



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 12, 2026 – 12:21 PM UTC

PDB ID : 6CDU / pdb_00006cdu
Title : Crystal structure of a chimeric human alpha1GABAA receptor in complex with alphaxalone
Authors : Chen, Q.; Arjunan, P.; Cohen, A.E.; Xu, Y.; Tang, P.
Deposited on : 2018-02-09
Resolution : 3.45 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
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

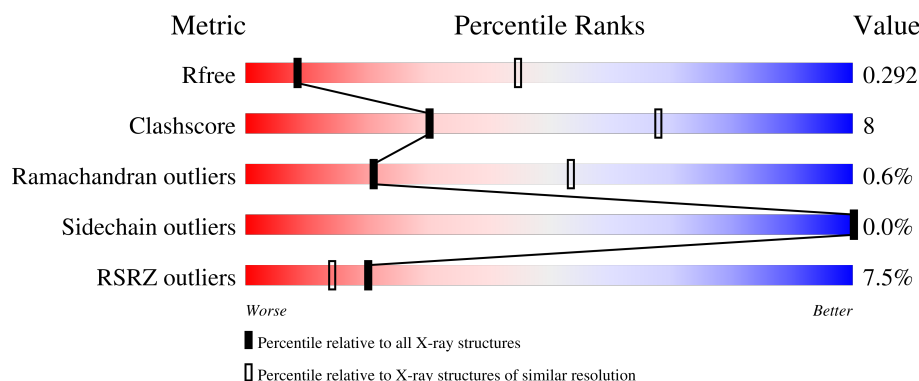
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.45 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	1070 (3.50-3.42)
Clashscore	190562	1128 (3.50-3.42)
Ramachandran outliers	187476	1101 (3.50-3.42)
Sidechain outliers	187428	1102 (3.50-3.42)
RSRZ outliers	180081	1070 (3.50-3.42)

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

Mol	Chain	Length	Quality of chain
1	A	324	5% 78% 18% ..
1	B	324	6% 73% 24% .
1	C	324	11% 76% 21% .
1	D	324	8% 73% 24% .
1	E	324	5% 74% 23% .

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Mol	Chain	Length	Quality of chain	
1	F	324	10% 71% 26%	.
1	G	324	7% 81% 16%	.
1	H	324	4% 76% 21%	.
1	I	324	9% 75% 22%	.
1	J	324	8% 75% 22%	.

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 25930 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 chimeric alpha1GABAA receptor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	314	Total	C	N	O	S	0	0	0
			2569	1672	428	462	7			
1	B	314	Total	C	N	O	S	0	0	0
			2569	1672	428	462	7			
1	C	314	Total	C	N	O	S	0	0	0
			2569	1672	428	462	7			
1	D	314	Total	C	N	O	S	0	0	0
			2569	1672	428	462	7			
1	E	314	Total	C	N	O	S	0	0	0
			2569	1672	428	462	7			
1	F	314	Total	C	N	O	S	0	0	0
			2569	1672	428	462	7			
1	G	314	Total	C	N	O	S	0	0	0
			2569	1672	428	462	7			
1	H	314	Total	C	N	O	S	0	0	0
			2569	1672	428	462	7			
1	I	314	Total	C	N	O	S	0	0	0
			2569	1672	428	462	7			
1	J	314	Total	C	N	O	S	0	0	0
			2569	1672	428	462	7			

There are 30 discrepancies between the modelled and reference sequences:

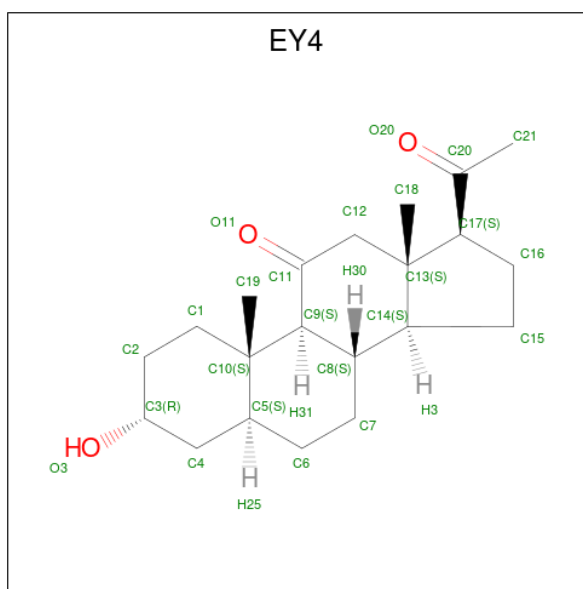
Chain	Residue	Modelled	Actual	Comment	Reference
A	314	GLY	-	linker	UNP P14867
A	315	VAL	-	linker	UNP P14867
A	316	GLU	-	linker	UNP P14867
B	314	GLY	-	linker	UNP P14867
B	315	VAL	-	linker	UNP P14867
B	316	GLU	-	linker	UNP P14867
C	314	GLY	-	linker	UNP P14867
C	315	VAL	-	linker	UNP P14867
C	316	GLU	-	linker	UNP P14867

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Chain	Residue	Modelled	Actual	Comment	Reference
D	314	GLY	-	linker	UNP P14867
D	315	VAL	-	linker	UNP P14867
D	316	GLU	-	linker	UNP P14867
E	314	GLY	-	linker	UNP P14867
E	315	VAL	-	linker	UNP P14867
E	316	GLU	-	linker	UNP P14867
F	314	GLY	-	linker	UNP P14867
F	315	VAL	-	linker	UNP P14867
F	316	GLU	-	linker	UNP P14867
G	314	GLY	-	linker	UNP P14867
G	315	VAL	-	linker	UNP P14867
G	316	GLU	-	linker	UNP P14867
H	314	GLY	-	linker	UNP P14867
H	315	VAL	-	linker	UNP P14867
H	316	GLU	-	linker	UNP P14867
I	314	GLY	-	linker	UNP P14867
I	315	VAL	-	linker	UNP P14867
I	316	GLU	-	linker	UNP P14867
J	314	GLY	-	linker	UNP P14867
J	315	VAL	-	linker	UNP P14867
J	316	GLU	-	linker	UNP P14867

- Molecule 2 is (3a,5a)-3-Hydroxypregnane-11,20-dione (CCD ID: EY4) (formula: C₂₁H₃₂O₃).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			24	21	3		

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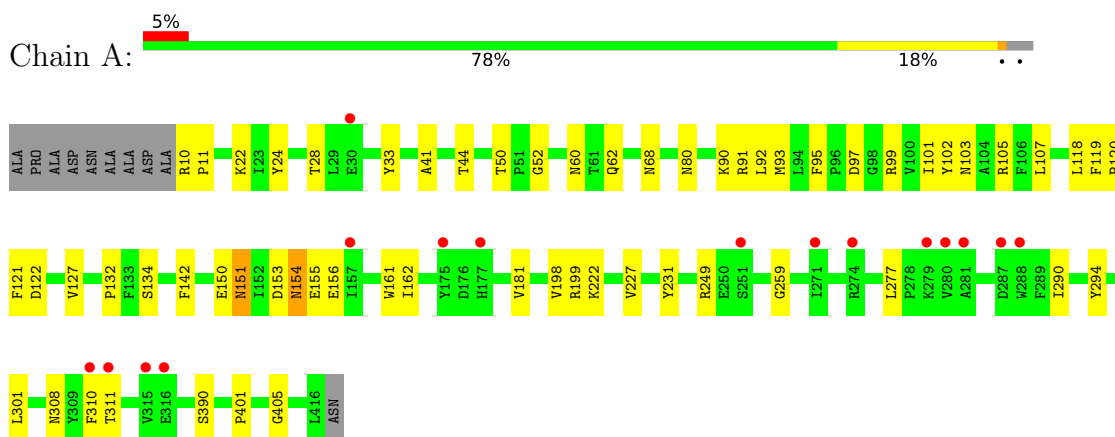
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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			24	21	3		
2	B	1	Total	C	O	0	0
			24	21	3		
2	D	1	Total	C	O	0	0
			24	21	3		
2	E	1	Total	C	O	0	0
			24	21	3		
2	F	1	Total	C	O	0	0
			24	21	3		
2	G	1	Total	C	O	0	0
			24	21	3		
2	G	1	Total	C	O	0	0
			24	21	3		
2	H	1	Total	C	O	0	0
			24	21	3		
2	I	1	Total	C	O	0	0
			24	21	3		

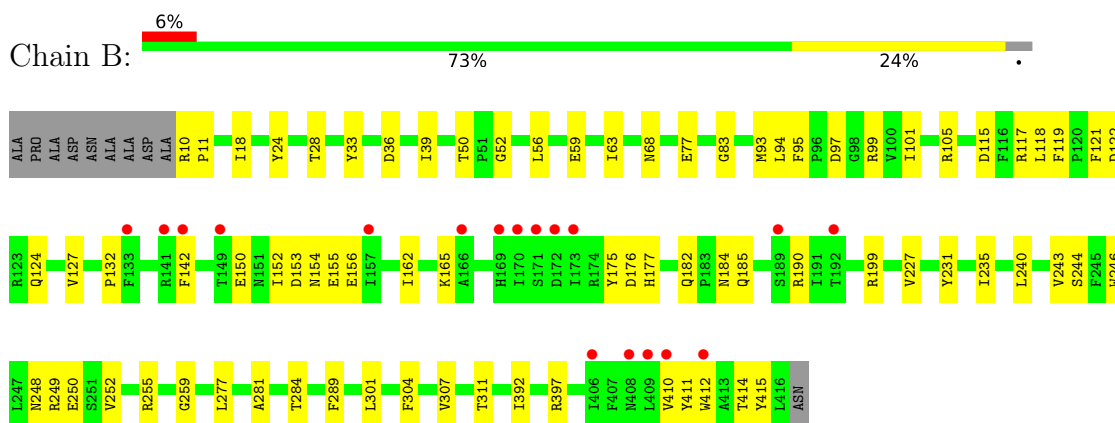
3 Residue-property plots [i](#)

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.

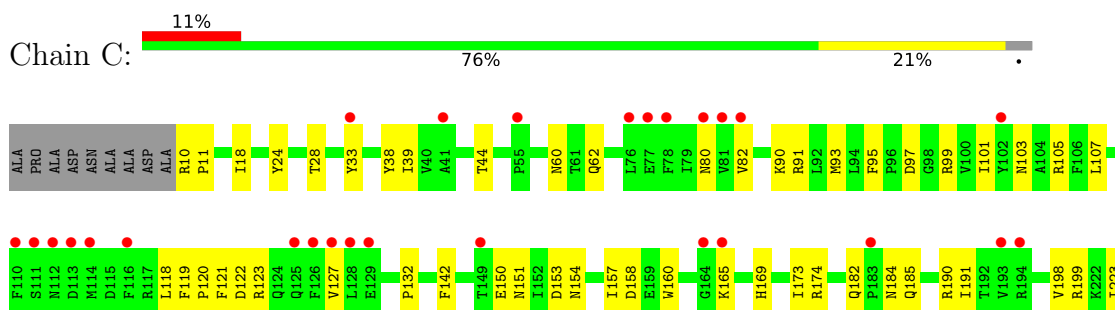
- Molecule 1: chimeric alpha1GABAA receptor



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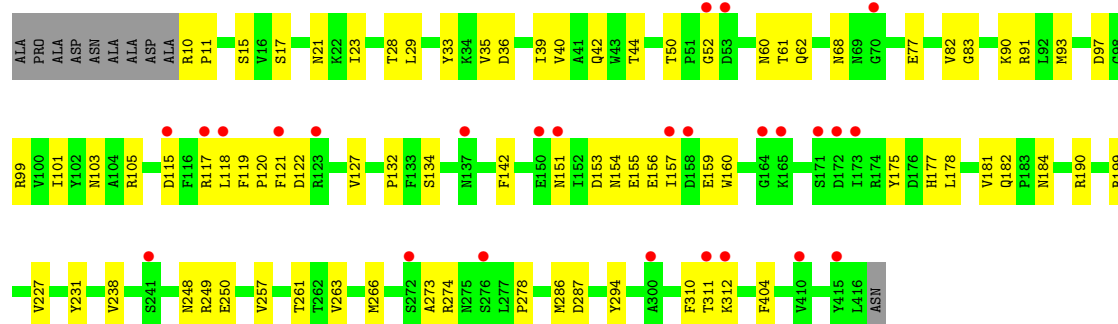
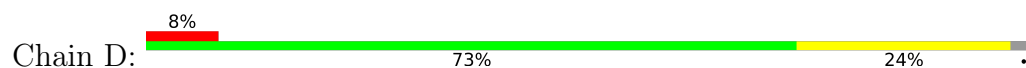


- Molecule 1: chimeric alpha1GABAA receptor

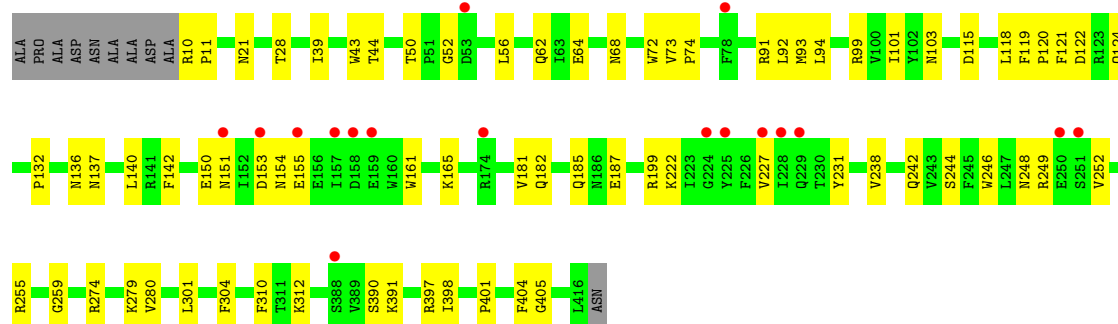
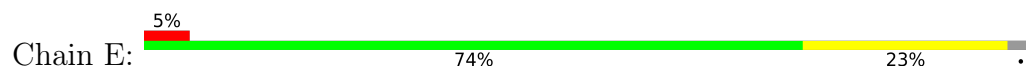




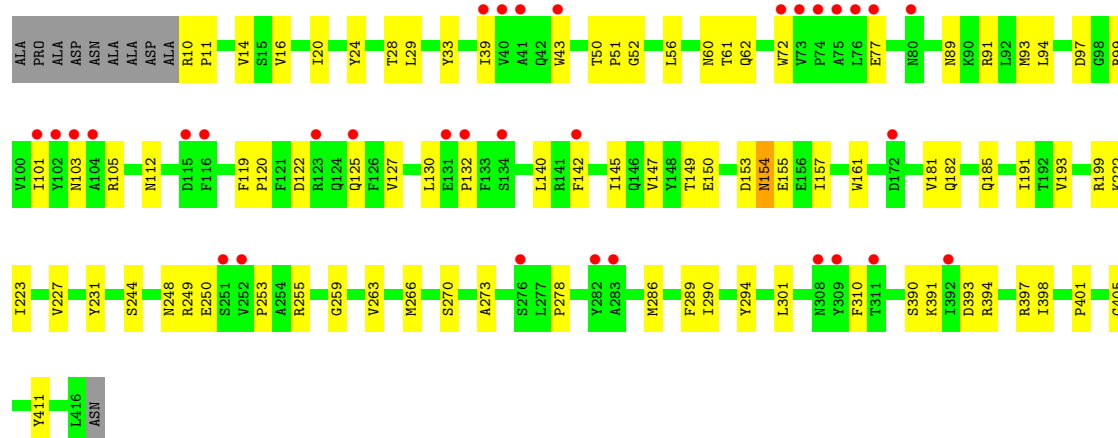
• Molecule 1: chimeric alpha1GABAA receptor



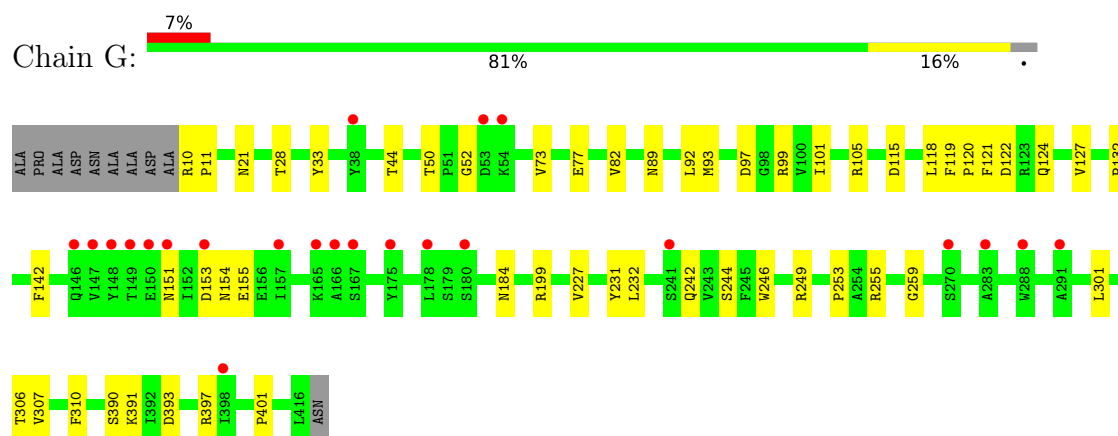
• Molecule 1: chimeric alpha1GABAA receptor



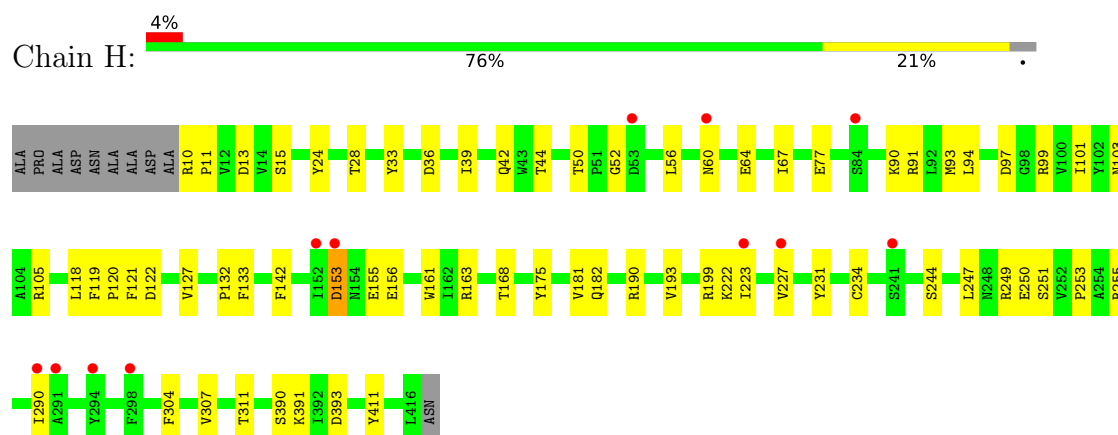
• Molecule 1: chimeric alpha1GABAA receptor



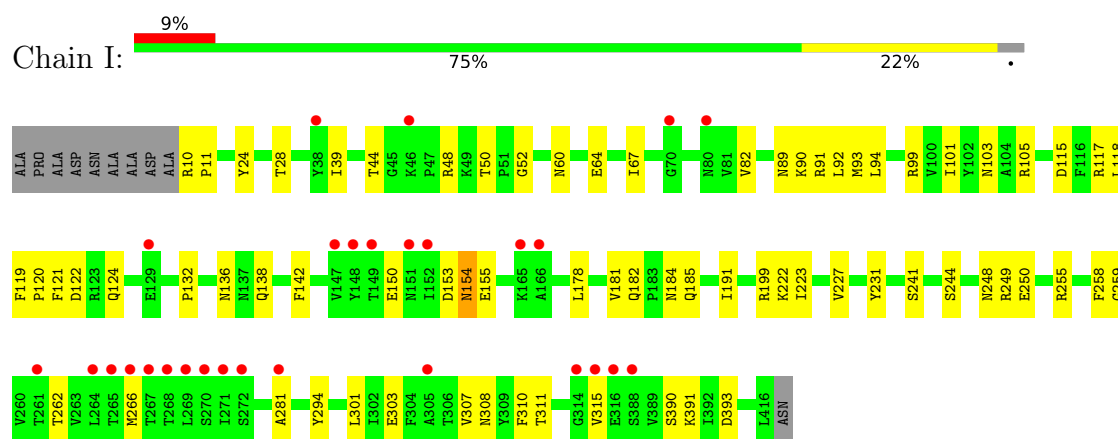
- Molecule 1: chimeric alpha1GABAA receptor



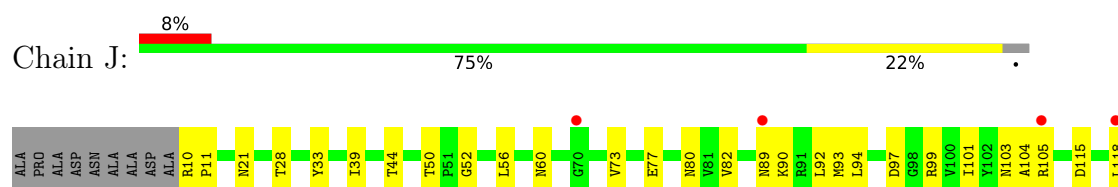
- Molecule 1: chimeric alpha1GABAA receptor

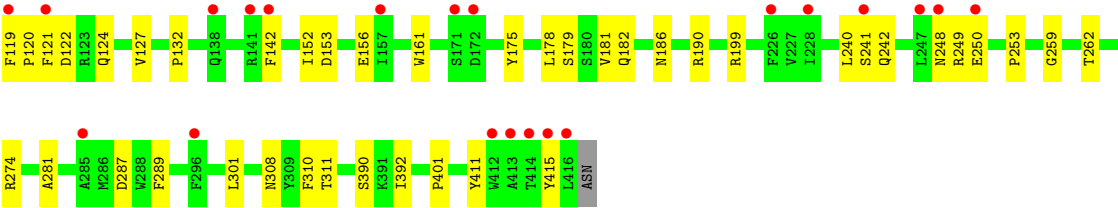


- Molecule 1: chimeric alpha1GABAA receptor



- Molecule 1: chimeric alpha1GABAA receptor





4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	108.20Å 263.53Å 109.16Å 90.00° 110.91° 90.00°	Depositor
Resolution (Å)	39.88 – 3.45 39.88 – 3.45	Depositor EDS
% Data completeness (in resolution range)	97.6 (39.88-3.45) 97.5 (39.88-3.45)	Depositor EDS
R_{merge}	0.16	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.54 (at 3.48Å)	Xtriage
Refinement program	PHENIX (1.13_2998: ???)	Depositor
R, R_{free}	0.227 , 0.286 0.231 , 0.292	Depositor DCC
R_{free} test set	3582 reflections (4.78%)	wwPDB-VP
Wilson B-factor (Å ²)	128.7	Xtriage
Anisotropy	0.221	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.24 , 70.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtriage
Estimated twinning fraction	0.027 for l,-k,h	Xtriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	25930	wwPDB-VP
Average B, all atoms (Å ²)	141.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.60% 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: EY4

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	0.13	0/2637	0.37	0/3592
1	B	0.13	0/2637	0.38	0/3592
1	C	0.15	0/2637	0.38	0/3592
1	D	0.15	0/2637	0.41	0/3592
1	E	0.15	0/2637	0.38	0/3592
1	F	0.16	0/2637	0.40	1/3592 (0.0%)
1	G	0.14	0/2637	0.38	0/3592
1	H	0.15	0/2637	0.40	2/3592 (0.1%)
1	I	0.14	0/2637	0.39	0/3592
1	J	0.13	0/2637	0.39	0/3592
All	All	0.14	0/26370	0.39	3/35920 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	157	ILE	CA-CB-CG1	5.13	119.12	110.40
1	H	251	SER	CA-C-N	5.04	123.42	120.24
1	H	251	SER	C-N-CA	5.04	123.42	120.24

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	2569	0	2550	41	0
1	B	2569	0	2550	55	0
1	C	2569	0	2550	51	0
1	D	2569	0	2550	54	0
1	E	2569	0	2550	45	0
1	F	2569	0	2550	54	0
1	G	2569	0	2550	35	0
1	H	2569	0	2550	46	0
1	I	2569	0	2550	52	0
1	J	2569	0	2550	45	0
2	A	48	0	0	0	0
2	B	24	0	0	1	0
2	D	24	0	0	0	0
2	E	24	0	0	0	0
2	F	24	0	0	0	0
2	G	48	0	0	2	0
2	H	24	0	0	0	0
2	I	24	0	0	0	0
All	All	25930	0	25500	434	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 8.

All (434) 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:F:28:THR:HG21	1:F:199:ARG:HH12	1.51	0.76
1:B:93:MET:HB2	1:B:101:ILE:HB	1.68	0.74
1:D:28:THR:HG21	1:D:199:ARG:HH12	1.52	0.74
1:C:153:ASP:O	1:C:154:ASN:ND2	2.20	0.74
1:J:249:ARG:NH2	1:J:310:PHE:O	2.21	0.74
1:D:156:GLU:OE1	1:D:160:TRP:N	2.20	0.73
1:D:156:GLU:C	1:D:156:GLU:OE2	2.33	0.72
1:A:93:MET:HB2	1:A:101:ILE:HB	1.72	0.71
1:A:28:THR:HG21	1:A:199:ARG:HH12	1.55	0.71
1:I:249:ARG:HH11	1:I:315:VAL:HB	1.53	0.71
1:B:156:GLU:HG2	1:B:162:ILE:HB	1.71	0.71
1:H:249:ARG:HH21	1:H:311:THR:HA	1.56	0.71
1:F:150:GLU:O	1:F:154:ASN:ND2	2.23	0.71
1:F:249:ARG:NH2	1:F:310:PHE:O	2.22	0.71
1:B:249:ARG:HH21	1:B:311:THR:HA	1.55	0.70
1:F:56:LEU:HB3	1:F:94:LEU:HB2	1.72	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:28:THR:HG21	1:C:199:ARG:HH12	1.56	0.70
1:F:147:VAL:HG12	1:F:149:THR:HG23	1.75	0.69
1:H:175:TYR:OH	1:H:190:ARG:NH2	2.26	0.69
1:G:28:THR:HG21	1:G:199:ARG:HH12	1.57	0.68
1:J:175:TYR:OH	1:J:190:ARG:NH2	2.26	0.68
1:A:156:GLU:HG3	1:A:162:ILE:H	1.59	0.67
1:G:259:GLY:HA3	1:G:301:LEU:HD13	1.76	0.66
1:I:249:ARG:NH2	1:I:310:PHE:O	2.28	0.66
1:I:44:THR:HA	1:I:99:ARG:HA	1.77	0.66
1:B:28:THR:HG21	1:B:199:ARG:HH12	1.60	0.66
1:I:181:VAL:HG23	1:I:182:GLN:HG3	1.77	0.66
1:C:249:ARG:NH2	1:C:310:PHE:O	2.29	0.65
1:F:93:MET:HB2	1:F:101:ILE:HB	1.79	0.65
1:B:227:VAL:HA	1:B:231:TYR:HB2	1.79	0.65
1:G:249:ARG:NH2	1:G:310:PHE:O	2.30	0.64
1:D:227:VAL:HA	1:D:231:TYR:HB2	1.80	0.63
1:A:249:ARG:NH2	1:A:310:PHE:O	2.31	0.63
1:H:181:VAL:HG23	1:H:182:GLN:HG3	1.80	0.63
1:F:182:GLN:HB3	1:F:185:GLN:HB2	1.81	0.63
1:I:28:THR:HG21	1:I:199:ARG:HH12	1.62	0.63
1:J:39:ILE:O	1:J:103:ASN:ND2	2.27	0.63
1:H:39:ILE:O	1:H:103:ASN:ND2	2.29	0.63
1:H:28:THR:HG21	1:H:199:ARG:HH12	1.63	0.62
1:B:36:ASP:OD2	1:B:105:ARG:NH2	2.28	0.62
1:J:274:ARG:NH1	1:J:287:ASP:OD2	2.31	0.62
1:B:182:GLN:HB3	1:B:185:GLN:HB2	1.82	0.62
1:E:181:VAL:HG23	1:E:182:GLN:HG3	1.80	0.62
1:G:93:MET:HB2	1:G:101:ILE:HB	1.81	0.61
1:D:97:ASP:OD2	1:D:99:ARG:NE	2.32	0.61
1:B:259:GLY:HA3	1:B:301:LEU:HD13	1.82	0.61
1:E:39:ILE:O	1:E:103:ASN:ND2	2.29	0.61
1:I:60:ASN:ND2	1:I:89:ASN:OD1	2.33	0.60
1:I:184:ASN:O	1:I:184:ASN:ND2	2.35	0.60
1:D:36:ASP:OD2	1:D:105:ARG:NH2	2.31	0.60
1:C:227:VAL:HA	1:C:231:TYR:HB2	1.83	0.60
1:D:39:ILE:O	1:D:103:ASN:ND2	2.28	0.59
1:J:152:ILE:HG22	1:J:153:ASP:H	1.66	0.59
1:C:184:ASN:ND2	1:C:184:ASN:O	2.35	0.59
1:I:150:GLU:HG3	1:I:154:ASN:HB3	1.83	0.59
1:F:60:ASN:HD22	1:F:89:ASN:HA	1.68	0.59
1:J:44:THR:HA	1:J:99:ARG:HA	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:80:ASN:ND2	1:A:127:VAL:O	2.33	0.58
1:D:50:THR:OG1	1:D:52:GLY:O	2.21	0.58
1:A:33:TYR:OH	1:A:127:VAL:O	2.21	0.58
1:B:244:SER:OG	1:B:255:ARG:NE	2.35	0.58
1:E:28:THR:HG21	1:E:199:ARG:HH12	1.67	0.58
1:E:249:ARG:NH2	1:E:310:PHE:O	2.37	0.58
1:J:33:TYR:OH	1:J:127:VAL:O	2.21	0.58
1:B:33:TYR:OH	1:B:127:VAL:N	2.35	0.57
1:D:93:MET:HB2	1:D:101:ILE:HB	1.86	0.57
1:A:259:GLY:HA3	1:A:301:LEU:HD13	1.86	0.57
1:J:93:MET:HB2	1:J:101:ILE:HB	1.85	0.57
1:D:62:GLN:NE2	1:E:68:ASN:OD1	2.25	0.57
1:C:44:THR:HA	1:C:99:ARG:HA	1.86	0.57
1:I:93:MET:HB2	1:I:101:ILE:HB	1.85	0.57
1:A:44:THR:HA	1:A:99:ARG:HA	1.87	0.57
1:G:242:GLN:OE1	2:G:502:EY4:O3	2.22	0.57
1:A:227:VAL:HA	1:A:231:TYR:HB2	1.86	0.57
1:E:44:THR:HA	1:E:99:ARG:HA	1.87	0.56
1:D:156:GLU:CD	1:D:160:TRP:O	2.49	0.56
1:F:33:TYR:OH	1:F:127:VAL:O	2.22	0.56
1:B:252:VAL:HG13	1:B:304:PHE:HZ	1.69	0.56
1:C:240:LEU:HD13	1:D:263:VAL:HG11	1.88	0.56
1:F:253:PRO:HG3	1:J:253:PRO:HB2	1.87	0.56
1:J:156:GLU:HB3	1:J:161:TRP:HA	1.88	0.55
1:C:157:ILE:HD11	1:C:160:TRP:HB2	1.87	0.55
1:J:28:THR:HG21	1:J:199:ARG:HH12	1.72	0.55
1:E:136:ASN:ND2	1:E:185:GLN:O	2.38	0.55
1:G:33:TYR:OH	1:G:127:VAL:O	2.20	0.55
1:H:227:VAL:HA	1:H:231:TYR:HB2	1.89	0.55
1:J:50:THR:OG1	1:J:52:GLY:O	2.25	0.55
1:C:123:ARG:HG2	1:C:198:VAL:HG13	1.88	0.55
1:F:119:PHE:CD1	1:F:120:PRO:HA	2.42	0.55
1:B:24:TYR:OH	1:C:82:VAL:O	2.20	0.55
1:D:181:VAL:HG12	1:D:182:GLN:HG3	1.88	0.55
1:G:244:SER:OG	1:G:255:ARG:NE	2.37	0.55
1:I:249:ARG:NH1	1:I:315:VAL:HB	2.22	0.55
1:C:62:GLN:OE1	1:D:68:ASN:ND2	2.39	0.54
1:G:132:PRO:HD3	1:G:142:PHE:CE2	2.41	0.54
1:F:97:ASP:OD1	1:F:97:ASP:N	2.37	0.54
1:C:154:ASN:OD1	1:H:163:ARG:NH2	2.41	0.54
1:E:259:GLY:HA3	1:E:301:LEU:HD12	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:244:SER:OG	1:I:255:ARG:NE	2.38	0.54
1:A:62:GLN:NE2	1:B:68:ASN:OD1	2.34	0.54
1:E:401:PRO:O	1:E:405:GLY:N	2.33	0.54
1:A:153:ASP:O	1:A:155:GLU:N	2.42	0.53
1:B:115:ASP:O	1:B:124:GLN:NE2	2.41	0.53
1:G:97:ASP:OD1	1:G:97:ASP:N	2.40	0.53
1:I:39:ILE:O	1:I:103:ASN:ND2	2.32	0.53
1:A:41:ALA:HB3	1:A:102:TYR:HB3	1.90	0.53
1:C:101:ILE:HD13	1:D:181:VAL:HG13	1.90	0.53
1:D:159:GLU:CD	1:E:279:LYS:HD2	2.34	0.53
1:I:136:ASN:ND2	1:I:185:GLN:HB3	2.24	0.53
1:E:56:LEU:HB3	1:E:94:LEU:HB2	1.91	0.53
1:H:390:SER:O	1:H:393:ASP:N	2.42	0.52
1:I:182:GLN:HB3	1:I:185:GLN:HB2	1.91	0.52
1:D:33:TYR:OH	1:D:127:VAL:N	2.43	0.52
1:A:161:TRP:N	1:A:198:VAL:O	2.33	0.52
1:C:33:TYR:OH	1:C:127:VAL:N	2.43	0.52
1:C:97:ASP:OD1	1:C:97:ASP:N	2.37	0.52
1:J:80:ASN:ND2	1:J:127:VAL:O	2.41	0.52
1:C:93:MET:HB2	1:C:101:ILE:HB	1.90	0.52
1:I:60:ASN:OD1	1:I:90:LYS:N	2.39	0.52
1:F:91:ARG:HG2	1:F:103:ASN:HB3	1.91	0.52
1:F:227:VAL:HA	1:F:231:TYR:HB2	1.91	0.52
1:E:132:PRO:HD3	1:E:142:PHE:CE2	2.45	0.52
1:A:181:VAL:HG21	1:E:93:MET:HE1	1.92	0.52
1:B:153:ASP:O	1:B:155:GLU:N	2.44	0.51
1:F:105:ARG:HD2	1:G:77:GLU:OE2	2.10	0.51
1:C:33:TYR:OH	1:C:127:VAL:O	2.25	0.51
1:F:270:SER:HA	1:F:290:ILE:HD13	1.92	0.51
1:J:178:LEU:O	1:J:182:GLN:N	2.39	0.51
1:F:112:ASN:ND2	1:F:125:GLN:O	2.44	0.51
1:H:97:ASP:OD1	1:H:97:ASP:N	2.37	0.51
1:E:274:ARG:HH21	1:E:280:VAL:HG23	1.76	0.51
1:A:132:PRO:HD3	1:A:142:PHE:CE2	2.45	0.51
1:B:24:TYR:CE2	1:C:82:VAL:HG13	2.46	0.51
1:C:119:PHE:CD1	1:C:120:PRO:HA	2.45	0.51
1:G:44:THR:HA	1:G:99:ARG:HA	1.92	0.51
1:D:249:ARG:NH2	1:D:310:PHE:O	2.44	0.51
1:G:50:THR:OG1	1:G:52:GLY:O	2.29	0.51
1:D:274:ARG:NH1	1:D:287:ASP:OD2	2.43	0.50
1:G:97:ASP:OD2	1:G:99:ARG:NE	2.36	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:119:PHE:CD1	1:H:120:PRO:HA	2.46	0.50
1:H:222:LYS:HE2	1:I:281:ALA:HB2	1.92	0.50
1:E:227:VAL:HA	1:E:231:TYR:HB2	1.92	0.50
1:F:181:VAL:HG23	1:F:182:GLN:HG3	1.92	0.50
1:F:249:ARG:NH1	1:F:390:SER:HB2	2.25	0.50
1:I:308:ASN:O	1:I:311:THR:OG1	2.29	0.50
1:H:118:LEU:O	1:H:121:PHE:N	2.45	0.50
1:I:119:PHE:CD1	1:I:120:PRO:HA	2.47	0.50
1:J:132:PRO:HD3	1:J:142:PHE:CE2	2.47	0.50
1:A:119:PHE:CD1	1:A:120:PRO:HA	2.47	0.50
1:D:119:PHE:CD1	1:D:120:PRO:HA	2.47	0.50
1:H:24:TYR:OH	1:I:82:VAL:O	2.25	0.50
1:I:118:LEU:O	1:I:121:PHE:N	2.45	0.50
1:J:118:LEU:O	1:J:121:PHE:N	2.44	0.50
1:D:153:ASP:O	1:D:155:GLU:N	2.45	0.50
1:H:93:MET:HB2	1:H:101:ILE:HB	1.93	0.50
1:C:105:ARG:HD2	1:D:77:GLU:OE2	2.12	0.50
1:C:118:LEU:O	1:C:121:PHE:N	2.44	0.50
1:D:91:ARG:HD3	1:D:103:ASN:HB3	1.94	0.50
1:F:60:ASN:ND2	1:F:89:ASN:HA	2.27	0.50
1:I:105:ARG:HD2	1:J:77:GLU:OE2	2.12	0.50
1:E:153:ASP:O	1:E:155:GLU:N	2.45	0.49
1:G:153:ASP:O	1:G:155:GLU:N	2.44	0.49
1:G:242:GLN:OE1	1:G:401:PRO:HG3	2.12	0.49
1:I:115:ASP:OD1	1:I:117:ARG:NE	2.45	0.49
1:J:119:PHE:CD1	1:J:120:PRO:HA	2.47	0.49
1:E:118:LEU:O	1:E:121:PHE:N	2.46	0.49
1:C:132:PRO:HD3	1:C:142:PHE:CE2	2.48	0.49
1:G:306:THR:OG1	2:G:501:EY4:O20	2.25	0.49
1:G:253:PRO:HB2	1:H:253:PRO:HG3	1.95	0.49
1:I:132:PRO:HD3	1:I:142:PHE:CE2	2.48	0.49
1:J:21:ASN:C	1:J:21:ASN:HD22	2.21	0.49
1:A:95:PHE:HB2	1:A:99:ARG:HG3	1.95	0.48
1:B:118:LEU:O	1:B:121:PHE:N	2.45	0.48
1:F:391:LYS:HG3	1:F:394:ARG:HB3	1.94	0.48
1:A:105:ARG:HD2	1:B:77:GLU:OE2	2.12	0.48
1:C:248:ASN:HB2	1:C:250:GLU:HB2	1.96	0.48
1:G:73:VAL:HG21	1:G:92:LEU:HD11	1.95	0.48
1:H:132:PRO:HD3	1:H:142:PHE:CE2	2.48	0.48
1:I:120:PRO:HG2	1:I:223:ILE:HG22	1.95	0.48
1:E:119:PHE:CD1	1:E:120:PRO:HA	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:60:ASN:OD1	1:J:90:LYS:N	2.42	0.48
1:C:10:ARG:N	1:C:11:PRO:HD2	2.29	0.48
1:D:118:LEU:O	1:D:121:PHE:N	2.45	0.48
1:G:105:ARG:HD2	1:H:77:GLU:OE2	2.14	0.48
1:G:115:ASP:O	1:G:124:GLN:NE2	2.47	0.48
1:B:97:ASP:OD1	1:B:97:ASP:N	2.43	0.48
1:F:10:ARG:N	1:F:11:PRO:HD2	2.28	0.48
1:D:17:SER:HB2	1:D:40:VAL:HB	1.95	0.48
1:D:21:ASN:C	1:D:21:ASN:HD22	2.21	0.48
1:F:29:LEU:HA	1:F:278:PRO:HD3	1.96	0.48
1:H:44:THR:HA	1:H:99:ARG:HA	1.96	0.48
1:H:231:TYR:HH	1:H:411:TYR:HH	1.60	0.48
1:F:51:PRO:HD2	1:F:56:LEU:HD22	1.95	0.48
1:F:77:GLU:OE2	1:J:105:ARG:HD2	2.14	0.47
1:C:107:LEU:HD22	1:D:83:GLY:HA2	1.96	0.47
1:D:44:THR:HA	1:D:99:ARG:HA	1.96	0.47
1:D:60:ASN:OD1	1:D:90:LYS:N	2.46	0.47
1:D:257:VAL:O	1:D:261:THR:OG1	2.25	0.47
1:G:101:ILE:HD13	1:H:181:VAL:HB	1.96	0.47
1:I:93:MET:HE3	1:I:101:ILE:HG21	1.96	0.47
1:A:22:LYS:HE3	1:A:24:TYR:HB3	1.97	0.47
1:B:255:ARG:NH2	1:B:304:PHE:HB2	2.30	0.47
1:D:156:GLU:OE2	1:D:157:ILE:N	2.47	0.47
1:I:50:THR:OG1	1:I:52:GLY:O	2.32	0.47
1:F:14:VAL:HG22	1:F:43:TRP:HB3	1.95	0.47
1:G:227:VAL:HA	1:G:231:TYR:HB2	1.97	0.47
1:H:244:SER:HG	1:H:255:ARG:HE	1.62	0.47
1:E:91:ARG:NH1	1:E:103:ASN:OD1	2.44	0.47
1:B:97:ASP:OD2	1:B:99:ARG:NE	2.43	0.47
1:B:248:ASN:HB2	1:B:250:GLU:HB2	1.97	0.47
1:D:184:ASN:O	1:D:184:ASN:ND2	2.47	0.47
1:A:91:ARG:HH22	1:A:93:MET:HE2	1.80	0.47
1:B:10:ARG:N	1:B:11:PRO:HD2	2.30	0.47
1:C:174:ARG:NH1	1:H:13:ASP:OD2	2.48	0.47
1:E:21:ASN:C	1:E:21:ASN:HD22	2.23	0.47
1:F:401:PRO:O	1:F:405:GLY:N	2.36	0.47
1:H:10:ARG:N	1:H:11:PRO:HD2	2.30	0.47
1:H:36:ASP:OD2	1:H:105:ARG:NH2	2.37	0.47
1:H:50:THR:OG1	1:H:52:GLY:O	2.33	0.47
1:I:178:LEU:O	1:I:182:GLN:N	2.44	0.47
1:I:249:ARG:NE	1:I:390:SER:HB2	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:10:ARG:N	1:A:11:PRO:HD2	2.30	0.47
1:J:249:ARG:HH12	1:J:390:SER:HB2	1.80	0.47
1:A:401:PRO:O	1:A:405:GLY:N	2.41	0.47
1:B:132:PRO:HD3	1:B:142:PHE:CE2	2.50	0.47
1:C:182:GLN:HB3	1:C:185:GLN:HB2	1.97	0.47
1:E:155:GLU:O	1:E:155:GLU:HG3	2.14	0.47
1:J:97:ASP:OD1	1:J:97:ASP:N	2.36	0.47
1:D:10:ARG:N	1:D:11:PRO:HD2	2.30	0.46
1:E:246:TRP:CZ2	1:E:397:ARG:HB3	2.50	0.46
1:A:97:ASP:OD1	1:A:97:ASP:N	2.38	0.46
1:D:159:GLU:HG3	1:E:279:LYS:HB2	1.97	0.46
1:D:248:ASN:HB2	1:D:250:GLU:HB2	1.97	0.46
1:G:390:SER:O	1:G:393:ASP:N	2.49	0.46
1:I:227:VAL:HA	1:I:231:TYR:HB2	1.97	0.46
1:F:153:ASP:O	1:F:155:GLU:N	2.49	0.46
1:J:390:SER:C	1:J:392:ILE:H	2.22	0.46
1:A:222:LYS:HE2	1:B:281:ALA:HB2	1.97	0.46
1:E:249:ARG:NH1	1:E:390:SER:HB2	2.30	0.46
1:F:147:VAL:HG11	1:F:193:VAL:HG11	1.98	0.46
1:A:92:LEU:HD23	1:A:92:LEU:HA	1.84	0.46
1:B:18:ILE:HG12	1:B:39:ILE:HG13	1.97	0.46
1:B:121:PHE:CD2	1:B:415:TYR:HB3	2.51	0.46
1:G:10:ARG:N	1:G:11:PRO:HD2	2.31	0.46
1:I:10:ARG:N	1:I:11:PRO:HD2	2.30	0.46
1:J:179:SER:HB3	1:J:186:ASN:ND2	2.30	0.46
1:J:73:VAL:HG21	1:J:92:LEU:HD11	1.98	0.46
1:D:61:THR:HG21	1:E:64:GLU:OE2	2.16	0.45
1:D:266:MET:HG2	1:D:294:TYR:HA	1.98	0.45
1:C:122:ASP:OD1	1:C:122:ASP:N	2.49	0.45
1:C:158:ASP:OD1	1:C:158:ASP:N	2.46	0.45
1:F:97:ASP:OD2	1:F:99:ARG:NE	2.42	0.45
1:J:10:ARG:N	1:J:11:PRO:HD2	2.32	0.45
1:J:92:LEU:HD23	1:J:92:LEU:HA	1.79	0.45
1:D:29:LEU:HA	1:D:278:PRO:HD3	1.99	0.45
1:J:121:PHE:CD2	1:J:415:TYR:HB3	2.51	0.45
1:F:20:ILE:HB	1:F:149:THR:HG22	1.99	0.45
1:F:132:PRO:HD3	1:F:142:PHE:CE2	2.52	0.45
1:J:60:ASN:ND2	1:J:89:ASN:OD1	2.45	0.45
1:A:97:ASP:OD2	1:A:99:ARG:NE	2.45	0.45
1:G:21:ASN:C	1:G:21:ASN:HD22	2.24	0.45
1:I:64:GLU:HA	1:I:67:ILE:HG12	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:115:ASP:O	1:I:124:GLN:NE2	2.50	0.45
1:I:122:ASP:OD1	1:I:122:ASP:N	2.50	0.45
1:B:240:LEU:HD13	1:C:263:VAL:HG11	1.99	0.45
1:C:150:GLU:HB3	1:C:165:LYS:NZ	2.32	0.45
1:D:312:LYS:HA	1:D:312:LYS:HD3	1.74	0.45
1:D:122:ASP:OD1	1:D:122:ASP:N	2.48	0.45
1:B:115:ASP:OD1	1:B:117:ARG:NE	2.47	0.45
1:E:244:SER:OG	1:E:255:ARG:NE	2.43	0.45
1:E:252:VAL:HG13	1:E:304:PHE:HZ	1.82	0.45
1:F:61:THR:O	1:F:62:GLN:HB3	2.17	0.45
1:G:119:PHE:CD1	1:G:120:PRO:HA	2.52	0.45
1:I:48:ARG:HD2	1:I:94:LEU:HB3	1.99	0.45
1:B:175:TYR:HB3	1:B:177:HIS:CE1	2.52	0.45
1:B:289:PHE:HB2	1:B:411:TYR:CE1	2.52	0.45
1:C:270:SER:HA	1:C:290:ILE:HD13	1.99	0.45
1:D:132:PRO:HD3	1:D:142:PHE:CE2	2.52	0.45
1:D:249:ARG:HH21	1:D:311:THR:HA	1.82	0.45
1:H:56:LEU:HB3	1:H:94:LEU:HB2	1.99	0.45
1:B:246:TRP:CZ2	1:B:397:ARG:HB3	2.52	0.44
1:D:115:ASP:OD1	1:D:117:ARG:NE	2.48	0.44
1:D:273:ALA:HB1	1:D:286:MET:SD	2.58	0.44
1:E:132:PRO:HD3	1:E:142:PHE:HE2	1.81	0.44
1:I:92:LEU:HD23	1:I:92:LEU:HA	1.86	0.44
1:I:142:PHE:CD2	1:I:191:ILE:HG13	2.51	0.44
1:A:118:LEU:O	1:A:121:PHE:N	2.50	0.44
1:B:156:GLU:HB3	1:B:162:ILE:H	1.81	0.44
1:G:122:ASP:OD1	1:G:122:ASP:N	2.49	0.44
1:J:122:ASP:N	1:J:122:ASP:OD1	2.50	0.44
1:B:184:ASN:O	1:B:184:ASN:ND2	2.50	0.44
1:B:235:ILE:HD11	1:B:412:TRP:HH2	1.83	0.44
1:D:23:ILE:HG12	1:D:35:VAL:HG22	1.99	0.44
1:H:247:LEU:HB3	1:H:250:GLU:OE1	2.17	0.44
1:F:393:ASP:O	1:F:397:ARG:HG3	2.18	0.44
1:A:277:LEU:HD23	1:A:277:LEU:HA	1.87	0.44
1:B:150:GLU:C	1:B:152:ILE:H	2.26	0.44
1:C:80:ASN:ND2	1:C:127:VAL:O	2.47	0.44
1:I:101:ILE:HD13	1:J:181:VAL:CG1	2.47	0.44
1:I:266:MET:HG2	1:I:294:TYR:HA	2.00	0.44
1:J:241:SER:HA	1:J:262:THR:HG21	1.99	0.44
1:I:153:ASP:O	1:I:155:GLU:N	2.51	0.43
1:H:120:PRO:HG2	1:H:223:ILE:HG22	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:249:ARG:NH1	1:A:390:SER:HB2	2.33	0.43
1:E:242:GLN:OE1	1:E:401:PRO:HG3	2.18	0.43
1:G:118:LEU:O	1:G:121:PHE:N	2.50	0.43
1:J:289:PHE:HB2	1:J:411:TYR:CE1	2.54	0.43
1:B:307:VAL:HG12	1:B:392:ILE:HD12	2.00	0.43
1:E:73:VAL:HG21	1:E:92:LEU:HD11	2.01	0.43
1:G:89:ASN:HB2	1:H:133:PHE:HD2	1.82	0.43
1:H:91:ARG:HG2	1:H:103:ASN:HB3	2.00	0.43
1:I:138:GLN:HG3	1:I:185:GLN:OE1	2.18	0.43
1:A:60:ASN:OD1	1:A:90:LYS:N	2.48	0.43
1:B:59:GLU:O	1:B:63:ILE:HG13	2.19	0.43
1:C:91:ARG:HG2	1:C:103:ASN:HB3	2.00	0.43
1:C:119:PHE:HD1	1:C:120:PRO:HA	1.83	0.43
1:C:169:HIS:HA	1:H:168:THR:O	2.19	0.43
1:C:173:ILE:HG12	1:C:190:ARG:CZ	2.49	0.43
1:D:97:ASP:OD1	1:D:97:ASP:N	2.41	0.43
1:F:231:TYR:HH	1:F:411:TYR:HH	1.61	0.43
1:H:15:SER:N	1:H:42:GLN:O	2.46	0.43
1:I:248:ASN:HB2	1:I:250:GLU:HB2	2.01	0.43
1:C:24:TYR:CE2	1:D:82:VAL:HG13	2.54	0.43
1:D:175:TYR:HB3	1:D:177:HIS:CE1	2.53	0.43
1:B:246:TRP:CE2	1:B:397:ARG:HB3	2.54	0.43
1:B:410:VAL:O	1:B:414:THR:OG1	2.32	0.43
1:H:127:VAL:HA	1:H:193:VAL:O	2.19	0.43
1:A:151:ASN:ND2	1:B:176:ASP:OD2	2.48	0.43
1:E:93:MET:HB2	1:E:101:ILE:HB	2.01	0.43
1:F:273:ALA:HB1	1:F:286:MET:SD	2.59	0.43
1:C:142:PHE:CD2	1:C:191:ILE:HG13	2.53	0.42
1:F:290:ILE:O	1:F:294:TYR:N	2.43	0.42
1:H:244:SER:OG	1:H:255:ARG:NE	2.46	0.42
1:B:175:TYR:OH	1:B:190:ARG:NH2	2.52	0.42
1:G:246:TRP:CZ2	1:G:397:ARG:HB3	2.54	0.42
1:A:122:ASP:OD1	1:A:122:ASP:N	2.52	0.42
1:A:150:GLU:HG3	1:A:154:ASN:HB3	2.01	0.42
1:A:308:ASN:O	1:A:311:THR:HG23	2.19	0.42
1:B:231:TYR:HE2	1:B:411:TYR:HE2	1.67	0.42
1:D:178:LEU:O	1:D:182:GLN:N	2.45	0.42
1:F:248:ASN:HB2	1:F:250:GLU:HB2	2.01	0.42
1:E:122:ASP:OD1	1:E:122:ASP:N	2.51	0.42
1:F:122:ASP:OD1	1:F:122:ASP:N	2.51	0.42
1:B:50:THR:OG1	1:B:52:GLY:O	2.37	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:153:ASP:C	1:F:155:GLU:N	2.78	0.42
1:H:60:ASN:OD1	1:H:90:LYS:N	2.46	0.42
1:A:68:ASN:OD1	1:E:62:GLN:NE2	2.28	0.42
1:I:259:GLY:HA3	1:I:301:LEU:HD13	2.02	0.42
1:F:39:ILE:O	1:F:103:ASN:ND2	2.41	0.42
1:H:33:TYR:OH	1:H:127:VAL:O	2.34	0.42
1:A:50:THR:OG1	1:A:52:GLY:O	2.37	0.42
1:B:56:LEU:HB3	1:B:94:LEU:HB2	2.01	0.42
1:C:252:VAL:HG13	1:C:304:PHE:HZ	1.85	0.42
1:H:153:ASP:C	1:H:155:GLU:H	2.27	0.42
1:H:255:ARG:NH2	1:H:304:PHE:HB2	2.35	0.42
1:I:91:ARG:HG2	1:I:103:ASN:HB3	2.02	0.42
1:B:243:VAL:HG22	2:B:500:EY4:C6	2.48	0.42
1:C:150:GLU:HG2	1:C:151:ASN:N	2.35	0.42
1:E:238:VAL:HG11	1:E:404:PHE:CE1	2.54	0.42
1:F:161:TRP:CZ3	1:F:222:LYS:HA	2.54	0.42
1:F:263:VAL:HG11	1:J:240:LEU:HD13	2.02	0.42
1:E:72:TRP:CH2	1:E:140:LEU:HD12	2.55	0.42
1:E:150:GLU:OE2	1:E:165:LYS:HD2	2.20	0.42
1:F:24:TYR:CE2	1:G:82:VAL:HG13	2.54	0.42
1:H:307:VAL:HG11	1:H:393:ASP:OD1	2.20	0.42
1:I:241:SER:HA	1:I:262:THR:HG21	2.02	0.42
1:J:259:GLY:HA3	1:J:301:LEU:HD13	2.00	0.42
1:F:289:PHE:HB2	1:F:411:TYR:CE1	2.55	0.41
1:I:24:TYR:CE2	1:J:82:VAL:HG13	2.55	0.41
1:F:259:GLY:HA3	1:F:301:LEU:HD12	2.02	0.41
1:I:153:ASP:C	1:I:155:GLU:N	2.78	0.41
1:E:137:ASN:N	1:E:187:GLU:O	2.41	0.41
1:I:222:LYS:HB3	1:J:281:ALA:HB2	2.02	0.41
1:I:258:PHE:O	1:I:262:THR:OG1	2.29	0.41
1:A:134:SER:HA	1:E:91:ARG:NH2	2.35	0.41
1:C:60:ASN:OD1	1:C:90:LYS:N	2.52	0.41
1:D:15:SER:N	1:D:42:GLN:O	2.43	0.41
1:E:312:LYS:HD3	1:E:312:LYS:HA	1.90	0.41
1:B:289:PHE:HB2	1:B:411:TYR:CZ	2.55	0.41
1:A:91:ARG:HG2	1:A:103:ASN:HB3	2.03	0.41
1:A:107:LEU:HD22	1:B:83:GLY:HA2	2.03	0.41
1:A:290:ILE:O	1:A:294:TYR:N	2.48	0.41
1:B:119:PHE:CD2	1:B:277:LEU:HD21	2.56	0.41
1:E:43:TRP:CH2	1:E:74:PRO:HD2	2.56	0.41
1:F:16:VAL:O	1:F:145:ILE:HA	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:50:THR:OG1	1:F:52:GLY:O	2.39	0.41
1:F:120:PRO:HG2	1:F:223:ILE:HG22	2.03	0.41
1:G:92:LEU:HD23	1:G:92:LEU:HA	1.91	0.41
1:I:91:ARG:HH22	1:J:182:GLN:NE2	2.18	0.41
1:J:308:ASN:O	1:J:311:THR:HG23	2.21	0.41
1:B:235:ILE:HD11	1:B:412:TRP:CH2	2.55	0.41
1:C:91:ARG:NE	1:D:134:SER:HA	2.35	0.41
1:F:244:SER:OG	1:F:255:ARG:NE	2.45	0.41
1:H:153:ASP:C	1:H:155:GLU:N	2.78	0.41
1:J:248:ASN:HB2	1:J:250:GLU:HB2	2.03	0.41
1:B:277:LEU:HD23	1:B:277:LEU:HA	1.83	0.41
1:C:120:PRO:HG2	1:C:223:ILE:HG22	2.03	0.41
1:H:122:ASP:OD1	1:H:122:ASP:N	2.53	0.41
1:C:312:LYS:HA	1:C:312:LYS:HD3	1.85	0.41
1:D:175:TYR:OH	1:D:190:ARG:NH2	2.54	0.41
1:E:50:THR:OG1	1:E:52:GLY:O	2.39	0.41
1:F:398:ILE:C	1:F:401:PRO:HD2	2.46	0.41
1:G:89:ASN:HB2	1:H:133:PHE:CD2	2.56	0.41
1:H:64:GLU:OE2	1:H:67:ILE:HD11	2.20	0.41
1:I:255:ARG:NH1	1:I:393:ASP:OD2	2.35	0.41
1:I:303:GLU:O	1:I:307:VAL:HG13	2.21	0.41
1:J:242:GLN:OE1	1:J:401:PRO:HG3	2.21	0.41
1:A:33:TYR:OH	1:A:127:VAL:N	2.53	0.40
1:B:95:PHE:HD2	1:B:99:ARG:NE	2.19	0.40
1:B:122:ASP:N	1:B:122:ASP:OD1	2.54	0.40
1:F:130:LEU:O	1:F:191:ILE:N	2.43	0.40
1:I:60:ASN:HD21	1:I:89:ASN:CG	2.27	0.40
1:C:38:TYR:OH	1:D:77:GLU:OE1	2.33	0.40
1:C:390:SER:C	1:C:392:ILE:N	2.77	0.40
1:H:156:GLU:HB3	1:H:161:TRP:HA	2.02	0.40
1:B:165:LYS:HE3	1:B:165:LYS:HB3	1.95	0.40
1:C:95:PHE:HB2	1:C:99:ARG:HG3	2.02	0.40
1:C:184:ASN:OD1	1:H:10:ARG:NH1	2.54	0.40
1:E:10:ARG:HD2	1:E:11:PRO:HD3	2.03	0.40
1:E:161:TRP:CE2	1:E:222:LYS:HE3	2.57	0.40
1:G:232:LEU:HD23	1:G:232:LEU:HA	1.90	0.40
1:H:234:CYS:SG	1:H:290:ILE:HG12	2.61	0.40
1:C:266:MET:HG2	1:C:294:TYR:HA	2.03	0.40
1:D:238:VAL:HG11	1:D:404:PHE:CD1	2.57	0.40
1:E:115:ASP:O	1:E:124:GLN:NE2	2.53	0.40
1:F:72:TRP:CH2	1:F:140:LEU:HD12	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:119:PHE:HB3	1:B:284:THR:HB	2.03	0.40
1:C:18:ILE:HG12	1:C:39:ILE:HG13	2.04	0.40
1:E:398:ILE:C	1:E:401:PRO:HD2	2.46	0.40
1:F:266:MET:HG2	1:F:294:TYR:HA	2.03	0.40
1:G:184:ASN:O	1:G:184:ASN:ND2	2.55	0.40
1:J:39:ILE:HG22	1:J:104:ALA:O	2.22	0.40
1:J:56:LEU:HB3	1:J:94:LEU:HB2	2.02	0.40
1:J:115:ASP:O	1:J:124:GLN:NE2	2.55	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	312/324 (96%)	291 (93%)	19 (6%)	2 (1%)	21	53
1	B	312/324 (96%)	290 (93%)	21 (7%)	1 (0%)	36	67
1	C	312/324 (96%)	290 (93%)	20 (6%)	2 (1%)	21	53
1	D	312/324 (96%)	293 (94%)	17 (5%)	2 (1%)	21	53
1	E	312/324 (96%)	290 (93%)	18 (6%)	4 (1%)	9	39
1	F	312/324 (96%)	289 (93%)	22 (7%)	1 (0%)	36	67
1	G	312/324 (96%)	289 (93%)	20 (6%)	3 (1%)	12	44
1	H	312/324 (96%)	290 (93%)	20 (6%)	2 (1%)	21	53
1	I	312/324 (96%)	289 (93%)	21 (7%)	2 (1%)	21	53
1	J	312/324 (96%)	291 (93%)	21 (7%)	0	100	100
All	All	3120/3240 (96%)	2902 (93%)	199 (6%)	19 (1%)	21	53

All (19) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	151	ASN
1	A	154	ASN
1	B	154	ASN
1	D	151	ASN
1	D	154	ASN
1	E	154	ASN
1	E	391	LYS
1	F	154	ASN
1	G	154	ASN
1	H	391	LYS
1	I	391	LYS
1	C	391	LYS
1	E	151	ASN
1	G	151	ASN
1	I	154	ASN
1	G	391	LYS
1	H	153	ASP
1	C	248	ASN
1	E	248	ASN

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	284/289 (98%)	284 (100%)	0	100	100
1	B	284/289 (98%)	284 (100%)	0	100	100
1	C	284/289 (98%)	284 (100%)	0	100	100
1	D	284/289 (98%)	284 (100%)	0	100	100
1	E	284/289 (98%)	284 (100%)	0	100	100
1	F	284/289 (98%)	284 (100%)	0	100	100
1	G	284/289 (98%)	283 (100%)	1 (0%)	84	81
1	H	284/289 (98%)	284 (100%)	0	100	100
1	I	284/289 (98%)	284 (100%)	0	100	100
1	J	284/289 (98%)	284 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
All	All	2840/2890 (98%)	2839 (100%)	1 (0%)	100	100

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	G	307	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	184	ASN
1	C	125	GLN
1	D	308	ASN
1	E	21	ASN
1	E	124	GLN
1	G	154	ASN
1	G	184	ASN
1	H	177	HIS
1	H	308	ASN
1	I	125	GLN
1	I	177	HIS

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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

10 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
2	EY4	B	500	-	27,27,27	0.77	0	43,44,44	1.04	3 (6%)
2	EY4	G	501	-	27,27,27	0.76	0	43,44,44	1.07	2 (4%)
2	EY4	H	500	-	27,27,27	0.77	0	43,44,44	0.82	0
2	EY4	I	500	-	27,27,27	0.77	0	43,44,44	1.00	2 (4%)
2	EY4	E	500	-	27,27,27	0.78	0	43,44,44	0.83	1 (2%)
2	EY4	G	502	-	27,27,27	0.77	0	43,44,44	0.89	2 (4%)
2	EY4	D	500	-	27,27,27	0.78	0	43,44,44	1.00	1 (2%)
2	EY4	A	502	-	27,27,27	0.70	0	43,44,44	0.96	0
2	EY4	A	501	-	27,27,27	0.78	0	43,44,44	1.13	2 (4%)
2	EY4	F	500	-	27,27,27	0.76	0	43,44,44	0.73	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
2	EY4	B	500	-	-	0/4/65/65	0/4/4/4
2	EY4	G	501	-	-	0/4/65/65	0/4/4/4
2	EY4	H	500	-	-	0/4/65/65	0/4/4/4
2	EY4	I	500	-	-	0/4/65/65	0/4/4/4
2	EY4	E	500	-	-	0/4/65/65	0/4/4/4
2	EY4	G	502	-	-	0/4/65/65	0/4/4/4
2	EY4	D	500	-	-	0/4/65/65	0/4/4/4
2	EY4	A	502	-	-	0/4/65/65	0/4/4/4
2	EY4	A	501	-	-	2/4/65/65	0/4/4/4
2	EY4	F	500	-	-	0/4/65/65	0/4/4/4

There are no bond length outliers.

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	501	EY4	C5-C4-C3	-4.03	106.63	112.71
2	G	501	EY4	C5-C4-C3	-3.47	107.48	112.71
2	I	500	EY4	C13-C14-C8	-3.11	110.00	114.41
2	B	500	EY4	C5-C4-C3	-2.92	108.30	112.71
2	D	500	EY4	C5-C4-C3	-2.75	108.55	112.71
2	G	502	EY4	C10-C9-C8	-2.51	110.56	113.12
2	G	501	EY4	C13-C14-C8	-2.47	110.91	114.41
2	I	500	EY4	C17-C13-C14	2.41	102.24	99.72
2	B	500	EY4	C16-C17-C20	-2.36	110.12	114.21
2	G	502	EY4	C5-C4-C3	-2.28	109.27	112.71
2	A	501	EY4	C13-C14-C8	-2.17	111.33	114.41
2	B	500	EY4	C13-C14-C8	-2.08	111.46	114.41
2	E	500	EY4	C5-C4-C3	-2.06	109.60	112.71

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	501	EY4	C16-C17-C20-C21
2	A	501	EY4	C13-C17-C20-C21

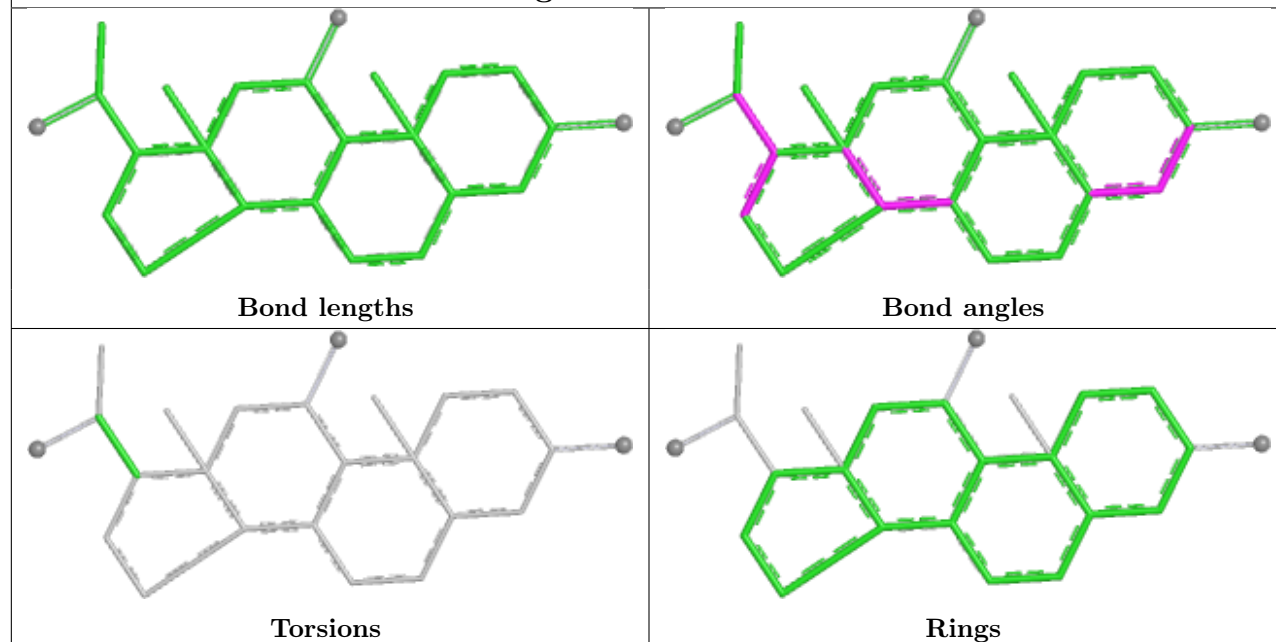
There are no ring outliers.

3 monomers are involved in 3 short contacts:

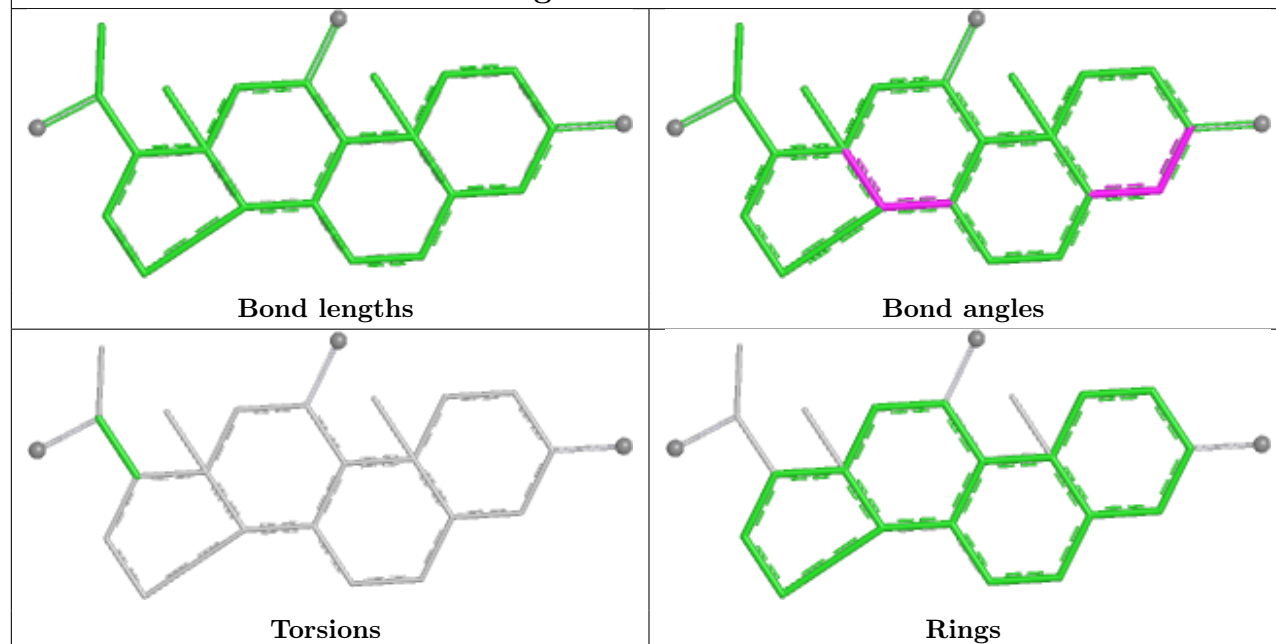
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	500	EY4	1	0
2	G	501	EY4	1	0
2	G	502	EY4	1	0

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.

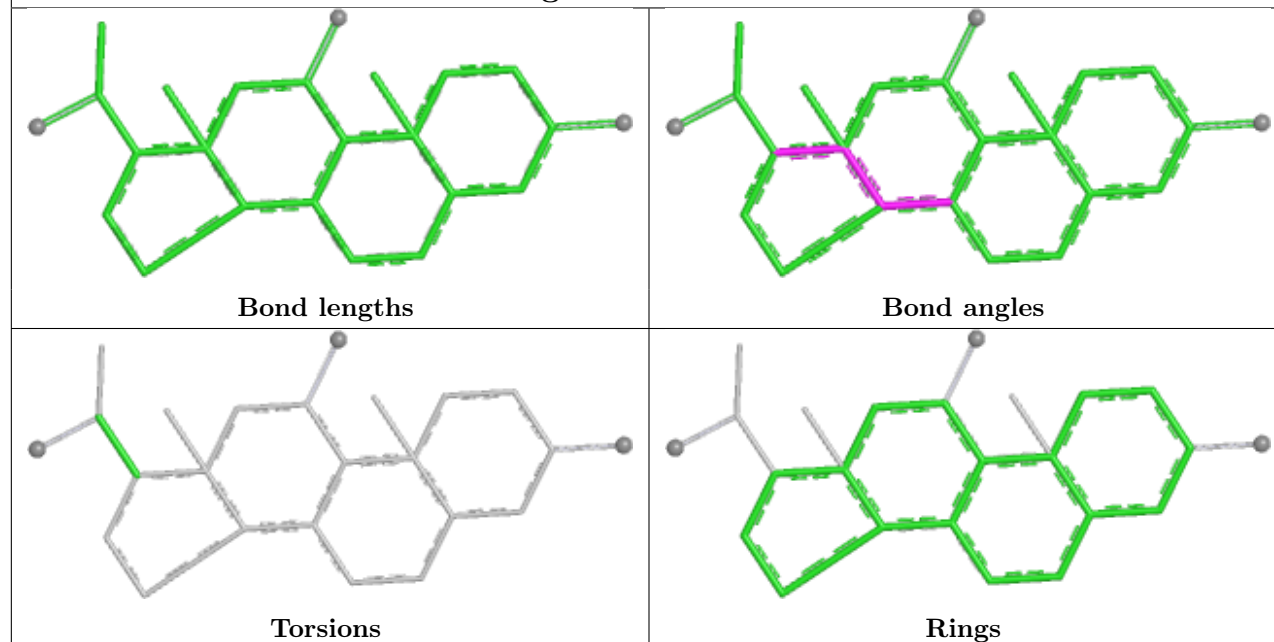
Ligand EY4 B 500



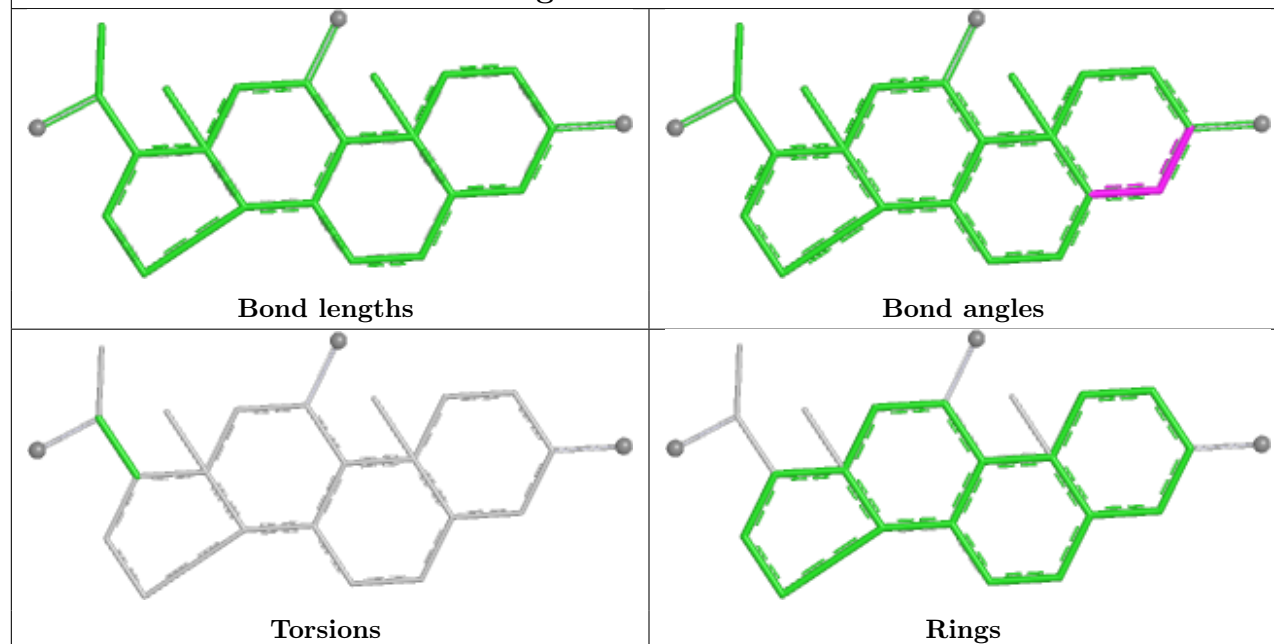
Ligand EY4 G 501



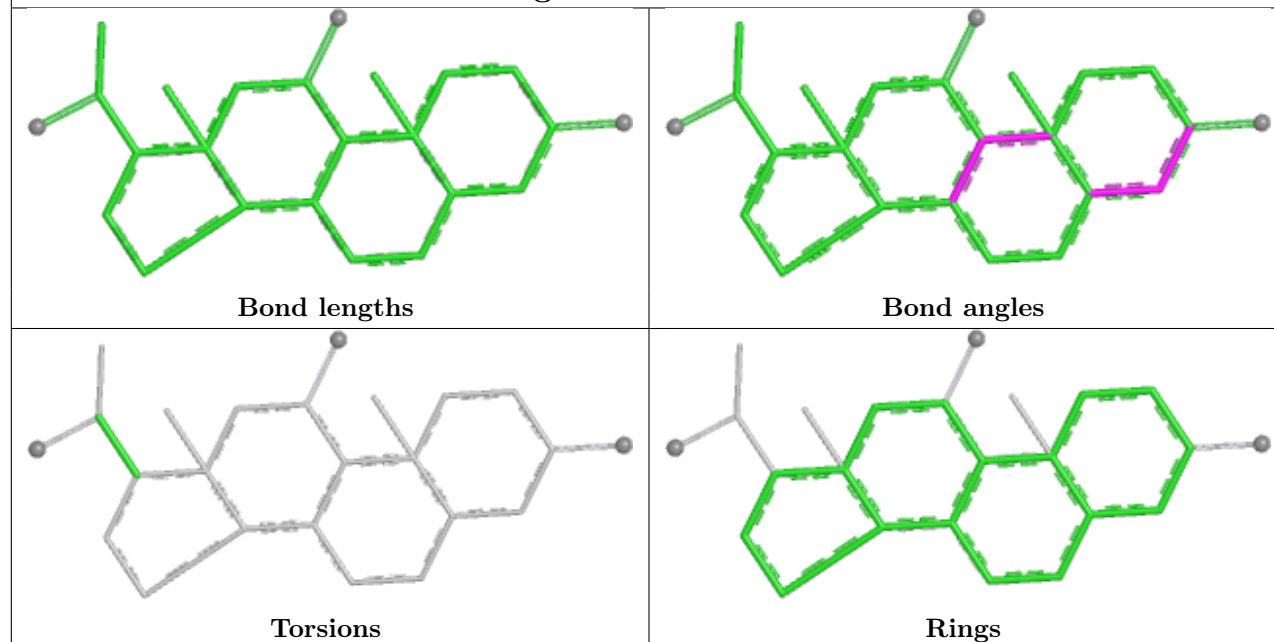
Ligand EY4 I 500



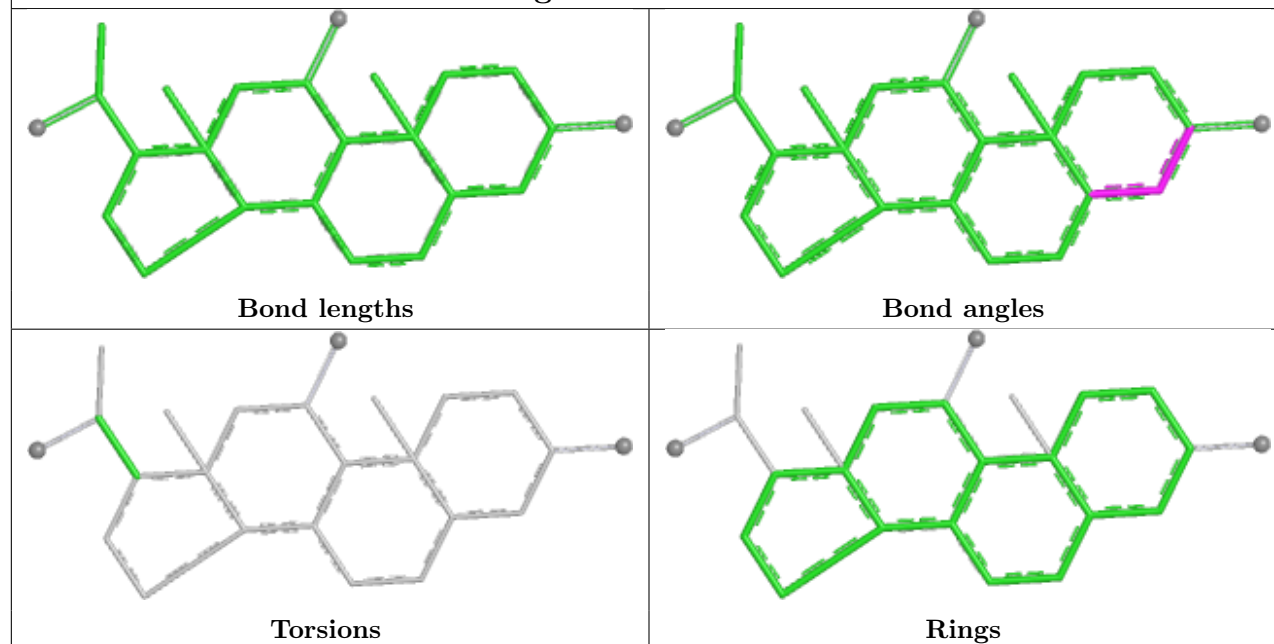
Ligand EY4 E 500

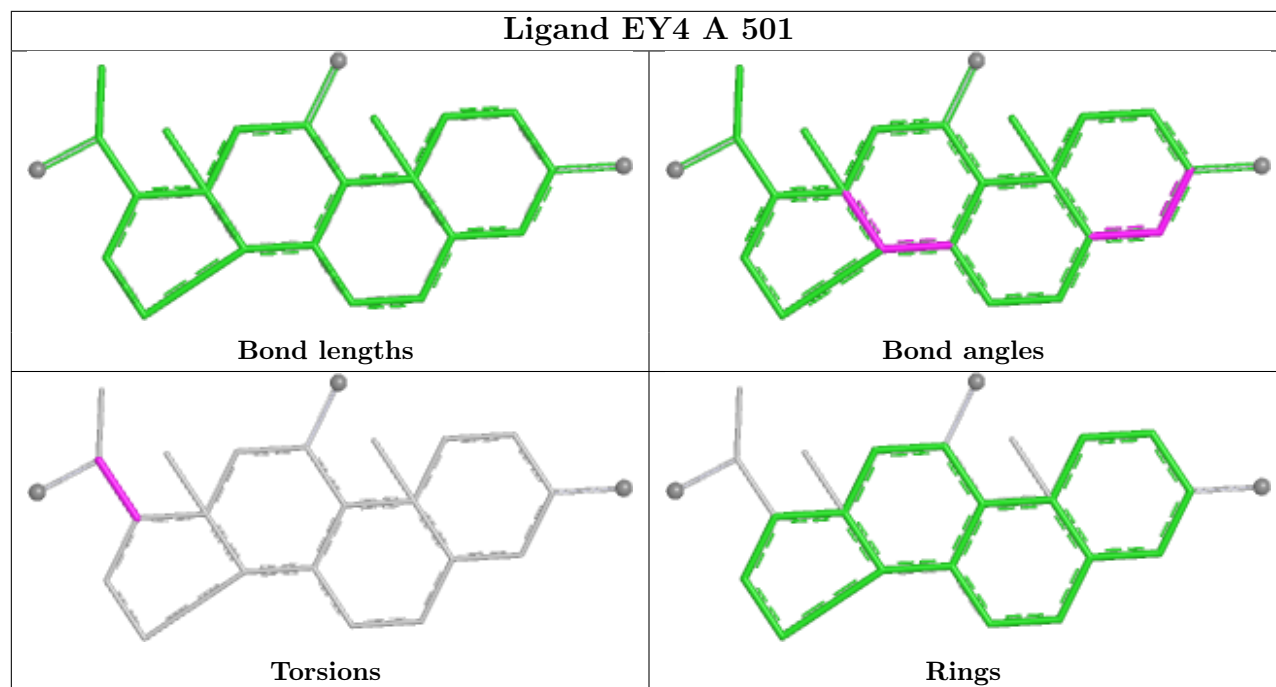


Ligand EY4 G 502



Ligand EY4 D 500





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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ > 2			OWAB(Å ²)	Q < 0.9
1	A	314/324 (96%)	0.21	16 (5%)	33	20	98, 139, 212, 283	0
1	B	314/324 (96%)	0.19	18 (5%)	29	18	99, 137, 205, 295	0
1	C	314/324 (96%)	0.48	37 (11%)	9	7	89, 127, 201, 293	0
1	D	314/324 (96%)	0.32	26 (8%)	17	13	85, 119, 201, 327	0
1	E	314/324 (96%)	0.20	17 (5%)	31	19	97, 131, 200, 309	0
1	F	314/324 (96%)	0.45	33 (10%)	11	9	91, 139, 230, 347	0
1	G	314/324 (96%)	0.21	23 (7%)	21	15	97, 133, 207, 274	0
1	H	314/324 (96%)	0.05	12 (3%)	44	26	86, 132, 210, 287	0
1	I	314/324 (96%)	0.42	28 (8%)	15	11	94, 136, 203, 273	0
1	J	314/324 (96%)	0.38	25 (7%)	18	13	97, 147, 212, 263	0
All	All	3140/3240 (96%)	0.29	235 (7%)	20	14	85, 134, 209, 347	0

All (235) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	102	TYR	8.8
1	F	76	LEU	8.3
1	J	415	TYR	7.9
1	F	41	ALA	7.1
1	D	53	ASP	7.0
1	A	281	ALA	7.0
1	I	270	SER	7.0
1	J	121	PHE	6.9
1	J	416	LEU	6.9
1	J	248	ASN	6.4
1	I	316	GLU	6.2
1	B	409	LEU	6.1
1	G	147	VAL	6.1

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Mol	Chain	Res	Type	RSRZ
1	A	280	VAL	6.1
1	F	77	GLU	5.9
1	F	74	PRO	5.8
1	G	151	ASN	5.7
1	I	149	THR	5.6
1	C	250	GLU	5.5
1	C	316	GLU	5.5
1	C	113	ASP	5.5
1	G	149	THR	5.4
1	D	151	ASN	5.3
1	F	311	THR	5.3
1	C	80	ASN	5.3
1	E	153	ASP	5.3
1	I	147	VAL	5.3
1	I	268	THR	5.2
1	F	73	VAL	5.0
1	D	157	ILE	4.9
1	F	39	ILE	4.9
1	H	153	ASP	4.9
1	I	269	LEU	4.8
1	C	112	ASN	4.8
1	I	148	TYR	4.7
1	I	314	GLY	4.7
1	F	103	ASN	4.7
1	F	116	PHE	4.6
1	D	311	THR	4.6
1	A	30	GLU	4.5
1	D	415	TYR	4.4
1	B	169	HIS	4.4
1	A	175	TYR	4.4
1	E	53	ASP	4.4
1	G	148	TYR	4.4
1	E	151	ASN	4.3
1	C	76	LEU	4.2
1	B	171	SER	4.1
1	E	158	ASP	4.1
1	F	104	ALA	4.1
1	J	250	GLU	4.1
1	B	173	ILE	4.0
1	C	194	ARG	4.0
1	F	115	ASP	4.0
1	C	127	VAL	3.9

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Mol	Chain	Res	Type	RSRZ
1	J	172	ASP	3.9
1	C	102	TYR	3.8
1	C	81	VAL	3.8
1	B	172	ASP	3.8
1	H	241	SER	3.7
1	B	406	ILE	3.7
1	C	315	VAL	3.7
1	G	270	SER	3.7
1	F	40	VAL	3.6
1	B	141	ARG	3.6
1	C	129	GLU	3.6
1	B	412	TRP	3.6
1	H	290	ILE	3.6
1	F	282	TYR	3.6
1	B	170	ILE	3.5
1	G	165	LYS	3.5
1	I	166	ALA	3.5
1	I	267	THR	3.5
1	I	281	ALA	3.4
1	D	123	ARG	3.4
1	J	412	TRP	3.4
1	F	43	TRP	3.4
1	G	398	ILE	3.4
1	H	152	ILE	3.4
1	D	121	PHE	3.4
1	A	177	HIS	3.4
1	G	166	ALA	3.4
1	E	155	GLU	3.3
1	I	80	ASN	3.3
1	G	150	GLU	3.3
1	G	283	ALA	3.3
1	D	241	SER	3.2
1	G	157	ILE	3.2
1	D	118	LEU	3.2
1	J	118	LEU	3.2
1	C	251	SER	3.2
1	B	133	PHE	3.2
1	D	117	ARG	3.2
1	G	167	SER	3.2
1	A	288	TRP	3.1
1	I	152	ILE	3.1
1	D	171	SER	3.1

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Mol	Chain	Res	Type	RSRZ
1	E	78	PHE	3.1
1	J	296	PHE	3.1
1	I	165	LYS	3.0
1	C	164	GLY	3.0
1	C	78	PHE	3.0
1	H	53	ASP	3.0
1	A	316	GLU	3.0
1	D	172	ASP	3.0
1	J	157	ILE	3.0
1	E	174	ARG	2.9
1	B	157	ILE	2.9
1	C	149	THR	2.9
1	I	46	LYS	2.9
1	A	315	VAL	2.9
1	H	227	VAL	2.9
1	F	172	ASP	2.9
1	C	248	ASN	2.8
1	C	125	GLN	2.8
1	C	82	VAL	2.8
1	D	165	LYS	2.8
1	D	300	ALA	2.8
1	C	116	PHE	2.8
1	I	70	GLY	2.8
1	E	388	SER	2.8
1	I	129	GLU	2.8
1	I	265	THR	2.8
1	D	70	GLY	2.7
1	F	252	VAL	2.7
1	C	126	PHE	2.7
1	J	414	THR	2.7
1	I	271	ILE	2.7
1	J	247	LEU	2.7
1	A	271	ILE	2.7
1	G	241	SER	2.6
1	C	110	PHE	2.6
1	B	166	ALA	2.6
1	A	274	ARG	2.6
1	C	77	GLU	2.6
1	C	165	LYS	2.6
1	B	142	PHE	2.6
1	I	272	SER	2.6
1	D	158	ASP	2.6

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Mol	Chain	Res	Type	RSRZ
1	F	72	TRP	2.5
1	G	180	SER	2.5
1	E	250	GLU	2.5
1	J	285	ALA	2.5
1	F	309	TYR	2.5
1	A	279	LYS	2.5
1	A	287	ASP	2.5
1	F	308	ASN	2.5
1	C	313	ARG	2.5
1	F	251	SER	2.5
1	J	241	SER	2.5
1	F	75	ALA	2.5
1	B	408	ASN	2.5
1	C	128	LEU	2.5
1	D	164	GLY	2.5
1	E	229	GLN	2.5
1	J	138	GLN	2.5
1	E	159	GLU	2.5
1	F	132	PRO	2.5
1	F	131	GLU	2.4
1	C	312	LYS	2.4
1	G	146	GLN	2.4
1	D	137	ASN	2.4
1	E	157	ILE	2.4
1	D	312	LYS	2.4
1	D	150	GLU	2.4
1	H	298	PHE	2.4
1	D	272	SER	2.4
1	G	288	TRP	2.4
1	D	52	GLY	2.4
1	G	291	ALA	2.4
1	I	151	ASN	2.4
1	A	157	ILE	2.3
1	E	228	ILE	2.3
1	J	105	ARG	2.3
1	J	228	ILE	2.3
1	I	264	LEU	2.3
1	C	114	MET	2.3
1	F	80	ASN	2.3
1	F	125	GLN	2.3
1	J	70	GLY	2.3
1	F	283	ALA	2.3

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Mol	Chain	Res	Type	RSRZ
1	J	413	ALA	2.3
1	D	276	SER	2.3
1	I	261	THR	2.3
1	G	178	LEU	2.3
1	G	175	TYR	2.3
1	J	89	ASN	2.3
1	J	226	PHE	2.2
1	B	189	SER	2.2
1	F	134	SER	2.2
1	H	84	SER	2.2
1	C	55	PRO	2.2
1	J	142	PHE	2.2
1	B	192	THR	2.2
1	C	111	SER	2.2
1	E	251	SER	2.2
1	D	410	VAL	2.2
1	C	41	ALA	2.2
1	G	54	LYS	2.2
1	A	310	PHE	2.2
1	C	33	TYR	2.2
1	C	193	VAL	2.2
1	A	251	SER	2.2
1	I	388	SER	2.2
1	F	392	ILE	2.2
1	G	38	TYR	2.2
1	F	101	ILE	2.2
1	F	276	SER	2.2
1	H	223	ILE	2.2
1	J	171	SER	2.2
1	I	305	ALA	2.2
1	J	141	ARG	2.2
1	H	294	TYR	2.1
1	I	38	TYR	2.1
1	C	183	PRO	2.1
1	I	266	MET	2.1
1	H	291	ALA	2.1
1	C	314	GLY	2.1
1	C	400	PHE	2.1
1	H	60	ASN	2.1
1	C	301	LEU	2.1
1	G	53	ASP	2.1
1	B	410	VAL	2.1

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Mol	Chain	Res	Type	RSRZ
1	D	115	ASP	2.1
1	F	123	ARG	2.0
1	B	149	THR	2.0
1	E	225	TYR	2.0
1	E	224	GLY	2.0
1	F	142	PHE	2.0
1	J	119	PHE	2.0
1	E	227	VAL	2.0
1	I	315	VAL	2.0
1	D	173	ILE	2.0
1	A	311	THR	2.0
1	G	153	ASP	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 oligosaccharides in this entry.

6.4 Ligands [i](#)

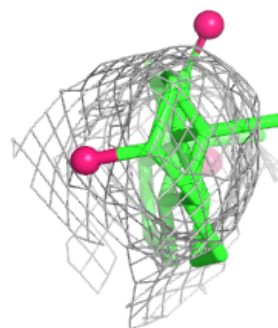
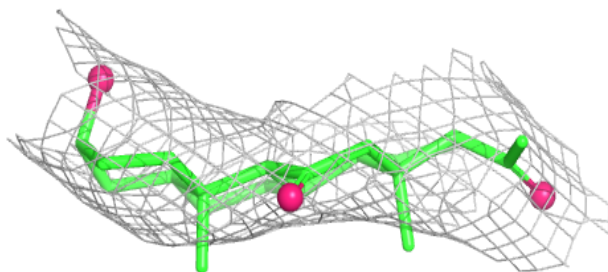
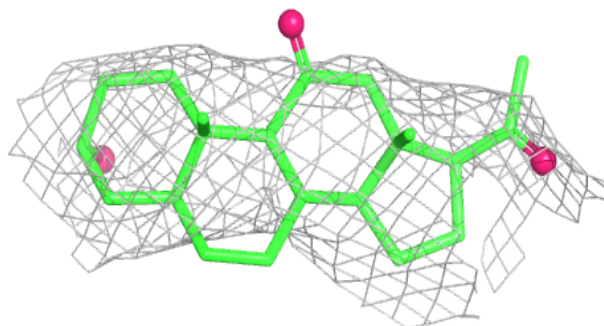
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	EY4	F	500	24/24	0.79	0.15	128,152,175,185	0
2	EY4	G	501	24/24	0.84	0.13	117,157,168,172	0
2	EY4	H	500	24/24	0.86	0.12	108,142,172,179	0
2	EY4	E	500	24/24	0.87	0.11	88,116,130,140	0
2	EY4	I	500	24/24	0.87	0.15	108,146,173,182	0
2	EY4	G	502	24/24	0.90	0.12	98,131,173,181	0
2	EY4	A	502	24/24	0.93	0.08	108,121,142,161	0
2	EY4	B	500	24/24	0.94	0.09	84,121,135,150	0
2	EY4	A	501	24/24	0.95	0.09	84,128,166,178	0
2	EY4	D	500	24/24	0.95	0.09	84,116,153,157	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.

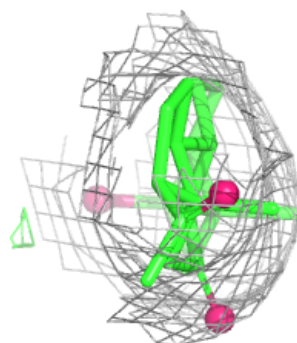
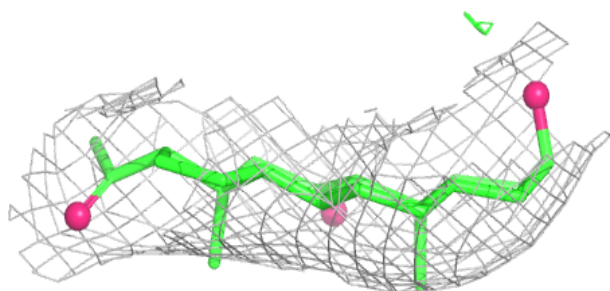
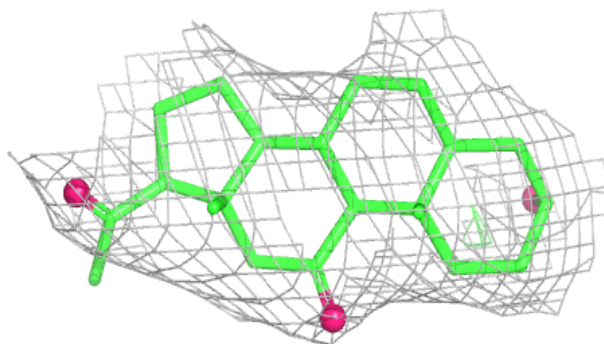
Electron density around EY4 G 501:

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

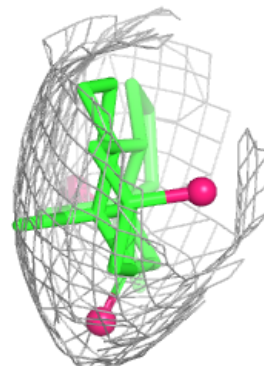
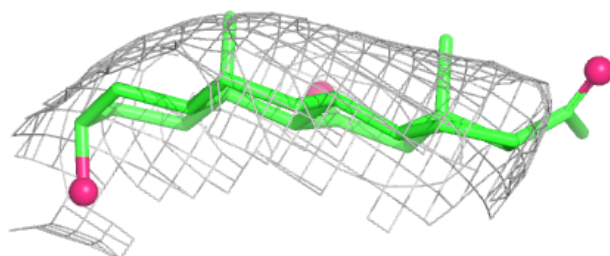
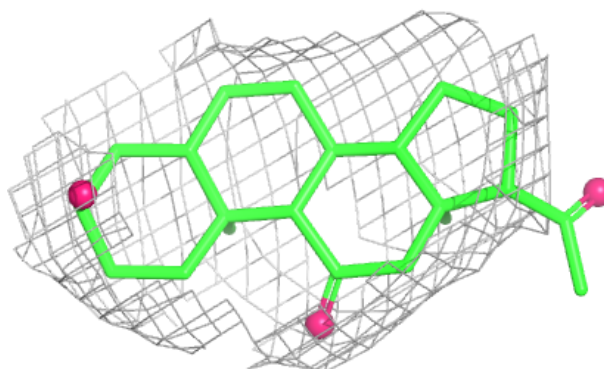


Electron density around EY4 E 500:

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

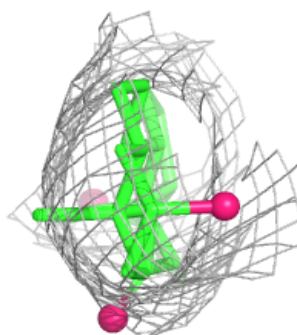
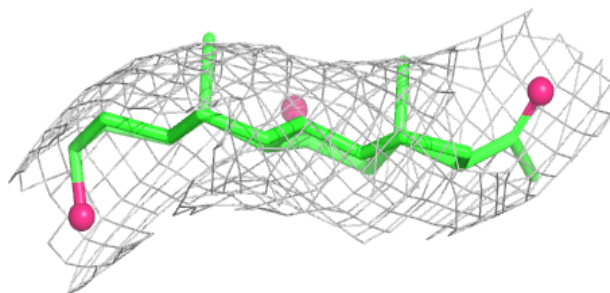
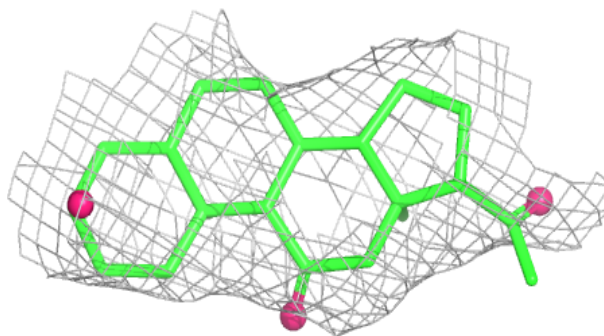
**Electron density around EY4 I 500:**

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

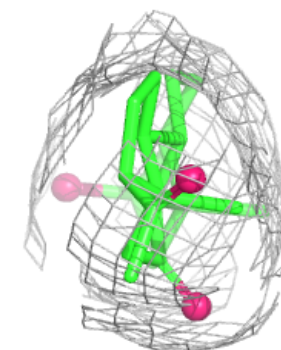
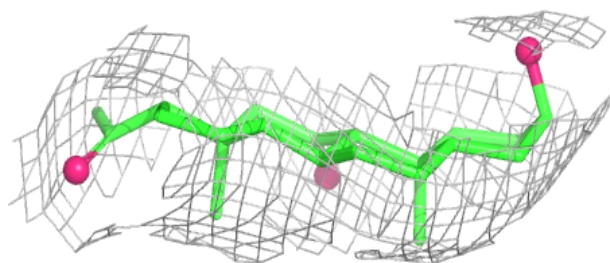
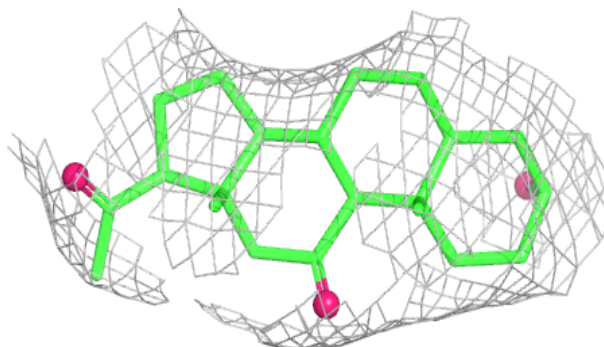


Electron density around EY4 G 502:

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

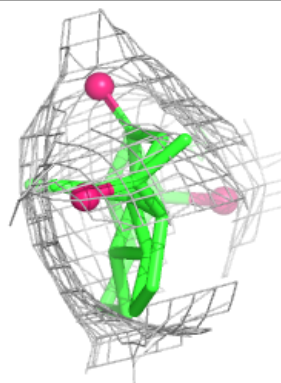
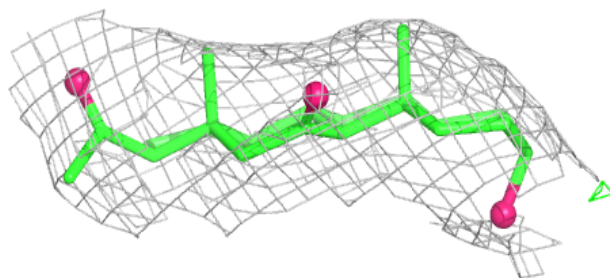
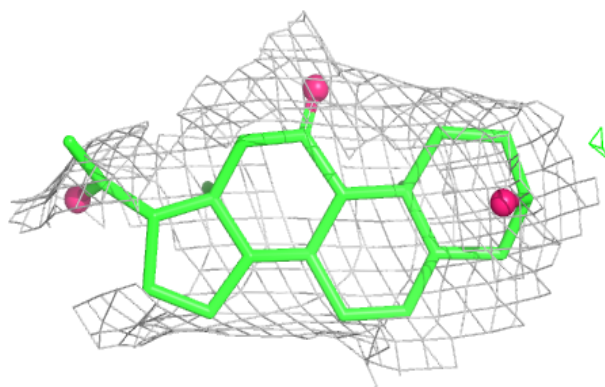
**Electron density around EY4 B 500:**

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

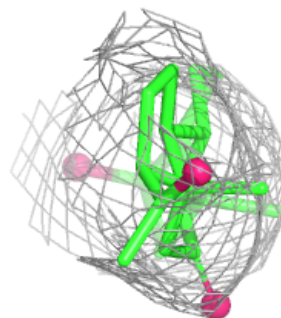
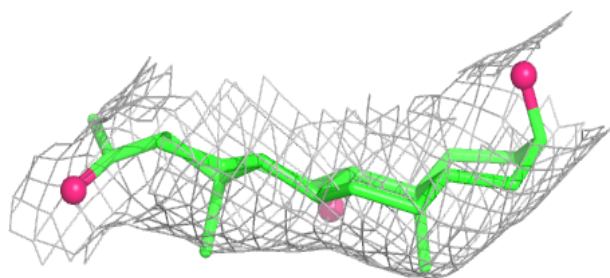
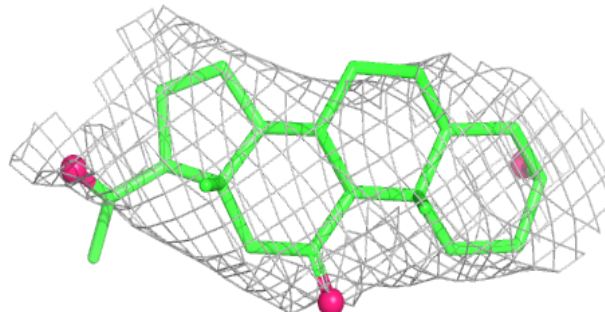


Electron density around EY4 A 501:

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

**Electron density around EY4 D 500:**

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



6.5 Other polymers

There are no such residues in this entry.