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 ⓘ

Aug 21, 2023 – 09:54 PM EDT

PDB ID	:	2P5G
Title	:	Crystal structure of RB69 gp43 in complex with DNA with dAMP opposite an abasic site analog in a 21mer template
Authors	:	Zahn, K.E.; Belrhali, H.; Wallace, S.S.; Doublie, S.
Deposited on	:	2007-03-15
Resolution	:	2.80 Å(reported)

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

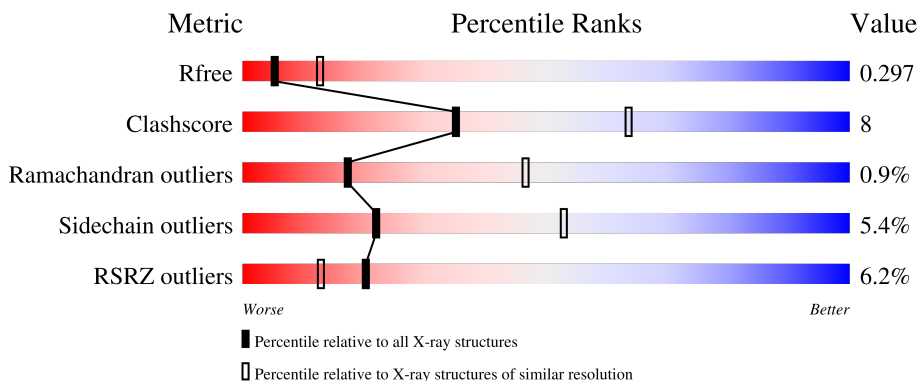|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

1   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 2.80 Å.

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

Metric	Percentile Ranks	Value
Rfree		0.297
Clashscore		8
Ramachandran outliers		0.9%
Sidechain outliers		5.4%
RSRZ outliers		6.2%

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	3140 (2.80-2.80)
Clashscore	141614	3569 (2.80-2.80)
Ramachandran outliers	138981	3498 (2.80-2.80)
Sidechain outliers	138945	3500 (2.80-2.80)
RSRZ outliers	127900	3078 (2.80-2.80)

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

Mol	Chain	Length	Quality of chain
1	E	21	48% 19% 5% 29%
1	G	21	10% 33% 14% 5% 48%
1	I	21	10% 48% 24% 24% 5%
1	K	21	24% 19% 10% 48%
2	F	15	7% 47% 40% 13%

WORLDWIDE
PDB
PROTEIN DATA BANK

Continued from previous page...

Mol	Chain	Length	Quality of chain
2	H	15	33% 33% 60% 7%
2	J	15	67% 33%
2	L	15	47% 33% 7% 13%
3	A	903	3% 79% 18%
3	B	903	3% 62% 19% 16%
3	C	903	3% 74% 22%
3	D	903	13% 81% 15%

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 29179 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 DNA chain called Template DNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	E	15	Total 303	C 145	N 56	O 88	P 14	0	0	0
1	G	11	Total 223	C 106	N 44	O 63	P 10	0	0	0
1	I	20	Total 395	C 188	N 72	O 116	P 19	0	0	0
1	K	11	Total 226	C 106	N 44	O 65	P 11	0	0	0

- Molecule 2 is a DNA chain called Primer DNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	F	15	Total 308	C 147	N 60	O 87	P 14	0	0	0
2	H	15	Total 308	C 147	N 60	O 87	P 14	0	0	0
2	J	15	Total 308	C 147	N 60	O 87	P 14	0	0	0
2	L	13	Total 265	C 127	N 50	O 76	P 12	0	0	0

- Molecule 3 is a protein called DNA polymerase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
3	A	890	Total 7143	C 4588	N 1193	O 1331	S 8	Se 23	0	0	0
3	B	756	Total 6036	C 3877	N 998	O 1134	S 6	Se 21	0	0	0
3	C	885	Total 7113	C 4560	N 1180	O 1341	S 8	Se 24	0	0	0
3	D	875	Total 6148	C 3867	N 1039	O 1216	S 7	Se 19	0	0	0

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	222	ALA	ASP	engineered mutation	UNP Q38087
A	327	ALA	ASP	engineered mutation	UNP Q38087
B	222	ALA	ASP	engineered mutation	UNP Q38087
B	327	ALA	ASP	engineered mutation	UNP Q38087
C	222	ALA	ASP	engineered mutation	UNP Q38087
C	327	ALA	ASP	engineered mutation	UNP Q38087
D	222	ALA	ASP	engineered mutation	UNP Q38087
D	327	ALA	ASP	engineered mutation	UNP Q38087

- Molecule 4 is water.

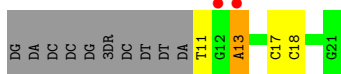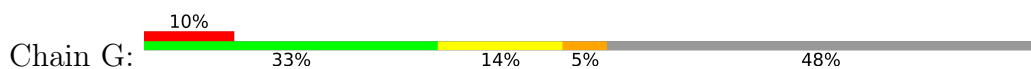| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	E	4	Total 4	O 4	0	0
4	F	7	Total 7	O 7	0	0
4	G	9	Total 9	O 9	0	0
4	H	9	Total 9	O 9	0	0
4	I	10	Total 10	O 10	0	0
4	J	10	Total 10	O 10	0	0
4	K	1	Total 1	O 1	0	0
4	L	2	Total 2	O 2	0	0
4	A	125	Total 125	O 125	0	0
4	B	86	Total 86	O 86	0	0
4	C	116	Total 116	O 116	0	0
4	D	24	Total 24	O 24	0	0

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.
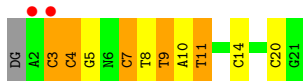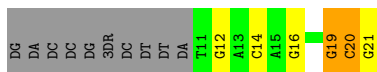
• Molecule 1: Template DNA

Chain E:

• Molecule 1: Template DNA

Chain G:

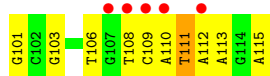• Molecule 1: Template DNA

Chain I:

• Molecule 1: Template DNA

Chain K:

• Molecule 2: Primer DNA

Chain F:

• Molecule 2: Primer DNA

Chain H:

33%

33%   60%   7%

G101 C102 G103 T106 G107 T108 C109 A110 T111 A112 A113 G114 A115

• Molecule 2: Primer DNA

Chain J:

67%   33%

G101 C105 T111 A112 A113 G114 A115

• Molecule 2: Primer DNA

Chain L:

47%   33%   7%   13%

G101 T106 G107 T108 C109 A110 T111 A112 A113 DG DA

• Molecule 3: DNA polymerase

Chain A:

3%

79%   18%

M1 L6 I15 N23 G24 R25 E26 C41 P42 Y53 Q70 R74 A82 L83 G84 M85 D86 D87 L90 N98 N112 F113 E116 P120 S127 Q128 P132 A135 Y139 R145 F146 Y147 S154 P155 Y156 I164 Q171 E172

D176 K185 M199 L202 Q206 Q207 K208 I212 L213 T214 G215 W216 N228 K231 F234 G235 E236 R241 H245 V250 K251 V252 I253 I262 L271 D272 Y273 Q285 P286 S289 L290 I293 S294 L298 N299 V300 G301 K302 P308 K311

E314 S315 R319 Y320 R330 V331 L332 I341 M347 Q356 S357 V358 I362 D366 Q376 N377 K378 V379 I380 P381 Q382 Y391 F395 R403 Y404 K405 Y406 V407 M408 L412 T413 S414 L415 Y416 P417 Q422 V423 N424 E428 T429 D441 A447 E448 R449

P450 S451 D452 D466 R467 V471 P472 R482 K486 M489 A492 Q493 R494 N495 G496 E497 I498 I499 K500 E501 A502 L503 H504 ASN PRO ASN LEU SER VAL ASP GLU PRO LEU ASP VAL ASP Y518 R519 F520 D521 E528 K529 I530 S534 A535 K536 S537 L542 F543 M553

T554 A555 Q556 I557 N558 R559 N572 V573 W574 F575 R576 A583 Q591 M592 A593 K600 V601 T622 A629 I632 F641 H646 D649 K653 F654 A655 R656 M659 D664 R668 E669 Q678 H679 L680 M681 F682 M683 G690 Y708 D714 M715 E716

R719 I727 M728 G729 L730 K746 E747 R751 N786 N787 I788 A789 K790 V793 P799 P802 I805 L809 T810 Y811 N812 R813 A814 I815 K816 G817 N818 I819 V830 A847 T855 E881 S885 L897 F898 D899 M900 F901 D902 F903

• Molecule 3: DNA polymerase

Chain B:

3%

62%   19%   16%

M1 K2 E3 I11 E17 D21 S22 R25 R29 P35 F38 S44 Q45 A46 T47 K48 R59 M65 W71 M75 M85 D86 D87 N98 N112 F113 E116 V117 T118 S119 P120 F123 P124 Q128 A129 K130 H131 P132 I133 D134 A135 I136

• Molecule 3: DNA polymerase

T732 Q733 K734 M752 L760 R772 S784 K800 H804 R813 A814 I815 A821 P822 V825 Y831 A847 V862 L863 M866 V870 L871 L872 E873 K874 T875 F876 P879 L889 D890 Y891 F898 ASP MSE PHE ASP PHE

• Molecule 3: DNA polymerase

13%

Chain D:　　　81%　　　15%

MSE K2 V8 E9 E17 S22 N23 R29 E30 V31 E32 Y33 E43 S44 Q45 A46 T47 I52 C57 L61 M65 Q70 M85 F88 K89 L90 L93 I101 K102 Y103 D104 H105 T106 F113 S119 P120 E125 P126 S127 P132 T137

H138 Y139 D140 D143 Y147 V148 F149 S154 P155 N158 E161 W162 S163 I164 E165 A168 LYS GLN GLU GLN G174 G175 V178 P179 Y188 D192 N217 E236 S237 T238 A239 H245 V250 E254 Y257 G258 S259 R260 E261 I262 I263 T264 L265 F266

G267 I268 F282 P286 L290 L303 D306 G307 R313 E314 S315 N316 S322 Y323 N324 I325 I326 R330 V331 I334 R338 K352 Q356 S357 V358 I362 W365 D366 I369 L373 G383 H386 P387 V388 V389 P390 Y391 P392 G393 A394 F395

P399 Y406 V407 M408 S409 F410 D411 L412 L415 I419 I420 I425 A431 F434 K435 V436 A437 P438 L439 Y442 I443 V446 P450 S451 S455 C456 S457 P458 V470 E474 V478 F479 R482 M489 L490 A491 A492 Q493 R494 A502 LEU HIS ASN PRO

ASN LEU SER VAL ASP GLU P513 L514 D515 V516 D517 D521 PHE SER D524 K529 A535 A545 Q546 R547 T548 E549 V550 A551 G552 M553 Q556 N572 F575 R576 Y577 Y578 D579 N582 F589 G590 Q591 M592 V608 C609 E612 Y619 G620 D621 T622 D623 S624

V627 S628 A629 I632 I633 D634 K635 S639 W647 L651 F654 A655 M659 E660 P661 M670 C671 E672 Y673 M674 N675 Q678 M683 S695 I698 G699 G700 F701 W702 K705 K706 R707 L710 K724 L725 E731 K734 K739 A740 V741 Q742 L745

C748 I749 R750 R751 M752 L753 Y763 F764 E768 Y776 I777 S778 N787 I788 A789 K790 Y791 D792 V793 G794 G795 F796 P797 I805 I808 L809 T810 Y811 N812 R813 A814 I815 LYS GLY ASN ILE ASP ALA P822 G827 E828 K829 V830 L833 F841 K844 C845 I846 A847

W848 P849 E853 I854 T855 D861 H864 W865 V870 E873 K874 I877 E892 L897 F898 D899 MSE PHE ASP PHE

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	131.63Å 122.27Å 163.87Å 90.00° 96.45° 90.00°	Depositor
Resolution (Å)	30.00 – 2.80 49.61 – 2.80	Depositor EDS
% Data completeness (in resolution range)	88.4 (30.00-2.80) 96.1 (49.61-2.80)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.40 (at 2.81Å)	Xtriage
Refinement program	REFMAC 5.3.0011	Depositor
R, R_{free}	0.234 , 0.295 0.242 , 0.297	Depositor DCC
R_{free} test set	24078 reflections (9.64%)	wwPDB-VP
Wilson B-factor (Å^2)	62.2	Xtriage
Anisotropy	0.176	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 54.1	EDS
L-test for twinning[2]	$< |L| > = 0.49, < L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	29179	wwPDB-VP
Average B, all atoms (Å^2)	77.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.60% 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: 3DR

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	E	0.71	0/339	1.37	2/521 (0.4%)
1	G	0.77	0/250	1.53	3/384 (0.8%)
1	I	0.75	1/429 (0.2%)	1.43	8/657 (1.2%)
1	K	0.70	0/253	1.46	5/388 (1.3%)
2	F	0.71	0/346	1.58	7/533 (1.3%)
2	H	0.71	0/346	1.39	3/533 (0.6%)
2	J	0.75	0/346	1.45	4/533 (0.8%)
2	L	0.69	0/297	1.25	1/457 (0.2%)
3	A	0.40	0/7294	0.54	0/9830
3	B	0.37	0/6163	0.52	0/8319
3	C	0.39	0/7262	0.52	0/9788
3	D	0.33	0/6255	0.47	0/8520
All	All	0.42	1/29580 (0.0%)	0.67	33/40463 (0.1%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	I	11	DT	C3'-O3'	-5.08	1.37	1.44

The worst 5 of 33 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	F	105	DC	O4'-C1'-N1	12.32	116.62	108.00
2	J	114	DG	O4'-C1'-N9	11.08	115.76	108.00
2	H	111	DT	O4'-C1'-N1	10.57	115.40	108.00
1	K	20	DC	O4'-C1'-N1	9.93	114.95	108.00
1	G	13	DA	O4'-C1'-N9	9.26	114.48	108.00

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	E	303	0	170	2	0
1	G	223	0	124	2	0
1	I	395	0	222	5	0
1	K	226	0	123	4	0
2	F	308	0	170	2	0
2	H	308	0	170	9	0
2	J	308	0	170	4	0
2	L	265	0	148	5	0
3	A	7143	0	6923	111	0
3	B	6036	0	5779	116	0
3	C	7113	0	6872	122	0
3	D	6148	0	5083	74	0
4	A	125	0	0	2	0
4	B	86	0	0	5	0
4	C	116	0	0	3	0
4	D	24	0	0	1	0
4	E	4	0	0	0	0
4	F	7	0	0	1	0
4	G	9	0	0	0	0
4	H	9	0	0	1	0
4	I	10	0	0	1	0
4	J	10	0	0	0	0
4	K	1	0	0	0	0
4	L	2	0	0	0	0
All	All	29179	0	25954	445	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 8.

The worst 5 of 445 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)
3:B:728:MSE:HG2	4:B:983:HOH:O	1.47	1.11
3:A:85:MSE:CE	3:A:87:ASP:HB3	1.82	1.08
3:A:85:MSE:HE3	3:A:87:ASP:HB3	1.10	1.04

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:85:MSE:HE3	3:A:87:ASP:CB	1.95	0.95
3:A:422:GLN:HG3	3:A:678:GLN:O	1.66	0.94

There are no symmetry-related clashes.

5.3   Torsion angles (i)

5.3.1   Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	A	886/903 (98%)	828 (94%)	51 (6%)	7 (1%)	19	49
3	B	750/903 (83%)	683 (91%)	61 (8%)	6 (1%)	19	49
3	C	879/903 (97%)	816 (93%)	58 (7%)	5 (1%)	25	56
3	D	865/903 (96%)	750 (87%)	101 (12%)	14 (2%)	9	31
All	All	3380/3612 (94%)	3077 (91%)	271 (8%)	32 (1%)	17	46

5 of 32 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	C	622	THR
3	D	622	THR
3	D	796	PHE
3	A	521	ASP
3	A	622	THR

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	
3	A	752/775 (97%)	723 (96%)	29 (4%)	32	66
3	B	632/775 (82%)	590 (93%)	42 (7%)	16	44
3	C	752/775 (97%)	710 (94%)	42 (6%)	21	51
3	D	518/775 (67%)	489 (94%)	29 (6%)	21	51
All	All	2654/3100 (86%)	2512 (95%)	142 (5%)	22	53

5 of 142 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	D	85	MSE
3	D	245	HIS
3	D	633	ILE
3	B	285	GLN
3	B	273	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 36 such sidechains are listed below:

Mol	Chain	Res	Type
3	C	864	HIS
3	D	761	GLN
3	D	128	GLN
3	D	733	GLN
3	B	285	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is 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	$\#\lvert Z \rvert > 2$	Counts	RMSZ	$\#\lvert Z \rvert > 2$
1	3DR	I	6	1	8,11,12	0.49	0	9,14,17	0.80	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
1	3DR	I	6	1	-	2/3/15/16	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	I	6	3DR	C3'-C4'-C5'-O5'
1	I	6	3DR	O4'-C4'-C5'-O5'

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

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	E	15/21 (71%)	-0.06	0	100	100	50, 71, 97, 100	0
1	G	11/21 (52%)	1.30	2 (18%)	1	1	68, 102, 119, 120	0
1	I	19/21 (90%)	0.14	2 (10%)	6	3	42, 52, 136, 139	0
1	K	11/21 (52%)	0.33	0	100	100	49, 104, 111, 112	0
2	F	15/15 (100%)	0.20	1 (6%)	17	10	64, 85, 111, 114	0
2	H	15/15 (100%)	1.51	5 (33%)	0	0	88, 116, 121, 124	0
2	J	15/15 (100%)	-0.24	0	100	100	39, 65, 82, 90	0
2	L	13/15 (86%)	0.83	0	100	100	115, 119, 124, 124	0
3	A	865/903 (95%)	0.21	23 (2%)	54	44	39, 54, 100, 124	0
3	B	734/903 (81%)	0.36	27 (3%)	41	31	42, 66, 109, 115	0
3	C	861/903 (95%)	0.31	31 (3%)	42	32	35, 62, 99, 126	0
3	D	852/903 (94%)	0.76	120 (14%)	2	1	98, 118, 133, 141	0
All	All	3426/3756 (91%)	0.41	211 (6%)	20	13	35, 69, 127, 141	0

The worst 5 of 211 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	D	259	SER	7.6
3	C	535	ALA	7.4
3	B	257	TYR	6.7
3	D	491	ALA	6.6
3	D	514	LEU	6.2

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

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
1	3DR	I	6	11/12	0.92	0.18	94,99,110,110	0

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.