



wwPDB X-ray Structure Validation Summary Report ⓘ

Sep 22, 2020 – 04:11 PM EDT

PDB ID : 6WA6
Title : Structure of the Chlamydia pneumoniae CdsV protein
Authors : Jensen, J.L.; Spiller, B.W.
Deposited on : 2020-03-24
Resolution : 2.80 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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 following versions of software and data (see [references ⓘ](#)) 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 : 2.14.6
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) : 2.14.6

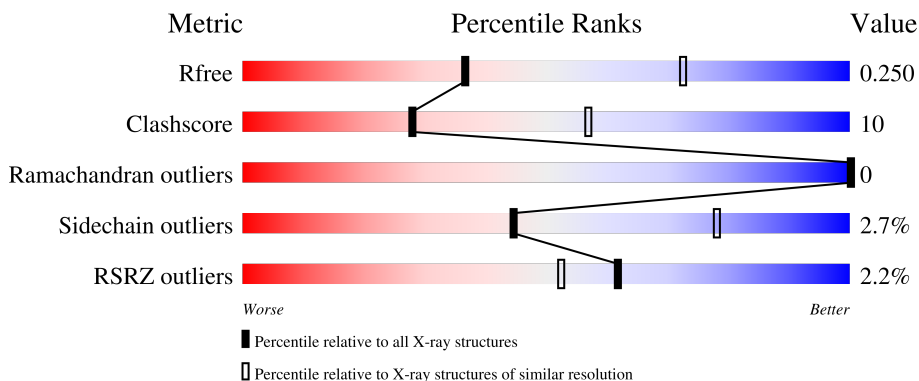
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 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	3140 (2.80-2.80)
Clashscore	141614	3569 (2.80-2.80)
Ramachandran outliers	138981	3498 (2.80-2.80)
Sidechain outliers	138945	3500 (2.80-2.80)
RSRZ outliers	127900	3078 (2.80-2.80)

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 respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	387	 73% 16% 10% 2%
1	B	387	 67% 21% 10% 2%
1	C	387	 69% 19% 12% 2%
1	D	387	 74% 14% 11% 1%
1	E	387	 67% 21% 11% 2%

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Mol	Chain	Length	Quality of chain
1	F	387	
1	G	387	
1	H	387	
1	I	387	

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	B	802	-	-	-	X

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 24992 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 Low calcium response locus protein D.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	348	Total 2845	C 1843	N 470	O 525	S 7	0	5	0
1	B	347	Total 2800	C 1811	N 461	O 521	S 7	0	0	0
1	C	342	Total 2767	C 1790	N 457	O 513	S 7	0	0	0
1	D	343	Total 2793	C 1808	N 461	O 517	S 7	0	2	0
1	E	343	Total 2779	C 1798	N 457	O 517	S 7	0	0	0
1	F	340	Total 2755	C 1783	N 453	O 512	S 7	0	1	0
1	G	343	Total 2773	C 1794	N 455	O 517	S 7	0	1	0
1	H	320	Total 2609	C 1692	N 425	O 485	S 7	0	0	0
1	I	334	Total 2735	C 1770	N 452	O 506	S 7	0	3	0

There are 189 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	324	MET	-	initiating methionine	UNP Q9Z8L5
A	325	GLY	-	expression tag	UNP Q9Z8L5
A	326	SER	-	expression tag	UNP Q9Z8L5
A	327	SER	-	expression tag	UNP Q9Z8L5
A	328	HIS	-	expression tag	UNP Q9Z8L5
A	329	HIS	-	expression tag	UNP Q9Z8L5
A	330	HIS	-	expression tag	UNP Q9Z8L5
A	331	HIS	-	expression tag	UNP Q9Z8L5
A	332	HIS	-	expression tag	UNP Q9Z8L5
A	333	HIS	-	expression tag	UNP Q9Z8L5
A	334	SER	-	expression tag	UNP Q9Z8L5

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Chain	Residue	Modelled	Actual	Comment	Reference
A	335	SER	-	expression tag	UNP Q9Z8L5
A	336	GLY	-	expression tag	UNP Q9Z8L5
A	337	LEU	-	expression tag	UNP Q9Z8L5
A	338	VAL	-	expression tag	UNP Q9Z8L5
A	339	PRO	-	expression tag	UNP Q9Z8L5
A	340	ARG	-	expression tag	UNP Q9Z8L5
A	341	GLY	-	expression tag	UNP Q9Z8L5
A	342	SER	-	expression tag	UNP Q9Z8L5
A	343	HIS	-	expression tag	UNP Q9Z8L5
A	344	MET	-	expression tag	UNP Q9Z8L5
B	324	MET	-	initiating methionine	UNP Q9Z8L5
B	325	GLY	-	expression tag	UNP Q9Z8L5
B	326	SER	-	expression tag	UNP Q9Z8L5
B	327	SER	-	expression tag	UNP Q9Z8L5
B	328	HIS	-	expression tag	UNP Q9Z8L5
B	329	HIS	-	expression tag	UNP Q9Z8L5
B	330	HIS	-	expression tag	UNP Q9Z8L5
B	331	HIS	-	expression tag	UNP Q9Z8L5
B	332	HIS	-	expression tag	UNP Q9Z8L5
B	333	HIS	-	expression tag	UNP Q9Z8L5
B	334	SER	-	expression tag	UNP Q9Z8L5
B	335	SER	-	expression tag	UNP Q9Z8L5
B	336	GLY	-	expression tag	UNP Q9Z8L5
B	337	LEU	-	expression tag	UNP Q9Z8L5
B	338	VAL	-	expression tag	UNP Q9Z8L5
B	339	PRO	-	expression tag	UNP Q9Z8L5
B	340	ARG	-	expression tag	UNP Q9Z8L5
B	341	GLY	-	expression tag	UNP Q9Z8L5
B	342	SER	-	expression tag	UNP Q9Z8L5
B	343	HIS	-	expression tag	UNP Q9Z8L5
B	344	MET	-	expression tag	UNP Q9Z8L5
C	324	MET	-	initiating methionine	UNP Q9Z8L5
C	325	GLY	-	expression tag	UNP Q9Z8L5
C	326	SER	-	expression tag	UNP Q9Z8L5
C	327	SER	-	expression tag	UNP Q9Z8L5
C	328	HIS	-	expression tag	UNP Q9Z8L5
C	329	HIS	-	expression tag	UNP Q9Z8L5
C	330	HIS	-	expression tag	UNP Q9Z8L5
C	331	HIS	-	expression tag	UNP Q9Z8L5
C	332	HIS	-	expression tag	UNP Q9Z8L5
C	333	HIS	-	expression tag	UNP Q9Z8L5
C	334	SER	-	expression tag	UNP Q9Z8L5

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Chain	Residue	Modelled	Actual	Comment	Reference
C	335	SER	-	expression tag	UNP Q9Z8L5
C	336	GLY	-	expression tag	UNP Q9Z8L5
C	337	LEU	-	expression tag	UNP Q9Z8L5
C	338	VAL	-	expression tag	UNP Q9Z8L5
C	339	PRO	-	expression tag	UNP Q9Z8L5
C	340	ARG	-	expression tag	UNP Q9Z8L5
C	341	GLY	-	expression tag	UNP Q9Z8L5
C	342	SER	-	expression tag	UNP Q9Z8L5
C	343	HIS	-	expression tag	UNP Q9Z8L5
C	344	MET	-	expression tag	UNP Q9Z8L5
D	324	MET	-	initiating methionine	UNP Q9Z8L5
D	325	GLY	-	expression tag	UNP Q9Z8L5
D	326	SER	-	expression tag	UNP Q9Z8L5
D	327	SER	-	expression tag	UNP Q9Z8L5
D	328	HIS	-	expression tag	UNP Q9Z8L5
D	329	HIS	-	expression tag	UNP Q9Z8L5
D	330	HIS	-	expression tag	UNP Q9Z8L5
D	331	HIS	-	expression tag	UNP Q9Z8L5
D	332	HIS	-	expression tag	UNP Q9Z8L5
D	333	HIS	-	expression tag	UNP Q9Z8L5
D	334	SER	-	expression tag	UNP Q9Z8L5
D	335	SER	-	expression tag	UNP Q9Z8L5
D	336	GLY	-	expression tag	UNP Q9Z8L5
D	337	LEU	-	expression tag	UNP Q9Z8L5
D	338	VAL	-	expression tag	UNP Q9Z8L5
D	339	PRO	-	expression tag	UNP Q9Z8L5
D	340	ARG	-	expression tag	UNP Q9Z8L5
D	341	GLY	-	expression tag	UNP Q9Z8L5
D	342	SER	-	expression tag	UNP Q9Z8L5
D	343	HIS	-	expression tag	UNP Q9Z8L5
D	344	MET	-	expression tag	UNP Q9Z8L5
E	324	MET	-	initiating methionine	UNP Q9Z8L5
E	325	GLY	-	expression tag	UNP Q9Z8L5
E	326	SER	-	expression tag	UNP Q9Z8L5
E	327	SER	-	expression tag	UNP Q9Z8L5
E	328	HIS	-	expression tag	UNP Q9Z8L5
E	329	HIS	-	expression tag	UNP Q9Z8L5
E	330	HIS	-	expression tag	UNP Q9Z8L5
E	331	HIS	-	expression tag	UNP Q9Z8L5
E	332	HIS	-	expression tag	UNP Q9Z8L5
E	333	HIS	-	expression tag	UNP Q9Z8L5
E	334	SER	-	expression tag	UNP Q9Z8L5

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Chain	Residue	Modelled	Actual	Comment	Reference
E	335	SER	-	expression tag	UNP Q9Z8L5
E	336	GLY	-	expression tag	UNP Q9Z8L5
E	337	LEU	-	expression tag	UNP Q9Z8L5
E	338	VAL	-	expression tag	UNP Q9Z8L5
E	339	PRO	-	expression tag	UNP Q9Z8L5
E	340	ARG	-	expression tag	UNP Q9Z8L5
E	341	GLY	-	expression tag	UNP Q9Z8L5
E	342	SER	-	expression tag	UNP Q9Z8L5
E	343	HIS	-	expression tag	UNP Q9Z8L5
E	344	MET	-	expression tag	UNP Q9Z8L5
F	324	MET	-	initiating methionine	UNP Q9Z8L5
F	325	GLY	-	expression tag	UNP Q9Z8L5
F	326	SER	-	expression tag	UNP Q9Z8L5
F	327	SER	-	expression tag	UNP Q9Z8L5
F	328	HIS	-	expression tag	UNP Q9Z8L5
F	329	HIS	-	expression tag	UNP Q9Z8L5
F	330	HIS	-	expression tag	UNP Q9Z8L5
F	331	HIS	-	expression tag	UNP Q9Z8L5
F	332	HIS	-	expression tag	UNP Q9Z8L5
F	333	HIS	-	expression tag	UNP Q9Z8L5
F	334	SER	-	expression tag	UNP Q9Z8L5
F	335	SER	-	expression tag	UNP Q9Z8L5
F	336	GLY	-	expression tag	UNP Q9Z8L5
F	337	LEU	-	expression tag	UNP Q9Z8L5
F	338	VAL	-	expression tag	UNP Q9Z8L5
F	339	PRO	-	expression tag	UNP Q9Z8L5
F	340	ARG	-	expression tag	UNP Q9Z8L5
F	341	GLY	-	expression tag	UNP Q9Z8L5
F	342	SER	-	expression tag	UNP Q9Z8L5
F	343	HIS	-	expression tag	UNP Q9Z8L5
F	344	MET	-	expression tag	UNP Q9Z8L5
G	324	MET	-	initiating methionine	UNP Q9Z8L5
G	325	GLY	-	expression tag	UNP Q9Z8L5
G	326	SER	-	expression tag	UNP Q9Z8L5
G	327	SER	-	expression tag	UNP Q9Z8L5
G	328	HIS	-	expression tag	UNP Q9Z8L5
G	329	HIS	-	expression tag	UNP Q9Z8L5
G	330	HIS	-	expression tag	UNP Q9Z8L5
G	331	HIS	-	expression tag	UNP Q9Z8L5
G	332	HIS	-	expression tag	UNP Q9Z8L5
G	333	HIS	-	expression tag	UNP Q9Z8L5
G	334	SER	-	expression tag	UNP Q9Z8L5

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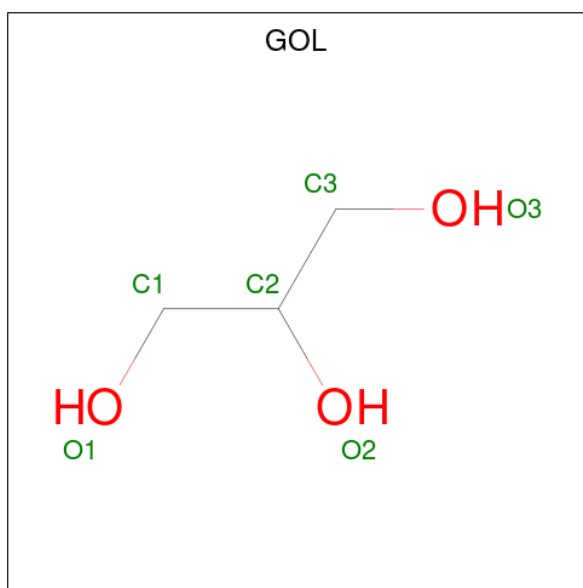
Chain	Residue	Modelled	Actual	Comment	Reference
G	335	SER	-	expression tag	UNP Q9Z8L5
G	336	GLY	-	expression tag	UNP Q9Z8L5
G	337	LEU	-	expression tag	UNP Q9Z8L5
G	338	VAL	-	expression tag	UNP Q9Z8L5
G	339	PRO	-	expression tag	UNP Q9Z8L5
G	340	ARG	-	expression tag	UNP Q9Z8L5
G	341	GLY	-	expression tag	UNP Q9Z8L5
G	342	SER	-	expression tag	UNP Q9Z8L5
G	343	HIS	-	expression tag	UNP Q9Z8L5
G	344	MET	-	expression tag	UNP Q9Z8L5
H	324	MET	-	initiating methionine	UNP Q9Z8L5
H	325	GLY	-	expression tag	UNP Q9Z8L5
H	326	SER	-	expression tag	UNP Q9Z8L5
H	327	SER	-	expression tag	UNP Q9Z8L5
H	328	HIS	-	expression tag	UNP Q9Z8L5
H	329	HIS	-	expression tag	UNP Q9Z8L5
H	330	HIS	-	expression tag	UNP Q9Z8L5
H	331	HIS	-	expression tag	UNP Q9Z8L5
H	332	HIS	-	expression tag	UNP Q9Z8L5
H	333	HIS	-	expression tag	UNP Q9Z8L5
H	334	SER	-	expression tag	UNP Q9Z8L5
H	335	SER	-	expression tag	UNP Q9Z8L5
H	336	GLY	-	expression tag	UNP Q9Z8L5
H	337	LEU	-	expression tag	UNP Q9Z8L5
H	338	VAL	-	expression tag	UNP Q9Z8L5
H	339	PRO	-	expression tag	UNP Q9Z8L5
H	340	ARG	-	expression tag	UNP Q9Z8L5
H	341	GLY	-	expression tag	UNP Q9Z8L5
H	342	SER	-	expression tag	UNP Q9Z8L5
H	343	HIS	-	expression tag	UNP Q9Z8L5
H	344	MET	-	expression tag	UNP Q9Z8L5
I	324	MET	-	initiating methionine	UNP Q9Z8L5
I	325	GLY	-	expression tag	UNP Q9Z8L5
I	326	SER	-	expression tag	UNP Q9Z8L5
I	327	SER	-	expression tag	UNP Q9Z8L5
I	328	HIS	-	expression tag	UNP Q9Z8L5
I	329	HIS	-	expression tag	UNP Q9Z8L5
I	330	HIS	-	expression tag	UNP Q9Z8L5
I	331	HIS	-	expression tag	UNP Q9Z8L5
I	332	HIS	-	expression tag	UNP Q9Z8L5
I	333	HIS	-	expression tag	UNP Q9Z8L5
I	334	SER	-	expression tag	UNP Q9Z8L5

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Chain	Residue	Modelled	Actual	Comment	Reference
I	335	SER	-	expression tag	UNP Q9Z8L5
I	336	GLY	-	expression tag	UNP Q9Z8L5
I	337	LEU	-	expression tag	UNP Q9Z8L5
I	338	VAL	-	expression tag	UNP Q9Z8L5
I	339	PRO	-	expression tag	UNP Q9Z8L5
I	340	ARG	-	expression tag	UNP Q9Z8L5
I	341	GLY	-	expression tag	UNP Q9Z8L5
I	342	SER	-	expression tag	UNP Q9Z8L5
I	343	HIS	-	expression tag	UNP Q9Z8L5
I	344	MET	-	expression tag	UNP Q9Z8L5

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



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

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	C	1	Total C O 6 3 3	0	0
2	D	1	Total C O 6 3 3	0	0
2	E	1	Total C O 6 3 3	0	0
2	E	1	Total C O 6 3 3	0	0
2	E	1	Total C O 6 3 3	0	0
2	G	1	Total C O 6 3 3	0	0
2	I	1	Total C O 6 3 3	0	0

- Molecule 3 is water.

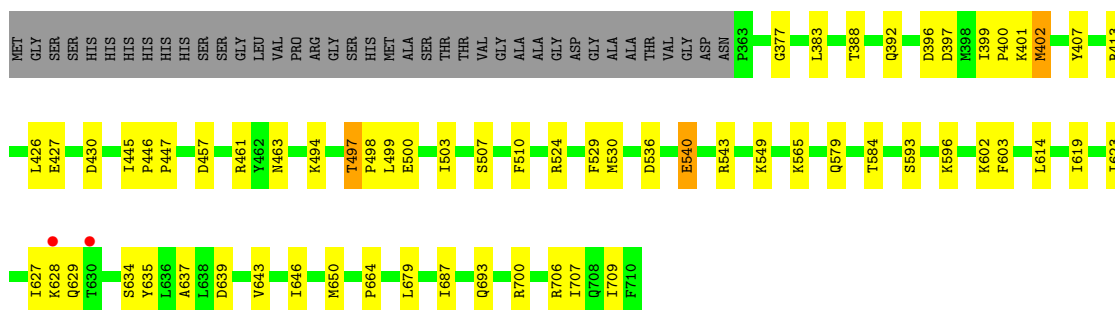
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	17	Total O 17 17	0	0
3	B	6	Total O 6 6	0	0
3	C	5	Total O 5 5	0	0
3	D	9	Total O 9 9	0	0
3	E	3	Total O 3 3	0	0
3	F	4	Total O 4 4	0	0
3	G	4	Total O 4 4	0	0
3	H	4	Total O 4 4	0	0
3	I	6	Total O 6 6	0	0

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.

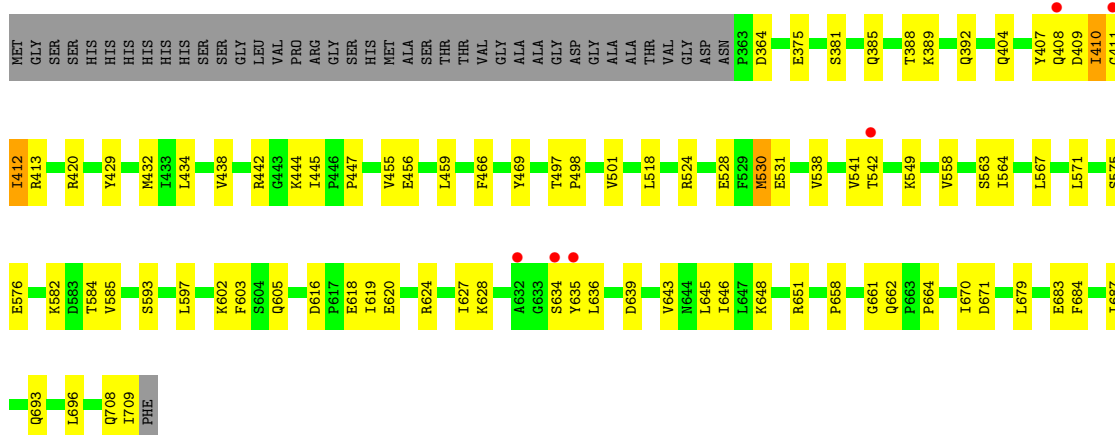
- Molecule 1: Low calcium response locus protein D

Chain A: 



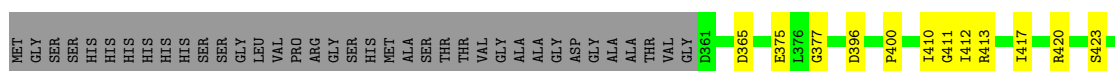
- Molecule 1: Low calcium response locus protein D

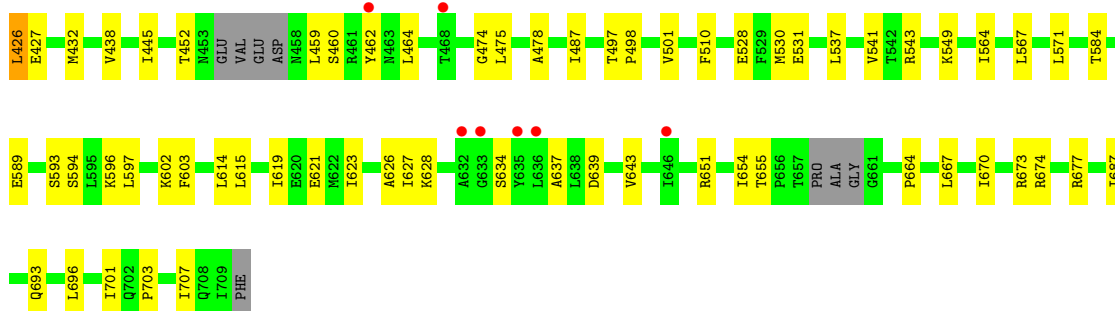
Chain B: 



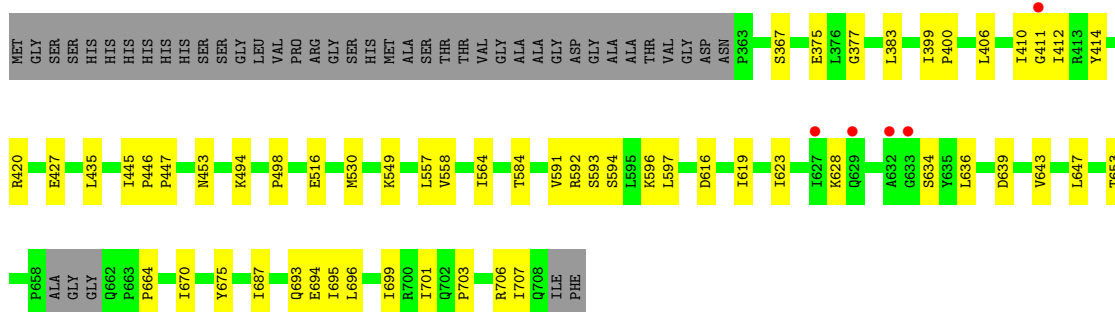
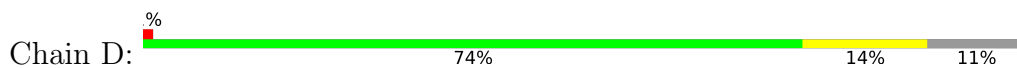
- Molecule 1: Low calcium response locus protein D

Chain C: 

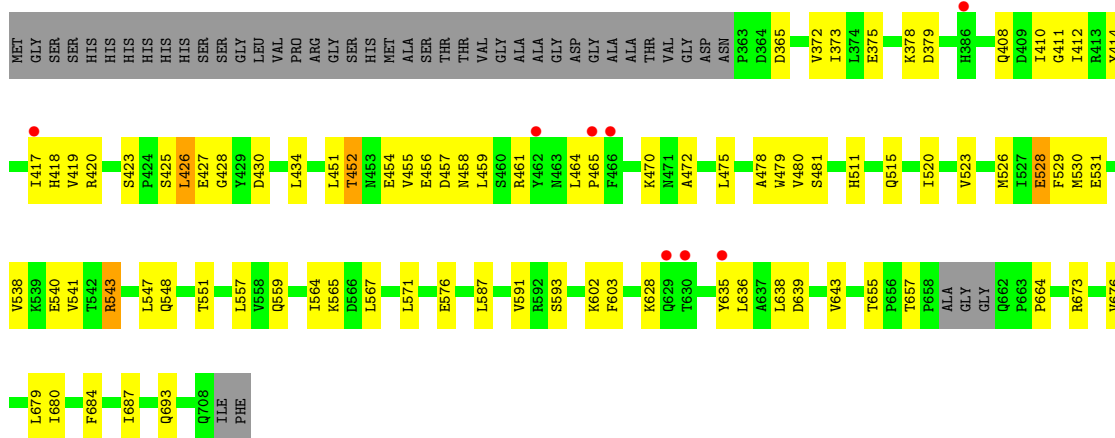




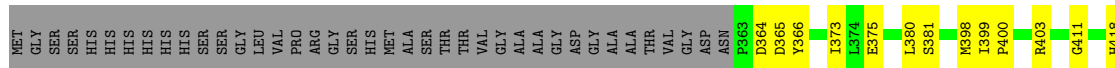
• Molecule 1: Low calcium response locus protein D

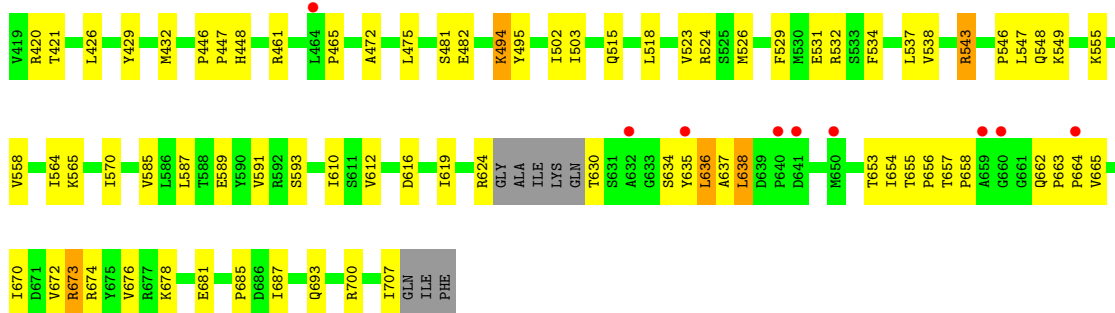


• Molecule 1: Low calcium response locus protein D

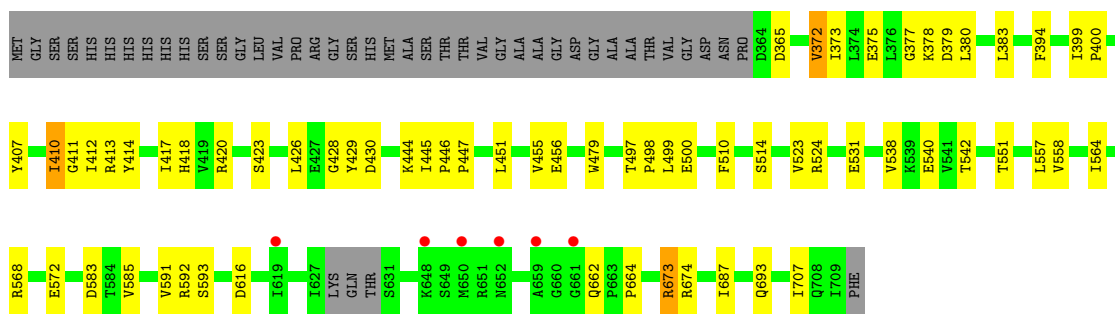


• Molecule 1: Low calcium response locus protein D

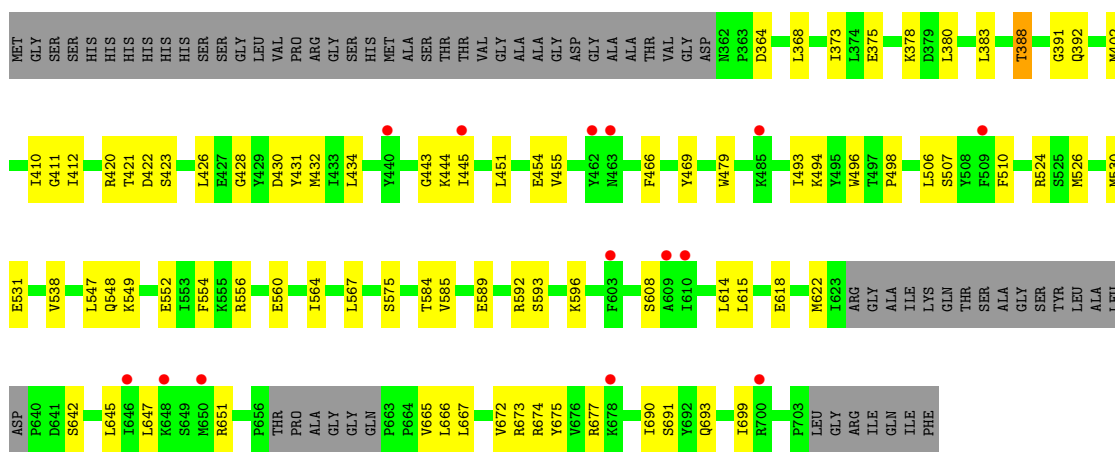




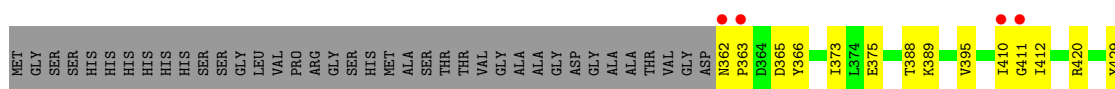
● Molecule 1: Low calcium response locus protein D

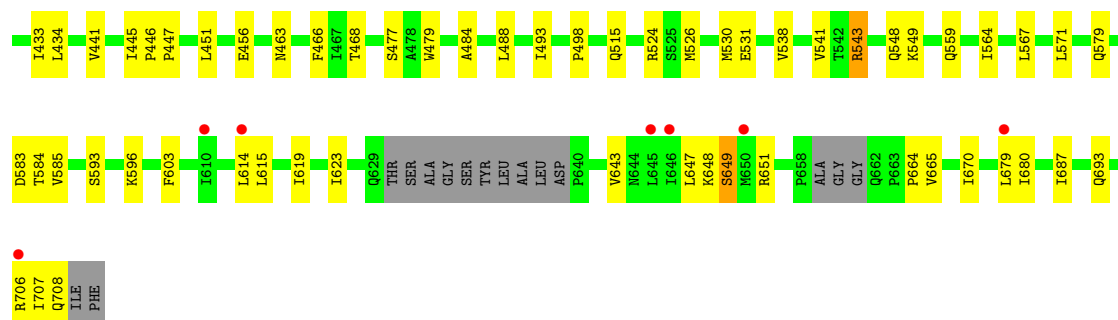


● Molecule 1: Low calcium response locus protein D



● Molecule 1: Low calcium response locus protein D





4 Data and refinement statistics i

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	66.65Å 280.44Å 290.41Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	126.27 – 2.80 126.27 – 2.80	Depositor EDS
% Data completeness (in resolution range)	99.4 (126.27-2.80) 99.4 (126.27-2.80)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.31 (at 2.82Å)	Xtrriage
Refinement program	PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.196 , 0.244 0.207 , 0.250	Depositor DCC
R_{free} test set	6708 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å ²)	66.1	Xtrriage
Anisotropy	0.729	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.29 , 56.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	0.011 for -h,l,k	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	24992	wwPDB-VP
Average B, all atoms (Å ²)	95.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.99% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [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	0.54	0/2923	0.66	0/3965
1	B	0.46	0/2860	0.65	0/3881
1	C	0.41	0/2824	0.62	0/3829
1	D	0.43	0/2860	0.61	0/3880
1	E	0.46	0/2838	0.65	0/3850
1	F	0.44	0/2818	0.58	0/3824
1	G	0.44	0/2834	0.61	0/3845
1	H	0.43	0/2665	0.62	0/3614
1	I	0.45	0/2802	0.62	0/3799
All	All	0.45	0/25424	0.62	0/34487

There are no bond length outliers.

There are no bond angle outliers.

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	2845	0	2930	41	0
1	B	2800	0	2880	57	0
1	C	2767	0	2847	48	0
1	D	2793	0	2871	35	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	E	2779	0	2857	76	0
1	F	2755	0	2827	81	0
1	G	2773	0	2847	64	0
1	H	2609	0	2677	50	0
1	I	2735	0	2814	58	0
2	A	24	0	32	1	0
2	B	12	0	16	1	0
2	C	6	0	8	0	0
2	D	6	0	8	0	0
2	E	18	0	24	1	0
2	G	6	0	8	0	0
2	I	6	0	8	0	0
3	A	17	0	0	0	0
3	B	6	0	0	0	0
3	C	5	0	0	0	0
3	D	9	0	0	0	0
3	E	3	0	0	0	0
3	F	4	0	0	0	0
3	G	4	0	0	0	0
3	H	4	0	0	0	0
3	I	6	0	0	1	0
All	All	24992	0	25654	500	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 10.

The worst 5 of 500 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:G:377:GLY:HA2	1:G:426:LEU:CD2	1.47	1.44
1:G:377:GLY:CA	1:G:426:LEU:HD22	1.52	1.38
1:E:464:LEU:CD1	1:E:465:PRO:HD3	1.54	1.33
1:G:412:ILE:HD11	1:G:558:VAL:CG2	1.69	1.20
1:E:464:LEU:HD12	1:E:465:PRO:CD	1.72	1.19

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	351/387 (91%)	344 (98%)	7 (2%)	0	100	100
1	B	345/387 (89%)	331 (96%)	14 (4%)	0	100	100
1	C	336/387 (87%)	321 (96%)	15 (4%)	0	100	100
1	D	341/387 (88%)	329 (96%)	12 (4%)	0	100	100
1	E	339/387 (88%)	323 (95%)	16 (5%)	0	100	100
1	F	337/387 (87%)	313 (93%)	24 (7%)	0	100	100
1	G	340/387 (88%)	329 (97%)	11 (3%)	0	100	100
1	H	314/387 (81%)	300 (96%)	14 (4%)	0	100	100
1	I	331/387 (86%)	320 (97%)	11 (3%)	0	100	100
All	All	3034/3483 (87%)	2910 (96%)	124 (4%)	0	100	100

There are no Ramachandran outliers to report.

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	323/345 (94%)	310 (96%)	13 (4%)	31	65
1	B	317/345 (92%)	305 (96%)	12 (4%)	33	67
1	C	314/345 (91%)	308 (98%)	6 (2%)	57	85
1	D	318/345 (92%)	315 (99%)	3 (1%)	78	94
1	E	316/345 (92%)	305 (96%)	11 (4%)	36	70

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	F	313/345 (91%)	304 (97%)	9 (3%)	42	76
1	G	314/345 (91%)	306 (98%)	8 (2%)	47	80
1	H	299/345 (87%)	291 (97%)	8 (3%)	44	78
1	I	313/345 (91%)	305 (97%)	8 (3%)	46	79
All	All	2827/3105 (91%)	2749 (97%)	78 (3%)	44	77

5 of 78 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	426	LEU
1	E	657	THR
1	I	524	ARG
1	E	452	THR
1	E	530	MET

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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](#)

13 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
2	GOL	C	801	-	5,5,5	0.09	0	5,5,5	0.32	0
2	GOL	A	801	-	5,5,5	0.10	0	5,5,5	0.32	0
2	GOL	G	801	-	5,5,5	0.09	0	5,5,5	0.32	0
2	GOL	A	802	-	5,5,5	0.09	0	5,5,5	0.32	0
2	GOL	E	801	-	5,5,5	0.08	0	5,5,5	0.32	0
2	GOL	E	802	-	5,5,5	0.08	0	5,5,5	0.32	0
2	GOL	B	802	-	5,5,5	0.09	0	5,5,5	0.32	0
2	GOL	B	801	-	5,5,5	0.09	0	5,5,5	0.32	0
2	GOL	A	803	-	5,5,5	0.08	0	5,5,5	0.32	0
2	GOL	D	801	-	5,5,5	0.10	0	5,5,5	0.32	0
2	GOL	E	803	-	5,5,5	0.09	0	5,5,5	0.32	0
2	GOL	I	801	-	5,5,5	0.09	0	5,5,5	0.32	0
2	GOL	A	804	-	5,5,5	0.09	0	5,5,5	0.32	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	C	801	-	-	0/4/4/4	-
2	GOL	A	801	-	-	2/4/4/4	-
2	GOL	G	801	-	-	2/4/4/4	-
2	GOL	A	802	-	-	2/4/4/4	-
2	GOL	E	801	-	-	1/4/4/4	-
2	GOL	E	802	-	-	4/4/4/4	-
2	GOL	B	802	-	-	2/4/4/4	-
2	GOL	B	801	-	-	2/4/4/4	-
2	GOL	A	803	-	-	3/4/4/4	-
2	GOL	D	801	-	-	2/4/4/4	-
2	GOL	E	803	-	-	2/4/4/4	-
2	GOL	I	801	-	-	2/4/4/4	-
2	GOL	A	804	-	-	3/4/4/4	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

5 of 27 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	802	GOL	O1-C1-C2-C3
2	E	802	GOL	O1-C1-C2-C3
2	E	802	GOL	C1-C2-C3-O3
2	A	803	GOL	O1-C1-C2-O2
2	I	801	GOL	C1-C2-C3-O3

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	802	GOL	1	0
2	E	801	GOL	1	0
2	B	801	GOL	1	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	348/387 (89%)	-0.13	2 (0%) 89 86	37, 61, 109, 201	0
1	B	347/387 (89%)	-0.01	6 (1%) 70 63	36, 77, 154, 225	0
1	C	342/387 (88%)	0.06	7 (2%) 65 56	48, 104, 185, 241	0
1	D	343/387 (88%)	-0.06	5 (1%) 73 68	42, 75, 149, 224	0
1	E	343/387 (88%)	-0.08	8 (2%) 60 51	44, 92, 166, 238	0
1	F	340/387 (87%)	0.01	9 (2%) 56 46	30, 106, 182, 239	0
1	G	343/387 (88%)	0.03	6 (1%) 70 63	58, 89, 148, 233	0
1	H	320/387 (82%)	0.20	14 (4%) 34 24	62, 117, 189, 247	0
1	I	334/387 (86%)	-0.05	11 (3%) 46 36	48, 95, 171, 211	0
All	All	3060/3483 (87%)	-0.01	68 (2%) 62 52	30, 89, 171, 247	0

The worst 5 of 68 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	632	ALA	7.5
1	F	632	ALA	6.6
1	F	635	TYR	4.8
1	F	464	LEU	4.4
1	H	648	LYS	4.3

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	C	801	6/6	0.59	0.26	155,158,162,165	0
2	GOL	G	801	6/6	0.68	0.36	110,114,116,117	0
2	GOL	B	802	6/6	0.75	0.41	99,109,112,113	0
2	GOL	I	801	6/6	0.80	0.20	105,120,127,131	0
2	GOL	A	804	6/6	0.81	0.34	66,79,82,82	0
2	GOL	E	801	6/6	0.82	0.33	79,94,112,117	0
2	GOL	E	803	6/6	0.83	0.32	117,121,136,139	0
2	GOL	E	802	6/6	0.84	0.38	65,75,84,90	0
2	GOL	D	801	6/6	0.85	0.21	75,98,101,102	0
2	GOL	A	802	6/6	0.88	0.46	75,101,102,105	0
2	GOL	A	801	6/6	0.90	0.17	85,96,112,118	0
2	GOL	A	803	6/6	0.90	0.12	87,98,105,109	0
2	GOL	B	801	6/6	0.91	0.25	68,75,85,90	0

6.5 Other polymers [i](#)

There are no such residues in this entry.