



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 09:01 AM UTC

PDB ID : 1KCR / pdb_00001kcr
Title : CRYSTAL STRUCTURE OF ANTIBODY PC283 IN COMPLEX WITH PS1 PEPTIDE
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Deposited on : 2001-11-11
Resolution : 2.90 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)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

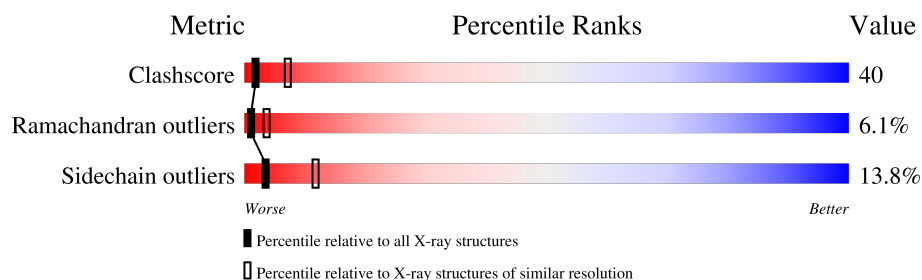
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.90 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	190562	2690 (2.90-2.90)
Ramachandran outliers	187476	2623 (2.90-2.90)
Sidechain outliers	187428	2625 (2.90-2.90)

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 $\leq 5\%$

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	L	213	50% 37% 11% .
2	H	218	47% 41% 11%
3	P	15	20% 33% 40% 7%

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 3394 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 PC283 IMMUNOGLOBULIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	L	213	Total	C	N	O	S	0	0	0
			1634	1015	275	336	8			

- Molecule 2 is a protein called PC283 IMMUNOGLOBULIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	H	218	Total	C	N	O	S	0	0	0
			1617	1023	270	317	7			

- Molecule 3 is a protein called PS1 peptide.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	P	15	Total	C	N	O	0	0	0
			112	67	20	25			

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	L	16	Total	O	0	0
			16	16		
4	H	15	Total	O	0	0
			15	15		

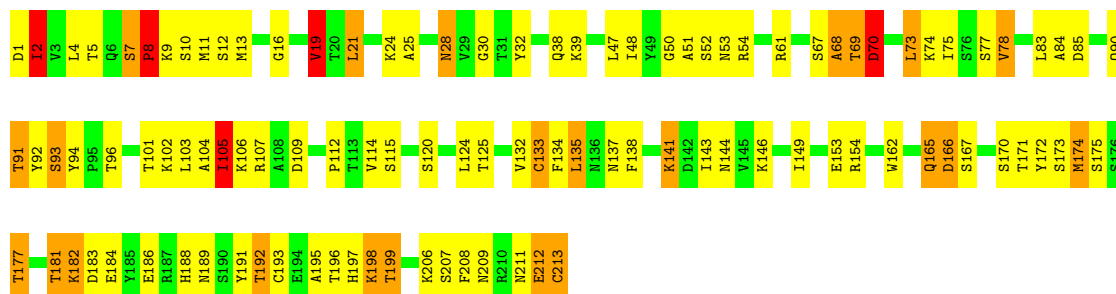
3 Residue-property plots

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. 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. 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.

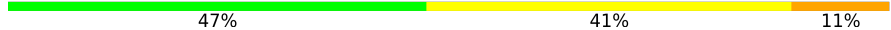
Note EDS was not executed.

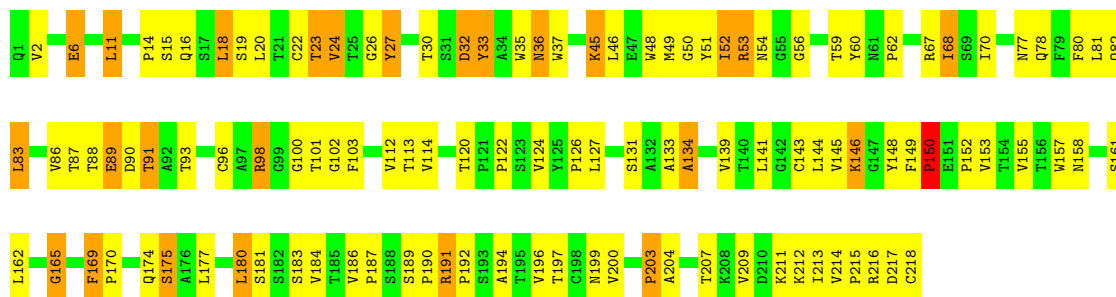
• Molecule 1: PC283 IMMUNOGLOBULIN

Chain L: 



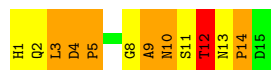
• Molecule 2: PC283 IMMUNOGLOBULIN

Chain H: 



• Molecule 3: PS1 peptide

Chain P: 



4 Data and refinement statistics

Xtriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	69.72Å 72.69Å 84.49Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	50.00 – 2.90	Depositor
% Data completeness (in resolution range)	82.4 (50.00-2.90)	Depositor
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	CNS 0.5	Depositor
R, R_{free}	0.184 , 0.277	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	3394	wwPDB-VP
Average B, all atoms (Å ²)	24.0	wwPDB-VP

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	L	21.97	1/1670 (0.1%)	1.05	9/2267 (0.4%)
2	H	0.57	1/1660 (0.1%)	1.10	10/2278 (0.4%)
3	P	0.51	0/115	1.06	0/156
All	All	15.30	2/3445 (0.1%)	1.07	19/4701 (0.4%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	L	213	CYS	C-OXT	897.47	19.18	1.23
2	H	46	LEU	N-CA	7.37	1.54	1.46

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	45	LYS	O-C-N	-8.32	111.52	122.59
2	H	45	LYS	CA-C-N	-7.49	112.07	122.93
2	H	45	LYS	C-N-CA	-7.49	112.07	122.93
1	L	137	ASN	N-CA-C	6.49	120.32	111.17
2	H	36	ASN	N-CA-C	6.40	119.93	110.46
1	L	166	ASP	CB-CA-C	-6.28	108.69	117.23
1	L	199	THR	N-CA-C	-5.68	104.52	112.25
2	H	169	PHE	CA-C-N	5.68	125.69	119.90
2	H	169	PHE	C-N-CA	5.68	125.69	119.90
2	H	68	ILE	N-CA-C	5.49	117.71	109.20
1	L	166	ASP	N-CA-C	5.49	117.83	108.67
1	L	105	ILE	N-CA-C	5.45	116.43	108.58
1	L	181	THR	N-CA-C	-5.40	102.49	110.48
2	H	165	GLY	N-CA-C	-5.36	106.83	115.08
1	L	5	THR	N-CA-C	5.29	117.43	108.02
1	L	19	VAL	CB-CA-C	-5.28	105.78	111.59
2	H	194	ALA	N-CA-C	-5.22	103.14	110.50
2	H	161	SER	N-CA-C	-5.19	105.53	111.14
1	L	70	ASP	N-CA-C	5.14	116.99	108.20

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	L	1634	0	1568	130	0
2	H	1617	0	1593	116	0
3	P	112	0	96	39	0
4	H	15	0	0	3	0
4	L	16	0	0	0	0
All	All	3394	0	3257	259	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 40.

All (259) 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)
2:H:102:GLY:H	3:P:3:LEU:HD22	1.03	1.12
3:P:3:LEU:HD23	3:P:3:LEU:O	1.56	1.05
2:H:191:ARG:HB3	2:H:192:PRO:HD3	1.34	1.03
2:H:102:GLY:N	3:P:3:LEU:HD22	1.77	0.98
1:L:165:GLN:HG2	1:L:166:ASP:H	1.23	0.98
1:L:11:MET:HE3	1:L:103:LEU:HD13	1.47	0.94
1:L:83:LEU:HB2	1:L:105:ILE:HD11	1.53	0.91
1:L:166:ASP:HA	1:L:170:SER:HA	1.53	0.90
2:H:91:THR:HG22	2:H:114:VAL:HB	1.55	0.87
1:L:7:SER:HB3	1:L:8:PRO:CD	2.03	0.86
2:H:141:LEU:HD21	2:H:191:ARG:HD3	1.58	0.85
1:L:114:VAL:HG22	1:L:135:LEU:HD13	1.57	0.84
1:L:32:TYR:CD2	3:P:3:LEU:HA	2.14	0.82
2:H:23:THR:HB	2:H:78:GLN:HE21	1.44	0.80
1:L:93:SER:HB3	3:P:13:ASN:H	1.49	0.77
2:H:217:ASP:O	2:H:218:CYS:HB2	1.83	0.77
3:P:10:ASN:C	3:P:10:ASN:HD22	1.92	0.77
1:L:7:SER:HB3	1:L:8:PRO:HD3	1.66	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:143:ILE:HG22	1:L:162:TRP:CH2	2.20	0.76
2:H:141:LEU:HD22	2:H:196:VAL:HG21	1.67	0.76
2:H:191:ARG:HB3	2:H:192:PRO:CD	2.15	0.76
1:L:32:TYR:HD2	3:P:3:LEU:HA	1.50	0.76
2:H:141:LEU:HD23	2:H:213:ILE:HG21	1.68	0.75
1:L:68:ALA:O	1:L:69:THR:HB	1.86	0.74
1:L:83:LEU:HD23	1:L:166:ASP:HB2	1.70	0.74
1:L:7:SER:CB	1:L:8:PRO:CD	2.66	0.74
2:H:98:ARG:HH11	2:H:98:ARG:HB3	1.52	0.74
2:H:32:ASP:H	2:H:54:ASN:ND2	1.85	0.73
1:L:83:LEU:CD2	1:L:166:ASP:HB2	2.18	0.73
1:L:25:ALA:HB3	1:L:69:THR:HA	1.71	0.72
1:L:174:MET:HG2	1:L:175:SER:H	1.54	0.72
1:L:91:THR:HG21	3:P:3:LEU:HD21	1.70	0.72
2:H:101:THR:HG22	3:P:2:GLN:HB3	1.69	0.72
1:L:4:LEU:HD23	1:L:25:ALA:HA	1.72	0.72
2:H:191:ARG:CB	2:H:192:PRO:HD3	2.18	0.72
1:L:4:LEU:HD11	1:L:90:GLN:HG3	1.72	0.71
2:H:2:VAL:HG23	4:H:223:HOH:O	1.91	0.71
1:L:94:TYR:CE1	3:P:12:THR:HG23	2.26	0.71
2:H:180:LEU:HA	4:H:226:HOH:O	1.90	0.71
2:H:187:PRO:HG2	2:H:190:PRO:CD	2.21	0.71
1:L:212:GLU:CG	1:L:212:GLU:O	2.36	0.70
1:L:28:ASN:ND2	1:L:68:ALA:HB1	2.07	0.69
2:H:18:LEU:HD22	2:H:20:LEU:HD22	1.73	0.69
2:H:23:THR:HB	2:H:78:GLN:NE2	2.08	0.69
1:L:90:GLN:HE21	1:L:96:THR:H	1.41	0.69
2:H:157:TRP:HB3	2:H:162:LEU:HD12	1.75	0.69
3:P:2:GLN:O	3:P:3:LEU:HB3	1.92	0.68
1:L:105:ILE:HD12	1:L:105:ILE:H	1.57	0.68
1:L:74:LYS:HD2	1:L:74:LYS:N	2.08	0.68
3:P:10:ASN:ND2	3:P:11:SER:N	2.42	0.68
3:P:4:ASP:N	3:P:5:PRO:HD3	2.07	0.68
1:L:94:TYR:HE1	3:P:12:THR:HG23	1.57	0.67
2:H:141:LEU:N	2:H:141:LEU:HD12	2.10	0.67
1:L:114:VAL:HG22	1:L:135:LEU:CD1	2.24	0.67
1:L:212:GLU:O	1:L:212:GLU:HG3	1.93	0.67
3:P:13:ASN:ND2	3:P:14:PRO:HD2	2.11	0.65
1:L:11:MET:HB2	1:L:103:LEU:HD12	1.76	0.65
1:L:92:TYR:O	3:P:11:SER:HB3	1.97	0.65
1:L:141:LYS:H	1:L:141:LYS:HD2	1.61	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:88:THR:O	2:H:91:THR:HG23	1.97	0.64
1:L:132:VAL:HG21	2:H:127:LEU:HD11	1.80	0.63
2:H:144:LEU:HD11	2:H:146:LYS:HB3	1.80	0.62
1:L:165:GLN:HG2	1:L:166:ASP:N	2.06	0.62
2:H:141:LEU:HD23	2:H:213:ILE:CG2	2.30	0.62
2:H:189:SER:OG	2:H:190:PRO:HD3	2.00	0.61
1:L:7:SER:CB	1:L:8:PRO:HD2	2.31	0.61
2:H:18:LEU:HD23	2:H:19:SER:H	1.65	0.61
2:H:24:VAL:HG22	2:H:77:ASN:ND2	2.16	0.61
1:L:132:VAL:HG22	1:L:177:THR:HG23	1.81	0.60
2:H:158:ASN:HD21	2:H:196:VAL:HA	1.65	0.60
2:H:36:ASN:OD1	2:H:51:TYR:HB3	2.00	0.60
2:H:124:VAL:HG11	2:H:209:VAL:HG11	1.84	0.60
1:L:91:THR:HB	3:P:3:LEU:HG	1.82	0.60
1:L:144:ASN:HB3	1:L:196:THR:HG23	1.83	0.60
1:L:166:ASP:O	1:L:167:SER:HB2	2.00	0.60
1:L:174:MET:HG2	1:L:175:SER:N	2.17	0.60
2:H:20:LEU:HD23	2:H:81:LEU:HD23	1.84	0.59
3:P:2:GLN:O	3:P:3:LEU:CB	2.49	0.59
1:L:38:GLN:O	1:L:84:ALA:HB1	2.02	0.59
1:L:141:LYS:H	1:L:141:LYS:CD	2.12	0.59
2:H:26:GLY:O	2:H:27:TYR:HB2	2.02	0.59
1:L:19:VAL:CG2	1:L:78:VAL:HG22	2.33	0.58
1:L:12:SER:HA	1:L:104:ALA:O	2.04	0.58
3:P:3:LEU:O	3:P:3:LEU:CD2	2.42	0.57
1:L:105:ILE:HD12	1:L:105:ILE:N	2.19	0.57
1:L:1:ASP:HA	3:P:13:ASN:OD1	2.05	0.57
1:L:197:HIS:HD2	1:L:199:THR:OG1	1.87	0.57
2:H:32:ASP:O	2:H:33:TYR:HB2	2.05	0.57
1:L:10:SER:HA	1:L:102:LYS:O	2.05	0.57
1:L:125:THR:CG2	1:L:213:CYS:OXT	2.53	0.57
1:L:143:ILE:HG22	1:L:162:TRP:HH2	1.70	0.56
3:P:4:ASP:N	3:P:5:PRO:CD	2.67	0.56
1:L:192:THR:HG22	1:L:207:SER:OG	2.05	0.56
1:L:39:LYS:HG2	1:L:84:ALA:HB2	1.87	0.56
1:L:141:LYS:HG3	1:L:172:TYR:CE1	2.40	0.56
2:H:187:PRO:HG2	2:H:190:PRO:CG	2.35	0.55
1:L:93:SER:HB3	3:P:13:ASN:N	2.18	0.55
1:L:28:ASN:CG	1:L:68:ALA:HB1	2.30	0.55
1:L:141:LYS:HD2	1:L:141:LYS:N	2.21	0.55
2:H:51:TYR:CD1	2:H:51:TYR:C	2.85	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:61:ARG:O	1:L:75:ILE:HA	2.07	0.55
1:L:11:MET:HB2	1:L:103:LEU:CD1	2.36	0.54
1:L:132:VAL:HG12	1:L:133:CYS:N	2.23	0.54
2:H:18:LEU:HD11	2:H:112:VAL:HG11	1.87	0.54
2:H:6:GLU:CD	2:H:6:GLU:H	2.16	0.54
3:P:10:ASN:C	3:P:10:ASN:ND2	2.58	0.54
1:L:21:LEU:HD12	1:L:21:LEU:N	2.22	0.54
2:H:155:VAL:HG22	2:H:200:VAL:HG22	1.89	0.54
2:H:197:THR:HG23	2:H:211:LYS:O	2.08	0.54
2:H:133:ALA:O	2:H:134:ALA:HB3	2.07	0.54
1:L:135:LEU:N	1:L:135:LEU:HD22	2.23	0.54
1:L:165:GLN:CG	1:L:166:ASP:H	2.02	0.54
2:H:18:LEU:HD22	2:H:20:LEU:CD2	2.38	0.53
1:L:4:LEU:HD11	1:L:90:GLN:CG	2.38	0.53
1:L:109:ASP:HB3	1:L:199:THR:HG22	1.91	0.53
2:H:191:ARG:C	2:H:191:ARG:HD2	2.34	0.53
2:H:214:VAL:HG13	2:H:215:PRO:HD2	1.90	0.53
2:H:32:ASP:H	2:H:54:ASN:HD21	1.56	0.53
2:H:48:TRP:CZ2	2:H:50:GLY:HA2	2.44	0.53
2:H:67:ARG:NH2	2:H:83:LEU:HD22	2.23	0.53
1:L:114:VAL:HA	1:L:134:PHE:O	2.09	0.52
2:H:49:MET:HE1	2:H:81:LEU:HD22	1.91	0.51
2:H:91:THR:HG22	2:H:114:VAL:CB	2.33	0.51
2:H:122:PRO:HB3	2:H:148:TYR:HB3	1.92	0.51
2:H:180:LEU:HD23	2:H:180:LEU:C	2.36	0.51
1:L:125:THR:HG21	1:L:213:CYS:OXT	2.10	0.51
1:L:135:LEU:HD11	1:L:195:ALA:HB2	1.93	0.51
1:L:114:VAL:O	1:L:206:LYS:HE3	2.10	0.50
2:H:87:THR:HG22	2:H:90:ASP:OD2	2.11	0.50
3:P:8:GLY:O	3:P:9:ALA:C	2.54	0.50
1:L:107:ARG:HH11	1:L:171:THR:HG23	1.77	0.50
1:L:182:LYS:NZ	1:L:182:LYS:HB3	2.27	0.50
2:H:187:PRO:HG2	2:H:190:PRO:HD2	1.91	0.50
1:L:48:ILE:HD13	1:L:54:ARG:HA	1.93	0.49
1:L:73:LEU:C	1:L:74:LYS:HD2	2.37	0.49
1:L:149:ILE:HG13	1:L:149:ILE:O	2.11	0.49
2:H:174:GLN:O	2:H:174:GLN:HG2	2.12	0.49
1:L:4:LEU:HA	1:L:24:LYS:O	2.12	0.49
2:H:101:THR:HG22	3:P:2:GLN:O	2.13	0.49
1:L:162:TRP:CD1	1:L:162:TRP:N	2.80	0.49
2:H:52:ILE:CD1	2:H:56:GLY:HA2	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:144:LEU:CD1	2:H:146:LYS:HB3	2.43	0.48
3:P:8:GLY:O	3:P:10:ASN:N	2.46	0.48
1:L:32:TYR:HD2	3:P:3:LEU:CA	2.25	0.48
1:L:112:PRO:HB3	1:L:138:PHE:CD2	2.49	0.48
2:H:81:LEU:HG	2:H:82:GLN:N	2.28	0.48
2:H:174:GLN:O	2:H:175:SER:HB3	2.12	0.48
2:H:86:VAL:HG23	2:H:86:VAL:O	2.12	0.48
2:H:88:THR:HG22	4:H:232:HOH:O	2.12	0.48
3:P:10:ASN:HD22	3:P:11:SER:N	2.08	0.48
1:L:83:LEU:O	1:L:84:ALA:HB2	2.14	0.48
2:H:22:CYS:CB	2:H:96:CYS:HG	2.25	0.48
2:H:35:TRP:CZ3	2:H:98:ARG:HG2	2.49	0.48
2:H:60:TYR:HE1	2:H:70:ILE:HG13	1.79	0.47
2:H:153:VAL:CG2	2:H:180:LEU:HD13	2.44	0.47
1:L:91:THR:CG2	3:P:3:LEU:HD21	2.40	0.47
1:L:146:LYS:HD3	1:L:153:GLU:OE1	2.14	0.47
1:L:7:SER:HB3	1:L:8:PRO:HD2	1.89	0.47
1:L:182:LYS:HD2	1:L:186:GLU:OE2	2.15	0.47
1:L:132:VAL:CG1	1:L:133:CYS:N	2.78	0.47
1:L:12:SER:OG	1:L:106:LYS:HB2	2.14	0.47
2:H:20:LEU:HD22	2:H:20:LEU:N	2.30	0.47
1:L:120:SER:O	1:L:124:LEU:HD13	2.14	0.46
2:H:14:PRO:O	2:H:15:SER:HB2	2.14	0.46
2:H:87:THR:OG1	2:H:89:GLU:HG2	2.16	0.46
3:P:10:ASN:CG	3:P:11:SER:N	2.72	0.46
1:L:2:ILE:HG13	1:L:2:ILE:O	2.14	0.46
2:H:186:VAL:HB	2:H:187:PRO:HD2	1.98	0.46
2:H:187:PRO:O	2:H:190:PRO:HD2	2.16	0.46
1:L:173:SER:O	2:H:169:PHE:HE1	1.99	0.46
2:H:18:LEU:CD2	2:H:19:SER:H	2.29	0.46
2:H:16:GLN:O	2:H:86:VAL:HG22	2.16	0.45
2:H:52:ILE:O	2:H:52:ILE:CG2	2.63	0.45
2:H:126:PRO:HD3	2:H:211:LYS:HG2	1.97	0.45
2:H:144:LEU:HD13	2:H:144:LEU:C	2.41	0.45
2:H:36:ASN:ND2	2:H:103:PHE:HE2	2.15	0.45
2:H:101:THR:CG2	3:P:2:GLN:HB3	2.43	0.45
2:H:134:ALA:HB1	2:H:139:VAL:HG22	1.98	0.45
1:L:93:SER:CB	3:P:13:ASN:N	2.79	0.45
1:L:213:CYS:SG	2:H:217:ASP:HB3	2.57	0.45
2:H:89:GLU:HG2	2:H:89:GLU:H	1.57	0.45
3:P:13:ASN:HD22	3:P:14:PRO:HD2	1.80	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:4:LEU:HD12	1:L:96:THR:O	2.17	0.44
2:H:51:TYR:CZ	2:H:59:THR:HB	2.52	0.44
2:H:148:TYR:CD1	2:H:148:TYR:C	2.95	0.44
1:L:144:ASN:HB3	1:L:196:THR:CG2	2.47	0.44
1:L:198:LYS:HD3	1:L:198:LYS:C	2.42	0.44
1:L:50:GLY:C	1:L:52:SER:H	2.25	0.44
1:L:209:ASN:C	1:L:211:ASN:H	2.26	0.44
1:L:21:LEU:N	1:L:21:LEU:CD1	2.81	0.44
1:L:38:GLN:C	1:L:84:ALA:HB1	2.42	0.44
1:L:83:LEU:HD22	1:L:166:ASP:HB2	1.98	0.44
2:H:174:GLN:O	2:H:175:SER:CB	2.65	0.44
1:L:19:VAL:HG23	1:L:75:ILE:HB	1.99	0.44
1:L:134:PHE:C	1:L:135:LEU:HD22	2.43	0.44
2:H:11:LEU:HB2	2:H:150:PRO:HG3	2.00	0.44
2:H:124:VAL:CG1	2:H:209:VAL:HG11	2.47	0.44
2:H:165:GLY:O	2:H:184:VAL:HA	2.18	0.44
1:L:162:TRP:CZ2	1:L:174:MET:HE3	2.53	0.43
1:L:1:ASP:O	1:L:2:ILE:C	2.61	0.43
1:L:50:GLY:O	1:L:52:SER:N	2.48	0.43
1:L:30:GLY:O	1:L:68:ALA:N	2.46	0.43
1:L:16:GLY:HA2	1:L:77:SER:HB2	2.00	0.43
1:L:91:THR:CB	3:P:3:LEU:HD21	2.48	0.43
1:L:184:GLU:O	1:L:188:HIS:HD2	2.02	0.43
1:L:109:ASP:HB3	1:L:199:THR:CG2	2.48	0.43
2:H:101:THR:HA	3:P:2:GLN:O	2.19	0.43
2:H:169:PHE:HA	2:H:170:PRO:HD3	1.84	0.43
1:L:24:LYS:HE2	1:L:24:LYS:HB3	1.83	0.43
1:L:67:SER:O	1:L:68:ALA:C	2.61	0.43
1:L:73:LEU:HD22	1:L:74:LYS:N	2.33	0.43
2:H:212:LYS:HE2	2:H:212:LYS:HB3	1.75	0.43
2:H:214:VAL:CG1	2:H:215:PRO:HD2	2.49	0.43
2:H:11:LEU:HD23	2:H:113:THR:HG22	2.00	0.43
2:H:91:THR:CG2	2:H:114:VAL:H	2.32	0.43
2:H:141:LEU:N	2:H:141:LEU:CD1	2.80	0.43
1:L:2:ILE:HG12	1:L:90:GLN:HG2	2.00	0.42
1:L:135:LEU:CD1	1:L:195:ALA:HB2	2.49	0.42
1:L:182:LYS:O	1:L:183:ASP:C	2.61	0.42
2:H:145:VAL:HB	2:H:180:LEU:HD22	2.01	0.42
1:L:166:ASP:O	1:L:167:SER:CB	2.67	0.42
1:L:208:PHE:CD1	1:L:208:PHE:C	2.97	0.42
2:H:53:ARG:CD	2:H:54:ASN:H	2.32	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:158:ASN:ND2	2:H:196:VAL:HA	2.33	0.42
2:H:134:ALA:CB	2:H:139:VAL:HG22	2.50	0.42
1:L:69:THR:HG22	1:L:70:ASP:OD1	2.20	0.42
2:H:143:CYS:O	2:H:181:SER:HA	2.19	0.42
1:L:135:LEU:N	1:L:135:LEU:CD2	2.83	0.42
1:L:192:THR:HB	1:L:207:SER:HB2	2.02	0.42
2:H:60:TYR:CD1	2:H:68:ILE:HG13	2.55	0.42
1:L:32:TYR:CE2	3:P:1:HIS:N	2.80	0.42
2:H:22:CYS:HB2	2:H:96:CYS:SG	2.59	0.42
2:H:217:ASP:O	2:H:218:CYS:CB	2.60	0.41
1:L:7:SER:HB2	1:L:8:PRO:HD2	2.02	0.41
1:L:19:VAL:HG23	1:L:78:VAL:HG22	2.01	0.41
2:H:141:LEU:HB3	2:H:213:ILE:HG21	2.01	0.41
1:L:188:HIS:HB2	1:L:191:TYR:OH	2.20	0.41
2:H:149:PHE:HA	2:H:150:PRO:HA	1.71	0.41
2:H:126:PRO:HB3	2:H:211:LYS:HG3	2.03	0.41
1:L:141:LYS:HG3	1:L:172:TYR:CZ	2.55	0.41
2:H:30:THR:C	2:H:54:ASN:OD1	2.63	0.41
2:H:36:ASN:O	2:H:96:CYS:HA	2.21	0.41
2:H:216:ARG:CZ	2:H:216:ARG:HB3	2.50	0.41
1:L:12:SER:O	1:L:13:MET:SD	2.79	0.41
2:H:157:TRP:HB2	2:H:162:LEU:HB2	2.03	0.41
2:H:18:LEU:CD2	2:H:19:SER:N	2.84	0.41
2:H:124:VAL:O	2:H:211:LYS:NZ	2.54	0.41
1:L:32:TYR:CE1	3:P:5:PRO:HG2	2.55	0.41
2:H:35:TRP:CZ2	2:H:98:ARG:HD3	2.55	0.41
2:H:191:ARG:HD2	2:H:191:ARG:O	2.20	0.41
1:L:149:ILE:HG22	1:L:191:TYR:CD2	2.57	0.40
1:L:144:ASN:O	1:L:196:THR:HG22	2.21	0.40
2:H:37:TRP:HB3	2:H:49:MET:HE3	2.03	0.40
2:H:102:GLY:N	3:P:3:LEU:CD2	2.67	0.40
1:L:7:SER:O	1:L:9:LYS:N	2.55	0.40
1:L:48:ILE:HA	1:L:53:ASN:O	2.22	0.40
1:L:107:ARG:HH11	1:L:171:THR:CG2	2.34	0.40
2:H:49:MET:HE1	2:H:81:LEU:CD2	2.52	0.40
3:P:10:ASN:CG	3:P:11:SER:H	2.30	0.40

There are no symmetry-related clashes.

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	L	211/213 (99%)	177 (84%)	25 (12%)	9 (4%)	2	8
2	H	216/218 (99%)	183 (85%)	21 (10%)	12 (6%)	1	4
3	P	13/15 (87%)	3 (23%)	4 (31%)	6 (46%)	0	0
All	All	440/446 (99%)	363 (82%)	50 (11%)	27 (6%)	1	4

All (27) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	L	2	ILE
1	L	7	SER
1	L	69	THR
1	L	165	GLN
3	P	9	ALA
1	L	68	ALA
2	H	27	TYR
2	H	131	SER
2	H	134	ALA
2	H	175	SER
3	P	3	LEU
1	L	93	SER
2	H	33	TYR
2	H	204	ALA
3	P	14	PRO
1	L	28	ASN
1	L	51	ALA
2	H	32	ASP
2	H	45	LYS
3	P	12	THR
1	L	8	PRO
3	P	4	ASP
2	H	100	GLY
2	H	203	PRO

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Mol	Chain	Res	Type
3	P	5	PRO
2	H	62	PRO
2	H	150	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	L	184/184 (100%)	158 (86%)	26 (14%)	3	11
2	H	180/180 (100%)	156 (87%)	24 (13%)	4	12
3	P	12/12 (100%)	10 (83%)	2 (17%)	2	7
All	All	376/376 (100%)	324 (86%)	52 (14%)	3	12

All (52) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	L	2	ILE
1	L	8	PRO
1	L	19	VAL
1	L	21	LEU
1	L	47	LEU
1	L	70	ASP
1	L	73	LEU
1	L	78	VAL
1	L	85	ASP
1	L	91	THR
1	L	101	THR
1	L	105	ILE
1	L	115	SER
1	L	133	CYS
1	L	135	LEU
1	L	141	LYS
1	L	154	ARG
1	L	174	MET
1	L	177	THR

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Mol	Chain	Res	Type
1	L	181	THR
1	L	182	LYS
1	L	189	ASN
1	L	192	THR
1	L	193	CYS
1	L	198	LYS
1	L	212	GLU
2	H	6	GLU
2	H	11	LEU
2	H	18	LEU
2	H	23	THR
2	H	24	VAL
2	H	52	ILE
2	H	53	ARG
2	H	80	PHE
2	H	83	LEU
2	H	89	GLU
2	H	91	THR
2	H	93	THR
2	H	98	ARG
2	H	120	THR
2	H	146	LYS
2	H	150	PRO
2	H	152	PRO
2	H	177	LEU
2	H	180	LEU
2	H	183	SER
2	H	191	ARG
2	H	199	ASN
2	H	203	PRO
2	H	207	THR
3	P	10	ASN
3	P	12	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	L	37	GLN
1	L	90	GLN
1	L	123	GLN
1	L	137	ASN
1	L	188	HIS

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Mol	Chain	Res	Type
1	L	197	HIS
2	H	78	GLN
2	H	167	HIS
2	H	174	GLN
2	H	199	ASN
3	P	10	ASN
3	P	13	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no 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

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.