



# wwPDB X-ray Structure Validation Summary Report ⓘ

Jan 31, 2016 – 09:29 PM GMT

PDB ID : 1P7T  
Title : Structure of Escherichia coli malate synthase G:pyruvate:acetyl-Coenzyme A abortive ternary complex at 1.95 angstrom resolution  
Authors : Anstrom, D.M.; Kallio, K.; Remington, S.J.  
Deposited on : 2003-05-05  
Resolution : 1.95 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](mailto: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.

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

MolProbity : 4.02b-467  
Mogul : 1.7 (RC4), CSD as536be (2015)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20026688  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk26865

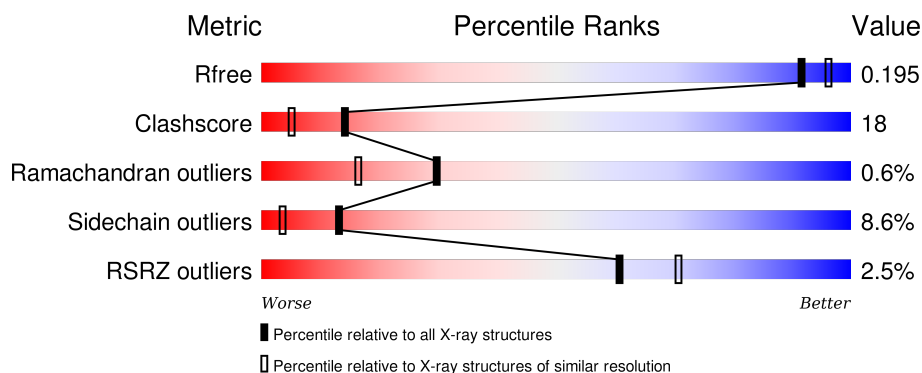
# 1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 1.95 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))
$R_{free}$	91344	1833 (1.96-1.96)
Clashscore	102246	1953 (1.96-1.96)
Ramachandran outliers	100387	1936 (1.96-1.96)
Sidechain outliers	100360	1936 (1.96-1.96)
RSRZ outliers	91569	1835 (1.96-1.96)

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  $\geq 3$ , 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.

Mol	Chain	Length	Quality of chain
1	A	731	<div> <div></div> <div>57%</div> <div>30%</div> <div>8%</div> <div>• •</div> </div>
2	B	731	<div> <div>3%</div> <div>60%</div> <div>29%</div> <div>6%</div> <div>• •</div> </div>

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
5	PYR	A	810	-	-	X	-
5	PYR	B	910	-	-	X	-
6	PG4	B	1002	-	-	-	X
6	PG4	B	1003	-	-	-	X
7	PEG	A	1001	-	-	-	X

## 2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 11504 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 Malate synthase G.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	706	Total	C	N	O	S	0	0	0
			5414	3406	956	1025	27			

There are 11 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	see remark 999	UNP P37330
A	2	ALA	SER	cloning artifact	UNP P37330
A	617	CSO	CYS	MODIFIED RESIDUE	UNP P37330
A	724	LEU	-	EXPRESSION TAG	UNP P37330
A	725	GLU	-	EXPRESSION TAG	UNP P37330
A	726	HIS	-	EXPRESSION TAG	UNP P37330
A	727	HIS	-	EXPRESSION TAG	UNP P37330
A	728	HIS	-	EXPRESSION TAG	UNP P37330
A	729	HIS	-	EXPRESSION TAG	UNP P37330
A	730	HIS	-	EXPRESSION TAG	UNP P37330
A	731	HIS	-	EXPRESSION TAG	UNP P37330

- Molecule 2 is a protein called Malate synthase G.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	705	Total	C	N	O	S	0	0	0
			5358	3379	944	1008	27			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	1	MET	-	see remark 999	UNP P37330
B	2	ALA	SER	cloning artifact	UNP P37330
B	617	CSO	CYS	MODIFIED RESIDUE	UNP P37330
B	688	CSO	CYS	MODIFIED RESIDUE	UNP P37330
B	724	LEU	-	EXPRESSION TAG	UNP P37330

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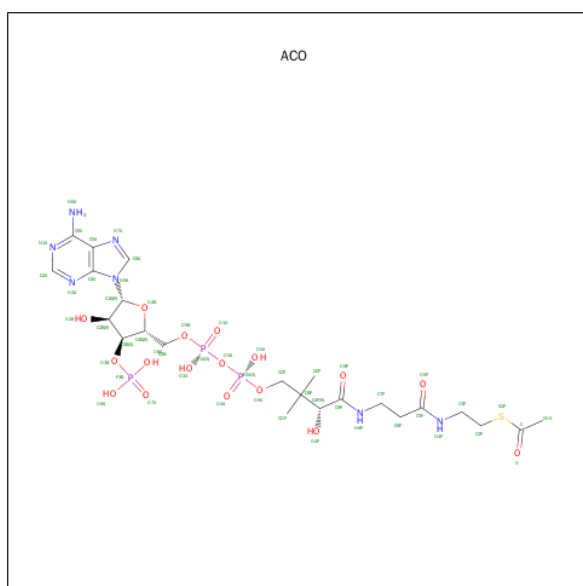
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Chain	Residue	Modelled	Actual	Comment	Reference
B	725	GLU	-	EXPRESSION TAG	UNP P37330
B	726	HIS	-	EXPRESSION TAG	UNP P37330
B	727	HIS	-	EXPRESSION TAG	UNP P37330
B	728	HIS	-	EXPRESSION TAG	UNP P37330
B	729	HIS	-	EXPRESSION TAG	UNP P37330
B	730	HIS	-	EXPRESSION TAG	UNP P37330
B	731	HIS	-	EXPRESSION TAG	UNP P37330

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

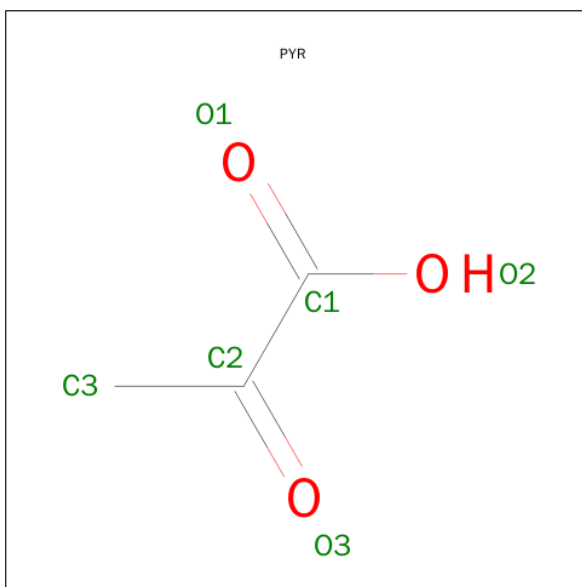
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total Mg 1 1	0	0
3	A	1	Total Mg 1 1	0	0

- Molecule 4 is ACETYL COENZYME \*A (three-letter code: ACO) (formula: C<sub>23</sub>H<sub>38</sub>N<sub>7</sub>O<sub>17</sub>P<sub>3</sub>S).



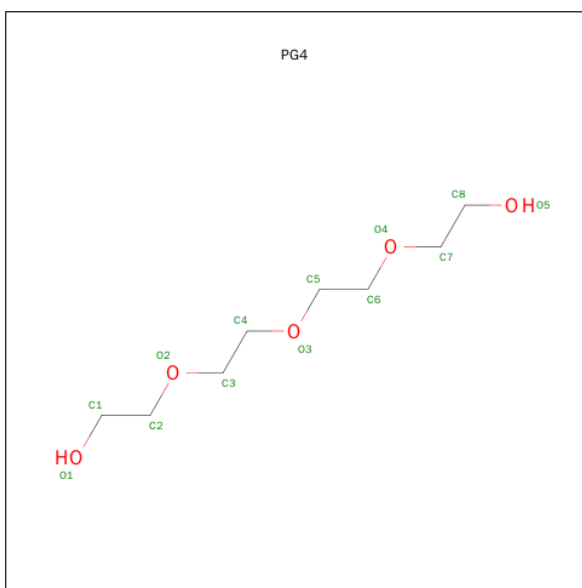
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C N O P S 51 23 7 17 3 1	0	0
4	B	1	Total C N O P S 51 23 7 17 3 1	0	0

- Molecule 5 is PYRUVIC ACID (three-letter code: PYR) (formula: C<sub>3</sub>H<sub>4</sub>O<sub>3</sub>).



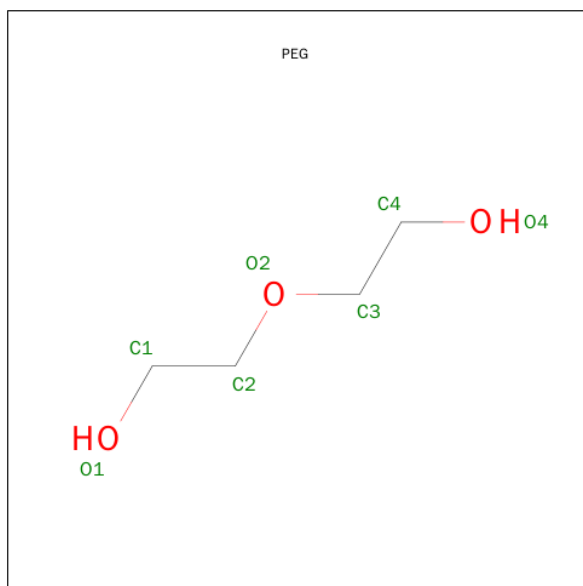
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total	C	O	0	0
			6	3	3		
5	B	1	Total	C	O	0	0
			6	3	3		

- Molecule 6 is TETRAETHYLENE GLYCOL (three-letter code: PG4) (formula:  $C_8H_{18}O_5$ ).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	B	1	Total	C	O	0	0
			13	8	5		
6	B	1	Total	C	O	0	0
			13	8	5		

- Molecule 7 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: C<sub>4</sub>H<sub>10</sub>O<sub>3</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	A	1	Total	C	O	0	0
			7	4	3		

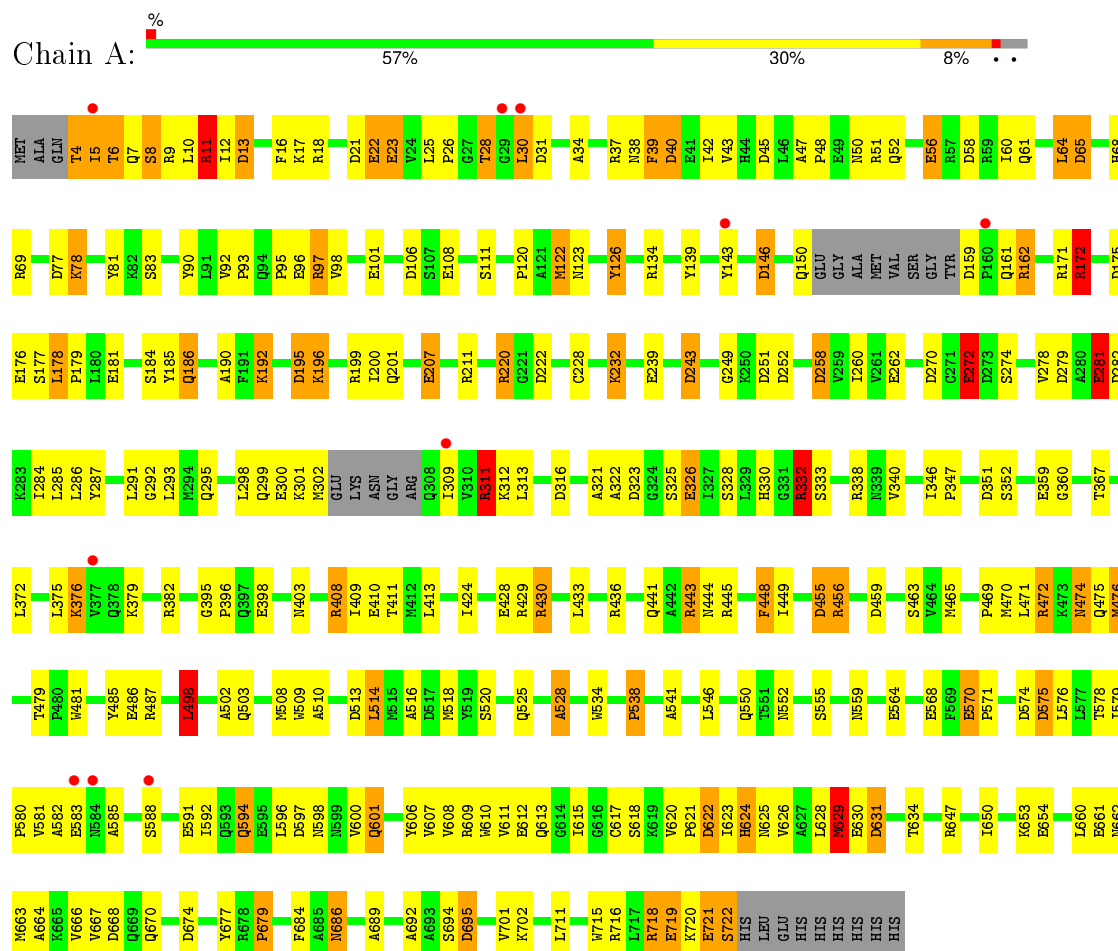
- Molecule 8 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	A	308	Total	O	0	0
			308	308		
8	B	275	Total	O	0	0
			275	275		

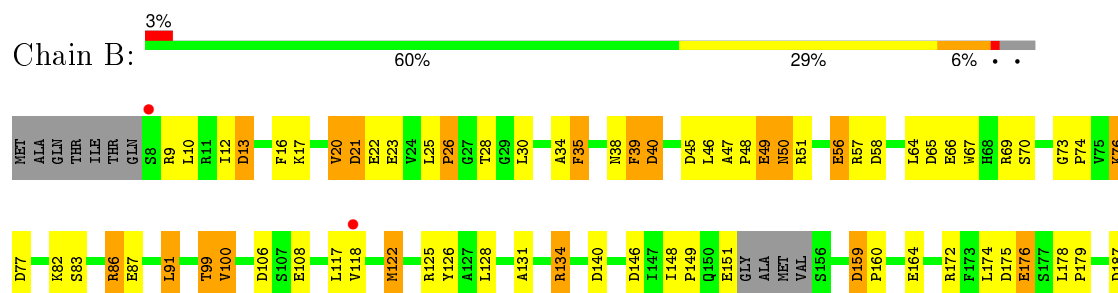
### 3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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: Malate synthase G



#### • Molecule 2: Malate synthase G







## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	73.93Å 107.39Å 204.97Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	39.22 – 1.95 39.21 – 1.95	Depositor EDS
% Data completeness (in resolution range)	(Not available) (39.22-1.95) 90.0 (39.21-1.95)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	4.28 (at 1.95Å)	Xtriage
Refinement program	TNT	Depositor
R, $R_{free}$	0.194 , 0.294 0.193 , 0.195	Depositor DCC
$R_{free}$ test set	10721 reflections (11.07%)	DCC
Wilson B-factor (Å <sup>2</sup> )	21.7	Xtriage
Anisotropy	0.506	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.33 , 102.2	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.33$	Xtriage
Outliers	2 of 107535 reflections (0.002%)	Xtriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	11504	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	30.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.83% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

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

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: MG, PYR, ACO, CSO, PG4, PEG

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	1.31	28/5509 (0.5%)	1.63	103/7485 (1.4%)
2	B	1.28	28/5447 (0.5%)	1.60	93/7407 (1.3%)
All	All	1.29	56/10956 (0.5%)	1.62	196/14892 (1.3%)

The worst 5 of 56 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	612	GLU	CD-OE2	10.15	1.36	1.25
2	B	207	GLU	CD-OE2	9.06	1.35	1.25
1	A	108	GLU	CD-OE2	8.95	1.35	1.25
2	B	164	GLU	CD-OE2	8.52	1.35	1.25
2	B	87	GLU	CD-OE2	8.48	1.34	1.25

The worst 5 of 196 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	436	ARG	NE-CZ-NH2	-14.30	113.15	120.30
1	A	316	ASP	CB-CG-OD2	-11.49	107.96	118.30
1	A	436	ARG	NE-CZ-NH1	11.41	126.01	120.30
2	B	382	ARG	NE-CZ-NH2	-11.23	114.69	120.30
2	B	678	ARG	NE-CZ-NH2	-11.20	114.70	120.30

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	5414	0	5271	192	0
2	B	5358	0	5172	188	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
4	A	51	0	34	10	0
4	B	51	0	34	13	0
5	A	6	0	3	6	0
5	B	6	0	3	9	0
6	B	26	0	36	8	0
7	A	7	0	10	1	0
8	A	308	0	0	10	0
8	B	275	0	0	10	0
All	All	11504	0	10563	391	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 18.

The worst 5 of 391 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:476:MET:HE1	1:A:481:TRP:HE1	1.15	1.10
1:A:476:MET:HE3	1:A:479:THR:HG21	1.32	1.10
2:B:86:ARG:HH11	2:B:86:ARG:HB2	1.21	1.05
2:B:86:ARG:NH1	2:B:86:ARG:HB2	1.81	0.95
2:B:534:TRP:CZ3	5:B:910:PYR:H31	2.03	0.94

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	699/731 (96%)	666 (95%)	30 (4%)	3 (0%)	39	27
2	B	697/731 (95%)	665 (95%)	27 (4%)	5 (1%)	26	14
All	All	1396/1462 (96%)	1331 (95%)	57 (4%)	8 (1%)	30	16

5 of 8 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	9	ARG
1	A	28	THR
2	B	585	ALA
2	B	26	PRO
1	A	585	ALA

### 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	555/606 (92%)	501 (90%)	54 (10%)	10	2
2	B	538/605 (89%)	498 (93%)	40 (7%)	17	5
All	All	1093/1211 (90%)	999 (91%)	94 (9%)	13	3

5 of 94 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	594	GLN
1	A	718	ARG
2	B	508	MET
1	A	601	GLN
1	A	653	LYS

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 21 such sidechains are listed below:

Mol	Chain	Res	Type
1	A	339	ASN

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Mol	Chain	Res	Type
1	A	521	GLN
2	B	197	GLN
1	A	314	ASN
2	B	299	GLN

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

3 non-standard protein/DNA/RNA residues 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	$\# Z  > 2$
1	CSO	A	617	1	3,6,7	1.08	0	1,6,8	1.52	0
2	CSO	B	617	2	3,6,7	0.55	0	1,6,8	1.97	0
2	CSO	B	688	2	3,6,7	2.03	1 (33%)	1,6,8	0.74	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
1	CSO	A	617	1	-	0/1/5/7	0/0/0/0
2	CSO	B	617	2	-	0/1/5/7	0/0/0/0
2	CSO	B	688	2	-	0/1/5/7	0/0/0/0

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	688	CSO	CB-CA	3.36	1.62	1.53

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

2 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	617	CSO	2	0
2	B	617	CSO	2	0

## 5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 5.6 Ligand geometry [i](#)

Of 9 ligands modelled in this entry, 2 are monoatomic - leaving 7 for Mogul analysis.

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	$\# Z  > 2$
7	PEG	A	1001	-	6,6,6	0.78	0	5,5,5	0.33	0
4	ACO	A	800	-	43,53,53	0.95	1 (2%)	55,79,79	1.37	8 (14%)
5	PYR	A	810	3	2,5,5	1.02	0	2,6,6	1.25	0
6	PG4	B	1002	-	12,12,12	1.16	1 (8%)	11,11,11	0.55	0
6	PG4	B	1003	-	12,12,12	0.59	0	11,11,11	0.49	0
4	ACO	B	900	-	43,53,53	1.17	4 (9%)	55,79,79	1.40	6 (10%)
5	PYR	B	910	3	2,5,5	0.44	0	2,6,6	1.87	1 (50%)

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
7	PEG	A	1001	-	-	0/4/4/4	0/0/0/0
4	ACO	A	800	-	-	0/47/67/67	0/3/3/3
5	PYR	A	810	3	-	0/0/4/4	0/0/0/0
6	PG4	B	1002	-	-	0/10/10/10	0/0/0/0
6	PG4	B	1003	-	-	0/10/10/10	0/0/0/0
4	ACO	B	900	-	-	0/47/67/67	0/3/3/3
5	PYR	B	910	3	-	0/0/4/4	0/0/0/0

The worst 5 of 6 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	800	ACO	P3B-O3B	-2.74	1.51	1.60
4	B	900	ACO	P1A-O5B	-2.01	1.49	1.59
4	B	900	ACO	C7P-N8P	2.10	1.51	1.46
6	B	1002	PG4	O4-C7	2.28	1.51	1.42
4	B	900	ACO	O4B-C1B	2.49	1.44	1.41

The worst 5 of 15 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	B	900	ACO	C1B-N9A-C4A	-6.11	117.72	126.94
4	A	800	ACO	C1B-N9A-C4A	-3.77	121.25	126.94
4	A	800	ACO	C6P-C5P-N4P	-3.30	110.72	116.46
4	B	900	ACO	P3B-O3B-C3B	-3.20	113.89	121.56
4	A	800	ACO	N3A-C2A-N1A	-2.73	126.80	128.89

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

7 monomers are involved in 40 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	A	1001	PEG	1	0
4	A	800	ACO	10	0
5	A	810	PYR	6	0
6	B	1002	PG4	5	0
6	B	1003	PG4	3	0
4	B	900	ACO	13	0
5	B	910	PYR	9	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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	705/731 (96%)	-0.05	10 (1%) 78 85	14, 26, 53, 100	0
2	B	703/731 (96%)	0.12	25 (3%) 46 57	14, 27, 58, 99	0
All	All	1408/1462 (96%)	0.03	35 (2%) 61 71	14, 26, 56, 100	0

The worst 5 of 35 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	682	GLY	6.4
1	A	309	ILE	4.3
2	B	683	ASN	3.9
1	A	5	ILE	3.0
2	B	352	SER	3.0

### 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95<sup>th</sup> 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	LLDF	B-factors(Å <sup>2</sup> )	Q<0.9
2	CSO	B	617	7/8	0.98	0.07	-	16,24,30,35	0
1	CSO	A	617	7/8	0.96	0.10	-	23,26,45,85	0
2	CSO	B	688	7/8	0.95	0.12	-	22,24,45,47	0

### 6.3 Carbohydrates ⓘ

There are no carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95<sup>th</sup> 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	LLDF	B-factors(Å <sup>2</sup> )	Q<0.9
7	PEG	A	1001	7/7	0.85	0.19	6.14	43,44,47,48	0
6	PG4	B	1002	13/13	0.84	0.19	6.12	29,40,64,66	0
6	PG4	B	1003	13/13	0.83	0.17	2.79	44,56,68,68	0
4	ACO	A	800	51/51	0.92	0.14	0.25	17,50,91,96	0
4	ACO	B	900	51/51	0.92	0.15	0.18	23,53,98,100	0
5	PYR	B	910	6/6	0.98	0.19	-0.28	20,23,32,32	0
5	PYR	A	810	6/6	0.98	0.14	-0.30	13,20,21,44	0
3	MG	A	1000	1/1	0.98	0.09	-2.77	16,16,16,16	0
3	MG	B	1001	1/1	0.99	0.11	-6.40	17,17,17,17	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.