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PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Sep 25, 2023 – 02:05 PM EDT

PDB ID	:	5W25
Title	:	Crystal structure of Aspartyl-tRNA synthetase from Mycobacterium tuberculosis complexed with L-Aspartic Acid
Authors	:	Seattle Structural Genomics Center for Infectious Disease (SSGCID)
Deposited on	:	2017-06-05
Resolution	:	2.65 Å(reported)

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 ⓘ

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

The reported resolution of this entry is 2.65 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.
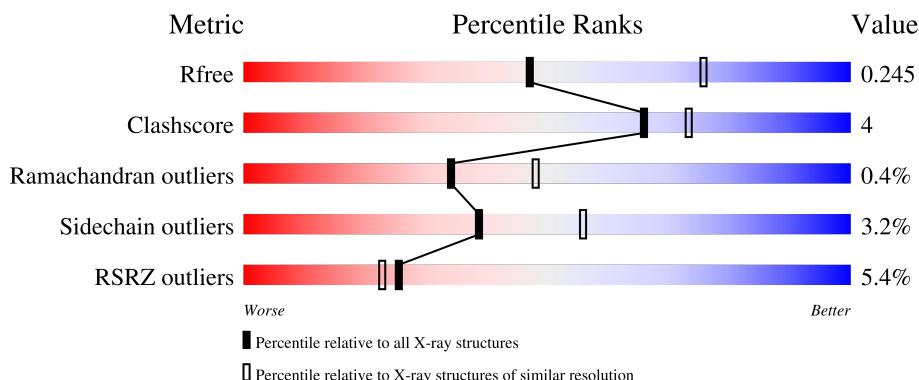
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1332 (2.68-2.64)
Clashscore	141614	1374 (2.68-2.64)
Ramachandran outliers	138981	1349 (2.68-2.64)
Sidechain outliers	138945	1349 (2.68-2.64)
RSRZ outliers	127900	1318 (2.68-2.64)

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	616	3% · 85% · 9% · 5%
1	B	616	7% · 81% · 10% · 8%
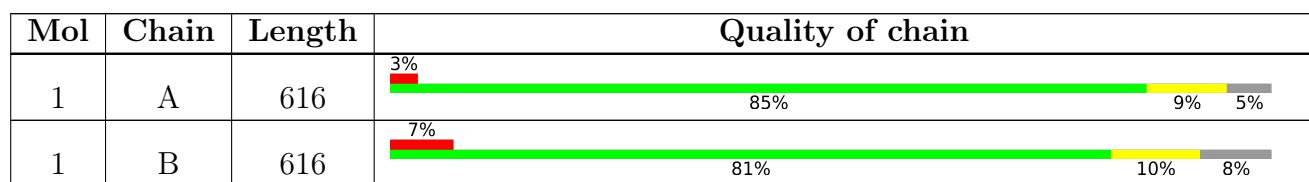
2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 8317 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(Asp/Asn) ligase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	583	Total	C	N	O	S	0	0	0
			4216	2668	759	774	15			
1	B	566	Total	C	N	O	S	0	0	0
			3991	2510	724	742	15			

There are 46 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-21	MET	-	initiating methionine	UNP P9WFW3
A	-20	GLY	-	expression tag	UNP P9WFW3
A	-19	SER	-	expression tag	UNP P9WFW3
A	-18	SER	-	expression tag	UNP P9WFW3
A	-17	HIS	-	expression tag	UNP P9WFW3
A	-16	HIS	-	expression tag	UNP P9WFW3
A	-15	HIS	-	expression tag	UNP P9WFW3
A	-14	HIS	-	expression tag	UNP P9WFW3
A	-13	HIS	-	expression tag	UNP P9WFW3
A	-12	HIS	-	expression tag	UNP P9WFW3
A	-11	SER	-	expression tag	UNP P9WFW3
A	-10	SER	-	expression tag	UNP P9WFW3
A	-9	GLY	-	expression tag	UNP P9WFW3
A	-8	LEU	-	expression tag	UNP P9WFW3
A	-7	VAL	-	expression tag	UNP P9WFW3
A	-6	PRO	-	expression tag	UNP P9WFW3
A	-5	ARG	-	expression tag	UNP P9WFW3
A	-4	GLY	-	expression tag	UNP P9WFW3
A	-3	SER	-	expression tag	UNP P9WFW3
A	-2	HIS	-	expression tag	UNP P9WFW3
A	-1	VAL	-	expression tag	UNP P9WFW3
A	0	PHE	-	expression tag	UNP P9WFW3
A	1	VAL	-	expression tag	UNP P9WFW3
B	-21	MET	-	initiating methionine	UNP P9WFW3
B	-20	GLY	-	expression tag	UNP P9WFW3

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-19	SER	-	expression tag	UNP P9WFW3
B	-18	SER	-	expression tag	UNP P9WFW3
B	-17	HIS	-	expression tag	UNP P9WFW3
B	-16	HIS	-	expression tag	UNP P9WFW3
B	-15	HIS	-	expression tag	UNP P9WFW3
B	-14	HIS	-	expression tag	UNP P9WFW3
B	-13	HIS	-	expression tag	UNP P9WFW3
B	-12	HIS	-	expression tag	UNP P9WFW3
B	-11	SER	-	expression tag	UNP P9WFW3
B	-10	SER	-	expression tag	UNP P9WFW3
B	-9	GLY	-	expression tag	UNP P9WFW3
B	-8	LEU	-	expression tag	UNP P9WFW3
B	-7	VAL	-	expression tag	UNP P9WFW3
B	-6	PRO	-	expression tag	UNP P9WFW3
B	-5	ARG	-	expression tag	UNP P9WFW3
B	-4	GLY	-	expression tag	UNP P9WFW3
B	-3	SER	-	expression tag	UNP P9WFW3
B	-2	HIS	-	expression tag	UNP P9WFW3
B	-1	VAL	-	expression tag	UNP P9WFW3
B	0	PHE	-	expression tag	UNP P9WFW3
B	1	VAL	-	expression tag	UNP P9WFW3

- Molecule 2 is ASPARTIC ACID (three-letter code: ASP) (formula: $C_4H_7NO_4$).
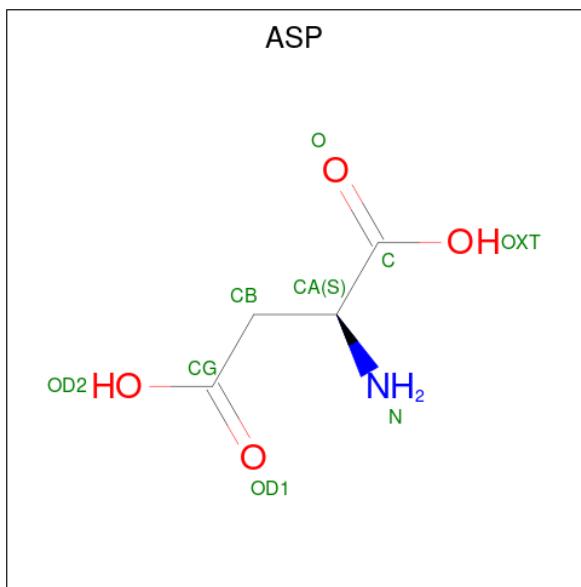

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			9	4	1	4		

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	B	1	Total 9	C 4	N 1	O 4	0	0

- Molecule 3 is LYSINE (three-letter code: LYS) (formula: $C_6H_{15}N_2O_2$).
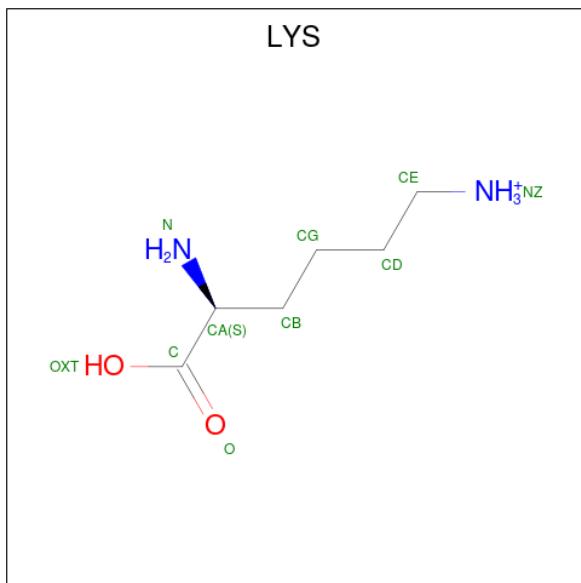
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total 10	C 6	N 2	O 2	0	0
3	A	1	Total 10	C 6	N 2	O 2	0	0
3	B	1	Total 10	C 6	N 2	O 2	0	0

- Molecule 4 is GLUTAMIC ACID (three-letter code: GLU) (formula: $C_5H_9NO_4$).

GLU

OE1

O

OH OE2

CD

O

O

CB

CG

CA(S)

C

HO

OXT

NH₂

N
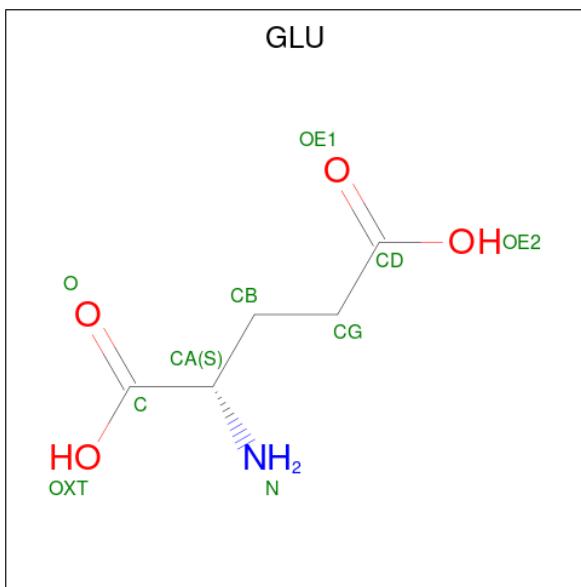
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total 10	C 5	N 1	O 4	0	0
4	B	1	Total 10	C 5	N 1	O 4	0	0

• Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	25	Total 25	O 25	0	0
5	B	17	Total 17	O 17	0	0

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3 Residue-property plots ⓘ

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(Asp/Asn) ligase
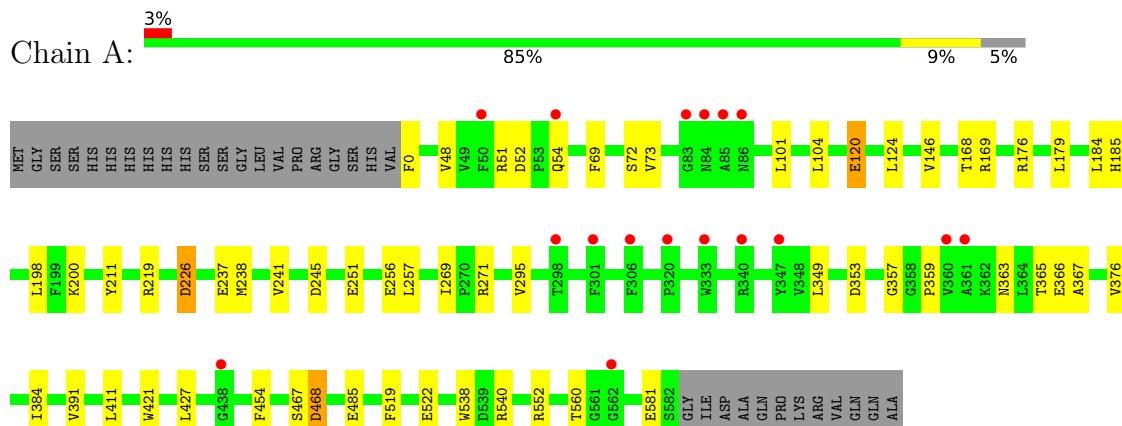
- Molecule 1: Aspartate--tRNA(Asp/Asn) ligase
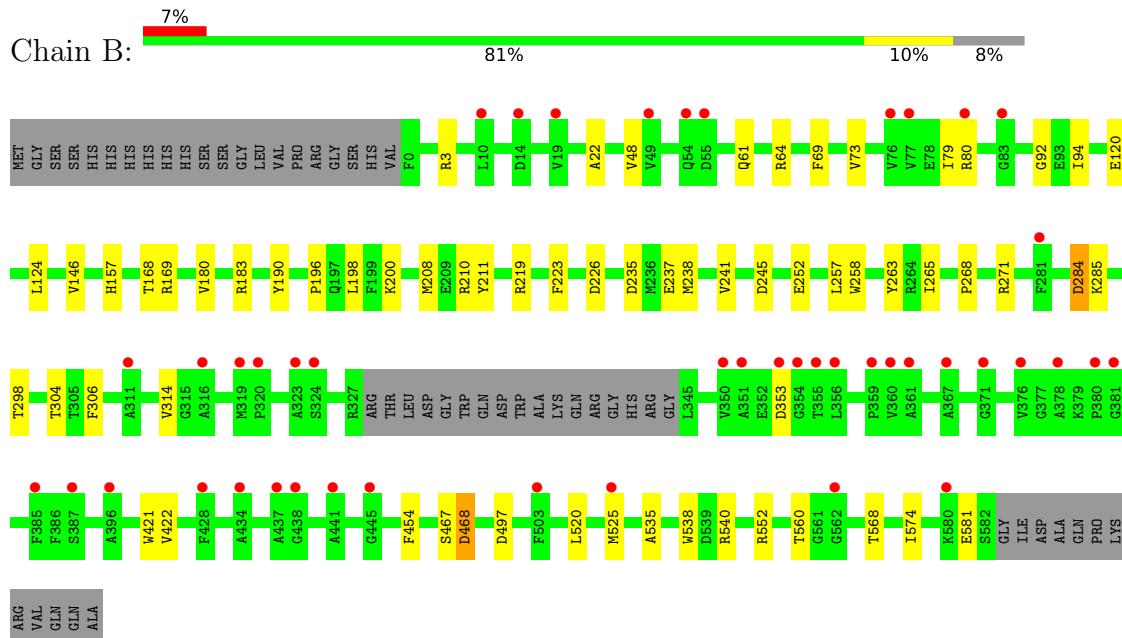
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	64.72Å 158.24Å 75.74Å 90.00° 93.77° 90.00°	Depositor
Resolution (Å)	43.25 – 2.65 43.25 – 2.65	Depositor EDS
% Data completeness (in resolution range)	99.6 (43.25-2.65) 99.8 (43.25-2.65)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.76 (at 2.65Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.225 , 0.245 0.225 , 0.245	Depositor DCC
R_{free} test set	1976 reflections (4.49%)	wwPDB-VP
Wilson B-factor (Å^2)	62.6	Xtriage
Anisotropy	0.663	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 71.4	EDS
L-test for twinning[2]	$< |L| > = 0.52$, $< L^2 > = 0.36$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	8317	wwPDB-VP
Average B, all atoms (Å^2)	102.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.82% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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 ⓘ

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	0.27	0/4319	0.55	0/5901
1	B	0.28	0/4082	0.55	0/5583
All	All	0.28	0/8401	0.55	0/11484

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2   Too-close contacts ⓘ

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	4216	0	3869	30	0
1	B	3991	0	3596	34	0
2	A	9	0	3	1	0
2	B	9	0	3	2	0
3	A	20	0	24	1	0
3	B	10	0	12	2	0
4	A	10	0	5	0	0
4	B	10	0	5	0	0
5	A	25	0	0	0	0
5	B	17	0	0	0	0
All	All	8317	0	7517	63	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 4.

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All (63) 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:200:LYS:HD2	1:B:237:GLU:HB2	1.69	0.72
1:B:183:ARG:HG3	1:B:581:GLU:HG2	1.76	0.67
1:A:468:ASP:OD1	1:A:468:ASP:N	2.27	0.67
1:B:284:ASP:OD1	1:B:284:ASP:N	2.27	0.66
1:A:48:VAL:HG11	1:A:73:VAL:HG11	1.82	0.62
1:B:61:GLN:OE1	1:B:64:ARG:NH2	2.33	0.62
1:B:468:ASP:N	1:B:468:ASP:OD1	2.32	0.61
1:B:304:THR:HG22	1:B:306:PHE:H	1.69	0.57
1:B:219:ARG:NH2	2:B:701:ASP:O	2.38	0.56
1:A:120:GLU:OE2	1:A:552:ARG:NH1	2.38	0.56
1:A:169:ARG:HB2	1:B:568:THR:HB	1.86	0.56
1:A:365:THR:O	1:A:367:ALA:N	2.38	0.56
1:A:176:ARG:HE	1:B:183:ARG:HH11	1.53	0.55
1:A:200:LYS:HD2	1:A:237:GLU:HB2	1.87	0.55
1:B:298:THR:HG22	1:B:314:VAL:H	1.72	0.54
1:B:535:ALA:HB3	2:B:701:ASP:HB2	1.89	0.54
1:A:219:ARG:NH2	2:A:701:ASP:O	2.41	0.54
1:B:146:VAL:HG13	1:B:257:LEU:HD22	1.90	0.54
1:B:120:GLU:OE2	1:B:552:ARG:NH2	2.42	0.53
1:A:271:ARG:HG2	1:A:421:TRP:HB2	1.89	0.53
1:A:124:LEU:HD12	1:A:560:THR:HG22	1.92	0.52
1:B:80:ARG:NH2	1:B:92:GLY:O	2.44	0.51
1:B:241:VAL:HB	1:B:245:ASP:HB2	1.94	0.50
1:A:359:PRO:O	1:A:363:ASN:ND2	2.45	0.49
1:B:271:ARG:HG2	1:B:421:TRP:HB2	1.94	0.49
1:A:146:VAL:HG13	1:A:257:LEU:HD22	1.95	0.48
1:A:72:SER:HB2	1:A:104:LEU:HD11	1.95	0.48
1:A:198:LEU:HD13	1:A:519:PHE:HZ	1.78	0.48
1:B:198:LEU:HD21	1:B:454:PHE:CZ	2.48	0.48
1:A:73:VAL:HG22	1:A:101:LEU:HD13	1.96	0.47
1:A:376:VAL:HG21	1:A:384:ILE:HG12	1.95	0.47
1:A:251:GLU:HG2	1:A:269:ILE:HD13	1.97	0.46
1:B:168:THR:OG1	1:B:169:ARG:N	2.41	0.46
1:B:196:PRO:HG2	1:B:235:ASP:OD2	2.14	0.46
1:B:157:HIS:NE2	1:B:252:GLU:OE2	2.49	0.46
1:A:349:LEU:N	1:A:357:GLY:O	2.49	0.46
1:B:258:TRP:HD1	1:B:263:TYR:HD2	1.62	0.45
1:A:295:VAL:HG11	1:A:376:VAL:HA	1.98	0.45
1:B:208:MET:O	1:B:210:ARG:N	2.45	0.45
1:A:226:ASP:HB3	1:A:540:ARG:HE	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:48:VAL:HG11	1:B:73:VAL:HG21	1.99	0.45
1:A:241:VAL:HB	1:A:245:ASP:HB2	1.98	0.45
1:A:168:THR:OG1	1:A:169:ARG:N	2.43	0.44
1:B:226:ASP:HB3	1:B:540:ARG:HH21	1.82	0.44
1:B:124:LEU:HD12	1:B:560:THR:HG22	1.99	0.44
1:B:3:ARG:HE	1:B:22:ALA:HB3	1.82	0.44
1:A:184:LEU:O	1:A:185:HIS:ND1	2.50	0.44
1:B:79:ILE:HD13	1:B:94:ILE:HG22	1.99	0.44
1:A:179:LEU:HD21	1:B:574:ILE:HG21	2.00	0.44
1:A:226:ASP:HB3	1:A:540:ARG:HB2	2.01	0.43
1:B:3:ARG:HD2	3:B:702:LYS:HB3	2.01	0.43
1:A:353:ASP:OD1	1:A:353:ASP:N	2.52	0.43
1:B:284:ASP:O	1:B:422:VAL:HG21	2.19	0.42
1:A:238:MET:HB2	1:A:241:VAL:HG21	2.02	0.42
1:B:238:MET:HB2	1:B:241:VAL:HG21	2.02	0.42
1:A:198:LEU:HD21	1:A:454:PHE:CZ	2.55	0.41
3:B:702:LYS:HB3	3:B:702:LYS:HE2	1.86	0.41
1:B:180:VAL:HB	1:B:190:TYR:HB2	2.00	0.41
1:B:497:ASP:OD1	1:B:497:ASP:N	2.53	0.41
1:A:52:ASP:O	1:A:54:GLN:N	2.54	0.40
3:A:702:LYS:HE3	3:A:702:LYS:HB3	1.85	0.40
1:A:581:GLU:OE1	1:A:581:GLU:N	2.54	0.40
1:B:198:LEU:HD22	1:B:520:LEU:HD22	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	581/616 (94%)	557 (96%)	22 (4%)	2 (0%)	41	56
1	B	562/616 (91%)	534 (95%)	25 (4%)	3 (0%)	29	43

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	1143/1232 (93%)	1091 (96%)	47 (4%)	5 (0%)	34 48

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	268	PRO
1	A	467	SER
1	B	223	PHE
1	A	366	GLU
1	B	467	SER

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	374/483 (77%)	360 (96%)	14 (4%)	34 50
1	B	342/483 (71%)	333 (97%)	9 (3%)	46 64
All	All	716/966 (74%)	693 (97%)	23 (3%)	39 56

All (23) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	0	PHE
1	A	51	ARG
1	A	69	PHE
1	A	120	GLU
1	A	211	TYR
1	A	226	ASP
1	A	256	GLU
1	A	391	VAL
1	A	411	LEU
1	A	427	LEU
1	A	468	ASP
1	A	485	GLU
1	A	522	GLU

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Mol	Chain	Res	Type
1	A	538	TRP
1	B	69	PHE
1	B	211	TYR
1	B	265	ILE
1	B	284	ASP
1	B	285	LYS
1	B	353	ASP
1	B	468	ASP
1	B	525	MET
1	B	538	TRP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	197	GLN
1	A	201	GLN
1	A	363	ASN
1	B	213	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

7 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	$\#|Z| > 2$
4	GLU	B	703	-	8,9,9	1.02	0	10,11,11	1.36	0
3	LYS	A	703	-	8,9,9	0.72	0	9,10,10	1.09	0
2	ASP	A	701	-	6,8,8	1.14	0	8,10,10	1.33	0
4	GLU	A	704	-	8,9,9	1.04	0	10,11,11	1.32	0
2	ASP	B	701	-	6,8,8	1.12	0	8,10,10	1.33	0
3	LYS	A	702	-	8,9,9	0.72	0	9,10,10	1.09	0
3	LYS	B	702	-	8,9,9	0.72	0	9,10,10	1.09	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	GLU	B	703	-	-	0/9/9/9	-
3	LYS	A	703	-	-	0/9/9/9	-
2	ASP	A	701	-	-	0/8/8/8	-
4	GLU	A	704	-	-	7/9/9/9	-
2	ASP	B	701	-	-	0/8/8/8	-
3	LYS	A	702	-	-	1/9/9/9	-
3	LYS	B	702	-	-	1/9/9/9	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (9) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	702	LYS	C-CA-CB-CG
4	A	704	GLU	N-CA-CB-CG
4	A	704	GLU	C-CA-CB-CG
4	A	704	GLU	O-C-CA-CB
4	A	704	GLU	CA-CB-CG-CD
4	A	704	GLU	OXT-C-CA-CB
4	A	704	GLU	OE2-CD-CG-CB
4	A	704	GLU	OE1-CD-CG-CB
3	A	702	LYS	OXT-C-CA-N

There are no ring outliers.

4 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	701	ASP	1	0
2	B	701	ASP	2	0
3	A	702	LYS	1	0
3	B	702	LYS	2	0

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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, 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(Å²)	Q<0.9
1	A	583/616 (94%)	0.14	17 (2%)	51	48	49, 95, 170, 220	0
1	B	566/616 (91%)	0.47	45 (7%)	12	9	50, 107, 188, 235	0
All	All	1149/1232 (93%)	0.30	62 (5%)	25	23	49, 100, 181, 235	0

All (62) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	354	GLY	5.7
1	B	360	VAL	5.1
1	B	438	GLY	4.5
1	B	311	ALA	4.1
1	B	562	GLY	4.0
1	B	367	ALA	4.0
1	B	434	ALA	3.6
1	B	378	ALA	3.6
1	B	54	GLN	3.6
1	B	319	MET	3.5
1	A	360	VAL	3.3
1	B	428	PHE	3.3
1	B	396	ALA	3.2
1	B	353	ASP	3.1
1	B	380	PRO	3.1
1	B	323	ALA	3.1
1	B	324	SER	3.1
1	A	562	GLY	3.1
1	B	376	VAL	3.1
1	A	361	ALA	2.9
1	B	371	GLY	2.9
1	B	385	PHE	2.8
1	B	10	LEU	2.8
1	B	359	PRO	2.8

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Mol	Chain	Res	Type	RSRZ
1	A	83	GLY	2.8
1	B	355	THR	2.8
1	B	76	VAL	2.7
1	B	281	PHE	2.7
1	B	356	LEU	2.7
1	A	85	ALA	2.7
1	A	347	TYR	2.6
1	B	503	PHE	2.6
1	B	83	GLY	2.6
1	A	320	PRO	2.6
1	B	316	ALA	2.6
1	A	340	ARG	2.5
1	B	580	LYS	2.5
1	A	50	PHE	2.5
1	B	437	ALA	2.5
1	B	351	ALA	2.5
1	B	77	VAL	2.4
1	B	361	ALA	2.4
1	A	86	ASN	2.4
1	B	55	ASP	2.3
1	B	49	VAL	2.3
1	B	80	ARG	2.3
1	B	387	SER	2.3
1	A	54	GLN	2.3
1	A	438	GLY	2.3
1	B	320	PRO	2.3
1	B	381	GLY	2.3
1	A	84	ASN	2.3
1	B	445	GLY	2.3
1	B	441	ALA	2.3
1	B	14	ASP	2.3
1	A	306	PHE	2.2
1	A	298	THR	2.1
1	B	19	VAL	2.1
1	A	333	TRP	2.1
1	B	525	MET	2.0
1	A	301	PHE	2.0
1	B	350	VAL	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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
4	GLU	A	704	10/10	0.65	0.22	120,132,143,148	0
3	LYS	B	702	10/10	0.78	0.23	122,123,126,126	0
3	LYS	A	703	10/10	0.78	0.35	130,143,150,152	0
4	GLU	B	703	10/10	0.79	0.23	155,161,165,166	0
3	LYS	A	702	10/10	0.85	0.28	122,130,150,151	0
2	ASP	B	701	9/9	0.90	0.18	80,82,90,91	0
2	ASP	A	701	9/9	0.92	0.20	56,61,72,76	0

6.5 Other polymers ⓘ

There are no such residues in this entry.

W O R L D W I D E
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PROTEIN DATA BANK