B:80:ASP:HA	1.92	0.50
1:E:315:LEU:HD12	1:E:373:ASP:OD2	2.12	0.50
1:G:285:THR:OG1	1:G:288:GLU:HG3	2.12	0.50
1:E:304:LEU:HB2	1:E:325:LYS:HB3	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:310:SER:HB2	1:E:318:ARG:HG3	1.93	0.50
1:E:320:ILE:C	1:E:321:LEU:HD23	2.32	0.50
2:F:9:TRP:NE1	1:G:280:ASN:HA	2.27	0.50
1:A:309:PHE:CZ	1:A:399:LYS:HG3	2.47	0.50
1:E:526:LYS:NZ	3:E:2006:HOH:O	2.40	0.50
2:H:130:GLU:HA	2:H:130:GLU:OE1	2.12	0.50
1:E:285:THR:OG1	1:E:288:GLU:HB2	2.12	0.49
1:E:350:ILE:HG22	1:E:351:THR:N	2.26	0.49
1:G:387:LYS:HE2	2:H:66:LEU:O	2.12	0.49
1:A:476:GLY:HA3	1:A:482:VAL:CG1	2.42	0.49
1:C:386:ASN:ND2	1:C:388:ILE:HB	2.21	0.49
1:E:339:ASN:ND2	1:E:353:GLU:HB3	2.27	0.49
1:G:301:GLU:OE1	1:G:325:LYS:HD2	2.11	0.49
1:E:378:LEU:C	1:E:383:LEU:HD12	2.33	0.49
1:G:313:GLY:C	1:G:315:LEU:N	2.66	0.49
1:E:388:ILE:O	1:E:392:ILE:HG13	2.11	0.49
2:F:37:LYS:H	2:F:37:LYS:HD2	1.76	0.49
2:B:11:TRP:HE3	2:B:11:TRP:HA	1.77	0.49
2:D:35:SER:O	2:D:36:VAL:HG23	2.13	0.49
2:B:15:ASN:HD22	2:B:16:CYS:N	2.11	0.49
1:E:320:ILE:O	1:E:320:ILE:HG23	2.13	0.49
1:G:293:TYR:CD2	1:G:303:PRO:HD3	2.48	0.49
1:A:452:ASP:O	1:A:453:GLU:CB	2.61	0.49
1:C:503:ASP:OD1	1:C:505:ILE:HD13	2.12	0.49
1:E:520:THR:HG22	1:E:522:VAL:HG23	1.95	0.49
1:G:280:ASN:HB3	1:G:283:ASP:HB2	1.95	0.49
2:B:68:ASP:OD2	2:B:97:GLU:HG3	2.13	0.48
1:C:275:PRO:HG2	1:C:278:THR:CG2	2.43	0.48
2:F:18:GLY:O	2:F:21:LYS:HB2	2.12	0.48
2:F:19:TRP:CE3	2:F:146:LEU:HD13	2.48	0.48
1:G:321:LEU:HD11	1:G:396:ILE:HG23	1.95	0.48
1:G:488:LEU:HB3	1:G:492:LYS:HE3	1.95	0.48
1:C:285:THR:HG23	1:C:288:GLU:OE1	2.13	0.48
1:C:479:LEU:O	1:C:479:LEU:HD13	2.13	0.48
1:C:314:GLN:NE2	2:D:64:ILE:HB	2.24	0.48
2:D:79:VAL:HG12	2:D:80:ASP:N	2.27	0.48
1:E:337:LYS:HZ2	1:E:338:LYS:HB2	1.78	0.48
1:E:501:LEU:HB3	1:E:506:ASP:CB	2.43	0.48
1:A:459:ASP:HB3	1:A:463:ARG:NH1	2.25	0.48
1:C:387:LYS:NZ	1:C:391:VAL:CG2	2.76	0.48
2:D:59:ARG:O	2:D:61:GLY:N	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:38:ASP:C	2:F:40:LYS:N	2.67	0.48
2:B:149:THR:O	2:B:151:GLY:N	2.47	0.48
2:D:45:LYS:HD2	2:D:76:GLU:CD	2.34	0.48
1:E:344:TYR:HB2	1:E:370:ASP:HB2	1.96	0.48
2:H:17:ILE:CG2	2:H:18:GLY:N	2.76	0.48
2:H:35:SER:O	2:H:41:TYR:CE1	2.67	0.48
2:B:11:TRP:HA	2:B:11:TRP:CE3	2.47	0.48
2:F:57:ASN:HB2	2:F:64:ILE:HD11	1.96	0.48
1:A:470:ASN:OD1	1:A:520:THR:HB	2.13	0.48
1:C:452:ASP:O	1:C:453:GLU:HB3	2.13	0.48
1:E:339:ASN:N	1:E:339:ASN:HD22	2.11	0.48
1:E:312:GLU:HA	1:E:316:GLU:CG	2.43	0.48
1:G:286:GLN:HG3	1:G:290:ASN:ND2	2.29	0.48
2:H:29:VAL:CG2	2:H:46:SER:HA	2.38	0.48
1:C:503:ASP:O	1:C:506:ASP:N	2.43	0.48
2:F:104:ALA:O	2:F:136:ARG:HD3	2.13	0.47
1:A:378:LEU:HD12	1:A:383:LEU:HD12	1.95	0.47
2:B:19:TRP:CZ3	2:B:146:LEU:HA	2.49	0.47
1:G:308:HIS:CD2	1:G:320:ILE:HB	2.49	0.47
1:A:280:ASN:OD1	1:A:282:SER:HB2	2.14	0.47
2:D:58:GLN:CG	2:D:63:VAL:HG22	2.34	0.47
1:E:480:LYS:HB2	1:E:480:LYS:NZ	2.30	0.47
2:F:149:THR:O	2:F:150:HIS:CG	2.68	0.47
2:H:124:LYS:HB2	2:H:125:PRO:HD3	1.96	0.47
1:A:427:LEU:HD23	1:A:427:LEU:HA	1.68	0.47
1:C:513:LEU:O	1:C:514:LYS:CB	2.63	0.47
2:B:33:ALA:HB3	2:B:42:ALA:HB3	1.96	0.47
2:F:23:TYR:O	2:F:26:GLN:HB3	2.14	0.47
2:F:79:VAL:O	2:F:80:ASP:HB3	2.13	0.47
1:A:430:HIS:CE1	1:A:508:TYR:HD2	2.33	0.47
2:B:116:GLU:HA	2:B:120:LEU:CD1	2.43	0.47
1:C:457:LEU:O	1:C:460:TYR:HB3	2.15	0.47
1:A:463:ARG:HG3	1:A:463:ARG:NH1	2.30	0.47
1:C:346:ARG:O	1:C:347:ARG:HB2	2.15	0.47
2:D:35:SER:O	2:D:36:VAL:CB	2.63	0.47
2:F:151:GLY:O	2:F:153:ASP:N	2.48	0.47
1:C:393:ARG:NH1	1:C:393:ARG:HB3	2.29	0.47
2:H:96:PRO:HD2	2:H:108:GLN:O	2.15	0.47
1:G:445:TYR:CE2	1:G:501:LEU:HD22	2.50	0.46
1:A:513:LEU:O	1:A:514:LYS:HB2	2.16	0.46
1:C:476:GLY:HA3	1:C:482:VAL:CG1	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:320:ILE:HG22	1:E:368:VAL:HB	1.96	0.46
1:G:491:LEU:N	1:G:491:LEU:HD22	2.30	0.46
2:H:12:VAL:O	2:H:12:VAL:HG12	2.15	0.46
1:A:526:LYS:HE3	1:C:526:LYS:HZ3	1.80	0.46
1:C:387:LYS:HZ1	1:C:391:VAL:HG21	1.80	0.46
2:F:19:TRP:CZ3	2:F:146:LEU:HD13	2.51	0.46
1:A:479:LEU:CD2	1:A:483:GLU:HG3	2.46	0.46
2:F:66:LEU:HA	2:F:100:PHE:CD2	2.51	0.46
1:G:338:LYS:HG2	1:G:353:GLU:HB3	1.98	0.46
1:C:387:LYS:NZ	1:C:391:VAL:HG21	2.30	0.46
1:G:316:GLU:O	1:G:317:PHE:HB3	2.15	0.46
1:E:378:LEU:HB3	1:E:383:LEU:CB	2.44	0.46
2:B:123:ALA:O	2:B:126:LEU:HB3	2.16	0.46
1:C:491:LEU:N	1:C:491:LEU:HD22	2.31	0.46
1:G:284:ILE:HG22	1:G:285:THR:N	2.30	0.46
2:B:117:THR:C	2:B:119:GLU:N	2.68	0.46
1:E:432:ASP:O	1:E:436:ARG:HB2	2.15	0.46
2:F:39:LYS:O	2:F:79:VAL:HA	2.16	0.46
1:G:352:ASP:N	1:G:352:ASP:OD1	2.49	0.46
1:A:446:ASN:O	1:A:500:PHE:HB2	2.15	0.45
1:A:501:LEU:HD23	1:A:501:LEU:N	2.31	0.45
1:C:349:PHE:O	1:C:350:ILE:HD13	2.16	0.45
2:F:45:LYS:HG2	2:F:46:SER:N	2.30	0.45
1:A:381:GLU:HB3	1:A:385:GLN:CD	2.37	0.45
2:B:103:GLU:O	2:B:104:ALA:C	2.53	0.45
2:B:110:ASP:C	2:B:110:ASP:OD1	2.53	0.45
1:C:340:ASN:HD21	1:C:366:LYS:CE	2.28	0.45
2:H:50:ILE:HG12	2:H:71:ILE:HG12	1.98	0.45
2:B:45:LYS:N	2:B:74:LEU:O	2.45	0.45
2:B:60:LYS:O	2:B:62:LYS:N	2.50	0.45
1:C:328:PRO:HD2	1:C:330:ASP:O	2.16	0.45
2:D:124:LYS:HB2	2:D:125:PRO:HD3	1.97	0.45
1:E:361:TRP:HD1	1:E:431:GLU:OE1	1.99	0.45
1:E:434:GLN:OE1	2:F:97:GLU:HB3	2.16	0.45
1:E:487:PHE:CD2	1:E:525:THR:HG22	2.50	0.45
1:G:312:GLU:HA	1:G:316:GLU:HG2	1.97	0.45
2:H:31:VAL:O	2:H:44:ILE:HG22	2.16	0.45
1:A:381:GLU:HB3	1:A:385:GLN:OE1	2.16	0.45
1:A:436:ARG:HG2	1:A:513:LEU:HD23	1.98	0.45
1:C:362:LEU:O	1:C:364:PHE:N	2.49	0.45
1:G:320:ILE:HG22	1:G:368:VAL:CG1	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:460:TYR:CD2	1:C:471:ILE:HG23	2.51	0.45
2:D:58:GLN:HE21	2:D:63:VAL:HG22	1.82	0.45
2:D:100:PHE:CE1	2:D:101:ASP:HB3	2.52	0.45
2:D:141:GLN:O	2:D:142:PHE:C	2.55	0.45
1:E:503:ASP:OD2	1:E:505:ILE:HG12	2.16	0.45
1:A:441:LYS:NZ	1:A:517:GLU:OE1	2.48	0.45
1:C:373:ASP:O	1:C:374:LEU:HB3	2.16	0.45
2:F:41:TYR:HB3	2:F:78:HIS:CE1	2.51	0.45
2:H:87:LEU:HA	2:H:88:PRO:HD3	1.77	0.45
1:E:427:LEU:HD23	1:E:427:LEU:HA	1.81	0.45
1:G:374:LEU:HD12	1:G:375:PRO:CD	2.40	0.45
2:B:117:THR:O	2:B:119:GLU:N	2.49	0.45
1:E:341:ILE:HD13	1:E:367:GLY:N	2.31	0.45
1:A:314:GLN:HB2	2:B:66:LEU:HD21	1.99	0.45
1:C:383:LEU:HD23	1:C:389:MET:HG2	1.99	0.45
2:F:11:TRP:HE1	1:G:280:ASN:CB	2.17	0.45
2:F:111:ILE:CG2	2:F:124:LYS:HG2	2.45	0.45
2:H:79:VAL:O	2:H:87:LEU:HD12	2.17	0.45
1:C:457:LEU:O	1:C:461:VAL:HG23	2.17	0.45
1:E:457:LEU:O	1:E:460:TYR:HB3	2.17	0.45
2:F:132:LEU:N	2:F:133:PRO:CD	2.80	0.45
1:A:332:PHE:CE1	1:A:423:LYS:HD3	2.52	0.44
1:A:394:LYS:NZ	2:B:68:ASP:OD1	2.32	0.44
1:E:383:LEU:C	1:E:383:LEU:HD23	2.37	0.44
1:E:418:TYR:CZ	1:E:422:SER:HB2	2.52	0.44
1:A:340:ASN:ND2	1:A:363:SER:O	2.50	0.44
2:B:126:LEU:O	2:B:130:GLU:HB2	2.17	0.44
2:H:70:LYS:HG3	2:H:96:PRO:HA	1.99	0.44
1:E:326:ARG:HG2	1:E:326:ARG:HH21	1.82	0.44
1:C:471:ILE:HB	1:C:521:LEU:CD2	2.45	0.44
2:B:32:GLU:O	2:B:134:LYS:NZ	2.48	0.44
2:B:60:LYS:C	2:B:62:LYS:N	2.71	0.44
2:B:89:PHE:CD1	2:B:89:PHE:C	2.91	0.44
1:C:276:LEU:HD11	1:C:284:ILE:HD13	1.98	0.44
1:E:338:LYS:O	1:E:339:ASN:CB	2.66	0.44
1:E:355:GLU:O	1:E:356:ASP:HB2	2.17	0.44
1:G:280:ASN:HD22	1:G:283:ASP:CB	2.05	0.44
2:B:40:LYS:HB3	2:B:126:LEU:HD22	1.99	0.44
1:C:460:TYR:HE1	1:C:497:GLU:HG2	1.83	0.44
1:C:501:LEU:HD13	1:C:506:ASP:HB3	2.00	0.44
2:D:103:GLU:O	2:D:104:ALA:C	2.56	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:404:PHE:O	1:E:407:ILE:N	2.51	0.44
1:A:410:ASP:OD1	1:A:413:GLN:HB2	2.18	0.44
1:A:487:PHE:CD1	1:A:525:THR:HG22	2.53	0.44
2:D:35:SER:O	2:D:36:VAL:HB	2.17	0.44
2:F:59:ARG:O	2:F:60:LYS:HB2	2.18	0.44
1:G:460:TYR:C	1:G:460:TYR:CD2	2.91	0.44
1:G:505:ILE:H	1:G:505:ILE:CD1	2.30	0.44
1:C:284:ILE:HG22	1:C:285:THR:N	2.33	0.43
2:D:128:ARG:HA	2:D:132:LEU:HG	1.99	0.43
1:G:346:ARG:HA	1:G:347:ARG:NH2	2.33	0.43
1:A:309:PHE:CE1	1:A:399:LYS:HG3	2.53	0.43
1:C:376:LEU:O	1:E:285:THR:HA	2.18	0.43
1:C:460:TYR:CE1	1:C:497:GLU:HG2	2.53	0.43
2:D:12:VAL:HG23	2:D:13:ASP:N	2.33	0.43
2:D:48:SER:OG	2:D:72:THR:CG2	2.66	0.43
2:D:79:VAL:O	2:D:87:LEU:HD23	2.18	0.43
1:E:315:LEU:HD21	1:E:388:ILE:HG23	1.99	0.43
1:E:376:LEU:H	1:E:376:LEU:CD1	2.30	0.43
2:H:79:VAL:HG23	2:H:87:LEU:HD11	2.00	0.43
2:D:44:ILE:HG23	2:D:73:VAL:HB	2.00	0.43
1:E:326:ARG:HG2	1:E:326:ARG:NH2	2.34	0.43
2:H:44:ILE:HG13	2:H:73:VAL:HB	1.99	0.43
2:H:128:ARG:HA	2:H:132:LEU:HG	2.00	0.43
1:A:378:LEU:HD22	1:A:382:MET:HB3	2.00	0.43
2:B:87:LEU:HD12	2:B:87:LEU:N	2.31	0.43
2:B:87:LEU:HA	2:B:88:PRO:HD3	1.83	0.43
2:B:149:THR:C	2:B:151:GLY:N	2.72	0.43
1:E:284:ILE:HG22	1:E:285:THR:N	2.33	0.43
1:G:315:LEU:HD22	1:G:391:VAL:HG11	2.00	0.43
1:G:434:GLN:OE1	2:H:97:GLU:HB3	2.19	0.43
2:F:109:PHE:CG	2:F:132:LEU:HD22	2.53	0.43
2:B:39:LYS:CD	2:B:86:ALA:HB2	2.41	0.43
2:B:128:ARG:HA	2:B:132:LEU:CD1	2.48	0.43
2:D:113:ILE:HG21	2:D:120:LEU:HD13	2.01	0.43
1:G:525:THR:O	1:G:526:LYS:HD3	2.18	0.43
2:F:11:TRP:CE2	1:G:280:ASN:HB2	2.53	0.43
2:F:17:ILE:O	2:F:21:LYS:HG2	2.19	0.43
1:G:459:ASP:HB3	1:G:463:ARG:HH12	1.84	0.43
1:A:520:THR:HG22	1:A:522:VAL:HG23	2.01	0.43
1:C:358:ILE:HG13	1:C:359:PRO:HD2	2.00	0.43
1:E:345:VAL:HG23	1:E:350:ILE:HG13	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:311:VAL:HG21	1:C:317:PHE:CE2	2.54	0.43
1:C:397:VAL:O	1:C:401:ILE:HG13	2.18	0.43
2:D:152:ASN:C	2:D:152:ASN:ND2	2.73	0.43
1:E:273:THR:HG22	1:E:274:LYS:N	2.30	0.43
2:F:134:LYS:HA	2:F:137:GLN:CD	2.39	0.43
2:F:140:GLN:HE21	2:F:140:GLN:HA	1.84	0.43
1:A:342:LYS:HD2	1:A:368:VAL:HG22	2.01	0.42
1:A:418:TYR:O	1:A:422:SER:HB3	2.19	0.42
2:D:79:VAL:CG1	2:D:80:ASP:N	2.81	0.42
1:G:317:PHE:HB2	1:G:371:SER:HA	2.01	0.42
1:G:380:ARG:CG	1:G:381:GLU:H	2.03	0.42
2:H:39:LYS:HE2	2:H:80:ASP:HB3	2.01	0.42
2:H:61:GLY:C	2:H:62:LYS:HG3	2.40	0.42
2:H:100:PHE:CD1	2:H:101:ASP:N	2.87	0.42
1:C:355:GLU:C	1:C:357:LEU:H	2.22	0.42
2:D:75:ILE:CD1	2:D:127:ILE:HD13	2.49	0.42
1:E:314:GLN:H	1:E:314:GLN:CD	2.14	0.42
2:F:22:GLU:O	2:F:23:TYR:C	2.57	0.42
1:G:466:GLU:OE2	1:G:466:GLU:HA	2.18	0.42
1:G:505:ILE:N	1:G:505:ILE:CD1	2.82	0.42
2:H:17:ILE:CG1	2:H:21:LYS:HE3	2.44	0.42
1:A:359:PRO:HG2	1:A:362:LEU:HD12	2.02	0.42
2:B:16:CYS:O	2:B:17:ILE:C	2.55	0.42
2:B:113:ILE:CG2	2:B:116:GLU:HB2	2.49	0.42
1:C:457:LEU:HG	3:C:2006:HOH:O	2.18	0.42
1:E:358:ILE:HD11	1:E:362:LEU:HB3	2.01	0.42
1:A:285:THR:OG1	1:A:288:GLU:HG3	2.19	0.42
1:E:459:ASP:HB3	1:E:463:ARG:HH12	1.84	0.42
2:F:83:ASP:O	2:F:84:GLY:C	2.57	0.42
2:F:127:ILE:HG23	2:F:131:LEU:HD23	2.00	0.42
1:A:518:GLY:HA2	2:B:128:ARG:CZ	2.49	0.42
2:D:121:SER:C	2:D:123:ALA:H	2.23	0.42
1:E:372:GLU:O	1:E:373:ASP:O	2.38	0.42
1:A:314:GLN:HE21	1:A:314:GLN:HB3	1.50	0.42
2:B:152:ASN:O	2:B:153:ASP:C	2.57	0.42
1:C:286:GLN:HG3	1:C:290:ASN:ND2	2.32	0.42
2:D:15:ASN:HD21	2:D:17:ILE:CG2	2.32	0.42
2:B:40:LYS:HA	2:B:79:VAL:HA	2.00	0.42
2:B:60:LYS:C	2:B:62:LYS:H	2.23	0.42
1:E:339:ASN:ND2	1:E:339:ASN:N	2.67	0.42
1:G:373:ASP:O	1:G:374:LEU:O	2.37	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:55:GLU:HG2	2:H:57:ASN:OD1	2.20	0.42
1:A:342:LYS:HD2	1:A:368:VAL:CG2	2.49	0.42
1:G:292:PHE:HE2	1:G:296:ILE:HG21	1.84	0.42
1:G:292:PHE:CE2	1:G:296:ILE:HG21	2.54	0.42
2:D:15:ASN:HA	2:D:55:GLU:HG2	2.01	0.42
2:F:100:PHE:CG	2:F:101:ASP:N	2.88	0.42
2:D:132:LEU:N	2:D:133:PRO:HD2	2.35	0.42
1:E:513:LEU:O	1:E:514:LYS:HB2	2.20	0.42
2:F:131:LEU:O	2:F:131:LEU:HD12	2.20	0.42
2:H:19:TRP:CZ3	2:H:146:LEU:HD12	2.55	0.42
1:G:274:LYS:H	1:G:274:LYS:HG2	1.66	0.41
2:H:100:PHE:CE1	2:H:101:ASP:HB3	2.55	0.41
2:B:29:VAL:HG22	2:B:46:SER:HA	2.02	0.41
1:C:372:GLU:OE2	1:C:372:GLU:HA	2.20	0.41
1:E:362:LEU:HD13	1:E:400:LEU:HD12	2.02	0.41
1:E:464:MET:O	1:E:465:PRO:O	2.38	0.41
2:F:37:LYS:H	2:F:37:LYS:HD3	1.80	0.41
1:G:478:SER:C	1:G:480:LYS:H	2.23	0.41
1:A:470:ASN:O	1:A:472:TYR:CE1	2.74	0.41
2:D:40:LYS:NZ	2:D:122:GLU:HB3	2.35	0.41
1:E:293:TYR:CD2	1:E:303:PRO:HD3	2.55	0.41
1:E:393:ARG:HH11	1:E:393:ARG:HB2	1.86	0.41
1:G:338:LYS:H	1:G:338:LYS:HD2	1.84	0.41
1:G:433:THR:HG22	1:G:436:ARG:HH12	1.85	0.41
2:B:58:GLN:HG2	2:B:63:VAL:CG1	2.46	0.41
1:E:289:TYR:HD2	1:E:320:ILE:HD11	1.85	0.41
1:E:361:TRP:CZ3	1:E:362:LEU:HD21	2.55	0.41
1:G:281:PRO:C	1:G:283:ASP:N	2.72	0.41
1:A:321:LEU:CD1	1:A:396:ILE:HG23	2.50	0.41
2:B:59:ARG:HD2	2:B:59:ARG:N	2.36	0.41
1:C:275:PRO:HG2	1:C:278:THR:HG23	2.03	0.41
1:E:315:LEU:HD12	1:E:315:LEU:HA	1.83	0.41
1:E:317:PHE:CD1	1:E:317:PHE:C	2.94	0.41
1:E:401:ILE:HD11	1:E:435:ASN:HB3	2.03	0.41
1:A:347:ARG:HE	1:A:347:ARG:HB2	1.68	0.41
1:A:438:ALA:O	1:A:441:LYS:HB2	2.21	0.41
1:A:444:ARG:HG2	1:A:444:ARG:HH11	1.85	0.41
2:D:74:LEU:HD23	2:D:92:SER:HB3	2.01	0.41
1:E:426:LYS:HE2	1:E:506:ASP:OD1	2.20	0.41
2:F:9:TRP:CD1	1:G:280:ASN:HA	2.56	0.41
1:G:320:ILE:O	1:G:320:ILE:CG2	2.66	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:39:LYS:O	2:H:79:VAL:HA	2.21	0.41
1:A:378:LEU:CB	1:A:383:LEU:HB2	2.42	0.41
1:A:393:ARG:O	1:A:397:VAL:HG23	2.21	0.41
1:C:309:PHE:CZ	1:C:399:LYS:HG3	2.55	0.41
2:D:22:GLU:HG3	2:D:23:TYR:N	2.34	0.41
1:E:479:LEU:O	1:E:483:GLU:HB2	2.21	0.41
1:G:307:LYS:HE3	1:G:399:LYS:CD	2.51	0.41
1:A:279:ARG:NH2	1:A:283:ASP:O	2.50	0.41
1:A:378:LEU:HD22	1:A:382:MET:O	2.21	0.41
2:B:79:VAL:HG13	2:B:89:PHE:HE2	1.86	0.41
2:B:149:THR:HG22	2:B:150:HIS:N	2.36	0.41
1:C:358:ILE:CG1	1:C:359:PRO:HD2	2.50	0.41
1:C:383:LEU:CD2	1:C:389:MET:HG2	2.51	0.41
1:C:399:LYS:HD3	1:C:399:LYS:HA	1.92	0.41
1:E:337:LYS:HE3	1:E:337:LYS:HB3	1.95	0.41
1:E:387:LYS:HA	1:E:387:LYS:HD2	1.90	0.41
2:F:56:VAL:C	2:F:57:ASN:HD22	2.23	0.41
1:G:345:VAL:O	1:G:346:ARG:HB2	2.21	0.41
2:D:15:ASN:HD21	2:D:17:ILE:HG22	1.85	0.40
2:D:58:GLN:HA	2:D:62:LYS:O	2.21	0.40
1:E:316:GLU:O	1:E:317:PHE:HB3	2.21	0.40
1:E:410:ASP:HB3	1:E:413:GLN:HB3	2.03	0.40
1:E:460:TYR:CD2	1:E:471:ILE:HG23	2.57	0.40
1:G:393:ARG:O	1:G:394:LYS:C	2.60	0.40
1:A:321:LEU:HD11	1:A:396:ILE:HG23	2.02	0.40
1:A:381:GLU:C	1:A:383:LEU:H	2.25	0.40
2:D:40:LYS:HB3	2:D:126:LEU:HD22	2.03	0.40
1:E:482:VAL:CG2	1:E:483:GLU:N	2.83	0.40
1:G:314:GLN:CD	2:H:64:ILE:HB	2.42	0.40
1:G:462:THR:HG22	1:G:462:THR:O	2.21	0.40
1:C:491:LEU:H	1:C:491:LEU:CD2	2.34	0.40
1:C:503:ASP:HA	1:C:504:PRO:HD3	1.98	0.40
1:E:373:ASP:O	1:E:374:LEU:HB3	2.20	0.40
2:H:79:VAL:HG23	2:H:87:LEU:CD1	2.51	0.40
1:C:345:VAL:HG12	1:C:346:ARG:HG3	2.04	0.40
1:E:289:TYR:CD2	1:E:320:ILE:HD11	2.56	0.40
1:E:309:PHE:CE1	1:E:399:LYS:HG3	2.57	0.40
1:E:487:PHE:CD1	1:E:525:THR:HG22	2.56	0.40
1:G:277:TRP:HA	1:G:308:HIS:CE1	2.56	0.40
1:G:351:THR:HG21	1:G:354:ALA:HB2	2.03	0.40
2:H:19:TRP:CE3	2:H:146:LEU:HD12	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:89:PHE:CD1	2:H:89:PHE:C	2.94	0.40
2:H:93:ILE:HA	2:H:110:ASP:O	2.22	0.40
1:A:390:LYS:CE	1:A:394:LYS:HE3	2.41	0.40
1:E:464:MET:CE	1:E:468:GLN:HE21	2.35	0.40
2:F:11:TRP:CE3	2:F:58:GLN:NE2	2.89	0.40
2:F:30:GLY:O	2:F:31:VAL:C	2.59	0.40
1:G:341:ILE:CG2	1:G:357:LEU:HD21	2.52	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	247/260 (95%)	219 (89%)	21 (8%)	7 (3%)	5 11
1	C	241/260 (93%)	214 (89%)	19 (8%)	8 (3%)	4 8
1	E	247/260 (95%)	207 (84%)	33 (13%)	7 (3%)	5 11
1	G	244/260 (94%)	200 (82%)	34 (14%)	10 (4%)	3 6
2	B	141/170 (83%)	111 (79%)	27 (19%)	3 (2%)	7 18
2	D	140/170 (82%)	121 (86%)	15 (11%)	4 (3%)	4 10
2	F	144/170 (85%)	102 (71%)	25 (17%)	17 (12%)	0 0
2	H	139/170 (82%)	117 (84%)	18 (13%)	4 (3%)	4 10
All	All	1543/1720 (90%)	1291 (84%)	192 (12%)	60 (4%)	3 6

All (60) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	385	GLN
1	A	453	GLU
1	C	341	ILE

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Mol	Chain	Res	Type
2	D	36	VAL
2	D	121	SER
1	E	373	ASP
2	F	36	VAL
2	F	120	LEU
2	F	152	ASN
1	G	276	LEU
1	G	328	PRO
1	G	374	LEU
1	G	513	LEU
2	H	36	VAL
2	B	150	HIS
1	C	297	SER
1	C	363	SER
2	D	12	VAL
1	E	380	ARG
2	F	45	LYS
2	F	121	SER
2	F	149	THR
1	G	385	GLN
1	G	514	LYS
2	B	38	ASP
1	C	328	PRO
1	C	513	LEU
2	D	60	LYS
1	E	465	PRO
2	F	38	ASP
2	F	122	GLU
2	H	123	ALA
1	A	340	ASN
1	A	374	LEU
2	B	118	SER
1	C	374	LEU
1	E	339	ASN
1	E	347	ARG
1	E	374	LEU
2	F	79	VAL
1	G	379	SER
1	G	384	GLN
2	H	118	SER
2	H	148	ALA
1	A	380	ARG

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Mol	Chain	Res	Type
1	C	453	GLU
2	F	80	ASP
2	F	86	ALA
2	F	150	HIS
1	G	298	ASN
1	A	338	LYS
1	C	411	SER
2	F	31	VAL
2	F	39	LYS
2	F	60	LYS
1	G	388	ILE
1	E	358	ILE
2	F	84	GLY
1	A	341	ILE
2	F	12	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	232/240 (97%)	222 (96%)	10 (4%)	29	57
1	C	227/240 (95%)	216 (95%)	11 (5%)	25	53
1	E	232/240 (97%)	222 (96%)	10 (4%)	29	57
1	G	228/240 (95%)	216 (95%)	12 (5%)	22	48
2	B	125/149 (84%)	120 (96%)	5 (4%)	31	60
2	D	123/149 (83%)	117 (95%)	6 (5%)	25	52
2	F	126/149 (85%)	118 (94%)	8 (6%)	18	40
2	H	122/149 (82%)	117 (96%)	5 (4%)	30	59
All	All	1415/1556 (91%)	1348 (95%)	67 (5%)	26	54

All (67) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	298	ASN
1	A	314	GLN
1	A	329	PHE
1	A	332	PHE
1	A	339	ASN
1	A	347	ARG
1	A	415	GLU
1	A	446	ASN
1	A	452	ASP
1	A	479	LEU
2	B	11	TRP
2	B	80	ASP
2	B	87	LEU
2	B	137	GLN
2	B	152	ASN
1	C	281	PRO
1	C	299	ASP
1	C	306	VAL
1	C	347	ARG
1	C	383	LEU
1	C	419	SER
1	C	433	THR
1	C	452	ASP
1	C	470	ASN
1	C	491	LEU
1	C	505	ILE
2	D	83	ASP
2	D	87	LEU
2	D	103	GLU
2	D	137	GLN
2	D	140	GLN
2	D	152	ASN
1	E	282	SER
1	E	306	VAL
1	E	318	ARG
1	E	347	ARG
1	E	351	THR
1	E	356	ASP
1	E	385	GLN
1	E	446	ASN
1	E	479	LEU
1	E	484	LYS
2	F	13	ASP

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Mol	Chain	Res	Type
2	F	15	ASN
2	F	26	GLN
2	F	37	LYS
2	F	53	ASP
2	F	80	ASP
2	F	140	GLN
2	F	152	ASN
1	G	283	ASP
1	G	339	ASN
1	G	351	THR
1	G	353	GLU
1	G	382	MET
1	G	383	LEU
1	G	385	GLN
1	G	453	GLU
1	G	479	LEU
1	G	484	LYS
1	G	513	LEU
1	G	521	LEU
2	H	13	ASP
2	H	36	VAL
2	H	44	ILE
2	H	49	SER
2	H	87	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (51) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	298	ASN
1	A	314	GLN
1	A	384	GLN
1	A	385	GLN
1	A	386	ASN
1	A	395	ASN
1	A	405	ASN
1	A	413	GLN
1	A	446	ASN
1	A	468	GLN
2	B	15	ASN
2	B	57	ASN
2	B	58	GLN
2	B	108	GLN

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Mol	Chain	Res	Type
2	B	140	GLN
2	B	152	ASN
1	C	290	ASN
1	C	314	GLN
1	C	340	ASN
1	C	384	GLN
1	C	386	ASN
1	C	405	ASN
1	C	430	HIS
1	C	446	ASN
1	C	512	GLN
2	D	108	GLN
2	D	140	GLN
2	D	152	ASN
1	E	280	ASN
1	E	339	ASN
1	E	384	GLN
1	E	385	GLN
1	E	405	ASN
1	E	413	GLN
1	E	468	GLN
2	F	15	ASN
2	F	26	GLN
2	F	57	ASN
2	F	58	GLN
2	F	78	HIS
2	F	108	GLN
2	F	150	HIS
2	F	152	ASN
1	G	280	ASN
1	G	308	HIS
1	G	384	GLN
1	G	385	GLN
1	G	405	ASN
1	G	413	GLN
1	G	435	ASN
2	H	15	ASN

5.3.3 RNA

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)

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

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, 95^{th} 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	251/260 (96%)	-0.24	6 (2%)	59	60	22, 44, 81, 114	0
1	C	247/260 (95%)	-0.31	2 (0%)	86	87	19, 40, 67, 87	0
1	E	251/260 (96%)	-0.18	9 (3%)	42	42	25, 45, 89, 120	0
1	G	248/260 (95%)	-0.15	2 (0%)	86	87	22, 51, 97, 115	0
2	B	143/170 (84%)	-0.11	7 (4%)	29	28	25, 56, 95, 103	0
2	D	142/170 (83%)	-0.11	5 (3%)	44	44	30, 56, 95, 101	0
2	F	146/170 (85%)	0.27	11 (7%)	14	12	38, 80, 109, 114	0
2	H	141/170 (82%)	-0.16	6 (4%)	35	33	41, 59, 92, 109	0
All	All	1569/1720 (91%)	-0.15	48 (3%)	49	49	19, 50, 98, 120	0

All (48) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	H	61	GLY	5.3
1	A	331	LEU	4.5
2	B	61	GLY	4.5
2	H	11	TRP	4.3
2	B	11	TRP	4.2
1	A	382	MET	4.1
1	E	378	LEU	3.9
2	F	61	GLY	3.9
2	H	12	VAL	3.7
1	A	380	ARG	3.6
1	A	383	LEU	3.6
1	G	381	GLU	3.5
2	F	87	LEU	3.4
2	F	12	VAL	3.4
2	D	12	VAL	3.2
1	E	380	ARG	3.2

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Mol	Chain	Res	Type	RSRZ
2	B	63	VAL	3.1
2	F	62	LYS	3.1
1	G	273	THR	3.1
2	F	11	TRP	3.0
2	F	59	ARG	2.9
2	F	88	PRO	2.9
1	E	329	PHE	2.9
2	D	58	GLN	2.9
2	D	11	TRP	2.9
2	H	59	ARG	2.7
2	H	60	LYS	2.5
1	C	337	LYS	2.5
2	B	82	LYS	2.5
2	B	80	ASP	2.5
1	E	338	LYS	2.5
2	F	152	ASN	2.5
1	E	377	ASN	2.4
2	D	89	PHE	2.4
1	C	338	LYS	2.3
1	E	331	LEU	2.3
1	E	339	ASN	2.3
2	H	58	GLN	2.2
2	F	117	THR	2.2
1	E	376	LEU	2.2
2	F	153	ASP	2.1
1	A	378	LEU	2.1
2	F	39	LYS	2.1
2	B	86	ALA	2.1
1	E	379	SER	2.0
2	D	60	LYS	2.0
1	A	381	GLU	2.0
2	B	59	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

There are no ligands in this entry.

6.5 Other polymers

There are no such residues in this entry.