Full wwPDB X-ray Structure Validation Report (i)

Aug 20, 2023 – 06:27 PM EDT

PDB ID	:	2OL2
Title	:	High Resolution Structure of Native PCI in Space Group P21
Authors	:	Li, W.; Huntington, J.A.
Deposited on	:	2007-01-18
Resolution	:	2.00 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 (i) 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 (i)) were used in the production of this report:

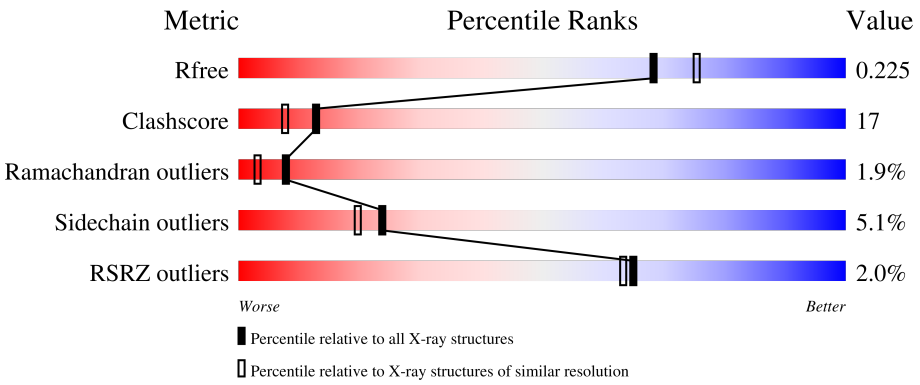
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA,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

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.00 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

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	A	395	3% 63% 25% • 9%
1	B	395	60% 24% • 13%

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
2	GOL	A	650	-	-	X	-

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 5696 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 Plasma serine protease inhibitor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	360	2748	1761	458	516	13	0	0	0
1	B	343	2658	1702	445	498	13	0	0	0

There are 48 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-7	MET	-	cloning artifact	UNP P05154
A	-6	GLY	-	cloning artifact	UNP P05154
A	-5	HIS	-	expression tag	UNP P05154
A	-4	HIS	-	expression tag	UNP P05154
A	-3	HIS	-	expression tag	UNP P05154
A	-2	HIS	-	expression tag	UNP P05154
A	-1	HIS	-	expression tag	UNP P05154
A	0	HIS	-	expression tag	UNP P05154
A	1	HIS	-	expression tag	UNP P05154
A	2	HIS	-	expression tag	UNP P05154
A	3	HIS	-	expression tag	UNP P05154
A	4	HIS	-	expression tag	UNP P05154
A	5	SER	-	cloning artifact	UNP P05154
A	6	SER	-	cloning artifact	UNP P05154
A	7	GLY	-	cloning artifact	UNP P05154
A	8	HIS	-	cloning artifact	UNP P05154
A	9	ILE	-	cloning artifact	UNP P05154
A	10	ASP	-	cloning artifact	UNP P05154
A	11	ASP	-	cloning artifact	UNP P05154
A	12	ASP	-	cloning artifact	UNP P05154
A	13	ASP	-	cloning artifact	UNP P05154
A	14	LYS	-	cloning artifact	UNP P05154
A	15	HIS	-	cloning artifact	UNP P05154
A	16	MET	-	cloning artifact	UNP P05154
B	-7	MET	-	cloning artifact	UNP P05154

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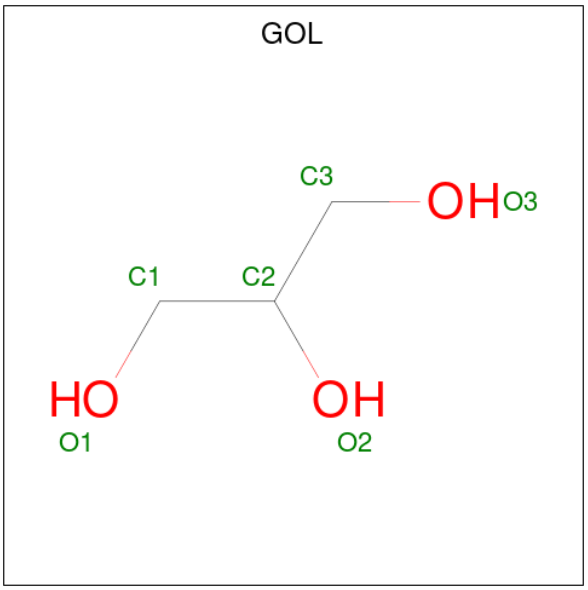
Chain	Residue	Modelled	Actual	Comment	Reference
B	-6	GLY	-	cloning artifact	UNP P05154
B	-5	HIS	-	expression tag	UNP P05154
B	-4	HIS	-	expression tag	UNP P05154
B	-3	HIS	-	expression tag	UNP P05154
B	-2	HIS	-	expression tag	UNP P05154
B	-1	HIS	-	expression tag	UNP P05154
B	0	HIS	-	expression tag	UNP P05154
B	1	HIS	-	expression tag	UNP P05154
B	2	HIS	-	expression tag	UNP P05154
B	3	HIS	-	expression tag	UNP P05154
B	4	HIS	-	expression tag	UNP P05154
B	5	SER	-	cloning artifact	UNP P05154
B	6	SER	-	cloning artifact	UNP P05154
B	7	GLY	-	cloning artifact	UNP P05154
B	8	HIS	-	cloning artifact	UNP P05154
B	9	ILE	-	cloning artifact	UNP P05154
B	10	ASP	-	cloning artifact	UNP P05154
B	11	ASP	-	cloning artifact	UNP P05154
B	12	ASP	-	cloning artifact	UNP P05154
B	13	ASP	-	cloning artifact	UNP P05154
B	14	LYS	-	cloning artifact	UNP P05154
B	15	HIS	-	cloning artifact	UNP P05154
B	16	MET	-	cloning artifact	UNP P05154

- Molecule 2 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



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

- Molecule 3 is water.

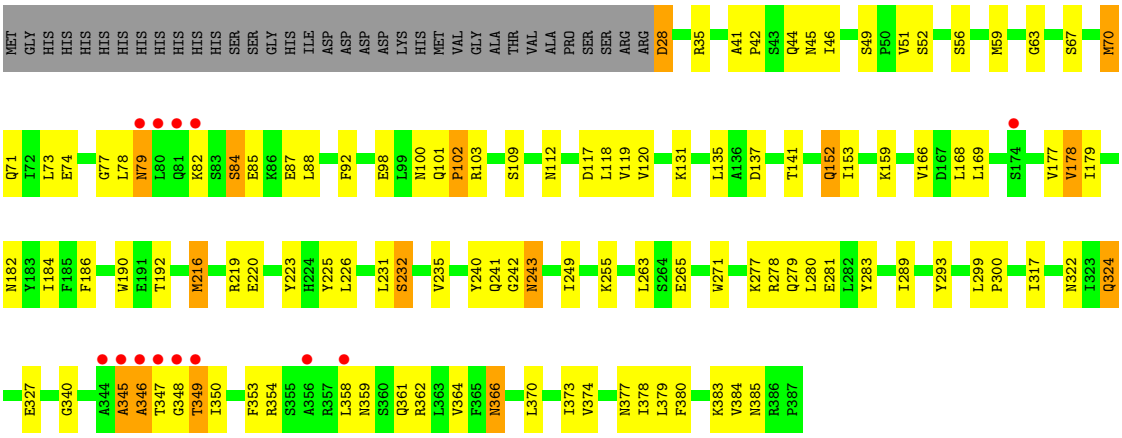
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
3	A	147	147	147	0	0
			Total	O		
3	B	137	137	137	0	0

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

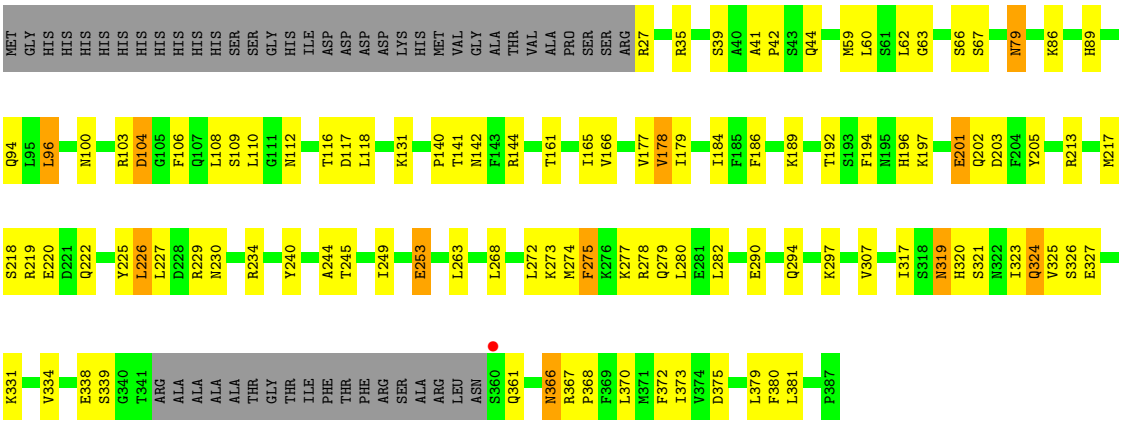
• Molecule 1: Plasma serine protease inhibitor

Chain A:



• Molecule 1: Plasma serine protease inhibitor

Chain B:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	56.02Å 60.07Å 133.17Å 90.00° 93.28° 90.00°	Depositor
Resolution (Å)	26.09 – 2.00 26.09 – 1.90	Depositor EDS
% Data completeness (in resolution range)	67.9 (26.09-2.00) 50.3 (26.09-1.90)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	0.05	Depositor
$< I/\sigma(I) >$ [1]	1.12 (at 1.91Å)	Xtriage
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.225 , 0.271 0.219 , 0.225	Depositor DCC
R_{free} test set	2074 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å^2)	27.9	Xtriage
Anisotropy	0.563	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 50.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.42$, $< L^2 > = 0.25$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	5696	wwPDB-VP
Average B, all atoms (Å^2)	34.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 9.20% of the height of the origin peak. No significant pseudotranslation is detected.*

[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: GOL

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	0.37	0/2801	0.69	2/3794 (0.1%)
1	B	0.38	0/2709	0.65	0/3662
All	All	0.38	0/5510	0.67	2/7456 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	346	ALA	N-CA-C	8.19	133.12	111.00
1	A	348	GLY	N-CA-C	-7.30	94.84	113.10

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2748	0	2653	89	0
1	B	2658	0	2606	88	0
2	A	6	0	8	4	0
3	A	147	0	0	4	0
3	B	137	0	0	7	0
All	All	5696	0	5267	177	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 17.

All (177) 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:347:THR:C	1:A:349:THR:H	1.79	0.84
1:A:131:LYS:HE2	1:A:137:ASP:OD1	1.81	0.81
1:B:234:ARG:HG2	1:B:234:ARG:HH11	1.47	0.80
1:A:347:THR:C	1:A:349:THR:N	2.33	0.80
1:A:374:VAL:HG12	1:A:378:ILE:HA	1.66	0.77
1:A:52:SER:OG	1:A:182:ASN:ND2	2.15	0.77
1:B:178:VAL:HG13	1:B:324:GLN:O	1.85	0.76
1:B:319:ASN:C	1:B:319:ASN:HD22	1.88	0.76
1:B:319:ASN:HD22	1:B:320:HIS:N	1.82	0.76
1:A:279:GLN:O	1:A:280:LEU:HD12	1.88	0.73
1:A:347:THR:O	1:A:349:THR:N	2.22	0.72
1:B:367:ARG:HG2	1:B:368:PRO:HD2	1.72	0.69
1:B:225:TYR:OH	1:B:234:ARG:HD3	1.92	0.69
1:B:108:LEU:HD21	1:B:110:LEU:HD22	1.73	0.69
1:B:234:ARG:HG2	1:B:234:ARG:NH1	2.07	0.68
1:A:98:GLU:O	1:A:101:GLN:HG2	1.94	0.67
1:A:177:VAL:HG23	1:A:178:VAL:CG1	2.25	0.67
1:B:375:ASP:OD1	1:B:379:LEU:HD11	1.96	0.66
1:B:220:GLU:HG2	1:B:279:GLN:HE21	1.61	0.65
1:B:268:LEU:O	1:B:272:LEU:HD23	1.97	0.64
1:A:178:VAL:HG13	1:A:324:GLN:O	1.98	0.64
1:A:366:ASN:H	1:A:366:ASN:HD22	1.46	0.63
1:B:161:THR:HG21	1:B:165:ILE:HD12	1.81	0.63
1:A:70:MET:O	1:A:74:GLU:HG3	1.99	0.63
1:B:226:LEU:C	1:B:226:LEU:HD23	2.20	0.62
1:B:108:LEU:CD2	1:B:110:LEU:HD22	2.29	0.61
1:A:88:LEU:HD11	1:A:92:PHE:HE2	1.65	0.61
1:B:108:LEU:HD23	1:B:108:LEU:C	2.21	0.61
1:A:231:LEU:O	1:A:232:SER:HB3	2.01	0.61
1:B:189:LYS:HD3	1:B:339:SER:HB3	1.84	0.59
1:A:56:SER:HB3	1:A:112:ASN:ND2	2.17	0.59
1:A:177:VAL:HG23	1:A:178:VAL:HG12	1.83	0.59
1:B:96:LEU:HD22	1:B:100:ASN:ND2	2.17	0.59
1:A:152:GLN:HG3	1:A:153:ILE:N	2.19	0.58
1:B:220:GLU:HA	1:B:280:LEU:O	2.04	0.58
1:B:229:ARG:HH21	1:B:229:ARG:HG3	1.69	0.57
1:B:222:GLN:HA	1:B:278:ARG:O	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:226:LEU:HD23	1:B:227:LEU:N	2.20	0.56
1:A:35:ARG:NH2	1:A:263:LEU:O	2.38	0.56
1:A:293:TYR:CE2	2:A:650:GOL:H2	2.41	0.56
1:A:226:LEU:C	1:A:226:LEU:HD23	2.25	0.56
1:B:27:ARG:HG2	1:B:27:ARG:HH21	1.70	0.56
1:B:109:SER:O	1:B:184:ILE:HA	2.05	0.56
1:B:253:GLU:HB3	3:B:466:HOH:O	2.04	0.55
1:A:103:ARG:HH11	1:A:103:ARG:HG2	1.71	0.55
1:A:383:LYS:HD3	1:A:385:ASN:ND2	2.23	0.55
1:A:281:GLU:HG2	1:A:283:TYR:CE2	2.42	0.54
1:B:106:PHE:CE1	1:B:108:LEU:HB2	2.42	0.54
1:A:88:LEU:HD11	1:A:92:PHE:CE2	2.43	0.54
1:B:196:HIS:ND1	1:B:197:LYS:N	2.56	0.54
1:B:319:ASN:C	1:B:319:ASN:ND2	2.59	0.53
1:A:28:ASP:OD2	1:A:265:GLU:HG3	2.08	0.53
1:A:73:LEU:HD22	1:A:78:LEU:HD22	1.90	0.53
1:A:358:LEU:HG	1:A:359:ASN:N	2.24	0.53
1:B:249:ILE:N	1:B:249:ILE:HD12	2.23	0.53
1:A:51:VAL:HG13	1:A:52:SER:N	2.23	0.53
1:A:78:LEU:O	1:A:79:ASN:O	2.27	0.53
1:A:63:GLY:HA3	1:A:317:ILE:HG13	1.89	0.52
1:A:177:VAL:HG23	1:A:178:VAL:HG13	1.91	0.52
1:B:218:SER:HA	1:B:282:LEU:O	2.09	0.52
1:B:323:ILE:HD11	3:B:457:HOH:O	2.10	0.52
1:B:177:VAL:HG13	1:B:178:VAL:HG13	1.92	0.52
1:A:159:LYS:HE3	3:A:785:HOH:O	2.09	0.52
1:B:194:PHE:O	1:B:338:GLU:HB3	2.09	0.52
1:A:109:SER:O	1:A:184:ILE:HA	2.10	0.51
1:B:240:TYR:HB2	1:B:244:ALA:O	2.10	0.51
1:A:82:LYS:HG3	3:A:797:HOH:O	2.10	0.51
1:B:177:VAL:HG12	3:B:410:HOH:O	2.10	0.51
1:A:345:ALA:O	1:A:346:ALA:HB2	2.11	0.51
1:A:322:ASN:HD22	1:A:322:ASN:N	2.09	0.51
1:B:178:VAL:HG22	1:B:325:VAL:HA	1.93	0.51
1:A:249:ILE:HD12	1:A:249:ILE:N	2.25	0.50
1:B:177:VAL:HG12	1:B:326:SER:OG	2.12	0.50
1:A:49:SER:HB3	1:A:52:SER:HB3	1.94	0.50
1:A:240:TYR:O	1:A:242:GLY:N	2.44	0.50
1:A:166:VAL:HG22	1:A:166:VAL:O	2.11	0.49
1:B:375:ASP:CG	1:B:379:LEU:HD11	2.32	0.49
1:A:278:ARG:HG2	1:A:280:LEU:CD1	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:42:PRO:HA	3:B:491:HOH:O	2.12	0.49
1:A:42:PRO:O	1:A:44:GLN:HG3	2.12	0.49
1:B:277:LYS:O	1:B:278:ARG:HB3	2.12	0.49
1:A:278:ARG:HD3	1:A:361:GLN:OE1	2.13	0.49
1:B:273:LYS:HB3	1:B:273:LYS:NZ	2.26	0.49
1:B:186:PHE:HB3	1:B:334:VAL:HG22	1.94	0.48
1:A:278:ARG:NH1	1:A:361:GLN:OE1	2.42	0.48
1:B:86:LYS:O	1:B:86:LYS:HD3	2.13	0.48
1:B:367:ARG:HG2	1:B:368:PRO:CD	2.42	0.48
1:A:67:SER:O	1:A:71:GLN:HG3	2.13	0.48
1:B:27:ARG:HG2	1:B:27:ARG:NH2	2.29	0.48
1:B:103:ARG:O	1:B:104:ASP:C	2.53	0.47
1:A:293:TYR:HE2	2:A:650:GOL:H2	1.79	0.47
1:B:229:ARG:HG3	1:B:229:ARG:NH2	2.29	0.47
1:B:142:ASN:OD1	1:B:144:ARG:HB2	2.15	0.47
1:B:59:MET:HE1	1:B:112:ASN:HB2	1.97	0.47
1:B:290:GLU:OE2	1:B:331:LYS:NZ	2.48	0.46
1:B:189:LYS:CD	1:B:339:SER:HB3	2.44	0.46
1:B:63:GLY:HA3	1:B:317:ILE:HG13	1.97	0.46
1:B:62:LEU:CD1	1:B:89:HIS:CE1	2.99	0.46
1:B:177:VAL:HG13	1:B:178:VAL:N	2.31	0.46
1:A:255:LYS:NZ	3:A:678:HOH:O	2.44	0.46
1:A:354:ARG:HG3	1:A:354:ARG:HH21	1.80	0.46
1:A:289:ILE:HD12	1:A:384:VAL:HG22	1.98	0.46
1:B:117:ASP:HA	1:B:141:THR:O	2.15	0.45
1:A:235:VAL:HG22	1:A:249:ILE:HG13	1.98	0.45
1:A:169:LEU:N	1:A:169:LEU:HD12	2.31	0.45
1:A:179:ILE:HD12	1:A:327:GLU:HB2	1.98	0.45
1:A:373:ILE:HB	1:A:380:PHE:HB2	1.98	0.45
1:B:220:GLU:HG2	1:B:279:GLN:NE2	2.31	0.45
1:B:177:VAL:HG22	1:B:178:VAL:HG12	1.98	0.45
1:B:220:GLU:CG	1:B:279:GLN:HE21	2.27	0.45
1:B:225:TYR:CG	1:B:226:LEU:N	2.84	0.45
1:A:84:SER:HB3	1:A:87:GLU:CB	2.47	0.45
1:A:353:PHE:CZ	1:A:354:ARG:NH2	2.85	0.45
1:A:119:VAL:HG23	1:A:120:VAL:N	2.31	0.45
1:B:27:ARG:HG2	1:B:27:ARG:O	2.16	0.45
1:B:62:LEU:HD12	1:B:89:HIS:CE1	2.52	0.45
1:B:41:ALA:HB1	1:B:44:GLN:OE1	2.17	0.44
1:A:100:ASN:O	1:A:102:PRO:HD3	2.17	0.44
1:B:66:SER:HB2	3:B:478:HOH:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:79:ASN:N	3:B:517:HOH:O	2.50	0.44
1:A:192:THR:O	1:A:219:ARG:NH1	2.51	0.44
1:B:179:ILE:CD1	1:B:327:GLU:HB2	2.47	0.44
1:A:243:ASN:O	1:A:243:ASN:ND2	2.46	0.44
1:B:202:GLN:CG	1:B:203:ASP:N	2.80	0.44
1:A:45:ASN:O	1:A:46:ILE:HD13	2.17	0.43
1:A:216:MET:CE	1:A:364:VAL:HG23	2.48	0.43
1:A:85:GLU:O	1:A:88:LEU:HB3	2.18	0.43
1:A:51:VAL:HG11	1:A:379:LEU:HD23	2.00	0.43
1:A:220:GLU:HA	1:A:280:LEU:O	2.19	0.43
1:B:177:VAL:HG12	1:B:326:SER:HG	1.84	0.43
1:B:202:GLN:HG2	1:B:203:ASP:N	2.34	0.43
1:B:372:PHE:CE2	1:B:381:LEU:HD13	2.54	0.43
1:A:366:ASN:HD22	1:A:366:ASN:N	2.07	0.43
1:B:86:LYS:HD3	1:B:86:LYS:C	2.39	0.43
1:A:103:ARG:HH11	1:A:103:ARG:CG	2.32	0.42
1:A:358:LEU:HG	1:A:359:ASN:H	1.82	0.42
1:A:41:ALA:HB3	2:A:650:GOL:H32	2.01	0.42
1:A:177:VAL:HG23	1:A:178:VAL:N	2.34	0.42
1:B:366:ASN:C	1:B:366:ASN:HD22	2.22	0.42
1:A:366:ASN:H	1:A:366:ASN:ND2	2.13	0.42
1:B:116:THR:O	1:B:140:PRO:HA	2.19	0.42
1:B:205:TYR:O	1:B:368:PRO:HD3	2.20	0.42
1:B:373:ILE:HB	1:B:380:PHE:HB2	2.01	0.42
1:B:59:MET:O	1:B:62:LEU:HD13	2.19	0.42
1:A:223:TYR:HD2	1:A:280:LEU:HB2	1.85	0.42
1:A:59:MET:HB2	1:A:59:MET:HE2	1.78	0.42
1:B:294:GLN:HE21	1:B:294:GLN:HB3	1.71	0.41
1:A:117:ASP:HA	1:A:141:THR:O	2.20	0.41
1:B:201:GLU:HG3	1:B:213:ARG:HB3	2.03	0.41
1:B:294:GLN:HB2	1:B:297:LYS:HD2	2.03	0.41
1:A:225:TYR:CG	1:A:226:LEU:N	2.89	0.41
1:A:281:GLU:HB3	1:A:362:ARG:HG2	2.02	0.41
1:B:39:SER:O	1:B:42:PRO:HD3	2.19	0.41
1:A:299:LEU:N	1:A:300:PRO:CD	2.84	0.41
1:B:194:PHE:HB2	1:B:338:GLU:CB	2.50	0.41
1:A:186:PHE:CD1	1:A:186:PHE:C	2.94	0.41
1:A:101:GLN:HA	1:A:102:PRO:HD3	1.89	0.41
1:B:194:PHE:HB2	1:B:338:GLU:HB3	2.02	0.41
1:A:56:SER:HA	1:A:59:MET:HE3	2.01	0.41
1:A:293:TYR:HE2	2:A:650:GOL:C2	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:374:VAL:HB	1:A:377:ASN:O	2.21	0.41
1:B:60:LEU:HD21	1:B:307:VAL:HG21	2.03	0.41
1:B:192:THR:OG1	1:B:219:ARG:NH2	2.54	0.41
1:B:217:MET:SD	1:B:338:GLU:HG3	2.61	0.41
1:A:190:TRP:N	1:A:340:GLY:HA2	2.36	0.41
1:A:277:LYS:HE3	3:A:771:HOH:O	2.21	0.41
1:B:96:LEU:HD22	1:B:100:ASN:HD21	1.86	0.41
1:A:78:LEU:HD12	1:A:78:LEU:HA	1.88	0.40
1:A:118:LEU:HD13	1:A:141:THR:C	2.42	0.40
1:A:346:ALA:HB1	1:A:347:THR:H	1.10	0.40
1:A:299:LEU:HD23	1:A:299:LEU:HA	1.81	0.40
1:A:366:ASN:N	1:A:366:ASN:ND2	2.69	0.40
1:B:66:SER:HB3	1:B:67:SER:H	1.57	0.40
1:B:366:ASN:HD22	1:B:366:ASN:H	1.69	0.40
1:A:226:LEU:HD11	1:A:271:TRP:HA	2.04	0.40
1:B:35:ARG:NH2	1:B:263:LEU:O	2.55	0.40
1:B:320:HIS:HA	3:B:456:HOH:O	2.21	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	358/395 (91%)	325 (91%)	23 (6%)	10 (3%)	5 1
1	B	339/395 (86%)	313 (92%)	23 (7%)	3 (1%)	17 11
All	All	697/790 (88%)	638 (92%)	46 (7%)	13 (2%)	8 3

All (13) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	79	ASN

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Mol	Chain	Res	Type
1	A	84	SER
1	A	345	ALA
1	B	104	ASP
1	B	166	VAL
1	B	275	PHE
1	A	168	LEU
1	A	241	GLN
1	A	349	THR
1	A	232	SER
1	A	350	ILE
1	A	77	GLY
1	A	102	PRO

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	285/347 (82%)	275 (96%)	10 (4%)	36	35
1	B	286/347 (82%)	267 (93%)	19 (7%)	16	12
All	All	571/694 (82%)	542 (95%)	29 (5%)	24	19

All (29) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	28	ASP
1	A	70	MET
1	A	135	LEU
1	A	152	GLN
1	A	178	VAL
1	A	216	MET
1	A	243	ASN
1	A	324	GLN
1	A	366	ASN
1	A	370	LEU
1	B	79	ASN

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Mol	Chain	Res	Type
1	B	94	GLN
1	B	96	LEU
1	B	118	LEU
1	B	131	LYS
1	B	178	VAL
1	B	201	GLU
1	B	226	LEU
1	B	230	ASN
1	B	245	THR
1	B	253	GLU
1	B	274	MET
1	B	275	PHE
1	B	319	ASN
1	B	321	SER
1	B	324	GLN
1	B	361	GLN
1	B	366	ASN
1	B	370	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	97	GLN
1	A	101	GLN
1	A	107	GLN
1	A	200	GLN
1	A	202	GLN
1	A	224	HIS
1	A	294	GLN
1	A	320	HIS
1	A	322	ASN
1	A	324	GLN
1	A	359	ASN
1	A	366	ASN
1	B	79	ASN
1	B	94	GLN
1	B	97	GLN
1	B	100	ASN
1	B	202	GLN
1	B	243	ASN
1	B	279	GLN
1	B	294	GLN

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Mol	Chain	Res	Type
1	B	319	ASN
1	B	324	GLN
1	B	366	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 monosaccharides in this entry.

5.6 Ligand geometry (i)

1 ligand 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	$\#\|Z\| > 2$
2	GOL	A	650	-	5,5,5	0.34	0	5,5,5	0.28	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
2	GOL	A	650	-	-	0/4/4/4	-

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.

1 monomer is involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	650	GOL	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 (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	360/395 (91%)	-0.14	13 (3%)	42	42	17, 31, 68, 88	0
1	B	343/395 (86%)	-0.33	1 (0%)	94	93	15, 29, 55, 67	0
All	All	703/790 (88%)	-0.23	14 (1%)	65	63	15, 30, 60, 88	0

All (14) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	348	GLY	8.4
1	A	347	THR	6.6
1	A	80	LEU	5.6
1	A	346	ALA	4.9
1	A	345	ALA	3.4
1	A	79	ASN	3.1
1	B	360	SER	3.1
1	A	81	GLN	3.1
1	A	358	LEU	2.9
1	A	174	SER	2.5
1	A	344	ALA	2.4
1	A	356	ALA	2.3
1	A	349	THR	2.1
1	A	82	LYS	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 monosaccharides in this entry.

6.4 Ligands (i)

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
2	GOL	A	650	6/6	0.79	0.16	45,47,47,48	0

6.5 Other polymers (i)

There are no such residues in this entry.