Full wwPDB X-ray Structure Validation Report (i)

Sep 20, 2023 – 01:24 PM EDT

PDB ID	:	5HUO
Title	:	Crystal Structure of NadC Deletion Mutant in C2221 Space Group
Authors	:	Booth, W.T.; Chruszcz, M.
Deposited on	:	2016-01-27
Resolution	:	2.80 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:

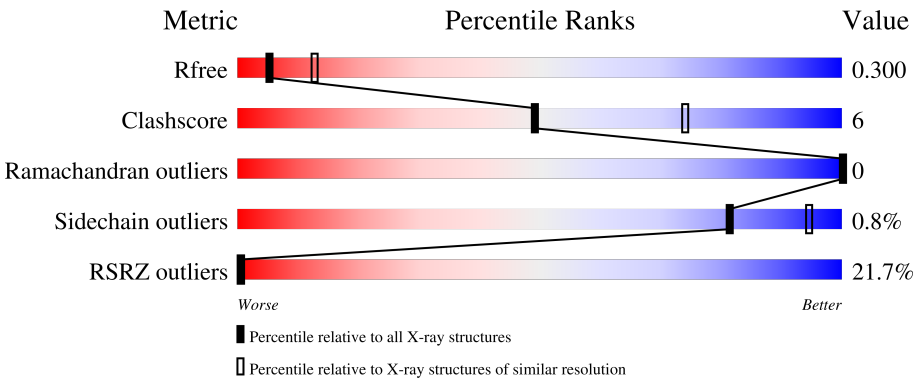
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35.1

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 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	314	17%, 81%, 9%, 10%
1	B	314	17%, 77%, 13%, 10%
1	C	314	35%, 74%, 15%, 11%
1	E	314	23%, 78%, 11%, 10%
1	F	314	13%, 80%, 10%, 10%

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Mol	Chain	Length	Quality of chain
1	H	314	12% 79% 10% 10%

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	SO4	A	302	-	-	-	X
2	SO4	B	303	-	-	-	X
2	SO4	B	304	-	-	-	X
2	SO4	C	302	-	-	-	X
2	SO4	E	301	-	-	-	X
2	SO4	F	303	-	-	-	X
2	SO4	H	303	-	-	-	X

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 13069 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 Nicotinate-nucleotide diphosphorylase (Carboxylating).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	283	2152	1360	370	413	9	0	0	0
			Total	C	N	O	S			
1	B	283	2171	1370	373	418	10	0	1	0
			Total	C	N	O	S			
1	C	280	2072	1304	353	408	7	0	0	0
			Total	C	N	O	S			
1	E	282	2108	1328	360	411	9	0	0	0
			Total	C	N	O	S			
1	F	284	2161	1363	369	420	9	0	0	0
			Total	C	N	O	S			
1	H	282	2156	1361	371	415	9	0	1	0

There are 156 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-24	MET	-	initiating methionine	UNP A0A0H3BVM1
A	-23	HIS	-	expression tag	UNP A0A0H3BVM1
A	-22	HIS	-	expression tag	UNP A0A0H3BVM1
A	-21	HIS	-	expression tag	UNP A0A0H3BVM1
A	-20	HIS	-	expression tag	UNP A0A0H3BVM1
A	-19	HIS	-	expression tag	UNP A0A0H3BVM1
A	-18	HIS	-	expression tag	UNP A0A0H3BVM1
A	-17	SER	-	expression tag	UNP A0A0H3BVM1
A	-16	SER	-	expression tag	UNP A0A0H3BVM1
A	-15	GLY	-	expression tag	UNP A0A0H3BVM1
A	-14	VAL	-	expression tag	UNP A0A0H3BVM1
A	-13	ASP	-	expression tag	UNP A0A0H3BVM1
A	-12	LEU	-	expression tag	UNP A0A0H3BVM1
A	-11	GLY	-	expression tag	UNP A0A0H3BVM1
A	-10	THR	-	expression tag	UNP A0A0H3BVM1
A	-9	GLU	-	expression tag	UNP A0A0H3BVM1
A	-8	ASN	-	expression tag	UNP A0A0H3BVM1

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-7	LEU	-	expression tag	UNP A0A0H3BVM1
A	-6	TYR	-	expression tag	UNP A0A0H3BVM1
A	-5	PHE	-	expression tag	UNP A0A0H3BVM1
A	-4	GLN	-	expression tag	UNP A0A0H3BVM1
A	-3	SER	-	expression tag	UNP A0A0H3BVM1
A	-2	GLY	-	expression tag	UNP A0A0H3BVM1
A	-1	SER	-	expression tag	UNP A0A0H3BVM1
A	0	GLY	-	expression tag	UNP A0A0H3BVM1
A	?	-	UNK	deletion	UNP A0A0H3BVM1
B	-24	MET	-	initiating methionine	UNP A0A0H3BVM1
B	-23	HIS	-	expression tag	UNP A0A0H3BVM1
B	-22	HIS	-	expression tag	UNP A0A0H3BVM1
B	-21	HIS	-	expression tag	UNP A0A0H3BVM1
B	-20	HIS	-	expression tag	UNP A0A0H3BVM1
B	-19	HIS	-	expression tag	UNP A0A0H3BVM1
B	-18	HIS	-	expression tag	UNP A0A0H3BVM1
B	-17	SER	-	expression tag	UNP A0A0H3BVM1
B	-16	SER	-	expression tag	UNP A0A0H3BVM1
B	-15	GLY	-	expression tag	UNP A0A0H3BVM1
B	-14	VAL	-	expression tag	UNP A0A0H3BVM1
B	-13	ASP	-	expression tag	UNP A0A0H3BVM1
B	-12	LEU	-	expression tag	UNP A0A0H3BVM1
B	-11	GLY	-	expression tag	UNP A0A0H3BVM1
B	-10	THR	-	expression tag	UNP A0A0H3BVM1
B	-9	GLU	-	expression tag	UNP A0A0H3BVM1
B	-8	ASN	-	expression tag	UNP A0A0H3BVM1
B	-7	LEU	-	expression tag	UNP A0A0H3BVM1
B	-6	TYR	-	expression tag	UNP A0A0H3BVM1
B	-5	PHE	-	expression tag	UNP A0A0H3BVM1
B	-4	GLN	-	expression tag	UNP A0A0H3BVM1
B	-3	SER	-	expression tag	UNP A0A0H3BVM1
B	-2	GLY	-	expression tag	UNP A0A0H3BVM1
B	-1	SER	-	expression tag	UNP A0A0H3BVM1
B	0	GLY	-	expression tag	UNP A0A0H3BVM1
B	?	-	UNK	deletion	UNP A0A0H3BVM1
C	-24	MET	-	initiating methionine	UNP A0A0H3BVM1
C	-23	HIS	-	expression tag	UNP A0A0H3BVM1
C	-22	HIS	-	expression tag	UNP A0A0H3BVM1
C	-21	HIS	-	expression tag	UNP A0A0H3BVM1
C	-20	HIS	-	expression tag	UNP A0A0H3BVM1
C	-19	HIS	-	expression tag	UNP A0A0H3BVM1
C	-18	HIS	-	expression tag	UNP A0A0H3BVM1

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-17	SER	-	expression tag	UNP A0A0H3BVM1
C	-16	SER	-	expression tag	UNP A0A0H3BVM1
C	-15	GLY	-	expression tag	UNP A0A0H3BVM1
C	-14	VAL	-	expression tag	UNP A0A0H3BVM1
C	-13	ASP	-	expression tag	UNP A0A0H3BVM1
C	-12	LEU	-	expression tag	UNP A0A0H3BVM1
C	-11	GLY	-	expression tag	UNP A0A0H3BVM1
C	-10	THR	-	expression tag	UNP A0A0H3BVM1
C	-9	GLU	-	expression tag	UNP A0A0H3BVM1
C	-8	ASN	-	expression tag	UNP A0A0H3BVM1
C	-7	LEU	-	expression tag	UNP A0A0H3BVM1
C	-6	TYR	-	expression tag	UNP A0A0H3BVM1
C	-5	PHE	-	expression tag	UNP A0A0H3BVM1
C	-4	GLN	-	expression tag	UNP A0A0H3BVM1
C	-3	SER	-	expression tag	UNP A0A0H3BVM1
C	-2	GLY	-	expression tag	UNP A0A0H3BVM1
C	-1	SER	-	expression tag	UNP A0A0H3BVM1
C	0	GLY	-	expression tag	UNP A0A0H3BVM1
C	?	-	UNK	deletion	UNP A0A0H3BVM1
E	-24	MET	-	initiating methionine	UNP A0A0H3BVM1
E	-23	HIS	-	expression tag	UNP A0A0H3BVM1
E	-22	HIS	-	expression tag	UNP A0A0H3BVM1
E	-21	HIS	-	expression tag	UNP A0A0H3BVM1
E	-20	HIS	-	expression tag	UNP A0A0H3BVM1
E	-19	HIS	-	expression tag	UNP A0A0H3BVM1
E	-18	HIS	-	expression tag	UNP A0A0H3BVM1
E	-17	SER	-	expression tag	UNP A0A0H3BVM1
E	-16	SER	-	expression tag	UNP A0A0H3BVM1
E	-15	GLY	-	expression tag	UNP A0A0H3BVM1
E	-14	VAL	-	expression tag	UNP A0A0H3BVM1
E	-13	ASP	-	expression tag	UNP A0A0H3BVM1
E	-12	LEU	-	expression tag	UNP A0A0H3BVM1
E	-11	GLY	-	expression tag	UNP A0A0H3BVM1
E	-10	THR	-	expression tag	UNP A0A0H3BVM1
E	-9	GLU	-	expression tag	UNP A0A0H3BVM1
E	-8	ASN	-	expression tag	UNP A0A0H3BVM1
E	-7	LEU	-	expression tag	UNP A0A0H3BVM1
E	-6	TYR	-	expression tag	UNP A0A0H3BVM1
E	-5	PHE	-	expression tag	UNP A0A0H3BVM1
E	-4	GLN	-	expression tag	UNP A0A0H3BVM1
E	-3	SER	-	expression tag	UNP A0A0H3BVM1
E	-2	GLY	-	expression tag	UNP A0A0H3BVM1

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Chain	Residue	Modelled	Actual	Comment	Reference
E	-1	SER	-	expression tag	UNP A0A0H3BVM1
E	0	GLY	-	expression tag	UNP A0A0H3BVM1
E	?	-	UNK	deletion	UNP A0A0H3BVM1
F	-24	MET	-	initiating methionine	UNP A0A0H3BVM1
F	-23	HIS	-	expression tag	UNP A0A0H3BVM1
F	-22	HIS	-	expression tag	UNP A0A0H3BVM1
F	-21	HIS	-	expression tag	UNP A0A0H3BVM1
F	-20	HIS	-	expression tag	UNP A0A0H3BVM1
F	-19	HIS	-	expression tag	UNP A0A0H3BVM1
F	-18	HIS	-	expression tag	UNP A0A0H3BVM1
F	-17	SER	-	expression tag	UNP A0A0H3BVM1
F	-16	SER	-	expression tag	UNP A0A0H3BVM1
F	-15	GLY	-	expression tag	UNP A0A0H3BVM1
F	-14	VAL	-	expression tag	UNP A0A0H3BVM1
F	-13	ASP	-	expression tag	UNP A0A0H3BVM1
F	-12	LEU	-	expression tag	UNP A0A0H3BVM1
F	-11	GLY	-	expression tag	UNP A0A0H3BVM1
F	-10	THR	-	expression tag	UNP A0A0H3BVM1
F	-9	GLU	-	expression tag	UNP A0A0H3BVM1
F	-8	ASN	-	expression tag	UNP A0A0H3BVM1
F	-7	LEU	-	expression tag	UNP A0A0H3BVM1
F	-6	TYR	-	expression tag	UNP A0A0H3BVM1
F	-5	PHE	-	expression tag	UNP A0A0H3BVM1
F	-4	GLN	-	expression tag	UNP A0A0H3BVM1
F	-3	SER	-	expression tag	UNP A0A0H3BVM1
F	-2	GLY	-	expression tag	UNP A0A0H3BVM1
F	-1	SER	-	expression tag	UNP A0A0H3BVM1
F	0	GLY	-	expression tag	UNP A0A0H3BVM1
F	?	-	UNK	deletion	UNP A0A0H3BVM1
H	-24	MET	-	initiating methionine	UNP A0A0H3BVM1
H	-23	HIS	-	expression tag	UNP A0A0H3BVM1
H	-22	HIS	-	expression tag	UNP A0A0H3BVM1
H	-21	HIS	-	expression tag	UNP A0A0H3BVM1
H	-20	HIS	-	expression tag	UNP A0A0H3BVM1
H	-19	HIS	-	expression tag	UNP A0A0H3BVM1
H	-18	HIS	-	expression tag	UNP A0A0H3BVM1
H	-17	SER	-	expression tag	UNP A0A0H3BVM1
H	-16	SER	-	expression tag	UNP A0A0H3BVM1
H	-15	GLY	-	expression tag	UNP A0A0H3BVM1
H	-14	VAL	-	expression tag	UNP A0A0H3BVM1
H	-13	ASP	-	expression tag	UNP A0A0H3BVM1
H	-12	LEU	-	expression tag	UNP A0A0H3BVM1

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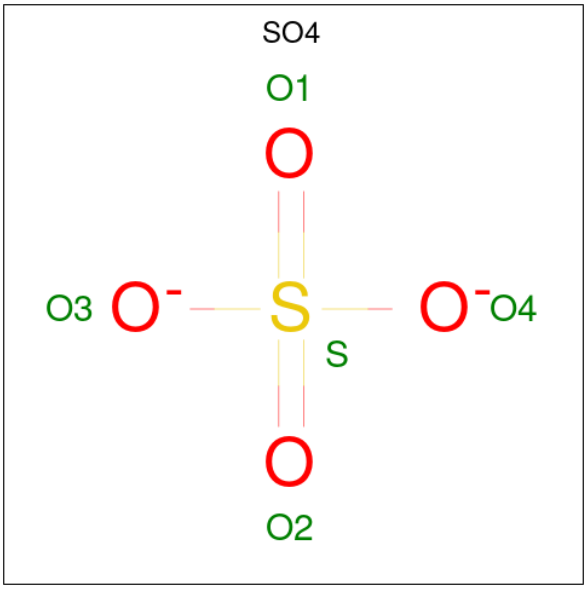
Chain	Residue	Modelled	Actual	Comment	Reference
H	-11	GLY	-	expression tag	UNP A0A0H3BVM1
H	-10	THR	-	expression tag	UNP A0A0H3BVM1
H	-9	GLU	-	expression tag	UNP A0A0H3BVM1
H	-8	ASN	-	expression tag	UNP A0A0H3BVM1
H	-7	LEU	-	expression tag	UNP A0A0H3BVM1
H	-6	TYR	-	expression tag	UNP A0A0H3BVM1
H	-5	PHE	-	expression tag	UNP A0A0H3BVM1
H	-4	GLN	-	expression tag	UNP A0A0H3BVM1
H	-3	SER	-	expression tag	UNP A0A0H3BVM1
H	-2	GLY	-	expression tag	UNP A0A0H3BVM1
H	-1	SER	-	expression tag	UNP A0A0H3BVM1
H	0	GLY	-	expression tag	UNP A0A0H3BVM1
H	?	-	UNK	deletion	UNP A0A0H3BVM1

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O_4S).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	O	S		0	0
			5	4	1			
2	A	1	Total	O	S		0	0
			5	4	1			
2	A	1	Total	O	S		0	0
			5	4	1			
2	A	1	Total	O	S		0	0
			5	4	1			
2	B	1	Total	O	S		0	0
			5	4	1			

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	B	1	Total O S 5 4 1	0	0
2	B	1	Total O S 5 4 1	0	0
2	B	1	Total O S 5 4 1	0	0
2	C	1	Total O S 5 4 1	0	0
2	C	1	Total O S 5 4 1	0	0
2	E	1	Total O S 5 4 1	0	0
2	E	1	Total O S 5 4 1	0	0
2	E	1	Total O S 5 4 1	0	0
2	E	1	Total O S 5 4 1	0	0
2	F	1	Total O S 5 4 1	0	0
2	F	1	Total O S 5 4 1	0	0
2	F	1	Total O S 5 4 1	0	0
2	H	1	Total O S 5 4 1	0	0
2	H	1	Total O S 5 4 1	0	0
2	H	1	Total O S 5 4 1	0	0

- Molecule 3 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	31	Total O 31 31	0	0
3	B	20	Total O 20 20	0	0
3	C	20	Total O 20 20	0	0
3	E	18	Total O 18 18	0	0

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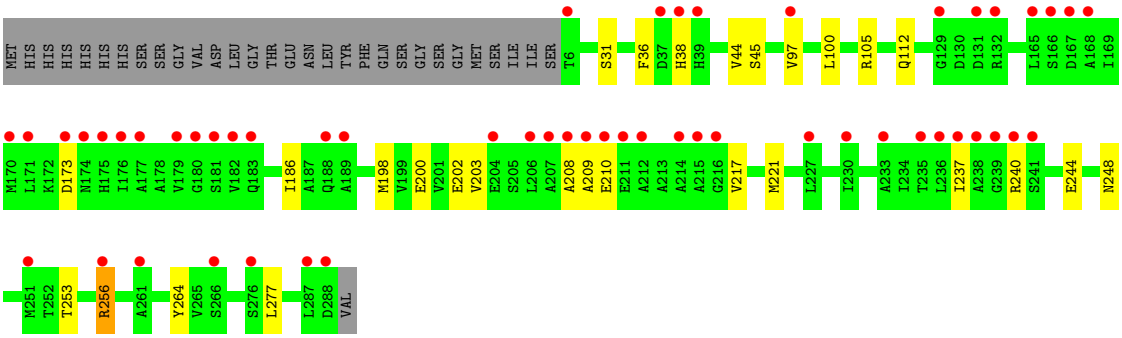
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
3	F	31	31	31	0	0
			Total	O		
3	H	29	29	29	0	0

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.

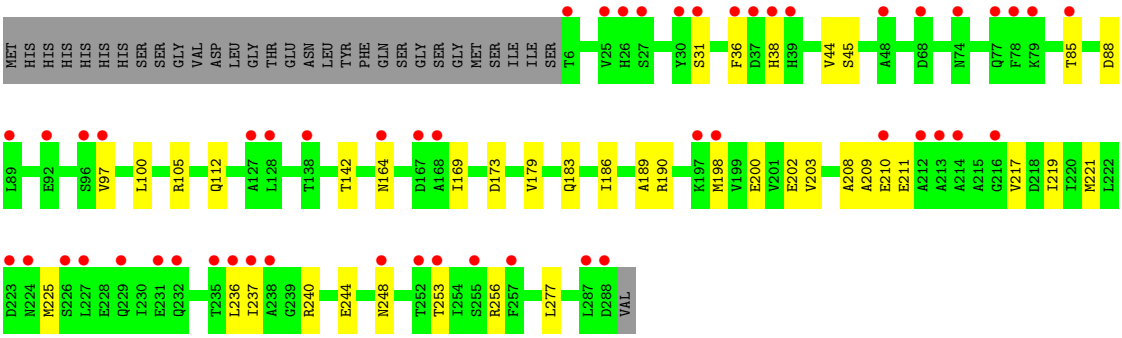
• Molecule 1: Nicotinate-nucleotide diphosphorylase (Carboxylating)

Chain A:



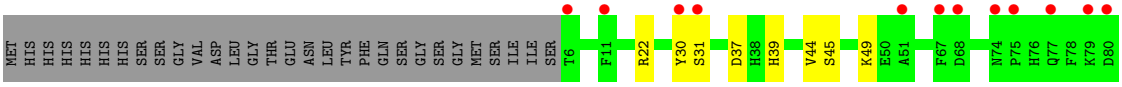
• Molecule 1: Nicotinate-nucleotide diphosphorylase (Carboxylating)

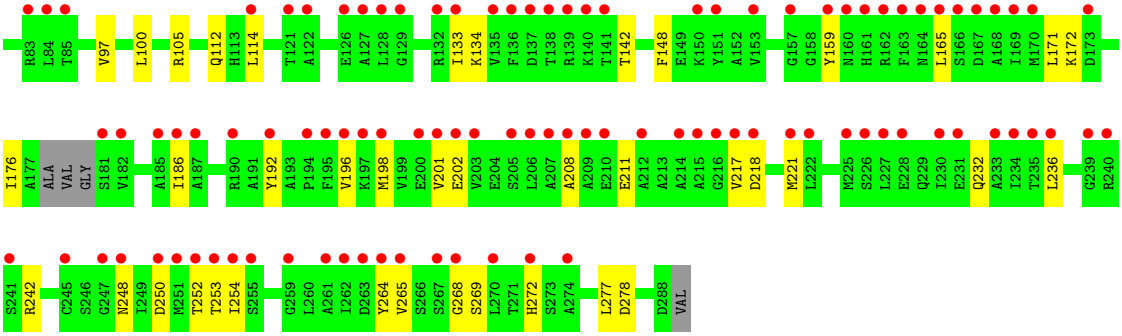
Chain B:



• Molecule 1: Nicotinate-nucleotide diphosphorylase (Carboxylating)

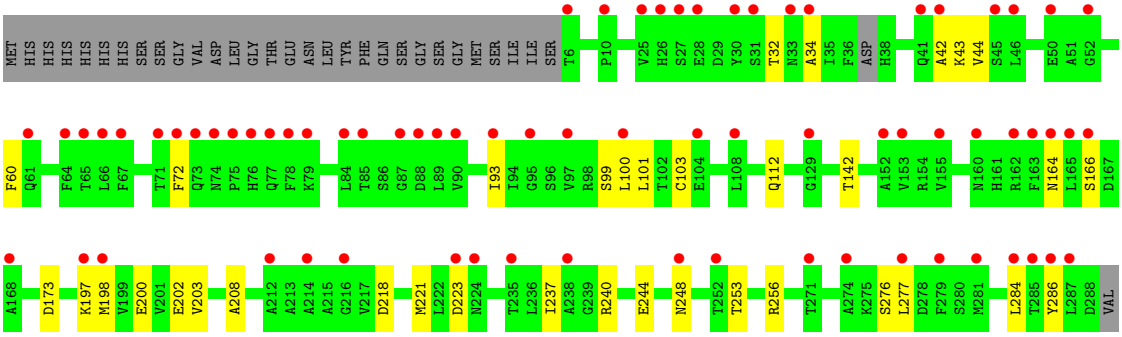
Chain C:





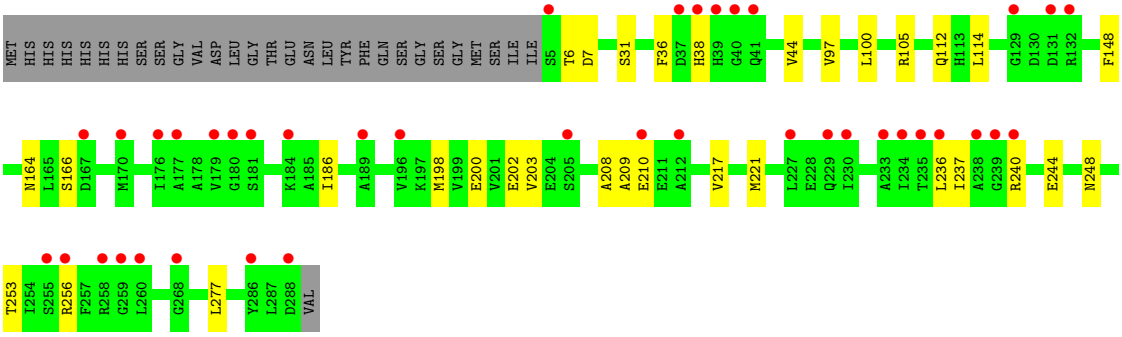
• Molecule 1: Nicotinate-nucleotide diphosphorylase (Carboxylating)

Chain E: 23% 78% 11% 10%



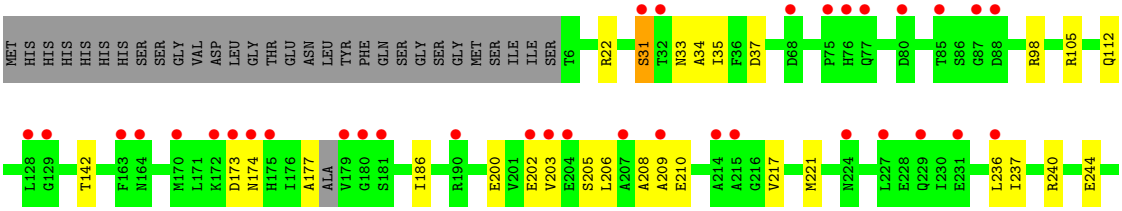
• Molecule 1: Nicotinate-nucleotide diphosphorylase (Carboxylating)

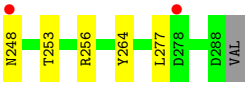
Chain F: 13% 80% 10% 10%



• Molecule 1: Nicotinate-nucleotide diphosphorylase (Carboxylating)

Chain H: 12% 79% 10% 10%




N248
T253
R256
Y264
L277
D278
D288
VAL

4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α, β, γ	106.20Å 186.26Å 221.91Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	40.00 – 2.80 36.98 – 2.80	Depositor EDS
% Data completeness (in resolution range)	99.9 (40.00-2.80) 100.0 (36.98-2.80)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	0.11	Depositor
$< I/\sigma(I) >$ [1]	2.44 (at 2.81Å)	Xtriage
Refinement program	REFMAC 5.8.0135	Depositor
R, R_{free}	0.216 , 0.255 0.261 , 0.300	Depositor DCC
R_{free} test set	2766 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å^2)	47.7	Xtriage
Anisotropy	0.029	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.27 , 58.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.007 for 1/2*h-1/2*k,-3/2*h-1/2*k,-l 0.012 for 1/2*h+1/2*k,3/2*h-1/2*k,-l	Xtriage
F_o,F_c correlation	0.89	EDS
Total number of atoms	13069	wwPDB-VP
Average B, all atoms (Å^2)	124.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.20% 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: SO4

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	0.86	0/2185	0.87	3/2957 (0.1%)
1	B	0.79	0/2207	0.85	5/2984 (0.2%)
1	C	0.76	0/2102	0.87	3/2851 (0.1%)
1	E	0.78	1/2138 (0.0%)	0.83	2/2898 (0.1%)
1	F	0.85	0/2194	0.85	2/2971 (0.1%)
1	H	0.85	0/2192	0.91	5/2963 (0.2%)
All	All	0.82	1/13018 (0.0%)	0.86	20/17624 (0.1%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	173	ASP	CB-CG	6.52	1.65	1.51

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	H	22	ARG	NE-CZ-NH1	7.32	123.96	120.30
1	H	105	ARG	NE-CZ-NH1	7.20	123.90	120.30
1	C	22	ARG	NE-CZ-NH1	6.86	123.73	120.30
1	H	22	ARG	NE-CZ-NH2	-6.55	117.02	120.30
1	B	190	ARG	NE-CZ-NH1	6.45	123.53	120.30
1	F	105	ARG	NE-CZ-NH1	6.00	123.30	120.30
1	H	105	ARG	NE-CZ-NH2	-5.73	117.43	120.30
1	A	173	ASP	CB-CG-OD1	5.71	123.44	118.30
1	C	105	ARG	NE-CZ-NH2	-5.58	117.51	120.30
1	F	105	ARG	NE-CZ-NH2	-5.57	117.52	120.30
1	C	37	ASP	CB-CG-OD2	5.55	123.30	118.30
1	A	256	ARG	NE-CZ-NH2	5.52	123.06	120.30
1	B	173	ASP	CB-CG-OD1	5.37	123.13	118.30
1	E	223	ASP	CB-CG-OD1	-5.35	113.48	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	E	223	ASP	CB-CG-OD2	5.24	123.02	118.30
1	A	105	ARG	NE-CZ-NH1	5.18	122.89	120.30
1	B	190	ARG	NE-CZ-NH2	-5.08	117.76	120.30
1	B	164	ASN	CB-CA-C	-5.07	100.25	110.40
1	B	105	ARG	NE-CZ-NH1	5.07	122.84	120.30
1	H	173	ASP	CB-CG-OD1	5.06	122.85	118.30

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	A	2152	0	2128	17	0
1	B	2171	0	2155	31	0
1	C	2072	0	1971	36	0
1	E	2108	0	2049	32	0
1	F	2161	0	2124	20	0
1	H	2156	0	2121	28	0
2	A	20	0	0	0	0
2	B	20	0	0	0	0
2	C	10	0	0	0	0
2	E	20	0	0	0	0
2	F	15	0	0	0	0
2	H	15	0	0	0	0
3	A	31	0	0	0	0
3	B	20	0	0	0	0
3	C	20	0	0	1	0
3	E	18	0	0	0	0
3	F	31	0	0	0	0
3	H	29	0	0	0	0
All	All	13069	0	12548	150	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 6.

All (150) 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:C:186:ILE:HD11	1:C:201:VAL:HG21	1.53	0.90
1:B:85:THR:O	1:B:88:ASP:OD2	1.90	0.89
1:A:198:MET:SD	1:E:198:MET:SD	2.72	0.88
1:C:186:ILE:HD11	1:C:201:VAL:CG2	2.04	0.86
1:H:206:LEU:HD23	1:H:206:LEU:O	1.80	0.81
1:E:60:PHE:CE2	1:E:93:ILE:HD11	2.23	0.74
1:E:203:VAL:HG13	1:E:208:ALA:HB3	1.71	0.72
1:F:203:VAL:HG13	1:F:208:ALA:HB3	1.70	0.72
1:B:203:VAL:HG13	1:B:208:ALA:HB3	1.72	0.72
1:A:203:VAL:HG13	1:A:208:ALA:HB3	1.72	0.71
1:H:203:VAL:HG13	1:H:208:ALA:HB3	1.74	0.69
1:B:179:VAL:CG2	1:H:35:ILE:HG23	2.22	0.69
1:H:206:LEU:HD23	1:H:206:LEU:C	2.14	0.67
1:E:60:PHE:CZ	1:E:93:ILE:HD11	2.30	0.66
1:H:174:ASN:O	1:H:177:ALA:HB3	1.96	0.65
1:C:269:SER:HA	1:C:272:HIS:HB3	1.77	0.65
1:E:44:VAL:HG23	1:E:100:LEU:HD13	1.79	0.63
1:B:142:THR:HG21	1:H:142:THR:HG21	1.80	0.63
1:C:272:HIS:CE1	1:E:276:SER:HB2	2.34	0.63
1:E:198:MET:CE	1:E:218:ASP:HB3	2.28	0.62
1:C:208:ALA:HA	1:C:211:GLU:HG2	1.80	0.62
1:F:253:THR:O	1:F:256:ARG:HG2	1.98	0.62
1:E:253:THR:O	1:E:256:ARG:HG2	2.00	0.62
1:C:172:LYS:O	1:C:176:ILE:N	2.32	0.61
1:C:134:LYS:HE2	1:C:159:TYR:CE2	2.36	0.61
1:B:183:GLN:CG	1:B:211:GLU:HG2	2.32	0.60
1:F:237:ILE:O	1:F:240:ARG:HD3	2.02	0.59
1:C:196:VAL:HG12	1:C:196:VAL:O	2.01	0.59
1:B:198[A]:MET:SD	1:F:198:MET:SD	3.01	0.59
1:F:7:ASP:O	1:H:98:ARG:NH2	2.28	0.58
1:B:44:VAL:HG23	1:B:100:LEU:HD13	1.85	0.57
1:A:44:VAL:HG23	1:A:100:LEU:HD13	1.86	0.56
1:A:237:ILE:O	1:A:240:ARG:HD3	2.03	0.56
1:C:250:ASP:OD1	1:C:252:THR:N	2.38	0.56
1:C:44:VAL:HG23	1:C:100:LEU:HD13	1.87	0.56
1:H:37:ASP:OD1	1:H:37:ASP:C	2.42	0.56
1:C:248:ASN:O	1:C:253:THR:HG21	2.05	0.56
1:B:36:PHE:CD2	1:B:97:VAL:HG11	2.41	0.56
1:H:237:ILE:O	1:H:240:ARG:HD3	2.06	0.56
1:E:237:ILE:O	1:E:240:ARG:HD3	2.05	0.56
1:H:206:LEU:HD21	1:H:236:LEU:HD22	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:179:VAL:HG23	1:H:35:ILE:HG23	1.86	0.56
1:B:237:ILE:O	1:B:240:ARG:HD3	2.05	0.55
1:F:6:THR:HG21	1:H:33:ASN:HB3	1.87	0.55
1:H:253:THR:O	1:H:256:ARG:HG2	2.06	0.55
1:E:198:MET:HE1	1:E:218:ASP:HB3	1.88	0.55
1:F:44:VAL:HG23	1:F:100:LEU:HD13	1.88	0.55
1:B:179:VAL:HG21	1:H:35:ILE:HD12	1.88	0.54
1:C:134:LYS:HE2	1:C:159:TYR:CZ	2.43	0.54
1:C:192:TYR:CD2	1:E:34:ALA:HB2	2.43	0.54
1:B:183:GLN:HG2	1:B:211:GLU:HG2	1.89	0.54
1:B:36:PHE:C	1:B:38:HIS:H	2.11	0.54
1:C:133:ILE:HG22	1:C:134:LYS:N	2.22	0.53
1:C:186:ILE:HD12	1:C:217:VAL:CG1	2.39	0.53
1:E:44:VAL:HG22	1:E:284:LEU:HD13	1.90	0.53
1:C:198:MET:CE	1:C:218:ASP:HB3	2.37	0.53
1:F:203:VAL:HG13	1:F:208:ALA:CB	2.38	0.53
1:B:210:GLU:HB2	1:B:236:LEU:HD21	1.90	0.53
1:E:72:PHE:CE1	1:E:93:ILE:HG12	2.45	0.52
1:H:206:LEU:CD2	1:H:236:LEU:HD22	2.40	0.52
1:C:30:TYR:CE2	1:E:197:LYS:HE3	2.44	0.52
1:F:36:PHE:CD1	1:F:97:VAL:HG11	2.44	0.52
1:B:198[B]:MET:SD	1:B:219:ILE:HD12	2.49	0.52
1:E:198:MET:HE3	1:E:218:ASP:HB3	1.92	0.51
1:A:112:GLN:HG2	1:A:277:LEU:O	2.09	0.51
1:A:203:VAL:HG13	1:A:208:ALA:CB	2.40	0.51
1:B:203:VAL:HG13	1:B:208:ALA:CB	2.39	0.51
1:H:203:VAL:HG13	1:H:208:ALA:CB	2.41	0.50
1:B:253:THR:HG22	1:B:256:ARG:HE	1.77	0.50
1:B:85:THR:N	1:B:88:ASP:OD2	2.39	0.50
1:C:133:ILE:HG23	1:C:264:TYR:HA	1.93	0.50
1:H:112:GLN:HG2	1:H:277:LEU:O	2.12	0.50
1:E:43:LYS:O	1:E:284:LEU:HD12	2.11	0.50
1:C:268:GLY:O	1:C:272:HIS:HB2	2.12	0.49
1:B:169:ILE:HG23	1:H:31:SER:HB3	1.94	0.49
1:E:60:PHE:HE2	1:E:93:ILE:HD11	1.76	0.49
1:E:112:GLN:HG2	1:E:277:LEU:O	2.13	0.49
1:F:112:GLN:HG2	1:F:277:LEU:O	2.12	0.49
1:F:210:GLU:OE1	1:F:236:LEU:HD11	2.13	0.49
1:H:210:GLU:HB2	1:H:236:LEU:HD21	1.94	0.49
1:C:112:GLN:HG2	1:C:277:LEU:O	2.12	0.49
1:F:253:THR:HG22	1:F:256:ARG:HE	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:42:ALA:HB1	1:E:284:LEU:HD11	1.94	0.48
1:E:93:ILE:HG22	1:E:100:LEU:CD2	2.44	0.48
1:E:203:VAL:HG13	1:E:208:ALA:CB	2.40	0.48
1:E:43:LYS:O	1:E:284:LEU:HA	2.13	0.48
1:F:186:ILE:HD13	1:F:217:VAL:HG13	1.95	0.48
1:A:186:ILE:HD13	1:A:217:VAL:HG13	1.95	0.48
1:B:112:GLN:HG2	1:B:277:LEU:O	2.14	0.47
1:C:202:GLU:O	1:C:202:GLU:HG3	2.15	0.47
1:C:254:ILE:HD11	1:C:265:VAL:HG21	1.97	0.47
1:E:202:GLU:HG2	1:E:221:MET:SD	2.54	0.47
1:C:198:MET:HE1	1:C:218:ASP:HB3	1.96	0.47
1:A:248:ASN:O	1:A:253:THR:HG21	2.15	0.46
1:C:133:ILE:CG2	1:C:134:LYS:N	2.78	0.46
1:E:93:ILE:HG22	1:E:100:LEU:HD21	1.97	0.46
1:E:200:GLU:OE2	1:E:244:GLU:OE2	2.33	0.46
1:F:248:ASN:O	1:F:253:THR:HG21	2.15	0.46
1:A:200:GLU:OE2	1:A:244:GLU:OE2	2.34	0.46
1:E:248:ASN:O	1:E:253:THR:HG21	2.15	0.46
1:E:202:GLU:HA	1:E:221:MET:HB3	1.98	0.46
1:E:32:THR:HG23	1:E:101:LEU:HD22	1.98	0.45
1:H:200:GLU:OE2	1:H:244:GLU:OE2	2.34	0.45
1:B:200:GLU:OE2	1:B:244:GLU:OE2	2.34	0.45
1:F:200:GLU:OE2	1:F:244:GLU:OE2	2.34	0.45
1:C:142:THR:HG21	1:E:142:THR:HG21	1.97	0.45
1:C:202:GLU:HA	1:C:221:MET:HB3	1.98	0.45
1:F:203:VAL:HG11	1:F:209:ALA:N	2.32	0.45
1:B:202:GLU:HA	1:B:221:MET:HB3	1.98	0.45
1:H:202:GLU:HG2	1:H:221:MET:SD	2.57	0.45
1:E:99:SER:O	1:E:103:CYS:HB2	2.16	0.44
1:H:186:ILE:HD13	1:H:217:VAL:HG13	1.99	0.44
1:A:210:GLU:HA	1:A:210:GLU:OE1	2.18	0.44
1:F:202:GLU:HA	1:F:221:MET:HB3	1.99	0.44
1:B:248:ASN:O	1:B:253:THR:HG21	2.17	0.44
1:H:248:ASN:O	1:H:253:THR:HG21	2.18	0.44
1:B:202:GLU:HG2	1:B:221:MET:SD	2.57	0.43
1:H:202:GLU:HA	1:H:221:MET:HB3	1.98	0.43
1:A:202:GLU:HA	1:A:221:MET:HB3	2.00	0.43
1:B:189:ALA:HA	1:H:34:ALA:HB1	2.00	0.43
1:C:171:LEU:O	1:C:202:GLU:HG2	2.17	0.43
1:C:232:GLN:O	1:C:236:LEU:HD13	2.17	0.43
1:H:244:GLU:HB2	1:H:264:TYR:CZ	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:203:VAL:HG11	1:H:209:ALA:N	2.34	0.43
1:A:36:PHE:CD2	1:A:97:VAL:HG11	2.54	0.43
1:C:196:VAL:O	1:C:196:VAL:CG1	2.64	0.42
1:H:206:LEU:C	1:H:206:LEU:CD2	2.83	0.42
1:A:244:GLU:HB2	1:A:264:TYR:CZ	2.55	0.42
1:C:97:VAL:HG23	3:C:407:HOH:O	2.19	0.42
1:C:44:VAL:HG12	1:C:45:SER:N	2.35	0.42
1:B:225:MET:HB3	1:B:225:MET:HE2	1.81	0.42
1:F:164:ASN:HB3	1:F:166:SER:H	1.85	0.42
1:F:114:LEU:HD21	1:F:148:PHE:HB3	2.01	0.42
1:A:253:THR:HG22	1:A:256:ARG:HE	1.85	0.41
1:C:49:LYS:HE3	1:C:278:ASP:OD2	2.20	0.41
1:E:164:ASN:HB3	1:E:166:SER:H	1.85	0.41
1:F:202:GLU:HG2	1:F:221:MET:SD	2.60	0.41
1:B:203:VAL:HG11	1:B:209:ALA:N	2.36	0.41
1:A:202:GLU:HG2	1:A:221:MET:SD	2.60	0.41
1:B:186:ILE:HD13	1:B:217:VAL:HG13	2.03	0.41
1:C:186:ILE:HD12	1:C:217:VAL:HG11	2.03	0.41
1:A:44:VAL:HG12	1:A:45:SER:N	2.36	0.41
1:B:44:VAL:HG12	1:B:45:SER:N	2.36	0.41
1:B:183:GLN:HG3	1:B:211:GLU:HG2	2.01	0.41
1:E:112:GLN:HB3	1:E:276:SER:HB3	2.02	0.41
1:A:203:VAL:HG11	1:A:209:ALA:N	2.36	0.41
1:C:165:LEU:HD23	1:C:165:LEU:HA	1.88	0.41
1:C:208:ALA:HA	1:C:211:GLU:CG	2.50	0.40
1:C:114:LEU:HD21	1:C:148:PHE:HB3	2.03	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	281/314 (90%)	274 (98%)	7 (2%)	0	100	100
1	B	282/314 (90%)	274 (97%)	8 (3%)	0	100	100
1	C	276/314 (88%)	268 (97%)	8 (3%)	0	100	100
1	E	278/314 (88%)	270 (97%)	8 (3%)	0	100	100
1	F	282/314 (90%)	275 (98%)	7 (2%)	0	100	100
1	H	279/314 (89%)	271 (97%)	8 (3%)	0	100	100
All	All	1678/1884 (89%)	1632 (97%)	46 (3%)	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	225/260 (86%)	223 (99%)	2 (1%)	78	94
1	B	230/260 (88%)	229 (100%)	1 (0%)	91	97
1	C	207/260 (80%)	204 (99%)	3 (1%)	67	90
1	E	217/260 (84%)	216 (100%)	1 (0%)	88	96
1	F	227/260 (87%)	225 (99%)	2 (1%)	78	94
1	H	226/260 (87%)	224 (99%)	2 (1%)	78	94
All	All	1332/1560 (85%)	1321 (99%)	11 (1%)	81	94

All (11) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	31	SER
1	A	38	HIS
1	B	31	SER
1	C	31	SER
1	C	39	HIS
1	C	242	ARG
1	E	286	TYR

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Mol	Chain	Res	Type
1	F	31	SER
1	F	38	HIS
1	H	31	SER
1	H	205	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	160	ASN
1	F	160	ASN
1	H	188	GLN

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)

20 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	SO4	H	302	-	4,4,4	0.47	0	6,6,6	0.68	0
2	SO4	B	303	-	4,4,4	0.45	0	6,6,6	0.47	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	SO4	E	301	-	4,4,4	0.36	0	6,6,6	0.19	0
2	SO4	B	302	-	4,4,4	0.30	0	6,6,6	0.30	0
2	SO4	F	301	-	4,4,4	0.37	0	6,6,6	0.56	0
2	SO4	A	304	-	4,4,4	0.39	0	6,6,6	0.67	0
2	SO4	C	301	-	4,4,4	0.32	0	6,6,6	0.42	0
2	SO4	E	303	-	4,4,4	0.28	0	6,6,6	0.92	0
2	SO4	A	303	-	4,4,4	0.20	0	6,6,6	0.60	0
2	SO4	H	301	-	4,4,4	0.38	0	6,6,6	0.77	0
2	SO4	F	303	-	4,4,4	0.40	0	6,6,6	0.28	0
2	SO4	A	301	-	4,4,4	0.35	0	6,6,6	0.23	0
2	SO4	F	302	-	4,4,4	0.42	0	6,6,6	0.59	0
2	SO4	E	302	-	4,4,4	0.45	0	6,6,6	0.44	0
2	SO4	B	301	-	4,4,4	0.27	0	6,6,6	0.60	0
2	SO4	B	304	-	4,4,4	0.40	0	6,6,6	0.20	0
2	SO4	E	304	-	4,4,4	0.27	0	6,6,6	0.27	0
2	SO4	H	303	-	4,4,4	0.35	0	6,6,6	0.28	0
2	SO4	C	302	-	4,4,4	0.37	0	6,6,6	0.19	0
2	SO4	A	302	-	4,4,4	0.52	0	6,6,6	0.50	0

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.

5.7 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	283/314 (90%)	1.26	54 (19%)	1	1	87, 105, 179, 236	0
1	B	283/314 (90%)	1.23	52 (18%)	1	1	90, 117, 159, 194	0
1	C	280/314 (89%)	1.94	111 (39%)	0	0	91, 154, 268, 297	0
1	E	282/314 (89%)	1.50	73 (25%)	0	0	92, 131, 219, 316	0
1	F	284/314 (90%)	1.05	40 (14%)	2	1	89, 101, 141, 201	0
1	H	282/314 (89%)	1.05	37 (13%)	3	2	91, 105, 152, 175	0
All	All	1694/1884 (89%)	1.34	367 (21%)	0	0	87, 115, 211, 316	0

All (367) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	203	VAL	10.4
1	C	239	GLY	9.2
1	C	215	ALA	8.9
1	A	38	HIS	8.2
1	C	206	LEU	8.1
1	C	241	SER	7.7
1	A	288	ASP	7.5
1	C	214	ALA	7.2
1	C	85	THR	6.8
1	E	89	LEU	6.8
1	F	38	HIS	6.6
1	C	209	ALA	6.1
1	F	288	ASP	6.1
1	C	167	ASP	6.0
1	C	161	HIS	5.9
1	C	132	ARG	5.6
1	B	79	LYS	5.3
1	A	216	GLY	5.3
1	C	217	VAL	5.2

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Mol	Chain	Res	Type	RSRZ
1	B	235	THR	5.1
1	C	202	GLU	5.1
1	C	216	GLY	5.1
1	E	42	ALA	5.1
1	C	261	ALA	4.8
1	C	259	GLY	4.8
1	A	39	HIS	4.8
1	C	252	THR	4.8
1	C	240	ARG	4.7
1	A	236	LEU	4.7
1	E	79	LYS	4.7
1	E	64	PHE	4.7
1	C	164	ASN	4.7
1	A	210	GLU	4.7
1	E	78	PHE	4.6
1	E	71	THR	4.6
1	E	285	THR	4.6
1	C	133	ILE	4.6
1	C	196	VAL	4.5
1	E	287	LEU	4.5
1	H	173	ASP	4.5
1	E	88	ASP	4.5
1	E	85	THR	4.4
1	A	235	THR	4.4
1	C	234	ILE	4.4
1	H	214	ALA	4.4
1	C	227	LEU	4.4
1	B	288	ASP	4.3
1	A	214	ALA	4.3
1	A	181	SER	4.3
1	E	30	TYR	4.3
1	C	205	SER	4.3
1	H	174	ASN	4.3
1	C	162	ARG	4.2
1	F	236	LEU	4.2
1	A	180	GLY	4.1
1	C	268	GLY	4.1
1	C	187	ALA	4.1
1	C	236	LEU	4.1
1	H	85	THR	4.1
1	C	201	VAL	4.1
1	C	166	SER	4.1

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Mol	Chain	Res	Type	RSRZ
1	E	284	LEU	4.1
1	A	261	ALA	4.1
1	E	27	SER	4.1
1	C	208	ALA	4.0
1	B	37	ASP	4.0
1	B	128	LEU	4.0
1	B	212	ALA	4.0
1	F	5	SER	4.0
1	B	38	HIS	4.0
1	C	226	SER	4.0
1	E	33	ASN	3.9
1	H	203	VAL	3.9
1	A	182	VAL	3.9
1	C	235	THR	3.9
1	E	248	ASN	3.9
1	B	224	ASN	3.9
1	C	182	VAL	3.8
1	H	215	ALA	3.8
1	C	173	ASP	3.8
1	F	131	ASP	3.8
1	H	227	LEU	3.8
1	F	181	SER	3.8
1	A	179	VAL	3.8
1	B	78	PHE	3.8
1	A	239	GLY	3.8
1	B	257	PHE	3.7
1	C	197	LYS	3.7
1	C	218	ASP	3.7
1	C	263	ASP	3.7
1	C	198	MET	3.7
1	H	202	GLU	3.6
1	H	129	GLY	3.6
1	E	87	GLY	3.6
1	C	221	MET	3.6
1	B	223	ASP	3.6
1	B	237	ILE	3.6
1	E	41	GLN	3.6
1	C	141	THR	3.5
1	C	272	HIS	3.5
1	C	255	SER	3.5
1	B	89	LEU	3.5
1	F	176	ILE	3.5

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Mol	Chain	Res	Type	RSRZ
1	A	132	ARG	3.5
1	E	90	VAL	3.4
1	C	165	LEU	3.4
1	H	204	GLU	3.4
1	C	267	SER	3.4
1	C	210	GLU	3.4
1	A	208	ALA	3.3
1	B	287	LEU	3.3
1	B	231	GLU	3.3
1	H	207	ALA	3.3
1	E	77	GLN	3.3
1	C	231	GLU	3.3
1	F	235	THR	3.3
1	C	128	LEU	3.3
1	C	192	TYR	3.3
1	C	190	ARG	3.2
1	E	235	THR	3.2
1	E	46	LEU	3.2
1	B	238	ALA	3.2
1	C	122	ALA	3.2
1	B	198[A]	MET	3.2
1	F	256	ARG	3.2
1	C	253	THR	3.2
1	F	39	HIS	3.2
1	C	248	ASN	3.2
1	E	45	SER	3.2
1	A	175	HIS	3.1
1	A	206	LEU	3.1
1	C	121	THR	3.1
1	A	170	MET	3.1
1	E	165	LEU	3.1
1	E	224	ASN	3.1
1	F	210	GLU	3.1
1	A	215	ALA	3.1
1	A	174	ASN	3.1
1	E	74	ASN	3.1
1	E	286	TYR	3.1
1	C	264	TYR	3.1
1	C	230	ILE	3.1
1	C	11	PHE	3.1
1	C	186	ILE	3.1
1	F	189	ALA	3.0

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Mol	Chain	Res	Type	RSRZ
1	E	214	ALA	3.0
1	C	168	ALA	3.0
1	H	164	ASN	3.0
1	C	222	LEU	3.0
1	C	262	ILE	3.0
1	B	77	GLN	3.0
1	E	223	ASP	3.0
1	C	6	THR	3.0
1	A	227	LEU	2.9
1	F	40	GLY	2.9
1	E	31	SER	2.9
1	C	170	MET	2.9
1	C	265	VAL	2.9
1	C	163	PHE	2.9
1	B	39	HIS	2.9
1	A	167	ASP	2.9
1	E	84	LEU	2.9
1	F	238	ALA	2.9
1	C	195	PHE	2.9
1	B	216	GLY	2.9
1	C	251	MET	2.9
1	B	27	SER	2.9
1	B	213	ALA	2.9
1	H	31	SER	2.9
1	C	139	ARG	2.9
1	A	131	ASP	2.9
1	A	173	ASP	2.9
1	F	37	ASP	2.9
1	H	229	GLN	2.8
1	E	76	HIS	2.8
1	C	84	LEU	2.8
1	H	231	GLU	2.8
1	F	179	VAL	2.8
1	B	31	SER	2.8
1	C	129	GLY	2.8
1	C	207	ALA	2.8
1	C	138	THR	2.8
1	A	176	ILE	2.8
1	A	230	ILE	2.7
1	C	159	TYR	2.7
1	C	126	GLU	2.7
1	E	93	ILE	2.7

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Mol	Chain	Res	Type	RSRZ
1	A	207	ALA	2.7
1	B	97	VAL	2.7
1	C	150	LYS	2.7
1	B	226	SER	2.7
1	E	25	VAL	2.7
1	C	245	CYS	2.7
1	E	6	THR	2.7
1	E	162	ARG	2.7
1	C	77	GLN	2.7
1	E	104	GLU	2.7
1	E	163	PHE	2.7
1	A	211	GLU	2.7
1	A	287	LEU	2.7
1	H	75	PRO	2.7
1	A	240	ARG	2.7
1	E	26	HIS	2.7
1	A	204	GLU	2.6
1	C	80	ASP	2.6
1	E	155	VAL	2.6
1	E	166	SER	2.6
1	E	66	LEU	2.6
1	E	52	GLY	2.6
1	E	153	VAL	2.6
1	C	225	MET	2.6
1	A	212	ALA	2.6
1	E	238	ALA	2.6
1	E	72	PHE	2.6
1	E	34	ALA	2.6
1	E	152	ALA	2.6
1	C	136	PHE	2.6
1	B	96	SER	2.6
1	H	278	ASP	2.6
1	A	177	ALA	2.6
1	F	239	GLY	2.6
1	E	274	ALA	2.6
1	F	259	GLY	2.5
1	A	209	ALA	2.5
1	B	236	LEU	2.5
1	H	224	ASN	2.5
1	E	252	THR	2.5
1	C	51	ALA	2.5
1	E	75	PRO	2.5

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Mol	Chain	Res	Type	RSRZ
1	B	248	ASN	2.5
1	C	228	GLU	2.5
1	C	140	LYS	2.5
1	C	194	PRO	2.5
1	E	73	GLN	2.5
1	F	129	GLY	2.5
1	F	286	TYR	2.5
1	E	50	GLU	2.4
1	C	135	VAL	2.4
1	H	163[A]	PHE	2.4
1	B	6	THR	2.4
1	H	128	LEU	2.4
1	C	137	ASP	2.4
1	F	230	ILE	2.4
1	F	180	GLY	2.4
1	A	189	ALA	2.4
1	E	168	ALA	2.4
1	H	209	ALA	2.4
1	A	165	LEU	2.4
1	A	6	THR	2.4
1	B	30	TYR	2.4
1	B	253	THR	2.4
1	C	127	ALA	2.4
1	A	97	VAL	2.4
1	H	77	GLN	2.4
1	E	198	MET	2.4
1	B	74	ASN	2.4
1	C	270	LEU	2.4
1	E	97	VAL	2.4
1	A	183	GLN	2.4
1	C	160	ASN	2.4
1	H	248	ASN	2.4
1	F	268	GLY	2.3
1	H	87	GLY	2.3
1	A	238	ALA	2.3
1	B	168	ALA	2.3
1	A	166	SER	2.3
1	B	227	LEU	2.3
1	C	254	ILE	2.3
1	B	26	HIS	2.3
1	A	37	ASP	2.3
1	F	177	ALA	2.3

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Mol	Chain	Res	Type	RSRZ
1	C	31	SER	2.3
1	C	153	VAL	2.3
1	H	180	GLY	2.3
1	B	25	VAL	2.3
1	C	68	ASP	2.3
1	C	233	ALA	2.3
1	E	164	ASN	2.3
1	B	68	ASP	2.3
1	H	172	LYS	2.3
1	A	168	ALA	2.3
1	A	171	LEU	2.3
1	F	132	ARG	2.3
1	H	88	ASP	2.3
1	A	233	ALA	2.3
1	F	212	ALA	2.3
1	B	92	GLU	2.3
1	E	95	GLY	2.3
1	C	169	ILE	2.2
1	F	229	GLN	2.2
1	H	190	ARG	2.2
1	C	250	ASP	2.2
1	H	236	LEU	2.2
1	A	129	GLY	2.2
1	E	129	GLY	2.2
1	B	214	ALA	2.2
1	F	227	LEU	2.2
1	F	41	GLN	2.2
1	C	83	ARG	2.2
1	F	240	ARG	2.2
1	C	151	TYR	2.2
1	E	28	GLU	2.2
1	C	212	ALA	2.2
1	E	279	PHE	2.2
1	C	274	ALA	2.2
1	F	234	ILE	2.2
1	B	85	THR	2.2
1	F	170	MET	2.2
1	H	175	HIS	2.2
1	E	197	LYS	2.2
1	C	74	ASN	2.1
1	A	266	SER	2.1
1	C	75	PRO	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	138	THR	2.1
1	A	276	SER	2.1
1	H	170	MET	2.1
1	H	181	SER	2.1
1	E	271	THR	2.1
1	F	196	VAL	2.1
1	C	30	TYR	2.1
1	B	197	LYS	2.1
1	C	79	LYS	2.1
1	C	114	LEU	2.1
1	B	48	ALA	2.1
1	B	127	ALA	2.1
1	E	65	THR	2.1
1	H	32	THR	2.1
1	E	277	LEU	2.1
1	B	210	GLU	2.1
1	C	185	ALA	2.1
1	E	281	MET	2.1
1	A	241	SER	2.1
1	C	200	GLU	2.1
1	B	232	GLN	2.1
1	C	157	GLY	2.1
1	E	160	ASN	2.1
1	C	181	SER	2.1
1	H	76	HIS	2.1
1	E	108	LEU	2.1
1	A	188	GLN	2.1
1	B	167	ASP	2.1
1	F	167	ASP	2.1
1	C	67	PHE	2.1
1	H	179	VAL	2.1
1	E	67	PHE	2.1
1	F	255	SER	2.1
1	E	216	GLY	2.1
1	A	251	MET	2.1
1	F	205	SER	2.0
1	E	10	PRO	2.0
1	E	61	GLN	2.0
1	F	260	LEU	2.0
1	A	237	ILE	2.0
1	B	229	GLN	2.0
1	E	100	LEU	2.0

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Mol	Chain	Res	Type	RSRZ
1	B	255	SER	2.0
1	H	80	ASP	2.0
1	F	233	ALA	2.0
1	B	164	ASN	2.0
1	F	258	ARG	2.0
1	C	247	GLY	2.0
1	H	68	ASP	2.0
1	E	212	ALA	2.0
1	A	256	ARG	2.0
1	B	252	THR	2.0
1	B	36	PHE	2.0
1	F	184	LYS	2.0

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	SO4	B	303	5/5	0.43	0.57	99,105,130,135	0
2	SO4	F	303	5/5	0.74	0.69	100,105,113,119	0
2	SO4	C	302	5/5	0.77	0.45	117,121,123,127	0
2	SO4	E	301	5/5	0.78	0.52	100,104,113,121	0
2	SO4	H	303	5/5	0.78	0.40	113,117,132,134	0
2	SO4	A	302	5/5	0.79	0.48	90,92,97,119	0
2	SO4	B	304	5/5	0.79	0.51	122,124,132,135	0
2	SO4	A	304	5/5	0.84	0.32	90,95,104,111	0
2	SO4	A	301	5/5	0.86	0.48	113,113,124,127	0
2	SO4	C	301	5/5	0.86	0.59	88,88,97,98	0
2	SO4	H	301	5/5	0.88	0.28	73,81,84,87	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	SO4	E	302	5/5	0.89	0.42	77,80,92,95	0
2	SO4	H	302	5/5	0.90	0.31	63,65,71,80	0
2	SO4	F	301	5/5	0.90	0.32	76,77,85,91	0
2	SO4	B	301	5/5	0.92	0.29	63,63,70,72	0
2	SO4	F	302	5/5	0.93	0.29	67,70,78,82	0
2	SO4	A	303	5/5	0.94	0.29	62,71,77,79	0
2	SO4	E	304	5/5	0.94	0.21	75,76,83,84	0
2	SO4	E	303	5/5	0.95	0.20	59,63,66,70	0
2	SO4	B	302	5/5	0.97	0.18	60,70,72,72	0

6.5 Other polymers (i)

There are no such residues in this entry.