Full wwPDB X-ray Structure Validation Report (i)

Aug 14, 2023 – 02:40 PM EDT

PDB ID	:	1R1L
Title	:	Structure of dimeric antithrombin complexed with a P14-P9 reactive loop peptide and an exogenous tripeptide (formyl-norleucine-LF)
Authors	:	Zhou, A.; Huntington, J.A.; Lomas, D.A.; Stein, P.E.; Carrell, R.W.
Deposited on	:	2003-09-24
Resolution	:	2.70 Å(reported)

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

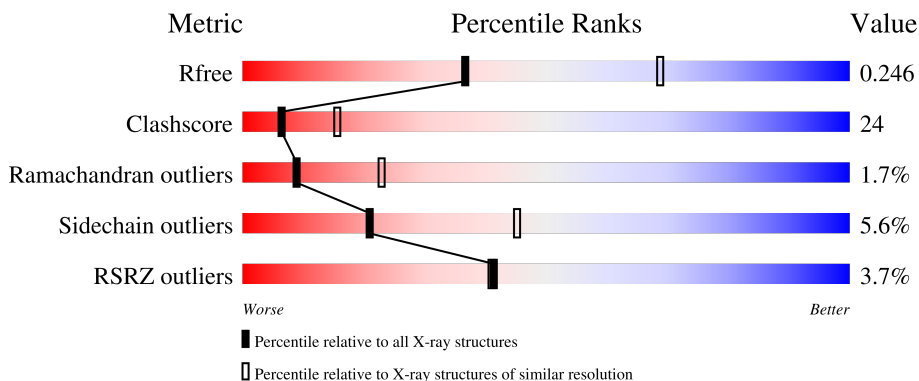|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

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 2.70 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	Percentile Ranks	Value
Rfree		0.246
Clashscore		24
Ramachandran outliers		1.7%
Sidechain outliers		5.6%
RSRZ outliers		3.7%

Worse   *Better*

▌ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	2808 (2.70-2.70)
Clashscore	141614	3122 (2.70-2.70)
Ramachandran outliers	138981	3069 (2.70-2.70)
Sidechain outliers	138945	3069 (2.70-2.70)
RSRZ outliers	127900	2737 (2.70-2.70)

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 <=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	I	432	3% 63% 29% · ·
1	L	432	4% 50% 41% · 5%
2	C	7	86% 14%
3	D	3	33% 67%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard

residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	NAG	I	901	X	-	-	-
4	NAG	I	941	-	-	X	-
4	NAG	I	942	X	-	-	X
4	NAG	I	962	X	-	-	X
4	NAG	L	841	X	-	X	-

2 Entry composition ⓘ

There are 7 unique types of molecules in this entry. The entry contains 6898 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 Antithrombin-III.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	L	409	Total 3270	C 2085	N 550	O 617	S 18	0	0	0
1	I	416	Total 3328	C 2121	N 562	O 627	S 18	0	0	0

- Molecule 2 is a protein called Antithrombin P14-P9 peptide.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	C	7	Total 40	C 22	N 6	O 12	0	0	0

- Molecule 3 is a protein called EXOGENOUS TRIPEPTIDE formyl-(NLE)LF.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	D	3	Total 28	C 21	N 3	O 4	0	0	0

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).

NAG

O6
OH

O1
HO

O5
O

C6

C1(R)   C5(R)

C2(R)   C4(S)
C3(R)

N2
HN

OH
O4

C7

OH
O3

C8

O
O7

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	L	1	Total	C	N	O	0	0
			15	8	1	6		
4	L	1	Total	C	N	O	0	0
			15	8	1	6		
4	I	1	Total	C	N	O	0	0
			15	8	1	6		
4	I	1	Total	C	N	O	0	0
			15	8	1	6		
4	I	1	Total	C	N	O	0	0
			15	8	1	6		
4	I	1	Total	C	N	O	0	0
			15	8	1	6		
4	I	1	Total	C	N	O	0	0
			15	8	1	6		

- Molecule 5 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).

GOL

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	C	1	Total	C	O	0	0
			6	3	3		

• Molecule 6 is FORMYL GROUP (three-letter code: FOR) (formula: CH_2O).

FOR
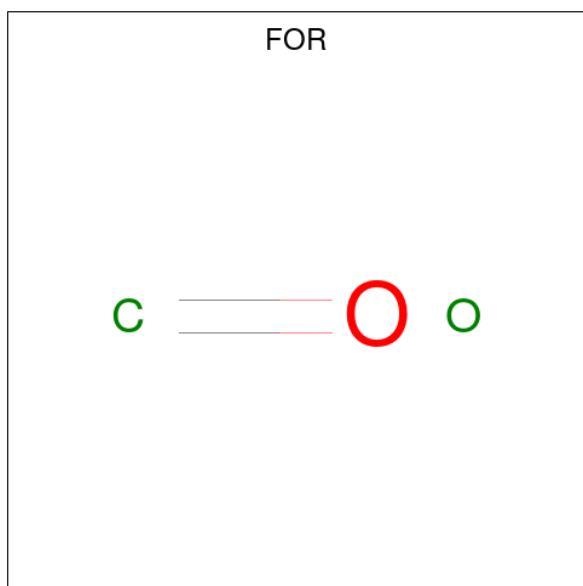
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	D	1	Total	C	O	0	0
			2	1	1		

• Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	L	42	Total 42	O 42	0	0
7	I	76	Total 76	O 76	0	0
7	D	1	Total 1	O 1	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: Antithrombin-III

- Molecule 1: Antithrombin-III

E306 E310 L311 M314 M315 L316 H319 M320 P321 R322 F323 F329 S330 L331 K332 L340 V341 D342 L343 F344 S345 P346 L351 P352 G353 I354 V355 A356 E357 G358 R359 D360 D361 L362 Y363 D366 A382 A383 I390 A391 V400 K403 L409 V410 F411 E414

V415 P416 L417 F422 V431 LYS

• Molecule 2: Antithrombin P14-P9 peptide

Chain C:

86%   14%

ACE1 S2 E3 S7
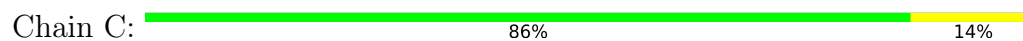
• Molecule 3: EXOGENOUS TRIPEPTIDE formyl-(NLE)LF

Chain D:

33%   67%

L10 L11 F12

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	69.17Å 100.42Å 87.20Å 90.00° 104.29° 90.00°	Depositor
Resolution (Å)	24.99 – 2.70 24.99 – 2.70	Depositor EDS
% Data completeness (in resolution range)	99.5 (24.99-2.70) 99.6 (24.99-2.70)	Depositor EDS
R_{merge}	0.16	Depositor
R_{sym}	0.14	Depositor
$< I/\sigma(I) >$ [1]	1.71 (at 2.72Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.204 , 0.249 0.195 , 0.246	Depositor DCC
R_{free} test set	1602 reflections (5.06%)	wwPDB-VP
Wilson B-factor (Å^2)	42.7	Xtriage
Anisotropy	0.024	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.31 , 63.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.49, < L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	6898	wwPDB-VP
Average B, all atoms (Å^2)	47.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.47% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< \|L\| >$, $< L^2 >$ 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)

Bond lengths and bond angles in the following residue types are not validated in this section: NAG, ACE, FOR, GOL, NLE

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	I	0.37	0/3394	0.61	0/4580
1	L	0.37	0/3334	0.61	1/4501 (0.0%)
2	C	0.46	0/37	0.46	0/48
3	D	0.75	0/20	0.84	0/24
All	All	0.38	0/6785	0.61	1/9153 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	L	316	LEU	CA-CB-CG	5.94	128.97	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	I	3328	0	3335	145	0
1	L	3270	0	3270	176	0
2	C	40	0	34	1	0
3	D	28	0	30	2	0
4	I	75	0	75	18	0
4	L	30	0	30	9	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	C	6	0	8	1	0
6	D	2	0	0	0	0
7	D	1	0	0	0	0
7	I	76	0	0	3	0
7	L	42	0	0	1	0
All	All	6898	0	6782	325	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 24.

All (325) 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:L:155:ASN:HD21	4:L:841:NAG:H1	1.14	1.13
1:L:155:ASN:HD21	4:L:841:NAG:C1	1.60	1.12
1:I:96:ASN:HD21	4:I:901:NAG:C1	1.62	1.11
1:L:155:ASN:ND2	4:L:841:NAG:H1	1.69	1.05
1:I:57:ARG:HH11	1:I:57:ARG:HB3	1.21	1.03
1:L:7:ILE:HD11	1:L:164:LEU:HG	1.33	1.02
1:I:96:ASN:HD21	4:I:901:NAG:H1	1.19	1.02
1:I:96:ASN:ND2	4:I:901:NAG:H1	1.74	1.02
1:I:227:SER:HB3	1:I:254:GLN:HE22	1.28	0.97
1:I:208:ASN:ND2	1:I:210:LEU:H	1.67	0.92
1:I:316:LEU:HB3	1:I:400:VAL:HG13	1.52	0.91
1:I:319:HIS:HB2	1:I:403:LYS:HA	1.54	0.89
4:I:941:NAG:H61	4:I:942:NAG:H81	1.54	0.88
1:I:91:LYS:NZ	1:I:120:HIS:NE2	2.22	0.88
1:I:19:PRO:HG3	1:I:22:ILE:HD11	1.56	0.87
1:L:428:ASN:HD21	1:L:430:CYS:HB2	1.41	0.85
1:I:57:ARG:HB3	1:I:57:ARG:NH1	1.92	0.83
1:I:178:ASN:HD22	1:I:178:ASN:N	1.74	0.82
1:L:17:MET:SD	1:L:161:ILE:HD11	2.21	0.80
1:L:287:LYS:HG2	1:L:290:LYS:HB2	1.63	0.79
1:L:91:LYS:NZ	1:L:120:HIS:NE2	2.31	0.79
1:L:332:LYS:O	1:L:336:GLN:HG3	1.84	0.77
1:I:208:ASN:HD22	1:I:210:LEU:H	1.32	0.77
1:L:18:ASN:ND2	4:L:841:NAG:H62	2.00	0.76
1:L:42:GLU:HB3	1:L:45:ASN:HD22	1.51	0.76
1:L:183:ARG:HD2	1:L:203:PRO:O	1.87	0.74
1:I:300:THR:CG2	1:I:302:GLU:HG2	2.19	0.73
1:L:46:ARG:O	1:L:50:GLU:HG3	1.89	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:208:ASN:HD22	1:I:208:ASN:C	1.92	0.72
1:I:7:ILE:HG13	1:I:15:ILE:CD1	2.20	0.71
1:L:102:LEU:HD23	1:L:340:LEU:HD21	1.72	0.71
1:L:71:ASN:HB3	1:L:74:ASP:OD2	1.91	0.70
1:L:230:SER:HB2	1:L:233:ASN:HD22	1.54	0.70
1:I:209:GLU:CD	1:I:209:GLU:H	1.95	0.70
1:L:209:GLU:H	1:L:209:GLU:CD	1.95	0.69
1:I:46:ARG:O	1:I:50:GLU:HG3	1.93	0.69
1:L:49:TRP:CH2	1:L:53:LYS:HD2	2.27	0.68
1:I:41:PRO:O	1:I:42:GLU:HB3	1.94	0.68
1:L:96:ASN:N	1:L:96:ASN:HD22	1.90	0.68
1:L:155:ASN:ND2	4:L:841:NAG:C1	2.39	0.67
1:L:176:LYS:HE3	1:L:359:ARG:HH22	1.58	0.67
1:I:91:LYS:HZ1	1:I:120:HIS:CE1	2.12	0.67
1:I:300:THR:HG21	1:I:302:GLU:HG2	1.76	0.66
1:L:77:PHE:CE2	1:L:373:LEU:HB2	2.32	0.65
1:I:82:SER:HA	1:I:217:ASN:ND2	2.12	0.65
1:L:300:THR:HB	1:L:303:VAL:HG23	1.79	0.65
1:L:108:PHE:HB3	1:L:119:ILE:HG13	1.78	0.64
1:L:254:GLN:NE2	1:L:258:PHE:HZ	1.95	0.64
4:L:841:NAG:H82	4:L:841:NAG:O1	1.98	0.64
1:L:96:ASN:ND2	4:L:801:NAG:O1	2.30	0.64
1:I:177:GLU:C	1:I:178:ASN:HD22	2.01	0.64
1:L:428:ASN:ND2	1:L:430:CYS:HB2	2.13	0.64
1:I:96:ASN:ND2	4:I:901:NAG:C1	2.41	0.64
1:L:427:ALA:O	1:L:429:PRO:HD3	1.98	0.63
1:L:398:ASN:N	1:L:398:ASN:HD22	1.95	0.63
1:I:155:ASN:ND2	4:I:941:NAG:O1	2.31	0.63
1:I:28:LYS:HE3	1:I:29:LYS:HE3	1.79	0.63
1:I:208:ASN:ND2	1:I:210:LEU:N	2.45	0.63
1:L:91:LYS:CE	1:L:103:MET:HE3	2.28	0.63
1:I:178:ASN:N	1:I:178:ASN:ND2	2.47	0.63
1:L:70:LYS:HD2	1:L:76:ILE:HG12	1.81	0.62
1:L:285:LEU:N	1:L:285:LEU:HD23	2.14	0.62
1:I:111:ILE:HG22	1:I:114:LYS:HG3	1.81	0.62
1:I:192:ASN:ND2	4:I:961:NAG:O5	2.32	0.62
1:I:414:GLU:OE1	1:I:416:PRO:HG2	1.98	0.62
1:I:152:LEU:CD1	1:I:212:VAL:HB	2.29	0.62
1:I:294:LYS:O	1:I:298:GLU:HG3	2.00	0.62
1:I:306:GLU:O	1:I:310:GLU:HG3	1.98	0.62
1:I:192:ASN:HD21	4:I:961:NAG:C5	2.13	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:230:SER:HB3	1:L:232:GLU:OE2	2.00	0.61
1:I:201:VAL:HG23	1:I:202:ILE:HG13	1.82	0.61
1:L:60:THR:O	1:L:64:GLN:HG3	2.00	0.61
1:L:324:ARG:HA	1:L:373:LEU:O	2.01	0.61
1:L:287:LYS:HG2	1:L:290:LYS:CB	2.30	0.61
1:I:28:LYS:HB3	1:I:112:SER:OG	2.00	0.61
1:L:178:ASN:HB3	1:L:181:GLN:HB2	1.81	0.60
1:L:230:SER:HB2	1:L:233:ASN:ND2	2.16	0.60
1:L:407:PRO:HB3	1:L:427:ALA:HB2	1.82	0.60
1:I:183:ARG:NE	1:I:204:SER:HA	2.17	0.60
1:I:356:ALA:HB1	4:I:941:NAG:H81	1.83	0.60
3:D:12:PHE:N	3:D:12:PHE:CD1	2.69	0.60
1:L:91:LYS:HE2	1:L:103:MET:HE3	1.82	0.60
1:L:116:SER:O	1:L:119:ILE:HG22	2.00	0.60
1:I:300:THR:HG22	1:I:303:VAL:H	1.66	0.60
1:I:332:LYS:HB2	7:I:1038:HOH:O	2.02	0.60
1:L:284:ILE:HD13	1:L:307:TRP:CZ3	2.36	0.60
4:I:961:NAG:O4	4:I:962:NAG:N2	2.35	0.60
1:I:227:SER:HB3	1:I:254:GLN:NE2	2.08	0.60
1:I:7:ILE:HG13	1:I:15:ILE:HD13	1.84	0.60
1:I:283:LEU:HD11	1:I:320:MET:CE	2.32	0.59
1:L:18:ASN:N	1:L:19:PRO:HD3	2.18	0.59
1:L:208:ASN:HD22	1:L:393:ARG:NH1	1.99	0.59
1:I:341:VAL:HG23	1:I:342:ASP:N	2.17	0.59
1:L:44:THR:O	1:L:48:VAL:HG23	2.02	0.59
1:I:152:LEU:HD11	1:I:212:VAL:HB	1.84	0.59
1:I:108:PHE:HB3	1:I:119:ILE:HG12	1.84	0.59
1:L:316:LEU:HD23	1:L:318:VAL:HG23	1.83	0.59
1:I:208:ASN:HD22	1:I:210:LEU:N	1.99	0.59
1:I:294:LYS:HA	1:I:294:LYS:HE3	1.84	0.59
1:L:415:VAL:HB	1:L:416:PRO:HD3	1.84	0.59
1:L:265:GLU:OE2	1:L:290:LYS:HE2	2.02	0.59
1:L:332:LYS:NZ	1:L:394:SER:OG	2.33	0.58
1:I:192:ASN:HD21	4:I:961:NAG:H61	1.69	0.58
1:L:428:ASN:C	1:L:428:ASN:HD22	2.07	0.58
1:I:174:ASP:OD2	1:I:177:GLU:HB2	2.04	0.58
1:I:366:ASP:HB2	3:D:11:LEU:HD11	1.85	0.58
1:L:398:ASN:N	1:L:398:ASN:ND2	2.52	0.57
1:I:286:PRO:HB3	1:I:295:VAL:HG21	1.86	0.57
1:I:202:ILE:HG21	1:I:207:ILE:CD1	2.34	0.57
1:I:102:LEU:HD23	1:I:340:LEU:HD11	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:23:TYR:CE2	1:L:100:GLN:HG3	2.40	0.57
1:L:260:TYR:CG	1:L:261:ARG:N	2.72	0.57
1:L:300:THR:CG2	1:L:302:GLU:HG2	2.34	0.57
1:I:269:VAL:HG12	1:I:311:LEU:HD21	1.86	0.57
1:I:186:ILE:HD13	1:I:214:VAL:HG11	1.86	0.56
1:I:250:SER:O	1:I:321:PRO:HA	2.05	0.56
1:L:96:ASN:N	1:L:96:ASN:ND2	2.54	0.56
1:I:346:PRO:HG3	1:I:363:TYR:CZ	2.40	0.56
1:I:129:ARG:HB3	1:I:417:LEU:HD11	1.86	0.56
1:I:290:LYS:HE3	1:I:294:LYS:HG2	1.87	0.56
1:L:234:THR:C	1:L:235:ARG:HD2	2.25	0.56
1:I:19:PRO:CG	1:I:22:ILE:HD11	2.33	0.56
1:I:130:LEU:HD23	1:I:414:GLU:HG3	1.88	0.55
1:L:230:SER:HB3	1:L:232:GLU:HG2	1.87	0.55
1:L:62:PHE:HZ	1:L:331:LEU:HD22	1.72	0.55
1:L:7:ILE:CD1	1:L:165:VAL:HA	2.37	0.55
1:L:225:TRP:CD1	1:L:379:GLY:HA2	2.42	0.55
1:I:341:VAL:HG23	1:I:342:ASP:H	1.71	0.55
1:I:257:LYS:HG3	1:I:315:MET:HE2	1.87	0.54
1:L:398:ASN:O	1:L:399:ARG:HB3	2.08	0.54
1:I:202:ILE:HD13	1:I:207:ILE:HD11	1.88	0.54
1:I:24:ARG:HD2	1:I:115:THR:HG22	1.89	0.54
1:I:300:THR:HG23	1:I:302:GLU:OE2	2.07	0.54
1:L:47:ARG:HG2	1:L:122:PHE:CE2	2.43	0.54
1:L:19:PRO:HG2	1:L:117:ASP:HB2	1.89	0.54
1:I:41:PRO:O	1:I:42:GLU:CB	2.56	0.54
1:I:203:PRO:HB2	1:I:205:GLU:OE2	2.08	0.53
1:L:300:THR:HG22	1:L:302:GLU:HG2	1.90	0.53
1:L:47:ARG:HG2	1:L:122:PHE:CZ	2.42	0.53
1:L:62:PHE:CZ	1:L:331:LEU:HD22	2.44	0.53
1:I:132:ARG:CD	1:I:136:LYS:HE3	2.39	0.53
1:L:7:ILE:HD12	1:L:165:VAL:HA	1.91	0.53
1:L:261:ARG:HB3	1:L:311:LEU:HD23	1.91	0.53
1:L:265:GLU:O	1:L:287:LYS:HD2	2.08	0.53
1:L:77:PHE:CZ	1:L:373:LEU:HB2	2.43	0.53
1:I:82:SER:HA	1:I:217:ASN:HD21	1.74	0.53
1:L:49:TRP:CZ3	1:L:53:LYS:HD2	2.44	0.53
1:L:15:ILE:HG23	1:L:164:LEU:HD21	1.90	0.52
1:I:42:GLU:O	1:I:44:THR:N	2.42	0.52
1:L:316:LEU:CD2	1:L:318:VAL:HG23	2.40	0.52
1:L:203:PRO:HB2	1:L:395:LEU:HD12	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:321:PRO:HD3	1:I:391:ALA:O	2.09	0.52
1:I:15:ILE:HD12	1:I:121:PHE:HE1	1.74	0.52
1:L:95:CYS:SG	1:L:96:ASN:ND2	2.83	0.52
1:L:257:LYS:NZ	1:L:257:LYS:HB3	2.25	0.52
1:I:47:ARG:NH1	1:I:50:GLU:OE1	2.40	0.52
1:I:190:VAL:HG11	1:I:201:VAL:HG11	1.91	0.52
1:I:192:ASN:ND2	4:I:961:NAG:H61	2.24	0.52
1:L:298:GLU:O	1:L:303:VAL:HG21	2.10	0.51
1:L:133:LYS:O	1:L:136:LYS:HG3	2.11	0.51
1:I:192:ASN:HD21	4:I:961:NAG:C6	2.24	0.51
1:I:257:LYS:HG3	1:I:315:MET:CE	2.41	0.51
1:I:300:THR:HG23	1:I:301:PRO:HD2	1.93	0.51
1:I:356:ALA:CB	4:I:941:NAG:H81	2.41	0.51
1:L:22:ILE:HG22	1:L:23:TYR:N	2.27	0.50
1:L:300:THR:HG22	1:L:302:GLU:H	1.76	0.50
1:I:201:VAL:HG23	1:I:202:ILE:N	2.26	0.50
1:I:290:LYS:HE3	1:I:294:LYS:CG	2.42	0.50
1:L:113:GLU:OE1	1:L:118:GLN:HG3	2.11	0.50
1:L:172:PRO:O	1:L:173:LEU:HD12	2.12	0.50
1:I:158:TYR:CE2	1:I:354:ILE:HG23	2.47	0.50
1:L:428:ASN:HD22	1:L:430:CYS:H	1.60	0.49
1:I:60:THR:O	1:I:64:GLN:HG3	2.12	0.49
1:L:183:ARG:NH1	1:L:202:ILE:O	2.45	0.49
1:L:276:GLY:O	1:L:277:ASP:HB2	2.12	0.49
1:I:283:LEU:HD11	1:I:320:MET:HE1	1.95	0.49
1:L:11:LYS:HB3	1:L:12:PRO:HD2	1.94	0.49
1:L:82:SER:HA	1:L:217:ASN:ND2	2.27	0.49
1:L:91:LYS:CD	1:L:103:MET:HE3	2.43	0.49
1:L:93:GLY:O	1:L:351:LEU:HA	2.12	0.49
1:L:205:GLU:HB2	1:L:395:LEU:HD21	1.94	0.49
1:I:186:ILE:HG21	1:I:202:ILE:CD1	2.42	0.48
1:I:183:ARG:CZ	1:I:204:SER:HA	2.43	0.48
1:I:134:ALA:O	1:I:136:LYS:N	2.42	0.48
1:I:208:ASN:ND2	1:I:208:ASN:C	2.64	0.48
1:L:18:ASN:HD22	4:L:841:NAG:H62	1.73	0.48
1:I:131:TYR:CE2	1:I:142:SER:HB2	2.48	0.48
1:L:22:ILE:CG2	1:L:23:TYR:N	2.76	0.48
1:L:190:VAL:HG11	1:L:201:VAL:HG21	1.95	0.48
1:I:132:ARG:HD3	1:I:136:LYS:HE3	1.96	0.48
1:L:101:GLN:O	1:L:105:VAL:HG23	2.14	0.48
1:L:284:ILE:C	1:L:285:LEU:HD23	2.34	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:319:HIS:HB2	1:I:390:ILE:HA	1.95	0.48
1:I:45:ASN:HB3	1:I:48:VAL:HG13	1.96	0.47
1:I:414:GLU:CD	1:I:416:PRO:HG2	2.34	0.47
1:L:343:LEU:HD11	1:L:364:VAL:HG23	1.97	0.47
1:L:238:LEU:HD23	1:L:240:TYR:OH	2.14	0.47
1:L:332:LYS:HG3	1:L:344:PHE:CD2	2.49	0.47
1:I:178:ASN:HB3	1:I:181:GLN:HB3	1.97	0.47
1:L:147:PHE:O	1:L:213:LEU:HD12	2.15	0.47
1:L:152:LEU:HD22	1:L:358:GLY:HA3	1.96	0.47
1:I:208:ASN:HD22	1:I:209:GLU:N	2.13	0.47
1:L:228:LYS:HE2	1:L:378:GLU:O	2.14	0.47
1:I:284:ILE:HB	1:I:409:LEU:HB2	1.95	0.47
1:L:47:ARG:HG2	1:L:122:PHE:CE1	2.50	0.47
1:I:208:ASN:HD21	1:I:210:LEU:HB2	1.80	0.47
1:I:302:GLU:CD	1:I:302:GLU:H	2.18	0.47
1:I:346:PRO:HG3	1:I:363:TYR:CE1	2.50	0.47
4:I:941:NAG:O4	4:I:942:NAG:O7	2.33	0.47
1:L:235:ARG:HG2	1:L:235:ARG:HH11	1.78	0.47
1:I:89:MET:HB3	1:I:215:LEU:HD11	1.97	0.47
1:I:115:THR:OG1	1:I:118:GLN:NE2	2.48	0.47
1:L:173:LEU:HD23	1:L:182:SER:HB3	1.97	0.47
1:L:372:PHE:CD1	1:L:372:PHE:C	2.87	0.47
1:I:20:MET:CE	1:I:352:PRO:HB2	2.46	0.46
1:L:57:ARG:HG3	1:L:57:ARG:HH11	1.80	0.46
1:L:317:VAL:HG21	1:I:228:LYS:HG3	1.95	0.46
1:I:332:LYS:HB3	7:I:999:HOH:O	2.14	0.46
1:L:17:MET:CE	1:L:161:ILE:HD11	2.46	0.46
1:L:131:TYR:CZ	1:L:142:SER:HB2	2.51	0.46
1:I:126:LEU:HD12	1:I:417:LEU:HD13	1.96	0.46
1:I:7:ILE:HG13	1:I:15:ILE:HD11	1.96	0.46
1:I:15:ILE:HD12	1:I:121:PHE:CE1	2.51	0.46
1:L:18:ASN:N	1:L:19:PRO:CD	2.78	0.46
1:L:413:ARG:HG2	1:L:413:ARG:HH11	1.80	0.46
1:I:111:ILE:O	1:I:114:LYS:HB2	2.16	0.46
1:I:340:LEU:HD23	1:I:344:PHE:HE1	1.80	0.46
1:L:284:ILE:HD13	1:L:307:TRP:HZ3	1.78	0.46
1:L:407:PRO:HB2	1:L:425:ARG:HG2	1.98	0.46
1:I:86:ALA:HB2	5:C:200:GOL:H11	1.98	0.46
1:L:183:ARG:CZ	1:L:204:SER:HA	2.45	0.45
1:L:372:PHE:O	1:L:382:ALA:HA	2.16	0.45
1:I:322:ARG:O	1:I:323:PHE:HB3	2.16	0.45

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Full wwPDB X-ray Structure Validation Report

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:6:ASP:OD1	1:L:8:CYS:HB2	2.16	0.45
1:L:91:LYS:HE3	1:L:120:HIS:CE1	2.52	0.45
1:L:97:ASP:HB2	1:L:342:ASP:OD2	2.17	0.45
1:L:428:ASN:ND2	1:L:430:CYS:H	2.14	0.45
1:I:260:TYR:CG	1:I:261:ARG:N	2.84	0.45
1:L:47:ARG:HG2	1:L:122:PHE:CD2	2.52	0.45
1:I:152:LEU:HD12	1:I:212:VAL:HB	1.97	0.45
4:I:942:NAG:H82	4:I:942:NAG:O1	2.17	0.45
1:I:270:LEU:HD21	1:I:272:LEU:HD21	1.98	0.45
1:L:91:LYS:HD2	1:L:103:MET:HE3	1.99	0.45
1:L:286:PRO:HD3	1:L:292:LEU:HD13	1.99	0.45
1:I:314:MET:SD	1:I:400:VAL:HG11	2.57	0.45
1:L:343:LEU:CD1	1:L:364:VAL:HG23	2.47	0.45
1:I:13:ARG:CB	1:I:13:ARG:HH11	2.30	0.44
1:L:20:MET:HE2	4:L:841:NAG:H2	1.99	0.44
1:L:235:ARG:HD2	1:L:235:ARG:N	2.32	0.44
1:I:155:ASN:ND2	4:I:941:NAG:O5	2.50	0.44
1:L:190:VAL:HG11	1:L:201:VAL:CG2	2.48	0.44
1:I:186:ILE:HG21	1:I:202:ILE:HD12	1.98	0.44
1:L:131:TYR:CE2	1:L:142:SER:HB2	2.51	0.44
1:L:198:ILE:HG22	1:L:201:VAL:HG22	2.00	0.44
1:L:260:TYR:O	1:L:261:ARG:HB2	2.18	0.44
1:L:147:PHE:C	1:L:213:LEU:HD12	2.38	0.44
1:L:149:ASP:HA	1:L:173:LEU:O	2.18	0.44
1:L:287:LYS:CG	1:L:290:LYS:HB2	2.41	0.44
1:L:288:PRO:O	1:L:289:GLU:CB	2.66	0.44
1:I:143:ALA:HB3	1:I:218:THR:OG1	2.17	0.44
1:I:340:LEU:HD23	1:I:344:PHE:CE1	2.53	0.44
1:L:17:MET:C	1:L:19:PRO:HD3	2.38	0.44
1:L:197:ARG:NH1	1:L:381:GLU:OE2	2.51	0.44
1:I:197:ARG:NH1	2:C:3:GLU:OE1	2.45	0.44
1:L:201:VAL:HG23	7:L:857:HOH:O	2.17	0.43
1:I:77:PHE:CZ	1:I:422:PHE:HB3	2.53	0.43
1:L:203:PRO:HB2	1:L:395:LEU:CD1	2.48	0.43
1:L:261:ARG:HB2	1:L:311:LEU:HA	2.00	0.43
1:I:13:ARG:HB3	1:I:13:ARG:NH1	2.33	0.43
1:L:91:LYS:HD2	1:L:103:MET:CE	2.48	0.43
1:L:399:ARG:HG3	1:L:399:ARG:HH11	1.84	0.43
1:L:228:LYS:HD3	1:L:378:GLU:HA	2.00	0.43
1:L:300:THR:HG21	1:L:302:GLU:HG2	2.01	0.43
1:I:20:MET:HE2	1:I:352:PRO:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:15:ILE:HG23	1:L:164:LEU:CD2	2.48	0.43
1:L:407:PRO:HB3	1:L:427:ALA:CB	2.46	0.43
1:I:71:ASN:HB3	1:I:74:ASP:OD2	2.19	0.43
1:L:113:GLU:HB3	1:L:114:LYS:H	1.64	0.43
1:I:47:ARG:HA	1:I:47:ARG:HD3	1.87	0.43
1:I:131:TYR:CZ	1:I:142:SER:HB2	2.54	0.43
1:L:241:LYS:O	1:L:242:ALA:C	2.56	0.43
1:L:171:GLN:HA	1:L:172:PRO:HD3	1.83	0.42
1:L:229:PHE:CD2	1:L:254:GLN:HB2	2.53	0.42
1:I:256:GLY:HA2	1:I:315:MET:CE	2.50	0.42
1:I:351:LEU:N	1:I:352:PRO:CD	2.82	0.42
1:L:125:LYS:O	1:L:128:CYS:HB2	2.19	0.42
1:L:334:GLN:O	1:L:338:MET:HG3	2.19	0.42
1:L:115:THR:HB	1:L:117:ASP:OD2	2.19	0.42
1:L:119:ILE:HD13	1:L:119:ILE:C	2.39	0.42
1:I:155:ASN:OD1	1:I:157:THR:N	2.51	0.42
1:L:197:ARG:HA	1:L:197:ARG:HD2	1.76	0.42
1:L:42:GLU:CD	1:L:42:GLU:N	2.73	0.42
1:L:104:GLU:O	1:L:107:LYS:HD2	2.19	0.42
1:L:198:ILE:CG2	1:L:201:VAL:HG22	2.49	0.42
4:I:941:NAG:O4	4:I:942:NAG:C7	2.68	0.42
1:I:27:GLU:O	1:I:28:LYS:O	2.38	0.42
1:I:130:LEU:CD2	1:I:414:GLU:HG3	2.48	0.42
1:I:132:ARG:HD2	1:I:136:LYS:HG3	2.02	0.42
1:I:346:PRO:HA	1:I:363:TYR:CD2	2.54	0.42
1:L:71:ASN:O	1:L:73:ASN:N	2.52	0.41
1:I:55:ASN:HA	7:I:963:HOH:O	2.19	0.41
1:I:411:PHE:CD1	1:I:411:PHE:N	2.88	0.41
1:L:11:LYS:HB2	1:L:14:ASP:OD2	2.20	0.41
1:L:396:ASN:OD1	1:L:397:PRO:HD2	2.20	0.41
1:L:421:ILE:HG22	1:L:422:PHE:CD1	2.55	0.41
1:I:414:GLU:OE2	1:I:416:PRO:HG2	2.19	0.41
1:L:92:LEU:HD13	1:L:161:ILE:HG23	2.01	0.41
1:L:202:ILE:HA	1:L:203:PRO:HD3	1.89	0.41
1:L:19:PRO:HG2	1:L:117:ASP:CB	2.50	0.41
1:L:179:ALA:HB1	1:L:207:ILE:O	2.20	0.41
1:L:281:MET:HA	1:L:411:PHE:O	2.21	0.41
1:L:130:LEU:HG	1:L:417:LEU:HD13	2.02	0.41
1:L:340:LEU:HB3	1:L:344:PHE:HE1	1.86	0.41
1:I:254:GLN:NE2	1:I:258:PHE:HZ	2.19	0.41
1:I:269:VAL:CG1	1:I:311:LEU:HD21	2.49	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:200:ASP:HB3	1:L:370:LYS:NZ	2.36	0.41
1:L:252:MET:CG	1:L:322:ARG:HG3	2.51	0.41
1:L:241:LYS:HE3	1:L:247:CYS:SG	2.61	0.40
1:I:300:THR:HG22	1:I:302:GLU:N	2.36	0.40
1:I:329:PHE:HE1	1:I:331:LEU:HD23	1.85	0.40
1:L:119:ILE:HD13	1:L:119:ILE:O	2.22	0.40
1:I:152:LEU:HD11	1:I:212:VAL:CG1	2.51	0.40
1:L:257:LYS:NZ	1:L:313:GLU:HB3	2.36	0.40
1:L:250:SER:HB2	1:L:322:ARG:HB2	2.03	0.40
1:L:300:THR:HG23	1:L:301:PRO:HD2	2.04	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	I	412/432 (95%)	381 (92%)	22 (5%)	9 (2%)	6	17
1	L	405/432 (94%)	364 (90%)	36 (9%)	5 (1%)	13	32
2	C	5/7 (71%)	5 (100%)	0	0	100	100
3	D	1/3 (33%)	1 (100%)	0	0	100	100
All	All	823/874 (94%)	751 (91%)	58 (7%)	14 (2%)	9	23

All (14) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	I	28	LYS
1	I	42	GLU
1	I	43	ALA
1	L	112	SER
1	L	242	ALA

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Mol	Chain	Res	Type
1	I	112	SER
1	L	72	ASP
1	L	403	LYS
1	I	383	ALA
1	I	113	GLU
1	I	134	ALA
1	L	399	ARG
1	I	207	ILE
1	I	357	GLU

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	I	370/383 (97%)	353 (95%)	17 (5%)	27	54
1	L	363/383 (95%)	341 (94%)	22 (6%)	18	41
2	C	3/3 (100%)	3 (100%)	0	100	100
3	D	2/2 (100%)	0	2 (100%)	0	0
All	All	738/771 (96%)	697 (94%)	41 (6%)	21	45

All (41) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	L	47	ARG
1	L	78	LEU
1	L	96	ASN
1	L	119	ILE
1	L	123	PHE
1	L	177	GLU
1	L	197	ARG
1	L	199	THR
1	L	201	VAL
1	L	205	GLU
1	L	235	ARG
1	L	245	GLU

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Mol	Chain	Res	Type
1	L	285	LEU
1	L	302	GLU
1	L	316	LEU
1	L	324	ARG
1	L	359	ARG
1	L	360	ASP
1	L	366	ASP
1	L	398	ASN
1	L	405	ASN
1	L	428	ASN
1	I	13	ARG
1	I	24	ARG
1	I	29	LYS
1	I	48	VAL
1	I	57	ARG
1	I	78	LEU
1	I	123	PHE
1	I	178	ASN
1	I	197	ARG
1	I	205	GLU
1	I	208	ASN
1	I	235	ARG
1	I	294	LYS
1	I	300	THR
1	I	315	MET
1	I	361	ASP
1	I	366	ASP
3	D	11	LEU
3	D	12	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (21) such sidechains are listed below:

Mol	Chain	Res	Type
1	L	18	ASN
1	L	96	ASN
1	L	135	ASN
1	L	155	ASN
1	L	217	ASN
1	L	233	ASN
1	L	254	GLN
1	L	398	ASN
1	L	405	ASN

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Mol	Chain	Res	Type
1	L	428	ASN
1	I	96	ASN
1	I	118	GLN
1	I	127	ASN
1	I	178	ASN
1	I	187	ASN
1	I	192	ASN
1	I	208	ASN
1	I	217	ASN
1	I	254	GLN
1	I	319	HIS
1	I	336	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
3	NLE	D	10	6,3	6,7,8	0.63	0	2,7,9	0.33	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NLE	D	10	6,3	-	0/5/6/8	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

9 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
4	NAG	I	941	-	15,15,15	0.38	0	21,21,21	0.57	0
4	NAG	I	962	-	15,15,15	0.40	0	21,21,21	0.56	0
4	NAG	L	801	-	15,15,15	0.51	0	21,21,21	0.53	0
4	NAG	I	961	-	15,15,15	0.52	0	21,21,21	0.67	0
4	NAG	I	942	-	15,15,15	0.50	0	21,21,21	0.55	0
4	NAG	L	841	-	15,15,15	0.44	0	21,21,21	0.67	0
6	FOR	D	9	3	0,1,1	-	-	-		
5	GOL	C	200	-	5,5,5	0.89	0	5,5,5	0.49	0
4	NAG	I	901	-	15,15,15	0.42	0	21,21,21	0.69	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	I	941	-	-	6/6/26/26	0/1/1/1
4	NAG	I	962	-	1/1/6/7	3/6/26/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	L	801	-	-	5/6/26/26	0/1/1/1
4	NAG	I	961	-	-	5/6/26/26	0/1/1/1
4	NAG	I	942	-	1/1/6/7	4/6/26/26	0/1/1/1
4	NAG	L	841	-	1/1/6/7	5/6/26/26	0/1/1/1
5	GOL	C	200	-	-	2/4/4/4	-
4	NAG	I	901	-	1/1/6/7	5/6/26/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

All (4) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
4	L	841	NAG	C1
4	I	901	NAG	C1
4	I	942	NAG	C1
4	I	962	NAG	C1

All (35) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	L	801	NAG	C1-C2-N2-C7
4	L	801	NAG	C8-C7-N2-C2
4	L	801	NAG	O7-C7-N2-C2
4	L	841	NAG	C1-C2-N2-C7
4	L	841	NAG	C8-C7-N2-C2
4	L	841	NAG	O7-C7-N2-C2
4	I	901	NAG	C1-C2-N2-C7
4	I	901	NAG	C8-C7-N2-C2
4	I	901	NAG	O7-C7-N2-C2
4	I	941	NAG	C8-C7-N2-C2
4	I	941	NAG	O7-C7-N2-C2
4	I	942	NAG	C1-C2-N2-C7
4	I	942	NAG	C8-C7-N2-C2
4	I	942	NAG	O7-C7-N2-C2
4	I	961	NAG	C1-C2-N2-C7
4	I	961	NAG	C8-C7-N2-C2
4	I	961	NAG	O7-C7-N2-C2
4	I	962	NAG	C8-C7-N2-C2
4	I	962	NAG	O7-C7-N2-C2
4	I	941	NAG	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
4	L	841	NAG	O5-C5-C6-O6
4	I	941	NAG	C4-C5-C6-O6
4	L	841	NAG	C4-C5-C6-O6
4	L	801	NAG	O5-C5-C6-O6
4	I	901	NAG	O5-C5-C6-O6
4	L	801	NAG	C4-C5-C6-O6
4	I	962	NAG	O5-C5-C6-O6
4	I	941	NAG	C3-C2-N2-C7
4	I	901	NAG	C4-C5-C6-O6
5	C	200	GOL	C1-C2-C3-O3
4	I	942	NAG	O5-C5-C6-O6
4	I	961	NAG	C3-C2-N2-C7
4	I	961	NAG	O5-C5-C6-O6
5	C	200	GOL	O2-C2-C3-O3
4	I	941	NAG	C1-C2-N2-C7

There are no ring outliers.

8 monomers are involved in 28 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	I	941	NAG	7	0
4	I	962	NAG	1	0
4	L	801	NAG	1	0
4	I	961	NAG	6	0
4	I	942	NAG	4	0
4	L	841	NAG	8	0
5	C	200	GOL	1	0
4	I	901	NAG	4	0

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	I	416/432 (96%)	-0.18	12 (2%)	51	52	14, 36, 88, 196	0
1	L	409/432 (94%)	0.08	19 (4%)	32	31	18, 43, 114, 191	0
2	C	6/7 (85%)	-0.41	0	100	100	19, 28, 32, 36	0
3	D	2/3 (66%)	0.32	0	100	100	35, 35, 35, 43	0
All	All	833/874 (95%)	-0.05	31 (3%)	41	41	14, 39, 104, 196	0

All (31) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	L	134	ALA	6.2
1	L	431	VAL	6.0
1	I	358	GLY	5.6
1	L	135	ASN	5.4
1	I	357	GLU	5.0
1	L	398	ASN	4.7
1	I	134	ALA	4.5
1	L	401	THR	4.4
1	I	383	ALA	4.1
1	I	135	ASN	3.9
1	I	132	ARG	3.9
1	L	402	PHE	3.8
1	I	28	LYS	3.8
1	L	399	ARG	3.6
1	L	242	ALA	3.3
1	I	360	ASP	3.3
1	L	132	ARG	3.2
1	L	243	ASP	3.1
1	I	382	ALA	3.0
1	L	114	LYS	2.9
1	I	136	LYS	2.7

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Mol	Chain	Res	Type	RSRZ
1	L	396	ASN	2.6
1	I	29	LYS	2.6
1	L	86	ALA	2.5
1	L	400	VAL	2.5
1	L	289	GLU	2.2
1	L	13	ARG	2.2
1	L	69	SER	2.2
1	L	397	PRO	2.2
1	I	5	VAL	2.1
1	L	388	VAL	2.0

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

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	NLE	D	10	8/9	0.94	0.24	23,25,29,30	0

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	NAG	I	942	15/15	0.54	0.51	143,143,143,143	0
4	NAG	I	961	15/15	0.64	0.32	88,88,88,88	0
4	NAG	I	962	15/15	0.64	0.44	109,109,109,109	0
4	NAG	L	801	15/15	0.70	0.39	48,103,112,121	0
4	NAG	L	841	15/15	0.76	0.28	44,75,85,94	0
4	NAG	I	901	15/15	0.83	0.25	66,66,66,66	0
4	NAG	I	941	15/15	0.88	0.20	54,54,54,54	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	GOL	C	200	6/6	0.91	0.27	45,45,45,45	0
6	FOR	D	9	2/2	0.97	0.25	33,33,33,33	0

6.5 Other polymers ⓘ

There are no such residues in this entry.