



wwPDB X-ray Structure Validation Summary Report ⓘ

Feb 1, 2016 – 02:41 PM GMT

PDB ID : 4A51
Title : Crystal structure of human kinesin Eg5 in complex with 1-(3-(((2-Aminoethyl)thio)diphenylmethyl)phenyl)ethanone hydrochloride
Authors : Kaan, H.Y.K.; Kozielski, F.
Deposited on : 2011-10-24
Resolution : 2.75 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20026688
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk26865

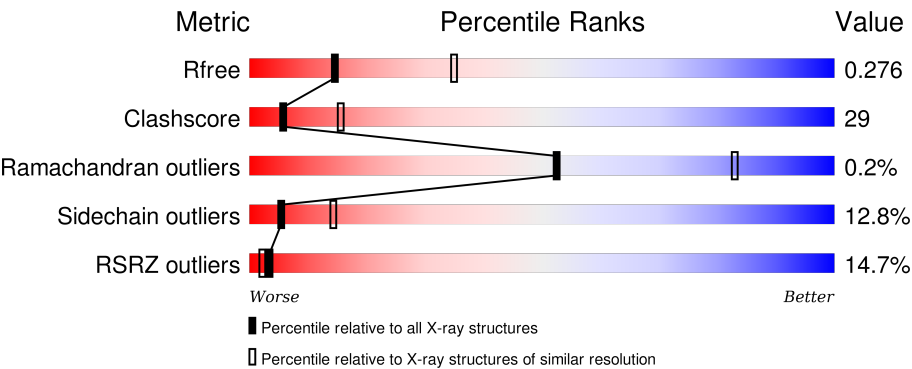
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.75 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.



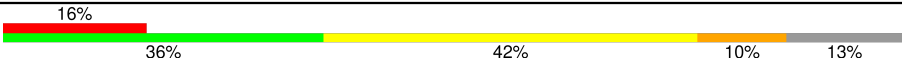
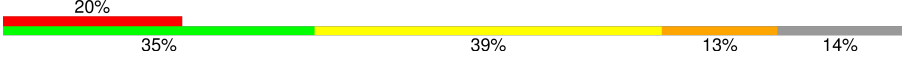
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R _{free}	91344	3340 (2.80-2.72)
Clashscore	102246	3829 (2.80-2.72)
Ramachandran outliers	100387	3767 (2.80-2.72)
Sidechain outliers	100360	3770 (2.80-2.72)
RSRZ outliers	91569	3352 (2.80-2.72)

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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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 $\leq 5\%$. 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	368	<div><div>11%</div><div>50%33%13%</div></div>
1	B	368	<div><div>12%</div><div>59%24%5%12%</div></div>
1	C	368	<div><div>8%</div><div>55%28%5%12%</div></div>
1	D	368	<div><div>7%</div><div>57%29%13%</div></div>
1	E	368	<div><div>15%</div><div>46%36%5%13%</div></div>

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Mol	Chain	Length	Quality of chain
1	F	368	
1	G	368	

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
4	DQ8	E	801	-	-	X	-

2 Entry composition [i](#)

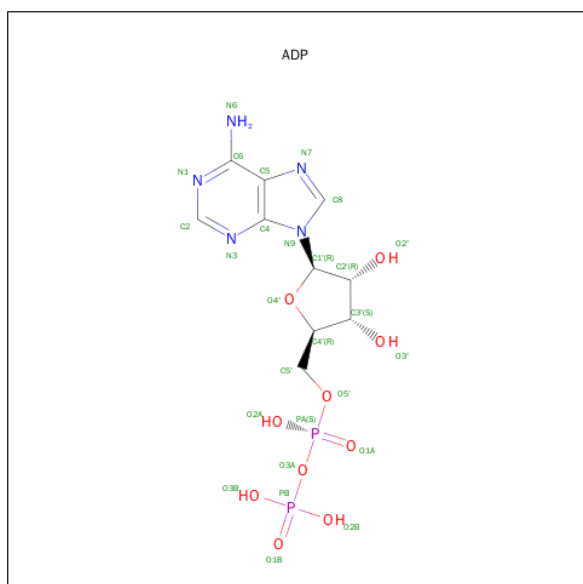
There are 7 unique types of molecules in this entry. The entry contains 18210 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 KINESIN-LIKE PROTEIN KIF11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	322	Total	C	N	O	S	0	1	0
			2522	1586	438	488	10			
1	B	324	Total	C	N	O	S	0	1	0
			2552	1602	446	494	10			
1	C	325	Total	C	N	O	S	0	1	0
			2551	1599	445	497	10			
1	D	322	Total	C	N	O	S	0	1	0
			2526	1585	438	493	10			
1	E	321	Total	C	N	O	S	0	0	0
			2504	1573	435	486	10			
1	F	319	Total	C	N	O	S	0	1	0
			2487	1559	433	486	9			
1	G	318	Total	C	N	O	S	0	0	0
			2446	1537	428	472	9			

- Molecule 2 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).

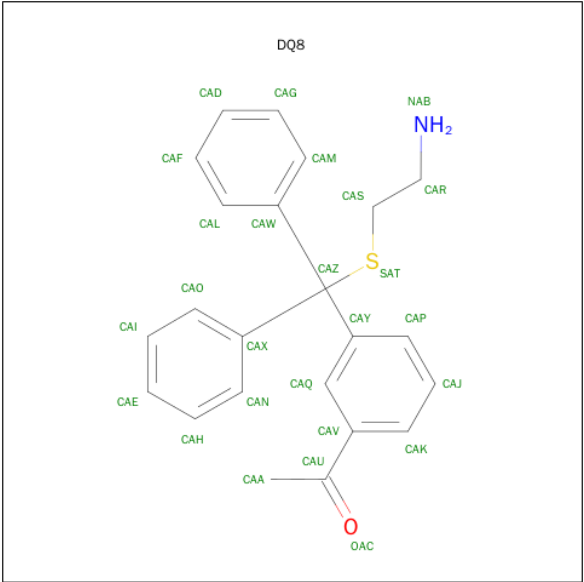


Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	B	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	C	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	D	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	E	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	F	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
2	G	1	Total	C	N	O	P	0	0
			27	10	5	10	2		

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	G	1	Total	Mg	0	0
			1	1		
3	D	1	Total	Mg	0	0
			1	1		
3	E	1	Total	Mg	0	0
			1	1		
3	B	1	Total	Mg	0	0
			1	1		
3	C	1	Total	Mg	0	0
			1	1		
3	A	1	Total	Mg	0	0
			1	1		
3	F	1	Total	Mg	0	0
			1	1		

- Molecule 4 is 1-(3-{|(2-AMINOETHYL)SULFANYL|(DIPHENYL)METHYL}PHENYL)ETHANONE (three-letter code: DQ8) (formula: C₂₃H₂₃NOS).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	A	1	Total	C	N	O	S	0	0
			26	23	1	1	1		
4	B	1	Total	C	N	O	S	0	0
			26	23	1	1	1		
4	C	1	Total	C	N	O	S	0	0
			26	23	1	1	1		
4	D	1	Total	C	N	O	S	0	0
			26	23	1	1	1		
4	E	1	Total	C	N	O	S	0	0
			26	23	1	1	1		
4	F	1	Total	C	N	O	S	0	0
			26	23	1	1	1		
4	G	1	Total	C	N	O	S	0	0
			26	23	1	1	1		

- Molecule 5 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	G	1	Total	Cl	0	0
			1	1		
5	D	2	Total	Cl	0	0
			2	2		
5	E	1	Total	Cl	0	0
			1	1		
5	B	2	Total	Cl	0	0
			2	2		
5	C	3	Total	Cl	0	0
			3	3		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	4	Total	Cl	0	0
			4	4		
5	F	1	Total	Cl	0	0
			1	1		

- Molecule 6 is SULFATE ION (three-letter code: SO4) (formula: O₄S).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	D	1	Total	O	S	0	0
			5	4	1		

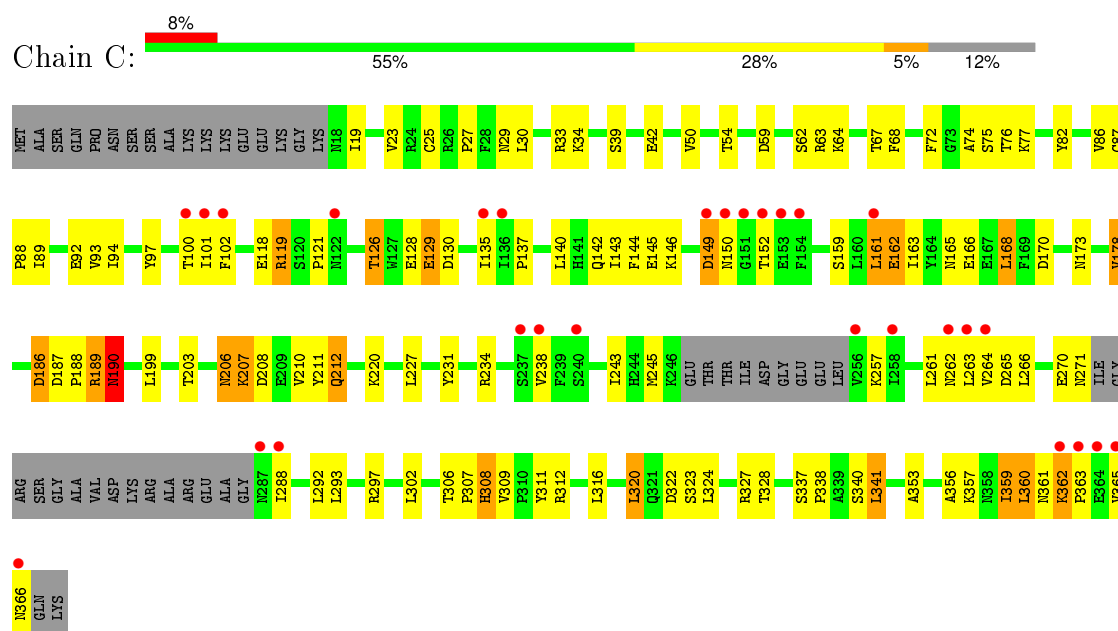
- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	32	Total	O	0	0
			32	32		
7	B	34	Total	O	0	0
			34	34		
7	C	47	Total	O	0	0
			47	47		
7	D	46	Total	O	0	0
			46	46		
7	E	22	Total	O	0	0
			22	22		
7	F	25	Total	O	0	0
			25	25		

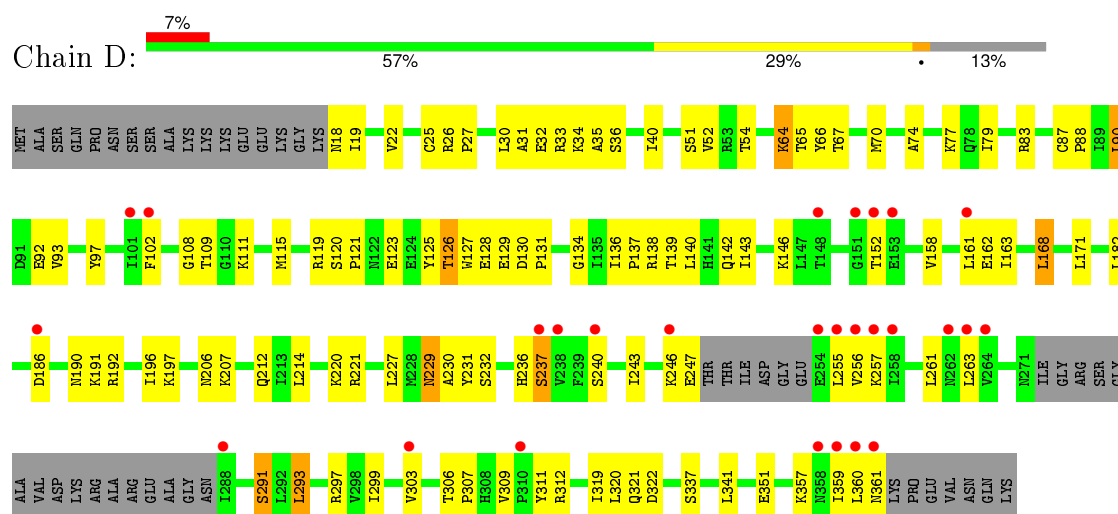
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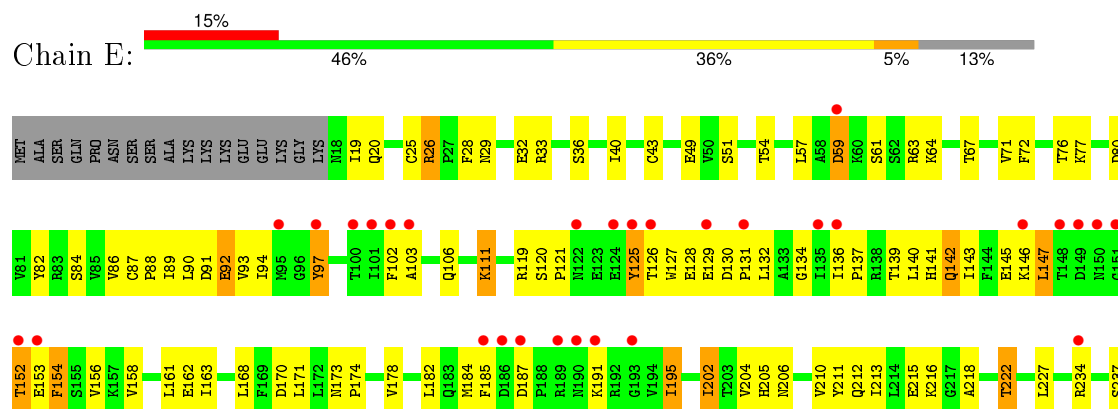
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	G	19	Total	O	0	0
			19	19		

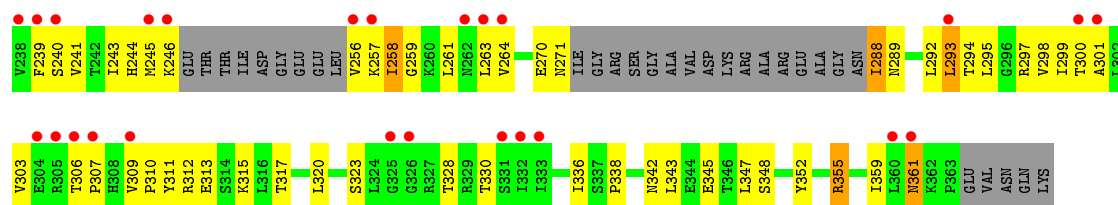


• Molecule 1: KINESIN-LIKE PROTEIN KIF11

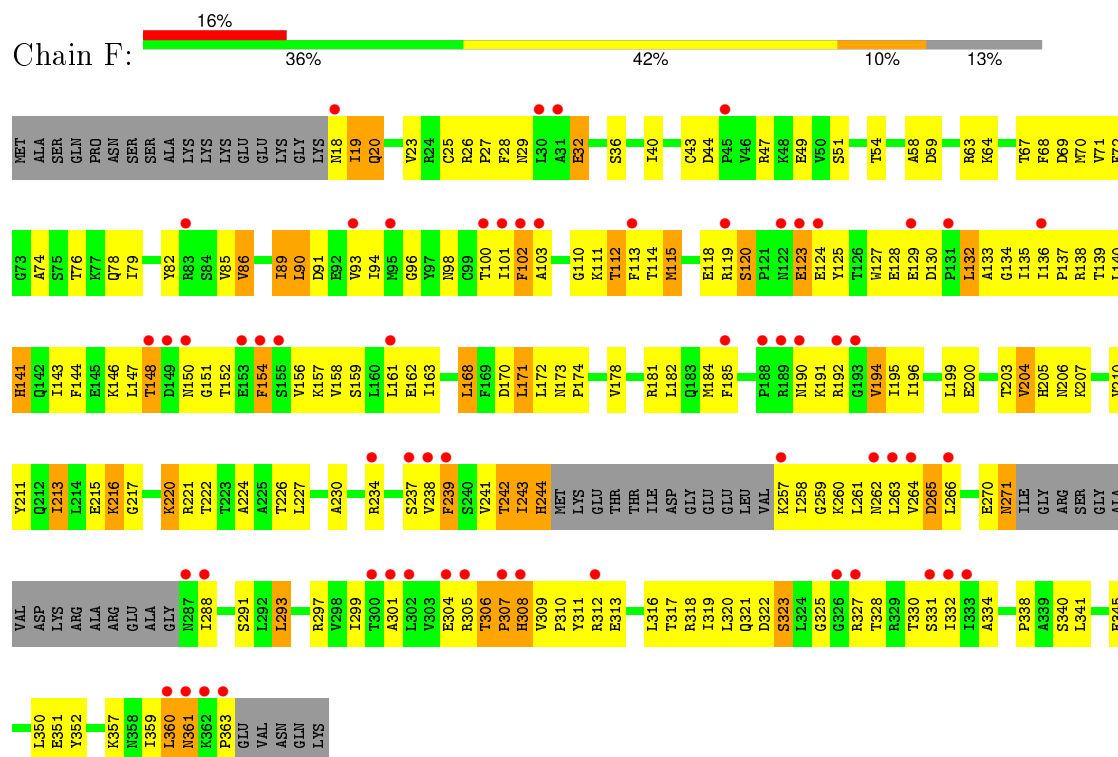


• Molecule 1: KINESIN-LIKE PROTEIN KIF11

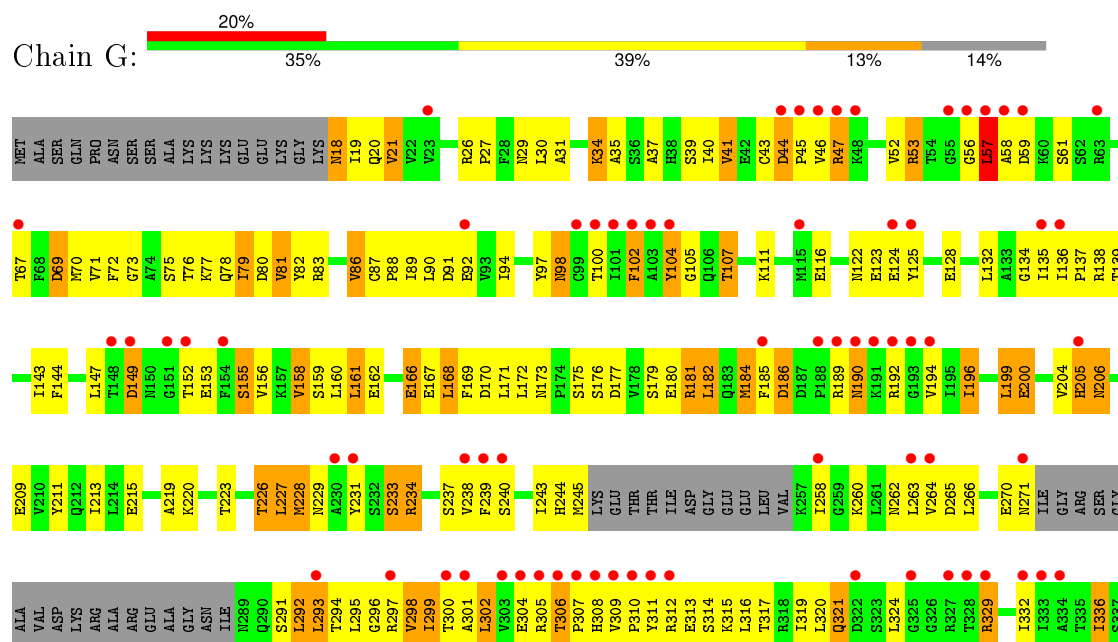




• Molecule 1: KINESIN-LIKE PROTEIN KIF11



• Molecule 1: KINESIN-LIKE PROTEIN KIF11





4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	145.84Å 156.40Å 170.16Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.99 – 2.75 29.99 – 2.75	Depositor EDS
% Data completeness (in resolution range)	97.4 (29.99-2.75) 97.4 (29.99-2.75)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.54 (at 2.76Å)	Xtriage
Refinement program	PHENIX (PHENIX.REFINE)	Depositor
R, R_{free}	0.221 , 0.280 0.223 , 0.276	Depositor DCC
R_{free} test set	4939 reflections (5.26%)	DCC
Wilson B-factor (Å ²)	59.1	Xtriage
Anisotropy	0.453	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 62.5	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Outliers	0 of 98873 reflections	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	18210	wwPDB-VP
Average B, all atoms (Å ²)	64.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 10.91% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 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: MG, DQ8, SO4, ADP, CL

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	0.68	0/2563	0.83	0/3467
1	B	0.65	0/2593	0.80	1/3505 (0.0%)
1	C	0.66	0/2589	0.83	1/3503 (0.0%)
1	D	0.67	0/2566	0.80	1/3471 (0.0%)
1	E	0.53	0/2542	0.71	0/3440
1	F	0.54	0/2527	0.78	0/3421
1	G	0.52	0/2483	0.75	2/3364 (0.1%)
All	All	0.61	0/17863	0.79	5/24171 (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	B	0	1
1	C	0	1
1	F	0	1
All	All	0	3

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	190	ASN	N-CA-C	-6.89	92.40	111.00
1	G	57	LEU	CA-CB-CG	6.63	130.54	115.30
1	D	263	LEU	CA-CB-CG	-5.99	101.53	115.30
1	B	241	VAL	CB-CA-C	-5.68	100.60	111.40
1	G	57	LEU	N-CA-C	5.36	125.47	111.00

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	304	GLU	Peptide
1	C	189	ARG	Peptide
1	F	304	GLU	Peptide

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	2522	0	2550	138	0
1	B	2552	0	2584	78	0
1	C	2551	0	2563	117	0
1	D	2526	0	2539	88	0
1	E	2504	0	2520	139	0
1	F	2487	0	2494	222	0
1	G	2446	0	2442	232	0
2	A	27	0	12	0	0
2	B	27	0	12	0	0
2	C	27	0	12	4	0
2	D	27	0	12	5	0
2	E	27	0	12	5	0
2	F	27	0	12	3	0
2	G	27	0	12	2	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
3	E	1	0	0	0	0
3	F	1	0	0	0	0
3	G	1	0	0	0	0
4	A	26	0	23	7	0
4	B	26	0	23	8	0
4	C	26	0	23	2	0
4	D	26	0	23	4	0
4	E	26	0	23	9	0
4	F	26	0	23	7	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	G	26	0	23	7	0
5	A	4	0	0	0	0
5	B	2	0	0	0	0
5	C	3	0	0	0	0
5	D	2	0	0	1	0
5	E	1	0	0	0	0
5	F	1	0	0	0	0
5	G	1	0	0	0	0
6	D	5	0	0	0	0
7	A	32	0	0	2	0
7	B	34	0	0	0	0
7	C	47	0	0	2	0
7	D	46	0	0	2	0
7	E	22	0	0	1	0
7	F	25	0	0	1	0
7	G	19	0	0	0	0
All	All	18210	0	17937	1040	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 29.

The worst 5 of 1040 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:E:82:TYR:CE2	1:E:86:VAL:HG21	1.82	1.12
1:F:89:ILE:HD12	1:F:101:ILE:HD11	1.23	1.12
1:A:141:HIS:O	1:A:207:LYS:NZ	1.83	1.11
1:F:136:ILE:HD13	1:F:263:LEU:HD12	1.29	1.09
1:F:171:LEU:HD12	1:F:220:LYS:HB3	1.34	1.09

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	
1	A	317/368 (86%)	300 (95%)	17 (5%)	0	100	100
1	B	319/368 (87%)	308 (97%)	11 (3%)	0	100	100
1	C	320/368 (87%)	302 (94%)	17 (5%)	1 (0%)	46	77
1	D	317/368 (86%)	303 (96%)	14 (4%)	0	100	100
1	E	315/368 (86%)	300 (95%)	15 (5%)	0	100	100
1	F	314/368 (85%)	286 (91%)	27 (9%)	1 (0%)	46	77
1	G	312/368 (85%)	277 (89%)	33 (11%)	2 (1%)	30	62
All	All	2214/2576 (86%)	2076 (94%)	134 (6%)	4 (0%)	52	83

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	G	206	ASN
1	G	97	TYR
1	C	190	ASN
1	F	307	PRO

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	284/322 (88%)	256 (90%)	28 (10%)	10	25
1	B	288/322 (89%)	260 (90%)	28 (10%)	10	26
1	C	287/322 (89%)	255 (89%)	32 (11%)	8	20
1	D	284/322 (88%)	262 (92%)	22 (8%)	16	38
1	E	281/322 (87%)	248 (88%)	33 (12%)	7	18
1	F	279/322 (87%)	233 (84%)	46 (16%)	3	7
1	G	269/322 (84%)	206 (77%)	63 (23%)	1	2
All	All	1972/2254 (88%)	1720 (87%)	252 (13%)	5	14

5 of 252 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	33	ARG
1	E	355	ARG
1	G	227	LEU
1	E	92	GLU
1	E	185	PHE

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

Mol	Chain	Res	Type
1	D	20	GLN
1	G	18	ASN
1	G	262	ASN
1	G	354	HIS
1	G	358	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 carbohydrates in this entry.

5.6 Ligand geometry ⓘ

Of 36 ligands modelled in this entry, 21 are monoatomic - leaving 15 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
2	ADP	A	601	3	22,29,29	0.99	1 (4%)	27,45,45	1.96	6 (22%)
4	DQ8	A	801	-	28,28,28	1.08	2 (7%)	36,38,38	1.02	1 (2%)
2	ADP	B	601	3	22,29,29	0.98	1 (4%)	27,45,45	2.00	6 (22%)
4	DQ8	B	801	-	28,28,28	0.83	1 (3%)	36,38,38	0.97	2 (5%)
2	ADP	C	601	3	22,29,29	1.13	2 (9%)	27,45,45	2.09	7 (25%)
4	DQ8	C	801	-	28,28,28	0.93	2 (7%)	36,38,38	1.24	6 (16%)
6	SO4	D	1362	-	4,4,4	0.13	0	6,6,6	0.25	0
2	ADP	D	601	3	22,29,29	1.12	2 (9%)	27,45,45	2.14	6 (22%)
4	DQ8	D	801	-	28,28,28	1.19	2 (7%)	36,38,38	1.24	4 (11%)
2	ADP	E	601	3	22,29,29	1.08	1 (4%)	27,45,45	2.19	8 (29%)
4	DQ8	E	801	-	28,28,28	0.88	1 (3%)	36,38,38	1.03	4 (11%)
2	ADP	F	601	3	22,29,29	1.14	1 (4%)	27,45,45	1.82	5 (18%)
4	DQ8	F	801	-	28,28,28	0.97	1 (3%)	36,38,38	1.02	2 (5%)
2	ADP	G	601	3	22,29,29	1.20	2 (9%)	27,45,45	2.07	8 (29%)
4	DQ8	G	801	-	28,28,28	1.05	3 (10%)	36,38,38	1.20	4 (11%)

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
2	ADP	A	601	3	-	0/12/32/32	0/3/3/3
4	DQ8	A	801	-	-	0/27/27/27	0/3/3/3
2	ADP	B	601	3	-	0/12/32/32	0/3/3/3
4	DQ8	B	801	-	-	0/27/27/27	0/3/3/3
2	ADP	C	601	3	-	0/12/32/32	0/3/3/3
4	DQ8	C	801	-	-	0/27/27/27	0/3/3/3
6	SO4	D	1362	-	-	0/0/0/0	0/0/0/0
2	ADP	D	601	3	-	0/12/32/32	0/3/3/3
4	DQ8	D	801	-	-	0/27/27/27	0/3/3/3
2	ADP	E	601	3	-	0/12/32/32	0/3/3/3
4	DQ8	E	801	-	-	0/27/27/27	0/3/3/3
2	ADP	F	601	3	-	0/12/32/32	0/3/3/3
4	DQ8	F	801	-	-	0/27/27/27	0/3/3/3
2	ADP	G	601	3	-	0/12/32/32	0/3/3/3
4	DQ8	G	801	-	-	0/27/27/27	0/3/3/3

The worst 5 of 22 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	D	801	DQ8	CAZ-SAT	-3.22	1.83	1.87
4	C	801	DQ8	CAZ-SAT	-2.49	1.84	1.87
4	A	801	DQ8	CAZ-SAT	-2.40	1.84	1.87
4	G	801	DQ8	CAZ-SAT	-2.30	1.84	1.87
4	G	801	DQ8	CAZ-CAW	-2.02	1.50	1.54

The worst 5 of 69 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	601	ADP	N3-C2-N1	-7.78	122.94	128.89
2	C	601	ADP	N3-C2-N1	-6.94	123.58	128.89
2	D	601	ADP	C2'-C1'-N9	-6.56	104.26	114.29
2	G	601	ADP	N3-C2-N1	-6.37	124.02	128.89
2	B	601	ADP	N3-C2-N1	-6.10	124.22	128.89

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

12 monomers are involved in 63 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	801	DQ8	7	0
4	B	801	DQ8	8	0
2	C	601	ADP	4	0
4	C	801	DQ8	2	0
2	D	601	ADP	5	0
4	D	801	DQ8	4	0
2	E	601	ADP	5	0
4	E	801	DQ8	9	0
2	F	601	ADP	3	0
4	F	801	DQ8	7	0
2	G	601	ADP	2	0
4	G	801	DQ8	7	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 [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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(Å ²)	Q<0.9
1	A	322/368 (87%)	0.56	40 (12%) 5 3	33, 54, 90, 112	0
1	B	324/368 (88%)	0.60	45 (13%) 4 2	34, 53, 92, 104	0
1	C	325/368 (88%)	0.31	28 (8%) 13 8	28, 50, 86, 113	0
1	D	322/368 (87%)	0.42	27 (8%) 14 9	28, 50, 92, 114	0
1	E	321/368 (87%)	0.76	55 (17%) 2 1	42, 67, 99, 119	0
1	F	319/368 (86%)	0.83	60 (18%) 2 1	41, 71, 106, 117	0
1	G	318/368 (86%)	1.15	75 (23%) 1 1	46, 81, 122, 140	0
All	All	2251/2576 (87%)	0.66	330 (14%) 3 2	28, 61, 105, 140	0

The worst 5 of 330 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	G	309	VAL	8.8
1	G	308	HIS	8.6
1	G	58	ALA	7.6
1	E	149	ASP	7.1
1	G	307	PRO	7.0

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 carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(Å ²)	Q<0.9
4	DQ8	B	801	26/26	0.93	0.22	0.52	44,53,67,82	0
4	DQ8	C	801	26/26	0.92	0.22	0.42	39,49,61,83	0
4	DQ8	D	801	26/26	0.93	0.21	0.39	38,47,60,79	0
4	DQ8	A	801	26/26	0.90	0.23	0.34	43,54,63,85	0
4	DQ8	F	801	26/26	0.86	0.26	0.18	60,75,84,110	0
4	DQ8	G	801	26/26	0.93	0.22	0.10	49,57,68,85	0
2	ADP	C	601	27/27	0.98	0.16	-0.06	28,38,42,48	0
4	DQ8	E	801	26/26	0.88	0.22	-0.20	57,67,77,98	0
2	ADP	B	601	27/27	0.98	0.16	-0.46	35,42,48,58	0
2	ADP	E	601	27/27	0.97	0.16	-0.77	45,54,61,71	0
2	ADP	F	601	27/27	0.97	0.16	-0.89	45,55,70,77	0
2	ADP	D	601	27/27	0.98	0.14	-1.10	28,40,45,51	0
6	SO4	D	1362	5/5	0.97	0.12	-1.28	54,54,63,68	0
2	ADP	G	601	27/27	0.97	0.14	-1.31	46,54,59,64	0
2	ADP	A	601	27/27	0.98	0.13	-1.40	34,41,47,50	0
3	MG	D	701	1/1	0.97	0.18	-	35,35,35,35	0
5	CL	F	1364	1/1	0.95	0.14	-	89,89,89,89	0
5	CL	G	1364	1/1	0.43	0.34	-	106,106,106,106	0
5	CL	C	1369	1/1	0.92	0.11	-	97,97,97,97	0
5	CL	A	1365	1/1	0.89	0.08	-	95,95,95,95	0
5	CL	C	1367	1/1	0.97	0.29	-	62,62,62,62	0
5	CL	A	1367	1/1	0.95	0.18	-	73,73,73,73	0
3	MG	B	701	1/1	0.95	0.18	-	37,37,37,37	0
3	MG	C	701	1/1	0.93	0.23	-	40,40,40,40	0
5	CL	B	1364	1/1	0.96	0.32	-	80,80,80,80	0
3	MG	G	701	1/1	0.96	0.28	-	45,45,45,45	0
3	MG	E	701	1/1	0.97	0.20	-	50,50,50,50	0
3	MG	A	701	1/1	0.99	0.16	-	35,35,35,35	0
5	CL	E	1364	1/1	0.85	0.21	-	90,90,90,90	0
5	CL	D	1363	1/1	0.97	0.10	-	79,79,79,79	0
3	MG	F	701	1/1	0.94	0.15	-	50,50,50,50	0
5	CL	D	1364	1/1	0.83	0.12	-	77,77,77,77	0
5	CL	A	1366	1/1	0.71	0.15	-	89,89,89,89	0
5	CL	C	1368	1/1	0.97	0.10	-	56,56,56,56	0
5	CL	B	1365	1/1	0.83	0.09	-	78,78,78,78	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(\AA^2)	Q<0.9
5	CL	A	1364	1/1	0.89	0.08	-	75,75,75,75	0

6.5 Other polymers [i](#)

There are no such residues in this entry.