



wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 5, 2026 – 03:27 AM UTC

PDB ID : 7JGL / pdb_00007jgl
Title : Crystal Structure of the Zn-bound Human Heavy-chain variant 122H-delta C-star with 2,5-furandihrdoxamate collected at 100K
Authors : Bailey, J.B.; Tezcan, F.A.
Deposited on : 2020-07-19
Resolution : 2.34 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

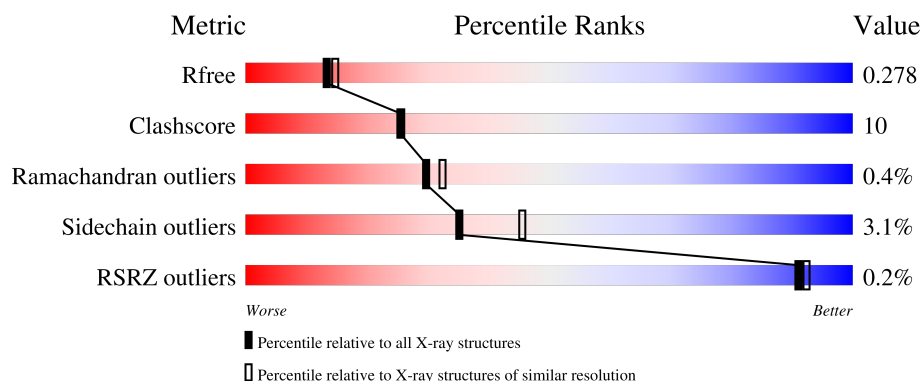
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.34 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.



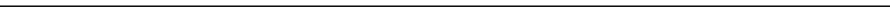
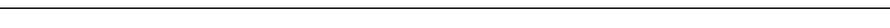
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	3031 (2.36-2.32)
Clashscore	190562	3127 (2.36-2.32)
Ramachandran outliers	187476	3095 (2.36-2.32)
Sidechain outliers	187428	3095 (2.36-2.32)
RSRZ outliers	180081	3033 (2.36-2.32)

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	182	79% 16% • •
1	B	182	70% 25% • •
1	C	182	81% 14% • •
1	D	182	73% 23% •
1	E	182	68% 27% • •

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Mol	Chain	Length	Quality of chain
1	F	182	 73%21% . .
1	G	182	 76%19% . .
1	H	182	 72%21% . .
1	I	182	 74%21% . .
1	J	182	 80%15% . .
1	K	182	 79%16% . .
1	L	182	 74%20% . .
1	M	182	 78%16% . .
1	N	182	 75%19% . .
1	O	182	 76%20% .
1	P	182	 76%20% .
1	Q	182	 72%22% . .
1	R	182	 71%24% . .
1	S	182	 74%22% .
1	T	182	 67%27% . .
1	U	182	 69%25% . .
1	V	182	 81%15% .
1	W	182	 75%20% . .
1	X	182	 74%21% . .
1	a	182	 62%34% .
1	b	182	 53%41% . .
1	c	182	 68%28% .
1	d	182	 66%29% . .
1	e	182	 59%36% .
1	f	182	 54%41% .

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Mol	Chain	Length	Quality of chain
1	g	182	
1	h	182	
1	i	182	
1	j	182	
1	k	182	
1	l	182	
1	m	182	
1	n	182	
1	o	182	
1	p	182	
1	q	182	
1	r	182	
1	s	182	
1	t	182	
1	u	182	
1	v	182	
1	w	182	
1	x	182	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	V9Y	D	204[C]	-	X	-	-
4	V9Y	D	204[D]	-	X	-	-
4	V9Y	I	203[C]	-	X	-	-
4	V9Y	R	203[C]	-	X	-	-
4	V9Y	R	203[D]	-	X	-	-
4	V9Y	X	203[C]	-	X	-	-
4	V9Y	t	203[D]	-	X	-	-

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 105214 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 Ferritin heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	B	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	C	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	D	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	E	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	F	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	G	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	H	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	I	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	J	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	K	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	L	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	M	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	N	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	O	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	P	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	Q	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	R	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	S	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	T	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	U	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	V	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	W	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	X	174	Total	C	N	O	S	0	0	0
			1431	896	252	279	4			
1	a	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	b	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	c	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	d	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	e	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	f	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	g	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	h	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	i	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	j	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	k	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	l	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	m	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	n	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	o	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	p	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	q	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	r	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	s	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	t	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	u	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	v	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	w	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			
1	x	174	Total	C	N	O	S	0	174	0
			2862	1792	504	558	8			

There are 240 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	86	GLN	LYS	engineered mutation	UNP P02794
A	90	GLU	CYS	engineered mutation	UNP P02794
A	102	ALA	CYS	engineered mutation	UNP P02794
A	122	HIS	THR	engineered mutation	UNP P02794
A	130	ALA	CYS	engineered mutation	UNP P02794
B	86	GLN	LYS	engineered mutation	UNP P02794
B	90	GLU	CYS	engineered mutation	UNP P02794
B	102	ALA	CYS	engineered mutation	UNP P02794
B	122	HIS	THR	engineered mutation	UNP P02794
B	130	ALA	CYS	engineered mutation	UNP P02794
C	86	GLN	LYS	engineered mutation	UNP P02794
C	90	GLU	CYS	engineered mutation	UNP P02794
C	102	ALA	CYS	engineered mutation	UNP P02794
C	122	HIS	THR	engineered mutation	UNP P02794
C	130	ALA	CYS	engineered mutation	UNP P02794
D	86	GLN	LYS	engineered mutation	UNP P02794
D	90	GLU	CYS	engineered mutation	UNP P02794

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Chain	Residue	Modelled	Actual	Comment	Reference
D	102	ALA	CYS	engineered mutation	UNP P02794
D	122	HIS	THR	engineered mutation	UNP P02794
D	130	ALA	CYS	engineered mutation	UNP P02794
E	86	GLN	LYS	engineered mutation	UNP P02794
E	90	GLU	CYS	engineered mutation	UNP P02794
E	102	ALA	CYS	engineered mutation	UNP P02794
E	122	HIS	THR	engineered mutation	UNP P02794
E	130	ALA	CYS	engineered mutation	UNP P02794
F	86	GLN	LYS	engineered mutation	UNP P02794
F	90	GLU	CYS	engineered mutation	UNP P02794
F	102	ALA	CYS	engineered mutation	UNP P02794
F	122	HIS	THR	engineered mutation	UNP P02794
F	130	ALA	CYS	engineered mutation	UNP P02794
G	86	GLN	LYS	engineered mutation	UNP P02794
G	90	GLU	CYS	engineered mutation	UNP P02794
G	102	ALA	CYS	engineered mutation	UNP P02794
G	122	HIS	THR	engineered mutation	UNP P02794
G	130	ALA	CYS	engineered mutation	UNP P02794
H	86	GLN	LYS	engineered mutation	UNP P02794
H	90	GLU	CYS	engineered mutation	UNP P02794
H	102	ALA	CYS	engineered mutation	UNP P02794
H	122	HIS	THR	engineered mutation	UNP P02794
H	130	ALA	CYS	engineered mutation	UNP P02794
I	86	GLN	LYS	engineered mutation	UNP P02794
I	90	GLU	CYS	engineered mutation	UNP P02794
I	102	ALA	CYS	engineered mutation	UNP P02794
I	122	HIS	THR	engineered mutation	UNP P02794
I	130	ALA	CYS	engineered mutation	UNP P02794
J	86	GLN	LYS	engineered mutation	UNP P02794
J	90	GLU	CYS	engineered mutation	UNP P02794
J	102	ALA	CYS	engineered mutation	UNP P02794
J	122	HIS	THR	engineered mutation	UNP P02794
J	130	ALA	CYS	engineered mutation	UNP P02794
K	86	GLN	LYS	engineered mutation	UNP P02794
K	90	GLU	CYS	engineered mutation	UNP P02794
K	102	ALA	CYS	engineered mutation	UNP P02794
K	122	HIS	THR	engineered mutation	UNP P02794
K	130	ALA	CYS	engineered mutation	UNP P02794
L	86	GLN	LYS	engineered mutation	UNP P02794
L	90	GLU	CYS	engineered mutation	UNP P02794
L	102	ALA	CYS	engineered mutation	UNP P02794
L	122	HIS	THR	engineered mutation	UNP P02794

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Chain	Residue	Modelled	Actual	Comment	Reference
L	130	ALA	CYS	engineered mutation	UNP P02794
M	86	GLN	LYS	engineered mutation	UNP P02794
M	90	GLU	CYS	engineered mutation	UNP P02794
M	102	ALA	CYS	engineered mutation	UNP P02794
M	122	HIS	THR	engineered mutation	UNP P02794
M	130	ALA	CYS	engineered mutation	UNP P02794
N	86	GLN	LYS	engineered mutation	UNP P02794
N	90	GLU	CYS	engineered mutation	UNP P02794
N	102	ALA	CYS	engineered mutation	UNP P02794
N	122	HIS	THR	engineered mutation	UNP P02794
N	130	ALA	CYS	engineered mutation	UNP P02794
O	86	GLN	LYS	engineered mutation	UNP P02794
O	90	GLU	CYS	engineered mutation	UNP P02794
O	102	ALA	CYS	engineered mutation	UNP P02794
O	122	HIS	THR	engineered mutation	UNP P02794
O	130	ALA	CYS	engineered mutation	UNP P02794
P	86	GLN	LYS	engineered mutation	UNP P02794
P	90	GLU	CYS	engineered mutation	UNP P02794
P	102	ALA	CYS	engineered mutation	UNP P02794
P	122	HIS	THR	engineered mutation	UNP P02794
P	130	ALA	CYS	engineered mutation	UNP P02794
Q	86	GLN	LYS	engineered mutation	UNP P02794
Q	90	GLU	CYS	engineered mutation	UNP P02794
Q	102	ALA	CYS	engineered mutation	UNP P02794
Q	122	HIS	THR	engineered mutation	UNP P02794
Q	130	ALA	CYS	engineered mutation	UNP P02794
R	86	GLN	LYS	engineered mutation	UNP P02794
R	90	GLU	CYS	engineered mutation	UNP P02794
R	102	ALA	CYS	engineered mutation	UNP P02794
R	122	HIS	THR	engineered mutation	UNP P02794
R	130	ALA	CYS	engineered mutation	UNP P02794
S	86	GLN	LYS	engineered mutation	UNP P02794
S	90	GLU	CYS	engineered mutation	UNP P02794
S	102	ALA	CYS	engineered mutation	UNP P02794
S	122	HIS	THR	engineered mutation	UNP P02794
S	130	ALA	CYS	engineered mutation	UNP P02794
T	86	GLN	LYS	engineered mutation	UNP P02794
T	90	GLU	CYS	engineered mutation	UNP P02794
T	102	ALA	CYS	engineered mutation	UNP P02794
T	122	HIS	THR	engineered mutation	UNP P02794
T	130	ALA	CYS	engineered mutation	UNP P02794
U	86	GLN	LYS	engineered mutation	UNP P02794

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Chain	Residue	Modelled	Actual	Comment	Reference
U	90	GLU	CYS	engineered mutation	UNP P02794
U	102	ALA	CYS	engineered mutation	UNP P02794
U	122	HIS	THR	engineered mutation	UNP P02794
U	130	ALA	CYS	engineered mutation	UNP P02794
V	86	GLN	LYS	engineered mutation	UNP P02794
V	90	GLU	CYS	engineered mutation	UNP P02794
V	102	ALA	CYS	engineered mutation	UNP P02794
V	122	HIS	THR	engineered mutation	UNP P02794
V	130	ALA	CYS	engineered mutation	UNP P02794
W	86	GLN	LYS	engineered mutation	UNP P02794
W	90	GLU	CYS	engineered mutation	UNP P02794
W	102	ALA	CYS	engineered mutation	UNP P02794
W	122	HIS	THR	engineered mutation	UNP P02794
W	130	ALA	CYS	engineered mutation	UNP P02794
X	86	GLN	LYS	engineered mutation	UNP P02794
X	90	GLU	CYS	engineered mutation	UNP P02794
X	102	ALA	CYS	engineered mutation	UNP P02794
X	122	HIS	THR	engineered mutation	UNP P02794
X	130	ALA	CYS	engineered mutation	UNP P02794
a	86	GLN	LYS	engineered mutation	UNP P02794
a	90	GLU	CYS	engineered mutation	UNP P02794
a	102	ALA	CYS	engineered mutation	UNP P02794
a	122	HIS	THR	engineered mutation	UNP P02794
a	130	ALA	CYS	engineered mutation	UNP P02794
b	86	GLN	LYS	engineered mutation	UNP P02794
b	90	GLU	CYS	engineered mutation	UNP P02794
b	102	ALA	CYS	engineered mutation	UNP P02794
b	122	HIS	THR	engineered mutation	UNP P02794
b	130	ALA	CYS	engineered mutation	UNP P02794
c	86	GLN	LYS	engineered mutation	UNP P02794
c	90	GLU	CYS	engineered mutation	UNP P02794
c	102	ALA	CYS	engineered mutation	UNP P02794
c	122	HIS	THR	engineered mutation	UNP P02794
c	130	ALA	CYS	engineered mutation	UNP P02794
d	86	GLN	LYS	engineered mutation	UNP P02794
d	90	GLU	CYS	engineered mutation	UNP P02794
d	102	ALA	CYS	engineered mutation	UNP P02794
d	122	HIS	THR	engineered mutation	UNP P02794
d	130	ALA	CYS	engineered mutation	UNP P02794
e	86	GLN	LYS	engineered mutation	UNP P02794
e	90	GLU	CYS	engineered mutation	UNP P02794
e	102	ALA	CYS	engineered mutation	UNP P02794

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Chain	Residue	Modelled	Actual	Comment	Reference
e	122	HIS	THR	engineered mutation	UNP P02794
e	130	ALA	CYS	engineered mutation	UNP P02794
f	86	GLN	LYS	engineered mutation	UNP P02794
f	90	GLU	CYS	engineered mutation	UNP P02794
f	102	ALA	CYS	engineered mutation	UNP P02794
f	122	HIS	THR	engineered mutation	UNP P02794
f	130	ALA	CYS	engineered mutation	UNP P02794
g	86	GLN	LYS	engineered mutation	UNP P02794
g	90	GLU	CYS	engineered mutation	UNP P02794
g	102	ALA	CYS	engineered mutation	UNP P02794
g	122	HIS	THR	engineered mutation	UNP P02794
g	130	ALA	CYS	engineered mutation	UNP P02794
h	86	GLN	LYS	engineered mutation	UNP P02794
h	90	GLU	CYS	engineered mutation	UNP P02794
h	102	ALA	CYS	engineered mutation	UNP P02794
h	122	HIS	THR	engineered mutation	UNP P02794
h	130	ALA	CYS	engineered mutation	UNP P02794
i	86	GLN	LYS	engineered mutation	UNP P02794
i	90	GLU	CYS	engineered mutation	UNP P02794
i	102	ALA	CYS	engineered mutation	UNP P02794
i	122	HIS	THR	engineered mutation	UNP P02794
i	130	ALA	CYS	engineered mutation	UNP P02794
j	86	GLN	LYS	engineered mutation	UNP P02794
j	90	GLU	CYS	engineered mutation	UNP P02794
j	102	ALA	CYS	engineered mutation	UNP P02794
j	122	HIS	THR	engineered mutation	UNP P02794
j	130	ALA	CYS	engineered mutation	UNP P02794
k	86	GLN	LYS	engineered mutation	UNP P02794
k	90	GLU	CYS	engineered mutation	UNP P02794
k	102	ALA	CYS	engineered mutation	UNP P02794
k	122	HIS	THR	engineered mutation	UNP P02794
k	130	ALA	CYS	engineered mutation	UNP P02794
l	86	GLN	LYS	engineered mutation	UNP P02794
l	90	GLU	CYS	engineered mutation	UNP P02794
l	102	ALA	CYS	engineered mutation	UNP P02794
l	122	HIS	THR	engineered mutation	UNP P02794
l	130	ALA	CYS	engineered mutation	UNP P02794
m	86	GLN	LYS	engineered mutation	UNP P02794
m	90	GLU	CYS	engineered mutation	UNP P02794
m	102	ALA	CYS	engineered mutation	UNP P02794
m	122	HIS	THR	engineered mutation	UNP P02794
m	130	ALA	CYS	engineered mutation	UNP P02794

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Chain	Residue	Modelled	Actual	Comment	Reference
n	86	GLN	LYS	engineered mutation	UNP P02794
n	90	GLU	CYS	engineered mutation	UNP P02794
n	102	ALA	CYS	engineered mutation	UNP P02794
n	122	HIS	THR	engineered mutation	UNP P02794
n	130	ALA	CYS	engineered mutation	UNP P02794
o	86	GLN	LYS	engineered mutation	UNP P02794
o	90	GLU	CYS	engineered mutation	UNP P02794
o	102	ALA	CYS	engineered mutation	UNP P02794
o	122	HIS	THR	engineered mutation	UNP P02794
o	130	ALA	CYS	engineered mutation	UNP P02794
p	86	GLN	LYS	engineered mutation	UNP P02794
p	90	GLU	CYS	engineered mutation	UNP P02794
p	102	ALA	CYS	engineered mutation	UNP P02794
p	122	HIS	THR	engineered mutation	UNP P02794
p	130	ALA	CYS	engineered mutation	UNP P02794
q	86	GLN	LYS	engineered mutation	UNP P02794
q	90	GLU	CYS	engineered mutation	UNP P02794
q	102	ALA	CYS	engineered mutation	UNP P02794
q	122	HIS	THR	engineered mutation	UNP P02794
q	130	ALA	CYS	engineered mutation	UNP P02794
r	86	GLN	LYS	engineered mutation	UNP P02794
r	90	GLU	CYS	engineered mutation	UNP P02794
r	102	ALA	CYS	engineered mutation	UNP P02794
r	122	HIS	THR	engineered mutation	UNP P02794
r	130	ALA	CYS	engineered mutation	UNP P02794
s	86	GLN	LYS	engineered mutation	UNP P02794
s	90	GLU	CYS	engineered mutation	UNP P02794
s	102	ALA	CYS	engineered mutation	UNP P02794
s	122	HIS	THR	engineered mutation	UNP P02794
s	130	ALA	CYS	engineered mutation	UNP P02794
t	86	GLN	LYS	engineered mutation	UNP P02794
t	90	GLU	CYS	engineered mutation	UNP P02794
t	102	ALA	CYS	engineered mutation	UNP P02794
t	122	HIS	THR	engineered mutation	UNP P02794
t	130	ALA	CYS	engineered mutation	UNP P02794
u	86	GLN	LYS	engineered mutation	UNP P02794
u	90	GLU	CYS	engineered mutation	UNP P02794
u	102	ALA	CYS	engineered mutation	UNP P02794
u	122	HIS	THR	engineered mutation	UNP P02794
u	130	ALA	CYS	engineered mutation	UNP P02794
v	86	GLN	LYS	engineered mutation	UNP P02794
v	90	GLU	CYS	engineered mutation	UNP P02794

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Chain	Residue	Modelled	Actual	Comment	Reference
v	102	ALA	CYS	engineered mutation	UNP P02794
v	122	HIS	THR	engineered mutation	UNP P02794
v	130	ALA	CYS	engineered mutation	UNP P02794
w	86	GLN	LYS	engineered mutation	UNP P02794
w	90	GLU	CYS	engineered mutation	UNP P02794
w	102	ALA	CYS	engineered mutation	UNP P02794
w	122	HIS	THR	engineered mutation	UNP P02794
w	130	ALA	CYS	engineered mutation	UNP P02794
x	86	GLN	LYS	engineered mutation	UNP P02794
x	90	GLU	CYS	engineered mutation	UNP P02794
x	102	ALA	CYS	engineered mutation	UNP P02794
x	122	HIS	THR	engineered mutation	UNP P02794
x	130	ALA	CYS	engineered mutation	UNP P02794

- Molecule 2 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	3	Total Zn 3 3	0	0
2	B	3	Total Zn 3 3	0	0
2	C	3	Total Zn 3 3	0	0
2	D	2	Total Zn 2 2	0	0
2	E	3	Total Zn 3 3	0	0
2	F	4	Total Zn 4 4	0	0
2	G	3	Total Zn 3 3	0	0
2	H	3	Total Zn 3 3	0	0
2	I	2	Total Zn 2 2	0	0
2	J	2	Total Zn 2 2	0	0
2	K	3	Total Zn 3 3	0	0
2	L	2	Total Zn 2 2	0	0
2	M	2	Total Zn 2 2	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	N	3	Total 3	Zn 3	0	0
2	O	3	Total 3	Zn 3	0	0
2	P	3	Total 3	Zn 3	0	0
2	Q	2	Total 2	Zn 2	0	0
2	R	2	Total 2	Zn 2	0	0
2	S	2	Total 2	Zn 2	0	0
2	T	3	Total 3	Zn 3	0	0
2	U	2	Total 2	Zn 2	0	0
2	V	2	Total 2	Zn 2	0	0
2	W	3	Total 3	Zn 3	0	0
2	X	2	Total 2	Zn 2	0	0
2	a	3	Total 6	Zn 6	0	3
2	b	2	Total 4	Zn 4	0	2
2	c	2	Total 4	Zn 4	0	2
2	d	4	Total 8	Zn 8	0	4
2	e	3	Total 6	Zn 6	0	3
2	f	3	Total 6	Zn 6	0	3
2	g	3	Total 6	Zn 6	0	3
2	h	2	Total 4	Zn 4	0	2
2	i	2	Total 4	Zn 4	0	2
2	j	2	Total 4	Zn 4	0	2

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	k	2	Total 4	Zn 4	0	2
2	l	3	Total 6	Zn 6	0	3
2	m	2	Total 4	Zn 4	0	2
2	n	3	Total 6	Zn 6	0	3
2	o	2	Total 4	Zn 4	0	2
2	p	3	Total 6	Zn 6	0	3
2	q	2	Total 4	Zn 4	0	2
2	r	2	Total 4	Zn 4	0	2
2	s	3	Total 6	Zn 6	0	3
2	t	2	Total 4	Zn 4	0	2
2	u	2	Total 4	Zn 4	0	2
2	v	3	Total 6	Zn 6	0	3
2	w	4	Total 8	Zn 8	0	4
2	x	3	Total 6	Zn 6	0	3

- Molecule 3 is SODIUM ION (CCD ID: NA) (formula: Na).

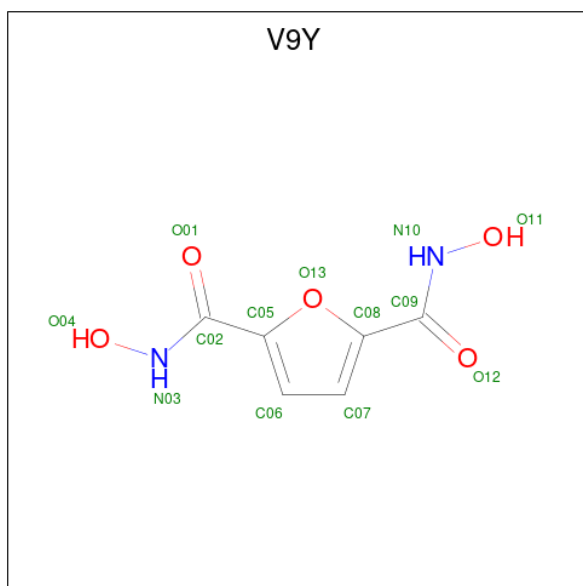
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total 1	Na 1	0	0
3	D	1	Total 1	Na 1	0	0
3	G	1	Total 1	Na 1	0	0
3	J	1	Total 1	Na 1	0	0
3	M	1	Total 1	Na 1	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	P	1	Total 1	Na 1	0	0
3	S	1	Total 1	Na 1	0	0
3	V	1	Total 1	Na 1	0	0
3	a	1	Total 2	Na 2	0	1
3	d	1	Total 2	Na 2	0	1
3	g	1	Total 2	Na 2	0	1
3	j	1	Total 2	Na 2	0	1
3	n	1	Total 2	Na 2	0	1
3	p	1	Total 2	Na 2	0	1
3	s	1	Total 2	Na 2	0	1
3	x	1	Total 2	Na 2	0	1

- Molecule 4 is N 2 ,N 5 -dihydroxyfuran-2,5-dicarboxamide (CCD ID: V9Y) (formula: C₆H₆N₂O₅) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	C	N	O	0	1
			26	12	4	10		
4	D	1	Total	C	N	O	0	1
			26	12	4	10		
4	I	1	Total	C	N	O	0	1
			26	12	4	10		
4	L	1	Total	C	N	O	0	1
			26	12	4	10		
4	O	1	Total	C	N	O	0	1
			26	12	4	10		
4	R	1	Total	C	N	O	0	1
			26	12	4	10		
4	X	1	Total	C	N	O	0	1
			26	12	4	10		
4	t	1	Total	C	N	O	0	1
			26	12	4	10		

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	92	Total	O	0	0
			92	92		
5	B	76	Total	O	0	0
			76	76		
5	C	86	Total	O	0	0
			86	86		
5	D	69	Total	O	0	0
			69	69		
5	E	78	Total	O	0	0
			78	78		
5	F	54	Total	O	0	0
			54	54		
5	G	66	Total	O	0	0
			66	66		
5	H	57	Total	O	0	0
			57	57		
5	I	59	Total	O	0	0
			59	59		
5	J	104	Total	O	0	0
			104	104		
5	K	83	Total	O	0	0
			83	83		
5	L	83	Total	O	0	0
			83	83		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	M	94	Total 94	O 94	0	0
5	N	64	Total 64	O 64	0	0
5	O	90	Total 90	O 90	0	0
5	P	56	Total 56	O 56	0	0
5	Q	54	Total 54	O 54	0	0
5	R	58	Total 58	O 58	0	0
5	S	67	Total 67	O 67	0	0
5	T	61	Total 61	O 61	0	0
5	U	58	Total 58	O 58	0	0
5	V	83	Total 83	O 83	0	0
5	W	70	Total 70	O 70	0	0
5	X	91	Total 91	O 91	0	0
5	c	1	Total 1	O 1	0	0
5	d	1	Total 1	O 1	0	0
5	j	1	Total 1	O 1	0	0
5	l	2	Total 2	O 2	0	0
5	m	1	Total 1	O 1	0	0
5	n	1	Total 1	O 1	0	0
5	q	1	Total 1	O 1	0	0
5	r	1	Total 1	O 1	0	0
5	u	1	Total 1	O 1	0	0

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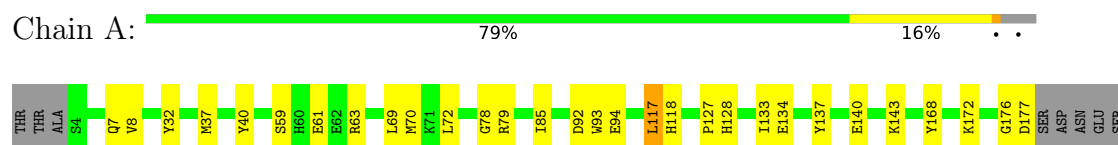
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	v	1	Total	O	0	0
			1	1		

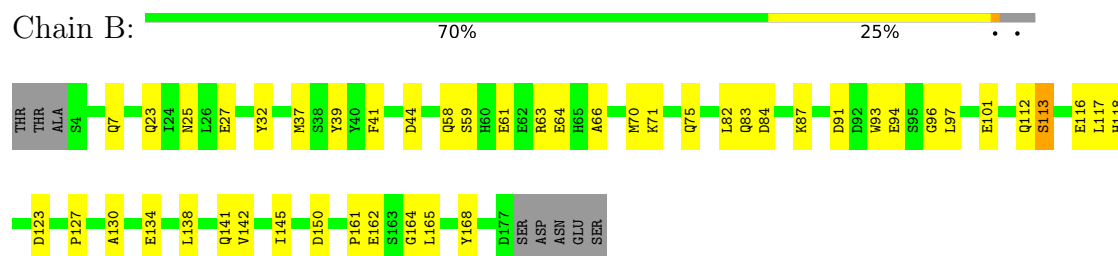
3 Residue-property plots

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.

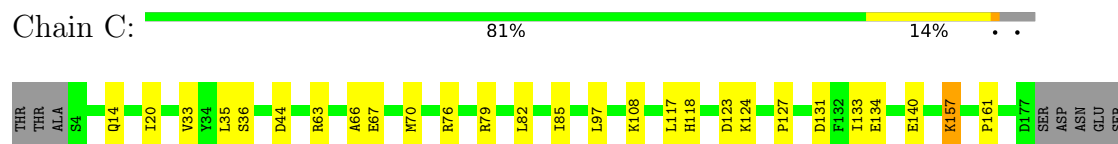
• Molecule 1: Ferritin heavy chain



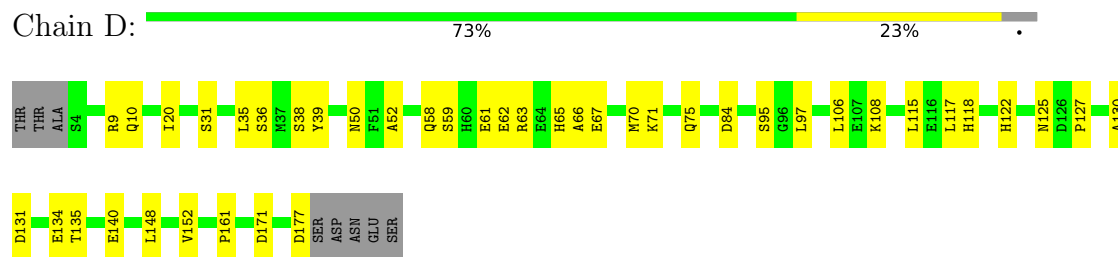
• Molecule 1: Ferritin heavy chain



• Molecule 1: Ferritin heavy chain

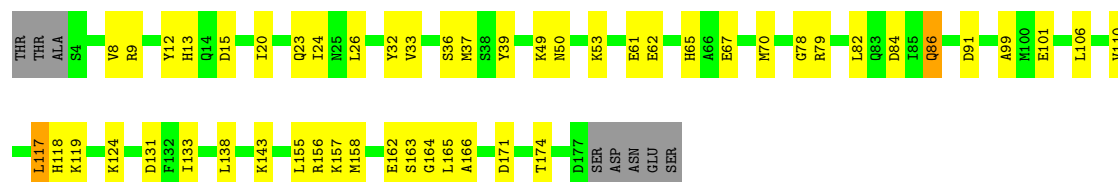


• Molecule 1: Ferritin heavy chain



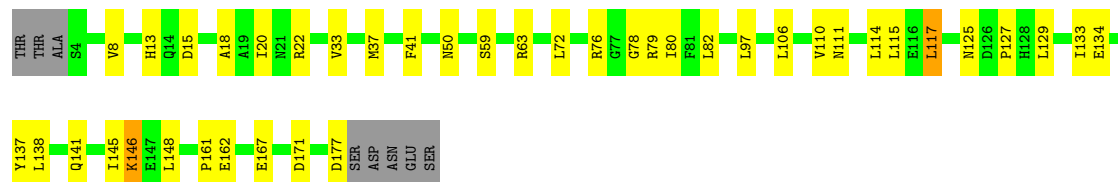
• Molecule 1: Ferritin heavy chain





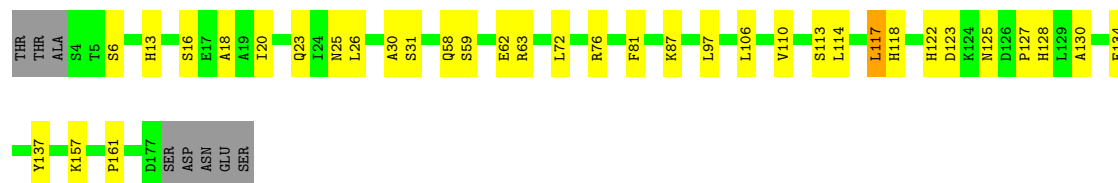
• Molecule 1: Ferritin heavy chain

Chain F: 73% 21% . .



• Molecule 1: Ferritin heavy chain

Chain G: 76% 19% . .



• Molecule 1: Ferritin heavy chain

Chain H: 72% 21% . .



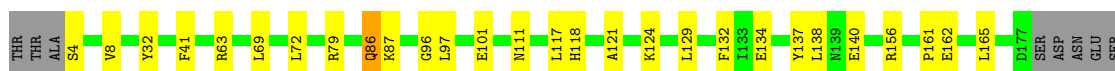
• Molecule 1: Ferritin heavy chain

Chain I: 74% 21% . .



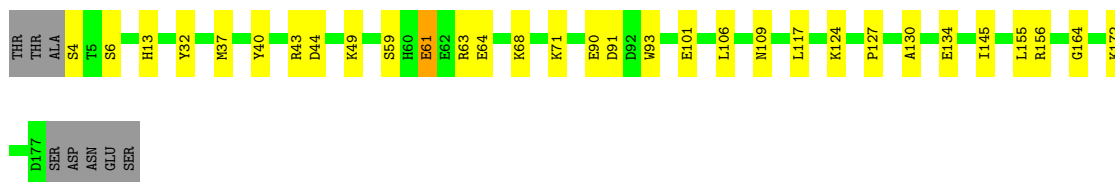
• Molecule 1: Ferritin heavy chain

Chain J: 80% 15% . .



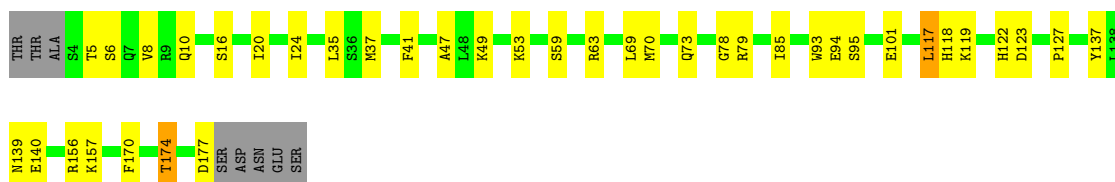
- Molecule 1: Ferritin heavy chain

Chain K: 79% 16% . .



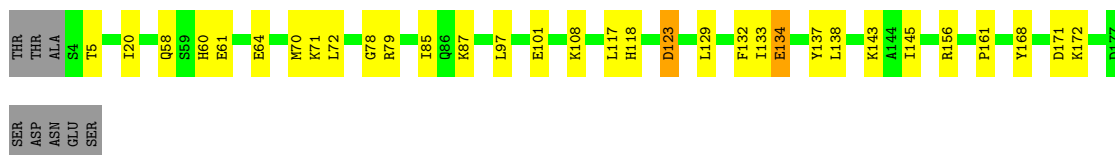
- Molecule 1: Ferritin heavy chain

Chain L: 74% 20% . .



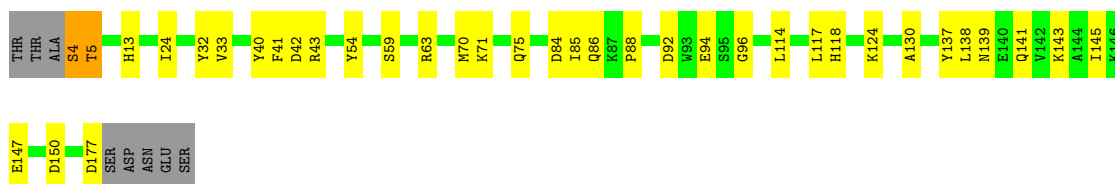
- Molecule 1: Ferritin heavy chain

Chain M: 78% 16% . .



- Molecule 1: Ferritin heavy chain

Chain N: 75% 19% . .



- Molecule 1: Ferritin heavy chain

Chain O: 76% 20% .





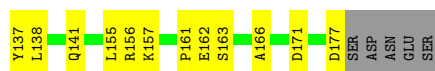
- Molecule 1: Ferritin heavy chain

Chain P: 76% 20% .



- Molecule 1: Ferritin heavy chain

Chain Q: 72% 22% . .



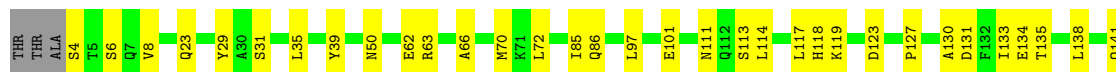
- Molecule 1: Ferritin heavy chain

Chain R: 71% 24% . .



- Molecule 1: Ferritin heavy chain

Chain S: 74% 22% .



- Molecule 1: Ferritin heavy chain

Chain T: 67% 27% . .

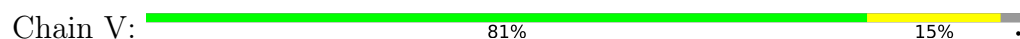




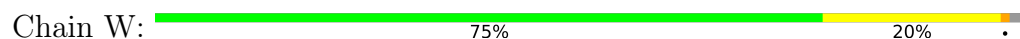
• Molecule 1: Ferritin heavy chain



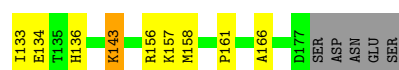
• Molecule 1: Ferritin heavy chain



• Molecule 1: Ferritin heavy chain



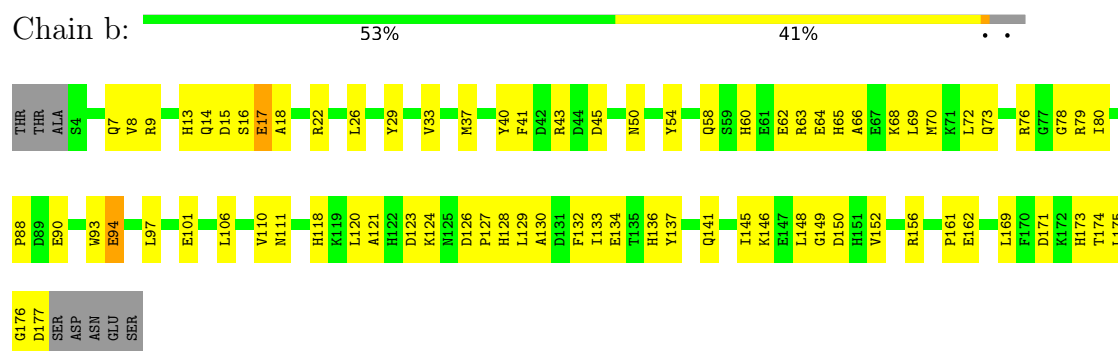
• Molecule 1: Ferritin heavy chain



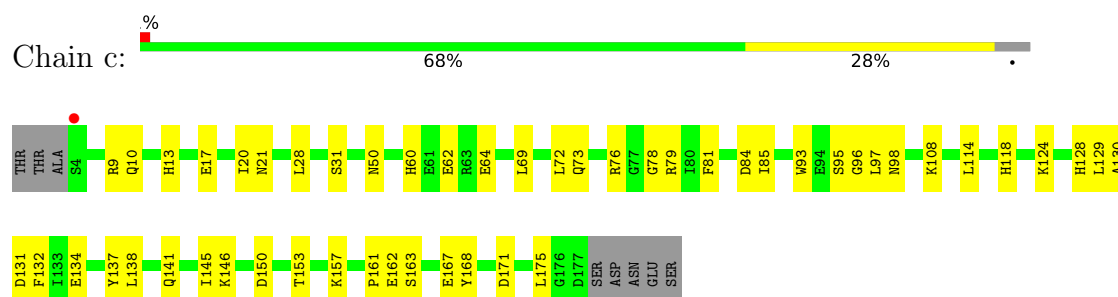
• Molecule 1: Ferritin heavy chain



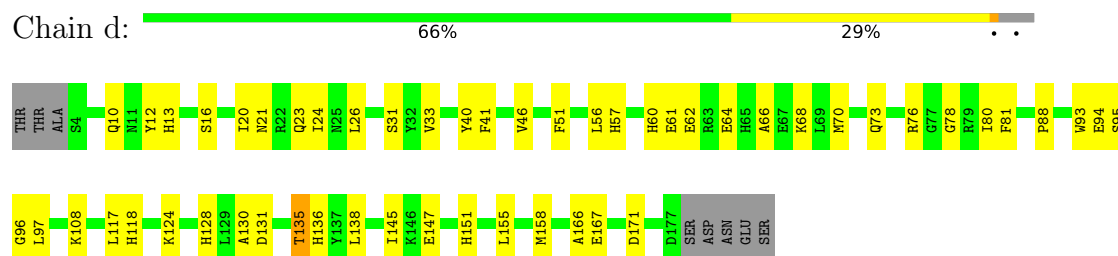
- Molecule 1: Ferritin heavy chain



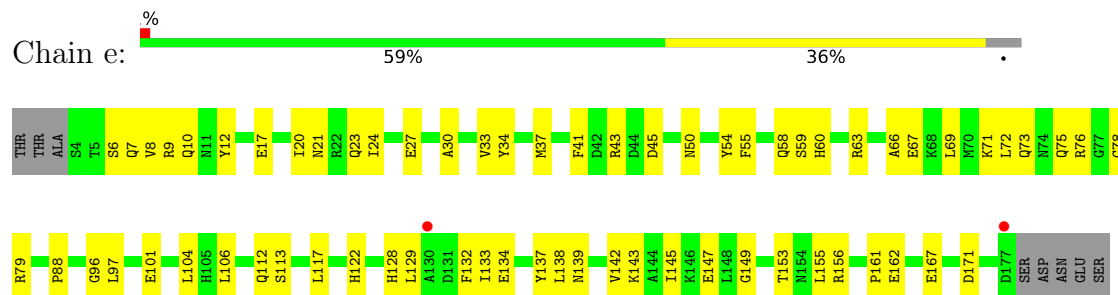
- Molecule 1: Ferritin heavy chain



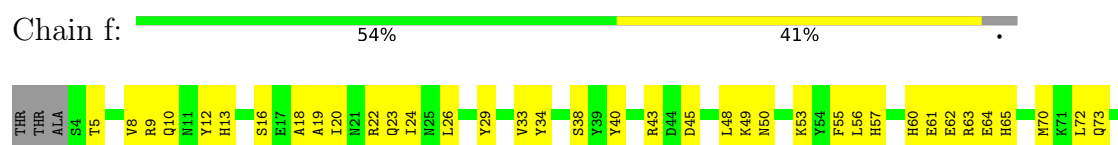
- Molecule 1: Ferritin heavy chain

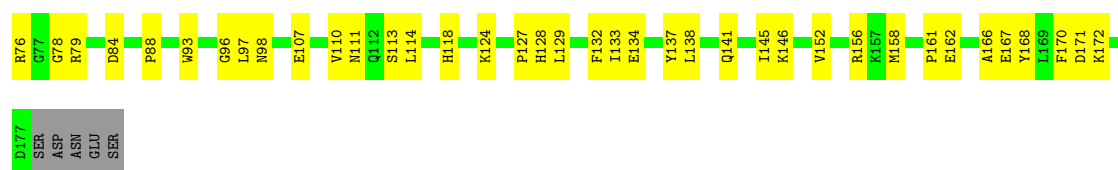


- Molecule 1: Ferritin heavy chain

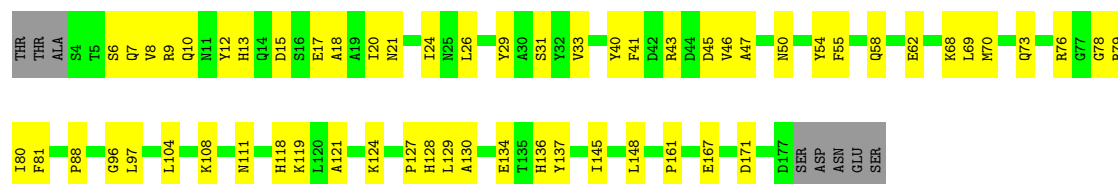


- Molecule 1: Ferritin heavy chain

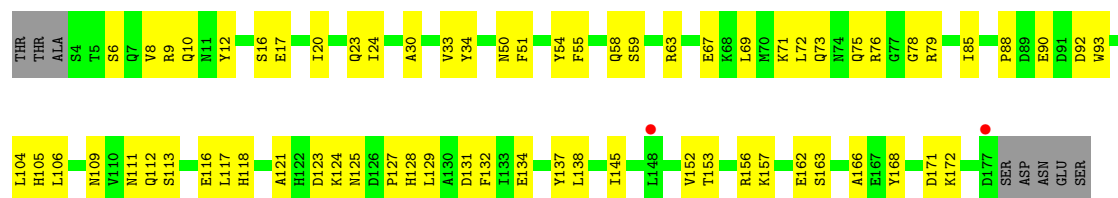




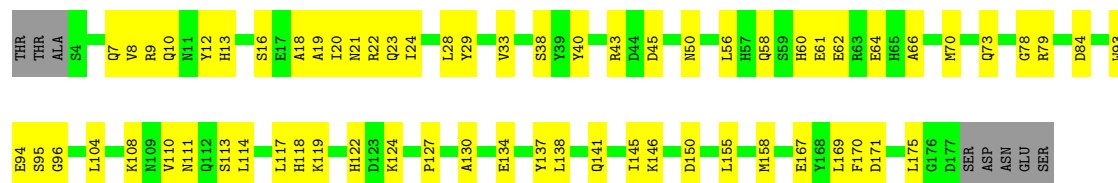
• Molecule 1: Ferritin heavy chain



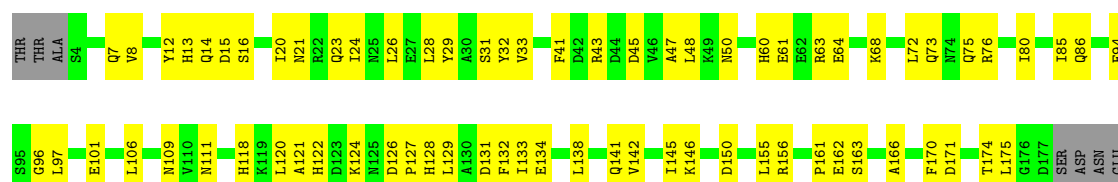
• Molecule 1: Ferritin heavy chain



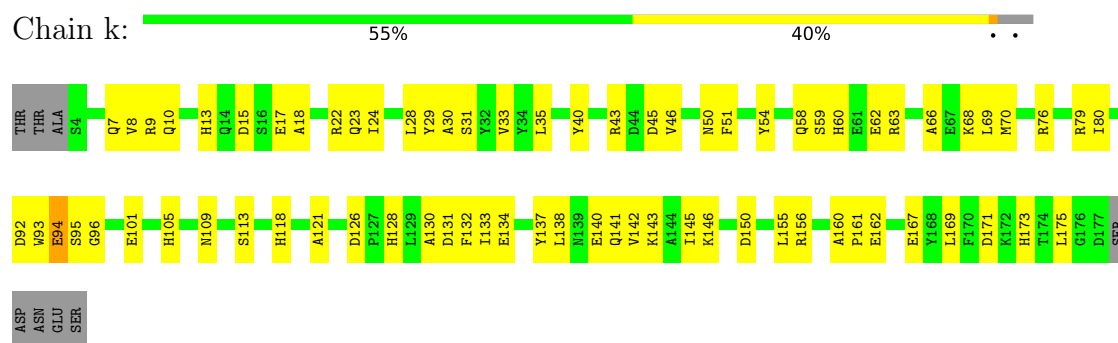
• Molecule 1: Ferritin heavy chain



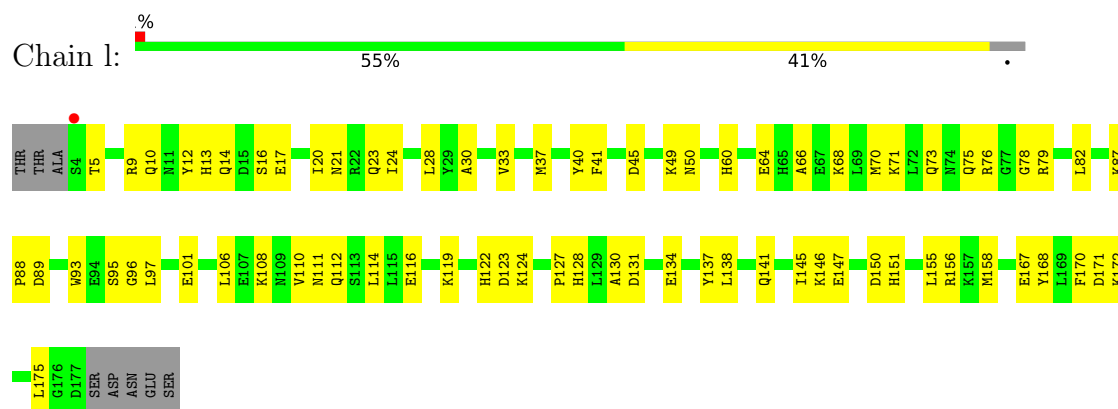
• Molecule 1: Ferritin heavy chain



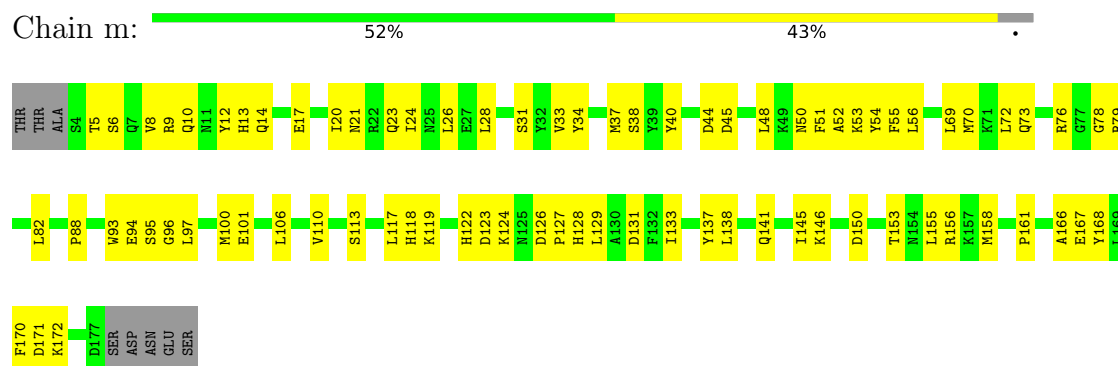
- Molecule 1: Ferritin heavy chain



- Molecule 1: Ferritin heavy chain

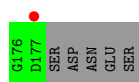


- Molecule 1: Ferritin heavy chain



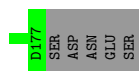
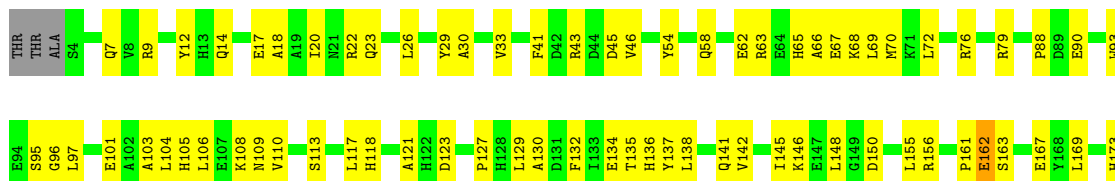
- Molecule 1: Ferritin heavy chain





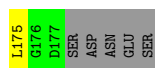
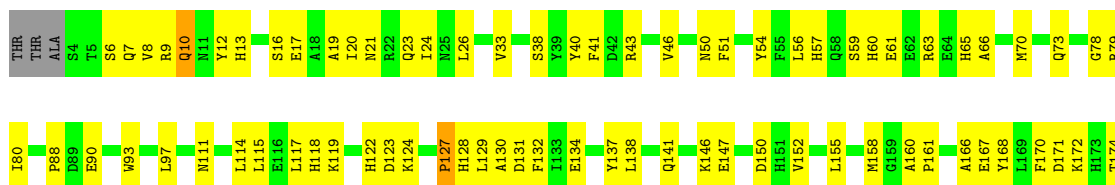
• Molecule 1: Ferritin heavy chain

Chain o: 56% 39% ..



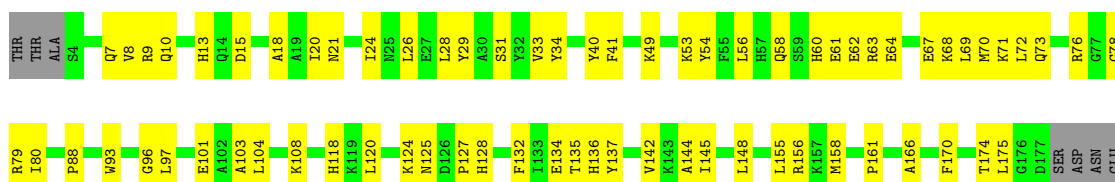
• Molecule 1: Ferritin heavy chain

Chain p: 54% 41% ..



• Molecule 1: Ferritin heavy chain

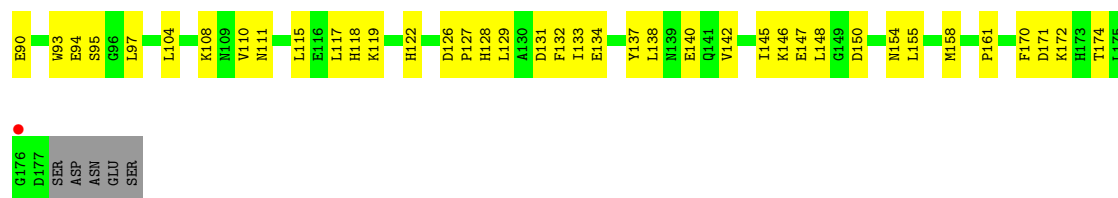
Chain q: 57% 38% .



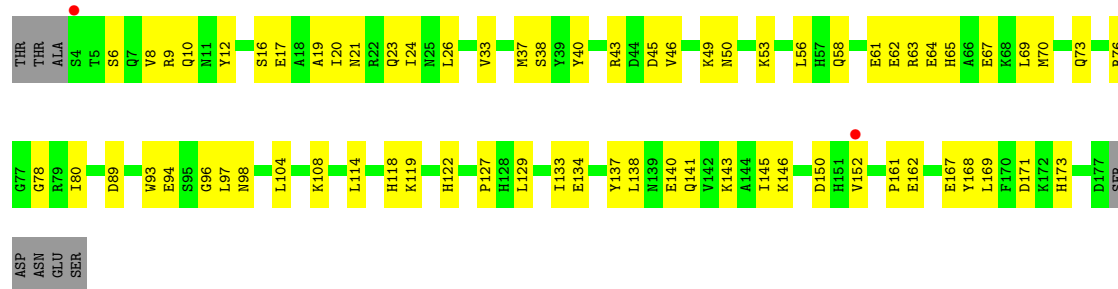
• Molecule 1: Ferritin heavy chain

Chain r: 54% 41% .

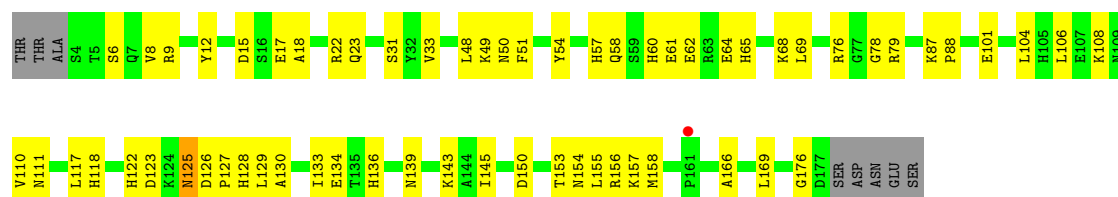




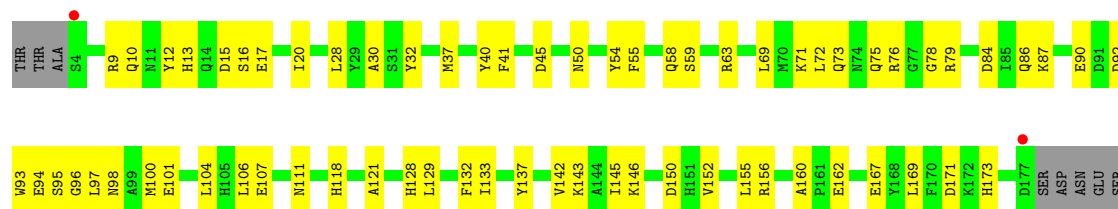
• Molecule 1: Ferritin heavy chain



• Molecule 1: Ferritin heavy chain



• Molecule 1: Ferritin heavy chain



• Molecule 1: Ferritin heavy chain

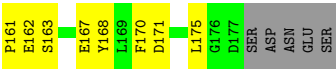
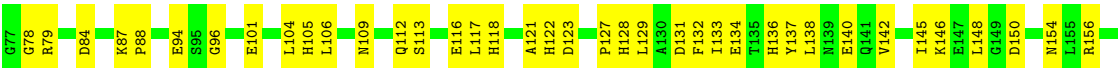
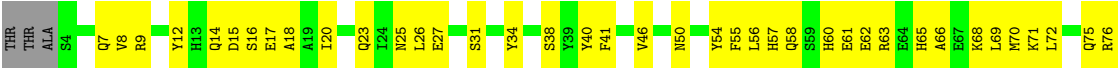




● Molecule 1: Ferritin heavy chain



● Molecule 1: Ferritin heavy chain



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	213.99Å 213.90Å 156.33Å 90.00° 90.14° 90.00°	Depositor
Resolution (Å)	38.49 – 2.34 38.49 – 2.34	Depositor EDS
% Data completeness (in resolution range)	94.7 (38.49-2.34) 93.7 (38.49-2.34)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.86 (at 2.34Å)	Xtriage
Refinement program	PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.207 , 0.278 0.207 , 0.278	Depositor DCC
R_{free} test set	55682 reflections (9.97%)	wwPDB-VP
Wilson B-factor (Å ²)	34.0	Xtriage
Anisotropy	0.156	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 41.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.36$, $\langle L^2 \rangle = 0.18$	Xtriage
Estimated twinning fraction	0.427 for k,h,-l 0.440 for -k,-h,-l 0.429 for -h,-k,l	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	105214	wwPDB-VP
Average B, all atoms (Å ²)	35.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 10.43% 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: V9Y, ZN, NA

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	0.59	0/1461	0.72	0/1969
1	B	0.57	0/1461	0.71	0/1969
1	C	0.59	0/1461	0.75	0/1969
1	D	0.57	0/1461	0.70	0/1969
1	E	0.56	0/1461	0.73	0/1969
1	F	0.52	0/1461	0.69	0/1969
1	G	0.55	0/1461	0.74	0/1969
1	H	0.53	0/1461	0.68	0/1969
1	I	0.51	0/1461	0.70	0/1969
1	J	0.58	0/1461	0.74	0/1969
1	K	0.58	0/1461	0.75	0/1969
1	L	0.57	0/1461	0.77	0/1969
1	M	0.58	0/1461	0.72	0/1969
1	N	0.53	0/1461	0.72	0/1969
1	O	0.57	0/1461	0.72	0/1969
1	P	0.56	0/1461	0.72	0/1969
1	Q	0.51	0/1461	0.70	0/1969
1	R	0.51	0/1461	0.68	0/1969
1	S	0.57	0/1461	0.69	0/1969
1	T	0.53	0/1461	0.71	0/1969
1	U	0.50	0/1461	0.70	0/1969
1	V	0.58	0/1461	0.73	0/1969
1	W	0.55	0/1461	0.73	0/1969
1	X	0.59	0/1461	0.72	0/1969
All	All	0.55	0/35064	0.72	0/47256

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1431	0	1362	23	0
1	B	1431	0	1362	40	0
1	C	1431	0	1362	22	0
1	D	1431	0	1362	33	0
1	E	1431	0	1362	43	0
1	F	1431	0	1362	32	0
1	G	1431	0	1362	28	0
1	H	1431	0	1362	36	0
1	I	1431	0	1362	32	0
1	J	1431	0	1362	21	0
1	K	1431	0	1362	24	0
1	L	1431	0	1362	30	0
1	M	1431	0	1362	21	0
1	N	1431	0	1362	22	0
1	O	1431	0	1362	29	0
1	P	1431	0	1362	24	0
1	Q	1431	0	1362	30	0
1	R	1431	0	1362	36	0
1	S	1431	0	1362	26	0
1	T	1431	0	1362	39	0
1	U	1431	0	1362	43	0
1	V	1431	0	1362	16	0
1	W	1431	0	1362	29	0
1	X	1431	0	1362	28	0
1	a	2862	0	2710	56	0
1	b	2862	0	2700	77	0
1	c	2862	0	2704	40	0
1	d	2862	0	2710	50	0
1	e	2862	0	2702	57	0
1	f	2862	0	2704	63	0
1	g	2862	0	2705	44	0
1	h	2862	0	2706	56	0
1	i	2862	0	2701	58	0
1	j	2862	0	2707	65	0
1	k	2862	0	2703	63	0
1	l	2862	0	2702	71	0
1	m	2862	0	2705	83	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	n	2862	0	2710	65	0
1	o	2862	0	2708	74	0
1	p	2862	0	2709	64	0
1	q	2862	0	2713	63	0
1	r	2862	0	2705	64	0
1	s	2862	0	2702	59	0
1	t	2862	0	2705	51	0
1	u	2862	0	2702	56	0
1	v	2862	0	2706	59	0
1	w	2862	0	2707	58	0
1	x	2862	0	2703	72	0
2	A	3	0	0	0	0
2	B	3	0	0	0	0
2	C	3	0	0	0	0
2	D	2	0	0	0	0
2	E	3	0	0	0	0
2	F	4	0	0	0	0
2	G	3	0	0	0	0
2	H	3	0	0	0	0
2	I	2	0	0	0	0
2	J	2	0	0	0	0
2	K	3	0	0	0	0
2	L	2	0	0	0	0
2	M	2	0	0	0	0
2	N	3	0	0	0	0
2	O	3	0	0	0	0
2	P	3	0	0	0	0
2	Q	2	0	0	0	0
2	R	2	0	0	0	0
2	S	2	0	0	0	0
2	T	3	0	0	0	0
2	U	2	0	0	0	0
2	V	2	0	0	0	0
2	W	3	0	0	0	0
2	X	2	0	0	0	0
2	a	6	0	0	0	0
2	b	4	0	0	0	0
2	c	4	0	0	0	0
2	d	8	0	0	0	0
2	e	6	0	0	0	0
2	f	6	0	0	0	0
2	g	6	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	h	4	0	0	0	0
2	i	4	0	0	0	0
2	j	4	0	0	0	0
2	k	4	0	0	0	0
2	l	6	0	0	0	0
2	m	4	0	0	0	0
2	n	6	0	0	0	0
2	o	4	0	0	0	0
2	p	6	0	0	0	0
2	q	4	0	0	0	0
2	r	4	0	0	0	0
2	s	6	0	0	0	0
2	t	4	0	0	0	0
2	u	4	0	0	0	0
2	v	6	0	0	0	0
2	w	8	0	0	0	0
2	x	6	0	0	0	0
3	A	1	0	0	0	0
3	D	1	0	0	0	0
3	G	1	0	0	0	0
3	J	1	0	0	0	0
3	M	1	0	0	0	0
3	P	1	0	0	0	0
3	S	1	0	0	0	0
3	V	1	0	0	0	0
3	a	2	0	0	0	0
3	d	2	0	0	0	0
3	g	2	0	0	0	0
3	j	2	0	0	0	0
3	n	2	0	0	0	0
3	p	2	0	0	0	0
3	s	2	0	0	0	0
3	x	2	0	0	0	0
4	A	26	0	0	0	0
4	D	26	0	0	2	0
4	I	26	0	0	3	0
4	L	26	0	0	0	0
4	O	26	0	0	2	0
4	R	26	0	0	5	0
4	X	26	0	0	3	0
4	t	26	0	0	3	0
5	A	92	0	0	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	B	76	0	0	8	0
5	C	86	0	0	1	0
5	D	69	0	0	4	0
5	E	78	0	0	3	0
5	F	54	0	0	2	0
5	G	66	0	0	4	0
5	H	57	0	0	4	0
5	I	59	0	0	0	0
5	J	104	0	0	4	0
5	K	83	0	0	6	0
5	L	83	0	0	5	0
5	M	94	0	0	4	0
5	N	64	0	0	1	0
5	O	90	0	0	7	0
5	P	56	0	0	4	0
5	Q	54	0	0	2	0
5	R	58	0	0	1	0
5	S	67	0	0	3	0
5	T	61	0	0	4	0
5	U	58	0	0	1	0
5	V	83	0	0	1	0
5	W	70	0	0	4	0
5	X	91	0	0	3	0
5	c	1	0	0	0	0
5	d	1	0	0	0	0
5	j	1	0	0	0	0
5	l	2	0	0	1	0
5	m	1	0	0	0	0
5	n	1	0	0	1	0
5	q	1	0	0	1	0
5	r	1	0	0	1	0
5	u	1	0	0	0	0
5	v	1	0	0	0	0
All	All	105214	0	97617	1926	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 10.

The worst 5 of 1926 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:l:87[C]:LYS:NZ	1:l:87[C]:LYS:CE	1.69	1.55
4:I:203[C]:V9Y:O11	1:i:122[C]:HIS:HE1	1.45	0.98
1:b:78[D]:GLY:O	1:b:79[D]:ARG:NH1	1.97	0.97
1:k:7[D]:GLN:O	1:l:108[D]:LYS:NZ	1.98	0.96
1:L:101:GLU:OE2	1:L:156:ARG:NH2	1.99	0.95

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	172/182 (94%)	168 (98%)	4 (2%)	0	100	100
1	B	172/182 (94%)	166 (96%)	5 (3%)	1 (1%)	21	22
1	C	172/182 (94%)	166 (96%)	6 (4%)	0	100	100
1	D	172/182 (94%)	163 (95%)	8 (5%)	1 (1%)	21	22
1	E	172/182 (94%)	161 (94%)	10 (6%)	1 (1%)	21	22
1	F	172/182 (94%)	163 (95%)	9 (5%)	0	100	100
1	G	172/182 (94%)	164 (95%)	8 (5%)	0	100	100
1	H	172/182 (94%)	161 (94%)	10 (6%)	1 (1%)	21	22
1	I	172/182 (94%)	162 (94%)	9 (5%)	1 (1%)	21	22
1	J	172/182 (94%)	166 (96%)	6 (4%)	0	100	100
1	K	172/182 (94%)	164 (95%)	8 (5%)	0	100	100
1	L	172/182 (94%)	166 (96%)	6 (4%)	0	100	100
1	M	172/182 (94%)	169 (98%)	3 (2%)	0	100	100
1	N	172/182 (94%)	165 (96%)	6 (4%)	1 (1%)	21	22
1	O	172/182 (94%)	167 (97%)	5 (3%)	0	100	100
1	P	172/182 (94%)	166 (96%)	6 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	Q	172/182 (94%)	158 (92%)	13 (8%)	1 (1%)	21	22
1	R	172/182 (94%)	163 (95%)	9 (5%)	0	100	100
1	S	172/182 (94%)	163 (95%)	9 (5%)	0	100	100
1	T	172/182 (94%)	164 (95%)	7 (4%)	1 (1%)	21	22
1	U	172/182 (94%)	163 (95%)	8 (5%)	1 (1%)	21	22
1	V	172/182 (94%)	170 (99%)	2 (1%)	0	100	100
1	W	172/182 (94%)	167 (97%)	5 (3%)	0	100	100
1	X	172/182 (94%)	165 (96%)	7 (4%)	0	100	100
1	a	344/182 (189%)	320 (93%)	24 (7%)	0	100	100
1	b	344/182 (189%)	320 (93%)	20 (6%)	4 (1%)	10	8
1	c	344/182 (189%)	328 (95%)	10 (3%)	6 (2%)	7	5
1	d	344/182 (189%)	324 (94%)	16 (5%)	4 (1%)	10	8
1	e	344/182 (189%)	320 (93%)	24 (7%)	0	100	100
1	f	344/182 (189%)	322 (94%)	20 (6%)	2 (1%)	21	22
1	g	344/182 (189%)	330 (96%)	14 (4%)	0	100	100
1	h	344/182 (189%)	312 (91%)	30 (9%)	2 (1%)	21	22
1	i	344/182 (189%)	328 (95%)	12 (4%)	4 (1%)	10	8
1	j	344/182 (189%)	326 (95%)	14 (4%)	4 (1%)	10	8
1	k	344/182 (189%)	320 (93%)	22 (6%)	2 (1%)	21	22
1	l	344/182 (189%)	318 (92%)	24 (7%)	2 (1%)	21	22
1	m	344/182 (189%)	326 (95%)	18 (5%)	0	100	100
1	n	344/182 (189%)	320 (93%)	24 (7%)	0	100	100
1	o	344/182 (189%)	318 (92%)	22 (6%)	4 (1%)	10	8
1	p	344/182 (189%)	318 (92%)	20 (6%)	6 (2%)	7	5
1	q	344/182 (189%)	328 (95%)	16 (5%)	0	100	100
1	r	344/182 (189%)	332 (96%)	10 (3%)	2 (1%)	21	22
1	s	344/182 (189%)	334 (97%)	8 (2%)	2 (1%)	21	22
1	t	344/182 (189%)	328 (95%)	14 (4%)	2 (1%)	21	22
1	u	344/182 (189%)	328 (95%)	14 (4%)	2 (1%)	21	22
1	v	344/182 (189%)	322 (94%)	22 (6%)	0	100	100
1	w	344/182 (189%)	326 (95%)	16 (5%)	2 (1%)	21	22

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	x	344/182 (189%)	322 (94%)	18 (5%)	4 (1%)	10	8
All	All	12384/8736 (142%)	11720 (95%)	601 (5%)	63 (0%)	30	26

5 of 63 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	f	84[C]	ASP
1	f	84[D]	ASP
1	i	94[C]	GLU
1	i	94[D]	GLU
1	o	163[C]	SER

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	153/160 (96%)	150 (98%)	3 (2%)	48	61
1	B	153/160 (96%)	148 (97%)	5 (3%)	33	43
1	C	153/160 (96%)	151 (99%)	2 (1%)	61	73
1	D	153/160 (96%)	150 (98%)	3 (2%)	48	61
1	E	153/160 (96%)	149 (97%)	4 (3%)	40	53
1	F	153/160 (96%)	150 (98%)	3 (2%)	48	61
1	G	153/160 (96%)	150 (98%)	3 (2%)	48	61
1	H	153/160 (96%)	146 (95%)	7 (5%)	24	31
1	I	153/160 (96%)	149 (97%)	4 (3%)	40	53
1	J	153/160 (96%)	150 (98%)	3 (2%)	48	61
1	K	153/160 (96%)	147 (96%)	6 (4%)	28	37
1	L	153/160 (96%)	146 (95%)	7 (5%)	24	31
1	M	153/160 (96%)	148 (97%)	5 (3%)	33	43
1	N	153/160 (96%)	146 (95%)	7 (5%)	24	31
1	O	153/160 (96%)	148 (97%)	5 (3%)	33	43

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	P	153/160 (96%)	149 (97%)	4 (3%)	40	53
1	Q	153/160 (96%)	145 (95%)	8 (5%)	21	25
1	R	153/160 (96%)	149 (97%)	4 (3%)	40	53
1	S	153/160 (96%)	147 (96%)	6 (4%)	28	37
1	T	153/160 (96%)	146 (95%)	7 (5%)	24	31
1	U	153/160 (96%)	149 (97%)	4 (3%)	40	53
1	V	153/160 (96%)	146 (95%)	7 (5%)	24	31
1	W	153/160 (96%)	150 (98%)	3 (2%)	48	61
1	X	153/160 (96%)	150 (98%)	3 (2%)	48	61
All	All	3672/3840 (96%)	3559 (97%)	113 (3%)	35	45

5 of 113 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	N	32	TYR
1	X	53	LYS
1	Q	5	THR
1	W	91	ASP
1	U	175	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 63 such sidechains are listed below:

Mol	Chain	Res	Type
1	L	7	GLN
1	V	141	GLN
1	N	25	ASN
1	V	109	ASN
1	W	141	GLN

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 226 ligands modelled in this entry, 210 are monoatomic - leaving 16 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	V9Y	A	205[C]	2	11,13,13	2.12	4 (36%)	13,17,17	2.86	6 (46%)
4	V9Y	I	203[C]	2	11,13,13	1.81	4 (36%)	13,17,17	2.81	6 (46%)
4	V9Y	D	204[D]	2	11,13,13	2.05	5 (45%)	13,17,17	2.67	8 (61%)
4	V9Y	A	205[D]	2	11,13,13	2.01	6 (54%)	13,17,17	2.72	6 (46%)
4	V9Y	I	203[D]	2	11,13,13	2.00	5 (45%)	13,17,17	2.77	8 (61%)
4	V9Y	X	203[D]	2	11,13,13	2.12	4 (36%)	13,17,17	2.65	6 (46%)
4	V9Y	R	203[C]	2	11,13,13	1.96	6 (54%)	13,17,17	2.70	8 (61%)
4	V9Y	t	203[C]	2	11,13,13	1.97	4 (36%)	13,17,17	2.60	6 (46%)
4	V9Y	R	203[D]	2	11,13,13	1.98	5 (45%)	13,17,17	2.34	5 (38%)
4	V9Y	t	203[D]	2	11,13,13	1.90	5 (45%)	13,17,17	2.63	7 (53%)
4	V9Y	X	203[C]	2	11,13,13	2.05	5 (45%)	13,17,17	2.47	5 (38%)
4	V9Y	L	203[D]	2	11,13,13	2.04	6 (54%)	13,17,17	2.66	5 (38%)
4	V9Y	O	204[C]	2	11,13,13	2.00	5 (45%)	13,17,17	2.42	5 (38%)
4	V9Y	L	203[C]	2	11,13,13	2.17	5 (45%)	13,17,17	2.82	8 (61%)
4	V9Y	O	204[D]	2	11,13,13	1.94	4 (36%)	13,17,17	2.94	6 (46%)
4	V9Y	D	204[C]	2	11,13,13	2.08	5 (45%)	13,17,17	2.75	7 (53%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	V9Y	A	205[C]	2	-	4/12/12/12	0/1/1/1
4	V9Y	I	203[C]	2	-	8/12/12/12	0/1/1/1
4	V9Y	D	204[D]	2	-	5/12/12/12	0/1/1/1
4	V9Y	A	205[D]	2	-	4/12/12/12	0/1/1/1
4	V9Y	I	203[D]	2	-	3/12/12/12	0/1/1/1
4	V9Y	X	203[D]	2	-	4/12/12/12	0/1/1/1
4	V9Y	R	203[C]	2	-	4/12/12/12	0/1/1/1
4	V9Y	t	203[C]	2	-	3/12/12/12	0/1/1/1
4	V9Y	R	203[D]	2	-	8/12/12/12	0/1/1/1
4	V9Y	t	203[D]	2	-	8/12/12/12	0/1/1/1
4	V9Y	X	203[C]	2	-	8/12/12/12	0/1/1/1
4	V9Y	L	203[D]	2	-	4/12/12/12	0/1/1/1
4	V9Y	O	204[C]	2	-	4/12/12/12	0/1/1/1
4	V9Y	L	203[C]	2	-	4/12/12/12	0/1/1/1
4	V9Y	O	204[D]	2	-	7/12/12/12	0/1/1/1
4	V9Y	D	204[C]	2	-	8/12/12/12	0/1/1/1

The worst 5 of 78 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	L	203[C]	V9Y	C05-C02	3.69	1.54	1.47
4	A	205[D]	V9Y	C08-C09	3.65	1.54	1.47
4	I	203[D]	V9Y	C08-C09	3.64	1.54	1.47
4	X	203[C]	V9Y	C08-C09	3.60	1.54	1.47
4	A	205[C]	V9Y	C08-C09	3.58	1.54	1.47

The worst 5 of 102 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	I	203[C]	V9Y	O13-C05-C02	5.71	126.78	117.52
4	I	203[D]	V9Y	O13-C08-C09	5.40	126.28	117.52
4	D	204[D]	V9Y	O13-C08-C09	5.34	126.18	117.52
4	O	204[D]	V9Y	O13-C08-C09	5.31	126.13	117.52
4	A	205[D]	V9Y	O13-C08-C09	5.16	125.89	117.52

There are no chirality outliers.

5 of 86 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	205[C]	V9Y	C07-C08-C09-N10
4	A	205[C]	V9Y	C07-C08-C09-O12
4	A	205[C]	V9Y	O13-C08-C09-N10
4	A	205[C]	V9Y	O13-C08-C09-O12
4	A	205[D]	V9Y	N03-C02-C05-C06

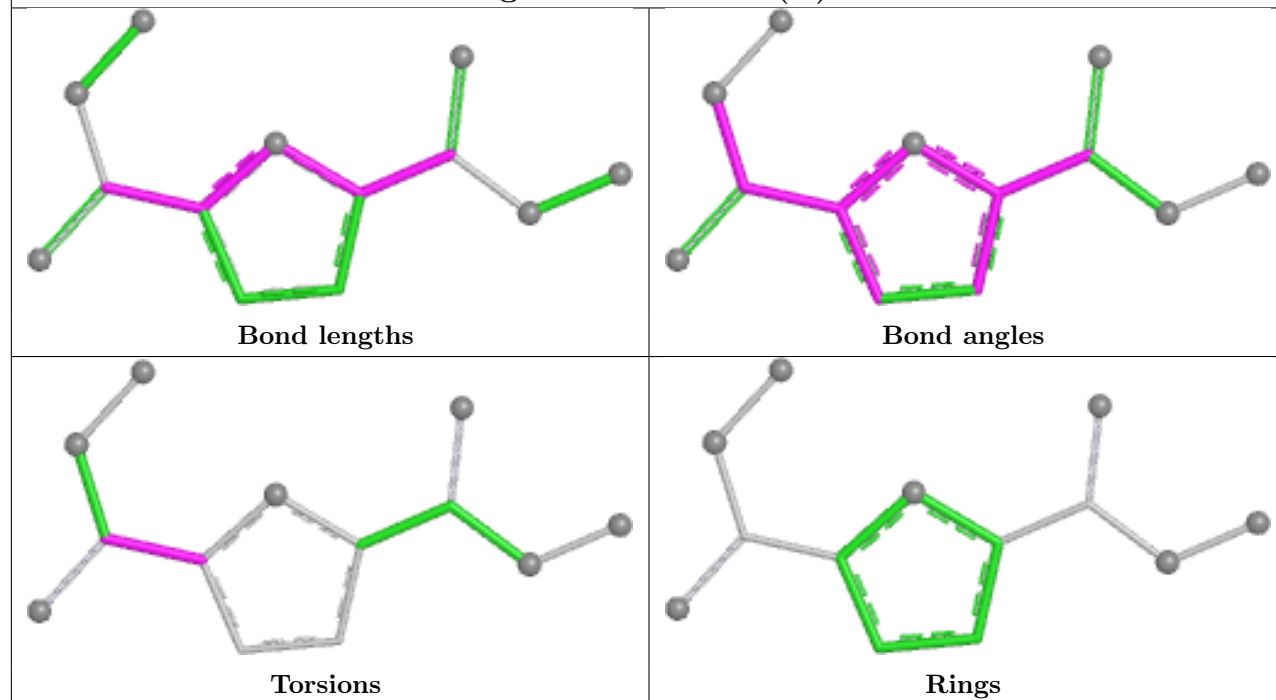
There are no ring outliers.

10 monomers are involved in 18 short contacts:

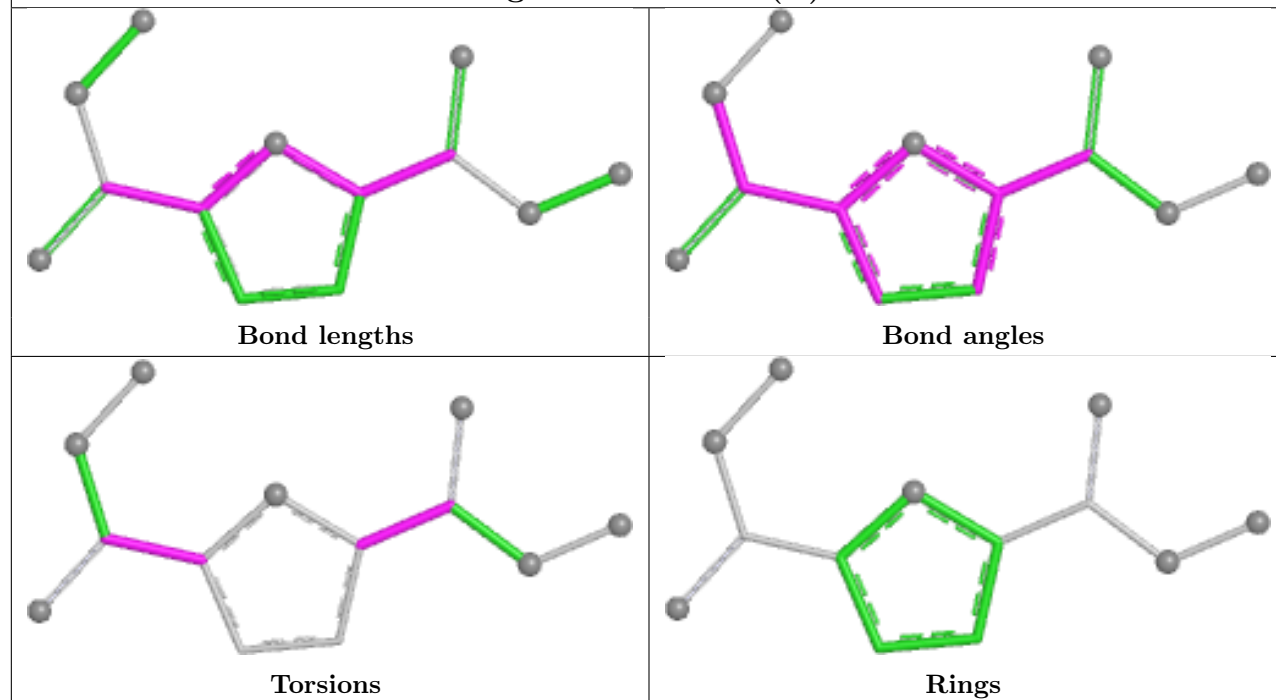
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	I	203[C]	V9Y	3	0
4	D	204[D]	V9Y	1	0
4	X	203[D]	V9Y	2	0
4	R	203[C]	V9Y	2	0
4	t	203[C]	V9Y	1	0
4	R	203[D]	V9Y	3	0
4	t	203[D]	V9Y	2	0
4	X	203[C]	V9Y	1	0
4	O	204[C]	V9Y	2	0
4	D	204[C]	V9Y	1	0

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.

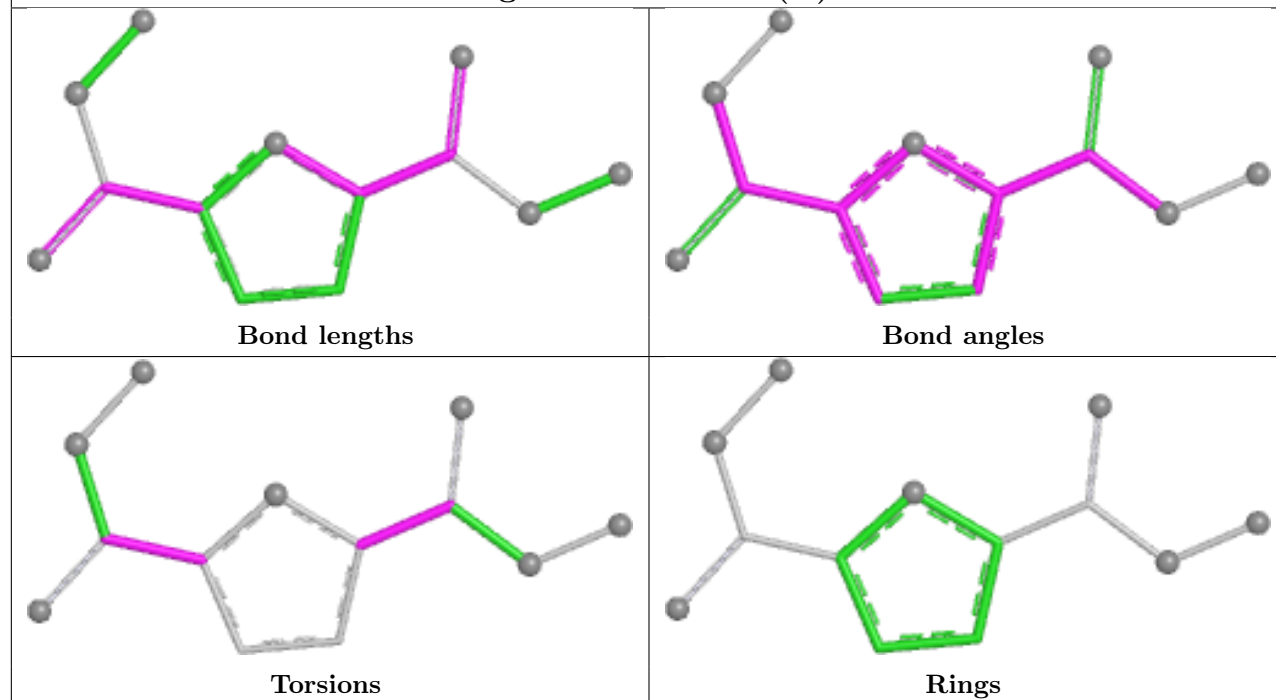
Ligand V9Y A 205 (C)



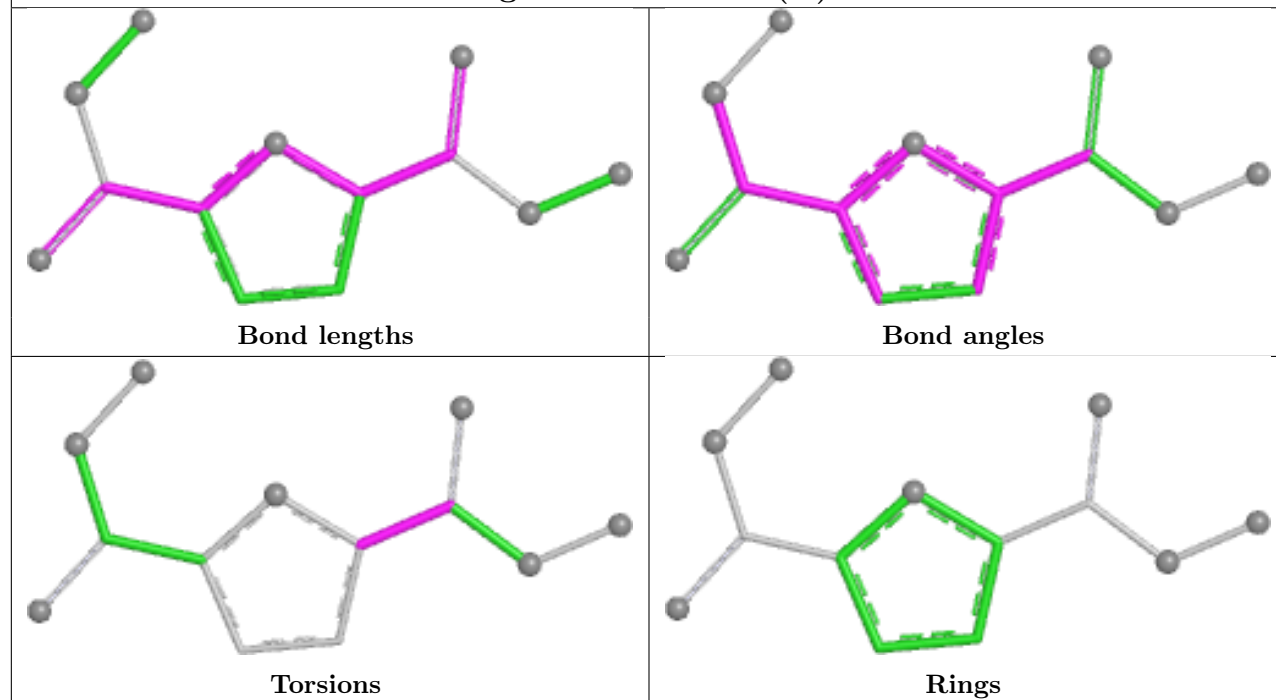
Ligand V9Y I 203 (C)



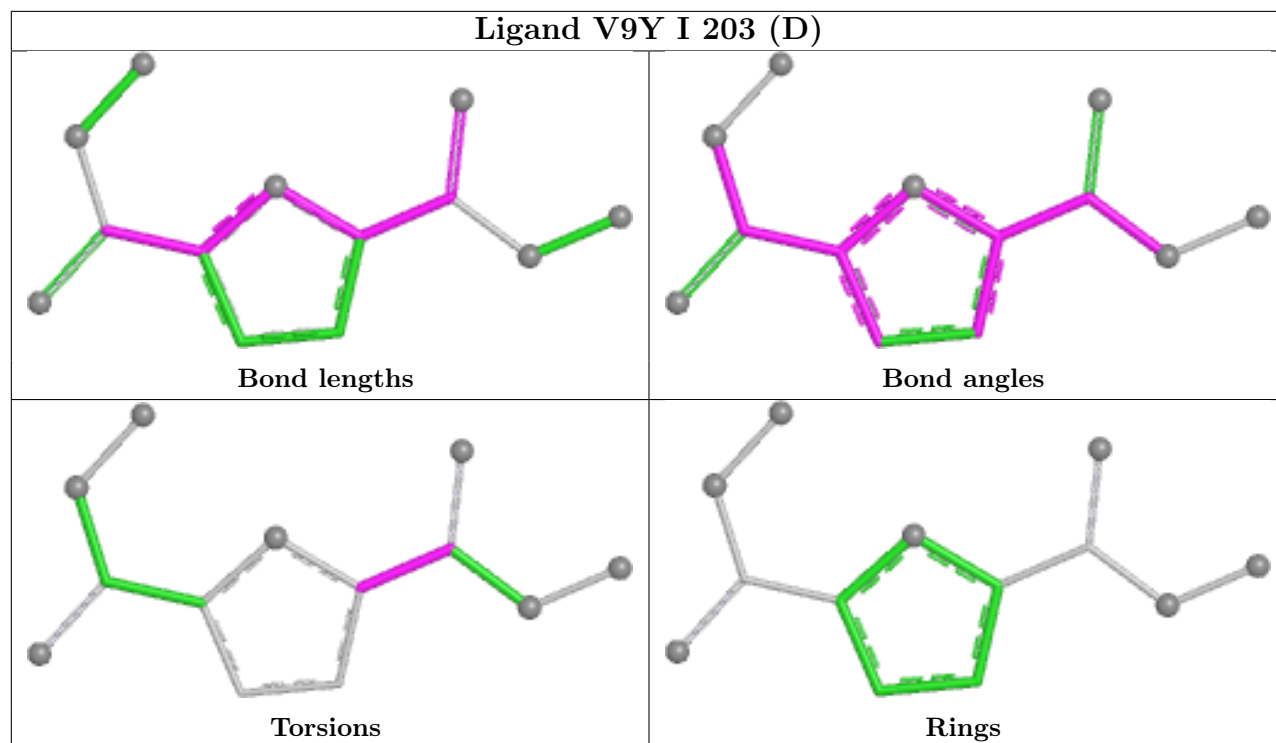
Ligand V9Y D 204 (D)



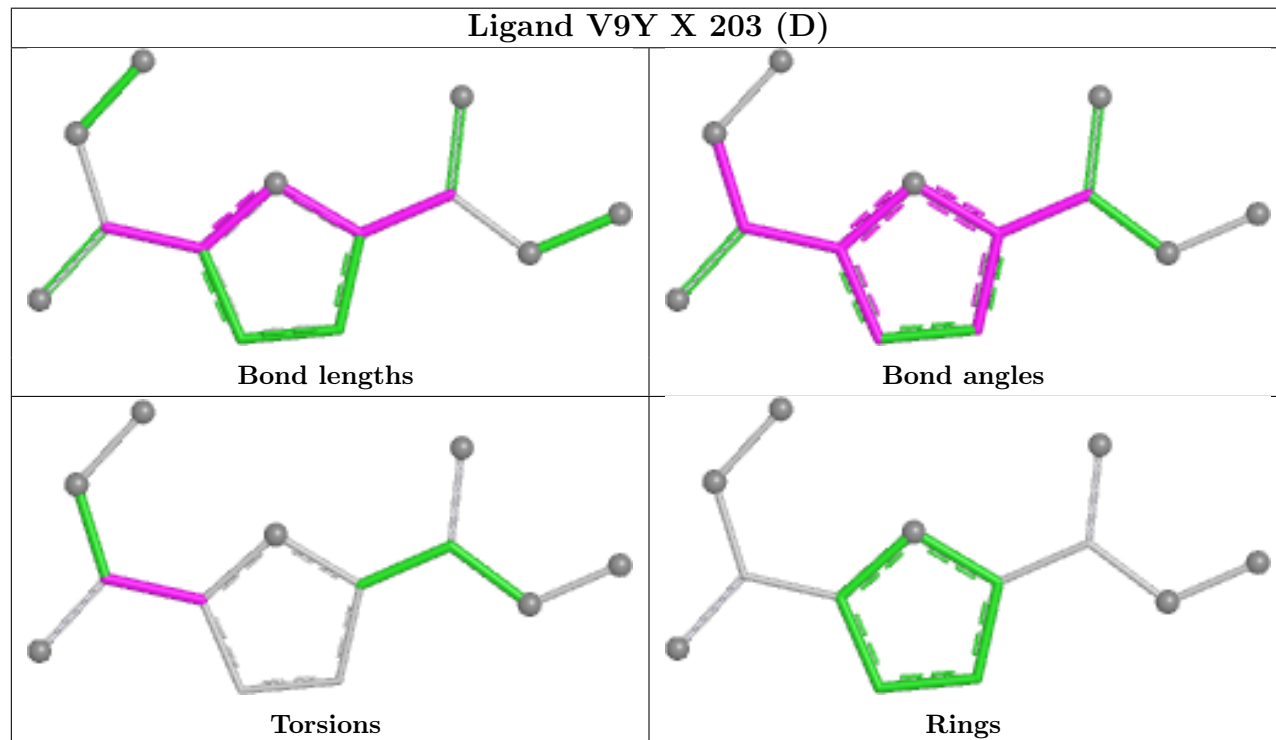
Ligand V9Y A 205 (D)



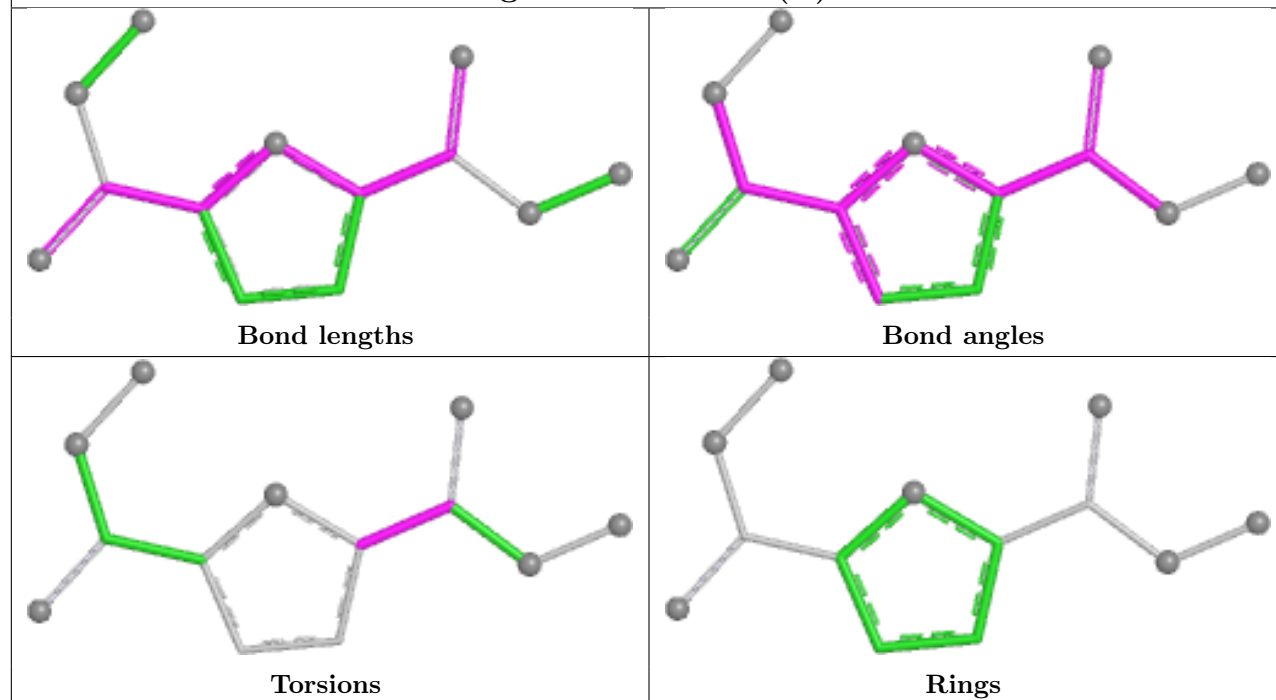
Ligand V9Y I 203 (D)



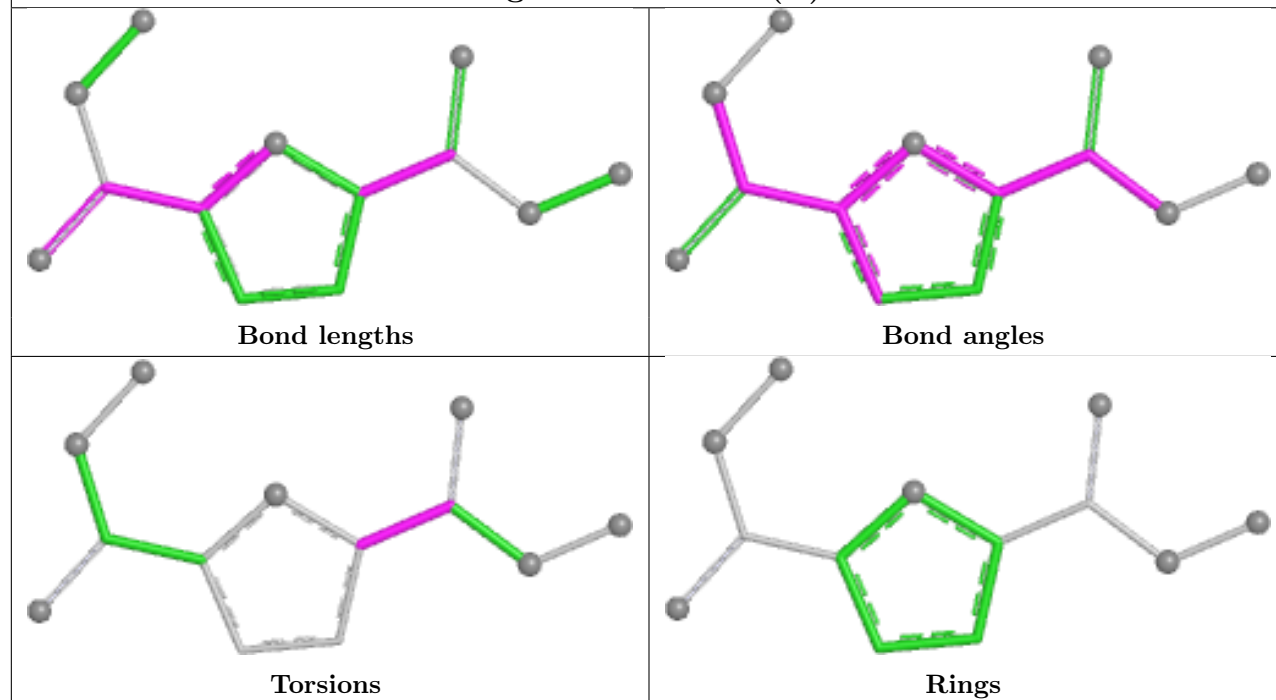
Ligand V9Y X 203 (D)



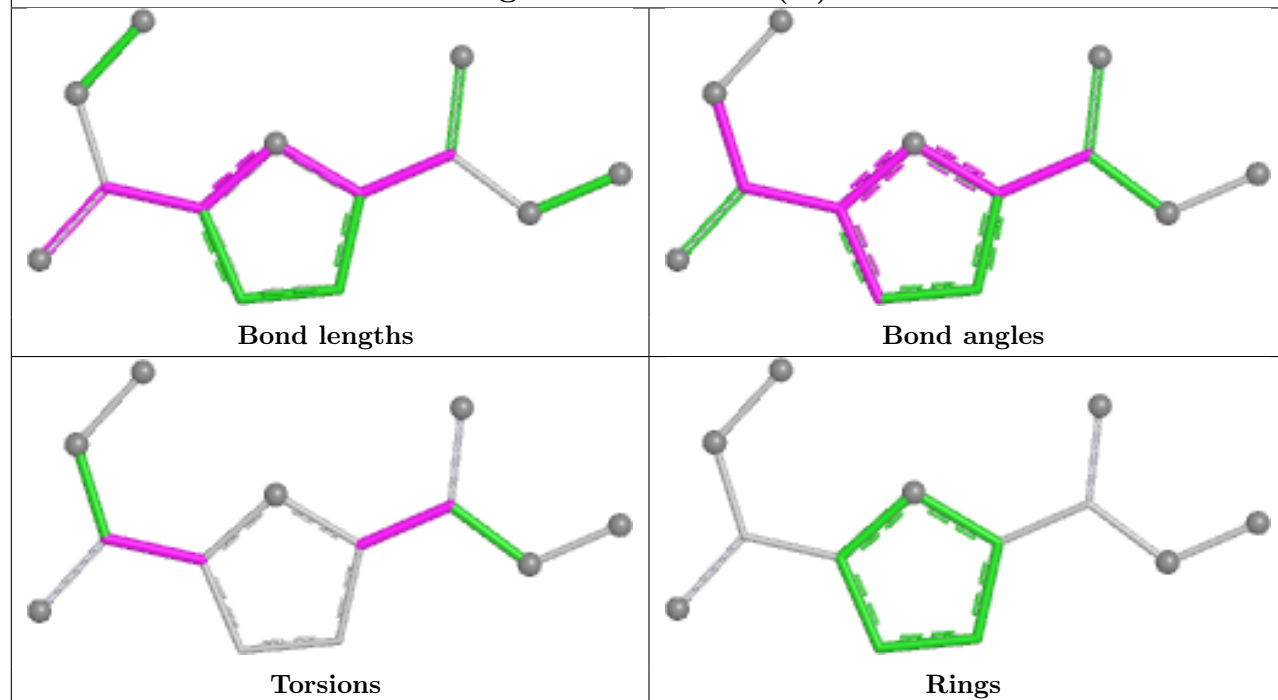
Ligand V9Y R 203 (C)



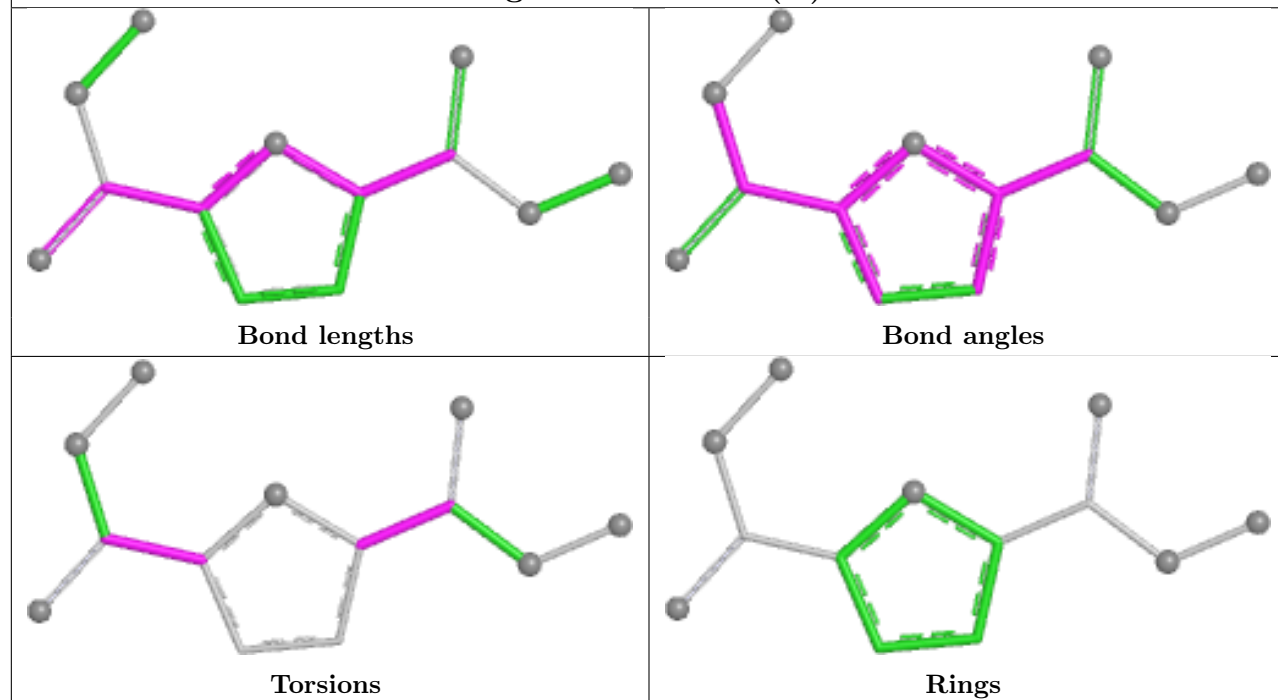
Ligand V9Y t 203 (C)



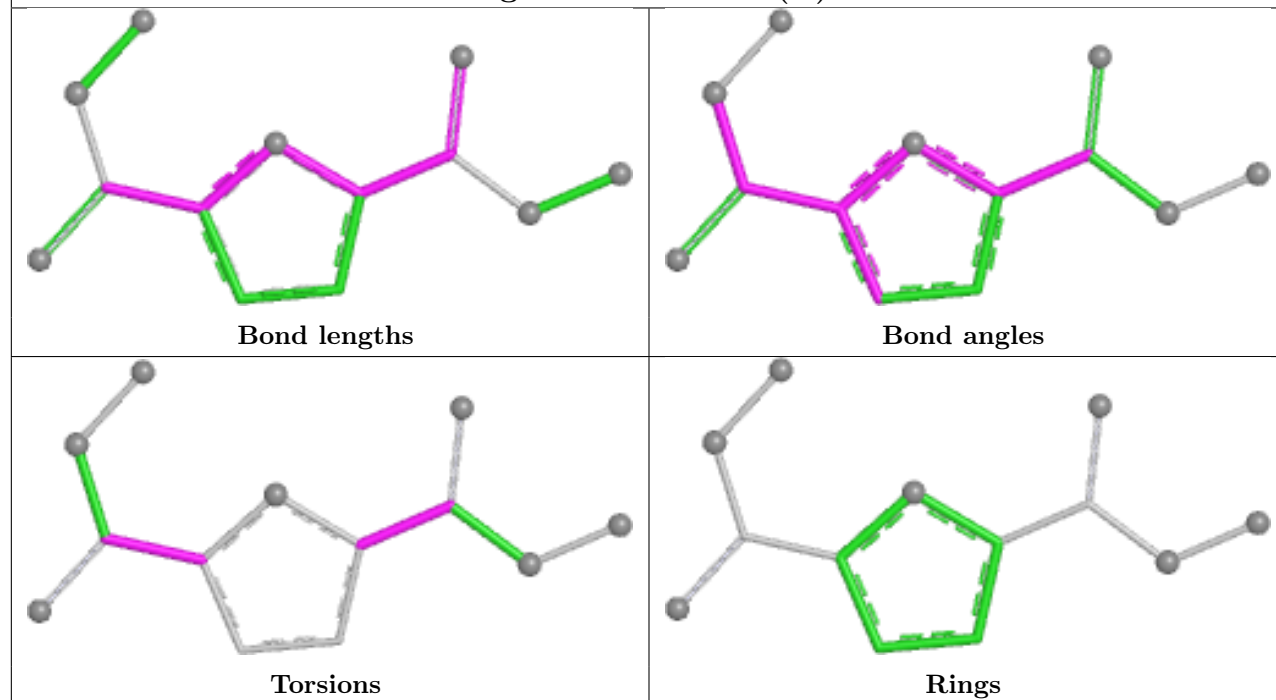
Ligand V9Y R 203 (D)



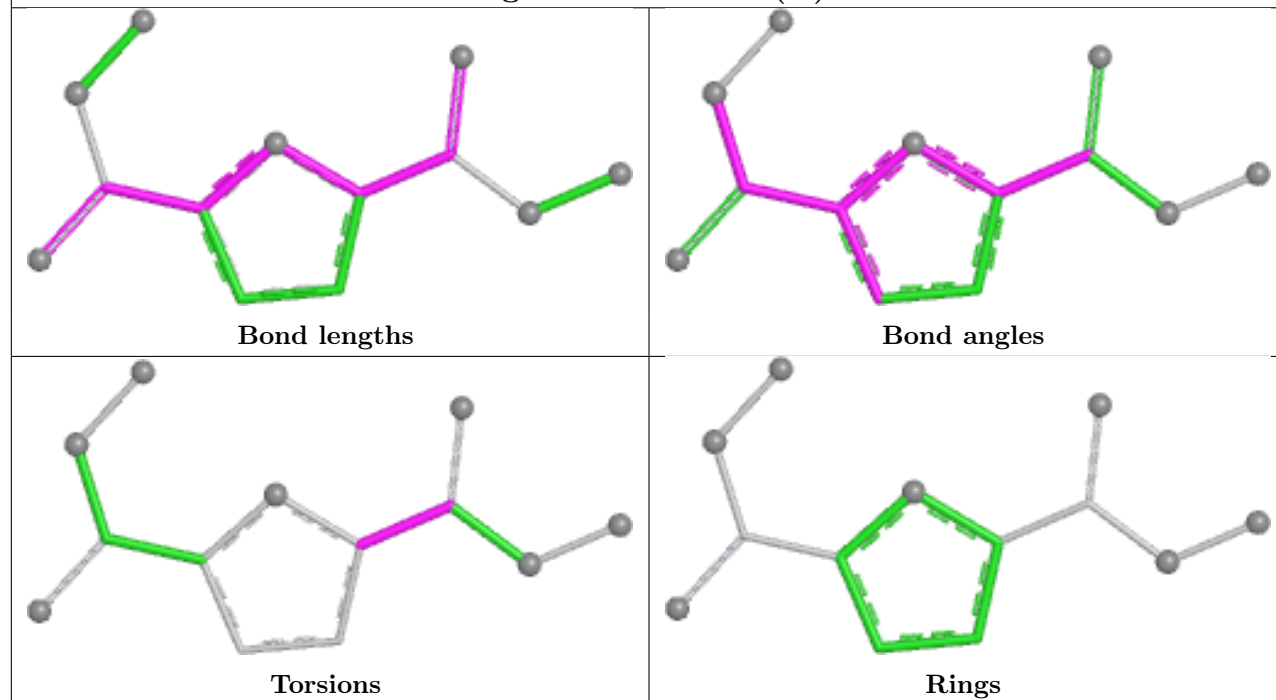
Ligand V9Y t 203 (D)



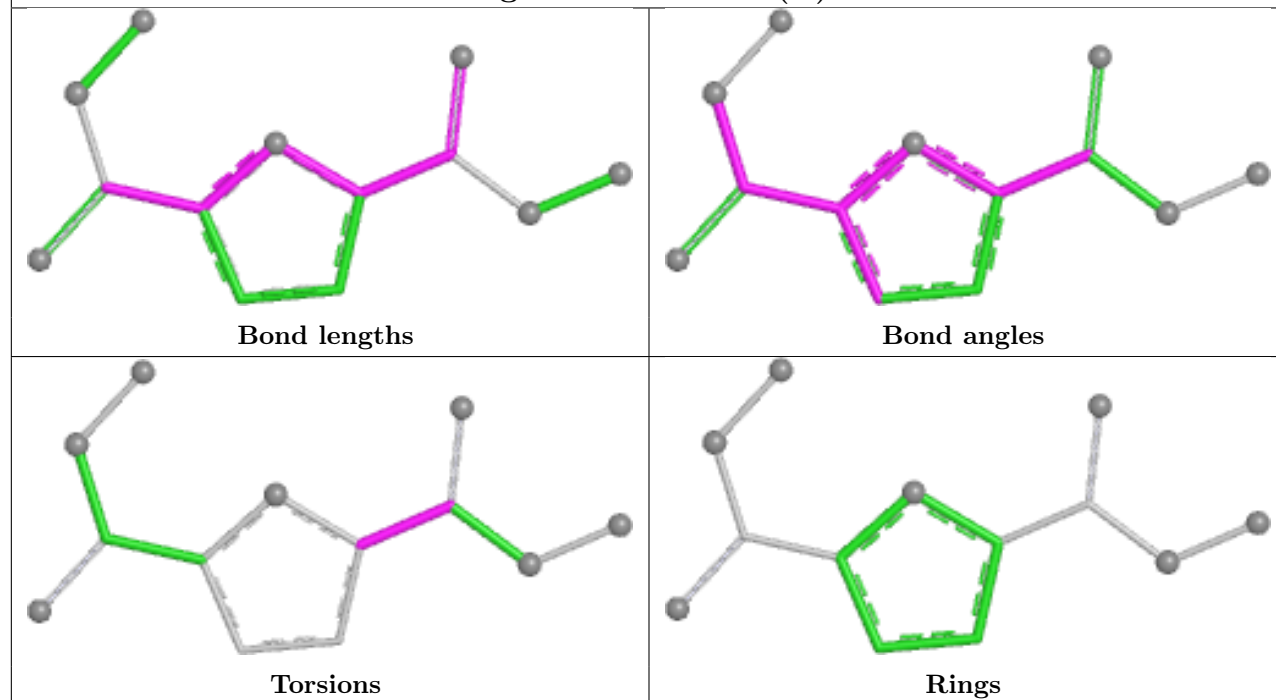
Ligand V9Y X 203 (C)



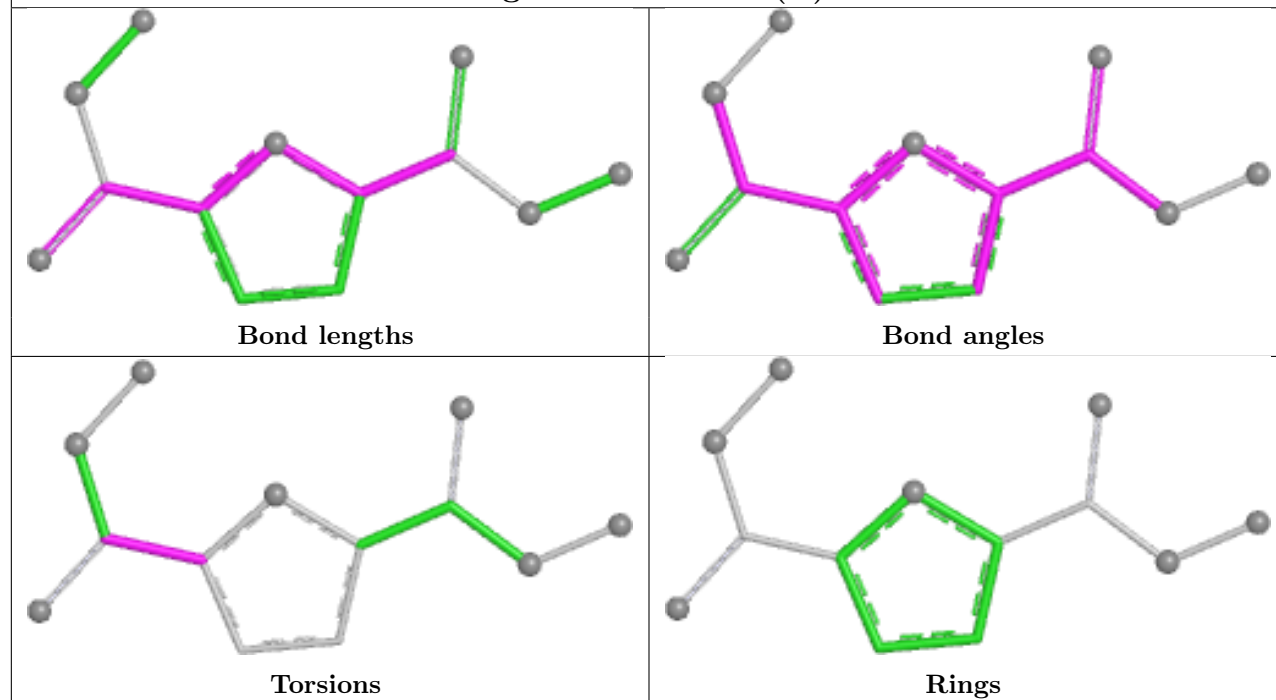
Ligand V9Y L 203 (D)

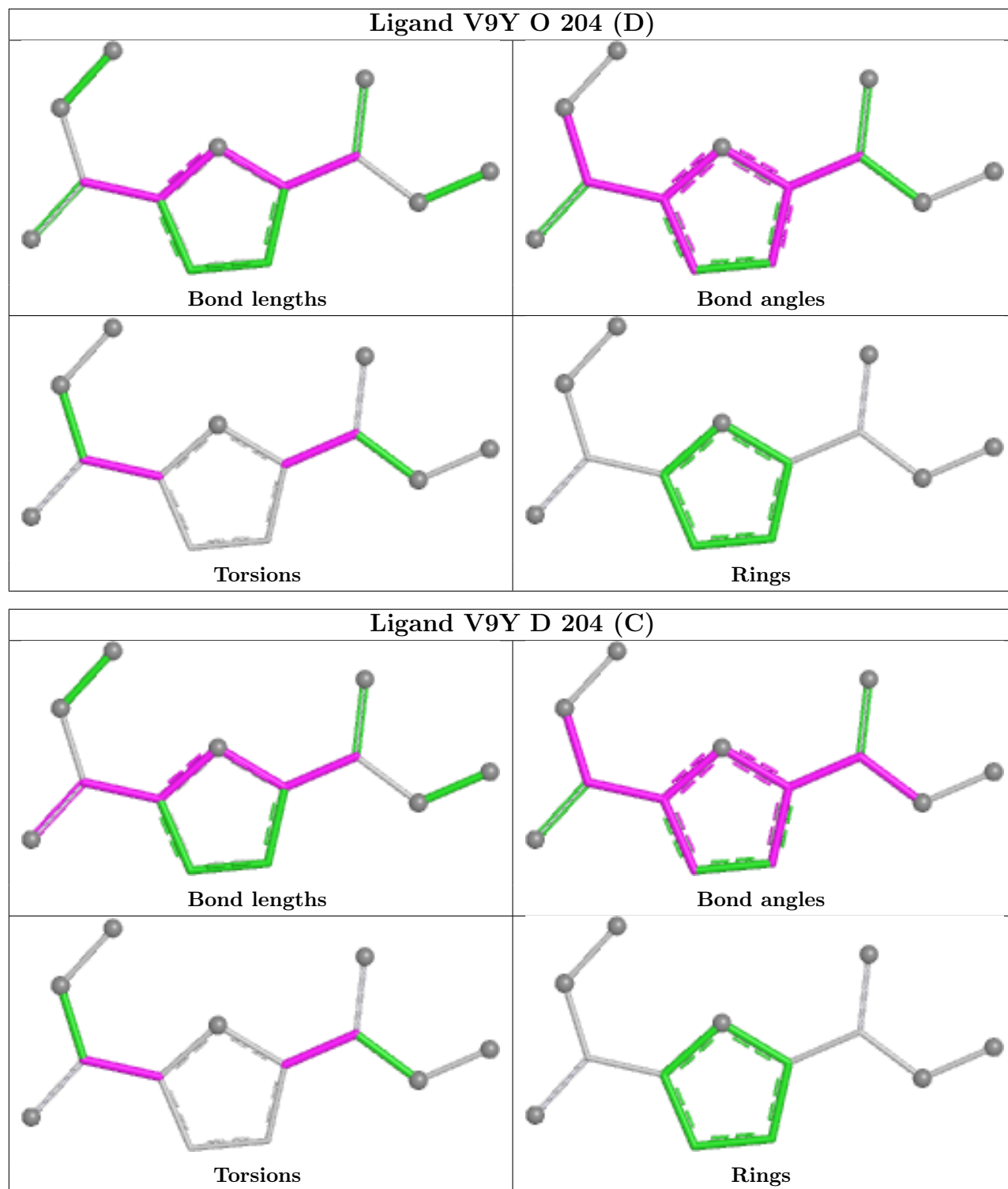


Ligand V9Y O 204 (C)



Ligand V9Y L 203 (C)





5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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	174/182 (95%)	-0.90	0 100 100	22, 31, 48, 75	0
1	B	174/182 (95%)	-0.85	0 100 100	23, 32, 50, 77	0
1	C	174/182 (95%)	-0.88	0 100 100	23, 32, 46, 80	0
1	D	174/182 (95%)	-0.83	0 100 100	26, 36, 53, 85	0
1	E	174/182 (95%)	-0.82	0 100 100	28, 39, 56, 82	0
1	F	174/182 (95%)	-0.80	0 100 100	30, 42, 58, 85	0
1	G	174/182 (95%)	-0.98	0 100 100	24, 37, 54, 75	0
1	H	174/182 (95%)	-0.83	0 100 100	27, 40, 53, 84	0
1	I	174/182 (95%)	-0.79	0 100 100	29, 41, 58, 80	0
1	J	174/182 (95%)	-0.99	0 100 100	23, 30, 46, 66	0
1	K	174/182 (95%)	-0.99	0 100 100	25, 33, 53, 75	0
1	L	174/182 (95%)	-0.94	0 100 100	24, 31, 48, 78	0
1	M	174/182 (95%)	-0.93	0 100 100	23, 31, 46, 77	0
1	N	174/182 (95%)	-1.00	0 100 100	26, 34, 53, 73	0
1	O	174/182 (95%)	-1.00	0 100 100	23, 32, 49, 76	0
1	P	174/182 (95%)	-0.92	0 100 100	26, 38, 55, 75	0
1	Q	174/182 (95%)	-0.89	0 100 100	28, 41, 57, 78	0
1	R	174/182 (95%)	-0.72	0 100 100	31, 42, 61, 88	0
1	S	174/182 (95%)	-0.78	0 100 100	23, 36, 51, 77	0
1	T	174/182 (95%)	-0.74	0 100 100	29, 40, 56, 82	0
1	U	174/182 (95%)	-0.76	0 100 100	32, 42, 60, 80	0
1	V	174/182 (95%)	-0.95	0 100 100	22, 31, 46, 73	0
1	W	174/182 (95%)	-0.83	0 100 100	23, 32, 51, 80	0
1	X	174/182 (95%)	-0.92	0 100 100	21, 31, 46, 83	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	a	174/182 (95%)	-0.60	0 100 100	14, 16, 21, 28	174 (100%)
1	b	174/182 (95%)	-0.52	0 100 100	13, 15, 19, 26	174 (100%)
1	c	174/182 (95%)	-0.55	1 (0%) 85 88	14, 17, 21, 30	174 (100%)
1	d	174/182 (95%)	-0.60	0 100 100	14, 16, 21, 27	174 (100%)
1	e	174/182 (95%)	-0.47	2 (1%) 78 81	14, 17, 21, 27	174 (100%)
1	f	174/182 (95%)	-0.55	0 100 100	13, 16, 21, 31	174 (100%)
1	g	174/182 (95%)	-0.53	0 100 100	13, 16, 20, 26	174 (100%)
1	h	174/182 (95%)	-0.57	2 (1%) 78 81	14, 17, 20, 27	174 (100%)
1	i	174/182 (95%)	-0.64	0 100 100	13, 16, 22, 29	174 (100%)
1	j	174/182 (95%)	-0.53	0 100 100	14, 16, 20, 27	174 (100%)
1	k	174/182 (95%)	-0.57	0 100 100	14, 16, 20, 26	174 (100%)
1	l	174/182 (95%)	-0.58	1 (0%) 85 88	14, 17, 22, 31	174 (100%)
1	m	174/182 (95%)	-0.54	0 100 100	15, 17, 22, 29	174 (100%)
1	n	174/182 (95%)	-0.47	2 (1%) 78 81	15, 17, 21, 26	174 (100%)
1	o	174/182 (95%)	-0.40	0 100 100	14, 17, 21, 26	174 (100%)
1	p	174/182 (95%)	-0.45	0 100 100	15, 17, 23, 35	174 (100%)
1	q	174/182 (95%)	-0.46	0 100 100	14, 17, 20, 27	174 (100%)
1	r	174/182 (95%)	-0.40	1 (0%) 85 88	15, 17, 21, 28	174 (100%)
1	s	174/182 (95%)	-0.43	2 (1%) 78 81	13, 16, 20, 27	174 (100%)
1	t	174/182 (95%)	-0.41	1 (0%) 85 88	14, 16, 21, 26	174 (100%)
1	u	174/182 (95%)	-0.45	2 (1%) 78 81	14, 17, 22, 27	174 (100%)
1	v	174/182 (95%)	-0.54	1 (0%) 85 88	14, 17, 22, 28	174 (100%)
1	w	174/182 (95%)	-0.45	1 (0%) 85 88	14, 16, 20, 26	174 (100%)
1	x	174/182 (95%)	-0.48	0 100 100	13, 15, 20, 27	174 (100%)
All	All	8352/8736 (95%)	-0.69	16 (0%) 91 92	13, 25, 49, 88	4176 (50%)

The worst 5 of 16 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	h	177[C]	ASP	2.6
1	h	148[C]	LEU	2.5
1	u	177[C]	ASP	2.4
1	w	177[C]	ASP	2.4
1	s	152[C]	VAL	2.4

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($\text{\AA}^2$)	Q<0.9
3	NA	a	204[C]	1/1	0.97	0.06	34,34,34,34	1
3	NA	a	204[D]	1/1	0.97	0.06	31,31,31,31	1
4	V9Y	A	205[C]	13/13	0.97	0.08	41,46,60,61	13
4	V9Y	A	205[D]	13/13	0.97	0.08	43,49,60,61	13
2	ZN	W	203	1/1	0.98	0.04	38,38,38,38	1
2	ZN	u	202[C]	1/1	0.98	0.05	40,40,40,40	1
2	ZN	u	202[D]	1/1	0.98	0.05	35,35,35,35	1
3	NA	J	203	1/1	0.98	0.05	32,32,32,32	0
2	ZN	D	201	1/1	0.98	0.03	34,34,34,34	0
2	ZN	D	202	1/1	0.98	0.04	35,35,35,35	1
2	ZN	F	203	1/1	0.98	0.10	76,76,76,76	1
2	ZN	R	202	1/1	0.98	0.03	45,45,45,45	1
4	V9Y	D	204[C]	13/13	0.98	0.07	49,57,65,67	13
4	V9Y	D	204[D]	13/13	0.98	0.07	45,49,64,66	13
4	V9Y	I	203[C]	13/13	0.98	0.06	48,53,66,66	13
4	V9Y	I	203[D]	13/13	0.98	0.06	44,51,64,66	13
4	V9Y	L	203[C]	13/13	0.98	0.08	42,46,67,68	13
4	V9Y	L	203[D]	13/13	0.98	0.08	43,50,67,68	13
4	V9Y	X	203[C]	13/13	0.98	0.05	40,47,57,58	13
4	V9Y	X	203[D]	13/13	0.98	0.05	34,45,57,58	13
4	V9Y	t	203[C]	13/13	0.98	0.07	43,46,65,67	13
4	V9Y	t	203[D]	13/13	0.98	0.07	51,56,67,68	13
2	ZN	S	201	1/1	0.99	0.02	33,33,33,33	0
2	ZN	S	202	1/1	0.99	0.02	35,35,35,35	1
2	ZN	T	203	1/1	0.99	0.02	41,41,41,41	1
2	ZN	U	202	1/1	0.99	0.03	44,44,44,44	1
2	ZN	V	201	1/1	0.99	0.02	33,33,33,33	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	ZN	W	201	1/1	0.99	0.02	35,35,35,35	0
2	ZN	A	202	1/1	0.99	0.08	48,48,48,48	1
2	ZN	b	201[C]	1/1	0.99	0.03	30,30,30,30	1
2	ZN	b	201[D]	1/1	0.99	0.03	31,31,31,31	1
2	ZN	b	202[C]	1/1	0.99	0.03	28,28,28,28	1
2	ZN	b	202[D]	1/1	0.99	0.03	35,35,35,35	1
2	ZN	d	201[C]	1/1	0.99	0.03	34,34,34,34	1
2	ZN	d	201[D]	1/1	0.99	0.03	40,40,40,40	1
2	ZN	d	203[C]	1/1	0.99	0.09	56,56,56,56	1
2	ZN	d	203[D]	1/1	0.99	0.09	52,52,52,52	1
2	ZN	e	201[C]	1/1	0.99	0.04	29,29,29,29	1
2	ZN	e	201[D]	1/1	0.99	0.04	34,34,34,34	1
2	ZN	e	202[C]	1/1	0.99	0.05	43,43,43,43	1
2	ZN	e	202[D]	1/1	0.99	0.05	50,50,50,50	1
2	ZN	e	203[C]	1/1	0.99	0.03	38,38,38,38	1
2	ZN	e	203[D]	1/1	0.99	0.03	36,36,36,36	1
2	ZN	f	202[C]	1/1	0.99	0.06	38,38,38,38	1
2	ZN	f	202[D]	1/1	0.99	0.06	45,45,45,45	1
2	ZN	h	201[C]	1/1	0.99	0.04	34,34,34,34	1
2	ZN	h	201[D]	1/1	0.99	0.04	36,36,36,36	1
2	ZN	j	202[C]	1/1	0.99	0.04	33,33,33,33	1
2	ZN	j	202[D]	1/1	0.99	0.04	34,34,34,34	1
2	ZN	k	202[C]	1/1	0.99	0.02	34,34,34,34	1
2	ZN	k	202[D]	1/1	0.99	0.02	33,33,33,33	1
2	ZN	m	201[C]	1/1	0.99	0.02	40,40,40,40	1
2	ZN	m	201[D]	1/1	0.99	0.02	33,33,33,33	1
2	ZN	n	201[C]	1/1	0.99	0.03	37,37,37,37	1
2	ZN	n	201[D]	1/1	0.99	0.03	32,32,32,32	1
2	ZN	o	202[C]	1/1	0.99	0.04	38,38,38,38	1
2	ZN	o	202[D]	1/1	0.99	0.04	34,34,34,34	1
2	ZN	p	201[C]	1/1	0.99	0.02	32,32,32,32	1
2	ZN	p	201[D]	1/1	0.99	0.02	32,32,32,32	1
2	ZN	q	201[C]	1/1	0.99	0.02	36,36,36,36	1
2	ZN	q	201[D]	1/1	0.99	0.02	32,32,32,32	1
2	ZN	s	203[C]	1/1	0.99	0.02	31,31,31,31	1
2	ZN	s	203[D]	1/1	0.99	0.02	32,32,32,32	1
2	ZN	t	201[C]	1/1	0.99	0.02	35,35,35,35	1
2	ZN	t	201[D]	1/1	0.99	0.02	34,34,34,34	1
2	ZN	t	202[C]	1/1	0.99	0.03	35,35,35,35	1
2	ZN	t	202[D]	1/1	0.99	0.03	31,31,31,31	1
2	ZN	B	203	1/1	0.99	0.02	34,34,34,34	1
2	ZN	E	202	1/1	0.99	0.05	79,79,79,79	1

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	ZN	v	202[C]	1/1	0.99	0.11	44,44,44,44	1
2	ZN	v	202[D]	1/1	0.99	0.11	44,44,44,44	1
2	ZN	w	201[C]	1/1	0.99	0.04	35,35,35,35	1
2	ZN	w	201[D]	1/1	0.99	0.04	31,31,31,31	1
2	ZN	w	203[C]	1/1	0.99	0.10	44,44,44,44	1
2	ZN	w	203[D]	1/1	0.99	0.10	50,50,50,50	1
2	ZN	w	204[C]	1/1	0.99	0.02	32,32,32,32	1
2	ZN	w	204[D]	1/1	0.99	0.02	37,37,37,37	1
2	ZN	x	202[C]	1/1	0.99	0.13	52,52,52,52	1
2	ZN	x	202[D]	1/1	0.99	0.13	51,51,51,51	1
3	NA	A	204	1/1	0.99	0.04	33,33,33,33	0
3	NA	D	203	1/1	0.99	0.07	48,48,48,48	0
3	NA	G	204	1/1	0.99	0.06	46,46,46,46	0
2	ZN	E	203	1/1	0.99	0.02	40,40,40,40	1
3	NA	M	203	1/1	0.99	0.03	28,28,28,28	0
3	NA	V	203	1/1	0.99	0.04	32,32,32,32	0
2	ZN	C	201	1/1	0.99	0.02	36,36,36,36	0
2	ZN	F	204	1/1	0.99	0.02	45,45,45,45	1
3	NA	d	205[C]	1/1	0.99	0.03	31,31,31,31	1
3	NA	d	205[D]	1/1	0.99	0.03	36,36,36,36	1
3	NA	p	204[C]	1/1	0.99	0.03	36,36,36,36	1
3	NA	p	204[D]	1/1	0.99	0.03	33,33,33,33	1
3	NA	s	204[C]	1/1	0.99	0.02	33,33,33,33	1
3	NA	s	204[D]	1/1	0.99	0.02	27,27,27,27	1
2	ZN	G	203	1/1	0.99	0.02	39,39,39,39	1
2	ZN	H	202	1/1	0.99	0.08	70,70,70,70	1
2	ZN	I	202	1/1	0.99	0.03	44,44,44,44	1
2	ZN	J	201	1/1	0.99	0.02	32,32,32,32	0
2	ZN	J	202	1/1	0.99	0.02	34,34,34,34	1
2	ZN	L	202	1/1	0.99	0.02	30,30,30,30	1
2	ZN	M	202	1/1	0.99	0.03	35,35,35,35	1
2	ZN	N	203	1/1	0.99	0.02	37,37,37,37	1
4	V9Y	O	204[C]	13/13	0.99	0.05	45,50,63,63	13
4	V9Y	O	204[D]	13/13	0.99	0.05	43,53,63,63	13
4	V9Y	R	203[C]	13/13	0.99	0.04	45,56,70,70	13
4	V9Y	R	203[D]	13/13	0.99	0.04	47,58,70,71	13
2	ZN	O	202	1/1	0.99	0.07	71,71,71,71	1
2	ZN	P	203	1/1	0.99	0.02	39,39,39,39	1
2	ZN	R	201	1/1	0.99	0.02	43,43,43,43	0
2	ZN	C	203	1/1	0.99	0.02	30,30,30,30	1
2	ZN	i	202[D]	1/1	1.00	0.01	36,36,36,36	1
2	ZN	j	201[C]	1/1	1.00	0.01	31,31,31,31	1

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	ZN	j	201[D]	1/1	1.00	0.01	39,39,39,39	1
2	ZN	H	201	1/1	1.00	0.02	43,43,43,43	0
2	ZN	E	201	1/1	1.00	0.02	44,44,44,44	0
2	ZN	k	201[C]	1/1	1.00	0.02	31,31,31,31	1
2	ZN	k	201[D]	1/1	1.00	0.02	37,37,37,37	1
2	ZN	H	203	1/1	1.00	0.02	37,37,37,37	1
2	ZN	T	201	1/1	1.00	0.02	42,42,42,42	0
2	ZN	l	201[C]	1/1	1.00	0.02	26,26,26,26	1
2	ZN	l	201[D]	1/1	1.00	0.02	34,34,34,34	1
2	ZN	l	202[C]	1/1	1.00	0.02	36,36,36,36	1
2	ZN	l	202[D]	1/1	1.00	0.02	47,47,47,47	1
2	ZN	l	203[C]	1/1	1.00	0.04	32,32,32,32	1
2	ZN	l	203[D]	1/1	1.00	0.04	30,30,30,30	1
2	ZN	T	202	1/1	1.00	0.01	54,54,54,54	0
2	ZN	I	201	1/1	1.00	0.02	43,43,43,43	0
2	ZN	m	202[C]	1/1	1.00	0.02	30,30,30,30	1
2	ZN	m	202[D]	1/1	1.00	0.02	30,30,30,30	1
2	ZN	U	201	1/1	1.00	0.02	43,43,43,43	0
2	ZN	A	203	1/1	1.00	0.02	33,33,33,33	1
2	ZN	n	202[C]	1/1	1.00	0.01	46,46,46,46	1
2	ZN	n	202[D]	1/1	1.00	0.01	48,48,48,48	1
2	ZN	n	203[C]	1/1	1.00	0.01	33,33,33,33	1
2	ZN	n	203[D]	1/1	1.00	0.01	31,31,31,31	1
2	ZN	o	201[C]	1/1	1.00	0.01	32,32,32,32	1
2	ZN	o	201[D]	1/1	1.00	0.01	33,33,33,33	1
2	ZN	C	202	1/1	1.00	0.05	71,71,71,71	1
2	ZN	V	202	1/1	1.00	0.02	31,31,31,31	1
2	ZN	F	201	1/1	1.00	0.01	45,45,45,45	0
2	ZN	W	202	1/1	1.00	0.01	40,40,40,40	0
2	ZN	p	202[C]	1/1	1.00	0.01	51,51,51,51	1
2	ZN	p	202[D]	1/1	1.00	0.01	39,39,39,39	1
2	ZN	p	203[C]	1/1	1.00	0.02	32,32,32,32	1
2	ZN	p	203[D]	1/1	1.00	0.02	31,31,31,31	1
2	ZN	K	201	1/1	1.00	0.01	33,33,33,33	0
2	ZN	X	201	1/1	1.00	0.01	34,34,34,34	0
2	ZN	q	202[C]	1/1	1.00	0.01	35,35,35,35	1
2	ZN	q	202[D]	1/1	1.00	0.01	37,37,37,37	1
2	ZN	r	201[C]	1/1	1.00	0.03	31,31,31,31	1
2	ZN	r	201[D]	1/1	1.00	0.03	34,34,34,34	1
2	ZN	r	202[C]	1/1	1.00	0.02	34,34,34,34	1
2	ZN	r	202[D]	1/1	1.00	0.02	40,40,40,40	1
2	ZN	s	201[C]	1/1	1.00	0.02	28,28,28,28	1

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	ZN	s	201[D]	1/1	1.00	0.02	33,33,33,33	1
2	ZN	s	202[C]	1/1	1.00	0.01	40,40,40,40	1
2	ZN	s	202[D]	1/1	1.00	0.01	44,44,44,44	1
2	ZN	X	202	1/1	1.00	0.02	36,36,36,36	1
2	ZN	a	201[C]	1/1	1.00	0.01	30,30,30,30	1
2	ZN	a	201[D]	1/1	1.00	0.01	34,34,34,34	1
2	ZN	a	202[C]	1/1	1.00	0.03	42,42,42,42	1
2	ZN	a	202[D]	1/1	1.00	0.03	50,50,50,50	1
2	ZN	a	203[C]	1/1	1.00	0.04	33,33,33,33	1
2	ZN	u	201[C]	1/1	1.00	0.02	37,37,37,37	1
2	ZN	u	201[D]	1/1	1.00	0.02	34,34,34,34	1
2	ZN	a	203[D]	1/1	1.00	0.04	34,34,34,34	1
2	ZN	K	202	1/1	1.00	0.01	42,42,42,42	0
2	ZN	v	201[C]	1/1	1.00	0.02	38,38,38,38	1
2	ZN	v	201[D]	1/1	1.00	0.02	33,33,33,33	1
2	ZN	K	203	1/1	1.00	0.03	36,36,36,36	1
2	ZN	L	201	1/1	1.00	0.02	31,31,31,31	0
2	ZN	v	203[C]	1/1	1.00	0.04	33,33,33,33	1
2	ZN	v	203[D]	1/1	1.00	0.04	35,35,35,35	1
2	ZN	F	202	1/1	1.00	0.01	45,45,45,45	0
2	ZN	c	201[C]	1/1	1.00	0.01	30,30,30,30	1
2	ZN	w	202[C]	1/1	1.00	0.02	42,42,42,42	1
2	ZN	w	202[D]	1/1	1.00	0.02	38,38,38,38	1
2	ZN	c	201[D]	1/1	1.00	0.01	38,38,38,38	1
2	ZN	c	202[C]	1/1	1.00	0.02	30,30,30,30	1
2	ZN	c	202[D]	1/1	1.00	0.02	27,27,27,27	1
2	ZN	M	201	1/1	1.00	0.03	42,42,42,42	0
2	ZN	x	201[C]	1/1	1.00	0.02	35,35,35,35	1
2	ZN	x	201[D]	1/1	1.00	0.02	30,30,30,30	1
2	ZN	B	201	1/1	1.00	0.01	33,33,33,33	0
2	ZN	d	202[C]	1/1	1.00	0.03	38,38,38,38	1
2	ZN	x	203[C]	1/1	1.00	0.04	39,39,39,39	1
2	ZN	x	203[D]	1/1	1.00	0.04	30,30,30,30	1
2	ZN	d	202[D]	1/1	1.00	0.03	50,50,50,50	1
2	ZN	N	201	1/1	1.00	0.03	34,34,34,34	0
2	ZN	N	202	1/1	1.00	0.01	41,41,41,41	0
2	ZN	d	204[C]	1/1	1.00	0.03	37,37,37,37	1
2	ZN	d	204[D]	1/1	1.00	0.03	36,36,36,36	1
3	NA	P	204	1/1	1.00	0.02	45,45,45,45	0
3	NA	S	203	1/1	1.00	0.04	45,45,45,45	0
2	ZN	B	202	1/1	1.00	0.01	44,44,44,44	0
2	ZN	O	201	1/1	1.00	0.02	30,30,30,30	0

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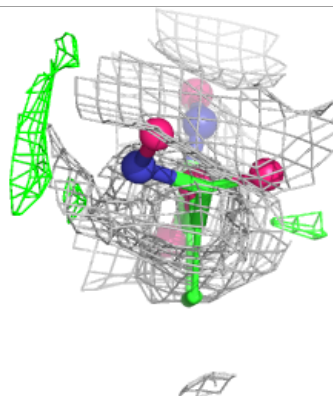
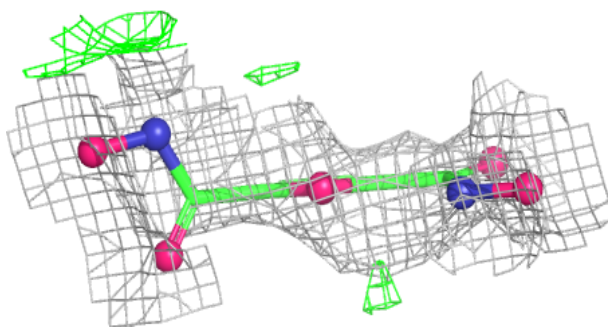
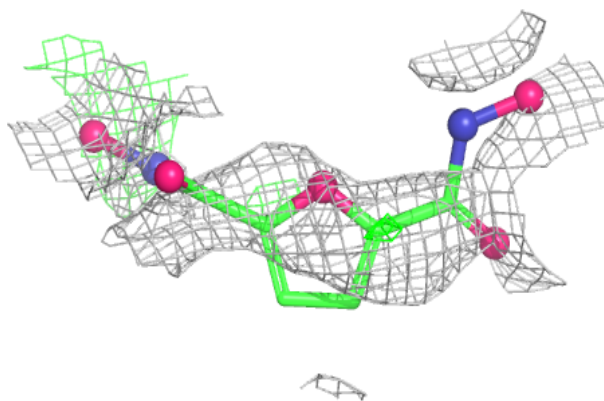
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	ZN	G	201	1/1	1.00	0.01	34,34,34,34	0
2	ZN	O	203	1/1	1.00	0.02	33,33,33,33	1
2	ZN	P	201	1/1	1.00	0.02	38,38,38,38	0
3	NA	g	204[C]	1/1	1.00	0.04	28,28,28,28	1
3	NA	g	204[D]	1/1	1.00	0.04	32,32,32,32	1
3	NA	j	203[C]	1/1	1.00	0.04	28,28,28,28	1
3	NA	j	203[D]	1/1	1.00	0.04	33,33,33,33	1
3	NA	n	204[C]	1/1	1.00	0.02	36,36,36,36	1
3	NA	n	204[D]	1/1	1.00	0.02	36,36,36,36	1
2	ZN	P	202	1/1	1.00	0.01	55,55,55,55	0
2	ZN	f	201[C]	1/1	1.00	0.03	26,26,26,26	1
2	ZN	f	201[D]	1/1	1.00	0.03	38,38,38,38	1
2	ZN	G	202	1/1	1.00	0.02	49,49,49,49	0
3	NA	x	204[C]	1/1	1.00	0.03	31,31,31,31	1
3	NA	x	204[D]	1/1	1.00	0.03	33,33,33,33	1
2	ZN	Q	201	1/1	1.00	0.01	42,42,42,42	0
2	ZN	f	203[C]	1/1	1.00	0.02	26,26,26,26	1
2	ZN	f	203[D]	1/1	1.00	0.02	42,42,42,42	1
2	ZN	g	201[C]	1/1	1.00	0.01	27,27,27,27	1
2	ZN	g	201[D]	1/1	1.00	0.01	36,36,36,36	1
2	ZN	g	202[C]	1/1	1.00	0.04	42,42,42,42	1
2	ZN	g	202[D]	1/1	1.00	0.04	48,48,48,48	1
2	ZN	g	203[C]	1/1	1.00	0.03	32,32,32,32	1
2	ZN	g	203[D]	1/1	1.00	0.03	40,40,40,40	1
2	ZN	Q	202	1/1	1.00	0.02	38,38,38,38	1
2	ZN	A	201	1/1	1.00	0.01	35,35,35,35	0
2	ZN	h	202[C]	1/1	1.00	0.02	37,37,37,37	1
2	ZN	h	202[D]	1/1	1.00	0.02	43,43,43,43	1
2	ZN	i	201[C]	1/1	1.00	0.02	29,29,29,29	1
2	ZN	i	201[D]	1/1	1.00	0.02	34,34,34,34	1
2	ZN	i	202[C]	1/1	1.00	0.01	29,29,29,29	1

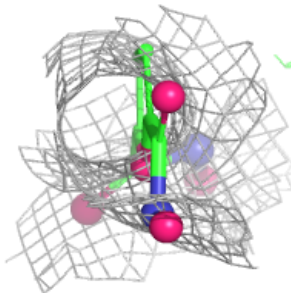
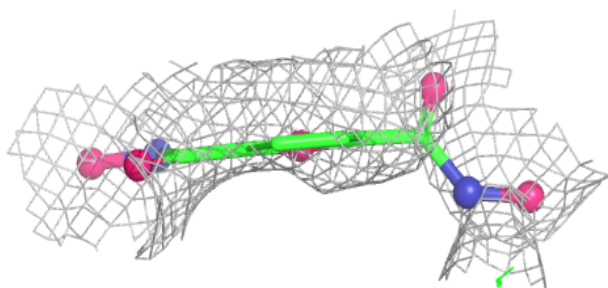
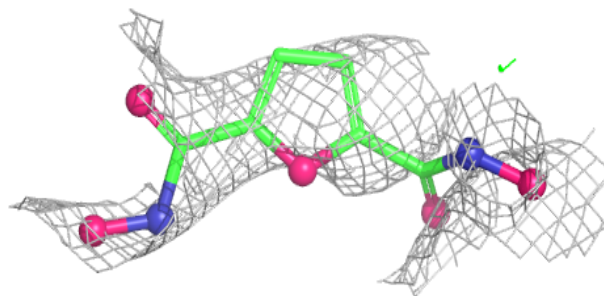
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around V9Y A 205 (C):

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

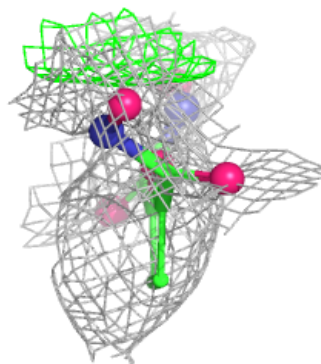
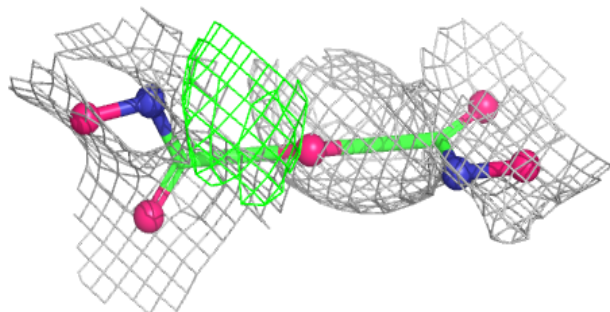
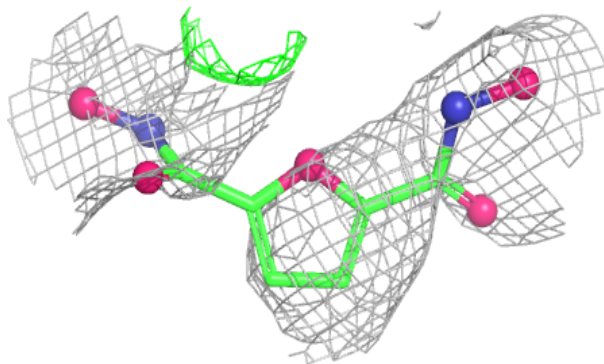
**Electron density around V9Y A 205 (D):**

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

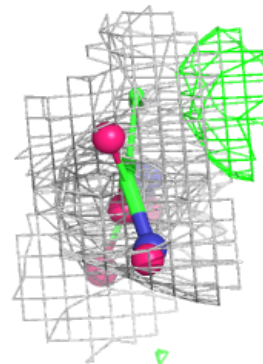
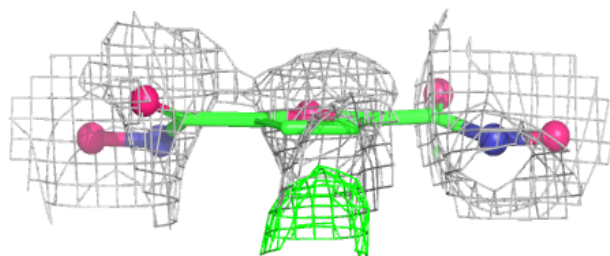
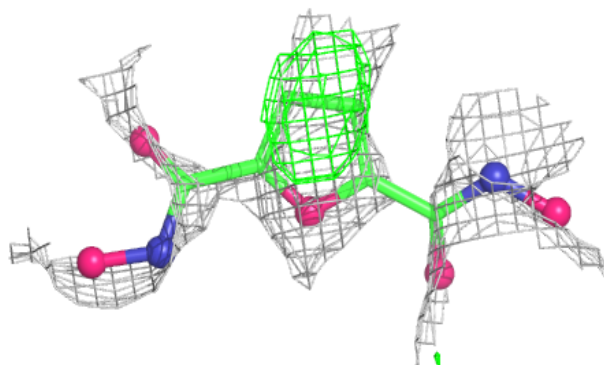


Electron density around V9Y D 204 (C):

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

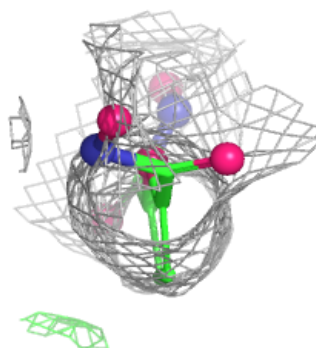
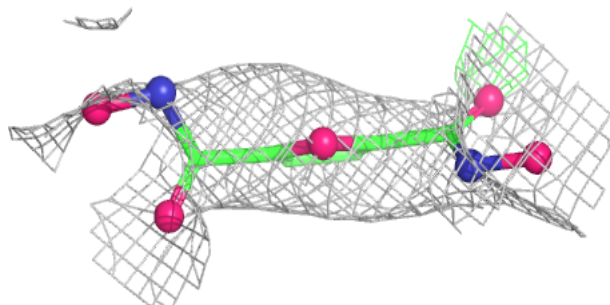
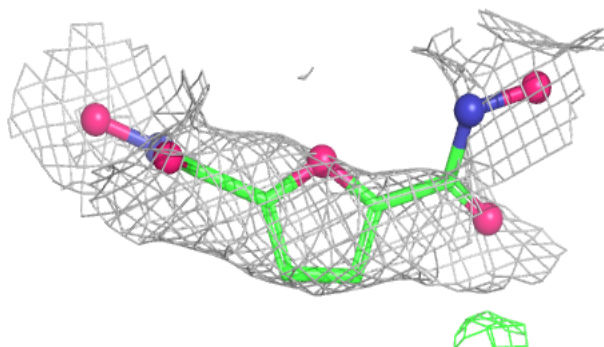
**Electron density around V9Y D 204 (D):**

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

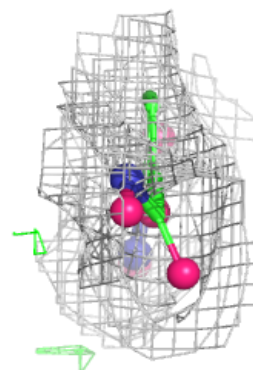
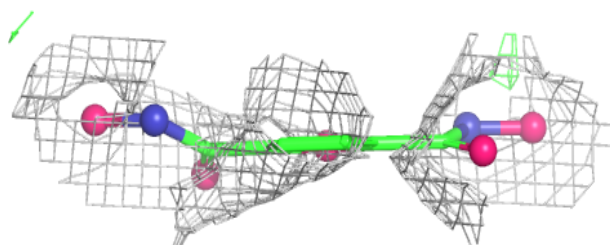
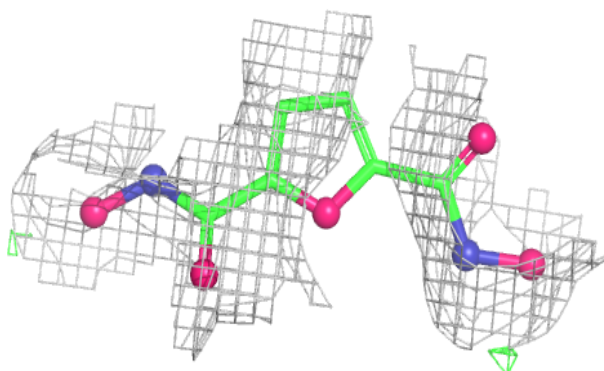


Electron density around V9Y I 203 (C):

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

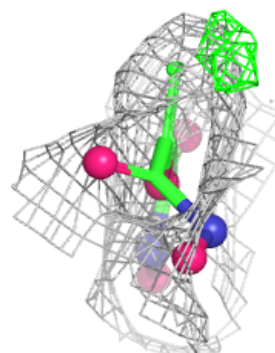
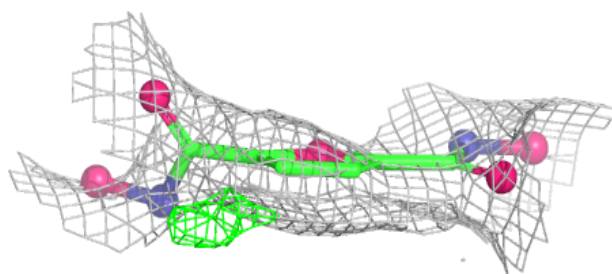
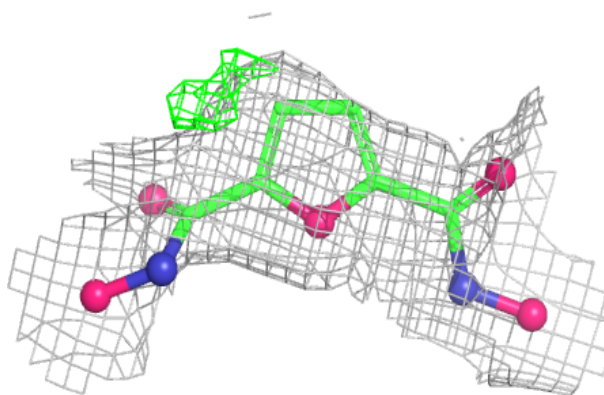
**Electron density around V9Y I 203 (D):**

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

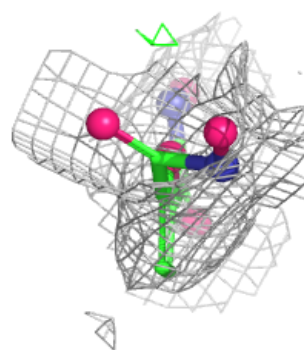
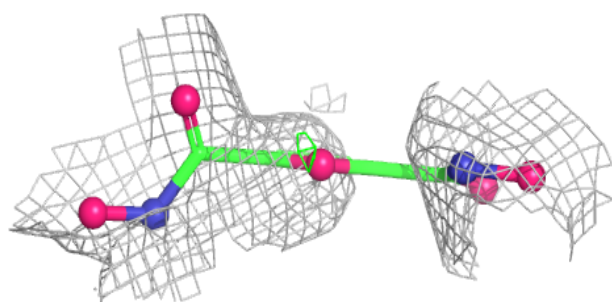
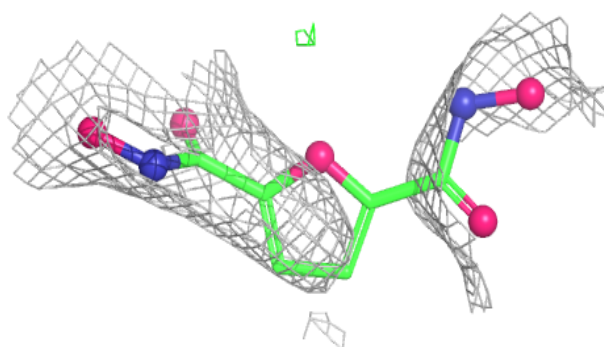


Electron density around V9Y L 203 (C):

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

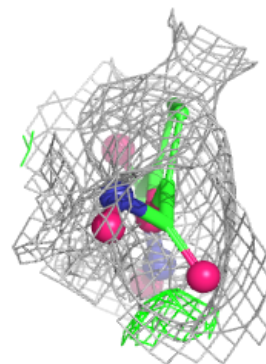
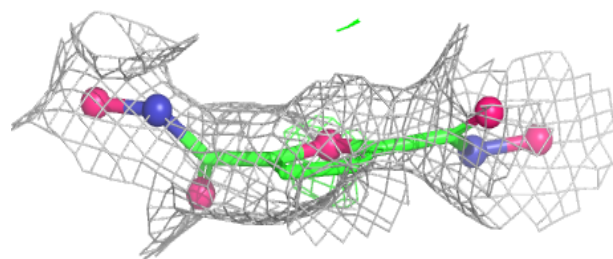
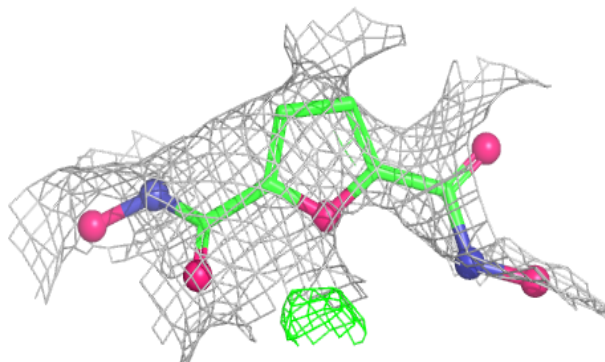
**Electron density around V9Y L 203 (D):**

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

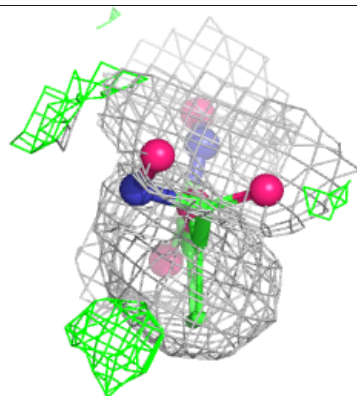
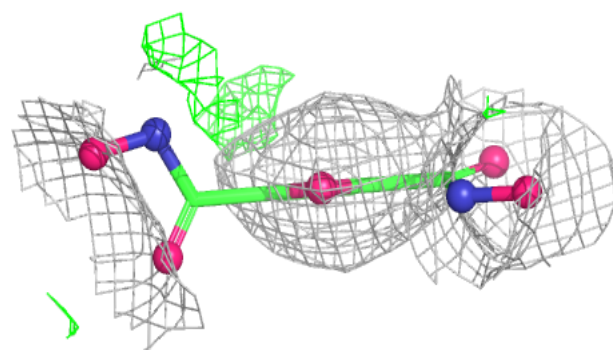
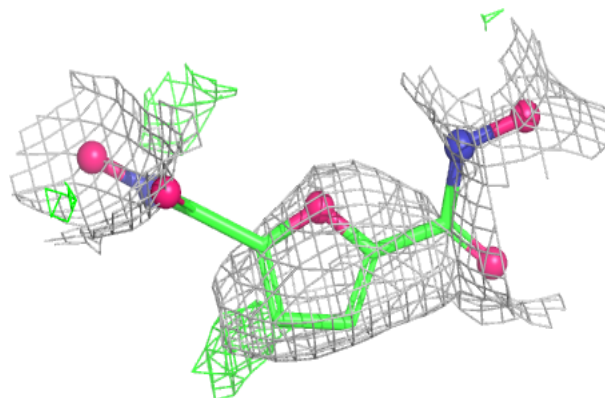


Electron density around V9Y X 203 (C):

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

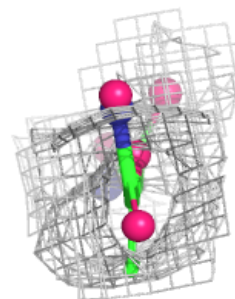
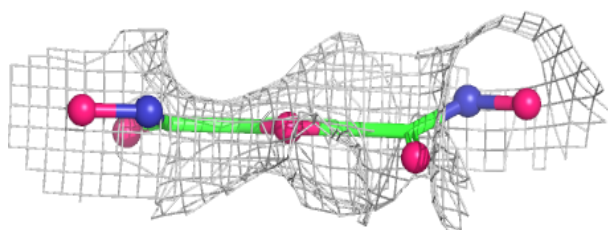
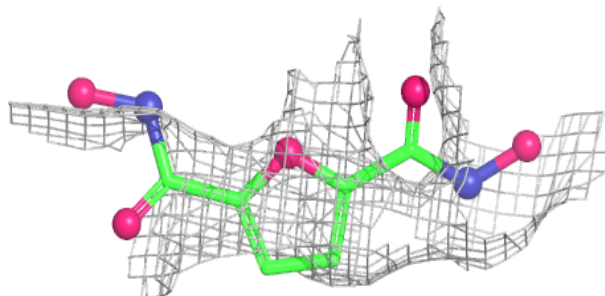
**Electron density around V9Y X 203 (D):**

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

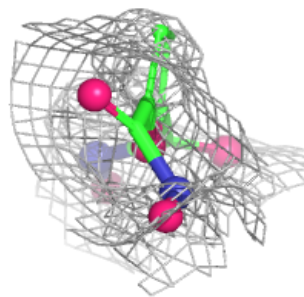
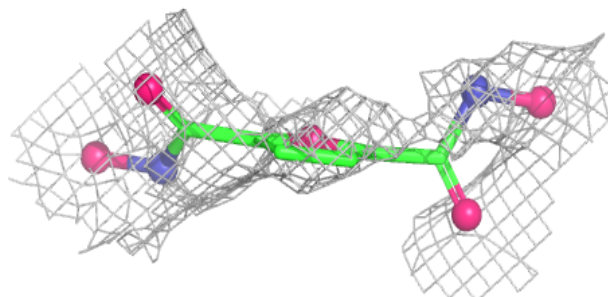
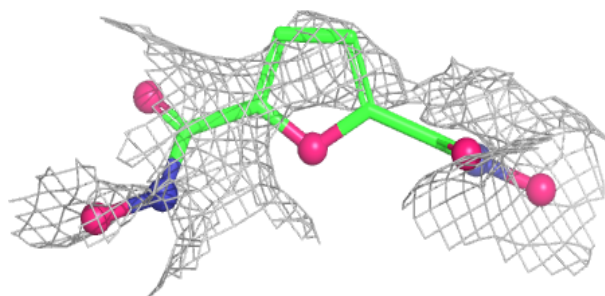


Electron density around V9Y t 203 (C):

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

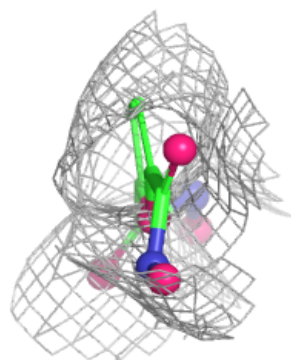
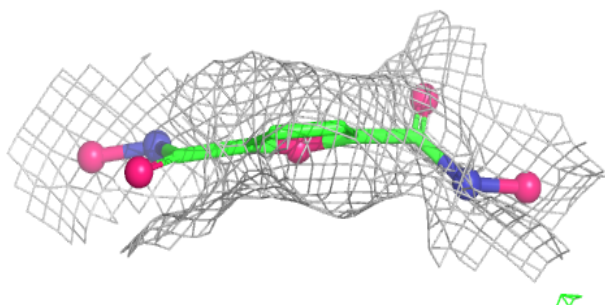
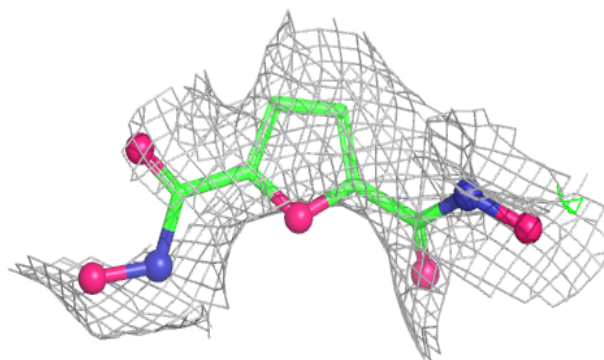
**Electron density around V9Y t 203 (D):**

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

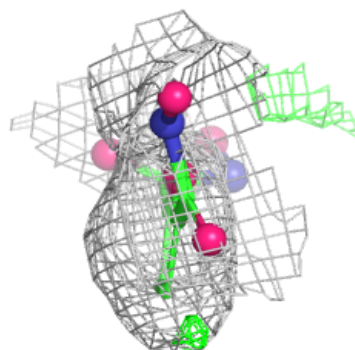
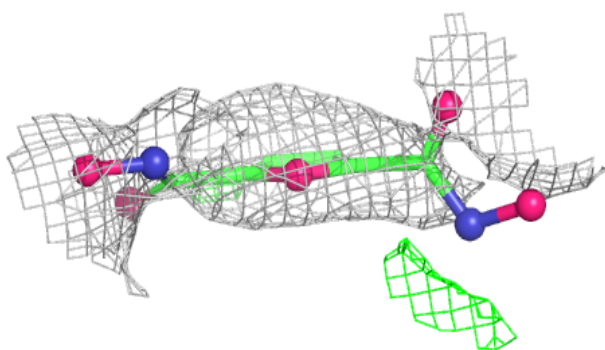


Electron density around V9Y O 204 (C):

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

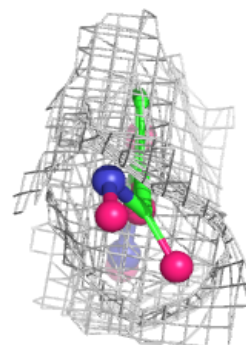
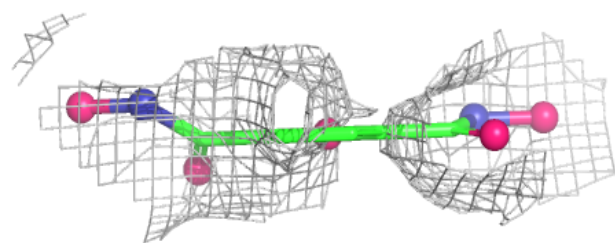
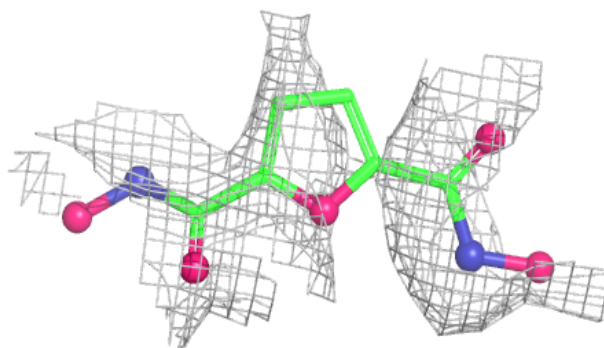
**Electron density around V9Y O 204 (D):**

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

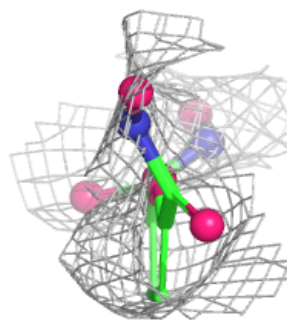
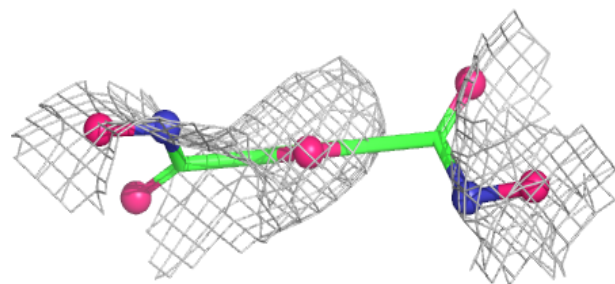
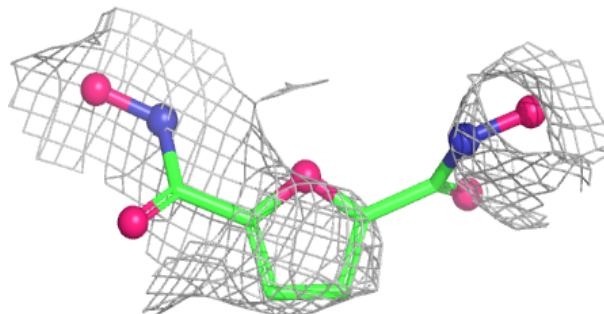


Electron density around V9Y R 203 (C):

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

**Electron density around V9Y R 203 (D):**

$2mF_o-DF_c$ (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.