



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 09:36 PM UTC

PDB ID : 1AYR / pdb_00001ayr
Title : ARRESTIN FROM BOVINE ROD OUTER SEGMENTS
Authors : Granzin, J.; Wilden, U.; Choe, H.-W.; Labahn, J.; Krafft, B.; Bueldt, G.
Deposited on : 1997-11-10
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	:	4-5-2 with Phenix2.0
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

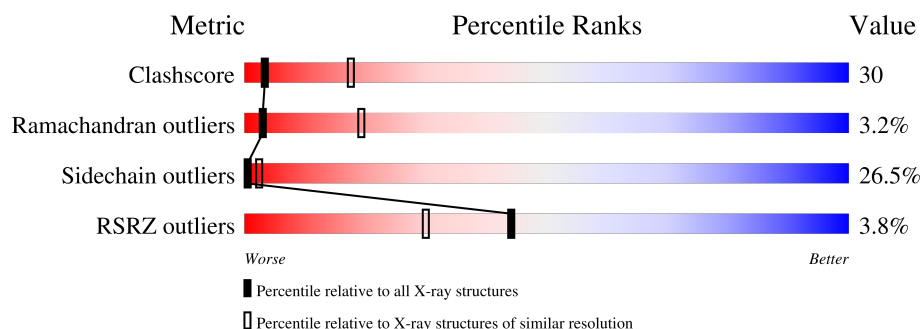
1 Overall quality at a glance

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))
Clashscore	190562	1209 (3.32-3.28)
Ramachandran outliers	187476	1188 (3.32-3.28)
Sidechain outliers	187428	1187 (3.32-3.28)
RSRZ outliers	180081	1169 (3.32-3.28)

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	368	5% 37% 46% 15% .
1	B	368	3% 41% 40% 17% ..
1	C	368	4% 38% 46% 15% .
1	D	368	4% 39% 42% 17% ..

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 11743 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 ARRESTIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	368	Total	C	N	O	S	0	0	0
			2882	1841	488	543	10			
1	B	363	Total	C	N	O	S	0	0	0
			2847	1821	482	534	10			
1	C	368	Total	C	N	O	S	0	0	0
			2882	1841	488	543	10			
1	D	363	Total	C	N	O	S	0	0	0
			2847	1821	482	534	10			

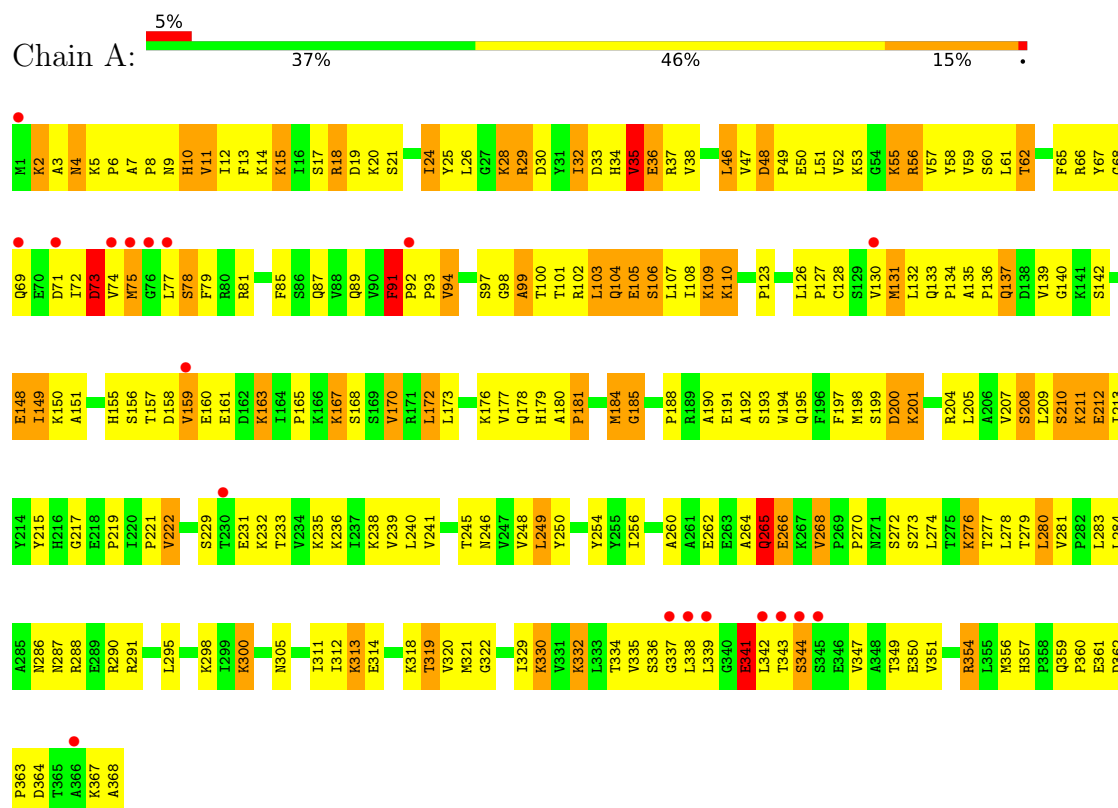
- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	99	Total	O	0	0
			99	99		
2	B	46	Total	O	0	0
			46	46		
2	C	78	Total	O	0	0
			78	78		
2	D	62	Total	O	0	0
			62	62		

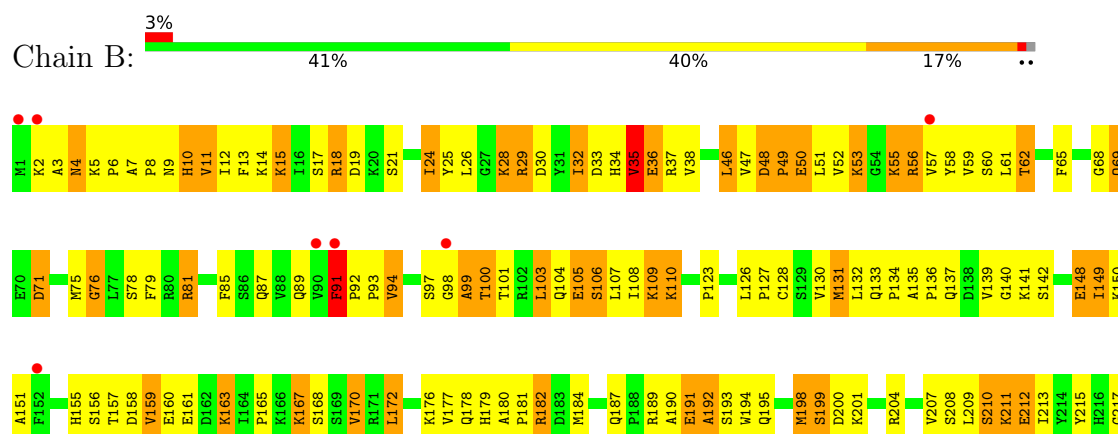
3 Residue-property plots

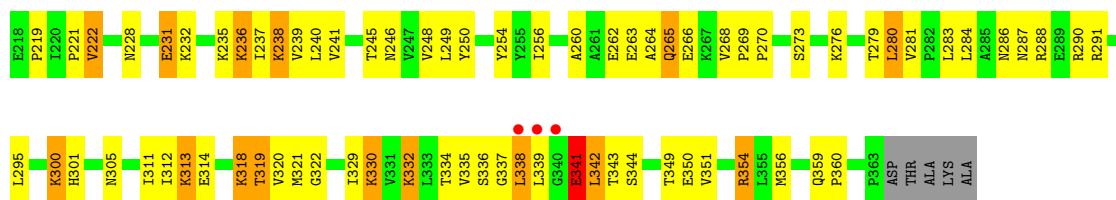
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

• Molecule 1: ARRESTIN

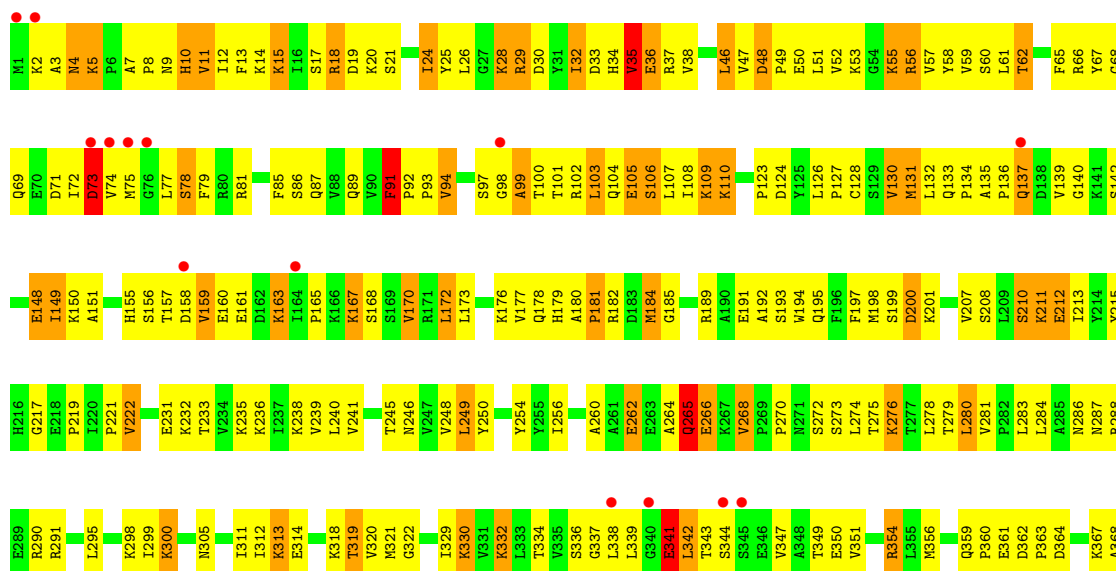


• Molecule 1: ARRESTIN

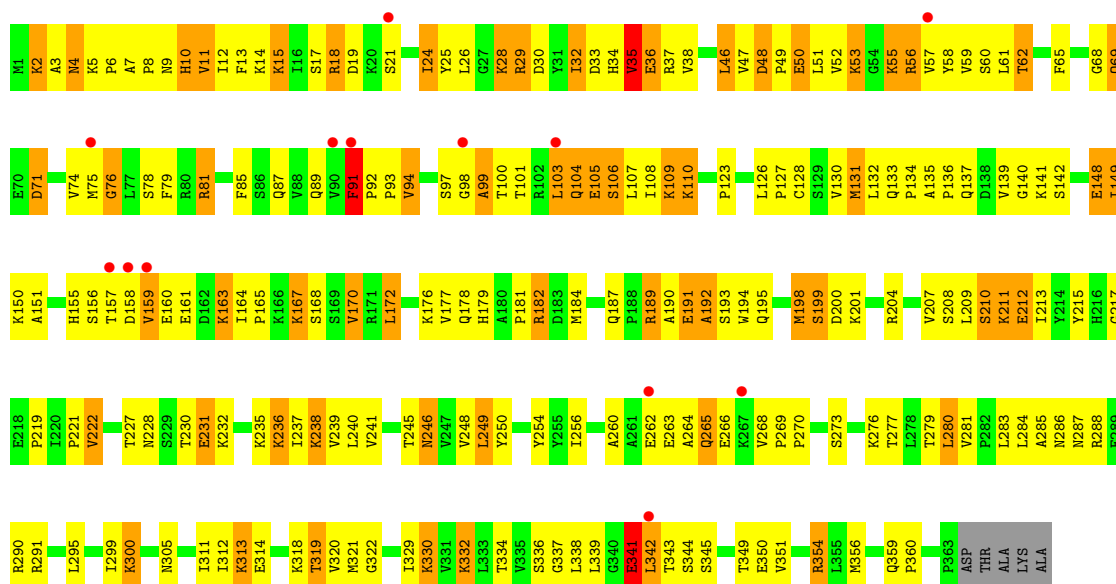




• Molecule 1: ARRESTIN



• Molecule 1: ARRESTIN



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α , β , γ	169.17Å 185.53Å 90.93Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	130.00 – 3.30 125.01 – 3.30	Depositor EDS
% Data completeness (in resolution range)	95.1 (130.00-3.30) 41.7 (125.01-3.30)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	0.17	Depositor
$\langle I/\sigma(I) \rangle$ ¹	11.37 (at 3.31Å)	Xtriage
Refinement program	X-PLOR 3.851	Depositor
R, R_{free}	0.254 , 0.316 0.248 , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å ²)	64.0	Xtriage
Anisotropy	0.742	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 32.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.88	EDS
Total number of atoms	11743	wwPDB-VP
Average B, all atoms (Å ²)	27.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.62% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.38	0/2940	0.86	11/3987 (0.3%)
1	B	0.36	0/2905	0.86	11/3941 (0.3%)
1	C	0.37	0/2940	0.86	11/3987 (0.3%)
1	D	0.36	0/2905	0.86	11/3941 (0.3%)
All	All	0.37	0/11690	0.86	44/15856 (0.3%)

There are no bond length outliers.

All (44) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	9	ASN	N-CA-C	-8.99	91.65	110.80
1	A	9	ASN	N-CA-C	-8.84	91.97	110.80
1	C	9	ASN	N-CA-C	-8.61	92.47	110.80
1	B	9	ASN	N-CA-C	-8.60	92.48	110.80
1	C	8	PRO	N-CA-C	7.24	123.77	111.68
1	A	8	PRO	N-CA-C	7.22	123.74	111.68
1	B	8	PRO	N-CA-C	7.12	123.56	111.68
1	D	8	PRO	N-CA-C	7.09	123.52	111.68
1	D	201	LYS	N-CA-C	-7.05	101.18	109.93
1	B	201	LYS	N-CA-C	-7.05	101.19	109.93
1	C	10	HIS	N-CA-C	-6.37	97.23	110.80
1	A	10	HIS	N-CA-C	-6.36	97.24	110.80
1	C	91	PHE	CA-C-N	-6.11	114.09	120.38
1	C	91	PHE	C-N-CA	-6.11	114.09	120.38
1	A	91	PHE	CA-C-N	-6.03	114.17	120.38
1	A	91	PHE	C-N-CA	-6.03	114.17	120.38
1	D	10	HIS	N-CA-C	-6.02	97.98	110.80
1	A	7	ALA	N-CA-C	-5.84	96.90	109.81
1	B	91	PHE	CA-C-N	-5.82	114.38	120.38
1	B	91	PHE	C-N-CA	-5.82	114.38	120.38
1	C	7	ALA	N-CA-C	-5.80	96.99	109.81
1	B	10	HIS	N-CA-C	-5.76	98.52	110.80
1	C	342	LEU	N-CA-C	-5.74	106.12	113.01

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	342	LEU	N-CA-C	-5.73	106.14	113.01
1	D	91	PHE	CA-C-N	-5.67	114.54	120.38
1	D	91	PHE	C-N-CA	-5.67	114.54	120.38
1	D	7	ALA	N-CA-C	-5.65	97.33	109.81
1	D	342	LEU	N-CA-C	-5.59	106.30	113.01
1	B	32	ILE	N-CA-C	5.57	116.76	109.58
1	D	48	ASP	CA-C-N	5.55	126.77	119.84
1	D	48	ASP	C-N-CA	5.55	126.77	119.84
1	A	342	LEU	N-CA-C	-5.53	106.37	113.01
1	B	7	ALA	N-CA-C	-5.51	97.62	109.81
1	D	32	ILE	N-CA-C	5.50	116.67	109.58
1	C	32	ILE	N-CA-C	5.49	116.66	109.58
1	B	48	ASP	CA-C-N	5.47	126.68	119.84
1	B	48	ASP	C-N-CA	5.47	126.68	119.84
1	A	32	ILE	N-CA-C	5.47	116.64	109.58
1	A	48	ASP	CA-C-N	5.40	126.59	119.84
1	A	48	ASP	C-N-CA	5.40	126.59	119.84
1	C	48	ASP	CA-C-N	5.39	126.57	119.84
1	C	48	ASP	C-N-CA	5.39	126.57	119.84
1	C	265	GLN	N-CA-C	5.23	117.19	107.99
1	A	265	GLN	N-CA-C	5.18	117.11	107.99

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	2882	0	2971	197	0
1	B	2847	0	2937	171	0
1	C	2882	0	2971	180	0
1	D	2847	0	2937	171	0
2	A	99	0	0	18	0
2	B	46	0	0	8	0
2	C	78	0	0	14	0
2	D	62	0	0	11	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	11743	0	11816	705	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 30.

All (705) 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:C:184:MET:HE2	1:C:213:ILE:HB	1.44	0.96
1:B:10:HIS:O	1:B:11:VAL:HG23	1.68	0.94
1:A:184:MET:HE2	1:A:213:ILE:HB	1.49	0.91
1:A:2:LYS:HG2	1:A:29:ARG:HH11	1.36	0.90
1:D:2:LYS:HG2	1:D:29:ARG:HH11	1.37	0.89
1:B:2:LYS:HG2	1:B:29:ARG:HH11	1.35	0.88
1:B:91:PHE:HB3	1:B:92:PRO:HD3	1.56	0.88
1:D:10:HIS:O	1:D:11:VAL:HG23	1.72	0.87
1:D:91:PHE:HB3	1:D:92:PRO:HD3	1.56	0.86
1:A:10:HIS:O	1:A:11:VAL:HG23	1.75	0.86
1:A:91:PHE:HB3	1:A:92:PRO:HD3	1.56	0.86
1:C:157:THR:HA	2:C:385:HOH:O	1.76	0.86
1:A:336:SER:HA	1:A:343:THR:HA	1.58	0.86
1:D:336:SER:HA	1:D:343:THR:HA	1.58	0.85
1:B:81:ARG:HG2	1:C:195:GLN:HB3	1.59	0.84
1:C:91:PHE:HB3	1:C:92:PRO:HD3	1.58	0.84
1:C:10:HIS:O	1:C:11:VAL:HG23	1.77	0.84
1:B:151:ALA:HB3	1:B:170:VAL:HG23	1.61	0.83
1:A:151:ALA:HB3	1:A:170:VAL:HG23	1.61	0.83
1:B:336:SER:HA	1:B:343:THR:HA	1.58	0.83
1:C:2:LYS:HG2	1:C:29:ARG:HH11	1.43	0.82
1:C:151:ALA:HB3	1:C:170:VAL:HG23	1.61	0.81
1:C:336:SER:HA	1:C:343:THR:HA	1.60	0.81
1:D:151:ALA:HB3	1:D:170:VAL:HG23	1.61	0.80
1:A:264:ALA:HB2	1:A:278:LEU:HD21	1.63	0.80
1:A:195:GLN:HB3	1:D:81:ARG:HG2	1.63	0.79
1:C:219:PRO:HA	1:C:281:VAL:HG22	1.64	0.79
1:B:89:GLN:HE21	1:B:94:VAL:HG22	1.46	0.79
1:A:276:LYS:HE2	1:B:342:LEU:HG	1.65	0.79
1:A:89:GLN:HE21	1:A:94:VAL:HG22	1.47	0.78
1:C:264:ALA:HB2	1:C:278:LEU:HD21	1.65	0.78
1:D:74:VAL:HA	2:D:410:HOH:O	1.83	0.78
1:A:192:ALA:HB2	1:A:349:THR:HG21	1.66	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:233:THR:OG1	1:A:270:PRO:HD3	1.83	0.77
1:B:219:PRO:HA	1:B:281:VAL:HG22	1.64	0.77
1:D:89:GLN:HE21	1:D:94:VAL:HG22	1.50	0.77
1:A:219:PRO:HA	1:A:281:VAL:HG22	1.65	0.77
1:D:219:PRO:HA	1:D:281:VAL:HG22	1.65	0.76
1:A:260:ALA:HB1	2:A:452:HOH:O	1.84	0.75
1:B:182:ARG:HG2	1:B:360:PRO:HD2	1.69	0.75
1:B:2:LYS:HG2	1:B:29:ARG:NH1	2.02	0.74
1:D:182:ARG:HG2	1:D:360:PRO:HD2	1.68	0.74
1:D:2:LYS:HG2	1:D:29:ARG:NH1	2.02	0.74
1:B:338:LEU:HA	2:B:386:HOH:O	1.86	0.74
1:B:238:LYS:HG3	1:B:263:GLU:HB3	1.67	0.74
1:B:68:GLY:O	1:B:71:ASP:HB2	1.89	0.73
1:D:135:ALA:HB1	1:D:136:PRO:HD2	1.71	0.73
1:D:68:GLY:O	1:D:71:ASP:HB2	1.89	0.73
1:D:238:LYS:HG3	1:D:263:GLU:HB3	1.70	0.73
1:D:181:PRO:HG2	1:D:184:MET:HG2	1.71	0.73
1:A:34:HIS:O	1:A:36:GLU:N	2.22	0.73
1:B:34:HIS:O	1:B:36:GLU:N	2.22	0.72
1:C:89:GLN:HE21	1:C:94:VAL:HG22	1.54	0.72
1:C:184:MET:HB3	1:C:213:ILE:HD12	1.69	0.72
1:D:13:PHE:HE2	1:D:28:LYS:HA	1.55	0.72
1:A:194:TRP:CE2	1:A:347:VAL:HB	2.25	0.72
1:A:135:ALA:HB1	1:A:136:PRO:HD2	1.72	0.72
1:D:34:HIS:O	1:D:36:GLU:N	2.22	0.72
1:B:181:PRO:HG2	1:B:184:MET:HG2	1.71	0.71
1:C:34:HIS:O	1:C:36:GLU:N	2.23	0.71
1:D:157:THR:HG21	1:D:163:LYS:HD2	1.70	0.71
1:B:157:THR:HG21	1:B:163:LYS:HD2	1.72	0.71
1:A:361:GLU:C	1:A:363:PRO:HD3	2.16	0.71
1:B:13:PHE:HE2	1:B:28:LYS:HA	1.54	0.70
1:C:361:GLU:C	1:C:363:PRO:HD3	2.16	0.70
1:D:195:GLN:HG2	1:D:204:ARG:HG2	1.73	0.70
1:A:2:LYS:HG2	1:A:29:ARG:NH1	2.05	0.70
1:C:13:PHE:HE2	1:C:28:LYS:HA	1.55	0.70
1:A:13:PHE:HE2	1:A:28:LYS:HA	1.56	0.70
1:B:135:ALA:HB1	1:B:136:PRO:HD2	1.71	0.70
1:C:135:ALA:HB1	1:C:136:PRO:HD2	1.72	0.70
1:B:12:ILE:HD13	1:B:107:LEU:HD11	1.74	0.69
1:D:190:ALA:HB3	1:D:209:LEU:HB2	1.74	0.69
1:A:204:ARG:HD2	2:A:432:HOH:O	1.93	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:190:ALA:HB3	1:B:209:LEU:HB2	1.74	0.69
1:A:157:THR:HG21	1:A:163:LYS:HD2	1.76	0.68
1:A:12:ILE:HD13	1:A:107:LEU:HD11	1.74	0.68
1:C:12:ILE:HD13	1:C:107:LEU:HD11	1.75	0.68
1:D:12:ILE:HD13	1:D:107:LEU:HD11	1.75	0.68
1:D:204:ARG:HD3	2:D:387:HOH:O	1.92	0.68
1:B:195:GLN:HG2	1:B:204:ARG:HG2	1.75	0.68
1:A:18:ARG:HD3	2:A:428:HOH:O	1.92	0.68
1:A:91:PHE:HB3	1:A:92:PRO:CD	2.24	0.68
1:A:184:MET:HB3	1:A:213:ILE:HD12	1.74	0.68
1:B:91:PHE:HB3	1:B:92:PRO:CD	2.24	0.68
1:C:330:LYS:HG2	1:C:350:GLU:HG3	1.77	0.67
1:A:337:GLY:H	1:A:343:THR:HA	1.60	0.66
1:B:18:ARG:HH12	1:C:137:GLN:HB2	1.58	0.66
1:A:66:ARG:NH2	2:A:398:HOH:O	2.29	0.66
1:C:157:THR:HG21	1:C:163:LYS:HD2	1.77	0.66
1:D:48:ASP:HB3	1:D:51:LEU:HB2	1.77	0.66
1:A:344:SER:HA	2:A:458:HOH:O	1.95	0.66
1:C:2:LYS:HG2	1:C:29:ARG:NH1	2.09	0.66
1:A:330:LYS:HG2	1:A:350:GLU:HG3	1.77	0.66
1:B:48:ASP:HB3	1:B:51:LEU:HB2	1.77	0.65
1:D:91:PHE:HB3	1:D:92:PRO:CD	2.24	0.65
1:D:330:LYS:HG2	1:D:350:GLU:HG3	1.77	0.65
1:A:102:ARG:NH1	1:A:368:ALA:HB3	2.10	0.65
1:C:91:PHE:HB3	1:C:92:PRO:CD	2.26	0.65
1:A:48:ASP:HB3	1:A:51:LEU:HB2	1.78	0.65
1:B:330:LYS:HG2	1:B:350:GLU:HG3	1.77	0.65
1:D:337:GLY:H	1:D:343:THR:HA	1.62	0.65
1:C:299:ILE:HB	2:C:426:HOH:O	1.95	0.65
1:C:35:VAL:HG13	1:C:181:PRO:HB3	1.78	0.64
1:C:264:ALA:HB1	1:C:276:LYS:HD3	1.79	0.64
1:A:300:LYS:HE2	1:A:300:LYS:H	1.63	0.64
1:A:73:ASP:OD2	1:A:77:LEU:HD13	1.98	0.63
1:C:48:ASP:HB3	1:C:51:LEU:HB2	1.78	0.63
1:C:337:GLY:H	1:C:343:THR:HA	1.62	0.63
1:B:17:SER:HB2	1:B:167:LYS:O	1.99	0.63
1:B:337:GLY:H	1:B:343:THR:HA	1.64	0.63
1:B:100:THR:HA	2:B:411:HOH:O	1.99	0.63
1:D:300:LYS:HE2	1:D:300:LYS:H	1.64	0.63
1:C:73:ASP:OD2	1:C:77:LEU:HD13	1.99	0.62
1:B:300:LYS:HE2	1:B:300:LYS:H	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:217:GLY:HA2	1:D:283:LEU:HD21	1.82	0.62
1:A:17:SER:HB2	1:A:167:LYS:O	1.99	0.62
1:C:217:GLY:HA2	1:C:283:LEU:HD21	1.81	0.62
1:D:17:SER:HB2	1:D:167:LYS:O	1.99	0.62
1:D:236:LYS:HG2	1:D:264:ALA:O	2.00	0.62
1:B:49:PRO:HA	2:B:413:HOH:O	1.98	0.62
1:C:300:LYS:HE2	1:C:300:LYS:H	1.64	0.62
1:D:60:SER:HB3	1:D:87:GLN:HG3	1.82	0.62
1:A:192:ALA:CB	1:A:349:THR:HG21	2.30	0.61
1:A:20:LYS:NZ	2:A:400:HOH:O	2.33	0.61
1:A:217:GLY:HA2	1:A:283:LEU:HD21	1.82	0.61
1:C:342:LEU:HD12	2:C:417:HOH:O	2.00	0.61
1:B:60:SER:HB3	1:B:87:GLN:HG3	1.82	0.61
1:C:192:ALA:HB2	1:C:349:THR:HG21	1.82	0.61
1:C:264:ALA:HB1	1:C:276:LYS:CD	2.31	0.61
1:D:235:LYS:HE2	1:D:336:SER:HB3	1.82	0.61
1:A:60:SER:HB3	1:A:87:GLN:HG3	1.83	0.61
1:C:60:SER:HB3	1:C:87:GLN:HG3	1.83	0.61
1:A:75:MET:HE3	2:A:421:HOH:O	2.01	0.60
1:C:235:LYS:HE2	1:C:336:SER:HB3	1.82	0.60
1:D:285:ALA:HA	2:D:418:HOH:O	2.02	0.60
1:D:13:PHE:CE2	1:D:28:LYS:HA	2.36	0.60
1:B:235:LYS:HE2	1:B:336:SER:HB3	1.83	0.60
1:C:13:PHE:CE2	1:C:28:LYS:HA	2.37	0.60
1:D:311:ILE:HG22	1:D:313:LYS:HE3	1.84	0.60
1:B:71:ASP:OD2	1:B:141:LYS:HB3	2.02	0.60
1:B:236:LYS:HG2	1:B:264:ALA:O	2.01	0.60
1:C:311:ILE:HG22	1:C:313:LYS:HE3	1.83	0.60
1:D:14:LYS:NZ	2:D:428:HOH:O	2.33	0.60
1:B:217:GLY:HA2	1:B:283:LEU:HD21	1.82	0.60
1:C:330:LYS:HD2	1:C:332:LYS:HE2	1.84	0.60
1:C:17:SER:HB2	1:C:167:LYS:O	2.01	0.60
1:C:134:PRO:HD2	1:C:142:SER:HB3	1.84	0.59
1:D:91:PHE:CB	1:D:92:PRO:HD3	2.31	0.59
1:D:105:GLU:O	1:D:109:LYS:HG2	2.03	0.59
1:A:344:SER:OG	2:A:434:HOH:O	2.16	0.59
1:B:148:GLU:O	1:B:148:GLU:HG3	2.03	0.59
1:C:105:GLU:O	1:C:109:LYS:HG2	2.03	0.59
1:A:148:GLU:O	1:A:148:GLU:HG3	2.02	0.59
1:A:277:THR:O	1:B:341:GLU:HB3	2.03	0.59
1:A:311:ILE:HG22	1:A:313:LYS:HE3	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:228:ASN:ND2	1:B:268:VAL:O	2.31	0.59
1:A:35:VAL:HG13	1:A:181:PRO:HB3	1.84	0.59
1:A:66:ARG:HB2	1:A:71:ASP:OD1	2.03	0.59
1:A:105:GLU:O	1:A:109:LYS:HG2	2.03	0.59
1:B:236:LYS:HZ3	1:B:263:GLU:CD	2.10	0.59
1:A:178:GLN:HG3	2:A:440:HOH:O	2.03	0.59
1:B:91:PHE:CB	1:B:92:PRO:HD3	2.32	0.59
1:B:311:ILE:HG22	1:B:313:LYS:HE3	1.84	0.59
1:C:239:VAL:HG12	1:C:280:LEU:HD11	1.86	0.58
1:A:19:ASP:OD2	1:A:168:SER:HB3	2.04	0.58
1:D:236:LYS:HZ3	1:D:263:GLU:CD	2.10	0.58
1:B:13:PHE:CE2	1:B:28:LYS:HA	2.36	0.58
1:A:213:ILE:HG12	1:A:354:ARG:HB2	1.86	0.58
1:B:330:LYS:HD2	1:B:332:LYS:HE2	1.85	0.58
1:D:191:GLU:O	1:D:192:ALA:HB2	2.04	0.58
1:D:239:VAL:HG12	1:D:280:LEU:HD11	1.86	0.58
1:A:134:PRO:HD2	1:A:142:SER:HB3	1.86	0.58
1:B:239:VAL:HG12	1:B:280:LEU:HD11	1.86	0.58
1:D:10:HIS:O	1:D:11:VAL:CG2	2.49	0.58
1:D:237:ILE:HD12	1:D:266:GLU:HG3	1.86	0.58
1:D:249:LEU:HD22	1:D:322:GLY:HA2	1.86	0.58
1:D:330:LYS:HD2	1:D:332:LYS:HE2	1.85	0.58
1:A:13:PHE:CE2	1:A:28:LYS:HA	2.37	0.58
1:B:10:HIS:O	1:B:11:VAL:CG2	2.49	0.58
1:A:56:ARG:HD3	1:A:58:TYR:OH	2.04	0.58
1:A:330:LYS:HD2	1:A:332:LYS:HE2	1.84	0.58
1:B:105:GLU:O	1:B:109:LYS:HG2	2.03	0.58
1:B:167:LYS:HE3	2:B:391:HOH:O	2.04	0.58
1:D:231:GLU:C	1:D:270:PRO:HG3	2.29	0.58
1:C:213:ILE:HG12	1:C:354:ARG:HB2	1.86	0.58
1:C:249:LEU:HD22	1:C:322:GLY:HA2	1.87	0.57
1:D:136:PRO:HA	2:D:377:HOH:O	2.04	0.57
1:B:254:TYR:CE2	1:B:256:ILE:HD11	2.40	0.57
1:A:265:GLN:C	1:A:266:GLU:HG2	2.29	0.57
1:A:239:VAL:HG12	1:A:280:LEU:HD11	1.85	0.57
1:B:237:ILE:HD12	1:B:266:GLU:HG3	1.85	0.57
1:D:56:ARG:HD3	1:D:58:TYR:OH	2.04	0.57
1:D:148:GLU:O	1:D:148:GLU:HG3	2.03	0.57
1:A:67:TYR:O	1:A:78:SER:HB3	2.03	0.57
1:A:249:LEU:HD22	1:A:322:GLY:HA2	1.87	0.57
1:D:19:ASP:OD2	1:D:168:SER:HB3	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:192:ALA:HB1	1:D:194:TRP:CH2	2.39	0.57
1:C:19:ASP:OD2	1:C:168:SER:HB3	2.04	0.57
1:C:56:ARG:HD3	1:C:58:TYR:OH	2.05	0.57
1:C:128:CYS:SG	1:C:178:GLN:HG2	2.44	0.57
1:A:10:HIS:O	1:A:11:VAL:CG2	2.51	0.57
1:B:19:ASP:OD2	1:B:168:SER:HB3	2.05	0.56
1:B:191:GLU:O	1:B:192:ALA:HB2	2.04	0.56
1:C:148:GLU:HG3	1:C:148:GLU:O	2.04	0.56
1:D:213:ILE:HG12	1:D:354:ARG:HB2	1.86	0.56
1:B:213:ILE:HG12	1:B:354:ARG:HB2	1.86	0.56
1:C:67:TYR:O	1:C:78:SER:HB3	2.04	0.56
1:C:265:GLN:C	1:C:266:GLU:HG2	2.29	0.56
1:D:222:VAL:HG11	1:D:329:ILE:HG21	1.87	0.56
1:B:56:ARG:HD3	1:B:58:TYR:OH	2.05	0.56
1:A:201:LYS:HB3	1:A:229:SER:O	2.06	0.56
1:A:201:LYS:HG2	1:A:229:SER:O	2.05	0.56
1:A:222:VAL:HG11	1:A:329:ILE:HG21	1.88	0.56
1:C:91:PHE:CB	1:C:92:PRO:HD3	2.33	0.56
1:C:254:TYR:CE2	1:C:256:ILE:HD11	2.41	0.56
1:A:232:LYS:HD2	2:A:385:HOH:O	2.04	0.56
1:B:192:ALA:HB1	1:B:194:TRP:CH2	2.40	0.56
1:B:231:GLU:C	1:B:270:PRO:HG3	2.31	0.56
1:B:128:CYS:SG	1:B:178:GLN:HG2	2.44	0.56
1:C:124:ASP:HB3	2:C:437:HOH:O	2.06	0.56
1:D:134:PRO:HD2	1:D:142:SER:HB3	1.88	0.56
1:D:228:ASN:ND2	1:D:268:VAL:O	2.32	0.56
1:D:254:TYR:CE2	1:D:256:ILE:HD11	2.41	0.56
1:B:222:VAL:HG11	1:B:329:ILE:HG21	1.88	0.55
1:A:265:GLN:NE2	1:A:265:GLN:HA	2.21	0.55
1:C:10:HIS:O	1:C:11:VAL:CG2	2.50	0.55
1:C:275:THR:O	1:D:345:SER:HA	2.06	0.55
1:C:222:VAL:HG11	1:C:329:ILE:HG21	1.87	0.55
1:A:47:VAL:HB	1:A:52:VAL:HG21	1.88	0.55
1:A:235:LYS:HE2	1:A:336:SER:HB3	1.89	0.55
1:A:254:TYR:CE2	1:A:256:ILE:HD11	2.41	0.55
1:A:18:ARG:HD2	1:A:167:LYS:HB2	1.89	0.55
1:A:72:ILE:HD11	1:A:298:LYS:HE2	1.87	0.55
1:B:2:LYS:HE3	1:B:29:ARG:CD	2.37	0.55
1:C:5:LYS:HE2	2:C:440:HOH:O	2.06	0.55
1:A:128:CYS:SG	1:A:178:GLN:HG2	2.47	0.55
1:B:249:LEU:HD22	1:B:322:GLY:HA2	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:91:PHE:CB	1:A:92:PRO:HD3	2.31	0.55
1:B:75:MET:O	1:B:76:GLY:C	2.50	0.54
1:B:134:PRO:HD2	1:B:142:SER:HB3	1.87	0.54
1:B:136:PRO:HD3	1:B:291:ARG:NH1	2.22	0.54
1:C:66:ARG:HB2	1:C:71:ASP:OD1	2.06	0.54
1:C:72:ILE:HD11	1:C:298:LYS:HE2	1.88	0.54
1:B:2:LYS:HE3	1:B:29:ARG:HD3	1.90	0.54
1:D:18:ARG:HD2	1:D:167:LYS:HB2	1.90	0.54
1:D:277:THR:HG23	2:D:413:HOH:O	2.06	0.54
1:C:130:VAL:HG21	2:C:421:HOH:O	2.07	0.54
1:D:160:GLU:OE1	1:D:160:GLU:HA	2.08	0.54
1:D:189:ARG:HG2	2:D:378:HOH:O	2.08	0.54
1:D:238:LYS:HD3	2:D:372:HOH:O	2.07	0.54
1:A:79:PHE:CD2	1:A:250:TYR:HB2	2.43	0.54
1:B:160:GLU:HA	1:B:160:GLU:OE1	2.08	0.54
1:D:212:GLU:HG3	1:D:213:ILE:HG13	1.89	0.54
1:B:127:PRO:O	1:B:176:LYS:HE2	2.08	0.54
1:C:127:PRO:O	1:C:176:LYS:HE2	2.07	0.54
1:C:265:GLN:NE2	1:C:265:GLN:HA	2.22	0.54
1:A:2:LYS:HE3	1:A:29:ARG:CD	2.37	0.54
1:C:35:VAL:CG1	1:C:181:PRO:HB3	2.37	0.54
1:C:212:GLU:HG3	1:C:213:ILE:HG13	1.90	0.54
1:C:192:ALA:CB	1:C:349:THR:HG21	2.39	0.53
1:C:276:LYS:HE2	1:D:342:LEU:HG	1.90	0.53
1:D:75:MET:O	1:D:76:GLY:C	2.50	0.53
1:A:127:PRO:O	1:A:176:LYS:HE2	2.08	0.53
1:A:136:PRO:HD3	1:A:291:ARG:NH1	2.23	0.53
1:D:136:PRO:HD3	1:D:291:ARG:NH1	2.24	0.53
1:C:182:ARG:HD2	2:C:394:HOH:O	2.08	0.53
1:C:233:THR:OG1	1:C:270:PRO:HD3	2.08	0.53
1:D:128:CYS:SG	1:D:178:GLN:HG2	2.48	0.53
1:B:249:LEU:HD13	1:B:319:THR:O	2.09	0.53
1:A:212:GLU:HG3	1:A:213:ILE:HG13	1.91	0.53
1:C:110:LYS:HG3	2:C:439:HOH:O	2.07	0.53
1:C:136:PRO:HD3	1:C:291:ARG:NH1	2.23	0.53
1:D:123:PRO:HG2	1:D:126:LEU:HG	1.91	0.53
1:B:18:ARG:HD2	1:B:167:LYS:HB2	1.90	0.53
1:C:123:PRO:HG2	1:C:126:LEU:HG	1.91	0.53
1:C:160:GLU:OE1	1:C:160:GLU:HA	2.08	0.53
1:A:160:GLU:OE1	1:A:160:GLU:HA	2.09	0.52
1:C:311:ILE:HG22	1:C:311:ILE:O	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:301:HIS:HD2	2:B:408:HOH:O	1.92	0.52
1:D:127:PRO:O	1:D:176:LYS:HE2	2.08	0.52
1:A:268:VAL:HG13	1:A:274:LEU:HB2	1.91	0.52
1:B:212:GLU:HG3	1:B:213:ILE:HG13	1.91	0.52
1:D:249:LEU:HD13	1:D:319:THR:O	2.09	0.52
1:A:3:ALA:O	1:A:4:ASN:HB2	2.08	0.52
1:A:123:PRO:HG2	1:A:126:LEU:HG	1.91	0.52
1:A:249:LEU:HD13	1:A:319:THR:O	2.09	0.52
1:C:59:VAL:HA	1:C:150:LYS:O	2.10	0.52
1:D:71:ASP:OD2	1:D:141:LYS:HB3	2.09	0.52
1:B:254:TYR:HE2	1:B:256:ILE:HD11	1.74	0.52
1:D:254:TYR:HE2	1:D:256:ILE:HD11	1.75	0.52
1:A:59:VAL:HA	1:A:150:LYS:O	2.10	0.52
1:A:264:ALA:HB1	1:A:276:LYS:CD	2.40	0.52
1:B:59:VAL:HA	1:B:150:LYS:O	2.10	0.52
1:C:249:LEU:HD13	1:C:319:THR:O	2.10	0.52
1:A:68:GLY:HA3	1:A:78:SER:HB2	1.91	0.52
1:C:20:LYS:HE3	2:C:380:HOH:O	2.10	0.52
1:D:32:ILE:HG23	1:D:179:HIS:CD2	2.45	0.52
1:D:265:GLN:CD	1:D:265:GLN:H	2.18	0.52
1:A:32:ILE:HG23	1:A:179:HIS:CD2	2.46	0.51
1:C:48:ASP:O	1:C:52:VAL:HG22	2.10	0.51
1:C:354:ARG:NH1	1:C:354:ARG:HG3	2.25	0.51
1:B:48:ASP:O	1:B:52:VAL:HG22	2.10	0.51
1:B:211:LYS:HD3	1:B:213:ILE:O	2.10	0.51
1:C:5:LYS:NZ	2:C:410:HOH:O	2.43	0.51
1:A:354:ARG:NH1	1:A:354:ARG:HG3	2.25	0.51
1:D:91:PHE:O	1:D:93:PRO:HD3	2.10	0.51
1:B:311:ILE:HG22	1:B:311:ILE:O	2.10	0.51
1:C:18:ARG:HD2	1:C:167:LYS:HB2	1.90	0.51
1:C:134:PRO:HG3	1:C:140:GLY:O	2.10	0.51
1:D:59:VAL:HA	1:D:150:LYS:O	2.10	0.51
1:D:211:LYS:HD3	1:D:213:ILE:O	2.10	0.51
1:C:102:ARG:NH1	1:C:368:ALA:HB3	2.24	0.51
1:C:211:LYS:HD3	1:C:213:ILE:O	2.10	0.51
1:A:188:PRO:HB2	1:A:209:LEU:HB2	1.93	0.51
1:A:344:SER:HB3	2:A:405:HOH:O	2.11	0.51
1:C:276:LYS:HZ1	1:D:342:LEU:HD12	1.74	0.51
1:A:190:ALA:HB2	1:A:351:VAL:HG22	1.92	0.51
1:A:211:LYS:HD3	1:A:213:ILE:O	2.11	0.51
1:A:134:PRO:HG3	1:A:140:GLY:O	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:25:TYR:HE2	1:B:46:LEU:HB2	1.76	0.51
1:B:329:ILE:O	1:B:350:GLU:HA	2.11	0.51
1:C:32:ILE:HG23	1:C:179:HIS:CD2	2.45	0.51
1:D:2:LYS:HE3	1:D:29:ARG:CD	2.40	0.51
1:D:311:ILE:HG22	1:D:311:ILE:O	2.11	0.51
1:D:329:ILE:O	1:D:350:GLU:HA	2.10	0.51
1:A:48:ASP:O	1:A:52:VAL:HG22	2.11	0.51
1:B:265:GLN:CD	1:B:265:GLN:H	2.18	0.51
1:B:106:SER:O	1:B:110:LYS:HB2	2.11	0.51
1:B:123:PRO:HG2	1:B:126:LEU:HG	1.92	0.51
1:C:106:SER:O	1:C:110:LYS:HB2	2.11	0.51
1:C:254:TYR:HE2	1:C:256:ILE:HD11	1.76	0.51
1:D:194:TRP:CD2	1:D:349:THR:HG21	2.46	0.51
1:A:106:SER:O	1:A:110:LYS:HB2	2.11	0.50
1:D:354:ARG:NH1	1:D:354:ARG:HG3	2.26	0.50
1:A:329:ILE:O	1:A:350:GLU:HA	2.11	0.50
1:A:336:SER:HB2	1:A:343:THR:OG1	2.11	0.50
1:C:25:TYR:HE2	1:C:46:LEU:HB2	1.76	0.50
1:C:248:VAL:O	1:C:319:THR:HG22	2.12	0.50
1:D:25:TYR:HE2	1:D:46:LEU:HB2	1.76	0.50
1:C:68:GLY:HA3	1:C:78:SER:HB2	1.92	0.50
1:A:103:LEU:HD22	1:A:107:LEU:HD12	1.94	0.50
1:A:341:GLU:HB3	2:A:405:HOH:O	2.11	0.50
1:B:354:ARG:NH2	2:B:376:HOH:O	2.45	0.50
1:D:132:LEU:HD23	1:D:133:GLN:N	2.27	0.50
1:A:197:PHE:CE2	1:A:198:MET:HE3	2.47	0.50
1:A:354:ARG:HG3	1:A:354:ARG:HH11	1.77	0.50
1:C:3:ALA:O	1:C:4:ASN:HB2	2.11	0.50
1:C:329:ILE:O	1:C:350:GLU:HA	2.12	0.50
1:D:48:ASP:O	1:D:52:VAL:HG22	2.11	0.50
1:C:103:LEU:HD22	1:C:107:LEU:HD12	1.94	0.50
1:D:299:ILE:HG22	2:D:420:HOH:O	2.11	0.50
1:A:254:TYR:HE2	1:A:256:ILE:HD11	1.75	0.50
1:B:32:ILE:HG23	1:B:179:HIS:CD2	2.46	0.50
1:B:248:VAL:O	1:B:319:THR:HG22	2.12	0.50
1:D:55:LYS:HB3	1:D:155:HIS:HB3	1.94	0.50
1:D:106:SER:O	1:D:110:LYS:HB2	2.11	0.50
1:A:25:TYR:HE2	1:A:46:LEU:HB2	1.76	0.49
1:B:132:LEU:HD23	1:B:133:GLN:N	2.27	0.49
1:C:132:LEU:HD23	1:C:133:GLN:N	2.27	0.49
1:A:4:ASN:ND2	2:A:426:HOH:O	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:248:VAL:O	1:A:319:THR:HG22	2.12	0.49
1:B:19:ASP:HB2	1:B:167:LYS:C	2.37	0.49
1:C:19:ASP:HB2	1:C:167:LYS:C	2.37	0.49
1:C:98:GLY:O	1:C:99:ALA:C	2.55	0.49
1:D:19:ASP:HB2	1:D:167:LYS:C	2.37	0.49
1:D:248:VAL:O	1:D:319:THR:HG22	2.12	0.49
1:D:283:LEU:O	1:D:286:ASN:HB2	2.12	0.49
1:A:311:ILE:HG22	1:A:311:ILE:O	2.11	0.49
1:B:283:LEU:O	1:B:286:ASN:HB2	2.12	0.49
1:C:354:ARG:HG3	1:C:354:ARG:HH11	1.77	0.49
1:D:134:PRO:HG3	1:D:140:GLY:O	2.12	0.49
1:D:336:SER:HB2	1:D:343:THR:OG1	2.12	0.49
1:A:300:LYS:HE2	1:A:300:LYS:N	2.28	0.49
1:B:354:ARG:NH1	1:B:354:ARG:HG3	2.27	0.49
1:A:35:VAL:CG1	1:A:181:PRO:HB3	2.41	0.49
1:A:98:GLY:O	1:A:99:ALA:C	2.55	0.49
1:B:103:LEU:HD22	1:B:107:LEU:HD12	1.94	0.49
1:A:15:LYS:NZ	2:A:388:HOH:O	2.45	0.49
1:A:276:LYS:HZ1	1:B:342:LEU:HD12	1.78	0.49
1:A:283:LEU:O	1:A:286:ASN:HB2	2.12	0.49
1:B:98:GLY:O	1:B:99:ALA:C	2.56	0.49
1:B:238:LYS:HG3	1:B:263:GLU:CB	2.40	0.49
1:D:246:ASN:ND2	2:D:430:HOH:O	2.45	0.49
1:C:362:ASP:N	1:C:363:PRO:HD3	2.28	0.49
1:A:132:LEU:HD23	1:A:133:GLN:N	2.28	0.49
1:B:295:LEU:N	1:B:295:LEU:HD12	2.28	0.49
1:C:283:LEU:O	1:C:286:ASN:HB2	2.12	0.49
1:D:98:GLY:O	1:D:99:ALA:C	2.56	0.49
1:D:354:ARG:HG3	1:D:354:ARG:HH11	1.78	0.49
1:A:55:LYS:HB3	1:A:155:HIS:HB3	1.95	0.48
1:A:91:PHE:CB	1:A:92:PRO:CD	2.90	0.48
1:C:342:LEU:CD1	2:C:417:HOH:O	2.58	0.48
1:B:55:LYS:HB3	1:B:155:HIS:HB3	1.95	0.48
1:B:134:PRO:HG3	1:B:140:GLY:O	2.12	0.48
1:A:362:ASP:N	1:A:363:PRO:HD3	2.28	0.48
1:C:55:LYS:HB3	1:C:155:HIS:HB3	1.95	0.48
1:A:72:ILE:HG23	1:A:173:LEU:HD11	1.95	0.48
1:B:199:SER:O	1:B:200:ASP:HB2	2.13	0.48
1:C:195:GLN:HE21	1:C:200:ASP:HA	1.78	0.48
1:A:184:MET:HB2	1:A:212:GLU:CG	2.43	0.48
1:A:312:ILE:HA	1:A:321:MET:HE2	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:91:PHE:O	1:C:93:PRO:HD3	2.14	0.48
1:B:91:PHE:O	1:B:93:PRO:HD3	2.13	0.48
1:C:91:PHE:O	1:C:92:PRO:C	2.55	0.48
1:D:91:PHE:CB	1:D:92:PRO:CD	2.90	0.48
1:A:19:ASP:HB2	1:A:167:LYS:C	2.38	0.48
1:C:79:PHE:CD2	1:C:250:TYR:HB2	2.48	0.48
1:D:103:LEU:HD22	1:D:107:LEU:HD12	1.94	0.48
1:B:204:ARG:NH2	2:B:384:HOH:O	2.47	0.48
1:C:12:ILE:HD12	1:C:107:LEU:HD21	1.96	0.48
1:C:266:GLU:CD	1:C:276:LYS:HD2	2.39	0.48
1:B:61:LEU:HD13	1:B:149:ILE:HD12	1.96	0.47
1:B:194:TRP:CD2	1:B:349:THR:HG21	2.49	0.47
1:A:131:MET:HE3	1:A:131:MET:HB2	1.66	0.47
1:A:295:LEU:HD12	1:A:295:LEU:N	2.29	0.47
1:A:12:ILE:HD12	1:A:107:LEU:HD21	1.96	0.47
1:A:195:GLN:HE21	1:A:200:ASP:HA	1.79	0.47
1:C:61:LEU:HD13	1:C:149:ILE:HD12	1.97	0.47
1:C:336:SER:HB2	1:C:343:THR:OG1	2.13	0.47
1:A:61:LEU:HD13	1:A:149:ILE:HD12	1.97	0.47
1:B:336:SER:HB2	1:B:343:THR:OG1	2.14	0.47
1:D:164:ILE:HB	2:D:393:HOH:O	2.15	0.47
1:D:21:SER:HB3	1:D:51:LEU:HB3	1.96	0.47
1:D:57:VAL:HB	1:D:91:PHE:HB2	1.96	0.47
1:D:295:LEU:N	1:D:295:LEU:HD12	2.29	0.47
1:D:300:LYS:HE2	1:D:300:LYS:N	2.29	0.47
1:B:91:PHE:CB	1:B:92:PRO:CD	2.91	0.47
1:A:21:SER:HB3	1:A:51:LEU:HB3	1.97	0.47
1:A:212:GLU:OE2	1:A:354:ARG:NH1	2.48	0.47
1:C:91:PHE:CB	1:C:92:PRO:CD	2.91	0.47
1:D:61:LEU:HD13	1:D:149:ILE:HD12	1.97	0.47
1:D:158:ASP:C	1:D:160:GLU:H	2.22	0.47
1:A:19:ASP:OD1	1:A:167:LYS:HE2	2.15	0.47
1:B:65:PHE:CD2	1:B:249:LEU:HD23	2.50	0.47
1:B:231:GLU:HA	1:B:270:PRO:HG3	1.97	0.47
1:C:2:LYS:HE3	1:C:29:ARG:CD	2.44	0.47
1:C:197:PHE:CE2	1:C:198:MET:HE3	2.49	0.47
1:B:135:ALA:HA	1:B:291:ARG:HB3	1.96	0.47
1:C:212:GLU:OE2	1:C:354:ARG:NH1	2.48	0.47
1:A:2:LYS:HE3	1:A:29:ARG:HD2	1.96	0.47
1:A:91:PHE:O	1:A:92:PRO:C	2.55	0.47
1:C:74:VAL:HG22	1:C:74:VAL:O	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:158:ASP:C	1:C:160:GLU:H	2.23	0.47
1:B:158:ASP:C	1:B:160:GLU:H	2.22	0.46
1:C:135:ALA:HA	1:C:291:ARG:HB3	1.97	0.46
1:C:295:LEU:HD12	1:C:295:LEU:N	2.29	0.46
1:D:91:PHE:O	1:D:92:PRO:C	2.58	0.46
1:D:337:GLY:H	1:D:343:THR:CA	2.28	0.46
1:A:276:LYS:CE	1:B:342:LEU:HG	2.42	0.46
1:A:337:GLY:N	1:A:343:THR:HA	2.28	0.46
1:C:47:VAL:HB	1:C:52:VAL:HG21	1.96	0.46
1:A:232:LYS:HG2	1:A:337:GLY:CA	2.46	0.46
1:C:194:TRP:CE2	1:C:347:VAL:HB	2.51	0.46
1:D:12:ILE:HD12	1:D:107:LEU:HD21	1.97	0.46
1:D:341:GLU:C	1:D:343:THR:H	2.24	0.46
1:B:21:SER:HB3	1:B:51:LEU:HB3	1.97	0.46
1:B:57:VAL:HB	1:B:91:PHE:HB2	1.96	0.46
1:B:341:GLU:C	1:B:343:THR:H	2.23	0.46
1:B:35:VAL:CG2	1:B:36:GLU:N	2.79	0.46
1:C:35:VAL:CG2	1:C:36:GLU:N	2.79	0.46
1:D:65:PHE:CE2	1:D:249:LEU:HB3	2.51	0.46
1:D:212:GLU:OE2	1:D:354:ARG:NH1	2.49	0.46
1:A:65:PHE:CE2	1:A:249:LEU:HB3	2.51	0.46
1:A:74:VAL:HG22	1:A:74:VAL:O	2.16	0.46
1:B:157:THR:CG2	1:B:163:LYS:HD2	2.44	0.46
1:D:199:SER:O	1:D:200:ASP:HB2	2.14	0.46
1:A:337:GLY:H	1:A:343:THR:CA	2.26	0.46
1:B:354:ARG:HG3	1:B:354:ARG:HH11	1.79	0.46
1:C:86:SER:HA	2:C:424:HOH:O	2.16	0.46
1:A:65:PHE:CD2	1:A:249:LEU:HD23	2.50	0.46
1:A:158:ASP:C	1:A:160:GLU:H	2.24	0.46
1:C:312:ILE:HA	1:C:321:MET:HE2	1.97	0.46
1:D:47:VAL:HB	1:D:52:VAL:HG21	1.96	0.46
1:B:65:PHE:CE2	1:B:249:LEU:HB3	2.50	0.46
1:B:300:LYS:HE2	1:B:300:LYS:N	2.29	0.46
1:C:65:PHE:CD2	1:C:249:LEU:HD23	2.51	0.46
1:A:184:MET:HB3	1:A:213:ILE:CD1	2.46	0.45
1:B:4:ASN:O	1:B:13:PHE:HB3	2.15	0.45
1:B:50:GLU:HA	1:B:53:LYS:HB2	1.98	0.45
1:C:337:GLY:N	1:C:343:THR:HA	2.30	0.45
1:D:50:GLU:HA	1:D:53:LYS:HB2	1.98	0.45
1:D:238:LYS:HG3	1:D:263:GLU:CB	2.43	0.45
1:A:335:VAL:HG12	1:A:336:SER:N	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:12:ILE:HD12	1:B:107:LEU:HD21	1.97	0.45
1:D:28:LYS:HD3	1:D:30:ASP:O	2.16	0.45
1:D:35:VAL:CG2	1:D:36:GLU:N	2.79	0.45
1:A:65:PHE:CG	1:A:249:LEU:HD23	2.51	0.45
1:C:207:VAL:HB	1:C:351:VAL:HG21	1.98	0.45
1:D:149:ILE:HG22	1:D:172:LEU:HB2	1.98	0.45
1:D:337:GLY:N	1:D:343:THR:HA	2.30	0.45
1:A:341:GLU:C	1:A:343:THR:H	2.25	0.45
1:B:232:LYS:HG2	1:B:337:GLY:CA	2.46	0.45
1:A:57:VAL:HB	1:A:91:PHE:HB2	1.97	0.45
1:C:19:ASP:OD1	1:C:167:LYS:HE2	2.17	0.45
1:C:28:LYS:HD3	1:C:30:ASP:O	2.17	0.45
1:B:149:ILE:HG22	1:B:172:LEU:HB2	1.98	0.45
1:B:249:LEU:HD12	1:B:249:LEU:HA	1.83	0.45
1:B:300:LYS:HB3	1:B:300:LYS:HZ3	1.81	0.45
1:D:2:LYS:HE3	1:D:29:ARG:HD3	1.98	0.45
1:A:35:VAL:CG2	1:A:36:GLU:N	2.79	0.45
1:A:194:TRP:NE1	1:A:347:VAL:HB	2.31	0.45
1:B:28:LYS:HD3	1:B:30:ASP:O	2.16	0.45
1:C:65:PHE:CE2	1:C:249:LEU:HB3	2.51	0.45
1:D:231:GLU:HA	1:D:270:PRO:HG3	1.98	0.45
1:D:269:PRO:HB2	1:D:270:PRO:HD2	1.98	0.45
1:B:212:GLU:OE2	1:B:354:ARG:NH1	2.50	0.45
1:B:269:PRO:HB2	1:B:270:PRO:HD2	1.98	0.45
1:B:341:GLU:C	1:B:343:THR:N	2.74	0.45
1:C:108:ILE:C	1:C:110:LYS:H	2.25	0.45
1:C:155:HIS:HE1	1:C:165:PRO:HG2	1.81	0.45
1:C:102:ARG:NH2	2:C:438:HOH:O	2.36	0.45
1:A:264:ALA:HB1	1:A:276:LYS:HD3	1.98	0.44
1:A:276:LYS:HZ3	1:B:342:LEU:HA	1.82	0.44
1:D:65:PHE:CD2	1:D:249:LEU:HD23	2.51	0.44
1:D:65:PHE:CG	1:D:249:LEU:HD23	2.52	0.44
1:D:108:ILE:C	1:D:110:LYS:H	2.25	0.44
1:A:201:LYS:NZ	2:A:416:HOH:O	2.49	0.44
1:C:33:ASP:OD1	1:C:33:ASP:C	2.60	0.44
1:C:149:ILE:HG22	1:C:172:LEU:HB2	1.99	0.44
1:D:312:ILE:HA	1:D:321:MET:HE2	1.99	0.44
1:A:135:ALA:HA	1:A:291:ARG:HB3	1.99	0.44
1:A:167:LYS:HG2	1:A:168:SER:N	2.33	0.44
1:B:337:GLY:N	1:B:343:THR:HA	2.32	0.44
1:D:13:PHE:HE1	1:D:29:ARG:HH21	1.65	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:155:HIS:HE1	1:D:165:PRO:HG2	1.82	0.44
1:D:232:LYS:HG2	1:D:337:GLY:CA	2.47	0.44
1:B:19:ASP:OD1	1:B:167:LYS:HE2	2.17	0.44
1:C:341:GLU:N	2:C:417:HOH:O	2.49	0.44
1:A:360:PRO:HB2	1:A:362:ASP:OD1	2.18	0.44
1:B:210:SER:OG	1:B:221:PRO:HG2	2.17	0.44
1:A:157:THR:CG2	1:A:163:LYS:HD2	2.46	0.44
1:A:207:VAL:HB	1:A:351:VAL:HG21	2.00	0.44
1:A:341:GLU:C	1:A:343:THR:N	2.76	0.44
1:B:155:HIS:HE1	1:B:165:PRO:HG2	1.82	0.44
1:B:167:LYS:HG2	1:B:168:SER:N	2.33	0.44
1:C:65:PHE:CG	1:C:249:LEU:HD23	2.52	0.44
1:C:337:GLY:H	1:C:343:THR:CA	2.28	0.44
1:D:207:VAL:HB	1:D:351:VAL:HG21	2.00	0.44
1:B:65:PHE:CG	1:B:249:LEU:HD23	2.52	0.44
1:B:68:GLY:O	1:B:69:GLN:C	2.60	0.44
1:B:320:VAL:HG12	1:B:320:VAL:O	2.18	0.44
1:D:19:ASP:OD1	1:D:167:LYS:HE2	2.17	0.44
1:A:33:ASP:C	1:A:33:ASP:OD1	2.60	0.44
1:A:71:ASP:C	1:A:72:ILE:HG13	2.43	0.44
1:B:11:VAL:O	1:B:11:VAL:HG12	2.17	0.44
1:B:108:ILE:C	1:B:110:LYS:H	2.25	0.44
1:D:167:LYS:HG2	1:D:168:SER:N	2.32	0.44
1:A:149:ILE:HG22	1:A:172:LEU:HB2	2.00	0.44
1:B:33:ASP:OD1	1:B:33:ASP:C	2.60	0.44
1:B:131:MET:HE3	1:B:131:MET:HB2	1.65	0.44
1:D:2:LYS:HE3	1:D:29:ARG:HD2	2.00	0.44
1:A:137:GLN:H	1:A:137:GLN:HG3	1.51	0.43
1:B:3:ALA:O	1:B:4:ASN:HB2	2.18	0.43
1:B:75:MET:HG2	1:C:189:ARG:HB2	2.00	0.43
1:C:137:GLN:H	1:C:137:GLN:HG3	1.51	0.43
1:C:167:LYS:HG2	1:C:168:SER:N	2.32	0.43
1:D:15:LYS:O	1:D:170:VAL:HG11	2.18	0.43
1:D:157:THR:CG2	1:D:163:LYS:HD2	2.43	0.43
1:A:195:GLN:CB	1:D:81:ARG:HG2	2.43	0.43
1:B:15:LYS:O	1:B:170:VAL:HG11	2.17	0.43
1:C:71:ASP:C	1:C:72:ILE:HG13	2.43	0.43
1:C:210:SER:OG	1:C:221:PRO:HG2	2.17	0.43
1:C:262:GLU:HB2	1:C:280:LEU:HD21	1.99	0.43
1:C:341:GLU:C	1:C:343:THR:H	2.25	0.43
1:C:363:PRO:O	1:C:364:ASP:HB3	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:341:GLU:C	1:D:343:THR:N	2.75	0.43
1:B:91:PHE:O	1:B:92:PRO:C	2.57	0.43
1:B:195:GLN:HE21	1:B:204:ARG:HH11	1.65	0.43
1:D:135:ALA:HA	1:D:291:ARG:HB3	1.98	0.43
1:A:155:HIS:HE1	1:A:165:PRO:HG2	1.82	0.43
1:B:207:VAL:HB	1:B:351:VAL:HG21	1.99	0.43
1:C:131:MET:HE3	1:C:131:MET:HB2	1.67	0.43
1:D:68:GLY:O	1:D:69:GLN:C	2.60	0.43
1:A:2:LYS:HE3	1:A:29:ARG:HD3	1.98	0.43
1:A:185:GLY:N	1:A:212:GLU:HG2	2.34	0.43
1:A:194:TRP:HH2	1:A:205:LEU:HD23	1.83	0.43
1:C:2:LYS:HE3	1:C:29:ARG:HD2	2.00	0.43
1:D:91:PHE:O	1:D:93:PRO:CD	2.67	0.43
1:A:108:ILE:C	1:A:110:LYS:H	2.26	0.43
1:A:200:ASP:HB3	2:A:396:HOH:O	2.19	0.43
1:A:363:PRO:O	1:A:364:ASP:HB3	2.18	0.43
1:C:21:SER:HB3	1:C:51:LEU:HB3	2.00	0.43
1:D:3:ALA:O	1:D:4:ASN:HB2	2.19	0.43
1:D:194:TRP:CZ2	1:D:349:THR:HB	2.53	0.43
1:D:211:LYS:H	1:D:211:LYS:HG3	1.73	0.43
1:B:57:VAL:H	1:B:91:PHE:HB3	1.83	0.43
1:B:133:GLN:HA	1:B:134:PRO:HD2	1.90	0.43
1:B:195:GLN:NE2	1:B:204:ARG:HH11	2.16	0.43
1:C:211:LYS:H	1:C:211:LYS:HG3	1.72	0.43
1:D:210:SER:OG	1:D:221:PRO:HG2	2.19	0.43
1:C:360:PRO:HB2	1:C:362:ASP:OD1	2.18	0.43
1:A:6:PRO:HA	1:A:12:ILE:O	2.19	0.43
1:A:184:MET:HB2	1:A:212:GLU:HG3	2.01	0.43
1:B:312:ILE:HA	1:B:321:MET:HE2	2.00	0.43
1:D:57:VAL:H	1:D:91:PHE:HB3	1.84	0.43
1:D:104:GLN:H	1:D:104:GLN:HG2	1.61	0.43
1:A:300:LYS:NZ	1:A:300:LYS:HB3	2.34	0.43
1:C:300:LYS:HE2	1:C:300:LYS:N	2.29	0.43
1:D:300:LYS:NZ	1:D:300:LYS:HB3	2.34	0.43
1:B:47:VAL:HB	1:B:52:VAL:HG21	1.99	0.42
1:D:198:MET:O	1:D:199:SER:HB2	2.19	0.42
1:A:91:PHE:O	1:A:93:PRO:HD3	2.17	0.42
1:A:137:GLN:O	1:D:18:ARG:NH1	2.52	0.42
1:A:177:VAL:HG23	1:A:179:HIS:CD2	2.55	0.42
1:B:300:LYS:HB3	1:B:300:LYS:NZ	2.33	0.42
1:C:268:VAL:HG13	1:C:274:LEU:HB2	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:14:LYS:HA	1:D:24:ILE:O	2.20	0.42
1:A:4:ASN:O	1:A:13:PHE:HB3	2.20	0.42
1:A:28:LYS:HD3	1:A:30:ASP:O	2.18	0.42
1:A:357:HIS:HE1	2:A:442:HOH:O	2.02	0.42
1:B:337:GLY:H	1:B:343:THR:CA	2.30	0.42
1:C:15:LYS:O	1:C:170:VAL:HG11	2.19	0.42
1:C:262:GLU:HB3	1:C:278:LEU:HD23	2.00	0.42
1:D:4:ASN:O	1:D:13:PHE:HB3	2.20	0.42
1:A:190:ALA:CB	1:A:351:VAL:HG22	2.49	0.42
1:A:284:LEU:HD11	1:A:290:ARG:HG2	2.01	0.42
1:B:62:THR:HG23	1:B:85:PHE:HD1	1.84	0.42
1:C:284:LEU:HD11	1:C:290:ARG:HG2	2.01	0.42
1:D:62:THR:HG23	1:D:85:PHE:HD1	1.84	0.42
1:D:177:VAL:HG23	1:D:179:HIS:CD2	2.55	0.42
1:C:184:MET:HB3	1:C:213:ILE:CD1	2.42	0.42
1:D:33:ASP:C	1:D:33:ASP:OD1	2.62	0.42
1:A:184:MET:HB2	1:A:212:GLU:HG2	2.02	0.42
1:A:232:LYS:HG2	1:A:337:GLY:HA2	2.02	0.42
1:B:14:LYS:HA	1:B:24:ILE:O	2.19	0.42
1:C:91:PHE:O	1:C:93:PRO:N	2.53	0.42
1:C:184:MET:HB2	1:C:212:GLU:CG	2.50	0.42
1:D:195:GLN:HE21	1:D:204:ARG:HH11	1.67	0.42
1:B:284:LEU:HD11	1:B:290:ARG:HG2	2.01	0.42
1:C:4:ASN:O	1:C:13:PHE:HB3	2.20	0.42
1:C:132:LEU:HD12	1:C:245:THR:HG21	2.01	0.42
1:D:284:LEU:HD11	1:D:290:ARG:HG2	2.01	0.42
1:A:15:LYS:O	1:A:170:VAL:HG11	2.19	0.42
1:B:198:MET:O	1:B:199:SER:HB2	2.19	0.42
1:C:14:LYS:HA	1:C:24:ILE:O	2.20	0.42
1:C:180:ALA:HB2	1:C:215:TYR:HE1	1.85	0.42
1:D:241:VAL:HB	1:D:260:ALA:HB3	2.02	0.42
1:A:3:ALA:O	1:A:4:ASN:CB	2.68	0.42
1:A:208:SER:HB2	2:A:394:HOH:O	2.20	0.42
1:A:210:SER:OG	1:A:221:PRO:HG2	2.20	0.42
1:B:241:VAL:HB	1:B:260:ALA:HB3	2.02	0.42
1:D:6:PRO:HA	1:D:12:ILE:O	2.20	0.42
1:D:281:VAL:HG12	1:D:283:LEU:HG	2.02	0.42
1:A:132:LEU:HD12	1:A:245:THR:HG21	2.02	0.41
1:B:194:TRP:CZ2	1:B:349:THR:HB	2.55	0.41
1:C:13:PHE:HE1	1:C:29:ARG:HH21	1.64	0.41
1:C:266:GLU:OE2	1:C:276:LYS:HE2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:300:LYS:NZ	1:C:300:LYS:HB3	2.34	0.41
1:A:62:THR:HG23	1:A:85:PHE:HD1	1.85	0.41
1:B:6:PRO:HA	1:B:12:ILE:O	2.19	0.41
1:B:48:ASP:HA	1:B:49:PRO:HD2	1.84	0.41
1:C:57:VAL:HB	1:C:91:PHE:HB2	2.01	0.41
1:C:133:GLN:HA	1:C:134:PRO:HD2	1.90	0.41
1:C:241:VAL:HB	1:C:260:ALA:HB3	2.02	0.41
1:C:320:VAL:O	1:C:320:VAL:HG12	2.20	0.41
1:C:341:GLU:C	1:C:343:THR:N	2.76	0.41
1:B:132:LEU:HD12	1:B:245:THR:HG21	2.03	0.41
1:B:211:LYS:H	1:B:211:LYS:HG3	1.73	0.41
1:D:195:GLN:NE2	1:D:204:ARG:HH11	2.18	0.41
1:A:14:LYS:HA	1:A:24:ILE:O	2.20	0.41
1:A:281:VAL:HG12	1:A:283:LEU:HG	2.02	0.41
1:D:132:LEU:HD12	1:D:245:THR:HG21	2.02	0.41
1:A:104:GLN:H	1:A:104:GLN:HG2	1.62	0.41
1:A:180:ALA:HB2	1:A:215:TYR:HE1	1.84	0.41
1:A:320:VAL:O	1:A:320:VAL:HG12	2.19	0.41
1:D:79:PHE:CD2	1:D:250:TYR:HB2	2.56	0.41
1:D:230:THR:O	1:D:270:PRO:HB3	2.21	0.41
1:D:320:VAL:O	1:D:320:VAL:HG12	2.19	0.41
1:A:241:VAL:HB	1:A:260:ALA:HB3	2.02	0.41
1:B:318:LYS:NZ	2:B:387:HOH:O	2.53	0.41
1:A:71:ASP:O	1:A:72:ILE:HG13	2.21	0.41
1:C:177:VAL:HG23	1:C:179:HIS:CD2	2.55	0.41
1:C:249:LEU:HD12	1:C:249:LEU:HA	1.82	0.41
1:D:191:GLU:O	1:D:192:ALA:CB	2.68	0.41
1:B:177:VAL:HG23	1:B:179:HIS:CD2	2.55	0.41
1:C:71:ASP:O	1:C:72:ILE:HG13	2.20	0.41
1:C:72:ILE:HG23	1:C:173:LEU:HD11	2.03	0.41
1:C:232:LYS:HG2	1:C:337:GLY:CA	2.51	0.41
1:C:281:VAL:HG12	1:C:283:LEU:HG	2.01	0.41
1:A:215:TYR:HA	1:A:356:MET:O	2.21	0.41
1:A:248:VAL:HG23	1:A:319:THR:HA	2.03	0.41
1:B:180:ALA:HB2	1:B:215:TYR:HE1	1.86	0.41
1:B:248:VAL:HG23	1:B:319:THR:HA	2.03	0.41
1:C:215:TYR:HA	1:C:356:MET:O	2.21	0.41
1:D:215:TYR:HA	1:D:356:MET:O	2.21	0.41
1:D:227:THR:O	1:D:227:THR:HG22	2.20	0.41
1:A:91:PHE:O	1:A:93:PRO:N	2.54	0.41
1:A:264:ALA:HB1	1:A:276:LYS:HE3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:79:PHE:CD2	1:B:250:TYR:HB2	2.56	0.41
1:C:3:ALA:O	1:C:4:ASN:CB	2.69	0.41
1:D:131:MET:HE3	1:D:131:MET:HB2	1.67	0.41
1:B:2:LYS:HE3	1:B:29:ARG:HD2	2.03	0.40
1:B:13:PHE:O	1:B:25:TYR:HA	2.21	0.40
1:B:335:VAL:HG12	1:B:336:SER:N	2.37	0.40
1:D:231:GLU:O	1:D:270:PRO:HG3	2.20	0.40
1:D:248:VAL:HG23	1:D:319:THR:HA	2.03	0.40
1:A:266:GLU:OE2	1:A:276:LYS:HE2	2.22	0.40
1:B:215:TYR:HA	1:B:356:MET:O	2.21	0.40
1:C:91:PHE:O	1:C:93:PRO:CD	2.69	0.40
1:A:10:HIS:C	1:A:11:VAL:HG23	2.44	0.40
1:C:19:ASP:O	1:C:20:LYS:HB2	2.21	0.40
1:A:201:LYS:CB	1:A:229:SER:O	2.68	0.40
1:C:62:THR:HG23	1:C:85:PHE:HD1	1.85	0.40
1:B:231:GLU:CA	1:B:270:PRO:HG3	2.51	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	366/368 (100%)	314 (86%)	40 (11%)	12 (3%)	3	19
1	B	361/368 (98%)	310 (86%)	40 (11%)	11 (3%)	3	20
1	C	366/368 (100%)	313 (86%)	41 (11%)	12 (3%)	3	19
1	D	361/368 (98%)	309 (86%)	41 (11%)	11 (3%)	3	20
All	All	1454/1472 (99%)	1246 (86%)	162 (11%)	46 (3%)	3	19

All (46) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	4	ASN
1	A	11	VAL
1	A	35	VAL
1	A	341	GLU
1	B	4	ASN
1	B	11	VAL
1	B	35	VAL
1	B	76	GLY
1	B	341	GLU
1	C	4	ASN
1	C	11	VAL
1	C	35	VAL
1	C	341	GLU
1	D	4	ASN
1	D	11	VAL
1	D	35	VAL
1	D	76	GLY
1	D	341	GLU
1	A	99	ALA
1	A	181	PRO
1	A	339	LEU
1	B	99	ALA
1	B	192	ALA
1	B	339	LEU
1	C	99	ALA
1	C	181	PRO
1	C	339	LEU
1	D	99	ALA
1	D	192	ALA
1	D	339	LEU
1	A	73	ASP
1	A	91	PHE
1	A	159	VAL
1	B	91	PHE
1	B	159	VAL
1	C	73	ASP
1	C	91	PHE
1	C	159	VAL
1	D	91	PHE
1	D	159	VAL
1	C	185	GLY
1	A	49	PRO
1	A	185	GLY

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Mol	Chain	Res	Type
1	B	49	PRO
1	C	49	PRO
1	D	49	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	327/327 (100%)	238 (73%)	89 (27%)	0	2
1	B	324/327 (99%)	241 (74%)	83 (26%)	0	2
1	C	327/327 (100%)	239 (73%)	88 (27%)	0	2
1	D	324/327 (99%)	239 (74%)	85 (26%)	0	2
All	All	1302/1308 (100%)	957 (74%)	345 (26%)	0	2

All (345) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	LYS
1	A	5	LYS
1	A	15	LYS
1	A	18	ARG
1	A	24	ILE
1	A	26	LEU
1	A	28	LYS
1	A	29	ARG
1	A	35	VAL
1	A	36	GLU
1	A	37	ARG
1	A	38	VAL
1	A	46	LEU
1	A	50	GLU
1	A	53	LYS
1	A	55	LYS
1	A	56	ARG
1	A	62	THR

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Mol	Chain	Res	Type
1	A	69	GLN
1	A	73	ASP
1	A	75	MET
1	A	78	SER
1	A	81	ARG
1	A	94	VAL
1	A	97	SER
1	A	100	THR
1	A	101	THR
1	A	103	LEU
1	A	104	GLN
1	A	105	GLU
1	A	106	SER
1	A	109	LYS
1	A	110	LYS
1	A	130	VAL
1	A	131	MET
1	A	137	GLN
1	A	139	VAL
1	A	148	GLU
1	A	149	ILE
1	A	156	SER
1	A	159	VAL
1	A	161	GLU
1	A	163	LYS
1	A	167	LYS
1	A	170	VAL
1	A	172	LEU
1	A	184	MET
1	A	191	GLU
1	A	193	SER
1	A	199	SER
1	A	200	ASP
1	A	201	LYS
1	A	208	SER
1	A	210	SER
1	A	211	LYS
1	A	212	GLU
1	A	222	VAL
1	A	231	GLU
1	A	236	LYS
1	A	238	LYS

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Mol	Chain	Res	Type
1	A	240	LEU
1	A	246	ASN
1	A	249	LEU
1	A	262	GLU
1	A	265	GLN
1	A	266	GLU
1	A	268	VAL
1	A	272	SER
1	A	273	SER
1	A	276	LYS
1	A	279	THR
1	A	280	LEU
1	A	287	ASN
1	A	288	ARG
1	A	300	LYS
1	A	305	ASN
1	A	313	LYS
1	A	314	GLU
1	A	318	LYS
1	A	319	THR
1	A	330	LYS
1	A	332	LYS
1	A	334	THR
1	A	338	LEU
1	A	341	GLU
1	A	344	SER
1	A	354	ARG
1	A	359	GLN
1	A	367	LYS
1	B	5	LYS
1	B	15	LYS
1	B	18	ARG
1	B	24	ILE
1	B	26	LEU
1	B	28	LYS
1	B	29	ARG
1	B	35	VAL
1	B	36	GLU
1	B	37	ARG
1	B	38	VAL
1	B	46	LEU
1	B	50	GLU

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Mol	Chain	Res	Type
1	B	53	LYS
1	B	55	LYS
1	B	56	ARG
1	B	62	THR
1	B	69	GLN
1	B	71	ASP
1	B	78	SER
1	B	81	ARG
1	B	94	VAL
1	B	97	SER
1	B	100	THR
1	B	101	THR
1	B	103	LEU
1	B	104	GLN
1	B	105	GLU
1	B	106	SER
1	B	109	LYS
1	B	110	LYS
1	B	130	VAL
1	B	131	MET
1	B	137	GLN
1	B	139	VAL
1	B	148	GLU
1	B	149	ILE
1	B	156	SER
1	B	159	VAL
1	B	161	GLU
1	B	163	LYS
1	B	167	LYS
1	B	170	VAL
1	B	172	LEU
1	B	182	ARG
1	B	187	GLN
1	B	189	ARG
1	B	191	GLU
1	B	193	SER
1	B	198	MET
1	B	199	SER
1	B	208	SER
1	B	210	SER
1	B	211	LYS
1	B	212	GLU

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Mol	Chain	Res	Type
1	B	222	VAL
1	B	231	GLU
1	B	236	LYS
1	B	238	LYS
1	B	240	LEU
1	B	246	ASN
1	B	262	GLU
1	B	265	GLN
1	B	273	SER
1	B	276	LYS
1	B	279	THR
1	B	280	LEU
1	B	287	ASN
1	B	288	ARG
1	B	300	LYS
1	B	305	ASN
1	B	313	LYS
1	B	314	GLU
1	B	318	LYS
1	B	319	THR
1	B	330	LYS
1	B	332	LYS
1	B	334	THR
1	B	338	LEU
1	B	341	GLU
1	B	344	SER
1	B	354	ARG
1	B	359	GLN
1	C	5	LYS
1	C	15	LYS
1	C	18	ARG
1	C	24	ILE
1	C	26	LEU
1	C	28	LYS
1	C	29	ARG
1	C	35	VAL
1	C	36	GLU
1	C	37	ARG
1	C	38	VAL
1	C	46	LEU
1	C	50	GLU
1	C	53	LYS

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Mol	Chain	Res	Type
1	C	55	LYS
1	C	56	ARG
1	C	62	THR
1	C	69	GLN
1	C	73	ASP
1	C	75	MET
1	C	78	SER
1	C	81	ARG
1	C	94	VAL
1	C	97	SER
1	C	100	THR
1	C	101	THR
1	C	103	LEU
1	C	104	GLN
1	C	105	GLU
1	C	106	SER
1	C	109	LYS
1	C	110	LYS
1	C	130	VAL
1	C	131	MET
1	C	137	GLN
1	C	139	VAL
1	C	148	GLU
1	C	149	ILE
1	C	156	SER
1	C	159	VAL
1	C	161	GLU
1	C	163	LYS
1	C	167	LYS
1	C	170	VAL
1	C	172	LEU
1	C	184	MET
1	C	191	GLU
1	C	193	SER
1	C	199	SER
1	C	200	ASP
1	C	201	LYS
1	C	208	SER
1	C	210	SER
1	C	211	LYS
1	C	212	GLU
1	C	222	VAL

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Mol	Chain	Res	Type
1	C	231	GLU
1	C	236	LYS
1	C	238	LYS
1	C	240	LEU
1	C	246	ASN
1	C	249	LEU
1	C	262	GLU
1	C	265	GLN
1	C	266	GLU
1	C	268	VAL
1	C	272	SER
1	C	273	SER
1	C	276	LYS
1	C	279	THR
1	C	280	LEU
1	C	287	ASN
1	C	288	ARG
1	C	300	LYS
1	C	305	ASN
1	C	313	LYS
1	C	314	GLU
1	C	318	LYS
1	C	319	THR
1	C	330	LYS
1	C	332	LYS
1	C	334	THR
1	C	338	LEU
1	C	341	GLU
1	C	344	SER
1	C	354	ARG
1	C	359	GLN
1	C	367	LYS
1	D	2	LYS
1	D	5	LYS
1	D	15	LYS
1	D	18	ARG
1	D	24	ILE
1	D	26	LEU
1	D	28	LYS
1	D	29	ARG
1	D	35	VAL
1	D	36	GLU

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Mol	Chain	Res	Type
1	D	37	ARG
1	D	38	VAL
1	D	46	LEU
1	D	50	GLU
1	D	53	LYS
1	D	55	LYS
1	D	56	ARG
1	D	62	THR
1	D	69	GLN
1	D	71	ASP
1	D	78	SER
1	D	81	ARG
1	D	94	VAL
1	D	97	SER
1	D	100	THR
1	D	101	THR
1	D	103	LEU
1	D	104	GLN
1	D	105	GLU
1	D	106	SER
1	D	109	LYS
1	D	110	LYS
1	D	130	VAL
1	D	131	MET
1	D	137	GLN
1	D	139	VAL
1	D	148	GLU
1	D	149	ILE
1	D	156	SER
1	D	159	VAL
1	D	161	GLU
1	D	163	LYS
1	D	167	LYS
1	D	170	VAL
1	D	172	LEU
1	D	182	ARG
1	D	187	GLN
1	D	189	ARG
1	D	191	GLU
1	D	193	SER
1	D	198	MET
1	D	199	SER

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Mol	Chain	Res	Type
1	D	208	SER
1	D	210	SER
1	D	211	LYS
1	D	212	GLU
1	D	222	VAL
1	D	231	GLU
1	D	236	LYS
1	D	238	LYS
1	D	240	LEU
1	D	246	ASN
1	D	249	LEU
1	D	262	GLU
1	D	265	GLN
1	D	273	SER
1	D	276	LYS
1	D	279	THR
1	D	280	LEU
1	D	287	ASN
1	D	288	ARG
1	D	300	LYS
1	D	305	ASN
1	D	313	LYS
1	D	314	GLU
1	D	318	LYS
1	D	319	THR
1	D	330	LYS
1	D	332	LYS
1	D	334	THR
1	D	338	LEU
1	D	341	GLU
1	D	344	SER
1	D	354	ARG
1	D	359	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (30) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	34	HIS
1	A	87	GLN
1	A	89	GLN
1	A	187	GLN
1	A	246	ASN

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Mol	Chain	Res	Type
1	A	265	GLN
1	A	301	HIS
1	A	357	HIS
1	B	34	HIS
1	B	89	GLN
1	B	155	HIS
1	B	195	GLN
1	B	246	ASN
1	B	286	ASN
1	B	301	HIS
1	B	305	ASN
1	C	10	HIS
1	C	34	HIS
1	C	89	GLN
1	C	155	HIS
1	C	286	ASN
1	C	301	HIS
1	D	34	HIS
1	D	89	GLN
1	D	155	HIS
1	D	195	GLN
1	D	246	ASN
1	D	286	ASN
1	D	301	HIS
1	D	357	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	368/368 (100%)	0.14	19 (5%) 33 22	2, 10, 70, 99	0
1	B	363/368 (98%)	0.09	10 (2%) 55 36	2, 29, 83, 97	0
1	C	368/368 (100%)	-0.06	14 (3%) 44 30	2, 13, 75, 99	0
1	D	363/368 (98%)	0.12	13 (3%) 46 31	2, 25, 83, 99	0
All	All	1462/1472 (99%)	0.07	56 (3%) 44 30	2, 17, 81, 99	0

All (56) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	338	LEU	7.1
1	C	345	SER	5.8
1	B	98	GLY	5.5
1	C	75	MET	5.2
1	A	344	SER	4.9
1	D	158	ASP	4.5
1	A	76	GLY	4.4
1	D	98	GLY	4.4
1	A	75	MET	4.2
1	A	77	LEU	4.1
1	D	159	VAL	3.9
1	C	73	ASP	3.7
1	C	76	GLY	3.6
1	A	130	VAL	3.6
1	A	345	SER	3.6
1	D	157	THR	3.6
1	C	74	VAL	3.3
1	A	74	VAL	3.3
1	A	159	VAL	3.3
1	A	342	LEU	3.2
1	B	90	VAL	3.2

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Mol	Chain	Res	Type	RSRZ
1	D	103	LEU	3.1
1	A	92	PRO	3.1
1	C	1	MET	3.1
1	D	21	SER	3.1
1	B	91	PHE	3.1
1	B	339	LEU	3.0
1	D	90	VAL	3.0
1	A	1	MET	3.0
1	A	230	THR	2.8
1	A	337	GLY	2.7
1	A	343	THR	2.7
1	C	158	ASP	2.6
1	D	75	MET	2.5
1	D	57	VAL	2.5
1	B	57	VAL	2.5
1	C	137	GLN	2.5
1	C	338	LEU	2.4
1	A	69	GLN	2.4
1	B	152	PHE	2.4
1	C	2	LYS	2.4
1	B	338	LEU	2.4
1	C	98	GLY	2.3
1	C	340	GLY	2.3
1	A	339	LEU	2.3
1	D	91	PHE	2.3
1	A	71	ASP	2.3
1	D	262	GLU	2.2
1	A	366	ALA	2.2
1	B	340	GLY	2.2
1	C	164	ILE	2.1
1	C	344	SER	2.1
1	D	267	LYS	2.1
1	D	342	LEU	2.1
1	B	1	MET	2.1
1	B	2	LYS	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.