Full wwPDB X-ray Structure Validation Report (i)

Aug 28, 2023 – 12:14 AM EDT

PDB ID	:	3LNM
Title	:	F233W mutant of the Kv2.1 paddle-Kv1.2 chimera channel
Authors	:	Tao, X.; Lee, A.; Limapichat, W.; Dougherty, D.A.; MacKinnon, R.
Deposited on	:	2010-02-02
Resolution	:	2.90 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 (i) 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 (i)) were used in the production of this report:

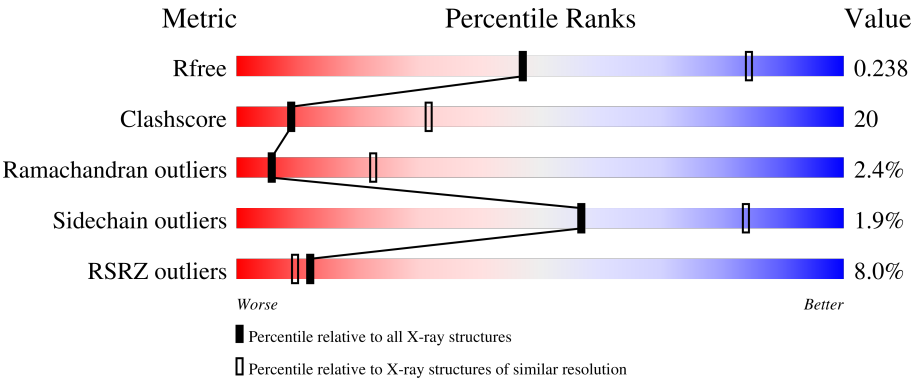
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

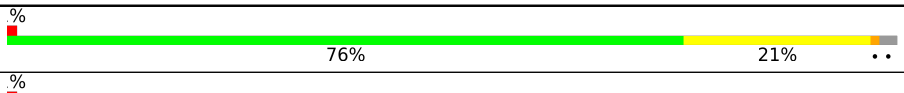
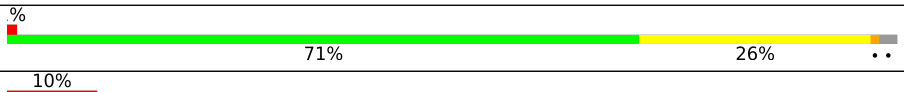
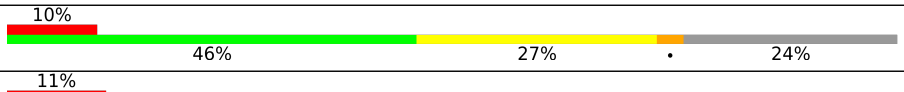
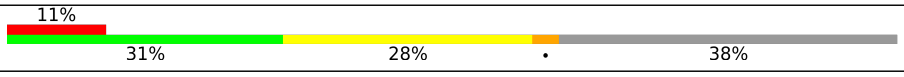
The reported resolution of this entry is 2.90 Å.

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	1957 (2.90-2.90)
Clashscore	141614	2172 (2.90-2.90)
Ramachandran outliers	138981	2115 (2.90-2.90)
Sidechain outliers	138945	2117 (2.90-2.90)
RSRZ outliers	127900	1906 (2.90-2.90)

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	333	
1	C	333	
2	B	514	
2	D	514	

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	PGW	B	601	-	-	-	X
4	PGW	B	606	-	-	-	X
4	PGW	B	607	-	-	-	X
4	PGW	B	608	-	-	-	X
4	PGW	B	611	-	-	-	X
4	PGW	B	612	-	-	-	X
4	PGW	D	601	-	-	-	X
5	K	D	501	-	-	-	X

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 11308 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 Voltage-gated potassium channel subunit beta-2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	326	Total	C	N	O	S	0	0	0
			2556	1627	443	470	16			
1	C	326	Total	C	N	O	S	0	0	0
			2556	1627	443	470	16			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	35	MET	-	initiating methionine	UNP P62483
C	35	MET	-	initiating methionine	UNP P62483

- Molecule 2 is a protein called F233W mutant of the Kv2.1 paddle-Kv1.2 chimera.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	389	Total	C	N	O	S	0	0	0
			3116	2038	510	554	14			
2	D	318	Total	C	N	O	S	0	0	0
			2584	1702	419	451	12			

There are 50 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-18	MET	-	expression tag	UNP P63142
B	-17	ALA	-	expression tag	UNP P63142
B	-16	HIS	-	expression tag	UNP P63142
B	-15	HIS	-	expression tag	UNP P63142
B	-14	HIS	-	expression tag	UNP P63142
B	-13	HIS	-	expression tag	UNP P63142
B	-12	HIS	-	expression tag	UNP P63142
B	-11	HIS	-	expression tag	UNP P63142
B	-10	HIS	-	expression tag	UNP P63142
B	-9	HIS	-	expression tag	UNP P63142

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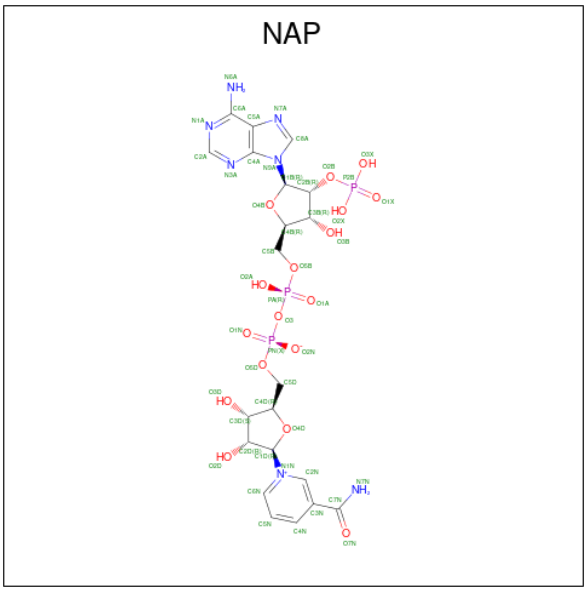
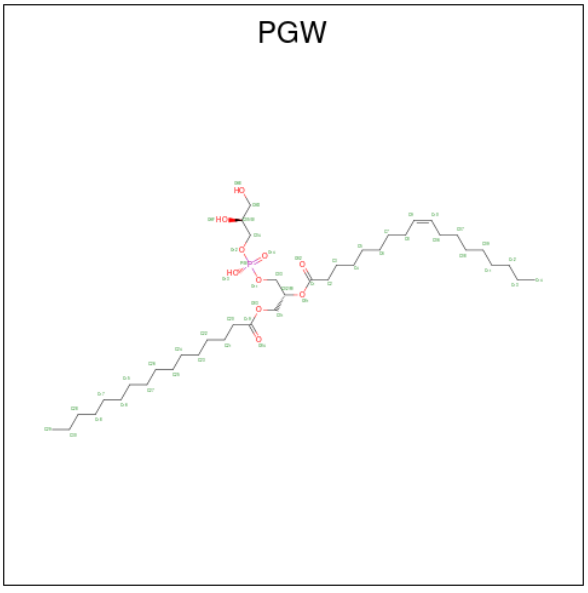
Chain	Residue	Modelled	Actual	Comment	Reference
B	-8	HIS	-	expression tag	UNP P63142
B	-7	HIS	-	expression tag	UNP P63142
B	-6	GLY	-	expression tag	UNP P63142
B	-5	LEU	-	expression tag	UNP P63142
B	-4	VAL	-	expression tag	UNP P63142
B	-3	PRO	-	expression tag	UNP P63142
B	-2	ARG	-	expression tag	UNP P63142
B	-1	GLY	-	expression tag	UNP P63142
B	0	SER	-	expression tag	UNP P63142
B	31	SER	CYS	engineered mutation	UNP P63142
B	32	SER	CYS	engineered mutation	UNP P63142
B	207	GLN	ASN	engineered mutation	UNP P63142
B	233	TRP	PHE	engineered mutation	UNP P63142
B	431	SER	CYS	engineered mutation	UNP P63142
B	478	SER	CYS	engineered mutation	UNP P63142
D	-18	MET	-	expression tag	UNP P63142
D	-17	ALA	-	expression tag	UNP P63142
D	-16	HIS	-	expression tag	UNP P63142
D	-15	HIS	-	expression tag	UNP P63142
D	-14	HIS	-	expression tag	UNP P63142
D	-13	HIS	-	expression tag	UNP P63142
D	-12	HIS	-	expression tag	UNP P63142
D	-11	HIS	-	expression tag	UNP P63142
D	-10	HIS	-	expression tag	UNP P63142
D	-9	HIS	-	expression tag	UNP P63142
D	-8	HIS	-	expression tag	UNP P63142
D	-7	HIS	-	expression tag	UNP P63142
D	-6	GLY	-	expression tag	UNP P63142
D	-5	LEU	-	expression tag	UNP P63142
D	-4	VAL	-	expression tag	UNP P63142
D	-3	PRO	-	expression tag	UNP P63142
D	-2	ARG	-	expression tag	UNP P63142
D	-1	GLY	-	expression tag	UNP P63142
D	0	SER	-	expression tag	UNP P63142
D	31	SER	CYS	engineered mutation	UNP P63142
D	32	SER	CYS	engineered mutation	UNP P63142
D	207	GLN	ASN	engineered mutation	UNP P63142
D	233	TRP	PHE	engineered mutation	UNP P63142
D	431	SER	CYS	engineered mutation	UNP P63142
D	478	SER	CYS	engineered mutation	UNP P63142

- Molecule 3 is NADP NICOTINAMIDE-ADENINE-DINUCLEOTIDE PHOSPHATE (three-letter code: NAP) (formula: $C_{21}H_{28}N_7O_{17}P_3$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			48	21	7	17	3		
3	C	1	Total	C	N	O	P	0	0
			48	21	7	17	3		

- Molecule 4 is (1R)-2-{[(S)-{[(2S)-2,3-dihydroxypropyl]oxy}(hydroxy)phosphoryl]oxy}-1-[(hexadecanoyloxy)methyl]ethyl (9Z)-octadec-9-enoate (three-letter code: PGW) (formula: $C_{40}H_{77}O_{10}P$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	B	1	Total	C	O	0	0
			19	15	4		

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	B	1	Total C 5 5	0	0
4	B	1	Total C 5 5	0	0
4	B	1	Total C 5 5	0	0
4	B	1	Total C 8 8	0	0
4	B	1	Total C 7 7	0	0
4	B	1	Total C 7 7	0	0
4	B	1	Total C O P 20 11 8 1	0	0
4	B	1	Total C 6 6	0	0
4	B	1	Total C O P 28 17 10 1	0	0
4	B	1	Total C 9 9	0	0
4	B	1	Total C 6 6	0	0
4	D	1	Total C O 22 17 5	0	0

- Molecule 5 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	B	5	Total K 5 5	0	0
5	D	5	Total K 5 5	0	0

- Molecule 6 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	92	Total O 92 92	0	0
6	B	46	Total O 46 46	0	0
6	C	91	Total O 91 91	0	0

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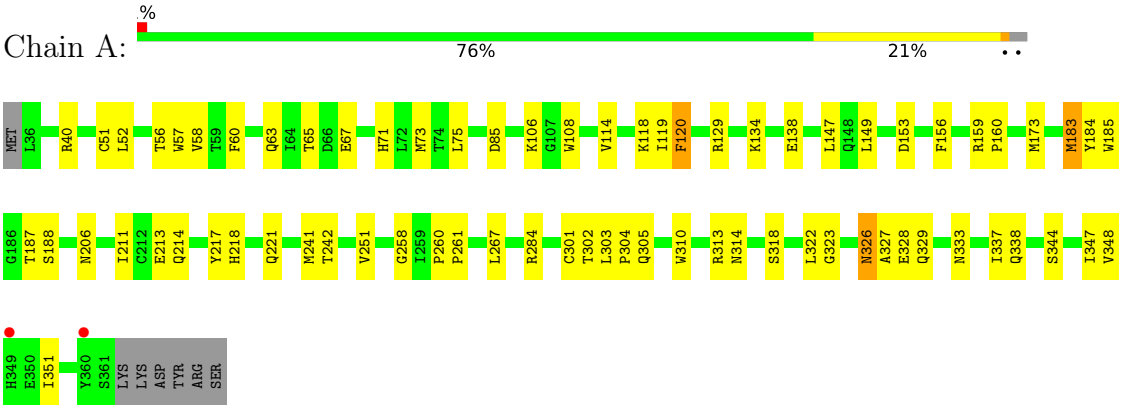
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	D	14	Total O 14 14	0	0

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.

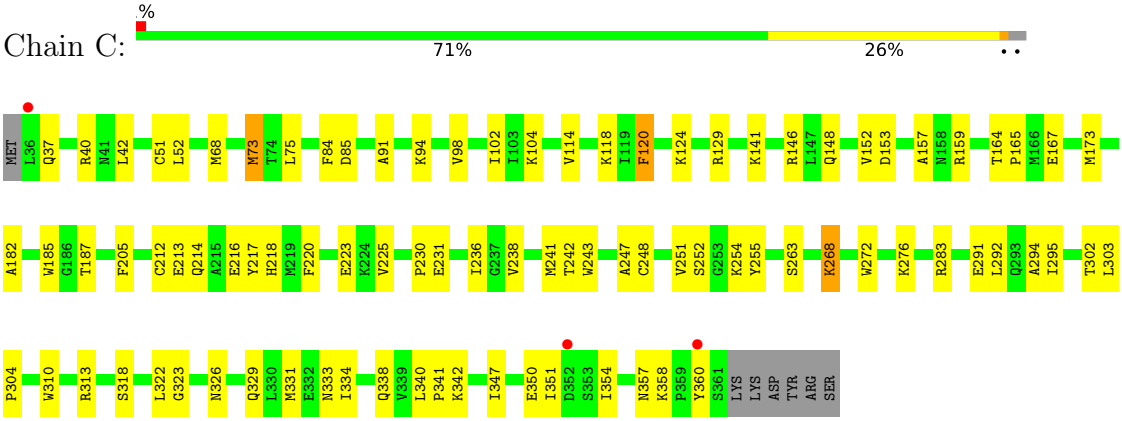
• Molecule 1: Voltage-gated potassium channel subunit beta-2

Chain A:



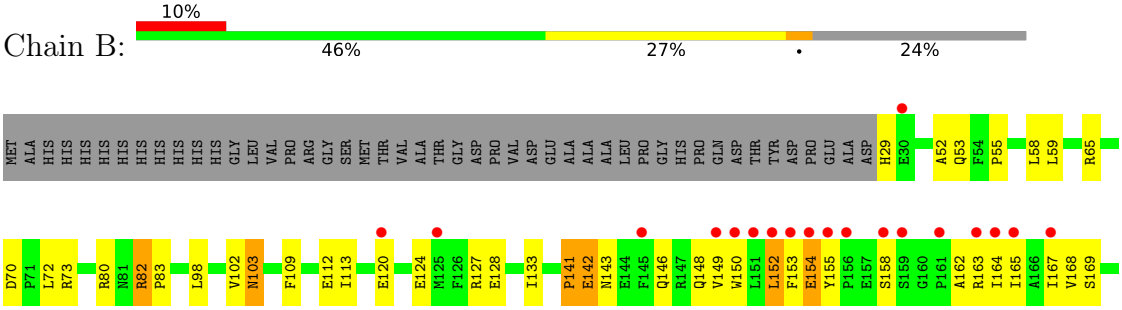
• Molecule 1: Voltage-gated potassium channel subunit beta-2

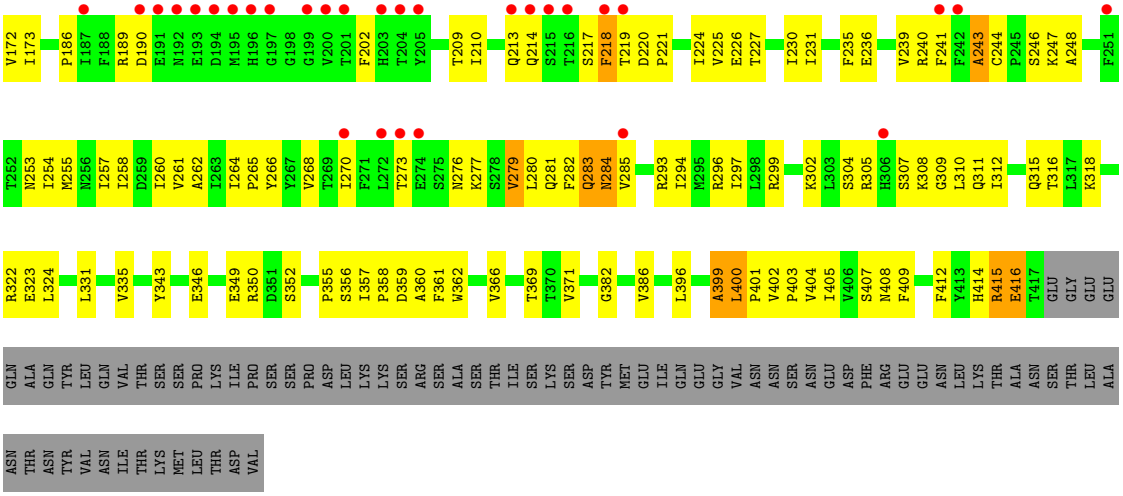
Chain C:



• Molecule 2: F233W mutant of the Kv2.1 paddle-Kv1.2 chimera

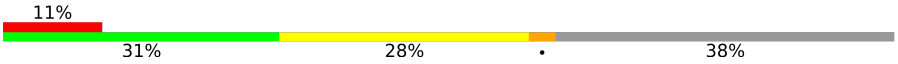
Chain B:

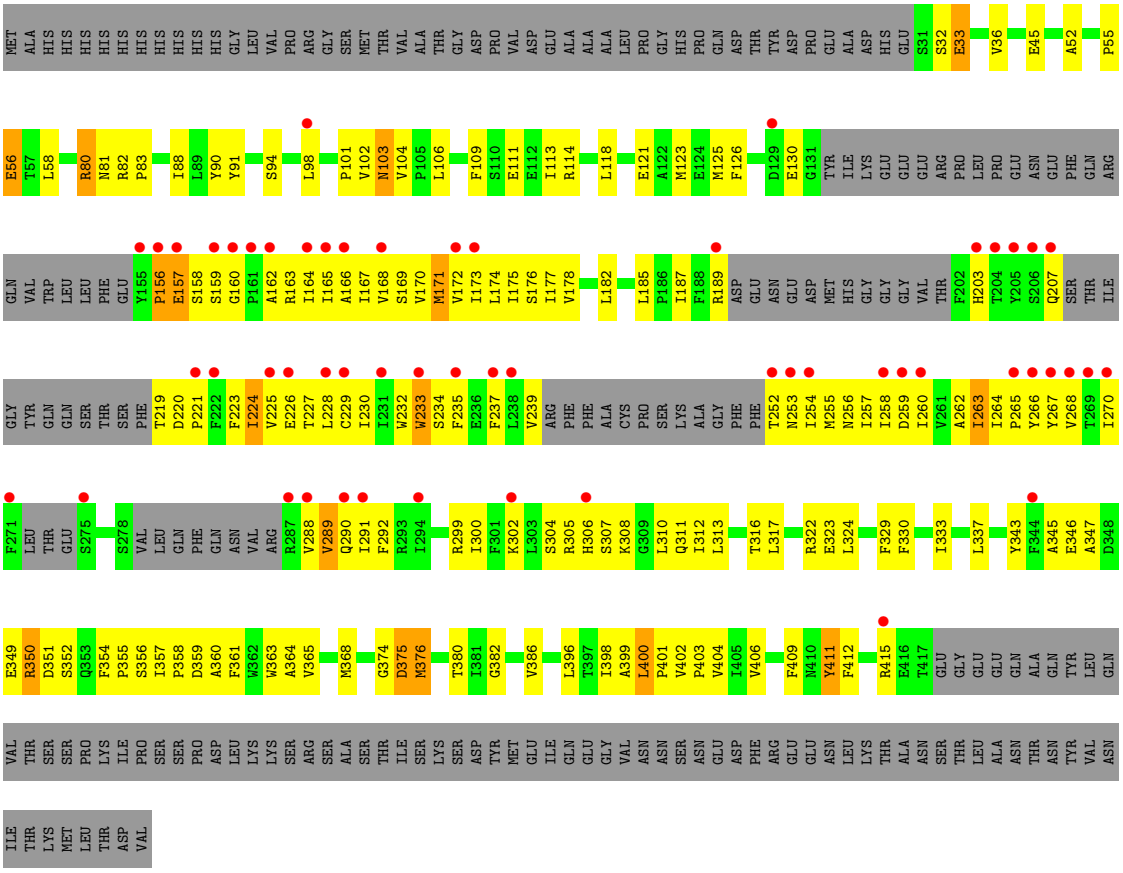




• Molecule 2: F233W mutant of the Kv2.1 paddle-Kv1.2 chimera

Chain D:





4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 4 21 2	Depositor
Cell constants a, b, c, α, β, γ	144.27Å 144.27Å 284.06Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.64 – 2.90 49.63 – 2.90	Depositor EDS
% Data completeness (in resolution range)	99.4 (49.64-2.90) 99.6 (49.63-2.90)	Depositor EDS
R_{merge}	0.13	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.60 (at 2.91Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.211 , 0.247 0.209 , 0.238	Depositor DCC
R_{free} test set	3245 reflections (4.83%)	wwPDB-VP
Wilson B-factor (Å^2)	55.4	Xtriage
Anisotropy	0.283	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 67.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	11308	wwPDB-VP
Average B, all atoms (Å^2)	71.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.02% 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: NAP, PGW, K

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	0.42	0/2608	0.62	0/3524
1	C	0.38	0/2608	0.59	1/3524 (0.0%)
2	B	0.35	0/3199	0.54	0/4334
2	D	0.33	0/2646	0.54	0/3581
All	All	0.37	0/11061	0.57	1/14963 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	157	ALA	N-CA-C	-5.06	97.33	111.00

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	A	2556	0	2582	56	0
1	C	2556	0	2582	61	0
2	B	3116	0	3052	137	0
2	D	2584	0	2598	186	0
3	A	48	0	25	2	0
3	C	48	0	25	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	B	125	0	141	8	0
4	D	22	0	25	7	0
5	B	5	0	0	0	0
5	D	5	0	0	0	0
6	A	92	0	0	2	0
6	B	46	0	0	2	0
6	C	91	0	0	3	0
6	D	14	0	0	2	0
All	All	11308	0	11030	446	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 20.

All (446) 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:B:213:GLN:HE22	2:B:219:THR:HB	1.29	0.95
2:B:400:LEU:HB2	2:B:401:PRO:HD3	1.49	0.93
2:D:400:LEU:HB2	2:D:401:PRO:HD3	1.48	0.93
2:D:103:ASN:HD22	2:D:103:ASN:H	1.11	0.92
1:C:295:ILE:HD12	1:C:295:ILE:H	1.37	0.89
2:D:264:ILE:HB	2:D:265:PRO:HD3	1.54	0.89
1:C:333:ASN:HD21	3:C:1001:NAP:H61A	1.22	0.86
2:B:103:ASN:H	2:B:103:ASN:HD22	1.21	0.85
2:B:236:GLU:HB3	2:B:240:ARG:HH12	1.39	0.84
2:D:260:ILE:HG22	2:D:264:ILE:HD11	1.60	0.84
2:D:182:LEU:HA	2:D:185:LEU:HD13	1.59	0.83
2:B:236:GLU:HB3	2:B:240:ARG:NH1	1.94	0.82
2:B:213:GLN:HB3	2:B:220:ASP:HB2	1.60	0.82
2:D:103:ASN:H	2:D:103:ASN:ND2	1.78	0.80
2:B:152:LEU:HB2	2:B:165:ILE:HD12	1.64	0.77
2:D:267:TYR:HA	2:D:270:ILE:HD12	1.64	0.77
1:C:338:GLN:O	1:C:341:PRO:HD2	1.85	0.76
1:C:217:TYR:HB2	1:C:225:VAL:HG21	1.68	0.76
2:D:225:VAL:HG13	2:D:228:LEU:HD23	1.68	0.76
2:D:355:PRO:HB2	2:D:359:ASP:OD2	1.86	0.75
2:B:82:ARG:HB2	2:B:83:PRO:HD3	1.67	0.74
2:B:98:LEU:HD21	2:B:113:ILE:HD13	1.70	0.74
2:D:259:ASP:HB2	2:D:302:LYS:NZ	2.02	0.74
2:D:265:PRO:HA	2:D:292:PHE:HD2	1.53	0.73
2:B:186:PRO:HG3	2:B:189:ARG:NH2	2.03	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:257:ILE:HD13	2:D:260:ILE:HD12	1.71	0.72
2:B:350:ARG:HB3	2:B:350:ARG:NH1	2.05	0.72
2:D:260:ILE:O	2:D:264:ILE:HG13	1.90	0.72
2:B:244:CYS:HB3	2:B:247:LYS:HD3	1.71	0.72
2:D:264:ILE:O	2:D:268:VAL:HG23	1.90	0.71
2:B:73:ARG:HD3	6:B:2061:HOH:O	1.89	0.71
2:B:168:VAL:O	2:B:172:VAL:HG23	1.90	0.70
1:C:75:LEU:HD23	1:C:331:MET:HE3	1.72	0.70
2:D:98:LEU:HD21	2:D:113:ILE:HD13	1.72	0.70
2:B:213:GLN:NE2	2:B:219:THR:HB	2.06	0.69
1:C:326:ASN:ND2	1:C:329:GLN:HG3	2.07	0.69
1:A:333:ASN:HD21	3:A:1001:NAP:H61A	1.39	0.69
2:B:152:LEU:HB3	2:B:162:ALA:HB2	1.73	0.69
2:D:166:ALA:HB1	2:D:306:HIS:CD2	2.28	0.69
2:D:288:VAL:HG12	2:D:289:VAL:H	1.55	0.69
2:D:288:VAL:O	2:D:289:VAL:HG22	1.93	0.69
2:B:260:ILE:HG22	2:B:264:ILE:HD11	1.75	0.68
2:B:361:PHE:HB2	4:B:601:PGW:H2	1.75	0.68
1:A:118:LYS:HG3	1:A:156:PHE:HB2	1.74	0.68
1:C:295:ILE:HD12	1:C:295:ILE:N	2.08	0.68
2:B:323:GLU:CD	2:B:323:GLU:H	1.98	0.68
2:D:82:ARG:HB2	2:D:83:PRO:HD3	1.77	0.67
2:D:237:PHE:HE1	2:D:260:ILE:HG12	1.60	0.66
2:D:411:TYR:CZ	2:D:415:ARG:HD3	2.30	0.66
2:D:227:THR:HA	2:D:230:ILE:HB	1.76	0.66
2:D:230:ILE:HG21	2:D:266:TYR:CE2	2.30	0.66
2:B:315:GLN:HE21	4:B:610:PGW:H01	1.61	0.66
2:D:254:ILE:HG23	2:D:255:MET:H	1.60	0.65
2:B:109:PHE:CE2	2:B:113:ILE:HD11	2.31	0.65
2:B:244:CYS:H	2:B:247:LYS:HZ3	1.42	0.65
2:D:322:ARG:HH11	2:D:322:ARG:HG3	1.62	0.65
1:C:331:MET:HE2	1:C:334:ILE:HD12	1.79	0.64
2:D:173:ILE:HD13	2:D:302:LYS:HB3	1.80	0.64
2:D:227:THR:HA	2:D:230:ILE:CG1	2.28	0.64
2:D:109:PHE:CE2	2:D:113:ILE:HD11	2.33	0.64
2:D:343:TYR:CE1	2:D:356:SER:HA	2.33	0.64
2:D:288:VAL:HG12	2:D:289:VAL:N	2.14	0.63
2:B:164:ILE:O	2:B:168:VAL:HG23	1.99	0.63
2:B:120:GLU:O	2:B:124:GLU:HG3	1.98	0.63
2:B:350:ARG:HB3	2:B:350:ARG:HH11	1.64	0.63
2:B:396:LEU:O	2:B:400:LEU:HG	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:349:GLU:HB2	2:D:352:SER:HB2	1.79	0.63
1:A:326:ASN:ND2	1:A:329:GLN:H	1.97	0.62
2:D:106:LEU:HD11	2:D:130:GLU:HG2	1.80	0.62
2:B:280:LEU:HD12	2:B:280:LEU:H	1.64	0.62
2:B:282:PHE:C	2:B:284:ASN:H	2.02	0.62
2:D:81:ASN:HA	6:D:2057:HOH:O	1.99	0.62
1:A:326:ASN:HD22	1:A:328:GLU:N	1.97	0.62
1:C:295:ILE:H	1:C:295:ILE:CD1	2.10	0.61
2:B:240:ARG:HH11	2:B:240:ARG:HG3	1.65	0.61
2:D:121:GLU:O	2:D:125:MET:HG2	2.01	0.61
2:B:210:ILE:HD11	2:B:273:THR:HG21	1.83	0.61
2:D:90:TYR:CE2	2:D:94:SER:HB3	2.36	0.60
1:C:167:GLU:HG3	1:C:205:PHE:CE1	2.37	0.60
1:A:40:ARG:HD2	1:A:318:SER:O	2.01	0.60
2:D:357:ILE:HB	2:D:358:PRO:HD3	1.83	0.60
2:B:331:LEU:O	2:B:335:VAL:HG23	2.01	0.60
2:D:402:VAL:HB	2:D:403:PRO:HD3	1.84	0.60
2:B:213:GLN:HB3	2:B:220:ASP:CB	2.32	0.59
1:C:141:LYS:HD2	6:C:2091:HOH:O	2.00	0.59
2:B:276:ASN:HB3	2:B:281:GLN:HB3	1.85	0.59
1:A:326:ASN:HD21	1:A:328:GLU:HB2	1.67	0.59
2:D:235:PHE:O	2:D:239:VAL:HG23	2.03	0.59
2:B:262:ALA:CB	2:B:302:LYS:HD2	2.32	0.59
2:D:364:ALA:O	2:D:368:MET:HG3	2.02	0.59
2:B:103:ASN:H	2:B:103:ASN:ND2	1.97	0.59
1:C:292:LEU:HA	1:C:295:ILE:HD13	1.85	0.59
2:D:185:LEU:O	2:D:189:ARG:HG2	2.03	0.59
2:D:52:ALA:O	2:D:55:PRO:HD3	2.03	0.58
2:D:375:ASP:O	2:D:376:MET:HB2	2.01	0.58
2:D:162:ALA:HA	2:D:165:ILE:CD1	2.32	0.58
2:D:172:VAL:HG12	2:D:172:VAL:O	2.02	0.58
2:D:227:THR:HA	2:D:230:ILE:CB	2.33	0.58
1:C:236:ILE:HG13	1:C:238:VAL:HG23	1.85	0.58
2:D:254:ILE:HG23	2:D:255:MET:N	2.18	0.58
2:B:361:PHE:CB	4:B:601:PGW:H2	2.33	0.58
4:B:608:PGW:O11	4:B:608:PGW:O02	2.22	0.58
2:D:221:PRO:C	2:D:223:PHE:H	2.06	0.57
2:D:255:MET:HG3	2:D:305:ARG:NH2	2.18	0.57
1:A:326:ASN:HD21	1:A:329:GLN:H	1.52	0.57
2:D:288:VAL:C	2:D:290:GLN:H	2.06	0.57
2:B:264:ILE:O	2:B:268:VAL:HG23	2.03	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:258:GLY:O	1:A:260:PRO:HD3	2.05	0.57
2:D:259:ASP:HB2	2:D:302:LYS:HZ3	1.66	0.57
2:D:396:LEU:O	2:D:400:LEU:HG	2.05	0.57
2:B:244:CYS:H	2:B:247:LYS:NZ	2.03	0.57
2:D:113:ILE:HG23	2:D:118:LEU:HD12	1.87	0.57
2:D:253:ASN:HB3	2:D:256:ASN:ND2	2.19	0.57
4:B:601:PGW:H01	4:B:601:PGW:O02	2.03	0.57
2:D:160:GLY:O	2:D:164:ILE:HG12	2.05	0.57
2:D:267:TYR:HA	2:D:270:ILE:CD1	2.34	0.57
2:D:365:VAL:HG21	4:D:601:PGW:H6A	1.87	0.57
2:D:109:PHE:O	2:D:113:ILE:HG13	2.05	0.56
2:B:382:GLY:O	2:B:386:VAL:HG23	2.06	0.56
4:D:601:PGW:H01	4:D:601:PGW:O02	2.04	0.56
2:B:294:ILE:O	2:B:297:ILE:HG22	2.06	0.56
2:D:56:GLU:CD	2:D:56:GLU:H	2.08	0.56
1:A:159:ARG:HA	1:A:188:SER:O	2.06	0.56
1:C:326:ASN:HD21	1:C:329:GLN:HG3	1.70	0.56
2:D:32:SER:O	2:D:33:GLU:C	2.44	0.55
2:D:58:LEU:C	2:D:58:LEU:HD23	2.26	0.55
2:D:173:ILE:C	2:D:175:ILE:H	2.08	0.55
2:B:281:GLN:O	2:B:284:ASN:HB3	2.07	0.55
2:D:350:ARG:HD2	2:D:350:ARG:O	2.07	0.55
2:D:165:ILE:O	2:D:168:VAL:HG12	2.07	0.54
2:B:309:GLY:HA2	2:B:312:ILE:HD12	1.87	0.54
2:D:402:VAL:O	2:D:406:VAL:HG23	2.06	0.54
2:D:103:ASN:HD22	2:D:103:ASN:N	1.93	0.54
2:D:156:PRO:O	2:D:158:SER:N	2.35	0.54
1:C:340:LEU:HB3	1:C:341:PRO:HD3	1.88	0.54
2:D:227:THR:OG1	2:D:230:ILE:HD12	2.07	0.54
1:A:302:THR:OG1	1:A:305:GLN:HG3	2.08	0.54
2:D:171:MET:SD	2:D:171:MET:N	2.80	0.54
2:D:266:TYR:O	2:D:270:ILE:HG13	2.08	0.54
1:A:326:ASN:ND2	1:A:328:GLU:HB2	2.23	0.53
1:A:147:LEU:HB3	1:A:149:LEU:HD12	1.89	0.53
1:C:247:ALA:O	1:C:248:CYS:HB2	2.08	0.53
1:C:347:ILE:O	1:C:351:ILE:HG13	2.09	0.53
2:B:255:MET:HB3	2:B:305:ARG:NH2	2.23	0.53
2:D:227:THR:C	2:D:229:CYS:N	2.62	0.53
2:D:227:THR:C	2:D:229:CYS:H	2.11	0.53
2:D:237:PHE:CE1	2:D:260:ILE:HG12	2.43	0.53
2:D:350:ARG:HG3	2:D:350:ARG:HH11	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:114:ARG:HG3	2:D:114:ARG:HH11	1.74	0.53
2:D:203:HIS:O	2:D:207:GLN:HB3	2.08	0.53
2:B:103:ASN:HD22	2:B:103:ASN:N	2.00	0.53
2:D:346:GLU:OE2	2:D:380:THR:HG23	2.09	0.53
2:B:241:PHE:O	2:B:247:LYS:NZ	2.39	0.53
1:C:187:THR:O	1:C:213:GLU:HA	2.09	0.53
2:D:308:LYS:O	2:D:312:ILE:HG13	2.09	0.53
1:A:251:VAL:O	1:A:251:VAL:HG12	2.08	0.52
2:B:163:ARG:O	2:B:167:ILE:HG12	2.09	0.52
2:D:178:VAL:O	2:D:182:LEU:HG	2.08	0.52
2:D:189:ARG:HG3	2:D:189:ARG:HH11	1.74	0.52
1:A:326:ASN:HD22	1:A:328:GLU:H	1.57	0.52
1:C:152:VAL:O	1:C:182:ALA:HA	2.08	0.52
1:C:214:GLN:HA	1:C:241:MET:O	2.09	0.52
1:C:350:GLU:O	1:C:354:ILE:HG13	2.10	0.52
1:A:71:HIS:CD2	1:A:327:ALA:HB2	2.45	0.52
1:C:218:HIS:CE1	1:C:220:PHE:HB2	2.45	0.52
2:D:313:LEU:O	2:D:317:LEU:HG	2.09	0.52
2:B:277:LYS:HE3	6:B:2123:HOH:O	2.10	0.52
2:B:262:ALA:HB1	2:B:302:LYS:HD2	1.90	0.52
2:D:349:GLU:HB3	2:D:352:SER:H	1.75	0.52
1:A:303:LEU:HB3	1:A:304:PRO:HD3	1.92	0.52
2:B:311:GLN:O	2:B:315:GLN:HG3	2.10	0.52
2:D:171:MET:C	2:D:173:ILE:H	2.13	0.52
2:D:259:ASP:HA	2:D:262:ALA:HB3	1.92	0.52
2:D:361:PHE:HD2	4:D:601:PGW:H20A	1.75	0.52
2:B:415:ARG:HH11	2:B:415:ARG:HG2	1.76	0.51
1:C:120:PHE:O	1:C:129:ARG:HA	2.10	0.51
2:B:414:HIS:C	2:B:416:GLU:H	2.14	0.51
1:C:120:PHE:CE2	1:C:159:ARG:HD3	2.46	0.51
1:C:104:LYS:NZ	1:C:148:GLN:HE22	2.07	0.51
2:D:374:GLY:C	2:D:376:MET:H	2.13	0.51
1:A:120:PHE:O	1:A:129:ARG:HA	2.10	0.51
2:B:53:GLN:C	2:B:55:PRO:HD3	2.31	0.51
1:C:114:VAL:HA	1:C:153:ASP:OD2	2.10	0.51
2:B:324:LEU:HD13	2:B:405:ILE:HD13	1.93	0.51
2:D:316:THR:HG21	2:D:409:PHE:HB2	1.92	0.51
2:B:414:HIS:O	2:B:416:GLU:N	2.37	0.51
2:B:280:LEU:HD12	2:B:280:LEU:N	2.26	0.50
2:D:88:ILE:O	2:D:91:TYR:HB3	2.11	0.50
1:C:310:TRP:O	1:C:313:ARG:HG2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:326:ASN:ND2	1:A:328:GLU:N	2.59	0.50
2:D:258:ILE:CG2	2:D:302:LYS:HA	2.41	0.50
2:D:400:LEU:O	2:D:403:PRO:HD2	2.11	0.50
2:D:221:PRO:HA	2:D:224:ILE:HB	1.93	0.50
2:D:329:PHE:O	2:D:333:ILE:HG12	2.12	0.50
2:B:243:ALA:N	2:B:247:LYS:HZ1	2.10	0.50
2:D:162:ALA:HA	2:D:165:ILE:HD12	1.93	0.50
2:D:259:ASP:O	2:D:263:ILE:HG12	2.12	0.50
2:D:400:LEU:HB2	2:D:401:PRO:CD	2.32	0.50
2:D:169:SER:O	2:D:173:ILE:HG13	2.12	0.50
2:B:357:ILE:HB	2:B:358:PRO:HD3	1.94	0.50
2:D:177:ILE:HD11	2:D:300:ILE:HG13	1.94	0.50
2:D:304:SER:HA	2:D:310:LEU:HD23	1.92	0.50
2:B:102:VAL:HG23	2:B:103:ASN:N	2.27	0.50
1:C:73:MET:HE3	1:C:84:PHE:CD2	2.47	0.50
2:B:29:HIS:HB2	2:B:52:ALA:HB3	1.93	0.49
2:B:362:TRP:O	2:B:366:VAL:HG23	2.12	0.49
2:D:354:PHE:HE1	2:D:376:MET:HE2	1.77	0.49
2:B:318:LYS:HD2	4:B:610:PGW:H22	1.94	0.49
2:D:260:ILE:HG22	2:D:264:ILE:CD1	2.37	0.49
1:A:313:ARG:HH11	1:A:313:ARG:HG2	1.76	0.49
2:D:253:ASN:O	2:D:257:ILE:HG12	2.12	0.49
2:B:169:SER:O	2:B:173:ILE:HG13	2.12	0.49
1:C:302:THR:OG1	1:C:304:PRO:HD2	2.13	0.49
2:D:123:MET:O	2:D:126:PHE:HB3	2.11	0.49
2:B:343:TYR:CE1	2:B:356:SER:HA	2.48	0.49
2:B:261:VAL:HA	2:B:264:ILE:HD12	1.95	0.49
2:B:282:PHE:C	2:B:284:ASN:N	2.66	0.49
1:C:333:ASN:ND2	3:C:1001:NAP:H61A	2.02	0.49
2:D:308:LYS:HA	2:D:311:GLN:CG	2.43	0.49
1:A:52:LEU:HD13	1:A:322:LEU:HD11	1.93	0.49
2:D:361:PHE:CD2	4:D:601:PGW:H20A	2.48	0.49
1:A:338:GLN:N	1:A:338:GLN:CD	2.65	0.49
2:B:240:ARG:NH1	2:B:240:ARG:HG3	2.27	0.49
2:B:141:PRO:O	2:B:143:ASN:N	2.46	0.49
2:B:53:GLN:O	2:B:55:PRO:HD3	2.13	0.49
2:B:296:ARG:HE	2:B:299:ARG:NH2	2.11	0.49
1:C:268:LYS:NZ	1:C:268:LYS:HB3	2.28	0.49
1:A:118:LYS:CG	1:A:156:PHE:HB2	2.43	0.48
2:B:221:PRO:O	2:B:225:VAL:HG23	2.12	0.48
1:A:56:THR:HG22	1:A:60:PHE:CD1	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:120:PHE:CD1	1:C:159:ARG:HG3	2.48	0.48
2:B:227:THR:O	2:B:231:ILE:HG12	2.12	0.48
2:B:243:ALA:H	2:B:247:LYS:NZ	2.11	0.48
1:C:295:ILE:HD11	1:C:354:ILE:HD11	1.94	0.48
2:D:403:PRO:O	2:D:406:VAL:HB	2.12	0.48
1:A:120:PHE:CD1	1:A:159:ARG:HG3	2.48	0.48
2:B:322:ARG:HG3	2:B:322:ARG:HH11	1.79	0.48
2:B:355:PRO:HG2	2:B:359:ASP:OD2	2.13	0.48
2:D:187:ILE:HG22	2:D:187:ILE:O	2.13	0.48
2:D:227:THR:HA	2:D:230:ILE:HG13	1.95	0.48
1:A:323:GLY:HA3	3:A:1001:NAP:H51A	1.95	0.48
2:B:230:ILE:HG12	2:B:266:TYR:CG	2.49	0.48
2:B:308:LYS:O	2:B:312:ILE:HG13	2.14	0.48
1:C:40:ARG:HD2	1:C:51:CYS:HB3	1.95	0.48
1:C:52:LEU:HD13	1:C:322:LEU:HD11	1.96	0.48
1:A:57:TRP:CD2	1:A:58:VAL:HG23	2.48	0.48
2:D:233:TRP:HA	2:D:233:TRP:CE3	2.48	0.47
1:A:310:TRP:O	1:A:313:ARG:HG2	2.14	0.47
1:C:323:GLY:HA3	3:C:1001:NAP:H51A	1.96	0.47
1:C:333:ASN:N	1:C:333:ASN:HD22	2.11	0.47
2:D:337:LEU:HD23	2:D:337:LEU:C	2.34	0.47
2:D:350:ARG:HG3	2:D:350:ARG:NH1	2.28	0.47
2:B:29:HIS:HB2	2:B:52:ALA:CB	2.44	0.47
1:C:42:LEU:HD11	1:C:212:CYS:SG	2.54	0.47
2:B:282:PHE:HA	2:B:285:VAL:HG12	1.96	0.47
1:C:40:ARG:HD3	1:C:318:SER:O	2.14	0.47
2:D:288:VAL:O	2:D:290:GLN:N	2.47	0.47
1:C:291:GLU:O	1:C:294:ALA:HB3	2.14	0.47
2:D:175:ILE:HA	2:D:178:VAL:CG2	2.45	0.47
2:D:264:ILE:HB	2:D:265:PRO:CD	2.37	0.47
1:A:187:THR:O	1:A:213:GLU:HA	2.14	0.47
4:B:606:PGW:H3	4:B:609:PGW:H17	1.96	0.47
1:C:85:ASP:OD1	1:C:118:LYS:NZ	2.48	0.47
1:C:272:TRP:O	1:C:276:LYS:HG2	2.15	0.47
2:D:80:ARG:HG2	6:D:2061:HOH:O	2.15	0.47
2:D:322:ARG:HG3	2:D:322:ARG:NH1	2.28	0.47
2:B:189:ARG:HG3	2:B:189:ARG:HH11	1.80	0.47
1:C:292:LEU:HD21	1:C:351:ILE:HG23	1.96	0.47
2:B:399:ALA:O	2:B:403:PRO:HD3	2.14	0.47
1:C:217:TYR:HB3	1:C:242:THR:HB	1.96	0.47
2:D:171:MET:HB3	2:D:175:ILE:HD12	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:156:PRO:C	2:D:158:SER:H	2.17	0.46
2:B:346:GLU:O	2:B:349:GLU:HB2	2.15	0.46
2:D:351:ASP:O	2:D:352:SER:C	2.53	0.46
2:D:361:PHE:CB	4:D:601:PGW:H2	2.45	0.46
2:D:182:LEU:O	2:D:185:LEU:HB2	2.16	0.46
2:D:266:TYR:HD2	2:D:267:TYR:CE1	2.34	0.46
2:B:264:ILE:HB	2:B:265:PRO:HD3	1.96	0.46
2:D:98:LEU:HD23	2:D:126:PHE:HB2	1.98	0.46
1:C:303:LEU:HB3	1:C:304:PRO:HD3	1.97	0.46
2:D:157:GLU:HA	2:D:163:ARG:CG	2.46	0.46
2:B:214:GLN:NE2	2:B:270:ILE:HG12	2.30	0.46
2:B:226:GLU:O	2:B:230:ILE:HD13	2.16	0.46
2:B:408:ASN:O	2:B:412:PHE:HD2	1.99	0.46
2:D:111:GLU:O	2:D:114:ARG:HB3	2.16	0.46
2:B:153:PHE:CE2	2:B:239:VAL:HG11	2.51	0.46
1:C:91:ALA:O	1:C:94:LYS:HB2	2.16	0.46
2:D:343:TYR:C	2:D:345:ALA:H	2.20	0.46
2:D:291:ILE:HG22	2:D:291:ILE:O	2.15	0.46
2:B:149:VAL:O	2:B:152:LEU:HD12	2.16	0.46
1:C:146:ARG:HD3	6:C:2049:HOH:O	2.15	0.46
2:D:101:PRO:HB2	2:D:104:VAL:HG23	1.98	0.46
2:B:186:PRO:O	2:B:190:ASP:HB2	2.16	0.45
2:D:266:TYR:CZ	2:D:270:ILE:HD11	2.51	0.45
1:A:183:MET:HB3	1:A:184:TYR:CD1	2.52	0.45
2:B:109:PHE:O	2:B:113:ILE:HG13	2.15	0.45
2:B:360:ALA:O	2:B:361:PHE:C	2.55	0.45
2:D:258:ILE:O	2:D:302:LYS:HD3	2.17	0.45
2:D:308:LYS:HA	2:D:311:GLN:HG2	1.98	0.45
2:D:363:TRP:HB2	2:D:376:MET:HE2	1.97	0.45
2:B:82:ARG:HB2	2:B:83:PRO:CD	2.44	0.45
1:C:68:MET:HA	1:C:68:MET:HE2	1.97	0.45
1:C:98:VAL:O	1:C:102:ILE:HG13	2.17	0.45
1:C:173:MET:HG3	1:C:185:TRP:CE3	2.51	0.45
2:D:176:SER:OG	2:D:299:ARG:NH1	2.49	0.45
1:C:252:SER:OG	1:C:254:LYS:HG2	2.16	0.45
2:B:202:PHE:HB2	2:B:279:VAL:CG2	2.47	0.45
2:B:369:THR:OG1	2:B:371:VAL:HG23	2.17	0.45
2:D:230:ILE:HG21	2:D:266:TYR:CD2	2.51	0.45
2:B:246:SER:C	2:B:248:ALA:H	2.19	0.45
2:D:354:PHE:CE1	2:D:376:MET:HE2	2.52	0.45
2:B:235:PHE:O	2:B:239:VAL:HG23	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:226:GLU:OE1	2:B:296:ARG:NH2	2.49	0.45
2:D:229:CYS:HA	2:D:232:TRP:CB	2.47	0.45
1:A:326:ASN:HD22	1:A:326:ASN:C	2.20	0.44
2:D:324:LEU:H	2:D:324:LEU:HD22	1.83	0.44
2:B:307:SER:O	2:B:311:GLN:HG3	2.17	0.44
2:B:400:LEU:CB	2:B:401:PRO:HD3	2.33	0.44
4:B:608:PGW:O12	4:B:608:PGW:H02	2.17	0.44
2:D:106:LEU:CD1	2:D:130:GLU:HG2	2.45	0.44
1:A:344:SER:O	1:A:348:VAL:HG23	2.18	0.44
2:B:146:GLN:C	2:B:148:GLN:H	2.21	0.44
1:C:251:VAL:HG12	1:C:251:VAL:O	2.17	0.44
1:A:71:HIS:HD2	1:A:327:ALA:HB2	1.81	0.44
1:A:217:TYR:HB3	1:A:242:THR:HB	1.99	0.44
1:A:314:ASN:HB2	6:A:2035:HOH:O	2.18	0.44
2:D:167:ILE:HA	2:D:170:VAL:HG23	1.99	0.44
2:B:400:LEU:HB2	2:B:401:PRO:CD	2.34	0.44
2:D:219:THR:O	2:D:220:ASP:HB2	2.17	0.44
2:D:304:SER:CA	2:D:310:LEU:HD23	2.48	0.44
2:B:70:ASP:C	2:B:70:ASP:OD1	2.55	0.44
2:D:172:VAL:HG12	2:D:233:TRP:CZ2	2.53	0.44
2:D:330:PHE:O	2:D:333:ILE:HB	2.17	0.44
1:A:260:PRO:HA	1:A:261:PRO:HD3	1.90	0.43
2:B:141:PRO:O	2:B:142:GLU:C	2.57	0.43
2:B:243:ALA:N	2:B:247:LYS:NZ	2.65	0.43
2:D:109:PHE:HE2	2:D:113:ILE:HD11	1.79	0.43
2:D:220:ASP:O	2:D:224:ILE:HG13	2.17	0.43
2:D:302:LYS:HA	2:D:302:LYS:HD2	1.82	0.43
1:A:301:CYS:HB2	1:A:305:GLN:OE1	2.18	0.43
2:B:253:ASN:OD1	2:B:255:MET:HB2	2.18	0.43
1:C:104:LYS:HZ2	1:C:148:GLN:HE22	1.66	0.43
2:B:59:LEU:O	2:B:65:ARG:NH1	2.49	0.43
2:D:102:VAL:HG23	2:D:103:ASN:N	2.33	0.43
2:D:176:SER:OG	2:D:299:ARG:HD3	2.18	0.43
2:D:233:TRP:HA	2:D:233:TRP:HE3	1.84	0.43
2:D:264:ILE:CB	2:D:265:PRO:HD3	2.35	0.43
1:A:67:GLU:CD	1:A:67:GLU:H	2.22	0.43
2:D:173:ILE:C	2:D:175:ILE:N	2.72	0.43
2:D:165:ILE:O	2:D:165:ILE:HG22	2.18	0.43
2:D:225:VAL:HG13	2:D:228:LEU:CD2	2.45	0.43
2:D:346:GLU:O	2:D:347:ALA:C	2.57	0.43
1:A:347:ILE:O	1:A:351:ILE:HG13	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:285:VAL:O	2:B:285:VAL:HG22	2.18	0.43
2:D:258:ILE:O	2:D:258:ILE:HG22	2.19	0.43
2:B:316:THR:HG21	2:B:409:PHE:HB2	2.00	0.43
2:D:400:LEU:CB	2:D:401:PRO:HD3	2.32	0.43
1:A:106:LYS:HG3	1:A:108:TRP:CH2	2.54	0.43
1:A:159:ARG:HB2	1:A:160:PRO:HD2	2.00	0.43
1:A:326:ASN:ND2	1:A:326:ASN:C	2.72	0.43
1:A:134:LYS:O	1:A:138:GLU:HG3	2.19	0.43
2:B:127:ARG:HH11	2:B:127:ARG:HG2	1.84	0.43
2:B:254:ILE:O	2:B:258:ILE:HG13	2.19	0.43
2:D:114:ARG:HG3	2:D:114:ARG:NH1	2.34	0.43
2:D:221:PRO:HA	2:D:224:ILE:HD12	1.99	0.43
2:D:288:VAL:C	2:D:290:GLN:N	2.70	0.43
2:B:58:LEU:HD23	2:B:58:LEU:C	2.39	0.42
2:D:175:ILE:HA	2:D:178:VAL:HG23	2.01	0.42
1:A:63:GLN:NE2	1:A:267:LEU:HD11	2.35	0.42
2:B:150:TRP:HE1	2:B:155:TYR:HE2	1.66	0.42
1:A:114:VAL:HA	1:A:153:ASP:OD2	2.19	0.42
1:A:119:ILE:O	1:A:120:PHE:HB2	2.19	0.42
2:B:217:SER:O	2:B:218:PHE:C	2.58	0.42
2:B:343:TYR:HE1	2:B:356:SER:HA	1.83	0.42
2:B:404:VAL:O	2:B:407:SER:HB3	2.19	0.42
2:D:164:ILE:HG22	2:D:164:ILE:O	2.18	0.42
2:D:382:GLY:O	2:D:386:VAL:HG23	2.20	0.42
2:B:127:ARG:HG2	2:B:127:ARG:NH1	2.35	0.42
2:B:349:GLU:HB2	2:B:352:SER:HB2	2.01	0.42
1:A:51:CYS:SG	1:A:337:ILE:HD11	2.59	0.42
2:B:209:THR:O	2:B:293:ARG:HD2	2.19	0.42
2:B:246:SER:C	2:B:248:ALA:N	2.73	0.42
2:B:255:MET:CE	2:B:305:ARG:HB2	2.50	0.42
2:B:304:SER:CA	2:B:310:LEU:HD23	2.50	0.42
2:B:402:VAL:HB	2:B:403:PRO:HD3	2.00	0.42
2:D:168:VAL:HG22	2:D:168:VAL:O	2.20	0.42
2:D:361:PHE:HB2	4:D:601:PGW:H2	2.02	0.42
2:D:171:MET:O	2:D:175:ILE:HB	2.18	0.42
1:A:65:THR:HB	1:A:67:GLU:OE1	2.19	0.42
1:A:284:ARG:HB2	1:A:284:ARG:NH1	2.33	0.42
2:B:218:PHE:HB3	2:B:224:ILE:HG12	2.00	0.42
1:C:124:LYS:HG3	6:C:2082:HOH:O	2.19	0.42
1:C:216:GLU:HB2	1:C:243:TRP:CZ2	2.55	0.42
1:C:357:ASN:O	1:C:358:LYS:C	2.58	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:323:GLU:OE1	2:D:404:VAL:HG11	2.20	0.42
2:B:153:PHE:O	2:B:154:GLU:HB2	2.20	0.42
2:D:307:SER:O	2:D:311:GLN:HG2	2.20	0.42
1:A:173:MET:HG3	1:A:185:TRP:CE3	2.55	0.42
1:A:218:HIS:CE1	1:A:221:GLN:HB2	2.55	0.42
2:B:230:ILE:HG21	2:B:266:TYR:CD2	2.55	0.42
2:B:277:LYS:HG3	2:B:277:LYS:O	2.20	0.42
2:D:225:VAL:HG12	2:D:225:VAL:O	2.20	0.42
1:C:331:MET:CE	1:C:334:ILE:HD12	2.48	0.41
1:A:85:ASP:OD1	1:A:118:LYS:NZ	2.49	0.41
2:B:72:LEU:HD23	2:B:72:LEU:HA	1.89	0.41
2:D:252:THR:HG22	2:D:253:ASN:N	2.35	0.41
1:A:337:ILE:HD13	1:A:337:ILE:HA	1.87	0.41
1:C:255:TYR:OH	1:C:263:SER:HB2	2.20	0.41
2:B:80:ARG:NH1	2:B:112:GLU:OE2	2.53	0.41
2:D:36:VAL:HG22	2:D:45:GLU:HG2	2.01	0.41
2:D:160:GLY:CA	2:D:163:ARG:HB3	2.50	0.41
2:D:166:ALA:HB1	2:D:306:HIS:HD2	1.84	0.41
2:D:171:MET:C	2:D:173:ILE:N	2.72	0.41
2:B:244:CYS:N	2:B:247:LYS:NZ	2.68	0.41
2:B:399:ALA:O	2:B:403:PRO:CD	2.69	0.41
1:C:164:THR:HA	1:C:165:PRO:HD3	1.93	0.41
2:D:258:ILE:HG22	2:D:302:LYS:HA	2.02	0.41
2:D:258:ILE:HG21	2:D:302:LYS:HA	2.01	0.41
2:B:304:SER:HA	2:B:310:LEU:HD23	2.01	0.41
2:B:323:GLU:CD	2:B:323:GLU:N	2.72	0.41
4:D:601:PGW:O02	4:D:601:PGW:H03A	2.20	0.41
2:B:257:ILE:O	2:B:261:VAL:HG23	2.21	0.41
2:B:282:PHE:O	2:B:284:ASN:N	2.54	0.41
1:C:225:VAL:O	1:C:230:PRO:HD3	2.21	0.41
2:D:160:GLY:O	2:D:163:ARG:HB3	2.20	0.41
2:D:226:GLU:HG3	2:D:230:ILE:HD11	2.03	0.41
2:D:234:SER:HA	2:D:237:PHE:HB3	2.01	0.41
2:D:262:ALA:O	2:D:263:ILE:HG23	2.20	0.41
2:D:288:VAL:CG1	2:D:289:VAL:H	2.28	0.41
2:D:398:ILE:O	2:D:402:VAL:HG23	2.21	0.41
2:B:414:HIS:C	2:B:416:GLU:N	2.74	0.41
2:D:229:CYS:HA	2:D:232:TRP:HB2	2.03	0.41
1:A:214:GLN:HA	1:A:241:MET:O	2.21	0.40
1:A:302:THR:OG1	1:A:304:PRO:HD2	2.21	0.40
2:B:357:ILE:N	2:B:358:PRO:CD	2.84	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:313:ARG:HG2	1:C:313:ARG:HH11	1.86	0.40
2:D:173:ILE:HG12	2:D:233:TRP:HZ2	1.86	0.40
2:D:225:VAL:O	2:D:228:LEU:HB3	2.21	0.40
2:D:360:ALA:O	2:D:361:PHE:C	2.59	0.40
2:B:210:ILE:HD11	2:B:273:THR:CG2	2.51	0.40
1:A:211:ILE:HG23	6:A:2003:HOH:O	2.20	0.40
1:A:313:ARG:HG2	1:A:313:ARG:NH1	2.37	0.40
2:B:264:ILE:N	2:B:265:PRO:CD	2.85	0.40
2:D:255:MET:HG3	2:D:305:ARG:CZ	2.52	0.40
2:D:224:ILE:HG22	2:D:225:VAL:N	2.36	0.40
2:D:288:VAL:CG1	2:D:289:VAL:N	2.83	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	324/333 (97%)	305 (94%)	18 (6%)	1 (0%)	41 71
1	C	324/333 (97%)	307 (95%)	14 (4%)	3 (1%)	17 48
2	B	387/514 (75%)	321 (83%)	52 (13%)	14 (4%)	3 14
2	D	304/514 (59%)	238 (78%)	52 (17%)	14 (5%)	2 9
All	All	1339/1694 (79%)	1171 (88%)	136 (10%)	32 (2%)	6 22

All (32) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	133	ILE
2	B	141	PRO
2	B	142	GLU
2	B	154	GLU

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Mol	Chain	Res	Type
2	D	157	GLU
2	D	289	VAL
1	A	120	PHE
2	B	158	SER
1	C	120	PHE
1	C	223	GLU
2	D	156	PRO
2	D	376	MET
2	B	243	ALA
2	B	283	GLN
2	B	399	ALA
2	D	159	SER
2	D	399	ALA
2	D	400	LEU
2	D	412	PHE
2	B	218	PHE
2	D	33	GLU
2	D	174	LEU
2	D	263	ILE
2	D	375	ASP
2	D	411	TYR
2	B	128	GLU
2	B	400	LEU
2	B	415	ARG
2	B	416	GLU
1	C	342	LYS
2	B	279	VAL
2	D	224	ILE

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	273/280 (98%)	268 (98%)	5 (2%)	59 85
1	C	273/280 (98%)	267 (98%)	6 (2%)	52 81
2	B	335/459 (73%)	330 (98%)	5 (2%)	65 87

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	D	284/459 (62%)	278 (98%)	6 (2%)	53 81
All	All	1165/1478 (79%)	1143 (98%)	22 (2%)	57 84

All (22) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	73	MET
1	A	75	LEU
1	A	183	MET
1	A	206	ASN
1	A	326	ASN
2	B	82	ARG
2	B	103	ASN
2	B	152	LEU
2	B	283	GLN
2	B	284	ASN
1	C	37	GLN
1	C	73	MET
1	C	231	GLU
1	C	268	LYS
1	C	283	ARG
1	C	360	TYR
2	D	56	GLU
2	D	80	ARG
2	D	103	ASN
2	D	171	MET
2	D	233	TRP
2	D	350	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (24) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	63	GLN
1	A	71	HIS
1	A	148	GLN
1	A	204	GLN
1	A	286	GLN
1	A	314	ASN
1	A	326	ASN
1	A	333	ASN
2	B	53	GLN

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Mol	Chain	Res	Type
2	B	103	ASN
2	B	213	GLN
2	B	214	GLN
2	B	315	GLN
1	C	37	GLN
1	C	71	HIS
1	C	148	GLN
1	C	163	ASN
1	C	204	GLN
1	C	333	ASN
2	D	47	GLN
2	D	53	GLN
2	D	103	ASN
2	D	256	ASN
2	D	311	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 25 ligands modelled in this entry, 10 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	$\#\|Z\|>2$
4	PGW	B	612	-	5,5,50	0.36	0	4,4,56	0.39	0
3	NAP	C	1001	-	45,52,52	1.28	5 (11%)	56,80,80	1.14	3 (5%)
4	PGW	B	606	-	6,6,50	0.35	0	5,5,56	0.47	0
4	PGW	B	607	-	6,6,50	0.35	0	5,5,56	0.46	0
4	PGW	B	611	-	8,8,50	0.35	0	7,7,56	0.50	0
4	PGW	D	601	-	21,21,50	0.60	0	23,23,56	1.18	2 (8%)
4	PGW	B	604	-	4,4,50	0.36	0	3,3,56	0.40	0
4	PGW	B	601	-	18,18,50	0.60	0	19,19,56	1.22	3 (15%)
4	PGW	B	605	-	7,7,50	0.35	0	6,6,56	0.51	0
4	PGW	B	603	-	4,4,50	0.36	0	3,3,56	0.40	0
4	PGW	B	602	-	4,4,50	0.36	0	3,3,56	0.40	0
4	PGW	B	609	-	5,5,50	0.35	0	4,4,56	0.40	0
4	PGW	B	610	-	27,27,50	0.76	1 (3%)	28,32,56	1.14	2 (7%)
3	NAP	A	1001	-	45,52,52	1.26	5 (11%)	56,80,80	1.14	5 (8%)
4	PGW	B	608	-	19,19,50	0.82	0	23,24,56	1.28	3 (13%)

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
4	PGW	B	612	-	-	0/3/3/55	-
3	NAP	C	1001	-	-	0/31/67/67	0/5/5/5
4	PGW	B	606	-	-	0/4/4/55	-
4	PGW	B	607	-	-	0/4/4/55	-
4	PGW	B	611	-	-	0/6/6/55	-
4	PGW	D	601	-	-	1/23/23/55	-
4	PGW	B	604	-	-	0/2/2/55	-
4	PGW	B	601	-	-	1/18/18/55	-
4	PGW	B	605	-	-	0/5/5/55	-
4	PGW	B	603	-	-	0/2/2/55	-
4	PGW	B	602	-	-	0/2/2/55	-
4	PGW	B	609	-	-	0/3/3/55	-
4	PGW	B	610	-	-	6/31/31/55	-
3	NAP	A	1001	-	-	1/31/67/67	0/5/5/5
4	PGW	B	608	-	-	6/21/21/55	-

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	1001	NAP	C6N-N1N	3.55	1.44	1.35
3	A	1001	NAP	C6N-N1N	3.33	1.43	1.35
3	C	1001	NAP	C4N-C3N	3.33	1.45	1.39
3	C	1001	NAP	C2A-N3A	3.25	1.37	1.32
3	A	1001	NAP	O4B-C1B	3.18	1.45	1.41
3	C	1001	NAP	C4A-N3A	3.09	1.39	1.35
3	A	1001	NAP	C4N-C3N	2.88	1.44	1.39
3	A	1001	NAP	C2A-N3A	2.76	1.36	1.32
3	A	1001	NAP	C4A-N3A	2.73	1.39	1.35
3	C	1001	NAP	O4B-C1B	2.44	1.44	1.41
4	B	610	PGW	O01-C02	-2.36	1.43	1.46

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	B	610	PGW	O01-C1-O02	-4.55	119.78	125.57
4	D	601	PGW	O01-C1-C2	3.30	118.62	111.50
4	B	608	PGW	O03-C19-C20	3.08	119.46	111.38
4	B	608	PGW	O01-C1-C2	2.98	117.93	111.50
3	C	1001	NAP	C6N-N1N-C2N	-2.87	119.36	121.97
3	A	1001	NAP	PN-O3-PA	2.69	142.05	132.83
3	C	1001	NAP	PN-O3-PA	2.57	141.66	132.83
3	A	1001	NAP	C6N-N1N-C2N	-2.45	119.74	121.97
4	B	601	PGW	O03-C19-C20	2.42	119.50	111.91
3	A	1001	NAP	C2A-N1A-C6A	2.41	122.87	118.75
4	B	601	PGW	C01-O03-C19	-2.29	109.52	116.92
4	B	608	PGW	O11-P-O14	2.29	112.89	106.47
4	D	601	PGW	O03-C19-C20	2.26	118.99	111.91
4	B	601	PGW	O01-C1-C2	2.24	118.95	111.91
3	C	1001	NAP	C2A-N1A-C6A	2.23	122.57	118.75
4	B	610	PGW	O03-C19-C20	2.15	118.66	111.91
3	A	1001	NAP	C5A-C6A-N6A	2.11	123.56	120.35
3	A	1001	NAP	C5A-C6A-N1A	-2.01	115.79	120.35

There are no chirality outliers.

All (15) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1001	NAP	PN-O3-PA-O5B
4	B	601	PGW	C01-C02-O01-C1
4	B	608	PGW	C02-C03-O11-P
4	B	610	PGW	O02-C1-O01-C02

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Mol	Chain	Res	Type	Atoms
4	B	610	PGW	C01-C02-O01-C1
4	B	610	PGW	C03-C02-O01-C1
4	D	601	PGW	C01-C02-O01-C1
4	B	610	PGW	C04-O12-P-O11
4	B	608	PGW	C01-C02-O01-C1
4	B	608	PGW	C03-C02-O01-C1
4	B	610	PGW	O03-C19-C20-C21
4	B	608	PGW	O01-C1-C2-C3
4	B	608	PGW	O02-C1-C2-C3
4	B	610	PGW	O04-C19-C20-C21
4	B	608	PGW	O04-C19-C20-C21

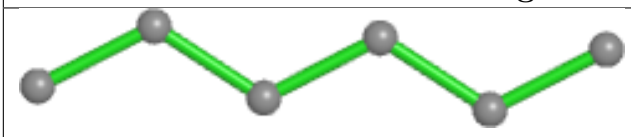
There are no ring outliers.

8 monomers are involved in 20 short contacts:

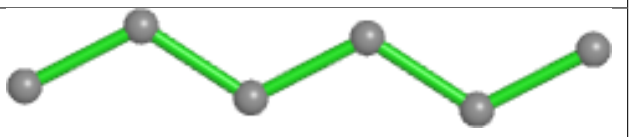
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	1001	NAP	3	0
4	B	606	PGW	1	0
4	D	601	PGW	7	0
4	B	601	PGW	3	0
4	B	609	PGW	1	0
4	B	610	PGW	2	0
3	A	1001	NAP	2	0
4	B	608	PGW	2	0

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.

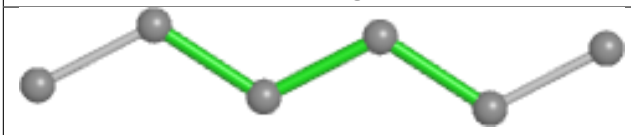
Ligand PGW B 612



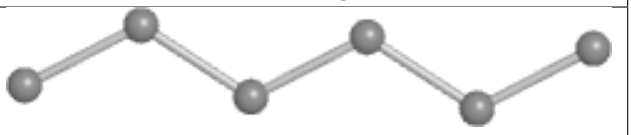
Bond lengths



Bond angles

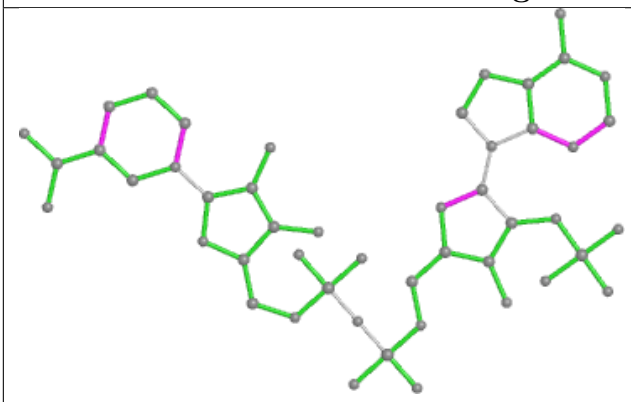


Torsions

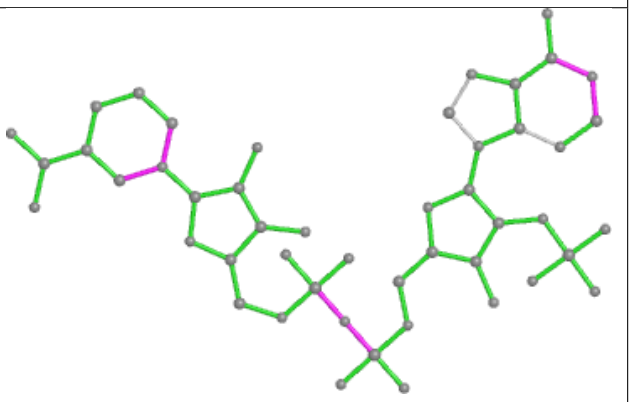


Rings

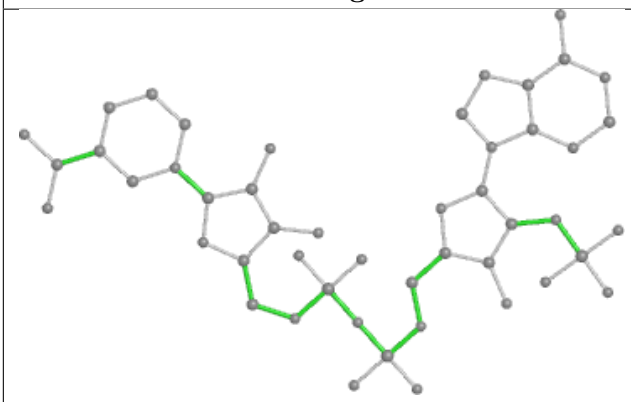
Ligand NAP C 1001



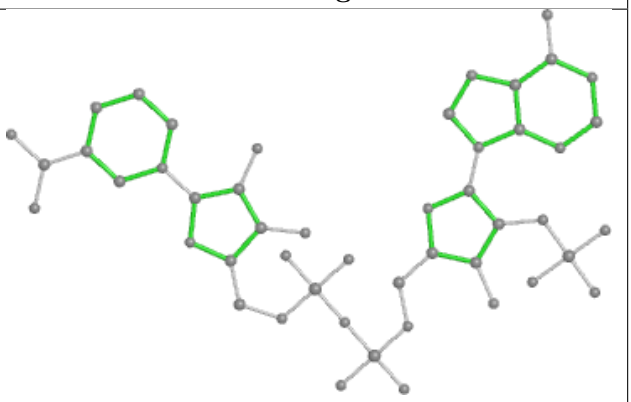
Bond lengths



Bond angles

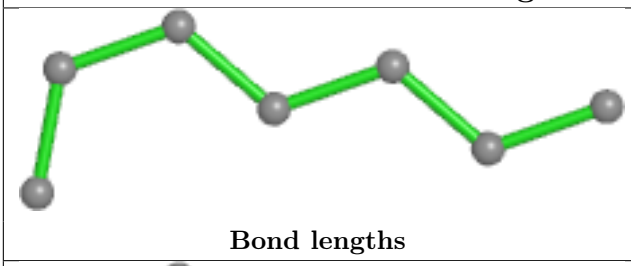


Torsions

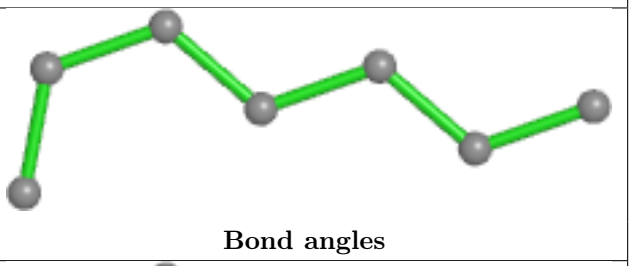


Rings

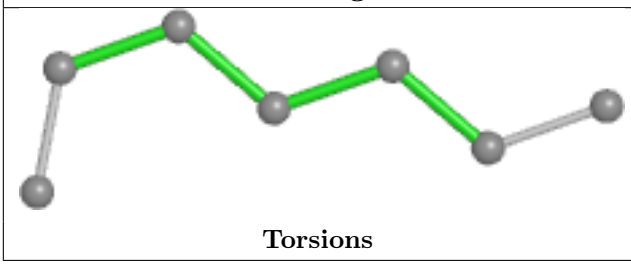
Ligand PGW B 606



Bond lengths



Bond angles



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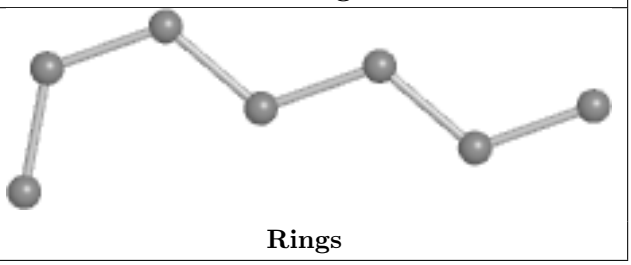
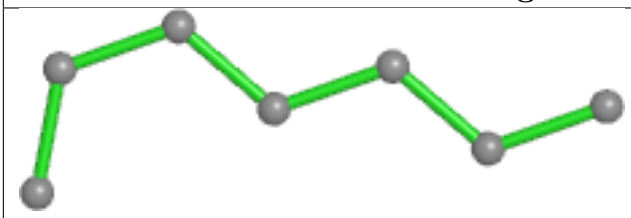
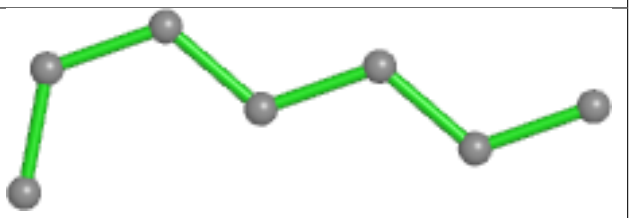


Rings

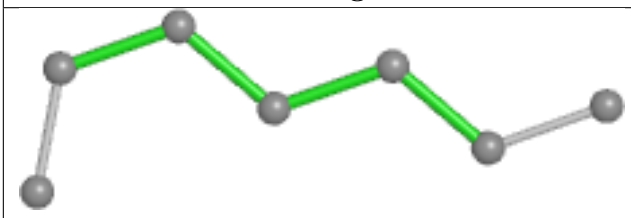
Ligand PGW B 607



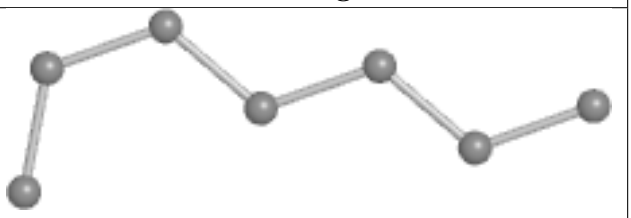
Bond lengths



Bond angles

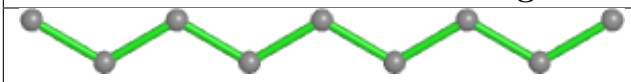


Torsions



Rings

Ligand PGW B 611



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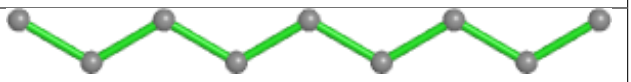
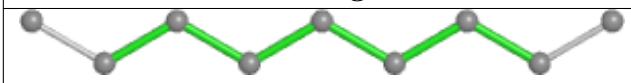


Bond angles



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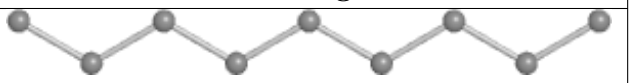
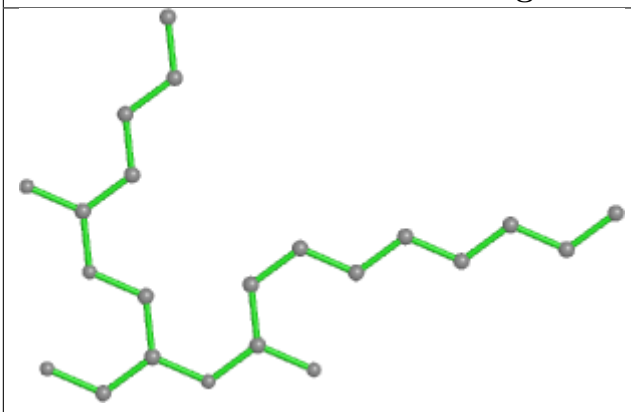
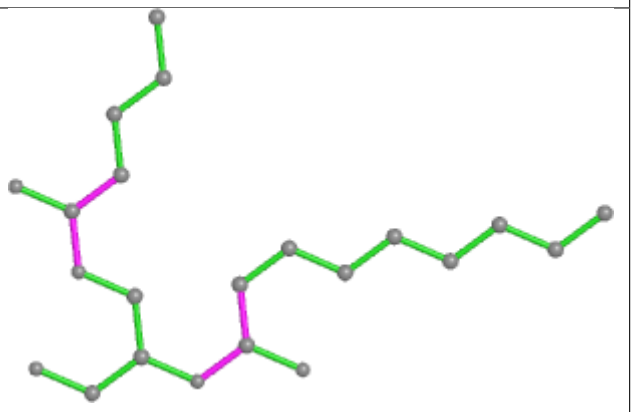


Rings

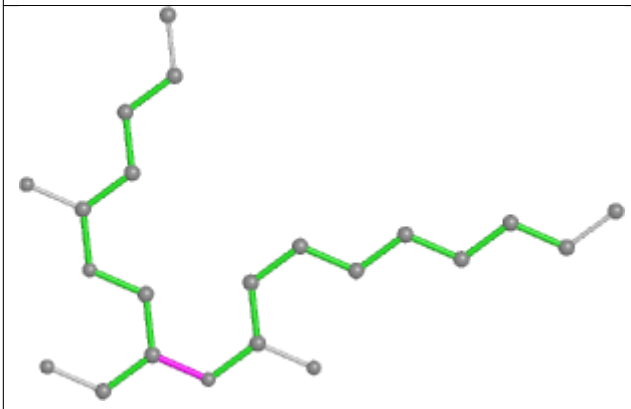
Ligand PGW D 601



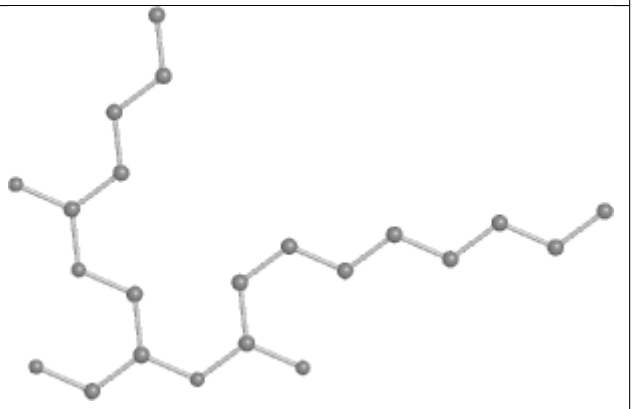
Bond lengths



Bond angles

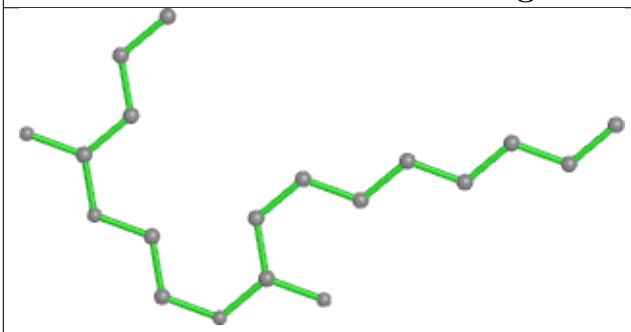


Torsions



Rings

Ligand PGW B 601



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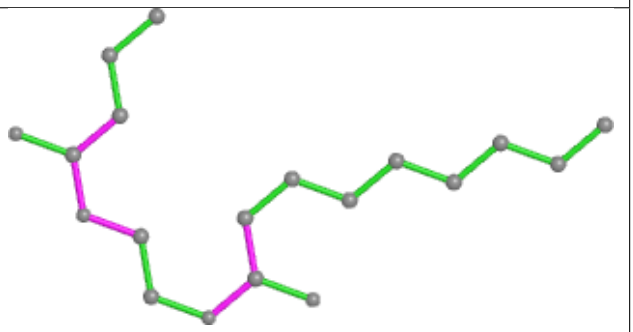
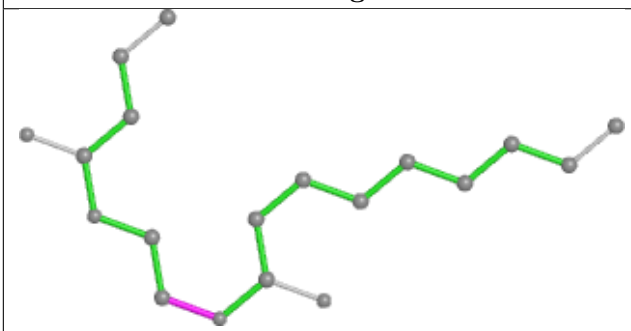


Bond angles



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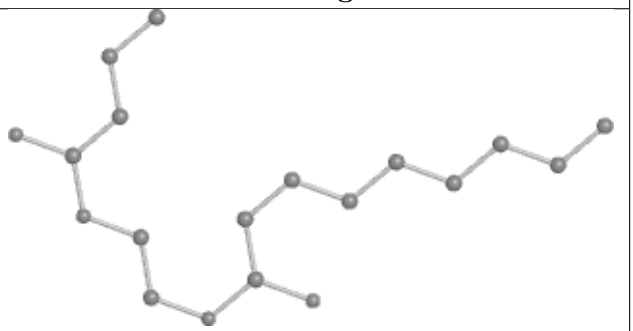
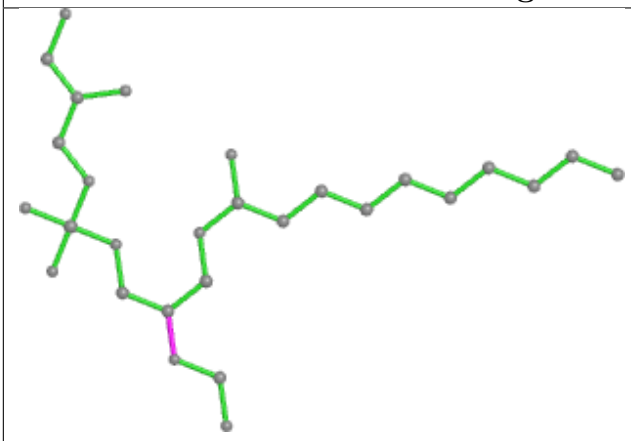
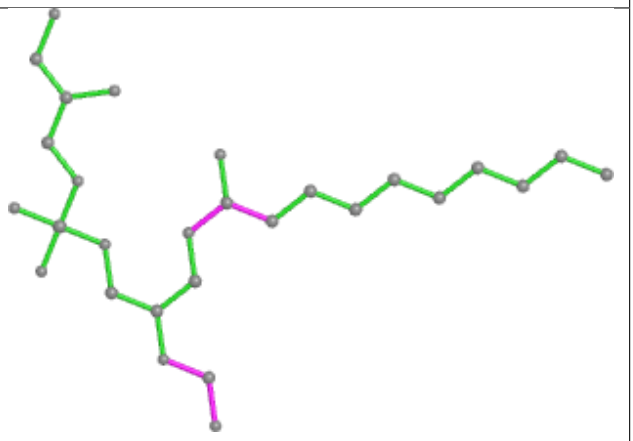


Rings

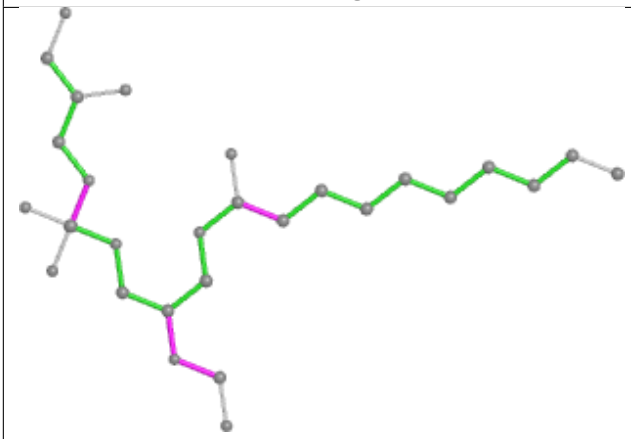
Ligand PGW B 610



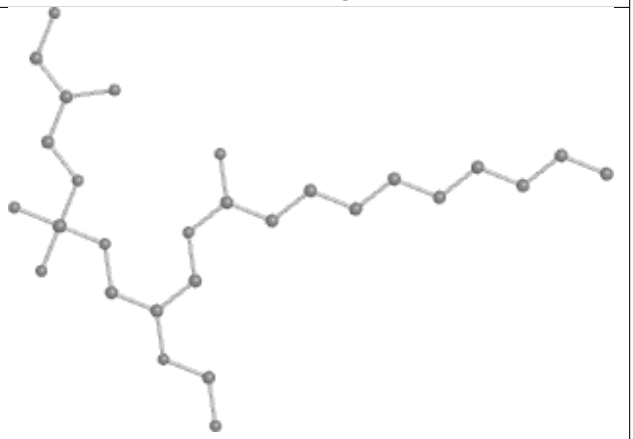
Bond lengths



Bond angles

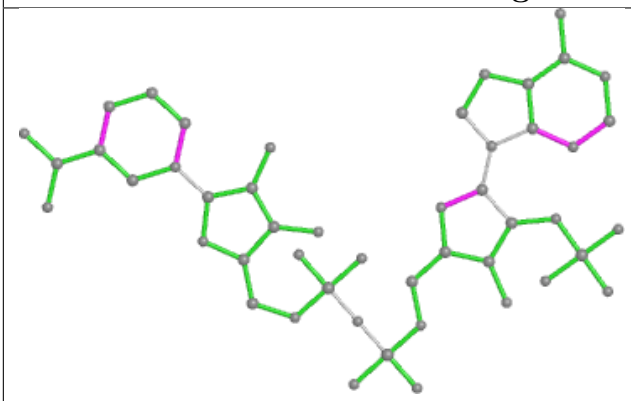


Torsions

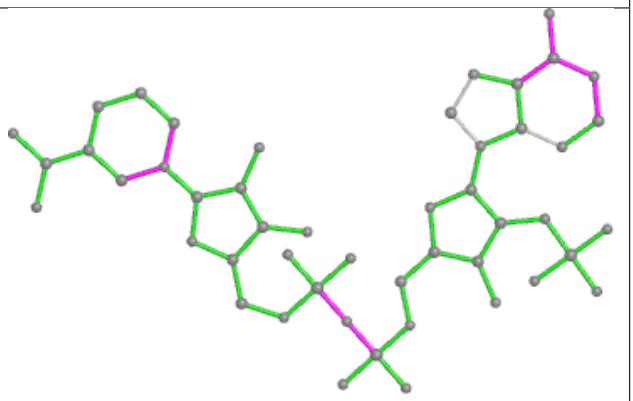


Rings

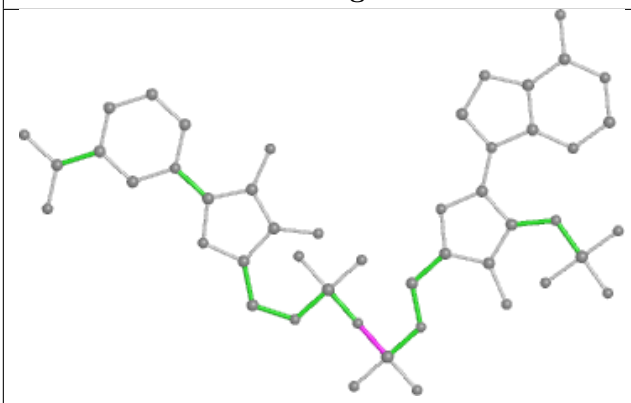
Ligand NAP A 1001



Bond lengths



Bond angles



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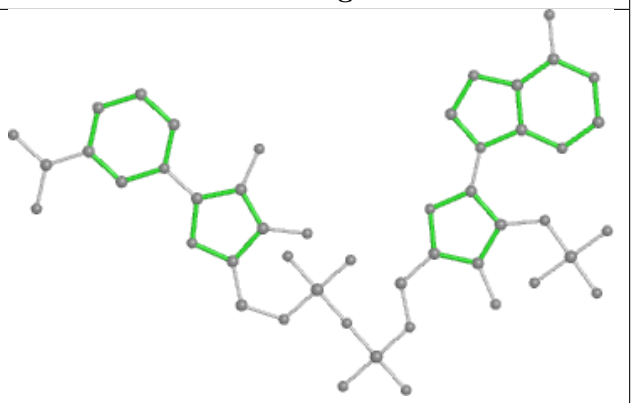
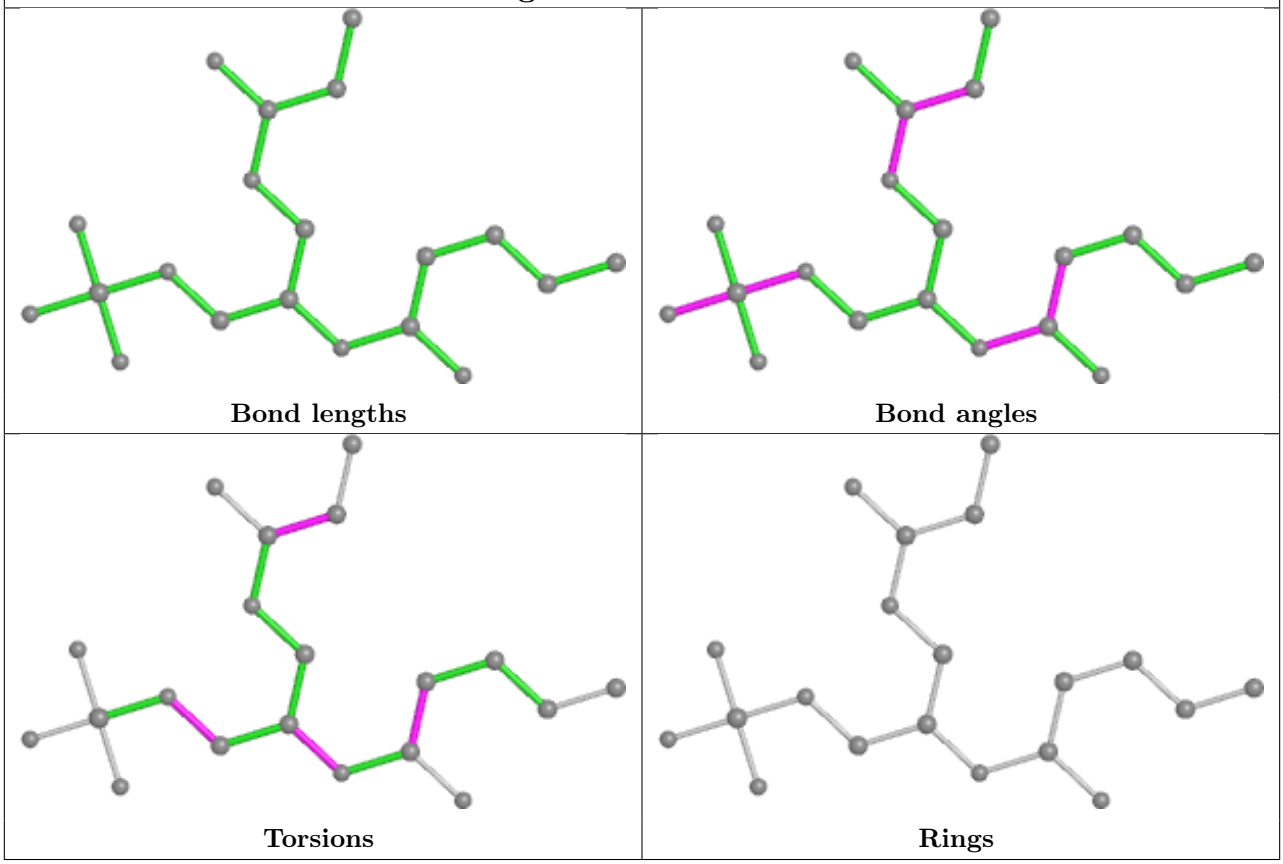


Rings

Ligand PGW B 608



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	326/333 (97%)	-0.11	2 (0%) 89 89	22, 42, 68, 94	0
1	C	326/333 (97%)	-0.08	3 (0%) 84 84	24, 46, 77, 102	0
2	B	389/514 (75%)	0.61	49 (12%) 3 3	33, 79, 137, 146	0
2	D	318/514 (61%)	0.77	55 (17%) 1 1	39, 97, 171, 187	0
All	All	1359/1694 (80%)	0.31	109 (8%) 12 9	22, 61, 149, 187	0

All (109) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	D	269	THR	8.4
2	B	192	ASN	7.8
2	B	152	LEU	7.3
2	B	196	HIS	7.2
2	B	153	PHE	6.2
2	D	161	PRO	6.2
2	B	195	MET	6.2
2	D	288	VAL	5.4
2	D	168	VAL	5.4
2	B	191	GLU	5.3
2	D	206	SER	5.3
1	C	360	TYR	5.2
2	D	205	TYR	5.2
2	D	271	PHE	4.9
2	D	275	SER	4.8
2	D	225	VAL	4.6
2	D	237	PHE	4.6
1	C	36	LEU	4.6
2	D	235	PHE	4.6
2	B	193	GLU	4.3
2	D	155	TYR	4.3

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Mol	Chain	Res	Type	RSRZ
2	B	145	PHE	4.1
2	D	238	LEU	4.1
2	B	158	SER	4.1
2	D	253	ASN	4.1
2	D	415	ARG	4.0
2	D	291	ILE	4.0
2	B	205	TYR	4.0
2	D	204	THR	4.0
2	B	200	VAL	3.9
2	D	165	ILE	3.9
2	D	258	ILE	3.9
2	B	204	THR	3.8
2	D	222	PHE	3.8
2	B	151	LEU	3.7
2	B	242	PHE	3.7
2	D	294	ILE	3.7
2	B	194	ASP	3.7
2	D	268	VAL	3.6
2	D	164	ILE	3.5
2	D	290	GLN	3.5
2	D	233	TRP	3.5
2	B	155	TYR	3.4
2	B	190	ASP	3.4
2	B	150	TRP	3.4
2	B	199	GLY	3.3
2	B	219	THR	3.3
2	B	156	PRO	3.2
1	A	360	TYR	3.2
2	B	214	GLN	3.2
2	D	159	SER	3.2
2	B	215	SER	3.1
2	B	165	ILE	3.1
2	B	213	GLN	3.1
2	D	160	GLY	3.1
2	D	189	ARG	3.1
2	D	252	THR	3.1
2	D	265	PRO	3.0
2	B	197	GLY	2.9
2	B	161	PRO	2.9
2	B	125	MET	2.9
2	B	241	PHE	2.8
2	D	156	PRO	2.7

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Mol	Chain	Res	Type	RSRZ
2	D	162	ALA	2.7
2	D	207	GLN	2.6
2	D	129	ASP	2.6
2	B	154	GLU	2.6
2	B	164	ILE	2.6
2	D	267	TYR	2.6
2	B	273	THR	2.6
2	D	231	ILE	2.6
2	D	166	ALA	2.6
2	D	260	ILE	2.5
2	B	203	HIS	2.5
2	D	157	GLU	2.5
2	B	149	VAL	2.5
2	D	254	ILE	2.4
2	D	98	LEU	2.4
2	B	270	ILE	2.4
2	B	274	GLU	2.4
2	D	259	ASP	2.4
2	D	229	CYS	2.3
2	D	306	HIS	2.3
2	D	226	GLU	2.3
2	D	266	TYR	2.3
2	B	187	ILE	2.3
2	B	159	SER	2.3
2	B	218	PHE	2.3
2	B	216	THR	2.2
2	B	306	HIS	2.2
1	C	352	ASP	2.2
2	B	251	PHE	2.2
2	B	30	GLU	2.2
2	D	221	PRO	2.2
2	D	287	ARG	2.2
2	D	302	LYS	2.2
2	B	272	LEU	2.2
2	B	201	THR	2.1
2	B	285	VAL	2.1
2	D	344	PHE	2.1
2	B	167	ILE	2.1
2	D	172	VAL	2.1
2	D	203	HIS	2.1
2	D	173	ILE	2.1
1	A	349	HIS	2.0

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Mol	Chain	Res	Type	RSRZ
2	D	228	LEU	2.0
2	D	270	ILE	2.0
2	B	120	GLU	2.0
2	B	163	ARG	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
4	PGW	B	612	6/51	0.60	0.57	94,96,96,97	0
4	PGW	D	601	22/51	0.61	0.42	95,113,118,118	0
4	PGW	B	601	19/51	0.64	0.42	72,84,97,97	0
4	PGW	B	607	7/51	0.65	0.48	94,96,98,98	0
4	PGW	B	606	7/51	0.67	0.49	90,91,93,93	0
4	PGW	B	602	5/51	0.70	0.34	80,81,82,82	0
4	PGW	B	610	28/51	0.74	0.30	122,148,154,155	0
4	PGW	B	611	9/51	0.75	0.53	83,84,85,85	0
4	PGW	B	608	20/51	0.76	0.42	141,146,153,153	0
5	K	D	501	1/1	0.76	0.41	37,37,37,37	1
4	PGW	B	603	5/51	0.81	0.29	85,87,88,88	0
4	PGW	B	604	5/51	0.81	0.30	87,87,88,88	0
4	PGW	B	605	8/51	0.82	0.60	74,74,75,75	0
5	K	B	505	1/1	0.86	0.40	64,64,64,64	1
5	K	D	502	1/1	0.87	0.32	34,34,34,34	1
5	K	B	502	1/1	0.90	0.34	21,21,21,21	1
4	PGW	B	609	6/51	0.90	0.33	73,73,73,74	0
5	K	D	505	1/1	0.90	0.58	53,53,53,53	1
5	K	B	503	1/1	0.93	0.30	28,28,28,28	1

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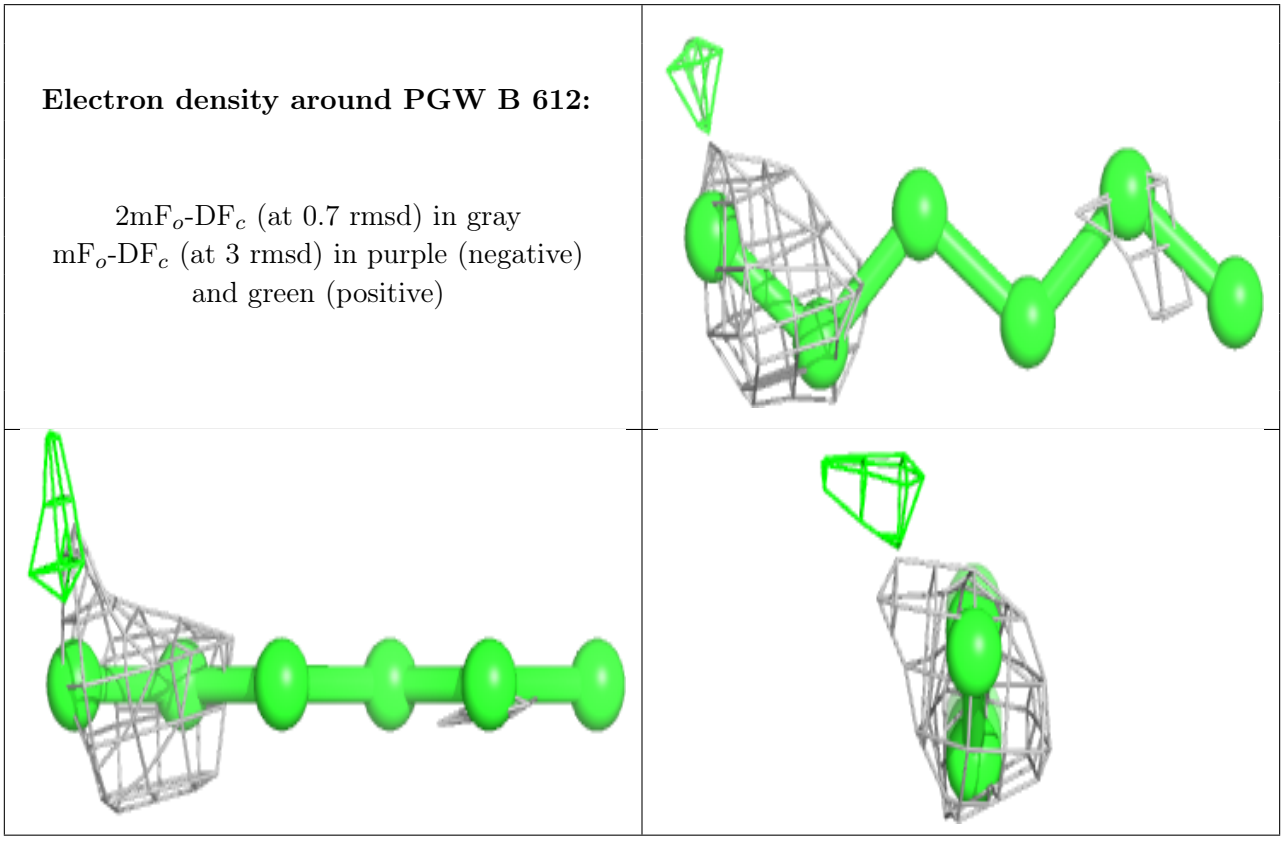
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	K	B	504	1/1	0.96	0.34	26,26,26,26	1
3	NAP	A	1001	48/48	0.98	0.17	35,43,47,48	0
5	K	B	501	1/1	0.98	0.39	32,32,32,32	1
5	K	D	503	1/1	0.98	0.34	41,41,41,41	1
5	K	D	504	1/1	0.98	0.39	26,26,26,26	1
3	NAP	C	1001	48/48	0.98	0.18	38,45,53,54	0

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.

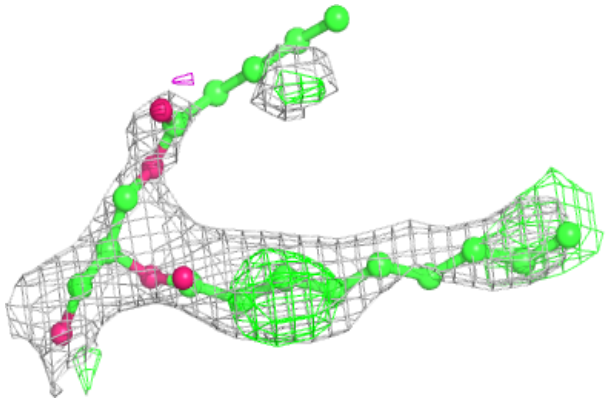
Electron density around PGW B 612:

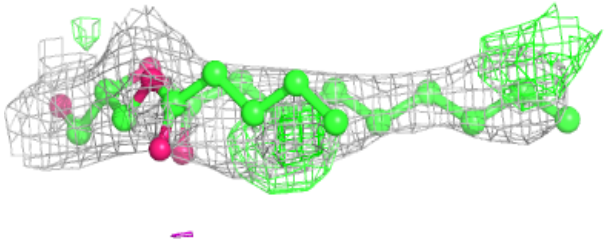
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

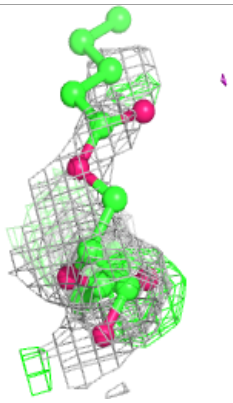


Electron density around PGW D 601:

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

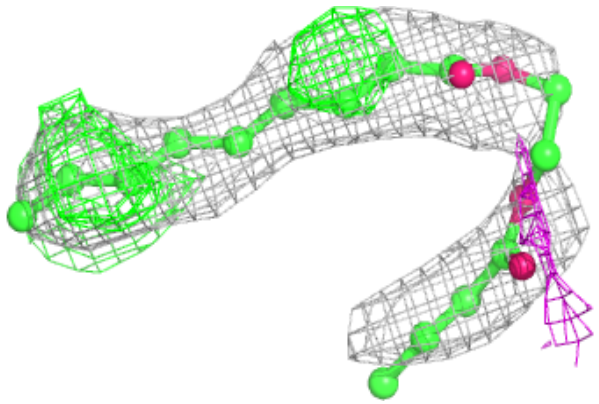


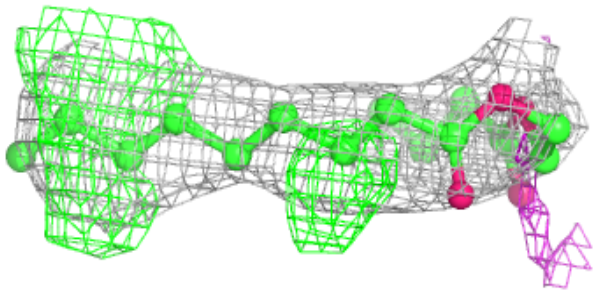


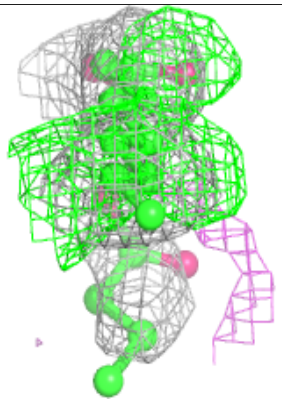


Electron density around PGW B 601:

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

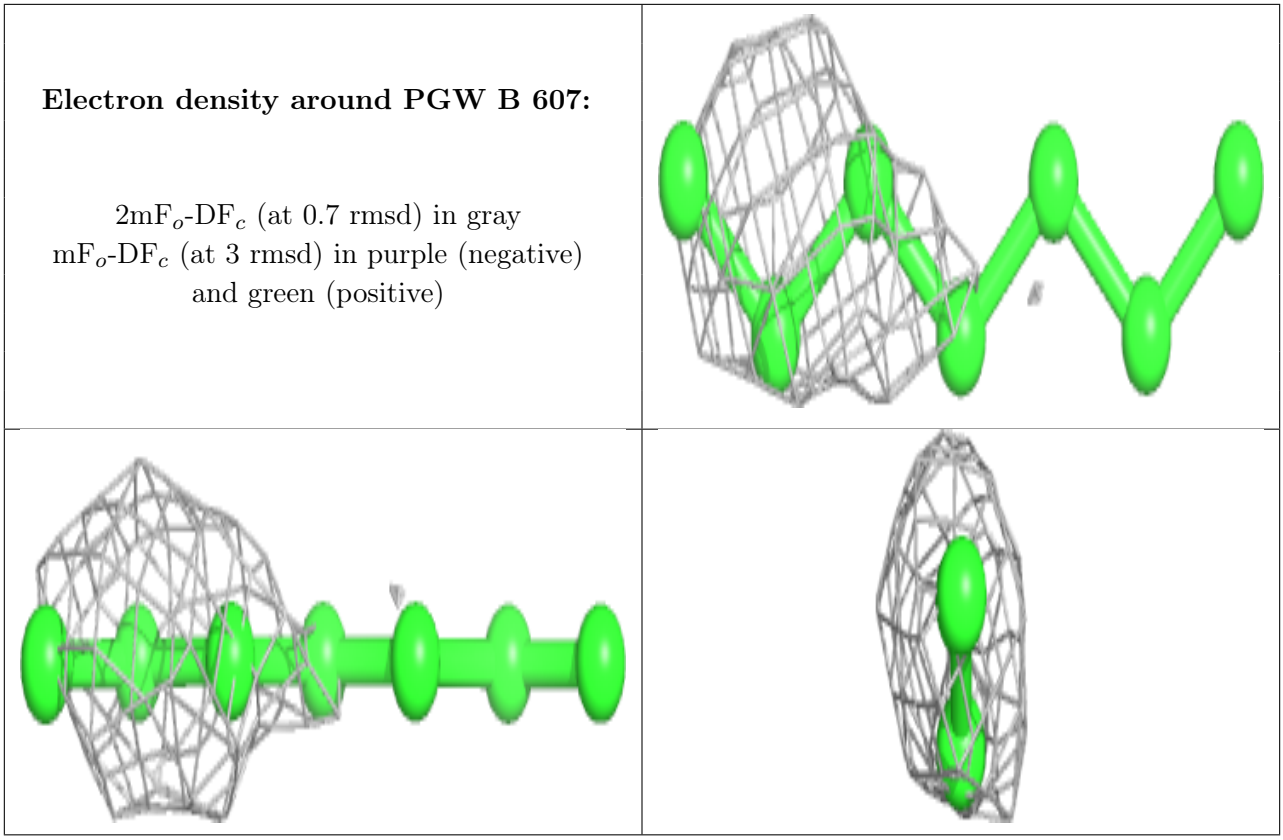






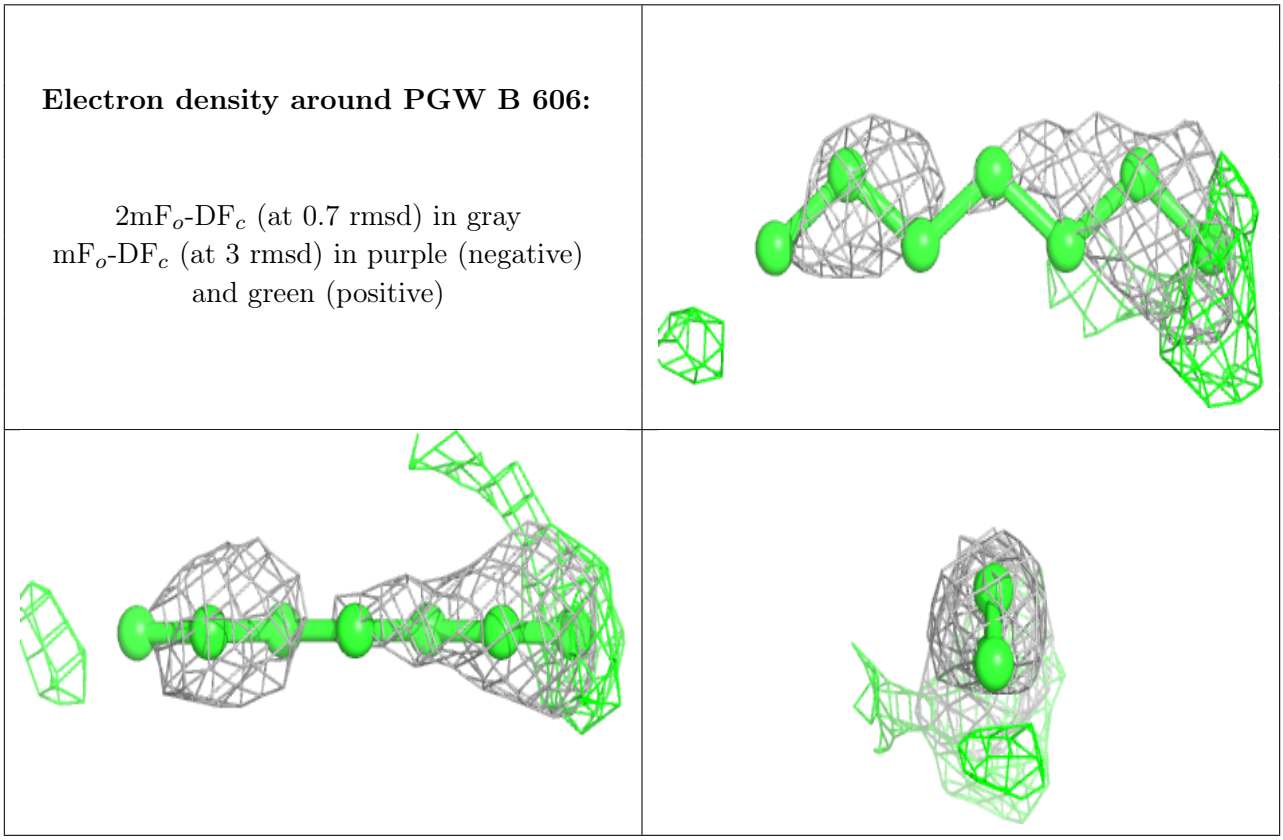
Electron density around PGW B 607:

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



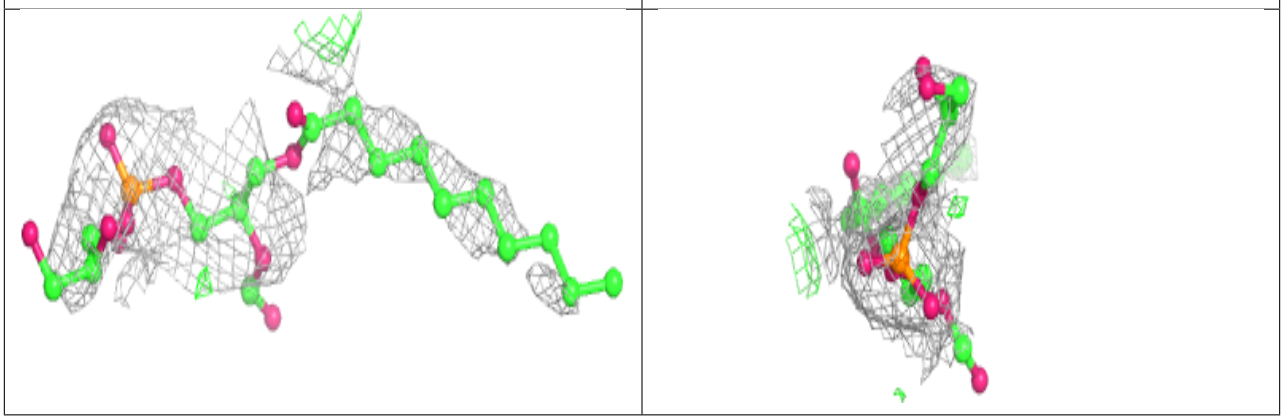
Electron density around PGW B 606:

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



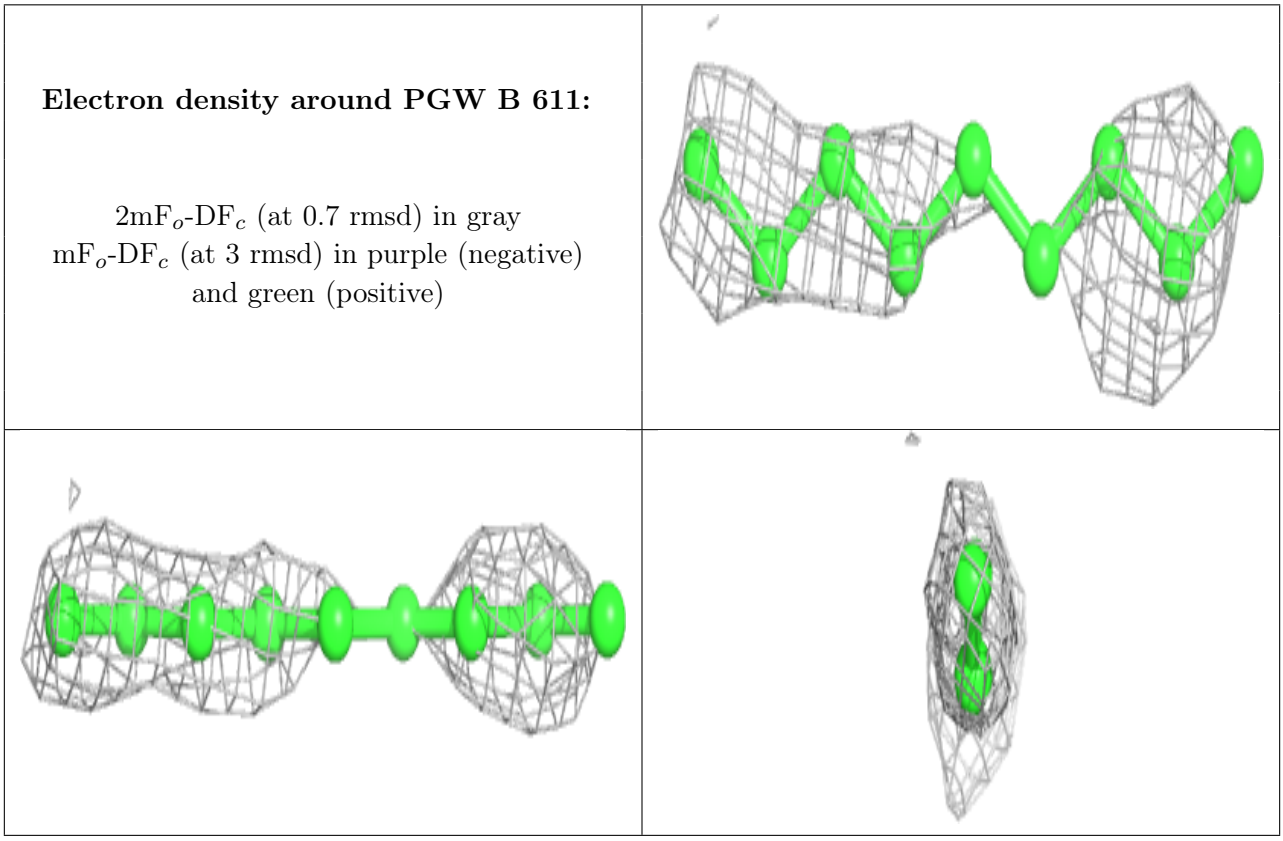
Electron density around PGW B 610:

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



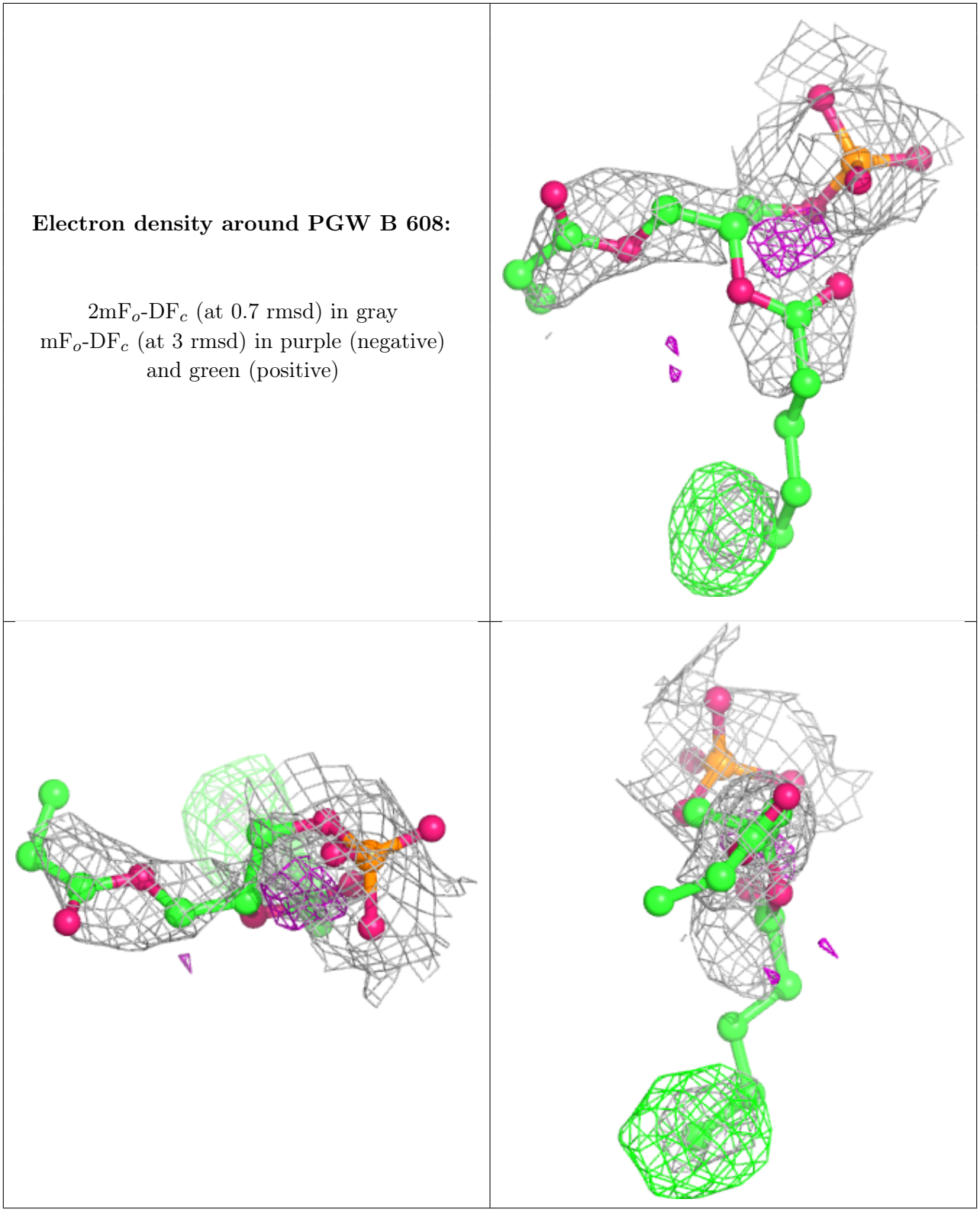
Electron density around PGW B 611:

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



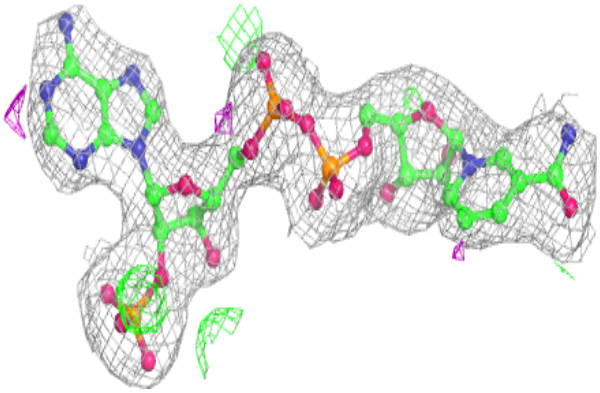
Electron density around PGW B 608:

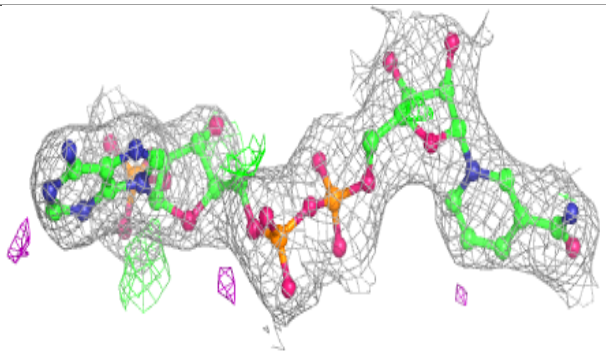
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

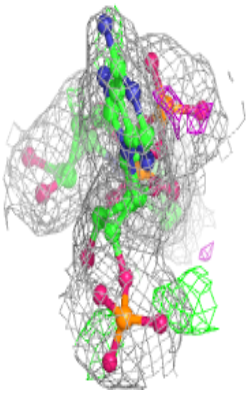


Electron density around NAP A 1001:

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

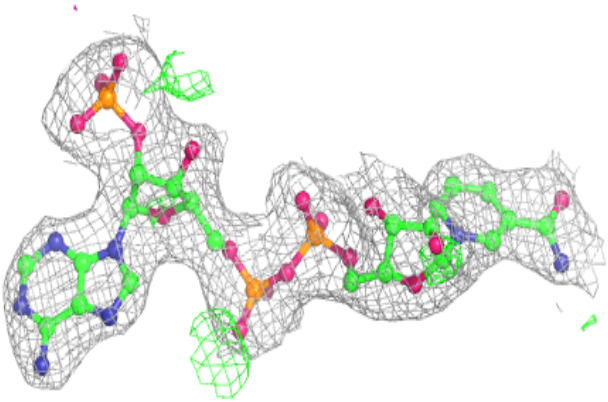


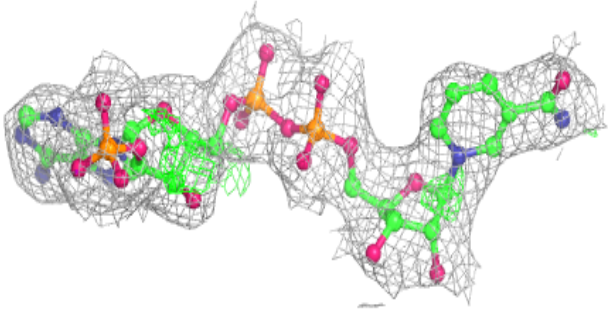


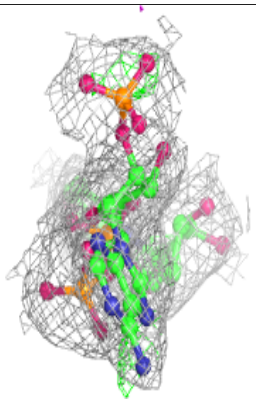


Electron density around NAP C 1001:

$2mF_o$-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.