Full wwPDB X-ray Structure Validation Report (i)

May 13, 2020 – 05:46 pm BST

PDB ID	:	2X6I
Title	:	THE CRYSTAL STRUCTURE OF THE DROSOPHILA CLASS III PI3-KINASE VPS34 IN COMPLEX WITH PIK-90
Authors	:	Miller, S.; Tavshanjian, B.; Oleksy, A.; Perisic, O.; Houseman, B.T.; Shokat, K.M.; Williams, R.L.
Deposited on	:	2010-02-17
Resolution	:	3.40 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 following versions of software and data (see references (i)) were used in the production of this report:

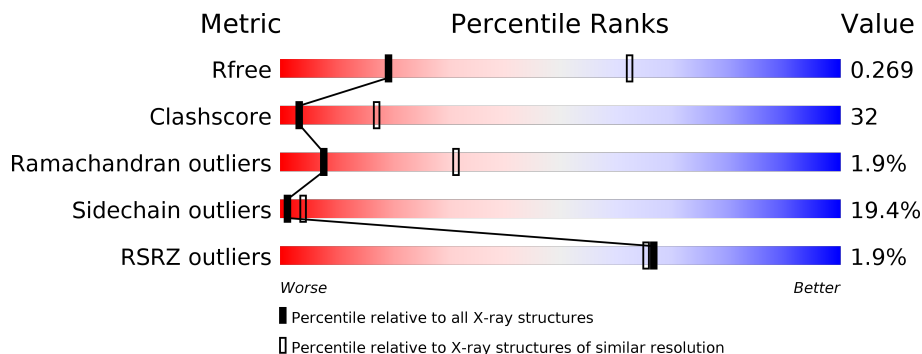|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.11
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.11

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 3.40 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	Percentile Ranks	Value
Rfree		0.269
Clashscore		32
Ramachandran outliers		1.9%
Sidechain outliers		19.4%
RSRZ outliers		1.9%

Worse   *Better*

∎ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RSRZ outliers	127900	2173 (3.50-3.30)

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 on 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	696	% 37% 30% 11% • 22%
1	B	696	2% 38% 31% 9% 22%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	090	B	1950	-	-	X	-

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 8976 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 PHOSPHOTIDYLINOSITOL 3 KINASE 59F.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	546	Total	C	N	O	S	0	0	0
			4468	2888	761	792	27			
1	B	544	Total	C	N	O	S	0	0	0
			4456	2881	760	788	27			

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	254	GLY	-	expression tag	UNP Q9W1M7
A	255	SER	-	expression tag	UNP Q9W1M7
A	256	HIS	-	expression tag	UNP Q9W1M7
A	257	MET	-	expression tag	UNP Q9W1M7
A	455	ALA	GLY	engineered mutation	UNP Q9W1M7
B	254	GLY	-	expression tag	UNP Q9W1M7
B	255	SER	-	expression tag	UNP Q9W1M7
B	256	HIS	-	expression tag	UNP Q9W1M7
B	257	MET	-	expression tag	UNP Q9W1M7
B	455	ALA	GLY	engineered mutation	UNP Q9W1M7

- Molecule 2 is N-(2,3-DIHYDRO-7,8-DIMETHOXYIMIDAZO[1,2-C] QUINAZOLIN-5-YL) NICOTINAMIDE (three-letter code: 090) (formula: $C_{18}H_{16}N_5O_3$).
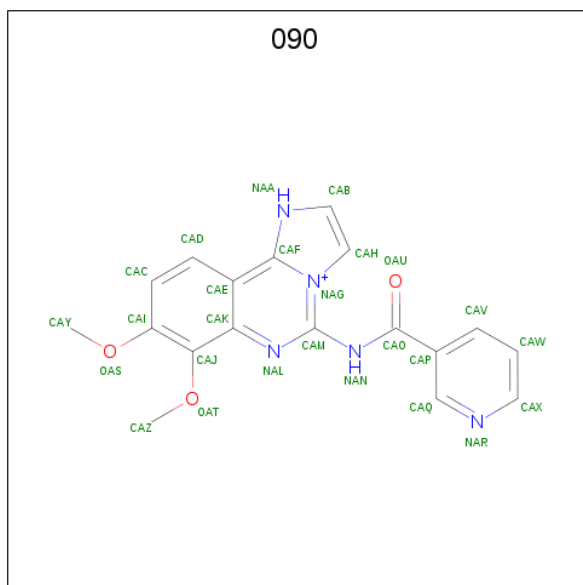
| Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			26	18	5	3		
2	B	1	Total	C	N	O	0	0
			26	18	5	3		

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA and DNA 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: PHOSPHOTIDYLINOSITOL 3 KINASE 59F
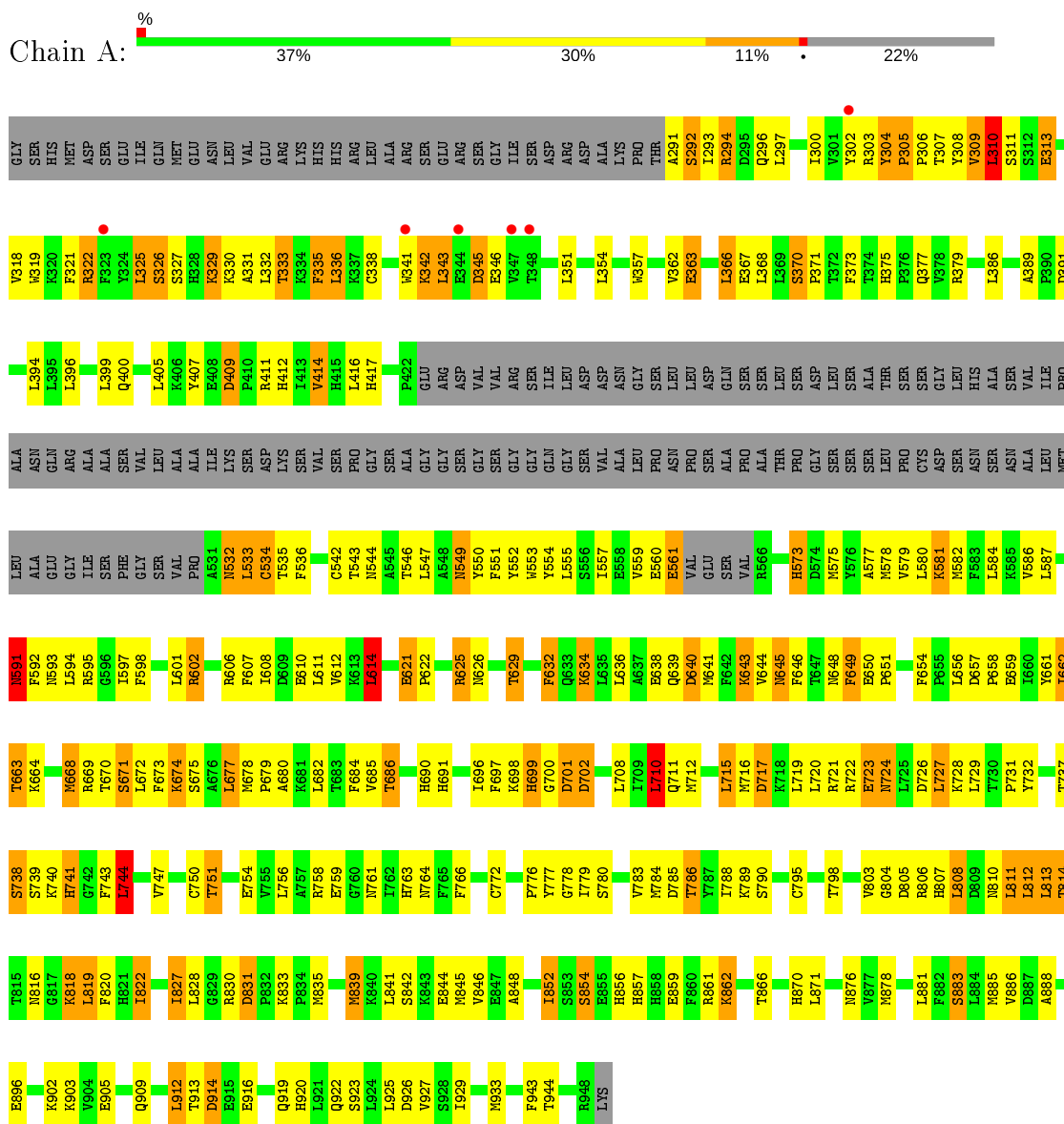
- Molecule 1: PHOSPHOTIDYLINOSITOL 3 KINASE 59F
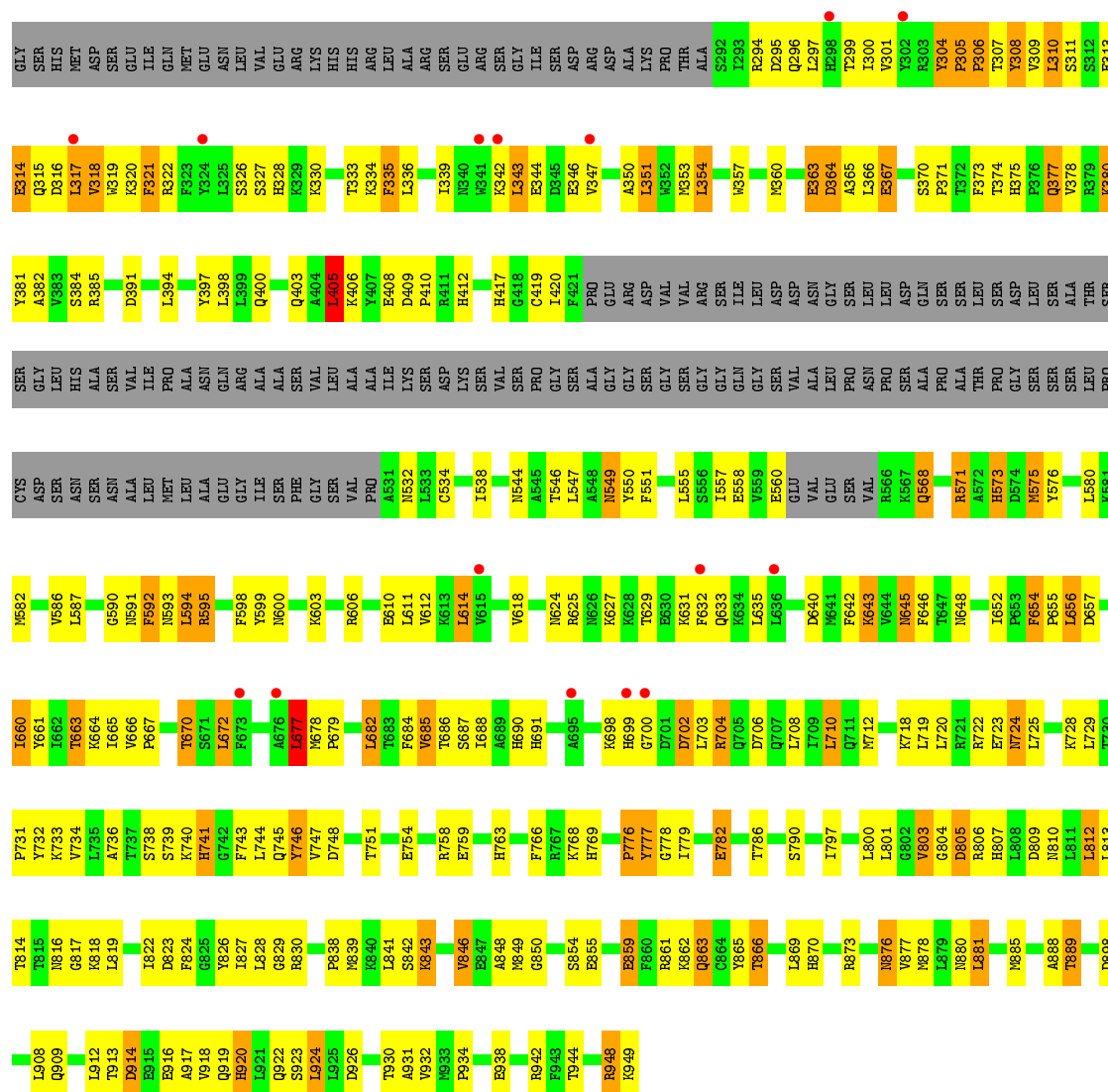
4   Data and refinement statistics (i)

Property	Value	Source
Space group	I 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	111.47Å 156.22Å 244.24Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	72.83 – 3.40 72.83 – 3.40	Depositor EDS
% Data completeness (in resolution range)	97.6 (72.83-3.40) 97.7 (72.83-3.40)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.33 (at 3.41Å)	Xtriage
Refinement program	REFMAC 5.5.0102	Depositor
R, R_{free}	0.217 , 0.279 0.211 , 0.269	Depositor DCC
R_{free} test set	1426 reflections (4.91%)	wwPDB-VP
Wilson B-factor (Å^2)	96.9	Xtriage
Anisotropy	0.106	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.31 , 61.8	EDS
L-test for twinning[2]	$< |L| > = 0.46, < L^2 > = 0.29$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	8976	wwPDB-VP
Average B, all atoms (Å^2)	68.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.75% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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.

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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: 090

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	0.79	2/4577 (0.0%)	0.91	7/6197 (0.1%)
1	B	0.62	0/4564	0.75	4/6177 (0.1%)
All	All	0.71	2/9141 (0.0%)	0.83	11/12374 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	292	SER	CB-OG	18.05	1.65	1.42
1	A	795	CYS	CB-SG	-5.53	1.72	1.81

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	710	LEU	CA-CB-CG	-7.40	98.28	115.30
1	B	710	LEU	CA-CB-CG	-7.29	98.54	115.30
1	B	677	LEU	CA-CB-CG	7.13	131.71	115.30
1	B	335	PHE	CB-CG-CD2	6.36	125.25	120.80
1	A	854	SER	N-CA-C	-5.92	95.00	111.00
1	A	325	LEU	CA-CB-CG	5.84	128.74	115.30
1	B	405	LEU	CA-CB-CG	5.48	127.90	115.30
1	A	744	LEU	CA-CB-CG	5.45	127.83	115.30
1	A	818	LYS	N-CA-C	-5.41	96.40	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	310	LEU	CA-CB-CG	5.38	127.67	115.30
1	A	614	LEU	CA-CB-CG	5.18	127.22	115.30

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	591	ASN	Mainchain
1	A	663	THR	Mainchain
1	A	680	ALA	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4468	0	4503	319	0
1	B	4456	0	4498	274	0
2	A	26	0	16	3	0
2	B	26	0	16	10	0
All	All	8976	0	9033	585	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 32.

All (585) 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:A:292:SER:CB	1:A:292:SER:OG	1.65	1.42
1:B:595:ARG:HG2	1:B:595:ARG:HH11	1.09	1.12
1:B:311:SER:HB2	1:B:314:GLU:HG3	1.24	1.11
1:A:677:LEU:HD11	1:A:700:GLY:H	1.18	1.05
1:B:311:SER:HB2	1:B:314:GLU:CG	1.87	1.05
1:A:677:LEU:HD11	1:A:700:GLY:N	1.72	1.04
1:A:367:GLU:O	1:A:370:SER:HB3	1.56	1.03
1:B:319:TRP:HA	1:B:322:ARG:HE	1.19	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:542:CYS:HB3	1:A:594:LEU:HD21	1.39	1.02
1:A:861:ARG:NH2	1:A:926:ASP:OD2	1.95	1.00
1:B:314:GLU:HA	1:B:317:LEU:HG	1.42	0.99
1:B:408:GLU:HB3	1:B:409:ASP:HA	1.45	0.99
1:A:814:THR:HG23	1:A:818:LYS:H	1.30	0.97
1:A:835:MET:CE	1:B:942:ARG:HD3	1.95	0.97
1:A:808:LEU:HD22	1:A:808:LEU:H	1.30	0.97
1:A:798:THR:HG23	1:A:803:VAL:HB	1.47	0.96
1:B:629:THR:HG22	1:B:672:LEU:HB2	1.46	0.95
1:A:835:MET:HE3	1:B:942:ARG:HD3	1.48	0.94
1:A:614:LEU:HD21	1:A:636:LEU:HD23	1.51	0.93
1:A:542:CYS:HB3	1:A:594:LEU:CD2	1.98	0.92
1:B:704:ARG:NH1	1:B:889:THR:HG21	1.84	0.91
1:A:308:TYR:HD1	1:A:310:LEU:HD22	1.36	0.90
1:A:412:HIS:HB3	1:A:532:ASN:ND2	1.87	0.89
1:B:595:ARG:HG2	1:B:595:ARG:NH1	1.88	0.87
1:A:854:SER:HB2	1:A:857:HIS:H	1.39	0.87
1:B:318:VAL:HG13	1:B:322:ARG:HH22	1.40	0.87
1:B:777:TYR:O	1:B:779:ILE:HG13	1.75	0.86
1:A:776:PRO:HG2	1:A:777:TYR:HD1	1.41	0.86
1:A:756:LEU:HD11	1:A:844:GLU:HG2	1.56	0.86
1:A:335:PHE:HD1	1:A:357:TRP:CZ3	1.94	0.85
1:B:335:PHE:HD2	1:B:336:LEU:HD12	1.39	0.85
1:B:813:LEU:HD12	1:B:818:LYS:O	1.76	0.85
1:B:865:TYR:CD1	1:B:918:VAL:HG13	2.11	0.85
1:B:948:ARG:O	1:B:949:LYS:HB2	1.76	0.84
1:A:645:ASN:HD22	1:A:645:ASN:C	1.80	0.84
1:B:733:LYS:H	1:B:745:GLN:HE21	1.25	0.84
1:B:534:CYS:O	1:B:538:ILE:HD12	1.78	0.83
1:B:319:TRP:HA	1:B:322:ARG:NE	1.93	0.83
1:B:318:VAL:HG13	1:B:322:ARG:NH2	1.94	0.82
1:A:399:LEU:HD12	1:A:554:TYR:CE1	2.14	0.82
1:B:682:LEU:H	1:B:682:LEU:HD22	1.46	0.80
1:A:677:LEU:O	1:A:679:PRO:HD3	1.82	0.80
1:A:846:VAL:HG11	1:A:933:MET:HE2	1.65	0.79
1:A:610:GLU:OE1	1:A:643:LYS:HB2	1.82	0.79
1:A:814:THR:CG2	1:A:818:LYS:H	1.96	0.79
1:B:734:VAL:HG22	1:B:744:LEU:HD22	1.64	0.79
1:B:347:VAL:O	1:B:351:LEU:CD2	2.31	0.78
1:A:608:ILE:O	1:A:612:VAL:HG23	1.83	0.78
1:A:806:ARG:HA	1:A:810:ASN:HD22	1.47	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:347:VAL:O	1:B:351:LEU:HD22	1.83	0.78
1:B:934:PRO:O	1:B:938:GLU:HG3	1.84	0.78
1:B:412:HIS:HB3	1:B:532:ASN:HD21	1.49	0.77
1:B:682:LEU:HD23	1:B:684:PHE:HE2	1.47	0.77
1:A:727:LEU:HB2	1:A:729:LEU:HD21	1.65	0.77
1:A:303:ARG:O	1:A:304:TYR:HD2	1.67	0.76
1:A:846:VAL:CG1	1:A:933:MET:CE	2.63	0.76
1:A:727:LEU:N	1:A:727:LEU:HD23	2.01	0.76
1:A:602:ARG:CZ	1:A:606:ARG:HD2	2.14	0.76
1:B:822:ILE:HD11	2:B:1950:090:CAM	2.16	0.76
1:B:912:LEU:HB3	1:B:916:GLU:HB2	1.67	0.75
1:B:777:TYR:HD1	1:B:777:TYR:N	1.84	0.75
1:B:948:ARG:HH11	1:B:948:ARG:HG2	1.50	0.75
1:B:335:PHE:CD2	1:B:336:LEU:HD12	2.21	0.75
1:B:595:ARG:H	1:B:595:ARG:HD3	1.51	0.75
1:B:827:ILE:CG2	1:B:828:LEU:HG	2.17	0.74
1:A:846:VAL:HG11	1:A:933:MET:CE	2.17	0.74
1:A:785:ASP:OD1	1:A:789:LYS:HE3	1.88	0.74
1:A:416:LEU:HD12	1:A:535:THR:HG22	1.69	0.74
1:A:814:THR:HG23	1:A:818:LYS:N	2.03	0.74
1:B:300:ILE:O	1:B:305:PRO:HD2	1.87	0.74
1:A:919:GLN:HB3	1:B:922:GLN:HE22	1.52	0.74
1:A:308:TYR:CD1	1:A:310:LEU:HD22	2.23	0.74
1:A:577:ALA:O	1:A:581:LYS:HD2	1.87	0.74
1:A:803:VAL:HG12	1:A:806:ARG:HD3	1.68	0.74
1:A:808:LEU:H	1:A:808:LEU:CD2	2.00	0.73
1:B:677:LEU:HD11	1:B:700:GLY:HA3	1.70	0.73
1:B:822:ILE:HD11	2:B:1950:090:NAL	2.03	0.73
1:B:739:SER:O	1:B:740:LYS:HG2	1.88	0.73
1:B:663:THR:OG1	1:B:664:LYS:HG2	1.89	0.73
1:A:550:TYR:O	1:A:554:TYR:CD2	2.41	0.73
1:A:550:TYR:O	1:A:554:TYR:HD2	1.71	0.73
1:A:819:LEU:C	1:A:819:LEU:HD23	2.10	0.73
1:A:363:GLU:HA	1:A:366:LEU:CD1	2.18	0.72
1:A:808:LEU:HD22	1:A:808:LEU:N	2.04	0.72
1:B:319:TRP:CA	1:B:322:ARG:HE	1.98	0.72
1:B:822:ILE:HD11	2:B:1950:090:CAO	2.20	0.72
1:A:751:THR:HG23	1:A:754:GLU:CG	2.20	0.72
1:A:645:ASN:HD22	1:A:646:PHE:N	1.88	0.71
1:A:303:ARG:O	1:A:304:TYR:CD2	2.42	0.71
1:A:335:PHE:CD1	1:A:357:TRP:CZ3	2.78	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:777:TYR:CD1	1:B:777:TYR:N	2.57	0.71
1:A:913:THR:HG22	1:A:916:GLU:CD	2.11	0.71
1:A:677:LEU:CD1	1:A:700:GLY:H	1.99	0.71
1:A:751:THR:HG23	1:A:754:GLU:CD	2.10	0.71
1:B:304:TYR:HB2	1:B:305:PRO:CD	2.20	0.70
1:A:625:ARG:O	1:A:629:THR:HG22	1.91	0.70
1:A:674:LYS:HD3	1:A:674:LYS:H	1.57	0.70
1:B:405:LEU:HD21	1:B:575:MET:CE	2.22	0.70
1:A:739:SER:O	1:A:740:LYS:HG2	1.91	0.69
1:B:412:HIS:HB3	1:B:532:ASN:ND2	2.06	0.69
1:A:737:THR:HG22	1:A:738:SER:N	2.07	0.69
1:B:311:SER:HB2	1:B:314:GLU:CB	2.22	0.68
1:A:645:ASN:ND2	1:A:645:ASN:C	2.46	0.68
1:A:708:LEU:HD23	1:A:708:LEU:C	2.14	0.68
1:A:715:LEU:C	1:A:715:LEU:HD23	2.15	0.68
1:B:827:ILE:HG22	1:B:828:LEU:HG	1.77	0.67
1:A:811:LEU:N	1:A:811:LEU:HD23	2.09	0.67
1:A:634:LYS:HE2	1:A:634:LYS:O	1.95	0.67
1:A:362:VAL:HG21	1:A:389:ALA:HB2	1.76	0.67
1:A:846:VAL:CG1	1:A:933:MET:HE2	2.23	0.67
1:A:638:GLU:HG2	1:A:641:MET:HB2	1.77	0.67
1:A:591:ASN:O	1:A:595:ARG:CZ	2.42	0.66
1:A:560:GLU:OE1	1:A:738:SER:HB2	1.96	0.66
1:B:800:LEU:HD13	1:B:908:LEU:HD21	1.76	0.66
1:A:677:LEU:HD22	1:A:678:MET:H	1.61	0.66
1:B:698:LYS:NZ	2:B:1950:O90:HAW	2.10	0.66
1:B:803:VAL:CG1	1:B:806:ARG:HD3	2.26	0.66
1:A:375:HIS:CD2	1:A:377:GLN:HB3	2.31	0.66
1:A:807:HIS:O	1:A:810:ASN:HB2	1.96	0.65
1:A:827:ILE:CG2	1:A:828:LEU:HG	2.26	0.65
1:A:922:GLN:HE22	1:B:919:GLN:HB3	1.62	0.65
1:A:625:ARG:HH21	1:A:674:LYS:HA	1.62	0.65
1:A:677:LEU:HD22	1:A:678:MET:N	2.11	0.65
1:A:399:LEU:HD12	1:A:554:TYR:HE1	1.60	0.65
1:A:776:PRO:HD2	1:A:779:ILE:O	1.95	0.65
1:B:363:GLU:HA	1:B:366:LEU:HD23	1.76	0.65
1:B:351:LEU:H	1:B:351:LEU:HD22	1.62	0.65
1:B:405:LEU:HD21	1:B:575:MET:HE3	1.77	0.65
1:A:677:LEU:HD11	1:A:700:GLY:CA	2.28	0.64
1:B:743:PHE:O	1:B:744:LEU:HD23	1.98	0.64
1:A:409:ASP:HB3	1:A:412:HIS:CE1	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:629:THR:HB	1:A:672:LEU:HG	1.78	0.64
1:A:335:PHE:CD1	1:A:357:TRP:HZ3	2.14	0.64
1:A:827:ILE:HG23	1:A:828:LEU:HG	1.79	0.64
1:B:311:SER:CB	1:B:314:GLU:HG3	2.15	0.63
1:A:595:ARG:HH11	1:A:595:ARG:HG3	1.62	0.63
1:B:558:GLU:HB2	1:B:576:TYR:CD1	2.33	0.63
1:A:743:PHE:C	1:A:744:LEU:HD23	2.19	0.63
1:B:656:LEU:HD23	1:B:656:LEU:C	2.20	0.63
1:B:311:SER:HB2	1:B:314:GLU:HB2	1.81	0.62
1:A:591:ASN:ND2	1:A:594:LEU:HD12	2.14	0.62
1:A:728:LYS:O	1:A:818:LYS:HD3	1.98	0.62
1:A:803:VAL:CG1	1:A:806:ARG:HD3	2.30	0.61
1:A:814:THR:HG22	1:A:818:LYS:O	2.00	0.61
1:B:397:TYR:CD1	1:B:397:TYR:N	2.65	0.61
1:B:810:ASN:O	1:B:822:ILE:HG22	2.00	0.61
1:B:408:GLU:HG2	1:B:410:PRO:HD3	1.83	0.61
1:B:838:PRO:HB2	1:B:924:LEU:HD12	1.83	0.61
1:B:667:PRO:O	1:B:670:THR:HG22	2.00	0.61
1:B:934:PRO:O	1:B:938:GLU:CG	2.48	0.60
1:A:668:MET:N	1:A:668:MET:SD	2.71	0.60
1:A:857:HIS:NE2	1:A:861:ARG:HD2	2.15	0.60
1:B:751:THR:HA	1:B:812:LEU:HD12	1.83	0.60
1:A:400:GLN:HG2	1:A:881:LEU:HD22	1.84	0.60
1:A:649:PHE:HE1	1:A:662:ILE:HG13	1.66	0.60
1:A:551:PHE:CE1	1:A:555:LEU:HD11	2.37	0.59
1:A:678:MET:O	1:A:699:HIS:CE1	2.55	0.59
1:B:807:HIS:HD2	1:B:809:ASP:H	1.50	0.59
1:B:326:SER:HA	1:B:357:TRP:CZ2	2.37	0.59
1:B:403:GLN:O	1:B:406:LYS:CB	2.49	0.59
1:B:913:THR:OG1	1:B:916:GLU:HG3	2.02	0.59
1:A:673:PHE:HB2	1:A:679:PRO:HD2	1.84	0.59
1:A:751:THR:HG23	1:A:754:GLU:HG3	1.83	0.59
1:A:854:SER:HB2	1:A:857:HIS:N	2.14	0.59
1:B:797:ILE:HG23	1:B:801:LEU:HD12	1.84	0.59
1:A:552:TYR:CD2	1:A:552:TYR:C	2.75	0.59
1:A:727:LEU:HB2	1:A:729:LEU:CD2	2.33	0.59
1:B:606:ARG:HH12	1:B:643:LYS:CG	2.16	0.59
1:B:343:LEU:HG	1:B:344:GLU:H	1.68	0.59
1:B:629:THR:HG22	1:B:672:LEU:CB	2.27	0.59
1:B:812:LEU:HD22	1:B:822:ILE:HB	1.85	0.59
1:A:657:ASP:OD2	1:A:657:ASP:C	2.41	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:862:LYS:O	1:A:866:THR:HG23	2.02	0.58
1:B:846:VAL:HA	1:B:849:MET:HG3	1.85	0.58
1:A:399:LEU:CD1	1:A:554:TYR:HE1	2.15	0.58
1:A:532:ASN:OD1	1:A:535:THR:HG23	2.03	0.58
1:B:336:LEU:HB3	1:B:373:PHE:HE1	1.69	0.58
1:B:397:TYR:N	1:B:397:TYR:HD1	2.01	0.58
1:B:590:GLY:O	1:B:595:ARG:HD2	2.04	0.58
1:A:783:VAL:HG13	1:A:816:ASN:O	2.03	0.58
1:B:557:ILE:O	1:B:560:GLU:HG2	2.04	0.58
1:A:657:ASP:OD2	1:A:659:GLU:N	2.31	0.58
1:B:645:ASN:C	1:B:645:ASN:OD1	2.41	0.58
1:A:412:HIS:CB	1:A:532:ASN:ND2	2.66	0.58
1:A:549:ASN:ND2	1:A:549:ASN:C	2.57	0.58
1:B:738:SER:HB3	1:B:741:HIS:CE1	2.38	0.58
1:B:347:VAL:O	1:B:351:LEU:HD21	2.02	0.57
1:B:876:ASN:ND2	1:B:876:ASN:H	2.00	0.57
1:B:600:ASN:HA	1:B:603:LYS:HD3	1.86	0.57
1:A:363:GLU:H	1:A:363:GLU:CD	2.07	0.57
1:B:665:ILE:HG22	1:B:666:VAL:N	2.20	0.57
1:A:806:ARG:N	1:A:806:ARG:HD2	2.20	0.57
1:A:944:THR:OG1	1:B:931:ALA:O	2.15	0.57
1:B:367:GLU:HG2	1:B:880:ASN:OD1	2.03	0.57
1:B:335:PHE:CD1	1:B:357:TRP:CZ3	2.93	0.57
1:A:306:PRO:HG3	1:A:876:ASN:HA	1.87	0.57
1:B:403:GLN:O	1:B:406:LYS:HB3	2.05	0.57
1:B:595:ARG:CG	1:B:595:ARG:HH11	1.98	0.57
1:A:712:MET:O	1:A:716:MET:HG3	2.05	0.56
1:A:811:LEU:N	1:A:811:LEU:CD2	2.67	0.56
1:A:830:ARG:HH22	1:A:903:LYS:NZ	2.01	0.56
1:B:682:LEU:HD23	1:B:684:PHE:CE2	2.36	0.56
1:A:776:PRO:HG2	1:A:777:TYR:N	2.20	0.56
1:A:363:GLU:HA	1:A:366:LEU:HD12	1.86	0.56
1:A:776:PRO:HG2	1:A:777:TYR:H	1.71	0.56
1:A:819:LEU:O	1:A:819:LEU:HD23	2.06	0.56
1:A:883:SER:O	1:A:886:VAL:HG23	2.06	0.56
1:A:649:PHE:CZ	1:A:663:THR:O	2.59	0.56
1:A:751:THR:CG2	1:A:754:GLU:CD	2.74	0.56
1:A:812:LEU:HD12	1:A:820:PHE:CZ	2.40	0.56
1:A:677:LEU:CD1	1:A:700:GLY:HA3	2.35	0.56
1:A:302:TYR:HE1	1:A:331:ALA:CB	2.19	0.55
1:B:768:LYS:HE2	1:B:769:HIS:NE2	2.20	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:842:SER:OG	1:A:844:GLU:OE1	2.18	0.55
1:A:549:ASN:HD22	1:A:550:TYR:N	2.04	0.55
1:A:701:ASP:O	1:A:740:LYS:HA	2.07	0.55
1:B:909:GLN:HG3	1:B:912:LEU:HG	1.87	0.55
1:A:292:SER:CB	1:A:292:SER:HG	2.09	0.55
1:A:533:LEU:O	1:A:536:PHE:HB3	2.07	0.55
1:A:645:ASN:O	1:A:648:ASN:O	2.24	0.55
1:B:603:LYS:HB3	1:B:652:ILE:HD11	1.88	0.55
1:B:304:TYR:CB	1:B:305:PRO:CD	2.84	0.55
1:A:553:TRP:O	1:A:557:ILE:HG13	2.07	0.55
1:B:776:PRO:HB2	1:B:777:TYR:HD1	1.72	0.55
1:B:304:TYR:HB2	1:B:305:PRO:HD3	1.88	0.55
1:B:741:HIS:ND1	1:B:741:HIS:N	2.55	0.55
1:B:723:GLU:C	1:B:724:ASN:OD1	2.45	0.55
1:A:326:SER:HB2	1:A:357:TRP:CE2	2.42	0.54
1:A:573:HIS:CD2	1:A:573:HIS:C	2.80	0.54
1:A:830:ARG:HH22	1:A:903:LYS:HZ1	1.53	0.54
1:A:307:THR:OG1	1:A:905:GLU:OE2	2.26	0.54
1:A:909:GLN:HG3	1:A:912:LEU:HG	1.88	0.54
1:B:806:ARG:HD2	1:B:806:ARG:N	2.22	0.54
1:B:827:ILE:HG23	1:B:828:LEU:HG	1.89	0.54
1:A:591:ASN:HD21	1:A:594:LEU:HD12	1.72	0.54
1:A:550:TYR:HB3	1:A:554:TYR:HE2	1.72	0.54
1:B:614:LEU:C	1:B:614:LEU:HD12	2.28	0.54
1:A:913:THR:HG23	1:A:916:GLU:H	1.72	0.54
1:B:311:SER:CB	1:B:314:GLU:HB2	2.36	0.54
1:B:661:TYR:O	1:B:686:THR:HA	2.08	0.54
1:B:667:PRO:O	1:B:670:THR:CG2	2.55	0.54
1:A:291:ALA:O	1:A:294:ARG:HG2	2.08	0.54
1:A:723:GLU:O	1:A:724:ASN:CB	2.55	0.54
1:B:865:TYR:HD1	1:B:918:VAL:HG13	1.67	0.54
1:A:723:GLU:OE1	1:A:723:GLU:HA	2.08	0.53
1:B:838:PRO:HB2	1:B:924:LEU:CD1	2.38	0.53
1:A:678:MET:O	1:A:699:HIS:NE2	2.42	0.53
1:A:343:LEU:HB3	1:A:346:GLU:HG2	1.89	0.53
1:B:719:LEU:O	1:B:723:GLU:HG2	2.09	0.53
1:A:575:MET:O	1:A:579:VAL:HG23	2.08	0.53
1:A:871:LEU:HD22	1:A:878:MET:HE1	1.89	0.53
1:B:813:LEU:CD1	1:B:818:LYS:O	2.53	0.53
1:B:926:ASP:O	1:B:930:THR:HG23	2.08	0.53
1:B:314:GLU:CA	1:B:317:LEU:HG	2.26	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:803:VAL:HG12	1:B:806:ARG:HD3	1.90	0.53
1:A:370:SER:O	1:A:379:ARG:NH2	2.41	0.53
1:A:737:THR:O	1:A:738:SER:C	2.48	0.53
1:B:594:LEU:N	1:B:594:LEU:HD23	2.24	0.53
1:B:405:LEU:C	1:B:405:LEU:HD23	2.30	0.53
1:B:859:GLU:OE1	1:B:859:GLU:HA	2.08	0.53
1:A:737:THR:CG2	1:A:738:SER:N	2.71	0.53
1:A:729:LEU:HD23	1:A:729:LEU:N	2.24	0.52
1:A:728:LYS:HG3	1:A:786:THR:HB	1.92	0.52
1:A:632:PHE:HE1	1:A:636:LEU:HD21	1.75	0.52
1:B:381:TYR:O	1:B:384:SER:OG	2.26	0.52
1:A:343:LEU:HD22	1:A:345:ASP:H	1.73	0.52
1:B:948:ARG:CG	1:B:948:ARG:HH11	2.22	0.52
1:A:294:ARG:HD2	1:A:321:PHE:CE1	2.45	0.52
1:B:790:SER:HB2	1:B:819:LEU:H	1.74	0.52
1:A:756:LEU:CD1	1:A:844:GLU:HG2	2.35	0.52
1:B:568:GLN:HE22	1:B:571:ARG:HH11	1.58	0.52
1:A:766:PHE:CE1	1:A:813:LEU:HD12	2.44	0.52
1:B:385:ARG:NE	1:B:385:ARG:HA	2.23	0.52
1:A:399:LEU:CD1	1:A:554:TYR:CE1	2.89	0.52
1:A:806:ARG:NH2	1:A:822:ILE:O	2.33	0.52
1:B:782:GLU:O	1:B:786:THR:HG23	2.09	0.52
1:A:602:ARG:NH2	1:A:606:ARG:HD2	2.25	0.51
1:B:364:ASP:O	1:B:367:GLU:HB2	2.09	0.51
1:B:595:ARG:CG	1:B:595:ARG:NH1	2.66	0.51
1:B:679:PRO:HB3	1:B:698:LYS:HG3	1.92	0.51
1:B:300:ILE:HA	1:B:304:TYR:HD2	1.76	0.51
1:B:656:LEU:HD12	1:B:743:PHE:HB3	1.93	0.51
1:B:763:HIS:CE1	1:B:777:TYR:CD2	2.99	0.51
1:B:297:LEU:O	1:B:300:ILE:HG12	2.10	0.51
1:B:732:TYR:HB2	1:B:745:GLN:HB3	1.93	0.51
1:A:304:TYR:CB	1:A:305:PRO:HD3	2.41	0.51
1:A:696:ILE:HG22	1:A:697:PHE:N	2.25	0.51
1:B:698:LYS:O	1:B:741:HIS:HA	2.11	0.51
1:B:914:ASP:OD1	1:B:914:ASP:N	2.44	0.51
1:A:409:ASP:OD1	1:A:411:ARG:N	2.42	0.51
1:B:592:PHE:N	1:B:595:ARG:HE	2.08	0.51
1:B:812:LEU:CD2	1:B:822:ILE:HB	2.40	0.51
1:B:400:GLN:HG2	1:B:881:LEU:HD13	1.92	0.51
1:A:559:VAL:HG22	1:A:577:ALA:HA	1.93	0.51
1:A:677:LEU:CD1	1:A:700:GLY:CA	2.89	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:351:LEU:HA	1:B:354:LEU:HB3	1.92	0.51
1:B:664:LYS:HG3	1:B:685:VAL:CG2	2.41	0.51
1:A:326:SER:O	1:A:326:SER:OG	2.27	0.51
1:B:582:MET:O	1:B:586:VAL:HG23	2.10	0.50
1:A:776:PRO:HG3	1:A:784:MET:HG3	1.92	0.50
1:B:380:LYS:C	1:B:380:LYS:HD2	2.31	0.50
1:A:293:ILE:O	1:A:297:LEU:HG	2.12	0.50
1:A:610:GLU:OE1	1:A:643:LYS:CB	2.56	0.50
1:A:835:MET:CE	1:B:942:ARG:CD	2.81	0.50
1:A:866:THR:O	1:A:870:HIS:HD2	1.94	0.50
1:B:575:MET:HE2	1:B:575:MET:O	2.10	0.50
1:B:624:ASN:OD1	1:B:625:ARG:N	2.44	0.50
1:B:823:ASP:OD1	1:B:824:PHE:N	2.45	0.50
1:B:920:HIS:C	1:B:920:HIS:CD2	2.85	0.50
1:B:776:PRO:HB2	1:B:777:TYR:CD1	2.46	0.50
1:A:610:GLU:OE1	1:A:643:LYS:N	2.45	0.50
1:B:698:LYS:HZ1	2:B:1950:O90:HAW	1.75	0.50
1:A:723:GLU:OE1	1:A:723:GLU:CA	2.60	0.50
1:A:772:CYS:O	1:A:778:GLY:HA2	2.12	0.50
1:A:549:ASN:C	1:A:549:ASN:HD22	2.15	0.50
1:A:805:ASP:N	1:A:831:ASP:OD2	2.45	0.50
1:B:888:ALA:O	1:B:889:THR:HB	2.12	0.50
1:A:595:ARG:NH1	1:A:595:ARG:HG3	2.27	0.49
1:B:751:THR:OG1	1:B:809:ASP:HA	2.12	0.49
1:B:885:MET:O	1:B:888:ALA:HB2	2.11	0.49
1:A:640:ASP:OD2	1:A:640:ASP:N	2.45	0.49
1:B:363:GLU:HG2	1:B:877:VAL:HG22	1.95	0.49
1:B:888:ALA:O	1:B:889:THR:CB	2.59	0.49
1:A:375:HIS:HD2	1:A:377:GLN:HB3	1.77	0.49
1:A:341:TRP:CD1	1:A:342:LYS:HG2	2.47	0.49
1:B:394:LEU:O	1:B:398:LEU:HB2	2.11	0.49
1:A:743:PHE:O	1:A:744:LEU:HD23	2.11	0.49
1:B:558:GLU:HB2	1:B:576:TYR:HD1	1.76	0.49
1:A:761:ASN:OD1	1:A:764:ASN:ND2	2.45	0.49
1:A:332:LEU:HD12	1:A:336:LEU:CD2	2.43	0.49
1:A:763:HIS:HE1	1:A:777:TYR:CE2	2.31	0.49
1:B:575:MET:HE1	1:B:576:TYR:HA	1.94	0.49
1:B:606:ARG:HH12	1:B:643:LYS:HG3	1.76	0.49
1:B:763:HIS:HE1	1:B:777:TYR:CD2	2.30	0.49
1:B:862:LYS:O	1:B:866:THR:HG23	2.12	0.49
1:A:649:PHE:CE2	1:A:663:THR:O	2.65	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:710:LEU:HD22	1:A:732:TYR:O	2.13	0.49
1:B:698:LYS:HZ2	2:B:1950:O90:HAW	1.78	0.49
1:B:720:LEU:O	1:B:723:GLU:HB2	2.13	0.49
1:B:304:TYR:HB2	1:B:305:PRO:HD2	1.95	0.49
1:A:807:HIS:H	1:A:810:ASN:HB2	1.78	0.49
1:A:400:GLN:HG2	1:A:881:LEU:CD2	2.43	0.49
1:A:943:PHE:HB2	1:B:931:ALA:HB1	1.94	0.49
1:B:790:SER:CB	1:B:819:LEU:H	2.26	0.48
1:B:826:TYR:HB3	1:B:830:ARG:O	2.13	0.48
1:A:300:ILE:O	1:A:304:TYR:HB2	2.13	0.48
1:A:302:TYR:HE1	1:A:331:ALA:HB2	1.78	0.48
1:B:315:GLN:HG3	1:B:316:ASP:N	2.28	0.48
1:B:724:ASN:OD1	1:B:724:ASN:N	2.46	0.48
1:A:362:VAL:O	1:A:366:LEU:HD12	2.13	0.48
1:A:582:MET:O	1:A:586:VAL:HG23	2.13	0.48
1:A:677:LEU:CD1	1:A:700:GLY:N	2.61	0.48
1:A:726:ASP:C	1:A:727:LEU:HD23	2.33	0.48
1:A:841:LEU:HD23	1:A:845:MET:HE2	1.96	0.48
1:B:822:ILE:CD1	2:B:1950:O90:CAM	2.91	0.48
1:B:822:ILE:HD11	2:B:1950:O90:OAU	2.13	0.48
1:A:835:MET:HE1	1:B:942:ARG:HD3	1.90	0.48
1:A:702:ASP:C	1:A:702:ASP:OD2	2.52	0.48
1:B:408:GLU:HB3	1:B:410:PRO:HD3	1.96	0.48
1:A:335:PHE:CD2	1:A:335:PHE:C	2.87	0.48
1:A:411:ARG:HA	1:A:414:VAL:CG2	2.43	0.48
1:A:920:HIS:O	1:A:923:SER:HB3	2.13	0.48
1:A:302:TYR:CE1	1:A:331:ALA:CB	2.97	0.48
1:A:332:LEU:HD12	1:A:336:LEU:HD23	1.95	0.48
1:A:561:GLU:N	1:A:561:GLU:CD	2.67	0.48
1:A:708:LEU:O	1:A:708:LEU:HD23	2.14	0.48
1:A:405:LEU:HD23	1:A:533:LEU:HD21	1.96	0.48
1:A:777:TYR:CD1	1:A:777:TYR:N	2.81	0.48
1:A:371:PRO:HG3	1:A:407:TYR:CZ	2.48	0.47
1:A:846:VAL:CB	1:A:933:MET:HE2	2.44	0.47
1:B:300:ILE:HA	1:B:304:TYR:CD2	2.49	0.47
1:B:712:MET:HE1	1:B:878:MET:HG2	1.95	0.47
1:B:295:ASP:O	1:B:299:THR:HG23	2.14	0.47
1:B:654:PHE:CD1	1:B:655:PRO:HD2	2.48	0.47
1:B:728:LYS:HZ3	1:B:786:THR:HG22	1.78	0.47
1:A:913:THR:HG22	1:A:916:GLU:CG	2.44	0.47
1:A:925:LEU:O	1:A:929:ILE:HG13	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:702:ASP:OD1	1:B:704:ARG:NH2	2.47	0.47
1:A:673:PHE:HD2	1:A:679:PRO:HG2	1.79	0.47
1:B:763:HIS:HE2	1:B:848:ALA:C	2.18	0.47
1:A:305:PRO:HG2	1:A:308:TYR:CD1	2.49	0.47
1:A:852:ILE:N	1:A:852:ILE:CD1	2.77	0.47
1:A:587:LEU:HB3	1:A:598:PHE:HB2	1.97	0.47
1:B:335:PHE:CD1	1:B:357:TRP:HZ3	2.32	0.47
1:B:703:LEU:CD2	1:B:744:LEU:HD21	2.44	0.47
1:B:746:TYR:CD2	1:B:746:TYR:C	2.87	0.47
1:A:811:LEU:C	1:A:812:LEU:HD23	2.35	0.47
1:B:350:ALA:O	1:B:353:MET:HB2	2.14	0.47
1:A:313:GLU:OE1	1:A:313:GLU:CA	2.63	0.47
1:A:561:GLU:H	1:A:561:GLU:CD	2.16	0.47
1:B:624:ASN:H	1:B:627:LYS:HD2	1.80	0.47
1:A:677:LEU:HD11	1:A:700:GLY:HA3	1.97	0.47
1:B:319:TRP:CD1	1:B:322:ARG:HD2	2.50	0.47
1:A:373:PHE:N	1:A:373:PHE:CD2	2.83	0.46
1:A:663:THR:HG23	1:A:685:VAL:HG22	1.96	0.46
1:B:360:MET:HA	1:B:360:MET:CE	2.44	0.46
1:B:618:VAL:HG11	1:B:632:PHE:HD2	1.79	0.46
1:A:412:HIS:HB3	1:A:532:ASN:HD21	1.74	0.46
1:A:651:PRO:HA	1:A:662:ILE:O	2.15	0.46
1:A:739:SER:O	1:A:740:LYS:CG	2.61	0.46
1:B:661:TYR:HB3	1:B:687:SER:HB3	1.97	0.46
1:B:763:HIS:NE2	1:B:848:ALA:O	2.39	0.46
1:B:861:ARG:O	1:B:865:TYR:CD2	2.68	0.46
1:A:416:LEU:CD1	1:A:535:THR:HG22	2.42	0.46
1:A:727:LEU:O	1:A:729:LEU:N	2.46	0.46
1:A:913:THR:HG22	1:A:916:GLU:HB2	1.97	0.46
1:A:648:ASN:HA	1:A:664:LYS:HG2	1.97	0.46
1:B:342:LYS:HG3	1:B:343:LEU:HD23	1.97	0.46
1:B:408:GLU:CB	1:B:409:ASP:HA	2.26	0.46
1:B:549:ASN:HD22	1:B:550:TYR:N	2.13	0.46
1:B:573:HIS:C	1:B:573:HIS:CD2	2.89	0.46
1:A:737:THR:HG21	1:A:741:HIS:CD2	2.50	0.46
1:A:814:THR:CG2	1:A:818:LYS:N	2.69	0.46
1:B:777:TYR:O	1:B:779:ILE:N	2.48	0.46
1:B:861:ARG:HB3	1:B:865:TYR:HE2	1.81	0.46
1:A:649:PHE:CE1	1:A:663:THR:O	2.68	0.46
1:B:648:ASN:HA	1:B:664:LYS:HB3	1.98	0.46
1:A:677:LEU:CG	1:A:700:GLY:HA3	2.45	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:720:LEU:HD23	1:A:720:LEU:N	2.30	0.45
1:A:553:TRP:CZ3	1:A:737:THR:HG23	2.51	0.45
1:A:805:ASP:O	1:A:810:ASN:ND2	2.48	0.45
1:A:330:LYS:O	1:A:333:THR:HG23	2.15	0.45
1:A:717:ASP:OD2	1:A:721:ARG:NH1	2.48	0.45
1:A:766:PHE:HE1	1:A:813:LEU:HD12	1.81	0.45
1:B:816:ASN:OD1	1:B:816:ASN:O	2.33	0.45
1:B:822:ILE:HD11	2:B:1950:O90:NAN	2.31	0.45
1:B:842:SER:O	1:B:846:VAL:HG23	2.15	0.45
1:A:591:ASN:O	1:A:595:ARG:NH1	2.50	0.45
1:A:812:LEU:O	1:A:819:LEU:HA	2.16	0.45
1:B:850:GLY:O	1:B:854:SER:HB2	2.16	0.45
1:B:863:GLN:HA	1:B:863:GLN:OE1	2.15	0.45
1:A:677:LEU:HG	1:A:700:GLY:HA3	1.98	0.45
1:B:723:GLU:O	1:B:724:ASN:OD1	2.34	0.45
1:A:677:LEU:HB3	1:A:698:LYS:HE3	1.98	0.45
1:A:785:ASP:O	1:A:789:LYS:HG3	2.17	0.45
1:B:587:LEU:HB3	1:B:598:PHE:HB2	1.99	0.45
1:B:629:THR:O	1:B:633:GLN:HG3	2.15	0.45
1:A:578:MET:O	1:A:582:MET:HE2	2.17	0.45
1:B:657:ASP:OD2	1:B:657:ASP:C	2.55	0.45
1:B:612:VAL:CG2	1:B:741:HIS:HD2	2.29	0.45
1:B:363:GLU:OE2	1:B:363:GLU:N	2.50	0.45
1:B:408:GLU:CB	1:B:410:PRO:HD3	2.47	0.45
1:B:558:GLU:HG3	1:B:576:TYR:CE1	2.52	0.45
1:B:610:GLU:OE1	1:B:643:LYS:NZ	2.49	0.45
1:A:368:LEU:HD22	1:A:373:PHE:CE1	2.52	0.44
1:B:682:LEU:N	1:B:682:LEU:HD22	2.22	0.44
1:B:829:GLY:O	1:B:830:ARG:C	2.54	0.44
1:B:306:PRO:O	1:B:307:THR:HG23	2.17	0.44
1:B:558:GLU:HG3	1:B:576:TYR:HE1	1.82	0.44
1:B:672:LEU:HD22	1:B:678:MET:HB2	2.00	0.44
1:A:305:PRO:HG2	1:A:308:TYR:CG	2.53	0.44
1:A:763:HIS:CE1	1:A:777:TYR:CD2	3.05	0.44
1:A:386:LEU:HA	1:A:386:LEU:HD23	1.71	0.44
1:A:715:LEU:HD23	1:A:716:MET:N	2.33	0.44
1:B:751:THR:HG23	1:B:754:GLU:H	1.83	0.44
1:A:747:VAL:CG2	1:A:820:PHE:CZ	3.00	0.44
1:B:296:GLN:O	1:B:300:ILE:HG23	2.18	0.44
1:B:308:TYR:CD1	1:B:310:LEU:HB2	2.53	0.44
1:B:380:LYS:HZ1	1:B:381:TYR:HB2	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:557:ILE:HD11	1:B:736:ALA:O	2.18	0.44
1:B:704:ARG:CZ	1:B:889:THR:HG21	2.46	0.44
1:A:302:TYR:CE1	1:A:331:ALA:HB2	2.52	0.44
1:A:552:TYR:CG	1:A:601:LEU:HD22	2.52	0.44
1:B:672:LEU:HD23	1:B:679:PRO:O	2.18	0.44
1:A:341:TRP:NE1	1:A:342:LYS:HG2	2.32	0.43
1:A:593:ASN:O	1:A:597:ILE:HG13	2.18	0.43
1:A:671:SER:O	1:A:672:LEU:HD23	2.17	0.43
1:A:674:LYS:H	1:A:674:LYS:CD	2.26	0.43
1:A:727:LEU:N	1:A:727:LEU:CD2	2.69	0.43
1:B:403:GLN:O	1:B:406:LYS:HB2	2.18	0.43
1:A:342:LYS:HA	1:A:342:LYS:HD3	1.66	0.43
1:A:812:LEU:HD21	1:A:822:ILE:HD12	2.01	0.43
1:A:854:SER:C	1:A:856:HIS:N	2.68	0.43
1:B:364:ASP:OD2	1:B:365:ALA:N	2.51	0.43
1:A:318:VAL:O	1:A:322:ARG:HB3	2.17	0.43
1:B:311:SER:OG	1:B:314:GLU:HB2	2.19	0.43
1:B:375:HIS:CD2	1:B:377:GLN:H	2.36	0.43
1:A:776:PRO:CG	1:A:777:TYR:N	2.81	0.43
1:B:734:VAL:HG13	1:B:744:LEU:CD2	2.49	0.43
1:B:822:ILE:HG23	1:B:823:ASP:N	2.33	0.43
1:A:662:ILE:H	1:A:662:ILE:HG12	1.67	0.43
1:B:763:HIS:CD2	1:B:848:ALA:HA	2.54	0.43
1:A:677:LEU:HD21	1:A:699:HIS:HD2	1.84	0.43
1:B:319:TRP:HA	1:B:322:ARG:HB3	2.01	0.43
1:B:336:LEU:HB3	1:B:373:PHE:CE1	2.50	0.43
2:A:1949:O90:NAL	2:A:1949:O90:OAU	2.52	0.43
1:A:625:ARG:HG3	1:A:626:ASN:N	2.30	0.43
1:A:638:GLU:HG2	1:A:641:MET:SD	2.59	0.43
1:A:625:ARG:NH2	1:A:674:LYS:HA	2.29	0.43
1:A:708:LEU:CD2	1:A:708:LEU:C	2.85	0.43
1:A:779:ILE:O	1:A:780:SER:C	2.56	0.43
1:A:885:MET:O	1:A:888:ALA:HB2	2.19	0.43
1:A:839:MET:HE2	1:A:925:LEU:HD21	2.01	0.43
1:B:824:PHE:HB3	1:B:827:ILE:HD11	2.01	0.43
1:A:672:LEU:HD12	1:A:678:MET:CE	2.49	0.43
1:A:766:PHE:CZ	1:A:813:LEU:HD11	2.53	0.43
1:A:822:ILE:HG21	1:A:822:ILE:HD13	1.80	0.43
1:B:631:LYS:O	1:B:635:LEU:HD23	2.18	0.43
1:A:737:THR:CG2	1:A:741:HIS:CD2	3.02	0.43
1:B:322:ARG:HD3	1:B:335:PHE:CD1	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:408:GLU:CG	1:B:410:PRO:HD3	2.49	0.43
1:B:591:ASN:O	1:B:593:ASN:N	2.52	0.43
1:B:618:VAL:HG22	1:B:631:LYS:HG3	1.99	0.43
1:B:912:LEU:HD12	1:B:917:ALA:HA	2.00	0.43
1:A:766:PHE:HZ	1:A:813:LEU:HD11	1.83	0.42
1:B:382:ALA:O	1:B:385:ARG:HB2	2.19	0.42
1:B:660:ILE:HG23	1:B:686:THR:HG23	2.01	0.42
1:B:804:GLY:O	1:B:805:ASP:HB3	2.19	0.42
1:A:621:GLU:HA	1:A:622:PRO:HD3	1.90	0.42
1:A:684:PHE:CD2	1:A:684:PHE:N	2.87	0.42
1:A:716:MET:HG2	1:A:878:MET:HE1	2.01	0.42
1:B:551:PHE:CE1	1:B:555:LEU:HD21	2.55	0.42
1:B:751:THR:CA	1:B:812:LEU:HD12	2.49	0.42
1:B:841:LEU:O	1:B:932:VAL:HG21	2.20	0.42
1:A:292:SER:CA	1:A:292:SER:OG	2.56	0.42
1:A:602:ARG:NH1	1:A:606:ARG:HD2	2.34	0.42
1:A:610:GLU:HG3	1:A:644:VAL:HG12	2.02	0.42
1:A:830:ARG:NH2	1:A:903:LYS:HZ1	2.17	0.42
1:B:682:LEU:CD2	1:B:682:LEU:H	2.26	0.42
1:A:806:ARG:NH2	1:A:810:ASN:HB3	2.33	0.42
1:A:914:ASP:N	1:A:914:ASP:OD1	2.52	0.42
1:B:370:SER:HB2	1:B:371:PRO:CD	2.49	0.42
1:B:678:MET:HA	1:B:679:PRO:HD3	1.85	0.42
1:A:650:GLU:HA	1:A:651:PRO:HD3	1.88	0.42
1:A:846:VAL:HB	1:A:933:MET:CE	2.49	0.42
1:B:734:VAL:CG2	1:B:744:LEU:HD22	2.43	0.42
1:B:828:LEU:HD23	1:B:828:LEU:N	2.34	0.42
1:A:677:LEU:CD1	1:A:698:LYS:HE3	2.50	0.42
1:B:710:LEU:HD22	1:B:732:TYR:O	2.19	0.42
1:B:729:LEU:N	1:B:729:LEU:HD23	2.35	0.42
1:B:870:HIS:O	1:B:873:ARG:HB2	2.20	0.42
1:A:343:LEU:CB	1:A:346:GLU:HG2	2.48	0.42
1:A:657:ASP:HA	1:A:658:PRO:HD3	1.86	0.42
1:A:763:HIS:NE2	1:A:848:ALA:O	2.35	0.42
1:B:603:LYS:HE3	1:B:652:ILE:HG12	2.02	0.42
1:A:747:VAL:HG22	2:A:1949:O90:HAA	1.85	0.42
1:B:614:LEU:HD23	1:B:646:PHE:CE1	2.55	0.42
1:A:719:LEU:HD23	1:A:719:LEU:HA	1.81	0.42
1:A:719:LEU:O	1:A:723:GLU:HG2	2.20	0.42
1:A:830:ARG:NH2	1:A:903:LYS:NZ	2.68	0.42
1:B:888:ALA:O	1:B:889:THR:HG22	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:296:GLN:HA	1:A:296:GLN:OE1	2.20	0.41
1:B:544:ASN:OD1	1:B:544:ASN:C	2.57	0.41
1:B:766:PHE:CZ	1:B:817:GLY:HA2	2.55	0.41
1:A:318:VAL:O	1:A:322:ARG:CB	2.68	0.41
1:A:552:TYR:CD1	1:A:601:LEU:HD22	2.54	0.41
1:B:948:ARG:CG	1:B:948:ARG:NH1	2.83	0.41
1:A:661:TYR:O	1:A:686:THR:HB	2.20	0.41
1:A:663:THR:HG23	1:A:685:VAL:CG2	2.51	0.41
1:A:922:GLN:HE22	1:B:919:GLN:CB	2.30	0.41
1:B:661:TYR:CB	1:B:687:SER:HB3	2.51	0.41
1:A:363:GLU:HA	1:A:366:LEU:HD13	2.00	0.41
1:A:319:TRP:CD1	1:A:322:ARG:NH2	2.85	0.41
1:A:335:PHE:CD2	1:A:335:PHE:O	2.73	0.41
1:A:533:LEU:HD23	1:A:534:CYS:N	2.34	0.41
1:A:586:VAL:HG12	1:A:586:VAL:O	2.20	0.41
1:B:339:ILE:HG13	1:B:339:ILE:H	1.66	0.41
1:A:607:PHE:C	1:A:607:PHE:CD1	2.95	0.41
1:A:634:LYS:CE	1:A:634:LYS:O	2.67	0.41
1:B:822:ILE:CD1	2:B:1950:090:NAL	2.77	0.41
1:B:409:ASP:OD1	1:B:410:PRO:HD2	2.20	0.41
1:B:718:LYS:O	1:B:722:ARG:HG3	2.20	0.41
1:B:320:LYS:HG3	1:B:321:PHE:N	2.34	0.41
1:A:776:PRO:HG2	1:A:777:TYR:CD1	2.33	0.41
1:B:575:MET:HE2	1:B:575:MET:C	2.42	0.41
1:A:822:ILE:HD13	2:A:1949:090:CAM	2.51	0.41
1:A:584:LEU:HD23	1:A:584:LEU:HA	1.91	0.41
1:A:804:GLY:HA3	1:A:831:ASP:OD2	2.21	0.41
1:B:375:HIS:HB3	1:B:378:VAL:HG22	2.03	0.41
1:B:420:ILE:HG22	1:B:420:ILE:O	2.19	0.41
1:B:614:LEU:HB2	1:B:642:PHE:CE1	2.56	0.41
1:A:417:HIS:HD2	1:A:578:MET:HG2	1.86	0.40
1:B:319:TRP:N	1:B:322:ARG:HH21	2.19	0.40
1:B:843:LYS:HA	1:B:932:VAL:CG1	2.51	0.40
1:A:309:VAL:O	1:A:311:SER:N	2.54	0.40
1:A:405:LEU:HD23	1:A:533:LEU:CD2	2.51	0.40
1:A:544:ASN:C	1:A:544:ASN:OD1	2.59	0.40
1:B:908:LEU:HD23	1:B:908:LEU:HA	1.87	0.40
1:A:625:ARG:CG	1:A:626:ASN:N	2.81	0.40
1:A:758:ARG:HB2	1:A:758:ARG:HE	1.70	0.40
1:A:883:SER:O	1:A:886:VAL:CG2	2.70	0.40
1:A:373:PHE:HD2	1:A:373:PHE:N	2.19	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:330:LYS:NZ	1:B:334:LYS:HE2	2.37	0.40
1:A:657:ASP:OD2	1:A:659:GLU:HB2	2.21	0.40
1:B:343:LEU:HD23	1:B:343:LEU:H	1.86	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	540/696 (78%)	504 (93%)	26 (5%)	10 (2%)	8	31
1	B	538/696 (77%)	503 (94%)	24 (4%)	11 (2%)	7	30
All	All	1078/1392 (77%)	1007 (93%)	50 (5%)	21 (2%)	8	31

All (21) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	343	LEU
1	B	592	PHE
1	B	778	GLY
1	A	305	PRO
1	A	310	LEU
1	A	327	SER
1	A	591	ASN
1	B	304	TYR
1	B	306	PRO
1	B	690	HIS
1	A	304	TYR
1	B	310	LEU
1	A	731	PRO
1	B	731	PRO
1	B	776	PRO

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Mol	Chain	Res	Type
1	A	329	LYS
1	A	675	SER
1	A	690	HIS
1	A	738	SER
1	B	805	ASP
1	B	305	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	491/612 (80%)	389 (79%)	102 (21%)	1	3
1	B	490/612 (80%)	402 (82%)	88 (18%)	1	6
All	All	981/1224 (80%)	791 (81%)	190 (19%)	1	4

All (190) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	294	ARG
1	A	309	VAL
1	A	310	LEU
1	A	313	GLU
1	A	322	ARG
1	A	325	LEU
1	A	326	SER
1	A	329	LYS
1	A	333	THR
1	A	335	PHE
1	A	336	LEU
1	A	338	CYS
1	A	342	LYS
1	A	343	LEU
1	A	345	ASP
1	A	351	LEU
1	A	354	LEU

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Mol	Chain	Res	Type
1	A	363	GLU
1	A	366	LEU
1	A	370	SER
1	A	391	ASP
1	A	394	LEU
1	A	396	LEU
1	A	409	ASP
1	A	414	VAL
1	A	532	ASN
1	A	533	LEU
1	A	534	CYS
1	A	543	THR
1	A	546	THR
1	A	547	LEU
1	A	549	ASN
1	A	561	GLU
1	A	573	HIS
1	A	580	LEU
1	A	581	LYS
1	A	591	ASN
1	A	592	PHE
1	A	602	ARG
1	A	611	LEU
1	A	614	LEU
1	A	621	GLU
1	A	625	ARG
1	A	629	THR
1	A	632	PHE
1	A	634	LYS
1	A	639	GLN
1	A	640	ASP
1	A	643	LYS
1	A	645	ASN
1	A	649	PHE
1	A	654	PHE
1	A	656	LEU
1	A	662	ILE
1	A	668	MET
1	A	669	ARG
1	A	670	THR
1	A	671	SER
1	A	674	LYS

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Mol	Chain	Res	Type
1	A	677	LEU
1	A	682	LEU
1	A	686	THR
1	A	691	HIS
1	A	699	HIS
1	A	701	ASP
1	A	702	ASP
1	A	710	LEU
1	A	711	GLN
1	A	715	LEU
1	A	717	ASP
1	A	722	ARG
1	A	723	GLU
1	A	724	ASN
1	A	727	LEU
1	A	741	HIS
1	A	744	LEU
1	A	750	CYS
1	A	751	THR
1	A	759	GLU
1	A	786	THR
1	A	788	ILE
1	A	790	SER
1	A	808	LEU
1	A	811	LEU
1	A	812	LEU
1	A	813	LEU
1	A	814	THR
1	A	819	LEU
1	A	822	ILE
1	A	827	ILE
1	A	831	ASP
1	A	833	LYS
1	A	839	MET
1	A	852	ILE
1	A	859	GLU
1	A	862	LYS
1	A	883	SER
1	A	896	GLU
1	A	902	LYS
1	A	912	LEU
1	A	914	ASP

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Mol	Chain	Res	Type
1	A	927	VAL
1	B	294	ARG
1	B	301	VAL
1	B	308	TYR
1	B	309	VAL
1	B	313	GLU
1	B	314	GLU
1	B	317	LEU
1	B	318	VAL
1	B	321	PHE
1	B	327	SER
1	B	328	HIS
1	B	333	THR
1	B	346	GLU
1	B	351	LEU
1	B	354	LEU
1	B	363	GLU
1	B	364	ASP
1	B	367	GLU
1	B	374	THR
1	B	377	GLN
1	B	380	LYS
1	B	391	ASP
1	B	405	LEU
1	B	417	HIS
1	B	419	CYS
1	B	546	THR
1	B	547	LEU
1	B	549	ASN
1	B	568	GLN
1	B	571	ARG
1	B	573	HIS
1	B	575	MET
1	B	580	LEU
1	B	594	LEU
1	B	595	ARG
1	B	599	TYR
1	B	611	LEU
1	B	614	LEU
1	B	640	ASP
1	B	643	LYS
1	B	645	ASN

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Mol	Chain	Res	Type
1	B	654	PHE
1	B	656	LEU
1	B	660	ILE
1	B	663	THR
1	B	670	THR
1	B	672	LEU
1	B	677	LEU
1	B	682	LEU
1	B	685	VAL
1	B	688	ILE
1	B	691	HIS
1	B	699	HIS
1	B	702	ASP
1	B	704	ARG
1	B	706	ASP
1	B	708	LEU
1	B	724	ASN
1	B	725	LEU
1	B	741	HIS
1	B	746	TYR
1	B	747	VAL
1	B	748	ASP
1	B	758	ARG
1	B	759	GLU
1	B	777	TYR
1	B	782	GLU
1	B	803	VAL
1	B	812	LEU
1	B	814	THR
1	B	839	MET
1	B	843	LYS
1	B	846	VAL
1	B	855	GLU
1	B	859	GLU
1	B	863	GLN
1	B	866	THR
1	B	869	LEU
1	B	876	ASN
1	B	881	LEU
1	B	889	THR
1	B	898	ASP
1	B	914	ASP

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Mol	Chain	Res	Type
1	B	920	HIS
1	B	923	SER
1	B	924	LEU
1	B	944	THR
1	B	948	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (29) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	298	HIS
1	A	375	HIS
1	A	377	GLN
1	A	403	GLN
1	A	532	ASN
1	A	549	ASN
1	A	573	HIS
1	A	645	ASN
1	A	764	ASN
1	A	807	HIS
1	A	810	ASN
1	A	870	HIS
1	A	922	GLN
1	B	340	ASN
1	B	349	GLN
1	B	403	GLN
1	B	532	ASN
1	B	549	ASN
1	B	568	GLN
1	B	573	HIS
1	B	589	ASN
1	B	711	GLN
1	B	741	HIS
1	B	745	GLN
1	B	807	HIS
1	B	810	ASN
1	B	857	HIS
1	B	876	ASN
1	B	922	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no carbohydrates in this entry.

5.6 Ligand geometry (i)

2 ligands are modelled in this entry.

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	090	B	1950	-	25,29,29	4.51	16 (64%)	31,41,41	1.66	5 (16%)
2	090	A	1949	-	25,29,29	4.23	13 (52%)	31,41,41	1.73	8 (25%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	090	B	1950	-	-	1/12/12/12	0/4/4/4
2	090	A	1949	-	-	1/12/12/12	0/4/4/4

All (29) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1950	090	CAF-NAA	14.63	1.47	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1949	090	CAF-NAA	13.55	1.46	1.33
2	B	1950	090	CAE-CAF	8.39	1.52	1.41
2	A	1949	090	CAQ-CAP	7.48	1.51	1.39
2	A	1949	090	CAE-CAF	7.46	1.51	1.41
2	B	1950	090	CAQ-CAP	7.35	1.50	1.39
2	B	1950	090	CAE-CAK	6.12	1.45	1.41
2	A	1949	090	CAJ-CAK	-4.99	1.36	1.42
2	A	1949	090	CAH-CAB	4.92	1.55	1.36
2	B	1950	090	CAH-CAB	4.77	1.54	1.36
2	A	1949	090	CAK-NAL	4.39	1.45	1.37
2	B	1950	090	CAO-NAN	4.29	1.47	1.35
2	A	1949	090	CAE-CAK	4.09	1.44	1.41
2	B	1950	090	CAK-NAL	4.03	1.45	1.37
2	A	1949	090	CAO-NAN	3.89	1.46	1.35
2	B	1950	090	CAB-NAA	3.63	1.54	1.37
2	A	1949	090	CAB-NAA	3.39	1.53	1.37
2	B	1950	090	CAJ-CAK	-3.33	1.38	1.42
2	B	1950	090	CAW-CAX	2.75	1.45	1.37
2	A	1949	090	CAW-CAX	2.48	1.45	1.37
2	B	1950	090	CAV-CAP	-2.45	1.35	1.39
2	A	1949	090	OAS-CAI	2.43	1.41	1.37
2	B	1950	090	CAD-CAC	2.41	1.41	1.36
2	A	1949	090	CAP-CAO	2.34	1.55	1.50
2	B	1950	090	OAS-CAI	2.33	1.40	1.37
2	B	1950	090	CAX-NAR	2.18	1.40	1.33
2	B	1950	090	CAM-NAN	2.14	1.44	1.36
2	A	1949	090	CAX-NAR	2.11	1.40	1.33
2	B	1950	090	CAC-CAI	2.03	1.43	1.39

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1950	090	CAB-CAH-NAG	-5.55	102.27	106.83
2	A	1949	090	CAB-CAH-NAG	-3.78	103.72	106.83
2	A	1949	090	CAY-OAS-CAI	3.44	122.72	117.53
2	A	1949	090	OAS-CAI-CAC	-3.39	118.56	124.37
2	A	1949	090	OAS-CAI-CAJ	3.19	120.96	116.49
2	B	1950	090	CAJ-CAK-CAE	2.84	122.14	119.27
2	B	1950	090	CAE-CAK-NAL	-2.65	119.67	123.33
2	A	1949	090	CAD-CAE-CAF	-2.47	119.04	122.55
2	B	1950	090	CAZ-OAT-CAJ	2.40	121.06	114.88
2	B	1950	090	CAV-CAP-CAQ	2.39	120.34	117.63

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	1949	090	OAU-CAO-NAN	-2.15	118.80	123.71
2	A	1949	090	CAE-CAK-NAL	-2.15	120.37	123.33
2	A	1949	090	CAD-CAE-CAK	2.12	121.04	117.59

There are no chirality outliers.
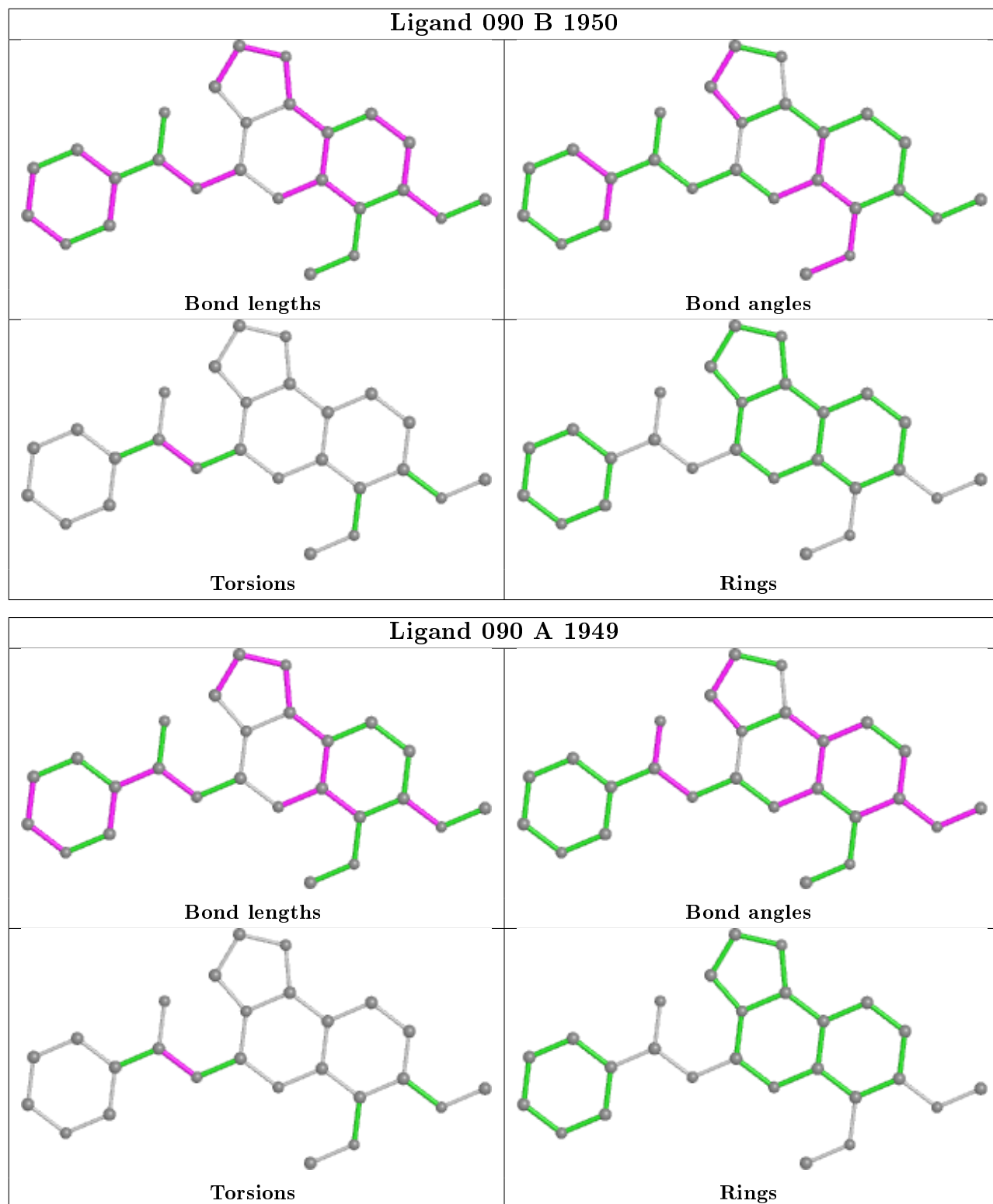
All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1949	090	OAU-CAO-NAN-CAM
2	B	1950	090	CAP-CAO-NAN-CAM

There are no ring outliers.

2 monomers are involved in 13 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	1950	090	10	0
2	A	1949	090	3	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 090 B 1950

Bond lengths

Bond angles

Torsions

Rings

Ligand 090 A 1949

Bond lengths

Bond angles

Torsions

Rings

5.7　Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data (i)

6.1 Protein, DNA and RNA chains (i)

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	546/696 (78%)	0.09	6 (1%)	80	79	36, 59, 97, 114	0
1	B	544/696 (78%)	0.23	15 (2%)	53	51	47, 70, 100, 110	0
All	All	1090/1392 (78%)	0.16	21 (1%)	66	65	36, 65, 99, 114	0

All (21) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	302	TYR	5.8
1	B	341	TRP	4.3
1	B	302	TYR	4.1
1	B	324	TYR	3.9
1	B	676	ALA	3.4
1	B	636	LEU	3.4
1	A	341	TRP	3.3
1	A	323	PHE	2.7
1	B	298	HIS	2.6
1	A	344	GLU	2.6
1	B	342	LYS	2.5
1	B	632	PHE	2.5
1	B	347	VAL	2.4
1	B	673	PHE	2.3
1	B	695	ALA	2.3
1	A	347	VAL	2.2
1	A	348	THR	2.2
1	B	699	HIS	2.2
1	B	317	LEU	2.1
1	B	615	VAL	2.1
1	B	700	GLY	2.1

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

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

6.3 Carbohydrates (i)

There are no carbohydrates in this entry.

6.4 Ligands (i)

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

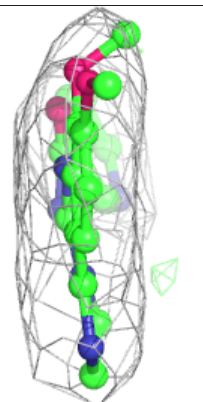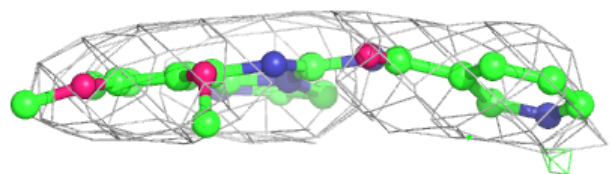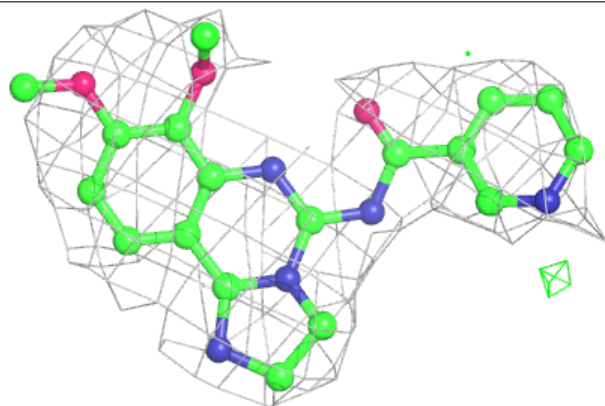| Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	090	A	1949	26/26	0.91	0.35	69,77,87,88	0
2	090	B	1950	26/26	0.95	0.28	75,80,95,96	0

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 090 A 1949:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
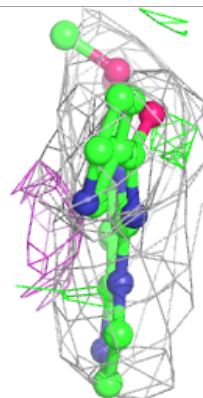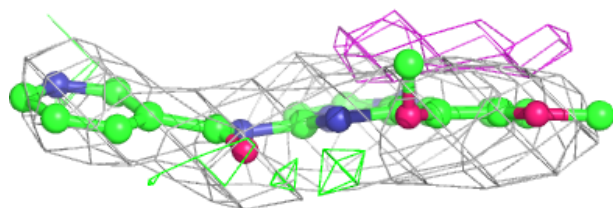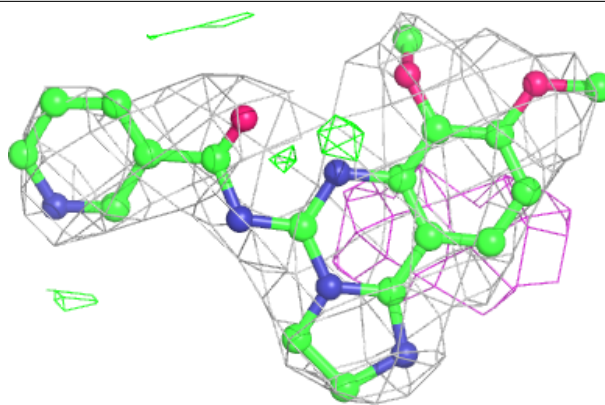
Electron density around 090 B 1950:

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

6.5 Other polymers (i)

There are no such residues in this entry.