Full wwPDB X-ray Structure Validation Report (i)

Jun 28, 2023 – 05:20 pm BST

PDB ID	:	8A0M
Title	:	Capsular polysaccharide synthesis multienzyme in complex with capsular polymer fragment
Authors	:	Cifuente, J.O.; Schulze, J.; Bethe, A.; Di Domenico, V.; Litschko, C.; Budde, I.; Eidenberger, L.; Thiesler, H.; Ramon-Roth, I.; Berger, M.; Claus, H.; DAngelo, C.; Marina, A.; Gerardy-Schahn, R.; Schubert, M.; Guerin, M.E.; Fiebig, T.
Deposited on	:	2022-05-29
Resolution	:	3.60 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 (i) 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 (i)) were used in the production of this report:

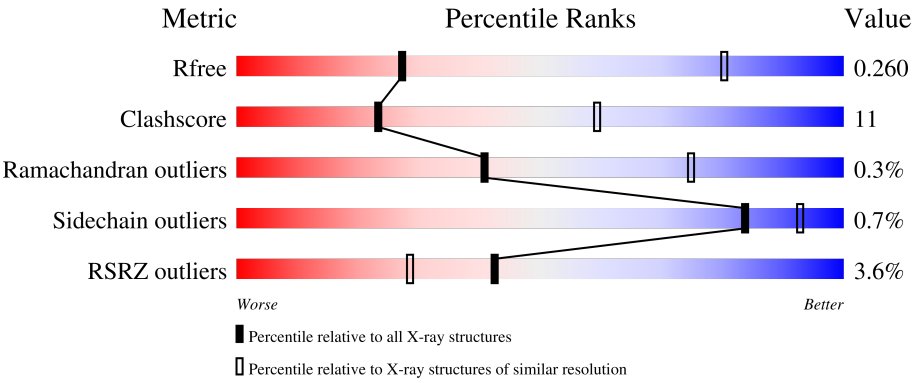
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.33
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.60 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	1257 (3.70-3.50)
Clashscore	141614	1353 (3.70-3.50)
Ramachandran outliers	138981	1307 (3.70-3.50)
Sidechain outliers	138945	1307 (3.70-3.50)
RSRZ outliers	127900	1161 (3.70-3.50)

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 <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1173	3% 73% 21% 5%
1	B	1173	4% 65% 17% 18%
1	C	1173	3% 72% 22% 5%

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Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.33

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Mol	Chain	Length	Quality of chain
1	D	1173	3% 66% 17% 17%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	KOF	C	1202	-	-	-	X
3	KOF	C	1203	-	-	-	X

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 32316 atoms, of which 160 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 Bcs3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1111	Total	C	N	O	S	0	0	0
			8786	5651	1452	1656	27			
1	B	964	Total	C	N	O	S	0	0	0
			7271	4652	1220	1377	22			
1	C	1112	Total	C	N	O	S	0	0	0
			8523	5468	1421	1607	27			
1	D	975	Total	C	N	O	S	0	0	0
			7364	4699	1236	1408	21			

There are 48 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	GLY	-	expression tag	UNP Q2ERG0
A	-1	PRO	-	expression tag	UNP Q2ERG0
A	0	VAL	-	expression tag	UNP Q2ERG0
A	1	ASP	-	expression tag	UNP Q2ERG0
A	1163	LEU	-	expression tag	UNP Q2ERG0
A	1164	GLU	-	expression tag	UNP Q2ERG0
A	1165	HIS	-	expression tag	UNP Q2ERG0
A	1166	HIS	-	expression tag	UNP Q2ERG0
A	1167	HIS	-	expression tag	UNP Q2ERG0
A	1168	HIS	-	expression tag	UNP Q2ERG0
A	1169	HIS	-	expression tag	UNP Q2ERG0
A	1170	HIS	-	expression tag	UNP Q2ERG0
B	-2	GLY	-	expression tag	UNP Q2ERG0
B	-1	PRO	-	expression tag	UNP Q2ERG0
B	0	VAL	-	expression tag	UNP Q2ERG0
B	1	ASP	-	expression tag	UNP Q2ERG0
B	1163	LEU	-	expression tag	UNP Q2ERG0
B	1164	GLU	-	expression tag	UNP Q2ERG0
B	1165	HIS	-	expression tag	UNP Q2ERG0
B	1166	HIS	-	expression tag	UNP Q2ERG0
B	1167	HIS	-	expression tag	UNP Q2ERG0

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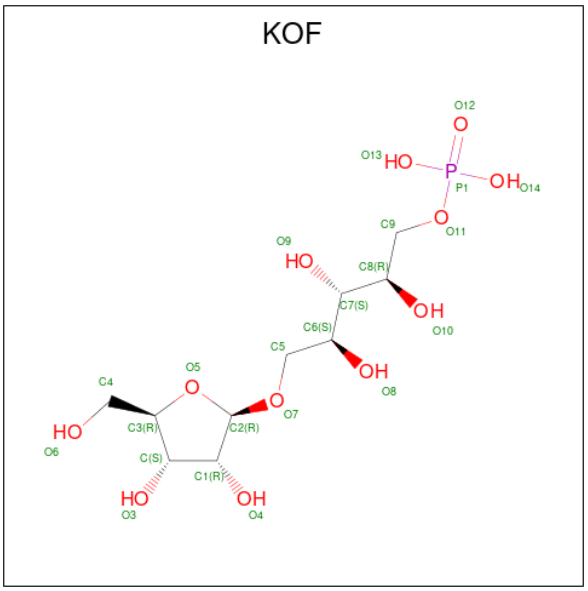
Chain	Residue	Modelled	Actual	Comment	Reference
B	1168	HIS	-	expression tag	UNP Q2ERG0
B	1169	HIS	-	expression tag	UNP Q2ERG0
B	1170	HIS	-	expression tag	UNP Q2ERG0
C	-2	GLY	-	expression tag	UNP Q2ERG0
C	-1	PRO	-	expression tag	UNP Q2ERG0
C	0	VAL	-	expression tag	UNP Q2ERG0
C	1	ASP	-	expression tag	UNP Q2ERG0
C	1163	LEU	-	expression tag	UNP Q2ERG0
C	1164	GLU	-	expression tag	UNP Q2ERG0
C	1165	HIS	-	expression tag	UNP Q2ERG0
C	1166	HIS	-	expression tag	UNP Q2ERG0
C	1167	HIS	-	expression tag	UNP Q2ERG0
C	1168	HIS	-	expression tag	UNP Q2ERG0
C	1169	HIS	-	expression tag	UNP Q2ERG0
C	1170	HIS	-	expression tag	UNP Q2ERG0
D	-2	GLY	-	expression tag	UNP Q2ERG0
D	-1	PRO	-	expression tag	UNP Q2ERG0
D	0	VAL	-	expression tag	UNP Q2ERG0
D	1	ASP	-	expression tag	UNP Q2ERG0
D	1163	LEU	-	expression tag	UNP Q2ERG0
D	1164	GLU	-	expression tag	UNP Q2ERG0
D	1165	HIS	-	expression tag	UNP Q2ERG0
D	1166	HIS	-	expression tag	UNP Q2ERG0
D	1167	HIS	-	expression tag	UNP Q2ERG0
D	1168	HIS	-	expression tag	UNP Q2ERG0
D	1169	HIS	-	expression tag	UNP Q2ERG0
D	1170	HIS	-	expression tag	UNP Q2ERG0

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total Mg 1 1	0	0
2	B	1	Total Mg 1 1	0	0
2	C	1	Total Mg 1 1	0	0
2	D	1	Total Mg 1 1	0	0

- Molecule 3 is beta-D-ribosyl-(1->1)-D-ribitol-5-phosphate (three-letter code: KOF) (formula: $C_{10}H_{21}O_{12}P$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C H O P 43 10 20 12 1	0	0
3	A	1	Total C H O P 41 10 19 11 1	0	0
3	A	1	Total H O P 5 1 3 1	0	0
3	B	1	Total C H O P 43 10 20 12 1	0	0
3	B	1	Total C H O P 41 10 19 11 1	0	0
3	B	1	Total H O P 5 1 3 1	0	0
3	C	1	Total C H O P 43 10 20 12 1	0	0
3	C	1	Total C H O P 41 10 19 11 1	0	0
3	C	1	Total H O P 5 1 3 1	0	0
3	D	1	Total C H O P 43 10 20 12 1	0	0
3	D	1	Total C H O P 41 10 19 11 1	0	0
3	D	1	Total H O P 5 1 3 1	0	0

- Molecule 4 is water.

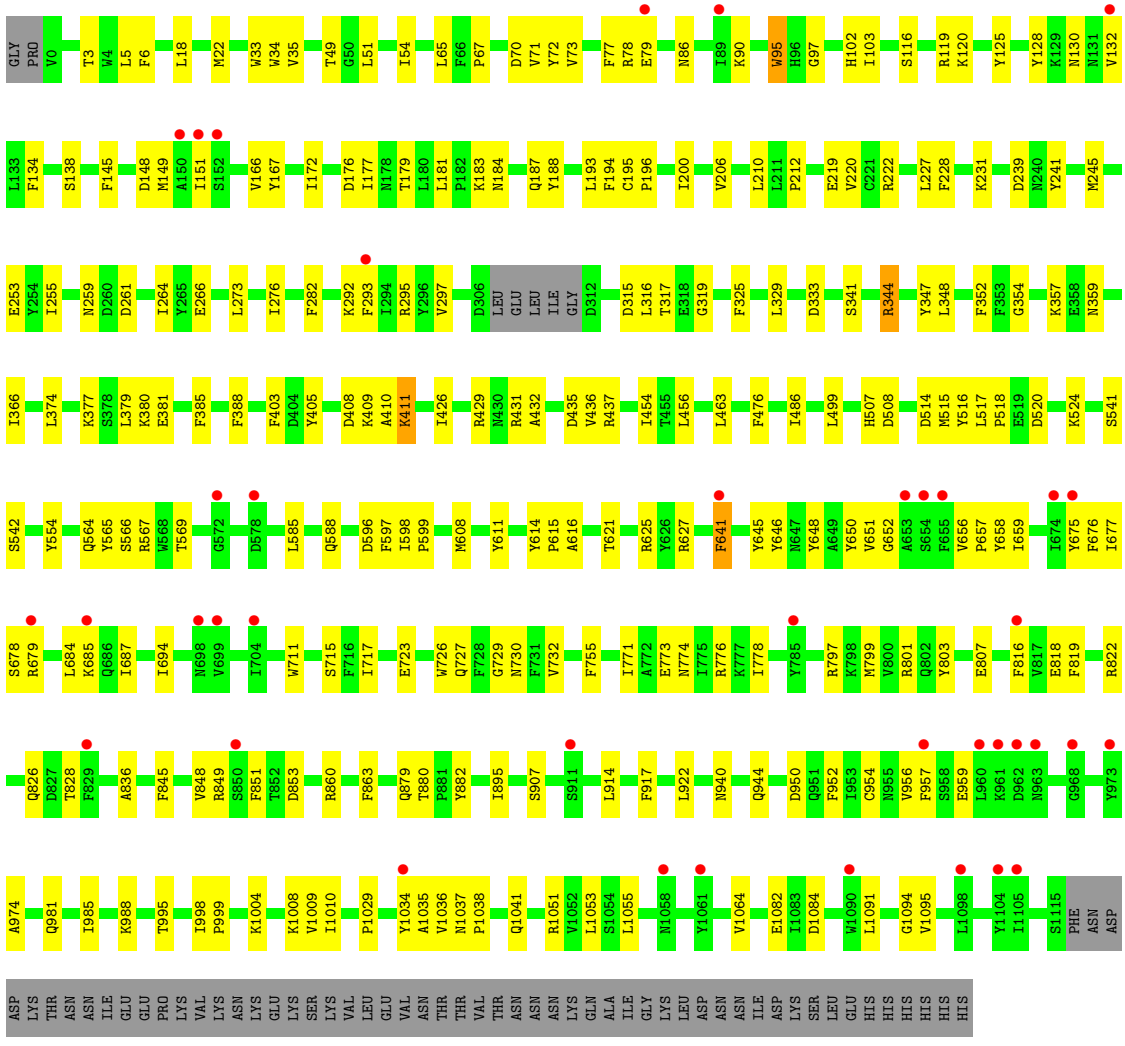
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	3	Total O 3 3	0	0
4	B	3	Total O 3 3	0	0
4	C	3	Total O 3 3	0	0
4	D	3	Total O 3 3	0	0

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.

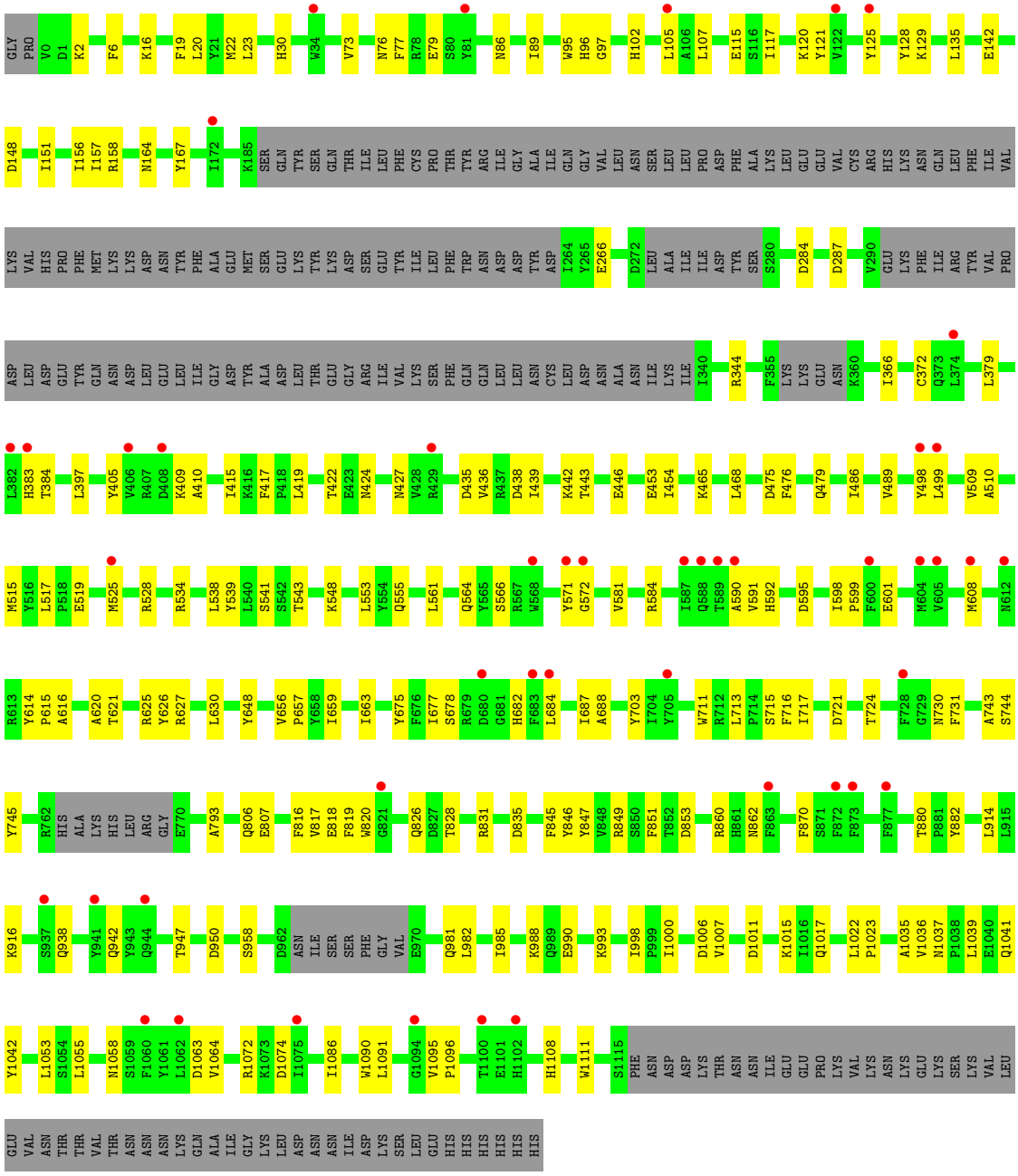
• Molecule 1: Bcs3

Chain A:



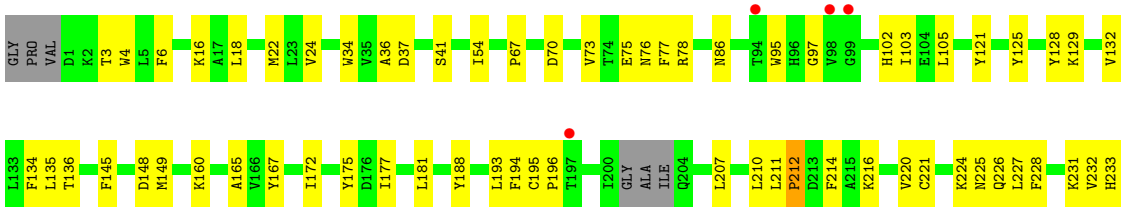
• Molecule 1: Bcs3

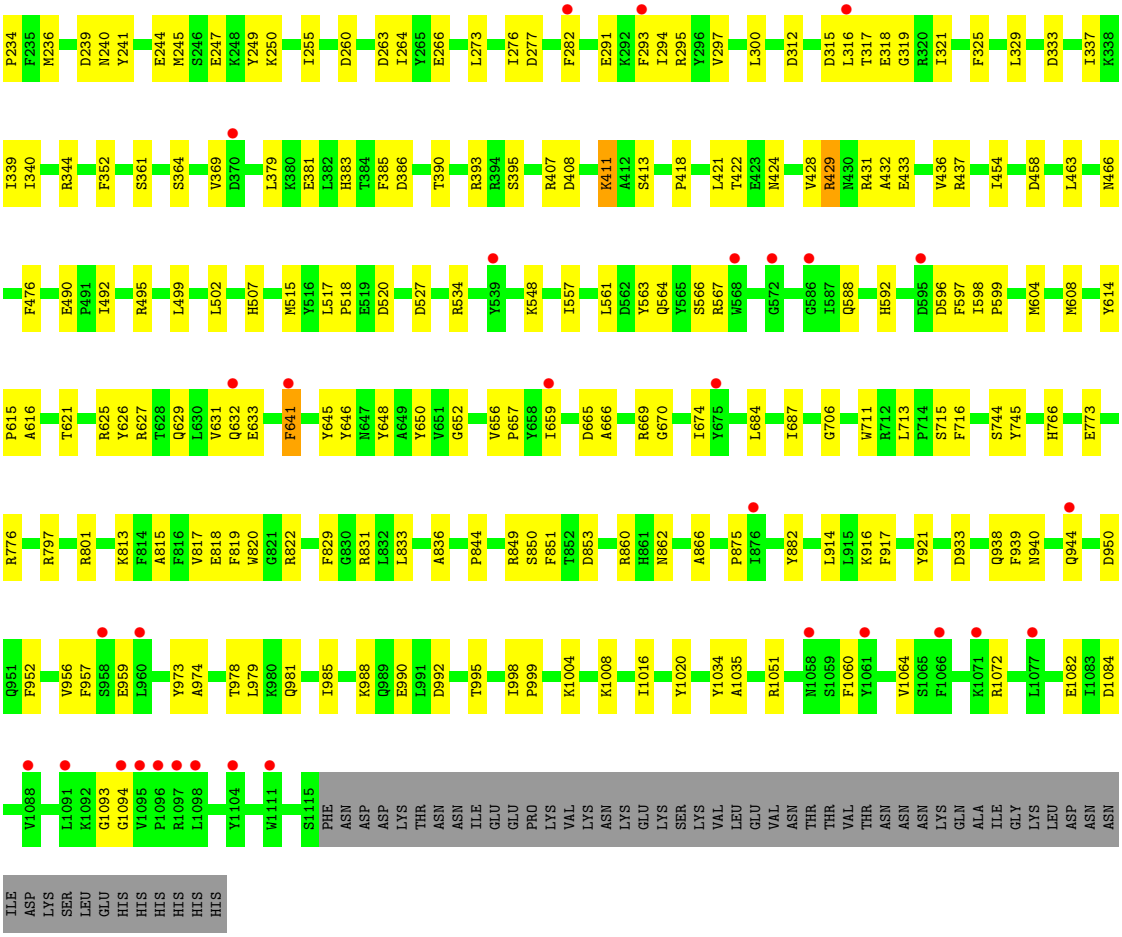
Chain B:



• Molecule 1: Bcs3

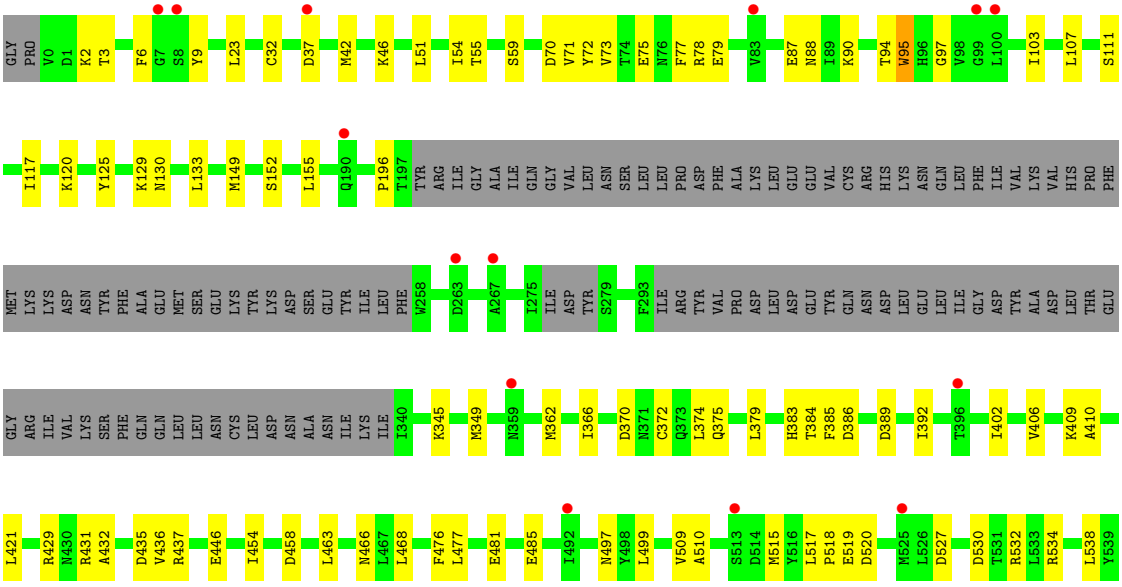
Chain C:

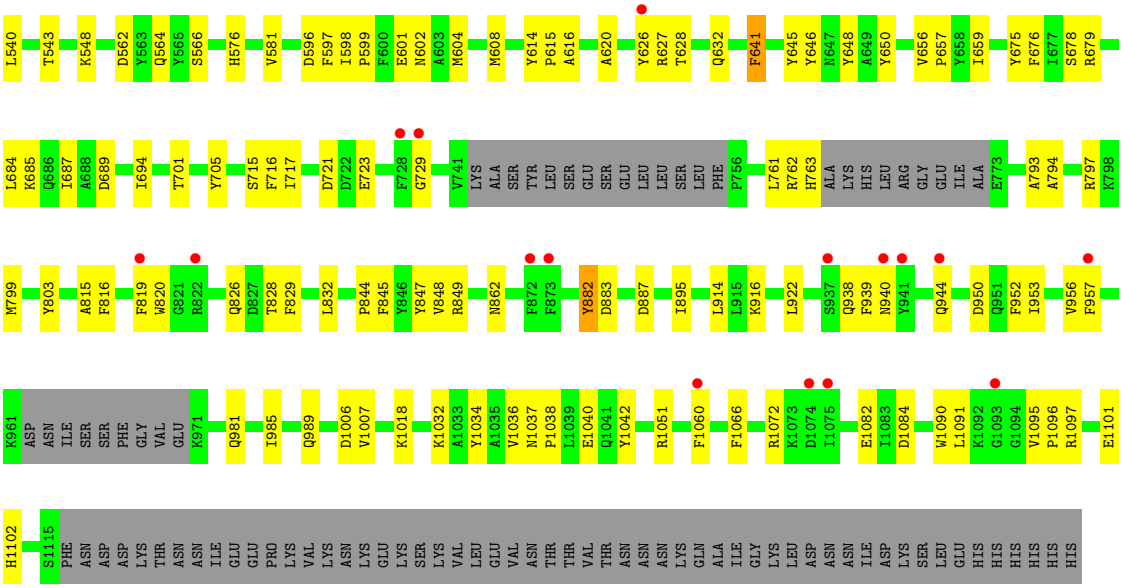




• Molecule 1: Bcs3

Chain D:




L540 T543 K548 D562 Y563 Q564 Y565 S566 H576 V581 D596 F597 I598 P599 F600 E601 N602 A603 M604 M608 Y614 P615 A616 A620 Y626 R627 T628 Q632 F641 Y645 Y646 N647 Y648 A649 Y650 V656 P657 Y658 I659 Y675 F676 I677 S678 R679
L684 K685 Q686 I687 A688 D689 I694 T701 Y705 S715 F716 I717 D721 D722 E723 F728 G729 V741 LYS ALA SER TYR LEU SER GLU SER GLU LEU LEU SER LEU PHE P756 L761 R762 H763 ALA LYS HIS LEU ARG GLY GLU ILE ALA E773 A793 A794 R797 K798
M799 Y803 A815 F816 F819 W820 G821 R822 Q826 D827 T828 F829 L832 P844 F845 Y846 Y847 V848 R849 N862 F872 F873 Y882 D883 D887 I895 L914 L915 K916 L922 S937 Q938 F939 N940 Y941 Q944 D950 Q951 F952 I953 V956 F957
K961 ASP ASN ILE SER SER PHE GLY VAL GLU K971 Q981 I985 Q989 D1006 V1007 K1018 K1032 A1033 Y1034 A1035 V1036 N1037 P1038 L1039 E1040 Q1041 Y1042 R1051 F1060 F1066 R1072 K1073 D1074 I1075 E1082 I1083 D1084 W1090 L1091 K1092 G1093 G1094 V1095 P1096 R1097 E1101
H1102 S1115 PHE ASN ASP ASP LYS THR ASN ASN ILE GLU GLU PRO LYS VAL LYS ASN LYS GLU LYS SER LYS VAL LEU GLU VAL ASN THR THR VAL THR ASN ASN ASN LYS GLN ALA ILE GLY LYS LEU ASP ASN ASN ILE ASP LYS SER LEU GLU HIS HIS HIS HIS HIS HIS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	127.91Å 232.81Å 129.18Å 90.00° 118.39° 90.00°	Depositor
Resolution (Å)	63.94 – 3.60 81.32 – 3.60	Depositor EDS
% Data completeness (in resolution range)	99.7 (63.94-3.60) 96.9 (81.32-3.60)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.52 (at 3.58Å)	Xtriage
Refinement program	PHENIX 1.19.2_4158	Depositor
R, R_{free}	0.220 , 0.261 0.220 , 0.260	Depositor DCC
R_{free} test set	3808 reflections (4.96%)	wwPDB-VP
Wilson B-factor (Å^2)	99.4	Xtriage
Anisotropy	0.263	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 104.5	EDS
L-test for twinning[2]	$< \|L\| > = 0.45$, $< L^2 > = 0.28$	Xtriage
Estimated twinning fraction	0.019 for -h-l,k,h 0.019 for l,k,-h-l 0.031 for h,-k,-h-l 0.029 for -h-l,-k,l 0.114 for l,-k,h	Xtriage
F_o,F_c correlation	0.88	EDS
Total number of atoms	32316	wwPDB-VP
Average B, all atoms (Å^2)	99.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.80% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: KOF, MG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	A	0.26	0/9010	0.48	0/12268
1	B	0.27	0/7443	0.48	0/10152
1	C	0.26	0/8738	0.47	0/11917
1	D	0.26	0/7533	0.48	0/10275
All	All	0.26	0/32724	0.48	0/44612

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	8786	0	8119	199	0
1	B	7271	0	6331	151	0
1	C	8523	0	7498	198	0
1	D	7364	0	6397	151	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
3	A	49	40	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	49	40	0	1	0
3	C	49	40	0	0	0
3	D	49	40	0	2	0
4	A	3	0	0	1	0
4	B	3	0	0	0	0
4	C	3	0	0	0	0
4	D	3	0	0	0	0
All	All	32156	160	28345	685	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 11.

All (685) 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:C:598:ILE:HB	1:C:599:PRO:HD2	1.48	0.94
1:A:184:ASN:HB2	1:A:187:GLN:HG2	1.50	0.93
1:B:107:LEU:HD12	1:B:117:ILE:HD11	1.48	0.93
1:A:651:VAL:HG12	1:A:914:LEU:HD21	1.49	0.92
1:A:598:ILE:HB	1:A:599:PRO:HD2	1.50	0.91
1:B:397:LEU:HD11	1:B:595:ASP:HB3	1.54	0.90
1:D:820:TRP:HZ3	1:D:849:ARG:HB3	1.36	0.88
1:B:379:LEU:HB2	1:B:566:SER:HB3	1.57	0.86
1:B:820:TRP:HZ3	1:B:849:ARG:HB3	1.39	0.86
1:A:1036:VAL:HG23	1:A:1037:ASN:HD22	1.44	0.82
1:B:397:LEU:HD11	1:B:595:ASP:CB	2.10	0.82
1:C:295:ARG:HD3	1:C:317:THR:CG2	2.10	0.82
1:D:689:ASP:OD1	1:D:701:THR:HG21	1.81	0.80
1:D:1051:ARG:HE	1:D:1082:GLU:HB3	1.47	0.79
1:B:682:HIS:ND1	1:B:880:THR:HG23	1.98	0.78
1:B:115:GLU:HG2	1:B:555:GLN:NE2	1.98	0.77
1:C:295:ARG:HH11	1:C:317:THR:HB	1.49	0.77
1:C:418:PRO:HG2	1:C:421:LEU:HB2	1.66	0.77
1:A:183:LYS:HE3	1:A:187:GLN:O	1.85	0.76
1:B:626:TYR:CD1	1:B:916:LYS:HE2	2.21	0.75
1:A:90:LYS:HG2	1:A:374:LEU:HD11	1.69	0.75
1:A:1036:VAL:HG23	1:A:1037:ASN:ND2	2.00	0.75
1:A:771:ILE:H	1:A:771:ILE:HD12	1.50	0.75
1:D:715:SER:HA	1:D:832:LEU:HD11	1.67	0.75
1:A:276:ILE:HD13	1:A:282:PHE:HB2	1.70	0.74
1:A:773:GLU:HG3	1:A:776:ARG:HH21	1.53	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:519:GLU:HG3	1:B:538:LEU:HD23	1.70	0.73
1:D:79:GLU:HA	1:D:120:LYS:HG2	1.69	0.73
1:A:219:GLU:OE1	1:A:222:ARG:NH1	2.21	0.73
1:A:166:VAL:HG13	1:A:172:ILE:HD13	1.69	0.72
1:C:212:PRO:HD2	1:C:325:PHE:CD1	2.23	0.72
1:C:849:ARG:NH1	1:D:435:ASP:OD1	2.22	0.72
1:B:534:ARG:O	1:B:534:ARG:HD3	1.90	0.71
1:A:5:LEU:HD21	1:A:65:LEU:HD22	1.73	0.71
1:A:228:PHE:HB3	1:A:255:ILE:HD13	1.70	0.71
1:B:990:GLU:O	1:B:993:LYS:HG2	1.90	0.71
1:A:184:ASN:HB2	1:A:187:GLN:CG	2.20	0.70
1:B:849:ARG:NH1	1:B:851:PHE:HE1	1.90	0.70
1:A:799:MET:HG3	1:A:895:ILE:HD12	1.72	0.70
1:B:22:MET:HG2	1:B:366:ILE:HD11	1.73	0.70
1:B:86:ASN:OD1	1:B:89:ILE:N	2.25	0.70
1:B:515:MET:HE3	1:B:517:LEU:HG	1.74	0.70
1:B:164:ASN:HD21	1:B:284:ASP:HA	1.57	0.69
1:A:773:GLU:HA	1:A:776:ARG:HE	1.57	0.69
1:D:437:ARG:HG3	1:D:454:ILE:HD13	1.73	0.69
1:A:177:ILE:H	1:A:177:ILE:HD12	1.58	0.69
1:B:1035:ALA:HB1	1:B:1039:LEU:HD11	1.72	0.69
1:C:77:PHE:HE1	1:C:132:VAL:HG11	1.58	0.69
1:C:557:ILE:O	1:C:561:LEU:HG	1.93	0.68
3:D:1202:KOF:O13	3:D:1202:KOF:O10	2.10	0.68
1:A:410:ALA:HA	1:A:476:PHE:HE2	1.58	0.68
1:C:291:GLU:HB3	1:C:339:ILE:HG23	1.75	0.68
1:C:801:ARG:HG3	1:C:836:ALA:HA	1.75	0.68
1:B:79:GLU:HA	1:B:120:LYS:HG2	1.76	0.68
1:D:715:SER:CA	1:D:832:LEU:HD11	2.23	0.67
1:A:851:PHE:HA	1:B:439:ILE:HG12	1.76	0.67
1:B:849:ARG:HH12	1:B:851:PHE:HE1	1.43	0.67
1:B:1011:ASP:O	1:B:1015:LYS:HG3	1.94	0.67
1:D:828:THR:O	1:D:832:LEU:HD13	1.95	0.67
1:C:820:TRP:HZ3	1:C:849:ARG:HB3	1.59	0.66
1:B:105:LEU:HD21	1:B:121:TYR:CD2	2.30	0.66
1:C:207:LEU:HD13	1:C:232:VAL:HG11	1.77	0.66
1:A:679:ARG:O	1:A:880:THR:HG21	1.95	0.66
1:A:130:ASN:HD21	1:A:379:LEU:HD11	1.60	0.66
1:B:818:GLU:HG3	1:B:819:PHE:H	1.60	0.66
1:C:773:GLU:HA	1:C:776:ARG:HE	1.59	0.66
1:A:184:ASN:O	1:A:187:GLN:N	2.27	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:316:LEU:HD12	1:C:352:PHE:CE2	2.30	0.66
1:D:687:ILE:HD11	1:D:914:LEU:HD22	1.78	0.66
1:C:177:ILE:H	1:C:177:ILE:HD12	1.60	0.65
1:C:210:LEU:O	1:C:211:LEU:HD23	1.96	0.65
1:C:853:ASP:O	1:C:860:ARG:NH1	2.29	0.65
1:C:295:ARG:HB2	1:C:321:ILE:HD13	1.78	0.65
1:C:959:GLU:OE2	1:C:1004:LYS:NZ	2.24	0.65
1:D:820:TRP:CZ3	1:D:849:ARG:HB3	2.27	0.65
1:B:548:LYS:O	1:B:581:VAL:HG11	1.96	0.65
1:B:581:VAL:HA	1:B:584:ARG:NH1	2.12	0.65
1:D:530:ASP:OD1	1:D:532:ARG:HG2	1.97	0.65
1:B:498:TYR:CE1	1:B:1086:ILE:HD12	2.32	0.64
1:A:611:TYR:CD2	1:B:419:LEU:HD21	2.33	0.64
1:C:408:ASP:O	1:C:411:LYS:HG3	1.96	0.64
1:C:295:ARG:HD3	1:C:317:THR:HG21	1.80	0.64
1:A:385:PHE:CD2	1:A:499:LEU:HD12	2.33	0.64
1:B:438:ASP:OD1	1:B:442:LYS:NZ	2.29	0.64
1:D:345:LYS:O	1:D:349:MET:HG2	1.97	0.64
1:A:822:ARG:HG2	1:A:851:PHE:CZ	2.33	0.64
1:A:77:PHE:HE1	1:A:132:VAL:HG11	1.63	0.63
1:D:527:ASP:OD2	1:D:534:ARG:NH2	2.31	0.63
1:D:527:ASP:OD1	1:D:534:ARG:HB2	1.99	0.63
1:B:731:PHE:HE1	1:B:744:SER:HA	1.63	0.63
1:D:1006:ASP:OD1	1:D:1007:VAL:N	2.31	0.63
1:C:1060:PHE:CB	1:C:1072:ARG:HD3	2.29	0.62
1:D:107:LEU:HD12	1:D:117:ILE:HD11	1.81	0.62
1:A:49:THR:HB	1:A:51:LEU:CD2	2.29	0.62
1:B:581:VAL:HA	1:B:584:ARG:HH11	1.65	0.62
1:A:212:PRO:HD2	1:A:325:PHE:CD1	2.35	0.61
1:C:295:ARG:HD3	1:C:317:THR:HG22	1.80	0.61
1:D:90:LYS:NZ	1:D:372:CYS:O	2.27	0.61
1:B:849:ARG:NH1	1:B:851:PHE:CE1	2.67	0.61
1:B:687:ILE:HD11	1:B:914:LEU:HD22	1.82	0.61
1:C:337:ILE:HD12	1:C:337:ILE:H	1.64	0.61
1:C:220:VAL:HG13	1:C:333:ASP:HB2	1.82	0.61
1:C:466:ASN:OD1	1:D:862:ASN:HB2	2.01	0.61
1:D:761:LEU:O	1:D:763:HIS:N	2.33	0.61
1:B:820:TRP:CZ3	1:B:849:ARG:HB3	2.30	0.61
1:D:715:SER:HA	1:D:832:LEU:CD1	2.31	0.60
1:A:1053:LEU:CD2	1:A:1055:LEU:HD23	2.30	0.60
1:C:145:PHE:HB3	1:C:149:MET:HE1	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:241:TYR:CE1	1:C:245:MET:HE2	2.36	0.60
1:C:240:ASN:O	1:C:244:GLU:HG3	2.01	0.60
1:C:295:ARG:NH1	1:C:317:THR:HB	2.16	0.60
1:C:1051:ARG:HE	1:C:1082:GLU:HB3	1.66	0.60
1:D:88:ASN:O	1:D:374:LEU:HD12	2.01	0.60
1:A:325:PHE:CE2	1:A:329:LEU:HD11	2.36	0.60
1:A:183:LYS:HB3	1:A:187:GLN:CB	2.31	0.60
1:A:988:LYS:HE2	1:A:998:ILE:CD1	2.32	0.60
1:C:318:GLU:HG2	1:C:340:ILE:HG13	1.84	0.60
1:C:418:PRO:HG2	1:C:421:LEU:CB	2.31	0.60
1:D:685:LYS:HE2	1:D:701:THR:OG1	2.02	0.59
1:D:46:LYS:HG3	1:D:51:LEU:O	2.02	0.59
1:C:325:PHE:CZ	1:C:329:LEU:HD11	2.37	0.59
1:D:1101:GLU:HG3	1:D:1102:HIS:ND1	2.17	0.59
1:B:744:SER:O	1:B:745:TYR:HB2	2.00	0.59
1:C:437:ARG:HG3	1:C:454:ILE:HD13	1.84	0.59
1:C:646:TYR:CZ	1:C:957:PHE:HB2	2.37	0.59
1:C:598:ILE:HB	1:C:599:PRO:CD	2.30	0.59
1:C:379:LEU:HB2	1:C:566:SER:HB3	1.84	0.59
1:A:293:PHE:O	1:A:319:GLY:HA2	2.02	0.59
1:A:5:LEU:HD21	1:A:65:LEU:CD2	2.32	0.58
1:D:646:TYR:CZ	1:D:957:PHE:HB2	2.38	0.58
1:A:988:LYS:HE2	1:A:998:ILE:HD11	1.84	0.58
1:C:18:LEU:HG	1:C:22:MET:CE	2.34	0.58
1:C:393:ARG:HG3	1:C:490:GLU:HG3	1.86	0.58
1:A:410:ALA:HA	1:A:476:PHE:CE2	2.38	0.58
1:A:818:GLU:HG3	1:A:819:PHE:H	1.68	0.58
1:C:866:ALA:HB2	1:D:431:ARG:HE	1.69	0.58
1:C:713:LEU:HD13	1:C:745:TYR:CE2	2.38	0.58
1:A:598:ILE:HB	1:A:599:PRO:CD	2.30	0.58
1:B:534:ARG:HD3	1:B:534:ARG:C	2.24	0.58
1:B:990:GLU:HA	1:B:993:LYS:HD3	1.85	0.58
1:A:687:ILE:HD11	1:A:914:LEU:HD22	1.85	0.58
1:A:431:ARG:NH2	1:B:938:GLN:OE1	2.37	0.58
1:B:713:LEU:HD21	1:B:745:TYR:CE2	2.39	0.58
1:D:675:TYR:HB2	1:D:816:PHE:CD2	2.38	0.58
1:C:385:PHE:CD2	1:C:499:LEU:HD12	2.38	0.58
1:B:2:LYS:HB2	1:B:30:HIS:CD2	2.39	0.57
1:A:611:TYR:CE2	1:B:419:LEU:HD21	2.39	0.57
1:C:687:ILE:HD11	1:C:914:LEU:HD22	1.85	0.57
1:A:220:VAL:HG13	1:A:333:ASP:HB2	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:659:ILE:HD11	1:D:684:LEU:HD22	1.87	0.57
1:A:259:ASN:OD1	1:A:261:ASP:HB2	2.04	0.57
1:A:102:HIS:HA	1:A:148:ASP:OD2	2.04	0.57
1:C:646:TYR:HB3	1:C:956:VAL:HG11	1.87	0.57
1:A:149:MET:HE3	1:A:151:ILE:HD13	1.87	0.57
1:C:75:GLU:HG3	1:C:76:ASN:ND2	2.20	0.57
1:D:130:ASN:O	1:D:374:LEU:HD22	2.04	0.57
1:C:167:TYR:CD1	1:C:266:GLU:HG2	2.40	0.56
1:C:316:LEU:HD12	1:C:352:PHE:HE2	1.70	0.56
1:C:715:SER:O	1:C:831:ARG:HD2	2.05	0.56
1:A:677:ILE:HD12	1:A:711:TRP:HH2	1.70	0.56
1:A:774:ASN:O	1:A:778:ILE:HG13	2.05	0.56
1:A:755:PHE:CE1	1:A:778:ILE:HG22	2.40	0.56
1:C:273:LEU:HD11	1:C:294:ILE:HG13	1.86	0.56
1:D:55:THR:HG1	1:D:59:SER:HG	1.52	0.56
1:D:794:ALA:HA	1:D:797:ARG:NH2	2.21	0.56
1:D:9:TYR:HA	1:D:37:ASP:OD2	2.06	0.56
1:A:727:GLN:O	1:A:732:VAL:HG21	2.06	0.56
1:A:959:GLU:OE2	1:A:1004:LYS:NZ	2.31	0.56
1:B:659:ILE:HD11	1:B:684:LEU:HD22	1.87	0.56
1:C:815:ALA:HA	1:C:844:PRO:HG2	1.87	0.56
1:C:231:LYS:NZ	1:C:260:ASP:OD1	2.39	0.56
1:B:486:ILE:O	1:B:528:ARG:HD2	2.06	0.56
1:A:78:ARG:O	1:A:128:TYR:OH	2.22	0.55
1:C:744:SER:O	1:C:745:TYR:HB2	2.05	0.55
1:B:19:PHE:CZ	1:B:23:LEU:HD11	2.42	0.55
1:B:731:PHE:CE1	1:B:744:SER:HA	2.41	0.55
1:C:300:LEU:HD23	1:C:300:LEU:O	2.07	0.55
1:C:1060:PHE:HB2	1:C:1072:ARG:HD3	1.88	0.55
1:D:519:GLU:HB2	1:D:543:THR:HG21	1.87	0.55
1:D:608:MET:HG3	1:D:616:ALA:HB2	1.87	0.55
1:A:1064:VAL:O	1:A:1091:LEU:HD21	2.07	0.55
1:B:397:LEU:HD11	1:B:595:ASP:HB2	1.88	0.55
1:B:548:LYS:HG3	1:B:553:LEU:HD23	1.88	0.55
1:D:77:PHE:O	1:D:120:LYS:HD2	2.07	0.55
1:D:519:GLU:HA	1:D:540:LEU:HD22	1.87	0.55
1:A:567:ARG:HD3	1:A:588:GLN:OE1	2.07	0.55
1:B:853:ASP:O	1:B:860:ARG:NH1	2.39	0.55
1:D:598:ILE:HB	1:D:599:PRO:CD	2.37	0.55
1:C:818:GLU:HG3	1:C:819:PHE:H	1.72	0.55
1:C:293:PHE:O	1:C:319:GLY:CA	2.55	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1091:LEU:HD12	1:D:1095:VAL:HB	1.88	0.55
1:B:105:LEU:HD21	1:B:121:TYR:CE2	2.42	0.54
1:C:390:THR:O	1:C:495:ARG:HD2	2.07	0.54
1:A:273:LEU:HD12	1:A:292:LYS:O	2.06	0.54
1:D:375:GLN:HA	1:D:375:GLN:OE1	2.07	0.54
1:A:71:VAL:HG22	1:A:90:LYS:HB2	1.89	0.54
1:C:381:GLU:HB2	1:C:507:HIS:ND1	2.22	0.54
1:C:239:ASP:OD1	1:C:240:ASN:N	2.41	0.54
1:C:293:PHE:O	1:C:319:GLY:HA2	2.06	0.54
1:B:22:MET:CG	1:B:366:ILE:HD11	2.36	0.54
1:D:820:TRP:HZ3	1:D:849:ARG:CB	2.15	0.54
1:D:989:GLN:OE1	1:D:989:GLN:N	2.37	0.54
1:A:1035:ALA:HA	1:A:1094:GLY:HA3	1.90	0.54
1:D:436:VAL:HG11	1:D:458:ASP:HB3	1.89	0.54
1:A:18:LEU:HG	1:A:22:MET:HE2	1.89	0.54
1:B:519:GLU:HB2	1:B:543:THR:HG21	1.90	0.54
1:D:721:ASP:OD2	1:D:723:GLU:HB2	2.08	0.54
1:C:325:PHE:O	1:C:329:LEU:HD13	2.08	0.54
1:D:679:ARG:HH12	1:D:883:ASP:HA	1.72	0.54
1:A:678:SER:O	1:A:679:ARG:HB2	2.08	0.54
1:B:436:VAL:HG12	1:B:454:ILE:CG2	2.38	0.54
1:D:803:TYR:HB2	1:D:895:ILE:HG21	1.89	0.54
1:B:76:ASN:HD21	1:B:96:HIS:CE1	2.26	0.53
1:B:1053:LEU:HD23	1:B:1055:LEU:HD23	1.90	0.53
1:B:79:GLU:HA	1:B:120:LYS:CG	2.38	0.53
1:B:572:GLY:O	1:B:591:VAL:HA	2.07	0.53
1:A:652:GLY:HA3	1:A:917:PHE:CG	2.43	0.53
1:B:820:TRP:CZ2	1:B:851:PHE:CZ	2.97	0.53
1:A:435:ASP:OD1	1:B:849:ARG:NE	2.40	0.53
1:B:675:TYR:HB2	1:B:816:PHE:CD2	2.43	0.53
1:A:119:ARG:HG3	1:A:120:LYS:N	2.24	0.53
1:C:102:HIS:HA	1:C:148:ASP:OD2	2.08	0.53
1:A:276:ILE:CD1	1:A:282:PHE:HB2	2.37	0.53
1:B:499:LEU:C	1:B:499:LEU:HD23	2.29	0.53
1:C:938:GLN:OE1	1:D:431:ARG:NH1	2.42	0.53
1:D:23:LEU:CD2	1:D:32:CYS:HB2	2.39	0.53
1:D:678:SER:CB	1:D:705:TYR:HA	2.39	0.53
1:C:393:ARG:CG	1:C:490:GLU:HG3	2.39	0.53
1:C:822:ARG:HD3	1:D:446:GLU:OE2	2.08	0.53
1:A:183:LYS:HD3	1:A:253:GLU:OE2	2.08	0.53
1:A:5:LEU:HD23	1:A:33:TRP:HB2	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:818:GLU:OE1	1:C:818:GLU:HA	2.09	0.52
1:A:1051:ARG:HD2	1:A:1084:ASP:OD1	2.09	0.52
1:A:486:ILE:CD1	1:A:524:LYS:HE3	2.40	0.52
1:A:79:GLU:CD	1:A:119:ARG:HD2	2.30	0.52
1:B:384:THR:HA	1:B:510:ALA:O	2.09	0.52
1:B:405:TYR:CE2	1:B:409:LYS:HD2	2.44	0.52
1:C:317:THR:HG22	1:C:318:GLU:N	2.24	0.52
1:A:5:LEU:CD2	1:A:33:TRP:HB2	2.39	0.52
1:C:674:ILE:HG23	1:C:817:VAL:HG23	1.90	0.52
1:D:402:ILE:HG21	1:D:485:GLU:HG2	1.90	0.52
1:D:678:SER:O	1:D:679:ARG:HB3	2.10	0.52
1:A:659:ILE:HD11	1:A:684:LEU:HD22	1.91	0.52
1:C:413:SER:HB3	1:C:476:PHE:CZ	2.44	0.52
1:A:677:ILE:HB	1:A:818:GLU:OE1	2.10	0.52
1:A:676:PHE:CG	1:A:685:LYS:HB2	2.44	0.52
1:A:803:TYR:HB2	1:A:895:ILE:HG21	1.90	0.52
1:C:18:LEU:HG	1:C:22:MET:HE2	1.91	0.52
1:C:317:THR:HG22	1:C:318:GLU:H	1.74	0.52
1:C:921:TYR:OH	1:C:933:ASP:OD1	2.26	0.52
1:A:381:GLU:OE2	1:A:567:ARG:NH1	2.42	0.52
1:C:527:ASP:OD2	1:C:534:ARG:NE	2.41	0.52
1:A:801:ARG:HG3	1:A:836:ALA:HA	1.91	0.52
1:C:432:ALA:HB2	1:C:463:LEU:HD21	1.92	0.52
1:C:646:TYR:HH	1:C:957:PHE:HD1	1.57	0.52
1:D:410:ALA:HA	1:D:476:PHE:CE2	2.45	0.52
1:D:598:ILE:HB	1:D:599:PRO:HD2	1.92	0.52
1:B:22:MET:HG2	1:B:366:ILE:CD1	2.40	0.51
1:D:42:MET:HG3	1:D:54:ILE:HG22	1.90	0.51
1:C:228:PHE:HB3	1:C:255:ILE:HD13	1.92	0.51
1:A:18:LEU:HG	1:A:22:MET:CE	2.40	0.51
1:B:598:ILE:HB	1:B:599:PRO:CD	2.40	0.51
1:D:799:MET:HG3	1:D:895:ILE:HD12	1.93	0.51
1:B:1006:ASP:OD1	1:B:1007:VAL:N	2.43	0.51
1:C:979:LEU:HD22	1:C:1008:LYS:HD2	1.92	0.51
1:B:410:ALA:HA	1:B:476:PHE:HE2	1.76	0.51
1:B:626:TYR:CE1	1:B:916:LYS:HE2	2.44	0.51
1:C:626:TYR:CD1	1:C:916:LYS:HE2	2.46	0.51
1:C:715:SER:O	1:C:831:ARG:NH1	2.41	0.51
1:A:1091:LEU:HD12	1:A:1095:VAL:HB	1.93	0.51
1:B:608:MET:HG3	1:B:616:ALA:HB2	1.93	0.51
1:C:337:ILE:HD12	1:C:337:ILE:N	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:184:ASN:H	1:A:187:GLN:HG3	1.76	0.51
1:C:862:ASN:HB2	1:D:466:ASN:OD1	2.11	0.51
1:A:6:PHE:HZ	1:A:22:MET:HE3	1.75	0.51
1:C:67:PRO:O	1:C:86:ASN:HB2	2.11	0.51
1:D:386:ASP:OD1	1:D:548:LYS:NZ	2.44	0.51
1:D:410:ALA:HA	1:D:476:PHE:HE2	1.75	0.51
1:C:988:LYS:HE2	1:C:992:ASP:OD2	2.11	0.51
1:C:105:LEU:HD21	1:C:121:TYR:CD2	2.47	0.50
1:B:164:ASN:HD22	1:B:287:ASP:CB	2.24	0.50
1:B:598:ILE:HG23	1:B:627:ARG:CZ	2.42	0.50
1:D:72:TYR:OH	1:D:78:ARG:NH1	2.43	0.50
1:D:379:LEU:HB2	1:D:566:SER:HB3	1.91	0.50
1:C:135:LEU:HD12	1:C:136:THR:N	2.25	0.50
1:A:239:ASP:OD2	1:A:241:TYR:HB3	2.11	0.50
1:D:1038:PRO:HB3	1:D:1040:GLU:OE2	2.11	0.50
1:A:853:ASP:O	1:A:860:ARG:NH1	2.45	0.50
1:C:128:TYR:HA	1:C:132:VAL:HG21	1.92	0.50
1:C:1060:PHE:HB3	1:C:1072:ARG:HD3	1.93	0.50
1:A:694:ILE:HD12	1:A:922:LEU:HD12	1.94	0.50
1:B:16:LYS:HG3	1:B:20:LEU:HD11	1.94	0.50
1:C:193:LEU:HG	1:C:195:CYS:SG	2.51	0.50
1:A:241:TYR:CE1	1:A:245:MET:HE2	2.47	0.50
1:C:318:GLU:OE1	1:C:318:GLU:HA	2.12	0.50
1:D:133:LEU:HD21	1:D:372:CYS:SG	2.52	0.50
1:D:1101:GLU:HG3	1:D:1102:HIS:CE1	2.47	0.50
1:A:1053:LEU:HD22	1:A:1055:LEU:HD23	1.92	0.50
1:D:815:ALA:HA	1:D:844:PRO:HG2	1.94	0.50
1:A:231:LYS:HE2	1:A:264:ILE:HG21	1.94	0.50
1:B:151:ILE:HD12	1:B:156:ILE:CD1	2.41	0.50
1:B:164:ASN:ND2	1:B:284:ASP:HA	2.25	0.50
1:B:820:TRP:CZ3	1:B:870:PHE:HD1	2.30	0.50
1:C:3:THR:O	1:C:70:ASP:HB2	2.12	0.50
1:C:128:TYR:HA	1:C:132:VAL:CG2	2.42	0.49
1:A:184:ASN:O	1:A:187:GLN:HB2	2.11	0.49
1:A:405:TYR:CZ	1:A:409:LYS:HE3	2.47	0.49
1:A:940:ASN:O	1:A:944:GLN:HG3	2.11	0.49
1:C:820:TRP:HZ3	1:C:849:ARG:CB	2.24	0.49
1:A:145:PHE:HB3	1:A:149:MET:HE1	1.94	0.49
1:C:429:ARG:NH1	1:C:433:GLU:OE1	2.40	0.49
1:B:142:GLU:OE2	1:B:158:ARG:NH2	2.44	0.49
1:D:761:LEU:C	1:D:763:HIS:H	2.14	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:826:GLN:HG3	1:D:845:PHE:CD1	2.47	0.49
1:D:562:ASP:O	1:D:564:GLN:HG2	2.12	0.49
1:A:344:ARG:HH21	1:A:348:LEU:HD21	1.77	0.49
1:B:489:VAL:HG21	1:B:525:MET:HB3	1.95	0.49
1:B:598:ILE:HB	1:B:599:PRO:HD2	1.95	0.49
1:B:598:ILE:HG23	1:B:627:ARG:NH2	2.28	0.49
1:C:6:PHE:CE2	1:C:73:VAL:HG21	2.48	0.49
1:C:431:ARG:NH2	1:D:938:GLN:OE1	2.46	0.49
1:D:845:PHE:HB3	1:D:847:TYR:CE2	2.48	0.49
1:A:295:ARG:NH1	1:A:317:THR:OG1	2.43	0.49
1:A:715:SER:CB	1:A:828:THR:HB	2.43	0.49
1:B:135:LEU:HD12	1:B:157:ILE:O	2.13	0.49
1:D:646:TYR:HB3	1:D:956:VAL:HG11	1.93	0.49
1:A:167:TYR:CD1	1:A:266:GLU:HG2	2.48	0.49
1:A:432:ALA:HB2	1:A:463:LEU:HD21	1.95	0.49
1:D:650:TYR:HB3	1:D:944:GLN:HE22	1.77	0.49
1:A:183:LYS:CB	1:A:187:GLN:HB2	2.43	0.48
1:C:627:ARG:HB3	1:C:645:TYR:CD1	2.48	0.48
1:C:940:ASN:O	1:C:944:GLN:HG3	2.13	0.48
1:D:23:LEU:HD23	1:D:32:CYS:HB2	1.95	0.48
1:D:125:TYR:CZ	1:D:564:GLN:HA	2.48	0.48
1:A:6:PHE:CZ	1:A:22:MET:HE3	2.48	0.48
1:A:34:TRP:HB3	1:A:54:ILE:HD12	1.96	0.48
1:B:102:HIS:ND1	1:B:148:ASP:OD2	2.42	0.48
1:C:214:PHE:HB3	1:C:249:TYR:CZ	2.47	0.48
1:B:446:GLU:OE1	1:B:446:GLU:N	2.40	0.48
1:B:981:GLN:O	1:B:985:ILE:HG23	2.13	0.48
1:C:1035:ALA:HA	1:C:1094:GLY:HA3	1.95	0.48
1:A:771:ILE:HD12	1:A:771:ILE:N	2.25	0.48
1:A:437:ARG:HG3	1:A:454:ILE:HD13	1.96	0.48
1:A:651:VAL:CG1	1:A:914:LEU:HD21	2.33	0.48
1:B:135:LEU:HA	1:B:157:ILE:O	2.13	0.48
1:C:216:LYS:O	1:C:220:VAL:HG23	2.13	0.48
1:D:1051:ARG:HD2	1:D:1084:ASP:OD1	2.13	0.48
1:C:670:GLY:O	1:C:813:LYS:HE3	2.13	0.48
1:A:130:ASN:ND2	1:A:379:LEU:HD11	2.28	0.48
1:B:6:PHE:CE2	1:B:73:VAL:HG21	2.48	0.48
1:D:95:TRP:HD1	1:D:97:GLY:O	1.97	0.48
1:D:816:PHE:CZ	1:D:829:PHE:HE2	2.31	0.48
1:A:408:ASP:O	1:A:411:LYS:HG3	2.13	0.48
1:A:650:TYR:HB3	1:A:944:GLN:HE22	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:561:LEU:HD11	1:C:563:TYR:HD2	1.79	0.48
1:D:2:LYS:HD3	1:D:370:ASP:CG	2.34	0.48
1:D:950:ASP:OD1	1:D:952:PHE:N	2.45	0.48
1:A:103:ILE:HD11	1:A:145:PHE:CD1	2.49	0.48
1:B:1017:GLN:NE2	1:B:1022:LEU:O	2.46	0.48
1:C:134:PHE:CZ	1:C:149:MET:HE1	2.49	0.48
1:D:384:THR:HA	1:D:510:ALA:O	2.13	0.48
1:D:717:ILE:HA	1:D:797:ARG:NH1	2.29	0.48
1:D:436:VAL:HG12	1:D:454:ILE:CG2	2.44	0.48
1:A:1051:ARG:HE	1:A:1082:GLU:HB3	1.79	0.47
1:A:1091:LEU:HB3	3:A:1203:KOF:C4	2.44	0.47
1:B:656:VAL:N	1:B:657:PRO:HD2	2.29	0.47
1:A:341:SER:OG	1:A:344:ARG:HB2	2.14	0.47
1:C:129:LYS:HE3	1:C:564:GLN:NE2	2.29	0.47
1:C:436:VAL:HG12	1:C:454:ILE:CG2	2.43	0.47
1:A:49:THR:HB	1:A:51:LEU:HD23	1.95	0.47
1:A:51:LEU:HD22	1:A:51:LEU:N	2.29	0.47
1:A:627:ARG:HB3	1:A:645:TYR:CD1	2.49	0.47
1:B:571:TYR:CD2	1:B:590:ALA:HB3	2.48	0.47
1:D:129:LYS:O	1:D:152:SER:OG	2.31	0.47
1:A:297:VAL:HG23	1:A:297:VAL:O	2.15	0.47
1:B:621:THR:O	1:B:625:ARG:HG2	2.14	0.47
1:B:591:VAL:HG12	1:B:1063:ASP:HA	1.97	0.47
1:B:703:TYR:OH	1:B:882:TYR:OH	2.24	0.47
1:C:386:ASP:OD1	1:C:548:LYS:NZ	2.47	0.47
1:B:539:TYR:OH	1:B:561:LEU:CD1	2.63	0.47
1:C:315:ASP:O	1:C:344:ARG:NH2	2.48	0.47
1:D:1091:LEU:HB3	3:D:1203:KOF:O6	2.15	0.47
1:A:176:ASP:OD2	1:A:179:THR:HG23	2.15	0.47
1:A:183:LYS:CE	1:A:187:GLN:O	2.60	0.47
1:A:379:LEU:HB2	1:A:566:SER:HB3	1.96	0.47
1:A:879:GLN:O	1:A:907:SER:HB3	2.15	0.47
1:A:1053:LEU:C	1:A:1053:LEU:HD23	2.35	0.47
1:B:498:TYR:OH	1:B:1086:ILE:HD12	2.15	0.47
1:B:663:ILE:HD11	1:B:688:ALA:CB	2.44	0.47
1:C:4:TRP:CE3	1:C:22:MET:HE3	2.50	0.47
1:D:723:GLU:O	1:D:729:GLY:HA3	2.14	0.47
1:D:940:ASN:O	1:D:944:GLN:HG3	2.14	0.47
1:A:145:PHE:HB3	1:A:149:MET:CE	2.44	0.47
1:C:181:LEU:HD22	1:C:227:LEU:HD21	1.95	0.47
1:B:417:PHE:HB2	1:B:422:THR:CG2	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:713:LEU:O	1:B:793:ALA:HB1	2.15	0.47
1:C:212:PRO:HD2	1:C:325:PHE:CE1	2.49	0.47
1:D:604:MET:HB2	1:D:939:PHE:CE2	2.50	0.47
1:D:1036:VAL:O	1:D:1037:ASN:HB2	2.14	0.47
1:D:676:PHE:CG	1:D:685:LYS:HB2	2.50	0.46
1:A:3:THR:O	1:A:70:ASP:HB2	2.15	0.46
1:A:149:MET:CE	1:A:151:ILE:HD13	2.44	0.46
1:B:436:VAL:HG12	1:B:454:ILE:HG21	1.98	0.46
1:D:518:PRO:HB2	1:D:520:ASP:OD1	2.15	0.46
1:A:435:ASP:OD1	1:B:849:ARG:NH2	2.47	0.46
1:A:677:ILE:HD12	1:A:711:TRP:CH2	2.51	0.46
1:C:518:PRO:HB2	1:C:520:ASP:OD1	2.16	0.46
1:C:974:ALA:HA	1:C:995:THR:OG1	2.14	0.46
1:B:592:HIS:HA	1:B:1064:VAL:CG1	2.44	0.46
1:C:34:TRP:HB3	1:C:54:ILE:HD12	1.97	0.46
1:C:233:HIS:HB3	1:C:236:MET:HG3	1.96	0.46
1:A:608:MET:HG3	1:A:616:ALA:HB2	1.98	0.46
1:B:95:TRP:HD1	1:B:97:GLY:O	1.99	0.46
1:B:677:ILE:HG22	1:B:678:SER:N	2.30	0.46
1:B:1036:VAL:O	1:B:1037:ASN:HB2	2.15	0.46
1:A:34:TRP:HB3	1:A:54:ILE:CD1	2.45	0.46
1:C:6:PHE:HZ	1:C:22:MET:HE3	1.81	0.46
1:C:196:PRO:HA	1:C:277:ASP:OD2	2.16	0.46
1:C:221:CYS:O	1:C:225:ASN:N	2.49	0.46
1:C:436:VAL:HG11	1:C:458:ASP:HB3	1.97	0.46
1:C:629:GLN:HG3	1:C:633:GLU:OE1	2.15	0.46
1:D:103:ILE:C	1:D:103:ILE:HD12	2.35	0.46
1:D:497:ASN:OD1	1:D:532:ARG:NH2	2.47	0.46
1:B:626:TYR:O	1:B:630:LEU:HG	2.16	0.46
1:C:125:TYR:CZ	1:C:564:GLN:HA	2.50	0.46
1:B:498:TYR:CZ	1:B:1086:ILE:HD12	2.51	0.46
1:C:231:LYS:HE2	1:C:264:ILE:HG21	1.98	0.46
1:D:103:ILE:HD12	1:D:103:ILE:O	2.16	0.46
1:D:981:GLN:O	1:D:985:ILE:HG23	2.16	0.46
1:C:24:VAL:HG21	1:C:172:ILE:HD11	1.98	0.46
1:C:650:TYR:HB3	1:C:944:GLN:HE22	1.81	0.46
1:A:67:PRO:O	1:A:86:ASN:HB2	2.17	0.45
1:A:436:VAL:HG12	1:A:454:ILE:CG2	2.46	0.45
1:C:18:LEU:CD2	1:C:22:MET:HE1	2.46	0.45
1:C:24:VAL:HG21	1:C:172:ILE:CD1	2.46	0.45
1:C:145:PHE:HB3	1:C:149:MET:CE	2.45	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:194:PHE:CD2	1:C:196:PRO:HD3	2.51	0.45
1:A:344:ARG:NH2	1:A:348:LEU:HD21	2.31	0.45
1:A:614:TYR:N	1:A:615:PRO:HD2	2.31	0.45
1:C:621:THR:O	1:C:625:ARG:HG2	2.17	0.45
1:A:103:ILE:HD11	1:A:145:PHE:HD1	1.82	0.45
1:A:518:PRO:HB2	1:A:520:ASP:OD1	2.17	0.45
1:C:233:HIS:CG	1:C:234:PRO:HD2	2.51	0.45
1:C:515:MET:HE2	1:C:517:LEU:HD12	1.98	0.45
1:C:596:ASP:OD1	1:C:597:PHE:N	2.49	0.45
1:D:596:ASP:OD1	1:D:597:PHE:N	2.49	0.45
1:B:1058:ASN:OD1	1:B:1111:TRP:HE3	2.00	0.45
1:A:675:TYR:HB2	1:A:816:PHE:CD2	2.52	0.45
1:A:641:PHE:CZ	1:A:1034:TYR:HD2	2.35	0.45
1:B:847:TYR:HB2	1:B:862:ASN:HD22	1.81	0.45
1:C:641:PHE:CZ	1:C:1034:TYR:HD2	2.34	0.45
1:A:177:ILE:O	1:A:181:LEU:HG	2.17	0.45
1:B:167:TYR:CB	1:B:266:GLU:HA	2.47	0.45
1:C:16:LYS:NZ	1:C:263:ASP:OD2	2.28	0.45
1:C:128:TYR:O	1:C:132:VAL:HB	2.16	0.45
1:C:273:LEU:HD21	1:C:294:ILE:HD12	1.99	0.45
1:D:385:PHE:CD1	1:D:499:LEU:HD12	2.52	0.45
1:D:519:GLU:HG3	1:D:538:LEU:HD23	1.98	0.45
1:B:958:SER:HB3	1:B:1000:ILE:HG21	1.99	0.45
1:D:421:LEU:HD21	1:D:477:LEU:HD11	1.97	0.45
1:B:817:VAL:HA	1:B:846:TYR:HB2	1.99	0.45
1:C:492:ILE:HG21	1:C:495:ARG:NH1	2.32	0.45
1:A:6:PHE:CE2	1:A:73:VAL:HG21	2.52	0.44
1:A:22:MET:SD	1:A:366:ILE:HD13	2.58	0.44
1:A:49:THR:CB	1:A:51:LEU:HD23	2.46	0.44
1:A:183:LYS:HB3	1:A:187:GLN:HB2	1.98	0.44
1:A:456:LEU:HD13	1:A:516:TYR:CE1	2.52	0.44
1:C:383:HIS:CG	1:C:502:LEU:HD13	2.52	0.44
1:A:188:TYR:CD1	1:A:227:LEU:HB2	2.51	0.44
1:B:730:ASN:O	1:B:743:ALA:HB1	2.17	0.44
1:C:567:ARG:HD3	1:C:588:GLN:OE1	2.17	0.44
1:D:389:ASP:N	1:D:392:ILE:O	2.48	0.44
1:A:119:ARG:CG	1:A:120:LYS:N	2.81	0.44
1:C:312:ASP:O	1:C:316:LEU:HD23	2.17	0.44
1:D:540:LEU:HD23	1:D:543:THR:HG23	1.98	0.44
1:A:515:MET:HE2	1:A:517:LEU:HD12	1.99	0.44
1:B:626:TYR:CE2	1:B:630:LEU:HD11	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:820:TRP:HZ3	1:B:849:ARG:CB	2.21	0.44
1:B:998:ILE:HD12	1:B:1023:PRO:HG2	1.98	0.44
1:C:1034:TYR:CE1	1:C:1093:GLY:O	2.71	0.44
1:A:569:THR:HA	1:A:588:GLN:O	2.18	0.44
1:C:1051:ARG:HD2	1:C:1084:ASP:OD1	2.17	0.44
1:D:362:MET:O	1:D:366:ILE:HG13	2.18	0.44
1:D:627:ARG:HB3	1:D:645:TYR:CD1	2.53	0.44
1:B:820:TRP:CZ2	1:B:851:PHE:HZ	2.36	0.44
1:C:614:TYR:N	1:C:615:PRO:HD2	2.33	0.44
1:D:679:ARG:NH1	1:D:883:ASP:HA	2.32	0.44
1:A:95:TRP:CE3	1:A:134:PHE:HE1	2.36	0.44
1:A:125:TYR:CZ	1:A:564:GLN:HA	2.53	0.44
1:A:659:ILE:HD11	1:A:684:LEU:HB3	2.00	0.44
1:C:6:PHE:CZ	1:C:22:MET:HE3	2.53	0.44
1:C:214:PHE:HB3	1:C:249:TYR:CE2	2.53	0.44
1:C:276:ILE:HD13	1:C:282:PHE:CD1	2.52	0.44
1:C:706:GLY:HA3	1:C:711:TRP:CZ2	2.53	0.44
1:C:820:TRP:CZ3	1:C:849:ARG:HB3	2.44	0.44
1:C:985:ILE:HA	1:C:990:GLU:OE1	2.18	0.44
1:D:641:PHE:CZ	1:D:1034:TYR:HD2	2.36	0.44
1:A:596:ASP:OD1	1:A:597:PHE:N	2.50	0.44
1:B:1090:TRP:CZ3	1:B:1096:PRO:HD3	2.53	0.44
1:C:160:LYS:NZ	1:C:165:ALA:HB1	2.32	0.44
1:C:167:TYR:CB	1:C:266:GLU:HA	2.48	0.44
1:A:49:THR:OG1	1:A:51:LEU:HD23	2.18	0.44
1:A:95:TRP:HD1	1:A:97:GLY:O	2.01	0.44
1:A:381:GLU:HB2	1:A:507:HIS:ND1	2.33	0.44
1:B:990:GLU:HB3	1:B:993:LYS:HZ1	1.83	0.44
1:A:826:GLN:NE2	1:A:845:PHE:HB2	2.33	0.43
1:B:417:PHE:HB2	1:B:422:THR:HG23	2.00	0.43
1:C:665:ASP:OD2	1:C:669:ARG:HD2	2.18	0.43
1:A:167:TYR:CB	1:A:266:GLU:HA	2.48	0.43
1:A:515:MET:O	1:A:542:SER:HB3	2.18	0.43
1:A:954:CYS:HB3	1:A:1004:LYS:HG2	2.01	0.43
1:D:656:VAL:HB	1:D:657:PRO:HD3	1.99	0.43
1:A:183:LYS:HB3	1:A:187:GLN:HB3	1.99	0.43
1:A:377:LYS:O	1:A:379:LEU:HD12	2.18	0.43
1:B:397:LEU:HD13	1:B:625:ARG:HH12	1.83	0.43
1:B:982:LEU:O	1:B:985:ILE:HG12	2.17	0.43
1:D:826:GLN:CD	1:D:845:PHE:HB2	2.38	0.43
1:A:803:TYR:CZ	1:A:807:GLU:HG3	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:988:LYS:HE2	1:B:998:ILE:HD11	2.01	0.43
1:C:194:PHE:CE2	1:C:196:PRO:HG3	2.53	0.43
1:C:393:ARG:NE	1:C:490:GLU:OE2	2.51	0.43
1:D:515:MET:HG3	1:D:517:LEU:H	1.82	0.43
1:D:626:TYR:CD1	1:D:916:LYS:HE2	2.53	0.43
1:D:632:GLN:HB3	1:D:1090:TRP:CE2	2.54	0.43
1:C:188:TYR:CE2	1:C:227:LEU:HB2	2.53	0.43
1:C:224:LYS:HD3	1:C:333:ASP:O	2.19	0.43
1:A:981:GLN:O	1:A:985:ILE:HG23	2.18	0.43
1:C:36:ALA:HB1	1:C:41:SER:HB2	1.99	0.43
1:C:95:TRP:HD1	1:C:97:GLY:O	2.02	0.43
1:D:6:PHE:CE2	1:D:73:VAL:HG21	2.53	0.43
1:D:103:ILE:CD1	1:D:149:MET:HE3	2.49	0.43
1:D:1066:PHE:CZ	1:D:1097:ARG:HD2	2.54	0.43
1:A:206:VAL:O	1:A:210:LEU:HG	2.18	0.43
1:B:453:GLU:HG2	1:B:541:SER:C	2.40	0.43
1:B:498:TYR:HE1	1:B:1086:ILE:HD12	1.79	0.43
1:C:424:ASN:O	1:C:428:VAL:HG23	2.19	0.43
1:C:875:PRO:HG3	1:C:973:TYR:CD1	2.54	0.43
1:C:1051:ARG:NE	1:C:1082:GLU:HB3	2.32	0.43
1:D:598:ILE:HG23	1:D:627:ARG:CZ	2.49	0.43
1:A:35:VAL:HG23	1:A:35:VAL:O	2.18	0.43
1:A:514:ASP:HA	1:A:541:SER:HB3	2.01	0.43
1:A:646:TYR:CZ	1:A:957:PHE:HB2	2.54	0.43
1:B:115:GLU:HG2	1:B:555:GLN:HE21	1.81	0.43
1:C:247:GLU:OE1	1:C:250:LYS:HD2	2.19	0.43
1:D:598:ILE:HG23	1:D:627:ARG:NH2	2.34	0.43
1:A:138:SER:HB3	1:A:354:GLY:H	1.83	0.43
1:B:475:ASP:O	1:B:479:GLN:HG2	2.19	0.43
1:B:713:LEU:HG	1:B:745:TYR:CZ	2.54	0.43
1:B:947:THR:HG22	1:B:950:ASP:HB2	2.01	0.43
1:C:175:TYR:HE1	1:C:266:GLU:HB2	1.82	0.43
1:D:679:ARG:NH1	1:D:882:TYR:O	2.51	0.43
1:A:49:THR:O	1:A:51:LEU:HD22	2.19	0.42
1:A:194:PHE:CE2	1:A:196:PRO:HG3	2.54	0.42
1:A:723:GLU:O	1:A:729:GLY:HA3	2.19	0.42
1:D:383:HIS:O	1:D:509:VAL:HA	2.19	0.42
1:A:380:LYS:O	1:A:565:TYR:HA	2.19	0.42
1:C:659:ILE:HD11	1:C:684:LEU:HD22	2.00	0.42
1:C:716:PHE:O	1:C:797:ARG:NH2	2.53	0.42
1:C:978:THR:OG1	1:C:981:GLN:HG3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:409:LYS:HE3	1:D:409:LYS:HB3	1.77	0.42
1:A:405:TYR:OH	1:A:409:LYS:HE3	2.20	0.42
1:A:515:MET:HG3	1:A:517:LEU:H	1.84	0.42
1:A:621:THR:O	1:A:625:ARG:HG2	2.19	0.42
1:A:818:GLU:OE1	1:A:818:GLU:HA	2.19	0.42
1:A:1010:ILE:CD1	1:A:1029:PRO:HG3	2.48	0.42
1:B:424:ASN:OD1	1:B:427:ASN:HB2	2.20	0.42
1:D:107:LEU:HB3	1:D:111:SER:HB2	2.01	0.42
1:B:1072:ARG:NH2	1:B:1074:ASP:OD2	2.36	0.42
1:C:393:ARG:HD3	1:C:492:ILE:HG12	2.01	0.42
1:C:631:VAL:HG12	1:C:632:GLN:HG2	2.00	0.42
1:A:1008:LYS:HG3	1:A:1009:VAL:N	2.33	0.42
1:B:1041:GLN:O	1:B:1108:HIS:HA	2.20	0.42
1:D:87:GLU:HG3	1:D:88:ASN:CG	2.39	0.42
1:A:851:PHE:CA	1:B:439:ILE:HG12	2.47	0.42
1:B:439:ILE:O	1:B:443:THR:HG23	2.19	0.42
1:C:18:LEU:HG	1:C:22:MET:HE1	1.99	0.42
1:C:318:GLU:HG2	1:C:340:ILE:CG1	2.48	0.42
1:C:592:HIS:HA	1:C:1064:VAL:CG1	2.49	0.42
1:D:87:GLU:HG3	1:D:88:ASN:OD1	2.19	0.42
1:D:694:ILE:HD12	1:D:922:LEU:HD12	2.01	0.42
1:A:184:ASN:CB	1:A:187:GLN:HG2	2.35	0.42
1:A:554:TYR:HB2	1:A:585:LEU:CD1	2.49	0.42
1:B:826:GLN:NE2	1:B:845:PHE:HB2	2.35	0.42
1:C:646:TYR:CB	1:C:956:VAL:HG11	2.50	0.42
1:D:1042:TYR:CZ	1:D:1095:VAL:HG13	2.54	0.42
1:D:432:ALA:HB2	1:D:463:LEU:HD21	2.02	0.42
1:D:628:THR:O	1:D:632:GLN:HG2	2.19	0.42
1:A:116:SER:HA	1:A:119:ARG:NH1	2.34	0.42
1:A:380:LYS:HE2	1:A:508:ASP:OD2	2.20	0.42
1:A:403:PHE:HB2	1:A:426:ILE:CD1	2.50	0.42
1:B:129:LYS:O	1:B:129:LYS:HG3	2.20	0.42
1:B:383:HIS:HB2	1:B:509:VAL:HG12	2.01	0.42
1:C:224:LYS:HB2	1:C:226:GLN:HG3	2.02	0.42
1:C:499:LEU:HD23	1:C:499:LEU:C	2.39	0.42
1:A:486:ILE:HD13	1:A:524:LYS:HE3	2.00	0.42
1:B:125:TYR:CZ	1:B:564:GLN:HA	2.54	0.42
1:B:721:ASP:OD1	1:B:831:ARG:NH1	2.37	0.42
1:C:527:ASP:OD1	1:C:534:ARG:HB2	2.20	0.42
1:C:604:MET:HB2	1:C:939:PHE:CE2	2.55	0.42
1:D:2:LYS:NZ	1:D:370:ASP:HB3	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:614:TYR:N	1:D:615:PRO:HD2	2.34	0.42
1:A:18:LEU:CD2	1:A:22:MET:HE1	2.50	0.41
1:A:388:PHE:HB2	4:A:1303:HOH:O	2.19	0.41
1:A:819:PHE:CE1	1:A:848:VAL:HG21	2.55	0.41
1:A:849:ARG:NH2	1:B:435:ASP:OD1	2.50	0.41
1:B:468:LEU:HD12	1:B:468:LEU:HA	1.84	0.41
1:B:715:SER:CB	1:B:828:THR:HB	2.50	0.41
1:C:37:ASP:OD1	1:C:78:ARG:NH2	2.53	0.41
1:D:103:ILE:HD11	1:D:149:MET:HE3	2.01	0.41
1:D:406:VAL:HG21	1:D:481:GLU:HA	2.00	0.41
1:D:1018:LYS:HE2	1:D:1018:LYS:HB2	1.86	0.41
1:B:806:GLN:HG3	1:B:807:GLU:HG2	2.01	0.41
1:C:103:ILE:HD11	1:C:145:PHE:HD1	1.86	0.41
1:C:316:LEU:N	1:C:316:LEU:HD22	2.36	0.41
1:C:656:VAL:HB	1:C:657:PRO:HD3	2.02	0.41
1:C:822:ARG:HA	1:C:851:PHE:CZ	2.55	0.41
1:C:998:ILE:N	1:C:999:PRO:CD	2.84	0.41
1:D:716:PHE:HB2	1:D:793:ALA:CB	2.50	0.41
1:D:950:ASP:HB3	1:D:953:ILE:HB	2.01	0.41
1:A:72:TYR:OH	1:A:78:ARG:NH1	2.54	0.41
1:A:134:PHE:CE2	1:A:149:MET:HE1	2.55	0.41
1:A:316:LEU:HD12	1:A:352:PHE:CE2	2.54	0.41
1:A:717:ILE:HD13	1:A:797:ARG:NE	2.36	0.41
1:B:591:VAL:O	1:B:591:VAL:HG13	2.20	0.41
1:C:666:ALA:HB1	1:C:674:ILE:HD11	2.02	0.41
1:C:950:ASP:OD1	1:C:952:PHE:N	2.50	0.41
1:D:133:LEU:HG	1:D:155:LEU:HB3	2.02	0.41
1:D:601:GLU:HB3	1:D:620:ALA:HB1	2.03	0.41
1:A:193:LEU:HG	1:A:195:CYS:SG	2.60	0.41
1:B:826:GLN:CD	1:B:845:PHE:HB2	2.41	0.41
1:C:4:TRP:CH2	1:C:369:VAL:HG11	2.56	0.41
1:D:3:THR:O	1:D:70:ASP:HB2	2.21	0.41
1:A:646:TYR:HB3	1:A:956:VAL:HG11	2.03	0.41
1:D:55:THR:OG1	1:D:59:SER:OG	2.26	0.41
1:D:1090:TRP:CZ3	1:D:1096:PRO:HD3	2.56	0.41
1:B:151:ILE:HD12	1:B:156:ILE:HD11	2.02	0.41
1:C:361:SER:O	1:C:364:SER:OG	2.38	0.41
1:C:1016:ILE:HB	1:C:1020:TYR:CD2	2.56	0.41
1:A:771:ILE:H	1:A:771:ILE:CD1	2.24	0.41
1:B:601:GLU:HB3	1:B:620:ALA:HB1	2.03	0.41
1:B:716:PHE:CZ	1:B:724:THR:HG21	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:656:VAL:HB	1:A:657:PRO:HD3	2.03	0.41
1:A:658:TYR:HD1	1:A:863:PHE:CD2	2.39	0.41
1:A:1038:PRO:O	1:A:1041:GLN:HG2	2.21	0.41
1:B:1091:LEU:HB3	3:B:1203:KOF:C4	2.51	0.41
1:C:608:MET:HG3	1:C:616:ALA:HB2	2.02	0.41
1:C:652:GLY:HA3	1:C:917:PHE:CG	2.56	0.41
1:C:706:GLY:HA3	1:C:711:TRP:CE2	2.56	0.41
1:D:468:LEU:HD12	1:D:468:LEU:HA	1.91	0.41
1:D:499:LEU:C	1:D:499:LEU:HD23	2.41	0.41
1:D:527:ASP:OD2	1:D:534:ARG:NE	2.53	0.41
1:D:794:ALA:HA	1:D:797:ARG:CZ	2.51	0.41
1:C:393:ARG:HG3	1:C:490:GLU:CG	2.51	0.41
1:D:530:ASP:OD1	1:D:532:ARG:CG	2.66	0.41
1:D:534:ARG:O	1:D:534:ARG:HG2	2.21	0.41
1:D:819:PHE:CE1	1:D:848:VAL:HG21	2.56	0.41
1:A:950:ASP:OD1	1:A:952:PHE:N	2.52	0.40
1:B:77:PHE:HB3	1:B:128:TYR:CZ	2.56	0.40
1:B:717:ILE:HD13	1:B:835:ASP:HB2	2.02	0.40
1:B:1042:TYR:CZ	1:B:1095:VAL:HG13	2.56	0.40
1:D:1060:PHE:CB	1:D:1072:ARG:HD3	2.51	0.40
1:D:1060:PHE:HB2	1:D:1072:ARG:HD3	2.03	0.40
1:B:415:ILE:HB	1:B:417:PHE:CE1	2.56	0.40
1:B:515:MET:HG3	1:B:517:LEU:H	1.86	0.40
1:B:614:TYR:N	1:B:615:PRO:HD2	2.37	0.40
1:C:850:SER:N	1:C:862:ASN:OD1	2.54	0.40
1:A:357:LYS:C	1:A:359:ASN:H	2.24	0.40
1:C:395:SER:O	1:C:621:THR:HG21	2.22	0.40
1:C:829:PHE:CE2	1:C:833:LEU:HD11	2.57	0.40
1:A:315:ASP:OD2	1:A:347:TYR:OH	2.23	0.40
1:D:406:VAL:CG2	1:D:481:GLU:HA	2.52	0.40
1:D:656:VAL:HA	1:D:687:ILE:HG21	2.04	0.40
1:A:167:TYR:CG	1:A:266:GLU:HA	2.56	0.40
1:A:403:PHE:CB	1:A:426:ILE:HD13	2.52	0.40
1:A:974:ALA:HA	1:A:995:THR:OG1	2.22	0.40
1:A:998:ILE:N	1:A:999:PRO:CD	2.84	0.40
1:B:677:ILE:HD12	1:B:711:TRP:HH2	1.87	0.40
1:C:160:LYS:HZ2	1:C:165:ALA:HB1	1.85	0.40
1:C:297:VAL:HG23	1:C:297:VAL:O	2.22	0.40
1:C:407:ARG:HD2	1:C:422:THR:O	2.21	0.40
1:C:561:LEU:HD13	1:C:563:TYR:HA	2.03	0.40
1:D:71:VAL:HG22	1:D:90:LYS:HB2	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:75:GLU:HA	1:D:94:THR:O	2.21	0.40
1:D:576:HIS:O	1:D:581:VAL:HG23	2.22	0.40
1:D:1032:LYS:HB3	1:D:1032:LYS:HE2	1.87	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1107/1173 (94%)	1049 (95%)	55 (5%)	3 (0%)	41	75
1	B	950/1173 (81%)	908 (96%)	41 (4%)	1 (0%)	51	83
1	C	1108/1173 (94%)	1051 (95%)	54 (5%)	3 (0%)	41	75
1	D	961/1173 (82%)	918 (96%)	39 (4%)	4 (0%)	34	71
All	All	4126/4692 (88%)	3926 (95%)	189 (5%)	11 (0%)	41	75

All (11) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	200	ILE
1	D	762	ARG
1	C	766	HIS
1	A	648	TYR
1	B	648	TYR
1	C	648	TYR
1	D	648	TYR
1	D	95	TRP
1	D	196	PRO
1	A	95	TRP
1	C	212	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	888/1063 (84%)	881 (99%)	7 (1%)	81 91
1	B	664/1063 (62%)	660 (99%)	4 (1%)	86 94
1	C	792/1063 (74%)	788 (100%)	4 (0%)	88 95
1	D	673/1063 (63%)	668 (99%)	5 (1%)	84 93
All	All	3017/4252 (71%)	2997 (99%)	20 (1%)	84 93

All (20) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	344	ARG
1	A	411	LYS
1	A	429	ARG
1	A	641	PHE
1	A	726	TRP
1	A	730	ASN
1	A	882	TYR
1	B	344	ARG
1	B	372	CYS
1	B	465	LYS
1	B	942	GLN
1	C	411	LYS
1	C	429	ARG
1	C	641	PHE
1	C	882	TYR
1	D	429	ARG
1	D	602	ASN
1	D	641	PHE
1	D	882	TYR
1	D	887	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (19) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	130	ASN
1	A	774	ASN
1	A	944	GLN
1	A	1037	ASN
1	B	96	HIS
1	B	164	ASN
1	B	555	GLN
1	B	686	GLN
1	B	730	ASN
1	B	862	ASN
1	C	190	GLN
1	C	944	GLN
1	D	144	HIS
1	D	170	ASN
1	D	862	ASN
1	D	927	GLN
1	D	944	GLN
1	D	1081	ASN
1	D	1108	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

Of 16 ligands modelled in this entry, 4 are monoatomic - leaving 12 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	$\#\|Z\| > 2$
3	KOF	D	1204	3	0,3,23	-	-	0,3,33	-	-
3	KOF	B	1204	3	0,3,23	-	-	0,3,33	-	-
3	KOF	A	1203	3	19,22,23	0.23	0	25,30,33	0.78	0
3	KOF	A	1204	3	0,3,23	-	-	0,3,33	-	-
3	KOF	D	1202	3	23,23,23	0.28	0	33,33,33	1.02	3 (9%)
3	KOF	B	1203	3	19,22,23	0.22	0	25,30,33	0.57	0
3	KOF	C	1203	3	19,22,23	0.22	0	25,30,33	0.70	1 (4%)
3	KOF	C	1202	3	23,23,23	0.26	0	33,33,33	0.71	1 (3%)
3	KOF	D	1203	3	19,22,23	0.21	0	25,30,33	0.75	0
3	KOF	B	1202	3	23,23,23	0.25	0	33,33,33	0.85	2 (6%)
3	KOF	C	1204	3	0,3,23	-	-	0,3,33	-	-
3	KOF	A	1202	3	23,23,23	0.25	0	33,33,33	0.79	2 (6%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	KOF	A	1203	3	-	7/18/36/37	0/1/1/1
3	KOF	D	1202	3	-	7/21/37/37	0/1/1/1
3	KOF	B	1203	3	-	6/18/36/37	0/1/1/1
3	KOF	C	1203	3	-	7/18/36/37	0/1/1/1
3	KOF	C	1202	3	-	7/21/37/37	0/1/1/1
3	KOF	D	1203	3	-	6/18/36/37	0/1/1/1
3	KOF	B	1202	3	-	4/21/37/37	0/1/1/1
3	KOF	A	1202	3	-	5/21/37/37	0/1/1/1

There are no bond length outliers.

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	D	1202	KOF	C2-C1-C	-2.95	98.56	102.30
3	D	1202	KOF	P1-O11-C9	2.85	126.16	118.30
3	C	1203	KOF	O7-C5-C6	2.46	115.00	109.27
3	B	1202	KOF	C2-C1-C	-2.41	99.24	102.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	1202	KOF	C2-C1-C	-2.36	99.31	102.30
3	A	1202	KOF	P1-O11-C9	2.30	124.64	118.30
3	A	1202	KOF	C2-C1-C	-2.19	99.53	102.30
3	B	1202	KOF	P1-O11-C9	2.16	124.24	118.30
3	D	1202	KOF	O5-C2-C1	-2.14	102.22	104.98

There are no chirality outliers.

All (49) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1202	KOF	C1-C2-O7-C5
3	A	1202	KOF	O5-C2-O7-C5
3	A	1203	KOF	C7-C8-C9-O11
3	A	1203	KOF	O10-C8-C9-O11
3	A	1203	KOF	C1-C2-O7-C5
3	A	1203	KOF	O5-C2-O7-C5
3	B	1202	KOF	C1-C2-O7-C5
3	B	1202	KOF	O5-C2-O7-C5
3	B	1203	KOF	C7-C8-C9-O11
3	B	1203	KOF	O10-C8-C9-O11
3	B	1203	KOF	C1-C2-O7-C5
3	B	1203	KOF	O5-C2-O7-C5
3	C	1202	KOF	C1-C2-O7-C5
3	C	1202	KOF	O5-C2-O7-C5
3	C	1202	KOF	C9-O11-P1-O13
3	C	1202	KOF	C9-O11-P1-O14
3	C	1203	KOF	C7-C8-C9-O11
3	C	1203	KOF	O10-C8-C9-O11
3	C	1203	KOF	C1-C2-O7-C5
3	C	1203	KOF	O5-C2-O7-C5
3	D	1202	KOF	C8-C9-O11-P1
3	D	1202	KOF	C1-C2-O7-C5
3	D	1202	KOF	O5-C2-O7-C5
3	D	1202	KOF	C9-O11-P1-O12
3	D	1202	KOF	C9-O11-P1-O13
3	D	1202	KOF	C9-O11-P1-O14
3	D	1203	KOF	C1-C2-O7-C5
3	D	1203	KOF	O5-C2-O7-C5
3	A	1202	KOF	C8-C9-O11-P1
3	B	1202	KOF	C8-C9-O11-P1
3	C	1202	KOF	C8-C9-O11-P1
3	C	1203	KOF	O5-C3-C4-O6

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Mol	Chain	Res	Type	Atoms
3	B	1203	KOF	O5-C3-C4-O6
3	A	1203	KOF	O5-C3-C4-O6
3	B	1203	KOF	C6-C5-O7-C2
3	C	1202	KOF	C6-C5-O7-C2
3	D	1202	KOF	C6-C5-O7-C2
3	D	1203	KOF	C5-C6-C7-O9
3	A	1202	KOF	C6-C5-O7-C2
3	A	1203	KOF	C6-C5-O7-C2
3	B	1202	KOF	C6-C5-O7-C2
3	C	1203	KOF	C6-C5-O7-C2
3	C	1202	KOF	C9-O11-P1-O12
3	D	1203	KOF	C5-C6-C7-C8
3	D	1203	KOF	O8-C6-C7-O9
3	A	1203	KOF	O9-C7-C8-C9
3	D	1203	KOF	O8-C6-C7-C8
3	C	1203	KOF	O9-C7-C8-C9
3	A	1202	KOF	C7-C8-C9-O11

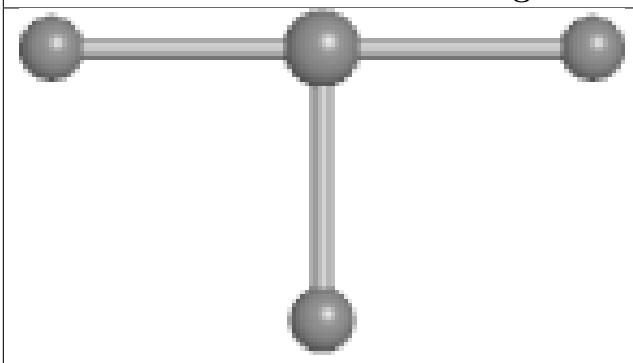
There are no ring outliers.

4 monomers are involved in 4 short contacts:

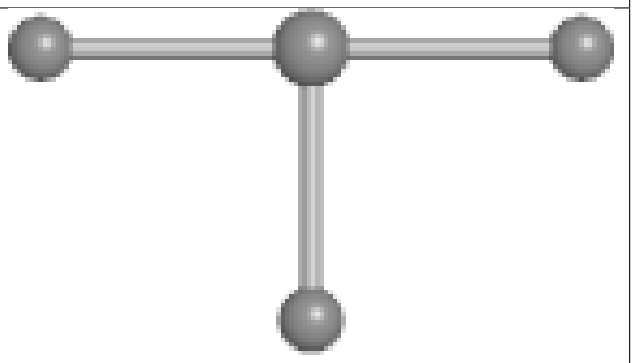
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	1203	KOF	1	0
3	D	1202	KOF	1	0
3	B	1203	KOF	1	0
3	D	1203	KOF	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

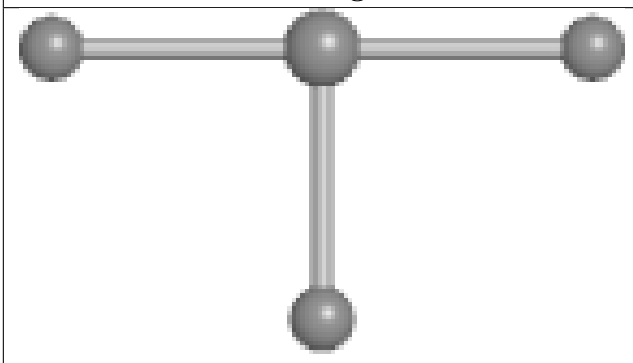
Ligand KOF D 1204



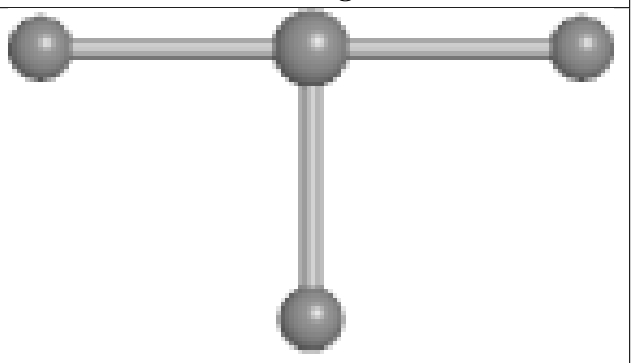
Bond lengths



Bond angles

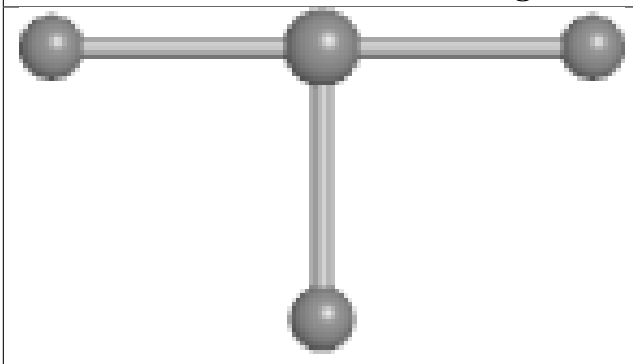


Torsions

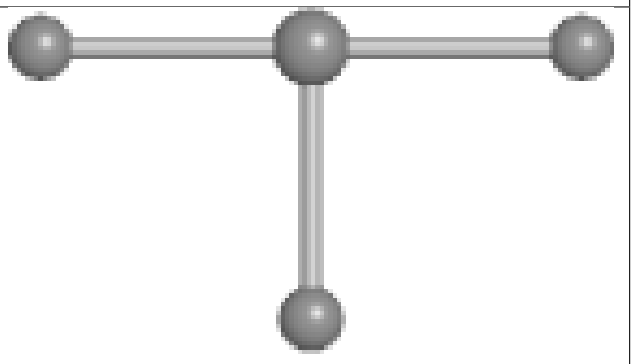


Rings

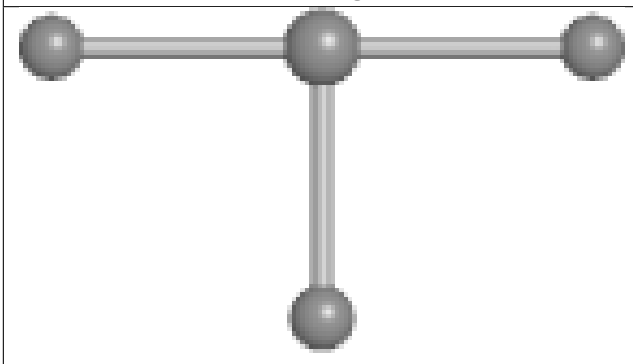
Ligand KOF B 1204



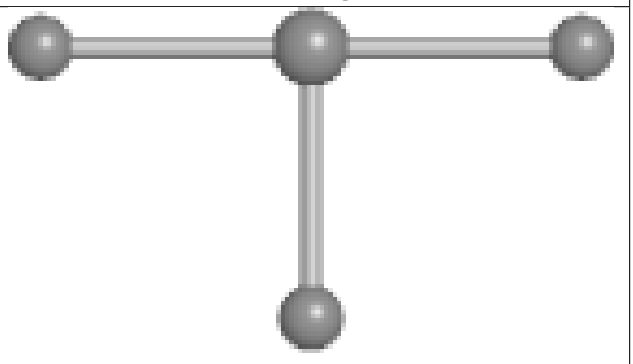
Bond lengths



Bond angles

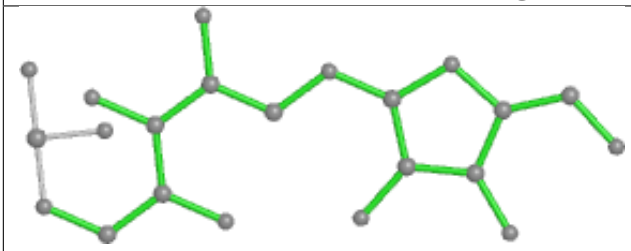


Torsions

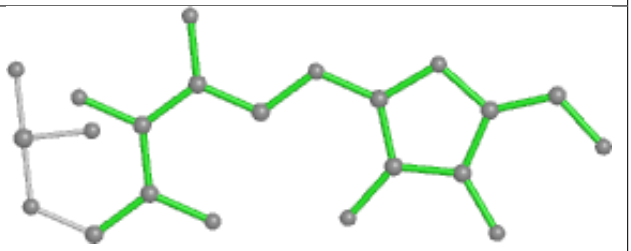


Rings

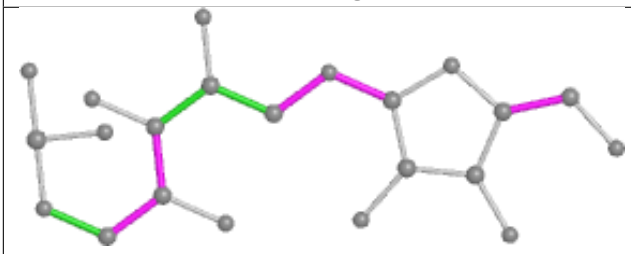
Ligand KOF A 1203



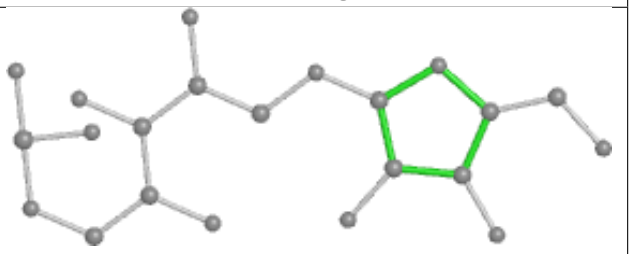
Bond lengths



Bond angles

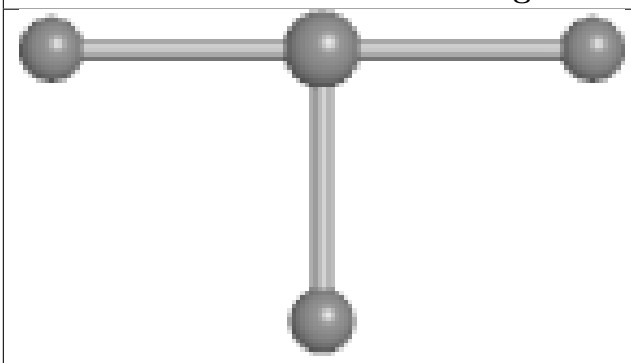


Torsions

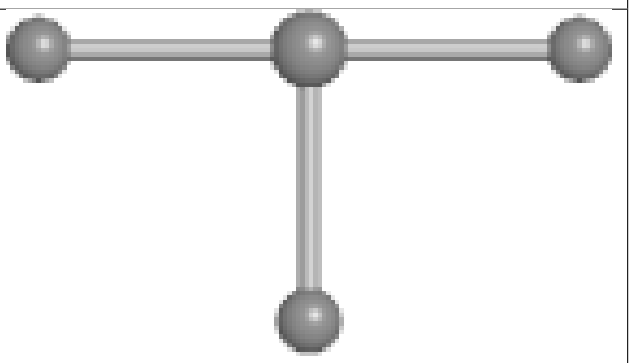


Rings

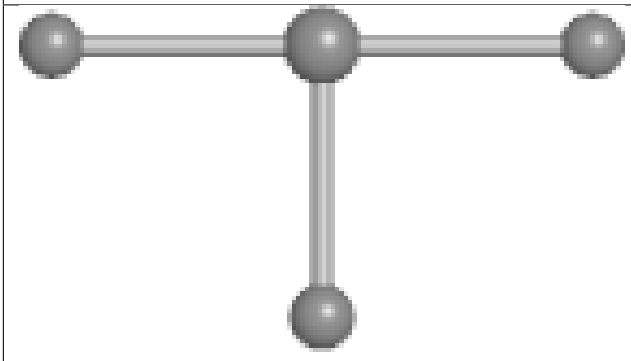
Ligand KOF A 1204



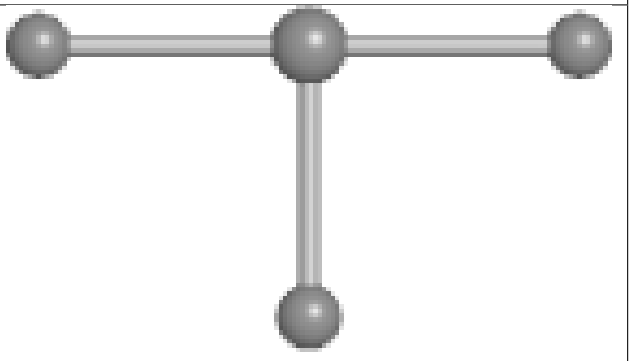
Bond lengths



Bond angles

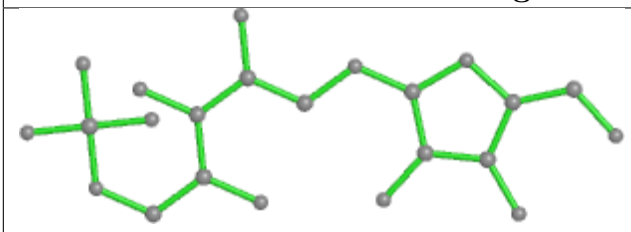


Torsions

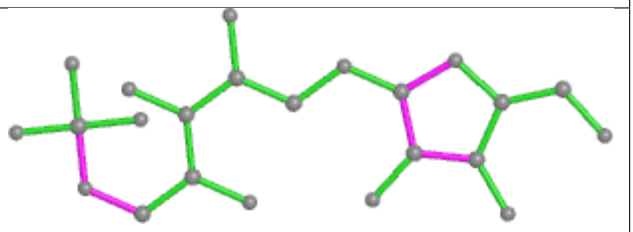


Rings

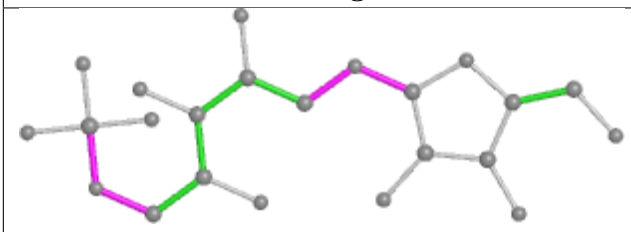
Ligand KOF D 1202



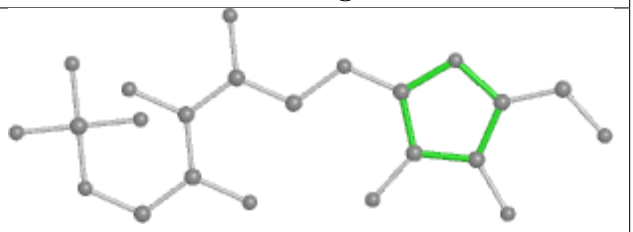
Bond lengths



Bond angles

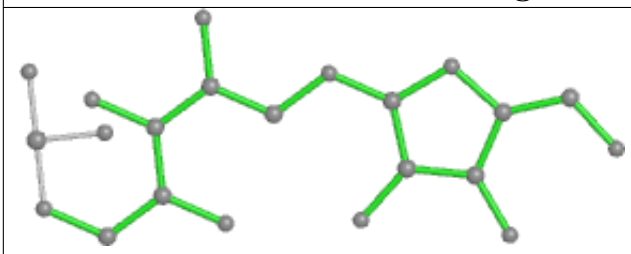


Torsions

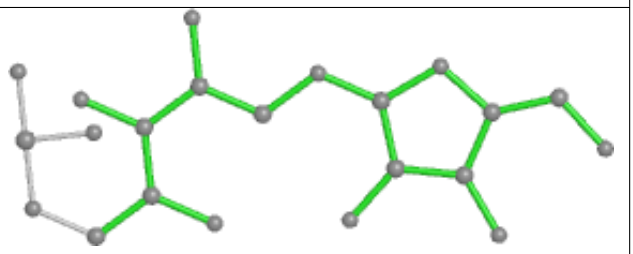


Rings

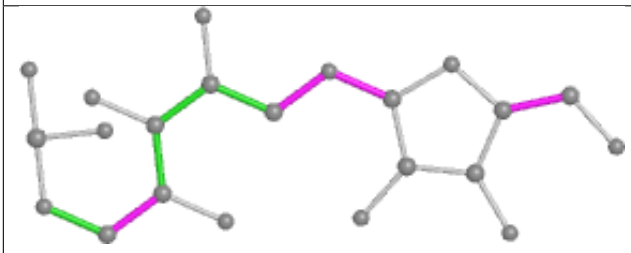
Ligand KOF B 1203



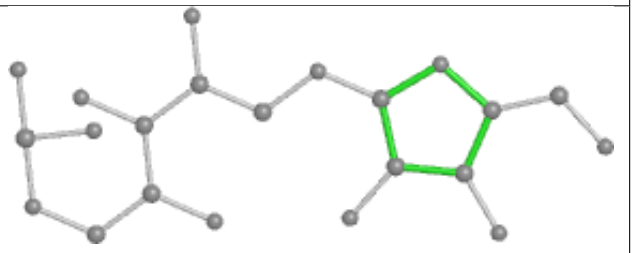
Bond lengths



Bond angles

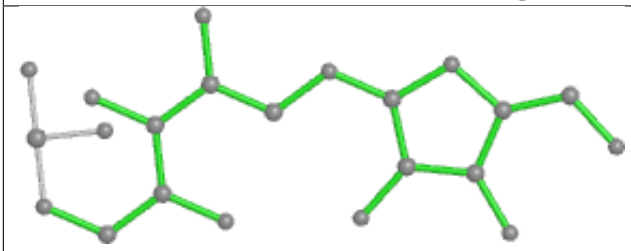


Torsions



Rings

Ligand KOF C 1203



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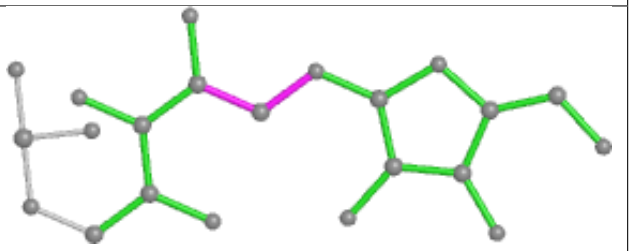
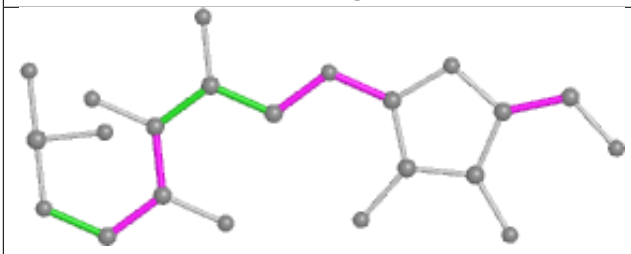
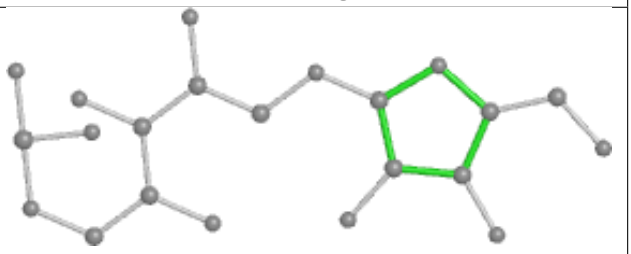


Bond angles

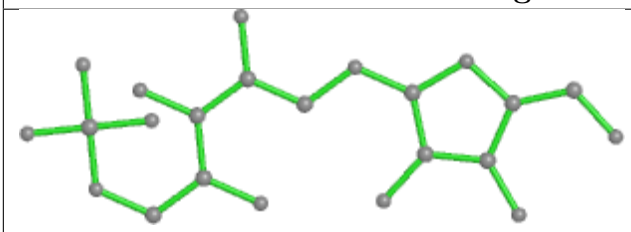


Torsions

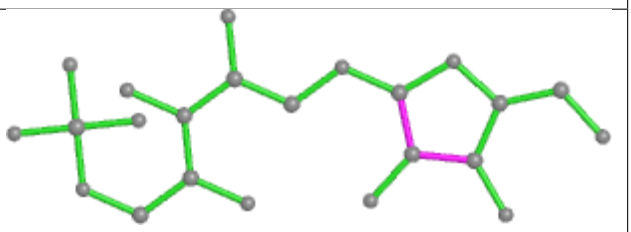


Rings

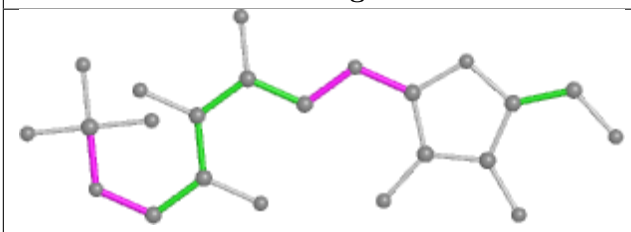
Ligand KOF C 1202



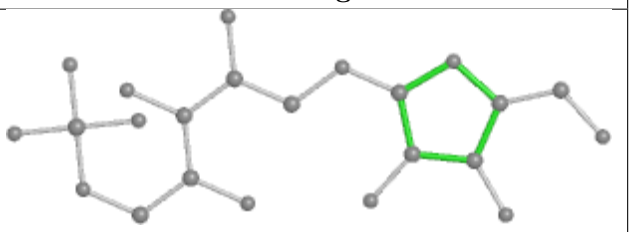
Bond lengths



Bond angles

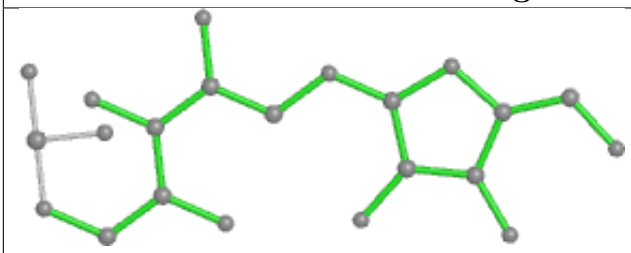


Torsions

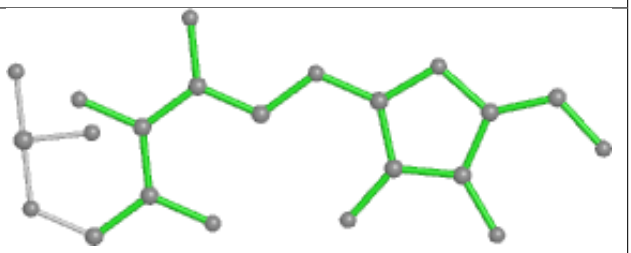


Rings

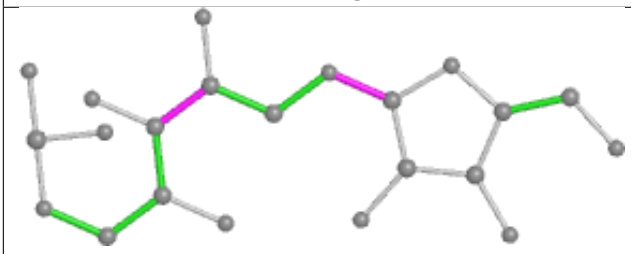
Ligand KOF D 1203



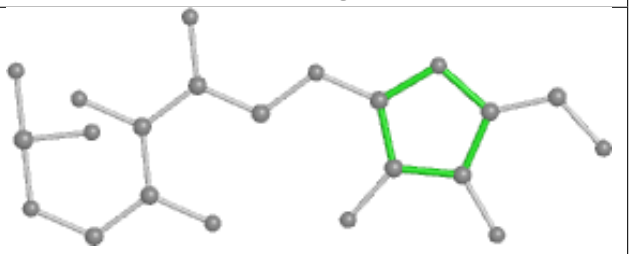
Bond lengths



Bond angles

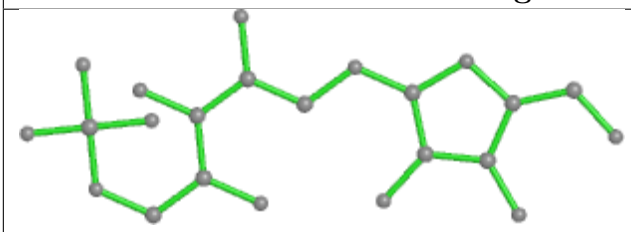


Torsions

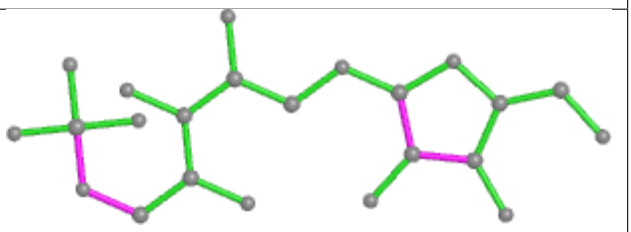


Rings

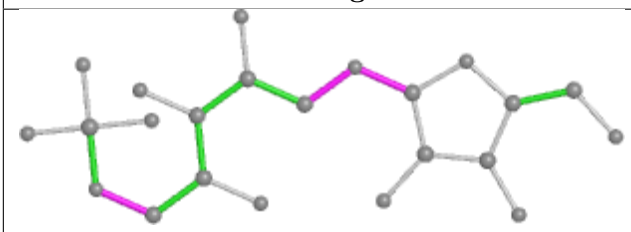
Ligand KOF B 1202



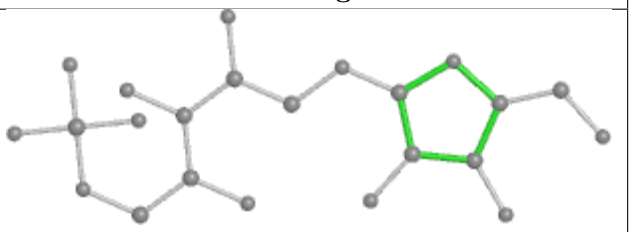
Bond lengths



Bond angles

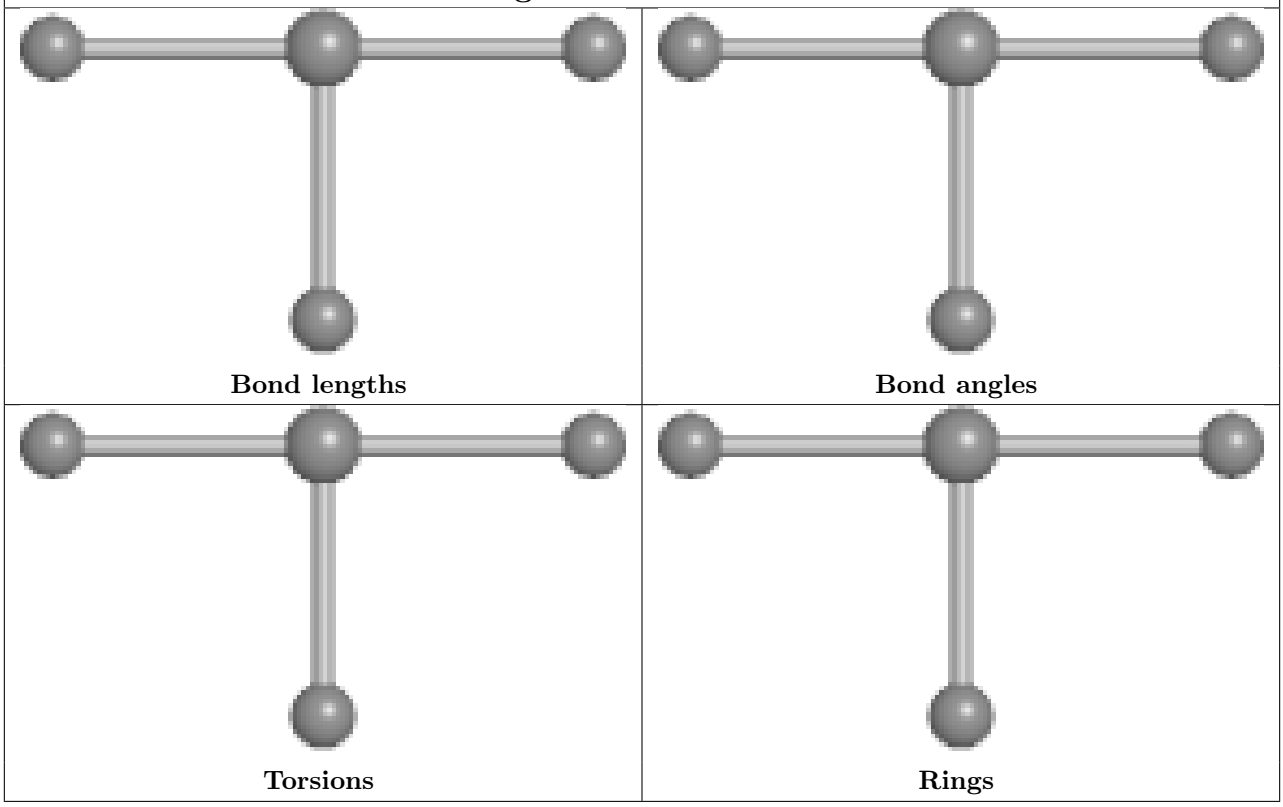


Torsions

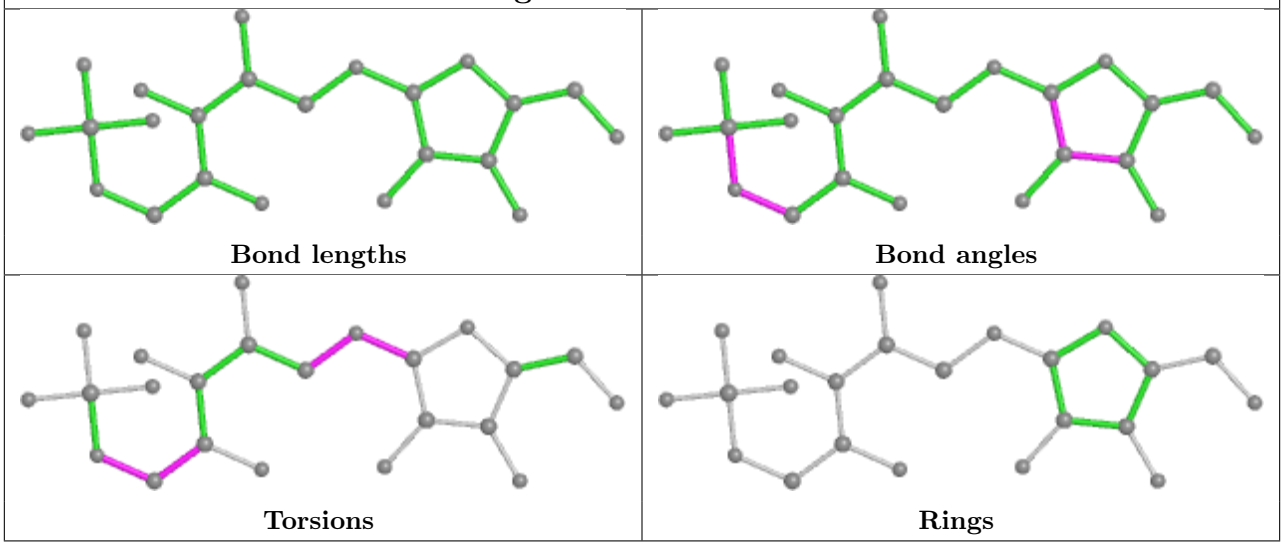


Rings

Ligand KOF C 1204



Ligand KOF A 1202



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	1111/1173 (94%)	0.06	39 (3%)	44	29	63, 94, 129, 165	0
1	B	964/1173 (82%)	0.05	46 (4%)	30	19	71, 105, 148, 171	0
1	C	1112/1173 (94%)	0.03	35 (3%)	49	33	58, 94, 127, 175	0
1	D	975/1173 (83%)	0.03	30 (3%)	49	33	56, 96, 148, 185	0
All	All	4162/4692 (88%)	0.04	150 (3%)	42	28	56, 97, 140, 185	0

All (150) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	99	GLY	6.7
1	D	267	ALA	4.9
1	A	962	ASP	4.5
1	A	698	ASN	4.3
1	A	1098	LEU	4.2
1	C	1097	ARG	4.0
1	D	1074	ASP	3.8
1	C	1096	PRO	3.8
1	C	595	ASP	3.7
1	A	699	VAL	3.7
1	D	872	PHE	3.6
1	C	1058	ASN	3.6
1	C	960	LEU	3.6
1	B	172	ILE	3.5
1	B	81	TYR	3.5
1	A	961	LYS	3.5
1	D	941	TYR	3.5
1	B	604	MET	3.3
1	A	79	GLU	3.3
1	C	98	VAL	3.3
1	A	816	PHE	3.2

Continued on next page...

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Mol	Chain	Res	Type	RSRZ
1	D	944	GLN	3.2
1	B	605	VAL	3.2
1	D	728	PHE	3.2
1	B	872	PHE	3.1
1	C	1104	TYR	3.1
1	B	944	GLN	3.1
1	B	568	TRP	3.1
1	C	282	PHE	3.0
1	A	1034	TYR	3.0
1	A	960	LEU	3.0
1	D	937	SER	3.0
1	B	588	GLN	2.9
1	A	829	PHE	2.9
1	B	821	GLY	2.9
1	D	7	GLY	2.9
1	A	685	LYS	2.9
1	D	359	ASN	2.9
1	A	675	TYR	2.9
1	C	293	PHE	2.9
1	B	382	LEU	2.8
1	A	1105	ILE	2.8
1	B	873	PHE	2.8
1	A	641	PHE	2.8
1	C	1091	LEU	2.8
1	A	1104	TYR	2.8
1	B	941	TYR	2.7
1	D	729	GLY	2.7
1	B	728	PHE	2.7
1	D	492	ILE	2.7
1	A	785	TYR	2.7
1	B	684	LEU	2.7
1	B	1102	HIS	2.6
1	D	263	ASP	2.6
1	C	94	THR	2.6
1	A	653	ALA	2.6
1	B	705	TYR	2.6
1	C	1098	LEU	2.6
1	D	100	LEU	2.6
1	B	406	VAL	2.6
1	B	571	TYR	2.6
1	B	590	ALA	2.6
1	D	940	ASN	2.6

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Mol	Chain	Res	Type	RSRZ
1	C	1088	VAL	2.6
1	C	659	ILE	2.6
1	D	8	SER	2.5
1	B	383	HIS	2.5
1	A	957	PHE	2.5
1	B	589	THR	2.5
1	A	132	VAL	2.5
1	B	374	LEU	2.5
1	D	190	GLN	2.5
1	B	863	PHE	2.5
1	C	944	GLN	2.5
1	D	1060	PHE	2.5
1	B	572	GLY	2.4
1	C	1061	TYR	2.4
1	C	370	ASP	2.4
1	D	1075	ILE	2.4
1	A	968	GLY	2.4
1	C	1077	LEU	2.4
1	D	396	THR	2.4
1	B	600	PHE	2.4
1	C	675	TYR	2.4
1	A	89	ILE	2.4
1	C	316	LEU	2.4
1	A	152	SER	2.4
1	A	572	GLY	2.4
1	A	850	SER	2.4
1	C	1095	VAL	2.4
1	B	1075	ILE	2.4
1	D	873	PHE	2.4
1	C	632	GLN	2.3
1	B	499	LEU	2.3
1	A	1090	TRP	2.3
1	A	973	TYR	2.3
1	D	99	GLY	2.3
1	D	1093	GLY	2.3
1	B	122	VAL	2.3
1	B	429	ARG	2.3
1	B	125	TYR	2.3
1	B	408	ASP	2.3
1	B	680	ASP	2.3
1	C	586	GLY	2.3
1	B	1060	PHE	2.3

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Mol	Chain	Res	Type	RSRZ
1	C	641	PHE	2.3
1	A	151	ILE	2.3
1	B	34	TRP	2.2
1	C	197	THR	2.2
1	C	1071	LYS	2.2
1	B	105	LEU	2.2
1	B	1100	THR	2.2
1	C	568	TRP	2.2
1	A	963	ASN	2.2
1	B	612	ASN	2.2
1	C	539	TYR	2.2
1	D	626	TYR	2.2
1	A	293	PHE	2.2
1	A	578	ASP	2.2
1	A	1061	TYR	2.2
1	D	37	ASP	2.2
1	A	704	ILE	2.2
1	A	150	ALA	2.2
1	D	957	PHE	2.2
1	B	877	PHE	2.2
1	D	819	PHE	2.2
1	B	683	PHE	2.2
1	A	674	ILE	2.2
1	A	911	SER	2.1
1	C	1094	GLY	2.1
1	A	655	PHE	2.1
1	C	958	SER	2.1
1	A	1058	ASN	2.1
1	B	525	MET	2.1
1	A	679	ARG	2.1
1	D	83	VAL	2.1
1	C	1066	PHE	2.1
1	D	513	SER	2.1
1	C	1111	TRP	2.1
1	B	587	ILE	2.1
1	C	572	GLY	2.1
1	C	876	ILE	2.1
1	D	822	ARG	2.1
1	A	654	SER	2.1
1	B	1094	GLY	2.1
1	B	608	MET	2.0
1	B	1062	LEU	2.0

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Mol	Chain	Res	Type	RSRZ
1	D	525	MET	2.0
1	B	937	SER	2.0
1	B	498	TYR	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, 95^{th} 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.

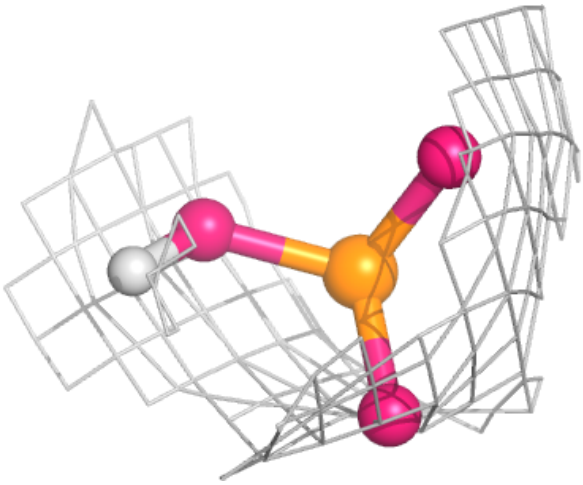
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	KOF	C	1204	4/23	0.57	0.30	133,134,149,161	5
3	KOF	C	1203	22/23	0.66	0.83	94,127,152,160	41
3	KOF	C	1202	23/23	0.68	0.53	100,135,161,180	43
3	KOF	A	1202	23/23	0.75	0.30	103,141,171,193	0
3	KOF	B	1202	23/23	0.77	0.24	117,148,183,212	0
3	KOF	D	1202	23/23	0.80	0.23	92,128,170,204	0
3	KOF	B	1204	4/23	0.81	0.13	149,159,173,198	0
3	KOF	A	1203	22/23	0.82	0.28	88,141,171,192	0
3	KOF	B	1203	22/23	0.91	0.18	105,147,177,181	0
3	KOF	D	1203	22/23	0.91	0.24	89,123,167,196	0
3	KOF	D	1204	4/23	0.91	0.11	153,160,179,194	0
3	KOF	A	1204	4/23	0.92	0.22	157,161,170,196	0
2	MG	A	1201	1/1	0.97	0.16	71,71,71,71	0
2	MG	C	1201	1/1	0.97	0.08	85,85,85,85	0
2	MG	B	1201	1/1	0.98	0.08	83,83,83,83	0
2	MG	D	1201	1/1	0.99	0.16	75,75,75,75	0

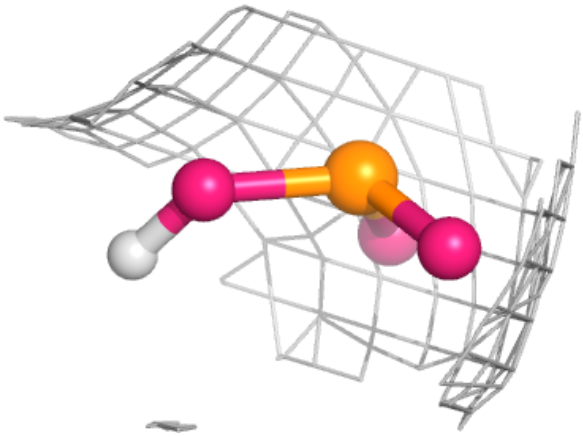
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different

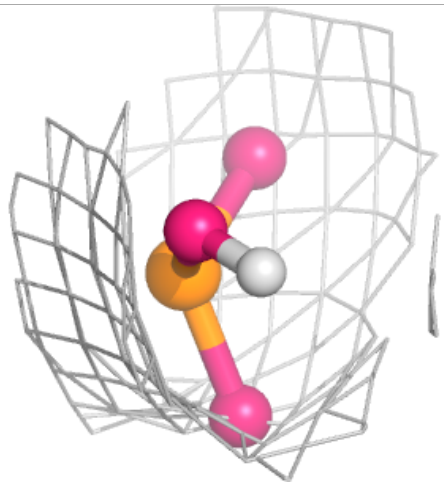
orientation to approximate a three-dimensional view.

Electron density around KOF C 1204:

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

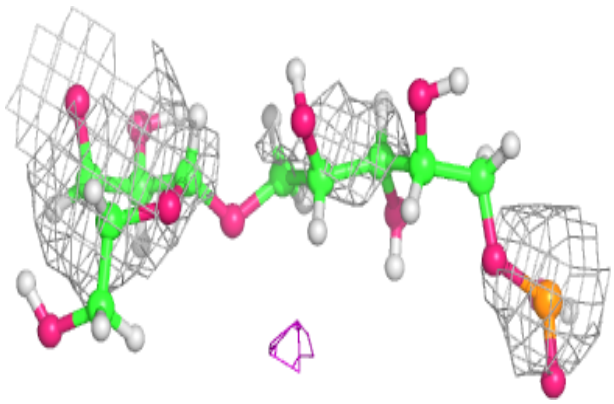


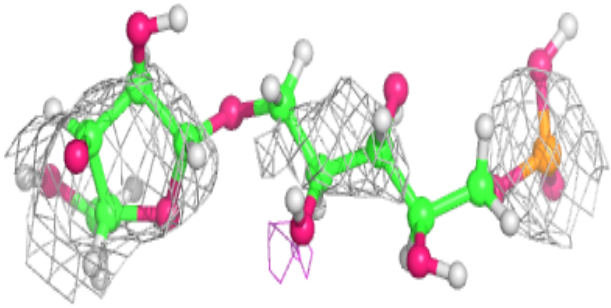


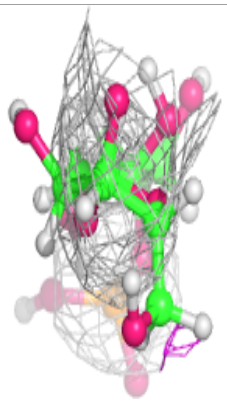


Electron density around KOF C 1203:

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

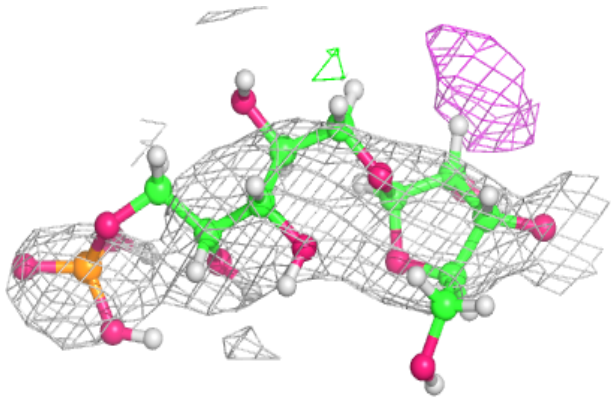


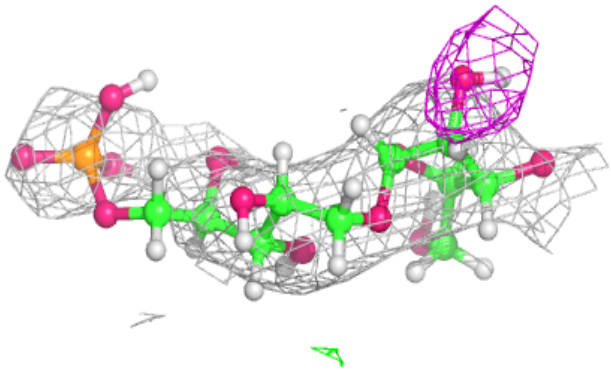


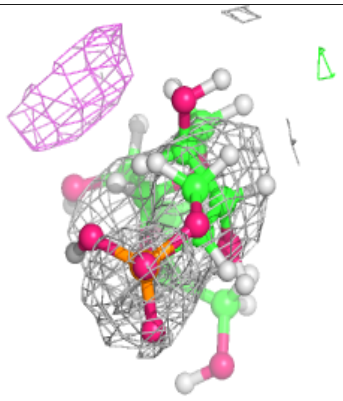


Electron density around KOF C 1202:

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

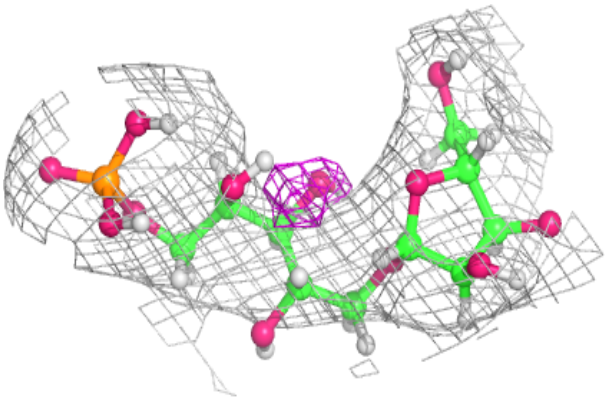


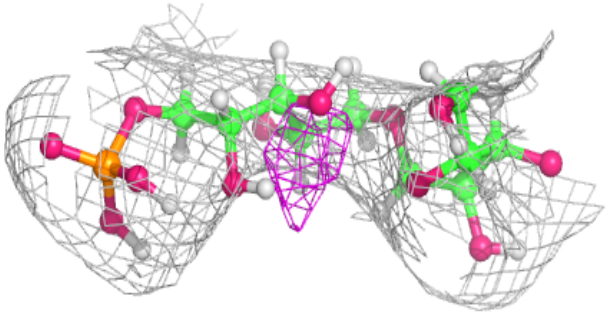


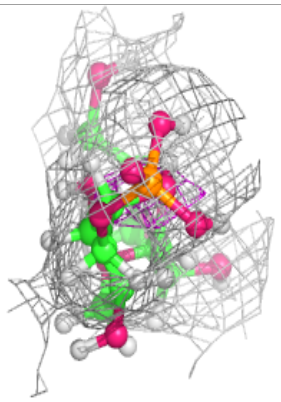


Electron density around KOF A 1202:

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

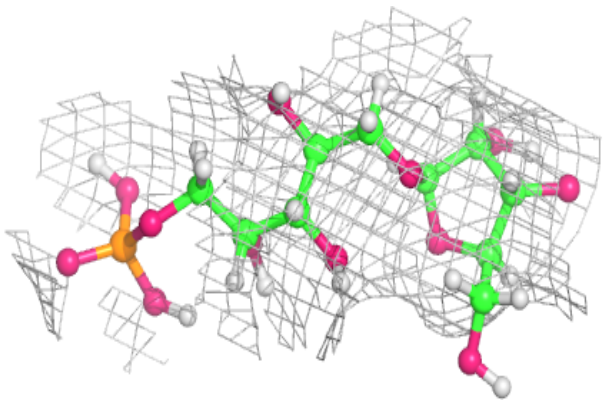


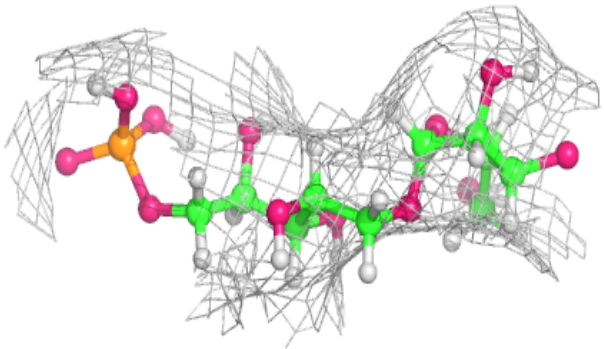


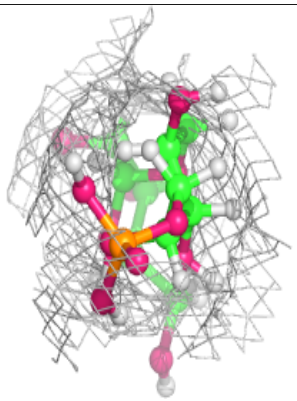


Electron density around KOF B 1202:

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

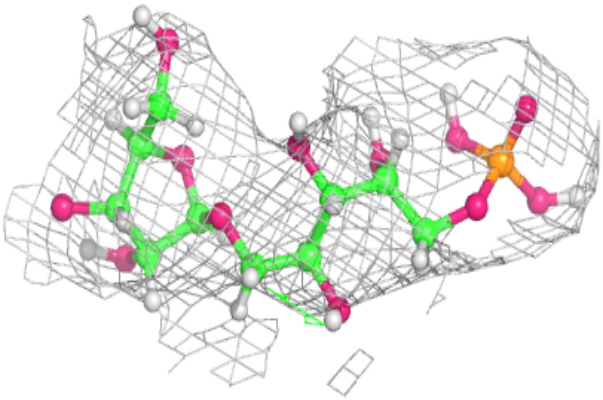


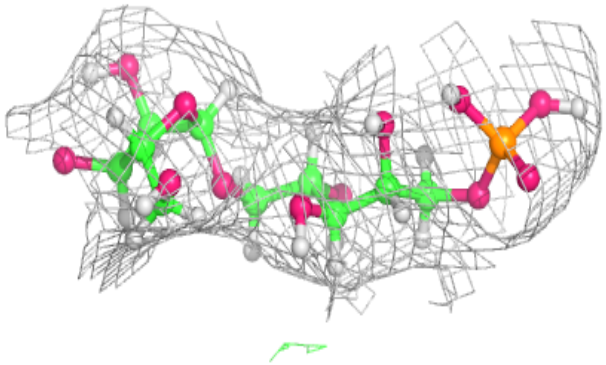


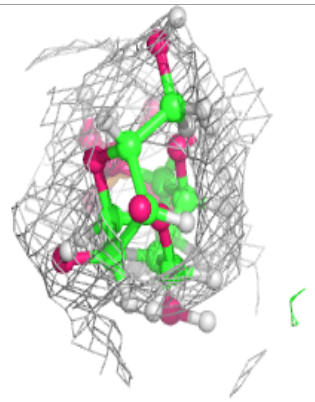


Electron density around KOF D 1202:

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

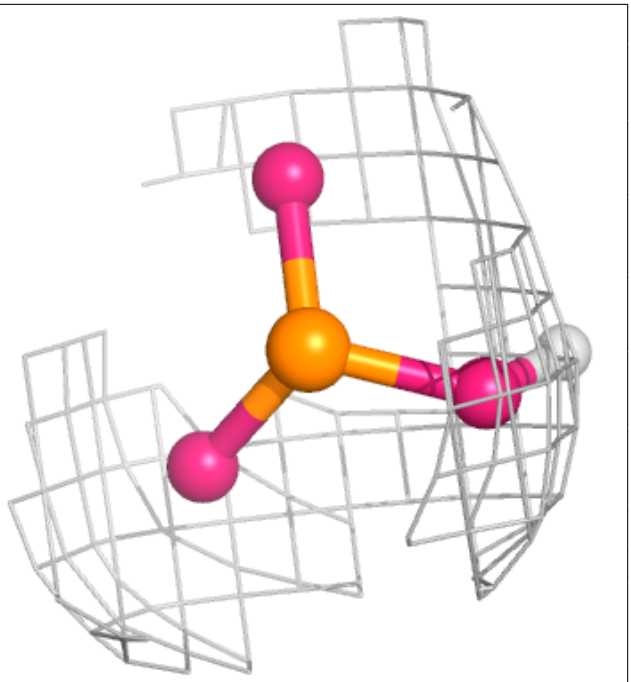


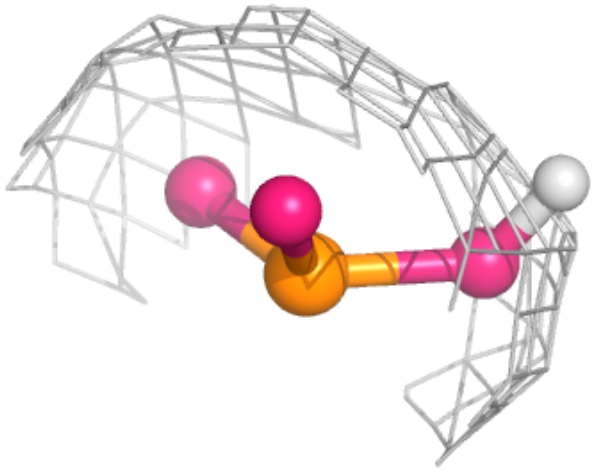


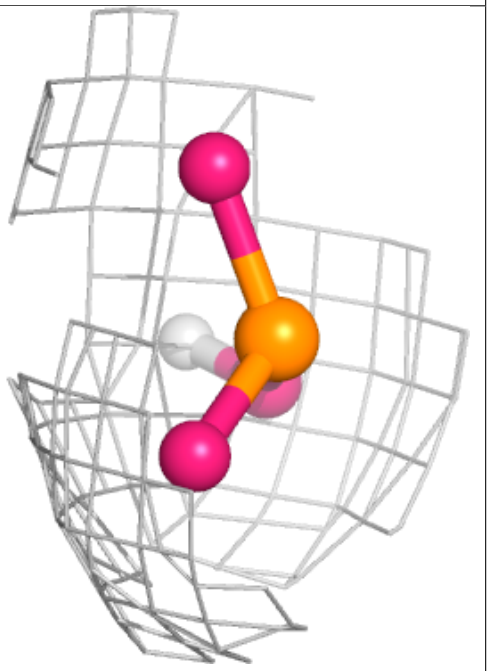


Electron density around KOF B 1204:

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

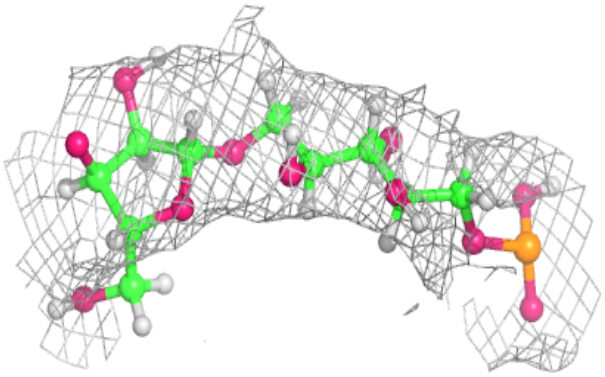


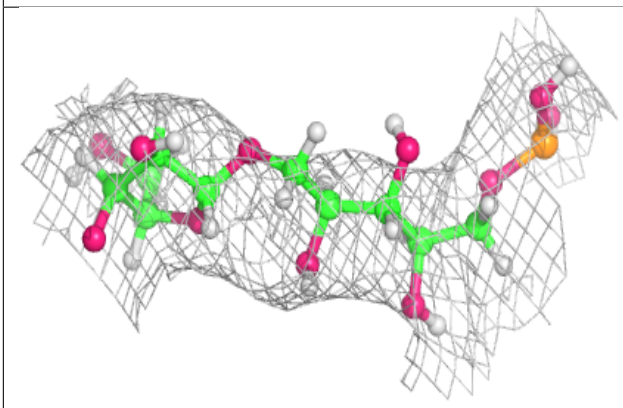


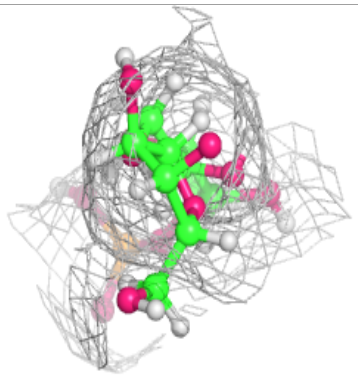


Electron density around KOF A 1203:

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

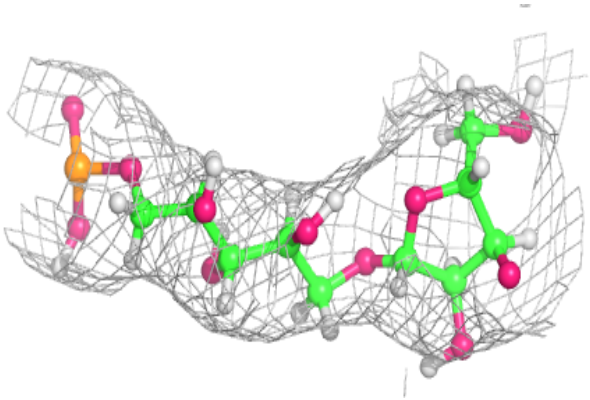


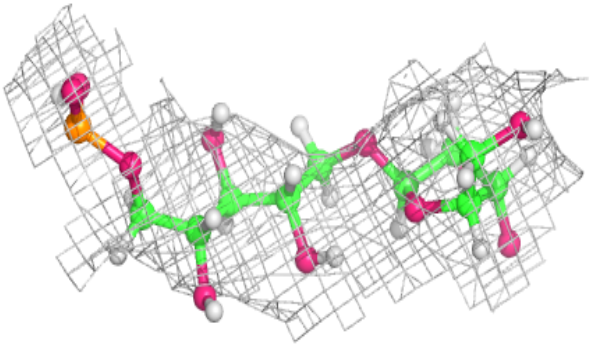


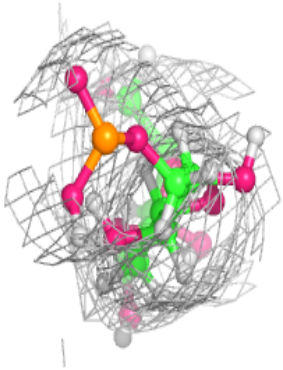


Electron density around KOF B 1203:

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

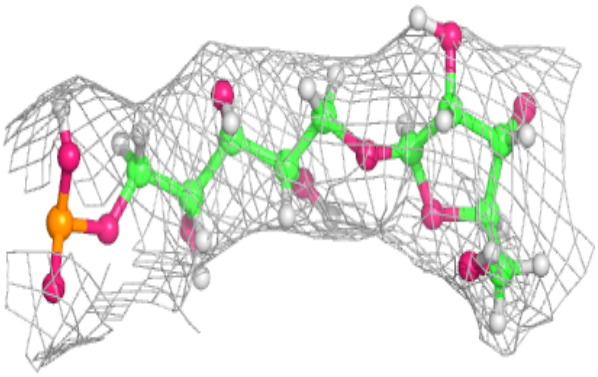


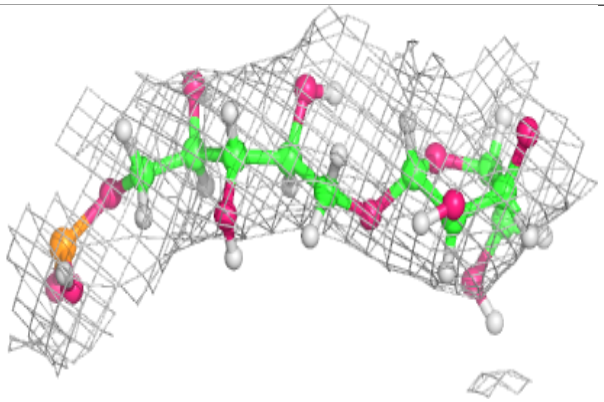




Electron density around KOF D 1203:

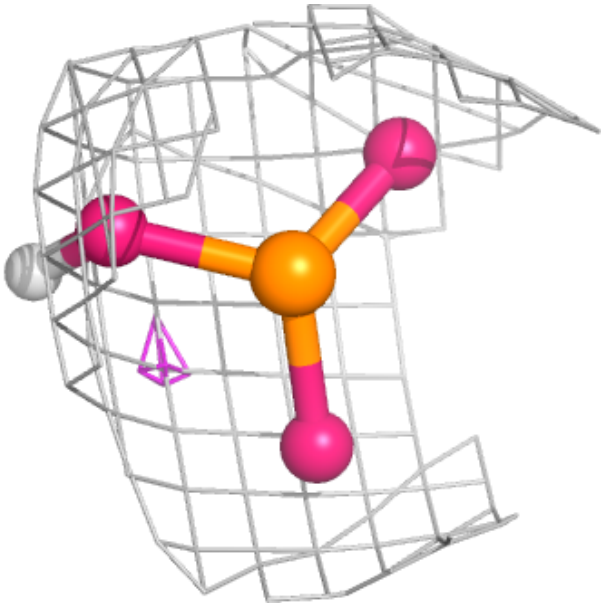
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

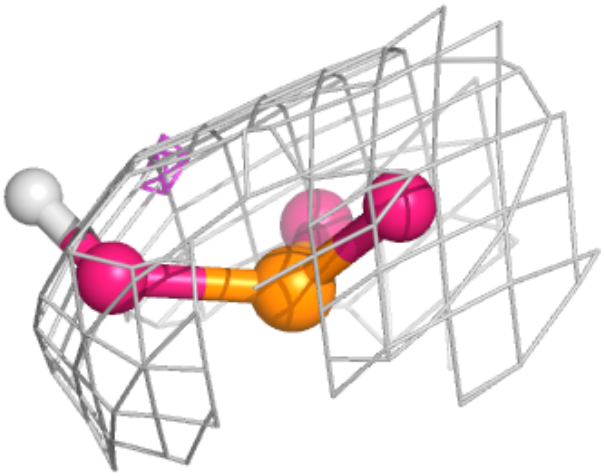


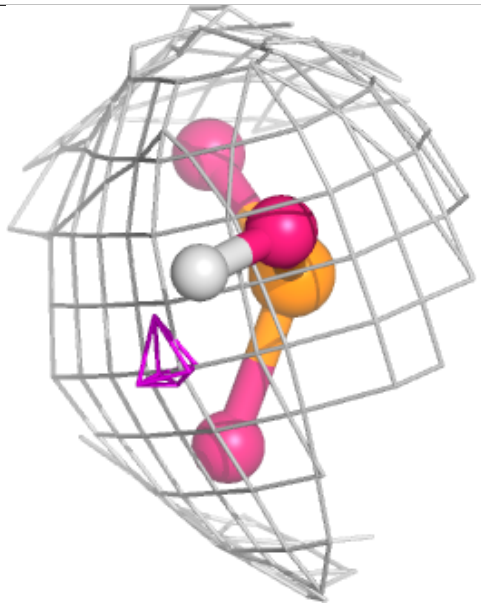


Electron density around KOF D 1204:

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

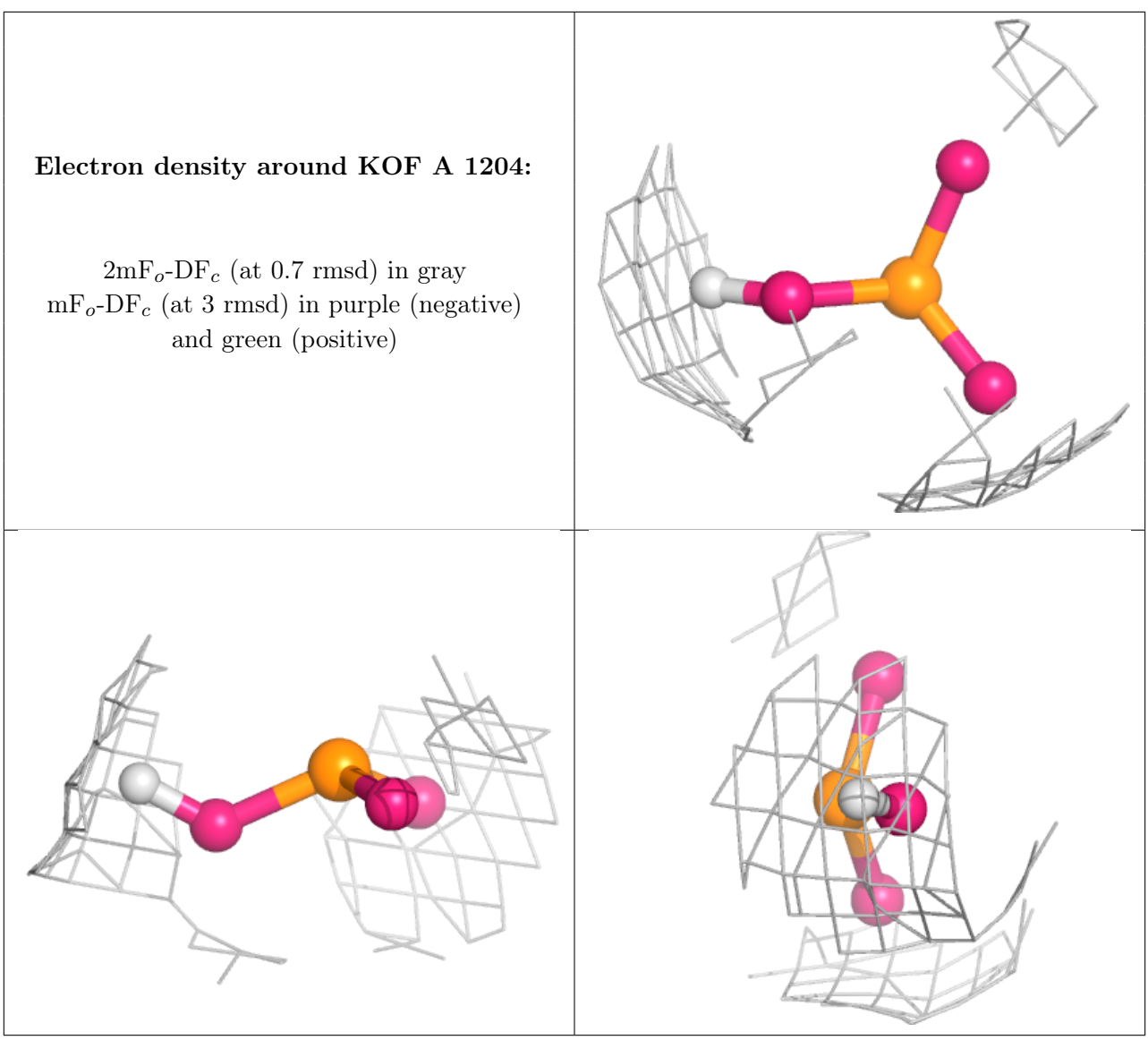






Electron density around KOF A 1204:

$2mF_o$-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.