



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 11:07 PM UTC

PDB ID : 6VPQ / pdb_00006vpq
Title : Crystal structure of the C-terminal domain of DENR
Authors : Lomakin, I.B.; Steitz, T.A.
Deposited on : 2020-02-04
Resolution : 1.74 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 ⓘ 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 ⓘ](#)) were used in the production of this report:

MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

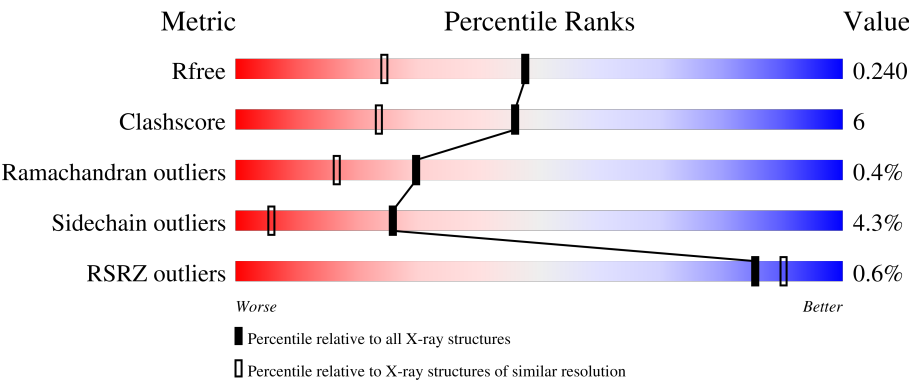
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.74 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}	180053	1187 (1.74-1.74)
Clashscore	190562	1207 (1.74-1.74)
Ramachandran outliers	187476	1200 (1.74-1.74)
Sidechain outliers	187428	1200 (1.74-1.74)
RSRZ outliers	180081	1188 (1.74-1.74)

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 $\leq 5\%$. 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	198	38%5%56%
1	B	198	% 35%8%56%
1	C	198	36%8%56%
1	D	198	% 39%56%
1	E	198	39%56%

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Mol	Chain	Length	Quality of chain
1	F	198	% 36%7%56%

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 4920 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 Density-regulated protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	87	Total	C	N	O	S	4	5	0
			712	456	113	141	2			
1	B	87	Total	C	N	O	S	0	6	0
			721	465	113	141	2			
1	C	87	Total	C	N	O	S	0	6	0
			712	454	111	144	3			
1	D	87	Total	C	N	O	S	0	3	0
			704	447	115	140	2			
1	E	87	Total	C	N	O	S	0	7	0
			724	466	112	144	2			
1	F	87	Total	C	N	O	S	0	5	0
			712	457	114	139	2			

- Molecule 2 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	4	Total	Mg	0	0
			4	4		
2	B	5	Total	Mg	0	0
			5	5		
2	C	2	Total	Mg	0	0
			2	2		
2	D	2	Total	Mg	0	0
			2	2		
2	E	3	Total	Mg	0	0
			3	3		
2	F	7	Total	Mg	0	0
			7	7		

- Molecule 3 is TRIETHYLENE GLYCOL (CCD ID: PGE) (formula: C₆H₁₄O₄).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			7	4	3		
3	A	1	Total	C	O	0	0
			7	4	3		
3	B	1	Total	C	O	0	0
			7	4	3		
3	B	1	Total	C	O	0	0
			7	4	3		
3	C	1	Total	C	O	0	1
			14	8	6		
3	C	1	Total	C	O	0	0
			4	2	2		
3	C	1	Total	C	O	0	0
			7	4	3		
3	D	1	Total	C	O	0	1
			20	12	8		
3	E	1	Total	C	O	0	0
			4	2	2		
3	F	1	Total	C	O	0	0
			10	6	4		
3	F	1	Total	C	O	0	0
			7	4	3		

- Molecule 4 is ACETATE ION (CCD ID: ACT) (formula: C₂H₃O₂).



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

- Molecule 5 is CALCIUM ION (CCD ID: CA) (formula: Ca).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	B	1	Total Ca 1 1	0	0
5	C	1	Total Ca 1 1	0	0
5	D	1	Total Ca 1 1	0	0

- Molecule 6 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	84	Total O 86 86	0	2
6	B	82	Total O 83 83	0	1
6	C	87	Total O 90 90	0	3

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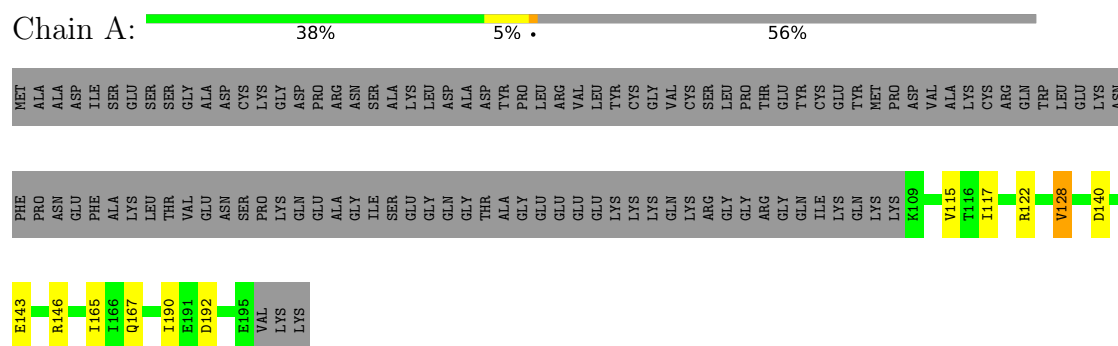
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	D	79	Total 82	O 82	0	3
6	E	72	Total 76	O 76	0	4
6	F	84	Total 86	O 86	0	2

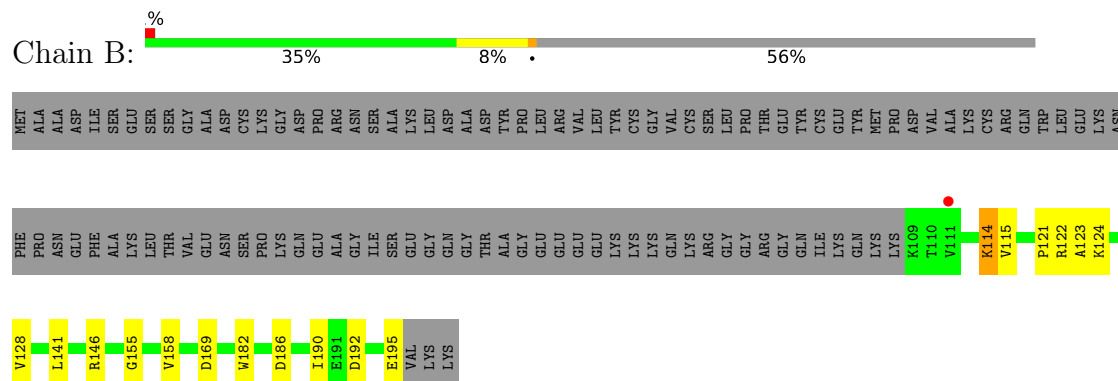
3 Residue-property plots

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.

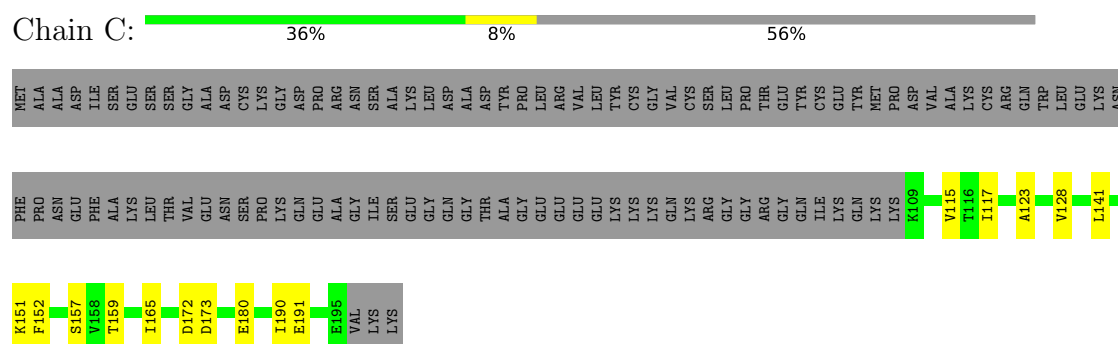
• Molecule 1: Density-regulated protein



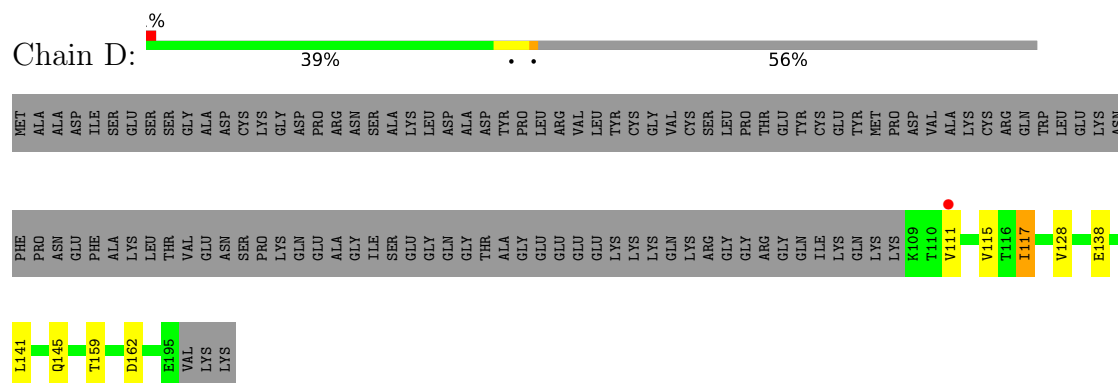
• Molecule 1: Density-regulated protein



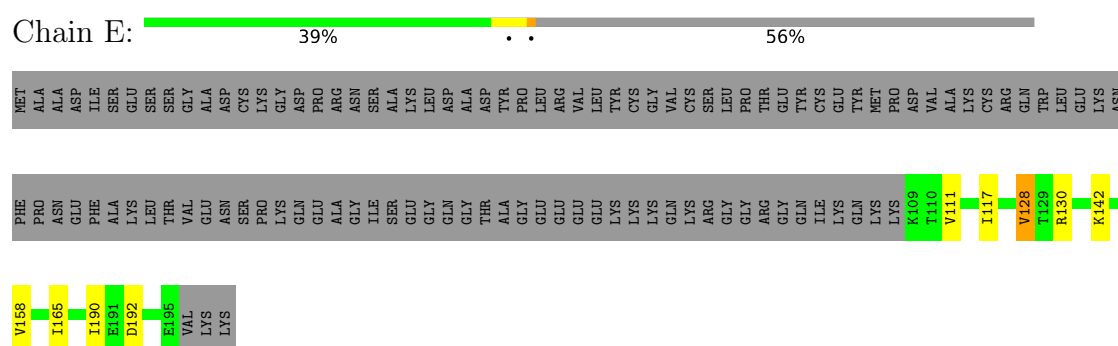
• Molecule 1: Density-regulated protein



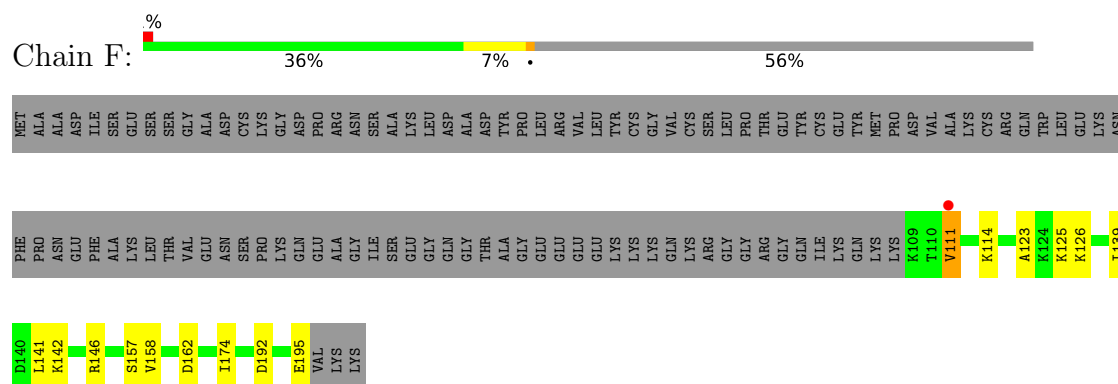
- Molecule 1: Density-regulated protein



- Molecule 1: Density-regulated protein



- Molecule 1: Density-regulated protein



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	64.67Å 47.26Å 95.50Å 90.00° 106.29° 90.00°	Depositor
Resolution (Å)	91.67 – 1.74 91.67 – 1.74	Depositor EDS
% Data completeness (in resolution range)	89.5 (91.67-1.74) 77.6 (91.67-1.74)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.09 (at 1.74Å)	Xtriage
Refinement program	PHENIX 1.13_2998	Depositor
R, R_{free}	0.178 , 0.247 (Not available) , 0.240	Depositor DCC
R_{free} test set	2686 reflections (4.69%)	wwPDB-VP
Wilson B-factor (Å ²)	32.1	Xtriage
Anisotropy	0.277	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 49.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.97	EDS
Total number of atoms	4920	wwPDB-VP
Average B, all atoms (Å ²)	48.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.53% 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, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: CSO, ACT, CA, PGE, MG

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	0.31	0/729	0.51	0/982
1	B	0.33	0/744	0.52	0/1000
1	C	0.31	0/732	0.48	0/987
1	D	0.29	0/715	0.47	0/961
1	E	0.27	0/750	0.46	0/1011
1	F	0.33	0/729	0.53	0/982
All	All	0.31	0/4399	0.49	0/5923

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 [i](#)

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	712	0	720	11	0
1	B	721	0	743	14	0
1	C	712	0	712	9	0
1	D	704	0	704	5	0
1	E	724	0	743	8	0
1	F	712	0	728	13	0
2	A	4	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	5	0	0	0	0
2	C	2	0	0	0	0
2	D	2	0	0	0	0
2	E	3	0	0	0	0
2	F	7	0	0	0	0
3	A	14	0	18	1	0
3	B	14	0	18	5	0
3	C	25	0	31	3	0
3	D	20	0	28	3	0
3	E	4	0	5	0	0
3	F	17	0	23	3	0
4	A	4	0	3	0	0
4	F	8	0	6	2	0
5	B	1	0	0	0	0
5	C	1	0	0	0	0
5	D	1	0	0	0	0
6	A	86	0	0	3	2
6	B	83	0	0	3	0
6	C	90	0	0	3	0
6	D	82	0	0	3	0
6	E	76	0	0	2	2
6	F	86	0	0	4	0
All	All	4920	0	4482	51	2

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 6.

All (51) 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:124:LYS:NZ	6:B:301:HOH:O	2.08	0.84
1:B:121:PRO:HB3	3:B:207:PGE:H62	1.63	0.77
1:C:151:LYS:NZ	6:C:302:HOH:O	2.21	0.74
1:A:146[B]:ARG:NH1	6:A:316[B]:HOH:O	2.21	0.73
3:C:202[A]:PGE:O1	6:C:301:HOH:O	2.11	0.67
1:F:139:ILE:HA	3:F:209:PGE:H1	1.78	0.66
1:D:145[B]:GLN:NE2	6:D:302:HOH:O	2.30	0.63
1:B:169:ASP:OD2	6:B:302:HOH:O	2.16	0.63
1:B:155:GLY:HA3	3:B:207:PGE:H42	1.83	0.61
1:F:142[B]:LYS:NZ	6:F:302:HOH:O	2.35	0.59
1:E:117[A]:ILE:HG21	1:F:174[A]:ILE:HG21	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:158:VAL:O	6:E:301:HOH:O	2.17	0.59
1:A:122:ARG:HG3	1:B:123:ALA:HB3	1.86	0.57
1:B:122:ARG:HG3	1:C:123:ALA:HB3	1.86	0.56
1:A:117[A]:ILE:HG13	1:B:192:ASP:HA	1.88	0.56
1:E:117[C]:ILE:HG13	1:F:192:ASP:HA	1.88	0.56
1:D:159:THR:O	1:E:130:ARG:NH1	2.37	0.54
1:A:140:ASP:HB3	1:A:143:GLU:HG3	1.88	0.54
3:D:202[A]:PGE:H5	1:F:123:ALA:H	1.73	0.53
3:B:206:PGE:H2	1:F:126:LYS:HE3	1.92	0.52
1:B:146:ARG:HD3	6:B:370:HOH:O	2.11	0.51
1:A:165[B]:ILE:HD11	3:A:204:PGE:H42	1.93	0.51
1:E:128:VAL:HG13	1:E:165:ILE:HG23	1.93	0.50
1:A:190:ILE:HA	1:C:115:VAL:O	2.12	0.49
1:D:141:LEU:HD11	1:D:162:ASP:HA	1.95	0.49
1:A:167:GLN:OE1	6:A:301:HOH:O	2.19	0.48
1:A:146[B]:ARG:HD3	6:A:362:HOH:O	2.15	0.46
1:F:141:LEU:HD11	1:F:162:ASP:HA	1.97	0.46
1:B:115:VAL:O	1:C:190:ILE:HA	2.16	0.46
1:D:115:VAL:O	1:E:190:ILE:HA	2.17	0.45
1:B:122:ARG:HG2	3:C:202[B]:PGE:H12	1.97	0.45
1:F:125:LYS:HE3	4:F:210:ACT:H1	1.99	0.45
1:C:152:PHE:HA	3:C:203:PGE:H42	1.98	0.44
3:F:208:PGE:H3	4:F:211:ACT:H1	1.99	0.44
1:F:146[B]:ARG:NH1	6:F:307:HOH:O	2.51	0.44
1:C:159:THR:OG1	1:C:165:ILE:HD13	2.17	0.43
6:D:321:HOH:O	1:F:111:VAL:HG13	2.19	0.43
1:F:195:GLU:OE1	6:F:301:HOH:O	2.21	0.43
1:B:186:ASP:OD1	1:B:186:ASP:N	2.45	0.42
3:F:208:PGE:H12	6:F:353:HOH:O	2.18	0.42
3:D:202[B]:PGE:H22	6:D:304:HOH:O	2.20	0.42
3:B:206:PGE:H4	1:F:126:LYS:NZ	2.35	0.41
1:C:173[B]:ASP:OD1	6:C:303:HOH:O	2.22	0.41
1:E:142[B]:LYS:NZ	6:E:311:HOH:O	2.51	0.41
3:D:202[B]:PGE:H52	1:F:123:ALA:HB2	2.02	0.41
1:A:115:VAL:O	1:B:190:ILE:HA	2.21	0.41
1:A:128[A]:VAL:HG13	1:A:165[A]:ILE:HG23	2.03	0.41
1:A:192:ASP:HA	1:C:117:ILE:HG13	2.03	0.41
1:B:182:TRP:HE1	3:B:206:PGE:H12	1.85	0.41
1:D:117:ILE:HG13	1:E:192:ASP:HA	2.03	0.40
1:B:114[A]:LYS:NZ	1:C:191:GLU:OE1	2.54	0.40

All (2) 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)
6:A:315:HOH:O	6:E:305:HOH:O[1_645]	2.02	0.18
6:A:368:HOH:O	6:E:360:HOH:O[1_645]	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	89/198 (45%)	89 (100%)	0	0	100	100
1	B	91/198 (46%)	89 (98%)	2 (2%)	0	100	100
1	C	90/198 (46%)	89 (99%)	1 (1%)	0	100	100
1	D	87/198 (44%)	85 (98%)	1 (1%)	1 (1%)	11	2
1	E	92/198 (46%)	90 (98%)	1 (1%)	1 (1%)	11	2
1	F	89/198 (45%)	88 (99%)	1 (1%)	0	100	100
All	All	538/1188 (45%)	530 (98%)	6 (1%)	2 (0%)	30	16

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	111	VAL
1	E	111	VAL

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	79/167 (47%)	77 (98%)	2 (2%)	42	18
1	B	81/167 (48%)	72 (89%)	9 (11%)	6	0
1	C	80/167 (48%)	73 (91%)	7 (9%)	9	1
1	D	77/167 (46%)	74 (96%)	3 (4%)	28	7
1	E	82/167 (49%)	81 (99%)	1 (1%)	63	47
1	F	79/167 (47%)	74 (94%)	5 (6%)	16	2
All	All	478/1002 (48%)	451 (94%)	27 (6%)	26	3

All (27) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	128[A]	VAL
1	A	128[B]	VAL
1	B	114[A]	LYS
1	B	114[B]	LYS
1	B	128[A]	VAL
1	B	128[B]	VAL
1	B	141[A]	LEU
1	B	141[B]	LEU
1	B	158[A]	VAL
1	B	158[B]	VAL
1	B	195	GLU
1	C	128[A]	VAL
1	C	128[B]	VAL
1	C	141[A]	LEU
1	C	141[B]	LEU
1	C	157	SER
1	C	172	ASP
1	C	180	GLU
1	D	117	ILE
1	D	128	VAL
1	D	138	GLU
1	E	128	VAL
1	F	111	VAL
1	F	114	LYS
1	F	157	SER
1	F	158[A]	VAL
1	F	158[B]	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

6 non-standard protein/DNA/RNA residues 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	$\# Z > 2$
1	CSO	C	154	1	3,6,7	0.60	0	1,6,8	0.48	0
1	CSO	D	154	1	3,6,7	0.78	0	1,6,8	0.22	0
1	CSO	E	154	1	3,6,7	0.72	0	1,6,8	0.36	0
1	CSO	B	154	1	3,6,7	0.53	0	1,6,8	0.35	0
1	CSO	F	154	1	3,6,7	0.73	0	1,6,8	0.16	0
1	CSO	A	154	1	3,6,7	0.76	0	1,6,8	0.19	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	CSO	C	154	1	-	0/1/5/7	-
1	CSO	D	154	1	-	0/1/5/7	-
1	CSO	E	154	1	-	0/1/5/7	-
1	CSO	B	154	1	-	0/1/5/7	-
1	CSO	F	154	1	-	0/1/5/7	-
1	CSO	A	154	1	-	0/1/5/7	-

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.

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 42 ligands modelled in this entry, 26 are monoatomic - leaving 16 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	$\# Z > 2$
3	PGE	C	204	-	6,6,9	0.32	0	5,5,8	0.29	0
4	ACT	A	207	-	3,3,3	1.47	1 (33%)	3,3,3	1.49	0
3	PGE	B	207	-	6,6,9	0.34	0	5,5,8	0.30	0
3	PGE	F	208	-	9,9,9	0.32	0	8,8,8	0.29	0
4	ACT	F	210	-	3,3,3	0.80	0	3,3,3	1.50	0
3	PGE	B	206	-	6,6,9	0.36	0	5,5,8	0.47	0
3	PGE	F	209	-	6,6,9	0.30	0	5,5,8	0.32	0
3	PGE	D	202[B]	-	9,9,9	0.33	0	8,8,8	0.18	0
4	ACT	F	211	-	3,3,3	1.44	1 (33%)	3,3,3	1.54	0
3	PGE	C	203	-	3,3,9	0.29	0	2,2,8	0.34	0
3	PGE	C	202[B]	-	6,6,9	0.29	0	5,5,8	0.34	0
3	PGE	E	204	-	3,3,9	0.30	0	2,2,8	0.33	0
3	PGE	D	202[A]	-	9,9,9	0.33	0	8,8,8	0.22	0
3	PGE	A	205	2	6,6,9	0.29	0	5,5,8	0.41	0
3	PGE	A	204	-	6,6,9	0.33	0	5,5,8	0.23	0
3	PGE	C	202[A]	-	6,6,9	0.29	0	5,5,8	0.28	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
3	PGE	C	204	-	-	2/4/4/7	-
3	PGE	B	207	-	-	3/4/4/7	-
3	PGE	F	208	-	-	3/7/7/7	-
3	PGE	B	206	-	-	1/4/4/7	-
3	PGE	F	209	-	-	3/4/4/7	-
3	PGE	D	202[B]	-	-	5/7/7/7	-
3	PGE	C	203	-	-	0/1/1/7	-
3	PGE	C	202[B]	-	-	2/4/4/7	-
3	PGE	E	204	-	-	1/1/1/7	-
3	PGE	D	202[A]	-	-	5/7/7/7	-
3	PGE	A	205	2	-	2/4/4/7	-
3	PGE	A	204	-	-	3/4/4/7	-
3	PGE	C	202[A]	-	-	2/4/4/7	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	207	ACT	CH3-C	2.16	1.57	1.49
4	F	211	ACT	CH3-C	2.07	1.57	1.49

There are no bond angle outliers.

There are no chirality outliers.

All (32) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	F	208	PGE	O2-C3-C4-O3
3	B	206	PGE	C4-C3-O2-C2
3	C	204	PGE	O1-C1-C2-O2
3	A	204	PGE	O2-C3-C4-O3
3	C	202[B]	PGE	O1-C1-C2-O2
3	F	209	PGE	O2-C3-C4-O3
3	F	208	PGE	O3-C5-C6-O4
3	C	202[A]	PGE	O2-C3-C4-O3
3	C	204	PGE	O2-C3-C4-O3
3	E	204	PGE	O1-C1-C2-O2
3	B	207	PGE	O2-C3-C4-O3
3	B	207	PGE	C6-C5-O3-C4
3	D	202[B]	PGE	C4-C3-O2-C2
3	F	208	PGE	C3-C4-O3-C5
3	D	202[B]	PGE	C1-C2-O2-C3

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Mol	Chain	Res	Type	Atoms
3	D	202[B]	PGE	C3-C4-O3-C5
3	C	202[A]	PGE	C1-C2-O2-C3
3	D	202[A]	PGE	C1-C2-O2-C3
3	D	202[A]	PGE	C3-C4-O3-C5
3	B	207	PGE	C3-C4-O3-C5
3	A	204	PGE	O1-C1-C2-O2
3	D	202[A]	PGE	O3-C5-C6-O4
3	A	205	PGE	C4-C3-O2-C2
3	A	205	PGE	O2-C3-C4-O3
3	D	202[B]	PGE	O1-C1-C2-O2
3	D	202[B]	PGE	O2-C3-C4-O3
3	C	202[B]	PGE	C1-C2-O2-C3
3	F	209	PGE	C4-C3-O2-C2
3	A	204	PGE	C1-C2-O2-C3
3	D	202[A]	PGE	C6-C5-O3-C4
3	D	202[A]	PGE	O2-C3-C4-O3
3	F	209	PGE	O1-C1-C2-O2

There are no ring outliers.

12 monomers are involved in 16 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	207	PGE	2	0
3	F	208	PGE	2	0
4	F	210	ACT	1	0
3	B	206	PGE	3	0
3	F	209	PGE	1	0
3	D	202[B]	PGE	2	0
4	F	211	ACT	1	0
3	C	203	PGE	1	0
3	C	202[B]	PGE	1	0
3	D	202[A]	PGE	1	0
3	A	204	PGE	1	0
3	C	202[A]	PGE	1	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	86/198 (43%)	-0.22	0 100 100	19, 43, 66, 90	5 (5%)
1	B	86/198 (43%)	-0.21	1 (1%) 76 83	14, 36, 63, 121	6 (6%)
1	C	86/198 (43%)	-0.24	0 100 100	17, 39, 69, 115	6 (6%)
1	D	86/198 (43%)	-0.03	1 (1%) 76 83	25, 44, 77, 130	3 (3%)
1	E	86/198 (43%)	-0.12	0 100 100	14, 45, 72, 99	7 (8%)
1	F	86/198 (43%)	-0.22	1 (1%) 76 83	17, 38, 70, 148	5 (5%)
All	All	516/1188 (43%)	-0.17	3 (0%) 85 90	14, 41, 73, 148	32 (6%)

All (3) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	111	VAL	2.8
1	D	111	VAL	2.6
1	F	111	VAL	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [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, 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	CSO	D	154	7/8	0.92	0.09	40,42,56,82	0
1	CSO	B	154	7/8	0.93	0.09	27,32,47,53	0
1	CSO	A	154	7/8	0.95	0.08	35,39,51,63	0
1	CSO	E	154	7/8	0.95	0.06	44,47,68,70	0
1	CSO	F	154	7/8	0.95	0.07	39,42,58,61	0
1	CSO	C	154	7/8	0.96	0.06	30,34,44,69	0

6.3 Carbohydrates ⓘ

There are no oligosaccharides 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	ACT	F	211	4/4	0.64	0.18	98,107,111,111	0
2	MG	A	201	1/1	0.68	0.15	90,90,90,90	0
4	ACT	A	207	4/4	0.73	0.12	72,88,91,96	0
2	MG	D	203	1/1	0.73	0.10	79,79,79,79	0
3	PGE	A	205	7/10	0.77	0.10	87,102,108,110	0
2	MG	F	206	1/1	0.79	0.09	103,103,103,103	0
3	PGE	F	208	10/10	0.79	0.12	66,92,96,100	0
2	MG	A	203	1/1	0.81	0.08	98,98,98,98	0
2	MG	B	203	1/1	0.81	0.14	72,72,72,72	0
2	MG	A	202	1/1	0.83	0.09	65,65,65,65	0
2	MG	C	201	1/1	0.84	0.12	81,81,81,81	0
3	PGE	C	203	4/10	0.85	0.11	74,82,84,85	0
3	PGE	E	204	4/10	0.86	0.09	72,73,74,75	0
2	MG	E	203	1/1	0.86	0.10	112,112,112,112	0
5	CA	C	206	1/1	0.86	0.09	95,95,95,95	0
2	MG	B	205	1/1	0.88	0.13	105,105,105,105	0
3	PGE	B	207	7/10	0.88	0.11	52,76,88,88	0
3	PGE	F	209	7/10	0.89	0.13	52,70,77,80	0
3	PGE	B	206	7/10	0.89	0.13	41,59,67,70	0
3	PGE	A	204	7/10	0.90	0.09	61,74,79,80	0
2	MG	B	202	1/1	0.90	0.09	59,59,59,59	0
3	PGE	D	202[A]	10/10	0.90	0.12	53,68,74,76	10
3	PGE	D	202[B]	10/10	0.90	0.12	53,70,74,76	10
2	MG	F	207	1/1	0.90	0.11	96,96,96,96	0
2	MG	B	201	1/1	0.91	0.11	55,55,55,55	0
3	PGE	C	204	7/10	0.91	0.08	77,97,106,106	0
2	MG	D	201	1/1	0.91	0.06	81,81,81,81	0
3	PGE	C	202[A]	7/10	0.91	0.11	74,80,81,81	7
3	PGE	C	202[B]	7/10	0.91	0.11	76,78,82,82	7
5	CA	D	204	1/1	0.91	0.09	95,95,95,95	0
2	MG	F	205	1/1	0.92	0.16	83,83,83,83	0
2	MG	E	201	1/1	0.92	0.08	60,60,60,60	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
5	CA	B	208	1/1	0.92	0.05	90,90,90,90	0
2	MG	A	206	1/1	0.92	0.06	44,44,44,44	0
2	MG	F	203	1/1	0.92	0.06	31,31,31,31	1
2	MG	E	202	1/1	0.93	0.11	85,85,85,85	0
2	MG	C	205	1/1	0.94	0.11	52,52,52,52	0
2	MG	F	201	1/1	0.95	0.07	33,33,33,33	0
4	ACT	F	210	4/4	0.95	0.12	44,46,65,70	1
2	MG	F	202	1/1	0.97	0.07	49,49,49,49	0
2	MG	B	204	1/1	0.98	0.04	53,53,53,53	0
2	MG	F	204	1/1	0.99	0.03	31,31,31,31	0

6.5 Other polymers [i](#)

There are no such residues in this entry.