Full wwPDB X-ray Structure Validation Report (i)

Jun 24, 2024 – 04:58 PM EDT

PDB ID	:	6WOM
Title	:	Crystal structure of Aspartyl-tRNA ligase from Elizabethkingia sp.
Authors	:	Seattle Structural Genomics Center for Infectious Disease (SSGCID)
Deposited on	:	2020-04-24
Resolution	:	2.15 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:

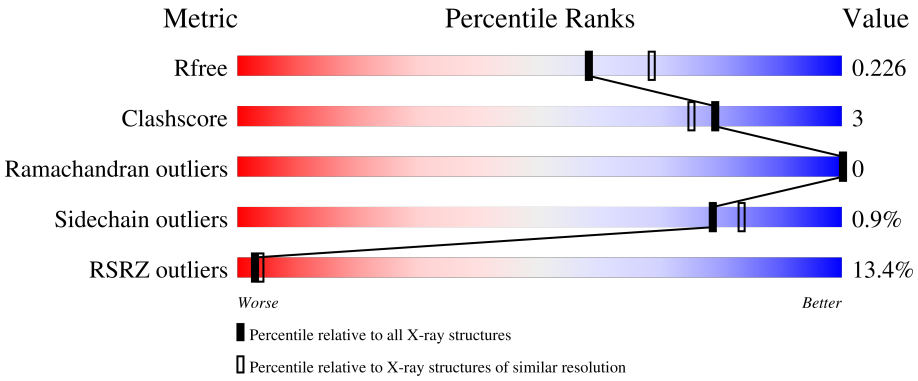
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.20.1
EDS	:	2.37.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

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 2.15 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	1479 (2.16-2.16)
Clashscore	141614	1585 (2.16-2.16)
Ramachandran outliers	138981	1560 (2.16-2.16)
Sidechain outliers	138945	1559 (2.16-2.16)
RSRZ outliers	127900	1456 (2.16-2.16)

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	592	2% 91% 7%
1	B	592	3% 93% 5%
1	C	592	34% 85% 8% 7%

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 14257 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 Aspartate–tRNA ligase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	583	Total	C	N	O	S	0	4	0
			4635	2957	785	873	20			
1	B	583	Total	C	N	O	S	0	4	0
			4622	2948	779	874	21			
1	C	549	Total	C	N	O	S	0	0	0
			3941	2499	680	744	18			

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-7	MET	-	initiating methionine	UNP A0A1T3DDI2
A	-6	ALA	-	expression tag	UNP A0A1T3DDI2
A	-5	HIS	-	expression tag	UNP A0A1T3DDI2
A	-4	HIS	-	expression tag	UNP A0A1T3DDI2
A	-3	HIS	-	expression tag	UNP A0A1T3DDI2
A	-2	HIS	-	expression tag	UNP A0A1T3DDI2
A	-1	HIS	-	expression tag	UNP A0A1T3DDI2
A	0	HIS	-	expression tag	UNP A0A1T3DDI2
B	-7	MET	-	initiating methionine	UNP A0A1T3DDI2
B	-6	ALA	-	expression tag	UNP A0A1T3DDI2
B	-5	HIS	-	expression tag	UNP A0A1T3DDI2
B	-4	HIS	-	expression tag	UNP A0A1T3DDI2
B	-3	HIS	-	expression tag	UNP A0A1T3DDI2
B	-2	HIS	-	expression tag	UNP A0A1T3DDI2
B	-1	HIS	-	expression tag	UNP A0A1T3DDI2
B	0	HIS	-	expression tag	UNP A0A1T3DDI2
C	-7	MET	-	initiating methionine	UNP A0A1T3DDI2
C	-6	ALA	-	expression tag	UNP A0A1T3DDI2
C	-5	HIS	-	expression tag	UNP A0A1T3DDI2
C	-4	HIS	-	expression tag	UNP A0A1T3DDI2
C	-3	HIS	-	expression tag	UNP A0A1T3DDI2
C	-2	HIS	-	expression tag	UNP A0A1T3DDI2
C	-1	HIS	-	expression tag	UNP A0A1T3DDI2

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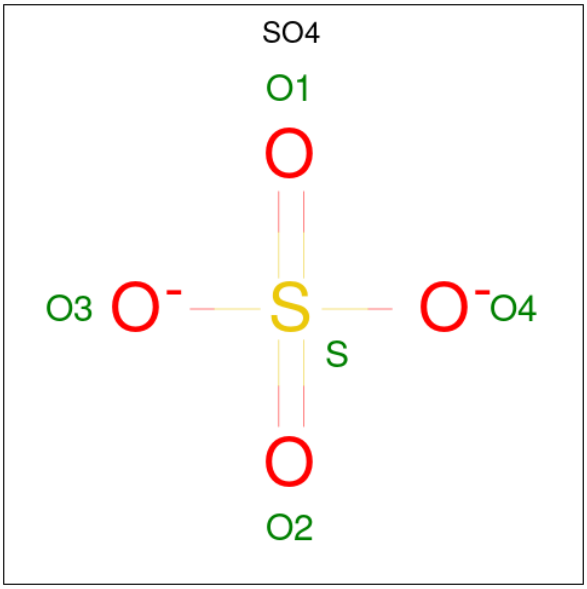
Chain	Residue	Modelled	Actual	Comment	Reference
C	0	HIS	-	expression tag	UNP A0A1T3DDI2

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



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

- Molecule 3 is water.

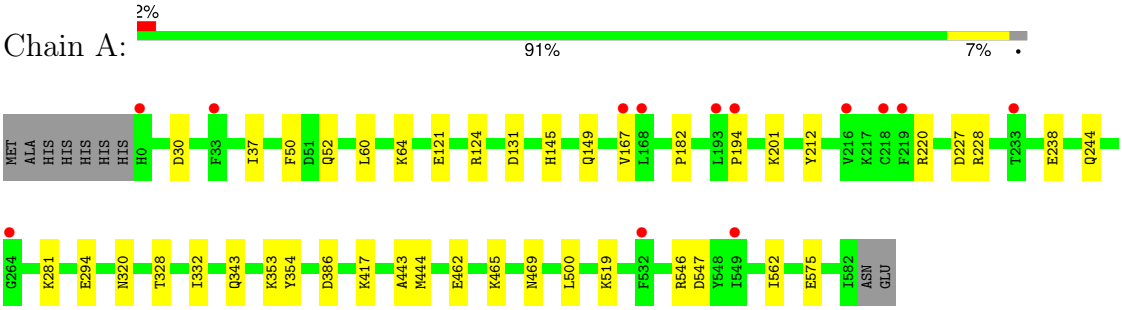
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	537	Total O 544 544	0	7
3	B	447	Total O 450 450	0	3
3	C	54	Total O 55 55	0	1

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.

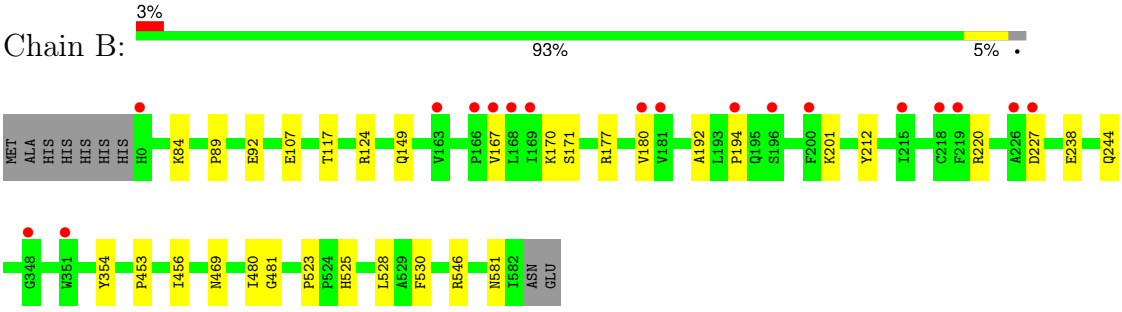
• Molecule 1: Aspartate–tRNA ligase

Chain A:



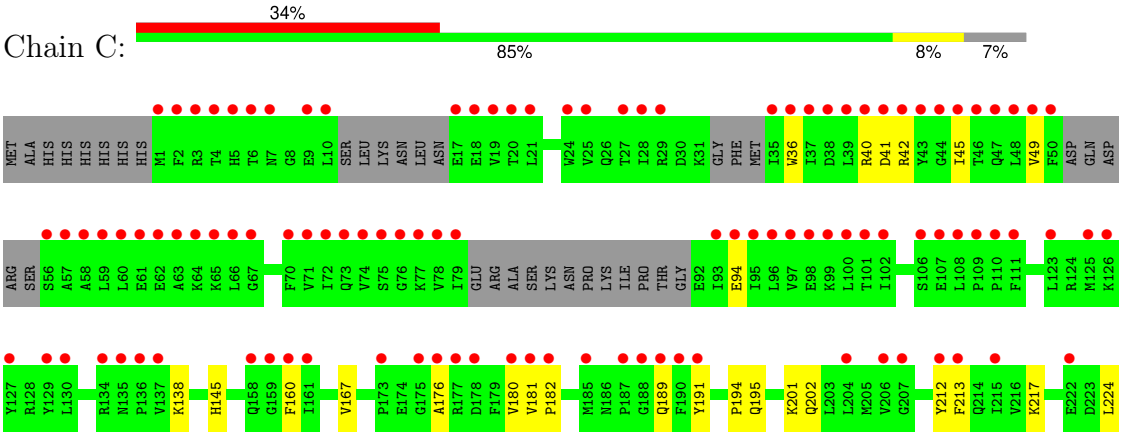
• Molecule 1: Aspartate–tRNA ligase

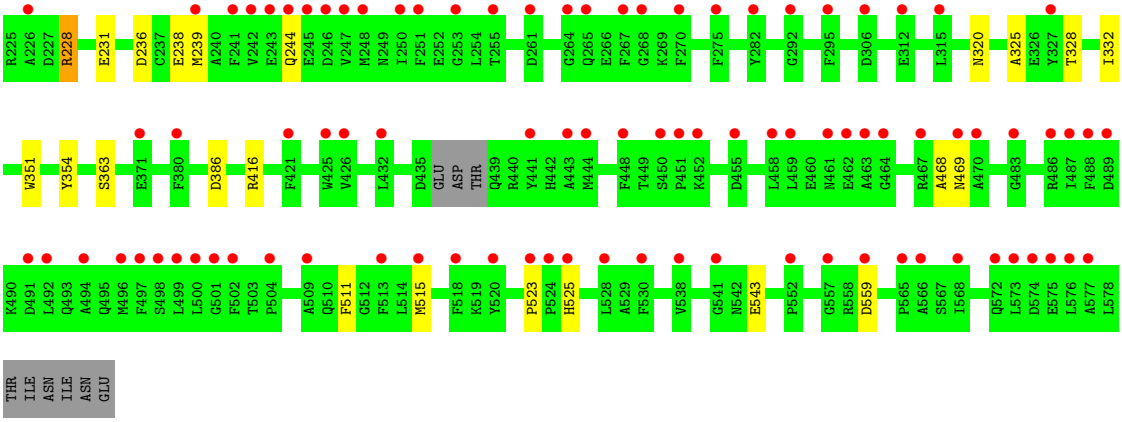
Chain B:



• Molecule 1: Aspartate–tRNA ligase

Chain C:




R225 A226 D227 R228 E231 D236 C237 E238 M239 A240 F241 V242 E243 Q244 E245 D246 V247 M248 N249 I250 F251 E252 G253 L254 T255 D261 G264 Q265 E266 F267 G268 K269 F270 F275 Y282 G292 F295 D306 E312 L315 N320 A325 E326 Y327 T328 I332
W351 Y354 S363 E371 F380 D386 R416 F421 W425 V426 L432 D435 GLU ASP THR Q439 R440 Y441 H442 A443 M444 F448 T449 S450 P451 K452 D455 L458 L459 E460 N461 E462 A463 G464 R467 A468 N469 A470 G483 R486 I487 F488 D489
K490 D491 L492 Q493 A494 Q495 M496 F497 S498 L499 L500 G501 F502 T503 P504 A509 Q510 F511 G512 F513 L514 M515 F518 K519 Y520 P523 P524 H525 L528 A529 F530 V538 G541 N542 E543 P562 G557 R558 D559 P565 A566 S567 I568 Q572 L573 D574 E575 L576 A577 L578
THR ILE ASN ILE ASN GLU

4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	234.37Å 106.57Å 93.41Å 90.00° 100.91° 90.00°	Depositor
Resolution (Å)	36.07 – 2.15 48.35 – 2.15	Depositor EDS
% Data completeness (in resolution range)	98.5 (36.07-2.15) 98.5 (48.35-2.15)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.43 (at 2.16Å)	Xtriage
Refinement program	PHENIX 1.18rc7 3834	Depositor
R, R_{free}	0.187 , 0.225 0.189 , 0.226	Depositor DCC
R_{free} test set	2019 reflections (1.67%)	wwPDB-VP
Wilson B-factor (Å^2)	37.4	Xtriage
Anisotropy	0.410	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 52.7	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	14257	wwPDB-VP
Average B, all atoms (Å^2)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.43% 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

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	0.46	0/4743	0.60	0/6407
1	B	0.43	0/4730	0.59	0/6395
1	C	0.32	1/4024 (0.0%)	0.51	0/5479
All	All	0.41	1/13497 (0.0%)	0.57	0/18281

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	228	ARG	C-N	-5.16	1.22	1.34

There are no bond angle outliers.

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	4635	0	4543	28	0
1	B	4622	0	4497	21	0
1	C	3941	0	3417	27	0
2	A	5	0	0	0	0
2	B	5	0	0	0	0
3	A	544	0	0	8	1
3	B	450	0	0	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	C	55	0	0	2	0
All	All	14257	0	12457	72	1

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 3.

All (72) 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:201:LYS:HD2	1:C:238:GLU:HB2	1.71	0.72
1:A:281:LYS:HE3	1:A:294[A]:GLU:HG2	1.70	0.71
1:A:462:GLU:HB3	1:A:465:LYS:HD2	1.79	0.64
1:C:181:VAL:HB	1:C:191:TYR:HB2	1.80	0.64
1:A:201:LYS:HD2	1:A:238:GLU:HB2	1.80	0.64
1:B:201:LYS:HD2	1:B:238:GLU:HB2	1.84	0.60
1:A:244:GLN:NE2	1:A:469:ASN:OD1	2.34	0.60
1:A:149[B]:GLN:OE1	3:A:801:HOH:O	2.17	0.60
1:B:528:LEU:HD21	1:B:530[B]:PHE:CE1	2.36	0.60
1:A:417:LYS:NZ	3:A:815:HOH:O	2.36	0.59
1:B:84:LYS:HG2	1:B:92:GLU:HA	1.83	0.59
1:A:353:LYS:NZ	3:A:814:HOH:O	2.35	0.58
1:C:468:ALA:O	3:C:601:HOH:O	2.18	0.56
1:B:481:GLY:HA3	1:B:530[B]:PHE:HD1	1.69	0.56
1:C:523:PRO:O	1:C:525:HIS:HD2	1.89	0.56
1:B:244:GLN:NE2	1:B:469:ASN:OD1	2.39	0.55
1:A:562:ILE:HD12	1:B:170:LYS:HB2	1.88	0.55
1:C:217:LYS:NZ	1:C:231:GLU:OE2	2.26	0.54
1:A:124:ARG:HH22	1:A:546:ARG:NH2	2.06	0.53
1:B:581:ASN:ND2	3:B:805:HOH:O	2.25	0.53
1:A:121:GLU:OE2	1:A:546:ARG:NH1	2.42	0.53
1:C:42:ARG:HG3	1:C:138:LYS:HD2	1.92	0.52
1:A:547:ASP:HB2	3:A:990:HOH:O	2.09	0.52
1:B:220:ARG:HB3	3:B:1092:HOH:O	2.09	0.51
1:C:180:VAL:HA	1:C:191:TYR:O	2.10	0.51
1:A:281:LYS:NZ	3:A:821:HOH:O	2.41	0.51
1:C:36:TRP:CD1	1:C:49:VAL:HG22	2.46	0.51
1:C:49:VAL:HG21	1:C:94:GLU:OE1	2.12	0.50
1:A:37:ILE:HD12	1:A:50:PHE:CE2	2.46	0.50
1:A:64:LYS:NZ	3:A:818:HOH:O	2.39	0.49
1:A:443:ALA:HB2	1:A:500:LEU:HD22	1.95	0.49
1:A:145:HIS:O	1:A:149[A]:GLN:HG2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:124:ARG:HH12	1:B:546:ARG:HH22	1.61	0.48
1:C:224:LEU:HA	1:C:228:ARG:HB2	1.95	0.48
1:A:167:VAL:O	1:A:194:PRO:HD3	2.14	0.48
1:B:171:SER:HB2	1:B:192:ALA:HB2	1.95	0.47
1:C:213:PHE:HA	1:C:236:ASP:O	2.14	0.47
1:A:519:LYS:HG3	1:B:107:GLU:HG3	1.97	0.46
1:B:453:PRO:HA	1:B:456:ILE:HD12	1.97	0.46
1:B:481:GLY:HA3	1:B:530[B]:PHE:CD1	2.50	0.46
1:C:328:THR:O	1:C:332:ILE:HG12	2.16	0.46
1:A:343:GLN:OE1	1:A:343:GLN:N	2.35	0.46
1:A:328:THR:O	1:A:332:ILE:HG12	2.16	0.45
1:B:167:VAL:O	1:B:194:PRO:HD3	2.15	0.45
1:B:89:PRO:HD2	3:B:1107:HOH:O	2.15	0.45
1:C:40:ARG:HG3	1:C:45:ILE:HG12	1.99	0.45
1:C:511:PHE:O	1:C:515:MET:HG2	2.17	0.45
1:A:124:ARG:HD2	1:A:131:ASP:OD1	2.16	0.45
1:B:480:ILE:HG22	1:B:530[A]:PHE:HD1	1.83	0.44
1:C:244:GLN:HE22	1:C:469:ASN:HA	1.83	0.44
1:C:167:VAL:O	1:C:194:PRO:HD3	2.17	0.44
1:A:320:ASN:OD1	1:A:386:ASP:HB3	2.18	0.43
1:C:320:ASN:OD1	1:C:386:ASP:HB3	2.18	0.43
1:A:220:ARG:HB3	3:A:834:HOH:O	2.17	0.43
1:A:182:PRO:HD2	1:B:180:VAL:O	2.19	0.43
1:C:182:PRO:HA	1:C:189:GLN:O	2.18	0.43
1:A:575:GLU:CD	1:B:177:ARG:HE	2.22	0.43
1:C:160:PHE:HZ	1:C:239:MET:SD	2.42	0.43
1:C:559:ASP:HA	3:C:643:HOH:O	2.19	0.42
1:C:325:ALA:HB2	1:C:386:ASP:O	2.19	0.42
1:A:52:GLN:HB3	1:A:60:LEU:HG	2.02	0.42
1:B:523:PRO:O	1:B:525:HIS:HD2	2.02	0.42
1:B:117:THR:HG21	1:B:124:ARG:HD3	2.02	0.42
1:A:281:LYS:CE	1:A:294[A]:GLU:HG2	2.44	0.41
1:A:444:MET:HB3	3:A:1160:HOH:O	2.20	0.41
1:C:202:GLN:OE1	1:C:525:HIS:HE1	2.01	0.41
1:C:351:TRP:NE1	1:C:363:SER:HB3	2.35	0.41
1:C:40:ARG:HG2	1:C:41:ASP:N	2.35	0.41
1:C:176:ALA:HB3	1:C:195:GLN:OE1	2.20	0.41
1:C:201:LYS:HD3	1:C:236:ASP:OD2	2.20	0.41
1:B:480:ILE:HG22	1:B:530[A]:PHE:CD1	2.57	0.40
1:C:416:ARG:NH2	1:C:543:GLU:OE2	2.42	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the sym-

metry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:859:HOH:O	3:A:1193:HOH:O[1_554]	2.17	0.03

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	585/592 (99%)	569 (97%)	16 (3%)	0	100	100
1	B	585/592 (99%)	572 (98%)	13 (2%)	0	100	100
1	C	537/592 (91%)	524 (98%)	13 (2%)	0	100	100
All	All	1707/1776 (96%)	1665 (98%)	42 (2%)	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	489/509 (96%)	484 (99%)	5 (1%)	76	81
1	B	485/509 (95%)	481 (99%)	4 (1%)	81	86
1	C	343/509 (67%)	340 (99%)	3 (1%)	78	83
All	All	1317/1527 (86%)	1305 (99%)	12 (1%)	78	83

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	30	ASP
1	A	212	TYR
1	A	227	ASP
1	A	228	ARG
1	A	354	TYR
1	B	149	GLN
1	B	212	TYR
1	B	227	ASP
1	B	354	TYR
1	C	145	HIS
1	C	212	TYR
1	C	354	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	244	GLN
1	B	469	ASN
1	C	7	ASN
1	C	244	GLN
1	C	525	HIS

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)

2 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	A	700	-	4,4,4	0.24	0	6,6,6	0.17	0
2	SO4	B	700	-	4,4,4	0.26	0	6,6,6	0.18	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	583/592 (98%)	0.13	13 (2%) 62 69	25, 36, 55, 109	0
1	B	583/592 (98%)	0.26	18 (3%) 49 58	25, 40, 68, 133	0
1	C	549/592 (92%)	1.74	199 (36%) 0 0	40, 88, 139, 219	0
All	All	1715/1776 (96%)	0.69	230 (13%) 3 4	25, 45, 118, 219	0

All (230) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	48	LEU	8.8
1	C	96	LEU	8.4
1	C	129	TYR	7.8
1	C	97	VAL	7.5
1	C	190	PHE	7.4
1	C	425	TRP	7.4
1	C	49	VAL	7.1
1	C	4	THR	6.6
1	C	76	GLY	6.6
1	C	46	THR	6.6
1	C	64	LYS	6.4
1	C	79	ILE	6.4
1	C	565	PRO	6.3
1	C	37	ILE	6.2
1	C	10	LEU	6.2
1	C	36	TRP	6.1
1	C	577	ALA	6.1
1	C	93	ILE	6.0
1	C	450	SER	5.9
1	C	59	LEU	5.8
1	C	463	ALA	5.7
1	C	2	PHE	5.7
1	C	58	ALA	5.5

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Mol	Chain	Res	Type	RSRZ
1	C	65	LYS	5.5
1	C	50	PHE	5.3
1	C	78	VAL	5.2
1	C	99	LYS	5.1
1	C	5	HIS	5.1
1	C	95	ILE	4.9
1	C	130	LEU	4.9
1	C	21	LEU	4.9
1	C	499	LEU	4.6
1	C	74	VAL	4.6
1	C	100	LEU	4.5
1	C	28	ILE	4.5
1	C	18	GLU	4.5
1	C	19	VAL	4.5
1	C	45	ILE	4.4
1	C	101	THR	4.4
1	C	250	ILE	4.3
1	C	441	TYR	4.2
1	C	62	GLU	4.2
1	C	189	GLN	4.2
1	C	29	ARG	4.2
1	C	109	PRO	4.2
1	C	464	GLY	4.1
1	C	576	LEU	4.1
1	C	98	GLU	4.1
1	C	504	PRO	4.0
1	C	421	PHE	4.0
1	C	134	ARG	4.0
1	C	206	VAL	4.0
1	C	261	ASP	4.0
1	C	557	GLY	4.0
1	C	242	VAL	4.0
1	C	264	GLY	4.0
1	C	159	GLY	3.9
1	C	204	LEU	3.9
1	C	20	THR	3.9
1	C	57	ALA	3.9
1	C	173	PRO	3.9
1	C	136	PRO	3.8
1	C	182	PRO	3.8
1	C	111	PHE	3.8
1	C	61	GLU	3.7

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Mol	Chain	Res	Type	RSRZ
1	C	39	LEU	3.7
1	C	66	LEU	3.7
1	C	6	THR	3.7
1	C	572	GLN	3.7
1	C	270	PHE	3.7
1	C	327	TYR	3.7
1	C	110	PRO	3.7
1	C	60	LEU	3.6
1	C	239	MET	3.6
1	C	160	PHE	3.6
1	C	180	VAL	3.5
1	C	538	VAL	3.5
1	C	267	PHE	3.5
1	C	187	PRO	3.4
1	C	568	ILE	3.4
1	C	176	ALA	3.4
1	C	67	GLY	3.4
1	C	207	GLY	3.4
1	B	226	ALA	3.3
1	C	108	LEU	3.3
1	C	501	GLY	3.3
1	C	498	SER	3.3
1	C	312	GLU	3.2
1	C	63	ALA	3.2
1	C	246	ASP	3.2
1	C	44	GLY	3.2
1	C	488	PHE	3.2
1	C	247	VAL	3.2
1	C	94	GLU	3.2
1	C	24	TRP	3.2
1	B	167	VAL	3.2
1	C	25	VAL	3.2
1	C	459	LEU	3.1
1	C	432	LEU	3.1
1	C	35	ILE	3.1
1	C	47	GLN	3.1
1	C	491	ASP	3.1
1	C	125	MET	3.1
1	C	17	GLU	3.1
1	C	9	GLU	3.1
1	C	541	GLY	3.0
1	C	492	LEU	3.0

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Mol	Chain	Res	Type	RSRZ
1	C	226	ALA	3.0
1	C	27	THR	3.0
1	C	43	TYR	3.0
1	A	219	PHE	2.9
1	C	40	ARG	2.9
1	B	168	LEU	2.9
1	A	33	PHE	2.9
1	C	470	ALA	2.9
1	C	106	SER	2.9
1	A	167	VAL	2.9
1	C	241	PHE	2.9
1	C	42	ARG	2.9
1	C	559	ASP	2.8
1	A	193	LEU	2.8
1	C	253	GLY	2.8
1	A	0	HIS	2.8
1	C	489	ASP	2.8
1	B	351	TRP	2.8
1	C	255	THR	2.8
1	C	497	PHE	2.8
1	C	315	LEU	2.8
1	C	426	VAL	2.7
1	B	219	PHE	2.7
1	C	380	PHE	2.7
1	C	573	LEU	2.7
1	C	38	ASP	2.7
1	C	275	PHE	2.7
1	C	525	HIS	2.7
1	A	168	LEU	2.7
1	A	264	GLY	2.6
1	C	243	GLU	2.6
1	A	233	THR	2.6
1	B	348	GLY	2.6
1	C	245	GLU	2.6
1	C	70	PHE	2.6
1	C	513	PHE	2.6
1	C	72	ILE	2.6
1	C	461	ASN	2.5
1	C	520	TYR	2.5
1	C	574	ASP	2.5
1	C	502	PHE	2.5
1	B	218	CYS	2.5

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Mol	Chain	Res	Type	RSRZ
1	C	71	VAL	2.5
1	C	469	ASN	2.5
1	C	451	PRO	2.5
1	C	56	SER	2.5
1	C	175	GLY	2.5
1	C	443	ALA	2.5
1	C	500	LEU	2.4
1	C	524	PRO	2.4
1	C	7	ASN	2.4
1	B	169	ILE	2.4
1	C	494	ALA	2.4
1	C	244	GLN	2.4
1	C	496	MET	2.4
1	C	222	GLU	2.4
1	C	452	LYS	2.4
1	C	566	ALA	2.4
1	C	552	PRO	2.4
1	C	509	ALA	2.4
1	C	191	TYR	2.4
1	C	487	ILE	2.4
1	C	458	LEU	2.4
1	B	181	VAL	2.4
1	C	181	VAL	2.4
1	C	515	MET	2.4
1	C	178	ASP	2.4
1	C	528	LEU	2.3
1	B	180	VAL	2.3
1	C	41	ASP	2.3
1	C	161	ILE	2.3
1	B	194	PRO	2.3
1	A	216	VAL	2.3
1	C	292	GLY	2.3
1	B	166	PRO	2.3
1	B	196	SER	2.3
1	C	444	MET	2.3
1	C	575	GLU	2.3
1	C	126	LYS	2.3
1	A	194	PRO	2.3
1	C	73	GLN	2.3
1	C	137	VAL	2.2
1	C	177	ARG	2.2
1	C	102	ILE	2.2

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Mol	Chain	Res	Type	RSRZ
1	C	1	MET	2.2
1	B	163	VAL	2.2
1	C	462	GLU	2.2
1	C	135	ASN	2.2
1	A	532	PHE	2.2
1	C	295	PHE	2.2
1	C	215	ILE	2.2
1	C	467	ARG	2.2
1	A	549	ILE	2.1
1	C	127	TYR	2.1
1	C	212	TYR	2.1
1	C	455	ASP	2.1
1	C	268	GLY	2.1
1	C	483	GLY	2.1
1	C	107	GLU	2.1
1	B	0	HIS	2.1
1	C	77	LYS	2.1
1	C	265	GLN	2.1
1	C	188	GLY	2.1
1	C	75	SER	2.1
1	C	448	PHE	2.1
1	A	218	CYS	2.1
1	C	185	MET	2.1
1	C	530	PHE	2.1
1	B	227	ASP	2.1
1	C	282	TYR	2.1
1	B	215	ILE	2.1
1	C	371	GLU	2.1
1	B	200	PHE	2.1
1	C	518	PHE	2.1
1	C	3	ARG	2.0
1	C	306	ASP	2.0
1	C	248	MET	2.0
1	C	523	PRO	2.0
1	C	213	PHE	2.0
1	C	251	PHE	2.0
1	C	158	GLN	2.0
1	C	123	LEU	2.0
1	C	486	ARG	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
2	SO4	B	700	5/5	0.80	0.31	84,85,86,87	5
2	SO4	A	700	5/5	0.97	0.20	51,53,54,56	5

6.5 Other polymers (i)

There are no such residues in this entry.