



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 7, 2023 – 04:37 pm BST

PDB ID : 8CBT
Title : HIV-1 Integrase Catalytic Core Domain and C-Terminal Domain in Complex with Allosteric Integrase Inhibitor MUT872
Authors : Singer, M.R.; Pye, V.E.; Yu, Z.; Cherepanov, P.
Deposited on : 2023-01-25
Resolution : 2.14 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 1.8.4, CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.33
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) : 2.33

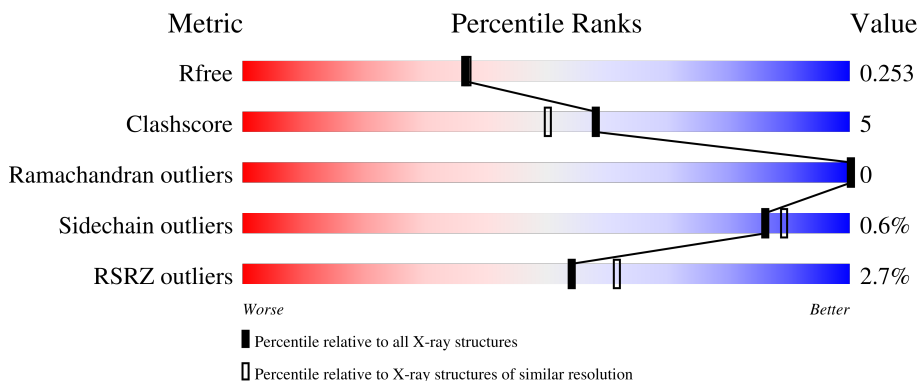
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.14 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	2523 (2.16-2.12)
Clashscore	141614	2653 (2.16-2.12)
Ramachandran outliers	138981	2618 (2.16-2.12)
Sidechain outliers	138945	2617 (2.16-2.12)
RSRZ outliers	127900	2485 (2.16-2.12)

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	233	 2% 17% 81%
1	B	233	 54% 6% 40%
1	C	233	 18% 79%
1	D	233	 53% 8% 39%

2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 3292 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.

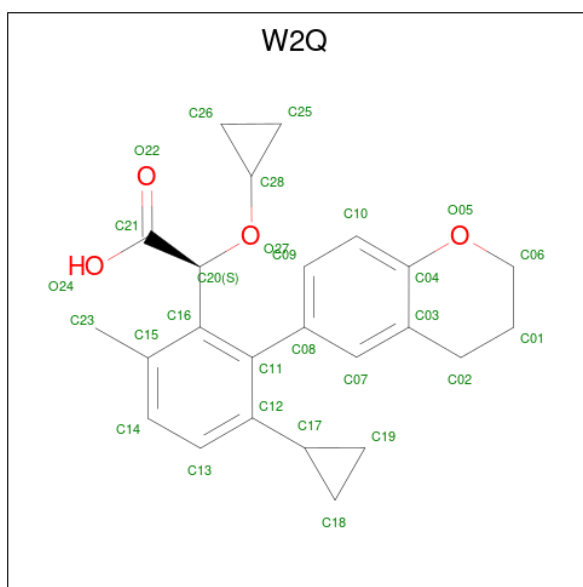
- Molecule 1 is a protein called Integrase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	45	373	242	69	62	0	1	0	
1	B	140	1116	717	193	202	4	0	5	0
1	C	50	410	263	76	71	0	0	0	
1	D	142	1128	724	194	206	4	0	4	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	219	SER	-	expression tag	UNP P12497
A	243	GLU	TRP	engineered mutation	UNP P12497
A	424	LYS	PHE	engineered mutation	UNP P12497
B	-20	SER	-	expression tag	UNP P12497
B	4	GLU	TRP	engineered mutation	UNP P12497
B	185	LYS	PHE	engineered mutation	UNP P12497
C	219	SER	-	expression tag	UNP P12497
C	243	GLU	TRP	engineered mutation	UNP P12497
C	424	LYS	PHE	engineered mutation	UNP P12497
D	-20	SER	-	expression tag	UNP P12497
D	4	GLU	TRP	engineered mutation	UNP P12497
D	185	LYS	PHE	engineered mutation	UNP P12497

- Molecule 2 is (2 {S})-2-[3-cyclopropyl-2-(3,4-dihydro-2 {H}-chromen-6-yl)-6-methyl-phenyl]-2-cyclopropyloxy-ethanoic acid (three-letter code: W2Q) (formula: C₂₄H₂₆O₄) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	
2	B	1	Total	C	O	0	0
			28	24	4		
2	D	1	Total	C	O	0	0
			28	24	4		

- Molecule 3 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: $C_2H_6O_2$).



Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	
3	B	1	Total	C	O	0	0
			4	2	2		
3	B	1	Total	C	O	0	0
			4	2	2		

Continued on next page...

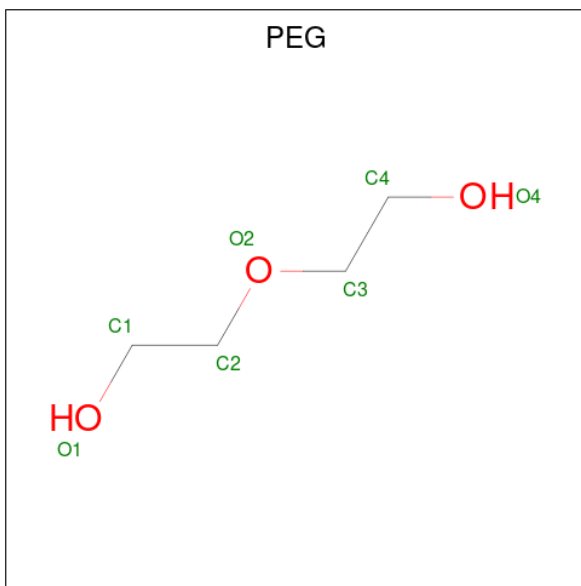
Continued from previous page...

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	C	1	Total C O 4 2 2	0	0
3	D	1	Total C O 4 2 2	0	0
3	D	1	Total C O 4 2 2	0	0

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	B	1	Total Mg 1 1	0	0
4	D	1	Total Mg 1 1	0	0

- Molecule 5 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: C₄H₁₀O₃).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	C	1	Total C O 7 4 3	0	0
5	D	1	Total C O 7 4 3	0	0
5	D	1	Total C O 7 4 3	0	0
5	D	1	Total C O 7 4 3	0	0

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

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

- Molecule 7 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	13	Total O 13 13	0	0
7	B	69	Total O 69 69	0	0
7	C	10	Total O 10 10	0	0
7	D	66	Total O 66 66	0	0

TRP
ALA
GLY
TYR
SER
ILE
LYS
ALA
GLN
GLY
GLU
PHE
GLY
ILE
GLY
ILE
VAL
GLN
GLY
GLY
VAL
ILE
GLY
GLN
MET
ASN
LYS
GLY
LEU
GLY
LYS
LYS
ILE
ILE
GLY
GLN
VAL
GLY
VAL
GLN
VAL
ARG
ASP
GLN
GLN
ALA
GLU
HIS
LEU
LYS
LYS
THR
ALA
VAL
GLN
MET
ALA
VAL
PHE
ILE
HIS
ASN
LYS
LYS
ARG
LYS
GLY
ILE

GLY
GLY
TYR
SER
ALA
GLY
GLU
ARG
PHE
VAL
ASP
VAL
ASP
ASP
ILE
GLN
THR
LYS
GLU

● Molecule 1: Integrase

Chain D:  53% 8% 39%

SER
ILE
GLN
ASN
PHE
SER
ARG
VAL
GLN
TYR
TYR
GLY
ARG
ASP
MET
HIS
SER
GLY
ASP
GLN
VAL
ASP
ASP
TRP
CYS
TRP
GLY
PRO
ALA
LYS
LEU
LEU
LEU
GLY
LYS
GLY
GLY
ALA
VAL
VAL
ILE
GLN
GLN
ASP
ASN
ASP
SER
ASP
ILE
HIS
LYS
VAL
VAL
SER
PRO
ARG
ARG
GLN
LYS
ALA
MET
LYS
ILE
ILE
ARG
ASP
TYR
GLY
LYS
LYS
GLN
MET
ALA
GLY
ASP

ASP
CYS
VAL
ALA
SER
ARG
GLN
ASP
GLU
ASP
MET
HIS
GLY
GLN
VAL
ASP
ASP
CYS
S57
P58
V77
I84
E85
R107
P108
P109
V110
H114
A133
F139
GLY
ILE
PRO
TYR
ASN
PRO
GLN
GLN
SER
Q148
G163
R166
D167
Q168
R188
GLY
GLY
ILE
GLY
GLY
G193
Y194
V201

I204
A205
Q209
T210
LYS
GLU

4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	53.31Å 64.47Å 70.70Å 90.00° 101.66° 90.00°	Depositor
Resolution (Å)	52.21 – 2.14 52.21 – 2.14	Depositor EDS
% Data completeness (in resolution range)	100.0 (52.21-2.14) 100.0 (52.21-2.14)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.13 (at 2.14Å)	Xtrriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.207 , 0.253 0.208 , 0.253	Depositor DCC
R_{free} test set	1258 reflections (4.83%)	wwPDB-VP
Wilson B-factor (Å ²)	46.9	Xtrriage
Anisotropy	0.273	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 51.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	3292	wwPDB-VP
Average B, all atoms (Å ²)	58.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 11.25% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, PEG, EDO, CL, W2Q

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	0.24	0/382	0.52	0/512
1	B	0.23	0/1153	0.42	0/1558
1	C	0.24	0/417	0.51	0/558
1	D	0.23	0/1161	0.43	0/1570
All	All	0.23	0/3113	0.45	0/4198

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	373	0	399	3	0
1	B	1116	0	1135	12	0
1	C	410	0	425	5	0
1	D	1128	0	1149	13	0
2	B	28	0	0	0	0
2	D	28	0	0	0	0
3	B	8	0	12	0	0
3	C	4	0	6	0	0
3	D	8	0	12	2	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	B	1	0	0	0	0
4	D	1	0	0	0	0
5	C	7	0	10	2	0
5	D	21	0	30	4	0
6	C	1	0	0	0	0
7	A	13	0	0	1	0
7	B	69	0	0	1	0
7	C	10	0	0	1	0
7	D	66	0	0	0	0
All	All	3292	0	3178	30	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 5.

All (30) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:77[A]:VAL:HG22	1:B:84:ILE:HG22	1.81	0.63
1:C:268:ILE:HG12	5:C:501:PEG:H41	1.83	0.59
1:D:77[A]:VAL:HG22	1:D:84:ILE:HG22	1.86	0.57
1:C:249:VAL:HG11	1:C:267:ILE:HD11	1.90	0.52
1:D:110:VAL:H	3:D:803:EDO:H21	1.74	0.52
1:A:264:LYS:NZ	7:A:502:HOH:O	2.43	0.52
1:B:202:ASP:OD1	1:D:209:GLN:NE2	2.42	0.51
1:A:249[A]:VAL:HG11	1:A:267:ILE:HD11	1.94	0.49
1:B:107:ARG:NH2	7:B:905:HOH:O	2.44	0.49
1:D:109:PRO:HD2	1:D:204:ILE:HD13	1.95	0.48
1:C:269:ARG:NH1	7:C:601:HOH:O	2.42	0.46
1:C:242:LEU:HD11	1:C:252:GLN:HB2	1.98	0.46
1:A:225:VAL:HG11	1:A:251:ILE:HG21	1.98	0.45
1:B:109:PRO:HD2	1:B:204:ILE:HD13	1.98	0.45
1:B:62:GLN:HG2	1:B:114[A]:HIS:HB2	1.99	0.45
1:B:201:VAL:HG12	1:D:205:ALA:HB2	1.97	0.44
1:B:173:LYS:HD2	5:D:804:PEG:H22	2.00	0.44
1:D:163:GLY:HA2	5:D:805:PEG:H41	1.99	0.44
1:B:85:GLU:OE1	1:B:107:ARG:NH2	2.43	0.43
1:B:83:TYR:OH	1:D:107:ARG:HG3	2.19	0.42
1:B:62:GLN:HG2	1:B:114[B]:HIS:HB3	2.01	0.42
5:C:501:PEG:H42	1:D:168:GLN:HB3	2.02	0.41
1:D:133:ALA:O	3:D:803:EDO:O1	2.29	0.41
1:B:67[B]:HIS:HE1	1:B:92:GLU:OE1	2.04	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:205:ALA:HB2	1:D:201:VAL:HG12	2.02	0.41
1:D:166:ARG:HG2	5:D:805:PEG:H32	2.01	0.41
1:C:249:VAL:HG13	1:C:262:ARG:HD2	2.02	0.41
1:D:57:SER:HA	1:D:58:PRO:HD3	1.90	0.40
1:D:85:GLU:OE1	1:D:107:ARG:NH2	2.51	0.40
5:D:806:PEG:H41	5:D:806:PEG:H22	1.89	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	42/233 (18%)	41 (98%)	1 (2%)	0	100	100
1	B	139/233 (60%)	137 (99%)	2 (1%)	0	100	100
1	C	46/233 (20%)	45 (98%)	1 (2%)	0	100	100
1	D	140/233 (60%)	138 (99%)	2 (1%)	0	100	100
All	All	367/932 (39%)	361 (98%)	6 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	40/193 (21%)	40 (100%)	0	100	100
1	B	119/193 (62%)	119 (100%)	0	100	100
1	C	43/193 (22%)	43 (100%)	0	100	100
1	D	121/193 (63%)	119 (98%)	2 (2%)	60	63
All	All	323/772 (42%)	321 (99%)	2 (1%)	86	89

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	148	GLN
1	D	194	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	252	GLN
1	D	148	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 14 ligands modelled in this entry, 3 are monoatomic - leaving 11 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
2	W2Q	D	801	-	30,32,32	1.78	4 (13%)	34,47,47	1.41	1 (2%)
3	EDO	D	803	-	3,3,3	0.44	0	2,2,2	0.38	0
5	PEG	D	806	-	6,6,6	0.12	0	5,5,5	0.09	0
5	PEG	D	805	-	6,6,6	0.10	0	5,5,5	0.10	0
5	PEG	C	501	-	6,6,6	0.09	0	5,5,5	0.10	0
3	EDO	B	803	-	3,3,3	0.46	0	2,2,2	0.29	0
2	W2Q	B	801	-	30,32,32	1.76	4 (13%)	34,47,47	1.43	2 (5%)
3	EDO	D	802	-	3,3,3	0.46	0	2,2,2	0.34	0
3	EDO	B	802	-	3,3,3	0.46	0	2,2,2	0.32	0
3	EDO	C	502	-	3,3,3	0.45	0	2,2,2	0.35	0
5	PEG	D	804	-	6,6,6	0.11	0	5,5,5	0.08	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	W2Q	D	801	-	-	3/18/31/31	0/5/5/5
3	EDO	D	803	-	-	0/1/1/1	-
5	PEG	D	806	-	-	3/4/4/4	-
5	PEG	D	805	-	-	1/4/4/4	-
5	PEG	C	501	-	-	2/4/4/4	-
3	EDO	B	803	-	-	0/1/1/1	-
2	W2Q	B	801	-	-	3/18/31/31	0/5/5/5
3	EDO	D	802	-	-	0/1/1/1	-
3	EDO	B	802	-	-	0/1/1/1	-
3	EDO	C	502	-	-	0/1/1/1	-
5	PEG	D	804	-	-	3/4/4/4	-

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	801	W2Q	C02-C03	-6.79	1.39	1.51
2	D	801	W2Q	C02-C03	-6.79	1.39	1.51
2	D	801	W2Q	C11-C08	3.89	1.57	1.50
2	B	801	W2Q	C11-C08	3.78	1.56	1.50

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	801	W2Q	C23-C15	2.17	1.55	1.51
2	B	801	W2Q	C23-C15	2.15	1.55	1.51
2	B	801	W2Q	O27-C20	-2.04	1.41	1.43
2	D	801	W2Q	O27-C20	-2.02	1.41	1.43

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	801	W2Q	C18-C17-C12	6.04	138.49	120.68
2	B	801	W2Q	C18-C17-C12	5.91	138.12	120.68
2	B	801	W2Q	C13-C12-C11	2.10	120.14	118.49

There are no chirality outliers.

All (15) torsion outliers are listed below:

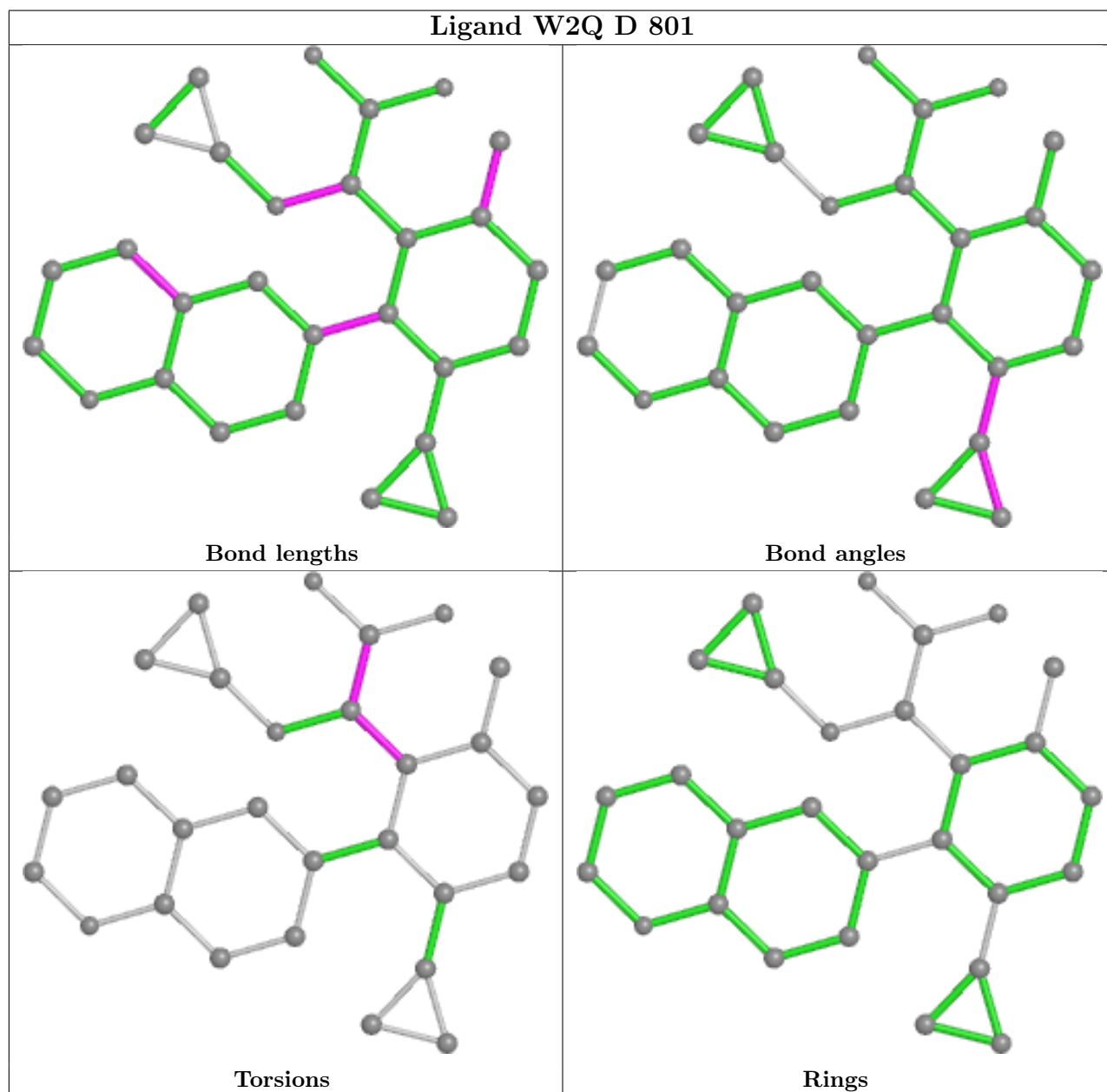
Mol	Chain	Res	Type	Atoms
2	B	801	W2Q	C16-C20-C21-O24
2	B	801	W2Q	C16-C20-C21-O22
2	D	801	W2Q	C16-C20-C21-O24
5	D	806	PEG	C4-C3-O2-C2
5	C	501	PEG	O1-C1-C2-O2
5	D	804	PEG	O2-C3-C4-O4
5	D	806	PEG	O1-C1-C2-O2
2	D	801	W2Q	C16-C20-C21-O22
5	D	804	PEG	C1-C2-O2-C3
5	D	806	PEG	O2-C3-C4-O4
5	C	501	PEG	O2-C3-C4-O4
5	D	805	PEG	C4-C3-O2-C2
2	B	801	W2Q	C15-C16-C20-O27
2	D	801	W2Q	C15-C16-C20-O27
5	D	804	PEG	O1-C1-C2-O2

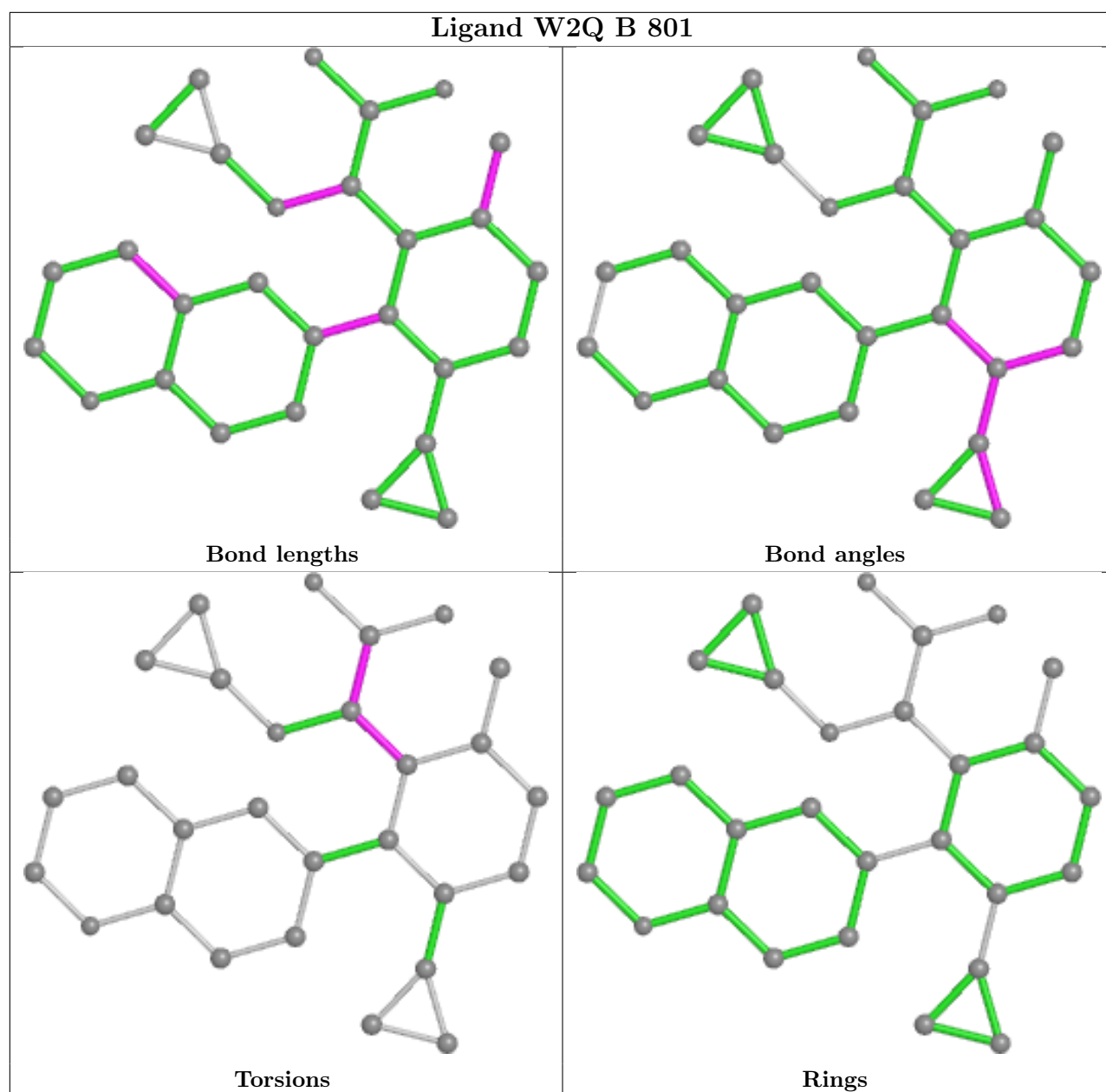
There are no ring outliers.

5 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	D	803	EDO	2	0
5	D	806	PEG	1	0
5	D	805	PEG	2	0
5	C	501	PEG	2	0
5	D	804	PEG	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.





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	A	45/233 (19%)	0.82	5 (11%) 5 6	51, 69, 102, 112	0
1	B	140/233 (60%)	0.40	3 (2%) 63 69	34, 48, 80, 97	0
1	C	50/233 (21%)	0.58	1 (2%) 65 71	61, 76, 101, 124	0
1	D	142/233 (60%)	0.34	1 (0%) 87 90	35, 49, 79, 122	0
All	All	377/932 (40%)	0.45	10 (2%) 54 61	34, 53, 96, 124	0

All (10) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	268	ILE	5.0
1	B	193	GLY	4.4
1	B	194	TYR	3.3
1	A	223	PHE	3.0
1	A	269	ARG	3.0
1	A	239	ALA	2.8
1	C	262	ARG	2.4
1	A	255	SER	2.3
1	D	114	HIS	2.2
1	B	208	ILE	2.1

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

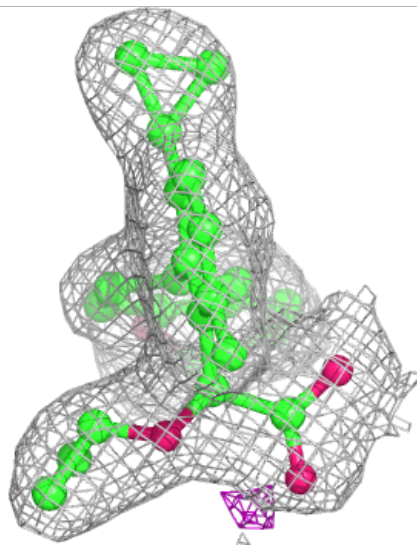
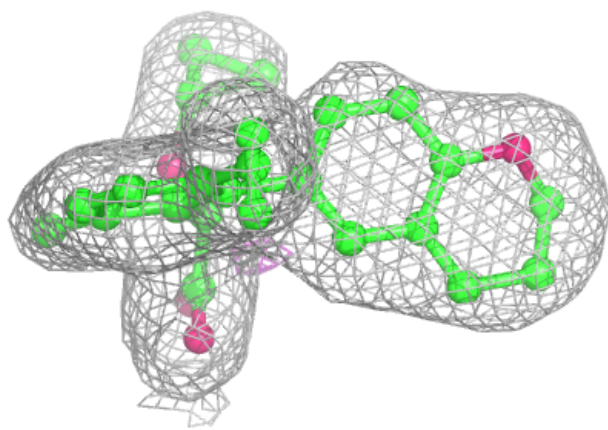
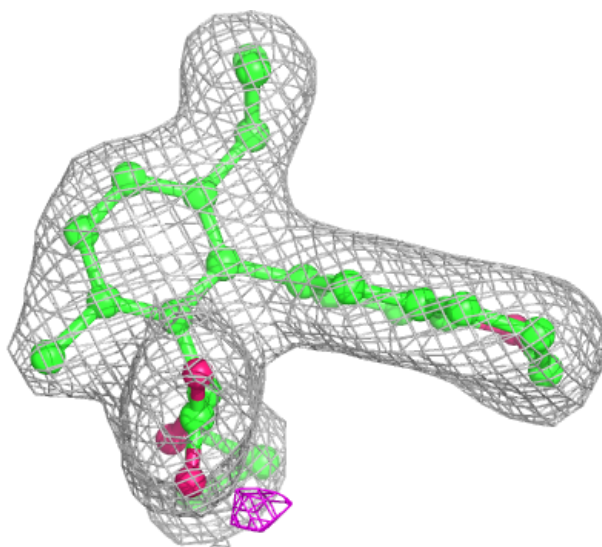
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

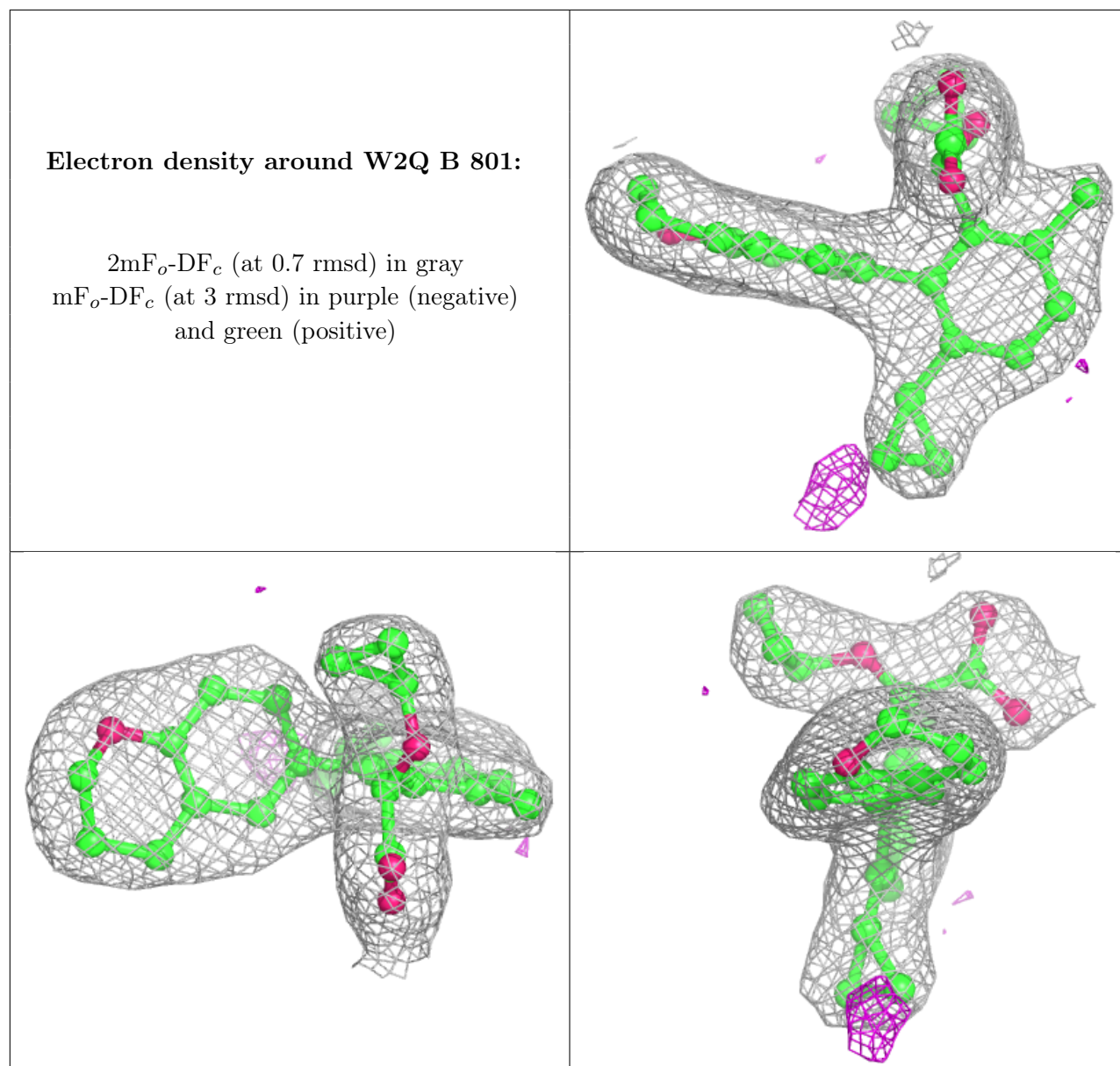
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
5	PEG	C	501	7/7	0.70	0.38	64,67,73,75	0
5	PEG	D	804	7/7	0.72	0.25	58,64,76,83	0
5	PEG	D	805	7/7	0.80	0.20	49,54,61,63	0
3	EDO	D	802	4/4	0.83	0.14	53,56,65,66	0
3	EDO	B	803	4/4	0.84	0.42	61,63,74,74	0
6	CL	C	503	1/1	0.86	0.11	78,78,78,78	0
5	PEG	D	806	7/7	0.87	0.27	54,62,65,66	0
3	EDO	D	803	4/4	0.88	0.33	49,55,59,62	0
3	EDO	B	802	4/4	0.88	0.32	51,52,55,61	0
4	MG	B	804	1/1	0.94	0.05	40,40,40,40	0
3	EDO	C	502	4/4	0.94	0.25	84,85,87,90	0
2	W2Q	D	801	28/28	0.95	0.16	40,46,51,53	0
2	W2Q	B	801	28/28	0.95	0.16	38,45,50,52	0
4	MG	D	807	1/1	0.97	0.08	50,50,50,50	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 W2Q D 801:

$2mF_o-DF_c$ (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.