



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 12, 2024 – 11:38 PM EDT

PDB ID : 1K9A
Title : Crystal structure analysis of full-length carboxyl-terminal Src kinase at 2.5 Å resolution
Authors : Ogawa, A.; Takayama, Y.; Nagata, A.; Chong, K.T.; Takeuchi, S.; Sakai, H.; Nakagawa, A.; Nada, S.; Okada, M.; Tsukihara, T.
Deposited on : 2001-10-28
Resolution : 2.50 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 : 2.36.2
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) : 2.36.2

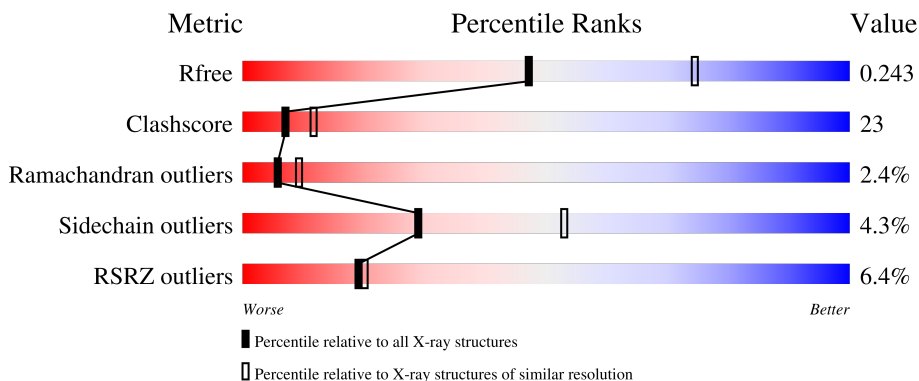
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.50 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	4661 (2.50-2.50)
Clashscore	141614	5346 (2.50-2.50)
Ramachandran outliers	138981	5231 (2.50-2.50)
Sidechain outliers	138945	5233 (2.50-2.50)
RSRZ outliers	127900	4559 (2.50-2.50)

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	450	<div style="display: flex; align-items: center;"> <div style="width: 8%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 67%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 28%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">67% 28% . .</p>
1	B	450	<div style="display: flex; align-items: center;"> <div style="width: 8%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 66%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 28%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">66% 28% . .</p>
1	C	450	<div style="display: flex; align-items: center;"> <div style="width: 8%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 64%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 30%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">8% 64% 30% . .</p>
1	D	450	<div style="display: flex; align-items: center;"> <div style="width: 8%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 60%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 32%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">8% 60% 32% . .</p>
1	E	450	<div style="display: flex; align-items: center;"> <div style="width: 3%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 55%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 38%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">3% 55% 38% . .</p>

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Mol	Chain	Length	Quality of chain
1	F	450	 <p>A horizontal bar chart representing the quality of chain. The bar is divided into three segments: a red segment on the left labeled '16%', a green segment in the middle labeled '47%', and a yellow segment on the right labeled '46%'. At the far right end of the bar, there are two small black dots.</p>

2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 21313 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 Carboxyl-terminal Src kinase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	439	Total 3491	C 2231	N 595	O 644	S 21	0	0	0
1	B	441	Total 3506	C 2241	N 598	O 646	S 21	0	0	0
1	C	438	Total 3482	C 2225	N 593	O 643	S 21	0	0	0
1	D	433	Total 3443	C 2201	N 587	O 634	S 21	0	0	0
1	E	440	Total 3495	C 2232	N 595	O 647	S 21	0	0	0
1	F	436	Total 3468	C 2216	N 591	O 640	S 21	0	0	0

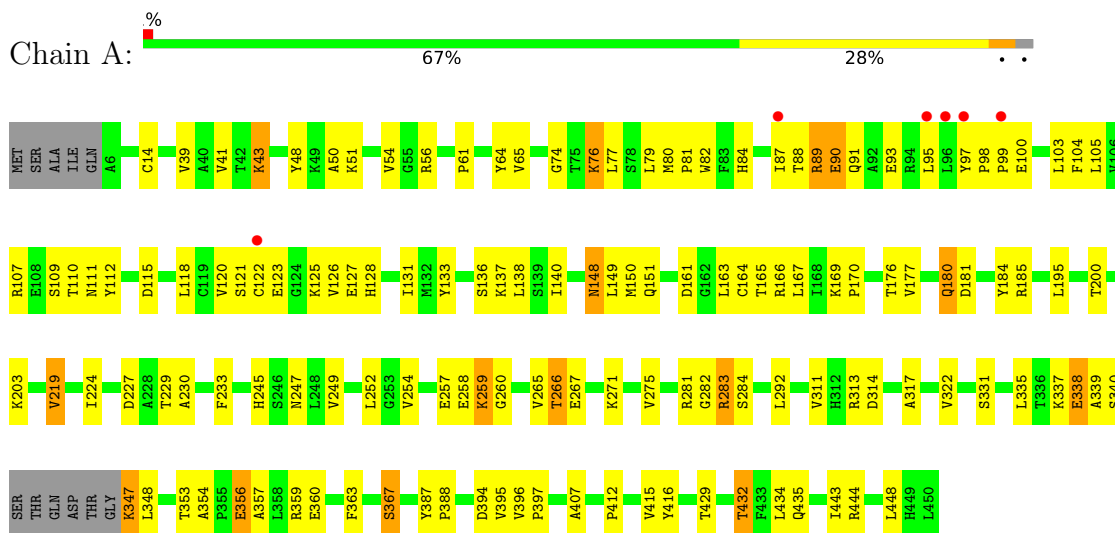
- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	106	Total 106	O 106	0	0
2	B	89	Total 89	O 89	0	0
2	C	79	Total 79	O 79	0	0
2	D	85	Total 85	O 85	0	0
2	E	40	Total 40	O 40	0	0
2	F	29	Total 29	O 29	0	0

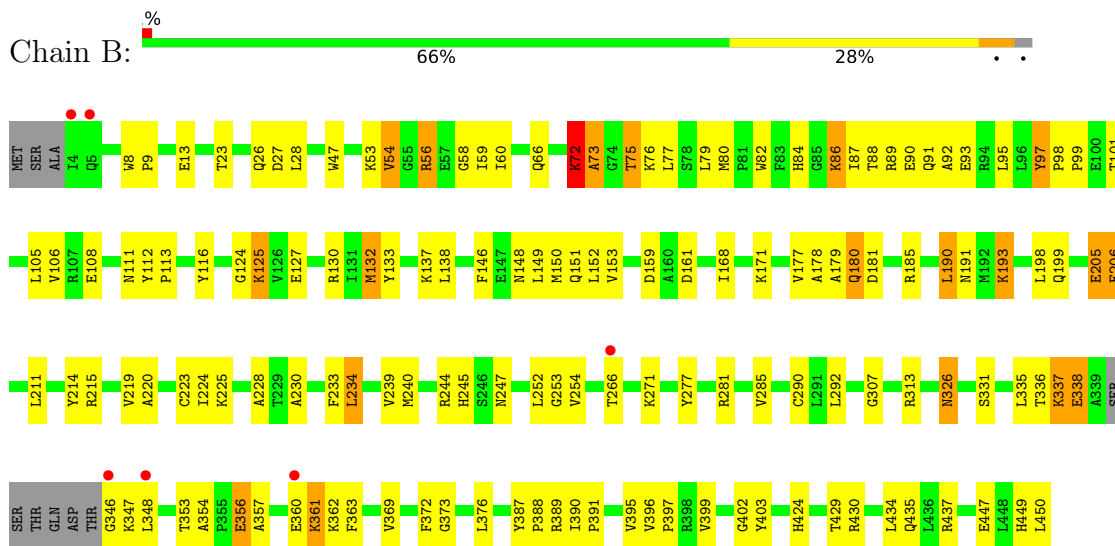
3 Residue-property plots [i](#)

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: Carboxyl-terminal Src kinase

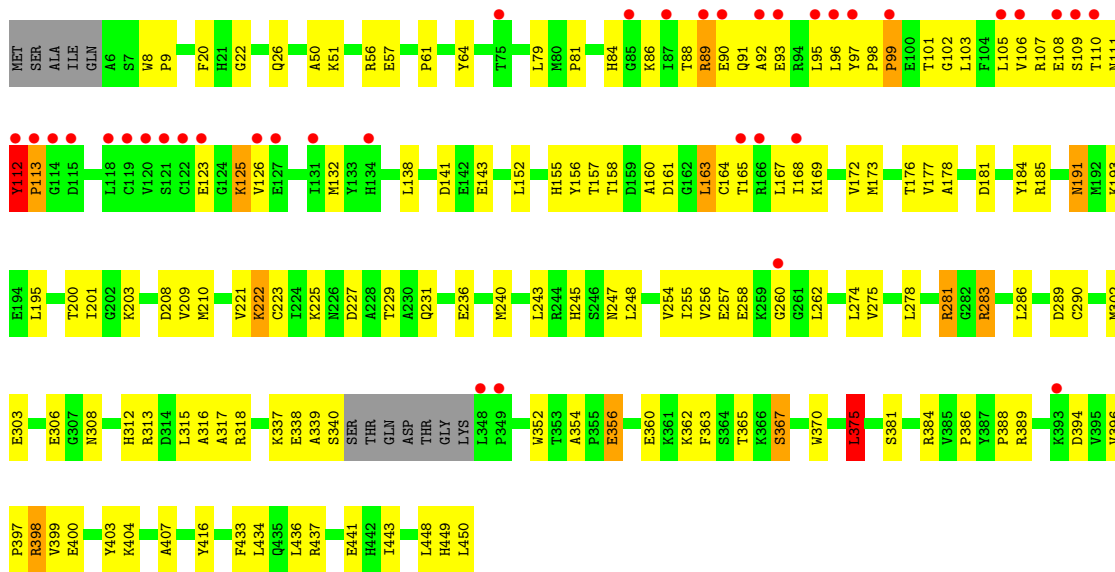


- Molecule 1: Carboxyl-terminal Src kinase

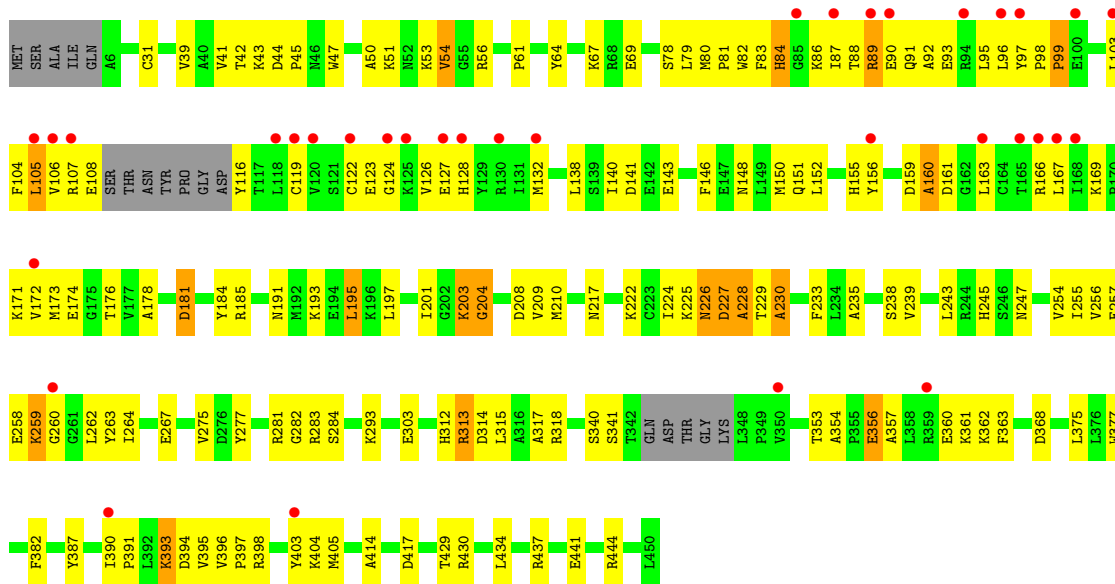


- Molecule 1: Carboxyl-terminal Src kinase

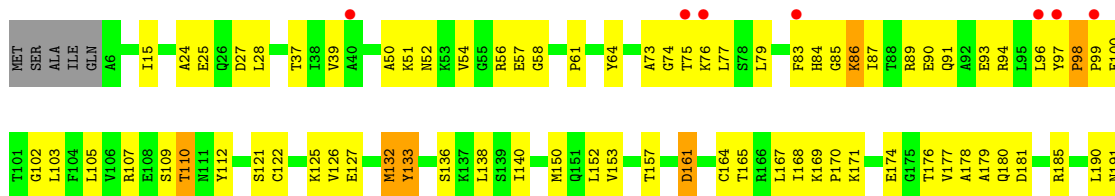


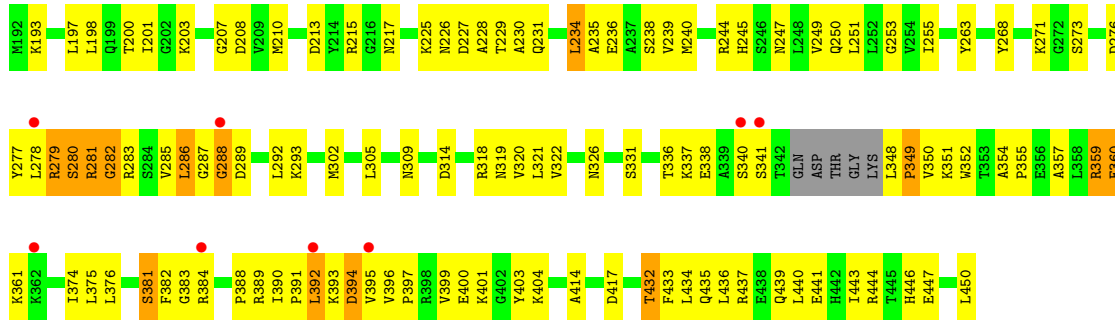


• Molecule 1: Carboxyl-terminal Src kinase

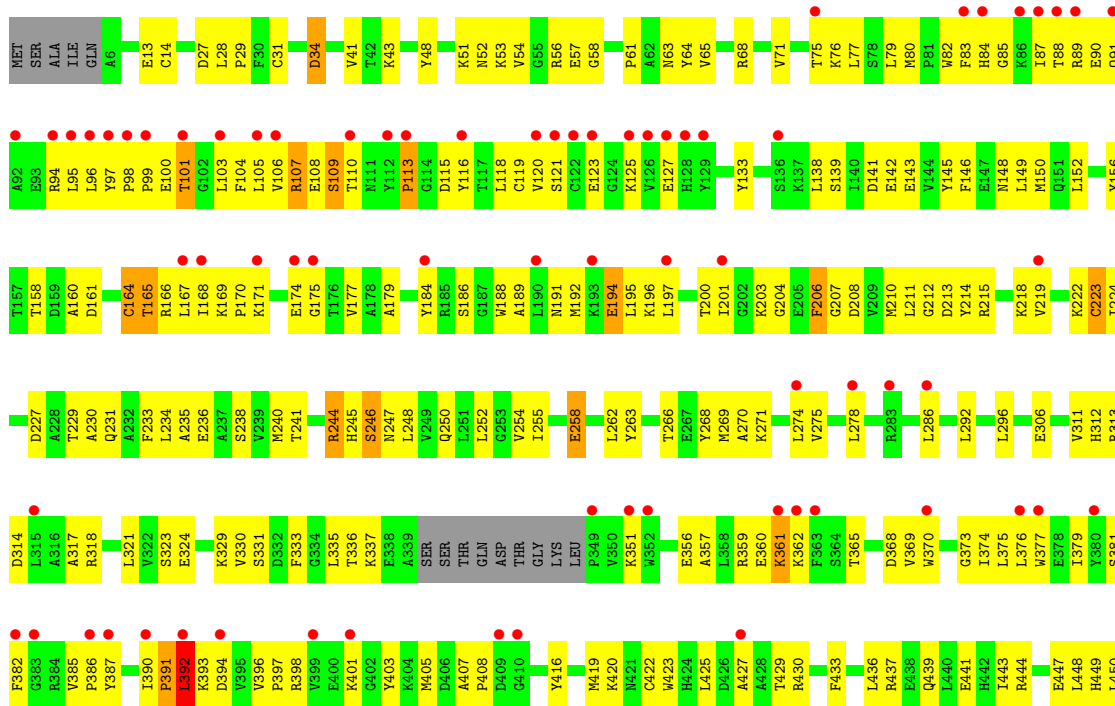


• Molecule 1: Carboxyl-terminal Src kinase





● Molecule 1: Carboxyl-terminal Src kinase



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	115.00Å 162.60Å 232.40Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	73.50 – 2.50 73.03 – 2.48	Depositor EDS
% Data completeness (in resolution range)	(Not available) (73.50-2.50) 97.5 (73.03-2.48)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.35 (at 2.48Å)	Xtrriage
Refinement program	CNS	Depositor
R, R_{free}	0.246 , 0.288 0.246 , 0.243	Depositor DCC
R_{free} test set	3007 reflections (2.00%)	wwPDB-VP
Wilson B-factor (Å ²)	49.8	Xtrriage
Anisotropy	0.650	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 54.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	21313	wwPDB-VP
Average B, all atoms (Å ²)	58.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.50% 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	0.41	0/3570	0.63	0/4828
1	B	0.39	0/3585	0.67	2/4848 (0.0%)
1	C	0.36	0/3561	0.61	1/4817 (0.0%)
1	D	0.38	0/3519	0.62	0/4757
1	E	0.37	0/3574	0.62	1/4835 (0.0%)
1	F	0.34	0/3547	0.58	0/4797
All	All	0.38	0/21356	0.62	4/28882 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	381	SER	N-CA-C	-6.43	93.63	111.00
1	B	72	LYS	N-CA-C	6.16	127.62	111.00
1	B	331	SER	N-CA-C	5.77	126.59	111.00
1	C	375	LEU	CA-CB-CG	5.18	127.20	115.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3491	0	3484	137	0
1	B	3506	0	3501	127	0
1	C	3482	0	3471	147	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	3443	0	3441	164	0
1	E	3495	0	3483	168	0
1	F	3468	0	3456	222	0
2	A	106	0	0	3	0
2	B	89	0	0	4	0
2	C	79	0	0	6	0
2	D	85	0	0	5	0
2	E	40	0	0	1	0
2	F	29	0	0	3	0
All	All	21313	0	20836	952	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 23.

All (952) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:259:LYS:H	1:A:259:LYS:HD2	1.02	1.13
1:B:193:LYS:H	1:B:193:LYS:HD2	1.11	1.12
1:B:73:ALA:HB3	1:B:77:LEU:HB2	1.32	1.09
1:E:432:THR:HG22	1:E:435:GLN:H	1.18	1.06
1:A:432:THR:HG22	1:A:435:GLN:H	1.12	1.05
1:F:191:ASN:HD21	1:F:194:GLU:HB2	1.20	1.04
1:D:203:LYS:H	1:D:203:LYS:HD2	1.19	1.04
1:D:105:LEU:HD23	1:D:171:LYS:HB3	1.41	1.01
1:C:84:HIS:HA	1:C:173:MET:HE2	1.40	1.00
1:C:125:LYS:HE2	1:C:126:VAL:HG22	1.45	0.99
1:E:277:TYR:HA	1:E:281:ARG:HG3	1.47	0.96
1:A:84:HIS:HB3	1:A:87:ILE:HD12	1.46	0.95
1:C:89:ARG:HB2	1:C:89:ARG:HH11	1.27	0.95
1:C:112:TYR:HB3	1:C:113:PRO:HD3	1.47	0.94
1:B:73:ALA:CB	1:B:77:LEU:HB2	1.97	0.94
1:D:84:HIS:NE2	1:D:105:LEU:HD21	1.85	0.92
1:C:102:GLY:HA3	1:C:168:ILE:HB	1.52	0.91
1:A:396:VAL:HG13	1:A:397:PRO:HD3	1.52	0.91
1:E:271:LYS:HB2	1:E:322:VAL:HB	1.52	0.91
1:D:313:ARG:HH11	1:D:363:PHE:HB2	1.32	0.90
1:B:437:ARG:HH11	1:B:437:ARG:HB3	1.35	0.89
1:A:347:LYS:HD3	1:A:348:LEU:H	1.35	0.89
1:F:148:ASN:HD22	1:F:150:MET:H	1.19	0.89
1:A:259:LYS:HD2	1:A:259:LYS:N	1.85	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:193:LYS:H	1:B:193:LYS:CD	1.82	0.88
1:A:43:LYS:H	1:A:43:LYS:HD2	1.36	0.88
1:E:97:TYR:HB3	1:E:98:PRO:HD3	1.56	0.87
1:C:281:ARG:HG2	1:C:281:ARG:HH11	1.39	0.87
1:E:447:GLU:HB2	1:E:450:LEU:HD12	1.57	0.86
1:A:89:ARG:HD3	1:A:89:ARG:H	1.38	0.86
1:D:103:LEU:HD11	1:D:171:LYS:HB2	1.55	0.86
1:D:313:ARG:NH1	1:D:363:PHE:HB2	1.90	0.85
1:E:190:LEU:HD13	1:E:253:GLY:HA3	1.58	0.85
1:A:88:THR:HG23	1:A:89:ARG:CZ	2.05	0.85
1:A:363:PHE:CE2	1:A:367:SER:HB2	2.11	0.85
1:E:289:ASP:O	1:E:293:LYS:HD3	1.76	0.85
1:E:302:MET:HE2	1:E:305:LEU:HD12	1.60	0.84
1:C:125:LYS:HE2	1:C:126:VAL:H	1.40	0.84
1:E:391:PRO:HB2	1:E:394:ASP:HB2	1.60	0.84
1:F:196:LYS:HB2	1:F:213:ASP:OD2	1.77	0.83
1:A:347:LYS:HD3	1:A:348:LEU:N	1.93	0.83
1:C:163:LEU:H	1:C:163:LEU:HD23	1.42	0.82
1:A:97:TYR:HB3	1:A:98:PRO:HD3	1.62	0.82
1:B:84:HIS:HB3	1:B:87:ILE:HD12	1.62	0.81
1:E:79:LEU:HA	1:E:180:GLN:NE2	1.96	0.80
1:E:245:HIS:HE1	1:E:247:ASN:HD22	1.28	0.80
1:E:102:GLY:HA3	1:E:168:ILE:HB	1.64	0.80
1:D:140:ILE:HD12	1:D:156:TYR:HE1	1.47	0.79
1:F:138:LEU:HD13	1:F:149:LEU:HD23	1.64	0.79
1:E:127:GLU:HG3	1:E:164:CYS:SG	2.22	0.79
1:B:220:ALA:HB3	1:B:266:THR:HG22	1.63	0.78
1:E:352:TRP:HA	1:E:374:ILE:HD13	1.64	0.78
1:A:127:GLU:HG3	1:A:164:CYS:SG	2.23	0.78
1:C:396:VAL:HB	1:C:397:PRO:HD3	1.64	0.78
1:D:97:TYR:HB3	1:D:98:PRO:HD3	1.64	0.78
1:F:51:LYS:HE2	1:F:57:GLU:HG2	1.67	0.77
1:F:200:THR:HG21	1:F:203:LYS:HE3	1.67	0.77
1:E:280:SER:O	1:E:281:ARG:HG2	1.84	0.77
1:A:432:THR:HG22	1:A:435:GLN:N	1.96	0.76
1:E:157:THR:HG22	1:E:167:LEU:HB2	1.66	0.76
1:F:427:ALA:HA	1:F:430:ARG:NH1	1.99	0.76
1:B:72:LYS:CD	1:B:72:LYS:H	1.98	0.76
1:B:271:LYS:NZ	1:B:326:ASN:HD22	1.83	0.76
1:C:337:LYS:HG2	1:C:338:GLU:N	1.99	0.76
1:B:220:ALA:HB3	1:B:266:THR:CG2	2.16	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:437:ARG:HB3	1:B:437:ARG:NH1	2.00	0.76
1:D:88:THR:HG22	1:D:91:GLN:HE21	1.51	0.76
1:B:348:LEU:HD22	1:B:363:PHE:CZ	2.20	0.76
1:F:28:LEU:HB2	1:F:58:GLY:HA3	1.66	0.75
1:F:245:HIS:HE1	1:F:247:ASN:HD22	1.31	0.75
1:F:215:ARG:HD2	2:F:458:HOH:O	1.86	0.75
1:F:127:GLU:HG3	1:F:164:CYS:SG	2.26	0.75
1:B:271:LYS:HZ2	1:B:326:ASN:HD22	1.35	0.75
1:F:91:GLN:O	1:F:95:LEU:HG	1.85	0.75
1:F:391:PRO:HB2	1:F:394:ASP:CG	2.07	0.74
1:D:88:THR:HG23	1:D:91:GLN:H	1.52	0.74
1:F:148:ASN:HD21	1:F:150:MET:HB2	1.52	0.74
1:F:89:ARG:H	1:F:89:ARG:HD2	1.53	0.74
1:F:118:LEU:HD23	1:F:119:CYS:N	2.03	0.73
1:B:193:LYS:HD2	1:B:193:LYS:N	1.97	0.73
1:B:245:HIS:HD2	1:B:247:ASN:H	1.35	0.73
1:E:90:GLU:HG3	1:E:91:GLN:H	1.53	0.73
1:F:97:TYR:HB3	1:F:98:PRO:HD3	1.71	0.73
1:A:84:HIS:CB	1:A:87:ILE:HD12	2.19	0.73
1:A:89:ARG:H	1:A:89:ARG:CD	2.01	0.73
1:A:43:LYS:H	1:A:43:LYS:CD	1.96	0.73
1:D:150:MET:HE1	1:D:226:ASN:HB2	1.69	0.73
1:F:103:LEU:HD11	1:F:171:LYS:HD3	1.68	0.73
1:D:245:HIS:CD2	1:D:247:ASN:H	2.06	0.73
1:F:191:ASN:ND2	1:F:194:GLU:HB2	1.99	0.73
1:A:396:VAL:HG13	1:A:397:PRO:CD	2.18	0.73
1:F:392:LEU:HD23	1:F:392:LEU:H	1.52	0.72
1:E:357:ALA:O	1:E:361:LYS:HA	1.87	0.72
1:F:292:LEU:HD21	1:F:444:ARG:HB2	1.71	0.72
1:C:313:ARG:NH1	1:C:363:PHE:HB2	2.03	0.72
1:D:88:THR:HG22	1:D:91:GLN:NE2	2.04	0.72
1:E:90:GLU:HG3	1:E:91:GLN:N	2.05	0.72
1:E:207:GLY:HA2	1:E:225:LYS:HG3	1.71	0.72
1:F:258:GLU:H	1:F:258:GLU:CD	1.92	0.72
1:D:88:THR:H	1:D:91:GLN:HE21	1.34	0.71
1:B:245:HIS:CD2	1:B:247:ASN:H	2.07	0.71
1:D:437:ARG:O	1:D:441:GLU:HG3	1.91	0.71
1:F:394:ASP:C	1:F:397:PRO:HD2	2.12	0.70
1:E:122:CYS:SG	1:E:165:THR:HG22	2.31	0.70
1:B:396:VAL:HB	1:B:397:PRO:HD3	1.73	0.70
1:E:351:LYS:HE3	1:E:392:LEU:HD13	1.74	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:396:VAL:HB	1:D:397:PRO:HD3	1.71	0.70
1:C:157:THR:HA	1:C:167:LEU:HB2	1.73	0.70
1:F:275:VAL:HG23	1:F:317:ALA:C	2.12	0.70
1:D:312:HIS:HD2	1:D:314:ASP:H	1.38	0.70
1:C:163:LEU:H	1:C:163:LEU:CD2	2.04	0.69
1:D:245:HIS:HD2	1:D:247:ASN:H	1.40	0.69
1:F:148:ASN:ND2	1:F:150:MET:HB2	2.07	0.69
1:F:53:LYS:NZ	1:F:215:ARG:HH22	1.89	0.69
1:C:223:CYS:SG	2:C:495:HOH:O	2.51	0.69
1:C:254:VAL:HG13	1:C:262:LEU:HD11	1.74	0.69
1:F:13:GLU:OE1	1:F:68:ARG:HD2	1.93	0.69
1:B:97:TYR:HB3	1:B:98:PRO:HD3	1.74	0.69
1:A:109:SER:HB3	1:A:112:TYR:O	1.93	0.68
1:C:125:LYS:CE	1:C:126:VAL:H	2.05	0.68
1:A:89:ARG:NH1	1:A:110:THR:HG21	2.07	0.68
1:E:79:LEU:HA	1:E:180:GLN:HE22	1.58	0.68
1:B:72:LYS:H	1:B:72:LYS:HD3	1.57	0.68
1:A:396:VAL:HG12	2:A:533:HOH:O	1.93	0.68
1:D:84:HIS:CD2	1:D:105:LEU:HD21	2.28	0.68
1:E:432:THR:HG22	1:E:435:GLN:N	2.03	0.68
1:D:96:LEU:HG	1:D:103:LEU:HD12	1.75	0.68
1:F:336:THR:O	1:F:337:LYS:HG3	1.94	0.68
1:A:181:ASP:HB2	1:A:185:ARG:NH1	2.09	0.68
1:E:61:PRO:HG2	1:E:64:TYR:HB2	1.76	0.67
1:C:163:LEU:HD23	1:C:163:LEU:N	2.09	0.67
1:B:437:ARG:HH11	1:B:437:ARG:CB	2.07	0.67
1:F:96:LEU:HD22	1:F:103:LEU:HD21	1.77	0.67
1:F:391:PRO:HB2	1:F:394:ASP:OD1	1.94	0.67
1:B:105:LEU:C	1:B:105:LEU:HD12	2.15	0.67
1:F:89:ARG:CZ	1:F:110:THR:HB	2.23	0.67
1:F:270:ALA:HB3	1:F:324:GLU:HG3	1.76	0.67
1:A:259:LYS:H	1:A:259:LYS:CD	1.89	0.66
1:C:97:TYR:O	1:C:99:PRO:HD3	1.94	0.66
1:C:88:THR:OG1	1:C:91:GLN:HG3	1.95	0.66
1:A:281:ARG:HG3	1:A:281:ARG:HH11	1.60	0.66
1:C:337:LYS:HG2	1:C:338:GLU:H	1.60	0.66
1:A:148:ASN:HD22	1:A:150:MET:H	1.42	0.66
1:E:93:GLU:HG2	1:E:126:VAL:HG11	1.77	0.66
1:D:293:LYS:HD3	1:D:444:ARG:HH12	1.60	0.66
1:A:283:ARG:HD3	1:A:284:SER:H	1.60	0.66
1:B:88:THR:OG1	1:B:91:GLN:HG3	1.95	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:394:ASP:O	1:D:397:PRO:HD2	1.96	0.65
1:E:320:VAL:O	1:E:321:LEU:HD23	1.95	0.65
1:F:324:GLU:CD	1:F:324:GLU:H	1.98	0.65
1:A:89:ARG:HD3	1:A:89:ARG:N	2.11	0.65
1:E:381:SER:HB3	1:E:384:ARG:HG3	1.76	0.65
1:F:118:LEU:HD21	1:F:120:VAL:HG23	1.78	0.65
1:C:181:ASP:O	1:C:185:ARG:HB2	1.96	0.65
1:E:236:GLU:HG2	1:E:240:MET:CE	2.26	0.65
1:D:104:PHE:CE2	1:D:167:LEU:HB3	2.31	0.65
1:D:140:ILE:HD12	1:D:156:TYR:CE1	2.31	0.65
1:C:96:LEU:HG	1:C:103:LEU:HD12	1.77	0.65
1:B:290:CYS:SG	2:B:527:HOH:O	2.54	0.65
1:A:54:VAL:HG12	1:A:54:VAL:O	1.97	0.65
1:B:148:ASN:OD1	1:B:150:MET:HB2	1.97	0.65
1:D:393:LYS:H	1:D:393:LYS:HD2	1.62	0.65
1:D:105:LEU:HD13	1:D:106:VAL:N	2.11	0.64
1:A:87:ILE:HD13	1:A:95:LEU:HD11	1.79	0.64
1:F:437:ARG:O	1:F:441:GLU:HG3	1.98	0.64
1:A:224:ILE:HD12	1:A:233:PHE:HA	1.80	0.64
1:F:396:VAL:HB	1:F:397:PRO:HD3	1.80	0.64
1:A:76:LYS:HG2	1:A:177:VAL:CG2	2.27	0.64
1:E:79:LEU:HD23	1:E:180:GLN:NE2	2.13	0.64
1:F:89:ARG:HG3	1:F:107:ARG:CZ	2.28	0.64
1:F:51:LYS:HE2	1:F:57:GLU:CG	2.28	0.64
1:F:387:TYR:HB3	1:F:390:ILE:HB	1.80	0.64
1:E:437:ARG:O	1:E:441:GLU:HG3	1.98	0.63
1:F:95:LEU:O	1:F:96:LEU:HD23	1.99	0.63
1:F:377:TRP:O	1:F:381:SER:HB2	1.98	0.63
1:C:193:LYS:HE2	2:C:515:HOH:O	1.97	0.63
1:A:356:GLU:HB3	1:A:360:GLU:OE2	1.98	0.63
1:A:84:HIS:HB3	1:A:87:ILE:CD1	2.25	0.63
1:C:254:VAL:CG1	1:C:262:LEU:HD11	2.28	0.63
1:D:257:GLU:HG2	1:D:258:GLU:H	1.64	0.63
1:D:356:GLU:O	1:D:360:GLU:HG2	1.98	0.63
1:F:274:LEU:HD12	1:F:317:ALA:HB1	1.81	0.63
1:F:422:CYS:O	1:F:430:ARG:HD3	1.99	0.63
1:C:275:VAL:HG23	1:C:317:ALA:C	2.19	0.63
1:E:302:MET:CE	1:E:305:LEU:HD12	2.27	0.63
1:E:432:THR:HG23	1:E:434:LEU:H	1.62	0.63
1:C:101:THR:HG23	1:C:165:THR:HB	1.79	0.63
1:E:89:ARG:HG2	1:E:107:ARG:NH2	2.13	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:148:ASN:ND2	1:A:150:MET:HB2	2.13	0.63
1:C:394:ASP:O	1:C:398:ARG:HB2	1.99	0.63
1:D:81:PRO:HA	1:D:176:THR:HG21	1.81	0.63
1:E:153:VAL:O	1:E:157:THR:HG23	1.99	0.63
1:F:360:GLU:O	1:F:362:LYS:N	2.30	0.63
1:D:104:PHE:CD2	1:D:167:LEU:HB3	2.33	0.62
1:D:254:VAL:CG1	1:D:262:LEU:HD11	2.29	0.62
1:D:257:GLU:HG2	1:D:258:GLU:N	2.14	0.62
1:C:109:SER:OG	1:C:111:ASN:HB2	1.99	0.62
1:C:89:ARG:HH11	1:C:89:ARG:CB	2.06	0.62
1:C:107:ARG:NH2	1:C:111:ASN:HD22	1.97	0.62
1:F:141:ASP:OD2	1:F:143:GLU:HB2	1.99	0.62
1:F:191:ASN:ND2	1:F:194:GLU:H	1.96	0.62
1:A:151:GLN:HG2	1:A:260:GLY:HA3	1.81	0.62
1:C:398:ARG:HG3	1:C:398:ARG:HH11	1.64	0.62
1:A:148:ASN:HD22	1:A:150:MET:N	1.96	0.62
1:E:203:LYS:HG3	1:E:208:ASP:OD1	1.99	0.62
1:D:151:GLN:HE21	1:D:259:LYS:HD3	1.65	0.62
1:C:315:LEU:HD23	1:C:316:ALA:N	2.14	0.62
1:F:118:LEU:CD2	1:F:120:VAL:HG23	2.29	0.61
1:A:314:ASP:HB2	1:A:335:LEU:HD12	1.82	0.61
1:A:115:ASP:HB3	1:A:131:ILE:O	2.01	0.61
1:A:245:HIS:CD2	1:A:247:ASN:H	2.18	0.61
1:C:79:LEU:HD12	1:C:225:LYS:O	2.00	0.61
1:F:76:LYS:HB3	1:F:175:GLY:O	2.00	0.61
1:A:76:LYS:H	1:A:76:LYS:HD3	1.65	0.61
1:A:257:GLU:HB3	1:A:259:LYS:HD3	1.81	0.61
1:C:51:LYS:HA	1:C:56:ARG:O	2.00	0.61
1:D:93:GLU:OE2	1:D:126:VAL:HG21	2.01	0.61
1:F:184:TYR:HA	1:F:189:ALA:HB2	1.83	0.61
1:E:109:SER:OG	1:E:112:TYR:HB2	2.01	0.61
1:F:88:THR:HB	1:F:91:GLN:HG3	1.82	0.61
1:C:281:ARG:HH11	1:C:281:ARG:CG	2.12	0.61
1:E:271:LYS:NZ	1:E:326:ASN:ND2	2.49	0.61
1:A:105:LEU:HD12	1:A:105:LEU:O	2.00	0.61
1:C:203:LYS:NZ	1:C:203:LYS:HB3	2.16	0.61
1:F:222:LYS:HE2	1:F:224:ILE:HG12	1.82	0.61
1:E:245:HIS:CE1	1:E:247:ASN:HD22	2.16	0.61
1:F:51:LYS:HA	1:F:56:ARG:O	2.00	0.60
1:C:209:VAL:HG12	1:C:222:LYS:HG2	1.83	0.60
1:C:245:HIS:CD2	1:C:247:ASN:H	2.20	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:254:VAL:HG22	1:D:264:ILE:HD13	1.83	0.60
1:F:245:HIS:CE1	1:F:247:ASN:HD22	2.17	0.60
1:C:105:LEU:HD22	1:C:106:VAL:H	1.67	0.60
1:D:103:LEU:HD13	1:D:104:PHE:N	2.17	0.60
1:D:105:LEU:HD13	1:D:106:VAL:H	1.67	0.60
1:B:435:GLN:HE21	1:C:308:ASN:ND2	1.99	0.60
1:E:375:LEU:C	1:E:375:LEU:HD23	2.21	0.60
1:C:107:ARG:HH21	1:C:109:SER:CB	2.13	0.60
1:B:193:LYS:HD3	2:B:502:HOH:O	2.01	0.60
1:C:84:HIS:CG	1:C:105:LEU:HD21	2.37	0.60
1:D:354:ALA:HB1	1:D:356:GLU:OE2	2.02	0.60
1:F:152:LEU:C	1:F:152:LEU:HD23	2.21	0.60
1:A:164:CYS:HB3	1:B:56:ARG:HE	1.67	0.60
1:D:184:TYR:CE1	1:D:256:VAL:HG23	2.37	0.60
1:E:84:HIS:HB3	1:E:87:ILE:HD12	1.84	0.59
1:E:87:ILE:O	1:E:107:ARG:HD2	2.02	0.59
1:D:88:THR:HG22	1:D:91:GLN:HG2	1.85	0.59
1:D:387:TYR:HB3	1:D:390:ILE:HG23	1.85	0.59
1:B:97:TYR:O	1:B:98:PRO:C	2.37	0.59
1:E:89:ARG:HD2	1:E:110:THR:HG21	1.84	0.59
1:E:236:GLU:HG2	1:E:240:MET:HE2	1.83	0.59
1:A:88:THR:HB	1:A:91:GLN:HG3	1.84	0.59
1:F:63:ASN:HB2	2:F:459:HOH:O	2.02	0.59
1:A:88:THR:HG22	1:A:90:GLU:HG3	1.83	0.59
1:E:190:LEU:CD1	1:E:253:GLY:HA3	2.32	0.59
1:A:148:ASN:ND2	1:A:151:GLN:H	1.99	0.59
1:B:76:LYS:O	1:B:177:VAL:N	2.34	0.59
1:D:197:LEU:HD13	1:D:210:MET:HE1	1.83	0.59
1:F:212:GLY:O	1:F:219:VAL:HG12	2.02	0.59
1:F:397:PRO:O	1:F:401:LYS:HG3	2.03	0.59
1:A:138:LEU:HD23	1:A:149:LEU:HD23	1.85	0.59
1:A:432:THR:HG23	1:A:434:LEU:H	1.68	0.59
1:D:203:LYS:HD2	1:D:203:LYS:N	2.03	0.59
1:E:28:LEU:HB2	1:E:58:GLY:HA3	1.83	0.59
1:A:258:GLU:HA	1:A:258:GLU:OE1	2.03	0.58
1:B:434:LEU:HG	1:B:437:ARG:HH12	1.68	0.58
1:C:275:VAL:HG23	1:C:318:ARG:N	2.18	0.58
1:E:359:ARG:O	1:E:361:LYS:N	2.37	0.58
1:F:53:LYS:HZ1	1:F:215:ARG:HH22	1.49	0.58
1:D:184:TYR:CZ	1:D:256:VAL:HG23	2.38	0.58
1:E:230:ALA:O	1:E:234:LEU:HD22	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:352:TRP:HA	1:E:374:ILE:CD1	2.34	0.58
1:F:271:LYS:HG3	1:F:323:SER:O	2.03	0.58
1:A:219:VAL:HG22	1:A:252:LEU:HD12	1.85	0.58
1:A:79:LEU:HA	1:A:180:GLN:HE22	1.69	0.58
1:D:191:ASN:HD21	1:D:193:LYS:HE3	1.68	0.58
1:B:87:ILE:HG23	1:B:91:GLN:HB2	1.85	0.58
1:B:108:GLU:HG2	1:B:116:TYR:CE2	2.39	0.58
1:A:122:CYS:SG	1:A:165:THR:HG22	2.44	0.58
1:D:160:ALA:HB2	1:D:166:ARG:HB3	1.85	0.58
1:F:89:ARG:H	1:F:89:ARG:CD	2.15	0.58
1:E:54:VAL:HG12	1:E:54:VAL:O	2.03	0.58
1:F:109:SER:H	1:F:116:TYR:HA	1.69	0.58
1:F:311:VAL:HG22	1:F:337:LYS:O	2.04	0.58
1:C:102:GLY:HA3	1:C:168:ILE:CB	2.29	0.57
1:C:160:ALA:HA	1:C:163:LEU:HD21	1.86	0.57
1:B:97:TYR:O	1:B:99:PRO:N	2.38	0.57
1:B:99:PRO:HB3	1:B:124:GLY:HA2	1.86	0.57
1:C:275:VAL:HG22	1:C:317:ALA:HB3	1.86	0.57
1:A:249:VAL:HG21	1:A:331:SER:HB3	1.86	0.57
1:B:230:ALA:O	1:B:234:LEU:HD22	2.05	0.57
1:C:81:PRO:CG	1:C:178:ALA:HA	2.35	0.57
1:A:105:LEU:HD12	1:A:105:LEU:C	2.24	0.57
1:C:437:ARG:O	1:C:441:GLU:HG3	2.05	0.57
1:D:225:LYS:HB3	1:D:227:ASP:OD1	2.04	0.57
1:E:105:LEU:HD12	1:E:105:LEU:C	2.25	0.57
1:E:394:ASP:O	1:E:397:PRO:HD2	2.05	0.57
1:F:51:LYS:HG2	1:F:57:GLU:HG2	1.87	0.57
1:D:88:THR:N	1:D:91:GLN:HE21	2.00	0.57
1:F:188:TRP:O	1:F:254:VAL:HG12	2.04	0.57
1:C:61:PRO:HG2	1:C:64:TYR:HB2	1.87	0.57
1:E:109:SER:HB3	1:E:112:TYR:O	2.05	0.57
1:E:193:LYS:HD3	1:E:193:LYS:N	2.20	0.57
1:C:243:LEU:HD13	1:C:248:LEU:HD13	1.87	0.56
1:D:108:GLU:HG2	1:D:116:TYR:HE2	1.70	0.56
1:D:225:LYS:HG2	1:D:226:ASN:H	1.69	0.56
1:E:359:ARG:C	1:E:361:LYS:H	2.09	0.56
1:F:370:TRP:HE3	1:F:430:ARG:HE	1.53	0.56
1:D:160:ALA:CB	1:D:166:ARG:HB3	2.36	0.56
1:E:348:LEU:N	1:E:349:PRO:CD	2.69	0.56
1:C:184:TYR:CE1	1:C:256:VAL:HG23	2.39	0.56
1:F:196:LYS:N	1:F:196:LYS:HD2	2.21	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:76:LYS:HG2	1:A:177:VAL:HG21	1.86	0.56
1:C:173:MET:O	1:C:176:THR:HB	2.06	0.56
1:D:91:GLN:O	1:D:95:LEU:HG	2.04	0.56
1:D:108:GLU:HG2	1:D:116:TYR:CE2	2.40	0.56
1:E:86:LYS:HD3	1:E:86:LYS:H	1.71	0.56
1:E:432:THR:CG2	1:E:435:GLN:H	2.04	0.56
1:F:68:ARG:HA	1:F:186:SER:O	2.06	0.56
1:E:227:ASP:OD2	1:E:230:ALA:HA	2.06	0.56
1:D:89:ARG:O	1:D:93:GLU:HG3	2.06	0.56
1:A:164:CYS:HB3	1:B:56:ARG:NE	2.21	0.56
1:F:43:LYS:HG3	2:F:477:HOH:O	2.05	0.56
1:A:87:ILE:HG23	1:A:91:GLN:HB2	1.88	0.55
1:B:125:LYS:HE3	1:B:127:GLU:OE2	2.06	0.55
1:C:86:LYS:HG3	1:C:108:GLU:O	2.06	0.55
1:C:125:LYS:HG3	1:C:126:VAL:N	2.20	0.55
1:D:150:MET:CE	1:D:226:ASN:HB2	2.36	0.55
1:C:93:GLU:HG2	1:C:126:VAL:HG21	1.88	0.55
1:C:95:LEU:C	1:C:96:LEU:HD12	2.26	0.55
1:C:281:ARG:HG2	1:C:281:ARG:NH1	2.18	0.55
1:D:148:ASN:N	2:D:515:HOH:O	2.32	0.55
1:D:313:ARG:HB3	1:D:363:PHE:CD2	2.42	0.55
1:D:67:LYS:HE2	1:D:69:GLU:HB3	1.87	0.55
1:C:303:GLU:OE1	1:C:437:ARG:HD3	2.07	0.55
1:C:354:ALA:HB1	1:C:356:GLU:OE2	2.06	0.55
1:D:92:ALA:HA	1:D:95:LEU:HD12	1.88	0.55
1:D:160:ALA:HB2	1:D:166:ARG:CB	2.36	0.55
1:F:248:LEU:HD22	1:F:333:PHE:CE2	2.41	0.55
1:C:191:ASN:OD1	1:C:193:LYS:HE3	2.07	0.55
1:C:356:GLU:O	1:C:360:GLU:HG2	2.06	0.55
1:E:191:ASN:ND2	1:E:215:ARG:HH12	2.04	0.55
1:E:271:LYS:NZ	1:E:326:ASN:HD21	2.03	0.55
1:A:271:LYS:HB2	1:A:322:VAL:HB	1.89	0.55
1:B:95:LEU:O	1:B:171:LYS:HE3	2.05	0.55
1:D:54:VAL:HG22	1:E:140:ILE:CG2	2.37	0.55
1:D:107:ARG:HH12	1:D:128:HIS:CE1	2.24	0.55
1:D:201:ILE:HB	1:D:209:VAL:HG12	1.88	0.54
1:C:81:PRO:HG2	1:C:178:ALA:HA	1.88	0.54
1:F:89:ARG:HG3	1:F:107:ARG:NH2	2.21	0.54
1:F:105:LEU:C	1:F:105:LEU:HD12	2.28	0.54
1:F:375:LEU:HD23	1:F:375:LEU:O	2.07	0.54
1:A:88:THR:CG2	1:A:90:GLU:HG3	2.37	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:96:LEU:HG	1:C:103:LEU:CD1	2.37	0.54
1:E:235:ALA:O	1:E:239:VAL:HG23	2.07	0.54
1:A:148:ASN:ND2	1:A:151:GLN:HG3	2.21	0.54
1:F:270:ALA:CB	1:F:324:GLU:HG3	2.38	0.54
1:D:203:LYS:H	1:D:203:LYS:CD	1.97	0.54
1:E:249:VAL:HG21	1:E:331:SER:HB3	1.90	0.54
1:E:348:LEU:O	1:E:350:VAL:N	2.41	0.54
1:F:398:ARG:O	1:F:401:LYS:HB2	2.08	0.54
1:D:54:VAL:HG22	1:E:140:ILE:HG22	1.90	0.54
1:E:39:VAL:HG23	1:E:50:ALA:HA	1.89	0.54
1:F:84:HIS:HB3	1:F:87:ILE:CG1	2.38	0.54
1:B:214:TYR:CD2	1:B:215:ARG:HG3	2.43	0.54
1:D:88:THR:H	1:D:91:GLN:NE2	2.04	0.54
1:F:236:GLU:HG2	1:F:240:MET:CE	2.38	0.54
1:A:14:CYS:HB3	1:A:65:VAL:HB	1.90	0.54
1:B:354:ALA:HB1	1:B:356:GLU:OE1	2.08	0.54
1:E:51:LYS:HG2	1:E:57:GLU:HB2	1.90	0.54
1:F:218:LYS:HD3	1:F:268:TYR:CD2	2.43	0.54
1:F:394:ASP:O	1:F:397:PRO:HD2	2.07	0.54
1:A:54:VAL:O	1:A:54:VAL:CG1	2.56	0.54
1:D:239:VAL:HG12	1:D:243:LEU:HD11	1.88	0.54
1:C:201:ILE:HB	1:C:209:VAL:HG23	1.91	0.53
1:E:97:TYR:HB3	1:E:98:PRO:CD	2.35	0.53
1:C:255:ILE:O	1:C:262:LEU:HD12	2.08	0.53
1:E:76:LYS:O	1:E:177:VAL:HG12	2.08	0.53
1:E:282:GLY:O	1:E:286:LEU:HG	2.09	0.53
1:B:388:PRO:O	1:B:389:ARG:HB2	2.08	0.53
1:C:105:LEU:HD22	1:C:106:VAL:N	2.23	0.53
1:C:236:GLU:O	1:C:240:MET:HG3	2.09	0.53
1:A:311:VAL:HG11	1:A:363:PHE:CD2	2.43	0.53
1:B:148:ASN:CG	1:B:151:GLN:HG3	2.28	0.53
1:D:360:GLU:OE2	1:D:362:LYS:HB2	2.08	0.53
1:F:246:SER:O	1:F:329:LYS:HE2	2.09	0.53
1:D:82:TRP:CZ3	1:D:83:PHE:HB2	2.43	0.53
1:E:37:THR:O	1:E:50:ALA:HB1	2.09	0.53
1:E:73:ALA:HB2	1:E:238:SER:OG	2.09	0.53
1:E:84:HIS:CB	1:E:87:ILE:HD12	2.38	0.53
1:F:75:THR:HG23	1:F:76:LYS:HG3	1.90	0.53
1:D:393:LYS:H	1:D:393:LYS:CD	2.20	0.53
1:B:191:ASN:HB3	1:B:193:LYS:HD3	1.90	0.53
1:B:356:GLU:OE1	1:B:430:ARG:NH2	2.33	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:125:LYS:HE3	1:C:125:LYS:HA	1.91	0.53
1:E:293:LYS:NZ	1:E:444:ARG:HD2	2.24	0.53
1:A:88:THR:CG2	1:A:89:ARG:N	2.72	0.53
1:B:26:GLN:HG2	2:B:453:HOH:O	2.09	0.53
1:C:89:ARG:HG3	1:C:90:GLU:OE1	2.08	0.53
1:A:313:ARG:NH2	1:A:337:LYS:HD2	2.24	0.52
1:D:151:GLN:NE2	1:D:259:LYS:HD3	2.24	0.52
1:E:100:GLU:O	1:E:121:SER:HB3	2.08	0.52
1:F:200:THR:HG21	1:F:203:LYS:CE	2.36	0.52
1:A:61:PRO:HG2	1:A:64:TYR:HB2	1.91	0.52
1:B:198:LEU:HD12	1:B:211:LEU:HG	1.91	0.52
1:C:50:ALA:O	1:C:57:GLU:HA	2.08	0.52
1:D:156:TYR:CG	1:D:163:LEU:HD11	2.44	0.52
1:E:396:VAL:HB	1:E:397:PRO:HD3	1.90	0.52
1:B:75:THR:C	1:B:77:LEU:H	2.12	0.52
1:F:370:TRP:HE3	1:F:430:ARG:NE	2.07	0.52
1:A:107:ARG:HH21	1:A:128:HIS:HD2	1.56	0.52
1:C:81:PRO:HA	1:C:176:THR:HG21	1.91	0.52
1:C:88:THR:HG23	1:C:91:GLN:HE21	1.73	0.52
1:F:79:LEU:HD23	1:F:179:ALA:HB3	1.90	0.52
1:F:351:LYS:HZ2	1:F:385:VAL:HG12	1.75	0.52
1:C:97:TYR:N	1:C:98:PRO:CD	2.72	0.52
1:E:283:ARG:HG2	1:E:283:ARG:HH11	1.75	0.52
1:A:90:GLU:O	1:A:93:GLU:HB2	2.09	0.52
1:D:51:LYS:HA	1:D:56:ARG:O	2.09	0.52
1:D:97:TYR:O	1:D:99:PRO:HD3	2.09	0.52
1:E:51:LYS:HA	1:E:56:ARG:O	2.10	0.52
1:F:51:LYS:HE2	1:F:57:GLU:CD	2.30	0.52
1:A:354:ALA:HB1	1:A:356:GLU:OE2	2.08	0.52
1:C:399:VAL:HA	1:C:403:TYR:HB3	1.92	0.52
1:E:229:THR:O	1:E:230:ALA:HB3	2.09	0.52
1:B:191:ASN:HD22	1:B:215:ARG:HH12	1.58	0.52
1:A:43:LYS:HD2	1:A:43:LYS:N	2.15	0.52
1:A:219:VAL:HG11	1:A:265:VAL:HG13	1.92	0.52
1:A:283:ARG:HD3	1:A:283:ARG:N	2.25	0.52
1:D:258:GLU:H	1:D:258:GLU:CD	2.11	0.52
1:F:398:ARG:HB3	1:F:403:TYR:HB2	1.90	0.52
1:B:337:LYS:HG3	1:B:338:GLU:H	1.74	0.52
1:A:161:ASP:OD1	1:B:53:LYS:NZ	2.34	0.51
1:A:257:GLU:HB3	1:A:259:LYS:CD	2.40	0.51
1:B:399:VAL:HA	1:B:403:TYR:HB3	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:81:PRO:HG3	1:D:178:ALA:HA	1.92	0.51
1:F:52:ASN:OD1	1:F:56:ARG:HB2	2.10	0.51
1:F:68:ARG:HD3	1:F:188:TRP:CZ2	2.45	0.51
1:F:275:VAL:HG23	1:F:318:ARG:N	2.24	0.51
1:F:275:VAL:CG2	1:F:317:ALA:HB3	2.40	0.51
1:F:106:VAL:HG11	1:F:149:LEU:HD13	1.91	0.51
1:F:351:LYS:NZ	1:F:385:VAL:HG12	2.24	0.51
1:F:258:GLU:N	1:F:258:GLU:OE1	2.43	0.51
1:A:359:ARG:HD3	2:A:496:HOH:O	2.10	0.51
1:B:223:CYS:O	1:B:223:CYS:SG	2.67	0.51
1:A:151:GLN:HA	1:A:259:LYS:O	2.11	0.51
1:A:348:LEU:HD13	1:A:363:PHE:HE1	1.75	0.51
1:B:360:GLU:HG2	1:B:362:LYS:HB2	1.93	0.51
1:F:433:PHE:HA	1:F:436:LEU:HD12	1.92	0.51
1:C:141:ASP:OD2	1:C:143:GLU:HB2	2.11	0.51
1:E:447:GLU:CB	1:E:450:LEU:HD12	2.36	0.51
1:C:398:ARG:HG3	1:C:398:ARG:NH1	2.25	0.51
1:D:88:THR:HG22	1:D:91:GLN:CG	2.41	0.51
1:A:88:THR:HG22	1:A:89:ARG:N	2.25	0.51
1:B:214:TYR:CE2	1:B:215:ARG:HG3	2.46	0.51
1:C:92:ALA:O	1:C:96:LEU:HD13	2.11	0.51
1:F:41:VAL:HB	1:F:48:TYR:CE2	2.46	0.51
1:F:224:ILE:HD12	1:F:233:PHE:HA	1.93	0.51
1:F:248:LEU:HD22	1:F:333:PHE:HE2	1.74	0.51
1:A:166:ARG:NH1	2:A:554:HOH:O	2.43	0.51
1:D:283:ARG:HA	1:D:382:PHE:CE2	2.46	0.51
1:F:398:ARG:HA	1:F:401:LYS:HD2	1.91	0.51
1:A:394:ASP:O	1:A:397:PRO:HG2	2.11	0.51
1:B:424:HIS:CD2	1:B:429:THR:HG22	2.46	0.51
1:C:152:LEU:C	1:C:152:LEU:HD23	2.32	0.51
1:F:195:LEU:CD2	1:F:214:TYR:HB2	2.41	0.51
1:A:219:VAL:CG1	1:A:265:VAL:HG13	2.41	0.50
1:E:391:PRO:C	1:E:393:LYS:H	2.14	0.50
1:F:84:HIS:HB3	1:F:87:ILE:HG12	1.92	0.50
1:F:255:ILE:HB	1:F:263:TYR:HB2	1.93	0.50
1:A:185:ARG:HG3	1:A:185:ARG:HH11	1.76	0.50
1:B:348:LEU:HD22	1:B:363:PHE:CE2	2.47	0.50
1:B:373:GLY:HA2	1:B:376:LEU:HB2	1.93	0.50
1:D:84:HIS:CE1	1:D:105:LEU:HD21	2.45	0.50
1:D:277:TYR:CZ	1:D:281:ARG:HD2	2.46	0.50
1:F:148:ASN:ND2	1:F:150:MET:H	1.97	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:338:GLU:HB3	2:B:522:HOH:O	2.12	0.50
1:F:306:GLU:CD	1:F:365:THR:HG21	2.31	0.50
1:F:449:HIS:CE1	1:F:450:LEU:HG	2.45	0.50
1:F:118:LEU:HD23	1:F:118:LEU:C	2.32	0.50
1:B:111:ASN:C	1:B:113:PRO:HD3	2.31	0.50
1:C:103:LEU:HA	1:C:169:LYS:O	2.11	0.50
1:C:258:GLU:CD	1:C:258:GLU:H	2.15	0.50
1:D:90:GLU:C	1:D:92:ALA:H	2.14	0.50
1:D:208:ASP:OD1	1:D:209:VAL:HG23	2.12	0.50
1:A:313:ARG:NH2	1:A:340:SER:OG	2.44	0.50
1:D:160:ALA:HB2	1:D:166:ARG:HA	1.94	0.50
1:F:94:ARG:C	1:F:96:LEU:H	2.14	0.50
1:F:258:GLU:CD	1:F:258:GLU:N	2.64	0.50
1:A:120:VAL:O	1:A:126:VAL:HA	2.11	0.50
1:A:140:ILE:HG22	1:B:54:VAL:HG22	1.93	0.50
1:B:233:PHE:CZ	1:B:254:VAL:CG2	2.95	0.50
1:C:360:GLU:OE2	1:C:362:LYS:HB2	2.11	0.50
1:D:254:VAL:HG13	1:D:262:LEU:HD11	1.94	0.50
1:E:273:SER:HB3	1:E:276:ASP:OD2	2.12	0.50
1:F:275:VAL:HG23	1:F:317:ALA:HB3	1.92	0.50
1:C:443:ILE:HA	1:C:448:LEU:HD12	1.94	0.50
1:D:222:LYS:HE2	1:D:233:PHE:CZ	2.47	0.50
1:D:225:LYS:HG2	1:D:226:ASN:N	2.27	0.50
1:E:171:LYS:C	1:E:171:LYS:HD3	2.32	0.50
1:E:200:THR:HA	1:E:210:MET:HA	1.94	0.50
1:F:447:GLU:C	1:F:449:HIS:H	2.14	0.50
1:D:103:LEU:HA	1:D:169:LYS:O	2.11	0.50
1:F:141:ASP:O	1:F:143:GLU:HG3	2.12	0.50
1:F:191:ASN:HD22	1:F:194:GLU:H	1.59	0.50
1:F:375:LEU:O	1:F:379:ILE:HG13	2.12	0.50
1:A:123:GLU:C	1:A:125:LYS:H	2.15	0.49
1:B:82:TRP:CZ2	1:B:153:VAL:HG21	2.48	0.49
1:B:148:ASN:OD1	1:B:151:GLN:HG3	2.11	0.49
1:E:74:GLY:C	1:E:76:LYS:H	2.14	0.49
1:E:279:ARG:HG3	1:E:383:GLY:HA3	1.93	0.49
1:E:309:ASN:O	1:E:338:GLU:HG2	2.12	0.49
1:F:211:LEU:HG	1:F:212:GLY:H	1.77	0.49
1:C:125:LYS:CE	1:C:126:VAL:HG22	2.28	0.49
1:E:193:LYS:HD3	1:E:193:LYS:H	1.77	0.49
1:F:101:THR:HA	1:F:121:SER:O	2.12	0.49
1:F:139:SER:HB2	1:F:145:TYR:CD2	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:101:THR:HG22	1:C:102:GLY:N	2.27	0.49
1:C:126:VAL:HG23	1:C:126:VAL:O	2.12	0.49
1:E:77:LEU:HA	1:E:177:VAL:HG13	1.93	0.49
1:F:109:SER:HB2	1:F:115:ASP:C	2.32	0.49
1:F:286:LEU:HB2	1:F:382:PHE:HE2	1.76	0.49
1:C:433:PHE:HA	1:C:436:LEU:HD12	1.95	0.49
1:B:307:GLY:HA3	1:C:434:LEU:HD22	1.93	0.49
1:D:313:ARG:HH11	1:D:363:PHE:CB	2.15	0.49
1:F:306:GLU:CG	1:F:365:THR:HG21	2.43	0.49
1:F:311:VAL:HG23	1:F:311:VAL:O	2.13	0.49
1:A:275:VAL:HG23	1:A:317:ALA:C	2.33	0.49
1:C:281:ARG:CG	1:C:281:ARG:NH1	2.74	0.49
1:C:283:ARG:O	1:C:283:ARG:HG3	2.11	0.49
1:F:88:THR:HG22	1:F:89:ARG:N	2.28	0.49
1:F:375:LEU:HD23	1:F:375:LEU:C	2.33	0.49
1:F:425:LEU:H	1:F:425:LEU:HD22	1.78	0.49
1:A:434:LEU:C	1:A:434:LEU:HD23	2.33	0.49
1:D:43:LYS:HG2	2:D:527:HOH:O	2.12	0.49
1:D:357:ALA:O	1:D:361:LYS:HA	2.13	0.49
1:B:219:VAL:CG2	1:B:252:LEU:HD22	2.43	0.48
1:C:227:ASP:OD1	1:C:229:THR:HG22	2.13	0.48
1:D:88:THR:CG2	1:D:91:GLN:HG2	2.43	0.48
1:D:197:LEU:HD13	1:D:210:MET:CE	2.43	0.48
1:D:293:LYS:HD3	1:D:444:ARG:NH1	2.28	0.48
1:E:302:MET:HE2	1:E:302:MET:HA	1.95	0.48
1:F:196:LYS:HD2	1:F:196:LYS:H	1.77	0.48
1:F:314:ASP:HB2	1:F:335:LEU:HD12	1.95	0.48
1:A:203:LYS:O	1:B:285:VAL:HG21	2.12	0.48
1:D:393:LYS:HD2	1:D:393:LYS:N	2.27	0.48
1:F:51:LYS:CE	1:F:57:GLU:HG2	2.41	0.48
1:A:76:LYS:H	1:A:76:LYS:CD	2.26	0.48
1:D:195:LEU:HD12	1:D:255:ILE:HD12	1.95	0.48
1:D:203:LYS:N	1:D:203:LYS:CD	2.71	0.48
1:E:292:LEU:HD21	1:E:444:ARG:HB2	1.96	0.48
1:F:219:VAL:HG23	1:F:266:THR:O	2.14	0.48
1:A:387:TYR:N	1:A:388:PRO:HD3	2.28	0.48
1:B:146:PHE:HB3	1:B:151:GLN:HB2	1.95	0.48
1:D:229:THR:HG23	1:D:230:ALA:N	2.28	0.48
1:F:76:LYS:O	1:F:177:VAL:HG12	2.14	0.48
1:C:231:GLN:HB3	2:C:513:HOH:O	2.13	0.48
1:C:275:VAL:CG2	1:C:318:ARG:N	2.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:306:GLU:CD	1:C:365:THR:HG21	2.33	0.48
1:C:381:SER:HB3	1:C:384:ARG:HB3	1.96	0.48
1:D:375:LEU:O	1:D:375:LEU:HD12	2.14	0.48
1:E:293:LYS:HZ1	1:E:444:ARG:HD2	1.77	0.48
1:F:387:TYR:HA	1:F:390:ILE:HD12	1.96	0.48
1:B:219:VAL:HG22	1:B:266:THR:O	2.14	0.48
1:C:245:HIS:HD2	1:C:247:ASN:H	1.59	0.48
1:E:91:GLN:HA	1:E:94:ARG:HD2	1.96	0.48
1:E:201:ILE:HD11	1:E:268:TYR:HE1	1.79	0.48
1:E:395:VAL:O	1:E:399:VAL:HG23	2.13	0.48
1:F:77:LEU:CD1	1:F:177:VAL:HG13	2.43	0.48
1:F:184:TYR:HA	1:F:189:ALA:CB	2.44	0.48
1:F:197:LEU:HD13	1:F:210:MET:HE1	1.96	0.48
1:B:190:LEU:HD22	1:B:253:GLY:C	2.34	0.47
1:C:209:VAL:HG12	1:C:222:LYS:CG	2.43	0.47
1:F:416:TYR:CE2	1:F:420:LYS:HD3	2.50	0.47
1:A:281:ARG:HG3	1:A:281:ARG:NH1	2.28	0.47
1:D:391:PRO:HD2	1:D:394:ASP:OD2	2.14	0.47
1:E:24:ALA:O	1:E:27:ASP:HB2	2.14	0.47
1:E:197:LEU:O	1:E:198:LEU:HD23	2.14	0.47
1:E:213:ASP:HA	1:E:217:ASN:O	2.14	0.47
1:F:439:GLN:O	1:F:443:ILE:HG13	2.14	0.47
1:B:79:LEU:HD23	1:B:179:ALA:HB3	1.96	0.47
1:C:109:SER:C	1:C:111:ASN:H	2.17	0.47
1:E:249:VAL:CG2	1:E:331:SER:HB3	2.44	0.47
1:A:100:GLU:O	1:A:121:SER:HB3	2.15	0.47
1:A:245:HIS:CD2	1:A:247:ASN:HB2	2.49	0.47
1:B:181:ASP:O	1:B:185:ARG:HG2	2.15	0.47
1:B:360:GLU:O	1:B:362:LYS:N	2.48	0.47
1:C:155:HIS:HE1	1:C:161:ASP:OD2	1.98	0.47
1:E:278:LEU:O	1:E:279:ARG:O	2.32	0.47
1:A:41:VAL:HB	1:A:48:TYR:CE2	2.49	0.47
1:B:108:GLU:HG2	1:B:116:TYR:HE2	1.78	0.47
1:D:303:GLU:OE1	1:D:437:ARG:HD3	2.15	0.47
1:F:96:LEU:HD22	1:F:103:LEU:CD2	2.41	0.47
1:A:51:LYS:HA	1:A:56:ARG:O	2.14	0.47
1:B:89:ARG:O	1:B:92:ALA:HB3	2.15	0.47
1:B:219:VAL:HG23	1:B:252:LEU:HD22	1.97	0.47
1:D:87:ILE:HG13	1:D:87:ILE:O	2.14	0.47
1:D:191:ASN:HD21	1:D:193:LYS:CE	2.27	0.47
1:F:90:GLU:O	1:F:94:ARG:HG3	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:75:THR:C	1:B:77:LEU:N	2.68	0.47
1:C:303:GLU:OE2	1:C:437:ARG:NH1	2.48	0.47
1:F:278:LEU:HA	1:F:286:LEU:HD11	1.97	0.47
1:F:286:LEU:HB2	1:F:382:PHE:CE2	2.50	0.47
1:B:224:ILE:HG22	1:B:225:LYS:N	2.29	0.47
1:B:277:TYR:O	1:B:281:ARG:HG2	2.15	0.47
1:D:429:THR:HG22	1:D:429:THR:O	2.14	0.47
1:A:104:PHE:HB3	1:A:167:LEU:HD22	1.96	0.47
1:B:336:THR:O	1:B:337:LYS:HB2	2.15	0.47
1:D:181:ASP:O	1:D:185:ARG:HG3	2.15	0.47
1:F:373:GLY:HA2	1:F:376:LEU:HB2	1.96	0.47
1:C:20:PHE:CZ	1:C:22:GLY:HA2	2.50	0.46
1:C:352:TRP:CZ2	1:C:386:PRO:HG2	2.50	0.46
1:C:388:PRO:O	1:C:389:ARG:HG3	2.15	0.46
1:C:443:ILE:HG23	1:C:448:LEU:HB2	1.97	0.46
1:D:414:ALA:O	1:D:417:ASP:HB2	2.15	0.46
1:E:432:THR:HG23	1:E:434:LEU:N	2.30	0.46
1:F:275:VAL:HG23	1:F:317:ALA:CB	2.45	0.46
1:A:266:THR:HG22	1:A:267:GLU:O	2.15	0.46
1:B:133:TYR:CZ	1:B:228:ALA:HB2	2.50	0.46
1:F:160:ALA:HB2	1:F:166:ARG:N	2.30	0.46
1:B:159:ASP:OD1	1:B:161:ASP:N	2.48	0.46
1:C:396:VAL:HG12	1:C:400:GLU:OE1	2.15	0.46
1:D:225:LYS:C	1:D:227:ASP:H	2.18	0.46
1:D:283:ARG:HG2	2:D:522:HOH:O	2.14	0.46
1:E:79:LEU:CD2	1:E:180:GLN:HE21	2.27	0.46
1:E:302:MET:HB3	1:E:433:PHE:CE1	2.49	0.46
1:F:211:LEU:HG	1:F:212:GLY:N	2.31	0.46
1:B:205:GLU:HB2	1:B:206:PHE:CD1	2.51	0.46
1:E:152:LEU:C	1:E:152:LEU:HD23	2.36	0.46
1:A:76:LYS:HD3	1:A:76:LYS:N	2.29	0.46
1:C:81:PRO:HB3	1:C:172:VAL:HG13	1.97	0.46
1:C:112:TYR:HB3	1:C:113:PRO:CD	2.32	0.46
1:D:119:CYS:HA	1:D:127:GLU:O	2.15	0.46
1:A:76:LYS:HG2	1:A:177:VAL:HG23	1.96	0.46
1:B:435:GLN:HE21	1:C:308:ASN:HD22	1.61	0.46
1:C:367:SER:O	1:C:370:TRP:HB3	2.16	0.46
1:E:77:LEU:HD11	1:E:179:ALA:HA	1.97	0.46
1:E:271:LYS:HZ2	1:E:326:ASN:ND2	2.14	0.46
1:E:388:PRO:O	1:E:389:ARG:HB2	2.14	0.46
1:F:244:ARG:HG3	1:F:250:GLN:OE1	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:292:LEU:HD21	1:A:444:ARG:HB2	1.97	0.46
1:C:200:THR:HA	1:C:210:MET:HG2	1.97	0.46
1:E:359:ARG:C	1:E:361:LYS:N	2.69	0.46
1:E:432:THR:HB	1:E:435:GLN:OE1	2.15	0.46
1:D:47:TRP:CZ3	1:D:61:PRO:HB3	2.51	0.46
1:D:146:PHE:HA	1:D:151:GLN:OE1	2.15	0.46
1:D:155:HIS:HE1	1:D:161:ASP:OD2	1.96	0.46
1:D:387:TYR:HB3	1:D:390:ILE:CG2	2.45	0.46
1:F:219:VAL:CG2	1:F:266:THR:O	2.64	0.46
1:F:229:THR:OG1	1:F:231:GLN:HG3	2.16	0.46
1:D:191:ASN:OD1	1:D:193:LYS:HB2	2.16	0.46
1:D:356:GLU:OE2	1:D:430:ARG:NH2	2.32	0.45
1:E:75:THR:HG22	1:E:75:THR:O	2.16	0.45
1:E:391:PRO:CB	1:E:394:ASP:HB2	2.38	0.45
1:F:127:GLU:CG	1:F:164:CYS:SG	3.02	0.45
1:F:369:VAL:HG13	1:F:436:LEU:HD11	1.98	0.45
1:B:132:MET:O	1:B:138:LEU:HA	2.16	0.45
1:D:78:SER:HB3	1:D:176:THR:HG23	1.99	0.45
1:B:233:PHE:HZ	1:B:254:VAL:CG2	2.29	0.45
1:B:239:VAL:HG13	1:B:240:MET:N	2.31	0.45
1:B:346:GLY:O	1:B:348:LEU:HD12	2.17	0.45
1:D:132:MET:O	1:D:138:LEU:HA	2.17	0.45
1:E:201:ILE:CD1	1:E:268:TYR:HE1	2.30	0.45
1:C:449:HIS:CE1	1:C:450:LEU:HG	2.51	0.45
1:D:86:LYS:HG3	1:D:108:GLU:OE1	2.16	0.45
1:E:132:MET:O	1:E:138:LEU:HA	2.17	0.45
1:F:443:ILE:HG23	1:F:448:LEU:HB2	1.98	0.45
1:A:122:CYS:SG	1:A:165:THR:CG2	3.04	0.45
1:D:222:LYS:HE2	1:D:233:PHE:CE2	2.51	0.45
1:E:133:TYR:CZ	1:E:228:ALA:HB2	2.52	0.45
1:A:87:ILE:HD13	1:A:95:LEU:CD1	2.47	0.45
1:B:97:TYR:HB3	1:B:98:PRO:CD	2.45	0.45
1:E:320:VAL:C	1:E:321:LEU:HD23	2.36	0.45
1:F:85:GLY:O	1:F:108:GLU:HB2	2.16	0.45
1:A:39:VAL:HG23	1:A:50:ALA:HA	1.99	0.45
1:B:180:GLN:CD	1:B:180:GLN:H	2.20	0.45
1:E:381:SER:O	1:E:382:PHE:CD1	2.70	0.45
1:A:412:PRO:HB2	1:A:415:VAL:HG23	1.99	0.45
1:E:229:THR:O	1:E:229:THR:HG22	2.15	0.45
1:E:436:LEU:O	1:E:440:LEU:HG	2.17	0.45
1:F:207:GLY:HA3	1:F:223:CYS:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:353:THR:HG22	1:B:357:ALA:HB3	1.99	0.45
1:C:315:LEU:HD23	1:C:315:LEU:C	2.37	0.45
1:D:79:LEU:HD11	1:D:224:ILE:HG22	1.99	0.45
1:D:156:TYR:CD1	1:D:163:LEU:HD11	2.52	0.45
1:D:340:SER:OG	1:D:341:SER:N	2.51	0.45
1:E:87:ILE:HG23	1:E:91:GLN:HB2	1.98	0.45
1:F:425:LEU:H	1:F:425:LEU:CD2	2.29	0.45
1:A:103:LEU:HA	1:A:169:LYS:O	2.17	0.44
1:C:407:ALA:HB2	1:C:416:TYR:CD2	2.51	0.44
1:D:141:ASP:O	1:D:143:GLU:HG3	2.17	0.44
1:E:136:SER:HB2	1:E:226:ASN:OD1	2.16	0.44
1:F:68:ARG:HD3	1:F:188:TRP:CH2	2.51	0.44
1:F:84:HIS:HD2	1:F:105:LEU:HB2	1.81	0.44
1:F:312:HIS:O	1:F:313:ARG:HB2	2.17	0.44
1:C:89:ARG:HB3	1:C:107:ARG:HH12	1.82	0.44
1:C:172:VAL:HG11	1:C:176:THR:O	2.18	0.44
1:C:302:MET:SD	1:C:315:LEU:HD12	2.56	0.44
1:E:84:HIS:N	1:E:84:HIS:CD2	2.86	0.44
1:B:86:LYS:H	1:B:86:LYS:HD2	1.82	0.44
1:E:414:ALA:O	1:E:417:ASP:HB2	2.17	0.44
1:F:105:LEU:HB3	1:F:171:LYS:HB3	1.99	0.44
1:F:227:ASP:OD2	1:F:230:ALA:HA	2.16	0.44
1:F:386:PRO:C	1:F:387:TYR:HD1	2.21	0.44
1:F:407:ALA:HB2	1:F:416:TYR:CG	2.52	0.44
1:E:351:LYS:O	1:E:374:ILE:HD13	2.18	0.44
1:E:360:GLU:O	1:E:361:LYS:C	2.56	0.44
1:E:390:ILE:HD11	1:E:403:TYR:OH	2.18	0.44
1:F:31:CYS:O	1:F:34:ASP:HB2	2.18	0.44
1:F:195:LEU:HD23	1:F:214:TYR:HB2	1.98	0.44
1:F:219:VAL:HG23	1:F:252:LEU:HD12	1.99	0.44
1:A:43:LYS:CD	1:A:43:LYS:N	2.74	0.44
1:A:104:PHE:CB	1:A:167:LEU:HD22	2.47	0.44
1:B:313:ARG:CZ	1:B:363:PHE:HB2	2.48	0.44
1:D:160:ALA:HB2	1:D:166:ARG:CA	2.46	0.44
1:E:83:PHE:CZ	1:E:85:GLY:HA2	2.52	0.44
1:F:377:TRP:O	1:F:381:SER:CB	2.65	0.44
1:A:181:ASP:HA	1:A:184:TYR:HB3	2.00	0.44
1:A:88:THR:HG23	1:A:89:ARG:NH1	2.32	0.44
1:B:73:ALA:HB1	1:B:77:LEU:HB2	1.94	0.44
1:C:132:MET:O	1:C:138:LEU:HA	2.18	0.44
1:D:54:VAL:O	1:D:54:VAL:HG13	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:169:LYS:HA	1:F:170:PRO:HD3	1.83	0.44
1:F:245:HIS:O	1:F:247:ASN:N	2.51	0.44
1:F:391:PRO:O	1:F:394:ASP:OD1	2.36	0.44
1:A:76:LYS:HD3	1:A:77:LEU:N	2.32	0.44
1:B:133:TYR:HD1	1:B:137:LYS:O	2.00	0.44
1:D:53:LYS:HE3	1:E:161:ASP:O	2.18	0.44
1:D:122:CYS:O	1:D:124:GLY:N	2.51	0.44
1:D:403:TYR:O	1:D:404:LYS:HD3	2.17	0.44
1:F:360:GLU:O	1:F:362:LYS:HG2	2.16	0.44
1:C:81:PRO:HG3	1:C:178:ALA:HA	2.00	0.44
1:E:229:THR:HG21	1:E:231:GLN:HE21	1.82	0.44
1:F:71:VAL:O	1:F:238:SER:HB2	2.18	0.44
1:F:77:LEU:HD12	1:F:177:VAL:HG13	2.00	0.44
1:F:286:LEU:HD12	1:F:382:PHE:CE2	2.53	0.44
1:A:104:PHE:CD2	1:A:167:LEU:HB3	2.52	0.43
1:B:60:ILE:O	1:B:60:ILE:HG13	2.18	0.43
1:C:89:ARG:HB2	1:C:89:ARG:NH1	2.12	0.43
1:D:103:LEU:HD22	1:D:169:LYS:O	2.18	0.43
1:D:108:GLU:HA	1:D:116:TYR:HD2	1.82	0.43
1:E:250:GLN:HG3	1:E:251:LEU:O	2.17	0.43
1:A:180:GLN:H	1:A:180:GLN:NE2	2.15	0.43
1:B:190:LEU:HD22	1:B:254:VAL:N	2.33	0.43
1:C:274:LEU:O	1:C:278:LEU:HG	2.19	0.43
1:D:89:ARG:HB3	1:D:107:ARG:CZ	2.48	0.43
1:D:235:ALA:O	1:D:238:SER:HB3	2.19	0.43
1:D:258:GLU:C	1:D:260:GLY:H	2.22	0.43
1:F:118:LEU:HD21	1:F:120:VAL:CG2	2.47	0.43
1:C:107:ARG:HH22	1:C:111:ASN:HD22	1.65	0.43
1:E:271:LYS:HZ2	1:E:326:ASN:HD21	1.66	0.43
1:E:271:LYS:CB	1:E:322:VAL:HB	2.36	0.43
1:F:393:LYS:O	1:F:393:LYS:HG2	2.17	0.43
1:A:89:ARG:HH11	1:A:110:THR:HG21	1.82	0.43
1:D:312:HIS:O	1:D:368:ASP:OD1	2.36	0.43
1:F:192:MET:O	1:F:192:MET:HG3	2.17	0.43
1:F:330:VAL:HG12	1:F:331:SER:N	2.33	0.43
1:A:229:THR:O	1:A:230:ALA:HB3	2.19	0.43
1:B:13:GLU:OE2	1:B:244:ARG:NH2	2.50	0.43
1:B:390:ILE:HA	1:B:391:PRO:HD3	1.88	0.43
1:C:339:ALA:O	1:C:340:SER:C	2.57	0.43
1:E:97:TYR:O	1:E:99:PRO:HD3	2.18	0.43
1:F:229:THR:O	1:F:230:ALA:HB3	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:269:MET:CG	1:F:321:LEU:HD23	2.48	0.43
1:A:353:THR:HG22	1:A:357:ALA:HB3	2.01	0.43
1:C:84:HIS:HA	1:C:173:MET:CE	2.28	0.43
1:C:257:GLU:HB3	1:C:260:GLY:O	2.19	0.43
1:C:315:LEU:CD2	1:C:375:LEU:HD23	2.48	0.43
1:D:41:VAL:HG22	1:D:42:THR:N	2.33	0.43
1:E:103:LEU:HA	1:E:169:LYS:O	2.17	0.43
1:E:255:ILE:HB	1:E:263:TYR:HB2	2.00	0.43
1:E:394:ASP:C	1:E:397:PRO:HD2	2.38	0.43
1:F:150:MET:HE1	1:F:262:LEU:HD21	2.01	0.43
1:F:274:LEU:HD12	1:F:317:ALA:CB	2.48	0.43
1:A:443:ILE:HG23	1:A:448:LEU:HB2	2.00	0.43
1:E:208:ASP:OD1	1:E:225:LYS:HE3	2.19	0.43
1:F:141:ASP:O	1:F:142:GLU:C	2.57	0.43
1:A:80:MET:CE	1:A:150:MET:HG3	2.49	0.43
1:E:52:ASN:OD1	1:E:52:ASN:C	2.56	0.43
1:E:283:ARG:O	1:E:285:VAL:HG23	2.19	0.43
1:F:150:MET:CE	1:F:262:LEU:HD21	2.49	0.43
1:A:163:LEU:HD23	1:B:54:VAL:HG21	2.01	0.43
1:A:200:THR:HG21	1:A:203:LYS:HG3	2.00	0.43
1:B:292:LEU:HD22	1:B:449:HIS:CG	2.54	0.43
1:D:39:VAL:HG23	1:D:50:ALA:HA	2.00	0.43
1:D:61:PRO:HG2	1:D:64:TYR:HB2	2.00	0.43
1:D:156:TYR:HB3	1:D:163:LEU:CD1	2.48	0.43
1:D:245:HIS:CD2	1:D:247:ASN:HB2	2.54	0.43
1:F:109:SER:HB2	1:F:116:TYR:N	2.34	0.43
1:F:206:PHE:CD1	1:F:206:PHE:N	2.87	0.43
1:F:236:GLU:HG2	1:F:240:MET:HE3	2.01	0.43
1:F:387:TYR:CB	1:F:390:ILE:HD12	2.49	0.43
1:B:79:LEU:CD2	1:B:179:ALA:HB3	2.49	0.43
1:C:286:LEU:HD22	1:C:290:CYS:SG	2.59	0.43
1:D:80:MET:HE1	1:D:226:ASN:OD1	2.19	0.43
1:E:286:LEU:HD11	1:E:382:PHE:HE2	1.84	0.43
1:E:375:LEU:HD23	1:E:375:LEU:O	2.19	0.43
1:F:104:PHE:CE2	1:F:167:LEU:HB3	2.54	0.43
1:F:201:ILE:HD11	1:F:211:LEU:HB2	2.00	0.43
1:A:97:TYR:O	1:A:99:PRO:HD3	2.20	0.42
1:A:123:GLU:C	1:A:125:LYS:N	2.72	0.42
1:B:23:THR:N	1:B:27:ASP:OD2	2.43	0.42
1:B:112:TYR:CE2	1:B:130:ARG:HD2	2.54	0.42
1:E:396:VAL:O	1:E:400:GLU:HG3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:158:THR:HG22	1:F:158:THR:O	2.18	0.42
1:F:429:THR:O	1:F:429:THR:HG22	2.18	0.42
1:C:203:LYS:HB3	1:C:203:LYS:HZ3	1.84	0.42
1:E:125:LYS:HG2	1:E:126:VAL:N	2.33	0.42
1:F:269:MET:HB2	1:F:321:LEU:HD23	1.99	0.42
1:A:136:SER:O	1:A:137:LYS:HD3	2.19	0.42
1:B:360:GLU:CD	1:B:362:LYS:HD2	2.39	0.42
1:B:387:TYR:N	1:B:388:PRO:HD3	2.35	0.42
1:C:125:LYS:HE2	1:C:126:VAL:CG2	2.32	0.42
1:D:227:ASP:O	1:D:229:THR:N	2.53	0.42
1:E:77:LEU:HD12	1:E:177:VAL:HG13	2.01	0.42
1:F:109:SER:O	1:F:113:PRO:HA	2.18	0.42
1:A:74:GLY:HA3	1:A:76:LYS:NZ	2.35	0.42
1:B:97:TYR:CD1	1:B:97:TYR:C	2.90	0.42
1:C:95:LEU:O	1:C:96:LEU:HD12	2.20	0.42
1:C:107:ARG:NH2	1:C:109:SER:OG	2.49	0.42
1:D:126:VAL:O	1:D:126:VAL:HG23	2.19	0.42
1:F:392:LEU:H	1:F:392:LEU:CD2	2.27	0.42
1:F:407:ALA:HB2	1:F:416:TYR:CD1	2.54	0.42
1:A:138:LEU:CD2	1:A:149:LEU:HD23	2.49	0.42
1:B:313:ARG:O	1:B:348:LEU:HD23	2.19	0.42
1:B:369:VAL:O	1:B:372:PHE:O	2.37	0.42
1:C:112:TYR:C	1:C:112:TYR:CD2	2.93	0.42
1:D:377:TRP:CE2	1:D:405:MET:SD	3.13	0.42
1:E:239:VAL:HG11	1:E:336:THR:HG22	2.02	0.42
1:F:188:TRP:NE1	1:F:241:THR:HB	2.34	0.42
1:A:407:ALA:HB2	1:A:416:TYR:CG	2.55	0.42
1:E:244:ARG:HG2	1:E:244:ARG:HH11	1.84	0.42
1:E:271:LYS:HZ1	1:E:326:ASN:ND2	2.17	0.42
1:F:79:LEU:CD2	1:F:179:ALA:HB3	2.50	0.42
1:B:80:MET:HB3	1:B:82:TRP:CZ3	2.55	0.42
1:C:26:GLN:HG2	2:C:467:HOH:O	2.19	0.42
1:C:97:TYR:O	1:C:99:PRO:CD	2.66	0.42
1:E:279:ARG:O	1:E:281:ARG:N	2.52	0.42
1:F:61:PRO:HG2	1:F:64:TYR:HB2	2.01	0.42
1:F:357:ALA:O	1:F:361:LYS:HA	2.19	0.42
1:A:82:TRP:HB3	1:A:170:PRO:HB3	2.02	0.42
1:A:227:ASP:OD2	1:A:230:ALA:HA	2.19	0.42
1:B:8:TRP:HA	1:B:9:PRO:HD3	1.85	0.42
1:B:447:GLU:HG2	1:B:450:LEU:HD12	2.01	0.42
1:F:156:TYR:O	1:F:167:LEU:HG	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:419:MET:HB3	1:F:423:TRP:CH2	2.54	0.42
1:F:425:LEU:HD22	1:F:425:LEU:N	2.34	0.42
1:A:338:GLU:O	1:A:340:SER:N	2.52	0.42
1:B:245:HIS:CD2	1:B:247:ASN:HB2	2.54	0.42
1:C:89:ARG:HB3	1:C:107:ARG:NH1	2.35	0.42
1:D:31:CYS:SG	2:D:492:HOH:O	2.28	0.42
1:D:172:VAL:HG11	1:D:176:THR:O	2.20	0.42
1:D:208:ASP:O	1:D:222:LYS:HA	2.20	0.42
1:D:275:VAL:HG22	1:D:317:ALA:CB	2.50	0.42
1:F:387:TYR:CD1	1:F:387:TYR:N	2.88	0.42
1:B:101:THR:O	1:B:168:ILE:HD12	2.20	0.42
1:C:403:TYR:O	1:C:404:LYS:HD3	2.19	0.42
1:F:208:ASP:O	1:F:222:LYS:HA	2.19	0.42
1:D:159:ASP:O	1:D:160:ALA:HB3	2.20	0.41
1:D:173:MET:HG3	1:D:174:GLU:H	1.84	0.41
1:E:74:GLY:C	1:E:76:LYS:N	2.73	0.41
1:E:439:GLN:HA	2:E:471:HOH:O	2.20	0.41
1:F:27:ASP:O	1:F:29:PRO:HD3	2.20	0.41
1:F:274:LEU:CD1	1:F:278:LEU:HD11	2.50	0.41
1:B:105:LEU:C	1:B:105:LEU:CD1	2.86	0.41
1:C:97:TYR:CD1	1:C:98:PRO:HD3	2.55	0.41
1:D:96:LEU:HG	1:D:103:LEU:CD1	2.48	0.41
1:D:173:MET:CG	1:D:174:GLU:N	2.83	0.41
1:E:286:LEU:CD1	1:E:286:LEU:O	2.68	0.41
1:F:89:ARG:NH2	1:F:110:THR:HB	2.34	0.41
1:F:306:GLU:OE2	1:F:365:THR:HG21	2.20	0.41
1:B:429:THR:HG22	1:B:429:THR:O	2.21	0.41
1:D:44:ASP:HA	1:D:45:PRO:HD3	1.87	0.41
1:D:255:ILE:HB	1:D:263:TYR:HB2	2.02	0.41
1:F:77:LEU:HA	1:F:177:VAL:CG1	2.49	0.41
1:F:447:GLU:C	1:F:449:HIS:N	2.73	0.41
1:B:28:LEU:HB2	1:B:58:GLY:HA3	2.02	0.41
1:B:152:LEU:HD23	1:B:152:LEU:C	2.41	0.41
1:B:245:HIS:HD2	1:B:247:ASN:N	2.09	0.41
1:C:8:TRP:HA	1:C:9:PRO:HD3	1.95	0.41
1:D:152:LEU:C	1:D:152:LEU:HD23	2.40	0.41
1:E:287:GLY:O	1:E:288:GLY:C	2.58	0.41
1:F:28:LEU:HB2	1:F:58:GLY:CA	2.44	0.41
1:F:215:ARG:HG2	1:F:215:ARG:HH11	1.84	0.41
1:A:81:PRO:HA	1:A:176:THR:HG21	2.02	0.41
1:B:399:VAL:O	1:B:402:GLY:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:209:VAL:HA	1:C:221:VAL:O	2.20	0.41
1:D:90:GLU:C	1:D:92:ALA:N	2.74	0.41
1:E:348:LEU:N	1:E:349:PRO:HD3	2.35	0.41
1:F:374:ILE:HG13	1:F:423:TRP:HE1	1.86	0.41
1:A:140:ILE:CG2	1:B:54:VAL:HG22	2.50	0.41
1:B:111:ASN:O	1:B:113:PRO:HD3	2.20	0.41
1:D:353:THR:HG22	1:D:357:ALA:HB3	2.02	0.41
1:E:229:THR:CG2	1:E:231:GLN:HG3	2.50	0.41
1:F:109:SER:CB	1:F:115:ASP:C	2.88	0.41
1:F:201:ILE:HD11	1:F:211:LEU:CA	2.49	0.41
1:A:283:ARG:N	1:A:283:ARG:CD	2.83	0.41
1:D:104:PHE:CG	1:D:167:LEU:HD22	2.56	0.41
1:E:15:ILE:O	1:E:15:ILE:HG23	2.20	0.41
1:E:193:LYS:H	1:E:193:LYS:CD	2.33	0.41
1:E:390:ILE:HA	1:E:391:PRO:HD3	1.88	0.41
1:A:148:ASN:HD22	1:A:148:ASN:C	2.24	0.41
1:A:348:LEU:HD13	1:A:363:PHE:CE1	2.55	0.41
1:D:225:LYS:O	1:D:230:ALA:HB2	2.20	0.41
1:D:390:ILE:HA	1:D:391:PRO:HD3	1.90	0.41
1:B:47:TRP:HE3	1:B:59:ILE:HG22	1.85	0.41
1:C:110:THR:C	1:C:112:TYR:N	2.73	0.41
1:C:184:TYR:CZ	1:C:256:VAL:HG23	2.56	0.41
1:C:275:VAL:HG22	1:C:317:ALA:CB	2.49	0.41
1:C:394:ASP:C	1:C:397:PRO:HD2	2.41	0.41
1:D:203:LYS:O	1:D:204:GLY:O	2.39	0.41
1:D:434:LEU:C	1:D:434:LEU:HD23	2.41	0.41
1:F:83:PHE:CE2	1:F:85:GLY:HA2	2.56	0.41
1:F:148:ASN:HD22	1:F:150:MET:N	2.02	0.41
1:F:234:LEU:O	1:F:235:ALA:C	2.59	0.41
1:B:138:LEU:HD13	1:B:149:LEU:HD23	2.03	0.41
1:D:79:LEU:CD1	1:D:224:ILE:HG22	2.51	0.41
1:D:275:VAL:HG23	1:D:318:ARG:HA	2.03	0.41
1:F:14:CYS:HB3	1:F:65:VAL:HB	2.03	0.41
1:A:429:THR:O	1:A:429:THR:HG22	2.20	0.40
1:B:54:VAL:O	1:B:54:VAL:HG13	2.21	0.40
1:C:156:TYR:HB3	1:C:163:LEU:HD11	2.02	0.40
1:C:281:ARG:NH1	2:C:487:HOH:O	2.35	0.40
1:C:312:HIS:HD2	1:C:315:LEU:N	2.19	0.40
1:C:396:VAL:HG23	2:C:511:HOH:O	2.19	0.40
1:E:178:ALA:HB1	1:E:180:GLN:OE1	2.22	0.40
1:F:373:GLY:O	1:F:376:LEU:HB2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:84:HIS:ND1	1:A:87:ILE:HD12	2.37	0.40
1:D:151:GLN:HB3	2:D:515:HOH:O	2.22	0.40
1:D:227:ASP:O	1:D:228:ALA:C	2.60	0.40
1:E:354:ALA:HA	1:E:355:PRO:HD3	1.98	0.40
1:E:443:ILE:O	1:E:446:HIS:O	2.39	0.40
1:A:245:HIS:HD2	1:A:247:ASN:HB2	1.85	0.40
1:B:356:GLU:H	1:B:356:GLU:HG3	1.55	0.40
1:E:94:ARG:C	1:E:96:LEU:N	2.74	0.40
1:E:169:LYS:HA	1:E:170:PRO:HD3	1.78	0.40
1:E:181:ASP:OD1	1:E:185:ARG:NH1	2.54	0.40
1:E:337:LYS:HG3	1:E:338:GLU:H	1.87	0.40
1:F:101:THR:HB	1:F:165:THR:HG21	2.02	0.40
1:B:90:GLU:O	1:B:93:GLU:HB2	2.22	0.40
1:B:106:VAL:HG11	1:B:149:LEU:HD13	2.02	0.40
1:E:79:LEU:HD23	1:E:180:GLN:HE21	1.81	0.40
1:E:168:ILE:HG22	1:E:169:LYS:N	2.36	0.40
1:E:314:ASP:OD1	1:E:319:ASN:ND2	2.54	0.40
1:E:397:PRO:O	1:E:401:LYS:HG3	2.20	0.40
1:C:176:THR:HG22	1:C:177:VAL:N	2.35	0.40
1:C:208:ASP:OD1	1:C:209:VAL:HG13	2.21	0.40
1:F:80:MET:HE1	1:F:229:THR:HA	2.04	0.40
1:F:248:LEU:HD23	1:F:330:VAL:HB	2.03	0.40
1:F:292:LEU:HD21	1:F:444:ARG:CB	2.47	0.40
1:F:296:LEU:HD23	1:F:296:LEU:HA	1.92	0.40
1:F:351:LYS:HZ1	1:F:385:VAL:CG1	2.34	0.40
1:F:387:TYR:HB3	1:F:390:ILE:HD12	2.03	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	435/450 (97%)	403 (93%)	29 (7%)	3 (1%)	22	39
1	B	437/450 (97%)	405 (93%)	23 (5%)	9 (2%)	7	11
1	C	434/450 (96%)	386 (89%)	43 (10%)	5 (1%)	13	24
1	D	427/450 (95%)	376 (88%)	39 (9%)	12 (3%)	5	7
1	E	436/450 (97%)	388 (89%)	33 (8%)	15 (3%)	3	5
1	F	432/450 (96%)	351 (81%)	63 (15%)	18 (4%)	3	3
All	All	2601/2700 (96%)	2309 (89%)	230 (9%)	62 (2%)	6	9

All (62) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	112	TYR
1	D	123	GLU
1	D	204	GLY
1	D	228	ALA
1	D	230	ALA
1	E	279	ARG
1	F	359	ARG
1	F	361	LYS
1	A	339	ALA
1	A	395	VAL
1	B	75	THR
1	B	347	LYS
1	B	361	LYS
1	C	123	GLU
1	D	282	GLY
1	D	395	VAL
1	E	110	THR
1	E	174	GLU
1	E	280	SER
1	E	288	GLY
1	E	340	SER
1	E	341	SER
1	E	360	GLU
1	F	101	THR
1	F	109	SER
1	F	161	ASP
1	F	174	GLU
1	F	204	GLY
1	F	246	SER
1	F	392	LEU

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Mol	Chain	Res	Type
1	B	97	TYR
1	B	338	GLU
1	C	113	PRO
1	C	158	THR
1	D	84	HIS
1	D	99	PRO
1	F	99	PRO
1	F	391	PRO
1	A	282	GLY
1	B	73	ALA
1	B	178	ALA
1	D	160	ALA
1	D	259	LYS
1	E	359	ARG
1	E	392	LEU
1	F	125	LYS
1	F	405	MET
1	B	395	VAL
1	C	99	PRO
1	D	226	ASN
1	D	313	ARG
1	E	161	ASP
1	E	281	ARG
1	E	282	GLY
1	E	349	PRO
1	B	199	GLN
1	F	54	VAL
1	F	107	ARG
1	F	168	ILE
1	F	113	PRO
1	E	98	PRO
1	F	408	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	376/385 (98%)	356 (95%)	20 (5%)	22	43
1	B	377/385 (98%)	359 (95%)	18 (5%)	25	48
1	C	375/385 (97%)	360 (96%)	15 (4%)	31	56
1	D	371/385 (96%)	357 (96%)	14 (4%)	33	58
1	E	377/385 (98%)	364 (97%)	13 (3%)	37	63
1	F	373/385 (97%)	357 (96%)	16 (4%)	29	53
All	All	2249/2310 (97%)	2153 (96%)	96 (4%)	29	53

All (96) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	43	LYS
1	A	76	LYS
1	A	89	ARG
1	A	90	GLU
1	A	111	ASN
1	A	118	LEU
1	A	133	TYR
1	A	148	ASN
1	A	180	GLN
1	A	195	LEU
1	A	219	VAL
1	A	254	VAL
1	A	259	LYS
1	A	266	THR
1	A	283	ARG
1	A	338	GLU
1	A	347	LYS
1	A	356	GLU
1	A	367	SER
1	A	432	THR
1	B	54	VAL
1	B	56	ARG
1	B	66	GLN
1	B	72	LYS
1	B	86	LYS
1	B	125	LYS
1	B	132	MET
1	B	180	GLN
1	B	190	LEU
1	B	193	LYS

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Mol	Chain	Res	Type
1	B	205	GLU
1	B	206	PHE
1	B	234	LEU
1	B	326	ASN
1	B	335	LEU
1	B	337	LYS
1	B	356	GLU
1	B	361	LYS
1	C	89	ARG
1	C	112	TYR
1	C	125	LYS
1	C	163	LEU
1	C	164	CYS
1	C	191	ASN
1	C	195	LEU
1	C	222	LYS
1	C	281	ARG
1	C	283	ARG
1	C	289	ASP
1	C	356	GLU
1	C	367	SER
1	C	375	LEU
1	C	398	ARG
1	D	54	VAL
1	D	89	ARG
1	D	105	LEU
1	D	181	ASP
1	D	195	LEU
1	D	203	LYS
1	D	217	ASN
1	D	227	ASP
1	D	267	GLU
1	D	284	SER
1	D	315	LEU
1	D	356	GLU
1	D	393	LYS
1	D	398	ARG
1	E	25	GLU
1	E	86	LYS
1	E	132	MET
1	E	133	TYR
1	E	150	MET

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Mol	Chain	Res	Type
1	E	176	THR
1	E	234	LEU
1	E	286	LEU
1	E	318	ARG
1	E	376	LEU
1	E	394	ASP
1	E	404	LYS
1	E	432	THR
1	F	34	ASP
1	F	82	TRP
1	F	100	GLU
1	F	123	GLU
1	F	133	TYR
1	F	146	PHE
1	F	164	CYS
1	F	165	THR
1	F	194	GLU
1	F	206	PHE
1	F	223	CYS
1	F	244	ARG
1	F	258	GLU
1	F	356	GLU
1	F	368	ASP
1	F	392	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (47) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	128	HIS
1	A	148	ASN
1	A	180	GLN
1	A	226	ASN
1	A	245	HIS
1	A	247	ASN
1	A	446	HIS
1	B	63	ASN
1	B	91	GLN
1	B	111	ASN
1	B	191	ASN
1	B	231	GLN
1	B	245	HIS
1	B	247	ASN

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Mol	Chain	Res	Type
1	B	326	ASN
1	B	424	HIS
1	C	26	GLN
1	C	91	GLN
1	C	111	ASN
1	C	155	HIS
1	C	245	HIS
1	C	308	ASN
1	C	312	HIS
1	C	446	HIS
1	D	91	GLN
1	D	245	HIS
1	D	247	ASN
1	D	312	HIS
1	D	326	ASN
1	D	442	HIS
1	D	446	HIS
1	E	63	ASN
1	E	134	HIS
1	E	180	GLN
1	E	191	ASN
1	E	231	GLN
1	E	247	ASN
1	E	250	GLN
1	E	326	ASN
1	F	84	HIS
1	F	148	ASN
1	F	191	ASN
1	F	242	GLN
1	F	247	ASN
1	F	309	ASN
1	F	421	ASN
1	F	424	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

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, 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	439/450 (97%)	0.30	6 (1%) 75 77	23, 45, 79, 100	0
1	B	441/450 (98%)	0.36	6 (1%) 75 77	29, 48, 78, 95	0
1	C	438/450 (97%)	0.60	37 (8%) 11 11	31, 52, 111, 124	0
1	D	433/450 (96%)	0.56	34 (7%) 12 12	24, 50, 101, 118	0
1	E	440/450 (97%)	0.46	15 (3%) 45 48	31, 58, 91, 107	0
1	F	436/450 (96%)	1.03	71 (16%) 1 1	40, 74, 118, 136	0
All	All	2627/2700 (97%)	0.55	169 (6%) 19 20	23, 54, 103, 136	0

All (169) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	103	LEU	7.8
1	F	97	TYR	7.6
1	F	122	CYS	6.6
1	D	97	TYR	6.5
1	C	112	TYR	6.3
1	F	361	LYS	6.2
1	C	168	ILE	6.1
1	C	99	PRO	6.0
1	F	88	THR	5.9
1	F	392	LEU	5.8
1	F	278	LEU	5.8
1	F	87	ILE	5.7
1	F	174	GLU	5.7
1	E	75	THR	5.6
1	F	193	LYS	5.6
1	B	4	ILE	5.5
1	E	97	TYR	5.4
1	D	87	ILE	5.4
1	F	96	LEU	5.3

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Mol	Chain	Res	Type	RSRZ
1	C	90	GLU	5.2
1	D	96	LEU	5.2
1	C	121	SER	5.1
1	E	392	LEU	4.9
1	D	120	VAL	4.7
1	F	390	ILE	4.7
1	C	95	LEU	4.5
1	A	122	CYS	4.5
1	D	105	LEU	4.3
1	E	340	SER	4.3
1	F	352	TRP	4.2
1	C	122	CYS	4.2
1	F	121	SER	4.1
1	E	96	LEU	4.1
1	F	363	PHE	3.9
1	C	89	ARG	3.9
1	F	351	LYS	3.9
1	F	101	THR	3.8
1	C	126	VAL	3.8
1	D	122	CYS	3.8
1	C	120	VAL	3.8
1	F	349	PRO	3.8
1	F	387	TYR	3.8
1	D	107	ARG	3.7
1	F	75	THR	3.7
1	C	118	LEU	3.7
1	A	96	LEU	3.6
1	F	168	ILE	3.6
1	F	286	LEU	3.5
1	C	165	THR	3.4
1	F	116	TYR	3.4
1	C	96	LEU	3.4
1	F	274	LEU	3.3
1	A	87	ILE	3.3
1	F	175	GLY	3.3
1	F	94	ARG	3.3
1	F	125	LYS	3.3
1	F	383	GLY	3.3
1	C	97	TYR	3.3
1	F	83	PHE	3.2
1	F	112	TYR	3.2
1	D	260	GLY	3.2

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Mol	Chain	Res	Type	RSRZ
1	C	260	GLY	3.2
1	C	87	ILE	3.2
1	F	128	HIS	3.2
1	F	386	PRO	3.2
1	C	127	GLU	3.2
1	F	167	LEU	3.2
1	D	130	ARG	3.1
1	F	86	LYS	3.1
1	C	349	PRO	3.1
1	E	76	LYS	3.1
1	B	5	GLN	3.0
1	D	90	GLU	3.0
1	F	136	SER	3.0
1	C	109	SER	3.0
1	E	384	ARG	3.0
1	D	94	ARG	3.0
1	F	89	ARG	3.0
1	F	201	ILE	3.0
1	F	99	PRO	3.0
1	C	166	ARG	3.0
1	F	283	ARG	2.9
1	D	106	VAL	2.9
1	D	100	GLU	2.9
1	C	105	LEU	2.9
1	F	362	LYS	2.9
1	D	166	ARG	2.9
1	C	115	ASP	2.9
1	C	134	HIS	2.9
1	F	123	GLU	2.8
1	E	99	PRO	2.8
1	E	288	GLY	2.8
1	F	84	HIS	2.8
1	C	110	THR	2.7
1	B	348	LEU	2.7
1	E	278	LEU	2.7
1	F	184	TYR	2.7
1	C	119	CYS	2.7
1	D	168	ILE	2.7
1	F	370	TRP	2.7
1	C	106	VAL	2.6
1	C	92	ALA	2.6
1	F	394	ASP	2.6

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Mol	Chain	Res	Type	RSRZ
1	C	114	GLY	2.6
1	C	85	GLY	2.6
1	D	165	THR	2.6
1	A	99	PRO	2.6
1	D	118	LEU	2.5
1	D	156	TYR	2.5
1	A	95	LEU	2.5
1	C	123	GLU	2.5
1	C	113	PRO	2.5
1	C	131	ILE	2.5
1	D	85	GLY	2.5
1	E	341	SER	2.4
1	A	97	TYR	2.4
1	F	382	PHE	2.4
1	D	172	VAL	2.4
1	F	377	TRP	2.4
1	D	103	LEU	2.4
1	F	376	LEU	2.4
1	F	126	VAL	2.3
1	F	129	TYR	2.3
1	F	399	VAL	2.3
1	B	346	GLY	2.3
1	F	95	LEU	2.3
1	C	108	GLU	2.3
1	F	113	PRO	2.3
1	D	390	ILE	2.3
1	F	91	GLN	2.3
1	D	119	CYS	2.3
1	F	105	LEU	2.3
1	F	171	LYS	2.3
1	D	350	VAL	2.2
1	F	219	VAL	2.2
1	C	93	GLU	2.2
1	D	128	HIS	2.2
1	D	127	GLU	2.2
1	D	125	LYS	2.2
1	C	348	LEU	2.2
1	E	395	VAL	2.2
1	F	92	ALA	2.2
1	E	83	PHE	2.2
1	D	124	GLY	2.2
1	F	127	GLU	2.2

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Mol	Chain	Res	Type	RSRZ
1	F	401	LYS	2.2
1	F	110	THR	2.2
1	D	89	ARG	2.2
1	F	98	PRO	2.2
1	E	40	ALA	2.1
1	F	409	ASP	2.1
1	D	163	LEU	2.1
1	C	75	THR	2.1
1	D	359	ARG	2.1
1	F	197	LEU	2.1
1	F	427	ALA	2.1
1	D	403	TYR	2.1
1	F	190	LEU	2.1
1	F	315	LEU	2.0
1	C	393	LYS	2.0
1	E	362	LYS	2.0
1	B	266	THR	2.0
1	B	360	GLU	2.0
1	F	120	VAL	2.0
1	F	410	GLY	2.0
1	D	132	MET	2.0
1	F	106	VAL	2.0
1	D	167	LEU	2.0
1	F	380	TYR	2.0

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

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.