



wwPDB X-ray Structure Validation Summary Report

Oct 10, 2023 – 08:34 AM EDT

PDB ID : 7MHQ
Title : Ensemble refinement structure of SARS-CoV-2 main protease (Mpro) at 310 K
Authors : Ebrahim, A.; Riley, B.T.; Kumaran, D.; Andi, B.; Fuchs, M.R.; McSweeney, S.; Keedy, D.A.
Deposited on : 2021-04-15
Resolution : 1.96 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 : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.35.1
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.35.1

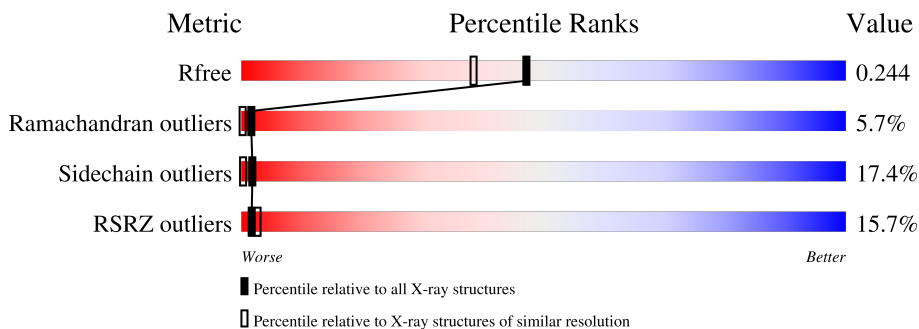
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.96 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	2580 (1.96-1.96)
Ramachandran outliers	138981	2678 (1.96-1.96)
Sidechain outliers	138945	2678 (1.96-1.96)
RSRZ outliers	127900	2539 (1.96-1.96)

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	1-A	306	
1	10-A	306	
1	11-A	306	
1	12-A	306	
1	13-A	306	
1	14-A	306	
1	15-A	306	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain	
1	16-A	306	15%	78% 18% .
1	17-A	306	15%	76% 19% ..
1	18-A	306	15%	74% 21% ..
1	19-A	306	15%	79% 18% ..
1	2-A	306	15%	82% 14% .
1	20-A	306	15%	77% 18% ..
1	21-A	306	15%	78% 17% .
1	22-A	306	15%	79% 18% .
1	23-A	306	15%	82% 15% .
1	24-A	306	15%	76% 19% 5% .
1	25-A	306	15%	75% 21% .
1	26-A	306	15%	80% 17% ..
1	27-A	306	15%	78% 17% ..
1	28-A	306	15%	76% 19% ..
1	29-A	306	15%	78% 19% .
1	3-A	306	15%	78% 18% ..
1	30-A	306	15%	82% 15% .
1	31-A	306	15%	79% 17% ..
1	32-A	306	15%	79% 15% ..
1	33-A	306	15%	79% 18% .
1	34-A	306	15%	80% 16% .
1	35-A	306	15%	78% 18% .
1	36-A	306	15%	77% 18% ..
1	4-A	306	15%	79% 19% .
1	5-A	306	15%	81% 17% ..

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	6-A	306	
1	7-A	306	
1	8-A	306	
1	9-A	306	

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
2	DMS	1-A	501	-	-	-	X
2	DMS	1-A	502	-	-	-	X
2	DMS	10-A	501	-	-	-	X
2	DMS	10-A	502	-	-	-	X
2	DMS	11-A	501	-	-	-	X
2	DMS	11-A	502	-	-	-	X
2	DMS	12-A	501	-	-	-	X
2	DMS	12-A	502	-	-	-	X
2	DMS	13-A	501	-	-	-	X
2	DMS	13-A	502	-	-	-	X
2	DMS	14-A	501	-	-	-	X
2	DMS	14-A	502	-	-	-	X
2	DMS	15-A	501	-	-	-	X
2	DMS	15-A	502	-	-	-	X
2	DMS	16-A	501	-	-	-	X
2	DMS	16-A	502	-	-	-	X
2	DMS	17-A	501	-	-	-	X
2	DMS	17-A	502	-	X	-	X
2	DMS	18-A	501	-	-	-	X
2	DMS	18-A	502	-	-	-	X
2	DMS	19-A	501	-	-	-	X
2	DMS	19-A	502	-	-	-	X
2	DMS	2-A	501	-	-	-	X
2	DMS	2-A	502	-	-	-	X
2	DMS	20-A	501	-	-	-	X
2	DMS	20-A	502	-	-	-	X
2	DMS	21-A	501	-	-	-	X
2	DMS	21-A	502	-	-	-	X
2	DMS	22-A	501	-	-	-	X
2	DMS	22-A	502	-	-	-	X

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	DMS	23-A	501	-	-	-	X
2	DMS	23-A	502	-	-	-	X
2	DMS	24-A	501	-	-	-	X
2	DMS	24-A	502	-	-	-	X
2	DMS	25-A	501	-	-	-	X
2	DMS	25-A	502	-	-	-	X
2	DMS	26-A	501	-	-	-	X
2	DMS	26-A	502	-	-	-	X
2	DMS	27-A	501	-	-	-	X
2	DMS	27-A	502	-	-	-	X
2	DMS	28-A	501	-	-	-	X
2	DMS	28-A	502	-	-	-	X
2	DMS	29-A	501	-	-	-	X
2	DMS	29-A	502	-	-	-	X
2	DMS	3-A	501	-	-	-	X
2	DMS	3-A	502	-	-	-	X
2	DMS	30-A	501	-	-	-	X
2	DMS	30-A	502	-	-	-	X
2	DMS	31-A	501	-	-	-	X
2	DMS	31-A	502	-	-	-	X
2	DMS	32-A	501	-	-	-	X
2	DMS	32-A	502	-	-	-	X
2	DMS	33-A	501	-	-	-	X
2	DMS	33-A	502	-	-	-	X
2	DMS	34-A	501	-	-	-	X
2	DMS	34-A	502	-	-	-	X
2	DMS	35-A	501	-	-	-	X
2	DMS	35-A	502	-	-	-	X
2	DMS	36-A	501	-	-	-	X
2	DMS	36-A	502	-	-	-	X
2	DMS	4-A	501	-	-	-	X
2	DMS	4-A	502	-	-	-	X
2	DMS	5-A	501	-	-	-	X
2	DMS	5-A	502	-	-	-	X
2	DMS	6-A	501	-	X	-	X
2	DMS	6-A	502	-	-	-	X
2	DMS	7-A	501	-	-	-	X
2	DMS	7-A	502	-	-	-	X
2	DMS	8-A	501	-	-	-	X
2	DMS	8-A	502	-	-	-	X
2	DMS	9-A	501	-	-	-	X
2	DMS	9-A	502	-	-	-	X

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 170649 atoms, of which 83700 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 3C-like proteinase.

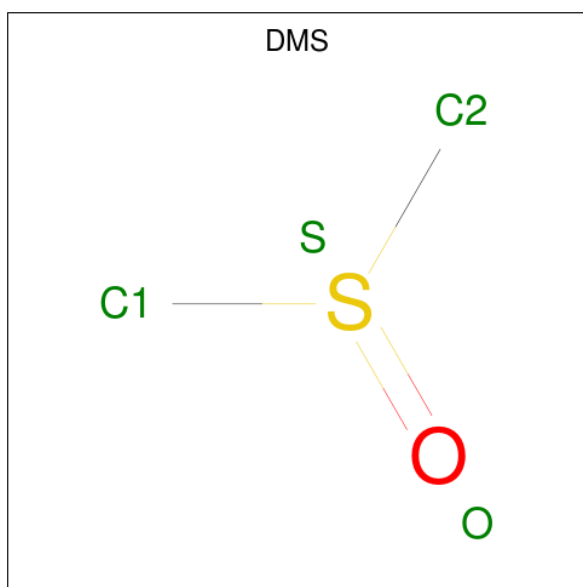
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	H	N	O	S			
1	1-A	306	4680	1499	2313	402	444	22	0	0	0
1	2-A	306	4680	1499	2313	402	444	22	0	0	0
1	3-A	306	4680	1499	2313	402	444	22	0	0	0
1	4-A	306	4680	1499	2313	402	444	22	0	0	0
1	5-A	306	4680	1499	2313	402	444	22	0	0	0
1	6-A	306	4680	1499	2313	402	444	22	0	0	0
1	7-A	306	4680	1499	2313	402	444	22	0	0	0
1	8-A	306	4680	1499	2313	402	444	22	0	0	0
1	9-A	306	4680	1499	2313	402	444	22	0	0	0
1	10-A	306	4680	1499	2313	402	444	22	0	0	0
1	11-A	306	4680	1499	2313	402	444	22	0	0	0
1	12-A	306	4680	1499	2313	402	444	22	0	0	0
1	13-A	306	4680	1499	2313	402	444	22	0	0	0
1	14-A	306	4680	1499	2313	402	444	22	0	0	0
1	15-A	306	4680	1499	2313	402	444	22	0	0	0
1	16-A	306	4680	1499	2313	402	444	22	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
1	17-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	18-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	19-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	20-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	21-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	22-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	23-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	24-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	25-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	26-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	27-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	28-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	29-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	30-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	31-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	32-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	33-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	34-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	35-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			
1	36-A	306	Total	C	H	N	O	S	0	0	0
			4680	1499	2313	402	444	22			

- Molecule 2 is DIMETHYL SULFOXIDE (three-letter code: DMS) (formula: C₂H₆OS).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	H	O	S		
2	1-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	2-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	3-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	4-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	5-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	6-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	7-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	8-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	9-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	10-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	11-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	12-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	13-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	14-A	1	Total 10	C 2	H 6	O 1	S 1	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	H	O	S		
2	15-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	16-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	17-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	18-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	19-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	20-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	21-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	22-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	23-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	24-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	25-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	26-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	27-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	28-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	29-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	30-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	31-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	32-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	33-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	34-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	35-A	1	Total 10	C 2	H 6	O 1	S 1	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	H	O	S		
2	36-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	1-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	2-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	3-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	4-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	5-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	6-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	7-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	8-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	9-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	10-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	11-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	12-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	13-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	14-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	15-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	16-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	17-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	18-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	19-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	20-A	1	Total 10	C 2	H 6	O 1	S 1	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	H	O	S		
2	21-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	22-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	23-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	24-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	25-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	26-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	27-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	28-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	29-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	30-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	31-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	32-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	33-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	34-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	35-A	1	Total 10	C 2	H 6	O 1	S 1	0	0
2	36-A	1	Total 10	C 2	H 6	O 1	S 1	0	0

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	1-A	1	Total 1	Zn 1	0	0
3	2-A	1	Total 1	Zn 1	0	0
3	3-A	1	Total 1	Zn 1	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	4-A	1	Total 1	Zn 1	0	0
3	5-A	1	Total 1	Zn 1	0	0
3	6-A	1	Total 1	Zn 1	0	0
3	7-A	1	Total 1	Zn 1	0	0
3	8-A	1	Total 1	Zn 1	0	0
3	9-A	1	Total 1	Zn 1	0	0
3	10-A	1	Total 1	Zn 1	0	0
3	11-A	1	Total 1	Zn 1	0	0
3	12-A	1	Total 1	Zn 1	0	0
3	13-A	1	Total 1	Zn 1	0	0
3	14-A	1	Total 1	Zn 1	0	0
3	15-A	1	Total 1	Zn 1	0	0
3	16-A	1	Total 1	Zn 1	0	0
3	17-A	1	Total 1	Zn 1	0	0
3	18-A	1	Total 1	Zn 1	0	0
3	19-A	1	Total 1	Zn 1	0	0
3	20-A	1	Total 1	Zn 1	0	0
3	21-A	1	Total 1	Zn 1	0	0
3	22-A	1	Total 1	Zn 1	0	0
3	23-A	1	Total 1	Zn 1	0	0
3	24-A	1	Total 1	Zn 1	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	25-A	1	Total 1	Zn 1	0	0
3	26-A	1	Total 1	Zn 1	0	0
3	27-A	1	Total 1	Zn 1	0	0
3	28-A	1	Total 1	Zn 1	0	0
3	29-A	1	Total 1	Zn 1	0	0
3	30-A	1	Total 1	Zn 1	0	0
3	31-A	1	Total 1	Zn 1	0	0
3	32-A	1	Total 1	Zn 1	0	0
3	33-A	1	Total 1	Zn 1	0	0
3	34-A	1	Total 1	Zn 1	0	0
3	35-A	1	Total 1	Zn 1	0	0
3	36-A	1	Total 1	Zn 1	0	0

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	1-A	45	Total 45	O 45	0	0
4	2-A	45	Total 45	O 45	0	0
4	3-A	46	Total 46	O 46	0	0
4	4-A	37	Total 37	O 37	0	0
4	5-A	42	Total 42	O 42	0	0
4	6-A	43	Total 43	O 43	0	0
4	7-A	35	Total 35	O 35	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	8-A	33	Total 33	O 33	0	0
4	9-A	39	Total 39	O 39	0	0
4	10-A	37	Total 37	O 37	0	0
4	11-A	41	Total 41	O 41	0	0
4	12-A	42	Total 42	O 42	0	0
4	13-A	45	Total 45	O 45	0	0
4	14-A	43	Total 43	O 43	0	0
4	15-A	38	Total 38	O 38	0	0
4	16-A	30	Total 30	O 30	0	0
4	17-A	34	Total 34	O 34	0	0
4	18-A	46	Total 46	O 46	0	0
4	19-A	41	Total 41	O 41	0	0
4	20-A	38	Total 38	O 38	0	0
4	21-A	42	Total 42	O 42	0	0
4	22-A	44	Total 44	O 44	0	0
4	23-A	40	Total 40	O 40	0	0
4	24-A	33	Total 33	O 33	0	0
4	25-A	36	Total 36	O 36	0	0
4	26-A	41	Total 41	O 41	0	0
4	27-A	38	Total 38	O 38	0	0
4	28-A	39	Total 39	O 39	0	0

Continued on next page...

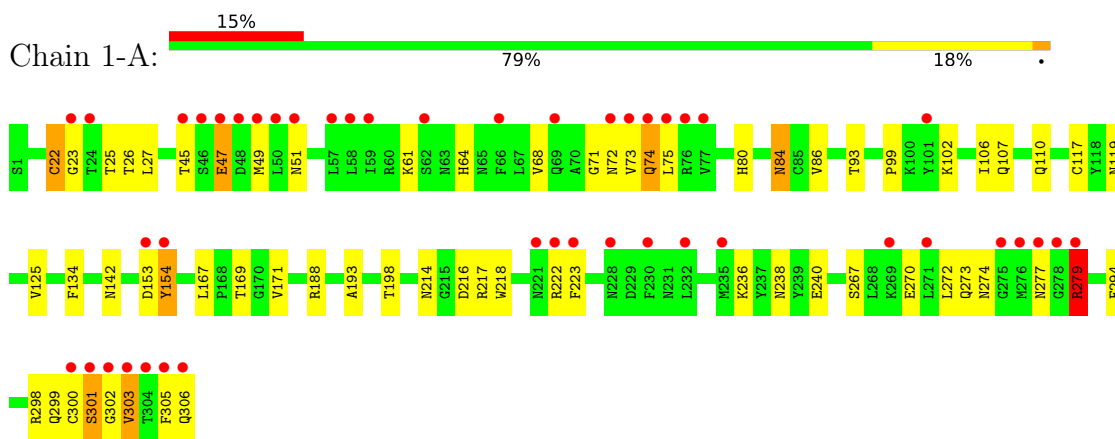
Continued from previous page...

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	29-A	38	Total O 38 38	0	0
4	30-A	37	Total O 37 37	0	0
4	31-A	34	Total O 34 34	0	0
4	32-A	34	Total O 34 34	0	0
4	33-A	39	Total O 39 39	0	0
4	34-A	48	Total O 48 48	0	0
4	35-A	37	Total O 37 37	0	0
4	36-A	33	Total O 33 33	0	0

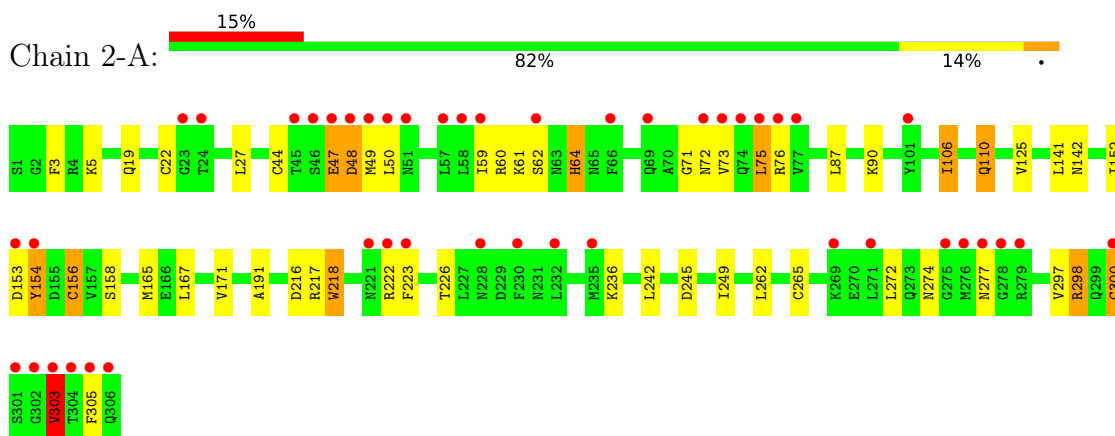
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

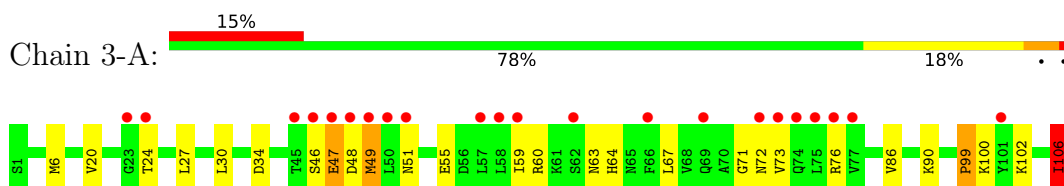
- Molecule 1: 3C-like proteinase

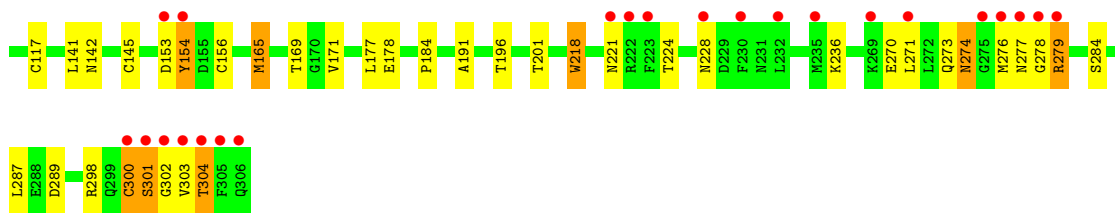


- Molecule 1: 3C-like proteinase

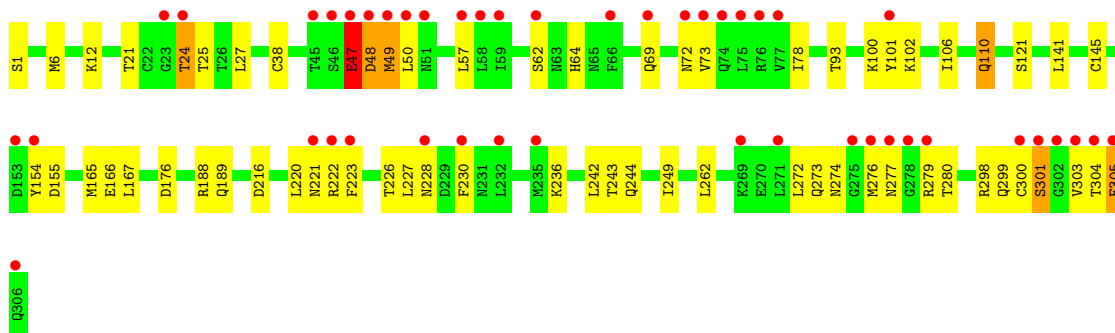
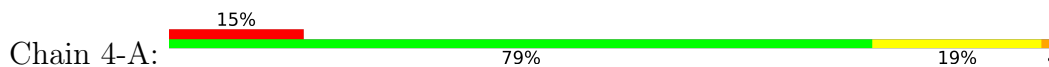


- Molecule 1: 3C-like proteinase

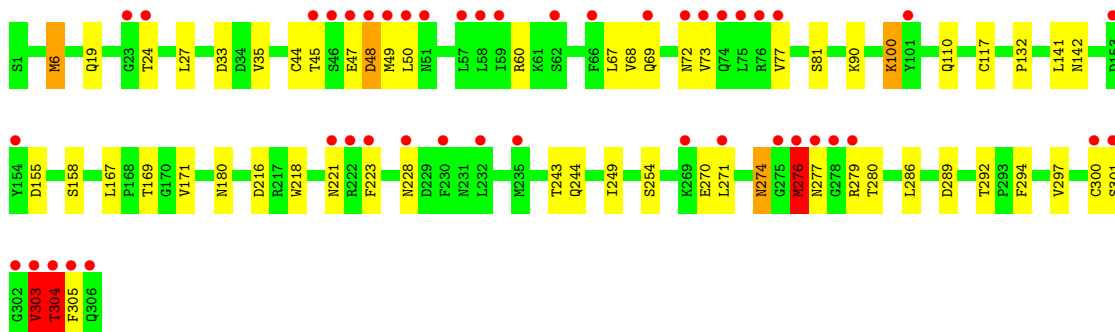
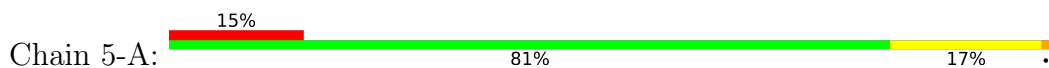




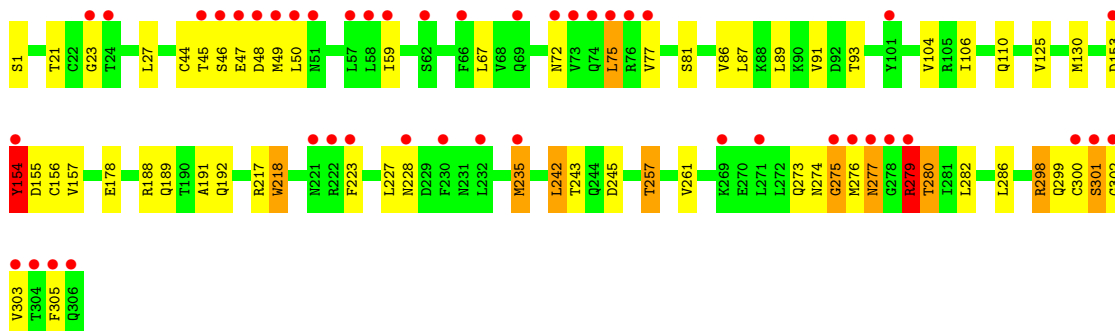
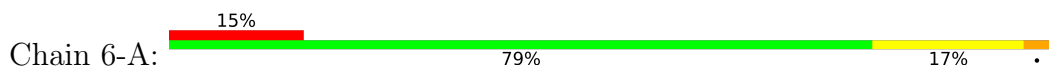
● Molecule 1: 3C-like proteinase



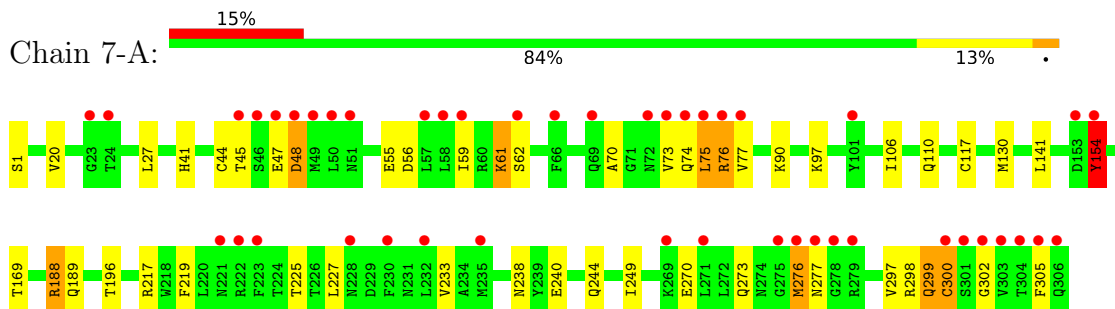
● Molecule 1: 3C-like proteinase



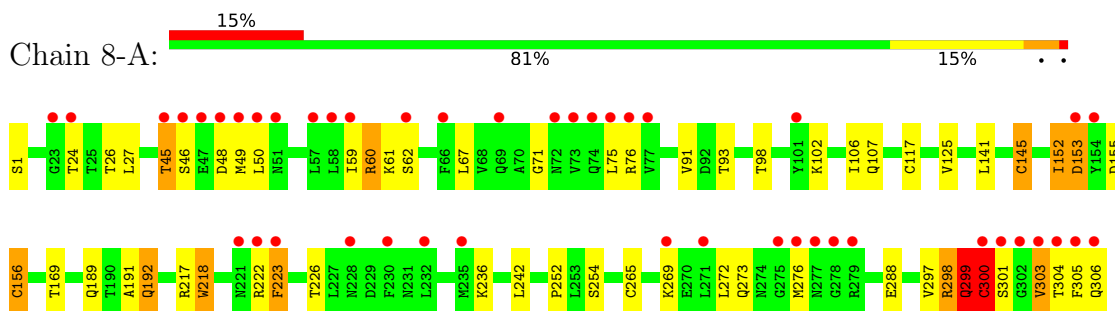
● Molecule 1: 3C-like proteinase



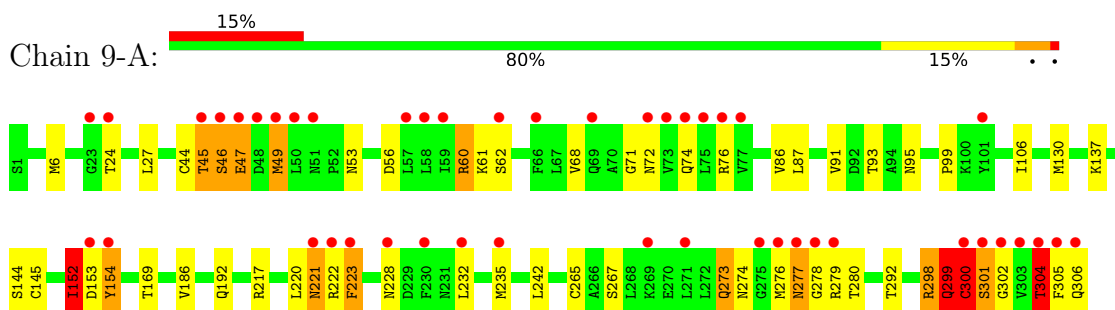
- Molecule 1: 3C-like proteinase



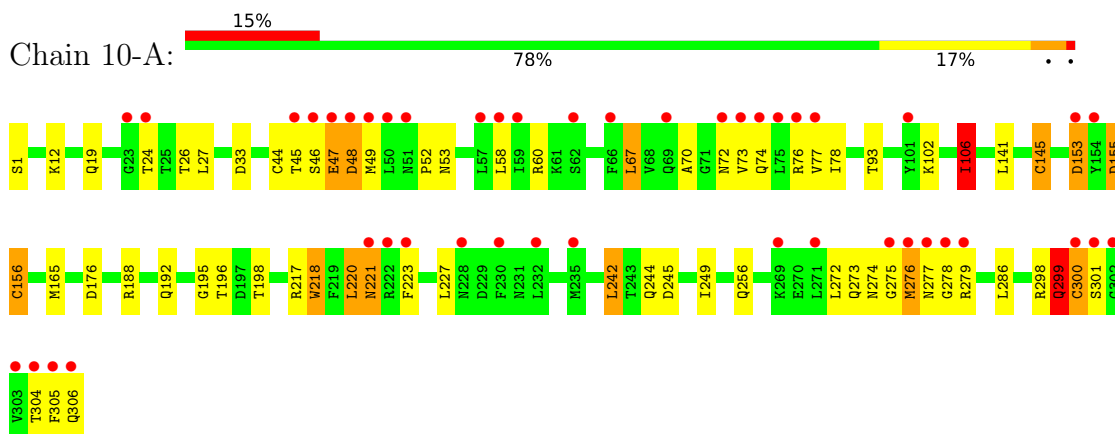
- Molecule 1: 3C-like proteinase



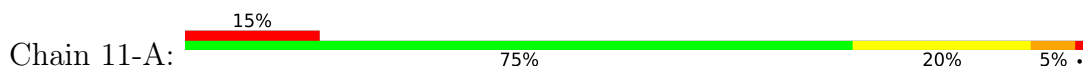
- Molecule 1: 3C-like proteinase

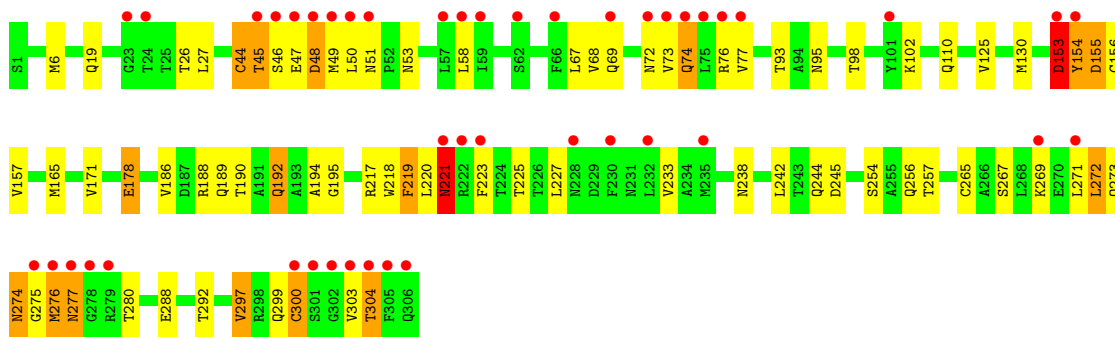


- Molecule 1: 3C-like proteinase

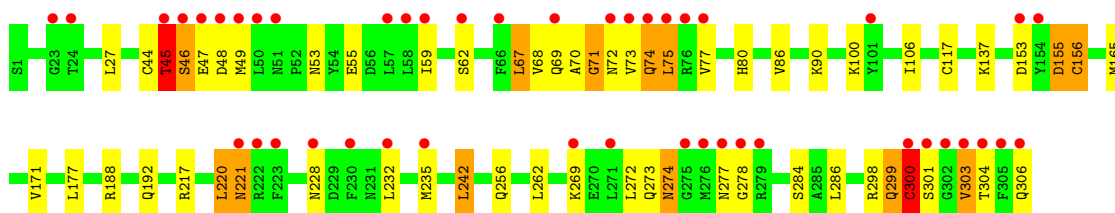
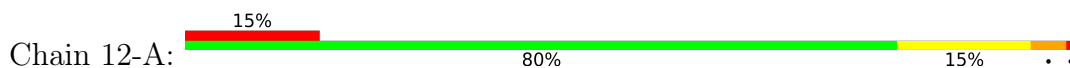


- Molecule 1: 3C-like proteinase

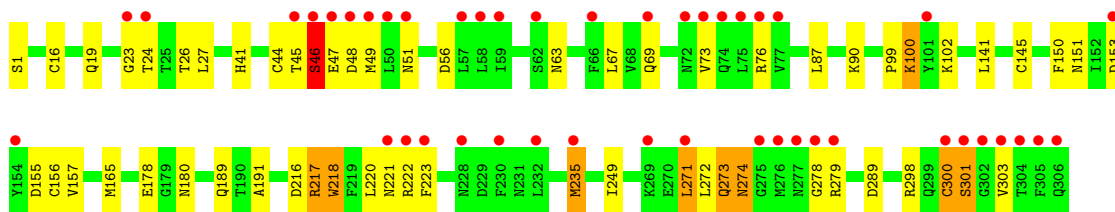
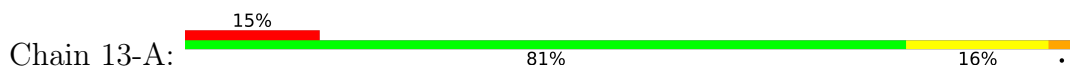




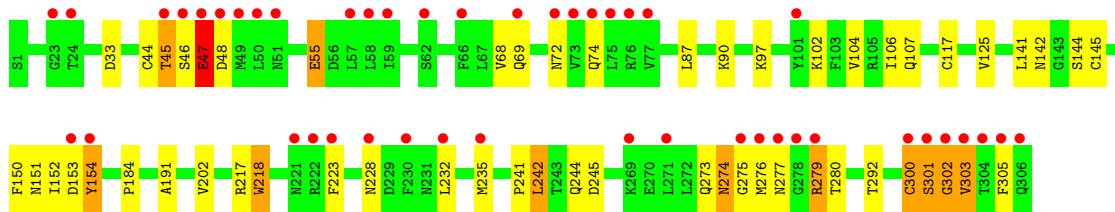
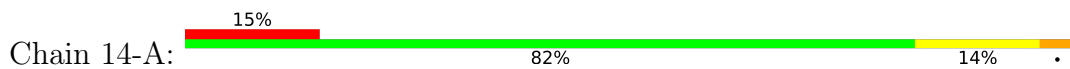
• Molecule 1: 3C-like proteinase



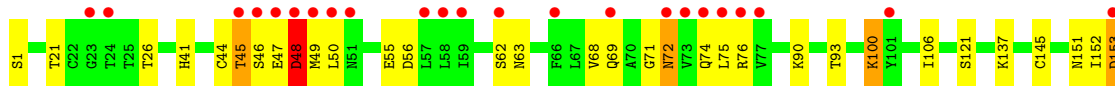
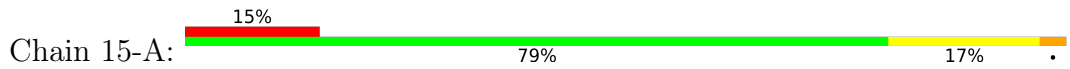
• Molecule 1: 3C-like proteinase

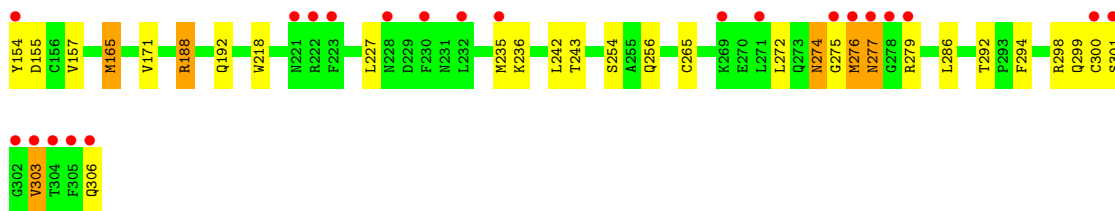


• Molecule 1: 3C-like proteinase

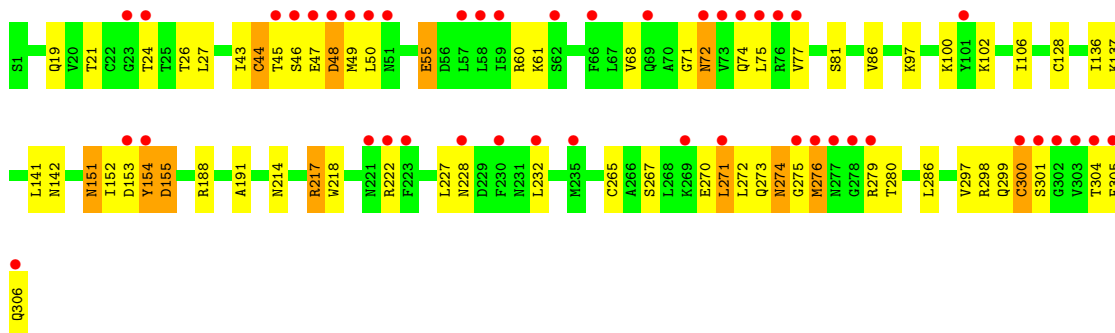
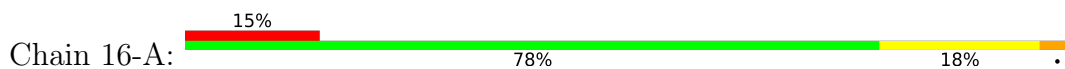


• Molecule 1: 3C-like proteinase

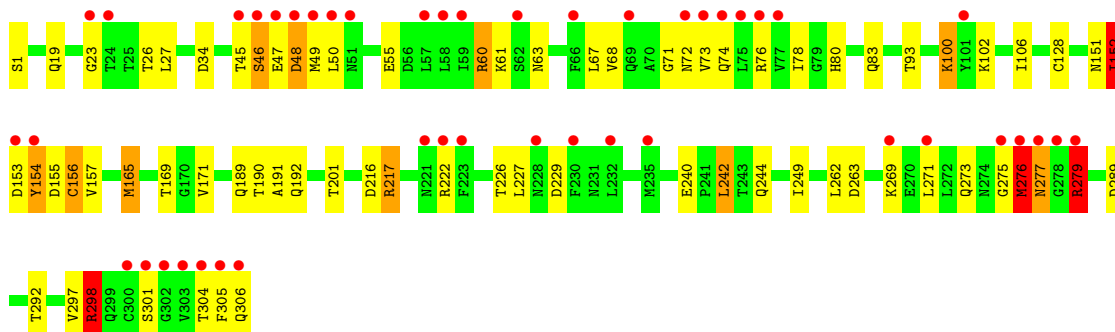
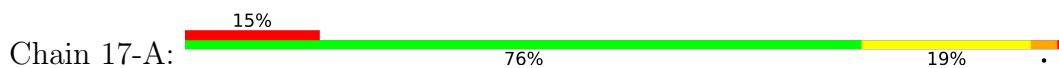




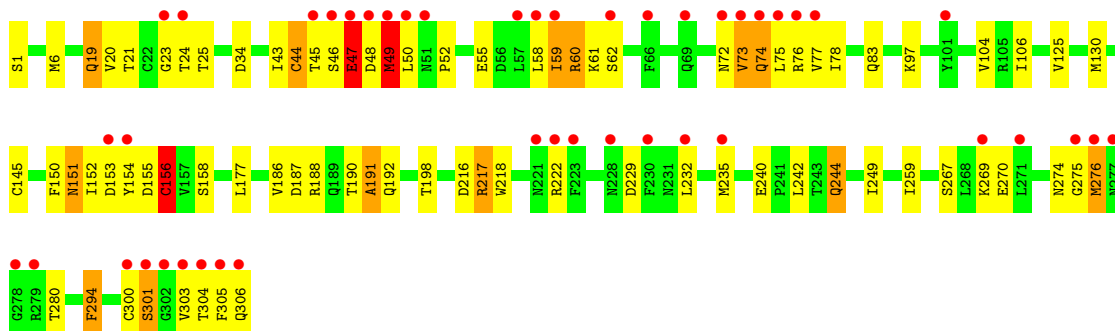
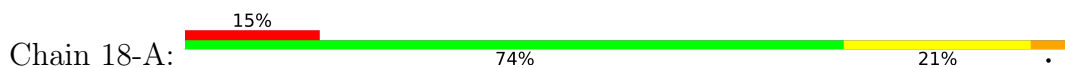
- Molecule 1: 3C-like proteinase



- Molecule 1: 3C-like proteinase



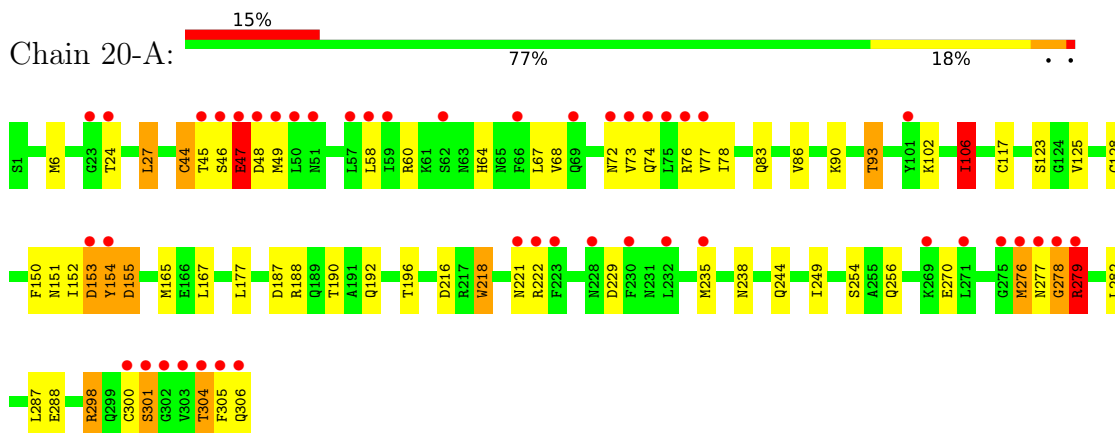
- Molecule 1: 3C-like proteinase



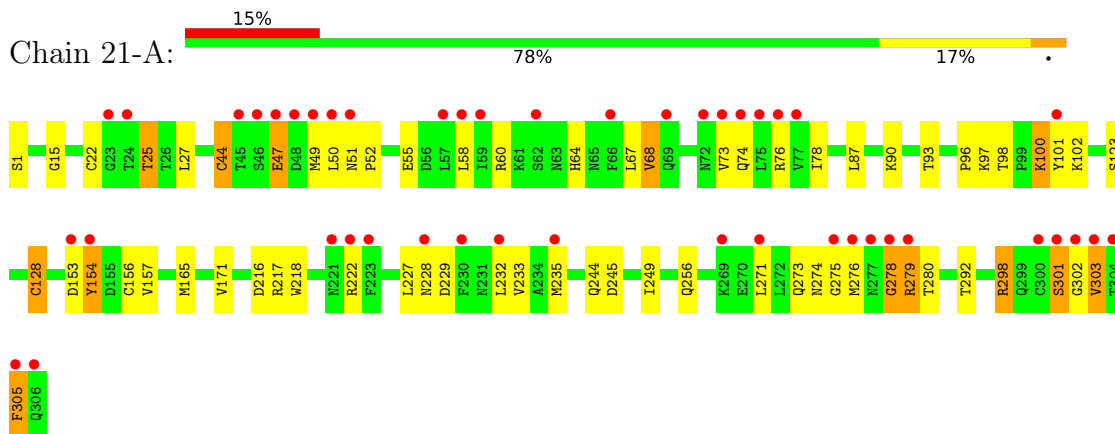
• Molecule 1: 3C-like proteinase



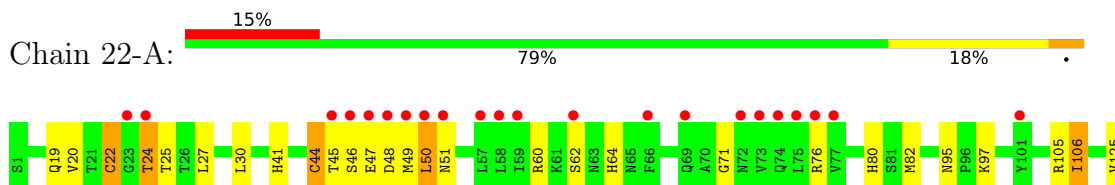
• Molecule 1: 3C-like proteinase



• Molecule 1: 3C-like proteinase

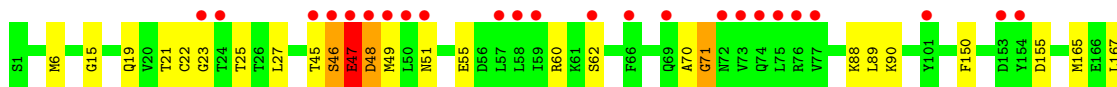
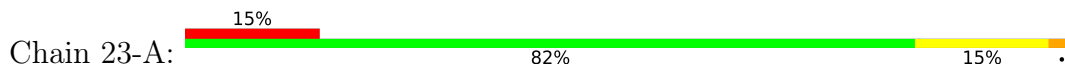


• Molecule 1: 3C-like proteinase

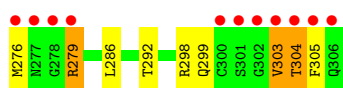
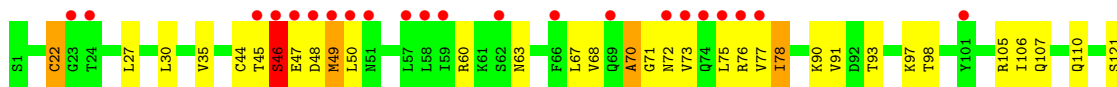
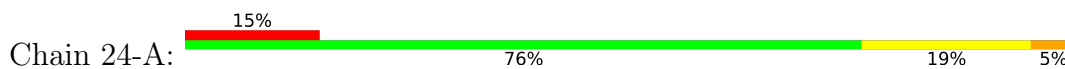




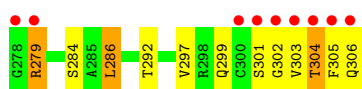
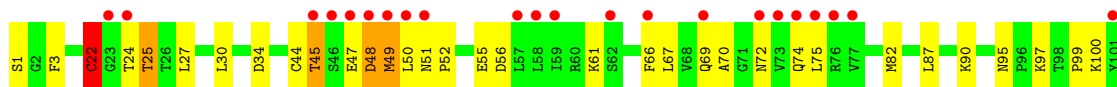
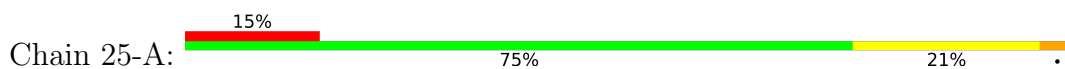
• Molecule 1: 3C-like proteinase



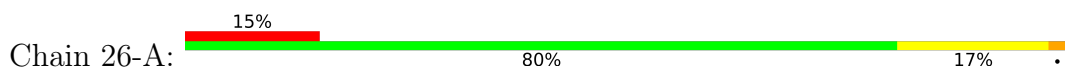
• Molecule 1: 3C-like proteinase

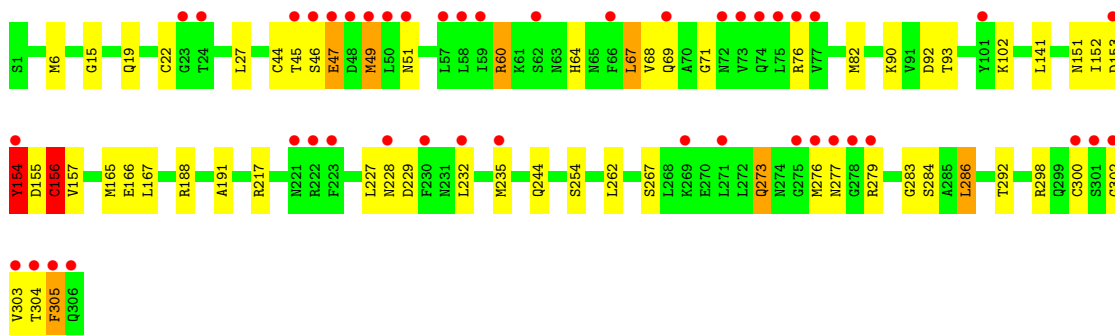


• Molecule 1: 3C-like proteinase

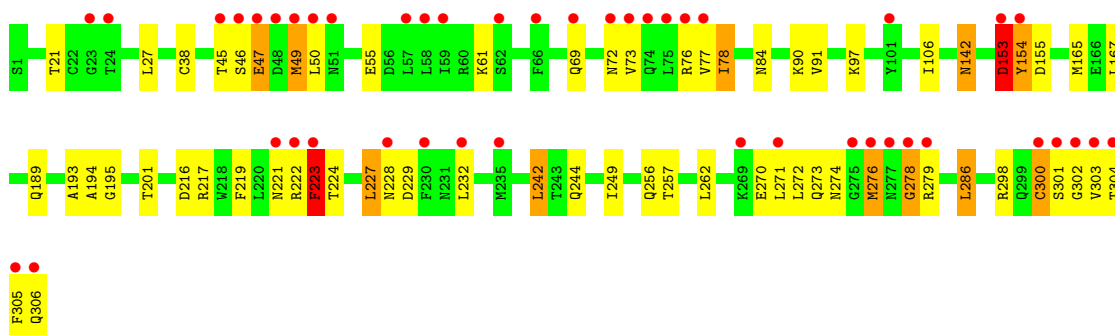
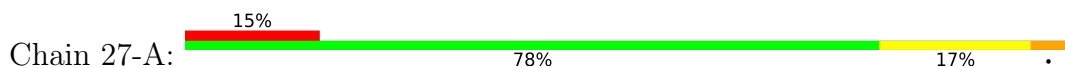


• Molecule 1: 3C-like proteinase

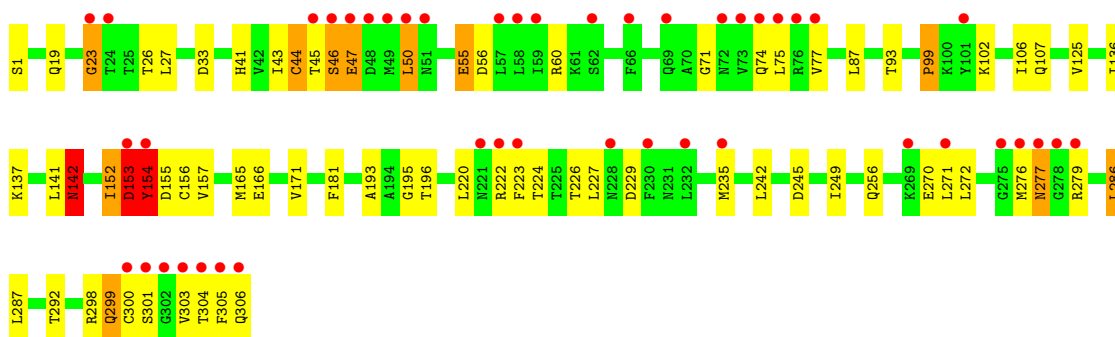
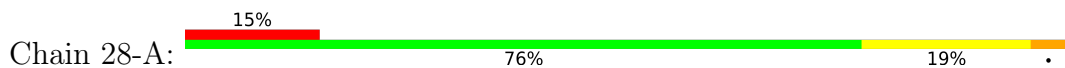




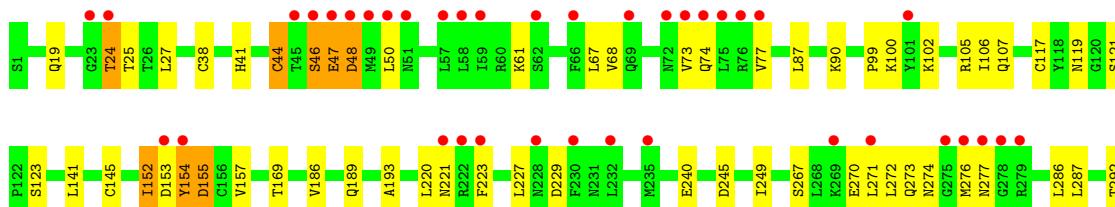
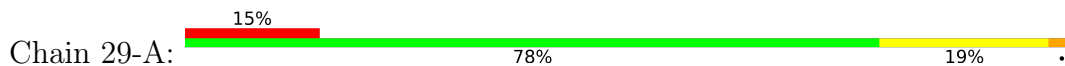
- Molecule 1: 3C-like proteinase

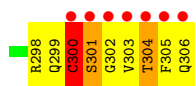


- Molecule 1: 3C-like proteinase

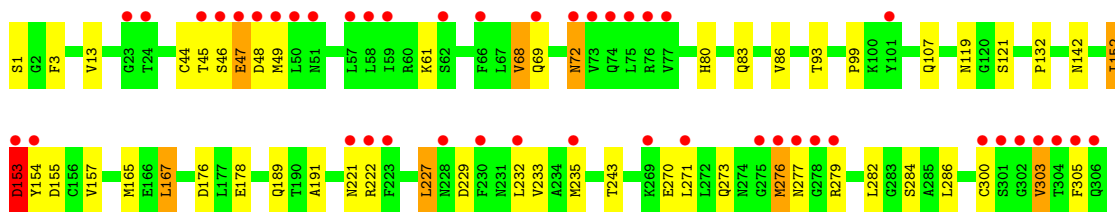
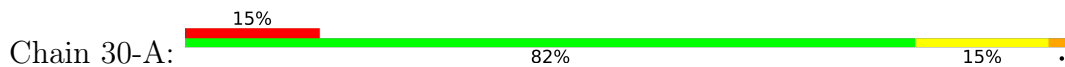


- Molecule 1: 3C-like proteinase

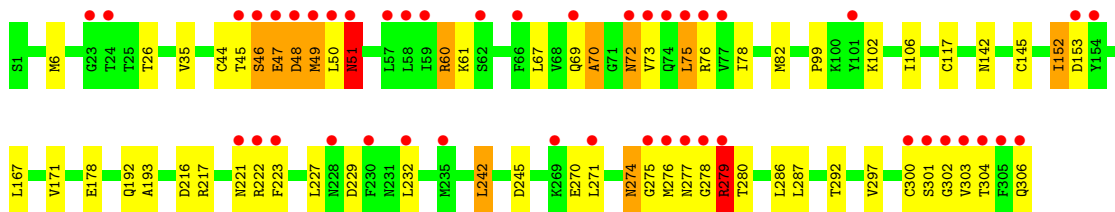
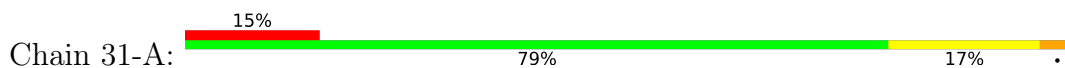




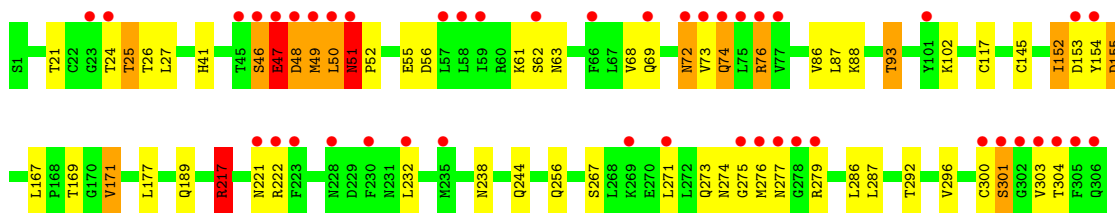
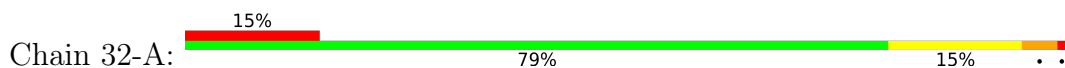
• Molecule 1: 3C-like proteinase



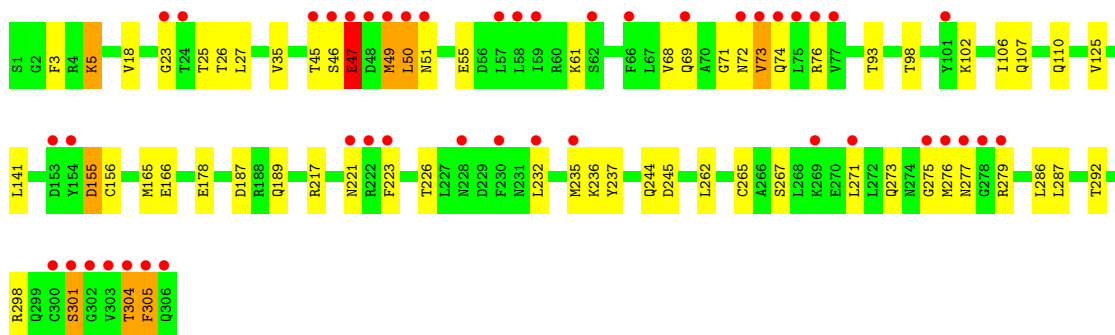
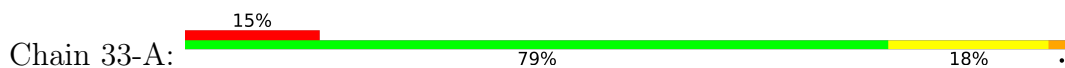
• Molecule 1: 3C-like proteinase



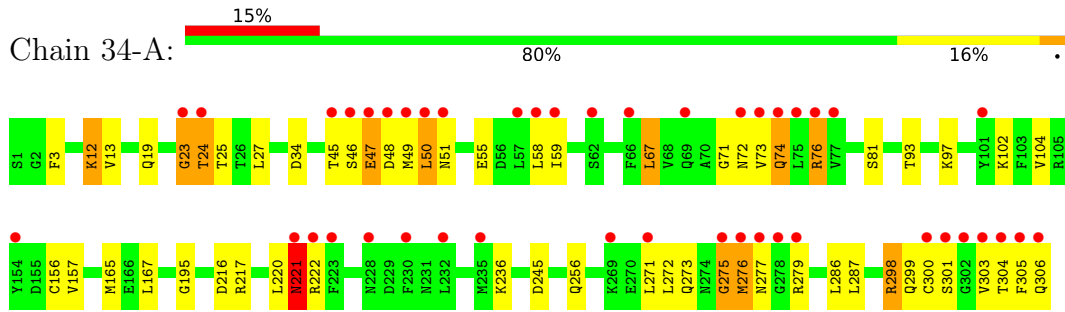
• Molecule 1: 3C-like proteinase



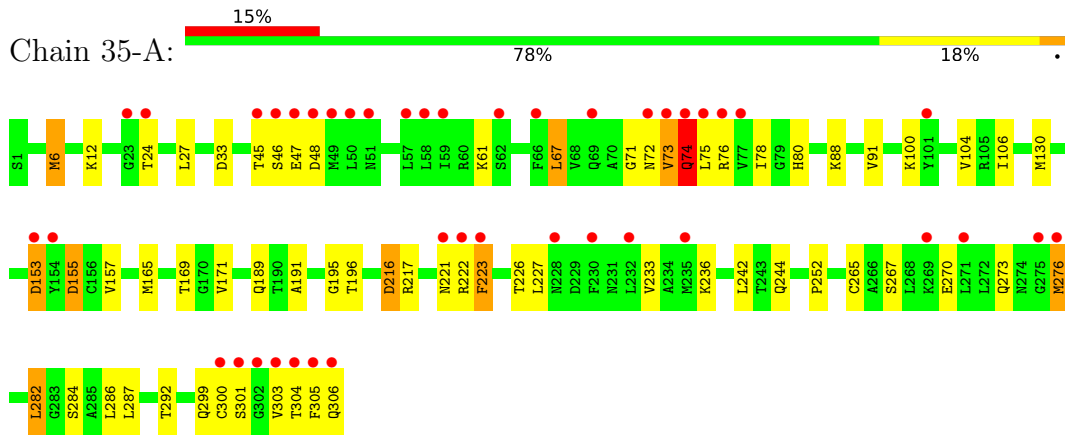
• Molecule 1: 3C-like proteinase



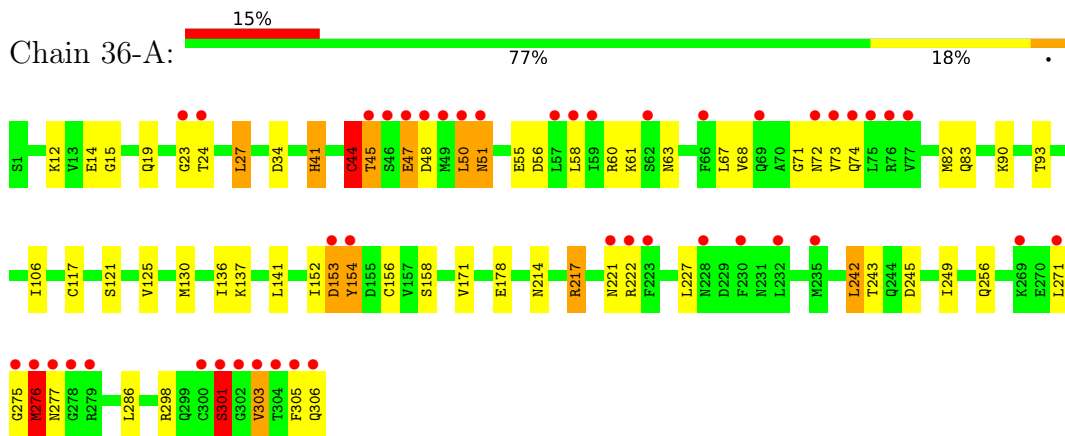
• Molecule 1: 3C-like proteinase



• Molecule 1: 3C-like proteinase



• Molecule 1: 3C-like proteinase



4 Data and refinement statistics i

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	114.30Å 54.29Å 44.97Å 90.00° 102.12° 90.00°	Depositor
Resolution (Å)	43.97 – 1.96 43.97 – 1.96	Depositor EDS
% Data completeness (in resolution range)	99.8 (43.97-1.96) 66.7 (43.97-1.96)	Depositor EDS
R_{merge}	0.20	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	0.55 (at 1.97Å)	Xtrriage
Refinement program	PHENIX (phenix.ensemble_refinement:1.19.2_4158)	Depositor
R, R_{free}	0.171 , 0.235 0.182 , 0.244	Depositor DCC
R_{free} test set	880 reflections (4.53%)	wwPDB-VP
Wilson B-factor (Å ²)	29.5	Xtrriage
Anisotropy	0.246	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.69 , 999.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	170649	wwPDB-VP
Average B, all atoms (Å ²)	43.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 9.77% 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: DMS, ZN

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	1-A	0.76	2/2420 (0.1%)	0.87	3/3289 (0.1%)
1	2-A	0.78	4/2420 (0.2%)	0.87	1/3289 (0.0%)
1	3-A	0.78	4/2420 (0.2%)	0.88	4/3289 (0.1%)
1	4-A	0.79	4/2420 (0.2%)	0.88	0/3289
1	5-A	0.75	2/2420 (0.1%)	0.87	1/3289 (0.0%)
1	6-A	0.79	3/2420 (0.1%)	0.88	4/3289 (0.1%)
1	7-A	0.79	2/2420 (0.1%)	0.86	0/3289
1	8-A	0.81	5/2420 (0.2%)	0.88	0/3289
1	9-A	0.82	2/2420 (0.1%)	0.92	5/3289 (0.2%)
1	10-A	0.81	2/2420 (0.1%)	0.89	5/3289 (0.2%)
1	11-A	0.79	5/2420 (0.2%)	0.92	1/3289 (0.0%)
1	12-A	0.77	4/2420 (0.2%)	0.88	3/3289 (0.1%)
1	13-A	0.79	3/2420 (0.1%)	0.87	1/3289 (0.0%)
1	14-A	0.78	5/2420 (0.2%)	0.87	2/3289 (0.1%)
1	15-A	0.79	2/2420 (0.1%)	0.87	3/3289 (0.1%)
1	16-A	0.78	2/2420 (0.1%)	0.89	3/3289 (0.1%)
1	17-A	0.75	2/2420 (0.1%)	0.90	3/3289 (0.1%)
1	18-A	0.87	6/2420 (0.2%)	0.89	7/3289 (0.2%)
1	19-A	0.82	4/2420 (0.2%)	0.87	2/3289 (0.1%)
1	20-A	0.77	2/2420 (0.1%)	0.93	10/3289 (0.3%)
1	21-A	0.83	4/2420 (0.2%)	0.88	1/3289 (0.0%)
1	22-A	0.83	4/2420 (0.2%)	0.88	1/3289 (0.0%)
1	23-A	0.75	3/2420 (0.1%)	0.87	0/3289
1	24-A	0.80	4/2420 (0.2%)	0.91	4/3289 (0.1%)
1	25-A	0.76	4/2420 (0.2%)	0.90	6/3289 (0.2%)
1	26-A	0.80	4/2420 (0.2%)	0.89	5/3289 (0.2%)
1	27-A	0.80	3/2420 (0.1%)	0.88	4/3289 (0.1%)
1	28-A	0.77	5/2420 (0.2%)	0.88	3/3289 (0.1%)
1	29-A	0.77	3/2420 (0.1%)	0.88	1/3289 (0.0%)
1	30-A	0.72	1/2420 (0.0%)	0.85	1/3289 (0.0%)
1	31-A	0.77	3/2420 (0.1%)	0.88	2/3289 (0.1%)
1	32-A	0.80	4/2420 (0.2%)	0.87	3/3289 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	33-A	0.75	3/2420 (0.1%)	0.87	3/3289 (0.1%)
1	34-A	0.75	1/2420 (0.0%)	0.86	3/3289 (0.1%)
1	35-A	0.79	3/2420 (0.1%)	0.88	5/3289 (0.2%)
1	36-A	0.76	3/2420 (0.1%)	0.89	4/3289 (0.1%)
All	All	0.78	117/87120 (0.1%)	0.88	104/118404 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	1-A	0	5
1	2-A	0	6
1	3-A	0	5
1	4-A	0	7
1	5-A	0	9
1	6-A	0	9
1	7-A	0	8
1	8-A	0	6
1	9-A	0	13
1	10-A	0	10
1	11-A	0	18
1	12-A	0	12
1	13-A	0	11
1	14-A	0	10
1	15-A	0	7
1	16-A	0	7
1	17-A	0	15
1	18-A	0	13
1	19-A	0	12
1	20-A	0	12
1	21-A	0	15
1	22-A	0	8
1	23-A	0	6
1	24-A	0	16
1	25-A	0	10
1	26-A	0	9
1	27-A	0	10
1	28-A	0	17
1	29-A	0	12
1	30-A	0	11

Continued on next page...

Continued from previous page...

Mol	Chain	#Chirality outliers	#Planarity outliers
1	31-A	0	14
1	32-A	0	9
1	33-A	0	3
1	34-A	0	11
1	35-A	0	6
1	36-A	0	8
All	All	0	360

The worst 5 of 117 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	21-A	128	CYS	CB-SG	-16.74	1.53	1.82
1	10-A	145	CYS	CB-SG	13.64	2.05	1.82
1	18-A	145	CYS	CB-SG	-13.28	1.59	1.82
1	9-A	145	CYS	CB-SG	12.55	2.03	1.82
1	8-A	145	CYS	CB-SG	11.95	2.02	1.82

The worst 5 of 104 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	20-A	128	CYS	CA-CB-SG	-13.80	89.17	114.00
1	10-A	218	TRP	CA-CB-CG	8.09	129.07	113.70
1	27-A	300	CYS	CA-CB-SG	-7.84	99.89	114.00
1	1-A	22	CYS	CA-CB-SG	-7.60	100.33	114.00
1	20-A	44	CYS	CA-CB-SG	-7.46	100.58	114.00

There are no chirality outliers.

5 of 360 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	1-A	154	TYR	Peptide
1	1-A	279	ARG	Sidechain,Peptide
1	1-A	64	HIS	Peptide
1	1-A	74	GLN	Peptide
1	2-A	44	CYS	Peptide

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	1-A	2367	2313	2313	0	0
1	2-A	2367	2313	2312	0	0
1	3-A	2367	2313	2313	0	0
1	4-A	2367	2313	2312	0	0
1	5-A	2367	2313	2313	0	0
1	6-A	2367	2313	2313	0	0
1	7-A	2367	2313	2311	0	0
1	8-A	2367	2313	2313	0	0
1	9-A	2367	2313	2313	0	0
1	10-A	2367	2313	2312	0	0
1	11-A	2367	2313	2313	0	0
1	12-A	2367	2313	2313	0	0
1	13-A	2367	2313	2313	0	0
1	14-A	2367	2313	2313	0	0
1	15-A	2367	2313	2312	0	0
1	16-A	2367	2313	2313	0	0
1	17-A	2367	2313	2313	0	0
1	18-A	2367	2313	2313	0	0
1	19-A	2367	2313	2313	0	0
1	20-A	2367	2313	2310	0	0
1	21-A	2367	2313	2313	0	0
1	22-A	2367	2313	2312	0	0
1	23-A	2367	2313	2313	0	0
1	24-A	2367	2313	2313	0	0
1	25-A	2367	2313	2313	0	0
1	26-A	2367	2313	2313	0	0
1	27-A	2367	2313	2313	0	0
1	28-A	2367	2313	2313	0	0
1	29-A	2367	2313	2313	0	0
1	30-A	2367	2313	2313	0	0
1	31-A	2367	2313	2313	0	0
1	32-A	2367	2313	2313	0	0
1	33-A	2367	2313	2313	0	0
1	34-A	2367	2313	2313	0	0
1	35-A	2367	2313	2313	0	0
1	36-A	2367	2313	2313	0	0
2	1-A	8	12	12	0	0
2	2-A	8	12	12	0	0
2	3-A	8	12	12	0	0
2	4-A	8	12	12	0	0
2	5-A	8	12	12	0	0
2	6-A	8	12	12	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	7-A	8	12	12	0	0
2	8-A	8	12	12	0	0
2	9-A	8	12	12	0	0
2	10-A	8	12	12	0	0
2	11-A	8	12	12	0	0
2	12-A	8	12	12	0	0
2	13-A	8	12	12	0	0
2	14-A	8	12	12	0	0
2	15-A	8	12	12	0	0
2	16-A	8	12	12	0	0
2	17-A	8	12	12	0	0
2	18-A	8	12	12	0	0
2	19-A	8	12	12	0	0
2	20-A	8	12	12	0	0
2	21-A	8	12	12	0	0
2	22-A	8	12	12	0	0
2	23-A	8	12	12	0	0
2	24-A	8	12	12	0	0
2	25-A	8	12	12	0	0
2	26-A	8	12	12	0	0
2	27-A	8	12	12	0	0
2	28-A	8	12	12	0	0
2	29-A	8	12	12	0	0
2	30-A	8	12	12	0	0
2	31-A	8	12	12	0	0
2	32-A	8	12	12	0	0
2	33-A	8	12	12	0	0
2	34-A	8	12	12	0	0
2	35-A	8	12	12	0	0
2	36-A	8	12	12	0	0
3	1-A	1	0	0	0	0
3	2-A	1	0	0	0	0
3	3-A	1	0	0	0	0
3	4-A	1	0	0	0	0
3	5-A	1	0	0	0	0
3	6-A	1	0	0	0	0
3	7-A	1	0	0	0	0
3	8-A	1	0	0	0	0
3	9-A	1	0	0	0	0
3	10-A	1	0	0	0	0
3	11-A	1	0	0	0	0
3	12-A	1	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	13-A	1	0	0	0	0
3	14-A	1	0	0	0	0
3	15-A	1	0	0	0	0
3	16-A	1	0	0	0	0
3	17-A	1	0	0	0	0
3	18-A	1	0	0	0	0
3	19-A	1	0	0	0	0
3	20-A	1	0	0	0	0
3	21-A	1	0	0	0	0
3	22-A	1	0	0	0	0
3	23-A	1	0	0	0	0
3	24-A	1	0	0	0	0
3	25-A	1	0	0	0	0
3	26-A	1	0	0	0	0
3	27-A	1	0	0	0	0
3	28-A	1	0	0	0	0
3	29-A	1	0	0	0	0
3	30-A	1	0	0	0	0
3	31-A	1	0	0	0	0
3	32-A	1	0	0	0	0
3	33-A	1	0	0	0	0
3	34-A	1	0	0	0	0
3	35-A	1	0	0	0	0
3	36-A	1	0	0	0	0
4	1-A	45	0	0	0	0
4	2-A	45	0	0	0	0
4	3-A	46	0	0	0	0
4	4-A	37	0	0	0	0
4	5-A	42	0	0	0	0
4	6-A	43	0	0	0	0
4	7-A	35	0	0	0	0
4	8-A	33	0	0	0	0
4	9-A	39	0	0	0	0
4	10-A	37	0	0	0	0
4	11-A	41	0	0	0	0
4	12-A	42	0	0	0	0
4	13-A	45	0	0	0	0
4	14-A	43	0	0	0	0
4	15-A	38	0	0	0	0
4	16-A	30	0	0	0	0
4	17-A	34	0	0	0	0
4	18-A	46	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	19-A	41	0	0	0	0
4	20-A	38	0	0	0	0
4	21-A	42	0	0	0	0
4	22-A	44	0	0	0	0
4	23-A	40	0	0	0	0
4	24-A	33	0	0	0	0
4	25-A	36	0	0	0	0
4	26-A	41	0	0	0	0
4	27-A	38	0	0	0	0
4	28-A	39	0	0	0	0
4	29-A	38	0	0	0	0
4	30-A	37	0	0	0	0
4	31-A	34	0	0	0	0
4	32-A	34	0	0	0	0
4	33-A	39	0	0	0	0
4	34-A	48	0	0	0	0
4	35-A	37	0	0	0	0
4	36-A	33	0	0	0	0
All	All	86949	83700	83690	0	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). Clashscore could not be calculated for this entry.

There are no clashes within the asymmetric unit.

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	1-A	304/306 (99%)	249 (82%)	35 (12%)	20 (7%)	1 0
1	2-A	304/306 (99%)	255 (84%)	33 (11%)	16 (5%)	2 0
1	3-A	304/306 (99%)	257 (84%)	23 (8%)	24 (8%)	1 0

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	4-A	304/306 (99%)	255 (84%)	32 (10%)	17 (6%)	2	0
1	5-A	304/306 (99%)	250 (82%)	43 (14%)	11 (4%)	3	0
1	6-A	304/306 (99%)	255 (84%)	28 (9%)	21 (7%)	1	0
1	7-A	304/306 (99%)	256 (84%)	37 (12%)	11 (4%)	3	0
1	8-A	304/306 (99%)	254 (84%)	32 (10%)	18 (6%)	1	0
1	9-A	304/306 (99%)	258 (85%)	24 (8%)	22 (7%)	1	0
1	10-A	304/306 (99%)	254 (84%)	32 (10%)	18 (6%)	1	0
1	11-A	304/306 (99%)	244 (80%)	36 (12%)	24 (8%)	1	0
1	12-A	304/306 (99%)	257 (84%)	31 (10%)	16 (5%)	2	0
1	13-A	304/306 (99%)	262 (86%)	31 (10%)	11 (4%)	3	0
1	14-A	304/306 (99%)	272 (90%)	20 (7%)	12 (4%)	3	0
1	15-A	304/306 (99%)	262 (86%)	28 (9%)	14 (5%)	2	0
1	16-A	304/306 (99%)	249 (82%)	42 (14%)	13 (4%)	2	0
1	17-A	304/306 (99%)	248 (82%)	35 (12%)	21 (7%)	1	0
1	18-A	304/306 (99%)	245 (81%)	39 (13%)	20 (7%)	1	0
1	19-A	304/306 (99%)	260 (86%)	28 (9%)	16 (5%)	2	0
1	20-A	304/306 (99%)	261 (86%)	28 (9%)	15 (5%)	2	0
1	21-A	304/306 (99%)	247 (81%)	43 (14%)	14 (5%)	2	0
1	22-A	304/306 (99%)	251 (83%)	33 (11%)	20 (7%)	1	0
1	23-A	304/306 (99%)	257 (84%)	31 (10%)	16 (5%)	2	0
1	24-A	304/306 (99%)	247 (81%)	41 (14%)	16 (5%)	2	0
1	25-A	304/306 (99%)	248 (82%)	33 (11%)	23 (8%)	1	0
1	26-A	304/306 (99%)	272 (90%)	20 (7%)	12 (4%)	3	0
1	27-A	304/306 (99%)	257 (84%)	27 (9%)	20 (7%)	1	0
1	28-A	304/306 (99%)	246 (81%)	40 (13%)	18 (6%)	1	0
1	29-A	304/306 (99%)	252 (83%)	34 (11%)	18 (6%)	1	0
1	30-A	304/306 (99%)	253 (83%)	37 (12%)	14 (5%)	2	0
1	31-A	304/306 (99%)	259 (85%)	25 (8%)	20 (7%)	1	0
1	32-A	304/306 (99%)	251 (83%)	32 (10%)	21 (7%)	1	0
1	33-A	304/306 (99%)	258 (85%)	26 (9%)	20 (7%)	1	0
1	34-A	304/306 (99%)	256 (84%)	27 (9%)	21 (7%)	1	0

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	35-A	304/306 (99%)	257 (84%)	32 (10%)	15 (5%)	2	0
1	36-A	304/306 (99%)	257 (84%)	28 (9%)	19 (6%)	1	0
All	All	10944/11016 (99%)	9171 (84%)	1146 (10%)	627 (6%)	1	0

5 of 627 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	1-A	22	CYS
1	1-A	47	GLU
1	1-A	51	ASN
1	1-A	72	ASN
1	1-A	73	VAL

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	1-A	263/263 (100%)	219 (83%)	44 (17%)	2	0
1	2-A	263/263 (100%)	221 (84%)	42 (16%)	2	0
1	3-A	263/263 (100%)	218 (83%)	45 (17%)	2	0
1	4-A	263/263 (100%)	218 (83%)	45 (17%)	2	0
1	5-A	263/263 (100%)	217 (82%)	46 (18%)	2	0
1	6-A	263/263 (100%)	221 (84%)	42 (16%)	2	0
1	7-A	263/263 (100%)	224 (85%)	39 (15%)	3	0
1	8-A	263/263 (100%)	218 (83%)	45 (17%)	2	0
1	9-A	263/263 (100%)	222 (84%)	41 (16%)	2	0
1	10-A	263/263 (100%)	213 (81%)	50 (19%)	1	0
1	11-A	263/263 (100%)	212 (81%)	51 (19%)	1	0
1	12-A	263/263 (100%)	220 (84%)	43 (16%)	2	0
1	13-A	263/263 (100%)	219 (83%)	44 (17%)	2	0
1	14-A	263/263 (100%)	224 (85%)	39 (15%)	3	0

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	15-A	263/263 (100%)	213 (81%)	50 (19%)	1	0
1	16-A	263/263 (100%)	209 (80%)	54 (20%)	1	0
1	17-A	263/263 (100%)	212 (81%)	51 (19%)	1	0
1	18-A	263/263 (100%)	208 (79%)	55 (21%)	1	0
1	19-A	263/263 (100%)	221 (84%)	42 (16%)	2	0
1	20-A	263/263 (100%)	211 (80%)	52 (20%)	1	0
1	21-A	263/263 (100%)	217 (82%)	46 (18%)	2	0
1	22-A	263/263 (100%)	220 (84%)	43 (16%)	2	0
1	23-A	263/263 (100%)	223 (85%)	40 (15%)	3	0
1	24-A	263/263 (100%)	210 (80%)	53 (20%)	1	0
1	25-A	263/263 (100%)	214 (81%)	49 (19%)	1	0
1	26-A	263/263 (100%)	221 (84%)	42 (16%)	2	0
1	27-A	263/263 (100%)	218 (83%)	45 (17%)	2	0
1	28-A	263/263 (100%)	215 (82%)	48 (18%)	1	0
1	29-A	263/263 (100%)	215 (82%)	48 (18%)	1	0
1	30-A	263/263 (100%)	226 (86%)	37 (14%)	3	0
1	31-A	263/263 (100%)	223 (85%)	40 (15%)	3	0
1	32-A	263/263 (100%)	218 (83%)	45 (17%)	2	0
1	33-A	263/263 (100%)	218 (83%)	45 (17%)	2	0
1	34-A	263/263 (100%)	224 (85%)	39 (15%)	3	0
1	35-A	263/263 (100%)	211 (80%)	52 (20%)	1	0
1	36-A	263/263 (100%)	211 (80%)	52 (20%)	1	0
All	All	9468/9468 (100%)	7824 (83%)	1644 (17%)	2	0

5 of 1644 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	21-A	58	LEU
1	25-A	297	VAL
1	36-A	47	GLU
1	21-A	244	GLN
1	21-A	55	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 290 such sidechains are listed below:

Mol	Chain	Res	Type
1	29-A	221	ASN
1	36-A	65	ASN
1	30-A	80	HIS
1	32-A	299	GLN
1	13-A	163	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 108 ligands modelled in this entry, 36 are monoatomic - leaving 72 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	DMS	16-A	502	-	3,3,3	0.73	0	3,3,3	1.38	0
2	DMS	18-A	502	-	3,3,3	0.72	0	3,3,3	1.47	1 (33%)
2	DMS	31-A	501	-	3,3,3	0.87	0	3,3,3	2.46	1 (33%)
2	DMS	1-A	501	-	3,3,3	0.77	0	3,3,3	2.23	2 (66%)
2	DMS	12-A	501	-	3,3,3	0.64	0	3,3,3	0.87	0
2	DMS	22-A	502	-	3,3,3	0.53	0	3,3,3	1.07	0
2	DMS	17-A	502	-	3,3,3	0.91	0	3,3,3	3.10	3 (100%)
2	DMS	13-A	501	-	3,3,3	0.81	0	3,3,3	1.70	1 (33%)
2	DMS	19-A	501	-	3,3,3	0.59	0	3,3,3	1.40	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	DMS	28-A	501	-	3,3,3	0.91	0	3,3,3	1.17	0
2	DMS	8-A	501	-	3,3,3	0.62	0	3,3,3	0.48	0
2	DMS	21-A	501	-	3,3,3	0.67	0	3,3,3	0.90	0
2	DMS	34-A	502	-	3,3,3	0.84	0	3,3,3	1.82	1 (33%)
2	DMS	23-A	501	-	3,3,3	0.84	0	3,3,3	2.06	1 (33%)
2	DMS	24-A	501	-	3,3,3	0.73	0	3,3,3	1.31	1 (33%)
2	DMS	9-A	501	-	3,3,3	0.60	0	3,3,3	1.39	0
2	DMS	20-A	502	-	3,3,3	0.71	0	3,3,3	0.79	0
2	DMS	23-A	502	-	3,3,3	0.75	0	3,3,3	1.07	0
2	DMS	25-A	501	-	3,3,3	0.76	0	3,3,3	1.75	1 (33%)
2	DMS	26-A	502	-	3,3,3	0.76	0	3,3,3	0.76	0
2	DMS	30-A	502	-	3,3,3	0.71	0	3,3,3	0.65	0
2	DMS	3-A	502	-	3,3,3	0.87	0	3,3,3	2.18	1 (33%)
2	DMS	7-A	501	-	3,3,3	0.70	0	3,3,3	1.01	0
2	DMS	14-A	502	-	3,3,3	0.79	0	3,3,3	2.10	1 (33%)
2	DMS	36-A	502	-	3,3,3	0.67	0	3,3,3	1.21	0
2	DMS	6-A	501	-	3,3,3	0.75	0	3,3,3	2.73	3 (100%)
2	DMS	33-A	501	-	3,3,3	0.71	0	3,3,3	1.08	0
2	DMS	1-A	502	-	3,3,3	0.84	0	3,3,3	0.88	0
2	DMS	8-A	502	-	3,3,3	0.80	0	3,3,3	1.12	0
2	DMS	24-A	502	-	3,3,3	0.81	0	3,3,3	1.56	1 (33%)
2	DMS	21-A	502	-	3,3,3	0.75	0	3,3,3	1.97	2 (66%)
2	DMS	29-A	502	-	3,3,3	0.70	0	3,3,3	0.43	0
2	DMS	27-A	502	-	3,3,3	0.92	0	3,3,3	0.45	0
2	DMS	35-A	501	-	3,3,3	0.72	0	3,3,3	0.50	0
2	DMS	2-A	501	-	3,3,3	0.71	0	3,3,3	1.24	0
2	DMS	32-A	501	-	3,3,3	0.89	0	3,3,3	0.97	0
2	DMS	9-A	502	-	3,3,3	0.58	0	3,3,3	1.34	0
2	DMS	7-A	502	-	3,3,3	0.82	0	3,3,3	2.36	1 (33%)
2	DMS	33-A	502	-	3,3,3	0.72	0	3,3,3	0.89	0
2	DMS	15-A	501	-	3,3,3	0.63	0	3,3,3	1.57	1 (33%)
2	DMS	2-A	502	-	3,3,3	0.81	0	3,3,3	0.55	0
2	DMS	6-A	502	-	3,3,3	0.95	0	3,3,3	0.95	0
2	DMS	26-A	501	-	3,3,3	0.66	0	3,3,3	0.34	0
2	DMS	25-A	502	-	3,3,3	0.90	0	3,3,3	0.75	0
2	DMS	19-A	502	-	3,3,3	0.81	0	3,3,3	1.01	0
2	DMS	13-A	502	-	3,3,3	0.89	0	3,3,3	1.79	0
2	DMS	4-A	501	-	3,3,3	0.67	0	3,3,3	1.27	0
2	DMS	32-A	502	-	3,3,3	0.87	0	3,3,3	1.95	2 (66%)
2	DMS	5-A	501	-	3,3,3	0.62	0	3,3,3	1.22	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	DMS	18-A	501	-	3,3,3	0.84	0	3,3,3	0.57	0
2	DMS	28-A	502	-	3,3,3	0.73	0	3,3,3	1.92	1 (33%)
2	DMS	11-A	502	-	3,3,3	0.79	0	3,3,3	0.24	0
2	DMS	12-A	502	-	3,3,3	0.76	0	3,3,3	1.37	1 (33%)
2	DMS	10-A	501	-	3,3,3	0.73	0	3,3,3	1.08	0
2	DMS	14-A	501	-	3,3,3	0.56	0	3,3,3	0.80	0
2	DMS	16-A	501	-	3,3,3	0.85	0	3,3,3	1.23	0
2	DMS	3-A	501	-	3,3,3	0.70	0	3,3,3	0.46	0
2	DMS	27-A	501	-	3,3,3	0.69	0	3,3,3	1.12	0
2	DMS	4-A	502	-	3,3,3	0.76	0	3,3,3	0.78	0
2	DMS	31-A	502	-	3,3,3	0.57	0	3,3,3	1.96	1 (33%)
2	DMS	17-A	501	-	3,3,3	0.52	0	3,3,3	1.29	0
2	DMS	5-A	502	-	3,3,3	0.85	0	3,3,3	1.90	1 (33%)
2	DMS	22-A	501	-	3,3,3	0.91	0	3,3,3	2.13	1 (33%)
2	DMS	30-A	501	-	3,3,3	0.78	0	3,3,3	0.99	0
2	DMS	29-A	501	-	3,3,3	0.80	0	3,3,3	1.33	1 (33%)
2	DMS	20-A	501	-	3,3,3	0.76	0	3,3,3	0.61	0
2	DMS	10-A	502	-	3,3,3	0.83	0	3,3,3	1.16	0
2	DMS	34-A	501	-	3,3,3	0.61	0	3,3,3	1.24	1 (33%)
2	DMS	35-A	502	-	3,3,3	0.72	0	3,3,3	1.37	0
2	DMS	36-A	501	-	3,3,3	0.74	0	3,3,3	1.18	0
2	DMS	11-A	501	-	3,3,3	0.70	0	3,3,3	1.90	1 (33%)
2	DMS	15-A	502	-	3,3,3	0.71	0	3,3,3	1.97	1 (33%)

There are no bond length outliers.

The worst 5 of 33 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	7-A	502	DMS	O-S-C2	4.07	127.30	106.54
2	17-A	502	DMS	O-S-C1	3.67	125.25	106.54
2	14-A	502	DMS	O-S-C1	3.53	124.55	106.54
2	31-A	501	DMS	O-S-C2	3.37	123.75	106.54
2	22-A	501	DMS	O-S-C1	3.33	123.53	106.54

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	4-A	1
1	22-A	1
1	10-A	1
1	15-A	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
4	A	106:ILE	C	107:GLN	N	1.17
22	A	106:ILE	C	107:GLN	N	1.15
10	A	106:ILE	C	107:GLN	N	1.13
15	A	106:ILE	C	107:GLN	N	1.11

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	1-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	2-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	3-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	4-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	5-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	6-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	7-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	8-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	9-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	10-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	11-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	12-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	13-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	14-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	15-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	16-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	17-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	18-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	19-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	20-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	21-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	22-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	23-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	24-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	25-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	26-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	27-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	28-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	29-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	30-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	31-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	32-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	33-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	34-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	35-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
1	36-A	306/306 (100%)	1.02	45 (14%) 2 3	38, 42, 49, 52	306 (100%)
All	All	11016/11016 (100%)	1.02	1620 (14%) 2 3	38, 42, 49, 52	11016 (100%)

The worst 5 of 1620 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	1-A	303	VAL	22.6
1	2-A	303	VAL	22.6
1	3-A	303	VAL	22.6
1	4-A	303	VAL	22.6
1	5-A	303	VAL	22.6

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum,

median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	DMS	1-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	2-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	3-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	4-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	5-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	6-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	7-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	8-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	9-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	10-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	11-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	12-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	13-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	14-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	15-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	16-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	17-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	18-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	19-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	20-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	21-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	22-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	23-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	24-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	25-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	26-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	27-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	28-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	29-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	30-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	31-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	32-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	33-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	34-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	35-A	501	4/4	0.39	2.90	38,39,39,39	10
2	DMS	36-A	501	4/4	0.39	2.90	38,39,39,39	10
3	ZN	1-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	2-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	3-A	503	1/1	0.55	0.29	41,41,41,41	1

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
3	ZN	4-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	5-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	6-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	7-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	8-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	9-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	10-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	11-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	12-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	13-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	14-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	15-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	16-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	17-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	18-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	19-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	20-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	21-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	22-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	23-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	24-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	25-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	26-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	27-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	28-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	29-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	30-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	31-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	32-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	33-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	34-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	35-A	503	1/1	0.55	0.29	41,41,41,41	1
3	ZN	36-A	503	1/1	0.55	0.29	41,41,41,41	1
2	DMS	1-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	2-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	3-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	4-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	5-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	6-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	7-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	8-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	9-A	502	4/4	0.66	0.66	40,41,41,41	10

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
2	DMS	10-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	11-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	12-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	13-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	14-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	15-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	16-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	17-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	18-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	19-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	20-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	21-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	22-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	23-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	24-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	25-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	26-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	27-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	28-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	29-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	30-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	31-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	32-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	33-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	34-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	35-A	502	4/4	0.66	0.66	40,41,41,41	10
2	DMS	36-A	502	4/4	0.66	0.66	40,41,41,41	10

6.5 Other polymers [i](#)

There are no such residues in this entry.