



wwPDB X-ray Structure Validation Summary Report ⓘ

Apr 26, 2026 – 02:07 AM EDT

PDB ID : 8QW6 / pdb_00008qw6
Title : Crystal Structure of compound 3 in complex with KRAS G12V C118S GDP and pVHL:ElonginC:ElonginB
Authors : Zollman, D.; Farnaby, W.; Ciulli, A.
Deposited on : 2023-10-18
Resolution : 2.20 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

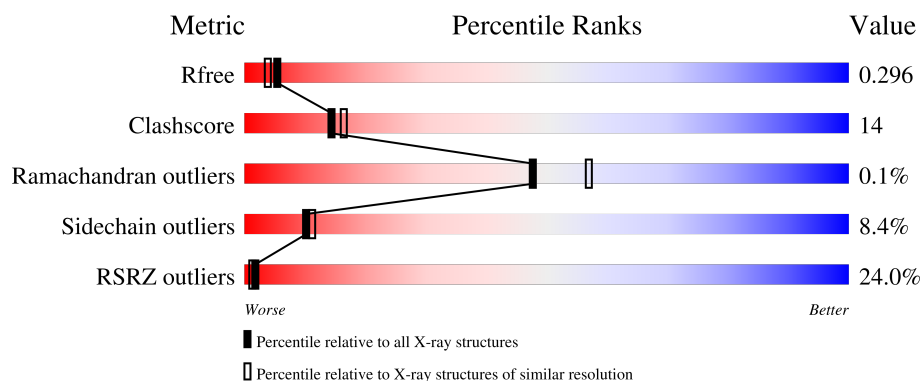
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.20 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	6164 (2.20-2.20)
Clashscore	190562	6851 (2.20-2.20)
Ramachandran outliers	187476	6768 (2.20-2.20)
Sidechain outliers	187428	6769 (2.20-2.20)
RSRZ outliers	180081	6166 (2.20-2.20)

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

Mol	Chain	Length	Quality of chain
1	D	104	46% 44% 39% 14% ..
1	H	104	6% 69% 26% . .
2	C	97	16% 41% 40% 7% 11%
2	G	97	7% 51% 29% 9% 11%
3	B	162	6% 49% 38% . 10%

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Mol	Chain	Length	Quality of chain
3	F	162	6% 52% 33% • • 11%
4	A	170	32% 47% 38% 11% • •
4	E	170	52% 51% 35% 5% • 9%

2 Entry composition [i](#)

There are 8 unique types of molecules in this entry. The entry contains 7996 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 Elongin-B.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	H	104	Total	C	N	O	S	0	0	0
			819	517	137	160	5			
1	D	103	Total	C	N	O	S	0	0	0
			795	503	134	153	5			

- Molecule 2 is a protein called Elongin-C.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	G	86	Total	C	N	O	S	0	0	0
			681	440	107	128	6			
2	C	86	Total	C	N	O	S	0	0	0
			667	432	103	126	6			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	16	MET	-	initiating methionine	UNP Q15369
C	16	MET	-	initiating methionine	UNP Q15369

- Molecule 3 is a protein called von Hippel-Lindau disease tumor suppressor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	F	144	Total	C	N	O	S	0	0	0
			1165	741	210	212	2			
3	B	146	Total	C	N	O	S	0	0	0
			1196	759	221	214	2			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F	52	GLY	-	expression tag	UNP P40337
F	53	SER	-	expression tag	UNP P40337

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Chain	Residue	Modelled	Actual	Comment	Reference
B	52	GLY	-	expression tag	UNP P40337
B	53	SER	-	expression tag	UNP P40337

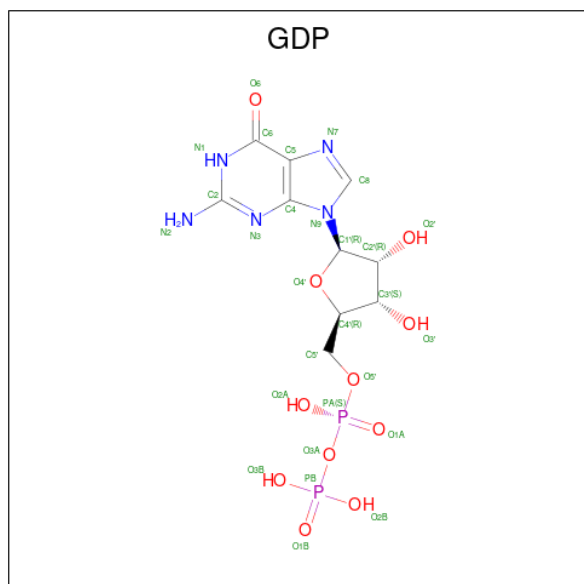
- Molecule 4 is a protein called GTPase KRas.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	E	155	Total	C	N	O	S	0	0	0
			1158	726	199	228	5			
4	A	163	Total	C	N	O	S	0	0	0
			1271	795	218	253	5			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	0	GLY	-	expression tag	UNP P01116
E	12	VAL	GLY	engineered mutation	UNP P01116
E	118	SER	CYS	engineered mutation	UNP P01116
A	0	GLY	-	expression tag	UNP P01116
A	12	VAL	GLY	engineered mutation	UNP P01116
A	118	SER	CYS	engineered mutation	UNP P01116

- Molecule 5 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$).



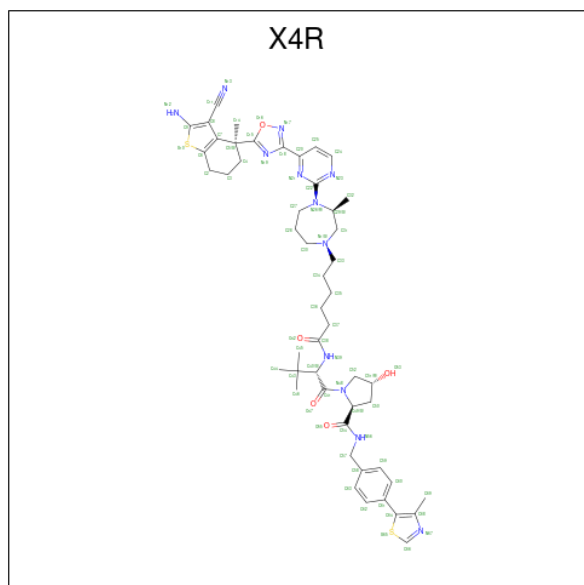
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	E	1	Total	C	N	O	P	0	0
			28	10	5	11	2		

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	A	1	Total	C	N	O	P	0	0
			28	10	5	11	2		

- Molecule 6 is (2S,4R)-1-[(2S)-2-[6-[(3S)-4-[4-[5-[(4S)-2-azanyl-3-cyano-4-methyl-6,7-dihydro-5H-1-benzothiophen-4-yl]-1,2,4-oxadiazol-3-yl]pyrimidin-2-yl]-3-methyl-1,4-diazepan-1-yl]hexanoylamino]-3,3-dimethyl-butanoyl]-N-[[4-(4-methyl-1,3-thiazol-5-yl)phenyl]methyl]-4-oxidanyl-pyrrolidine-2-carboxamide (CCD ID: X4R) (formula: C₅₀H₆₄N₁₂O₅S₂) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
6	E	1	Total	C	N	O	S	0	0
			69	50	12	5	2		
6	A	1	Total	C	N	O	S	0	0
			69	50	12	5	2		

- Molecule 7 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	E	1	Total	Mg	0	0
			1	1		
7	A	1	Total	Mg	0	0
			1	1		

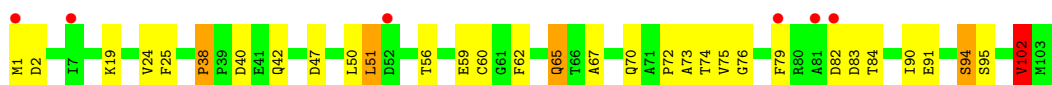
- Molecule 8 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	H	3	Total 3	O 3	0	0
8	G	7	Total 7	O 7	0	0
8	F	16	Total 16	O 16	0	0
8	E	3	Total 3	O 3	0	0
8	C	4	Total 4	O 4	0	0
8	B	11	Total 11	O 11	0	0
8	A	4	Total 4	O 4	0	0

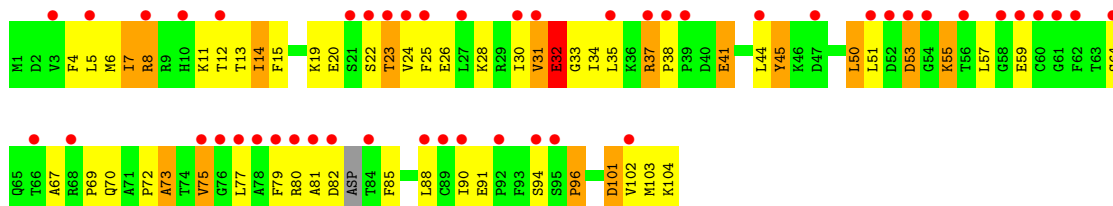
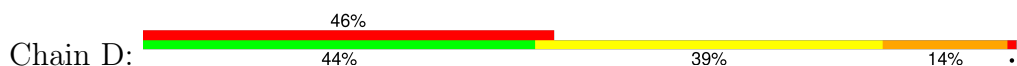
3 Residue-property plots [i](#)

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.

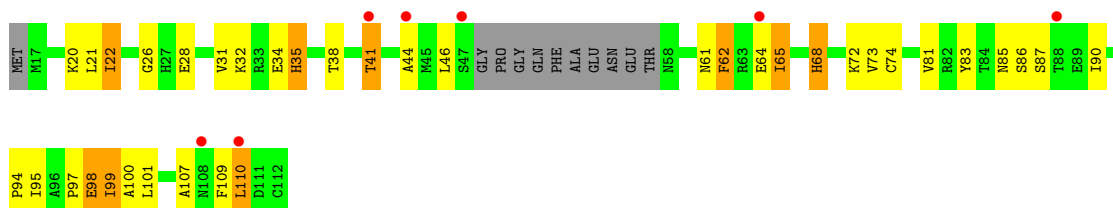
• Molecule 1: Elongin-B



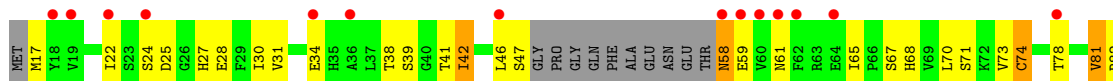
• Molecule 1: Elongin-B

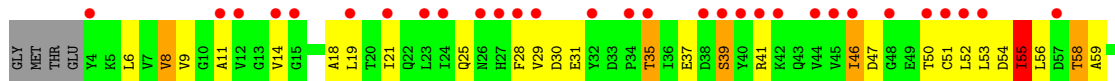


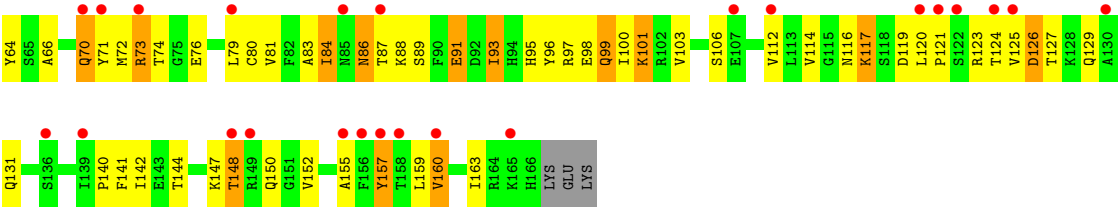
• Molecule 2: Elongin-C



• Molecule 2: Elongin-C







4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	70.21Å 72.30Å 80.79Å 112.25° 100.61° 100.57°	Depositor
Resolution (Å)	46.37 – 2.20 46.37 – 2.20	Depositor EDS
% Data completeness (in resolution range)	55.5 (46.37-2.20) 55.6 (46.37-2.20)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.28 (at 2.20Å)	Xtriage
Refinement program	PHENIX 1.20.1_4487, PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.255 , 0.295 0.257 , 0.296	Depositor DCC
R_{free} test set	2000 reflections (2.83%)	wwPDB-VP
Wilson B-factor (Å ²)	43.0	Xtriage
Anisotropy	0.034	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.29 , 38.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	7996	wwPDB-VP
Average B, all atoms (Å ²)	48.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.50% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: MG, GDP, X4R

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	D	1.71	11/810 (1.4%)	1.47	9/1093 (0.8%)
1	H	1.81	22/835 (2.6%)	1.34	3/1128 (0.3%)
2	C	1.82	18/681 (2.6%)	1.36	7/922 (0.8%)
2	G	1.76	19/695 (2.7%)	1.29	3/938 (0.3%)
3	B	1.38	12/1227 (1.0%)	1.35	6/1674 (0.4%)
3	F	1.80	28/1196 (2.3%)	1.36	5/1634 (0.3%)
4	A	1.62	25/1292 (1.9%)	1.40	7/1749 (0.4%)
4	E	1.47	16/1174 (1.4%)	1.50	13/1587 (0.8%)
All	All	1.66	151/7910 (1.9%)	1.39	53/10725 (0.5%)

The worst 5 of 151 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	F	96	GLN	C-O	-9.14	1.14	1.24
3	F	179	ASP	C-O	-8.74	1.14	1.23
2	G	100	ALA	C-O	-8.55	1.14	1.24
2	G	62	PHE	C-O	-8.47	1.14	1.24
4	A	76	GLU	CA-C	-8.31	1.41	1.52

The worst 5 of 53 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	E	156	PHE	N-CA-C	-8.21	103.40	113.50
1	D	30	ILE	N-CA-C	8.05	119.78	111.00
1	D	38	PRO	CB-CA-C	-7.65	101.59	110.92
2	C	94	PRO	CA-C-O	-7.50	112.48	121.48
1	D	31	VAL	O-C-N	7.34	130.43	122.06

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	D	795	0	782	42	0
1	H	819	0	813	8	0
2	C	667	0	651	22	0
2	G	681	0	677	19	0
3	B	1196	0	1195	34	0
3	F	1165	0	1150	19	0
4	A	1271	0	1210	47	0
4	E	1158	0	1070	38	0
5	A	28	0	12	0	0
5	E	28	0	12	0	0
6	A	69	0	0	2	0
6	E	69	0	0	3	0
7	A	1	0	0	0	0
7	E	1	0	0	0	0
8	A	4	0	0	1	0
8	B	11	0	0	0	0
8	C	4	0	0	0	0
8	E	3	0	0	0	0
8	F	16	0	0	0	0
8	G	7	0	0	0	0
8	H	3	0	0	0	0
All	All	7996	0	7572	218	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 14.

The worst 5 of 218 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:101:ASP:HA	1:D:104:LYS:HG3	1.30	1.13
4:E:27:HIS:O	4:E:27:HIS:ND1	2.07	0.86
3:F:165:VAL:O	3:F:168:SER:HB3	1.79	0.82
3:F:75:ILE:HG12	3:F:108:ARG:HG2	1.60	0.82
3:F:182:ARG:HA	3:F:185:TYR:CD2	2.16	0.81

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	D	99/104 (95%)	94 (95%)	5 (5%)	0	100	100
1	H	102/104 (98%)	95 (93%)	7 (7%)	0	100	100
2	C	82/97 (84%)	78 (95%)	4 (5%)	0	100	100
2	G	82/97 (84%)	79 (96%)	3 (4%)	0	100	100
3	B	144/162 (89%)	140 (97%)	4 (3%)	0	100	100
3	F	142/162 (88%)	138 (97%)	4 (3%)	0	100	100
4	A	161/170 (95%)	150 (93%)	10 (6%)	1 (1%)	21	23
4	E	147/170 (86%)	134 (91%)	13 (9%)	0	100	100
All	All	959/1066 (90%)	908 (95%)	50 (5%)	1 (0%)	48	57

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	A	121	PRO

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	D	86/92 (94%)	75 (87%)	11 (13%)	4	4

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	H	91/92 (99%)	87 (96%)	4 (4%)	25	34
2	C	74/86 (86%)	65 (88%)	9 (12%)	5	4
2	G	77/86 (90%)	74 (96%)	3 (4%)	28	39
3	B	136/148 (92%)	129 (95%)	7 (5%)	21	27
3	F	132/148 (89%)	122 (92%)	10 (8%)	12	14
4	A	135/150 (90%)	117 (87%)	18 (13%)	4	3
4	E	115/150 (77%)	106 (92%)	9 (8%)	11	13
All	All	846/952 (89%)	775 (92%)	71 (8%)	10	11

5 of 71 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	A	50	THR
4	A	55	ILE
4	A	106	SER
4	E	127	THR
4	E	94	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 9 such sidechains are listed below:

Mol	Chain	Res	Type
4	A	22	GLN
4	A	86	ASN
3	F	141	ASN
3	F	195	GLN
1	D	10	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 6 ligands modelled in this entry, 2 are monoatomic - leaving 4 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
6	X4R	E	202	-	74,76,76	1.92	15 (20%)	94,111,111	1.07	7 (7%)
6	X4R	A	202	-	74,76,76	2.04	10 (13%)	94,111,111	1.32	9 (9%)
5	GDP	A	201	7	29,30,30	0.53	0	45,47,47	0.55	0
5	GDP	E	201	-	29,30,30	0.53	0	45,47,47	0.46	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
6	X4R	E	202	-	-	3/50/94/94	0/8/8/8
6	X4R	A	202	-	-	5/50/94/94	0/8/8/8
5	GDP	A	201	7	-	0/16/32/32	0/3/3/3
5	GDP	E	201	-	-	1/16/32/32	0/3/3/3

The worst 5 of 25 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	202	X4R	C31-N1	-10.81	1.35	1.46
6	E	202	X4R	C31-N1	-7.44	1.38	1.46
6	E	202	X4R	C5-C7	-6.26	1.40	1.52
6	A	202	X4R	C64-S65	-5.33	1.60	1.73
6	E	202	X4R	C29-N26	-5.04	1.36	1.47

The worst 5 of 16 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	A	202	X4R	C50-C49-C54	-5.06	101.66	111.36
6	A	202	X4R	C4-C5-C15	-3.70	100.26	107.75
6	A	202	X4R	C66-S65-C64	3.54	90.82	88.96
6	A	202	X4R	C30-C28-C27	3.45	122.06	113.99
6	A	202	X4R	C58-C57-N56	3.41	120.26	113.07

There are no chirality outliers.

5 of 9 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	202	X4R	C58-C57-N56-C54
6	E	202	X4R	C36-C37-C38-N39
6	E	202	X4R	C36-C37-C38-O42
6	A	202	X4R	C36-C37-C38-O42
6	A	202	X4R	C36-C37-C38-N39

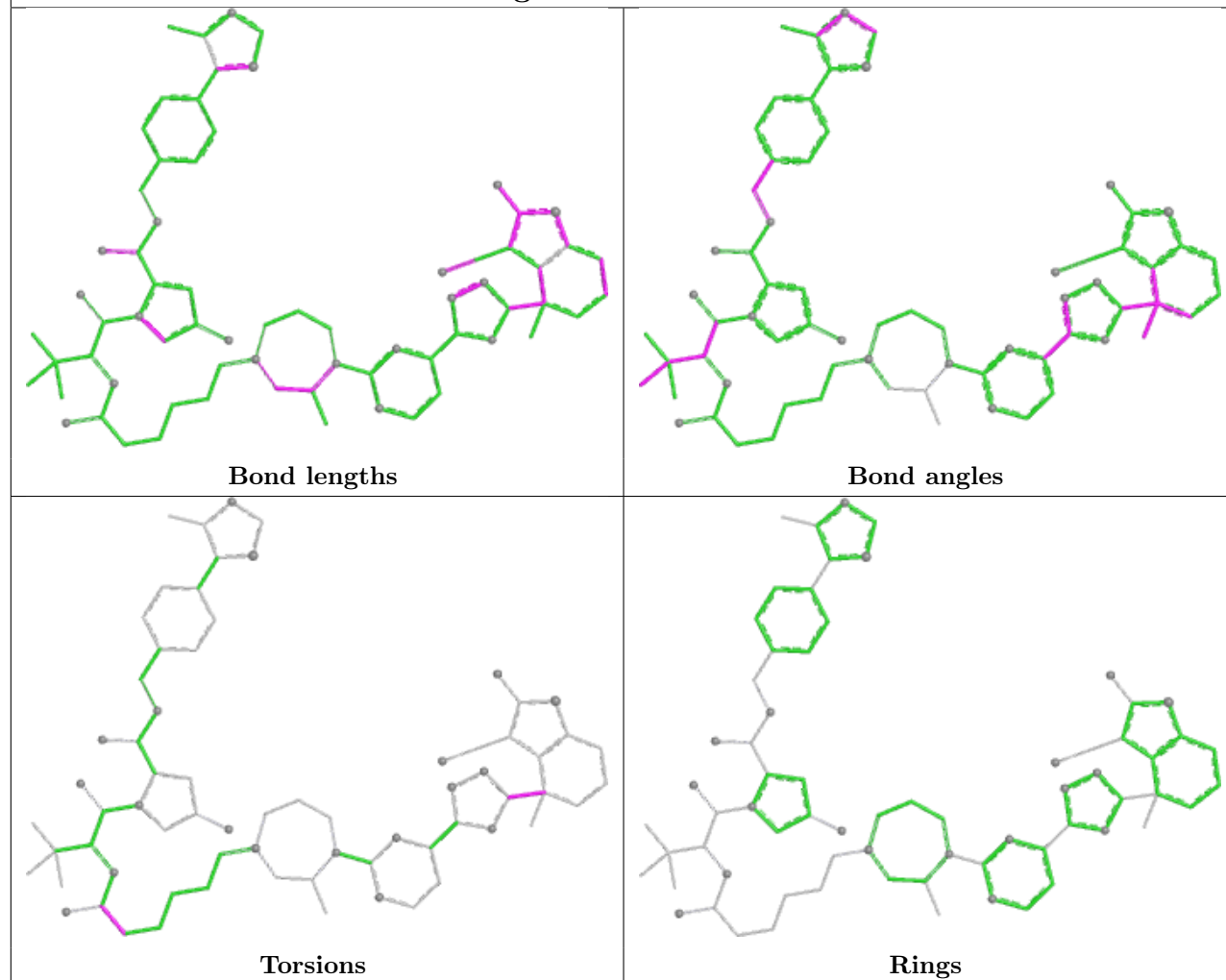
There are no ring outliers.

2 monomers are involved in 5 short contacts:

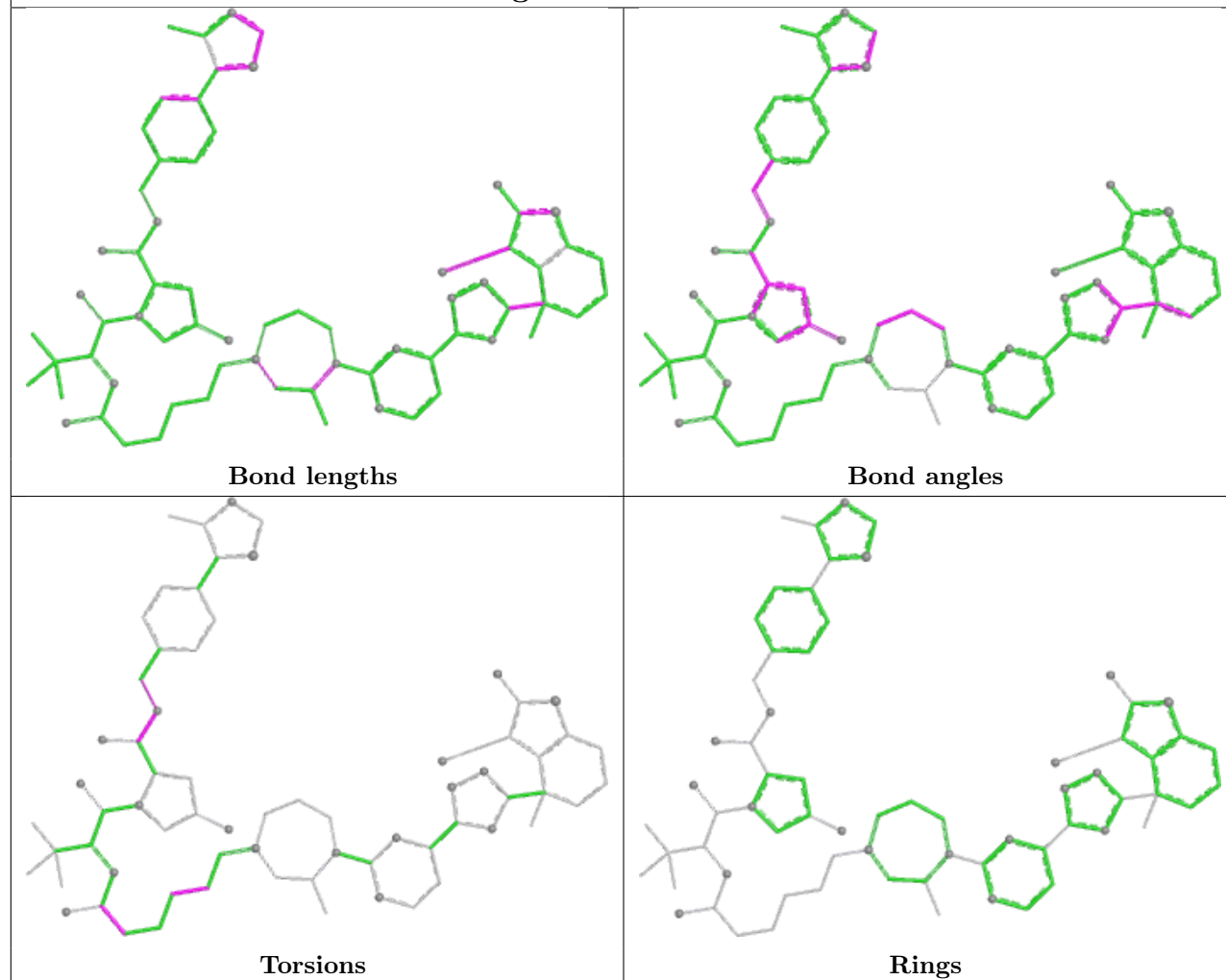
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	E	202	X4R	3	0
6	A	202	X4R	2	0

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 than 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.

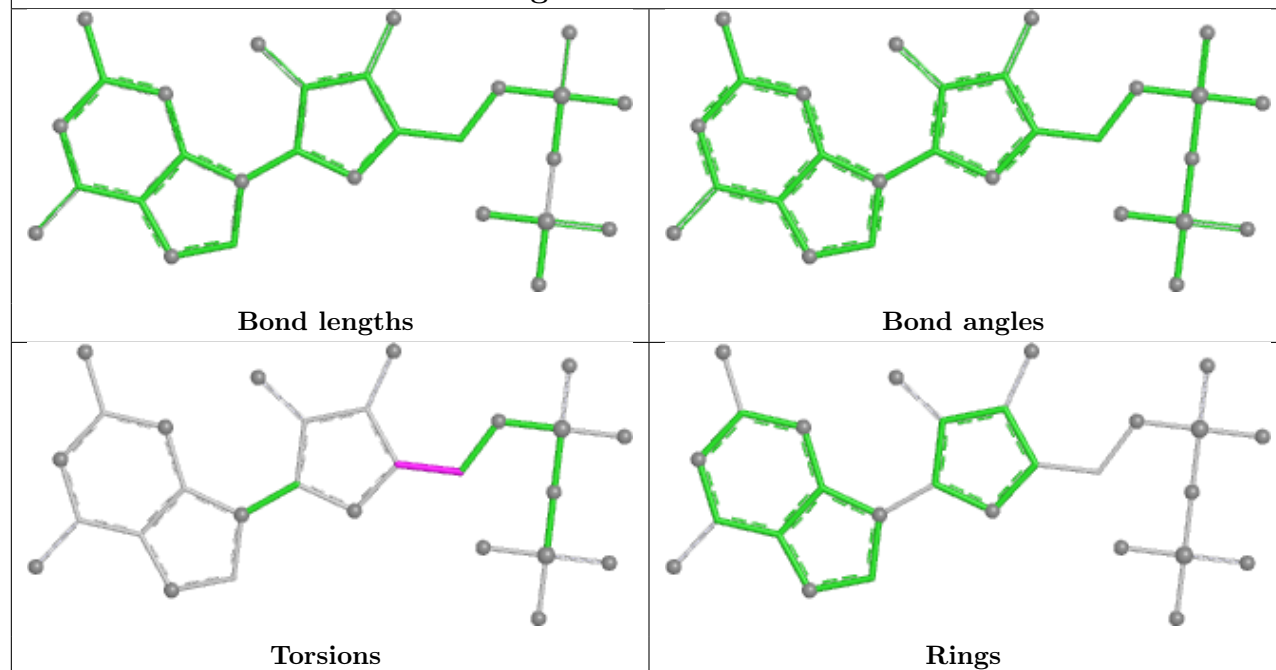
Ligand X4R E 202



Ligand X4R A 202



Ligand GDP E 201



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 [i](#)

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

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	D	103/104 (99%)	1.98	48 (46%) 0 0	37, 74, 90, 94	0
1	H	104/104 (100%)	0.71	6 (5%) 29 25	22, 40, 55, 66	0
2	C	86/97 (88%)	1.17	16 (18%) 3 2	25, 49, 72, 85	0
2	G	86/97 (88%)	0.59	7 (8%) 18 15	18, 33, 56, 77	0
3	B	146/162 (90%)	0.59	9 (6%) 26 23	15, 28, 52, 84	0
3	F	144/162 (88%)	0.55	9 (6%) 26 23	16, 29, 51, 81	0
4	A	163/170 (95%)	1.65	54 (33%) 1 0	22, 60, 82, 86	0
4	E	155/170 (91%)	2.38	88 (56%) 0 0	29, 72, 91, 98	0
All	All	987/1066 (92%)	1.25	237 (24%) 2 1	15, 46, 86, 98	0

The worst 5 of 237 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
4	E	86	ASN	5.9
4	E	124	THR	5.7
4	E	14	VAL	5.5
4	A	34	PRO	5.3
1	D	54	GLY	5.3

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](#)

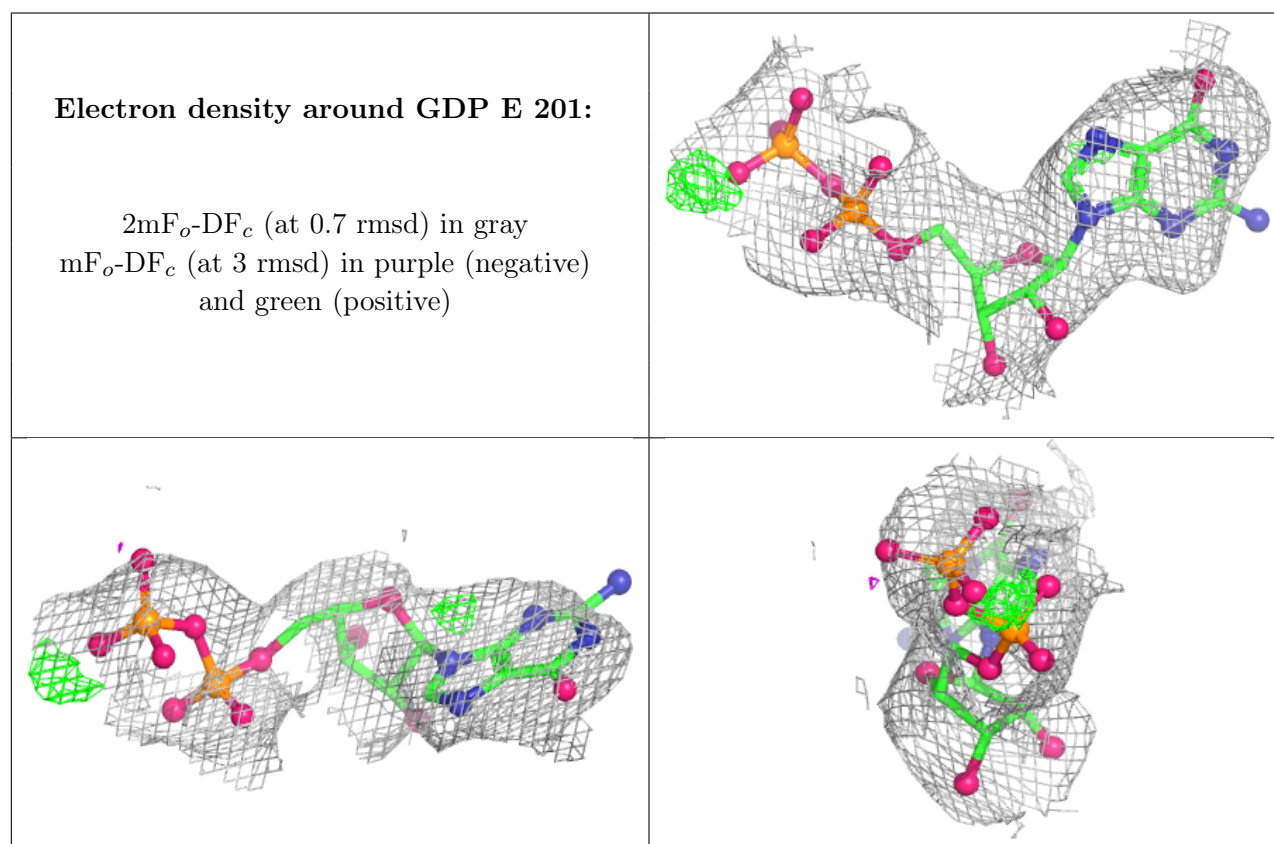
There are no oligosaccharides in this entry.

6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q<0.9' lists the number of atoms with occupancy less than 0.9.

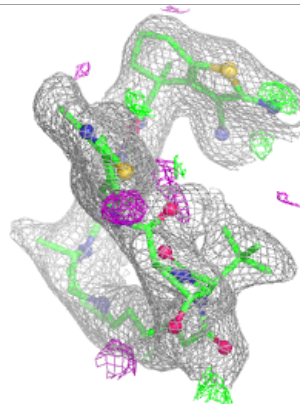
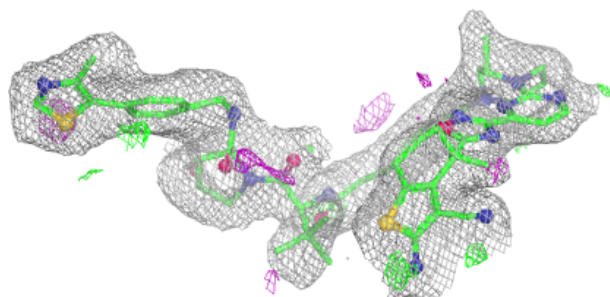
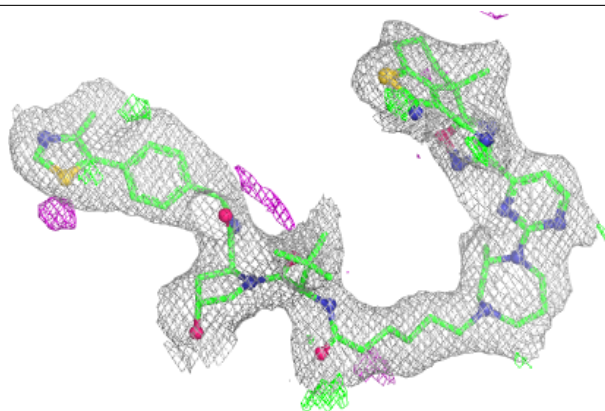
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
7	MG	A	203	1/1	0.69	0.34	62,62,62,62	0
5	GDP	E	201	28/28	0.83	0.14	52,75,88,91	0
7	MG	E	203	1/1	0.87	0.10	57,57,57,57	0
5	GDP	A	201	28/28	0.88	0.11	47,62,68,70	0
6	X4R	A	202	69/69	0.93	0.10	12,27,47,53	0
6	X4R	E	202	69/69	0.94	0.10	16,30,53,62	0

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.

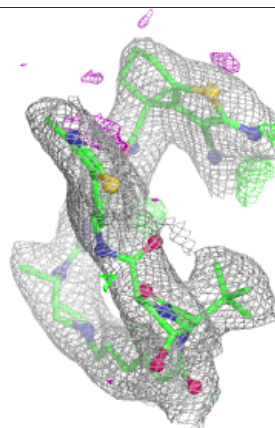
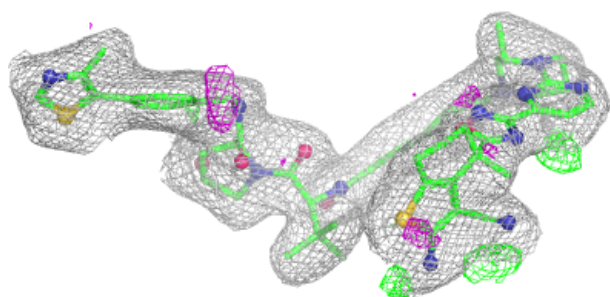
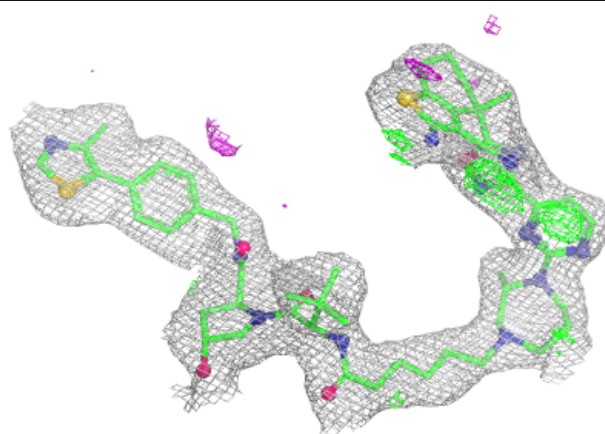


Electron density around X4R A 202:

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

**Electron density around X4R E 202:**

$2mF_o-DF_c$ (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.