



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 12, 2026 – 02:49 AM UTC

PDB ID : 2D26 / pdb_00002d26
Title : Active site distortion is sufficient for proteinase inhibit second crystal structure of covalent serpin-proteinase complex
Authors : Dementiev, A.; Dobo, J.; Gettins, P.G.
Deposited on : 2005-09-03
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

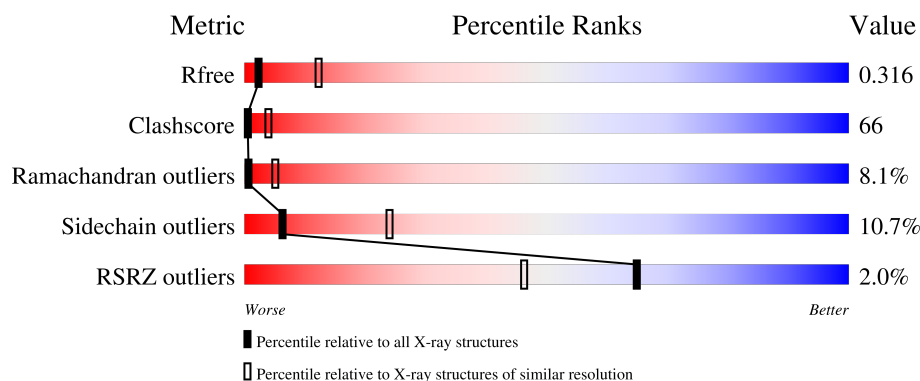
1 Overall quality at a glance

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))
R_{free}	180053	1169 (3.32-3.28)
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	358	31% 51% 11% 6%
2	B	36	6% 19% 42% 19% 17%
3	C	240	2% 31% 54% 8% 7%

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 4189 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 Alpha-1-antitrypsin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	336	Total	C	N	O	S	0	0	0
			2302	1474	394	429	5			

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	GLU	engineered mutation	UNP P01009
A	51	LEU	PHE	engineered mutation	UNP P01009
A	59	ALA	THR	engineered mutation	UNP P01009
A	68	ALA	THR	engineered mutation	UNP P01009
A	70	GLY	ALA	engineered mutation	UNP P01009
A	101	HIS	ARG	engineered mutation	UNP P01009
A	232	SER	CYS	engineered mutation	UNP P01009

- Molecule 2 is a protein called Alpha-1-antitrypsin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	30	Total	C	N	O	S	0	0	0
			221	148	34	38	1			

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	374	ILE	MET	engineered mutation	UNP P01009
B	381	ALA	SER	engineered mutation	UNP P01009
B	387	ARG	LYS	engineered mutation	UNP P01009

- Molecule 3 is a protein called Elastase-1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	223	Total	C	N	O	S	0	0	0
			1591	1001	288	292	10			

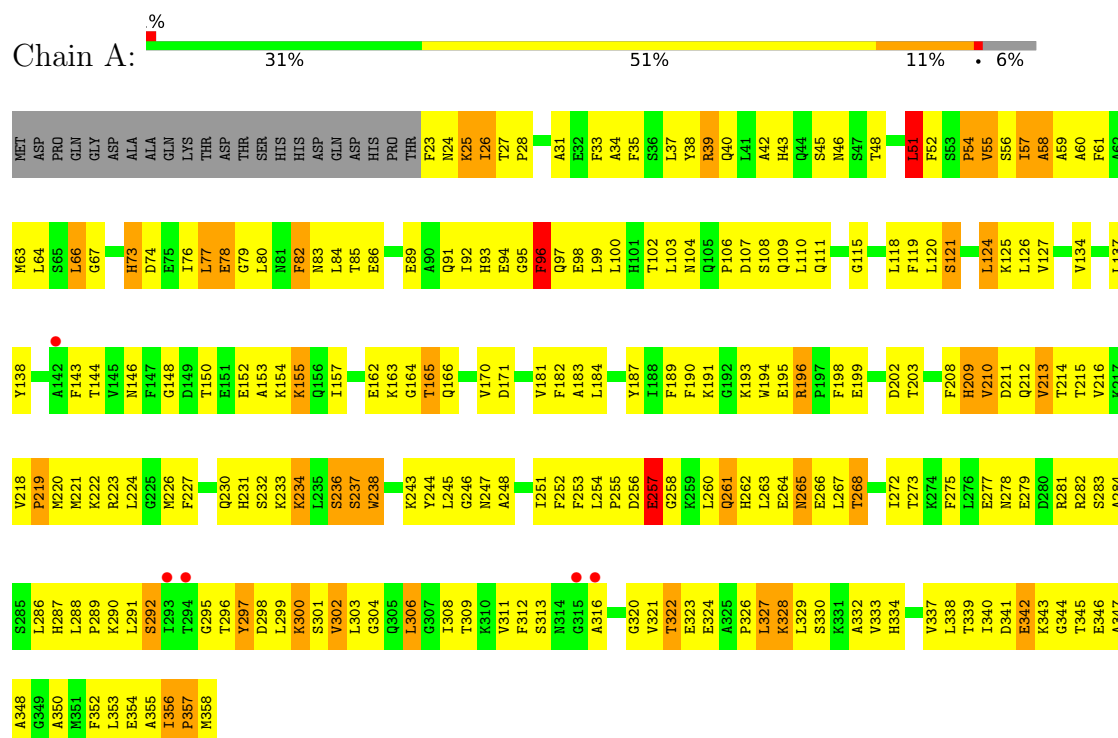
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	43	Total 43	O 43	0	0
4	B	3	Total 3	O 3	0	0
4	C	29	Total 29	O 29	0	0

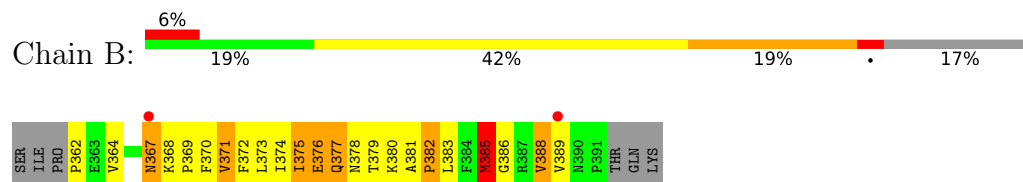
3 Residue-property plots

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.

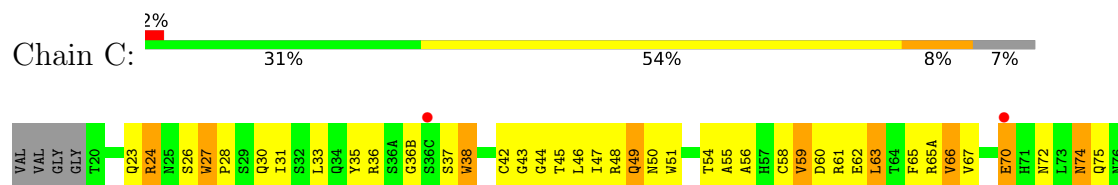
• Molecule 1: Alpha-1-antitrypsin

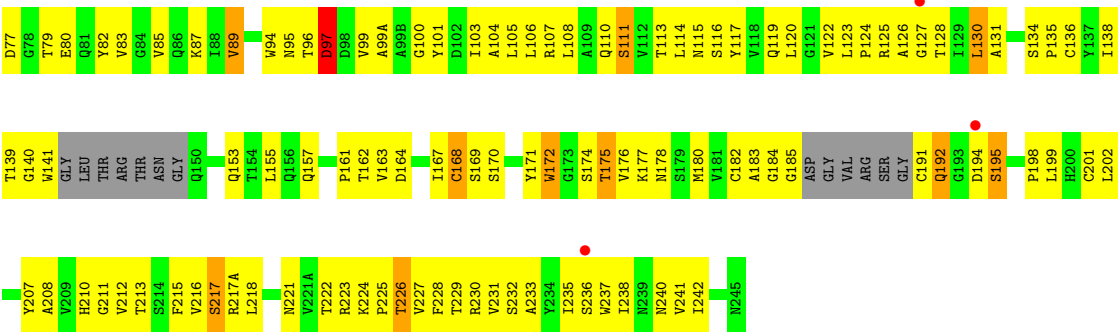


• Molecule 2: Alpha-1-antitrypsin



• Molecule 3: Elastase-1





4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	109.83Å 85.18Å 76.26Å 90.00° 121.01° 90.00°	Depositor
Resolution (Å)	50.00 – 3.30 50.00 – 3.30	Depositor EDS
% Data completeness (in resolution range)	(Not available) (50.00-3.30) 97.8 (50.00-3.30)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	0.50 (at 2.90Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.251 , 0.312 0.254 , 0.316	Depositor DCC
R_{free} test set	821 reflections (6.58%)	wwPDB-VP
Wilson B-factor (Å ²)	80.8	Xtriage
Anisotropy	0.373	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 204.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	4189	wwPDB-VP
Average B, all atoms (Å ²)	63.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.26% 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

5.1 Standard geometry

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.65	1/2353 (0.0%)	1.24	19/3222 (0.6%)
2	B	0.72	1/228 (0.4%)	1.25	2/311 (0.6%)
3	C	0.79	3/1628 (0.2%)	1.11	6/2229 (0.3%)
All	All	0.71	5/4209 (0.1%)	1.20	27/5762 (0.5%)

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	238	TRP	NE1-CE2	10.38	1.48	1.37
3	C	38	TRP	NE1-CE2	10.36	1.48	1.37
3	C	27	TRP	NE1-CE2	10.34	1.48	1.37
3	C	172	TRP	NE1-CE2	10.33	1.48	1.37
2	B	385	MET	C-N	-5.64	1.25	1.33

All (27) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	278	ASN	N-CA-C	-14.72	84.90	108.90
1	A	279	GLU	N-CA-CB	-12.48	94.40	111.00
1	A	279	GLU	N-CA-C	-11.07	100.50	114.56
1	A	278	ASN	CB-CA-C	-9.74	91.89	109.71
1	A	356	ILE	CA-C-N	8.32	130.24	119.84
1	A	356	ILE	C-N-CA	8.32	130.24	119.84
3	C	221	ASN	N-CA-C	-8.29	102.04	114.64
1	A	66	LEU	N-CA-C	-8.02	103.28	113.23
1	A	309	THR	N-CA-C	-7.88	104.14	114.31
1	A	60	ALA	N-CA-C	-7.82	103.34	113.12
1	A	196	ARG	CA-C-N	6.78	126.76	119.78
1	A	196	ARG	C-N-CA	6.78	126.76	119.78
2	B	375	ILE	N-CA-C	6.50	116.93	108.35
1	A	108	SER	N-CA-C	6.21	119.32	111.69
1	A	328	LYS	N-CA-C	6.17	118.55	109.24
3	C	226	THR	N-CA-C	-5.96	102.25	110.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	51	LEU	CB-CG-CD2	5.81	128.12	110.70
1	A	83	ASN	N-CA-C	5.72	119.11	110.64
1	A	243	LYS	N-CA-C	5.61	118.82	109.96
2	B	371	VAL	N-CA-C	5.35	115.60	108.11
3	C	153	GLN	N-CA-C	5.26	117.18	108.13
1	A	165	THR	N-CA-C	-5.24	107.06	112.93
3	C	116	SER	N-CA-C	-5.21	106.62	112.87
1	A	78	GLU	N-CA-C	-5.12	106.13	112.38
3	C	36	ARG	CD-NE-CZ	-5.12	117.24	124.40
1	A	163	LYS	N-CA-C	-5.04	107.14	113.28
3	C	125	ARG	CD-NE-CZ	-5.03	117.35	124.40

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	2302	0	1920	290	2
2	B	221	0	198	41	0
3	C	1591	0	1401	184	1
4	A	43	0	0	5	0
4	B	3	0	0	0	0
4	C	29	0	0	5	1
All	All	4189	0	3519	501	2

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 66.

All (501) 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:299:LEU:HB2	1:A:332:ALA:CB	1.54	1.37
1:A:299:LEU:CD1	1:A:332:ALA:HB1	1.57	1.33
3:C:122:VAL:O	3:C:208:ALA:HB1	1.43	1.16

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:45:SER:O	1:A:46:ASN:ND2	1.79	1.14
1:A:299:LEU:HB2	1:A:332:ALA:HB3	1.19	1.14
3:C:42:CYS:HA	3:C:195:SER:O	1.48	1.14
1:A:290:LYS:HE2	1:A:342:GLU:OE1	1.51	1.09
1:A:291:LEU:HD12	1:A:340:ILE:HD12	1.27	1.09
1:A:45:SER:C	1:A:46:ASN:HD22	1.57	1.09
1:A:255:PRO:HG3	1:A:260:LEU:HD13	1.32	1.08
1:A:299:LEU:HD12	1:A:332:ALA:CB	1.83	1.06
1:A:299:LEU:HB3	1:A:303:LEU:HG	1.38	1.05
1:A:221:MET:HG3	1:A:288:LEU:O	1.55	1.04
3:C:36(B):GLY:O	4:C:263:HOH:O	1.78	1.02
1:A:299:LEU:CB	1:A:332:ALA:CB	2.38	1.01
1:A:51:LEU:HG	1:A:51:LEU:O	1.50	1.00
1:A:299:LEU:CB	1:A:332:ALA:HB3	1.92	1.00
3:C:67:VAL:CG1	3:C:70:GLU:HG3	1.91	0.99
1:A:24:ASN:O	1:A:25:LYS:HG2	1.65	0.97
3:C:201:CYS:HB2	3:C:210:HIS:HD2	1.30	0.96
1:A:328:LYS:O	1:A:355:ALA:HA	1.67	0.95
1:A:327:LEU:HD23	1:A:327:LEU:H	1.29	0.94
3:C:216:VAL:HG12	3:C:226:THR:HG23	1.49	0.94
3:C:67:VAL:HG12	3:C:70:GLU:HG3	1.50	0.94
1:A:299:LEU:HB3	1:A:303:LEU:CG	1.99	0.92
1:A:302:VAL:HG13	1:A:303:LEU:N	1.82	0.92
1:A:226:MET:HA	1:A:283:SER:HA	1.50	0.92
1:A:238:TRP:HB2	1:A:254:LEU:HB3	1.51	0.91
3:C:28:PRO:HB2	3:C:119:GLN:H	1.36	0.91
3:C:122:VAL:HG13	3:C:208:ALA:HA	1.49	0.91
1:A:45:SER:C	1:A:46:ASN:ND2	2.25	0.90
1:A:297:TYR:CD1	1:A:297:TYR:N	2.40	0.89
1:A:264:GLU:HG3	1:A:265:ASN:ND2	1.88	0.88
3:C:122:VAL:O	3:C:208:ALA:CB	2.21	0.88
3:C:55:ALA:HB3	3:C:58:CYS:SG	2.14	0.87
1:A:299:LEU:HD12	1:A:332:ALA:HB1	0.88	0.86
3:C:72:ASN:ND2	3:C:75:GLN:HG2	1.91	0.85
1:A:302:VAL:CG1	1:A:303:LEU:H	1.89	0.85
1:A:302:VAL:CG1	1:A:303:LEU:N	2.39	0.84
1:A:255:PRO:HG3	1:A:260:LEU:CD1	2.06	0.84
1:A:290:LYS:HE2	1:A:342:GLU:CD	2.03	0.84
1:A:103:LEU:HD11	2:B:376:GLU:HG3	1.60	0.83
2:B:376:GLU:HB3	2:B:379:THR:O	1.79	0.83
3:C:136:CYS:HB3	3:C:199:LEU:HD11	1.61	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:42:CYS:CA	3:C:195:SER:O	2.27	0.82
1:A:255:PRO:CG	1:A:260:LEU:HD13	2.09	0.82
1:A:299:LEU:CD1	1:A:332:ALA:CB	2.51	0.81
2:B:369:PRO:HA	2:B:388:VAL:O	1.81	0.81
3:C:67:VAL:HG11	3:C:70:GLU:HG3	1.63	0.81
1:A:290:LYS:CE	1:A:342:GLU:OE1	2.29	0.80
1:A:216:VAL:HA	4:A:396:HOH:O	1.81	0.80
1:A:244:TYR:HB2	1:A:248:ALA:HB3	1.64	0.79
1:A:194:TRP:NE1	1:A:344:GLY:HA2	1.97	0.78
3:C:217(A):ARG:HD2	3:C:217(A):ARG:N	1.99	0.78
1:A:221:MET:CG	1:A:288:LEU:O	2.31	0.77
1:A:109:GLN:NE2	1:A:245:LEU:HD13	2.00	0.77
3:C:124:PRO:O	3:C:235:ILE:CD1	2.33	0.76
1:A:299:LEU:CG	1:A:332:ALA:HB1	2.15	0.76
3:C:122:VAL:HG13	3:C:208:ALA:CA	2.15	0.76
3:C:72:ASN:ND2	3:C:75:GLN:CG	2.49	0.76
1:A:231:HIS:HB2	1:A:238:TRP:CZ3	2.21	0.75
1:A:299:LEU:HB3	1:A:303:LEU:CD1	2.17	0.75
1:A:24:ASN:O	1:A:25:LYS:CG	2.36	0.74
1:A:299:LEU:HA	1:A:302:VAL:HG12	1.69	0.74
3:C:72:ASN:HD22	3:C:75:GLN:CG	2.01	0.74
1:A:299:LEU:HB2	1:A:332:ALA:HB2	1.64	0.74
3:C:33:LEU:HD12	3:C:66:VAL:HG12	1.70	0.73
1:A:299:LEU:O	1:A:300:LYS:C	2.32	0.73
2:B:379:THR:O	2:B:381:ALA:N	2.19	0.72
3:C:230:ARG:CZ	3:C:233:ALA:HB2	2.20	0.72
3:C:230:ARG:NE	3:C:233:ALA:HB2	2.05	0.72
3:C:63:LEU:HD12	3:C:63:LEU:H	1.54	0.71
1:A:296:THR:C	1:A:297:TYR:CG	2.67	0.71
1:A:327:LEU:H	1:A:327:LEU:CD2	2.03	0.71
1:A:219:PRO:HG2	1:A:290:LYS:HB2	1.73	0.71
1:A:265:ASN:N	1:A:265:ASN:HD22	1.87	0.70
3:C:171:TYR:HA	3:C:223:ARG:O	1.92	0.70
1:A:203:THR:HG23	1:A:221:MET:HA	1.74	0.70
2:B:377:GLN:HE21	2:B:377:GLN:CA	2.02	0.70
1:A:120:LEU:O	1:A:144:THR:HA	1.92	0.70
1:A:291:LEU:O	1:A:292:SER:HB2	1.92	0.69
1:A:124:LEU:HG	1:A:125:LYS:N	2.06	0.69
1:A:256:ASP:O	1:A:258:GLY:N	2.26	0.69
1:A:311:VAL:HG22	1:A:329:LEU:CB	2.23	0.69
3:C:23:GLN:HB2	3:C:26:SER:OG	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:80:LEU:HD12	1:A:80:LEU:O	1.93	0.69
1:A:254:LEU:HD11	2:B:368:LYS:HE2	1.75	0.68
3:C:74:ASN:C	3:C:74:ASN:OD1	2.36	0.68
1:A:73:HIS:HE2	1:A:89:GLU:CD	2.02	0.68
3:C:140:GLY:O	3:C:155:LEU:HD12	1.93	0.68
3:C:23:GLN:O	3:C:24:ARG:C	2.36	0.68
1:A:291:LEU:HD12	1:A:340:ILE:CD1	2.17	0.68
3:C:172:TRP:HB3	3:C:176:VAL:HG23	1.75	0.68
1:A:184:LEU:HD22	1:A:353:LEU:HD12	1.74	0.67
3:C:211:GLY:HA2	3:C:231:VAL:HG13	1.76	0.67
1:A:27:THR:N	1:A:28:PRO:HD2	2.07	0.67
1:A:51:LEU:O	1:A:51:LEU:CG	2.35	0.67
3:C:124:PRO:HB2	3:C:128:THR:HG21	1.77	0.67
1:A:238:TRP:HD1	1:A:254:LEU:HD23	1.60	0.66
3:C:130:LEU:HD13	3:C:162:THR:HG21	1.77	0.66
1:A:54:PRO:O	1:A:55:VAL:C	2.37	0.66
1:A:39:ARG:HH12	1:A:265:ASN:HA	1.61	0.66
1:A:226:MET:HE2	1:A:281:ARG:HB2	1.77	0.66
3:C:124:PRO:HG3	3:C:210:HIS:ND1	2.10	0.66
1:A:26:ILE:HB	1:A:82:PHE:CZ	2.31	0.65
1:A:247:ASN:O	2:B:377:GLN:HB2	1.96	0.65
3:C:104:ALA:O	3:C:105:LEU:HD23	1.97	0.65
1:A:223:ARG:HD3	1:A:227:PHE:CZ	2.32	0.64
1:A:301:SER:O	1:A:302:VAL:C	2.40	0.64
1:A:313:SER:C	1:A:328:LYS:HZ2	2.06	0.64
1:A:61:PHE:CZ	1:A:303:LEU:HD13	2.33	0.64
3:C:178:ASN:O	3:C:230:ARG:HD3	1.98	0.64
2:B:376:GLU:OE2	2:B:378:ASN:HB2	1.98	0.64
1:A:265:ASN:ND2	1:A:265:ASN:N	2.44	0.63
3:C:167:ILE:HG23	3:C:171:TYR:CZ	2.33	0.63
3:C:72:ASN:HD22	3:C:75:GLN:HG2	1.59	0.63
1:A:103:LEU:CD1	2:B:376:GLU:HG3	2.28	0.63
1:A:341:ASP:OD1	1:A:343:LYS:N	2.32	0.63
3:C:122:VAL:C	3:C:208:ALA:HB1	2.23	0.63
2:B:369:PRO:HB3	2:B:389:VAL:HG22	1.79	0.63
1:A:110:LEU:HD11	1:A:190:PHE:HE1	1.63	0.63
3:C:47:ILE:HA	4:C:252:HOH:O	1.99	0.63
3:C:141:TRP:H	3:C:194:ASP:CB	2.12	0.63
3:C:172:TRP:CB	3:C:176:VAL:HG23	2.28	0.63
1:A:230:GLN:O	1:A:238:TRP:HE3	1.82	0.62
1:A:296:THR:C	1:A:297:TYR:CD1	2.78	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:313:SER:O	1:A:328:LYS:HE3	1.99	0.62
1:A:261:GLN:CD	1:A:261:GLN:H	2.08	0.61
2:B:376:GLU:HB2	2:B:383:LEU:HD21	1.82	0.61
1:A:119:PHE:CD2	1:A:143:PHE:HB2	2.35	0.61
1:A:119:PHE:HA	1:A:143:PHE:O	2.01	0.61
1:A:313:SER:C	1:A:328:LYS:NZ	2.59	0.61
1:A:224:LEU:HD12	1:A:284:ALA:O	2.01	0.61
1:A:275:PHE:C	1:A:277:GLU:H	2.09	0.61
2:B:376:GLU:OE1	2:B:377:GLN:N	2.34	0.61
3:C:49:GLN:HG2	3:C:114:LEU:HD21	1.82	0.61
1:A:26:ILE:C	1:A:26:ILE:HD12	2.26	0.60
1:A:57:ILE:O	1:A:59:ALA:N	2.32	0.60
3:C:174:SER:O	3:C:175:THR:C	2.42	0.60
3:C:47:ILE:O	3:C:48:ARG:HG3	2.02	0.60
3:C:194:ASP:O	3:C:195:SER:C	2.44	0.60
1:A:253:PHE:O	2:B:370:PHE:HB2	2.01	0.60
1:A:230:GLN:O	1:A:238:TRP:CE3	2.55	0.60
1:A:194:TRP:CD1	1:A:344:GLY:HA2	2.37	0.60
3:C:185:GLY:CA	3:C:225:PRO:HB3	2.31	0.60
1:A:233:LYS:O	1:A:234:LYS:C	2.43	0.60
1:A:299:LEU:CG	1:A:332:ALA:CB	2.78	0.60
1:A:33:PHE:CE2	1:A:58:ALA:HB2	2.36	0.60
1:A:220:MET:HA	1:A:289:PRO:HA	1.83	0.60
1:A:198:PHE:HB2	1:A:342:GLU:HA	1.82	0.60
1:A:63:MET:HE3	1:A:184:LEU:HD11	1.84	0.59
1:A:184:LEU:HD22	1:A:353:LEU:CD1	2.32	0.59
2:B:377:GLN:HA	2:B:377:GLN:NE2	2.17	0.59
3:C:44:GLY:HA3	3:C:54:THR:HG22	1.84	0.59
1:A:221:MET:HE3	1:A:288:LEU:CB	2.33	0.59
3:C:124:PRO:HB3	3:C:210:HIS:CE1	2.37	0.59
1:A:301:SER:O	1:A:304:GLY:N	2.36	0.58
3:C:215:PHE:CZ	3:C:227:VAL:HG11	2.38	0.58
3:C:82:TYR:N	3:C:82:TYR:CD2	2.71	0.58
3:C:122:VAL:HG13	3:C:208:ALA:CB	2.34	0.58
1:A:272:ILE:O	1:A:275:PHE:N	2.37	0.58
3:C:126:ALA:HB1	4:C:248:HOH:O	2.03	0.58
3:C:167:ILE:HG22	3:C:168:CYS:N	2.18	0.58
1:A:26:ILE:HB	1:A:82:PHE:HZ	1.67	0.58
1:A:64:LEU:HD22	1:A:76:ILE:CD1	2.34	0.58
2:B:379:THR:C	2:B:381:ALA:H	2.09	0.58
3:C:31:ILE:HB	3:C:44:GLY:O	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:37:SER:OG	4:C:274:HOH:O	2.17	0.57
3:C:72:ASN:HD22	3:C:75:GLN:CD	2.13	0.57
1:A:298:ASP:HA	1:A:332:ALA:O	2.05	0.57
3:C:122:VAL:HG22	3:C:208:ALA:HB2	1.87	0.57
1:A:31:ALA:O	1:A:34:ALA:HB3	2.05	0.57
3:C:96:THR:O	3:C:97:ASP:C	2.47	0.57
3:C:138:ILE:HG23	3:C:138:ILE:O	2.04	0.57
2:B:377:GLN:CA	2:B:377:GLN:NE2	2.68	0.57
1:A:342:GLU:CD	1:A:342:GLU:H	2.13	0.57
3:C:70:GLU:HG2	3:C:80:GLU:HG2	1.86	0.56
3:C:72:ASN:C	3:C:72:ASN:OD1	2.48	0.56
1:A:260:LEU:O	1:A:262:HIS:N	2.37	0.56
1:A:80:LEU:HD12	1:A:82:PHE:HB2	1.88	0.56
1:A:208:PHE:O	1:A:210:VAL:N	2.37	0.56
3:C:27:TRP:CE2	3:C:139:THR:HG21	2.39	0.56
3:C:58:CYS:C	3:C:60:ASP:H	2.13	0.56
3:C:161:PRO:O	3:C:184:GLY:N	2.37	0.56
3:C:27:TRP:NE1	3:C:139:THR:HG21	2.21	0.56
1:A:184:LEU:HD23	1:A:184:LEU:C	2.31	0.56
3:C:183:ALA:O	3:C:225:PRO:HB2	2.05	0.56
1:A:226:MET:CA	1:A:283:SER:HA	2.31	0.56
3:C:123:LEU:HD12	3:C:123:LEU:N	2.20	0.56
3:C:135:PRO:O	3:C:136:CYS:SG	2.64	0.56
1:A:38:TYR:C	1:A:40:GLN:H	2.14	0.55
1:A:66:LEU:HD21	1:A:138:TYR:CE1	2.41	0.55
1:A:184:LEU:HB3	1:A:353:LEU:HB2	1.88	0.55
1:A:302:VAL:HG12	1:A:303:LEU:H	1.66	0.55
2:B:369:PRO:CB	2:B:389:VAL:HA	2.36	0.55
3:C:31:ILE:HD11	3:C:46:LEU:HD13	1.88	0.55
3:C:35:TYR:CB	3:C:63:LEU:HD23	2.36	0.55
1:A:39:ARG:NH1	1:A:265:ASN:HA	2.21	0.55
1:A:264:GLU:C	1:A:265:ASN:HD22	2.14	0.55
3:C:124:PRO:HG2	3:C:232:SER:HB3	1.88	0.55
1:A:110:LEU:HD11	1:A:190:PHE:CE1	2.42	0.55
1:A:118:LEU:HD12	1:A:182:PHE:CE1	2.41	0.55
1:A:299:LEU:O	1:A:301:SER:N	2.39	0.55
1:A:210:VAL:CG2	1:A:216:VAL:HG22	2.37	0.55
3:C:201:CYS:HB2	3:C:210:HIS:CD2	2.23	0.55
1:A:110:LEU:HB2	1:A:246:GLY:HA3	1.88	0.54
1:A:209:HIS:HB2	2:B:367:ASN:O	2.07	0.54
1:A:221:MET:CB	1:A:288:LEU:O	2.55	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:168:CYS:HB3	3:C:176:VAL:HG11	1.88	0.54
1:A:92:ILE:O	1:A:96:PHE:HD2	1.90	0.54
1:A:308:ILE:HG22	1:A:308:ILE:O	2.06	0.54
3:C:61:ARG:HB3	3:C:63:LEU:CD1	2.37	0.54
3:C:185:GLY:HA3	3:C:225:PRO:HB3	1.89	0.54
3:C:236:SER:O	3:C:240:ASN:ND2	2.41	0.54
1:A:61:PHE:CZ	1:A:303:LEU:CD1	2.91	0.54
3:C:33:LEU:CD1	3:C:66:VAL:HG12	2.36	0.54
1:A:327:LEU:HD23	1:A:327:LEU:N	2.09	0.54
3:C:51:TRP:CZ2	3:C:107:ARG:HD3	2.43	0.54
1:A:98:GLU:O	1:A:102:THR:HG22	2.07	0.54
1:A:110:LEU:HB2	1:A:245:LEU:O	2.08	0.54
1:A:295:GLY:HA3	1:A:297:TYR:OH	2.07	0.54
3:C:46:LEU:HD23	3:C:119:GLN:O	2.08	0.54
1:A:67:GLY:HA2	1:A:320:GLY:HA3	1.89	0.54
1:A:77:LEU:O	1:A:80:LEU:HG	2.08	0.54
3:C:163:VAL:N	3:C:182:CYS:O	2.41	0.54
1:A:251:ILE:HG22	1:A:253:PHE:CE1	2.42	0.54
1:A:260:LEU:C	1:A:262:HIS:N	2.65	0.54
3:C:72:ASN:ND2	3:C:75:GLN:HB3	2.22	0.54
3:C:85:VAL:HG12	3:C:108:LEU:HD23	1.89	0.54
3:C:30:GLN:HE22	3:C:198:PRO:CD	2.21	0.54
3:C:44:GLY:H	3:C:198:PRO:HD3	1.72	0.54
1:A:234:LYS:O	1:A:262:HIS:CE1	2.61	0.54
1:A:327:LEU:CD2	1:A:327:LEU:N	2.70	0.54
3:C:161:PRO:O	3:C:183:ALA:HA	2.07	0.54
1:A:208:PHE:CE1	2:B:368:LYS:HA	2.43	0.53
1:A:299:LEU:HB3	1:A:303:LEU:HD12	1.91	0.53
1:A:121:SER:O	1:A:124:LEU:HB2	2.08	0.53
1:A:339:THR:O	1:A:345:THR:HG23	2.08	0.53
1:A:64:LEU:O	1:A:64:LEU:HD23	2.09	0.53
1:A:119:PHE:CE1	1:A:157:ILE:HG12	2.43	0.53
1:A:134:VAL:O	1:A:138:TYR:HB2	2.08	0.53
1:A:326:PRO:O	1:A:357:PRO:HA	2.08	0.53
3:C:72:ASN:ND2	3:C:75:GLN:CB	2.72	0.53
3:C:94:TRP:CH2	3:C:99:VAL:HG23	2.44	0.53
1:A:257:GLU:OE1	1:A:257:GLU:N	2.42	0.53
1:A:261:GLN:O	1:A:264:GLU:HG2	2.09	0.53
3:C:66:VAL:HG22	3:C:83:VAL:HG13	1.90	0.53
1:A:124:LEU:CG	1:A:125:LYS:N	2.72	0.53
1:A:38:TYR:C	1:A:40:GLN:N	2.67	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:290:LYS:HE2	1:A:342:GLU:OE2	2.09	0.52
2:B:369:PRO:HB3	2:B:389:VAL:HA	1.91	0.52
3:C:122:VAL:CG1	3:C:208:ALA:HA	2.33	0.52
3:C:140:GLY:O	3:C:155:LEU:HA	2.10	0.52
1:A:184:LEU:HB3	1:A:353:LEU:HD12	1.91	0.52
3:C:167:ILE:HG23	3:C:171:TYR:CE2	2.44	0.52
1:A:308:ILE:O	1:A:312:PHE:HD2	1.92	0.52
2:B:388:VAL:O	2:B:388:VAL:HG12	2.09	0.52
1:A:73:HIS:ND1	1:A:73:HIS:C	2.68	0.52
1:A:212:GLN:O	1:A:213:VAL:CB	2.56	0.52
1:A:84:LEU:O	1:A:86:GLU:N	2.43	0.51
3:C:31:ILE:HD11	3:C:46:LEU:CD1	2.41	0.51
1:A:299:LEU:HD13	1:A:303:LEU:HD11	1.93	0.51
1:A:115:GLY:HA3	1:A:187:TYR:CE2	2.46	0.51
2:B:379:THR:O	2:B:379:THR:OG1	2.29	0.51
2:B:383:LEU:N	2:B:383:LEU:HD22	2.26	0.51
1:A:63:MET:HE3	1:A:184:LEU:CD1	2.41	0.51
1:A:247:ASN:C	2:B:377:GLN:HB2	2.36	0.51
1:A:328:LYS:N	1:A:356:ILE:O	2.43	0.51
1:A:260:LEU:O	1:A:261:GLN:C	2.53	0.51
1:A:261:GLN:H	1:A:261:GLN:NE2	2.08	0.51
1:A:38:TYR:O	1:A:40:GLN:N	2.44	0.51
3:C:94:TRP:HB2	3:C:101:TYR:O	2.10	0.51
1:A:26:ILE:HG12	1:A:95:GLY:O	2.11	0.50
3:C:191:CYS:SG	3:C:192:GLN:HG2	2.51	0.50
1:A:153:ALA:O	1:A:155:LYS:N	2.38	0.50
1:A:223:ARG:HD3	1:A:227:PHE:HZ	1.76	0.50
1:A:226:MET:HA	1:A:283:SER:CA	2.34	0.50
3:C:61:ARG:HB3	3:C:63:LEU:HD12	1.92	0.50
3:C:72:ASN:OD1	3:C:74:ASN:N	2.44	0.50
3:C:124:PRO:O	3:C:235:ILE:HD11	2.10	0.50
1:A:165:THR:HA	1:A:189:PHE:HB2	1.94	0.50
1:A:313:SER:O	1:A:328:LYS:CE	2.59	0.50
1:A:337:VAL:CG2	1:A:348:ALA:HB3	2.42	0.50
3:C:48:ARG:O	3:C:50:ASN:N	2.44	0.50
3:C:235:ILE:O	3:C:236:SER:C	2.55	0.50
2:B:374:ILE:C	2:B:375:ILE:HG13	2.37	0.50
3:C:168:CYS:SG	3:C:176:VAL:HG21	2.52	0.50
1:A:35:PHE:CD1	2:B:385:MET:HE1	2.47	0.49
1:A:236:SER:O	1:A:237:SER:CB	2.59	0.49
1:A:333:VAL:HB	1:A:352:PHE:HB3	1.92	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:35:PHE:O	1:A:39:ARG:N	2.30	0.49
1:A:268:THR:O	1:A:272:ILE:HG13	2.12	0.49
1:A:273:THR:HG22	1:A:277:GLU:OE2	2.12	0.49
3:C:94:TRP:HH2	3:C:99:VAL:HG23	1.75	0.49
3:C:171:TYR:N	3:C:171:TYR:CD1	2.81	0.49
3:C:201:CYS:O	3:C:207:TYR:HA	2.11	0.49
1:A:233:LYS:O	1:A:236:SER:N	2.45	0.49
1:A:226:MET:HE2	1:A:281:ARG:CB	2.40	0.49
1:A:26:ILE:HD12	1:A:26:ILE:O	2.12	0.49
1:A:221:MET:O	1:A:287:HIS:HA	2.11	0.49
1:A:64:LEU:HD23	1:A:64:LEU:C	2.38	0.49
3:C:48:ARG:CD	3:C:242:ILE:HD12	2.43	0.49
1:A:251:ILE:HG22	1:A:253:PHE:CZ	2.47	0.49
3:C:35:TYR:CB	3:C:63:LEU:CD2	2.90	0.49
3:C:100:GLY:O	3:C:101:TYR:HB2	2.13	0.49
3:C:113:THR:HA	4:C:259:HOH:O	2.12	0.49
1:A:338:LEU:HD12	1:A:347:ALA:HB2	1.96	0.48
3:C:115:ASN:C	3:C:117:TYR:H	2.19	0.48
1:A:27:THR:H	1:A:28:PRO:HD2	1.75	0.48
1:A:193:LYS:O	1:A:244:TYR:HA	2.13	0.48
1:A:223:ARG:CD	1:A:227:PHE:HZ	2.27	0.48
1:A:299:LEU:CB	1:A:303:LEU:CD1	2.91	0.48
3:C:59:VAL:HG11	3:C:106:LEU:CD2	2.42	0.48
1:A:35:PHE:CE1	2:B:385:MET:HE1	2.48	0.48
1:A:37:LEU:O	1:A:37:LEU:HD12	2.14	0.48
1:A:91:GLN:O	1:A:92:ILE:C	2.55	0.48
1:A:304:GLY:C	1:A:306:LEU:N	2.71	0.48
1:A:330:SER:CB	1:A:354:GLU:HG2	2.43	0.48
1:A:55:VAL:O	1:A:56:SER:C	2.55	0.48
3:C:38:TRP:CE3	3:C:65(A):ARG:HG2	2.49	0.48
2:B:369:PRO:HG3	2:B:389:VAL:O	2.14	0.47
3:C:110:GLN:C	3:C:111:SER:O	2.57	0.47
3:C:128:THR:O	3:C:128:THR:HG23	2.14	0.47
1:A:231:HIS:HB2	1:A:238:TRP:CE3	2.49	0.47
3:C:123:LEU:N	3:C:123:LEU:CD1	2.77	0.47
3:C:163:VAL:HB	3:C:182:CYS:HB2	1.95	0.47
3:C:230:ARG:HH21	3:C:233:ALA:HA	1.79	0.47
1:A:48:THR:CB	4:A:362:HOH:O	2.63	0.47
1:A:221:MET:SD	1:A:341:ASP:C	2.97	0.47
2:B:377:GLN:HE21	2:B:377:GLN:HA	1.69	0.47
3:C:99:VAL:HG13	3:C:99(A):ALA:N	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:76:ILE:HG13	1:A:76:ILE:O	2.14	0.47
1:A:181:VAL:N	1:A:355:ALA:O	2.48	0.47
1:A:253:PHE:HD1	2:B:371:VAL:O	1.98	0.47
2:B:377:GLN:HE21	2:B:377:GLN:N	2.12	0.47
2:B:379:THR:C	2:B:381:ALA:N	2.71	0.47
3:C:177:LYS:HB2	3:C:180:MET:HE3	1.95	0.47
3:C:192:GLN:HE21	3:C:192:GLN:HB3	1.37	0.47
1:A:208:PHE:CD1	1:A:208:PHE:C	2.92	0.47
1:A:221:MET:N	1:A:288:LEU:O	2.38	0.46
1:A:162:GLU:CB	1:A:170:VAL:HA	2.46	0.46
1:A:322:THR:CG2	1:A:327:LEU:HD22	2.46	0.46
3:C:141:TRP:CD1	3:C:155:LEU:N	2.83	0.46
3:C:172:TRP:CB	3:C:176:VAL:CG2	2.92	0.46
1:A:77:LEU:C	1:A:79:GLY:N	2.72	0.46
3:C:99(A):ALA:O	3:C:180:MET:HE1	2.16	0.46
1:A:238:TRP:CD1	1:A:254:LEU:HD23	2.45	0.46
3:C:115:ASN:C	3:C:117:TYR:N	2.69	0.46
1:A:183:ALA:HA	1:A:353:LEU:O	2.15	0.46
1:A:203:THR:HG23	1:A:221:MET:CA	2.45	0.46
1:A:299:LEU:CB	1:A:303:LEU:HG	2.27	0.46
3:C:67:VAL:HG11	3:C:70:GLU:CG	2.39	0.46
1:A:208:PHE:HB3	1:A:216:VAL:HG23	1.97	0.46
3:C:218:LEU:N	3:C:218:LEU:HD22	2.31	0.46
1:A:124:LEU:HG	1:A:125:LYS:H	1.77	0.46
1:A:182:PHE:HB3	1:A:355:ALA:HB3	1.98	0.46
3:C:99(A):ALA:HB1	3:C:175:THR:HG23	1.97	0.46
3:C:232:SER:HA	3:C:235:ILE:HG13	1.98	0.46
1:A:57:ILE:C	1:A:59:ALA:H	2.23	0.45
1:A:25:LYS:HA	4:A:400:HOH:O	2.16	0.45
1:A:191:LYS:HA	1:A:346:GLU:HA	1.99	0.45
1:A:218:VAL:O	1:A:220:MET:N	2.49	0.45
1:A:299:LEU:CA	1:A:332:ALA:HB3	2.43	0.45
3:C:72:ASN:C	3:C:74:ASN:H	2.24	0.45
1:A:52:PHE:CD1	1:A:52:PHE:N	2.85	0.45
1:A:267:LEU:HA	1:A:267:LEU:HD23	1.79	0.45
1:A:52:PHE:CZ	2:B:385:MET:HG2	2.52	0.45
1:A:194:TRP:C	1:A:196:ARG:N	2.73	0.45
3:C:77:ASP:C	3:C:79:THR:H	2.23	0.45
3:C:99(A):ALA:CB	3:C:175:THR:HG23	2.47	0.45
1:A:150:THR:C	1:A:152:GLU:H	2.24	0.45
3:C:72:ASN:CG	3:C:75:GLN:HG2	2.41	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:97:GLN:HB3	1:A:137:LEU:O	2.16	0.45
1:A:299:LEU:N	1:A:332:ALA:HB3	2.32	0.45
1:A:73:HIS:NE2	1:A:89:GLU:OE2	2.48	0.45
1:A:100:LEU:O	1:A:104:ASN:ND2	2.49	0.45
1:A:126:LEU:O	1:A:127:VAL:C	2.60	0.45
1:A:299:LEU:HA	1:A:302:VAL:CG1	2.42	0.44
1:A:25:LYS:C	1:A:27:THR:N	2.73	0.44
1:A:39:ARG:HG3	1:A:39:ARG:HH11	1.82	0.44
1:A:111:GLN:O	1:A:190:PHE:HA	2.17	0.44
1:A:264:GLU:HG3	1:A:265:ASN:N	2.31	0.44
2:B:369:PRO:HG3	2:B:389:VAL:HA	2.00	0.44
3:C:49:GLN:CG	3:C:114:LEU:HD21	2.46	0.44
3:C:124:PRO:HB3	3:C:210:HIS:HE1	1.82	0.44
3:C:130:LEU:HD22	3:C:134:SER:CB	2.47	0.44
1:A:78:GLU:C	1:A:80:LEU:H	2.24	0.44
1:A:164:GLY:C	1:A:166:GLN:H	2.25	0.44
1:A:194:TRP:CE2	1:A:344:GLY:HA2	2.52	0.44
1:A:299:LEU:CB	1:A:303:LEU:HD12	2.48	0.44
3:C:139:THR:HA	3:C:157:GLN:HA	2.00	0.44
1:A:25:LYS:C	1:A:27:THR:H	2.26	0.44
1:A:214:THR:HG22	1:A:215:THR:N	2.32	0.44
1:A:262:HIS:O	1:A:266:GLU:CB	2.64	0.44
3:C:48:ARG:HD2	3:C:242:ILE:HD12	1.99	0.44
3:C:130:LEU:HD22	3:C:134:SER:HB2	1.98	0.44
1:A:26:ILE:HB	1:A:82:PHE:CE2	2.53	0.44
1:A:237:SER:HA	1:A:254:LEU:O	2.17	0.44
1:A:255:PRO:HB3	1:A:260:LEU:HA	1.98	0.44
3:C:216:VAL:HG12	3:C:226:THR:CG2	2.32	0.44
3:C:235:ILE:C	3:C:237:TRP:N	2.73	0.44
1:A:25:LYS:O	1:A:26:ILE:HG13	2.18	0.44
1:A:82:PHE:HE1	1:A:96:PHE:HE2	1.65	0.44
3:C:167:ILE:O	3:C:168:CYS:C	2.60	0.44
1:A:40:GLN:C	1:A:42:ALA:N	2.76	0.44
1:A:210:VAL:HG12	1:A:211:ASP:N	2.32	0.44
3:C:89:VAL:HG13	3:C:105:LEU:O	2.18	0.44
3:C:104:ALA:C	3:C:105:LEU:HD23	2.42	0.44
1:A:37:LEU:HD12	1:A:37:LEU:C	2.43	0.43
3:C:216:VAL:CG1	3:C:226:THR:HG23	2.34	0.43
3:C:59:VAL:HG11	3:C:106:LEU:HD22	1.99	0.43
3:C:192:GLN:HG2	3:C:192:GLN:H	1.41	0.43
3:C:213:THR:HA	3:C:228:PHE:CD1	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:109:GLN:HB3	1:A:245:LEU:HB3	2.01	0.43
1:A:251:ILE:CG2	1:A:253:PHE:CZ	3.01	0.43
3:C:59:VAL:O	3:C:59:VAL:HG23	2.18	0.43
3:C:164:ASP:O	3:C:167:ILE:HB	2.18	0.43
3:C:63:LEU:HB2	3:C:65:PHE:CE2	2.54	0.43
1:A:61:PHE:HE1	1:A:308:ILE:HG21	1.82	0.43
1:A:328:LYS:CG	1:A:329:LEU:N	2.81	0.43
2:B:372:PHE:CZ	2:B:386:GLY:C	2.96	0.43
1:A:48:THR:HA	4:A:394:HOH:O	2.18	0.43
1:A:25:LYS:O	1:A:27:THR:N	2.52	0.43
1:A:252:PHE:CD1	1:A:252:PHE:N	2.86	0.43
1:A:80:LEU:O	1:A:80:LEU:CD1	2.64	0.43
1:A:284:ALA:HB1	2:B:362:PRO:O	2.19	0.43
2:B:372:PHE:CZ	2:B:386:GLY:HA3	2.54	0.42
2:B:383:LEU:HD22	2:B:383:LEU:H	1.83	0.42
1:A:198:PHE:O	1:A:342:GLU:HB2	2.19	0.42
1:A:224:LEU:HD12	1:A:284:ALA:C	2.43	0.42
1:A:313:SER:O	1:A:328:LYS:NZ	2.51	0.42
3:C:110:GLN:O	3:C:111:SER:O	2.37	0.42
1:A:27:THR:N	1:A:28:PRO:CD	2.77	0.42
2:B:383:LEU:H	2:B:383:LEU:CD2	2.32	0.42
1:A:221:MET:HE1	1:A:340:ILE:HG22	2.02	0.42
1:A:267:LEU:C	1:A:268:THR:HG22	2.43	0.42
3:C:30:GLN:HE22	3:C:198:PRO:HD2	1.84	0.42
3:C:58:CYS:C	3:C:60:ASP:N	2.78	0.42
3:C:130:LEU:HD23	3:C:131:ALA:H	1.85	0.42
3:C:167:ILE:O	3:C:170:SER:N	2.53	0.42
1:A:302:VAL:O	1:A:303:LEU:C	2.61	0.42
3:C:169:SER:O	3:C:170:SER:C	2.63	0.42
1:A:223:ARG:HG2	1:A:227:PHE:HZ	1.84	0.42
1:A:286:LEU:HA	2:B:364:VAL:O	2.19	0.42
3:C:56:ALA:C	3:C:58:CYS:H	2.28	0.42
1:A:302:VAL:HG13	1:A:303:LEU:H	1.52	0.42
3:C:114:LEU:HD22	3:C:114:LEU:N	2.35	0.42
1:A:84:LEU:C	1:A:86:GLU:N	2.78	0.41
1:A:195:GLU:HB3	1:A:245:LEU:HD23	2.02	0.41
3:C:212:VAL:O	3:C:213:THR:C	2.62	0.41
1:A:93:HIS:HB3	1:A:137:LEU:HD13	2.03	0.41
1:A:260:LEU:O	1:A:263:LEU:N	2.53	0.41
3:C:56:ALA:HB2	3:C:103:ILE:H	1.85	0.41
3:C:202:LEU:O	3:C:202:LEU:HG	2.14	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:222:THR:C	3:C:224:LYS:H	2.27	0.41
1:A:25:LYS:C	1:A:26:ILE:HG13	2.45	0.41
1:A:124:LEU:CG	1:A:125:LYS:H	2.31	0.41
1:A:261:GLN:O	1:A:264:GLU:CG	2.68	0.41
1:A:322:THR:OG1	1:A:323:GLU:N	2.54	0.41
1:A:334:HIS:ND1	1:A:350:ALA:O	2.51	0.41
3:C:49:GLN:O	3:C:111:SER:HA	2.19	0.41
3:C:72:ASN:HD21	3:C:74:ASN:CG	2.27	0.41
1:A:222:LYS:HE2	1:A:287:HIS:HD2	1.86	0.41
1:A:255:PRO:CB	1:A:260:LEU:HA	2.51	0.41
3:C:95:ASN:HB3	3:C:97:ASP:OD2	2.20	0.41
3:C:215:PHE:O	3:C:227:VAL:HG12	2.20	0.41
3:C:231:VAL:CG2	3:C:232:SER:N	2.83	0.41
1:A:63:MET:HE3	1:A:184:LEU:CG	2.50	0.41
3:C:47:ILE:HG12	3:C:51:TRP:O	2.21	0.41
3:C:48:ARG:HA	3:C:120:LEU:CD1	2.51	0.41
3:C:128:THR:O	3:C:128:THR:CG2	2.68	0.41
3:C:216:VAL:C	3:C:217:SER:O	2.62	0.41
3:C:230:ARG:NH2	3:C:233:ALA:HA	2.35	0.41
2:B:369:PRO:CG	2:B:389:VAL:HG13	2.51	0.41
3:C:67:VAL:HG11	3:C:70:GLU:OE2	2.21	0.41
3:C:122:VAL:O	3:C:208:ALA:CA	2.68	0.41
3:C:222:THR:C	3:C:224:LYS:N	2.77	0.41
1:A:25:LYS:N	4:A:400:HOH:O	2.53	0.41
1:A:236:SER:HB2	1:A:262:HIS:ND1	2.36	0.41
1:A:43:HIS:N	1:A:43:HIS:CD2	2.86	0.41
1:A:78:GLU:C	1:A:80:LEU:N	2.77	0.41
3:C:48:ARG:HA	3:C:120:LEU:HD11	2.02	0.41
3:C:65(A):ARG:CZ	3:C:82:TYR:HD1	2.34	0.41
1:A:127:VAL:HG22	1:A:323:GLU:HG3	2.03	0.41
1:A:292:SER:HA	1:A:338:LEU:O	2.21	0.41
3:C:167:ILE:CG2	3:C:171:TYR:CE2	3.04	0.41
3:C:237:TRP:O	3:C:238:ILE:C	2.64	0.41
1:A:109:GLN:HE21	1:A:245:LEU:HD13	1.80	0.40
1:A:199:GLU:CB	1:A:202:ASP:OD1	2.69	0.40
3:C:72:ASN:HB3	3:C:75:GLN:HG2	2.02	0.40
3:C:85:VAL:O	3:C:85:VAL:HG23	2.21	0.40
3:C:230:ARG:CZ	3:C:233:ALA:CB	2.93	0.40
1:A:99:LEU:O	1:A:103:LEU:HB2	2.21	0.40
3:C:172:TRP:CD1	3:C:225:PRO:HD2	2.57	0.40
1:A:80:LEU:CD1	1:A:82:PHE:HB2	2.50	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:94:GLU:O	1:A:97:GLN:HG2	2.21	0.40
1:A:63:MET:HE3	1:A:184:LEU:HG	2.04	0.40
1:A:223:ARG:HD3	1:A:227:PHE:CE1	2.56	0.40
1:A:256:ASP:O	1:A:257:GLU:C	2.64	0.40
3:C:72:ASN:HD21	3:C:75:GLN:HB3	1.85	0.40
3:C:230:ARG:O	3:C:231:VAL:C	2.63	0.40

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:23:PHE:N	3:C:127:GLY:CA[3_445]	1.71	0.49
1:A:24:ASN:ND2	4:C:269:HOH:O[3_445]	1.80	0.40

5.3 Torsion angles

5.3.1 Protein backbone

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	334/358 (93%)	244 (73%)	57 (17%)	33 (10%)	0	3
2	B	28/36 (78%)	18 (64%)	7 (25%)	3 (11%)	0	2
3	C	217/240 (90%)	152 (70%)	54 (25%)	11 (5%)	1	11
All	All	579/634 (91%)	414 (72%)	118 (20%)	47 (8%)	1	5

All (47) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	25	LYS
1	A	55	VAL
1	A	210	VAL
1	A	213	VAL
1	A	257	GLU

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Mol	Chain	Res	Type
1	A	292	SER
1	A	316	ALA
1	A	357	PRO
2	B	380	LYS
3	C	111	SER
1	A	51	LEU
1	A	58	ALA
1	A	85	THR
1	A	121	SER
1	A	154	LYS
1	A	155	LYS
1	A	171	ASP
1	A	209	HIS
1	A	261	GLN
1	A	300	LYS
1	A	302	VAL
3	C	24	ARG
3	C	49	GLN
3	C	217	SER
1	A	39	ARG
1	A	54	PRO
1	A	96	PHE
1	A	124	LEU
1	A	219	PRO
1	A	234	LYS
1	A	324	GLU
3	C	97	ASP
1	A	236	SER
2	B	373	LEU
3	C	195	SER
1	A	237	SER
1	A	321	VAL
2	B	382	PRO
3	C	175	THR
1	A	148	GLY
3	C	62	GLU
1	A	26	ILE
3	C	59	VAL
3	C	241	VAL
1	A	57	ILE
3	C	43	GLY
1	A	106	PRO

5.3.2 Protein sidechains ⓘ

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	182/311 (58%)	163 (90%)	19 (10%)	7	25
2	B	21/34 (62%)	15 (71%)	6 (29%)	0	2
3	C	144/198 (73%)	132 (92%)	12 (8%)	10	34
All	All	347/543 (64%)	310 (89%)	37 (11%)	6	24

All (37) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	51	LEU
1	A	73	HIS
1	A	74	ASP
1	A	77	LEU
1	A	82	PHE
1	A	96	PHE
1	A	107	ASP
1	A	146	ASN
1	A	232	SER
1	A	257	GLU
1	A	265	ASN
1	A	268	THR
1	A	282	ARG
1	A	297	TYR
1	A	306	LEU
1	A	322	THR
1	A	327	LEU
1	A	342	GLU
1	A	358	MET
2	B	367	ASN
2	B	376	GLU
2	B	377	GLN
2	B	382	PRO
2	B	385	MET
2	B	388	VAL
3	C	45	THR

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Mol	Chain	Res	Type
3	C	63	LEU
3	C	66	VAL
3	C	70	GLU
3	C	74	ASN
3	C	87	LYS
3	C	89	VAL
3	C	97	ASP
3	C	130	LEU
3	C	168	CYS
3	C	192	GLN
3	C	229	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (22) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	24	ASN
1	A	46	ASN
1	A	97	GLN
1	A	109	GLN
1	A	111	GLN
1	A	228	ASN
1	A	261	GLN
1	A	265	ASN
1	A	287	HIS
2	B	367	ASN
2	B	377	GLN
3	C	23	GLN
3	C	30	GLN
3	C	72	ASN
3	C	74	ASN
3	C	75	GLN
3	C	119	GLN
3	C	192	GLN
3	C	200	HIS
3	C	210	HIS
3	C	240	ASN
3	C	245	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides 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 [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	336/358 (93%)	0.09	5 (1%) 72 53	31, 71, 96, 98	0
2	B	30/36 (83%)	0.21	2 (6%) 24 16	29, 52, 86, 92	0
3	C	223/240 (92%)	0.05	5 (2%) 62 43	15, 54, 91, 99	5 (2%)
All	All	589/634 (92%)	0.09	12 (2%) 65 46	15, 62, 95, 99	5 (0%)

All (12) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	C	236	SER	4.3
2	B	389	VAL	3.2
3	C	127	GLY	3.1
1	A	142	ALA	2.6
3	C	36(C)	SER	2.4
1	A	315	GLY	2.4
2	B	367	ASN	2.3
1	A	294	THR	2.3
1	A	293	ILE	2.2
1	A	316	ALA	2.2
3	C	194	ASP	2.2
3	C	70	GLU	2.1

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 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.