



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 15, 2017 – 06:38 pm GMT

PDB ID : 1JIQ
Title : Crystal Structure of Human Autocrine Motility Factor
Authors : Tanaka, N.; Haga, A.; Uemura, H.; Akiyama, H.; Funasaka, T.; Nagase, H.;
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Deposited on : 2001-07-02
Resolution : 1.90 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

<http://wwpdb.org/validation/2016/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Xtriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk28620

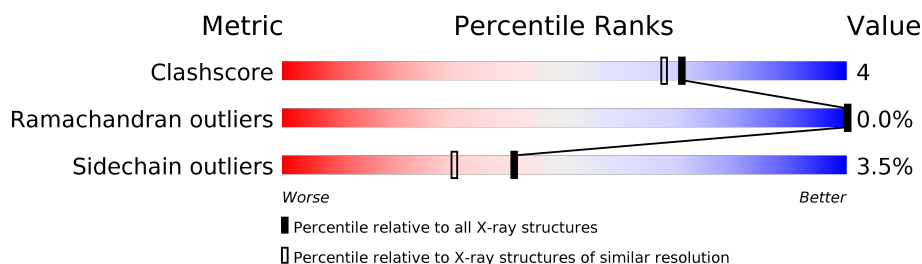
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.90 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	112137	5731 (1.90-1.90)
Ramachandran outliers	110173	5669 (1.90-1.90)
Sidechain outliers	110143	5670 (1.90-1.90)

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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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.

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	558	
1	B	558	
1	C	558	
1	D	558	

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 19255 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 autocrine motility factor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	557	Total	C	N	O	S	0	0	0
			4445	2832	783	811	19			
1	B	557	Total	C	N	O	S	0	0	0
			4445	2832	783	811	19			
1	C	557	Total	C	N	O	S	0	0	0
			4445	2832	783	811	19			
1	D	557	Total	C	N	O	S	0	0	0
			4445	2832	783	811	19			

- Molecule 2 is water.

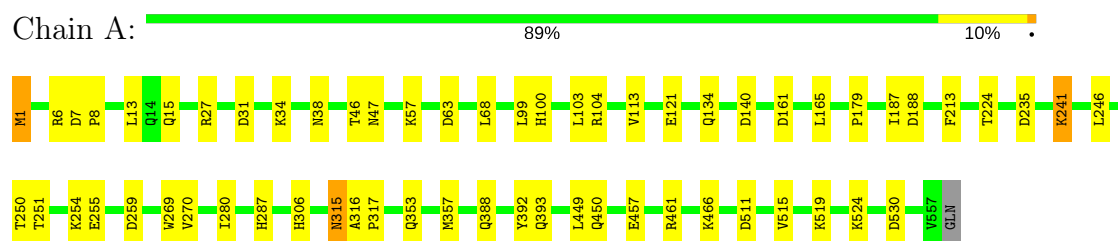
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	403	Total	O	0	0
			403	403		
2	B	398	Total	O	0	0
			398	398		
2	C	349	Total	O	0	0
			349	349		
2	D	325	Total	O	0	0
			325	325		

3 Residue-property plots

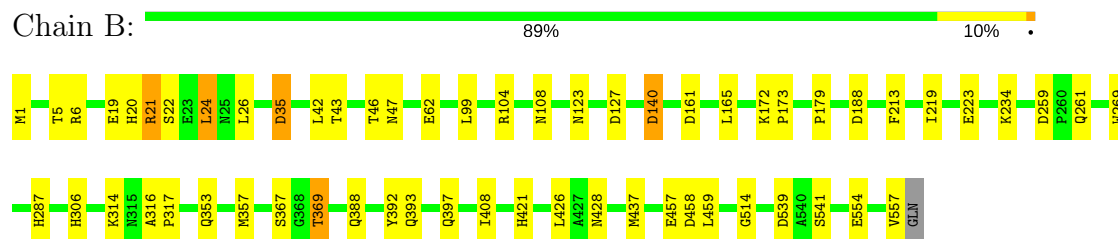
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are 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.

Note EDS was not executed.

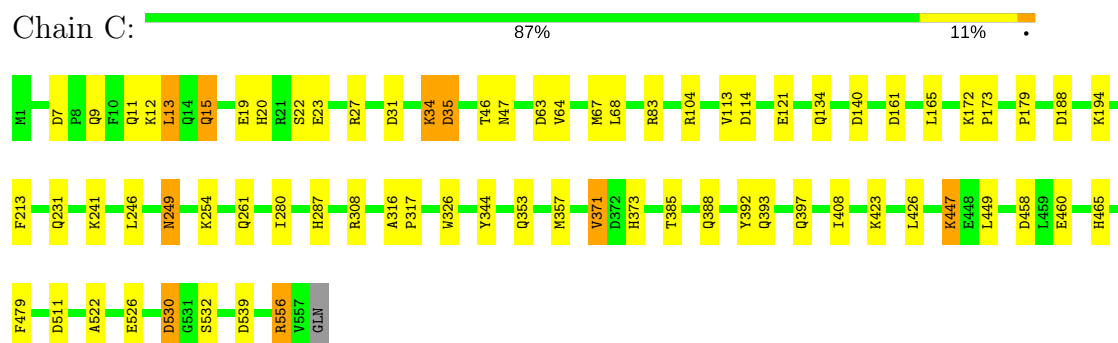
- Molecule 1: autocrine motility factor



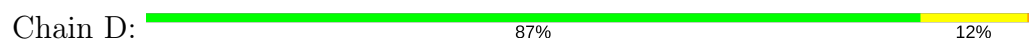
- Molecule 1: autocrine motility factor



- Molecule 1: autocrine motility factor



- Molecule 1: autocrine motility factor



M1		N249		D506
L13		T250		I507
R21		T251		N508
S22		K254		D511
E23		P260		A522
R27		F266		K523
D31		I280		K524
K34		L284		I525
D35		V288		E526
T43		N315		P527
D63		W326		D530
K89		C330		V557
I90		H346		GLN
N91		Q353		
R104		M357		
N108		T369		
V113		P383		
D114		Q388		
E121		Y392		
V122		H396		
N123		I408		
D151		L426		
D161		Q432		
L162		R438		
L165		T442		
N186		S455		
I187		D458		
I192		L459		
A193		L463		
K194		P464		
N200		F499		
P201		I503		
E202				
F213				
L230				
K234				
L246				

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	80.77Å 107.40Å 270.70Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	36.00 – 1.90	Depositor
% Data completeness (in resolution range)	98.7 (36.00-1.90)	Depositor
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	REFMAC 5	Depositor
R, R_{free}	0.167 , 0.198	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	19255	wwPDB-VP
Average B, all atoms (Å ²)	17.0	wwPDB-VP

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	0.50	0/4553	0.74	9/6164 (0.1%)
1	B	0.48	0/4553	0.73	7/6164 (0.1%)
1	C	0.46	0/4553	0.74	10/6164 (0.2%)
1	D	0.44	0/4553	0.74	9/6164 (0.1%)
All	All	0.47	0/18212	0.74	35/24656 (0.1%)

There are no bond length outliers.

All (35) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	35	ASP	CB-CG-OD2	7.23	124.81	118.30
1	A	161	ASP	CB-CG-OD2	6.31	123.98	118.30
1	A	235	ASP	CB-CG-OD2	6.25	123.92	118.30
1	D	511	ASP	CB-CG-OD2	6.22	123.90	118.30
1	C	140	ASP	CB-CG-OD2	6.14	123.83	118.30
1	A	63	ASP	CB-CG-OD2	6.06	123.75	118.30
1	A	140	ASP	CB-CG-OD2	6.06	123.75	118.30
1	C	188	ASP	CB-CG-OD2	5.99	123.69	118.30
1	C	161	ASP	CB-CG-OD2	5.94	123.64	118.30
1	D	530	ASP	CB-CG-OD2	5.87	123.58	118.30
1	C	31	ASP	CB-CG-OD2	5.79	123.52	118.30
1	D	506	ASP	CB-CG-OD2	5.73	123.46	118.30
1	A	511	ASP	CB-CG-OD2	5.70	123.43	118.30
1	B	140	ASP	CB-CG-OD2	5.68	123.42	118.30
1	A	31	ASP	CB-CG-OD2	5.62	123.36	118.30
1	D	151	ASP	CB-CG-OD2	5.56	123.31	118.30
1	B	188	ASP	CB-CG-OD2	5.55	123.29	118.30
1	D	161	ASP	CB-CG-OD2	5.53	123.27	118.30
1	A	188	ASP	CB-CG-OD2	5.51	123.26	118.30
1	D	458	ASP	CB-CG-OD2	5.50	123.25	118.30
1	D	31	ASP	CB-CG-OD2	5.49	123.24	118.30
1	B	161	ASP	CB-CG-OD2	5.43	123.19	118.30
1	A	259	ASP	CB-CG-OD2	5.42	123.17	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	539	ASP	CB-CG-OD2	5.40	123.16	118.30
1	A	530	ASP	CB-CG-OD2	5.40	123.16	118.30
1	C	530	ASP	CB-CG-OD2	5.40	123.16	118.30
1	C	63	ASP	CB-CG-OD2	5.25	123.03	118.30
1	D	114	ASP	CB-CG-OD2	5.25	123.02	118.30
1	C	539	ASP	CB-CG-OD2	5.18	122.96	118.30
1	B	458	ASP	CB-CG-OD2	5.16	122.95	118.30
1	C	35	ASP	CB-CG-OD2	5.15	122.93	118.30
1	B	127	ASP	CB-CG-OD2	5.14	122.92	118.30
1	C	114	ASP	CB-CG-OD2	5.13	122.92	118.30
1	C	511	ASP	CB-CG-OD2	5.07	122.86	118.30
1	D	63	ASP	CB-CG-OD2	5.07	122.86	118.30

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	4445	0	4404	32	0
1	B	4445	0	4404	38	0
1	C	4445	0	4404	49	0
1	D	4445	0	4404	35	0
2	A	403	0	0	6	0
2	B	398	0	0	6	0
2	C	349	0	0	14	0
2	D	325	0	0	7	0
All	All	19255	0	17616	146	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 4.

All (146) 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:B:314:LYS:HE3	2:B:896:HOH:O	1.71	0.89
1:B:19:GLU:HB2	2:B:895:HOH:O	1.71	0.89
1:B:306:HIS:HE1	1:B:316:ALA:H	1.24	0.83
1:B:367:SER:OG	1:B:369:THR:HG23	1.82	0.79
1:A:306:HIS:HE1	1:A:316:ALA:H	1.30	0.77
1:A:393:GLN:HE22	1:B:514:GLY:H	1.33	0.76
1:B:140:ASP:HB2	2:B:815:HOH:O	1.89	0.72
2:A:862:HOH:O	1:B:43:THR:HG21	1.89	0.72
1:D:200:ASN:OD1	1:D:202:GLU:HG2	1.90	0.71
1:C:241:LYS:NZ	2:C:832:HOH:O	2.25	0.70
1:B:314:LYS:CE	2:B:896:HOH:O	2.33	0.69
1:C:393:GLN:HE22	1:C:397:GLN:HE21	1.41	0.68
2:C:773:HOH:O	1:D:43:THR:HG21	1.91	0.68
1:D:91:ASN:ND2	1:D:508:ASN:HD21	1.92	0.67
1:A:121:GLU:OE1	2:A:815:HOH:O	2.13	0.66
1:C:371:VAL:HG22	1:C:373:HIS:CE1	2.32	0.65
1:C:12:LYS:HE3	2:C:892:HOH:O	1.96	0.64
1:B:108:ASN:ND2	1:B:123:ASN:HD21	1.96	0.63
1:D:463:LEU:HB3	1:D:464:PRO:HD3	1.81	0.63
1:C:9:GLN:OE1	1:C:12:LYS:HE2	2.00	0.62
1:D:91:ASN:HD22	1:D:508:ASN:HD21	1.46	0.62
1:A:38:ASN:OD1	2:A:827:HOH:O	2.16	0.61
1:D:1:MET:SD	2:D:795:HOH:O	2.56	0.61
1:B:393:GLN:HE22	1:B:397:GLN:HE21	1.46	0.61
1:C:121:GLU:HA	1:C:121:GLU:OE2	2.01	0.60
1:C:15:GLN:NE2	1:C:19:GLU:CD	2.55	0.59
1:B:21:ARG:HA	1:B:24:LEU:HD22	1.85	0.59
1:C:15:GLN:HE22	1:C:19:GLU:CD	2.07	0.58
1:A:224:THR:OG1	1:B:421:HIS:HE1	1.86	0.58
1:C:12:LYS:CE	2:C:892:HOH:O	2.51	0.57
1:A:388:GLN:HA	1:A:392:TYR:CD1	2.39	0.57
1:C:7:ASP:O	1:C:11:GLN:HG3	2.04	0.57
1:C:83:ARG:NH2	2:C:873:HOH:O	2.16	0.57
1:A:121:GLU:HG2	2:A:829:HOH:O	2.04	0.57
1:C:465:HIS:HD2	2:D:657:HOH:O	1.87	0.57
1:D:557:VAL:HG22	2:D:766:HOH:O	2.03	0.57
1:C:465:HIS:HE1	2:D:877:HOH:O	1.86	0.57
1:C:34:LYS:HG3	2:C:865:HOH:O	2.04	0.57
1:D:108:ASN:ND2	1:D:123:ASN:HD21	2.03	0.56
1:A:1:MET:HB2	1:A:6:ARG:HE	1.70	0.56
1:A:353:GLN:O	1:A:357:MET:HB2	2.06	0.55
1:C:388:GLN:HA	1:C:392:TYR:CD1	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:522:ALA:O	1:D:526:GLU:HG3	2.05	0.55
1:A:250:THR:HG22	1:A:254:LYS:HD2	1.89	0.55
1:C:316:ALA:HB3	1:C:317:PRO:HD3	1.89	0.55
1:D:524:LYS:HD3	2:D:798:HOH:O	2.06	0.55
1:C:353:GLN:O	1:C:357:MET:HB2	2.07	0.55
1:C:194:LYS:HD2	2:C:885:HOH:O	2.07	0.54
1:A:179:PRO:O	1:A:287:HIS:HD2	1.91	0.54
1:D:27:ARG:HD2	1:D:438:ARG:O	2.07	0.54
1:B:388:GLN:HE22	1:B:428:ASN:HD22	1.55	0.53
1:B:388:GLN:HE22	1:B:428:ASN:ND2	2.05	0.53
1:D:557:VAL:HG23	1:D:557:VAL:O	2.09	0.53
1:A:13:LEU:HD11	1:A:68:LEU:HD23	1.89	0.53
1:A:393:GLN:HE22	1:B:514:GLY:N	2.05	0.52
1:A:306:HIS:HD2	2:A:680:HOH:O	1.92	0.52
1:C:165:LEU:HD23	1:C:165:LEU:C	2.30	0.52
1:C:460:GLU:HG3	2:C:903:HOH:O	2.10	0.51
1:D:249:ASN:C	1:D:249:ASN:HD22	2.14	0.51
1:D:35:ASP:OD1	2:D:870:HOH:O	2.19	0.51
1:D:254:LYS:HD2	1:D:260:PRO:HD3	1.92	0.51
1:B:306:HIS:CE1	1:B:316:ALA:H	2.16	0.51
1:C:530:ASP:CG	2:C:899:HOH:O	2.48	0.51
1:A:103:LEU:HD11	1:A:270:VAL:HG22	1.92	0.51
1:D:396:HIS:HD2	2:D:675:HOH:O	1.93	0.50
1:C:249:ASN:C	1:C:249:ASN:HD22	2.14	0.50
1:A:187:ILE:O	1:B:421:HIS:HD2	1.95	0.50
1:B:99:LEU:HB2	1:B:269:TRP:CE3	2.47	0.50
1:B:353:GLN:O	1:B:357:MET:HB2	2.11	0.50
1:B:259:ASP:OD2	1:B:261:GLN:NE2	2.44	0.49
1:D:396:HIS:HE1	1:D:432:GLN:OE1	1.95	0.49
1:C:231:GLN:NE2	2:C:762:HOH:O	2.44	0.49
1:C:20:HIS:O	1:C:23:GLU:HG2	2.13	0.49
1:C:447:LYS:HE2	2:C:896:HOH:O	2.13	0.48
1:D:186:ASN:HD22	1:D:187:ILE:N	2.10	0.48
1:A:315:ASN:HD22	1:A:317:PRO:HD2	1.79	0.48
1:C:408:ILE:HD13	1:C:426:LEU:HD23	1.94	0.47
1:C:13:LEU:HD11	1:C:68:LEU:CD2	2.44	0.47
1:A:315:ASN:ND2	1:A:317:PRO:HD2	2.29	0.47
1:A:515:VAL:HG23	1:A:519:LYS:HE3	1.96	0.47
1:A:100:HIS:HA	1:A:103:LEU:HD12	1.96	0.47
1:A:46:THR:O	1:A:47:ASN:HB2	2.15	0.47
1:B:165:LEU:HD23	1:B:165:LEU:C	2.35	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:346:HIS:HA	1:D:383:PRO:HG3	1.96	0.47
1:B:408:ILE:HD13	1:B:426:LEU:HD23	1.95	0.47
1:C:35:ASP:HA	2:C:733:HOH:O	2.14	0.47
1:D:388:GLN:HA	1:D:392:TYR:CD1	2.49	0.47
1:B:19:GLU:OE1	1:B:20:HIS:CE1	2.68	0.46
1:C:172:LYS:HD3	1:C:287:HIS:HE1	1.78	0.46
1:B:388:GLN:HA	1:B:392:TYR:CD1	2.50	0.46
1:C:246:LEU:HD13	1:C:280:ILE:HA	1.98	0.46
1:B:19:GLU:CB	2:B:895:HOH:O	2.46	0.46
1:D:455:SER:O	1:D:459:LEU:N	2.49	0.46
1:A:165:LEU:HD23	1:A:165:LEU:C	2.37	0.46
1:B:172:LYS:HD3	1:B:287:HIS:HE1	1.80	0.45
1:B:179:PRO:O	1:B:287:HIS:HD2	1.98	0.45
1:C:530:ASP:N	2:C:899:HOH:O	2.24	0.45
1:A:241:LYS:HG2	1:A:241:LYS:H	1.68	0.45
1:C:13:LEU:HD22	1:C:326:TRP:CZ3	2.51	0.45
1:C:556:ARG:HH11	1:C:556:ARG:HG2	1.81	0.45
1:C:9:GLN:HA	1:C:12:LYS:HG2	1.99	0.45
1:C:46:THR:O	1:C:47:ASN:HB2	2.17	0.45
1:C:64:VAL:HA	1:C:67:MET:HE3	1.98	0.45
1:C:385:THR:H	1:D:186:ASN:ND2	2.15	0.44
1:A:246:LEU:HD13	1:A:280:ILE:HA	1.98	0.44
1:C:371:VAL:HG22	1:C:373:HIS:NE2	2.32	0.44
1:D:165:LEU:C	1:D:165:LEU:HD23	2.38	0.44
1:A:251:THR:O	1:A:255:GLU:HG3	2.16	0.44
1:B:62:GLU:HG2	2:B:820:HOH:O	2.16	0.44
1:D:408:ILE:HD13	1:D:426:LEU:HD23	2.00	0.43
1:C:447:LYS:CE	2:C:896:HOH:O	2.66	0.43
1:D:499:PHE:O	1:D:503:ILE:HG12	2.18	0.43
1:B:219:ILE:O	1:B:223:GLU:HG3	2.18	0.43
1:C:13:LEU:HD11	1:C:68:LEU:HD23	2.00	0.43
1:C:371:VAL:HG13	1:C:373:HIS:O	2.19	0.43
1:C:423:LYS:HE3	1:D:526:GLU:O	2.17	0.43
1:D:91:ASN:C	1:D:91:ASN:HD22	2.22	0.43
1:B:1:MET:HB3	1:B:6:ARG:HD2	2.01	0.43
1:D:326:TRP:O	1:D:330:CYS:HB2	2.18	0.43
1:B:388:GLN:HA	1:B:392:TYR:CG	2.54	0.43
1:A:15:GLN:NE2	2:A:954:HOH:O	2.49	0.42
1:A:316:ALA:HB3	1:A:317:PRO:HD3	2.00	0.42
1:A:388:GLN:HA	1:A:392:TYR:CG	2.54	0.42
1:A:524:LYS:HB3	1:A:524:LYS:HE2	1.88	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:526:GLU:HB2	1:D:527:PRO:HD3	2.01	0.42
1:C:15:GLN:HE21	1:C:15:GLN:C	2.22	0.42
1:C:388:GLN:HA	1:C:392:TYR:CG	2.55	0.42
1:D:353:GLN:O	1:D:357:MET:HB2	2.20	0.42
1:D:230:LEU:O	1:D:234:LYS:HD3	2.20	0.42
1:B:316:ALA:HB3	1:B:317:PRO:HD3	2.02	0.42
1:A:99:LEU:HB2	1:A:269:TRP:CE3	2.55	0.41
1:B:46:THR:O	1:B:47:ASN:HB2	2.20	0.41
1:A:57:LYS:HE2	1:B:541:SER:OG	2.21	0.41
1:B:172:LYS:N	1:B:173:PRO:CD	2.83	0.41
1:B:459:LEU:HD23	1:B:459:LEU:C	2.40	0.41
1:C:344:TYR:OH	1:D:194:LYS:NZ	2.34	0.41
1:B:108:ASN:HD21	1:B:123:ASN:HD21	1.67	0.41
1:C:172:LYS:HA	1:C:172:LYS:HD3	1.94	0.41
1:C:522:ALA:O	1:C:526:GLU:HG3	2.21	0.41
1:C:172:LYS:N	1:C:173:PRO:CD	2.84	0.41
1:D:442:THR:CG2	1:D:463:LEU:HD21	2.51	0.41
1:D:246:LEU:HD13	1:D:280:ILE:HA	2.03	0.41
1:C:179:PRO:O	1:C:287:HIS:HD2	2.03	0.41
1:A:7:ASP:HA	1:A:8:PRO:HD3	1.97	0.40
1:B:26:LEU:CB	1:B:437:MET:HG2	2.50	0.40
1:D:284:ILE:O	1:D:288:VAL:HG22	2.22	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	555/558 (100%)	539 (97%)	16 (3%)	0	100	100
1	B	555/558 (100%)	539 (97%)	16 (3%)	0	100	100
1	C	555/558 (100%)	537 (97%)	18 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	D	555/558 (100%)	534 (96%)	20 (4%)	1 (0%)	51	41
All	All	2220/2232 (100%)	2149 (97%)	70 (3%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	234	LYS

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	476/477 (100%)	462 (97%)	14 (3%)	48	39
1	B	476/477 (100%)	463 (97%)	13 (3%)	50	42
1	C	476/477 (100%)	456 (96%)	20 (4%)	34	23
1	D	476/477 (100%)	456 (96%)	20 (4%)	34	23
All	All	1904/1908 (100%)	1837 (96%)	67 (4%)	41	30

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

Mol	Chain	Res	Type
1	A	1	MET
1	A	27	ARG
1	A	34	LYS
1	A	104	ARG
1	A	113	VAL
1	A	134	GLN
1	A	213	PHE
1	A	241	LYS
1	A	315	ASN
1	A	449	LEU
1	A	450	GLN
1	A	457	GLU
1	A	461	ARG

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Mol	Chain	Res	Type
1	A	466	LYS
1	B	5	THR
1	B	21	ARG
1	B	22	SER
1	B	24	LEU
1	B	35	ASP
1	B	42	LEU
1	B	104	ARG
1	B	213	PHE
1	B	234	LYS
1	B	369	THR
1	B	457	GLU
1	B	554	GLU
1	B	557	VAL
1	C	13	LEU
1	C	15	GLN
1	C	22	SER
1	C	27	ARG
1	C	34	LYS
1	C	104	ARG
1	C	113	VAL
1	C	134	GLN
1	C	213	PHE
1	C	249	ASN
1	C	254	LYS
1	C	261	GLN
1	C	308	ARG
1	C	371	VAL
1	C	447	LYS
1	C	449	LEU
1	C	458	ASP
1	C	479	PHE
1	C	532	SER
1	C	556	ARG
1	D	13	LEU
1	D	21	ARG
1	D	23	GLU
1	D	34	LYS
1	D	35	ASP
1	D	89	LYS
1	D	91	ASN
1	D	104	ARG

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Mol	Chain	Res	Type
1	D	113	VAL
1	D	121	GLU
1	D	162	LEU
1	D	186	ASN
1	D	192	ILE
1	D	213	PHE
1	D	249	ASN
1	D	250	THR
1	D	251	THR
1	D	266	PHE
1	D	315	ASN
1	D	369	THR

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (60) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	9	GLN
1	A	14	GLN
1	A	38	ASN
1	A	58	ASN
1	A	134	GLN
1	A	287	HIS
1	A	292	ASN
1	A	305	GLN
1	A	306	HIS
1	A	315	ASN
1	A	354	GLN
1	A	393	GLN
1	A	397	GLN
1	A	475	ASN
1	B	11	GLN
1	B	15	GLN
1	B	58	ASN
1	B	86	ASN
1	B	108	ASN
1	B	154	ASN
1	B	216	GLN
1	B	287	HIS
1	B	306	HIS
1	B	354	GLN
1	B	397	GLN
1	B	421	HIS

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Mol	Chain	Res	Type
1	B	428	ASN
1	B	432	GLN
1	B	450	GLN
1	B	475	ASN
1	C	11	GLN
1	C	15	GLN
1	C	33	ASN
1	C	58	ASN
1	C	86	ASN
1	C	123	ASN
1	C	231	GLN
1	C	249	ASN
1	C	287	HIS
1	C	292	ASN
1	C	354	GLN
1	C	360	ASN
1	C	386	ASN
1	C	397	GLN
1	C	465	HIS
1	D	11	GLN
1	D	58	ASN
1	D	86	ASN
1	D	91	ASN
1	D	108	ASN
1	D	186	ASN
1	D	198	GLN
1	D	216	GLN
1	D	231	GLN
1	D	249	ASN
1	D	292	ASN
1	D	315	ASN
1	D	388	GLN
1	D	396	HIS
1	D	475	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no carbohydrates 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.