Full wwPDB X-ray Structure Validation Report (i)

Sep 16, 2024 – 10:21 am BST

PDB ID	:	8PRU
Title	:	Engineered form of T thermophiles AHIR
Authors	:	Roberts, M.; Powell, A.; Lewis, C.; Sinclair, J.
Deposited on	:	2023-07-12
Resolution	:	2.00 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references (1)) were used in the production of this report:

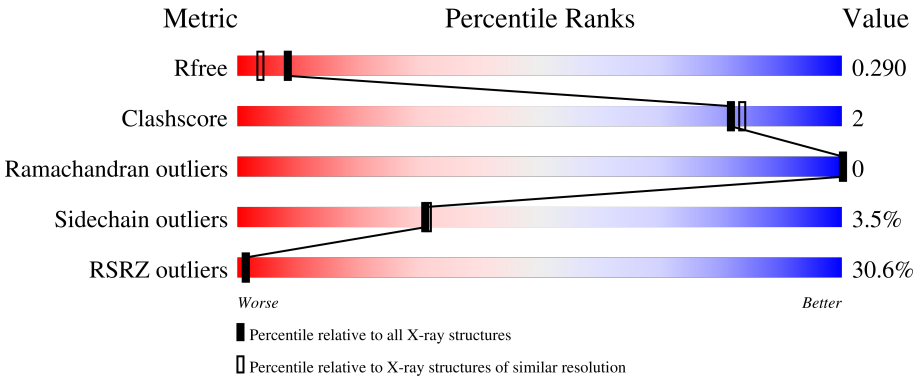
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.002 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.38.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.00 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	9409 (2.00-2.00)
Clashscore	180529	10737 (2.00-2.00)
Ramachandran outliers	177936	10628 (2.00-2.00)
Sidechain outliers	177891	10627 (2.00-2.00)
RSRZ outliers	164620	9409 (2.00-2.00)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	346	21% 82% 6% • 10%
1	B	346	42% 80% 9% • 10%
1	C	346	33% 83% 6% • 10%
1	D	346	30% 81% 8% • 10%
1	E	346	24% 83% 6% • 10%

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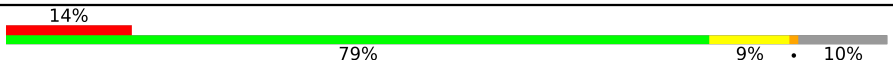
Mol	Chain	Length	Quality of chain
1	F	346	

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 29262 atoms, of which 14526 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 Ketol-acid reductoisomerase (NADP(+)).

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	311	Total	C	H	N	O	S	49	0	0
			4831	1530	2421	426	444	10			
1	B	311	Total	C	H	N	O	S	49	0	0
			4831	1530	2421	426	444	10			
1	C	311	Total	C	H	N	O	S	49	0	0
			4831	1530	2421	426	444	10			
1	D	311	Total	C	H	N	O	S	49	0	0
			4831	1530	2421	426	444	10			
1	E	311	Total	C	H	N	O	S	49	0	0
			4831	1530	2421	426	444	10			
1	F	311	Total	C	H	N	O	S	49	0	0
			4831	1530	2421	426	444	10			

There are 126 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-3	MET	-	initiating methionine	UNP Q72JC8
A	-2	THR	-	expression tag	UNP Q72JC8
A	-1	GLY	-	expression tag	UNP Q72JC8
A	0	THR	-	expression tag	UNP Q72JC8
A	141	GLY	-	insertion	UNP Q72JC8
A	142	GLY	-	insertion	UNP Q72JC8
A	143	GLY	-	insertion	UNP Q72JC8
A	144	SER	-	insertion	UNP Q72JC8
A	145	ASN	-	insertion	UNP Q72JC8
A	146	TRP	-	insertion	UNP Q72JC8
A	147	SER	-	insertion	UNP Q72JC8
A	148	HIS	-	insertion	UNP Q72JC8
A	149	PRO	-	insertion	UNP Q72JC8
A	151	PHE	-	insertion	UNP Q72JC8
A	152	GLU	-	insertion	UNP Q72JC8
A	154	ARG	-	insertion	UNP Q72JC8
A	155	PRO	-	insertion	UNP Q72JC8

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Chain	Residue	Modelled	Actual	Comment	Reference
A	156	PRO	-	insertion	UNP Q72JC8
A	157	GLY	-	insertion	UNP Q72JC8
A	341	ARG	-	expression tag	UNP Q72JC8
A	342	SER	-	expression tag	UNP Q72JC8
B	-3	MET	-	initiating methionine	UNP Q72JC8
B	-2	THR	-	expression tag	UNP Q72JC8
B	-1	GLY	-	expression tag	UNP Q72JC8
B	0	THR	-	expression tag	UNP Q72JC8
B	141	GLY	-	insertion	UNP Q72JC8
B	142	GLY	-	insertion	UNP Q72JC8
B	143	GLY	-	insertion	UNP Q72JC8
B	144	SER	-	insertion	UNP Q72JC8
B	145	ASN	-	insertion	UNP Q72JC8
B	146	TRP	-	insertion	UNP Q72JC8
B	147	SER	-	insertion	UNP Q72JC8
B	148	HIS	-	insertion	UNP Q72JC8
B	149	PRO	-	insertion	UNP Q72JC8
B	151	PHE	-	insertion	UNP Q72JC8
B	152	GLU	-	insertion	UNP Q72JC8
B	154	ARG	-	insertion	UNP Q72JC8
B	155	PRO	-	insertion	UNP Q72JC8
B	156	PRO	-	insertion	UNP Q72JC8
B	157	GLY	-	insertion	UNP Q72JC8
B	341	ARG	-	expression tag	UNP Q72JC8
B	342	SER	-	expression tag	UNP Q72JC8
C	-3	MET	-	initiating methionine	UNP Q72JC8
C	-2	THR	-	expression tag	UNP Q72JC8
C	-1	GLY	-	expression tag	UNP Q72JC8
C	0	THR	-	expression tag	UNP Q72JC8
C	141	GLY	-	insertion	UNP Q72JC8
C	142	GLY	-	insertion	UNP Q72JC8
C	143	GLY	-	insertion	UNP Q72JC8
C	144	SER	-	insertion	UNP Q72JC8
C	145	ASN	-	insertion	UNP Q72JC8
C	146	TRP	-	insertion	UNP Q72JC8
C	147	SER	-	insertion	UNP Q72JC8
C	148	HIS	-	insertion	UNP Q72JC8
C	149	PRO	-	insertion	UNP Q72JC8
C	151	PHE	-	insertion	UNP Q72JC8
C	152	GLU	-	insertion	UNP Q72JC8
C	154	ARG	-	insertion	UNP Q72JC8
C	155	PRO	-	insertion	UNP Q72JC8

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Chain	Residue	Modelled	Actual	Comment	Reference
C	156	PRO	-	insertion	UNP Q72JC8
C	157	GLY	-	insertion	UNP Q72JC8
C	341	ARG	-	expression tag	UNP Q72JC8
C	342	SER	-	expression tag	UNP Q72JC8
D	-3	MET	-	initiating methionine	UNP Q72JC8
D	-2	THR	-	expression tag	UNP Q72JC8
D	-1	GLY	-	expression tag	UNP Q72JC8
D	0	THR	-	expression tag	UNP Q72JC8
D	141	GLY	-	insertion	UNP Q72JC8
D	142	GLY	-	insertion	UNP Q72JC8
D	143	GLY	-	insertion	UNP Q72JC8
D	144	SER	-	insertion	UNP Q72JC8
D	145	ASN	-	insertion	UNP Q72JC8
D	146	TRP	-	insertion	UNP Q72JC8
D	147	SER	-	insertion	UNP Q72JC8
D	148	HIS	-	insertion	UNP Q72JC8
D	149	PRO	-	insertion	UNP Q72JC8
D	151	PHE	-	insertion	UNP Q72JC8
D	152	GLU	-	insertion	UNP Q72JC8
D	154	ARG	-	insertion	UNP Q72JC8
D	155	PRO	-	insertion	UNP Q72JC8
D	156	PRO	-	insertion	UNP Q72JC8
D	157	GLY	-	insertion	UNP Q72JC8
D	341	ARG	-	expression tag	UNP Q72JC8
D	342	SER	-	expression tag	UNP Q72JC8
E	-3	MET	-	initiating methionine	UNP Q72JC8
E	-2	THR	-	expression tag	UNP Q72JC8
E	-1	GLY	-	expression tag	UNP Q72JC8
E	0	THR	-	expression tag	UNP Q72JC8
E	141	GLY	-	insertion	UNP Q72JC8
E	142	GLY	-	insertion	UNP Q72JC8
E	143	GLY	-	insertion	UNP Q72JC8
E	144	SER	-	insertion	UNP Q72JC8
E	145	ASN	-	insertion	UNP Q72JC8
E	146	TRP	-	insertion	UNP Q72JC8
E	147	SER	-	insertion	UNP Q72JC8
E	148	HIS	-	insertion	UNP Q72JC8
E	149	PRO	-	insertion	UNP Q72JC8
E	151	PHE	-	insertion	UNP Q72JC8
E	152	GLU	-	insertion	UNP Q72JC8
E	154	ARG	-	insertion	UNP Q72JC8
E	155	PRO	-	insertion	UNP Q72JC8

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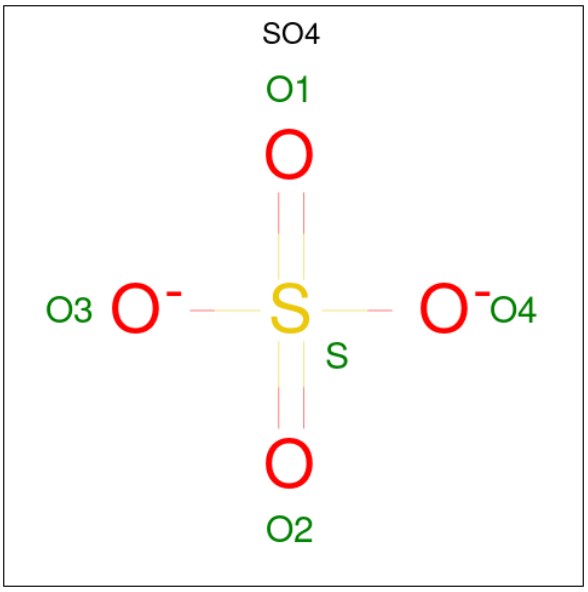
Chain	Residue	Modelled	Actual	Comment	Reference
E	156	PRO	-	insertion	UNP Q72JC8
E	157	GLY	-	insertion	UNP Q72JC8
E	341	ARG	-	expression tag	UNP Q72JC8
E	342	SER	-	expression tag	UNP Q72JC8
F	-3	MET	-	initiating methionine	UNP Q72JC8
F	-2	THR	-	expression tag	UNP Q72JC8
F	-1	GLY	-	expression tag	UNP Q72JC8
F	0	THR	-	expression tag	UNP Q72JC8
F	141	GLY	-	insertion	UNP Q72JC8
F	142	GLY	-	insertion	UNP Q72JC8
F	143	GLY	-	insertion	UNP Q72JC8
F	144	SER	-	insertion	UNP Q72JC8
F	145	ASN	-	insertion	UNP Q72JC8
F	146	TRP	-	insertion	UNP Q72JC8
F	147	SER	-	insertion	UNP Q72JC8
F	148	HIS	-	insertion	UNP Q72JC8
F	149	PRO	-	insertion	UNP Q72JC8
F	151	PHE	-	insertion	UNP Q72JC8
F	152	GLU	-	insertion	UNP Q72JC8
F	154	ARG	-	insertion	UNP Q72JC8
F	155	PRO	-	insertion	UNP Q72JC8
F	156	PRO	-	insertion	UNP Q72JC8
F	157	GLY	-	insertion	UNP Q72JC8
F	341	ARG	-	expression tag	UNP Q72JC8
F	342	SER	-	expression tag	UNP Q72JC8

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total Mg 1 1	0	0
2	C	1	Total Mg 1 1	0	0
2	D	1	Total Mg 1 1	0	0
2	E	1	Total Mg 1 1	0	0
2	F	1	Total Mg 1 1	0	0

- Molecule 3 is SULFATE ION (three-letter code: SO4) (formula: O_4S).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total O S 5 4 1	0	0
3	B	1	Total O S 5 4 1	0	0
3	C	1	Total O S 5 4 1	0	0
3	D	1	Total O S 5 4 1	0	0

- Molecule 4 is water.

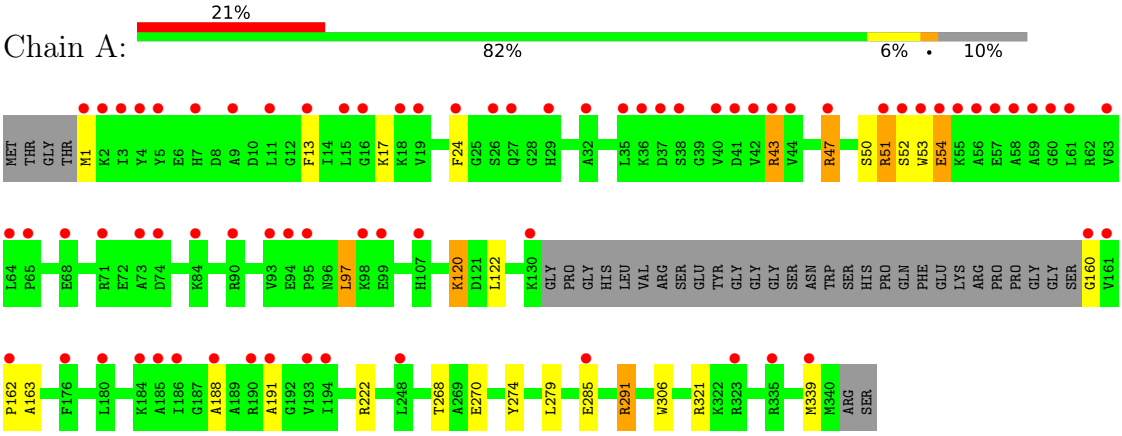
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	35	Total O 35 35	0	0
4	B	36	Total O 36 36	0	0
4	C	43	Total O 43 43	0	0
4	D	42	Total O 42 42	0	0
4	E	43	Total O 43 43	0	0
4	F	52	Total O 52 52	0	0

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.

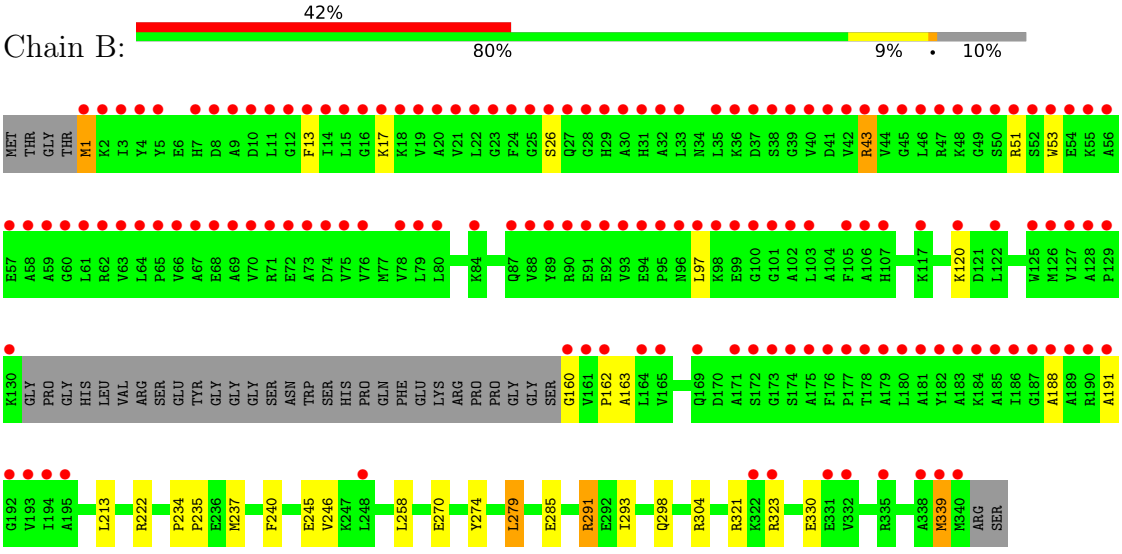
• Molecule 1: Ketol-acid reductoisomerase (NADP(+))

Chain A:



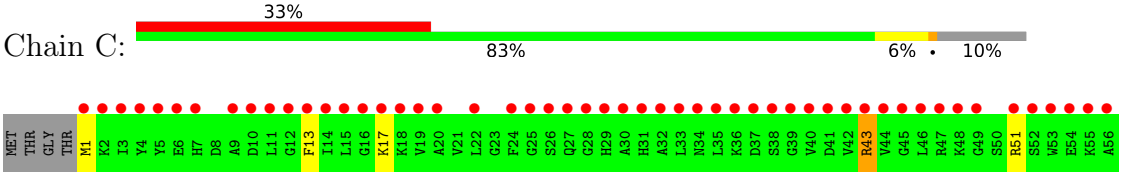
• Molecule 1: Ketol-acid reductoisomerase (NADP(+))

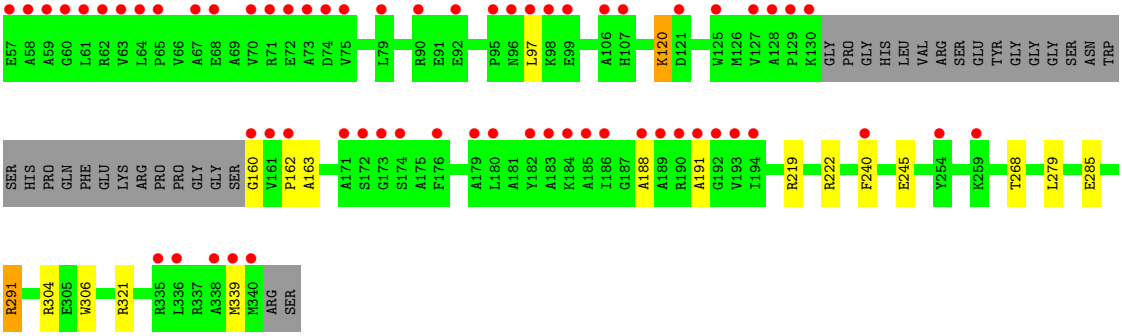
Chain B:



• Molecule 1: Ketol-acid reductoisomerase (NADP(+))

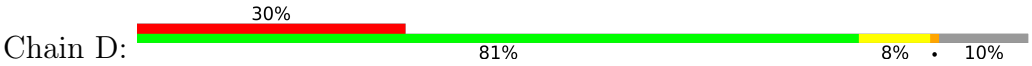
Chain C:

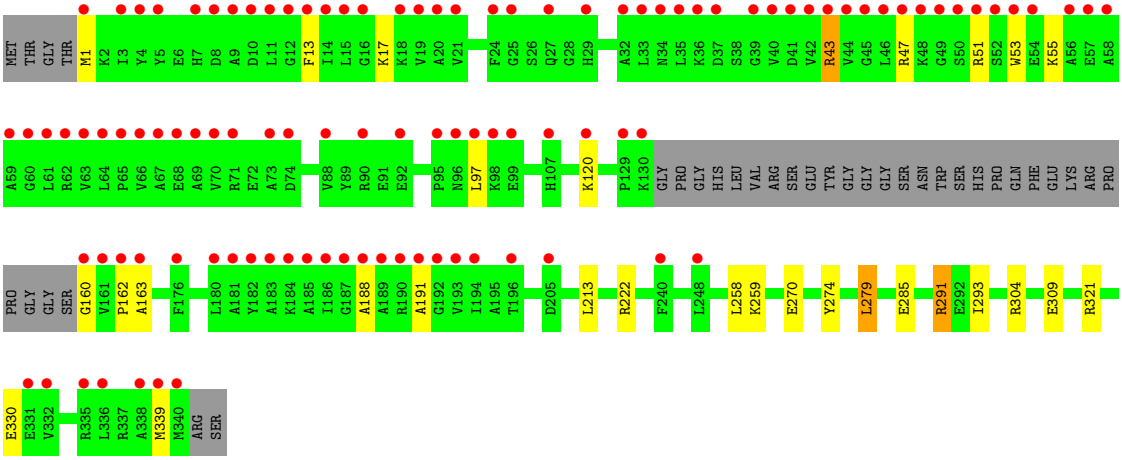




• Molecule 1: Ketol-acid reductoisomerase (NADP(+))

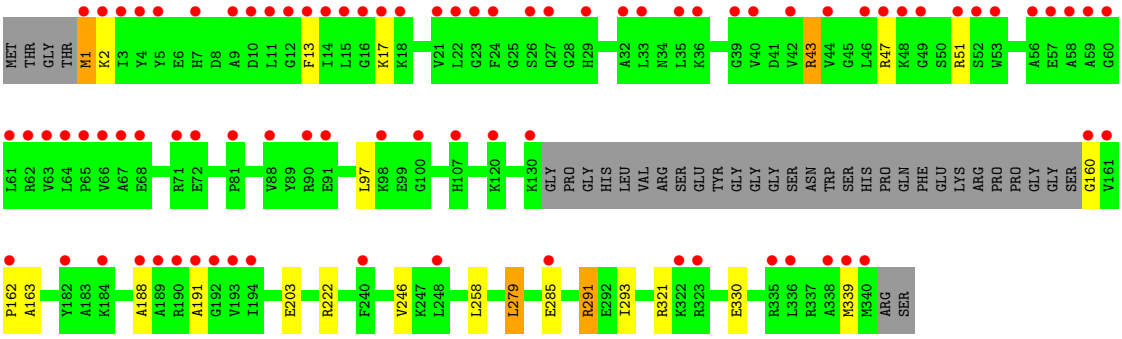
Chain D:





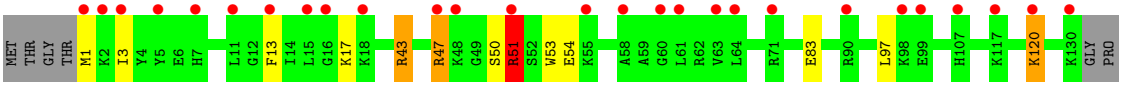
• Molecule 1: Ketol-acid reductoisomerase (NADP(+))

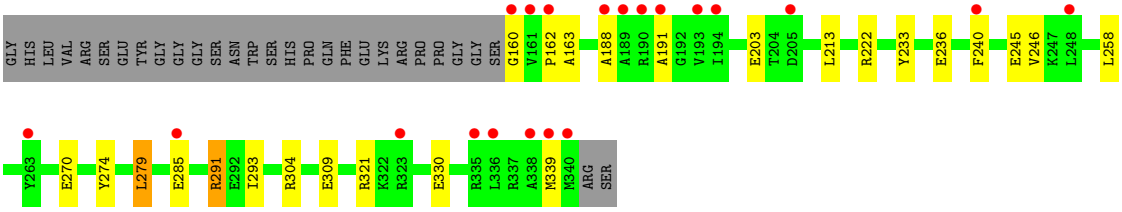
Chain E:



• Molecule 1: Ketol-acid reductoisomerase (NADP(+))

Chain F:




GLY HIS LEU VAL ARG SER GLU TYR GLY GLY GLY SER ASN TRP SER HIS PRO GLN PHE GLU LYS ARG PRO PRO GLY GLY SER
G160 V161 P162 A163
A188 A189 R190 A191 G192 V193 I194
E203 T204 D205
L213
R222
Y233
E236
F240
E245 V246 K247 L248
L258
Y263
E270
Y274
L279
E285
R291 E292 I293
R304
E309
R321
K322 R323
E330
R335 L336 R337 A338 M339 M340 ARG SER

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	136.03Å 142.72Å 126.13Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	63.06 – 2.00 63.06 – 2.00	Depositor EDS
% Data completeness (in resolution range)	97.5 (63.06-2.00) 97.5 (63.06-2.00)	Depositor EDS
R_{merge}	0.15	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.62 (at 2.00Å)	Xtriage
Refinement program	REFMAC 5.8.0411	Depositor
R, R_{free}	0.259 , 0.288 0.262 , 0.290	Depositor DCC
R_{free} test set	8775 reflections (5.40%)	wwPDB-VP
Wilson B-factor (Å^2)	26.9	Xtriage
Anisotropy	0.534	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.39 , 39.9	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.008 for k,h,-l	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	29262	wwPDB-VP
Average B, all atoms (Å^2)	48.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.47% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SO4, MG

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	0.52	0/2457	0.76	1/3318 (0.0%)
1	B	0.47	0/2457	0.75	2/3318 (0.1%)
1	C	0.52	0/2457	0.77	3/3318 (0.1%)
1	D	0.50	0/2457	0.73	1/3318 (0.0%)
1	E	0.52	1/2457 (0.0%)	0.75	1/3318 (0.0%)
1	F	0.57	3/2457 (0.1%)	0.75	1/3318 (0.0%)
All	All	0.52	4/14742 (0.0%)	0.75	9/19908 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	4
1	B	0	5
1	C	0	4
1	D	0	6
1	E	0	6
1	F	0	7
All	All	0	32

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	54	GLU	CD-OE1	6.45	1.32	1.25
1	F	203	GLU	CD-OE1	-5.62	1.19	1.25
1	F	83	GLU	CD-OE2	5.58	1.31	1.25
1	E	203	GLU	CD-OE2	5.44	1.31	1.25

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	291	ARG	NE-CZ-NH2	-12.35	114.13	120.30
1	B	291	ARG	NE-CZ-NH2	-10.87	114.87	120.30
1	E	291	ARG	NE-CZ-NH2	-8.74	115.93	120.30
1	A	291	ARG	NE-CZ-NH2	-8.59	116.01	120.30
1	B	291	ARG	NE-CZ-NH1	8.29	124.45	120.30
1	D	291	ARG	NE-CZ-NH2	-7.63	116.48	120.30
1	F	291	ARG	NE-CZ-NH2	-7.12	116.74	120.30
1	C	291	ARG	NE-CZ-NH1	5.65	123.12	120.30
1	C	219	ARG	NE-CZ-NH2	-5.18	117.71	120.30

There are no chirality outliers.

All (32) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	222	ARG	Sidechain
1	A	291	ARG	Sidechain
1	A	321	ARG	Sidechain
1	A	43	ARG	Sidechain
1	B	222	ARG	Sidechain
1	B	291	ARG	Sidechain
1	B	321	ARG	Sidechain
1	B	323	ARG	Sidechain
1	B	43	ARG	Sidechain
1	C	222	ARG	Sidechain
1	C	291	ARG	Sidechain
1	C	321	ARG	Sidechain
1	C	43	ARG	Sidechain
1	D	222	ARG	Sidechain
1	D	291	ARG	Sidechain
1	D	304	ARG	Sidechain
1	D	321	ARG	Sidechain
1	D	43	ARG	Sidechain
1	D	47	ARG	Sidechain
1	E	1	MET	Peptide
1	E	222	ARG	Sidechain
1	E	291	ARG	Sidechain
1	E	321	ARG	Sidechain
1	E	43	ARG	Sidechain
1	E	47	ARG	Sidechain
1	F	222	ARG	Sidechain
1	F	291	ARG	Sidechain
1	F	304	ARG	Sidechain
1	F	321	ARG	Sidechain

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Mol	Chain	Res	Type	Group
1	F	43	ARG	Sidechain
1	F	47	ARG	Sidechain
1	F	51	ARG	Sidechain

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	2410	2421	2414	12	1
1	B	2410	2421	2414	20	0
1	C	2410	2421	2414	8	1
1	D	2410	2421	2414	13	0
1	E	2410	2421	2414	12	0
1	F	2410	2421	2414	21	0
2	A	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	F	1	0	0	0	0
3	B	10	0	0	0	0
3	C	5	0	0	0	0
3	D	5	0	0	0	0
4	A	35	0	0	1	0
4	B	36	0	0	0	0
4	C	43	0	0	0	0
4	D	42	0	0	0	0
4	E	43	0	0	0	0
4	F	52	0	0	0	0
All	All	14736	14526	14484	69	2

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 2.

All (69) 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:B:339:MET:HE2	1:F:3:ILE:HD13	1.68	0.75
1:D:13:PHE:O	1:D:17:LYS:HE3	1.96	0.66
1:B:258:LEU:HB2	1:F:330:GLU:OE1	1.99	0.62
1:A:13:PHE:O	1:A:17:LYS:HE3	2.03	0.59
1:A:120:LYS:HD2	4:A:502:HOH:O	2.01	0.58
1:B:246:VAL:HG22	1:F:213:LEU:HD23	1.84	0.58
1:A:51:ARG:O	1:A:54:GLU:HG3	2.04	0.58
1:B:213:LEU:HD23	1:F:246:VAL:HG22	1.88	0.55
1:F:13:PHE:O	1:F:17:LYS:HE3	2.06	0.55
1:B:293:ILE:HG13	1:F:279:LEU:HD13	1.89	0.54
1:D:279:LEU:HD13	1:E:293:ILE:HG13	1.88	0.54
1:C:13:PHE:O	1:C:17:LYS:HE3	2.08	0.54
1:E:13:PHE:O	1:E:17:LYS:CE	2.57	0.53
1:B:13:PHE:O	1:B:17:LYS:CE	2.57	0.53
1:D:258:LEU:HB2	1:E:330:GLU:OE1	2.09	0.53
1:C:13:PHE:O	1:C:17:LYS:CE	2.58	0.52
1:A:13:PHE:O	1:A:17:LYS:CE	2.58	0.52
1:F:13:PHE:O	1:F:17:LYS:CE	2.58	0.51
1:D:13:PHE:O	1:D:17:LYS:CE	2.59	0.51
1:B:13:PHE:O	1:B:17:LYS:HE3	2.12	0.50
1:C:304:ARG:HD3	1:F:309:GLU:OE2	2.11	0.50
1:B:330:GLU:OE1	1:F:258:LEU:HB2	2.12	0.50
1:E:160:GLY:HA2	1:E:191:ALA:HB2	1.94	0.49
1:C:160:GLY:O	1:C:162:PRO:HD3	2.13	0.48
1:B:160:GLY:O	1:B:162:PRO:HD3	2.13	0.48
1:A:160:GLY:O	1:A:162:PRO:HD3	2.13	0.48
1:E:13:PHE:O	1:E:17:LYS:HE3	2.13	0.48
1:D:160:GLY:O	1:D:162:PRO:HD3	2.12	0.48
1:E:160:GLY:O	1:E:162:PRO:HD3	2.14	0.48
1:F:160:GLY:O	1:F:162:PRO:HD3	2.14	0.47
1:A:163:ALA:HB2	1:A:188:ALA:HB1	1.96	0.46
1:D:330:GLU:OE1	1:E:258:LEU:HB2	2.15	0.46
1:C:163:ALA:HB2	1:C:188:ALA:HB1	1.98	0.46
1:B:304:ARG:HD3	1:D:309:GLU:OE2	2.16	0.45
1:B:163:ALA:HB2	1:B:188:ALA:HB1	1.98	0.45
1:F:163:ALA:HB2	1:F:188:ALA:HB1	1.99	0.45
1:D:163:ALA:HB2	1:D:188:ALA:HB1	1.98	0.45
1:F:160:GLY:HA2	1:F:191:ALA:HB2	1.99	0.45
1:B:237:MET:HG3	1:F:1:MET:HE1	1.98	0.44
1:B:1:MET:HE1	1:F:236:GLU:HB2	2.00	0.44
1:B:279:LEU:HD13	1:F:293:ILE:HG13	1.99	0.44
1:D:160:GLY:HA2	1:D:191:ALA:HB2	1.98	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:163:ALA:HB2	1:E:188:ALA:HB1	1.99	0.43
1:B:160:GLY:HA2	1:B:191:ALA:HB2	2.00	0.43
1:C:160:GLY:HA2	1:C:191:ALA:HB2	2.00	0.43
1:F:270:GLU:HG2	1:F:274:TYR:CE2	2.54	0.42
1:D:270:GLU:HG2	1:D:274:TYR:CE2	2.55	0.42
1:C:120:LYS:HD2	1:C:120:LYS:H	1.84	0.42
1:B:270:GLU:HG2	1:B:274:TYR:CE2	2.54	0.42
1:D:293:ILE:HG13	1:E:279:LEU:HD13	2.02	0.42
1:B:298:GLN:NE2	1:F:233:TYR:OH	2.41	0.42
1:E:1:MET:HG2	1:E:2:LYS:H	1.85	0.42
1:A:24:PHE:HB3	1:A:52:SER:HB2	2.02	0.41
1:F:50:SER:HB2	1:F:51:ARG:HH21	1.84	0.41
1:B:234:PRO:HA	1:B:235:PRO:HD3	1.97	0.41
1:B:240:PHE:O	1:B:245:GLU:HG2	2.20	0.41
1:A:53:TRP:CD1	1:A:53:TRP:C	2.94	0.41
1:F:120:LYS:HD2	1:F:120:LYS:H	1.86	0.41
1:A:160:GLY:HA2	1:A:191:ALA:HB2	2.01	0.41
1:A:97:LEU:HD13	1:A:122:LEU:HD22	2.03	0.41
1:A:270:GLU:HG2	1:A:274:TYR:CE2	2.56	0.41
1:C:240:PHE:O	1:C:245:GLU:HG2	2.21	0.41
1:E:1:MET:HG2	1:E:2:LYS:N	2.36	0.41
1:A:47:ARG:HG2	1:A:50:SER:HB3	2.03	0.41
1:F:240:PHE:O	1:F:245:GLU:HG2	2.21	0.40
1:B:53:TRP:CD1	1:B:53:TRP:C	2.95	0.40
1:D:53:TRP:CD1	1:D:53:TRP:C	2.95	0.40
1:D:213:LEU:HD23	1:E:246:VAL:HG22	2.04	0.40
1:F:53:TRP:CD1	1:F:53:TRP:C	2.94	0.40

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:268:THR:HG1	1:C:306:TRP:HE1[2_555]	1.28	0.32
1:A:268:THR:HG1	1:A:306:TRP:HE1[2_555]	1.33	0.27

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	307/346 (89%)	290 (94%)	17 (6%)	0	100	100
1	B	307/346 (89%)	290 (94%)	17 (6%)	0	100	100
1	C	307/346 (89%)	290 (94%)	17 (6%)	0	100	100
1	D	307/346 (89%)	290 (94%)	17 (6%)	0	100	100
1	E	307/346 (89%)	290 (94%)	17 (6%)	0	100	100
1	F	307/346 (89%)	290 (94%)	17 (6%)	0	100	100
All	All	1842/2076 (89%)	1740 (94%)	102 (6%)	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	243/270 (90%)	233 (96%)	10 (4%)	26	25
1	B	243/270 (90%)	234 (96%)	9 (4%)	29	29
1	C	243/270 (90%)	235 (97%)	8 (3%)	33	33
1	D	243/270 (90%)	233 (96%)	10 (4%)	26	25
1	E	243/270 (90%)	237 (98%)	6 (2%)	42	45
1	F	243/270 (90%)	235 (97%)	8 (3%)	33	33
All	All	1458/1620 (90%)	1407 (96%)	51 (4%)	31	31

All (51) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1	MET
1	A	43	ARG
1	A	47	ARG
1	A	51	ARG
1	A	54	GLU
1	A	97	LEU
1	A	120	LYS
1	A	279	LEU
1	A	285	GLU
1	A	339	MET
1	B	1	MET
1	B	26	SER
1	B	43	ARG
1	B	51	ARG
1	B	97	LEU
1	B	120	LYS
1	B	279	LEU
1	B	285	GLU
1	B	339	MET
1	C	1	MET
1	C	43	ARG
1	C	51	ARG
1	C	97	LEU
1	C	120	LYS
1	C	279	LEU
1	C	285	GLU
1	C	339	MET
1	D	1	MET
1	D	43	ARG
1	D	51	ARG
1	D	55	LYS
1	D	97	LEU
1	D	120	LYS
1	D	259	LYS
1	D	279	LEU
1	D	285	GLU
1	D	339	MET
1	E	43	ARG
1	E	51	ARG
1	E	97	LEU
1	E	279	LEU
1	E	285	GLU

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Mol	Chain	Res	Type
1	E	339	MET
1	F	43	ARG
1	F	47	ARG
1	F	51	ARG
1	F	97	LEU
1	F	120	LYS
1	F	279	LEU
1	F	285	GLU
1	F	339	MET

Sometimes 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 oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 9 ligands modelled in this entry, 5 are monoatomic - leaving 4 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	$\#\|Z\| > 2$
3	SO4	C	402	-	4,4,4	0.34	0	6,6,6	0.22	0
3	SO4	D	402	-	4,4,4	0.30	0	6,6,6	0.23	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
3	SO4	B	402	-	4,4,4	0.33	0	6,6,6	0.10	0
3	SO4	B	401	-	4,4,4	0.37	0	6,6,6	0.14	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

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^{th} 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	311/346 (89%)	1.16	73 (23%)	2 2	22, 39, 71, 93	0
1	B	311/346 (89%)	2.01	147 (47%)	0 1	21, 54, 113, 134	0
1	C	311/346 (89%)	1.51	115 (36%)	1 1	18, 43, 88, 103	0
1	D	311/346 (89%)	1.47	105 (33%)	1 1	18, 41, 84, 102	0
1	E	311/346 (89%)	1.18	84 (27%)	2 2	19, 38, 76, 95	0
1	F	311/346 (89%)	0.91	47 (15%)	6 5	18, 37, 62, 93	0
All	All	1866/2076 (89%)	1.37	571 (30%)	1 1	18, 41, 90, 134	0

All (571) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	13	PHE	6.7
1	B	14	ILE	6.7
1	B	11	LEU	6.6
1	C	14	ILE	6.6
1	B	191	ALA	6.5
1	D	42	VAL	6.4
1	B	160	GLY	6.3
1	B	44	VAL	6.3
1	D	189	ALA	6.2
1	D	161	VAL	6.2
1	B	59	ALA	6.0
1	B	33	LEU	5.9
1	E	3	ILE	5.9
1	B	15	LEU	5.9
1	B	12	GLY	5.8
1	C	40	VAL	5.8
1	C	11	LEU	5.8
1	B	3	ILE	5.8
1	B	4	TYR	5.8

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Mol	Chain	Res	Type	RSRZ
1	B	193	VAL	5.7
1	B	73	ALA	5.7
1	D	192	GLY	5.6
1	B	40	VAL	5.6
1	C	33	LEU	5.5
1	B	24	PHE	5.4
1	D	188	ALA	5.4
1	B	188	ALA	5.3
1	B	192	GLY	5.3
1	B	35	LEU	5.2
1	B	61	LEU	5.2
1	B	189	ALA	5.2
1	E	61	LEU	5.1
1	C	160	GLY	5.1
1	B	64	LEU	5.1
1	D	61	LEU	5.1
1	E	1	MET	5.1
1	E	7	HIS	5.0
1	D	59	ALA	5.0
1	D	14	ILE	5.0
1	D	15	LEU	5.0
1	D	3	ILE	4.9
1	D	63	VAL	4.9
1	B	66	VAL	4.9
1	B	58	ALA	4.9
1	C	73	ALA	4.8
1	C	188	ALA	4.8
1	D	160	GLY	4.8
1	B	69	ALA	4.8
1	B	107	HIS	4.7
1	B	63	VAL	4.7
1	B	70	VAL	4.7
1	B	186	ILE	4.7
1	C	64	LEU	4.7
1	B	194	ILE	4.7
1	D	191	ALA	4.6
1	B	17	LYS	4.6
1	B	39	GLY	4.6
1	B	32	ALA	4.6
1	C	130	LYS	4.6
1	B	74	ASP	4.6
1	A	61	LEU	4.6

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Mol	Chain	Res	Type	RSRZ
1	B	22	LEU	4.6
1	B	5	TYR	4.5
1	D	98	LYS	4.5
1	D	5	TYR	4.5
1	E	188	ALA	4.5
1	B	37	ASP	4.5
1	F	339	MET	4.5
1	B	161	VAL	4.5
1	B	79	LEU	4.4
1	B	180	LEU	4.4
1	C	59	ALA	4.4
1	D	162	PRO	4.4
1	E	15	LEU	4.4
1	A	160	GLY	4.4
1	D	62	ARG	4.4
1	C	9	ALA	4.4
1	B	46	LEU	4.4
1	C	16	GLY	4.3
1	C	193	VAL	4.3
1	D	64	LEU	4.3
1	E	35	LEU	4.3
1	D	73	ALA	4.3
1	D	24	PHE	4.3
1	B	95	PRO	4.3
1	B	10	ASP	4.3
1	D	18	LYS	4.3
1	E	107	HIS	4.3
1	B	97	LEU	4.3
1	D	33	LEU	4.3
1	C	3	ILE	4.3
1	D	180	LEU	4.2
1	B	176	PHE	4.2
1	D	185	ALA	4.2
1	B	65	PRO	4.2
1	B	127	VAL	4.2
1	D	32	ALA	4.1
1	C	186	ILE	4.1
1	D	7	HIS	4.1
1	B	25	GLY	4.1
1	D	11	LEU	4.1
1	B	183	ALA	4.1
1	B	2	LYS	4.0

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Mol	Chain	Res	Type	RSRZ
1	D	130	LYS	4.0
1	C	61	LEU	4.0
1	D	65	PRO	4.0
1	C	107	HIS	4.0
1	B	21	VAL	4.0
1	F	191	ALA	4.0
1	B	16	GLY	4.0
1	A	64	LEU	4.0
1	B	103	LEU	4.0
1	B	53	TRP	3.9
1	C	183	ALA	3.9
1	C	191	ALA	3.9
1	C	1	MET	3.9
1	B	122	LEU	3.9
1	D	35	LEU	3.9
1	E	33	LEU	3.9
1	C	180	LEU	3.9
1	C	56	ALA	3.9
1	E	5	TYR	3.9
1	E	11	LEU	3.9
1	E	24	PHE	3.9
1	C	42	VAL	3.9
1	C	35	LEU	3.8
1	B	19	VAL	3.8
1	B	339	MET	3.8
1	C	340	MET	3.8
1	D	339	MET	3.8
1	B	130	LYS	3.8
1	B	335	ARG	3.8
1	C	63	VAL	3.8
1	B	101	GLY	3.8
1	E	49	GLY	3.8
1	C	15	LEU	3.8
1	E	339	MET	3.8
1	B	42	VAL	3.8
1	B	7	HIS	3.8
1	A	1	MET	3.7
1	C	13	PHE	3.7
1	D	13	PHE	3.7
1	E	58	ALA	3.7
1	B	1	MET	3.7
1	D	19	VAL	3.7

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Mol	Chain	Res	Type	RSRZ
1	C	162	PRO	3.7
1	C	7	HIS	3.7
1	A	9	ALA	3.7
1	D	70	VAL	3.7
1	D	193	VAL	3.7
1	E	340	MET	3.7
1	A	98	LYS	3.7
1	B	36	LYS	3.7
1	F	16	GLY	3.7
1	D	58	ALA	3.7
1	E	56	ALA	3.7
1	C	47	ARG	3.7
1	E	13	PHE	3.7
1	B	29	HIS	3.6
1	C	5	TYR	3.6
1	B	67	ALA	3.6
1	B	171	ALA	3.6
1	C	37	ASP	3.6
1	E	189	ALA	3.6
1	B	162	PRO	3.6
1	A	161	VAL	3.6
1	B	172	SER	3.6
1	B	184	LYS	3.6
1	C	17	LYS	3.6
1	B	173	GLY	3.6
1	B	106	ALA	3.6
1	A	52	SER	3.6
1	B	38	SER	3.6
1	B	68	GLU	3.6
1	D	186	ILE	3.6
1	D	190	ARG	3.6
1	C	49	GLY	3.6
1	F	61	LEU	3.6
1	A	59	ALA	3.6
1	B	102	ALA	3.6
1	C	128	ALA	3.6
1	F	1	MET	3.6
1	B	18	LYS	3.6
1	C	48	LYS	3.6
1	B	45	GLY	3.5
1	F	160	GLY	3.5
1	B	9	ALA	3.5

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Mol	Chain	Res	Type	RSRZ
1	B	93	VAL	3.5
1	D	49	GLY	3.5
1	A	107	HIS	3.5
1	B	84	LYS	3.5
1	A	90	ARG	3.5
1	D	44	VAL	3.5
1	E	44	VAL	3.5
1	A	53	TRP	3.5
1	B	28	GLY	3.5
1	B	31	HIS	3.5
1	C	339	MET	3.5
1	F	3	ILE	3.5
1	C	2	LYS	3.5
1	A	3	ILE	3.5
1	C	194	ILE	3.5
1	F	51	ARG	3.5
1	B	20	ALA	3.4
1	C	185	ALA	3.4
1	D	338	ALA	3.4
1	E	191	ALA	3.4
1	E	161	VAL	3.4
1	F	107	HIS	3.4
1	B	100	GLY	3.4
1	F	130	LYS	3.4
1	F	47	ARG	3.4
1	E	64	LEU	3.4
1	A	130	LYS	3.4
1	A	193	VAL	3.4
1	C	161	VAL	3.4
1	C	184	LYS	3.4
1	B	56	ALA	3.4
1	D	67	ALA	3.4
1	C	98	LYS	3.4
1	D	40	VAL	3.4
1	A	71	ARG	3.4
1	B	248	LEU	3.4
1	C	46	LEU	3.4
1	A	56	ALA	3.4
1	C	58	ALA	3.4
1	D	29	HIS	3.4
1	A	2	LYS	3.4
1	F	98	LYS	3.4

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Mol	Chain	Res	Type	RSRZ
1	E	51	ARG	3.4
1	A	58	ALA	3.3
1	C	127	VAL	3.3
1	D	66	VAL	3.3
1	A	55	LYS	3.3
1	D	194	ILE	3.3
1	D	52	SER	3.3
1	E	192	GLY	3.3
1	E	63	VAL	3.3
1	A	36	LYS	3.3
1	F	2	LYS	3.3
1	A	38	SER	3.3
1	A	190	ARG	3.3
1	C	71	ARG	3.3
1	C	129	PRO	3.3
1	E	14	ILE	3.3
1	B	128	ALA	3.3
1	C	53	TRP	3.3
1	C	62	ARG	3.3
1	E	248	LEU	3.3
1	C	65	PRO	3.2
1	D	48	LYS	3.2
1	B	75	VAL	3.2
1	C	75	VAL	3.2
1	E	4	TYR	3.2
1	C	97	LEU	3.2
1	B	195	ALA	3.2
1	E	59	ALA	3.2
1	D	51	ARG	3.2
1	A	65	PRO	3.2
1	C	189	ALA	3.2
1	C	192	GLY	3.2
1	C	55	LYS	3.2
1	E	130	LYS	3.2
1	D	107	HIS	3.2
1	E	42	VAL	3.2
1	B	26	SER	3.2
1	B	129	PRO	3.2
1	C	106	ALA	3.2
1	F	188	ALA	3.2
1	B	43	ARG	3.2
1	B	71	ARG	3.2

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Mol	Chain	Res	Type	RSRZ
1	B	182	TYR	3.1
1	E	336	LEU	3.1
1	B	49	GLY	3.1
1	B	179	ALA	3.1
1	C	190	ARG	3.1
1	C	338	ALA	3.1
1	F	190	ARG	3.1
1	C	52	SER	3.1
1	D	37	ASP	3.1
1	B	98	LYS	3.1
1	D	39	GLY	3.1
1	E	60	GLY	3.1
1	F	240	PHE	3.1
1	D	1	MET	3.1
1	A	15	LEU	3.1
1	B	125	TRP	3.1
1	E	47	ARG	3.1
1	E	52	SER	3.1
1	D	54	GLU	3.1
1	F	340	MET	3.1
1	A	11	LEU	3.0
1	B	96	ASN	3.0
1	C	4	TYR	3.0
1	A	51	ARG	3.0
1	B	47	ARG	3.0
1	D	43	ARG	3.0
1	A	7	HIS	3.0
1	D	21	VAL	3.0
1	B	187	GLY	3.0
1	C	45	GLY	3.0
1	D	45	GLY	3.0
1	C	24	PHE	3.0
1	E	48	LYS	3.0
1	B	52	SER	3.0
1	E	193	VAL	3.0
1	F	15	LEU	3.0
1	B	185	ALA	3.0
1	F	189	ALA	3.0
1	B	99	GLU	3.0
1	C	12	GLY	3.0
1	F	11	LEU	3.0
1	E	9	ALA	3.0

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Mol	Chain	Res	Type	RSRZ
1	E	338	ALA	3.0
1	B	48	LYS	3.0
1	D	184	LYS	3.0
1	B	340	MET	2.9
1	C	29	HIS	2.9
1	B	23	GLY	2.9
1	A	42	VAL	2.9
1	B	88	VAL	2.9
1	B	72	GLU	2.9
1	C	176	PHE	2.9
1	E	2	LYS	2.9
1	F	99	GLU	2.9
1	A	339	MET	2.9
1	B	174	SER	2.9
1	B	60	GLY	2.9
1	D	47	ARG	2.9
1	A	63	VAL	2.9
1	B	175	ALA	2.9
1	C	32	ALA	2.9
1	D	56	ALA	2.9
1	E	62	ARG	2.9
1	E	190	ARG	2.9
1	A	54	GLU	2.9
1	A	162	PRO	2.9
1	C	54	GLU	2.9
1	A	24	PHE	2.9
1	B	181	ALA	2.9
1	B	27	GLN	2.9
1	E	68	GLU	2.9
1	B	55	LYS	2.9
1	E	120	LYS	2.9
1	F	48	LYS	2.9
1	E	66	VAL	2.8
1	F	161	VAL	2.8
1	A	37	ASP	2.8
1	C	74	ASP	2.8
1	A	29	HIS	2.8
1	E	29	HIS	2.8
1	A	43	ARG	2.8
1	B	62	ARG	2.8
1	D	34	ASN	2.8
1	B	331	GLU	2.8

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Mol	Chain	Res	Type	RSRZ
1	C	95	PRO	2.8
1	F	7	HIS	2.8
1	C	27	GLN	2.8
1	C	179	ALA	2.8
1	C	174	SER	2.8
1	D	57	GLU	2.8
1	B	178	THR	2.8
1	B	177	PRO	2.8
1	D	182	TYR	2.8
1	B	8	ASP	2.8
1	D	10	ASP	2.8
1	B	190	ARG	2.8
1	A	185	ALA	2.8
1	C	67	ALA	2.8
1	D	68	GLU	2.8
1	D	187	GLY	2.8
1	A	35	LEU	2.8
1	C	19	VAL	2.8
1	F	193	VAL	2.8
1	D	16	GLY	2.7
1	B	41	ASP	2.7
1	D	248	LEU	2.7
1	A	40	VAL	2.7
1	B	338	ALA	2.7
1	D	53	TRP	2.7
1	D	340	MET	2.7
1	A	13	PHE	2.7
1	C	39	GLY	2.7
1	E	39	GLY	2.7
1	D	36	LYS	2.7
1	E	67	ALA	2.7
1	C	60	GLY	2.7
1	D	41	ASP	2.7
1	A	44	VAL	2.7
1	C	44	VAL	2.7
1	E	12	GLY	2.7
1	A	47	ARG	2.7
1	E	53	TRP	2.7
1	A	194	ILE	2.7
1	E	194	ILE	2.7
1	E	98	LYS	2.6
1	A	180	LEU	2.6

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Mol	Chain	Res	Type	RSRZ
1	B	89	TYR	2.6
1	C	57	GLU	2.6
1	F	120	LYS	2.6
1	E	65	PRO	2.6
1	E	162	PRO	2.6
1	C	38	SER	2.6
1	D	46	LEU	2.6
1	B	51	ARG	2.6
1	C	90	ARG	2.6
1	A	93	VAL	2.6
1	B	76	VAL	2.6
1	D	9	ALA	2.6
1	E	160	GLY	2.6
1	C	41	ASP	2.6
1	D	129	PRO	2.6
1	F	248	LEU	2.6
1	A	68	GLU	2.6
1	A	32	ALA	2.6
1	B	30	ALA	2.6
1	A	19	VAL	2.6
1	D	71	ARG	2.6
1	E	71	ARG	2.6
1	E	90	ARG	2.6
1	D	97	LEU	2.6
1	A	191	ALA	2.5
1	C	259	LYS	2.5
1	F	338	ALA	2.5
1	A	74	ASP	2.5
1	D	90	ARG	2.5
1	F	90	ARG	2.5
1	A	26	SER	2.5
1	C	26	SER	2.5
1	B	117	LYS	2.5
1	C	36	LYS	2.5
1	E	184	LYS	2.5
1	D	8	ASP	2.5
1	C	240	PHE	2.5
1	A	248	LEU	2.5
1	C	171	ALA	2.5
1	D	88	VAL	2.5
1	A	5	TYR	2.5
1	D	74	ASP	2.5

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Mol	Chain	Res	Type	RSRZ
1	D	332	VAL	2.5
1	E	21	VAL	2.5
1	C	92	GLU	2.4
1	B	105	PHE	2.4
1	A	84	LYS	2.4
1	C	20	ALA	2.4
1	A	94	GLU	2.4
1	A	285	GLU	2.4
1	C	31	HIS	2.4
1	F	18	LYS	2.4
1	D	176	PHE	2.4
1	A	323	ARG	2.4
1	C	51	ARG	2.4
1	C	6	GLU	2.4
1	A	184	LYS	2.4
1	B	165	VAL	2.4
1	A	186	ILE	2.4
1	C	10	ASP	2.4
1	B	80	LEU	2.4
1	F	64	LEU	2.4
1	E	32	ALA	2.4
1	E	335	ARG	2.4
1	F	323	ARG	2.4
1	D	60	GLY	2.4
1	C	336	LEU	2.3
1	F	336	LEU	2.3
1	C	96	ASN	2.3
1	A	188	ALA	2.3
1	F	58	ALA	2.3
1	E	40	VAL	2.3
1	E	88	VAL	2.3
1	C	72	GLU	2.3
1	C	254	TYR	2.3
1	E	72	GLU	2.3
1	F	5	TYR	2.3
1	B	322	LYS	2.3
1	C	18	LYS	2.3
1	C	34	ASN	2.3
1	D	96	ASN	2.3
1	F	55	LYS	2.3
1	A	73	ALA	2.3
1	D	69	ALA	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	50	SER	2.3
1	E	27	GLN	2.3
1	D	25	GLY	2.3
1	F	285	GLU	2.3
1	A	176	PHE	2.3
1	A	18	LYS	2.3
1	B	164	LEU	2.3
1	E	26	SER	2.3
1	A	57	GLU	2.3
1	B	94	GLU	2.3
1	F	63	VAL	2.3
1	E	23	GLY	2.3
1	D	120	LYS	2.3
1	E	36	LYS	2.3
1	F	13	PHE	2.3
1	F	71	ARG	2.3
1	A	27	GLN	2.3
1	D	183	ALA	2.3
1	D	95	PRO	2.2
1	F	162	PRO	2.2
1	D	205	ASP	2.2
1	E	322	LYS	2.2
1	B	126	MET	2.2
1	B	54	GLU	2.2
1	B	91	GLU	2.2
1	B	92	GLU	2.2
1	D	20	ALA	2.2
1	D	331	GLU	2.2
1	E	57	GLU	2.2
1	A	95	PRO	2.2
1	C	121	ASP	2.2
1	B	78	VAL	2.2
1	B	87	GLN	2.2
1	C	22	LEU	2.2
1	D	4	TYR	2.2
1	E	182	TYR	2.2
1	C	30	ALA	2.2
1	D	163	ALA	2.2
1	D	181	ALA	2.2
1	E	323	ARG	2.2
1	D	240	PHE	2.2
1	E	240	PHE	2.2

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Mol	Chain	Res	Type	RSRZ
1	C	99	GLU	2.2
1	E	91	GLU	2.2
1	A	41	ASP	2.2
1	A	16	GLY	2.2
1	A	335	ARG	2.2
1	D	335	ARG	2.2
1	E	16	GLY	2.2
1	B	57	GLU	2.1
1	E	285	GLU	2.1
1	C	79	LEU	2.1
1	D	336	LEU	2.1
1	E	22	LEU	2.1
1	F	117	LYS	2.1
1	E	10	ASP	2.1
1	D	12	GLY	2.1
1	F	60	GLY	2.1
1	D	27	GLN	2.1
1	D	92	GLU	2.1
1	C	335	ARG	2.1
1	D	50	SER	2.1
1	C	173	GLY	2.1
1	C	182	TYR	2.1
1	F	263	TYR	2.1
1	E	46	LEU	2.1
1	C	172	SER	2.1
1	D	196	THR	2.1
1	C	25	GLY	2.1
1	C	28	GLY	2.1
1	E	100	GLY	2.1
1	A	99	GLU	2.1
1	D	99	GLU	2.1
1	B	332	VAL	2.1
1	C	70	VAL	2.1
1	B	323	ARG	2.1
1	F	205	ASP	2.1
1	A	60	GLY	2.0
1	B	169	GLN	2.1
1	C	68	GLU	2.0
1	A	4	TYR	2.0
1	B	120	LYS	2.0
1	C	43	ARG	2.0
1	F	194	ILE	2.0

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Mol	Chain	Res	Type	RSRZ
1	E	81	PRO	2.0
1	B	90	ARG	2.0
1	E	17	LYS	2.0
1	E	18	LYS	2.0
1	F	335	ARG	2.0
1	C	125	TRP	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, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	SO4	B	401	5/5	0.79	0.11	66,71,78,78	0
3	SO4	B	402	5/5	0.81	0.12	63,64,74,78	0
3	SO4	D	402	5/5	0.85	0.09	63,63,70,77	0
3	SO4	C	402	5/5	0.90	0.07	50,56,59,65	0
2	MG	A	401	1/1	0.92	0.40	42,42,42,42	0
2	MG	F	401	1/1	0.92	0.36	43,43,43,43	0
2	MG	C	401	1/1	0.93	0.38	42,42,42,42	0
2	MG	E	401	1/1	0.97	0.38	41,41,41,41	0
2	MG	D	401	1/1	0.97	0.16	38,38,38,38	0

6.5 Other polymers (i)

There are no such residues in this entry.