W O R L D W I D E
wwPDB
P R O T E I N   D A T A   B A N K

wwPDB X-ray Structure Validation Summary Report (i)

Jun 13, 2024 – 12:55 AM EDT

PDB ID	:	1H0M
Title	:	Three-dimensional structure of the quorum sensing protein TraR bound to its autoinducer and to its target DNA
Authors	:	Vannini, A.; Volpari, C.; Gargioli, C.; Muraglia, E.; Cortese, R.; De Francesco, R.; Neddermann, P.; Di Marco, S.
Deposited on	:	2002-06-25
Resolution	:	3.00 Å(reported)

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

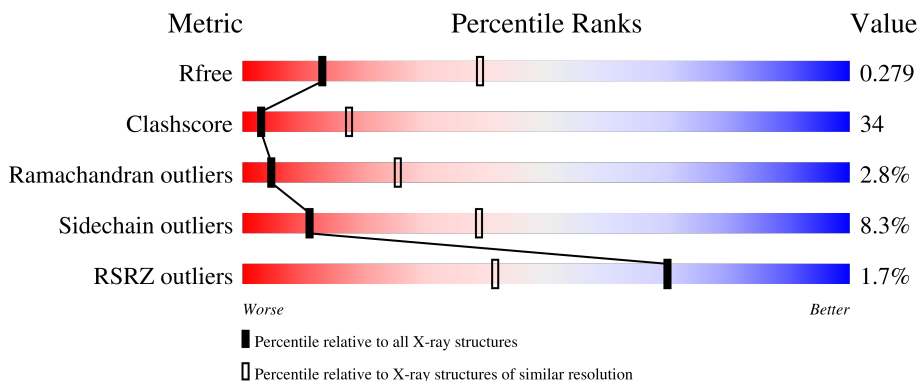|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36.2
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

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 3.00 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.
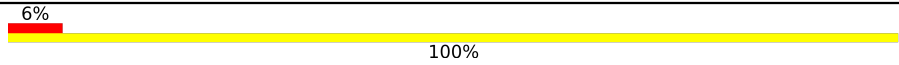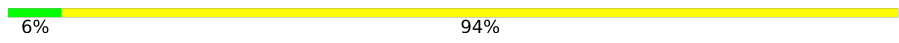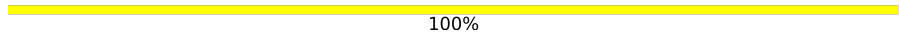
Metric	Percentile Ranks	Value
Rfree		0.279
Clashscore		34
Ramachandran outliers		2.8%
Sidechain outliers		8.3%
RSRZ outliers		1.7%

Worse   *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	2092 (3.00-3.00)
Clashscore	141614	2416 (3.00-3.00)
Ramachandran outliers	138981	2333 (3.00-3.00)
Sidechain outliers	138945	2336 (3.00-3.00)
RSRZ outliers	127900	1990 (3.00-3.00)

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	234	58% 32% 7% ··
1	B	234	46% 46% 6% ·
1	C	234	2% 57% 35% 5% ··
1	D	234	4% 43% 48% 6% ·
2	E	18	11% 89%

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Mol	Chain	Length	Quality of chain
2	F	18	6% ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 100%
2	G	18	▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 6% 94%
2	H	18	▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬ 100%

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
3	LAE	D	1235	-	-	X	-

2   Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 9013 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.
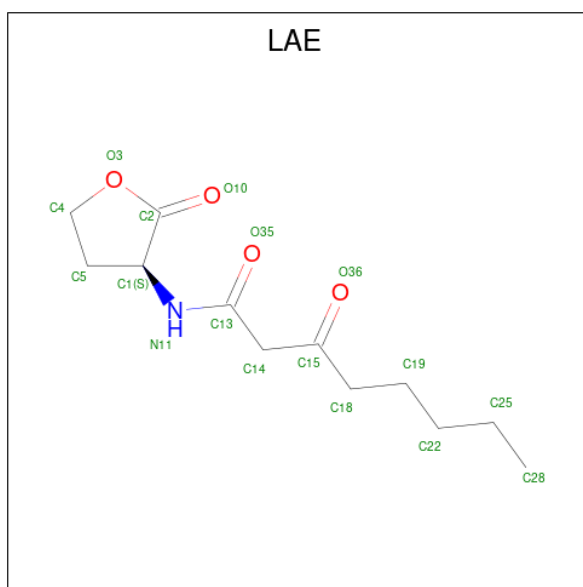
- Molecule 1 is a protein called Transcriptional activator protein TraR.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	230	Total	C	N	O	S	Se	0	0	0
			1859	1183	335	334	1	6			
1	B	230	Total	C	N	O	S	Se	0	0	0
			1851	1179	332	333	1	6			
1	C	228	Total	C	N	O	S	Se	0	0	0
			1844	1175	333	329	1	6			
1	D	229	Total	C	N	O	S	Se	0	0	0
			1843	1174	331	332	1	5			

- Molecule 2 is a DNA chain called 5'-D(*AP*TP*GP*TP*GP*CP*AP*GP*AP*TP *CP*TP*GP*CP*AP*CP*AP*T)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	E	18	Total	C	N	O	P	0	0	0
			366	176	67	106	17			
2	F	18	Total	C	N	O	P	0	0	0
			366	176	67	106	17			
2	G	18	Total	C	N	O	P	0	0	0
			366	176	67	106	17			
2	H	18	Total	C	N	O	P	0	0	0
			366	176	67	106	17			

- Molecule 3 is 3-OXO-OCTANOIC ACID (2-OXO-TETRAHYDRO-FURAN-3-YL)-AMIDE (three-letter code: LAE) (formula: $C_{12}H_{19}NO_4$).

LAE

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	N	O	0	0
			17	12	1	4		
3	B	1	Total	C	N	O	0	0
			17	12	1	4		
3	C	1	Total	C	N	O	0	0
			17	12	1	4		
3	D	1	Total	C	N	O	0	0
			17	12	1	4		

- Molecule 4 is water.

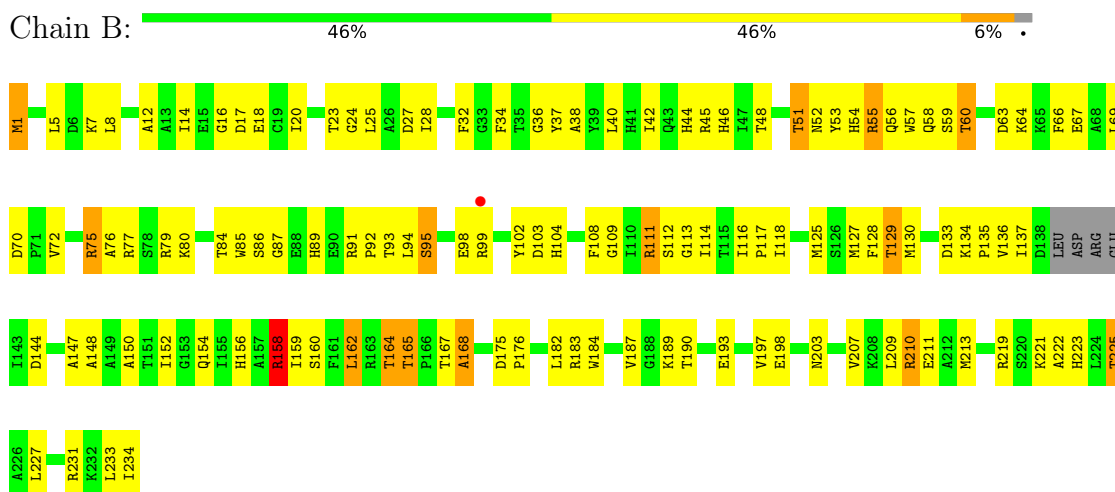| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	22	Total	O	0	0
			22	22		
4	B	30	Total	O	0	0
			30	30		
4	C	13	Total	O	0	0
			13	13		
4	D	9	Total	O	0	0
			9	9		
4	E	2	Total	O	0	0
			2	2		
4	G	3	Total	O	0	0
			3	3		
4	H	5	Total	O	0	0
			5	5		

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.
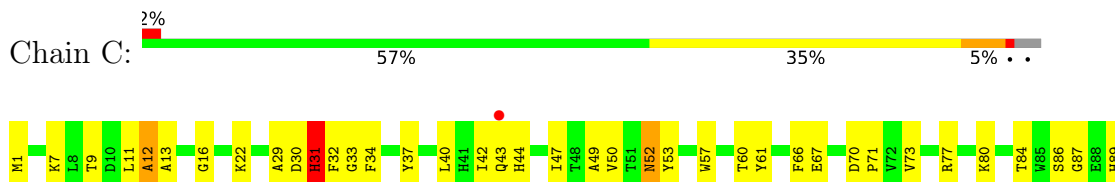
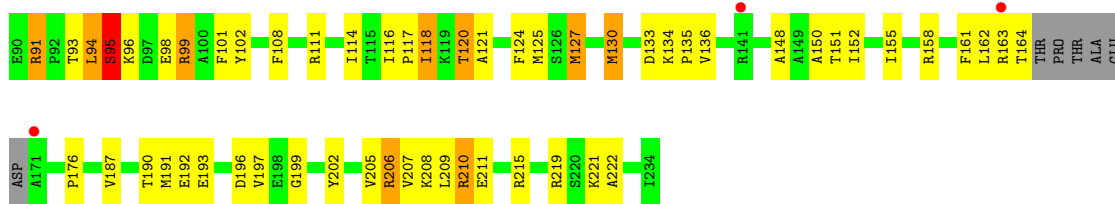• Molecule 1: Transcriptional activator protein TraR

Chain A:

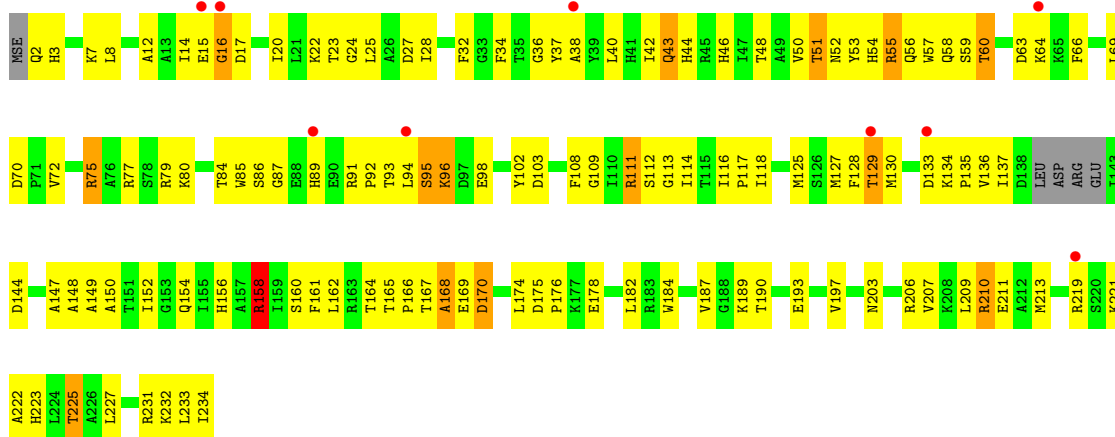• Molecule 1: Transcriptional activator protein TraR

Chain B:

• Molecule 1: Transcriptional activator protein TraR

Chain C:

E90 R91 P92 T93 L94 S95 K96 D97 E98 R99 A100 F101 Y102 F108 R111 I114 T115 I116 P117 I118 K119 T120 A121 F124 M125 S126 M127 M130 D133 K134 P135 V136 R141 A148 A149 A150 T151 I152 I155 R158 F161 L162 R163 T164 THR PRO THR ALA GLU

ASP A171 P176 V187 T190 M191 E192 E193 D196 V197 E198 G199 Y202 V205 R206 V207 K208 L209 E211 R215 R219 S220 K221 A222 I234
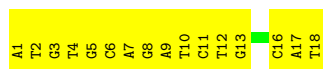
• Molecule 1: Transcriptional activator protein TraR

Chain D:

MSE Q2 H3 K7 L8 A12 A13 I14 E15 G16 D17 I20 L21 K22 T23 G24 L25 A26 D27 I28 F32 G33 F34 T35 G36 Y37 A38 Y39 L40 H41 I42 Q43 H44 R45 H46 I47 T48 A49 V50 T51 N52 Y53 H54 R55 Q56 W57 Q58 S59 T60 D63 K64 K65 F66 L69

D70 P71 V72 R75 A76 R77 S78 R79 K80 T84 W85 S86 G87 E88 H89 E90 R91 P92 T93 L94 S95 K96 D97 E98 Y102 D103 F108 G109 I110 R111 S112 G113 I114 T115 I116 P117 I118 M125 S126 M127 F128 T129 M130 D133 K134 P135 V136 I137 D138 LEU ASP GLU I143

D144 A147 A148 A149 A150 T151 I152 G153 Q154 I155 H156 A157 R158 I159 S160 F161 L162 R163 T164 T165 T167 A168 E169 D170 L174 D175 P176 K177 E178 L182 R183 W184 V187 K189 T190 E193 V197 N203 R206 V207 K208 L209 R210 E211 A212 M213 R219 S220 K221

A222 H223 L224 T225 A226 L227 R231 K232 L233 I234

• Molecule 2: 5'-D(*AP*TP*GP*TP*GP*CP*AP*GP*AP*TP *CP*TP*GP*CP*AP*CP*AP* T)-3'

Chain E:

A1 T2 G3 T4 G5 C6 A7 G8 A9 T10 C11 T12 G13 C16 A17 T18

• Molecule 2: 5'-D(*AP*TP*GP*TP*GP*CP*AP*GP*AP*TP *CP*TP*GP*CP*AP*CP*AP* T)-3'

Chain F:

A1 T2 G3 T4 G5 C6 A7 G8 A9 T10 C11 T12 G13 C14 A15 C16 A17 T18

• Molecule 2: 5'-D(*AP*TP*GP*TP*GP*CP*AP*GP*AP*TP *CP*TP*GP*CP*AP*CP*AP* T)-3'

Chain G:

A1 T2 G3 T4 G5 C6 A7 G8 A9 T10 C11 T12 G13 C14 A15 C16 A17 T18

• Molecule 2: 5'-D(*AP*TP*GP*TP*GP*CP*AP*GP*AP*TP *CP*TP*GP*CP*AP*CP*AP* T)-3'

Chain H:

100%

A1 T2 G3 T4 G5 C6 A7 G8 A9 T10 C11 T12 G13 C14 A15 C16 A17 T18

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	66.99Å 94.68Å 209.67Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	20.00 – 3.00 19.95 – 3.00	Depositor EDS
% Data completeness (in resolution range)	97.3 (20.00-3.00) 97.4 (19.95-3.00)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	5.73 (at 2.98Å)	Xtriage
Refinement program	CNX 2000.1	Depositor
R, R_{free}	0.233 , 0.285 0.232 , 0.279	Depositor DCC
R_{free} test set	1299 reflections (4.87%)	wwPDB-VP
Wilson B-factor (Å²)	67.1	Xtriage
Anisotropy	0.109	Xtriage
Bulk solvent k_{sol}(e/Å³), B_{sol}(Å²)	0.30 , 69.3	EDS
L-test for twinning[2]	$< |L| > = 0.48, < L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	9013	wwPDB-VP
Average B, all atoms (Å²)	74.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.73% 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 ⓘ

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

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	0.48	0/1896	0.92	6/2549 (0.2%)
1	B	0.50	0/1889	1.13	10/2542 (0.4%)
1	C	0.43	0/1881	0.87	5/2528 (0.2%)
1	D	0.42	0/1881	1.11	9/2532 (0.4%)
2	E	0.48	0/410	0.77	0/631
2	F	0.46	0/410	0.80	0/631
2	G	0.46	0/410	0.77	0/631
2	H	0.43	0/410	0.78	0/631
All	All	0.46	0/9187	0.97	30/12675 (0.2%)

There are no bond length outliers.

The worst 5 of 30 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	158	ARG	NE-CZ-NH2	-18.40	111.10	120.30
1	D	219	ARG	NE-CZ-NH1	18.11	129.35	120.30
1	D	219	ARG	NE-CZ-NH2	-17.91	111.35	120.30
1	B	219	ARG	NE-CZ-NH1	-17.19	111.71	120.30
1	C	91	ARG	NE-CZ-NH1	17.01	128.81	120.30

There are no chirality outliers.

There are no planarity outliers.

5.2   Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1859	0	1854	107	0
1	B	1851	0	1845	121	0
1	C	1844	0	1843	106	0
1	D	1843	0	1833	131	0
2	E	366	0	205	52	0
2	F	366	0	205	29	0
2	G	366	0	205	42	0
2	H	366	0	205	22	0
3	A	17	0	19	2	0
3	B	17	0	19	5	0
3	C	17	0	19	2	0
3	D	17	0	19	8	0
4	A	22	0	0	3	0
4	B	30	0	0	8	0
4	C	13	0	0	0	0
4	D	9	0	0	0	0
4	E	2	0	0	0	0
4	G	3	0	0	0	0
4	H	5	0	0	1	0
All	All	9013	0	8271	582	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 34.

The worst 5 of 582 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:D:162:LEU:HD13	1:D:162:LEU:O	1.35	1.22
2:G:9:DA:H2"	2:G:10:DT:C5'	1.72	1.20
1:B:77:ARG:HA	1:B:125:MSE:HE1	1.27	1.11
2:G:9:DA:H2"	2:G:10:DT:H5'	1.32	1.11
2:H:14:DC:H2"	2:H:15:DA:H5'	1.33	1.10

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	226/234 (97%)	197 (87%)	24 (11%)	5 (2%)	6	31
1	B	226/234 (97%)	199 (88%)	22 (10%)	5 (2%)	6	31
1	C	224/234 (96%)	198 (88%)	18 (8%)	8 (4%)	3	19
1	D	225/234 (96%)	190 (84%)	28 (12%)	7 (3%)	4	23
All	All	901/936 (96%)	784 (87%)	92 (10%)	25 (3%)	5	25

5 of 25 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	12	ALA
1	A	95	SER
1	B	95	SER
1	C	12	ALA
1	D	168	ALA

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	192/189 (102%)	174 (91%)	18 (9%)	8	32
1	B	191/189 (101%)	175 (92%)	16 (8%)	11	38
1	C	190/189 (100%)	175 (92%)	15 (8%)	12	41
1	D	190/189 (100%)	176 (93%)	14 (7%)	13	44
All	All	763/756 (101%)	700 (92%)	63 (8%)	11	39

5 of 63 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	158	ARG
1	D	96	LYS
1	C	52	ASN

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Mol	Chain	Res	Type
1	D	75	ARG
1	D	158	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 7 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	46	HIS
1	C	31	HIS
1	D	104	HIS
1	C	52	ASN
1	A	52	ASN

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 ⓘ

4 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	#$|Z| > 2$
3	LAE	B	1235	-	17,17,17	2.08	2 (11%)	16,21,21	2.32	3 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
3	LAE	A	1235	-	17,17,17	2.09	2 (11%)	16,21,21	2.07	3 (18%)
3	LAE	D	1235	-	17,17,17	2.20	2 (11%)	16,21,21	2.18	3 (18%)
3	LAE	C	1235	-	17,17,17	2.14	2 (11%)	16,21,21	1.97	3 (18%)

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
3	LAE	B	1235	-	-	5/13/23/23	0/1/1/1
3	LAE	A	1235	-	-	6/13/23/23	0/1/1/1
3	LAE	D	1235	-	-	8/13/23/23	0/1/1/1
3	LAE	C	1235	-	-	7/13/23/23	0/1/1/1

The worst 5 of 8 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	1235	LAE	O3-C2	8.26	1.53	1.35
3	C	1235	LAE	O3-C2	8.04	1.52	1.35
3	A	1235	LAE	O3-C2	7.72	1.52	1.35
3	B	1235	LAE	O3-C2	7.64	1.52	1.35
3	B	1235	LAE	O3-C4	3.16	1.54	1.46

The worst 5 of 12 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	1235	LAE	O3-C2-O10	6.28	127.93	121.42
3	D	1235	LAE	O3-C2-O10	6.23	127.88	121.42
3	A	1235	LAE	O3-C2-O10	6.04	127.69	121.42
3	C	1235	LAE	O3-C2-O10	5.34	126.95	121.42
3	B	1235	LAE	C4-O3-C2	-5.31	105.48	110.39

There are no chirality outliers.

5 of 26 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1235	LAE	C14-C13-N11-C1
3	A	1235	LAE	O35-C13-N11-C1
3	B	1235	LAE	C14-C13-N11-C1

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Mol	Chain	Res	Type	Atoms
3	B	1235	LAE	O35-C13-N11-C1
3	C	1235	LAE	C14-C13-N11-C1

There are no ring outliers.

4 monomers are involved in 17 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	1235	LAE	5	0
3	A	1235	LAE	2	0
3	D	1235	LAE	8	0
3	C	1235	LAE	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	224/234 (95%)	-0.44	1 (0%)	92	79	17, 49, 101, 150	0
1	B	224/234 (95%)	-0.42	1 (0%)	92	79	20, 51, 108, 145	0
1	C	222/234 (94%)	-0.22	4 (1%)	68	40	36, 68, 126, 159	0
1	D	224/234 (95%)	0.20	9 (4%)	38	15	33, 88, 145, 178	0
2	E	18/18 (100%)	0.24	0	100	100	50, 91, 141, 149	0
2	F	18/18 (100%)	0.28	1 (5%)	24	8	59, 84, 134, 165	0
2	G	18/18 (100%)	0.36	0	100	100	60, 99, 123, 130	0
2	H	18/18 (100%)	0.22	0	100	100	63, 93, 151, 153	0
All	All	966/1008 (95%)	-0.18	16 (1%)	70	41	17, 66, 130, 178	0

The worst 5 of 16 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	15	GLU	6.1
1	D	38	ALA	4.9
1	A	170	ASP	4.6
1	C	171	ALA	4.4
1	D	133	ASP	4.1

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
3	LAE	D	1235	17/17	0.83	0.47	106,106,106,106	0
3	LAE	A	1235	17/17	0.90	0.29	44,44,44,44	0
3	LAE	C	1235	17/17	0.92	0.36	65,65,65,65	0
3	LAE	B	1235	17/17	0.97	0.25	45,45,45,45	0

6.5 Other polymers ⓘ

There are no such residues in this entry.