



Full wwPDB X-ray Structure Validation Report

May 30, 2023 – 04:30 pm BST

PDB ID : 8P3M
Title : The structure of thiocyanate dehydrogenase mutant form with Lys 281 replaced by Ala from *Thioalkalivibrio paradoxus*
Authors : Varfolomeeva, L.A.; Polyakov, K.M.; Komolov, A.S.; Rakitina, T.V.; Der-gousova, N.I.; Dorovatovskii, P.V.; Boyko, K.M.; Tikhonova, T.V.; Popov, V.O.
Deposited on : 2023-05-18
Resolution : 2.07 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the  symbol.

The types of validation reports are described at

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

The following versions of software and data (see [references](#) ①) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.4, CSD as541be (2020)
Xtrriage (Phenix) : 1.13
EDS : 2.33
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.33

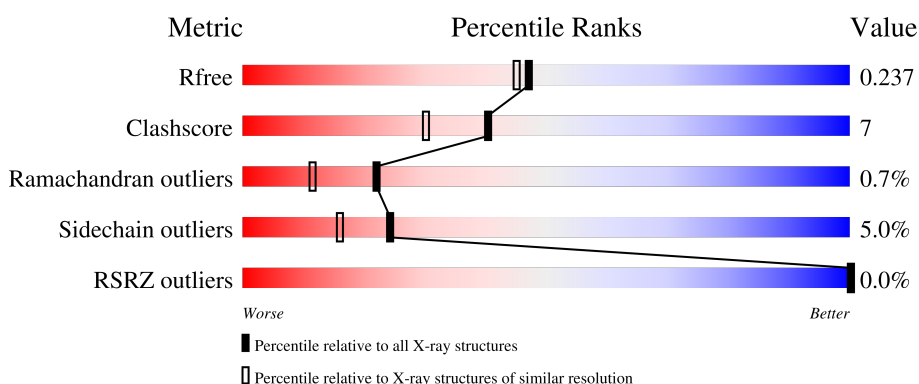
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.07 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	2684 (2.08-2.04)
Clashscore	141614	2801 (2.08-2.04)
Ramachandran outliers	138981	2768 (2.08-2.04)
Sidechain outliers	138945	2768 (2.08-2.04)
RSRZ outliers	127900	2646 (2.08-2.04)

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	2	494	
1	5	494	
1	8	494	
1	A	494	
1	D	494	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	G	494	 75% 16% • 5%
1	J	494	 78% 13% •• 5%
1	M	494	 76% 16% • 5%
1	P	494	 73% 18% • 5%
1	S	494	 73% 19% • 5%
1	V	494	 69% 23% •• 5%
1	Y	494	 76% 16% •• 5%
1	e	494	 86% 7% • 5%
1	h	494	 86% 7% • 5%
1	k	494	 84% 10% 5%
1	x	494	 83% 10% • 5%

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 60462 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 Twin-arginine translocation signal domain-containing protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	467	Total 3636	C 2319	N 607	O 692	S 18	0	1	0
1	D	467	Total 3628	C 2316	N 606	O 688	S 18	0	0	0
1	G	467	Total 3636	C 2320	N 607	O 690	S 19	0	2	0
1	J	467	Total 3620	C 2312	N 602	O 688	S 18	0	0	0
1	M	467	Total 3627	C 2315	N 606	O 688	S 18	0	0	0
1	P	467	Total 3626	C 2313	N 603	O 692	S 18	0	0	0
1	S	467	Total 3614	C 2309	N 605	O 682	S 18	0	0	0
1	V	467	Total 3621	C 2309	N 604	O 690	S 18	0	0	0
1	Y	467	Total 3617	C 2310	N 604	O 685	S 18	0	1	0
1	2	467	Total 3627	C 2315	N 604	O 690	S 18	0	0	0
1	5	467	Total 3617	C 2309	N 606	O 684	S 18	0	1	0
1	8	467	Total 3617	C 2308	N 603	O 688	S 18	0	0	0
1	x	467	Total 3608	C 2304	N 600	O 686	S 18	0	0	0
1	e	467	Total 3608	C 2304	N 598	O 688	S 18	0	1	0
1	h	467	Total 3602	C 2302	N 596	O 686	S 18	0	0	0
1	k	467	Total 3611	C 2304	N 603	O 686	S 18	0	1	0

There are 448 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	55	MET	-	initiating methionine	UNP W0DP94
A	56	SER	-	expression tag	UNP W0DP94
A	57	TYR	-	expression tag	UNP W0DP94
A	58	TYR	-	expression tag	UNP W0DP94
A	59	HIS	-	expression tag	UNP W0DP94
A	60	HIS	-	expression tag	UNP W0DP94
A	61	HIS	-	expression tag	UNP W0DP94
A	62	HIS	-	expression tag	UNP W0DP94
A	63	HIS	-	expression tag	UNP W0DP94
A	64	HIS	-	expression tag	UNP W0DP94
A	65	ASP	-	expression tag	UNP W0DP94
A	66	TYR	-	expression tag	UNP W0DP94
A	67	ASP	-	expression tag	UNP W0DP94
A	68	ILE	-	expression tag	UNP W0DP94
A	69	PRO	-	expression tag	UNP W0DP94
A	70	THR	-	expression tag	UNP W0DP94
A	71	THR	-	expression tag	UNP W0DP94
A	72	GLU	-	expression tag	UNP W0DP94
A	73	ASN	-	expression tag	UNP W0DP94
A	74	LEU	-	expression tag	UNP W0DP94
A	75	TYR	-	expression tag	UNP W0DP94
A	76	PHE	-	expression tag	UNP W0DP94
A	77	GLN	-	expression tag	UNP W0DP94
A	78	GLY	-	expression tag	UNP W0DP94
A	79	ALA	-	expression tag	UNP W0DP94
A	80	MET	-	expression tag	UNP W0DP94
A	81	GLY	-	expression tag	UNP W0DP94
A	281	ALA	LYS	engineered mutation	UNP W0DP94
D	55	MET	-	initiating methionine	UNP W0DP94
D	56	SER	-	expression tag	UNP W0DP94
D	57	TYR	-	expression tag	UNP W0DP94
D	58	TYR	-	expression tag	UNP W0DP94
D	59	HIS	-	expression tag	UNP W0DP94
D	60	HIS	-	expression tag	UNP W0DP94
D	61	HIS	-	expression tag	UNP W0DP94
D	62	HIS	-	expression tag	UNP W0DP94
D	63	HIS	-	expression tag	UNP W0DP94
D	64	HIS	-	expression tag	UNP W0DP94
D	65	ASP	-	expression tag	UNP W0DP94
D	66	TYR	-	expression tag	UNP W0DP94
D	67	ASP	-	expression tag	UNP W0DP94
D	68	ILE	-	expression tag	UNP W0DP94

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
D	69	PRO	-	expression tag	UNP W0DP94
D	70	THR	-	expression tag	UNP W0DP94
D	71	THR	-	expression tag	UNP W0DP94
D	72	GLU	-	expression tag	UNP W0DP94
D	73	ASN	-	expression tag	UNP W0DP94
D	74	LEU	-	expression tag	UNP W0DP94
D	75	TYR	-	expression tag	UNP W0DP94
D	76	PHE	-	expression tag	UNP W0DP94
D	77	GLN	-	expression tag	UNP W0DP94
D	78	GLY	-	expression tag	UNP W0DP94
D	79	ALA	-	expression tag	UNP W0DP94
D	80	MET	-	expression tag	UNP W0DP94
D	81	GLY	-	expression tag	UNP W0DP94
D	281	ALA	LYS	engineered mutation	UNP W0DP94
G	55	MET	-	initiating methionine	UNP W0DP94
G	56	SER	-	expression tag	UNP W0DP94
G	57	TYR	-	expression tag	UNP W0DP94
G	58	TYR	-	expression tag	UNP W0DP94
G	59	HIS	-	expression tag	UNP W0DP94
G	60	HIS	-	expression tag	UNP W0DP94
G	61	HIS	-	expression tag	UNP W0DP94
G	62	HIS	-	expression tag	UNP W0DP94
G	63	HIS	-	expression tag	UNP W0DP94
G	64	HIS	-	expression tag	UNP W0DP94
G	65	ASP	-	expression tag	UNP W0DP94
G	66	TYR	-	expression tag	UNP W0DP94
G	67	ASP	-	expression tag	UNP W0DP94
G	68	ILE	-	expression tag	UNP W0DP94
G	69	PRO	-	expression tag	UNP W0DP94
G	70	THR	-	expression tag	UNP W0DP94
G	71	THR	-	expression tag	UNP W0DP94
G	72	GLU	-	expression tag	UNP W0DP94
G	73	ASN	-	expression tag	UNP W0DP94
G	74	LEU	-	expression tag	UNP W0DP94
G	75	TYR	-	expression tag	UNP W0DP94
G	76	PHE	-	expression tag	UNP W0DP94
G	77	GLN	-	expression tag	UNP W0DP94
G	78	GLY	-	expression tag	UNP W0DP94
G	79	ALA	-	expression tag	UNP W0DP94
G	80	MET	-	expression tag	UNP W0DP94
G	81	GLY	-	expression tag	UNP W0DP94
G	281	ALA	LYS	engineered mutation	UNP W0DP94

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
J	55	MET	-	initiating methionine	UNP W0DP94
J	56	SER	-	expression tag	UNP W0DP94
J	57	TYR	-	expression tag	UNP W0DP94
J	58	TYR	-	expression tag	UNP W0DP94
J	59	HIS	-	expression tag	UNP W0DP94
J	60	HIS	-	expression tag	UNP W0DP94
J	61	HIS	-	expression tag	UNP W0DP94
J	62	HIS	-	expression tag	UNP W0DP94
J	63	HIS	-	expression tag	UNP W0DP94
J	64	HIS	-	expression tag	UNP W0DP94
J	65	ASP	-	expression tag	UNP W0DP94
J	66	TYR	-	expression tag	UNP W0DP94
J	67	ASP	-	expression tag	UNP W0DP94
J	68	ILE	-	expression tag	UNP W0DP94
J	69	PRO	-	expression tag	UNP W0DP94
J	70	THR	-	expression tag	UNP W0DP94
J	71	THR	-	expression tag	UNP W0DP94
J	72	GLU	-	expression tag	UNP W0DP94
J	73	ASN	-	expression tag	UNP W0DP94
J	74	LEU	-	expression tag	UNP W0DP94
J	75	TYR	-	expression tag	UNP W0DP94
J	76	PHE	-	expression tag	UNP W0DP94
J	77	GLN	-	expression tag	UNP W0DP94
J	78	GLY	-	expression tag	UNP W0DP94
J	79	ALA	-	expression tag	UNP W0DP94
J	80	MET	-	expression tag	UNP W0DP94
J	81	GLY	-	expression tag	UNP W0DP94
J	281	ALA	LYS	engineered mutation	UNP W0DP94
M	55	MET	-	initiating methionine	UNP W0DP94
M	56	SER	-	expression tag	UNP W0DP94
M	57	TYR	-	expression tag	UNP W0DP94
M	58	TYR	-	expression tag	UNP W0DP94
M	59	HIS	-	expression tag	UNP W0DP94
M	60	HIS	-	expression tag	UNP W0DP94
M	61	HIS	-	expression tag	UNP W0DP94
M	62	HIS	-	expression tag	UNP W0DP94
M	63	HIS	-	expression tag	UNP W0DP94
M	64	HIS	-	expression tag	UNP W0DP94
M	65	ASP	-	expression tag	UNP W0DP94
M	66	TYR	-	expression tag	UNP W0DP94
M	67	ASP	-	expression tag	UNP W0DP94
M	68	ILE	-	expression tag	UNP W0DP94

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
M	69	PRO	-	expression tag	UNP W0DP94
M	70	THR	-	expression tag	UNP W0DP94
M	71	THR	-	expression tag	UNP W0DP94
M	72	GLU	-	expression tag	UNP W0DP94
M	73	ASN	-	expression tag	UNP W0DP94
M	74	LEU	-	expression tag	UNP W0DP94
M	75	TYR	-	expression tag	UNP W0DP94
M	76	PHE	-	expression tag	UNP W0DP94
M	77	GLN	-	expression tag	UNP W0DP94
M	78	GLY	-	expression tag	UNP W0DP94
M	79	ALA	-	expression tag	UNP W0DP94
M	80	MET	-	expression tag	UNP W0DP94
M	81	GLY	-	expression tag	UNP W0DP94
M	281	ALA	LYS	engineered mutation	UNP W0DP94
P	55	MET	-	initiating methionine	UNP W0DP94
P	56	SER	-	expression tag	UNP W0DP94
P	57	TYR	-	expression tag	UNP W0DP94
P	58	TYR	-	expression tag	UNP W0DP94
P	59	HIS	-	expression tag	UNP W0DP94
P	60	HIS	-	expression tag	UNP W0DP94
P	61	HIS	-	expression tag	UNP W0DP94
P	62	HIS	-	expression tag	UNP W0DP94
P	63	HIS	-	expression tag	UNP W0DP94
P	64	HIS	-	expression tag	UNP W0DP94
P	65	ASP	-	expression tag	UNP W0DP94
P	66	TYR	-	expression tag	UNP W0DP94
P	67	ASP	-	expression tag	UNP W0DP94
P	68	ILE	-	expression tag	UNP W0DP94
P	69	PRO	-	expression tag	UNP W0DP94
P	70	THR	-	expression tag	UNP W0DP94
P	71	THR	-	expression tag	UNP W0DP94
P	72	GLU	-	expression tag	UNP W0DP94
P	73	ASN	-	expression tag	UNP W0DP94
P	74	LEU	-	expression tag	UNP W0DP94
P	75	TYR	-	expression tag	UNP W0DP94
P	76	PHE	-	expression tag	UNP W0DP94
P	77	GLN	-	expression tag	UNP W0DP94
P	78	GLY	-	expression tag	UNP W0DP94
P	79	ALA	-	expression tag	UNP W0DP94
P	80	MET	-	expression tag	UNP W0DP94
P	81	GLY	-	expression tag	UNP W0DP94
P	281	ALA	LYS	engineered mutation	UNP W0DP94

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
S	55	MET	-	initiating methionine	UNP W0DP94
S	56	SER	-	expression tag	UNP W0DP94
S	57	TYR	-	expression tag	UNP W0DP94
S	58	TYR	-	expression tag	UNP W0DP94
S	59	HIS	-	expression tag	UNP W0DP94
S	60	HIS	-	expression tag	UNP W0DP94
S	61	HIS	-	expression tag	UNP W0DP94
S	62	HIS	-	expression tag	UNP W0DP94
S	63	HIS	-	expression tag	UNP W0DP94
S	64	HIS	-	expression tag	UNP W0DP94
S	65	ASP	-	expression tag	UNP W0DP94
S	66	TYR	-	expression tag	UNP W0DP94
S	67	ASP	-	expression tag	UNP W0DP94
S	68	ILE	-	expression tag	UNP W0DP94
S	69	PRO	-	expression tag	UNP W0DP94
S	70	THR	-	expression tag	UNP W0DP94
S	71	THR	-	expression tag	UNP W0DP94
S	72	GLU	-	expression tag	UNP W0DP94
S	73	ASN	-	expression tag	UNP W0DP94
S	74	LEU	-	expression tag	UNP W0DP94
S	75	TYR	-	expression tag	UNP W0DP94
S	76	PHE	-	expression tag	UNP W0DP94
S	77	GLN	-	expression tag	UNP W0DP94
S	78	GLY	-	expression tag	UNP W0DP94
S	79	ALA	-	expression tag	UNP W0DP94
S	80	MET	-	expression tag	UNP W0DP94
S	81	GLY	-	expression tag	UNP W0DP94
S	281	ALA	LYS	engineered mutation	UNP W0DP94
V	55	MET	-	initiating methionine	UNP W0DP94
V	56	SER	-	expression tag	UNP W0DP94
V	57	TYR	-	expression tag	UNP W0DP94
V	58	TYR	-	expression tag	UNP W0DP94
V	59	HIS	-	expression tag	UNP W0DP94
V	60	HIS	-	expression tag	UNP W0DP94
V	61	HIS	-	expression tag	UNP W0DP94
V	62	HIS	-	expression tag	UNP W0DP94
V	63	HIS	-	expression tag	UNP W0DP94
V	64	HIS	-	expression tag	UNP W0DP94
V	65	ASP	-	expression tag	UNP W0DP94
V	66	TYR	-	expression tag	UNP W0DP94
V	67	ASP	-	expression tag	UNP W0DP94
V	68	ILE	-	expression tag	UNP W0DP94

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
V	69	PRO	-	expression tag	UNP W0DP94
V	70	THR	-	expression tag	UNP W0DP94
V	71	THR	-	expression tag	UNP W0DP94
V	72	GLU	-	expression tag	UNP W0DP94
V	73	ASN	-	expression tag	UNP W0DP94
V	74	LEU	-	expression tag	UNP W0DP94
V	75	TYR	-	expression tag	UNP W0DP94
V	76	PHE	-	expression tag	UNP W0DP94
V	77	GLN	-	expression tag	UNP W0DP94
V	78	GLY	-	expression tag	UNP W0DP94
V	79	ALA	-	expression tag	UNP W0DP94
V	80	MET	-	expression tag	UNP W0DP94
V	81	GLY	-	expression tag	UNP W0DP94
V	281	ALA	LYS	engineered mutation	UNP W0DP94
Y	55	MET	-	initiating methionine	UNP W0DP94
Y	56	SER	-	expression tag	UNP W0DP94
Y	57	TYR	-	expression tag	UNP W0DP94
Y	58	TYR	-	expression tag	UNP W0DP94
Y	59	HIS	-	expression tag	UNP W0DP94
Y	60	HIS	-	expression tag	UNP W0DP94
Y	61	HIS	-	expression tag	UNP W0DP94
Y	62	HIS	-	expression tag	UNP W0DP94
Y	63	HIS	-	expression tag	UNP W0DP94
Y	64	HIS	-	expression tag	UNP W0DP94
Y	65	ASP	-	expression tag	UNP W0DP94
Y	66	TYR	-	expression tag	UNP W0DP94
Y	67	ASP	-	expression tag	UNP W0DP94
Y	68	ILE	-	expression tag	UNP W0DP94
Y	69	PRO	-	expression tag	UNP W0DP94
Y	70	THR	-	expression tag	UNP W0DP94
Y	71	THR	-	expression tag	UNP W0DP94
Y	72	GLU	-	expression tag	UNP W0DP94
Y	73	ASN	-	expression tag	UNP W0DP94
Y	74	LEU	-	expression tag	UNP W0DP94
Y	75	TYR	-	expression tag	UNP W0DP94
Y	76	PHE	-	expression tag	UNP W0DP94
Y	77	GLN	-	expression tag	UNP W0DP94
Y	78	GLY	-	expression tag	UNP W0DP94
Y	79	ALA	-	expression tag	UNP W0DP94
Y	80	MET	-	expression tag	UNP W0DP94
Y	81	GLY	-	expression tag	UNP W0DP94
Y	281	ALA	LYS	engineered mutation	UNP W0DP94

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
2	55	MET	-	initiating methionine	UNP W0DP94
2	56	SER	-	expression tag	UNP W0DP94
2	57	TYR	-	expression tag	UNP W0DP94
2	58	TYR	-	expression tag	UNP W0DP94
2	59	HIS	-	expression tag	UNP W0DP94
2	60	HIS	-	expression tag	UNP W0DP94
2	61	HIS	-	expression tag	UNP W0DP94
2	62	HIS	-	expression tag	UNP W0DP94
2	63	HIS	-	expression tag	UNP W0DP94
2	64	HIS	-	expression tag	UNP W0DP94
2	65	ASP	-	expression tag	UNP W0DP94
2	66	TYR	-	expression tag	UNP W0DP94
2	67	ASP	-	expression tag	UNP W0DP94
2	68	ILE	-	expression tag	UNP W0DP94
2	69	PRO	-	expression tag	UNP W0DP94
2	70	THR	-	expression tag	UNP W0DP94
2	71	THR	-	expression tag	UNP W0DP94
2	72	GLU	-	expression tag	UNP W0DP94
2	73	ASN	-	expression tag	UNP W0DP94
2	74	LEU	-	expression tag	UNP W0DP94
2	75	TYR	-	expression tag	UNP W0DP94
2	76	PHE	-	expression tag	UNP W0DP94
2	77	GLN	-	expression tag	UNP W0DP94
2	78	GLY	-	expression tag	UNP W0DP94
2	79	ALA	-	expression tag	UNP W0DP94
2	80	MET	-	expression tag	UNP W0DP94
2	81	GLY	-	expression tag	UNP W0DP94
2	281	ALA	LYS	engineered mutation	UNP W0DP94
5	55	MET	-	initiating methionine	UNP W0DP94
5	56	SER	-	expression tag	UNP W0DP94
5	57	TYR	-	expression tag	UNP W0DP94
5	58	TYR	-	expression tag	UNP W0DP94
5	59	HIS	-	expression tag	UNP W0DP94
5	60	HIS	-	expression tag	UNP W0DP94
5	61	HIS	-	expression tag	UNP W0DP94
5	62	HIS	-	expression tag	UNP W0DP94
5	63	HIS	-	expression tag	UNP W0DP94
5	64	HIS	-	expression tag	UNP W0DP94
5	65	ASP	-	expression tag	UNP W0DP94
5	66	TYR	-	expression tag	UNP W0DP94
5	67	ASP	-	expression tag	UNP W0DP94
5	68	ILE	-	expression tag	UNP W0DP94

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
5	69	PRO	-	expression tag	UNP W0DP94
5	70	THR	-	expression tag	UNP W0DP94
5	71	THR	-	expression tag	UNP W0DP94
5	72	GLU	-	expression tag	UNP W0DP94
5	73	ASN	-	expression tag	UNP W0DP94
5	74	LEU	-	expression tag	UNP W0DP94
5	75	TYR	-	expression tag	UNP W0DP94
5	76	PHE	-	expression tag	UNP W0DP94
5	77	GLN	-	expression tag	UNP W0DP94
5	78	GLY	-	expression tag	UNP W0DP94
5	79	ALA	-	expression tag	UNP W0DP94
5	80	MET	-	expression tag	UNP W0DP94
5	81	GLY	-	expression tag	UNP W0DP94
5	281	ALA	LYS	engineered mutation	UNP W0DP94
8	55	MET	-	initiating methionine	UNP W0DP94
8	56	SER	-	expression tag	UNP W0DP94
8	57	TYR	-	expression tag	UNP W0DP94
8	58	TYR	-	expression tag	UNP W0DP94
8	59	HIS	-	expression tag	UNP W0DP94
8	60	HIS	-	expression tag	UNP W0DP94
8	61	HIS	-	expression tag	UNP W0DP94
8	62	HIS	-	expression tag	UNP W0DP94
8	63	HIS	-	expression tag	UNP W0DP94
8	64	HIS	-	expression tag	UNP W0DP94
8	65	ASP	-	expression tag	UNP W0DP94
8	66	TYR	-	expression tag	UNP W0DP94
8	67	ASP	-	expression tag	UNP W0DP94
8	68	ILE	-	expression tag	UNP W0DP94
8	69	PRO	-	expression tag	UNP W0DP94
8	70	THR	-	expression tag	UNP W0DP94
8	71	THR	-	expression tag	UNP W0DP94
8	72	GLU	-	expression tag	UNP W0DP94
8	73	ASN	-	expression tag	UNP W0DP94
8	74	LEU	-	expression tag	UNP W0DP94
8	75	TYR	-	expression tag	UNP W0DP94
8	76	PHE	-	expression tag	UNP W0DP94
8	77	GLN	-	expression tag	UNP W0DP94
8	78	GLY	-	expression tag	UNP W0DP94
8	79	ALA	-	expression tag	UNP W0DP94
8	80	MET	-	expression tag	UNP W0DP94
8	81	GLY	-	expression tag	UNP W0DP94
8	281	ALA	LYS	engineered mutation	UNP W0DP94

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
x	55	MET	-	initiating methionine	UNP W0DP94
x	56	SER	-	expression tag	UNP W0DP94
x	57	TYR	-	expression tag	UNP W0DP94
x	58	TYR	-	expression tag	UNP W0DP94
x	59	HIS	-	expression tag	UNP W0DP94
x	60	HIS	-	expression tag	UNP W0DP94
x	61	HIS	-	expression tag	UNP W0DP94
x	62	HIS	-	expression tag	UNP W0DP94
x	63	HIS	-	expression tag	UNP W0DP94
x	64	HIS	-	expression tag	UNP W0DP94
x	65	ASP	-	expression tag	UNP W0DP94
x	66	TYR	-	expression tag	UNP W0DP94
x	67	ASP	-	expression tag	UNP W0DP94
x	68	ILE	-	expression tag	UNP W0DP94
x	69	PRO	-	expression tag	UNP W0DP94
x	70	THR	-	expression tag	UNP W0DP94
x	71	THR	-	expression tag	UNP W0DP94
x	72	GLU	-	expression tag	UNP W0DP94
x	73	ASN	-	expression tag	UNP W0DP94
x	74	LEU	-	expression tag	UNP W0DP94
x	75	TYR	-	expression tag	UNP W0DP94
x	76	PHE	-	expression tag	UNP W0DP94
x	77	GLN	-	expression tag	UNP W0DP94
x	78	GLY	-	expression tag	UNP W0DP94
x	79	ALA	-	expression tag	UNP W0DP94
x	80	MET	-	expression tag	UNP W0DP94
x	81	GLY	-	expression tag	UNP W0DP94
x	281	ALA	LYS	engineered mutation	UNP W0DP94
e	55	MET	-	initiating methionine	UNP W0DP94
e	56	SER	-	expression tag	UNP W0DP94
e	57	TYR	-	expression tag	UNP W0DP94
e	58	TYR	-	expression tag	UNP W0DP94
e	59	HIS	-	expression tag	UNP W0DP94
e	60	HIS	-	expression tag	UNP W0DP94
e	61	HIS	-	expression tag	UNP W0DP94
e	62	HIS	-	expression tag	UNP W0DP94
e	63	HIS	-	expression tag	UNP W0DP94
e	64	HIS	-	expression tag	UNP W0DP94
e	65	ASP	-	expression tag	UNP W0DP94
e	66	TYR	-	expression tag	UNP W0DP94
e	67	ASP	-	expression tag	UNP W0DP94
e	68	ILE	-	expression tag	UNP W0DP94

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
e	69	PRO	-	expression tag	UNP W0DP94
e	70	THR	-	expression tag	UNP W0DP94
e	71	THR	-	expression tag	UNP W0DP94
e	72	GLU	-	expression tag	UNP W0DP94
e	73	ASN	-	expression tag	UNP W0DP94
e	74	LEU	-	expression tag	UNP W0DP94
e	75	TYR	-	expression tag	UNP W0DP94
e	76	PHE	-	expression tag	UNP W0DP94
e	77	GLN	-	expression tag	UNP W0DP94
e	78	GLY	-	expression tag	UNP W0DP94
e	79	ALA	-	expression tag	UNP W0DP94
e	80	MET	-	expression tag	UNP W0DP94
e	81	GLY	-	expression tag	UNP W0DP94
e	281	ALA	LYS	engineered mutation	UNP W0DP94
h	55	MET	-	initiating methionine	UNP W0DP94
h	56	SER	-	expression tag	UNP W0DP94
h	57	TYR	-	expression tag	UNP W0DP94
h	58	TYR	-	expression tag	UNP W0DP94
h	59	HIS	-	expression tag	UNP W0DP94
h	60	HIS	-	expression tag	UNP W0DP94
h	61	HIS	-	expression tag	UNP W0DP94
h	62	HIS	-	expression tag	UNP W0DP94
h	63	HIS	-	expression tag	UNP W0DP94
h	64	HIS	-	expression tag	UNP W0DP94
h	65	ASP	-	expression tag	UNP W0DP94
h	66	TYR	-	expression tag	UNP W0DP94
h	67	ASP	-	expression tag	UNP W0DP94
h	68	ILE	-	expression tag	UNP W0DP94
h	69	PRO	-	expression tag	UNP W0DP94
h	70	THR	-	expression tag	UNP W0DP94
h	71	THR	-	expression tag	UNP W0DP94
h	72	GLU	-	expression tag	UNP W0DP94
h	73	ASN	-	expression tag	UNP W0DP94
h	74	LEU	-	expression tag	UNP W0DP94
h	75	TYR	-	expression tag	UNP W0DP94
h	76	PHE	-	expression tag	UNP W0DP94
h	77	GLN	-	expression tag	UNP W0DP94
h	78	GLY	-	expression tag	UNP W0DP94
h	79	ALA	-	expression tag	UNP W0DP94
h	80	MET	-	expression tag	UNP W0DP94
h	81	GLY	-	expression tag	UNP W0DP94
h	281	ALA	LYS	engineered mutation	UNP W0DP94

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
k	55	MET	-	initiating methionine	UNP W0DP94
k	56	SER	-	expression tag	UNP W0DP94
k	57	TYR	-	expression tag	UNP W0DP94
k	58	TYR	-	expression tag	UNP W0DP94
k	59	HIS	-	expression tag	UNP W0DP94
k	60	HIS	-	expression tag	UNP W0DP94
k	61	HIS	-	expression tag	UNP W0DP94
k	62	HIS	-	expression tag	UNP W0DP94
k	63	HIS	-	expression tag	UNP W0DP94
k	64	HIS	-	expression tag	UNP W0DP94
k	65	ASP	-	expression tag	UNP W0DP94
k	66	TYR	-	expression tag	UNP W0DP94
k	67	ASP	-	expression tag	UNP W0DP94
k	68	ILE	-	expression tag	UNP W0DP94
k	69	PRO	-	expression tag	UNP W0DP94
k	70	THR	-	expression tag	UNP W0DP94
k	71	THR	-	expression tag	UNP W0DP94
k	72	GLU	-	expression tag	UNP W0DP94
k	73	ASN	-	expression tag	UNP W0DP94
k	74	LEU	-	expression tag	UNP W0DP94
k	75	TYR	-	expression tag	UNP W0DP94
k	76	PHE	-	expression tag	UNP W0DP94
k	77	GLN	-	expression tag	UNP W0DP94
k	78	GLY	-	expression tag	UNP W0DP94
k	79	ALA	-	expression tag	UNP W0DP94
k	80	MET	-	expression tag	UNP W0DP94
k	81	GLY	-	expression tag	UNP W0DP94
k	281	ALA	LYS	engineered mutation	UNP W0DP94

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O₄S).



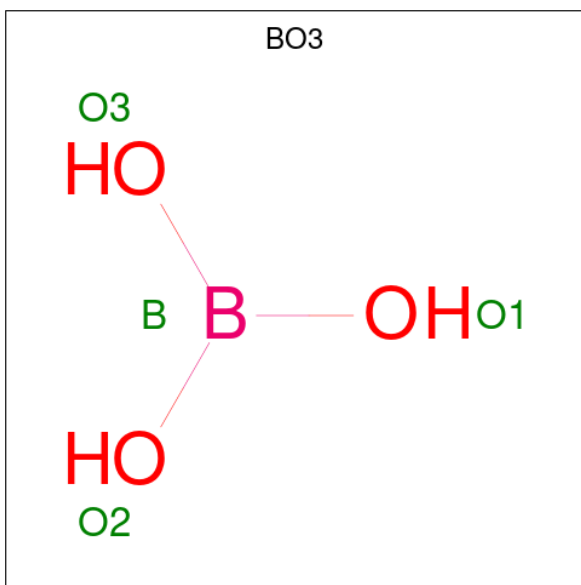
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	O	S	0	0
			5	4	1		
2	A	1	Total	O	S	0	0
			5	4	1		
2	D	1	Total	O	S	0	0
			5	4	1		
2	G	1	Total	O	S	0	0
			5	4	1		
2	J	1	Total	O	S	0	0
			5	4	1		
2	M	1	Total	O	S	0	0
			5	4	1		
2	P	1	Total	O	S	0	0
			5	4	1		
2	P	1	Total	O	S	0	0
			5	4	1		
2	S	1	Total	O	S	0	0
			5	4	1		
2	V	1	Total	O	S	0	0
			5	4	1		
2	Y	1	Total	O	S	0	0
			5	4	1		
2	2	1	Total	O	S	0	0
			5	4	1		
2	5	1	Total	O	S	0	0
			5	4	1		
2	8	1	Total	O	S	0	0
			5	4	1		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	x	1	Total	O	S	0	0
			5	4	1		
2	h	1	Total	O	S	0	0
			5	4	1		
2	k	1	Total	O	S	0	0
			5	4	1		

- Molecule 3 is BORIC ACID (three-letter code: BO3) (formula: BH_3O_3).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	B	O	0	0
			4	1	3		
3	D	1	Total	B	O	0	0
			4	1	3		

- Molecule 4 is COPPER (II) ION (three-letter code: CU) (formula: Cu) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	2	Total	Cu	0	0
			2	2		
4	D	2	Total	Cu	0	0
			2	2		
4	G	2	Total	Cu	0	0
			2	2		
4	J	2	Total	Cu	0	0
			2	2		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	M	2	Total Cu 2 2	0	0
4	P	2	Total Cu 2 2	0	0
4	S	2	Total Cu 2 2	0	0
4	V	2	Total Cu 2 2	0	0
4	Y	2	Total Cu 2 2	0	0
4	2	2	Total Cu 2 2	0	0
4	5	2	Total Cu 2 2	0	0
4	8	2	Total Cu 2 2	0	0
4	x	2	Total Cu 2 2	0	0
4	e	2	Total Cu 2 2	0	0
4	h	2	Total Cu 2 2	0	0
4	k	2	Total Cu 2 2	0	0

- Molecule 5 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	P	1	Total Na 1 1	0	0
5	V	1	Total Na 1 1	0	0

- Molecule 6 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	193	Total O 193 193	0	0
6	D	198	Total O 198 198	0	0
6	G	199	Total O 199 199	0	0

Continued on next page...


Continued from previous page...

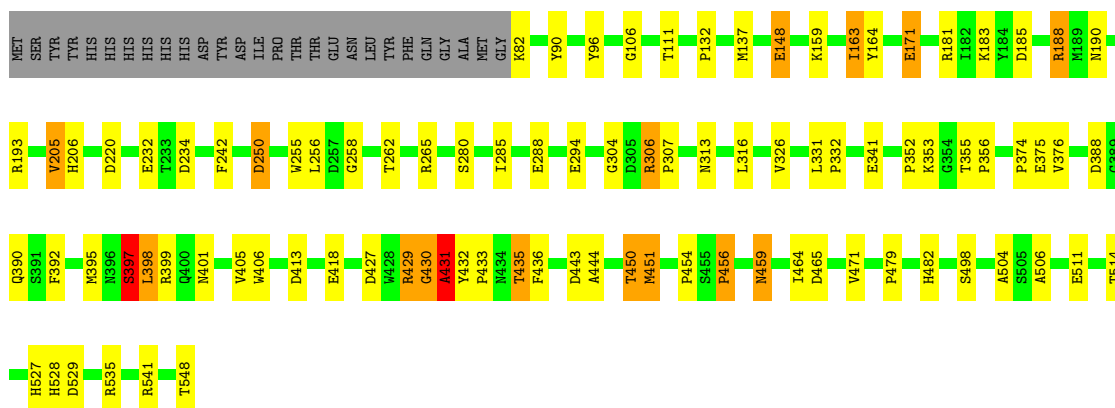
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	J	219	Total 219	O 219	0	0
6	M	140	Total 140	O 140	0	0
6	P	154	Total 154	O 154	0	0
6	S	145	Total 145	O 145	0	0
6	V	145	Total 145	O 145	0	0
6	Y	173	Total 173	O 173	0	0
6	2	143	Total 143	O 143	0	0
6	5	187	Total 187	O 187	0	0
6	8	137	Total 137	O 137	0	0
6	x	104	Total 104	O 104	0	0
6	e	94	Total 94	O 94	0	0
6	h	89	Total 89	O 89	0	0
6	k	100	Total 100	O 100	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.

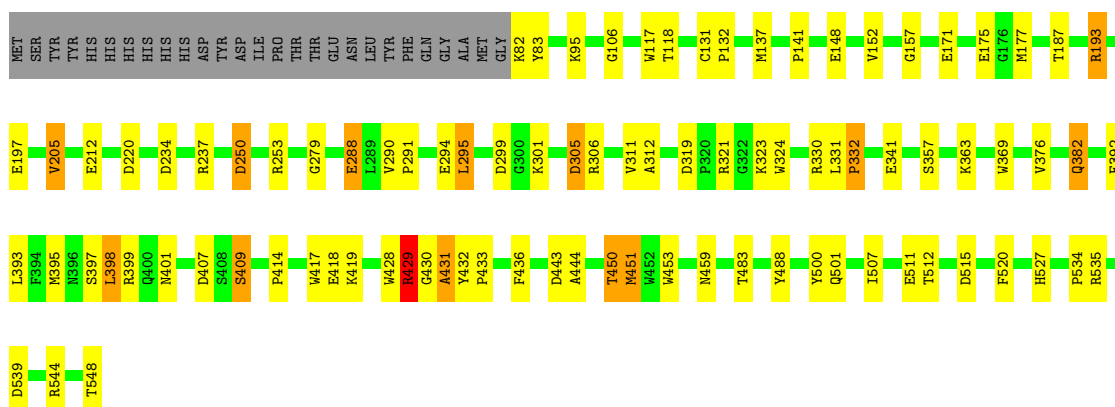
- Molecule 1: Twin-arginine translocation signal domain-containing protein

Chain A: 



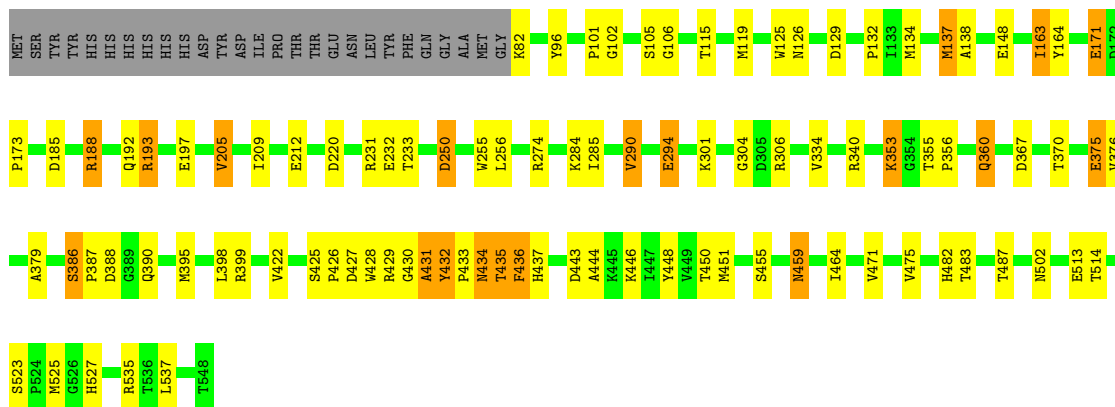
- Molecule 1: Twin-arginine translocation signal domain-containing protein

Chain D: 

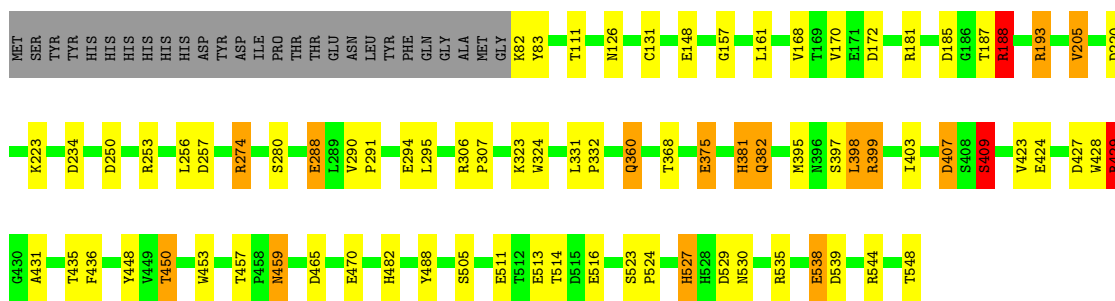
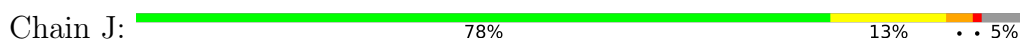


- Molecule 1: Twin-arginine translocation signal domain-containing protein

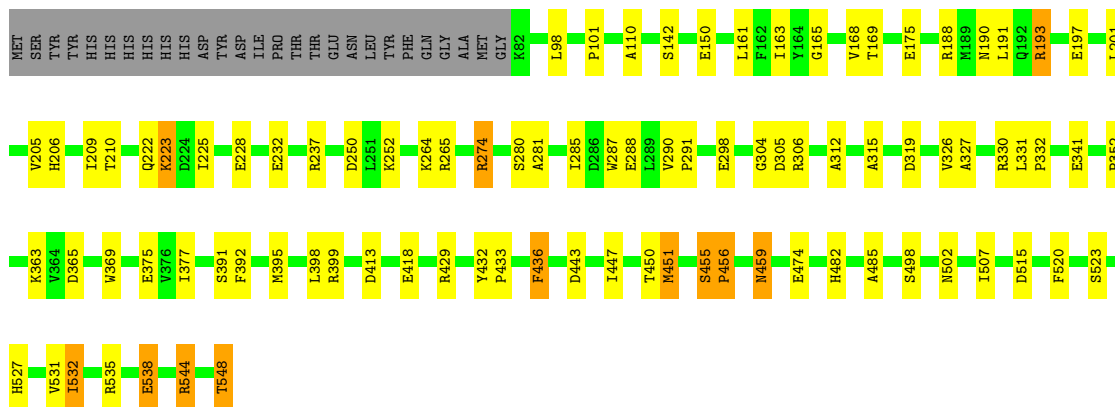
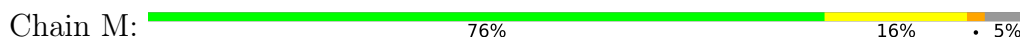
Chain G: 



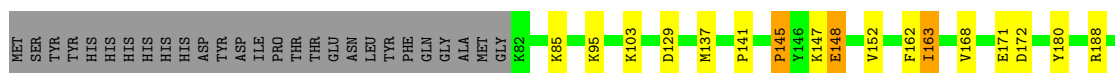
• Molecule 1: Twin-arginine translocation signal domain-containing protein

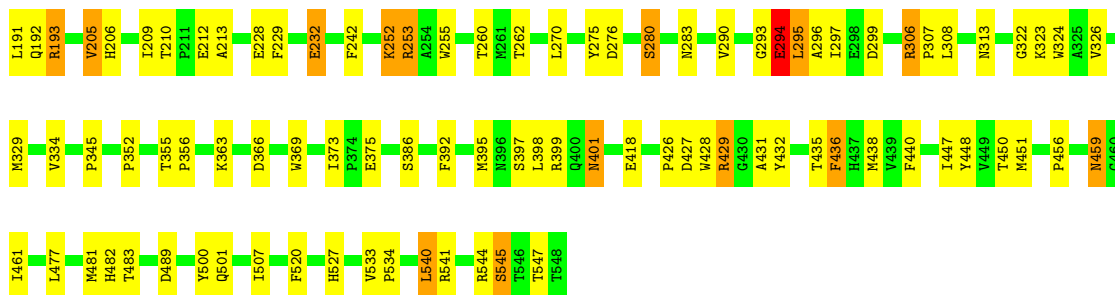


• Molecule 1: Twin-arginine translocation signal domain-containing protein



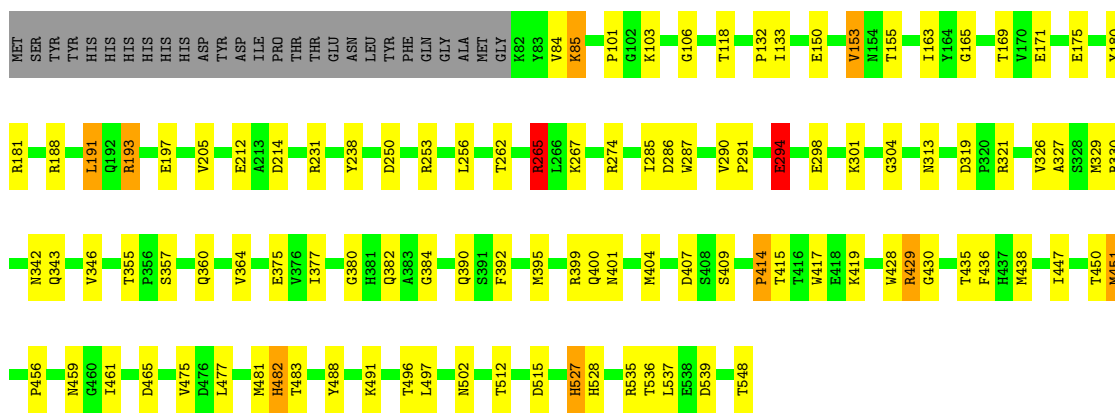
• Molecule 1: Twin-arginine translocation signal domain-containing protein





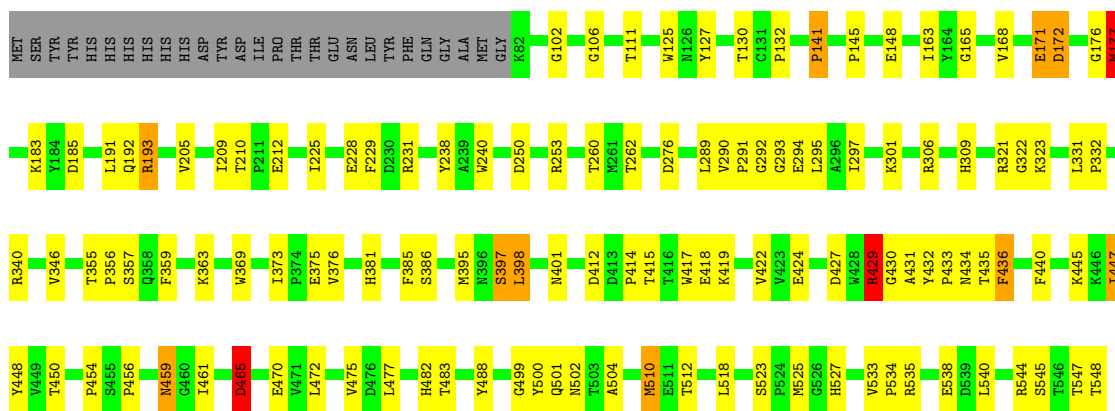
- Molecule 1: Twin-arginine translocation signal domain-containing protein

Chain S: 73% 19% 5%



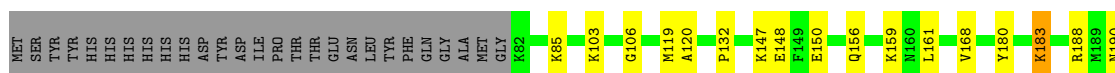
- Molecule 1: Twin-arginine translocation signal domain-containing protein

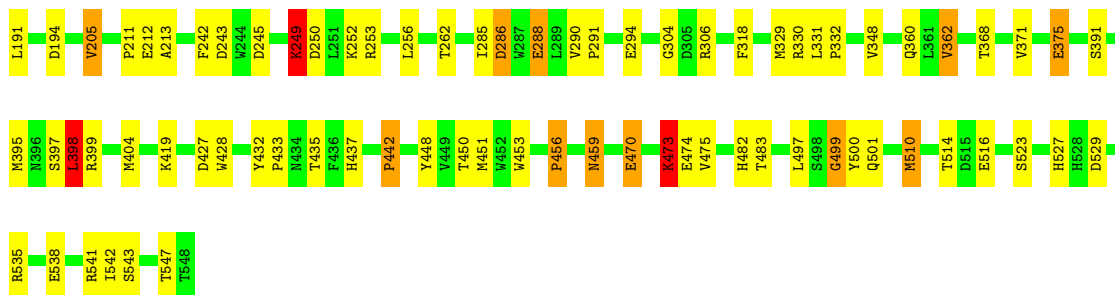
Chain V: 69% 23% 5%



- Molecule 1: Twin-arginine translocation signal domain-containing protein

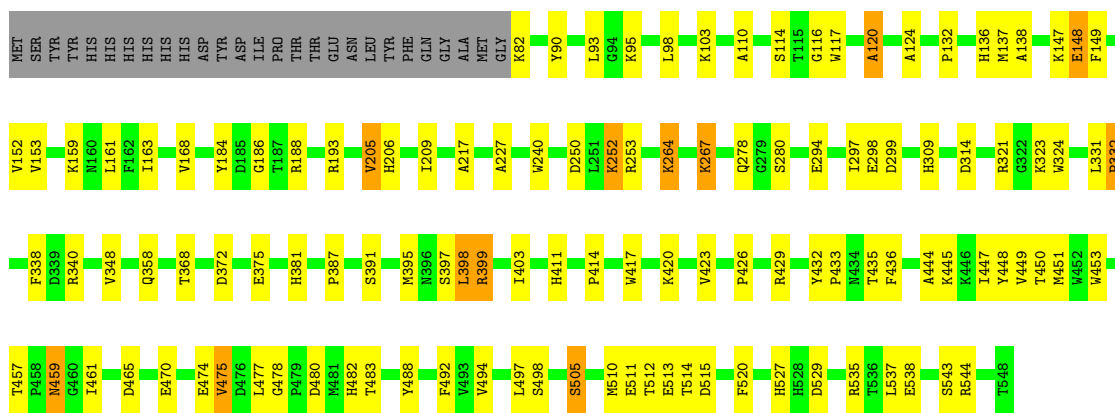
Chain Y: 76% 16% 5%





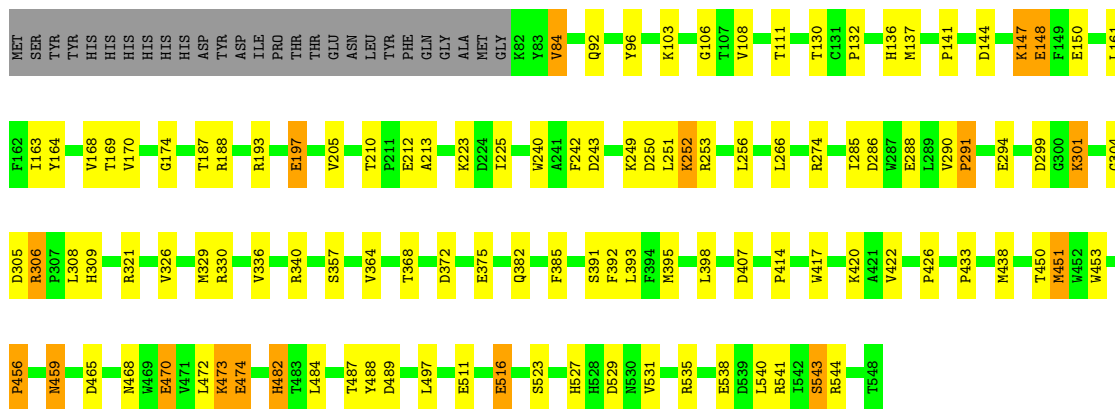
- Molecule 1: Twin-arginine translocation signal domain-containing protein

Chain 2: 70% 22% 5%



- Molecule 1: Twin-arginine translocation signal domain-containing protein

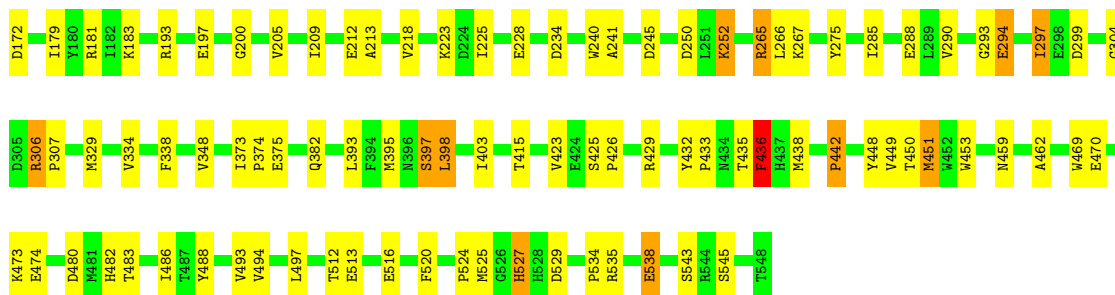
Chain 5: 72% 19% 5%



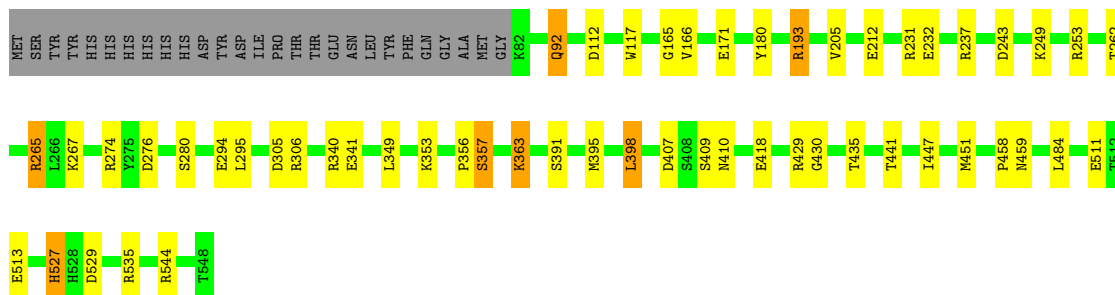
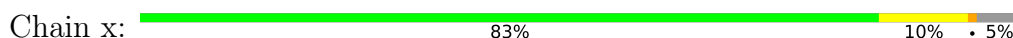
- Molecule 1: Twin-arginine translocation signal domain-containing protein

Chain 8: 73% 19% 5%

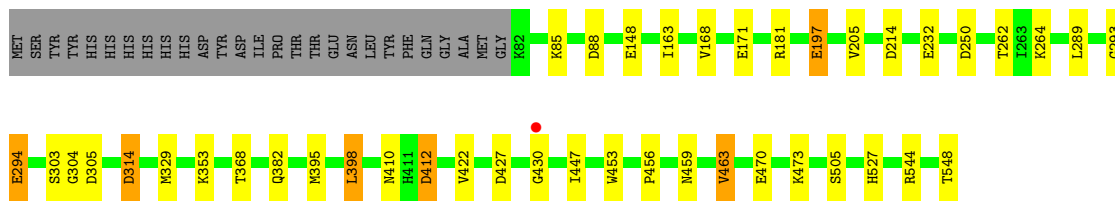
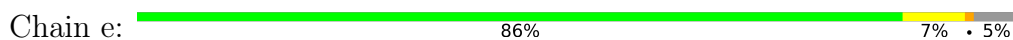




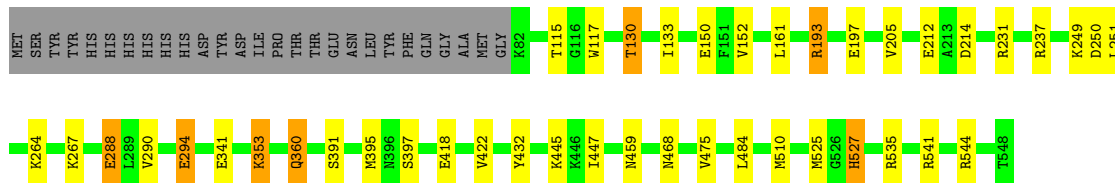
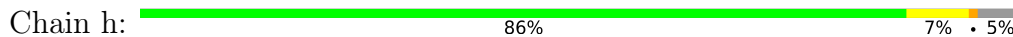
● Molecule 1: Twin-arginine translocation signal domain-containing protein



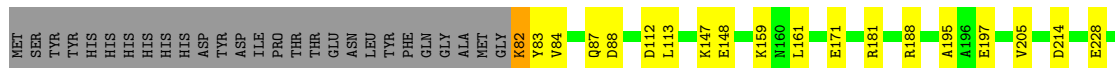
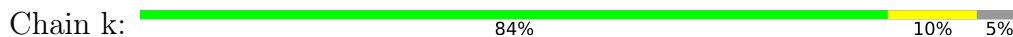
● Molecule 1: Twin-arginine translocation signal domain-containing protein

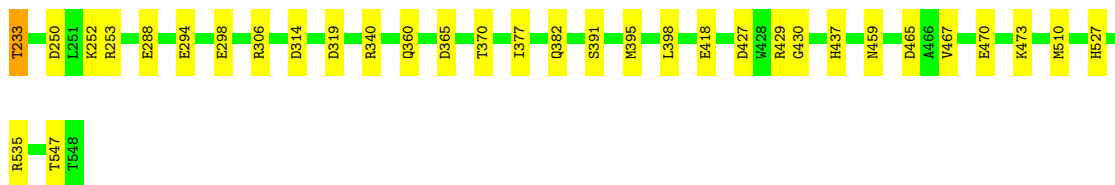


● Molecule 1: Twin-arginine translocation signal domain-containing protein



● Molecule 1: Twin-arginine translocation signal domain-containing protein





4 Data and refinement statistics i

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	98.15Å 142.42Å 294.40Å 90.00° 90.07° 90.00°	Depositor
Resolution (Å)	49.12 – 2.07 49.07 – 2.07	Depositor EDS
% Data completeness (in resolution range)	98.8 (49.12-2.07) 98.5 (49.07-2.07)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.67 (at 2.07Å)	Xtrriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.179 , 0.234 0.185 , 0.237	Depositor DCC
R_{free} test set	24463 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å ²)	27.5	Xtrriage
Anisotropy	0.214	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 28.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	0.456 for h,-k,-l	Xtrriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	60462	wwPDB-VP
Average B, all atoms (Å ²)	30.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 8.20% 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: SO4, CU, NA, BO3

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	2	0.84	3/3730 (0.1%)	1.41	28/5094 (0.5%)
1	5	0.91	8/3727 (0.2%)	1.49	42/5090 (0.8%)
1	8	0.85	3/3720 (0.1%)	1.43	29/5083 (0.6%)
1	A	0.98	9/3743 (0.2%)	1.50	36/5111 (0.7%)
1	D	0.95	5/3731 (0.1%)	1.45	23/5094 (0.5%)
1	G	0.96	6/3749 (0.2%)	1.51	46/5118 (0.9%)
1	J	0.97	6/3723 (0.2%)	1.47	32/5085 (0.6%)
1	M	0.94	14/3730 (0.4%)	1.40	28/5093 (0.5%)
1	P	0.90	4/3729 (0.1%)	1.44	23/5094 (0.5%)
1	S	0.90	6/3717 (0.2%)	1.46	37/5077 (0.7%)
1	V	0.92	8/3724 (0.2%)	1.43	37/5087 (0.7%)
1	Y	0.90	7/3726 (0.2%)	1.43	26/5089 (0.5%)
1	e	0.84	1/3719 (0.0%)	1.35	19/5083 (0.4%)
1	h	0.90	7/3705 (0.2%)	1.36	31/5065 (0.6%)
1	k	0.82	5/3721 (0.1%)	1.39	31/5085 (0.6%)
1	x	0.86	1/3711 (0.0%)	1.38	31/5072 (0.6%)
All	All	0.90	93/59605 (0.2%)	1.43	499/81420 (0.6%)

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	2	0	3
1	5	0	1
1	V	0	2
1	Y	0	1
1	e	0	3
1	h	0	1
1	k	0	2

Continued on next page...

Continued from previous page...

Mol	Chain	#Chirality outliers	#Planarity outliers
1	x	0	1
All	All	0	14

All (93) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	h	288	GLU	CD-OE1	12.68	1.39	1.25
1	M	175	GLU	CD-OE2	-10.92	1.13	1.25
1	V	538	GLU	CD-OE1	10.78	1.37	1.25
1	Y	538	GLU	CD-OE1	9.57	1.36	1.25
1	Y	538	GLU	CD-OE2	8.98	1.35	1.25
1	5	288	GLU	CD-OE1	8.90	1.35	1.25
1	A	418	GLU	CD-OE1	8.84	1.35	1.25
1	P	228	GLU	CD-OE1	8.78	1.35	1.25
1	G	232	GLU	CD-OE1	8.64	1.35	1.25
1	A	341	GLU	CD-OE1	8.54	1.35	1.25
1	8	294	GLU	CD-OE2	8.38	1.34	1.25
1	h	418	GLU	CD-OE1	8.30	1.34	1.25
1	J	288	GLU	CD-OE2	8.24	1.34	1.25
1	M	341	GLU	CD-OE2	8.12	1.34	1.25
1	Y	150	GLU	CD-OE1	-8.06	1.16	1.25
1	Y	288	GLU	CD-OE1	7.67	1.34	1.25
1	M	298	GLU	CD-OE2	7.33	1.33	1.25
1	D	212	GLU	CD-OE2	7.24	1.33	1.25
1	S	212	GLU	CD-OE1	7.19	1.33	1.25
1	A	288	GLU	CD-OE1	7.07	1.33	1.25
1	A	232	GLU	CD-OE1	6.84	1.33	1.25
1	P	375	GLU	CD-OE2	6.82	1.33	1.25
1	G	212	GLU	CD-OE1	6.75	1.33	1.25
1	k	197	GLU	CD-OE2	6.68	1.32	1.25
1	h	288	GLU	CG-CD	6.47	1.61	1.51
1	k	228	GLU	CD-OE2	-6.40	1.18	1.25
1	V	171	GLU	CD-OE1	6.26	1.32	1.25
1	h	212	GLU	CD-OE1	6.23	1.32	1.25
1	A	511	GLU	CD-OE2	-6.20	1.18	1.25
1	M	288	GLU	CD-OE2	6.18	1.32	1.25
1	M	391	SER	CA-CB	-6.17	1.43	1.52
1	M	197	GLU	CD-OE1	6.16	1.32	1.25
1	Y	375	GLU	CD-OE1	6.14	1.32	1.25
1	J	424	GLU	CD-OE2	-5.99	1.19	1.25
1	D	175	GLU	CD-OE1	5.98	1.32	1.25
1	2	298	GLU	CD-OE2	5.97	1.32	1.25

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	5	474	GLU	CD-OE1	5.96	1.32	1.25
1	S	294	GLU	CD-OE2	5.91	1.32	1.25
1	V	386	SER	CA-CB	-5.89	1.44	1.52
1	M	341	GLU	CD-OE1	5.85	1.32	1.25
1	h	214	ASP	CG-OD1	5.84	1.38	1.25
1	5	543	SER	CB-OG	5.81	1.49	1.42
1	e	548	THR	C-O	5.81	1.34	1.23
1	V	424	GLU	CD-OE1	5.81	1.32	1.25
1	k	288	GLU	CD-OE2	5.79	1.32	1.25
1	5	197	GLU	CD-OE1	-5.77	1.19	1.25
1	D	418	GLU	CD-OE2	5.77	1.31	1.25
1	G	386	SER	CB-OG	5.76	1.49	1.42
1	A	181	ARG	NE-CZ	5.76	1.40	1.33
1	M	538	GLU	CD-OE2	5.72	1.31	1.25
1	A	397	SER	CA-CB	-5.66	1.44	1.52
1	2	511	GLU	CD-OE1	5.62	1.31	1.25
1	P	386	SER	CA-CB	-5.61	1.44	1.52
1	M	455	SER	CA-CB	-5.52	1.44	1.52
1	M	498	SER	CB-OG	5.52	1.49	1.42
1	S	298	GLU	CD-OE1	-5.50	1.19	1.25
1	k	437	HIS	CE1-NE2	5.50	1.45	1.32
1	M	418	GLU	CD-OE2	5.49	1.31	1.25
1	V	523	SER	CA-CB	-5.47	1.44	1.52
1	D	319	ASP	CG-OD1	5.46	1.38	1.25
1	S	515	ASP	CG-OD2	-5.46	1.12	1.25
1	5	391	SER	CA-CB	-5.44	1.44	1.52
1	S	298	GLU	CD-OE2	5.43	1.31	1.25
1	P	418	GLU	CD-OE2	5.42	1.31	1.25
1	x	212	GLU	CD-OE2	5.38	1.31	1.25
1	D	288	GLU	CD-OE2	5.37	1.31	1.25
1	M	228	GLU	CD-OE1	5.35	1.31	1.25
1	h	150	GLU	CD-OE2	5.35	1.31	1.25
1	G	523	SER	CB-OG	5.33	1.49	1.42
1	J	511	GLU	CD-OE2	5.31	1.31	1.25
1	A	280	SER	CA-CB	-5.30	1.45	1.52
1	J	280	SER	CA-CB	-5.30	1.45	1.52
1	J	511	GLU	CD-OE1	-5.30	1.19	1.25
1	h	288	GLU	CD-OE2	5.28	1.31	1.25
1	V	427	ASP	CG-OD1	5.28	1.37	1.25
1	2	294	GLU	CD-OE2	5.27	1.31	1.25
1	G	105	SER	CB-OG	5.26	1.49	1.42
1	5	150	GLU	CD-OE1	-5.25	1.19	1.25

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	Y	543	SER	CB-OG	5.24	1.49	1.42
1	A	498	SER	CB-OG	5.22	1.49	1.42
1	5	136	HIS	CE1-NE2	5.21	1.44	1.32
1	5	357	SER	CA-CB	-5.20	1.45	1.52
1	Y	188	ARG	NE-CZ	5.20	1.39	1.33
1	S	175	GLU	CD-OE2	-5.17	1.20	1.25
1	k	298	GLU	CD-OE2	5.15	1.31	1.25
1	G	513	GLU	CD-OE1	-5.14	1.20	1.25
1	8	516	GLU	CD-OE2	5.13	1.31	1.25
1	M	538	GLU	CD-OE1	5.12	1.31	1.25
1	M	298	GLU	CD-OE1	-5.11	1.20	1.25
1	V	212	GLU	CD-OE2	5.04	1.31	1.25
1	V	548	THR	C-O	5.02	1.32	1.23
1	J	538	GLU	CD-OE2	5.00	1.31	1.25
1	8	197	GLU	CD-OE2	5.00	1.31	1.25

All (499) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	k	365	ASP	CB-CA-C	-13.43	83.54	110.40
1	Y	330	ARG	NE-CZ-NH1	-12.83	113.89	120.30
1	x	231	ARG	NE-CZ-NH2	-12.72	113.94	120.30
1	A	188	ARG	NE-CZ-NH1	12.38	126.49	120.30
1	G	274	ARG	NE-CZ-NH1	12.29	126.44	120.30
1	x	231	ARG	NE-CZ-NH1	11.76	126.18	120.30
1	k	306	ARG	CB-CG-CD	-11.49	81.72	111.60
1	5	188	ARG	NE-CZ-NH1	11.25	125.92	120.30
1	A	451	MET	CG-SD-CE	-10.79	82.93	100.20
1	2	188	ARG	CG-CD-NE	-10.61	89.52	111.80
1	8	429	ARG	CG-CD-NE	-10.49	89.77	111.80
1	G	188	ARG	NE-CZ-NH1	10.44	125.52	120.30
1	S	188	ARG	NE-CZ-NH1	10.20	125.40	120.30
1	V	193	ARG	NE-CZ-NH2	-10.04	115.28	120.30
1	5	516	GLU	CB-CA-C	-10.00	90.39	110.40
1	x	193	ARG	CG-CD-NE	-9.93	90.95	111.80
1	5	330	ARG	NE-CZ-NH1	-9.88	115.36	120.30
1	k	306	ARG	CG-CD-NE	9.69	132.15	111.80
1	5	253	ARG	NE-CZ-NH1	-9.61	115.50	120.30
1	Y	541	ARG	CG-CD-NE	-9.56	91.72	111.80
1	h	231	ARG	NE-CZ-NH1	9.56	125.08	120.30
1	Y	330	ARG	NE-CZ-NH2	9.34	124.97	120.30
1	M	274	ARG	NE-CZ-NH2	9.11	124.85	120.30

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	h	231	ARG	NE-CZ-NH2	-8.98	115.81	120.30
1	J	193	ARG	NE-CZ-NH2	-8.96	115.82	120.30
1	S	294	GLU	CB-CA-C	8.77	127.95	110.40
1	J	544	ARG	NE-CZ-NH1	8.73	124.67	120.30
1	2	193	ARG	NE-CZ-NH1	8.70	124.65	120.30
1	x	237	ARG	CG-CD-NE	-8.66	93.62	111.80
1	J	193	ARG	NE-CZ-NH1	8.64	124.62	120.30
1	V	231	ARG	NE-CZ-NH1	-8.59	116.00	120.30
1	x	418	GLU	CB-CG-CD	8.46	137.06	114.20
1	A	82	LYS	CB-CA-C	8.46	127.32	110.40
1	J	429	ARG	CB-CG-CD	8.44	133.53	111.60
1	P	294	GLU	CB-CA-C	-8.38	93.63	110.40
1	8	329	MET	CG-SD-CE	-8.36	86.82	100.20
1	5	193[A]	ARG	NE-CZ-NH1	8.36	124.48	120.30
1	5	193[B]	ARG	NE-CZ-NH1	8.36	124.48	120.30
1	V	185	ASP	CB-CG-OD1	8.34	125.81	118.30
1	8	535	ARG	CG-CD-NE	-8.33	94.31	111.80
1	A	450	THR	CA-CB-OG1	-8.32	91.53	109.00
1	D	544	ARG	NE-CZ-NH1	8.19	124.40	120.30
1	k	88	ASP	CB-CA-C	-8.13	94.14	110.40
1	e	181[A]	ARG	NE-CZ-NH2	-8.13	116.24	120.30
1	e	181[B]	ARG	NE-CZ-NH2	-8.13	116.24	120.30
1	x	237	ARG	NE-CZ-NH1	8.12	124.36	120.30
1	D	193	ARG	NE-CZ-NH1	8.09	124.34	120.30
1	P	262	THR	CA-CB-OG1	-8.06	92.08	109.00
1	P	193	ARG	NE-CZ-NH2	-8.05	116.27	120.30
1	S	180	TYR	CB-CG-CD1	8.04	125.82	121.00
1	D	431	ALA	CB-CA-C	8.03	122.15	110.10
1	A	535	ARG	NE-CZ-NH2	-8.03	116.29	120.30
1	S	399	ARG	NE-CZ-NH2	-8.03	116.29	120.30
1	8	193	ARG	NE-CZ-NH1	7.98	124.29	120.30
1	G	399	ARG	NE-CZ-NH2	-7.95	116.33	120.30
1	P	436	PHE	CB-CA-C	7.94	126.28	110.40
1	A	306	ARG	NE-CZ-NH2	-7.89	116.35	120.30
1	G	429	ARG	CB-CA-C	7.88	126.15	110.40
1	P	306	ARG	NE-CZ-NH1	7.86	124.23	120.30
1	P	544	ARG	NE-CZ-NH2	-7.85	116.38	120.30
1	M	193	ARG	CG-CD-NE	-7.78	95.47	111.80
1	J	193	ARG	CG-CD-NE	-7.77	95.48	111.80
1	e	197	GLU	CB-CG-CD	7.76	135.16	114.20
1	x	357	SER	CB-CA-C	7.73	124.79	110.10
1	J	83	TYR	CB-CA-C	-7.72	94.96	110.40

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	h	535	ARG	NE-CZ-NH1	7.71	124.16	120.30
1	V	111	THR	CA-CB-OG1	-7.67	92.89	109.00
1	h	237	ARG	NE-CZ-NH1	7.67	124.14	120.30
1	5	193[A]	ARG	NE-CZ-NH2	-7.64	116.48	120.30
1	5	193[B]	ARG	NE-CZ-NH2	-7.64	116.48	120.30
1	G	294	GLU	CB-CA-C	7.62	125.65	110.40
1	h	237	ARG	CG-CD-NE	-7.61	95.83	111.80
1	D	193	ARG	CG-CD-NE	-7.60	95.83	111.80
1	2	535	ARG	CG-CD-NE	-7.60	95.84	111.80
1	S	515	ASP	CB-CG-OD1	7.59	125.13	118.30
1	M	274	ARG	CB-CG-CD	7.58	131.31	111.60
1	A	429	ARG	NE-CZ-NH2	7.58	124.09	120.30
1	x	363	LYS	CB-CA-C	-7.55	95.30	110.40
1	Y	399	ARG	NE-CZ-NH1	7.54	124.07	120.30
1	G	535	ARG	NE-CZ-NH1	7.45	124.02	120.30
1	V	385	PHE	CB-CA-C	-7.42	95.56	110.40
1	k	83	TYR	CB-CA-C	-7.42	95.57	110.40
1	A	431	ALA	N-CA-CB	7.39	120.45	110.10
1	J	450	THR	CA-CB-OG1	-7.38	93.50	109.00
1	8	451	MET	CG-SD-CE	-7.36	88.43	100.20
1	h	397	SER	C-N-CA	-7.33	103.37	121.70
1	V	193	ARG	NE-CZ-NH1	7.31	123.96	120.30
1	Y	470	GLU	CB-CA-C	-7.29	95.82	110.40
1	5	187	THR	CA-CB-OG1	-7.26	93.76	109.00
1	e	412	ASP	CB-CA-C	7.25	124.90	110.40
1	h	544	ARG	NE-CZ-NH1	7.24	123.92	120.30
1	J	187	THR	CA-CB-OG1	-7.21	93.87	109.00
1	V	253	ARG	CG-CD-NE	-7.21	96.67	111.80
1	k	188	ARG	CG-CD-NE	-7.20	96.68	111.80
1	G	399	ARG	CG-CD-NE	-7.16	96.77	111.80
1	Y	262	THR	CA-CB-OG1	-7.16	93.97	109.00
1	h	130	THR	CA-CB-OG1	-7.16	93.97	109.00
1	P	541	ARG	CG-CD-NE	-7.14	96.81	111.80
1	8	513	GLU	CB-CA-C	-7.13	96.14	110.40
1	5	535	ARG	NE-CZ-NH2	-7.08	116.76	120.30
1	8	265	ARG	NE-CZ-NH1	-7.06	116.77	120.30
1	M	544	ARG	CG-CD-NE	-7.05	96.99	111.80
1	A	306	ARG	NE-CZ-NH1	7.03	123.82	120.30
1	k	429	ARG	C-N-CA	-7.01	107.58	122.30
1	J	188	ARG	CG-CD-NE	-6.99	97.12	111.80
1	S	181	ARG	NE-CZ-NH1	6.98	123.79	120.30
1	V	130	THR	CA-CB-OG1	-6.95	94.40	109.00

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	96	TYR	CD1-CE1-CZ	-6.94	113.56	119.80
1	k	340	ARG	NE-CZ-NH1	6.94	123.77	120.30
1	D	193	ARG	NE-CZ-NH2	-6.93	116.83	120.30
1	P	399	ARG	CG-CD-NE	-6.93	97.25	111.80
1	G	431	ALA	N-CA-CB	6.92	119.79	110.10
1	Y	473	LYS	CB-CA-C	-6.92	96.56	110.40
1	G	137	MET	CG-SD-CE	-6.91	89.15	100.20
1	G	82	LYS	CB-CA-C	6.88	124.15	110.40
1	P	483	THR	CA-CB-OG1	-6.86	94.59	109.00
1	k	233	THR	N-CA-CB	-6.86	97.27	110.30
1	S	193	ARG	CG-CD-NE	-6.85	97.42	111.80
1	e	262	THR	CA-CB-OG1	-6.84	94.64	109.00
1	k	535	ARG	CB-CG-CD	-6.82	93.86	111.60
1	Y	188	ARG	NE-CZ-NH1	6.81	123.70	120.30
1	A	418	GLU	CB-CG-CD	6.80	132.56	114.20
1	G	535	ARG	NE-CZ-NH2	-6.77	116.91	120.30
1	Y	427	ASP	CB-CA-C	6.76	123.91	110.40
1	V	429	ARG	CB-CG-CD	6.74	129.12	111.60
1	k	294	GLU	CB-CG-CD	6.73	132.38	114.20
1	V	436	PHE	CB-CA-C	6.72	123.83	110.40
1	Y	286	ASP	CB-CG-OD2	-6.70	112.27	118.30
1	e	214	ASP	CB-CG-OD1	6.70	124.33	118.30
1	x	544	ARG	NE-CZ-NH1	6.67	123.63	120.30
1	e	181[A]	ARG	NE-CZ-NH1	6.66	123.63	120.30
1	e	181[B]	ARG	NE-CZ-NH1	6.66	123.63	120.30
1	A	90	TYR	CB-CG-CD2	-6.64	117.02	121.00
1	k	188	ARG	CB-CG-CD	6.63	128.84	111.60
1	h	535	ARG	CD-NE-CZ	6.63	132.88	123.60
1	G	274	ARG	CD-NE-CZ	6.62	132.87	123.60
1	A	90	TYR	CB-CG-CD1	6.60	124.96	121.00
1	8	228	GLU	CB-CA-C	6.59	123.58	110.40
1	S	399	ARG	NE-CZ-NH1	6.59	123.59	120.30
1	P	148	GLU	CB-CG-CD	-6.58	96.43	114.20
1	S	188	ARG	NE-CZ-NH2	-6.57	117.01	120.30
1	S	535	ARG	NE-CZ-NH1	6.57	123.59	120.30
1	M	399	ARG	NE-CZ-NH1	6.57	123.58	120.30
1	x	340	ARG	NE-CZ-NH1	6.55	123.58	120.30
1	x	407	ASP	CB-CA-C	6.54	123.47	110.40
1	S	451	MET	CG-SD-CE	-6.53	89.76	100.20
1	8	538	GLU	CB-CA-C	6.52	123.44	110.40
1	h	341	GLU	CB-CA-C	6.52	123.44	110.40
1	M	169	THR	CA-CB-OG1	-6.51	95.32	109.00

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	J	274	ARG	NE-CZ-NH1	6.51	123.55	120.30
1	8	223	LYS	CB-CA-C	-6.51	97.39	110.40
1	8	535	ARG	NE-CZ-NH1	6.50	123.55	120.30
1	2	103	LYS	CB-CA-C	6.48	123.36	110.40
1	V	415	THR	CA-CB-OG1	-6.45	95.46	109.00
1	k	188	ARG	NE-CZ-NH2	-6.45	117.08	120.30
1	J	470	GLU	N-CA-CB	-6.43	99.02	110.60
1	2	340	ARG	NE-CZ-NH2	-6.43	117.08	120.30
1	A	535	ARG	NE-CZ-NH1	6.42	123.51	120.30
1	V	535	ARG	NE-CZ-NH2	-6.42	117.09	120.30
1	V	465	ASP	CB-CG-OD2	-6.42	112.53	118.30
1	8	480	ASP	CB-CA-C	-6.42	97.57	110.40
1	Y	437	HIS	CA-CB-CG	-6.40	102.72	113.60
1	h	294	GLU	CB-CA-C	6.40	123.20	110.40
1	x	265	ARG	CB-CG-CD	6.39	128.22	111.60
1	S	364	VAL	CA-CB-CG2	6.38	120.47	110.90
1	J	399	ARG	NE-CZ-NH1	6.37	123.49	120.30
1	e	294	GLU	CB-CA-C	6.37	123.14	110.40
1	V	456	PRO	CB-CA-C	-6.35	96.13	112.00
1	k	294	GLU	CB-CA-C	6.34	123.09	110.40
1	e	88	ASP	CB-CA-C	-6.33	97.74	110.40
1	2	188	ARG	NE-CZ-NH2	-6.32	117.14	120.30
1	8	265	ARG	NE-CZ-NH2	6.31	123.46	120.30
1	V	306	ARG	NE-CZ-NH1	6.30	123.45	120.30
1	A	399	ARG	NE-CZ-NH1	6.30	123.45	120.30
1	P	255	TRP	CA-CB-CG	-6.30	101.73	113.70
1	G	231	ARG	CG-CD-NE	-6.29	98.58	111.80
1	D	512	THR	CA-CB-OG1	-6.29	95.79	109.00
1	P	253	ARG	NE-CZ-NH2	6.29	123.44	120.30
1	M	482	HIS	CA-CB-CG	-6.29	102.92	113.60
1	D	330	ARG	NE-CZ-NH1	-6.28	117.16	120.30
1	2	513	GLU	CB-CA-C	-6.28	97.85	110.40
1	2	429	ARG	CG-CD-NE	-6.26	98.65	111.80
1	J	274	ARG	NE-CZ-NH2	-6.26	117.17	120.30
1	S	153	VAL	CA-CB-CG2	6.26	120.28	110.90
1	V	262	THR	CA-CB-OG1	-6.26	95.86	109.00
1	5	321	ARG	NE-CZ-NH1	-6.26	117.17	120.30
1	V	434	ASN	N-CA-CB	-6.25	99.35	110.60
1	D	83	TYR	CB-CA-C	-6.25	97.90	110.40
1	G	274	ARG	NE-CZ-NH2	-6.22	117.19	120.30
1	G	427	ASP	CB-CG-OD2	-6.20	112.72	118.30
1	M	399	ARG	NE-CZ-NH2	-6.19	117.20	120.30

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	Y	456	PRO	N-CA-CB	-6.19	95.80	102.60
1	Y	183	LYS	CD-CE-NZ	-6.18	97.48	111.70
1	5	422	VAL	CB-CA-C	-6.18	99.66	111.40
1	h	130	THR	N-CA-CB	-6.18	98.56	110.30
1	h	193	ARG	NE-CZ-NH1	6.17	123.38	120.30
1	2	494	VAL	CA-CB-CG1	6.16	120.14	110.90
1	A	456	PRO	N-CA-CB	-6.15	95.83	102.60
1	e	410	ASN	CB-CA-C	6.15	122.70	110.40
1	G	375	GLU	CB-CA-C	6.15	122.69	110.40
1	S	400	GLN	N-CA-CB	6.14	121.66	110.60
1	x	232	GLU	CB-CG-CD	-6.14	97.61	114.20
1	5	385	PHE	CB-CA-C	-6.14	98.12	110.40
1	G	434	ASN	CB-CA-C	6.14	122.67	110.40
1	h	197	GLU	N-CA-CB	-6.14	99.56	110.60
1	8	470	GLU	CB-CA-C	-6.12	98.15	110.40
1	V	141	PRO	N-CA-CB	-6.11	95.88	102.60
1	k	467	VAL	CG1-CB-CG2	6.10	120.66	110.90
1	M	375	GLU	CB-CA-C	6.10	122.59	110.40
1	G	432	TYR	CB-CG-CD1	-6.09	117.34	121.00
1	A	313	ASN	CB-CA-C	6.09	122.57	110.40
1	M	544	ARG	NE-CZ-NH2	-6.09	117.26	120.30
1	8	348	VAL	CA-CB-CG1	-6.08	101.79	110.90
1	V	427	ASP	CB-CG-OD2	-6.07	112.84	118.30
1	x	112	ASP	CB-CA-C	6.07	122.54	110.40
1	5	473	LYS	CB-CG-CD	-6.06	95.83	111.60
1	5	306	ARG	CB-CG-CD	-6.01	95.97	111.60
1	e	463	VAL	CA-CB-CG2	6.00	119.89	110.90
1	S	214	ASP	CB-CG-OD1	5.99	123.69	118.30
1	2	253	ARG	CG-CD-NE	-5.99	99.23	111.80
1	G	399	ARG	NE-CZ-NH1	5.98	123.29	120.30
1	5	426	PRO	N-CA-CB	5.98	110.48	103.30
1	J	427	ASP	CB-CG-OD2	-5.98	112.92	118.30
1	A	265	ARG	NE-CZ-NH2	5.98	123.29	120.30
1	S	321	ARG	NE-CZ-NH1	5.97	123.29	120.30
1	J	407	ASP	CB-CG-OD1	5.97	123.67	118.30
1	V	276	ASP	CB-CA-C	5.96	122.32	110.40
1	2	193	ARG	NE-CZ-NH2	-5.96	117.32	120.30
1	J	538	GLU	CB-CG-CD	5.96	130.29	114.20
1	D	237	ARG	CG-CD-NE	-5.96	99.29	111.80
1	G	171	GLU	C-N-CA	-5.96	106.81	121.70
1	V	168	VAL	CA-CB-CG1	5.95	119.83	110.90
1	G	475	VAL	CG1-CB-CG2	-5.95	101.38	110.90

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	M	232	GLU	CB-CA-C	5.95	122.30	110.40
1	k	382	GLN	CB-CA-C	5.95	122.29	110.40
1	8	494	VAL	CA-CB-CG1	5.93	119.80	110.90
1	G	537	LEU	CB-CG-CD1	-5.92	100.94	111.00
1	x	341	GLU	CB-CA-C	5.91	122.23	110.40
1	8	193	ARG	NE-CZ-NH2	-5.91	117.34	120.30
1	P	451	MET	CA-CB-CG	-5.91	103.26	113.30
1	2	426	PRO	N-CD-CG	-5.90	94.35	103.20
1	D	330	ARG	CG-CD-NE	-5.90	99.41	111.80
1	S	548	THR	CA-CB-OG1	-5.89	96.64	109.00
1	A	352	PRO	N-CA-CB	-5.87	96.14	102.60
1	5	169	THR	CA-CB-OG1	-5.87	96.67	109.00
1	k	112	ASP	CB-CA-C	5.86	122.12	110.40
1	5	372	ASP	CB-CG-OD2	-5.86	113.03	118.30
1	8	245	ASP	CB-CA-C	5.86	122.12	110.40
1	G	427	ASP	CB-CG-OD1	5.85	123.57	118.30
1	h	541	ARG	NE-CZ-NH1	5.85	123.23	120.30
1	8	535	ARG	NE-CZ-NH2	-5.85	117.37	120.30
1	J	535	ARG	NE-CZ-NH2	-5.84	117.38	120.30
1	M	223	LYS	CB-CA-C	-5.83	98.73	110.40
1	5	541	ARG	CG-CD-NE	-5.83	99.55	111.80
1	J	450	THR	OG1-CB-CG2	-5.83	96.60	110.00
1	A	190	ASN	CB-CA-C	-5.82	98.75	110.40
1	8	159	LYS	CB-CA-C	5.82	122.05	110.40
1	V	412	ASP	N-CA-CB	5.79	121.03	110.60
1	x	356	PRO	CB-CA-C	-5.79	97.52	112.00
1	V	177	MET	CB-CG-SD	5.79	129.77	112.40
1	5	544	ARG	CB-CA-C	5.79	121.98	110.40
1	k	340	ARG	NE-CZ-NH2	-5.77	117.41	120.30
1	D	187	THR	CA-CB-OG1	-5.76	96.90	109.00
1	P	260	THR	CA-CB-OG1	-5.76	96.91	109.00
1	S	482	HIS	CA-CB-CG	-5.76	103.81	113.60
1	G	370	THR	CA-CB-CG2	5.75	120.46	112.40
1	J	223	LYS	CB-CA-C	-5.75	98.89	110.40
1	D	321	ARG	NE-CZ-NH1	-5.75	117.42	120.30
1	D	450	THR	CA-CB-OG1	-5.75	96.93	109.00
1	Y	190	ASN	CB-CA-C	-5.74	98.92	110.40
1	5	137	MET	CG-SD-CE	-5.74	91.02	100.20
1	Y	362	VAL	CA-CB-CG1	5.73	119.49	110.90
1	5	489	ASP	CB-CA-C	-5.72	98.96	110.40
1	V	253	ARG	NE-CZ-NH2	5.71	123.15	120.30
1	k	252	LYS	N-CA-CB	5.70	120.86	110.60

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	S	231	ARG	NE-CZ-NH2	-5.70	117.45	120.30
1	A	353	LYS	C-N-CA	-5.70	110.34	122.30
1	Y	205	VAL	CA-CB-CG2	-5.69	102.36	110.90
1	D	253	ARG	NE-CZ-NH1	5.69	123.14	120.30
1	J	399	ARG	CD-NE-CZ	5.69	131.57	123.60
1	M	190	ASN	CB-CA-C	-5.69	99.02	110.40
1	G	290	VAL	CG1-CB-CG2	5.69	120.00	110.90
1	D	171	GLU	CB-CA-C	5.69	121.78	110.40
1	5	456	PRO	N-CA-CB	-5.69	96.34	102.60
1	J	82	LYS	CB-CA-C	5.68	121.76	110.40
1	k	429	ARG	O-C-N	-5.68	113.55	123.20
1	S	488	TYR	CB-CG-CD1	-5.67	117.59	121.00
1	D	451	MET	CG-SD-CE	-5.66	91.14	100.20
1	h	527	HIS	CB-CA-C	-5.66	99.07	110.40
1	V	193	ARG	CG-CD-NE	-5.66	99.91	111.80
1	5	340	ARG	NE-CZ-NH1	5.66	123.13	120.30
1	M	451	MET	CA-CB-CG	-5.66	103.68	113.30
1	G	148	GLU	CB-CG-CD	-5.65	98.93	114.20
1	8	163	ILE	CA-CB-CG2	5.65	122.20	110.90
1	V	454	PRO	N-CA-CB	5.65	110.08	103.30
1	S	429	ARG	CB-CG-CD	5.64	126.27	111.60
1	h	288	GLU	CB-CG-CD	5.63	129.41	114.20
1	A	465	ASP	CB-CG-OD2	-5.63	113.23	118.30
1	D	429	ARG	CB-CG-CD	5.63	126.23	111.60
1	e	232	GLU	CB-CA-C	5.63	121.65	110.40
1	P	489	ASP	CB-CA-C	-5.62	99.15	110.40
1	2	475	VAL	CG1-CB-CG2	-5.62	101.90	110.90
1	G	429	ARG	CB-CG-CD	5.62	126.22	111.60
1	S	169	THR	CA-CB-OG1	-5.61	97.22	109.00
1	D	544	ARG	NH1-CZ-NH2	-5.61	113.23	119.40
1	x	253	ARG	NE-CZ-NH1	5.60	123.10	120.30
1	D	305	ASP	CB-CA-C	-5.60	99.20	110.40
1	5	130	THR	CA-CB-OG1	-5.59	97.27	109.00
1	S	238	TYR	CB-CG-CD2	5.58	124.35	121.00
1	V	260	THR	OG1-CB-CG2	-5.58	97.17	110.00
1	Y	253	ARG	NE-CZ-NH1	-5.58	117.51	120.30
1	2	120	ALA	N-CA-CB	5.58	117.91	110.10
1	G	435	THR	CA-CB-OG1	-5.57	97.30	109.00
1	x	276	ASP	CB-CA-C	5.56	121.53	110.40
1	S	231	ARG	CG-CD-NE	-5.55	100.15	111.80
1	e	294	GLU	N-CA-CB	-5.55	100.61	110.60
1	2	332	PRO	N-CD-CG	-5.55	94.88	103.20

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	129	ASP	CB-CG-OD2	-5.54	113.31	118.30
1	G	353	LYS	CB-CA-C	-5.54	99.32	110.40
1	M	188	ARG	CB-CG-CD	5.54	126.00	111.60
1	M	319	ASP	CB-CG-OD2	-5.54	113.32	118.30
1	k	535	ARG	NE-CZ-NH2	-5.54	117.53	120.30
1	J	381	HIS	CB-CA-C	5.53	121.47	110.40
1	S	313	ASN	CB-CA-C	-5.53	99.34	110.40
1	h	544	ARG	NE-CZ-NH2	-5.53	117.53	120.30
1	V	301	LYS	CB-CA-C	5.52	121.45	110.40
1	h	115	THR	CA-CB-OG1	-5.52	97.40	109.00
1	G	193[A]	ARG	NE-CZ-NH1	5.52	123.06	120.30
1	G	193[B]	ARG	NE-CZ-NH1	5.52	123.06	120.30
1	J	111	THR	CA-CB-OG1	-5.52	97.41	109.00
1	e	544	ARG	NE-CZ-NH1	5.52	123.06	120.30
1	2	538	GLU	N-CA-CB	-5.52	100.67	110.60
1	x	249	LYS	CB-CA-C	5.52	121.43	110.40
1	S	407	ASP	CB-CG-OD1	5.51	123.26	118.30
1	h	360	GLN	CB-CG-CD	5.50	125.91	111.60
1	A	188	ARG	NE-CZ-NH2	-5.50	117.55	120.30
1	5	516	GLU	CB-CG-CD	-5.49	99.38	114.20
1	h	249	LYS	CB-CA-C	5.48	121.37	110.40
1	G	360	GLN	N-CA-CB	-5.48	100.74	110.60
1	M	237	ARG	NE-CZ-NH1	5.46	123.03	120.30
1	S	319	ASP	CB-CG-OD2	-5.46	113.39	118.30
1	h	288	GLU	OE1-CD-OE2	-5.45	116.75	123.30
1	2	465	ASP	CB-CG-OD1	5.44	123.19	118.30
1	A	250	ASP	CB-CA-C	5.43	121.26	110.40
1	S	360	GLN	CB-CA-C	-5.43	99.53	110.40
1	V	306	ARG	CD-NE-CZ	5.43	131.20	123.60
1	A	429	ARG	CB-CG-CD	5.43	125.71	111.60
1	S	253	ARG	CD-NE-CZ	5.42	131.20	123.60
1	x	527	HIS	CB-CA-C	-5.42	99.57	110.40
1	V	401	ASN	N-CA-CB	5.41	120.34	110.60
1	8	267	LYS	CB-CA-C	5.41	121.22	110.40
1	h	432	TYR	CB-CG-CD1	-5.41	117.75	121.00
1	G	446	LYS	CB-CA-C	-5.40	99.60	110.40
1	Y	432	TYR	CB-CG-CD1	-5.40	117.76	121.00
1	8	294	GLU	CB-CG-CD	5.40	128.78	114.20
1	2	480	ASP	CB-CA-C	-5.40	99.60	110.40
1	h	288	GLU	CA-CB-CG	5.40	125.28	113.40
1	J	181	ARG	NE-CZ-NH1	-5.39	117.60	120.30
1	k	319	ASP	CB-CA-C	-5.39	99.61	110.40

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	S	265	ARG	CG-CD-NE	5.37	123.08	111.80
1	V	340	ARG	NE-CZ-NH2	-5.37	117.61	120.30
1	2	321	ARG	CG-CD-NE	5.37	123.08	111.80
1	h	288	GLU	CB-CA-C	5.37	121.13	110.40
1	5	468	ASN	CB-CA-C	-5.36	99.67	110.40
1	A	111	THR	CA-CB-OG1	-5.36	97.75	109.00
1	P	188	ARG	NE-CZ-NH1	5.36	122.98	120.30
1	2	399	ARG	NE-CZ-NH2	-5.36	117.62	120.30
1	e	453	TRP	CA-CB-CG	5.35	123.87	113.70
1	D	253	ARG	CB-CA-C	-5.35	99.70	110.40
1	M	280	SER	CB-CA-C	-5.35	99.94	110.10
1	5	111	THR	CA-CB-OG1	-5.35	97.77	109.00
1	5	210	THR	CA-CB-OG1	-5.34	97.78	109.00
1	5	470	GLU	CB-CA-C	-5.34	99.72	110.40
1	G	334	VAL	CA-CB-CG2	5.33	118.90	110.90
1	J	448	TYR	CB-CG-CD1	-5.33	117.80	121.00
1	5	531	VAL	CA-CB-CG1	5.33	118.89	110.90
1	M	515	ASP	CB-CG-OD1	5.33	123.09	118.30
1	P	456	PRO	CB-CA-C	-5.33	98.69	112.00
1	S	274	ARG	NE-CZ-NH2	5.32	122.96	120.30
1	S	327	ALA	CB-CA-C	5.32	118.07	110.10
1	2	375	GLU	CB-CA-C	5.32	121.03	110.40
1	h	525	MET	CB-CG-SD	-5.32	96.45	112.40
1	J	250	ASP	N-CA-CB	-5.31	101.04	110.60
1	5	274	ARG	NE-CZ-NH2	5.31	122.96	120.30
1	k	181[A]	ARG	NE-CZ-NH1	5.31	122.95	120.30
1	k	181[B]	ARG	NE-CZ-NH1	5.31	122.95	120.30
1	Y	306	ARG	NE-CZ-NH1	5.30	122.95	120.30
1	8	535	ARG	CD-NE-CZ	5.30	131.02	123.60
1	2	512	THR	CA-CB-OG1	-5.29	97.88	109.00
1	J	431	ALA	CB-CA-C	5.29	118.03	110.10
1	A	514	THR	CA-CB-OG1	-5.29	97.90	109.00
1	x	305	ASP	CB-CA-C	5.29	120.97	110.40
1	M	531	VAL	CA-CB-CG1	5.28	118.81	110.90
1	x	274	ARG	NE-CZ-NH1	5.27	122.94	120.30
1	J	409	SER	CB-CA-C	-5.27	100.09	110.10
1	M	399	ARG	CB-CA-C	5.26	120.92	110.40
1	A	316	LEU	CB-CG-CD2	-5.26	102.06	111.00
1	Y	448	TYR	CB-CG-CD2	5.25	124.15	121.00
1	x	237	ARG	NE-CZ-NH2	-5.25	117.67	120.30
1	V	253	ARG	NE-CZ-NH1	-5.25	117.67	120.30
1	2	372	ASP	CB-CG-OD2	-5.25	113.57	118.30

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	197	GLU	CB-CG-CD	5.25	128.36	114.20
1	2	457	THR	CA-CB-OG1	-5.24	98.00	109.00
1	P	401	ASN	CB-CA-C	-5.24	99.92	110.40
1	S	262	THR	CA-CB-OG1	-5.24	98.00	109.00
1	8	415	THR	CA-CB-OG1	-5.24	98.00	109.00
1	M	436	PHE	CB-CA-C	5.24	120.87	110.40
1	5	148	GLU	CB-CG-CD	-5.24	100.06	114.20
1	Y	516	GLU	CB-CA-C	-5.23	99.94	110.40
1	P	232	GLU	CB-CA-C	-5.23	99.94	110.40
1	V	435	THR	CA-CB-OG1	-5.23	98.02	109.00
1	J	527	HIS	CB-CA-C	-5.23	99.95	110.40
1	P	253	ARG	NE-CZ-NH1	-5.23	117.69	120.30
1	G	502	ASN	CB-CA-C	5.23	120.85	110.40
1	A	454	PRO	N-CA-CB	-5.22	96.85	102.60
1	8	144	ASP	CB-CG-OD1	5.22	123.00	118.30
1	e	544	ARG	CB-CA-C	5.22	120.85	110.40
1	x	441	THR	CA-CB-CG2	-5.22	105.09	112.40
1	Y	249	LYS	CA-CB-CG	5.22	124.88	113.40
1	V	488	TYR	CB-CG-CD2	5.21	124.13	121.00
1	x	92	GLN	CB-CA-C	5.21	120.83	110.40
1	A	435	THR	CA-CB-OG1	-5.21	98.06	109.00
1	P	306	ARG	CD-NE-CZ	5.20	130.88	123.60
1	S	475	VAL	CG1-CB-CG2	-5.20	102.58	110.90
1	5	103	LYS	CB-CA-C	5.20	120.80	110.40
1	k	159	LYS	CB-CA-C	5.19	120.77	110.40
1	k	87	GLN	CB-CA-C	-5.18	100.03	110.40
1	A	137	MET	CG-SD-CE	-5.18	91.91	100.20
1	G	193[A]	ARG	CA-CB-CG	5.18	124.80	113.40
1	G	193[B]	ARG	CA-CB-CG	5.18	124.80	113.40
1	5	473	LYS	CB-CA-C	-5.18	100.03	110.40
1	2	535	ARG	NE-CZ-NH1	5.18	122.89	120.30
1	V	512	THR	CA-CB-OG1	-5.18	98.13	109.00
1	8	436	PHE	CB-CG-CD1	5.17	124.42	120.80
1	h	445	LYS	CB-CA-C	5.17	120.75	110.40
1	D	332	PRO	N-CD-CG	-5.17	95.45	103.20
1	S	512	THR	CA-CB-OG1	-5.16	98.16	109.00
1	x	253	ARG	CD-NE-CZ	5.16	130.83	123.60
1	h	535	ARG	NE-CZ-NH2	-5.16	117.72	120.30
1	k	195	ALA	CB-CA-C	-5.16	102.36	110.10
1	G	115	THR	CA-CB-CG2	5.16	119.62	112.40
1	M	193	ARG	NE-CZ-NH1	-5.15	117.73	120.30
1	M	548	THR	CA-CB-OG1	-5.14	98.20	109.00

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	x	180	TYR	CB-CA-C	-5.14	100.11	110.40
1	5	482	HIS	CB-CA-C	5.14	120.68	110.40
1	x	511	GLU	CB-CA-C	5.14	120.68	110.40
1	h	468	ASN	CA-CB-CG	-5.14	102.10	113.40
1	V	321	ARG	NE-CZ-NH1	-5.13	117.73	120.30
1	P	145	PRO	N-CA-CB	5.13	109.45	103.30
1	k	214	ASP	CB-CG-OD1	5.12	122.91	118.30
1	S	103	LYS	CB-CA-C	5.12	120.64	110.40
1	D	399	ARG	CG-CD-NE	-5.11	101.07	111.80
1	J	126	ASN	CB-CA-C	-5.11	100.18	110.40
1	e	544	ARG	CD-NE-CZ	5.11	130.75	123.60
1	J	188	ARG	NE-CZ-NH1	-5.10	117.75	120.30
1	5	144	ASP	CB-CG-OD1	5.10	122.89	118.30
1	k	294	GLU	N-CA-CB	-5.10	101.42	110.60
1	A	413	ASP	CB-CG-OD2	-5.10	113.71	118.30
1	P	427	ASP	O-C-N	-5.10	114.54	122.70
1	2	399	ARG	CB-CA-C	5.10	120.59	110.40
1	Y	547	THR	CA-CB-CG2	5.09	119.53	112.40
1	Y	252	LYS	N-CA-CB	-5.09	101.43	110.60
1	8	112	ASP	CB-CA-C	5.09	120.58	110.40
1	k	82	LYS	C-N-CA	5.09	134.43	121.70
1	A	498	SER	N-CA-CB	-5.09	102.87	110.50
1	Y	474	GLU	CB-CA-C	-5.09	100.22	110.40
1	h	418	GLU	CB-CG-CD	5.08	127.92	114.20
1	G	448	TYR	CB-CG-CD2	-5.08	117.95	121.00
1	A	353	LYS	CB-CA-C	-5.08	100.25	110.40
1	M	201	LEU	CB-CG-CD1	5.08	119.63	111.00
1	5	286	ASP	CB-CG-OD2	-5.08	113.73	118.30
1	M	265	ARG	CG-CD-NE	5.07	122.45	111.80
1	5	164	TYR	C-N-CA	-5.07	111.66	122.30
1	8	538	GLU	N-CA-CB	-5.06	101.49	110.60
1	h	353	LYS	CB-CA-C	5.06	120.53	110.40
1	G	340	ARG	NE-CZ-NH2	5.06	122.83	120.30
1	5	451	MET	CG-SD-CE	-5.06	92.11	100.20
1	A	541	ARG	NE-CZ-NH1	5.05	122.83	120.30
1	G	233	THR	CA-CB-OG1	-5.05	98.39	109.00
1	2	492	PHE	CB-CA-C	-5.05	100.29	110.40
1	x	529	ASP	CB-CA-C	5.05	120.51	110.40
1	G	367	ASP	CB-CA-C	-5.05	100.31	110.40
1	D	82	LYS	CB-CA-C	5.04	120.49	110.40
1	x	544	ARG	NE-CZ-NH2	-5.04	117.78	120.30
1	M	413	ASP	CB-CG-OD1	5.04	122.84	118.30

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	119	MET	CA-CB-CG	-5.04	104.73	113.30
1	J	505	SER	CB-CA-C	5.04	119.67	110.10
1	2	544	ARG	CB-CA-C	5.04	120.47	110.40
1	x	340	ARG	NE-CZ-NH2	-5.04	117.78	120.30
1	S	407	ASP	CB-CG-OD2	-5.02	113.78	118.30
1	G	514	THR	OG1-CB-CG2	-5.02	98.45	110.00
1	M	188	ARG	NE-CZ-NH1	5.02	122.81	120.30
1	V	346	VAL	CA-CB-CG1	5.01	118.42	110.90
1	e	314	ASP	CB-CA-C	-5.01	100.37	110.40
1	A	288	GLU	CB-CA-C	5.01	120.42	110.40
1	5	108	VAL	CA-CB-CG1	5.01	118.42	110.90
1	k	253	ARG	CB-CA-C	-5.01	100.38	110.40
1	Y	514	THR	CA-CB-OG1	-5.01	98.49	109.00
1	5	253	ARG	NE-CZ-NH2	5.01	122.80	120.30

There are no chirality outliers.

All (14) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	2	117	TRP	Peptide
1	2	497	LEU	Peptide
1	2	505	SER	Mainchain
1	5	497	LEU	Peptide
1	V	322	GLY	Mainchain
1	V	429	ARG	Peptide
1	Y	497	LEU	Peptide
1	e	293	GLY	Peptide
1	e	304	GLY	Peptide
1	e	430	GLY	Peptide
1	h	117	TRP	Peptide
1	k	430	GLY	Peptide
1	k	82	LYS	Peptide
1	x	117	TRP	Peptide

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	2	3627	0	3482	56	0
1	5	3617	0	3474	39	0
1	8	3617	0	3463	54	0
1	A	3636	0	3491	41	0
1	D	3628	0	3494	48	0
1	G	3636	0	3496	42	0
1	J	3620	0	3476	47	0
1	M	3627	0	3492	36	0
1	P	3626	0	3473	60	0
1	S	3614	0	3475	41	0
1	V	3621	0	3467	55	0
1	Y	3617	0	3475	39	0
1	e	3608	0	3435	0	0
1	h	3602	0	3436	0	0
1	k	3611	0	3449	0	0
1	x	3608	0	3450	0	0
2	2	5	0	0	0	0
2	5	5	0	0	0	0
2	8	5	0	0	0	0
2	A	10	0	0	1	0
2	D	5	0	0	0	0
2	G	5	0	0	0	0
2	J	5	0	0	0	0
2	M	5	0	0	0	0
2	P	10	0	0	0	0
2	S	5	0	0	0	0
2	V	5	0	0	0	0
2	Y	5	0	0	0	0
2	h	5	0	0	0	0
2	k	5	0	0	0	0
2	x	5	0	0	0	0
3	A	4	0	3	0	0
3	D	4	0	3	0	0
4	2	2	0	0	0	0
4	5	2	0	0	0	0
4	8	2	0	0	0	0
4	A	2	0	0	0	0
4	D	2	0	0	0	0
4	G	2	0	0	0	0
4	J	2	0	0	0	0
4	M	2	0	0	0	0
4	P	2	0	0	0	0
4	S	2	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	V	2	0	0	0	0
4	Y	2	0	0	0	0
4	e	2	0	0	0	0
4	h	2	0	0	0	0
4	k	2	0	0	0	0
4	x	2	0	0	0	0
5	P	1	0	0	0	0
5	V	1	0	0	0	0
6	2	143	0	0	3	0
6	5	187	0	0	1	0
6	8	137	0	0	3	0
6	A	193	0	0	3	0
6	D	198	0	0	2	0
6	G	199	0	0	0	0
6	J	219	0	0	3	0
6	M	140	0	0	2	0
6	P	154	0	0	3	0
6	S	145	0	0	2	0
6	V	145	0	0	2	0
6	Y	173	0	0	1	0
6	e	94	0	0	0	0
6	h	89	0	0	0	0
6	k	100	0	0	0	0
6	x	104	0	0	0	0
All	All	60462	0	55534	547	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 7.

All (547) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:197:GLU:OE2	1:5:197:GLU:OE2	1.59	1.19
1:8:148:GLU:OE1	1:8:183:LYS:HE3	1.42	1.18
1:P:429:ARG:HG3	1:P:429:ARG:HH11	1.01	1.17
1:J:450:THR:HG21	1:J:482:HIS:O	1.58	1.03
1:2:397:SER:O	1:2:398:LEU:CB	2.00	1.02
1:A:148:GLU:OE2	1:A:183:LYS:NZ	1.97	0.96
1:S:450:THR:HG21	1:S:482:HIS:O	1.65	0.95
1:A:397:SER:O	1:A:398:LEU:CB	2.11	0.95
1:5:451:MET:HG3	1:5:474:GLU:OE2	1.68	0.94

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:P:429:ARG:HG3	1:P:429:ARG:NH1	1.75	0.93
1:V:398:LEU:HD12	1:V:431:ALA:HB1	1.48	0.93
1:J:429:ARG:HB3	1:J:429:ARG:NH1	1.84	0.93
1:2:397:SER:O	1:2:398:LEU:HB2	1.65	0.91
1:P:398:LEU:HD12	1:P:431:ALA:HB2	1.54	0.88
1:P:429:ARG:HH11	1:P:429:ARG:CG	1.85	0.88
1:D:95:LYS:HE2	6:D:877:HOH:O	1.74	0.87
1:2:450:THR:HG21	1:2:482:HIS:O	1.76	0.85
1:5:450:THR:HG21	1:5:482:HIS:O	1.75	0.84
1:2:267:LYS:NZ	1:2:267:LYS:HB3	1.92	0.84
1:D:397:SER:O	1:D:398:LEU:CB	2.26	0.83
1:8:148:GLU:OE1	1:8:183:LYS:CE	2.25	0.83
1:V:398:LEU:HD12	1:V:431:ALA:CB	2.08	0.83
1:A:397:SER:O	1:A:398:LEU:HB3	1.78	0.82
1:Y:147:LYS:HD2	6:Y:708:HOH:O	1.78	0.82
1:G:450:THR:HG21	1:G:482:HIS:O	1.80	0.81
1:J:290:VAL:HB	1:J:291:PRO:HD2	1.58	0.81
1:8:450:THR:HG21	1:8:482:HIS:O	1.81	0.81
1:Y:450:THR:HG21	1:Y:482:HIS:O	1.80	0.81
1:G:431:ALA:O	1:G:434:ASN:HB3	1.79	0.80
1:D:397:SER:O	1:D:398:LEU:HB2	1.79	0.80
1:8:252:LYS:HE3	1:8:299:ASP:OD1	1.82	0.79
1:2:95:LYS:HE2	1:2:114:SER:OG	1.83	0.78
1:5:251:LEU:HD23	1:5:308:LEU:CD2	2.13	0.78
1:J:516:GLU:OE2	1:Y:85:LYS:HE3	1.84	0.78
1:8:288:GLU:HG2	6:8:916:HOH:O	1.83	0.78
1:J:407:ASP:OD1	1:J:409:SER:HB2	1.82	0.77
1:A:398:LEU:O	1:A:430:GLY:HA2	1.87	0.75
1:P:426:PRO:O	1:P:429:ARG:HD3	1.86	0.75
1:5:251:LEU:HD23	1:5:308:LEU:HD23	1.67	0.74
1:2:267:LYS:HB3	1:2:267:LYS:HZ3	1.51	0.73
1:Y:433:PRO:HG2	1:Y:451:MET:HE1	1.70	0.72
1:P:450:THR:HG21	1:P:482:HIS:O	1.89	0.71
1:2:267:LYS:NZ	1:2:267:LYS:CB	2.53	0.71
1:P:232:GLU:HA	1:P:232:GLU:OE1	1.90	0.70
1:J:429:ARG:HB3	1:J:429:ARG:HH11	1.54	0.70
1:5:538:GLU:HG2	6:5:857:HOH:O	1.89	0.70
1:D:407:ASP:OD1	1:D:409:SER:HB2	1.91	0.70
1:V:294:GLU:HB2	1:V:398:LEU:CD2	2.21	0.70
1:J:429:ARG:HH11	1:J:429:ARG:CB	2.05	0.70
1:2:147:LYS:O	1:2:148:GLU:HB3	1.92	0.69

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:V:461:ILE:HD12	1:V:477:LEU:HD11	1.72	0.69
1:J:488:TYR:CD1	1:J:539:ASP:HB3	2.27	0.69
1:V:171:GLU:O	1:V:172:ASP:HB3	1.94	0.67
1:8:397:SER:O	1:8:398:LEU:HB2	1.93	0.67
1:V:294:GLU:HB2	1:V:398:LEU:HD22	1.78	0.66
1:2:240:TRP:CE2	1:2:338:PHE:CE2	2.83	0.66
1:G:256:LEU:O	1:G:375:GLU:HB2	1.96	0.66
1:2:483:THR:HG21	1:2:529:ASP:HA	1.79	0.65
1:M:532:ILE:N	1:M:532:ILE:HD12	2.12	0.65
1:2:435:THR:HA	1:2:450:THR:O	1.96	0.65
1:V:461:ILE:CD1	1:V:477:LEU:HD11	2.27	0.65
1:D:305:ASP:HB3	1:D:306:ARG:HG3	1.79	0.64
1:G:435:THR:HA	1:G:450:THR:O	1.97	0.64
1:2:397:SER:O	1:2:398:LEU:HB3	1.94	0.64
1:8:432:TYR:HA	1:8:433:PRO:C	2.18	0.64
1:P:428:TRP:N	1:P:428:TRP:CD1	2.62	0.64
1:8:397:SER:O	1:8:398:LEU:CB	2.45	0.64
1:D:357:SER:HA	1:D:419:LYS:HE3	1.80	0.63
1:G:294:GLU:HG2	1:G:398:LEU:HD13	1.80	0.63
1:J:288:GLU:HG2	6:J:903:HOH:O	1.97	0.63
1:P:435:THR:HA	1:P:450:THR:O	1.99	0.63
1:P:171:GLU:O	1:P:172:ASP:HB3	1.97	0.63
1:5:212:GLU:O	1:5:213:ALA:HB3	1.99	0.63
1:G:459:ASN:N	1:G:459:ASN:HD22	1.96	0.62
1:M:290:VAL:HB	1:M:291:PRO:HD2	1.81	0.62
1:8:181:ARG:NH1	1:8:234:ASP:OD1	2.31	0.61
1:5:161:LEU:HG	1:5:168:VAL:HG11	1.83	0.61
1:5:285:ILE:HA	1:5:304:GLY:HA3	1.82	0.61
1:M:290:VAL:HB	1:M:291:PRO:CD	2.30	0.61
1:2:267:LYS:CB	1:2:267:LYS:HZ2	2.12	0.61
1:D:290:VAL:HB	1:D:291:PRO:HD2	1.81	0.61
1:G:386:SER:HB2	1:G:387:PRO:HD2	1.82	0.61
1:P:401:ASN:HB3	1:P:428:TRP:HB3	1.83	0.61
1:J:382:GLN:NE2	1:J:548:THR:OG1	2.33	0.60
1:A:427:ASP:HB3	1:P:95:LYS:HG3	1.82	0.60
1:P:322:GLY:O	1:P:323:LYS:HB3	2.02	0.60
1:A:256:LEU:O	1:A:375:GLU:HB2	2.01	0.60
1:2:451:MET:HE2	1:2:474:GLU:HB3	1.83	0.60
1:8:171:GLU:O	1:8:172:ASP:CB	2.49	0.60
1:V:450:THR:HG21	1:V:482:HIS:O	2.01	0.60
1:G:443:ASP:O	1:G:444:ALA:HB3	2.01	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:532:ILE:N	1:M:532:ILE:CD1	2.64	0.60
1:V:465:ASP:HB2	1:V:472:LEU:HD11	1.84	0.60
1:5:147:LYS:O	1:5:148:GLU:HB3	2.02	0.60
1:J:397:SER:O	1:J:398:LEU:CB	2.49	0.59
1:2:264:LYS:HE3	1:2:368:THR:OG1	2.01	0.59
1:J:290:VAL:HB	1:J:291:PRO:CD	2.32	0.59
1:Y:161:LEU:HG	1:Y:168:VAL:HG11	1.85	0.59
1:5:290:VAL:HB	1:5:291:PRO:HD2	1.83	0.59
1:J:429:ARG:NH1	1:J:429:ARG:CB	2.60	0.58
1:A:397:SER:O	1:A:398:LEU:HB2	2.01	0.58
1:D:488:TYR:CD1	1:D:539:ASP:HB3	2.39	0.58
1:5:433:PRO:HD3	1:5:453:TRP:CZ2	2.38	0.58
1:P:193:ARG:NH1	6:P:802:HOH:O	2.31	0.57
1:Y:106:GLY:HA2	1:Y:132:PRO:O	2.04	0.57
1:A:163:ILE:HG22	1:A:164:TYR:CE1	2.40	0.57
1:G:138:ALA:HB1	1:G:209:ILE:HG12	1.87	0.57
1:A:443:ASP:O	1:A:444:ALA:HB3	2.04	0.57
1:5:256:LEU:O	1:5:375:GLU:HB2	2.04	0.57
1:8:306:ARG:N	1:8:307:PRO:CD	2.67	0.57
1:2:348:VAL:O	1:2:358:GLN:HB3	2.05	0.57
1:D:535:ARG:HD2	1:M:429:ARG:HD2	1.86	0.57
1:5:306:ARG:NH2	1:5:309:HIS:ND1	2.52	0.57
1:8:435:THR:HA	1:8:450:THR:O	2.04	0.57
1:A:294:GLU:CG	1:A:398:LEU:HD13	2.35	0.56
1:S:330:ARG:HA	1:S:380:GLY:O	2.05	0.56
1:G:428:TRP:HE1	1:G:451[A]:MET:CE	2.19	0.56
1:Y:285:ILE:HA	1:Y:304:GLY:HA3	1.87	0.56
1:A:459:ASN:HD22	1:A:459:ASN:N	2.04	0.56
1:Y:147:LYS:O	1:Y:148:GLU:HB3	2.05	0.56
1:Y:459:ASN:N	1:Y:459:ASN:HD22	2.03	0.56
1:D:288:GLU:HG2	6:D:880:HOH:O	2.06	0.56
1:P:440:PHE:CE2	1:P:447:ILE:HG12	2.41	0.56
1:S:165:GLY:O	1:S:502:ASN:ND2	2.39	0.56
1:Y:435:THR:HG23	1:Y:450:THR:O	2.05	0.56
1:2:432:TYR:HA	1:2:433:PRO:C	2.26	0.56
1:P:306:ARG:N	1:P:307:PRO:CD	2.68	0.56
1:8:240:TRP:CE2	1:8:338:PHE:CE2	2.94	0.56
1:2:488:TYR:OH	1:2:543:SER:HB2	2.07	0.55
1:8:374:PRO:O	1:8:375:GLU:HB3	2.07	0.55
1:V:500:TYR:O	1:V:501:GLN:HB2	2.07	0.54
1:V:414:PRO:HA	1:V:417:TRP:CD1	2.43	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:188:ARG:NH1	6:J:702:HOH:O	2.39	0.54
1:P:326:VAL:HG11	1:P:392:PHE:CZ	2.42	0.54
1:S:342:ASN:O	1:S:343:GLN:HB2	2.07	0.54
1:2:267:LYS:HB3	1:2:267:LYS:HZ2	1.70	0.54
1:D:331:LEU:N	1:D:332:PRO:CD	2.70	0.54
1:J:256:LEU:O	1:J:375:GLU:HB2	2.08	0.54
1:V:459:ASN:N	1:V:459:ASN:HD22	2.05	0.53
1:2:161:LEU:HG	1:2:168:VAL:HG21	1.90	0.53
1:A:482:HIS:CE1	1:A:528:HIS:CD2	2.96	0.53
1:J:429:ARG:HD3	1:Y:535:ARG:HD2	1.90	0.53
1:M:432:TYR:HA	1:M:433:PRO:C	2.29	0.53
1:D:443:ASP:O	1:D:444:ALA:HB3	2.08	0.53
1:Y:433:PRO:HG2	1:Y:451:MET:CE	2.36	0.53
1:8:442:PRO:HB2	6:8:883:HOH:O	2.09	0.53
1:V:106:GLY:HA2	1:V:132:PRO:O	2.09	0.53
1:V:290:VAL:HB	1:V:291:PRO:CD	2.39	0.53
1:Y:500:TYR:O	1:Y:501:GLN:HB2	2.08	0.53
1:5:393:LEU:HD12	1:5:393:LEU:N	2.24	0.53
1:P:352:PRO:HD3	6:P:897:HOH:O	2.08	0.53
1:S:414:PRO:HA	1:S:417:TRP:CE2	2.44	0.53
1:Y:428:TRP:HE1	1:Y:451:MET:HE2	1.73	0.53
1:5:290:VAL:HB	1:5:291:PRO:CD	2.39	0.53
1:J:381:HIS:C	1:J:381:HIS:CD2	2.83	0.52
1:P:294:GLU:O	1:P:297:ILE:HG22	2.10	0.52
1:V:355:THR:HB	1:V:356:PRO:CD	2.39	0.52
1:8:483:THR:HG21	1:8:529:ASP:HA	1.91	0.52
1:2:331:LEU:N	1:2:332:PRO:HD3	2.25	0.52
1:A:435:THR:O	1:A:435:THR:HG22	2.08	0.52
1:M:485:ALA:CB	1:M:532:ILE:HD13	2.39	0.52
1:Y:211:PRO:HD3	1:Y:318:PHE:CB	2.40	0.52
1:P:280:SER:HB3	1:P:283:ASN:ND2	2.25	0.52
1:G:106:GLY:HA2	1:G:132:PRO:O	2.09	0.52
1:G:355:THR:HB	1:G:356:PRO:HD2	1.92	0.52
1:J:161:LEU:HG	1:J:168:VAL:HG11	1.92	0.52
1:J:256:LEU:O	1:J:375:GLU:CB	2.58	0.52
1:A:294:GLU:HG2	1:A:398:LEU:HD13	1.91	0.52
1:D:382:GLN:NE2	1:D:548:THR:OG1	2.43	0.52
1:G:171:GLU:O	1:G:173:PRO:HD3	2.09	0.52
1:P:334:VAL:HG11	1:P:373:ILE:HD11	1.92	0.52
1:Y:483:THR:HG21	1:Y:529:ASP:HA	1.90	0.52
1:5:252:LYS:HE2	1:5:299:ASP:OD1	2.09	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:8:171:GLU:O	1:8:172:ASP:HB3	2.10	0.52
1:8:433:PRO:HD3	1:8:453:TRP:CZ2	2.44	0.52
1:A:185:ASP:OD2	1:A:188:ARG:NH1	2.40	0.52
1:G:163:ILE:HG22	1:G:164:TYR:CE1	2.44	0.52
1:2:217:ALA:HA	1:2:227:ALA:O	2.10	0.52
1:Y:159:LYS:HD2	1:Y:286:ASP:HB3	1.92	0.52
1:S:382:GLN:HG3	1:S:438:MET:HE2	1.90	0.51
1:S:401:ASN:ND2	1:S:430:GLY:O	2.34	0.51
1:S:404:MET:SD	1:S:419:LYS:HD3	2.50	0.51
1:A:255:TRP:O	1:A:376:VAL:HG23	2.10	0.51
1:V:176:GLY:O	1:V:177:MET:HB2	2.10	0.51
1:G:301:LYS:N	1:G:301:LYS:HD3	2.25	0.51
1:S:133:ILE:O	1:S:155:THR:HA	2.11	0.51
1:5:242:PHE:CE1	1:5:329:MET:HE3	2.45	0.51
1:J:323:LYS:HG2	1:J:324:TRP:CE2	2.46	0.51
1:P:205:VAL:HG12	1:P:206:HIS:N	2.26	0.51
1:S:106:GLY:HA2	1:S:132:PRO:O	2.11	0.51
1:8:423:VAL:HG22	1:8:469:TRP:HB3	1.93	0.51
1:V:294:GLU:CD	1:V:294:GLU:H	2.13	0.51
1:5:392:PHE:C	1:5:393:LEU:HD12	2.31	0.51
1:8:285:ILE:HA	1:8:304:GLY:HA3	1.92	0.50
1:M:459:ASN:N	1:M:459:ASN:HD22	2.10	0.50
1:P:192:GLN:O	1:P:193:ARG:HB3	2.11	0.50
1:J:331:LEU:N	1:J:332:PRO:CD	2.75	0.50
1:S:536:THR:O	1:S:539:ASP:HB2	2.12	0.50
1:A:285:ILE:HA	1:A:304:GLY:HA3	1.93	0.50
1:5:305:ASP:HB3	1:5:306:ARG:HG3	1.93	0.50
1:M:101:PRO:HG2	6:M:839:HOH:O	2.12	0.50
1:V:145:PRO:HB3	1:V:533:VAL:HG11	1.92	0.50
1:D:500:TYR:O	1:D:501:GLN:HB2	2.12	0.50
1:S:290:VAL:HB	1:S:291:PRO:HD2	1.93	0.50
1:2:82:LYS:N	6:2:802:HOH:O	2.45	0.50
1:8:449:VAL:HG22	1:8:462:ALA:HB3	1.93	0.50
1:P:322:GLY:O	1:P:323:LYS:CB	2.59	0.50
1:V:418:GLU:HG3	6:V:838:HOH:O	2.12	0.50
1:2:323:LYS:HD3	1:2:324:TRP:CZ2	2.47	0.50
1:D:511:GLU:O	1:D:515:ASP:HA	2.12	0.50
1:J:331:LEU:HB2	1:J:332:PRO:HD3	1.94	0.50
1:S:118:THR:O	1:V:504:ALA:HA	2.12	0.49
1:V:440:PHE:CZ	1:V:447:ILE:HD13	2.47	0.49
1:G:205:VAL:HG23	1:G:220:ASP:HA	1.95	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:428:TRP:C	1:J:429:ARG:HG2	2.33	0.49
1:M:222:GLN:NE2	1:M:287:TRP:HA	2.27	0.49
1:P:461:ILE:HG12	1:P:477:LEU:HD11	1.92	0.49
1:V:165:GLY:O	1:V:502:ASN:ND2	2.45	0.49
1:S:132:PRO:HD2	1:V:125:TRP:CZ3	2.48	0.49
1:D:299:ASP:HB2	1:D:301:LYS:HD3	1.94	0.49
1:2:520:PHE:CD1	1:2:520:PHE:N	2.80	0.49
1:5:84:VAL:HG13	1:8:92:GLN:NE2	2.28	0.49
1:5:225:ILE:HA	1:5:240:TRP:O	2.11	0.49
1:8:393:LEU:HD23	1:8:403:ILE:HG21	1.95	0.49
1:8:493:VAL:HG23	1:8:512:THR:HG22	1.94	0.49
1:G:428:TRP:HE1	1:G:451[A]:MET:HE1	1.78	0.49
1:M:485:ALA:HB1	1:M:532:ILE:HD13	1.94	0.49
1:P:294:GLU:HG2	1:P:398:LEU:HD22	1.95	0.49
1:P:540:LEU:HD22	1:P:545:SER:HB2	1.94	0.49
1:V:209:ILE:HG22	1:V:210:THR:O	2.13	0.49
1:8:241:ALA:HB2	1:8:266:LEU:HD13	1.95	0.49
1:D:311:VAL:O	1:D:312:ALA:HB3	2.13	0.48
1:Y:212:GLU:O	1:Y:213:ALA:HB3	2.13	0.48
1:D:250:ASP:C	1:D:250:ASP:OD1	2.51	0.48
1:J:429:ARG:HH11	1:J:429:ARG:CG	2.26	0.48
1:V:357:SER:HA	1:V:419:LYS:HE3	1.95	0.48
1:8:265:ARG:NH2	6:8:806:HOH:O	2.46	0.48
1:8:488:TYR:OH	1:8:543:SER:HB2	2.13	0.48
1:Y:242:PHE:CZ	1:Y:329:MET:HE1	2.47	0.48
1:G:464:ILE:CD1	1:G:471:VAL:HG22	2.44	0.48
1:P:294:GLU:HB2	1:P:398:LEU:HD22	1.95	0.48
1:M:451:MET:CE	1:M:474:GLU:HB3	2.44	0.48
1:8:306:ARG:N	1:8:307:PRO:HD3	2.29	0.48
1:P:147:LYS:O	1:P:148:GLU:HB3	2.13	0.48
1:P:145:PRO:HB3	1:P:533:VAL:HG11	1.96	0.48
1:S:481:MET:HG3	1:S:482:HIS:N	2.27	0.48
1:5:106:GLY:HA2	1:5:132:PRO:O	2.14	0.48
1:A:398:LEU:H	1:A:431:ALA:HA	1.78	0.47
1:S:465:ASP:OD1	1:S:465:ASP:C	2.52	0.47
1:2:240:TRP:CE2	1:2:338:PHE:HE2	2.29	0.47
1:D:141:PRO:HB3	1:D:534:PRO:HB2	1.95	0.47
1:M:206:HIS:CE1	1:M:548:THR:HB	2.49	0.47
1:Y:442:PRO:HG3	1:Y:542:ILE:CD1	2.45	0.47
1:J:435:THR:HA	1:J:450:THR:O	2.14	0.47
1:P:355:THR:HB	1:P:356:PRO:HD2	1.96	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S:435:THR:HA	1:S:450:THR:O	2.15	0.47
1:D:305:ASP:CB	1:D:306:ARG:HG3	2.45	0.47
1:Y:103:LYS:NZ	1:Y:156:GLN:OE1	2.47	0.47
1:Y:256:LEU:O	1:Y:375:GLU:HB3	2.15	0.47
1:8:493:VAL:HG23	1:8:512:THR:CG2	2.45	0.47
1:A:432:TYR:HA	1:A:433:PRO:C	2.35	0.47
1:J:253:ARG:NH2	1:J:257:ASP:OD1	2.43	0.47
1:P:323:LYS:HG2	1:P:324:TRP:CE2	2.50	0.47
1:S:346:VAL:O	1:S:415:THR:HG22	2.15	0.47
1:S:461:ILE:HG13	1:S:477:LEU:HD11	1.96	0.47
1:V:499:GLY:C	1:V:501:GLN:N	2.66	0.47
1:5:242:PHE:CZ	1:5:329:MET:HE1	2.49	0.47
1:8:161:LEU:HG	1:8:168:VAL:HG11	1.97	0.47
1:8:212:GLU:O	1:8:213:ALA:HB3	2.15	0.47
1:A:205:VAL:HG23	1:A:220:ASP:HA	1.97	0.47
1:P:137:MET:HA	1:P:152:VAL:O	2.14	0.47
1:S:301:LYS:HD3	6:S:836:HOH:O	2.14	0.47
1:G:306:ARG:HG3	1:G:306:ARG:HH11	1.79	0.47
1:G:353:LYS:HD2	1:G:422:VAL:HG11	1.97	0.47
1:P:308:LEU:HB2	6:P:880:HOH:O	2.14	0.47
1:V:294:GLU:O	1:V:297:ILE:HG22	2.15	0.47
1:V:398:LEU:HD12	1:V:431:ALA:HB2	1.95	0.47
1:Y:510:MET:HB2	1:Y:510:MET:HE2	1.61	0.47
1:5:459:ASN:HD22	1:5:459:ASN:N	2.13	0.47
1:8:98:LEU:O	1:8:110:ALA:HA	2.15	0.47
1:M:451:MET:HE1	1:M:474:GLU:HB3	1.97	0.46
1:G:163:ILE:HD12	1:G:163:ILE:HA	1.69	0.46
1:8:451:MET:HE1	1:8:474:GLU:HB3	1.98	0.46
1:V:102:GLY:HA3	1:V:525:MET:HB2	1.97	0.46
1:D:106:GLY:HA2	1:D:132:PRO:O	2.16	0.46
1:P:162:PHE:CE1	1:P:168:VAL:HG22	2.50	0.46
1:Y:331:LEU:N	1:Y:332:PRO:CD	2.78	0.46
1:Y:433:PRO:HD3	1:Y:453:TRP:CZ2	2.51	0.46
1:2:331:LEU:N	1:2:332:PRO:CD	2.77	0.46
1:M:98:LEU:O	1:M:110:ALA:HA	2.15	0.46
1:V:475:VAL:O	1:V:475:VAL:HG23	2.15	0.46
1:V:499:GLY:C	1:V:501:GLN:H	2.19	0.46
1:5:301:LYS:HB2	1:5:301:LYS:HE2	1.65	0.46
1:5:393:LEU:N	1:5:393:LEU:CD1	2.78	0.46
1:G:285:ILE:HA	1:G:304:GLY:HA3	1.98	0.46
1:V:430:GLY:C	1:V:432:TYR:H	2.17	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:306:ARG:N	1:A:307:PRO:HD3	2.30	0.46
1:P:253:ARG:HE	1:P:253:ARG:HB3	1.57	0.46
1:P:270:LEU:HD11	1:P:276:ASP:HB2	1.96	0.46
1:S:101:PRO:O	1:S:527:HIS:HA	2.15	0.46
1:2:448:TYR:CD1	1:2:448:TYR:N	2.83	0.46
1:G:185:ASP:OD2	1:G:188:ARG:NH1	2.47	0.46
1:M:285:ILE:HA	1:M:304:GLY:HA3	1.96	0.46
1:V:397:SER:O	1:V:398:LEU:CB	2.63	0.46
1:A:504:ALA:HA	1:D:118:THR:O	2.16	0.46
1:G:432:TYR:HA	1:G:433:PRO:C	2.36	0.46
1:P:270:LEU:HD11	1:P:276:ASP:CB	2.46	0.46
1:P:438:MET:HA	1:P:448:TYR:O	2.16	0.46
1:V:289:LEU:HB3	1:V:293:GLY:HA3	1.96	0.46
1:5:407:ASP:HB2	1:5:420:LYS:HD3	1.98	0.46
1:D:323:LYS:HE3	1:D:324:TRP:CH2	2.51	0.45
1:J:381:HIS:C	1:J:381:HIS:HD2	2.19	0.45
1:2:95:LYS:HE2	1:2:114:SER:CB	2.46	0.45
1:A:479:PRO:HG3	1:A:504:ALA:HB3	1.98	0.45
1:M:326:VAL:HG11	1:M:392:PHE:CZ	2.51	0.45
1:M:365:ASP:OD1	1:M:365:ASP:C	2.54	0.45
1:5:251:LEU:HD23	1:5:308:LEU:HD21	1.96	0.45
1:8:334:VAL:HG11	1:8:373:ILE:HD11	1.98	0.45
1:M:315:ALA:O	1:M:327:ALA:HA	2.16	0.45
1:V:127:TYR:CD2	1:V:191:LEU:HD23	2.51	0.45
2:A:701:SO4:O1	6:A:802:HOH:O	2.20	0.45
1:J:529:ASP:O	1:J:530:ASN:HB3	2.17	0.45
1:P:270:LEU:HD12	1:P:275:TYR:O	2.16	0.45
1:2:98:LEU:O	1:2:110:ALA:HA	2.16	0.45
1:A:306:ARG:HD2	6:A:970:HOH:O	2.16	0.45
1:A:331:LEU:N	1:A:332:PRO:CD	2.79	0.45
1:J:185:ASP:OD1	1:J:185:ASP:C	2.55	0.45
1:M:305:ASP:HB3	1:M:306:ARG:HG3	1.97	0.45
1:P:363:LYS:NZ	1:P:366:ASP:HA	2.32	0.45
1:8:240:TRP:CD1	1:8:338:PHE:CE2	3.05	0.45
1:D:193:ARG:HD2	1:D:234:ASP:OD2	2.16	0.45
1:J:398:LEU:HB3	1:J:399:ARG:H	1.43	0.45
1:S:191:LEU:HD12	1:S:191:LEU:C	2.37	0.45
1:D:177:MET:HG3	1:D:279:GLY:O	2.16	0.45
1:Y:433:PRO:CG	1:Y:451:MET:CE	2.95	0.45
1:G:284:LYS:HB3	1:G:306:ARG:HB2	1.98	0.45
1:J:459:ASN:N	1:J:459:ASN:HD22	2.15	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:P:293:GLY:O	1:P:296:ALA:HB3	2.17	0.45
1:2:387:PRO:HD2	1:2:444:ALA:HB2	1.98	0.45
1:5:96:TYR:CE2	1:5:487:THR:HB	2.51	0.45
1:D:392:PHE:C	1:D:393:LEU:HD12	2.37	0.45
1:V:148:GLU:OE1	1:V:183:LYS:HE3	2.17	0.45
1:P:507:ILE:O	1:P:520:PHE:HA	2.17	0.44
1:V:381:HIS:C	1:V:381:HIS:CD2	2.90	0.44
1:Y:211:PRO:HD3	1:Y:318:PHE:HB3	1.99	0.44
1:5:488:TYR:OH	1:5:543:SER:HB2	2.17	0.44
1:M:507:ILE:HG13	1:M:523:SER:HB2	1.98	0.44
1:P:209:ILE:HG22	1:P:210:THR:O	2.17	0.44
1:Y:428:TRP:NE1	1:Y:451:MET:CE	2.80	0.44
1:D:331:LEU:N	1:D:332:PRO:HD3	2.31	0.44
1:S:294:GLU:H	1:S:294:GLU:HG2	1.41	0.44
1:J:168:VAL:HG12	1:J:170:VAL:H	1.83	0.44
1:J:397:SER:O	1:J:398:LEU:HB2	2.17	0.44
1:M:161:LEU:HG	1:M:168:VAL:HG21	1.99	0.44
1:P:242:PHE:CZ	1:P:329:MET:HE1	2.52	0.44
1:2:90:TYR:CE2	1:2:116:GLY:HA3	2.53	0.44
1:5:382:GLN:HG3	1:5:438:MET:HE2	1.99	0.44
1:D:429:ARG:NH1	1:D:429:ARG:HB3	2.32	0.44
1:G:102:GLY:CA	1:G:525:MET:HE2	2.47	0.44
1:G:379:ALA:HB3	1:G:398:LEU:HB2	1.99	0.44
1:P:500:TYR:O	1:P:501:GLN:HB2	2.18	0.44
1:V:448:TYR:HE2	1:V:510:MET:CE	2.31	0.44
1:2:420:LYS:HE3	6:2:920:HOH:O	2.17	0.44
1:D:488:TYR:CE1	1:D:539:ASP:HB3	2.53	0.44
1:Y:119:MET:O	1:Y:120:ALA:HB2	2.18	0.44
1:A:294:GLU:HG3	1:A:398:LEU:HD13	1.98	0.44
1:G:388:ASP:CG	1:G:390:GLN:HG2	2.38	0.44
1:J:274:ARG:HD3	6:J:766:HOH:O	2.18	0.44
1:V:359:PHE:CE2	1:V:373:ILE:HG12	2.53	0.44
1:5:511:GLU:OE2	1:5:516:GLU:HG3	2.18	0.44
1:D:294:GLU:O	1:D:295:LEU:C	2.55	0.44
1:S:290:VAL:HB	1:S:291:PRO:CD	2.47	0.44
1:S:482:HIS:CE1	1:S:528:HIS:CD2	3.05	0.44
1:V:332:PRO:HA	1:V:376:VAL:HG21	1.99	0.43
1:P:363:LYS:HA	1:P:369:TRP:CD1	2.53	0.43
1:2:514:THR:O	1:2:515:ASP:HB2	2.17	0.43
1:8:520:PHE:CD1	1:8:520:PHE:N	2.86	0.43
1:J:513:GLU:HG2	1:J:514:THR:HG23	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:P:129:ASP:OD2	1:P:180:TYR:OH	2.30	0.43
1:S:265:ARG:HD2	1:S:267:LYS:HE3	1.99	0.43
1:Y:404:MET:SD	1:Y:419:LYS:HE2	2.58	0.43
1:2:381:HIS:C	1:2:381:HIS:CD2	2.92	0.43
1:A:464:ILE:CD1	1:A:471:VAL:HG22	2.48	0.43
1:M:165:GLY:O	1:M:502:ASN:ND2	2.51	0.43
1:A:193[B]:ARG:NH1	6:A:810:HOH:O	2.47	0.43
1:D:137:MET:HA	1:D:152:VAL:O	2.18	0.43
1:S:85:LYS:HB3	1:V:518:LEU:O	2.18	0.43
1:V:292:GLY:HA2	1:V:398:LEU:HD13	1.99	0.43
1:V:355:THR:HB	1:V:356:PRO:HD2	2.01	0.43
1:8:425:SER:OG	1:8:426:PRO:HD2	2.19	0.43
1:M:443:ASP:OD1	1:M:443:ASP:C	2.57	0.43
1:S:390:GLN:OE1	1:S:409:SER:HB3	2.18	0.43
1:J:488:TYR:CE1	1:J:539:ASP:HB3	2.53	0.43
1:V:171:GLU:O	1:V:172:ASP:CB	2.63	0.43
1:Y:499:GLY:C	1:Y:501:GLN:N	2.71	0.43
1:D:205:VAL:HG23	1:D:220:ASP:HA	1.99	0.43
1:D:290:VAL:HB	1:D:291:PRO:CD	2.48	0.43
1:D:432:TYR:HA	1:D:433:PRO:C	2.39	0.43
1:P:141:PRO:HA	1:P:534:PRO:HG2	1.99	0.43
1:S:382:GLN:CG	1:S:438:MET:HE2	2.48	0.43
1:J:205:VAL:HG23	1:J:220:ASP:HA	2.00	0.43
1:J:465:ASP:C	1:J:465:ASP:OD1	2.57	0.43
1:J:523:SER:HA	1:J:524:PRO:HD2	1.84	0.43
1:P:345:PRO:HG3	1:P:369:TRP:CD2	2.54	0.43
1:Y:194:ASP:OD1	1:Y:194:ASP:C	2.56	0.43
1:Y:397:SER:O	1:Y:398:LEU:CB	2.66	0.43
1:G:96:TYR:CE2	1:G:487:THR:HB	2.54	0.43
1:P:229:PHE:N	1:P:229:PHE:CD1	2.87	0.43
1:S:150:GLU:HB3	6:S:751:HOH:O	2.19	0.43
1:2:137:MET:HA	1:2:152:VAL:O	2.19	0.43
1:2:411:HIS:O	1:2:411:HIS:CG	2.72	0.43
1:M:225:ILE:HG21	1:M:225:ILE:HD13	1.84	0.42
1:P:242:PHE:CE2	1:P:329:MET:HE1	2.53	0.42
1:5:141:PRO:CG	1:5:540:LEU:HD22	2.48	0.42
1:5:472:LEU:O	1:5:473:LYS:HB3	2.19	0.42
1:8:136:HIS:O	1:8:153:VAL:HA	2.19	0.42
1:V:363:LYS:HA	1:V:369:TRP:CD1	2.53	0.42
1:2:483:THR:CG2	1:2:529:ASP:HA	2.49	0.42
1:D:294:GLU:CG	1:D:331:LEU:HD23	2.49	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:240:TRP:NE1	1:2:338:PHE:CD2	2.87	0.42
1:A:193[B]:ARG:HD2	1:A:234:ASP:OD2	2.19	0.42
1:A:206:HIS:CG	1:A:548:THR:HG21	2.54	0.42
1:G:250:ASP:C	1:G:250:ASP:OD1	2.58	0.42
1:G:459:ASN:N	1:G:459:ASN:ND2	2.66	0.42
1:P:252:LYS:HZ3	1:P:252:LYS:HB3	1.83	0.42
1:2:136:HIS:O	1:2:153:VAL:HA	2.20	0.42
1:2:205:VAL:HG12	1:2:206:HIS:CD2	2.54	0.42
1:8:382:GLN:HG3	1:8:438:MET:HE2	2.01	0.42
1:A:398:LEU:HA	1:A:431:ALA:HB2	2.01	0.42
1:D:331:LEU:O	1:D:376:VAL:HG11	2.20	0.42
1:J:193:ARG:HD2	1:J:234:ASP:OD2	2.20	0.42
1:J:360:GLN:O	1:J:360:GLN:HG3	2.15	0.42
1:M:142:SER:O	1:M:535:ARG:HA	2.19	0.42
1:M:209:ILE:HG22	1:M:210:THR:O	2.20	0.42
1:S:355:THR:HG23	1:S:377:ILE:HD12	2.01	0.42
1:A:506:ALA:HB2	1:D:117:TRP:CE3	2.54	0.42
1:D:323:LYS:HE3	1:D:324:TRP:CZ2	2.55	0.42
1:D:401:ASN:HB3	1:D:428:TRP:O	2.19	0.42
1:G:255:TRP:O	1:G:376:VAL:HG23	2.19	0.42
1:J:294:GLU:O	1:J:295:LEU:C	2.57	0.42
1:S:326:VAL:HG11	1:S:392:PHE:CZ	2.55	0.42
1:V:225:ILE:HA	1:V:240:TRP:O	2.20	0.42
1:2:184:TYR:CE2	1:2:186:GLY:HA2	2.55	0.42
1:2:278:GLN:HB2	6:2:899:HOH:O	2.19	0.42
1:2:461:ILE:HG13	1:2:477:LEU:HD11	2.01	0.42
1:2:498:SER:HA	1:2:505:SER:HB2	2.02	0.42
1:8:524:PRO:C	1:8:525:MET:HG3	2.40	0.42
1:D:414:PRO:HA	1:D:417:TRP:CD1	2.55	0.42
1:G:125:TRP:CE2	1:G:126:ASN:ND2	2.87	0.42
1:2:433:PRO:HD3	1:2:453:TRP:CZ2	2.54	0.42
1:8:179:ILE:HD13	1:8:218:VAL:HG21	2.02	0.42
1:8:448:TYR:N	1:8:448:TYR:CD1	2.87	0.42
1:J:306:ARG:N	1:J:307:PRO:CD	2.82	0.42
1:2:252:LYS:HE2	1:2:299:ASP:OD1	2.19	0.42
1:8:200:GLY:HA3	1:8:275:TYR:O	2.19	0.42
1:8:225:ILE:HA	1:8:240:TRP:O	2.19	0.42
1:G:464:ILE:HD12	1:G:471:VAL:HG22	2.02	0.42
1:J:403:ILE:HB	1:J:423:VAL:HB	2.01	0.42
1:2:138:ALA:HB1	1:2:209:ILE:HG12	2.02	0.42
1:2:414:PRO:HA	1:2:417:TRP:CD1	2.55	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:388:ASP:CG	1:A:390:GLN:HG2	2.40	0.42
1:M:520:PHE:CD2	1:M:520:PHE:N	2.88	0.42
1:S:491:LYS:HB3	1:S:491:LYS:HE3	1.74	0.42
1:V:432:TYR:HA	1:V:433:PRO:C	2.40	0.42
1:Y:245:ASP:OD1	1:Y:249:LYS:NZ	2.47	0.42
1:8:138:ALA:HB1	1:8:209:ILE:HG12	2.02	0.42
1:A:171:GLU:N	1:A:171:GLU:CD	2.73	0.41
1:J:294:GLU:HG2	1:J:331:LEU:HD23	2.02	0.41
1:5:414:PRO:HA	1:5:417:TRP:CD1	2.54	0.41
1:8:488:TYR:CE2	1:8:534:PRO:HA	2.54	0.41
1:G:436:PHE:HD1	1:G:436:PHE:H	1.67	0.41
1:M:312:ALA:O	1:M:330:ARG:HG3	2.20	0.41
1:P:242:PHE:CE2	1:P:329:MET:CE	3.03	0.41
1:P:295:LEU:HD13	1:P:295:LEU:HA	1.88	0.41
1:8:101:PRO:O	1:8:527:HIS:HA	2.19	0.41
1:8:240:TRP:NE1	1:8:338:PHE:CD2	2.88	0.41
1:G:137:MET:HE3	1:G:137:MET:HB2	2.00	0.41
1:S:357:SER:HA	1:S:419:LYS:HG3	2.02	0.41
1:V:540:LEU:HD22	1:V:545:SER:HB2	2.03	0.41
1:Y:398:LEU:HD22	1:Y:398:LEU:HA	1.84	0.41
1:2:398:LEU:HB3	1:2:399:ARG:H	1.70	0.41
1:G:437:HIS:ND1	1:G:483:THR:HG22	2.36	0.41
1:P:252:LYS:NZ	1:P:299:ASP:OD1	2.46	0.41
1:P:459:ASN:HB3	1:P:481:MET:CB	2.50	0.41
1:S:384:GLY:HA3	1:S:438:MET:HE1	2.02	0.41
1:D:294:GLU:HG2	1:D:331:LEU:HD23	2.01	0.41
1:D:507:ILE:O	1:D:520:PHE:HA	2.20	0.41
1:J:131:CYS:SG	1:J:157:GLY:HA2	2.60	0.41
1:M:352:PRO:CB	1:M:377:ILE:HB	2.51	0.41
1:S:428:TRP:O	1:S:429:ARG:HG2	2.20	0.41
1:5:433:PRO:HG3	1:5:451:MET:HE1	2.03	0.41
1:D:131:CYS:SG	1:D:157:GLY:HA2	2.61	0.41
1:D:398:LEU:O	1:D:430:GLY:HA2	2.20	0.41
1:M:150:GLU:HB3	6:M:830:HOH:O	2.21	0.41
1:P:163:ILE:HD13	1:P:163:ILE:HA	1.72	0.41
1:Y:348:VAL:HG11	1:Y:371:VAL:HG21	2.02	0.41
1:8:294:GLU:O	1:8:297:ILE:HG22	2.20	0.41
1:8:436:PHE:HD1	1:8:436:PHE:H	1.68	0.41
1:S:537:LEU:HA	1:S:537:LEU:HD23	1.66	0.41
1:V:229:PHE:CD1	1:V:229:PHE:N	2.89	0.41
1:5:326:VAL:HA	1:5:336:VAL:O	2.20	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:398:LEU:HA	1:D:431:ALA:HB2	2.02	0.41
1:G:425:SER:OG	1:G:426:PRO:HD2	2.21	0.41
1:J:453:TRP:CD2	1:J:457:THR:HG21	2.56	0.41
1:M:223:LYS:HE2	1:M:281:ALA:O	2.21	0.41
1:S:132:PRO:HD2	1:V:125:TRP:CH2	2.55	0.41
1:S:285:ILE:HA	1:S:304:GLY:HA3	2.03	0.41
1:S:286:ASP:O	1:S:287:TRP:HB3	2.21	0.41
1:V:192:GLN:O	1:V:193:ARG:HB3	2.20	0.41
1:2:124:ALA:HB3	1:2:132:PRO:HB3	2.02	0.41
1:2:240:TRP:NE1	1:2:338:PHE:CE2	2.89	0.41
1:2:459:ASN:HB2	1:2:478:GLY:O	2.20	0.41
1:8:290:VAL:O	1:8:293:GLY:N	2.52	0.41
1:G:192:GLN:O	1:G:193[B]:ARG:HB3	2.21	0.41
1:V:228:GLU:HB2	1:V:238:TYR:CZ	2.56	0.41
1:2:148:GLU:O	1:2:149:PHE:HB3	2.21	0.41
1:2:403:ILE:HB	1:2:423:VAL:HB	2.03	0.41
1:5:364:VAL:HB	1:5:368:THR:HB	2.02	0.41
1:8:240:TRP:NE1	1:8:338:PHE:CE2	2.89	0.41
1:A:326:VAL:HG11	1:A:392:PHE:CZ	2.56	0.40
1:D:433:PRO:HD3	1:D:453:TRP:CZ2	2.56	0.40
1:G:436:PHE:CD1	1:G:437:HIS:HD2	2.39	0.40
1:M:455:SER:HA	1:M:456:PRO:HA	1.83	0.40
1:P:212:GLU:O	1:P:213:ALA:HB3	2.22	0.40
1:S:256:LEU:O	1:S:375:GLU:HB2	2.21	0.40
1:V:533:VAL:HA	1:V:534:PRO:HD3	1.84	0.40
1:Y:290:VAL:HB	1:Y:291:PRO:HD2	2.04	0.40
1:G:132:PRO:O	1:G:134:MET:HG2	2.21	0.40
1:M:363:LYS:HA	1:M:369:TRP:CD1	2.56	0.40
1:P:294:GLU:HB2	1:P:398:LEU:CD2	2.51	0.40
1:V:544:ARG:HD2	6:V:755:HOH:O	2.21	0.40
1:Y:473:LYS:HE2	1:Y:475:VAL:CG1	2.51	0.40
1:8:449:VAL:CG2	1:8:462:ALA:HB3	2.51	0.40
1:A:242:PHE:HA	1:A:262:THR:O	2.22	0.40
1:A:258:GLY:HA3	1:A:374:PRO:O	2.21	0.40
1:M:290:VAL:CB	1:M:291:PRO:CD	2.97	0.40
1:V:331:LEU:N	1:V:332:PRO:CD	2.85	0.40
1:8:486:ILE:HG21	1:8:486:ILE:HD13	1.74	0.40
1:A:106:GLY:HA2	1:A:132:PRO:O	2.21	0.40
1:A:294:GLU:HG3	1:A:398:LEU:HD22	2.04	0.40
1:A:355:THR:HB	1:A:356:PRO:HD2	2.04	0.40
1:D:363:LYS:HA	1:D:369:TRP:CD1	2.56	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:331:LEU:N	1:M:332:PRO:CD	2.85	0.40
1:Y:180:TYR:CD1	1:Y:191:LEU:HD11	2.56	0.40
1:A:405:VAL:HG12	1:A:406:TRP:N	2.37	0.40
1:G:101:PRO:HD3	1:G:137:MET:SD	2.61	0.40
1:2:240:TRP:CD1	1:2:338:PHE:CE2	3.10	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	2	465/494 (94%)	435 (94%)	27 (6%)	3 (1%)	25 15
1	5	466/494 (94%)	439 (94%)	23 (5%)	4 (1%)	17 8
1	8	465/494 (94%)	430 (92%)	32 (7%)	3 (1%)	25 15
1	A	466/494 (94%)	432 (93%)	30 (6%)	4 (1%)	17 8
1	D	465/494 (94%)	437 (94%)	26 (6%)	2 (0%)	34 25
1	G	467/494 (94%)	438 (94%)	27 (6%)	2 (0%)	34 25
1	J	465/494 (94%)	435 (94%)	26 (6%)	4 (1%)	17 8
1	M	465/494 (94%)	436 (94%)	27 (6%)	2 (0%)	34 25
1	P	465/494 (94%)	431 (93%)	31 (7%)	3 (1%)	25 15
1	S	465/494 (94%)	431 (93%)	33 (7%)	1 (0%)	47 39
1	V	465/494 (94%)	432 (93%)	29 (6%)	4 (1%)	17 8
1	Y	466/494 (94%)	432 (93%)	30 (6%)	4 (1%)	17 8
1	e	466/494 (94%)	426 (91%)	36 (8%)	4 (1%)	17 8
1	h	465/494 (94%)	427 (92%)	37 (8%)	1 (0%)	47 39
1	k	466/494 (94%)	423 (91%)	40 (9%)	3 (1%)	25 15
1	x	465/494 (94%)	425 (91%)	30 (6%)	10 (2%)	6 1

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	7447/7904 (94%)	6909 (93%)	484 (6%)	54 (1%)	22 11

All (54) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	398	LEU
1	2	398	LEU
1	8	398	LEU
1	x	171	GLU
1	A	205	VAL
1	A	398	LEU
1	A	430	GLY
1	M	205	VAL
1	S	205	VAL
1	Y	205	VAL
1	Y	398	LEU
1	Y	499	GLY
1	8	205	VAL
1	8	545	SER
1	x	166	VAL
1	x	398	LEU
1	x	410	ASN
1	x	429	ARG
1	x	430	GLY
1	e	398	LEU
1	D	205	VAL
1	G	205	VAL
1	J	398	LEU
1	P	432	TYR
1	V	205	VAL
1	V	398	LEU
1	5	205	VAL
1	x	391	SER
1	x	409	SER
1	e	294	GLU
1	A	431	ALA
1	G	430	GLY
1	J	205	VAL
1	M	398	LEU
1	P	545	SER
1	2	120	ALA
1	2	205	VAL

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	5	398	LEU
1	x	205	VAL
1	e	305	ASP
1	h	205	VAL
1	k	205	VAL
1	k	398	LEU
1	J	409	SER
1	P	205	VAL
1	V	323	LYS
1	Y	473	LYS
1	e	205	VAL
1	J	172	ASP
1	5	170	VAL
1	x	165	GLY
1	k	171	GLU
1	V	172	ASP
1	5	174	GLY

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	2	387/415 (93%)	363 (94%)	24 (6%)	18	10
1	5	386/415 (93%)	364 (94%)	22 (6%)	20	12
1	8	385/415 (93%)	369 (96%)	16 (4%)	30	23
1	A	389/415 (94%)	373 (96%)	16 (4%)	30	23
1	D	388/415 (94%)	374 (96%)	14 (4%)	35	28
1	G	389/415 (94%)	380 (98%)	9 (2%)	50	45
1	J	386/415 (93%)	373 (97%)	13 (3%)	37	30
1	M	388/415 (94%)	371 (96%)	17 (4%)	28	21
1	P	387/415 (93%)	369 (95%)	18 (5%)	26	18
1	S	384/415 (92%)	361 (94%)	23 (6%)	19	11
1	V	386/415 (93%)	365 (95%)	21 (5%)	22	14

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	Y	386/415 (93%)	367 (95%)	19 (5%)	25	17
1	e	383/415 (92%)	355 (93%)	28 (7%)	14	6
1	h	381/415 (92%)	358 (94%)	23 (6%)	19	11
1	k	384/415 (92%)	362 (94%)	22 (6%)	20	12
1	x	383/415 (92%)	358 (94%)	25 (6%)	17	9
All	All	6172/6640 (93%)	5862 (95%)	310 (5%)	24	16

All (310) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	148	GLU
1	A	159	LYS
1	A	163	ILE
1	A	171	GLU
1	A	250	ASP
1	A	395	MET
1	A	397	SER
1	A	401	ASN
1	A	429	ARG
1	A	436	PHE
1	A	450	THR
1	A	451	MET
1	A	456	PRO
1	A	459	ASN
1	A	527	HIS
1	A	529	ASP
1	D	148	GLU
1	D	250	ASP
1	D	295	LEU
1	D	341	GLU
1	D	382	GLN
1	D	395	MET
1	D	409	SER
1	D	429	ARG
1	D	436	PHE
1	D	450	THR
1	D	451	MET
1	D	459	ASN
1	D	483	THR
1	D	527	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	G	163	ILE
1	G	250	ASP
1	G	290	VAL
1	G	360	GLN
1	G	395	MET
1	G	436	PHE
1	G	455	SER
1	G	459	ASN
1	G	527	HIS
1	J	148	GLU
1	J	188	ARG
1	J	360	GLN
1	J	368	THR
1	J	375	GLU
1	J	382	GLN
1	J	395	MET
1	J	409	SER
1	J	429	ARG
1	J	436	PHE
1	J	459	ASN
1	J	527	HIS
1	J	538	GLU
1	M	163	ILE
1	M	191	LEU
1	M	193	ARG
1	M	250	ASP
1	M	252	LYS
1	M	264	LYS
1	M	274	ARG
1	M	395	MET
1	M	436	PHE
1	M	447	ILE
1	M	450	THR
1	M	456	PRO
1	M	459	ASN
1	M	527	HIS
1	M	532	ILE
1	M	538	GLU
1	M	544	ARG
1	P	85	LYS
1	P	103	LYS
1	P	163	ILE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	P	191	LEU
1	P	252	LYS
1	P	280	SER
1	P	290	VAL
1	P	294	GLU
1	P	295	LEU
1	P	313	ASN
1	P	395	MET
1	P	397	SER
1	P	429	ARG
1	P	436	PHE
1	P	459	ASN
1	P	527	HIS
1	P	540	LEU
1	P	547	THR
1	S	84	VAL
1	S	85	LYS
1	S	153	VAL
1	S	163	ILE
1	S	171	GLU
1	S	191	LEU
1	S	193	ARG
1	S	197	GLU
1	S	250	ASP
1	S	265	ARG
1	S	294	GLU
1	S	329	MET
1	S	395	MET
1	S	414	PRO
1	S	436	PHE
1	S	447	ILE
1	S	451	MET
1	S	456	PRO
1	S	459	ASN
1	S	483	THR
1	S	496	THR
1	S	497	LEU
1	S	527	HIS
1	V	141	PRO
1	V	163	ILE
1	V	177	MET
1	V	250	ASP

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	V	295	LEU
1	V	309	HIS
1	V	375	GLU
1	V	395	MET
1	V	397	SER
1	V	422	VAL
1	V	429	ARG
1	V	436	PHE
1	V	445	LYS
1	V	447	ILE
1	V	459	ASN
1	V	465	ASP
1	V	470	GLU
1	V	483	THR
1	V	510	MET
1	V	527	HIS
1	V	547	THR
1	Y	183	LYS
1	Y	243	ASP
1	Y	249	LYS
1	Y	250	ASP
1	Y	288	GLU
1	Y	294	GLU
1	Y	360	GLN
1	Y	362	VAL
1	Y	368	THR
1	Y	391	SER
1	Y	395	MET
1	Y	398	LEU
1	Y	442	PRO
1	Y	456	PRO
1	Y	459	ASN
1	Y	470	GLU
1	Y	510	MET
1	Y	523	SER
1	Y	527	HIS
1	2	93	LEU
1	2	148	GLU
1	2	159	LYS
1	2	163	ILE
1	2	250	ASP
1	2	252	LYS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	264	LYS
1	2	267	LYS
1	2	280	SER
1	2	297	ILE
1	2	309	HIS
1	2	314	ASP
1	2	391	SER
1	2	395	MET
1	2	436	PHE
1	2	445	LYS
1	2	447	ILE
1	2	449	VAL
1	2	459	ASN
1	2	470	GLU
1	2	475	VAL
1	2	510	MET
1	2	527	HIS
1	2	537	LEU
1	5	84	VAL
1	5	92	GLN
1	5	147	LYS
1	5	163	ILE
1	5	223	LYS
1	5	243	ASP
1	5	249	LYS
1	5	250	ASP
1	5	252	LYS
1	5	266	LEU
1	5	291	PRO
1	5	294	GLU
1	5	301	LYS
1	5	395	MET
1	5	456	PRO
1	5	459	ASN
1	5	465	ASP
1	5	470	GLU
1	5	484	LEU
1	5	523	SER
1	5	527	HIS
1	5	529	ASP
1	8	114	SER
1	8	148	GLU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	8	163	ILE
1	8	250	ASP
1	8	252	LYS
1	8	297	ILE
1	8	306	ARG
1	8	395	MET
1	8	397	SER
1	8	436	PHE
1	8	442	PRO
1	8	459	ASN
1	8	473	LYS
1	8	497	LEU
1	8	527	HIS
1	8	538	GLU
1	x	92	GLN
1	x	193	ARG
1	x	243	ASP
1	x	262	THR
1	x	265	ARG
1	x	267	LYS
1	x	280	SER
1	x	294	GLU
1	x	295	LEU
1	x	306	ARG
1	x	349	LEU
1	x	353	LYS
1	x	357	SER
1	x	363	LYS
1	x	395	MET
1	x	398	LEU
1	x	435	THR
1	x	447	ILE
1	x	451	MET
1	x	458	PRO
1	x	459	ASN
1	x	484	LEU
1	x	513	GLU
1	x	527	HIS
1	x	535	ARG
1	e	85	LYS
1	e	148	GLU
1	e	163	ILE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	e	168	VAL
1	e	171	GLU
1	e	197	GLU
1	e	250	ASP
1	e	264	LYS
1	e	289	LEU
1	e	303	SER
1	e	314	ASP
1	e	329	MET
1	e	353	LYS
1	e	368	THR
1	e	382	GLN
1	e	395	MET
1	e	398	LEU
1	e	412	ASP
1	e	422	VAL
1	e	427	ASP
1	e	447	ILE
1	e	456	PRO
1	e	459	ASN
1	e	463	VAL
1	e	470	GLU
1	e	473	LYS
1	e	505	SER
1	e	527	HIS
1	h	130	THR
1	h	133	ILE
1	h	152	VAL
1	h	161	LEU
1	h	193	ARG
1	h	250	ASP
1	h	251	LEU
1	h	264	LYS
1	h	267	LYS
1	h	288	GLU
1	h	290	VAL
1	h	294	GLU
1	h	353	LYS
1	h	360	GLN
1	h	391	SER
1	h	395	MET
1	h	422	VAL

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	h	447	ILE
1	h	459	ASN
1	h	475	VAL
1	h	484	LEU
1	h	510	MET
1	h	527	HIS
1	k	84	VAL
1	k	113	LEU
1	k	147	LYS
1	k	148	GLU
1	k	161	LEU
1	k	233	THR
1	k	250	ASP
1	k	314	ASP
1	k	360	GLN
1	k	370	THR
1	k	377	ILE
1	k	391	SER
1	k	395	MET
1	k	418	GLU
1	k	427	ASP
1	k	459	ASN
1	k	465	ASP
1	k	470	GLU
1	k	473	LYS
1	k	510	MET
1	k	527	HIS
1	k	547	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	401	ASN
1	D	360	GLN
1	D	382	GLN
1	J	382	GLN
1	P	126	ASN
1	P	382	GLN
1	5	390	GLN
1	8	343	GLN
1	x	309	HIS
1	x	411	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	e	434	ASN
1	k	390	GLN
1	k	459	ASN

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 53 ligands modelled in this entry, 34 are monoatomic - leaving 19 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	SO4	x	601	-	4,4,4	0.67	0	6,6,6	0.45	0
2	SO4	D	601	-	4,4,4	1.08	0	6,6,6	0.76	0
2	SO4	A	705	-	4,4,4	1.44	1 (25%)	6,6,6	0.61	0
2	SO4	P	702	-	4,4,4	0.51	0	6,6,6	0.13	0
2	SO4	M	701	-	4,4,4	0.83	0	6,6,6	0.30	0
2	SO4	8	701	-	4,4,4	0.73	0	6,6,6	0.25	0
2	SO4	5	601	-	4,4,4	0.92	0	6,6,6	0.38	0
2	SO4	S	601	-	4,4,4	0.66	0	6,6,6	0.52	0
2	SO4	G	701	-	4,4,4	1.56	1 (25%)	6,6,6	0.67	0
2	SO4	P	701	-	4,4,4	0.98	0	6,6,6	0.63	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	SO4	2	701	-	4,4,4	0.86	0	6,6,6	0.72	0
2	SO4	A	701	-	4,4,4	0.74	0	6,6,6	0.29	0
2	SO4	J	601	-	4,4,4	1.18	0	6,6,6	0.42	0
2	SO4	k	701	-	4,4,4	0.80	0	6,6,6	0.24	0
2	SO4	V	601	-	4,4,4	0.80	0	6,6,6	0.67	0
2	SO4	h	601	-	4,4,4	0.69	0	6,6,6	0.22	0
3	BO3	A	702	-	3,3,3	0.42	0	3,3,3	1.06	0
2	SO4	Y	601	-	4,4,4	1.15	0	6,6,6	0.31	0
3	BO3	D	602	-	3,3,3	0.35	0	3,3,3	1.70	1 (33%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	G	701	SO4	O2-S	-2.14	1.34	1.46
2	A	705	SO4	O1-S	-2.12	1.34	1.46

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	602	BO3	O3-B-O1	-2.31	111.89	119.79

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	701	SO4	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

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

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	2	467/494 (94%)	-0.90	0 100 100	19, 30, 43, 73	0
1	5	467/494 (94%)	-0.95	0 100 100	17, 26, 40, 61	3 (0%)
1	8	467/494 (94%)	-0.90	0 100 100	19, 30, 43, 71	1 (0%)
1	A	467/494 (94%)	-0.95	0 100 100	16, 25, 38, 99	3 (0%)
1	D	467/494 (94%)	-0.97	0 100 100	16, 24, 38, 62	2 (0%)
1	G	467/494 (94%)	-0.93	0 100 100	16, 25, 38, 59	0
1	J	467/494 (94%)	-0.96	0 100 100	16, 24, 38, 61	1 (0%)
1	M	467/494 (94%)	-0.94	0 100 100	20, 28, 41, 55	0
1	P	467/494 (94%)	-0.91	0 100 100	17, 28, 44, 79	1 (0%)
1	S	467/494 (94%)	-0.93	0 100 100	19, 28, 41, 67	0
1	V	467/494 (94%)	-0.92	0 100 100	18, 28, 43, 75	0
1	Y	467/494 (94%)	-0.93	0 100 100	16, 26, 41, 68	1 (0%)
1	e	467/494 (94%)	-0.82	1 (0%) 95 95	23, 35, 50, 78	1 (0%)
1	h	467/494 (94%)	-0.78	0 100 100	22, 34, 49, 70	0
1	k	467/494 (94%)	-0.77	0 100 100	24, 36, 51, 80	0
1	x	467/494 (94%)	-0.85	0 100 100	21, 33, 48, 75	1 (0%)
All	All	7472/7904 (94%)	-0.90	1 (0%) 100 100	16, 29, 45, 99	14 (0%)

All (1) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	e	430	GLY	2.0

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

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

6.3 Carbohydrates [i](#)

There are no 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
3	BO3	D	602	4/4	0.95	0.06	33,34,39,42	0
3	BO3	A	702	4/4	0.96	0.05	41,41,43,49	0
2	SO4	k	701	5/5	0.96	0.11	25,27,34,34	5
2	SO4	P	702	5/5	0.97	0.08	29,29,31,39	5
2	SO4	A	701	5/5	0.97	0.13	20,23,29,33	5
2	SO4	2	701	5/5	0.98	0.10	22,27,31,36	5
2	SO4	Y	601	5/5	0.98	0.18	19,23,26,28	5
4	CU	V	603	1/1	0.98	0.05	41,41,41,41	0
5	NA	P	705	1/1	0.98	0.14	27,27,27,27	1
5	NA	V	604	1/1	0.98	0.19	24,24,24,24	1
2	SO4	D	601	5/5	0.99	0.10	29,33,39,41	5
2	SO4	G	701	5/5	0.99	0.14	17,18,20,22	5
2	SO4	5	601	5/5	0.99	0.14	19,20,22,23	5
2	SO4	x	601	5/5	0.99	0.07	29,30,34,36	5
2	SO4	h	601	5/5	0.99	0.07	36,36,38,38	5
2	SO4	J	601	5/5	0.99	0.11	30,31,35,38	5
2	SO4	M	701	5/5	0.99	0.10	30,33,34,34	5
2	SO4	P	701	5/5	0.99	0.09	26,26,28,33	5
4	CU	A	704	1/1	0.99	0.07	37,37,37,37	0
4	CU	D	603	1/1	0.99	0.08	27,27,27,27	0
4	CU	D	604	1/1	0.99	0.08	34,34,34,34	0
4	CU	G	703	1/1	0.99	0.08	35,35,35,35	0
4	CU	J	602	1/1	0.99	0.07	28,28,28,28	0
4	CU	J	603	1/1	0.99	0.09	35,35,35,35	0
4	CU	M	703	1/1	0.99	0.06	39,39,39,39	0
4	CU	P	704	1/1	0.99	0.07	39,39,39,39	0
4	CU	S	603	1/1	0.99	0.06	38,38,38,38	0
2	SO4	A	705	5/5	0.99	0.14	18,19,22,24	5
4	CU	Y	602	1/1	0.99	0.08	31,31,31,31	0
4	CU	Y	603	1/1	0.99	0.08	37,37,37,37	0
4	CU	2	703	1/1	0.99	0.08	38,38,38,38	0
4	CU	8	702	1/1	0.99	0.05	35,35,35,35	0

Continued on next page...

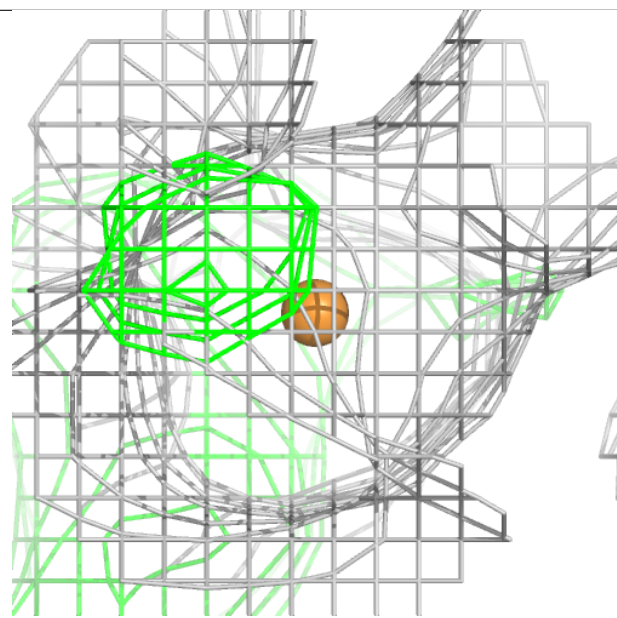
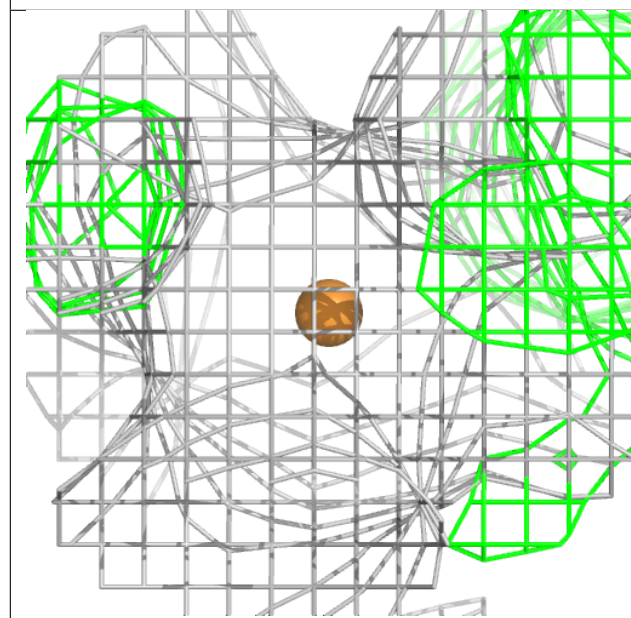
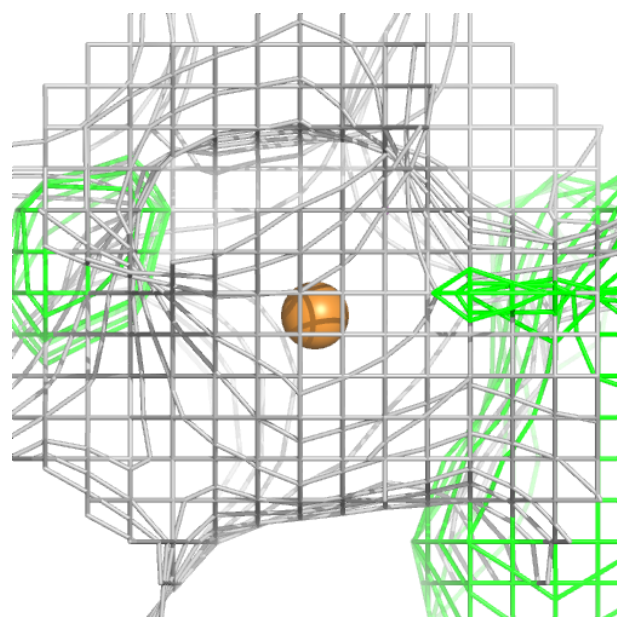
Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
4	CU	k	703	1/1	0.99	0.05	43,43,43,43	0
2	SO4	S	601	5/5	0.99	0.13	27,28,31,31	5
2	SO4	V	601	5/5	0.99	0.10	27,27,31,31	5
4	CU	A	703	1/1	1.00	0.07	32,32,32,32	0
4	CU	P	703	1/1	1.00	0.10	32,32,32,32	0
4	CU	2	702	1/1	1.00	0.08	33,33,33,33	0
2	SO4	8	701	5/5	1.00	0.09	25,28,31,35	5
4	CU	5	602	1/1	1.00	0.06	33,33,33,33	0
4	CU	5	603	1/1	1.00	0.06	38,38,38,38	0
4	CU	S	602	1/1	1.00	0.06	33,33,33,33	0
4	CU	8	703	1/1	1.00	0.08	39,39,39,39	0
4	CU	x	602	1/1	1.00	0.07	36,36,36,36	0
4	CU	x	603	1/1	1.00	0.07	42,42,42,42	0
4	CU	e	601	1/1	1.00	0.06	38,38,38,38	0
4	CU	e	602	1/1	1.00	0.06	41,41,41,41	0
4	CU	h	602	1/1	1.00	0.06	37,37,37,37	0
4	CU	h	603	1/1	1.00	0.05	42,42,42,42	0
4	CU	k	702	1/1	1.00	0.05	40,40,40,40	0
4	CU	G	702	1/1	1.00	0.08	29,29,29,29	0
4	CU	V	602	1/1	1.00	0.06	35,35,35,35	0
4	CU	M	702	1/1	1.00	0.07	31,31,31,31	0

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

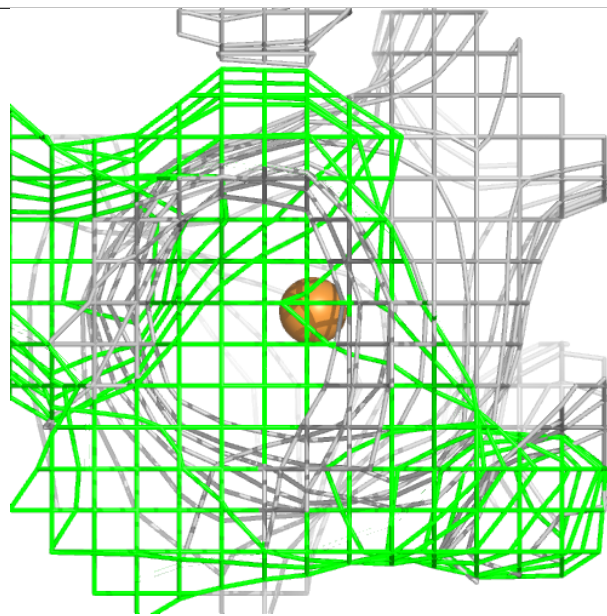
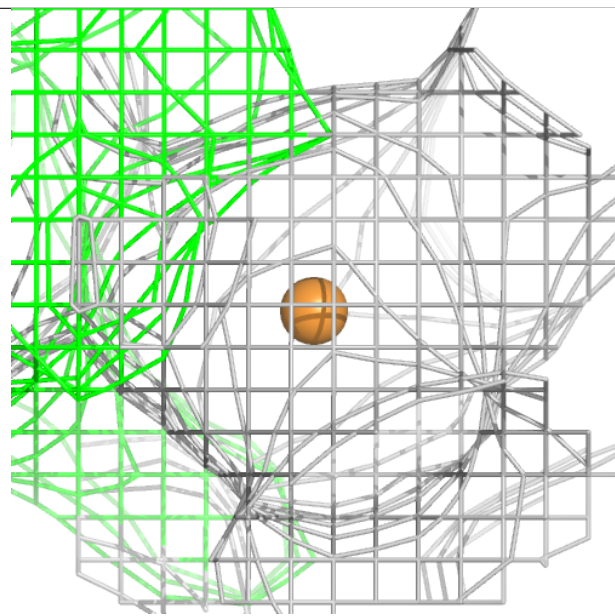
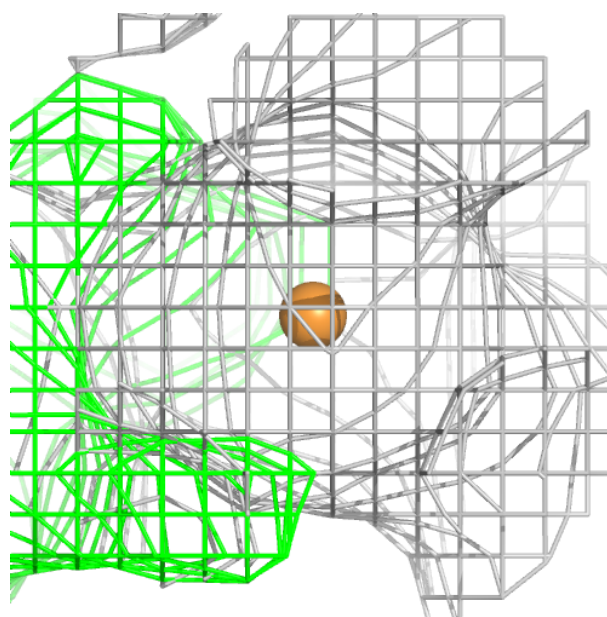
Electron density around CU V 603:

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



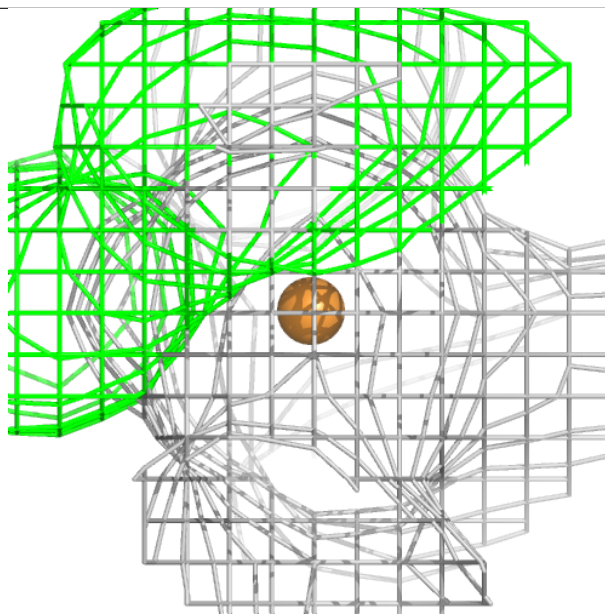
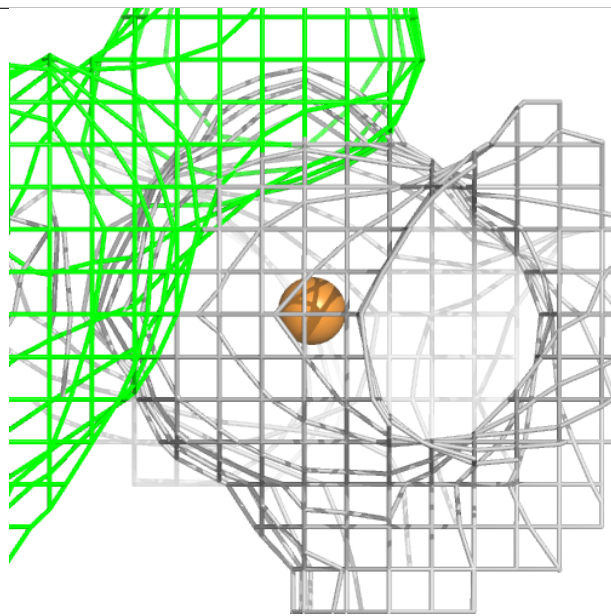
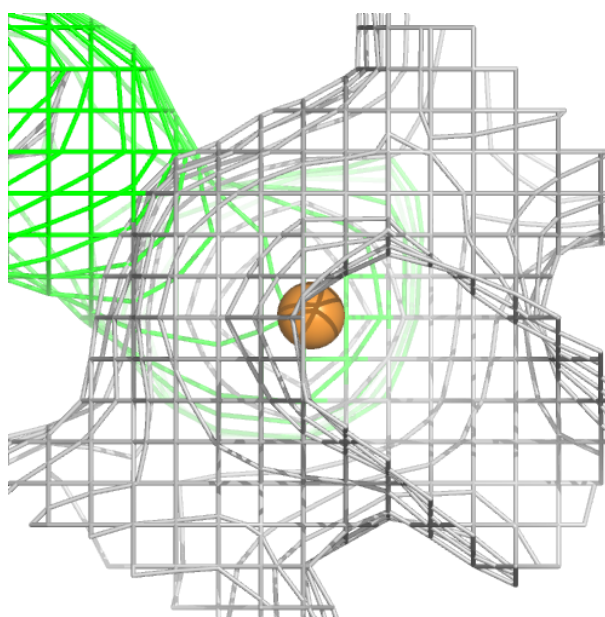
Electron density around CU A 704:

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



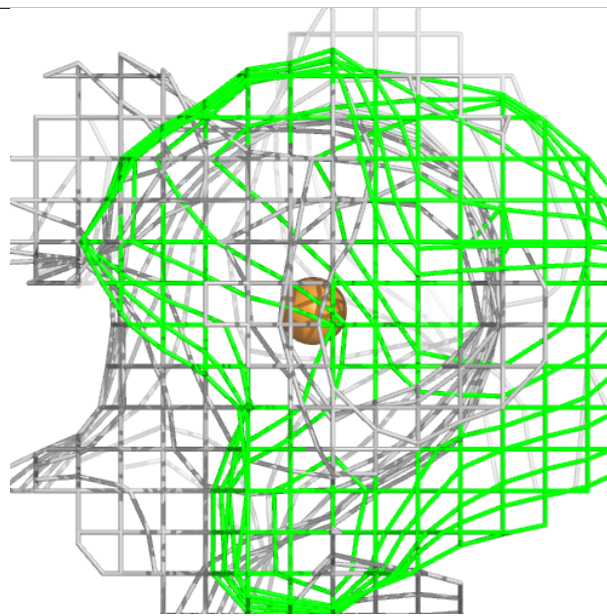
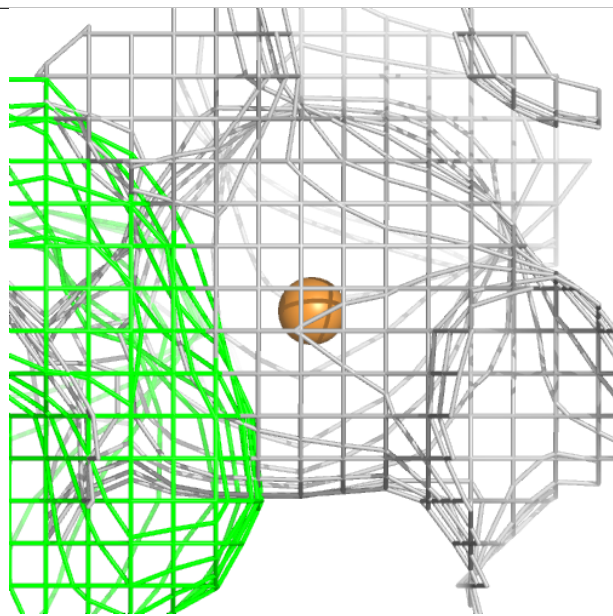
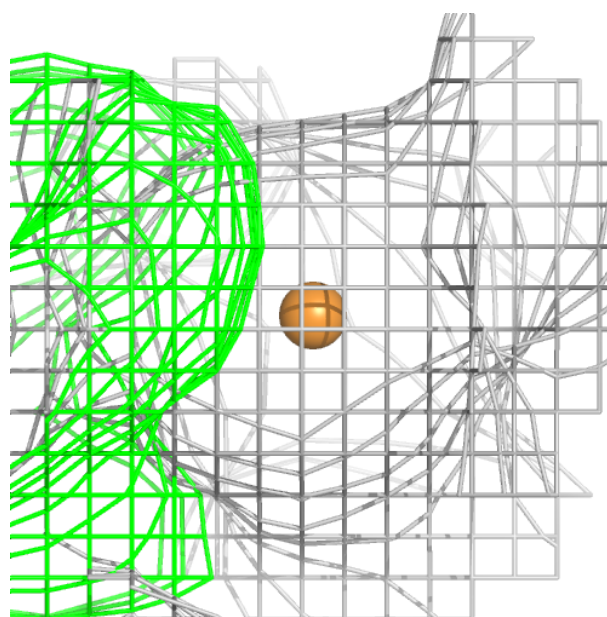
Electron density around CU D 603:

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



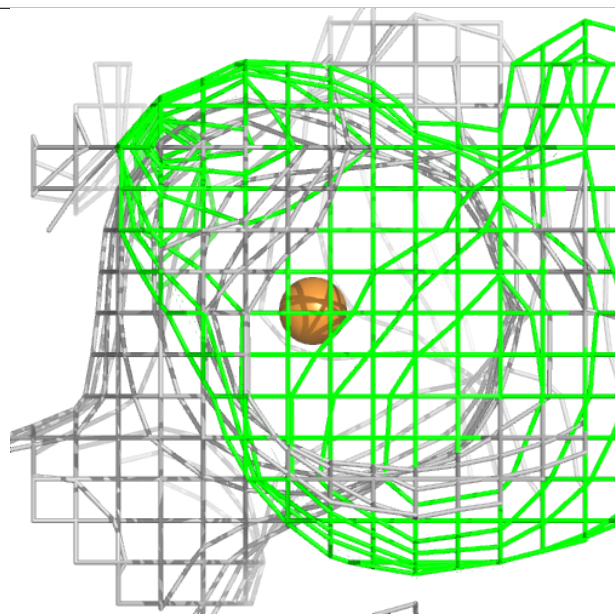
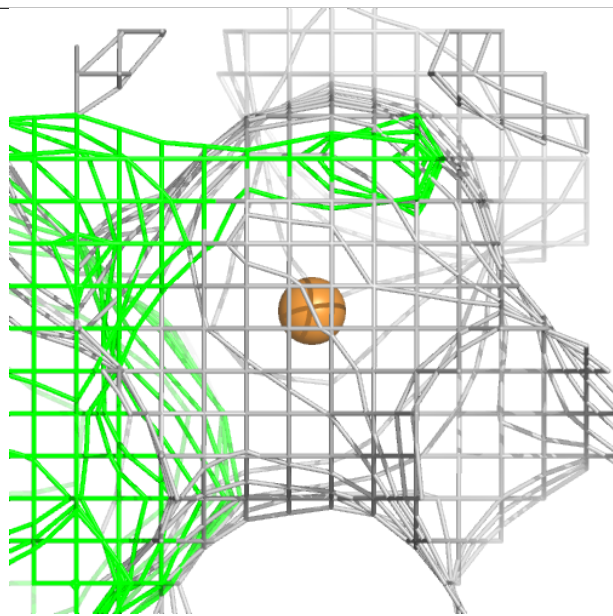
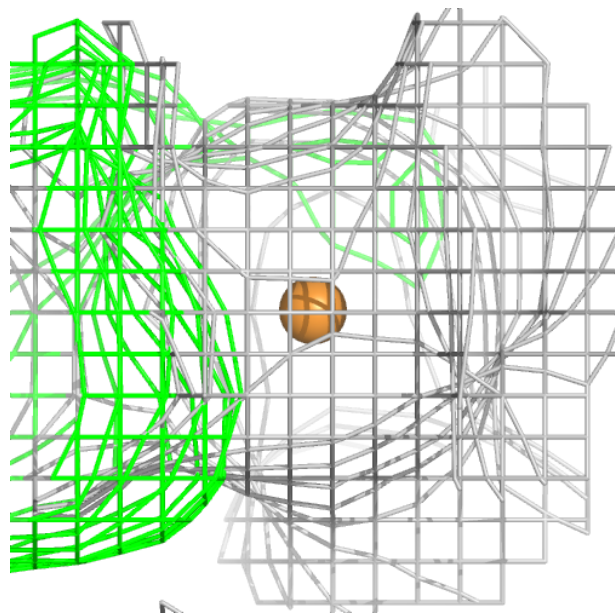
Electron density around CU D 604:

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



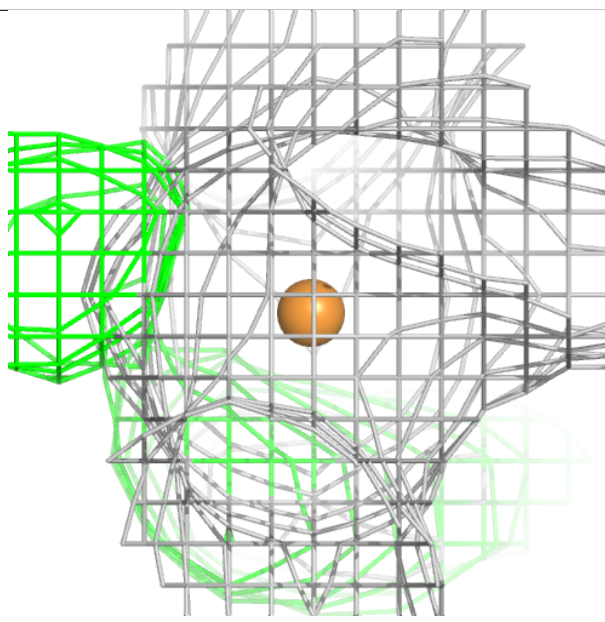
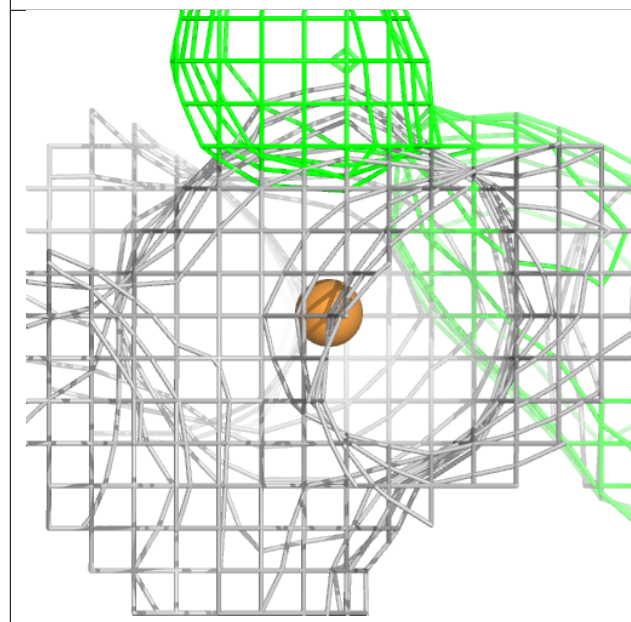
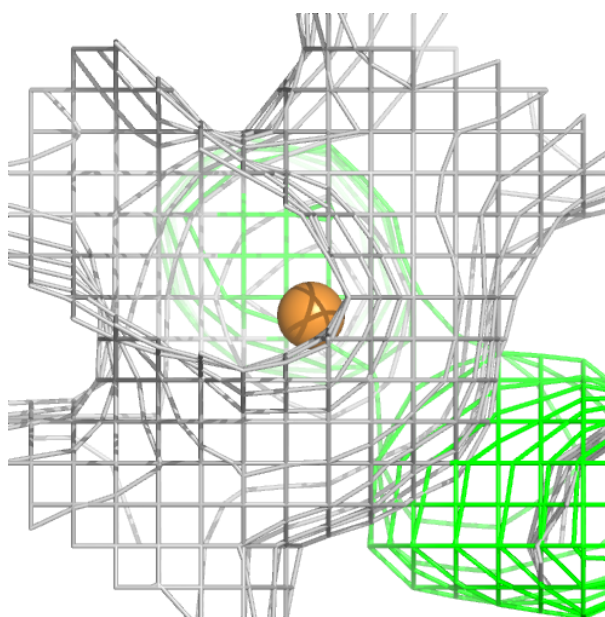
Electron density around CU G 703:

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



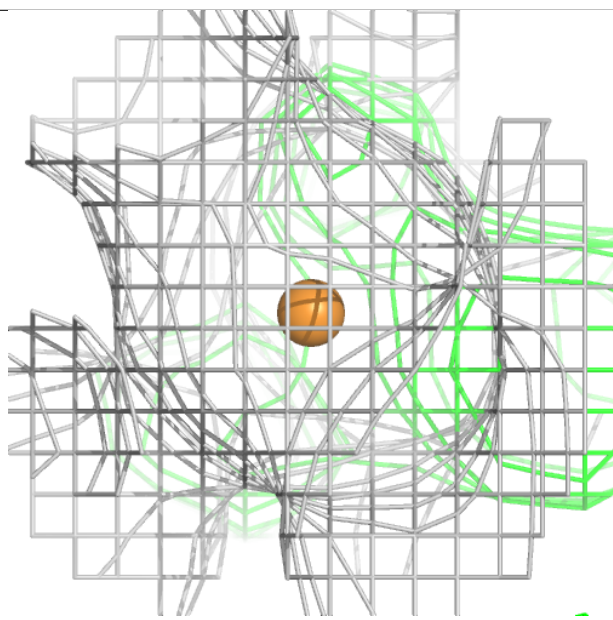
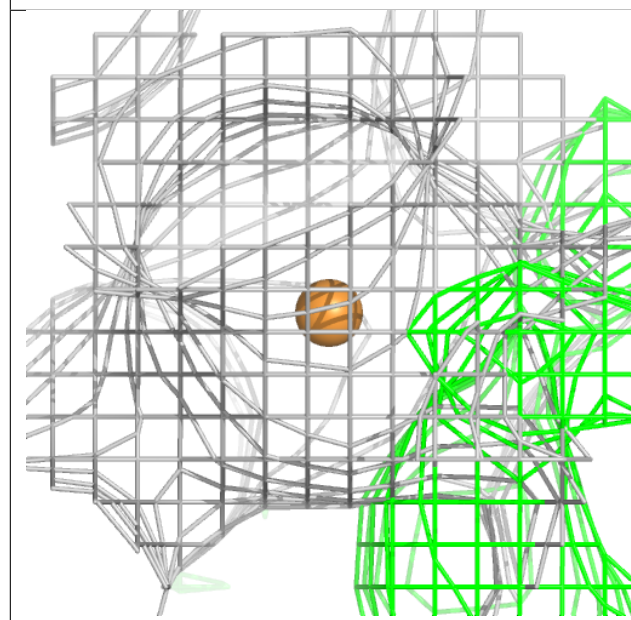
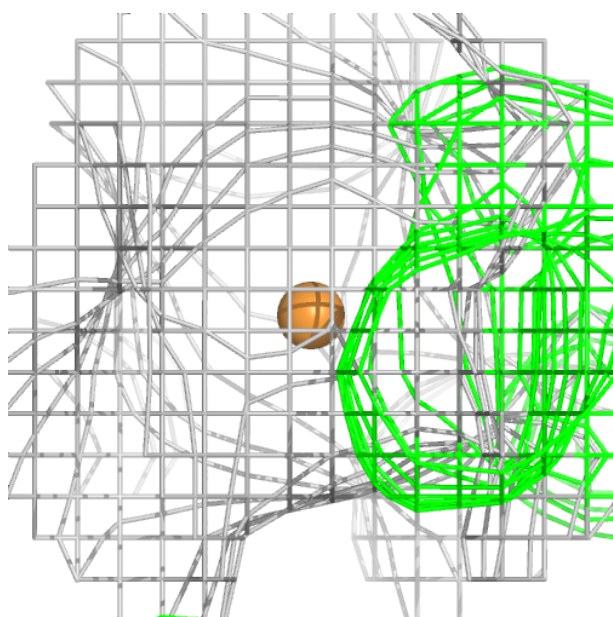
Electron density around CU J 602:

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



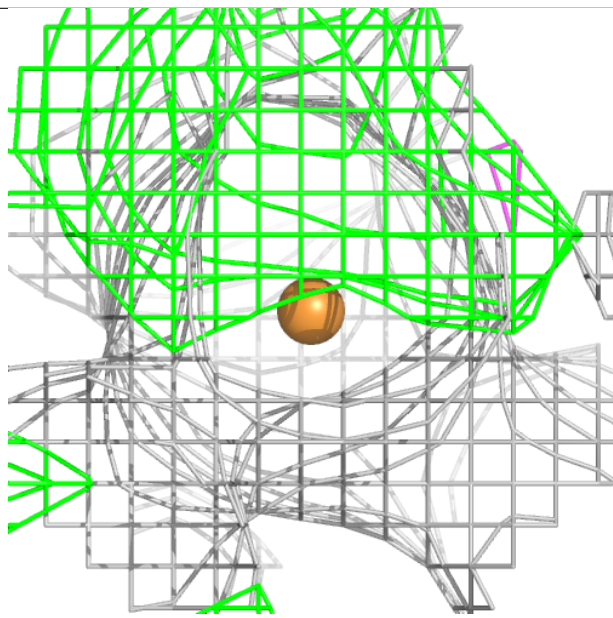
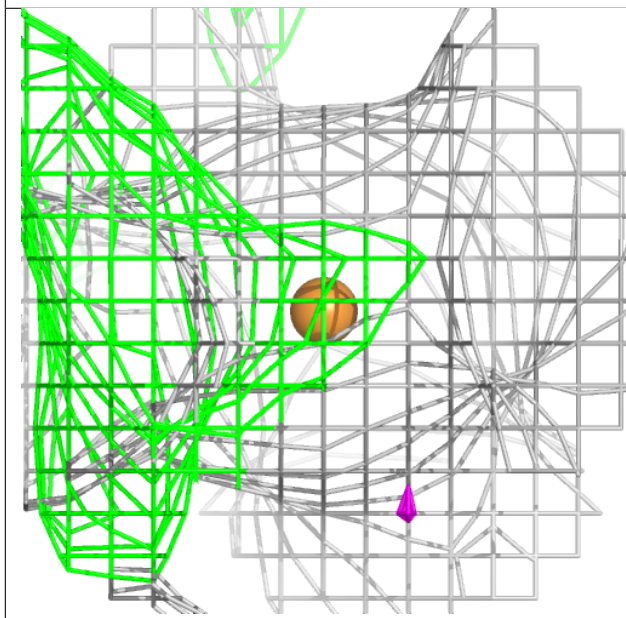
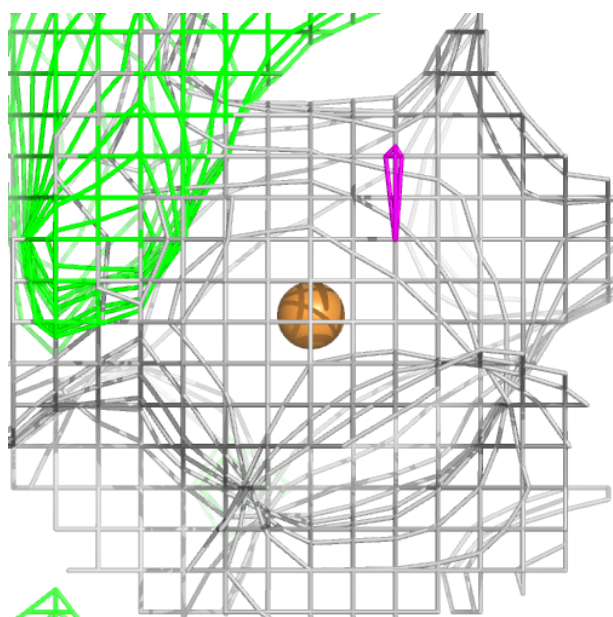
Electron density around CU J 603:

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



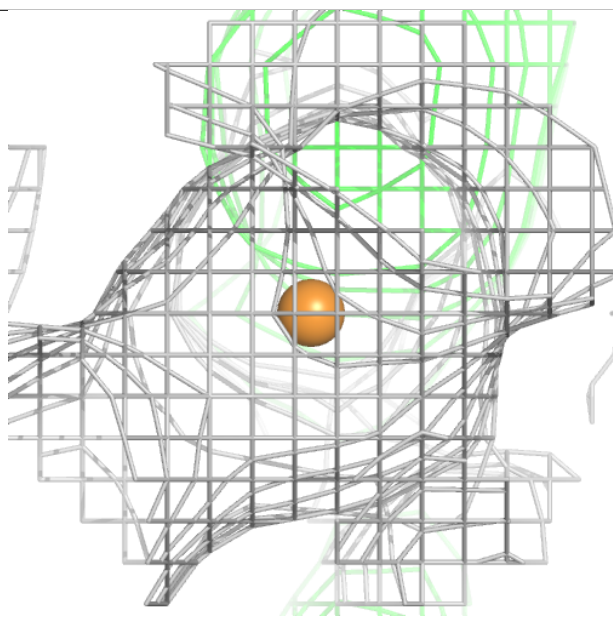
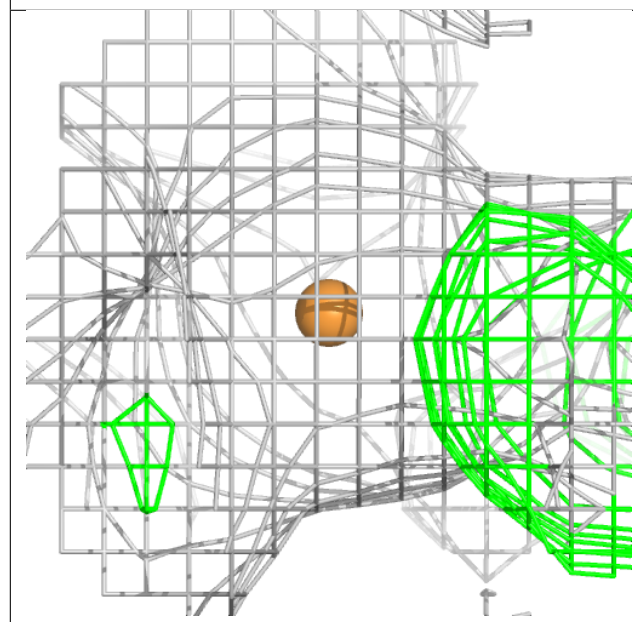
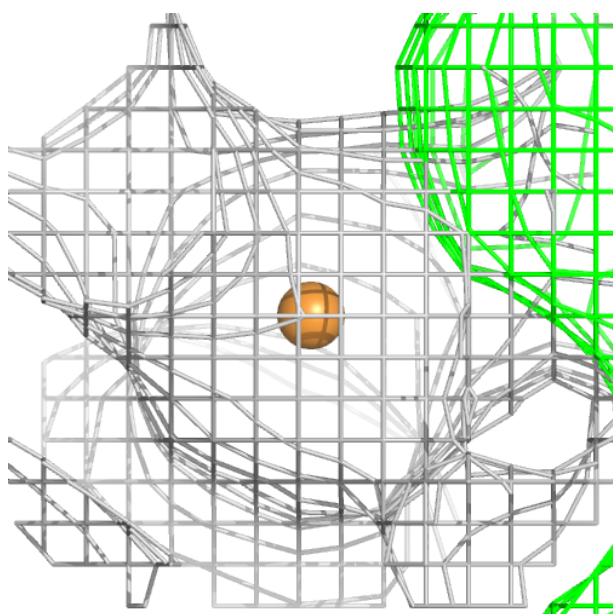
Electron density around CU M 703:

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



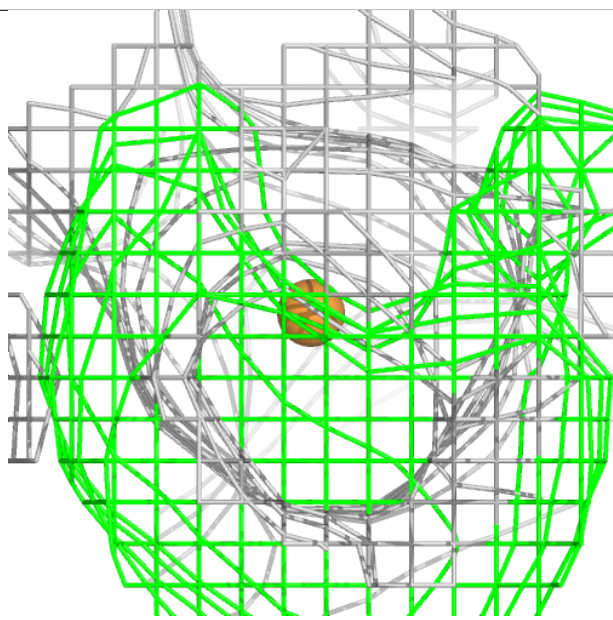
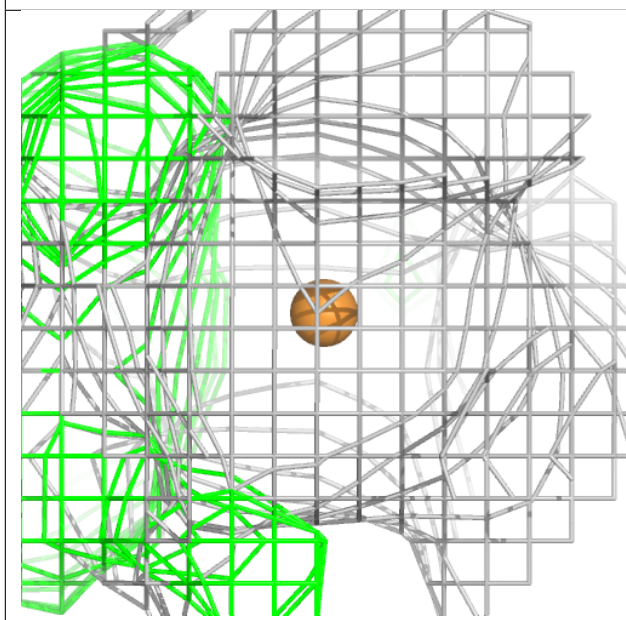
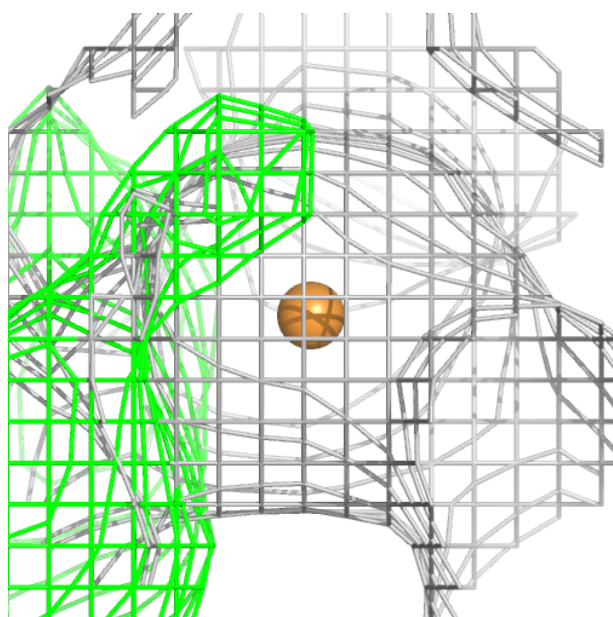
Electron density around CU P 704:

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



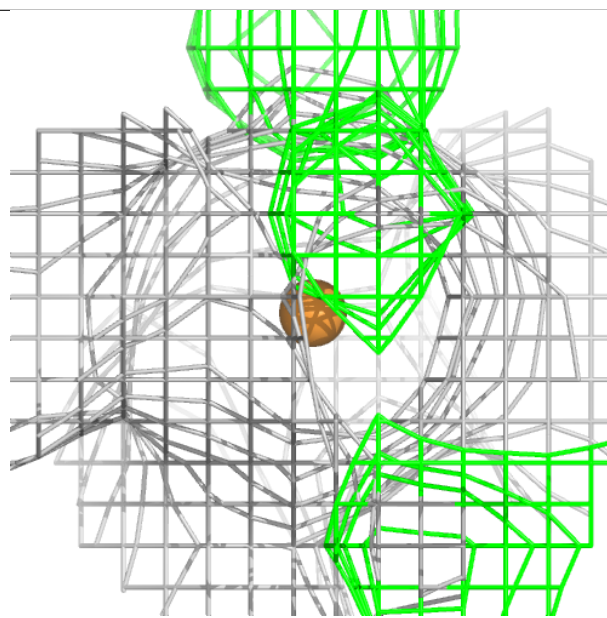
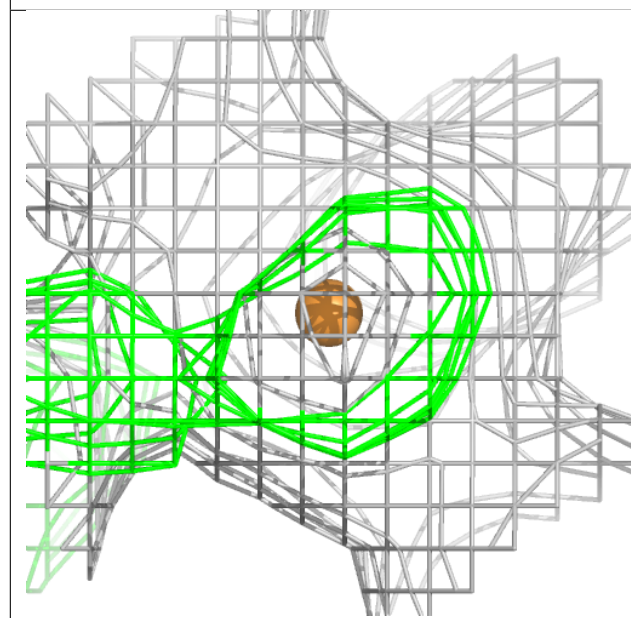
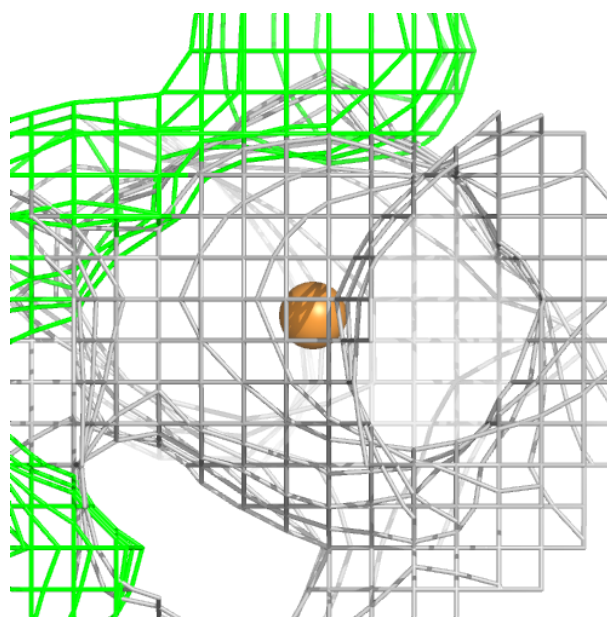
Electron density around CU S 603:

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



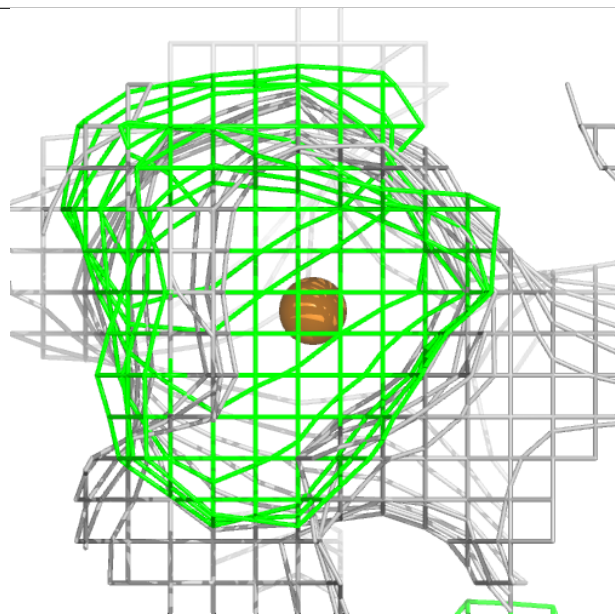
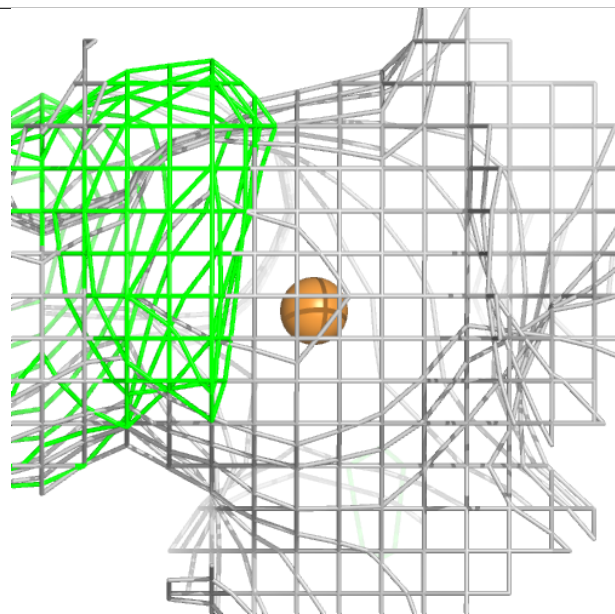
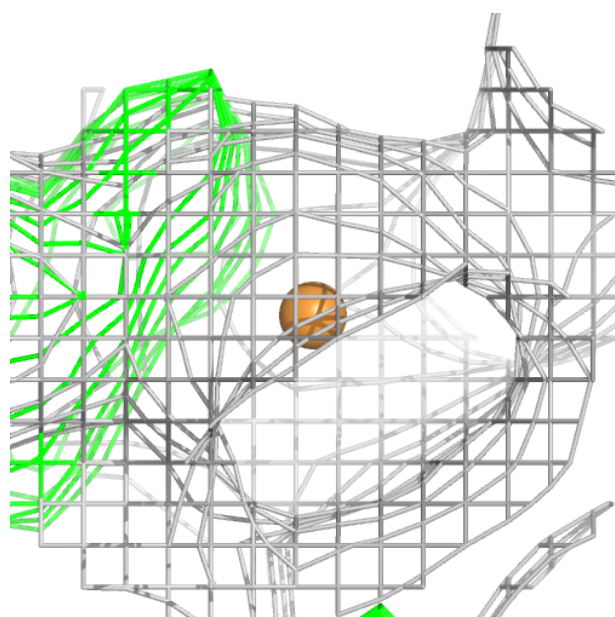
Electron density around CU Y 602:

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



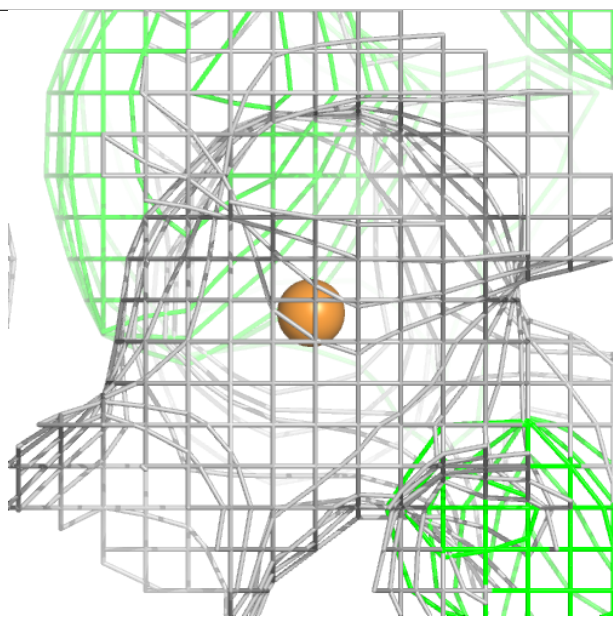
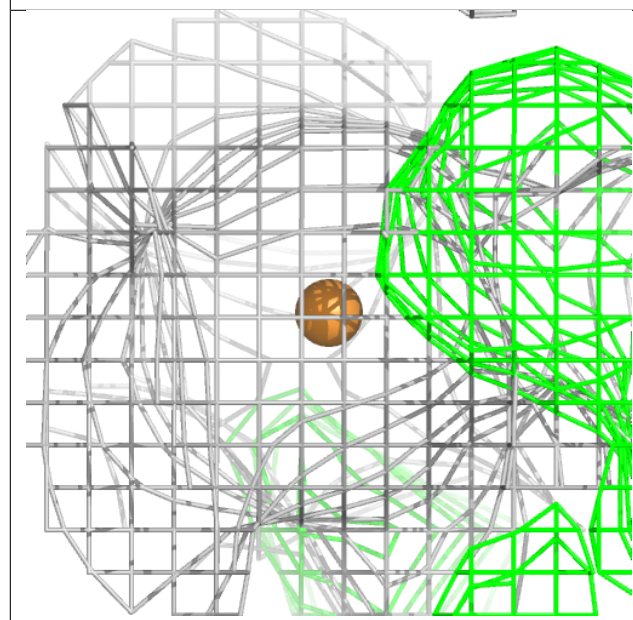
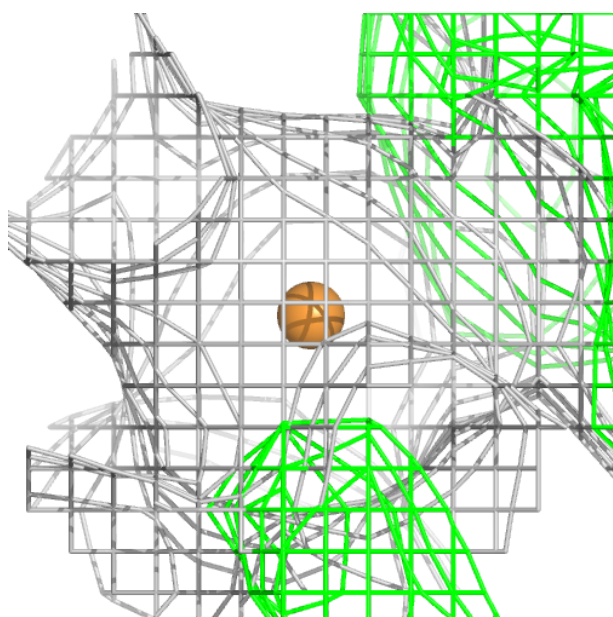
Electron density around CU Y 603:

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



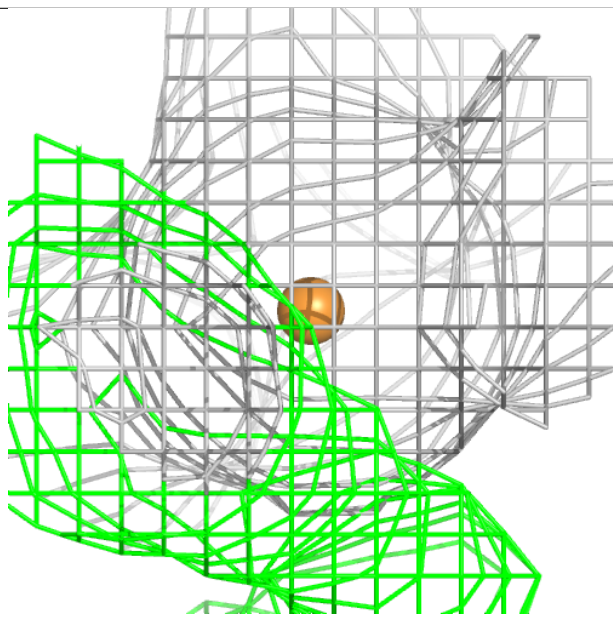
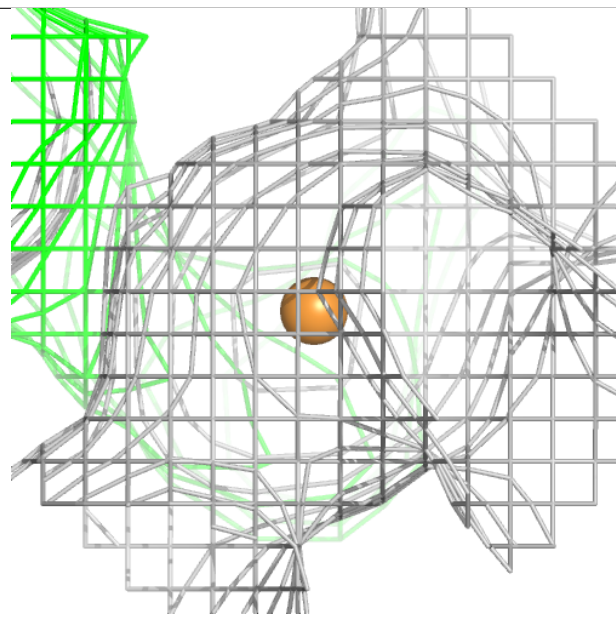
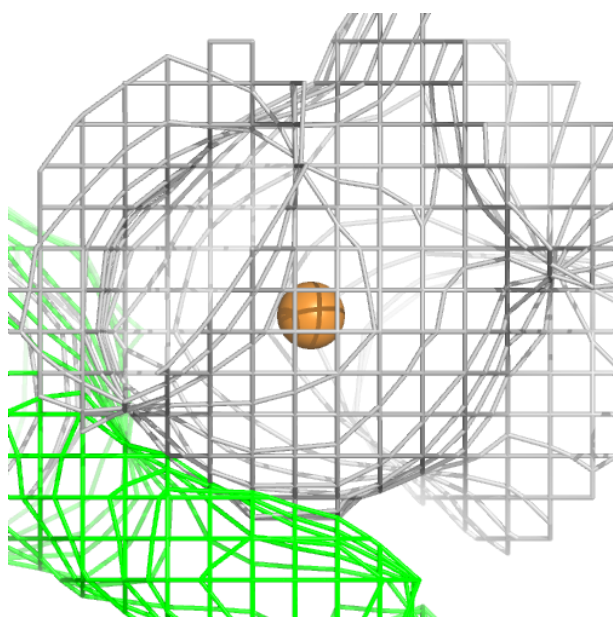
Electron density around CU 2 703:

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



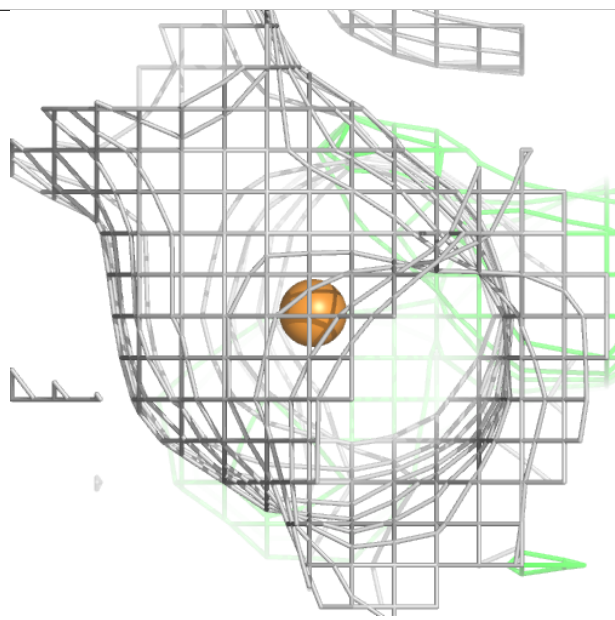
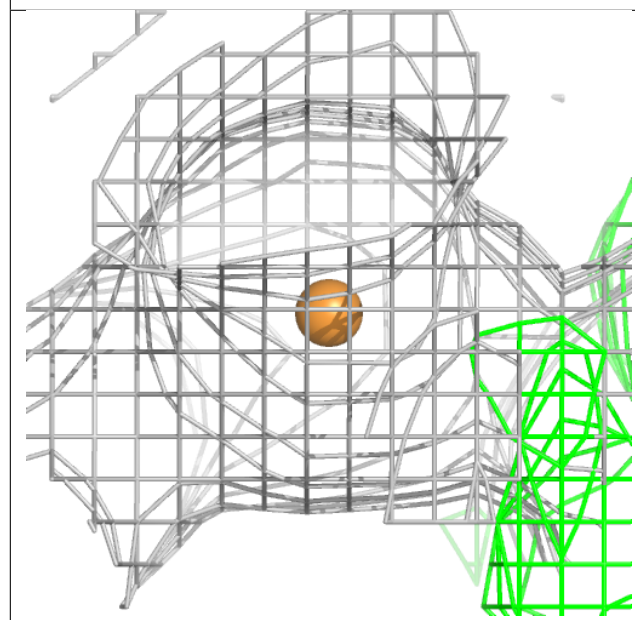
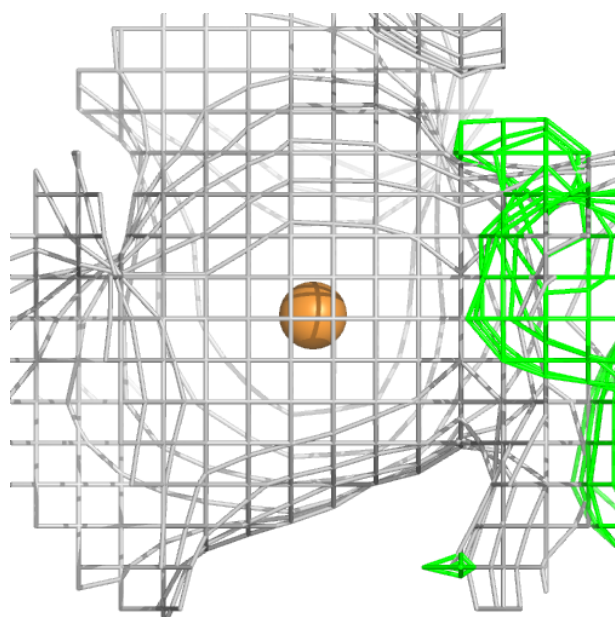
Electron density around CU 8 702:

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



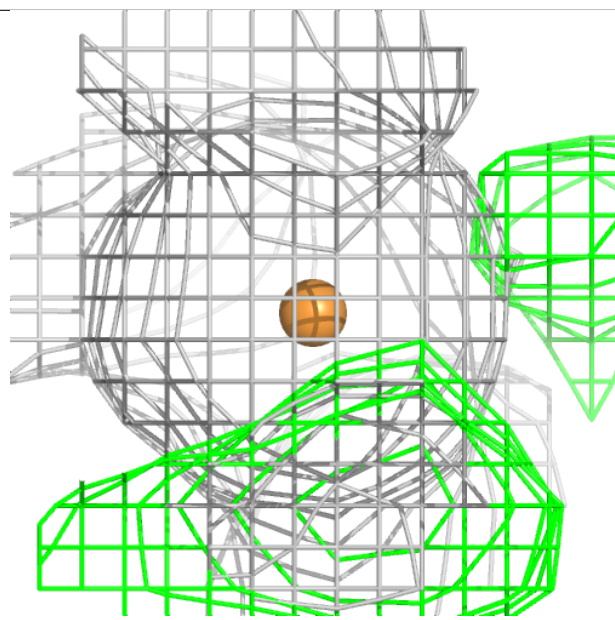
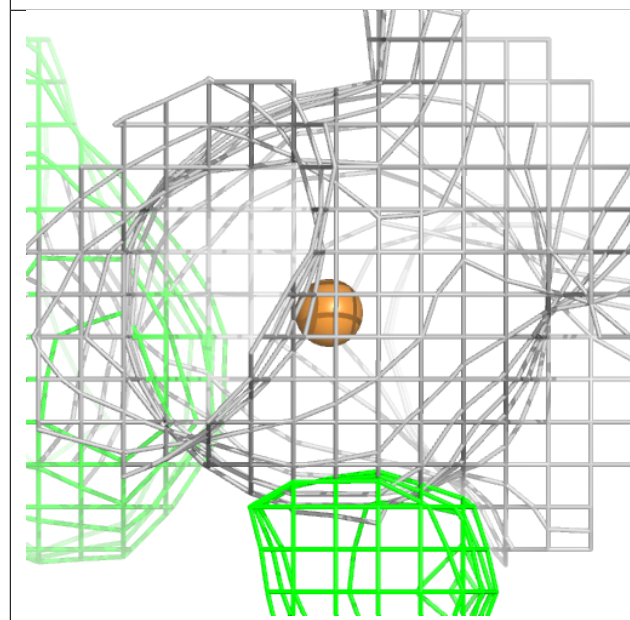
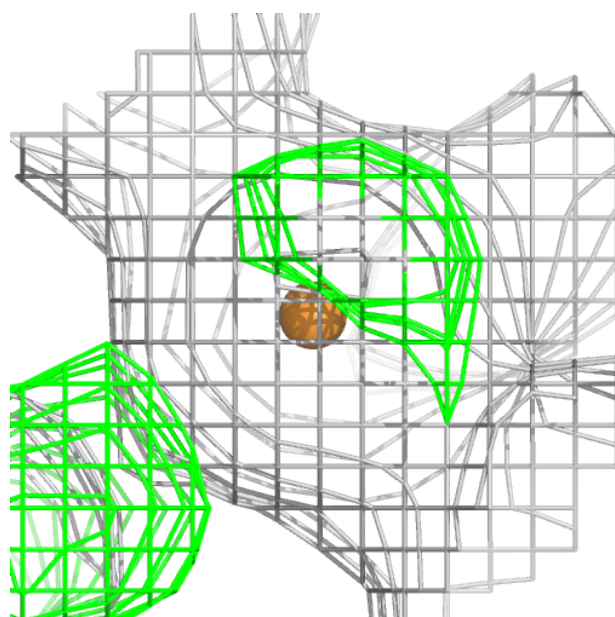
Electron density around CU k 703:

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



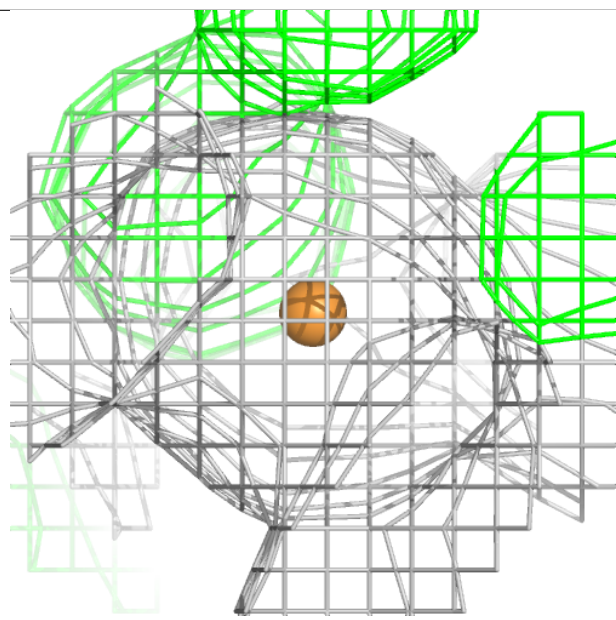
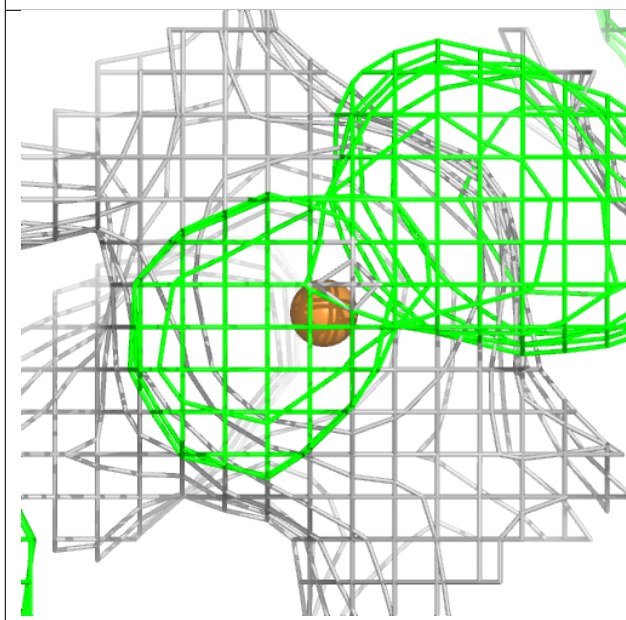
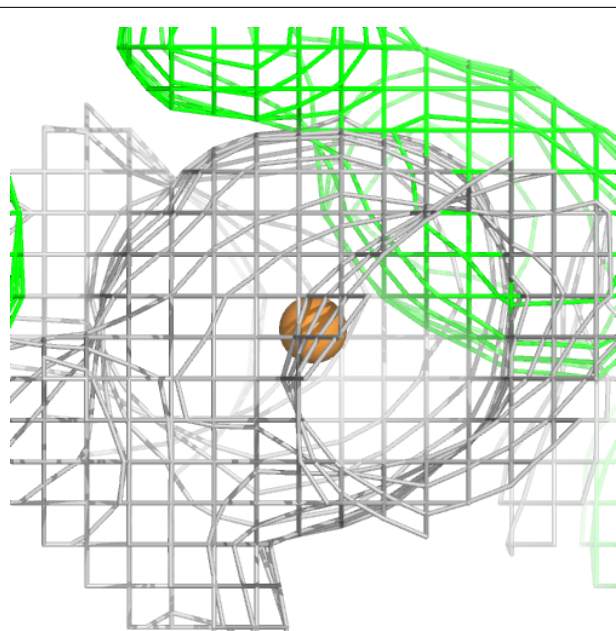
Electron density around CU A 703:

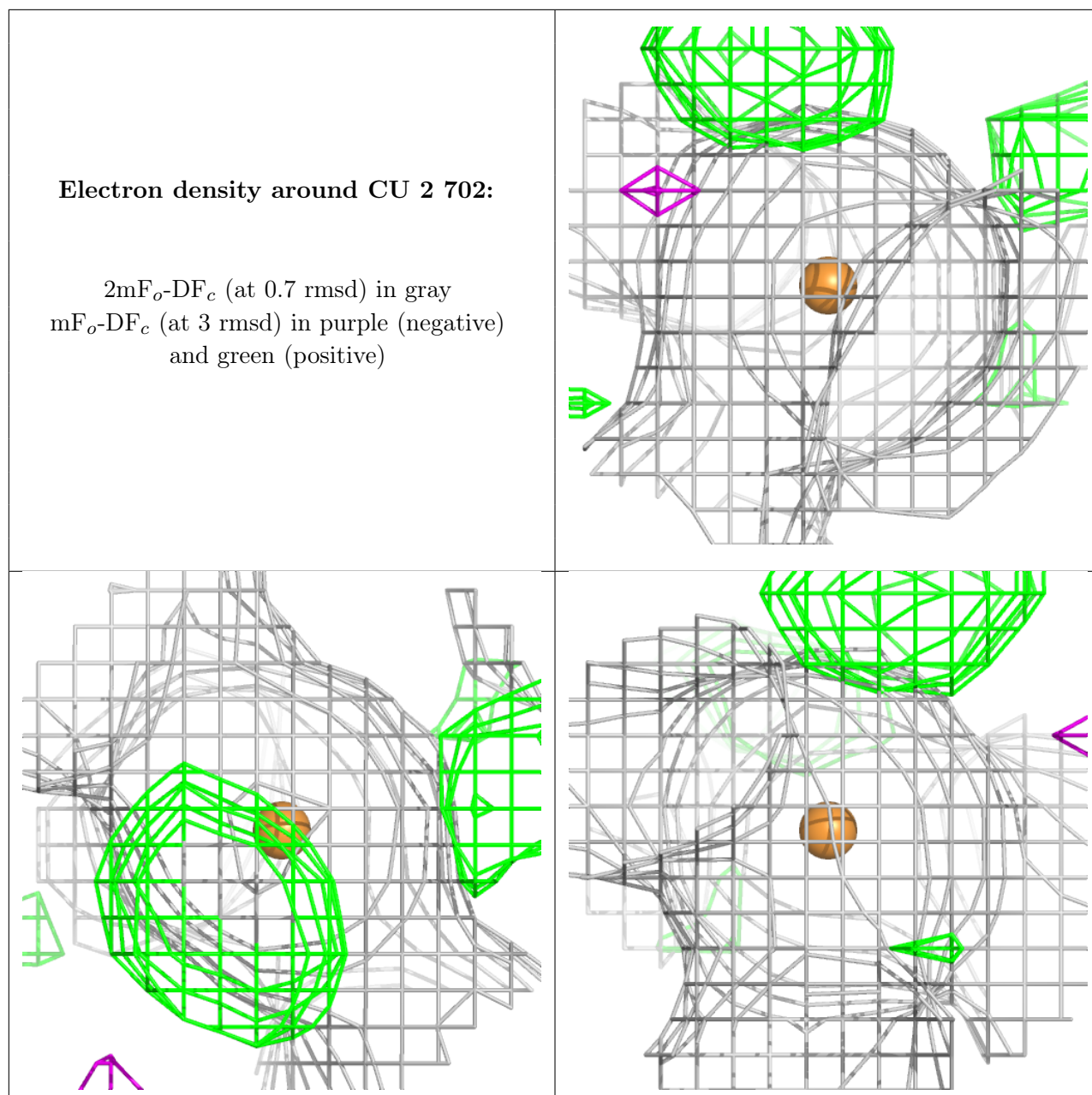
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around CU P 703:

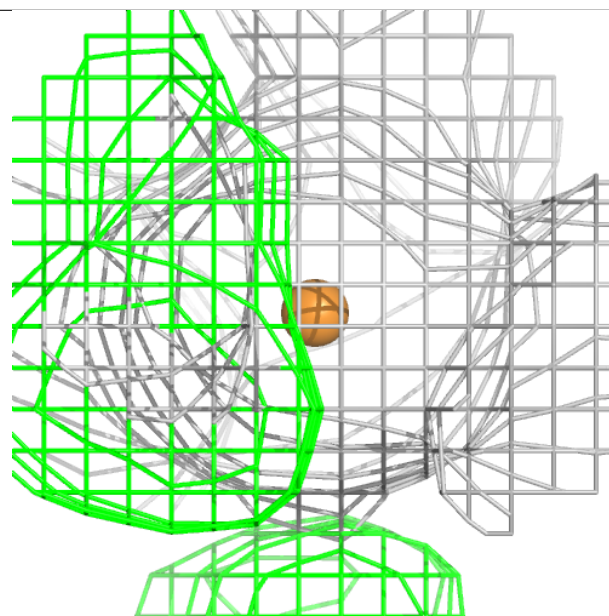
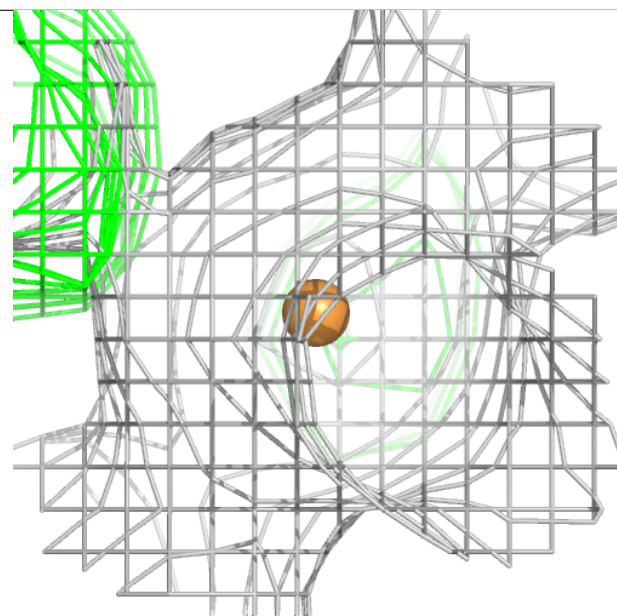
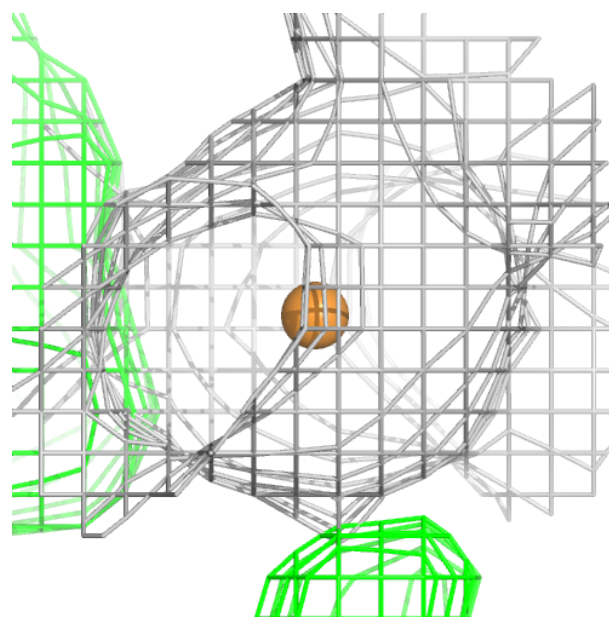
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





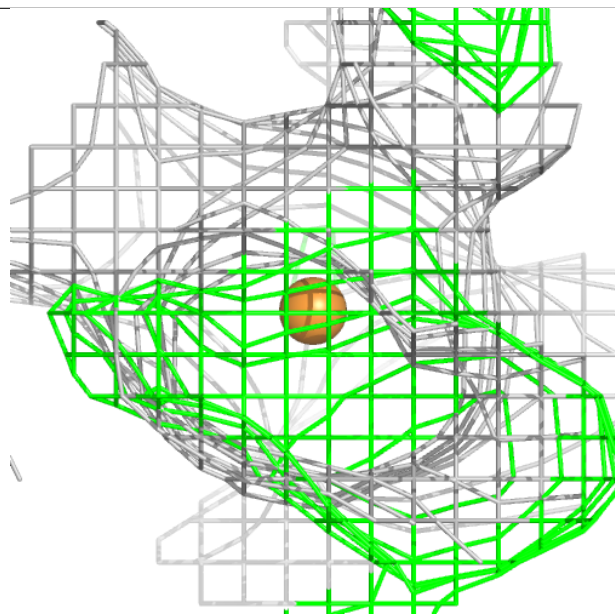
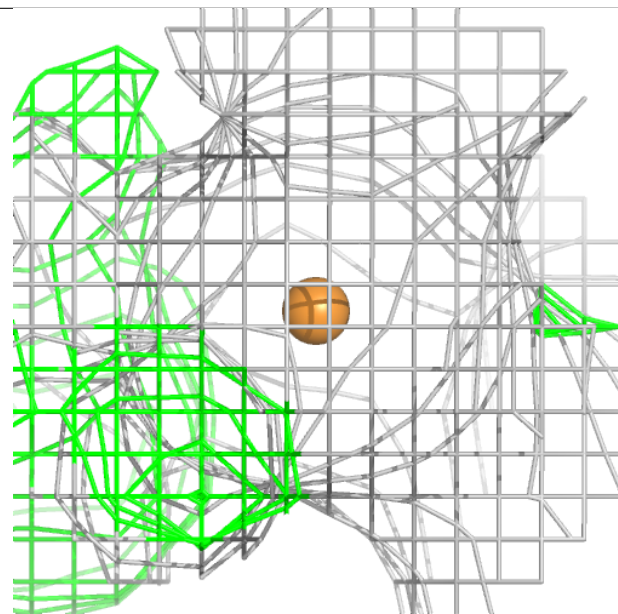
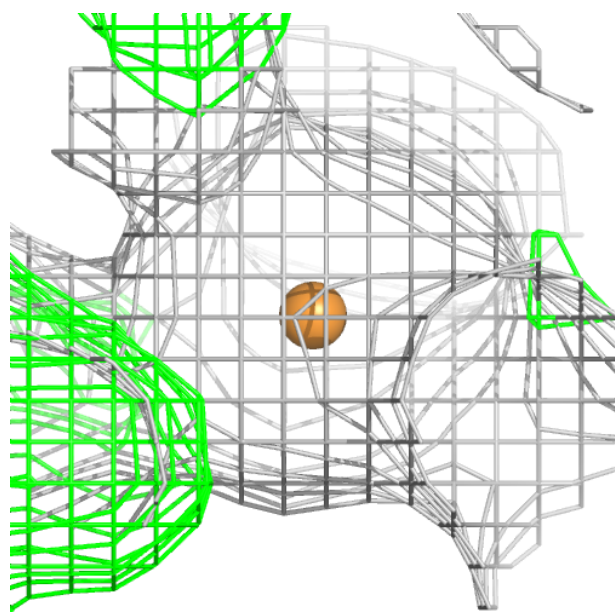
Electron density around CU 5 602:

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



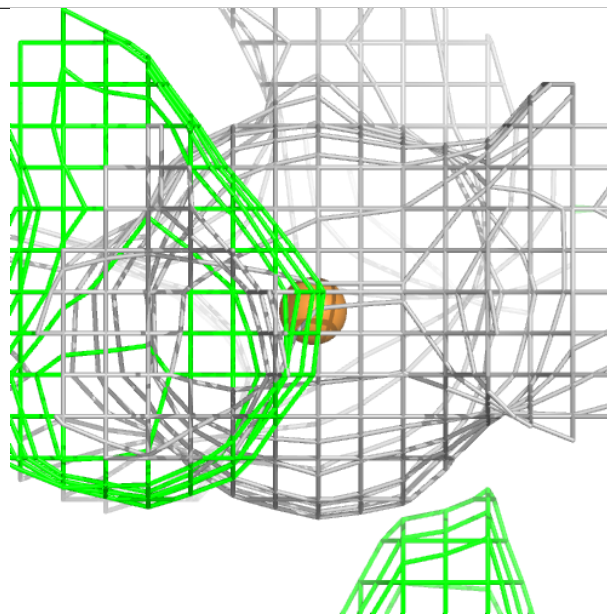
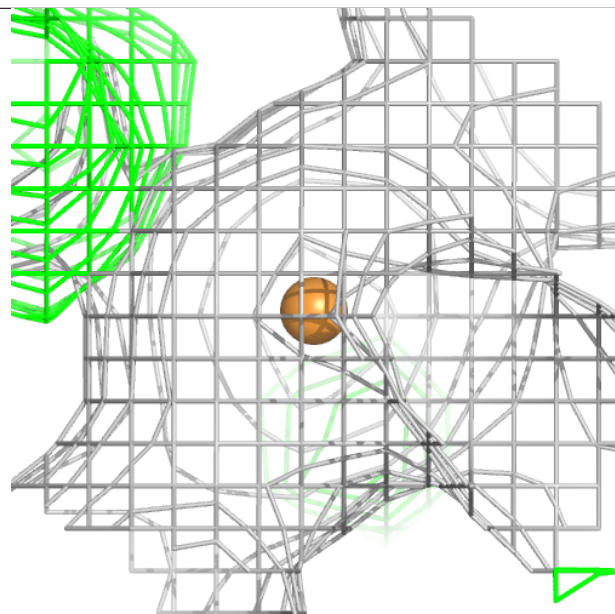
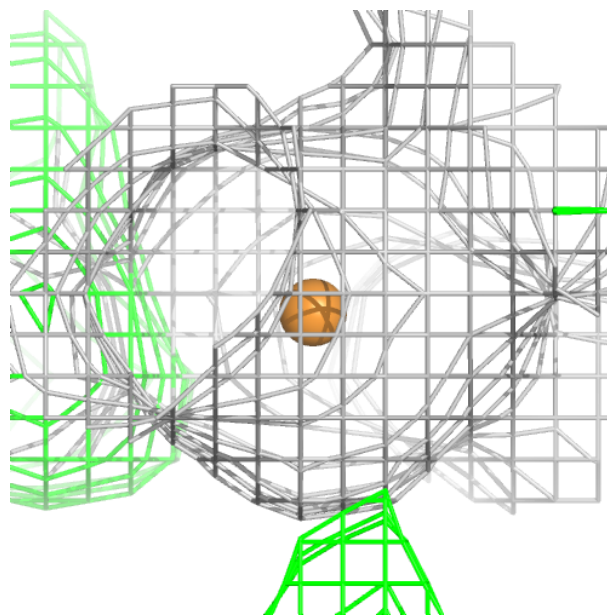
Electron density around CU 5 603:

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



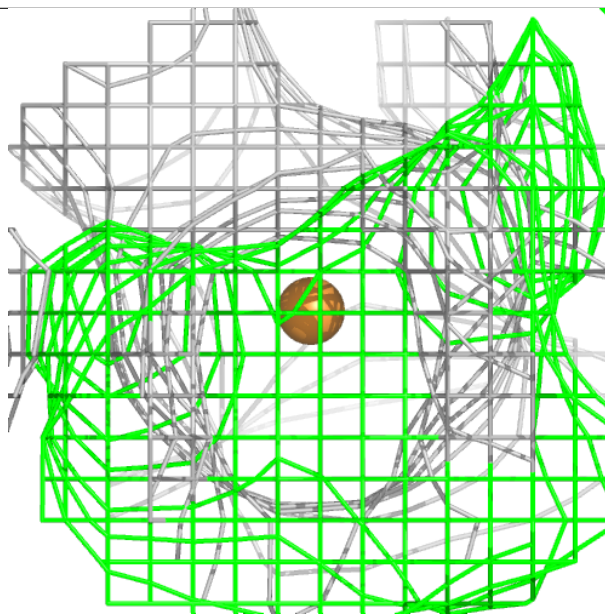
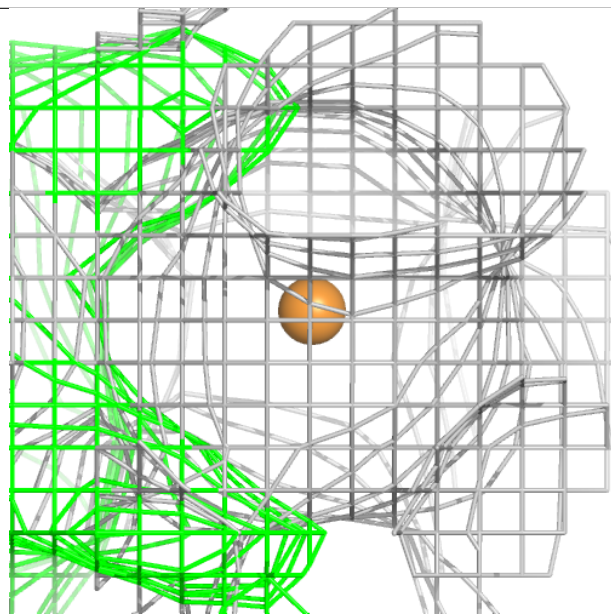
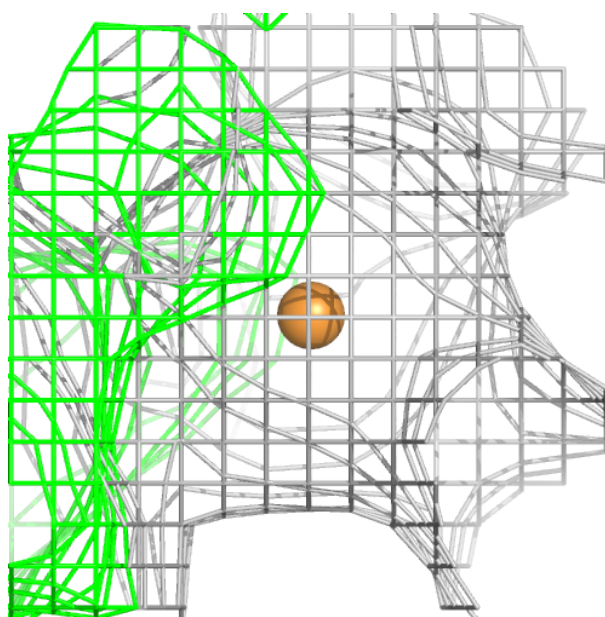
Electron density around CU S 602:

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



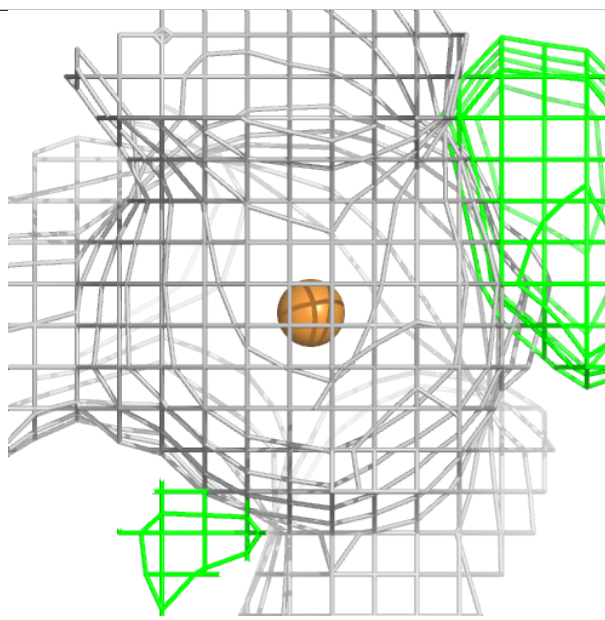
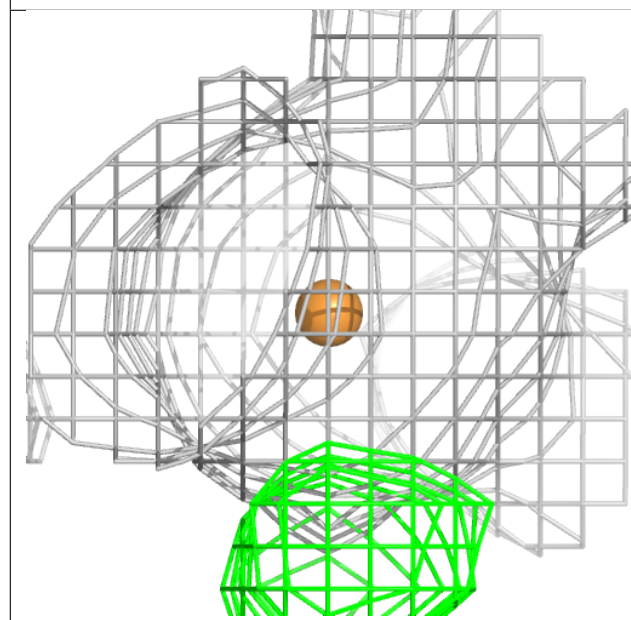
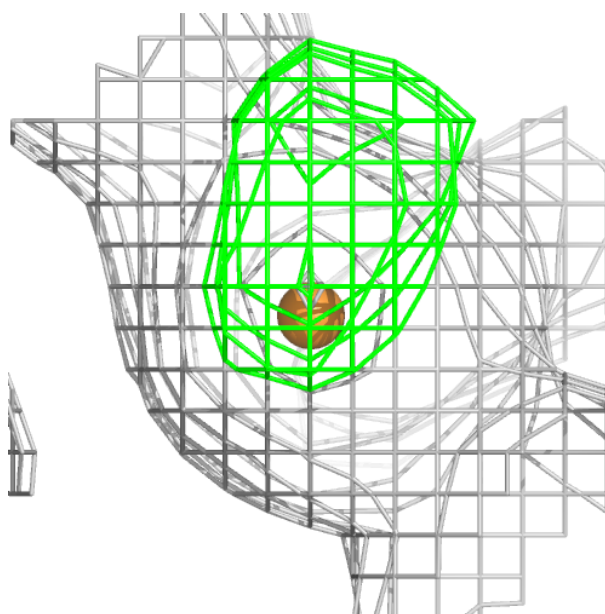
Electron density around CU 8 703:

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



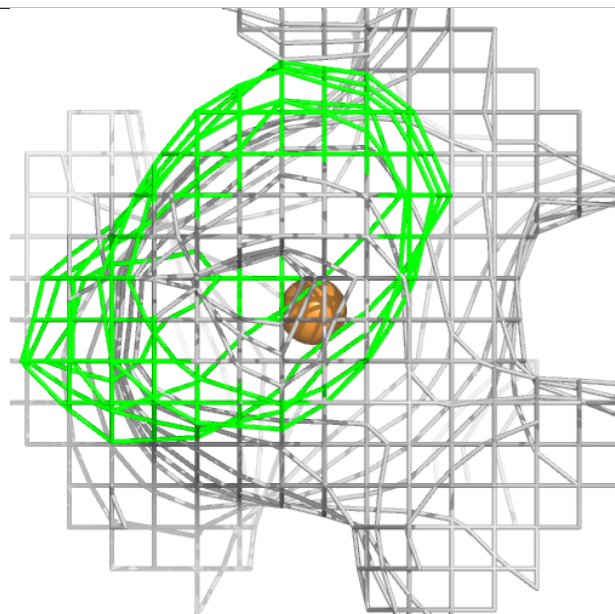
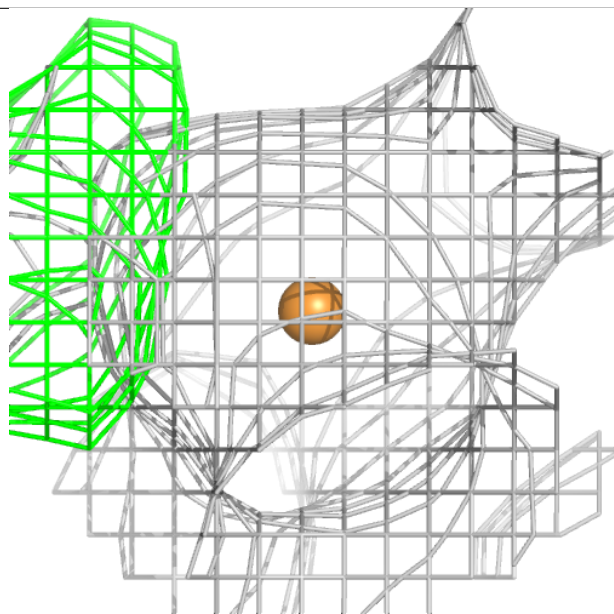
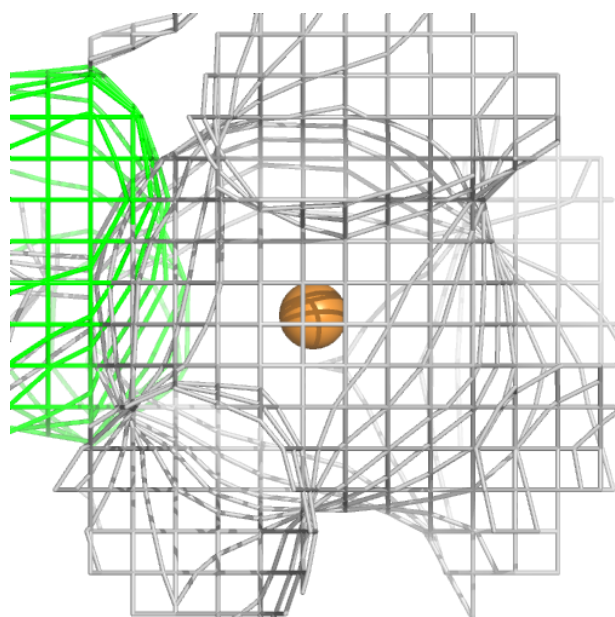
Electron density around CU x 602:

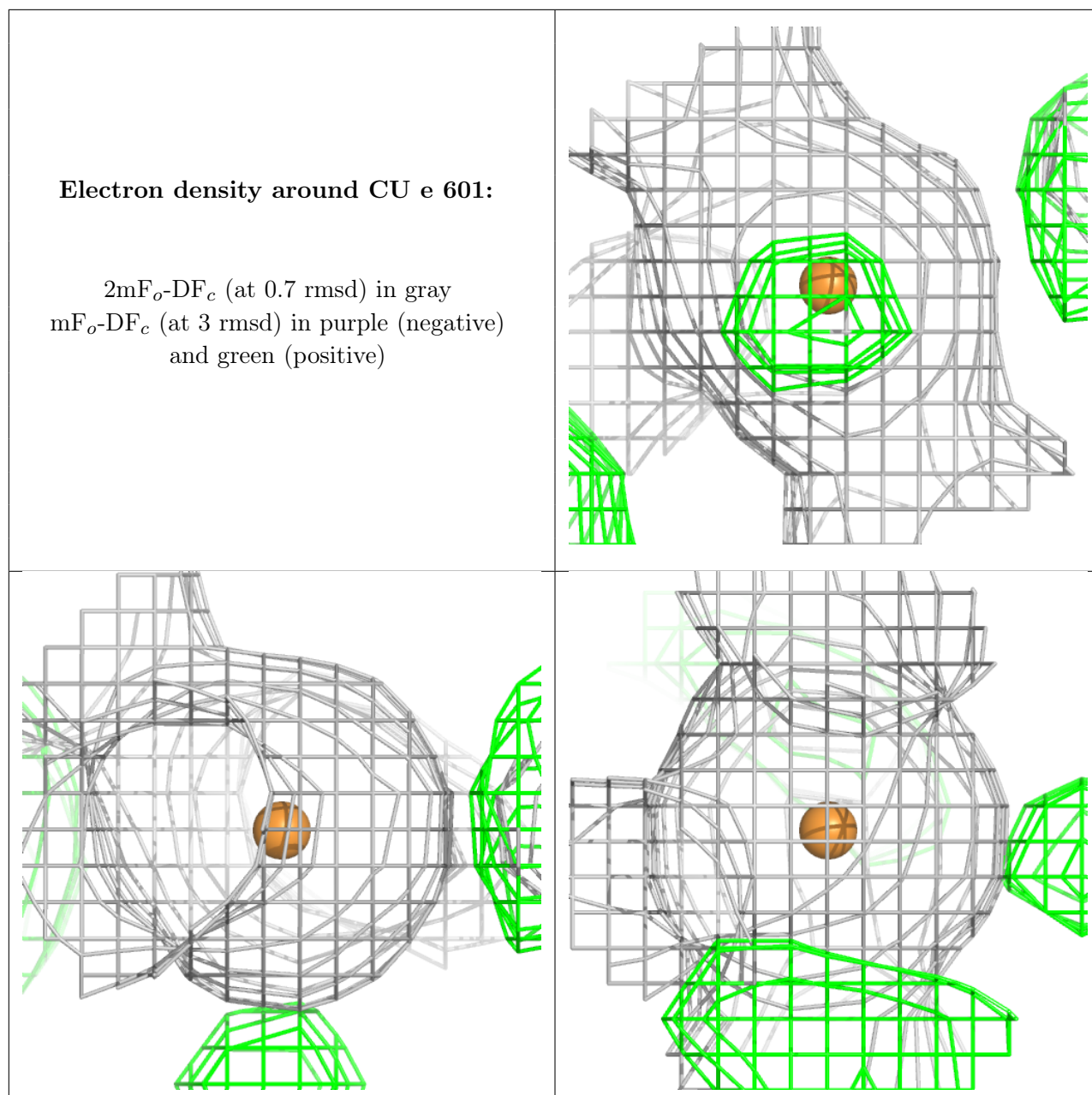
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

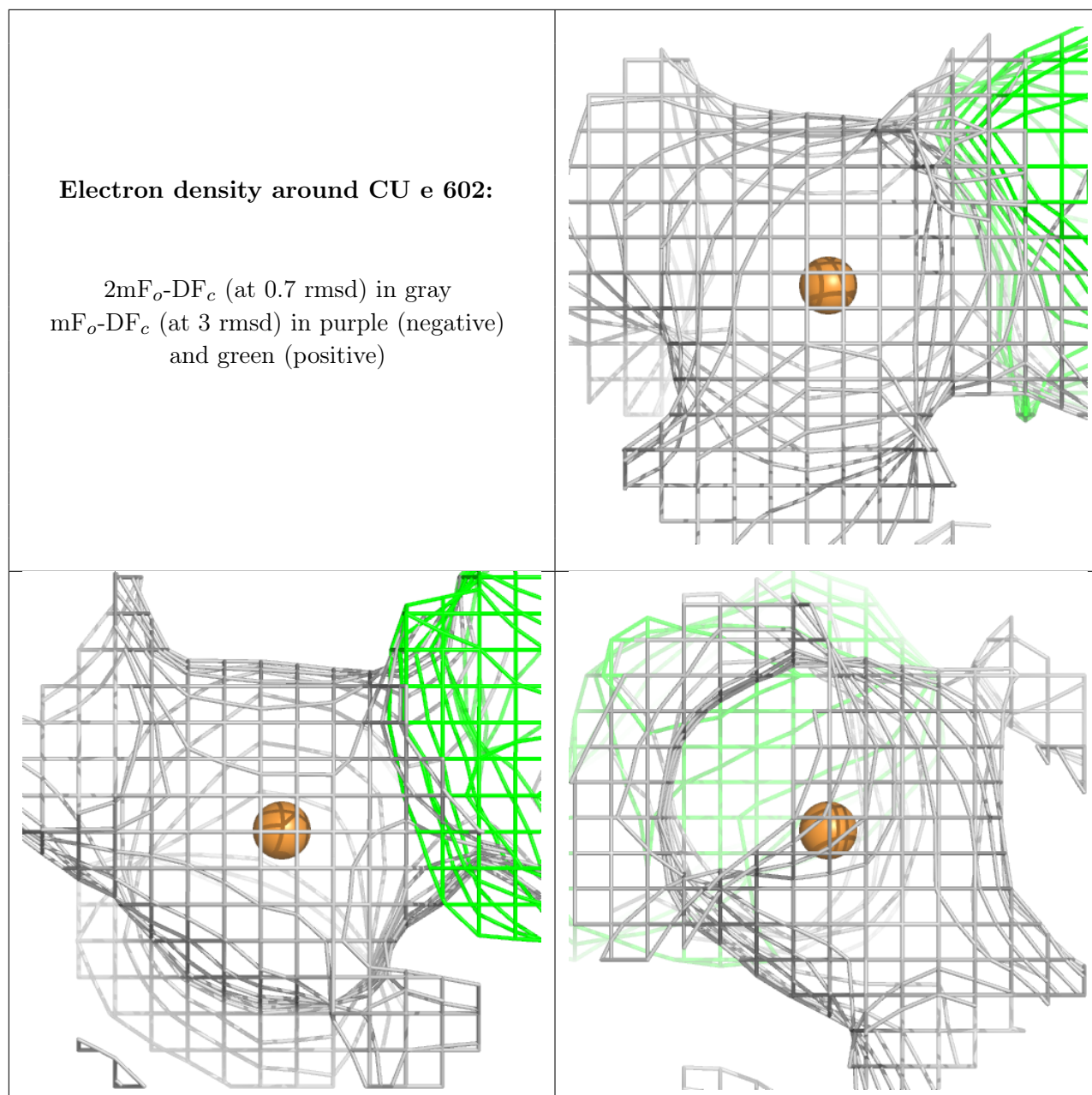


Electron density around CU x 603:

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

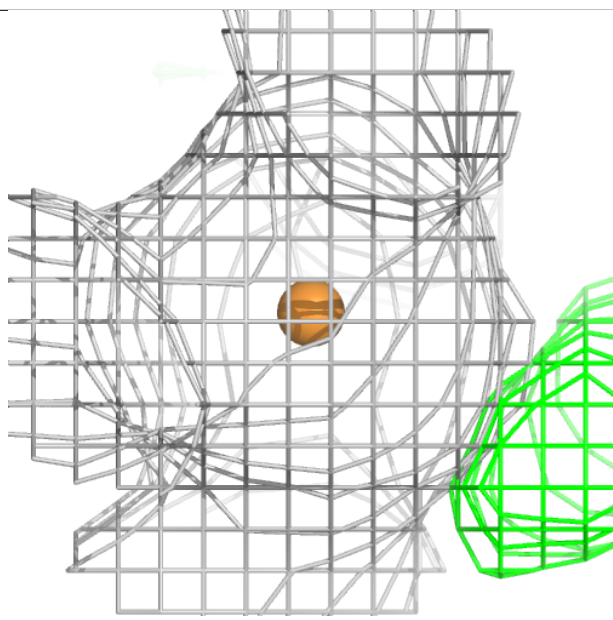
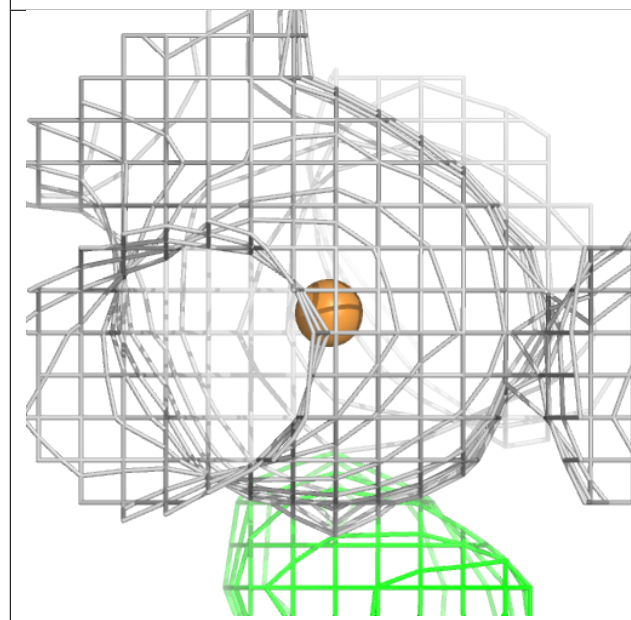
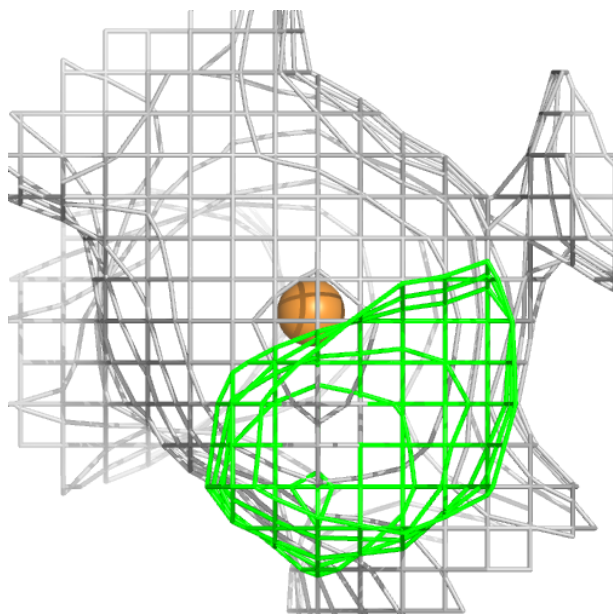






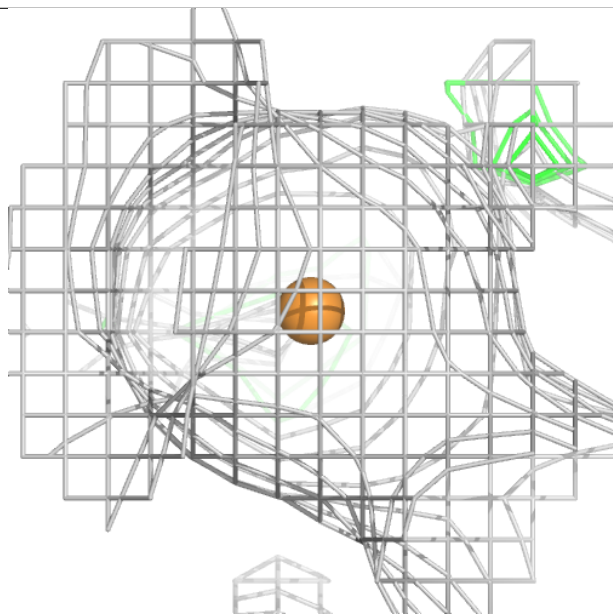
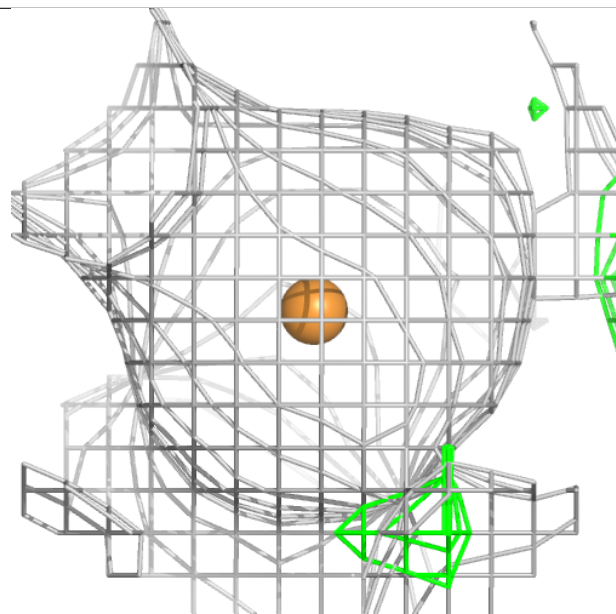
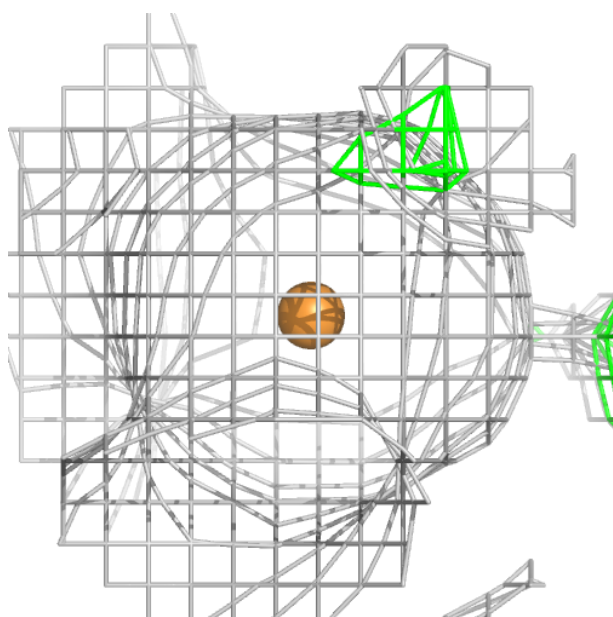
Electron density around CU h 602:

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



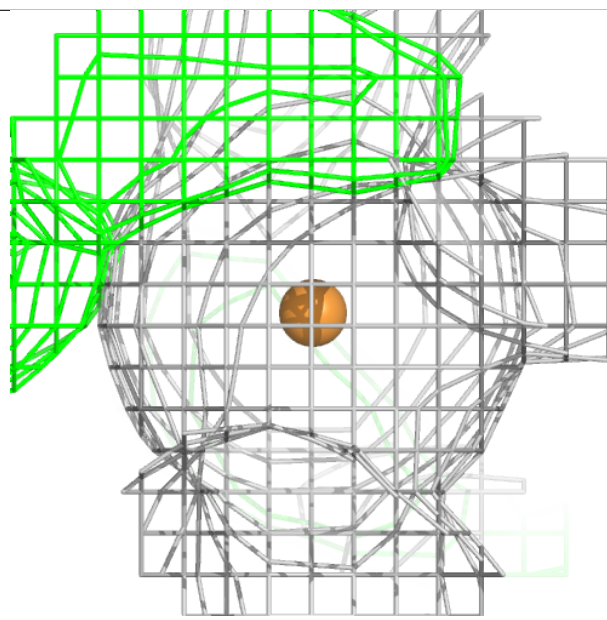
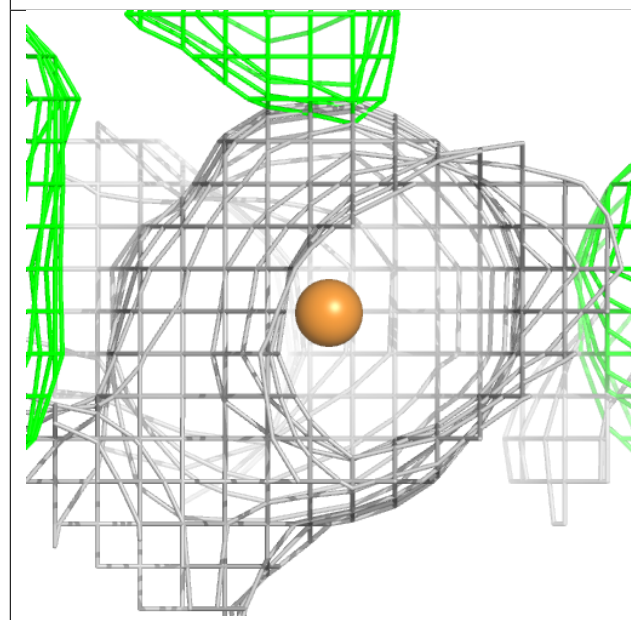
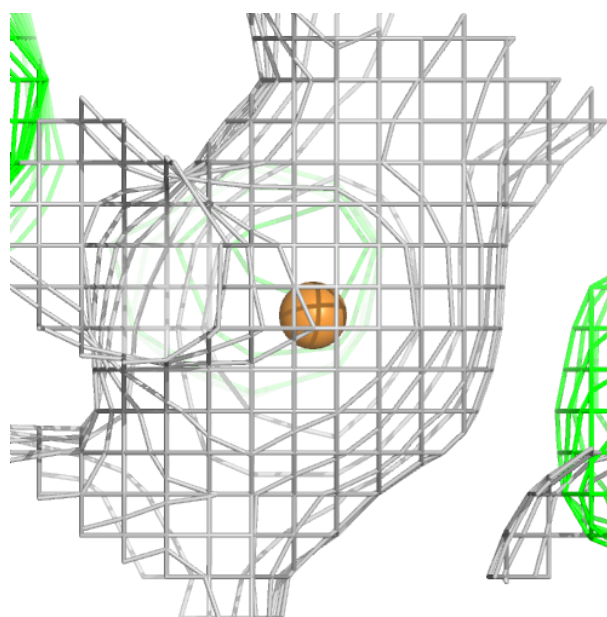
Electron density around CU h 603:

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



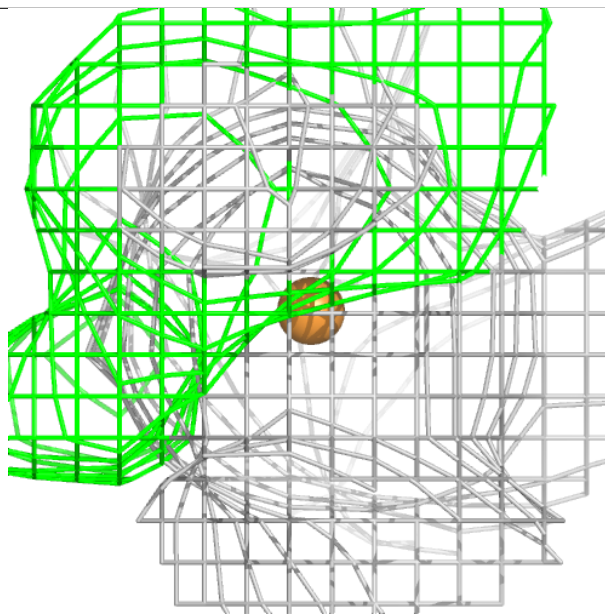
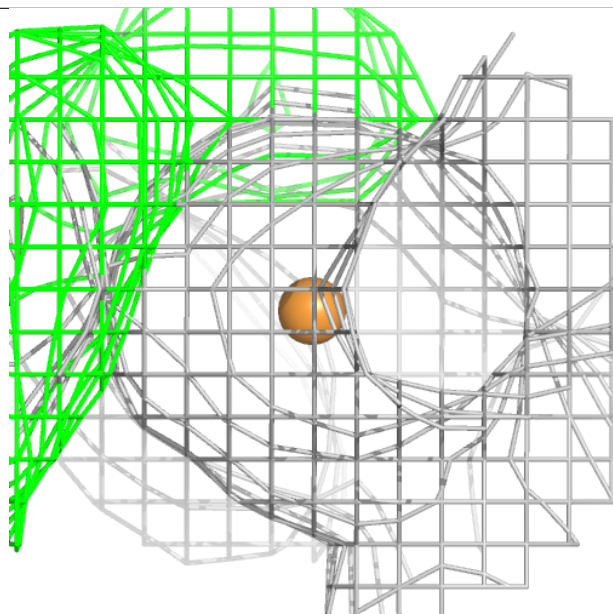
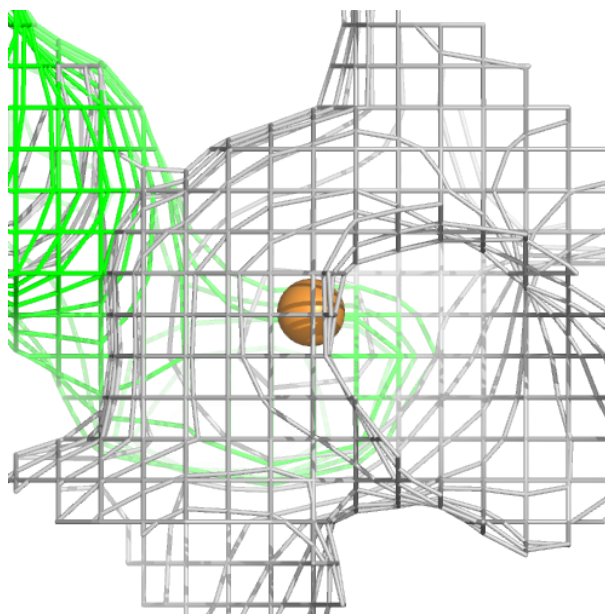
Electron density around CU k 702:

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



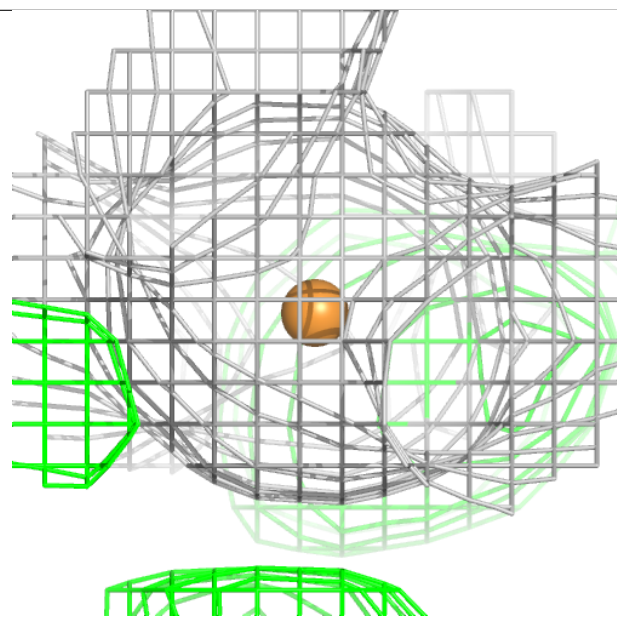
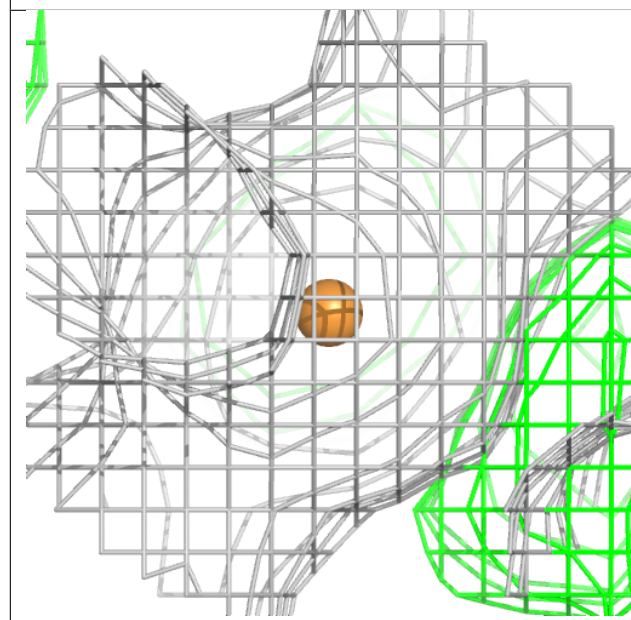
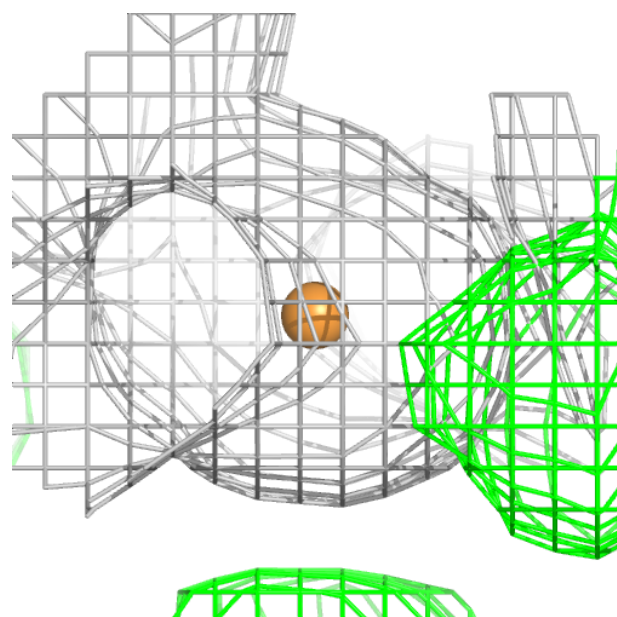
Electron density around CU G 702:

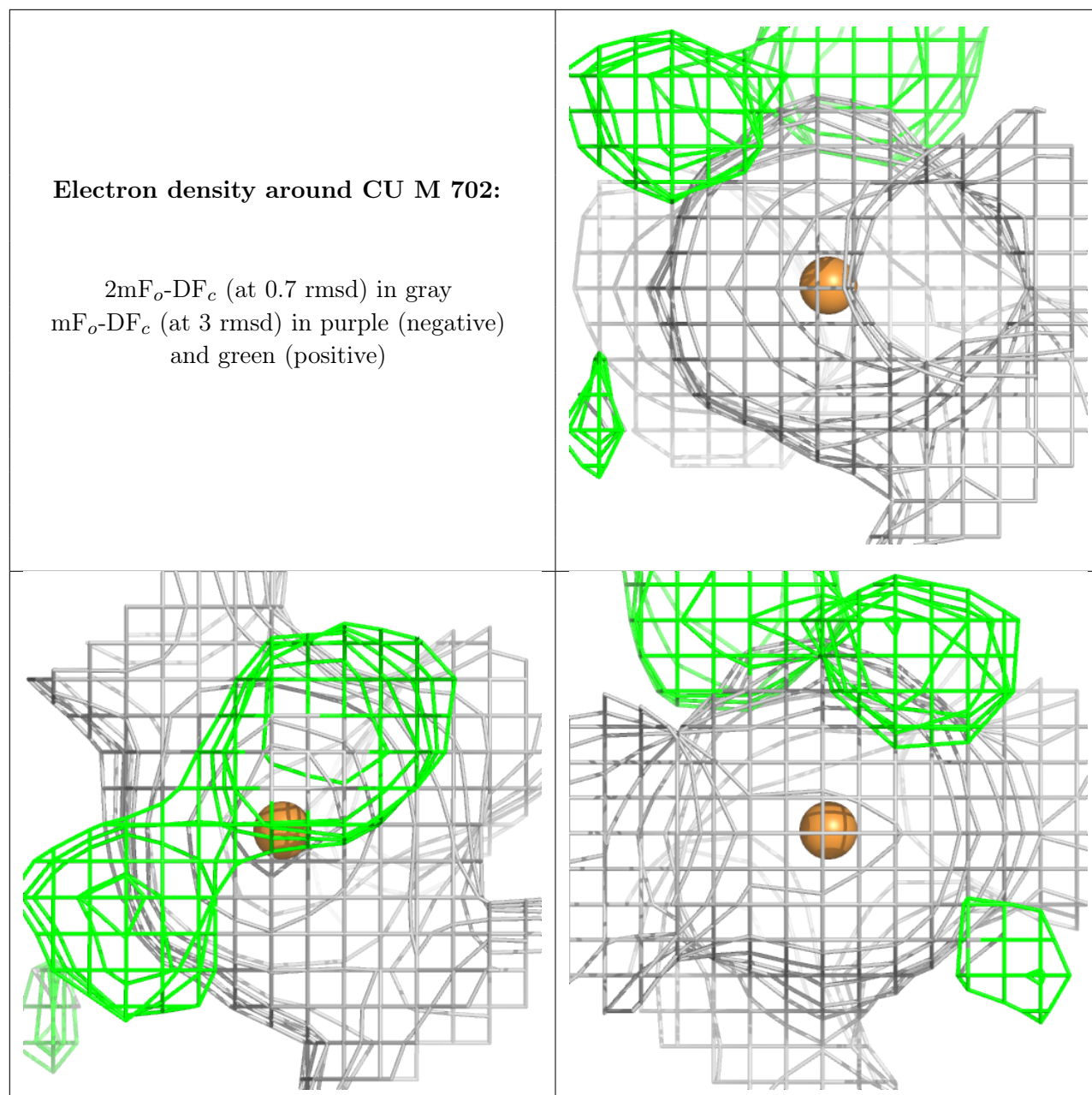
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around CU V 602:

$2mF_o-DF_c$ (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.