Full wwPDB X-ray Structure Validation Report ⓘ

Jun 18, 2024 – 06:16 PM EDT

PDB ID	:	3VR4
Title	:	Crystal structure of Enterococcus hirae V1-ATPase [eV1]
Authors	:	Saijo, S.; Arai, S.; Suzuki, K.; Mizutani, K.; Kakinuma, Y.; Ishizuka-Katsura, Y.; Ohsawa, N.; Terada, T.; Shirouzu, M.; Yokoyama, S.; Iwata, S.; Yamato, I.; Murata, T.
Deposited on	:	2012-04-03
Resolution	:	2.17 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:

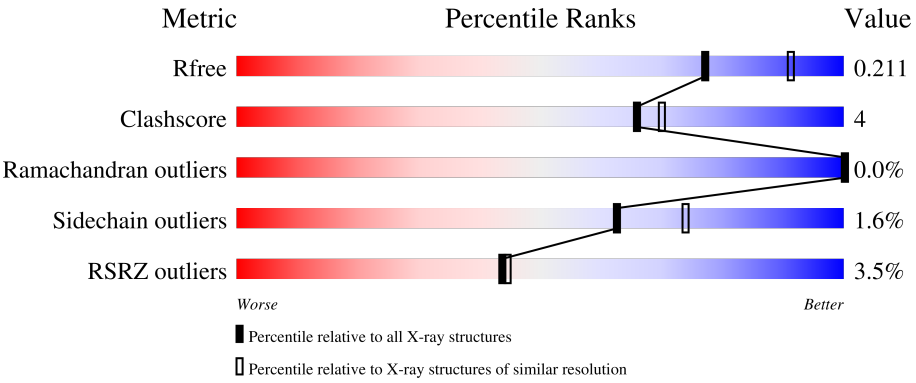
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.20.1
EDS	:	2.37.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

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 2.17 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	6864 (2.20-2.16)
Clashscore	141614	7689 (2.20-2.16)
Ramachandran outliers	138981	7564 (2.20-2.16)
Sidechain outliers	138945	7564 (2.20-2.16)
RSRZ outliers	127900	6738 (2.20-2.16)

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	600	2% 90% 8% ·
1	B	600	3% 88% 11% ·
1	C	600	4% 86% 11% ·
2	D	465	3% 84% 13% ·

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Mol	Chain	Length	Quality of chain
2	E	465	2% 84% 13%
2	F	465	% 88% 10%
3	G	217	12% 71% 12% 17%
4	H	115	7% 83% 5% 11%

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
7	B3P	F	502	-	X	-	-

2 Entry composition (i)

There are 8 unique types of molecules in this entry. The entry contains 28272 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 V-type sodium ATPase catalytic subunit A.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	588	Total	C	N	O	S	Se	0	3	0
			4513	2848	751	885	4	25			
1	B	593	Total	C	N	O	S	Se	0	10	0
			4555	2866	761	896	4	28			
1	C	586	Total	C	N	O	S	Se	0	7	0
			4542	2860	760	891	4	27			

There are 21 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-6	GLY	-	expression tag	UNP Q08636
A	-5	SER	-	expression tag	UNP Q08636
A	-4	SER	-	expression tag	UNP Q08636
A	-3	GLY	-	expression tag	UNP Q08636
A	-2	SER	-	expression tag	UNP Q08636
A	-1	SER	-	expression tag	UNP Q08636
A	0	GLY	-	expression tag	UNP Q08636
B	-6	GLY	-	expression tag	UNP Q08636
B	-5	SER	-	expression tag	UNP Q08636
B	-4	SER	-	expression tag	UNP Q08636
B	-3	GLY	-	expression tag	UNP Q08636
B	-2	SER	-	expression tag	UNP Q08636
B	-1	SER	-	expression tag	UNP Q08636
B	0	GLY	-	expression tag	UNP Q08636
C	-6	GLY	-	expression tag	UNP Q08636
C	-5	SER	-	expression tag	UNP Q08636
C	-4	SER	-	expression tag	UNP Q08636
C	-3	GLY	-	expression tag	UNP Q08636
C	-2	SER	-	expression tag	UNP Q08636
C	-1	SER	-	expression tag	UNP Q08636
C	0	GLY	-	expression tag	UNP Q08636

- Molecule 2 is a protein called V-type sodium ATPase subunit B.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	D	452	Total	C	N	O	Se	0	4	0
			3493	2223	596	659	15			
2	E	452	Total	C	N	O	Se	0	11	0
			3564	2257	621	669	17			
2	F	455	Total	C	N	O	Se	0	5	0
			3563	2260	608	677	18			

There are 21 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	-6	GLY	-	expression tag	UNP Q08637
D	-5	SER	-	expression tag	UNP Q08637
D	-4	SER	-	expression tag	UNP Q08637
D	-3	GLY	-	expression tag	UNP Q08637
D	-2	SER	-	expression tag	UNP Q08637
D	-1	SER	-	expression tag	UNP Q08637
D	0	GLY	-	expression tag	UNP Q08637
E	-6	GLY	-	expression tag	UNP Q08637
E	-5	SER	-	expression tag	UNP Q08637
E	-4	SER	-	expression tag	UNP Q08637
E	-3	GLY	-	expression tag	UNP Q08637
E	-2	SER	-	expression tag	UNP Q08637
E	-1	SER	-	expression tag	UNP Q08637
E	0	GLY	-	expression tag	UNP Q08637
F	-6	GLY	-	expression tag	UNP Q08637
F	-5	SER	-	expression tag	UNP Q08637
F	-4	SER	-	expression tag	UNP Q08637
F	-3	GLY	-	expression tag	UNP Q08637
F	-2	SER	-	expression tag	UNP Q08637
F	-1	SER	-	expression tag	UNP Q08637
F	0	GLY	-	expression tag	UNP Q08637

- Molecule 3 is a protein called V-type sodium ATPase subunit D.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
3	G	181	Total	C	N	O	S	Se	0	3	0
			1405	886	251	257	1	10			

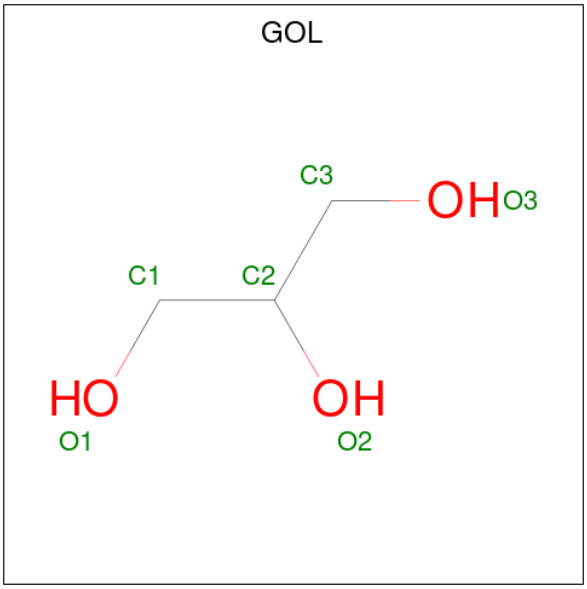
- Molecule 4 is a protein called V-type sodium ATPase subunit G.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
4	H	102	Total	C	N	O	S	Se	0	0	0
			755	484	119	150	1	1			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
H	104	SER	-	expression tag	UNP P43455
H	105	GLY	-	expression tag	UNP P43455
H	106	PRO	-	expression tag	UNP P43455
H	107	SER	-	expression tag	UNP P43455
H	108	SER	-	expression tag	UNP P43455
H	109	GLY	-	expression tag	UNP P43455
H	110	GLU	-	expression tag	UNP P43455
H	111	ASN	-	expression tag	UNP P43455
H	112	LEU	-	expression tag	UNP P43455
H	113	TYR	-	expression tag	UNP P43455
H	114	PHE	-	expression tag	UNP P43455
H	115	GLN	-	expression tag	UNP P43455

- Molecule 5 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total C O 6 3 3	0	0
5	B	1	Total C O 6 3 3	0	0
5	D	1	Total C O 6 3 3	0	0
5	D	1	Total C O 6 3 3	0	0
5	F	1	Total C O 6 3 3	0	0

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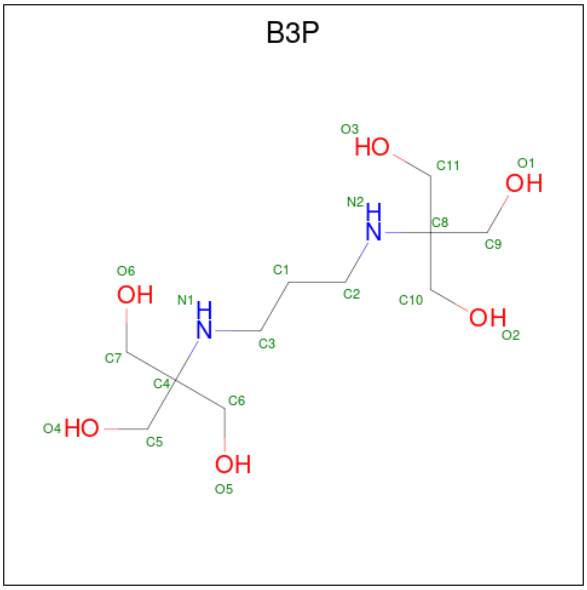
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	F	1	Total C O 6 3 3	0	0
5	F	1	Total C O 6 3 3	0	0
5	G	1	Total C O 6 3 3	0	0

- Molecule 6 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	B	1	Total Cl 1 1	0	0

- Molecule 7 is 2-[3-(2-HYDROXY-1,1-DIHYDROXYMETHYL-ETHYLAMINO)-PROPYL AMINO]-2-HYDROXYMETHYL-PROPANE-1,3-DIOL (three-letter code: B3P) (formula: $C_{11}H_{26}N_2O_6$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	F	1	Total C N O 19 11 2 6	0	0
7	F	1	Total C N O 19 11 2 6	0	0

- Molecule 8 is water.

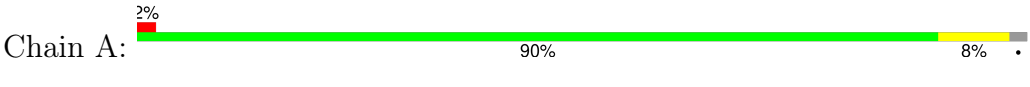
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	302	Total O 302 302	0	0
8	B	393	Total O 393 393	0	0
8	C	350	Total O 350 350	0	0
8	D	179	Total O 179 179	0	0
8	E	217	Total O 217 217	0	0
8	F	279	Total O 279 279	0	0
8	G	51	Total O 51 51	0	0
8	H	24	Total O 24 24	0	0

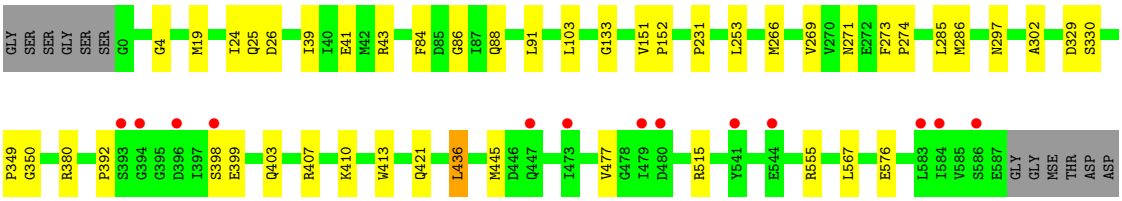
3 Residue-property plots (i)

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: V-type sodium ATPase catalytic subunit A

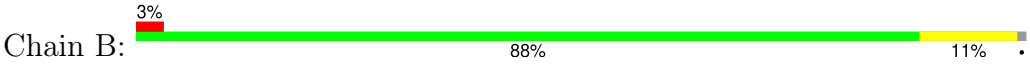
Chain A:

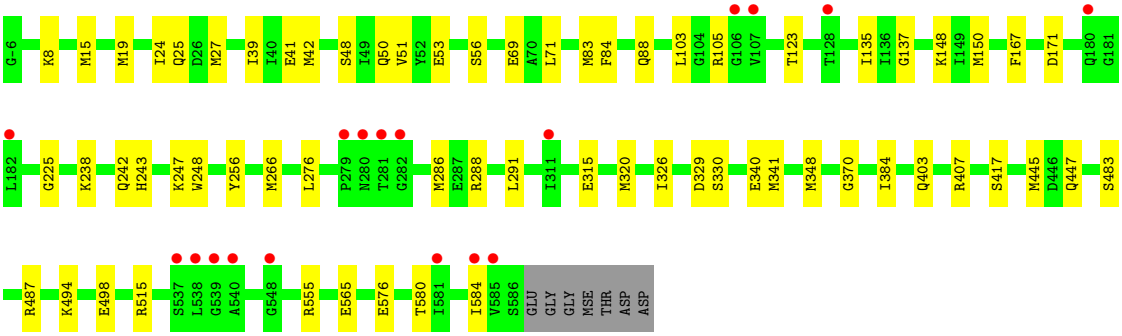




• Molecule 1: V-type sodium ATPase catalytic subunit A

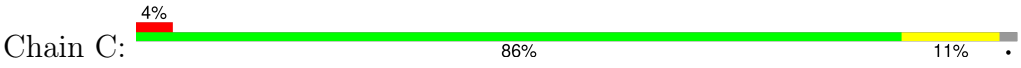
Chain B:

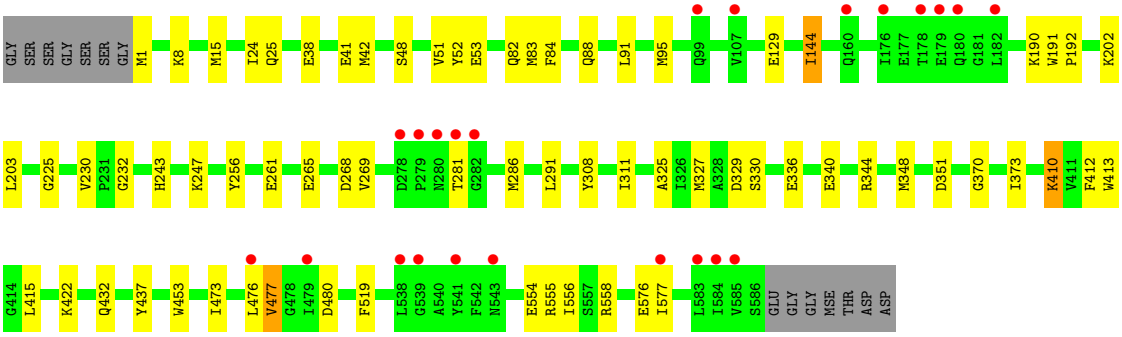




• Molecule 1: V-type sodium ATPase catalytic subunit A

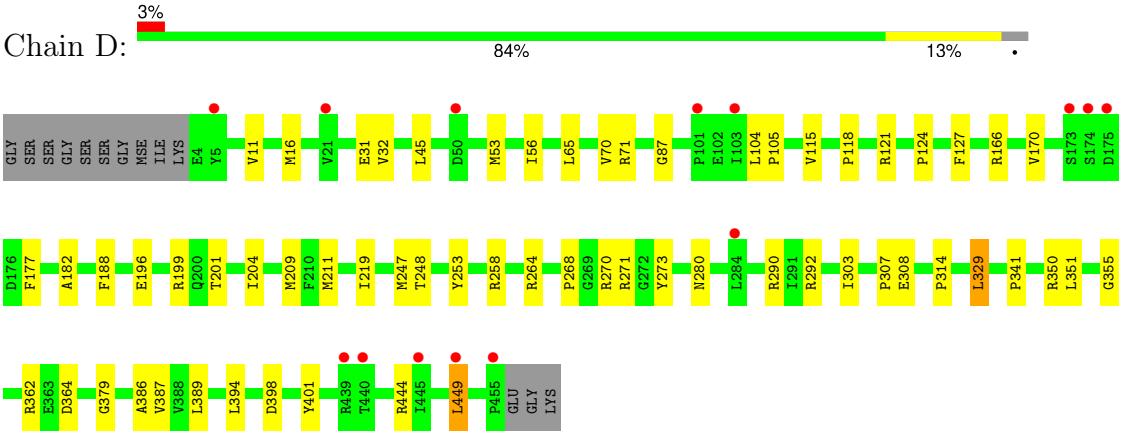
Chain C:





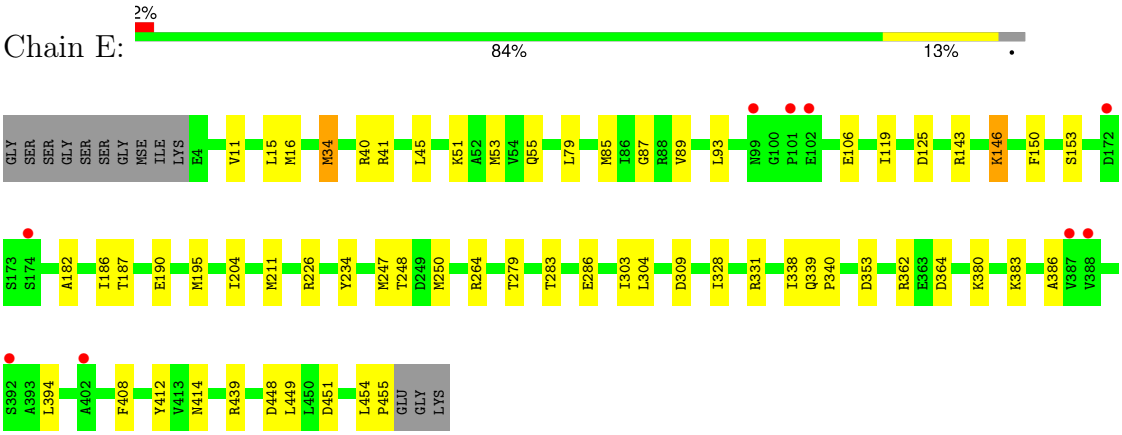
• Molecule 2: V-type sodium ATPase subunit B

Chain D:



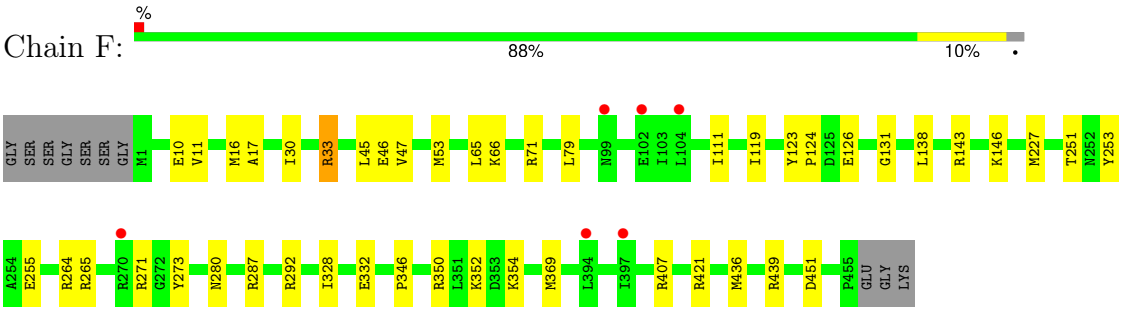
• Molecule 2: V-type sodium ATPase subunit B

Chain E:



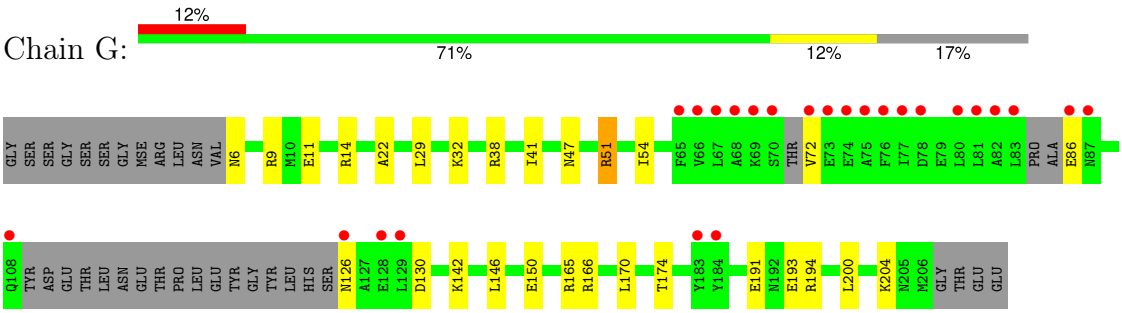
• Molecule 2: V-type sodium ATPase subunit B

Chain F:



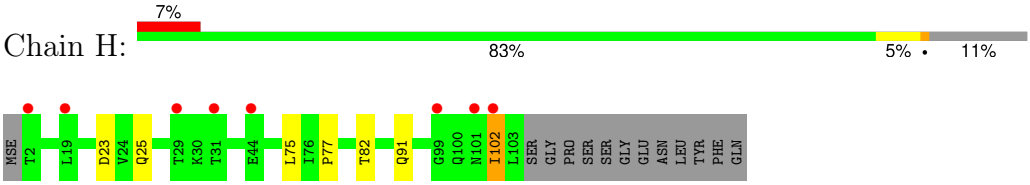
• Molecule 3: V-type sodium ATPase subunit D

Chain G:



• Molecule 4: V-type sodium ATPase subunit G

Chain H:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	127.98Å 128.48Å 225.93Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	34.04 – 2.17 34.04 – 2.17	Depositor EDS
% Data completeness (in resolution range)	99.0 (34.04-2.17) 99.3 (34.04-2.17)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.32 (at 2.18Å)	Xtriage
Refinement program	PHENIX (phenix.refine: dev_934)	Depositor
R, R_{free}	0.167 , 0.211 0.165 , 0.211	Depositor DCC
R_{free} test set	9807 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å^2)	27.3	Xtriage
Anisotropy	0.148	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 50.5	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	0.018 for k,h,-l	Xtriage
Reported twinning fraction	0.036 for k,h,-l	Depositor
Outliers	0 of 194627 reflections	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	28272	wwPDB-VP
Average B, all atoms (Å^2)	32.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.92% of the height of the origin peak. No significant pseudotranslation is detected.*

[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: B3P, GOL, 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	0.22	0/4579	0.41	0/6165
1	B	0.23	0/4647	0.41	0/6252
1	C	0.23	0/4625	0.41	0/6224
2	D	0.23	0/3559	0.43	0/4799
2	E	0.23	0/3664	0.43	0/4926
2	F	0.23	0/3636	0.44	0/4895
3	G	0.21	0/1416	0.37	0/1888
4	H	0.22	0/766	0.40	0/1042
All	All	0.23	0/26892	0.42	0/36191

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4513	0	4430	26	0
1	B	4555	0	4452	35	0
1	C	4542	0	4471	46	0
2	D	3493	0	3443	40	0
2	E	3564	0	3553	35	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	F	3563	0	3539	28	0
3	G	1405	0	1414	22	0
4	H	755	0	732	4	0
5	A	6	0	8	0	0
5	B	6	0	8	0	0
5	D	12	0	16	0	0
5	F	18	0	24	0	0
5	G	6	0	8	0	0
6	B	1	0	0	0	0
7	F	38	0	52	0	0
8	A	302	0	0	1	0
8	B	393	0	0	2	0
8	C	350	0	0	7	0
8	D	179	0	0	3	0
8	E	217	0	0	4	0
8	F	279	0	0	4	0
8	G	51	0	0	3	0
8	H	24	0	0	0	0
All	All	28272	0	26150	211	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 4.

All (211) 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)
2:F:79:LEU:HD13	2:F:227:MSE:HE1	1.65	0.78
2:E:146:LYS:NZ	2:E:286:GLU:OE2	2.21	0.73
2:E:11:VAL:HG22	2:E:16[A]:MSE:HG3	1.70	0.73
3:G:54:ILE:HG21	3:G:146:LEU:HD22	1.71	0.73
3:G:51:ARG:NH2	4:H:75:LEU:O	2.23	0.72
1:B:50:GLN:HG3	1:B:341[A]:MSE:HE3	1.73	0.70
2:F:33:ARG:HH21	2:F:71:ARG:HD3	1.57	0.70
2:F:439[B]:ARG:NH2	2:F:451:ASP:OD1	2.25	0.70
2:E:51:LYS:HB3	2:E:53[B]:MSE:HE1	1.73	0.70
2:E:182:ALA:HB3	2:E:247:MSE:HG2	1.74	0.69
2:D:389:LEU:HD22	3:G:32:LYS:HD2	1.75	0.69
2:D:53:MSE:HE1	2:D:264:ARG:HG2	1.75	0.68
1:B:135:ILE:HD12	1:B:148:LYS:HB3	1.76	0.68
1:A:133:GLY:O	1:A:380:ARG:NH2	2.19	0.67
2:F:253:TYR:OH	2:F:280:ASN:OD1	2.12	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:242[B]:GLN:NE2	1:B:256:TYR:OH	2.29	0.66
1:C:348:MSE:HE1	3:G:204:LYS:HA	1.79	0.64
2:F:11:VAL:HG22	2:F:16[B]:MSE:HG2	1.80	0.64
1:B:24:ILE:HG22	1:B:25:GLN:HG2	1.80	0.64
1:C:82:GLN:NE2	8:C:883:HOH:O	2.28	0.63
2:E:309:ASP:OD2	2:E:331[A]:ARG:NH1	2.31	0.63
2:D:121:ARG:NH2	8:D:683:HOH:O	2.31	0.63
2:F:292:ARG:NH1	8:F:810:HOH:O	2.32	0.63
2:D:253:TYR:OH	2:D:280:ASN:OD1	2.09	0.63
2:E:226[A]:ARG:NH1	8:E:699:HOH:O	2.32	0.63
1:B:19:MSE:HE3	1:B:39:ILE:HD11	1.81	0.62
1:C:41:GLU:HB2	1:C:48:SER:HB2	1.81	0.61
2:D:196:GLU:OE1	2:D:199:ARG:NH2	2.33	0.60
1:C:336:GLU:OE1	8:C:1030:HOH:O	2.16	0.60
3:G:9:ARG:NH2	3:G:193:GLU:OE2	2.27	0.60
2:D:166:ARG:HD2	2:D:201:THR:HG21	1.84	0.60
2:D:270:ARG:NH1	8:D:742:HOH:O	2.35	0.60
2:E:195[B]:MSE:HE2	2:E:211:MSE:HG3	1.84	0.59
1:C:477:VAL:HG13	3:G:166[B]:ARG:HH21	1.67	0.59
1:A:445:MSE:HE1	1:A:515:ARG:HG3	1.85	0.58
1:A:271:ASN:OD1	2:D:292:ARG:NH2	2.37	0.58
2:E:362:ARG:HD2	2:E:364:ASP:OD1	2.04	0.58
1:A:398:SER:O	8:A:983:HOH:O	2.17	0.57
1:A:477:VAL:HG22	3:G:38:ARG:HH12	1.69	0.57
1:B:348:MSE:HE3	2:F:265:ARG:HB3	1.86	0.57
1:C:24:ILE:HG22	1:C:25:GLN:HG2	1.86	0.57
2:D:45:LEU:HB2	2:D:53:MSE:HE3	1.86	0.57
2:F:10:GLU:HG2	2:F:17:ALA:HB3	1.86	0.57
1:B:135:ILE:HD13	1:B:150:MSE:HG2	1.86	0.57
1:B:340[B]:GLU:OE2	8:B:1023:HOH:O	2.16	0.57
2:D:362:ARG:HD2	2:D:364:ASP:OD1	2.05	0.57
4:H:77:PRO:HB3	4:H:82:THR:HG22	1.88	0.56
3:G:86:GLU:N	8:G:443:HOH:O	2.39	0.56
3:G:126:ASN:N	8:G:434:HOH:O	2.39	0.56
2:F:111:ILE:O	2:F:287:ARG:NH2	2.39	0.55
1:C:412:PHE:HE2	1:C:432:GLN:HG2	1.72	0.55
2:E:439:ARG:NH2	2:E:451:ASP:OD1	2.35	0.55
1:B:148:LYS:HD2	1:B:320:MSE:HB3	1.89	0.55
2:E:51:LYS:HE2	2:E:53[B]:MSE:HE1	1.89	0.55
2:E:186:ILE:HB	2:E:190[A]:GLU:HG3	1.89	0.54
1:A:24:ILE:HG22	1:A:25:GLN:HG2	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:410:LYS:HG3	1:C:437:TYR:OH	2.08	0.54
2:E:380[B]:LYS:NZ	8:E:673:HOH:O	2.40	0.54
1:C:8:LYS:HD3	1:C:15[B]:MSE:HE3	1.90	0.54
1:C:144:ILE:HD13	1:C:281:THR:HG21	1.90	0.54
1:A:26:ASP:HB2	1:A:39:ILE:HD12	1.90	0.54
1:C:190:LYS:NZ	8:C:1040:HOH:O	2.31	0.53
1:C:268:ASP:OD1	2:F:354:LYS:NZ	2.39	0.53
1:C:340:GLU:OE1	1:C:344:ARG:NE	2.37	0.53
2:D:182:ALA:HB3	2:D:247:MSE:HG2	1.90	0.53
2:D:268:PRO:HD2	3:G:200:LEU:HD13	1.90	0.53
1:C:286:MSE:HE1	1:C:291:LEU:HD12	1.91	0.53
2:D:386:ALA:HB2	2:D:394:LEU:HD11	1.89	0.53
2:E:34:MSE:HE1	2:E:40:ARG:HG3	1.91	0.53
2:D:124:PRO:HG2	2:D:351:LEU:HD13	1.90	0.53
1:C:51:VAL:HG12	1:C:53:GLU:H	1.74	0.52
1:C:555:ARG:NH1	1:C:576:GLU:OE2	2.42	0.52
1:C:477:VAL:HG22	3:G:29:LEU:HD11	1.92	0.52
1:C:325:ALA:HB1	1:C:327[B]:MSE:HE1	1.91	0.52
2:E:386:ALA:HB2	2:E:394:LEU:HD11	1.91	0.52
2:D:258:ARG:HD2	2:D:273:TYR:CE2	2.45	0.51
2:D:16[A]:MSE:HE2	2:D:56:ILE:HD11	1.92	0.51
1:A:477:VAL:HG22	3:G:38:ARG:NH1	2.25	0.51
2:E:79:LEU:HD21	2:E:85:MSE:HE1	1.92	0.50
1:B:167:PHE:HB3	1:B:171:ASP:HB2	1.93	0.50
1:B:555:ARG:NH1	1:B:576:GLU:OE2	2.43	0.50
2:E:41[A]:ARG:HH22	2:E:93:LEU:HD13	1.77	0.50
1:B:242[B]:GLN:NE2	1:B:329:ASP:OD2	2.37	0.50
2:E:45:LEU:HD11	2:E:55:GLN:HB2	1.94	0.50
1:A:410:LYS:HB3	1:A:436:LEU:HB2	1.94	0.49
1:C:256:TYR:HB3	1:C:291:LEU:HD23	1.94	0.49
2:E:106:GLU:OE1	2:E:234:TYR:OH	2.24	0.49
1:B:41:GLU:HB2	1:B:48:SER:HB2	1.93	0.49
1:C:230:VAL:HG22	1:C:413:TRP:HE3	1.78	0.49
2:D:11:VAL:HG22	2:D:16[A]:MSE:HG2	1.94	0.49
2:D:290[A]:ARG:HB3	2:D:290[A]:ARG:HH21	1.77	0.49
1:A:421:GLN:OE1	2:D:444:ARG:NH1	2.45	0.48
3:G:41:ILE:HG23	4:H:102:ILE:HG21	1.95	0.48
2:F:251:THR:O	2:F:255:GLU:HG2	2.14	0.48
1:A:403:GLN:O	1:A:407:ARG:HG3	2.14	0.48
2:E:153:SER:O	2:E:331[A]:ARG:NH2	2.44	0.48
2:F:45:LEU:HD13	2:F:264:ARG:HD2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:403:GLN:O	1:B:407[B]:ARG:HG3	2.14	0.47
1:C:84:PHE:HB3	1:C:88:GLN:HA	1.96	0.47
2:D:209:MSE:HE2	2:D:211:MSE:SE	2.64	0.47
3:G:170:LEU:HA	3:G:174:THR:HB	1.95	0.47
1:A:392:PRO:HB3	1:A:399:GLU:HG2	1.97	0.47
1:B:247:LYS:HG3	1:B:248:TRP:CD1	2.50	0.47
1:C:265:GLU:OE2	2:F:350:ARG:NH2	2.48	0.47
1:C:203:LEU:HD11	1:C:373:ILE:HG12	1.97	0.46
1:A:329:ASP:HA	1:A:330:SER:HA	1.62	0.46
1:B:27[B]:MSE:HE2	1:B:71:LEU:HD13	1.97	0.46
1:B:315:GLU:HA	1:B:384:ILE:HD11	1.97	0.46
1:B:42:MSE:HG2	2:F:65:LEU:HD13	1.97	0.46
1:C:476:LEU:HD13	3:G:22:ALA:HB2	1.98	0.46
2:D:271:ARG:HB2	2:D:314:PRO:HG2	1.97	0.46
2:F:138:LEU:HA	2:F:369[A]:MSE:HG3	1.98	0.46
1:B:225:GLY:O	1:B:370:GLY:HA2	2.16	0.46
2:E:454:LEU:HD12	2:E:455:PRO:HD2	1.98	0.46
2:D:32:VAL:HG22	2:D:70:VAL:HG22	1.98	0.46
1:A:91:LEU:HD13	2:D:118:PRO:HG2	1.98	0.46
2:D:248:THR:HB	2:D:303:ILE:HB	1.97	0.45
2:D:127:PHE:HB2	2:D:355:GLY:O	2.16	0.45
3:G:54:ILE:HD13	3:G:142:LYS:HB3	1.99	0.45
1:A:555:ARG:NH1	1:A:576:GLU:OE1	2.40	0.45
2:E:187:THR:OG1	2:E:190[A]:GLU:HG2	2.16	0.45
3:G:51:ARG:NH1	3:G:150:GLU:OE2	2.49	0.45
2:D:31:GLU:OE2	2:D:71:ARG:NH2	2.49	0.45
1:A:84:PHE:HB3	1:A:88:GLN:HA	1.98	0.45
2:D:307:PRO:O	2:D:308:GLU:HG2	2.17	0.45
2:E:89:VAL:HG21	2:E:195[A]:MSE:HE1	1.98	0.45
1:C:556:ILE:HD11	1:C:577:ILE:HD11	1.98	0.45
2:F:352:LYS:NZ	8:F:877:HOH:O	2.48	0.45
2:E:448:ASP:OD1	2:E:449:LEU:N	2.49	0.45
1:B:27[B]:MSE:SE	1:B:71:LEU:HB2	2.67	0.44
1:C:202:LYS:HB3	2:D:188:PHE:CE2	2.52	0.44
2:D:329:LEU:HG	2:D:341:PRO:HG2	1.99	0.44
1:C:95:MSE:HE1	2:F:119:ILE:HB	1.99	0.44
1:C:554:GLU:OE2	1:C:558:ARG:NH2	2.51	0.44
1:B:329:ASP:HA	1:B:330:SER:HA	1.69	0.44
1:C:8:LYS:HB3	1:C:15[B]:MSE:HB2	1.98	0.44
2:D:121:ARG:O	2:D:292:ARG:NH1	2.50	0.44
3:G:6:ASN:N	8:G:407:HOH:O	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:51:VAL:HG12	1:B:53:GLU:H	1.83	0.44
2:E:264:ARG:NH1	8:E:725:HOH:O	2.39	0.44
1:C:202:LYS:NZ	8:C:1024:HOH:O	2.49	0.44
3:G:11:GLU:CD	3:G:14:ARG:HH12	2.21	0.44
2:F:407:ARG:HD3	2:F:436:MSE:SE	2.67	0.43
1:C:269:VAL:HG11	1:C:291:LEU:HD21	2.00	0.43
1:A:349:PRO:O	3:G:194[B]:ARG:NH1	2.51	0.43
1:C:225:GLY:O	1:C:370:GLY:HA2	2.18	0.43
2:D:350:ARG:NH1	8:D:639:HOH:O	2.39	0.43
2:E:150:PHE:HB2	2:E:328:ILE:HD13	2.00	0.43
1:A:266:MSE:HE3	1:A:269:VAL:HB	1.99	0.43
4:H:23:ASP:OD1	4:H:25:GLN:NE2	2.51	0.43
1:A:4:GLY:HA3	1:A:19:MSE:SE	2.69	0.43
1:C:453:TRP:CZ3	1:C:519:PHE:HA	2.53	0.43
2:D:379:GLY:HA2	2:D:401:TYR:HB3	2.00	0.43
1:A:274:PRO:HA	1:A:286:MSE:HG2	1.99	0.43
1:B:445:MSE:HE1	1:B:515:ARG:HG3	2.00	0.43
2:E:248:THR:HB	2:E:303:ILE:HB	2.00	0.43
2:E:250:MSE:HB2	2:E:304:LEU:HB3	2.00	0.43
2:E:339:GLN:HA	2:E:340:PRO:HA	1.92	0.43
1:B:243:HIS:O	1:B:247:LYS:HG2	2.19	0.43
2:D:394:LEU:HD22	2:D:398:ASP:HB3	2.00	0.43
1:B:83:MSE:CE	1:B:266:MSE:HB3	2.50	0.42
2:D:87:GLY:HA2	2:D:204:ILE:O	2.19	0.42
1:C:232:GLY:HA3	1:C:415:LEU:HB2	2.00	0.42
1:C:329:ASP:HA	1:C:330:SER:HA	1.69	0.42
2:D:449:LEU:H	2:D:449:LEU:HD23	1.83	0.42
2:F:46:GLU:HB3	2:F:53[B]:MSE:HG2	2.01	0.42
1:A:297:ASN:ND2	2:D:115:VAL:HG13	2.34	0.42
2:F:271:ARG:HB3	2:F:273:TYR:CD2	2.54	0.42
1:B:56:SER:O	1:B:105:ARG:NH1	2.43	0.42
2:F:271:ARG:NH2	8:F:747:HOH:O	2.37	0.42
1:A:41:GLU:OE2	1:A:43:ARG:NH1	2.40	0.42
2:F:123:TYR:HA	2:F:124:PRO:HD3	1.93	0.42
1:A:231:PRO:HD2	1:A:413:TRP:O	2.19	0.42
1:B:494:LYS:O	1:B:498:GLU:HG2	2.20	0.42
2:F:271:ARG:HB3	2:F:273:TYR:HD2	1.84	0.42
1:B:84:PHE:HB3	1:B:88:GLN:HA	2.02	0.42
2:E:41[A]:ARG:NH2	2:E:93:LEU:HD13	2.35	0.42
1:C:243:HIS:ND1	8:C:788:HOH:O	2.37	0.42
1:A:151:VAL:HA	1:A:152:PRO:HD3	1.93	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:308:TYR:HA	1:C:311:ILE:HG22	2.02	0.41
1:C:473:ILE:HG21	2:D:387:VAL:HG12	2.02	0.41
1:C:83:MSE:HG2	1:C:91:LEU:HD12	2.01	0.41
2:E:408:PHE:O	2:E:412:TYR:HB3	2.20	0.41
1:C:1:MSE:HE2	1:C:1:MSE:HA	2.02	0.41
2:E:279:THR:O	2:E:283:THR:HG23	2.21	0.41
1:B:483:SER:O	1:B:487:ARG:HG2	2.21	0.41
2:E:125:ASP:O	2:E:143:ARG:HB2	2.19	0.41
2:E:226[A]:ARG:NH1	8:E:617:HOH:O	2.54	0.41
1:B:580:THR:O	1:B:584:ILE:HG13	2.21	0.41
1:C:42:MSE:HG2	2:D:65:LEU:HD13	2.02	0.41
1:C:191:TRP:HA	1:C:192:PRO:HD3	1.92	0.41
2:F:292:ARG:HD2	8:F:775:HOH:O	2.21	0.41
2:F:328:ILE:HD12	2:F:346:PRO:HB2	2.03	0.41
1:B:123:THR:HG22	1:B:137:GLY:HA2	2.02	0.41
1:C:243:HIS:O	1:C:247:LYS:HD2	2.21	0.41
8:C:800:HOH:O	2:F:350:ARG:HD2	2.20	0.41
2:E:338:ILE:HG23	2:E:414:ASN:HB2	2.01	0.41
1:A:86:GLY:HA3	1:A:302:ALA:O	2.21	0.41
1:B:288:ARG:NH1	8:B:741:HOH:O	2.34	0.41
1:A:350:GLY:C	3:G:194[B]:ARG:HH22	2.25	0.40
2:E:87:GLY:HA2	2:E:204:ILE:O	2.21	0.40
2:F:126:GLU:OE1	2:F:143:ARG:HD2	2.21	0.40
1:B:286:MSE:HE1	1:B:291[B]:LEU:HG	2.03	0.40
1:C:38:GLU:OE1	1:C:52:TYR:OH	2.30	0.40
1:C:351:ASP:CG	2:D:258:ARG:HH22	2.25	0.40
1:B:8:LYS:HB3	1:B:15[B]:MSE:CG	2.51	0.40
1:B:83:MSE:HE1	1:B:266:MSE:HB3	2.03	0.40
1:C:261:GLU:HB3	8:C:919:HOH:O	2.22	0.40
2:D:104:LEU:HA	2:D:105:PRO:HD3	1.93	0.40
2:F:131:GLY:HA2	2:F:421:ARG:O	2.22	0.40

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	589/600 (98%)	575 (98%)	14 (2%)	0	100	100
1	B	601/600 (100%)	588 (98%)	13 (2%)	0	100	100
1	C	591/600 (98%)	577 (98%)	13 (2%)	1 (0%)	47	52
2	D	454/465 (98%)	439 (97%)	15 (3%)	0	100	100
2	E	461/465 (99%)	450 (98%)	11 (2%)	0	100	100
2	F	458/465 (98%)	447 (98%)	11 (2%)	0	100	100
3	G	176/217 (81%)	172 (98%)	4 (2%)	0	100	100
4	H	100/115 (87%)	98 (98%)	2 (2%)	0	100	100
All	All	3430/3527 (97%)	3346 (98%)	83 (2%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	477	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	483/487 (99%)	477 (99%)	6 (1%)	71	81
1	B	490/487 (101%)	482 (98%)	8 (2%)	62	74
1	C	493/487 (101%)	488 (99%)	5 (1%)	76	85
2	D	358/372 (96%)	353 (99%)	5 (1%)	67	78
2	E	376/372 (101%)	370 (98%)	6 (2%)	62	74
2	F	374/372 (100%)	368 (98%)	6 (2%)	62	74
3	G	145/188 (77%)	140 (97%)	5 (3%)	37	44
4	H	79/97 (81%)	77 (98%)	2 (2%)	47	57
All	All	2798/2862 (98%)	2755 (98%)	43 (2%)	62	76

All (43) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	103	LEU
1	A	253	LEU
1	A	273	PHE
1	A	285	LEU
1	A	436	LEU
1	A	567	LEU
1	B	69	GLU
1	B	103	LEU
1	B	238	LYS
1	B	276	LEU
1	B	326	ILE
1	B	417	SER
1	B	447	GLN
1	B	565	GLU
1	C	129	GLU
1	C	144	ILE
1	C	410	LYS
1	C	422	LYS
1	C	480	ASP
2	D	170	VAL
2	D	177	PHE
2	D	219	ILE
2	D	329	LEU
2	D	449	LEU
2	E	15	LEU
2	E	34	MSE
2	E	119	ILE
2	E	146	LYS
2	E	353	ASP
2	E	383	LYS
2	F	30	ILE
2	F	33	ARG
2	F	47	VAL
2	F	66	LYS
2	F	146	LYS
2	F	332	GLU
3	G	47	ASN
3	G	51	ARG
3	G	72	VAL
3	G	130	ASP
3	G	165	ARG
4	H	91	GLN

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Mol	Chain	Res	Type
4	H	102	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
2	E	167	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 11 ligands modelled in this entry, 1 is monoatomic - leaving 10 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	$\#\|Z\| > 2$
5	GOL	D	501	-	5,5,5	0.38	0	5,5,5	0.35	0
5	GOL	B	602	-	5,5,5	0.39	0	5,5,5	0.21	0
5	GOL	F	505	-	5,5,5	0.38	0	5,5,5	0.30	0
5	GOL	F	504	-	5,5,5	0.35	0	5,5,5	0.37	0
5	GOL	F	503	-	5,5,5	0.36	0	5,5,5	0.29	0
7	B3P	F	501	-	18,18,18	0.33	0	23,23,23	5.22	14 (60%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
7	B3P	F	502	-	18,18,18	0.31	0	23,23,23	5.56	12 (52%)
5	GOL	G	301	-	5,5,5	0.38	0	5,5,5	0.24	0
5	GOL	A	601	-	5,5,5	0.38	0	5,5,5	0.33	0
5	GOL	D	502	-	5,5,5	0.36	0	5,5,5	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
5	GOL	D	501	-	-	2/4/4/4	-
5	GOL	B	602	-	-	4/4/4/4	-
5	GOL	F	505	-	-	2/4/4/4	-
5	GOL	F	504	-	-	2/4/4/4	-
5	GOL	F	503	-	-	2/4/4/4	-
7	B3P	F	501	-	-	7/28/28/28	-
7	B3P	F	502	-	-	16/28/28/28	-
5	GOL	G	301	-	-	2/4/4/4	-
5	GOL	A	601	-	-	2/4/4/4	-
5	GOL	D	502	-	-	2/4/4/4	-

There are no bond length outliers.

All (26) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	F	502	B3P	C3-N1-C4	16.45	140.24	116.17
7	F	502	B3P	C2-N2-C8	12.43	134.35	116.17
7	F	501	B3P	C10-C8-N2	9.87	138.48	109.02
7	F	501	B3P	C2-N2-C8	-9.62	102.09	116.17
7	F	501	B3P	C3-N1-C4	9.32	129.80	116.17
7	F	502	B3P	O2-C10-C8	9.29	130.58	111.68
7	F	501	B3P	C11-C8-C9	-9.19	89.87	110.02
7	F	502	B3P	O4-C5-C4	8.66	129.29	111.68
7	F	501	B3P	C1-C3-N1	8.15	130.70	110.98
7	F	501	B3P	C10-C8-C9	-7.38	93.83	110.02
7	F	502	B3P	O3-C11-C8	6.39	124.68	111.68
7	F	501	B3P	C7-C4-C6	5.83	122.81	110.02
7	F	501	B3P	C6-C4-N1	-5.60	92.31	109.02

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	F	501	B3P	O5-C6-C4	-5.36	100.79	111.68
7	F	502	B3P	O1-C9-C8	4.12	120.06	111.68
7	F	502	B3P	C1-C3-N1	-3.57	102.34	110.98
7	F	502	B3P	C11-C8-C10	3.56	117.82	110.02
7	F	501	B3P	C9-C8-N2	-3.52	98.51	109.02
7	F	501	B3P	C5-C4-N1	-3.30	99.17	109.02
7	F	502	B3P	O5-C6-C4	-3.00	105.59	111.68
7	F	502	B3P	C6-C4-C5	2.66	115.85	110.02
7	F	501	B3P	C1-C2-N2	-2.50	104.94	110.98
7	F	502	B3P	C7-C4-N1	2.38	116.13	109.02
7	F	501	B3P	C7-C4-C5	2.28	115.01	110.02
7	F	501	B3P	O2-C10-C8	-2.18	107.25	111.68
7	F	502	B3P	C6-C4-N1	-2.18	102.51	109.02

There are no chirality outliers.

All (41) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	B	602	GOL	O1-C1-C2-O2
5	B	602	GOL	O1-C1-C2-C3
5	D	501	GOL	O1-C1-C2-C3
5	F	503	GOL	O1-C1-C2-C3
5	F	505	GOL	O1-C1-C2-C3
5	G	301	GOL	O1-C1-C2-C3
7	F	501	B3P	C7-C4-N1-C3
7	F	501	B3P	C9-C8-N2-C2
7	F	501	B3P	C10-C8-N2-C2
7	F	502	B3P	C5-C4-N1-C3
7	F	502	B3P	C9-C8-N2-C2
7	F	502	B3P	C10-C8-N2-C2
7	F	502	B3P	C11-C8-N2-C2
7	F	502	B3P	O3-C11-C8-N2
7	F	502	B3P	C2-C1-C3-N1
5	F	505	GOL	O1-C1-C2-O2
5	G	301	GOL	O1-C1-C2-O2
7	F	502	B3P	O3-C11-C8-C9
7	F	502	B3P	O3-C11-C8-C10
7	F	502	B3P	C1-C3-N1-C4
5	A	601	GOL	O1-C1-C2-C3
5	B	602	GOL	C1-C2-C3-O3
5	D	502	GOL	O1-C1-C2-C3
5	F	504	GOL	O1-C1-C2-C3

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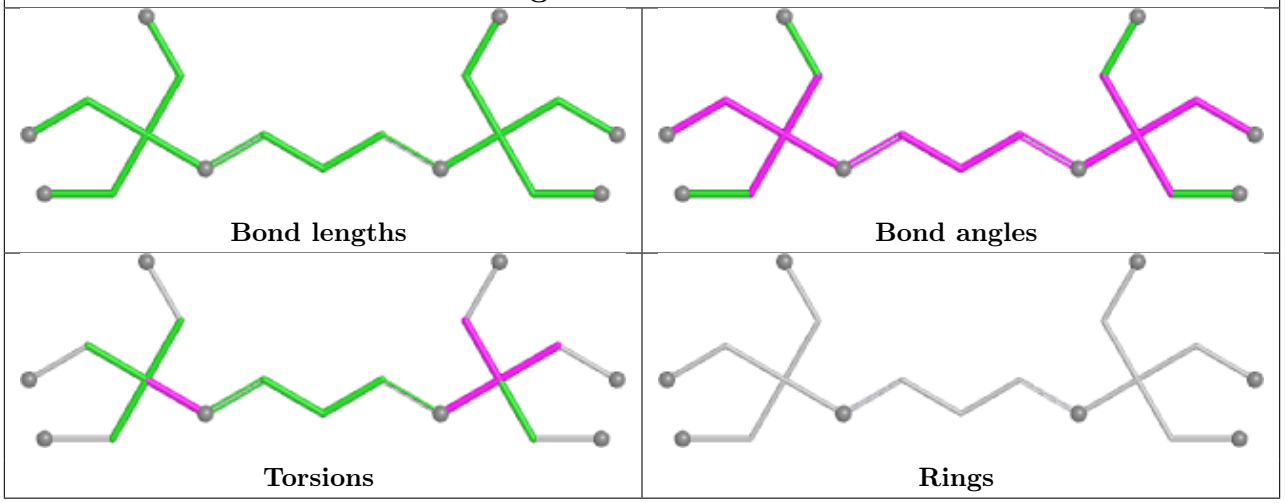
Mol	Chain	Res	Type	Atoms
5	D	502	GOL	O1-C1-C2-O2
5	F	503	GOL	O1-C1-C2-O2
7	F	501	B3P	O3-C11-C8-N2
7	F	502	B3P	N2-C8-C9-O1
5	D	501	GOL	O1-C1-C2-O2
5	F	504	GOL	O1-C1-C2-O2
7	F	501	B3P	C5-C4-N1-C3
7	F	501	B3P	C6-C4-N1-C3
5	A	601	GOL	O1-C1-C2-O2
5	B	602	GOL	O2-C2-C3-O3
7	F	502	B3P	C7-C4-N1-C3
7	F	501	B3P	O2-C10-C8-C11
7	F	502	B3P	C7-C4-C6-O5
7	F	502	B3P	C10-C8-C9-O1
7	F	502	B3P	C6-C4-N1-C3
7	F	502	B3P	C5-C4-C6-O5
7	F	502	B3P	O2-C10-C8-N2

There are no ring outliers.

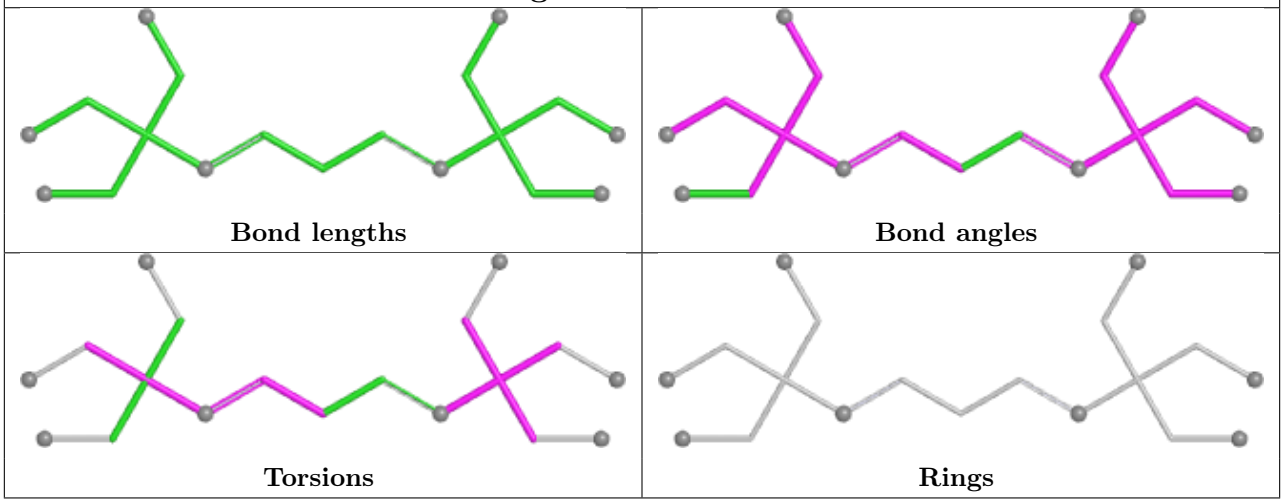
No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand B3P F 501



Ligand B3P F 502



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

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, 95^{th} 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	565/600 (94%)	-0.14	13 (2%) 60 61	17, 31, 54, 79	0
1	B	570/600 (95%)	-0.14	18 (3%) 47 48	13, 27, 53, 74	0
1	C	563/600 (93%)	-0.12	23 (4%) 37 38	13, 28, 55, 80	0
2	D	438/465 (94%)	-0.08	14 (3%) 47 48	18, 31, 60, 91	0
2	E	438/465 (94%)	-0.15	9 (2%) 63 64	13, 28, 58, 82	0
2	F	440/465 (94%)	-0.29	6 (1%) 75 75	13, 24, 52, 77	0
3	G	172/217 (79%)	0.52	25 (14%) 2 2	22, 40, 83, 108	0
4	H	101/115 (87%)	0.37	8 (7%) 12 13	27, 51, 75, 81	0
All	All	3287/3527 (93%)	-0.10	116 (3%) 44 44	13, 29, 59, 108	0

All (116) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	G	72	VAL	7.5
1	B	585	VAL	5.2
3	G	66	VAL	5.1
1	C	279	PRO	4.9
3	G	70	SER	4.9
3	G	77	ILE	4.7
1	B	280	ASN	4.6
1	B	279	PRO	4.6
2	D	175	ASP	4.1
2	D	174	SER	4.1
3	G	183	TYR	4.1
1	B	281	THR	4.1
3	G	75	ALA	4.1
2	D	5	TYR	4.0
1	B	538	LEU	4.0
3	G	69	LYS	3.9

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Mol	Chain	Res	Type	RSRZ
2	F	394	LEU	3.8
1	B	539	GLY	3.8
1	C	281	THR	3.8
1	C	476	LEU	3.7
4	H	101	ASN	3.6
2	E	99	ASN	3.5
1	C	280	ASN	3.5
1	C	538	LEU	3.4
1	A	586	SER	3.4
3	G	82	ALA	3.3
2	D	440	THR	3.3
3	G	128	GLU	3.3
3	G	65	PHE	3.3
3	G	126	ASN	3.2
4	H	2	THR	3.1
2	D	449	LEU	3.1
1	C	541	TYR	3.1
3	G	86	GLU	3.0
3	G	76	PHE	3.0
1	C	479	ILE	3.0
3	G	68	ALA	3.0
1	A	541	TYR	3.0
1	A	396	ASP	2.9
1	A	393	SER	2.9
1	A	473	ILE	2.9
2	D	21	VAL	2.9
1	B	584	ILE	2.9
4	H	102	ILE	2.8
1	C	178	THR	2.8
2	F	99	ASN	2.7
1	B	106	GLY	2.7
3	G	67	LEU	2.7
3	G	81	LEU	2.7
1	C	584	ILE	2.7
2	F	102	GLU	2.7
2	D	455	PRO	2.7
1	A	583	LEU	2.7
3	G	87	ASN	2.7
1	C	585	VAL	2.6
2	E	174	SER	2.6
2	D	103	ILE	2.6
1	C	577	ILE	2.6

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Mol	Chain	Res	Type	RSRZ
4	H	99	GLY	2.5
2	D	445	ILE	2.5
4	H	19	LEU	2.5
2	F	397	ILE	2.5
2	E	392	SER	2.5
3	G	80	LEU	2.5
4	H	31	THR	2.5
1	C	539	GLY	2.5
3	G	129	LEU	2.5
1	B	128	THR	2.4
3	G	78	ASP	2.4
2	D	439	ARG	2.4
2	D	173	SER	2.4
1	C	583	LEU	2.3
2	E	101	PRO	2.3
1	B	107	VAL	2.3
1	C	282	GLY	2.3
2	D	284	LEU	2.3
2	E	387	VAL	2.3
1	B	180	GLN	2.3
3	G	73	GLU	2.3
3	G	83	LEU	2.2
1	C	278	ASP	2.2
2	D	50	ASP	2.2
2	E	172	ASP	2.2
1	C	99	GLN	2.2
1	B	537	SER	2.2
1	B	581	ILE	2.2
1	C	176	ILE	2.2
1	C	182	LEU	2.2
1	B	282	GLY	2.2
3	G	108	GLN	2.2
1	A	447	GLN	2.2
1	A	479	ILE	2.2
1	C	543	ASN	2.2
1	A	480	ASP	2.2
1	A	544	GLU	2.1
1	C	179	GLU	2.1
1	B	548	GLY	2.1
4	H	29	THR	2.1
2	F	104	LEU	2.1
2	E	388	VAL	2.1

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Mol	Chain	Res	Type	RSRZ
3	G	74	GLU	2.1
2	D	101	PRO	2.1
1	B	182	LEU	2.1
1	A	398	SER	2.1
2	E	402	ALA	2.1
3	G	184	TYR	2.1
1	C	107	VAL	2.1
1	C	160	GLN	2.1
1	A	394	GLY	2.1
2	E	102	GLU	2.0
4	H	44	GLU	2.0
2	F	270	ARG	2.0
1	B	311	ILE	2.0
1	B	540	ALA	2.0
1	C	180	GLN	2.0
1	A	584	ILE	2.0

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 monosaccharides in this entry.

6.4 Ligands (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, 95^{th} 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
5	GOL	D	502	6/6	0.55	0.23	67,69,69,70	0
5	GOL	F	503	6/6	0.73	0.31	68,69,71,71	0
5	GOL	G	301	6/6	0.78	0.12	55,56,58,59	0
5	GOL	D	501	6/6	0.80	0.16	64,66,67,69	0
7	B3P	F	502	19/19	0.81	0.18	42,55,68,68	0
5	GOL	F	505	6/6	0.88	0.14	53,55,56,57	0
5	GOL	B	602	6/6	0.92	0.14	53,57,58,60	0

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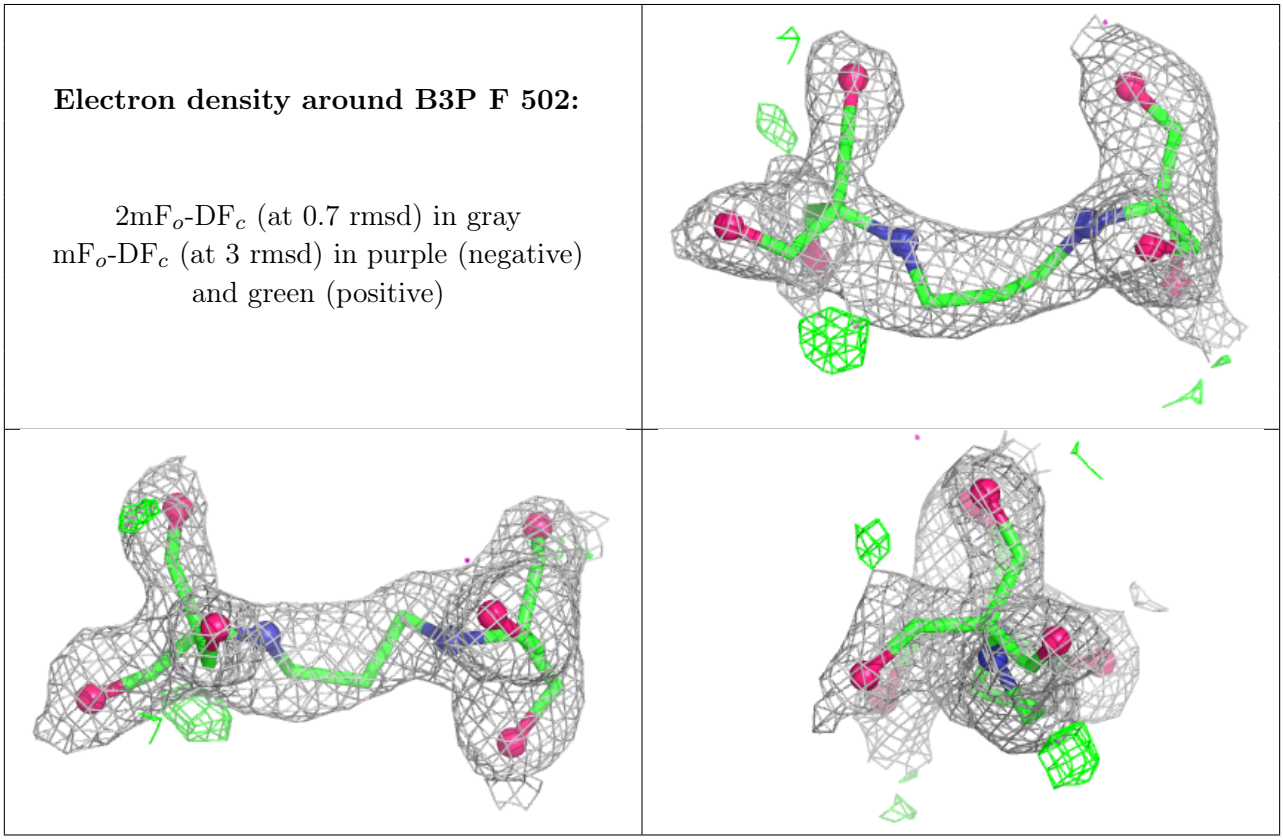
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	GOL	F	504	6/6	0.93	0.11	47,48,49,50	0
5	GOL	A	601	6/6	0.93	0.20	48,51,53,55	0
7	B3P	F	501	19/19	0.95	0.12	18,25,29,31	0
6	CL	B	601	1/1	0.99	0.09	26,26,26,26	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

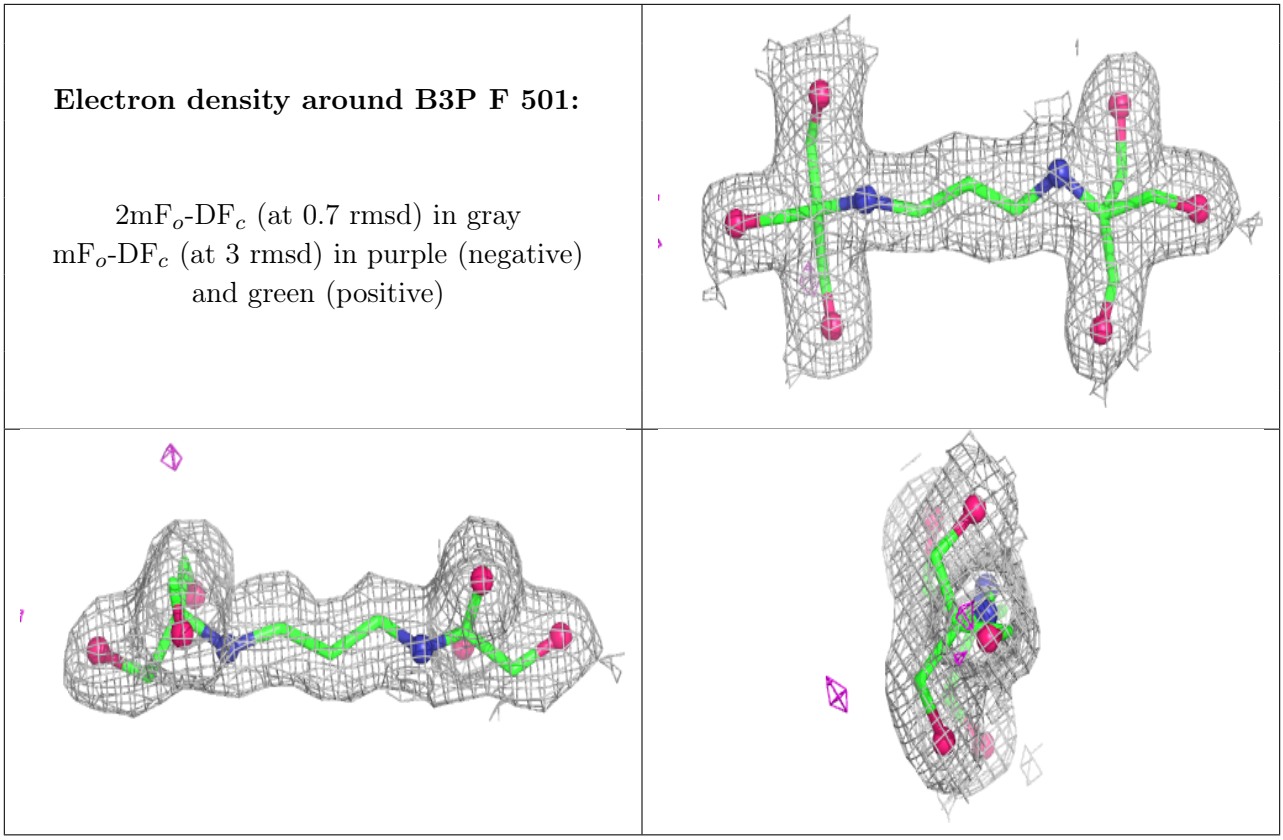
Electron density around B3P F 502:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around B3P F 501:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers (i)

There are no such residues in this entry.