Full wwPDB X-ray Structure Validation Report ⓘ

Jun 26, 2024 – 03:01 AM EDT

PDB ID	:	6Y3X
Title	:	Crystal structure of the Francisella novicida lysine decarboxylase LdcF
Authors	:	Felix, J.; Siebert, C.; Gutsche, I.; Renesto, P.
Deposited on	:	2020-02-19
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 ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references ⓘ) were used in the production of this report:

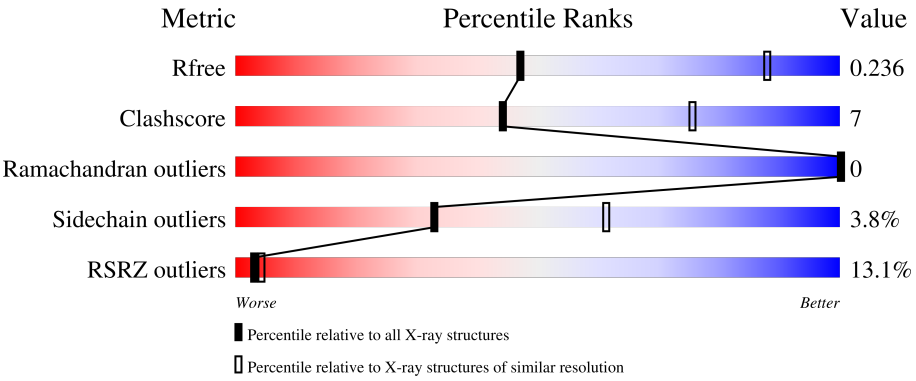
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.37.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 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	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 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	717	7% 81% 18%
1	B	717	9% 82% 17%
1	C	717	17% 84% 15%
1	D	717	12% 82% 17%
1	E	717	20% 81% 17%

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 28440 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 Lysine decarboxylase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	717	Total	C	N	O	P	S	0	0	0
			5697	3668	916	1090	1	22			
1	B	717	Total	C	N	O	P	S	0	0	0
			5703	3670	918	1092	1	22			
1	C	717	Total	C	N	O	P	S	0	0	0
			5675	3650	912	1090	1	22			
1	D	717	Total	C	N	O	P	S	0	0	0
			5690	3660	915	1092	1	22			
1	E	717	Total	C	N	O	P	S	0	0	0
			5675	3653	909	1090	1	22			

There are 35 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-5	GLU	-	expression tag	UNP A0Q584
A	-4	ASN	-	expression tag	UNP A0Q584
A	-3	LEU	-	expression tag	UNP A0Q584
A	-2	TYR	-	expression tag	UNP A0Q584
A	-1	PHE	-	expression tag	UNP A0Q584
A	0	GLN	-	expression tag	UNP A0Q584
A	1	GLY	-	expression tag	UNP A0Q584
B	-5	GLU	-	expression tag	UNP A0Q584
B	-4	ASN	-	expression tag	UNP A0Q584
B	-3	LEU	-	expression tag	UNP A0Q584
B	-2	TYR	-	expression tag	UNP A0Q584
B	-1	PHE	-	expression tag	UNP A0Q584
B	0	GLN	-	expression tag	UNP A0Q584
B	1	GLY	-	expression tag	UNP A0Q584
C	-5	GLU	-	expression tag	UNP A0Q584
C	-4	ASN	-	expression tag	UNP A0Q584
C	-3	LEU	-	expression tag	UNP A0Q584
C	-2	TYR	-	expression tag	UNP A0Q584
C	-1	PHE	-	expression tag	UNP A0Q584

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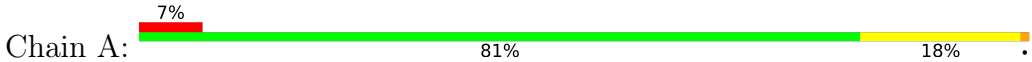
Chain	Residue	Modelled	Actual	Comment	Reference
C	0	GLN	-	expression tag	UNP A0Q584
C	1	GLY	-	expression tag	UNP A0Q584
D	-5	GLU	-	expression tag	UNP A0Q584
D	-4	ASN	-	expression tag	UNP A0Q584
D	-3	LEU	-	expression tag	UNP A0Q584
D	-2	TYR	-	expression tag	UNP A0Q584
D	-1	PHE	-	expression tag	UNP A0Q584
D	0	GLN	-	expression tag	UNP A0Q584
D	1	GLY	-	expression tag	UNP A0Q584
E	-5	GLU	-	expression tag	UNP A0Q584
E	-4	ASN	-	expression tag	UNP A0Q584
E	-3	LEU	-	expression tag	UNP A0Q584
E	-2	TYR	-	expression tag	UNP A0Q584
E	-1	PHE	-	expression tag	UNP A0Q584
E	0	GLN	-	expression tag	UNP A0Q584
E	1	GLY	-	expression tag	UNP A0Q584

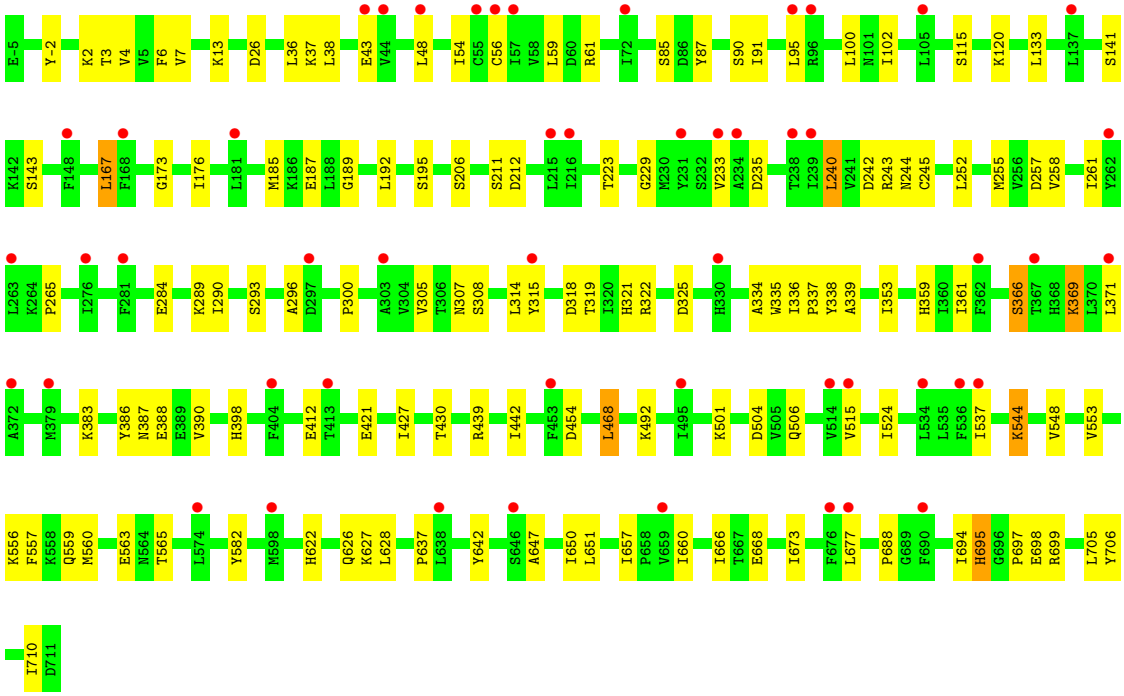
3 Residue-property plots (i)

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: Lysine decarboxylase

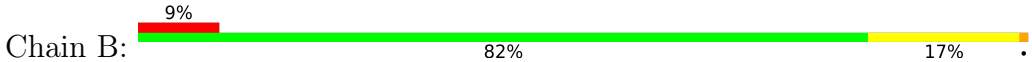
Chain A:

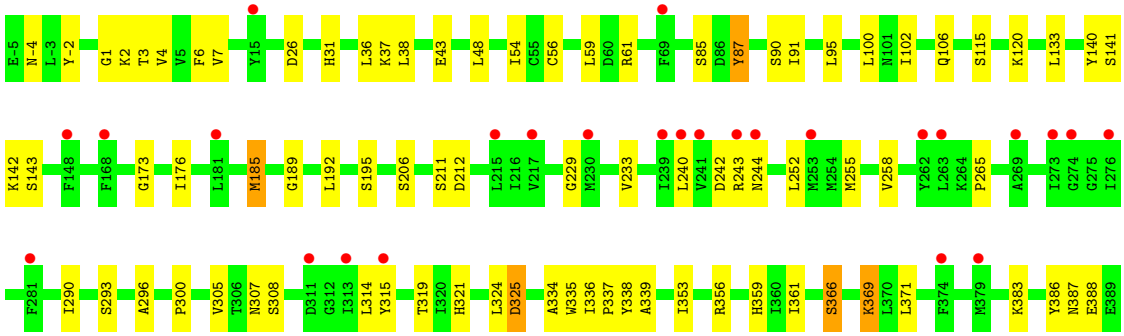


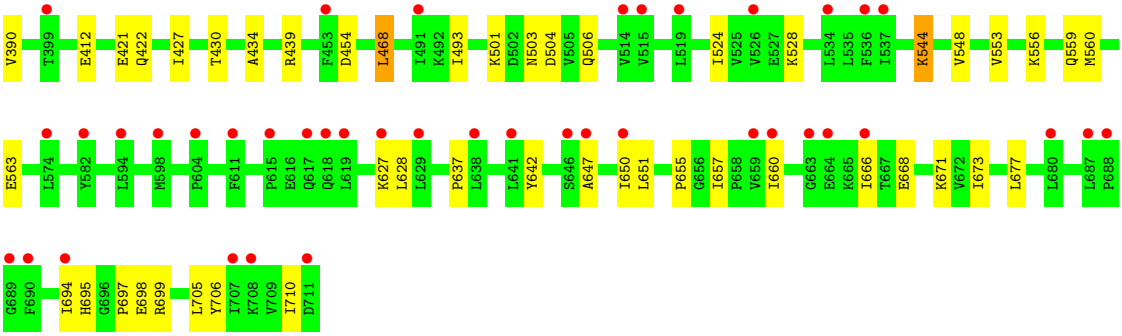


• Molecule 1: Lysine decarboxylase

Chain B:

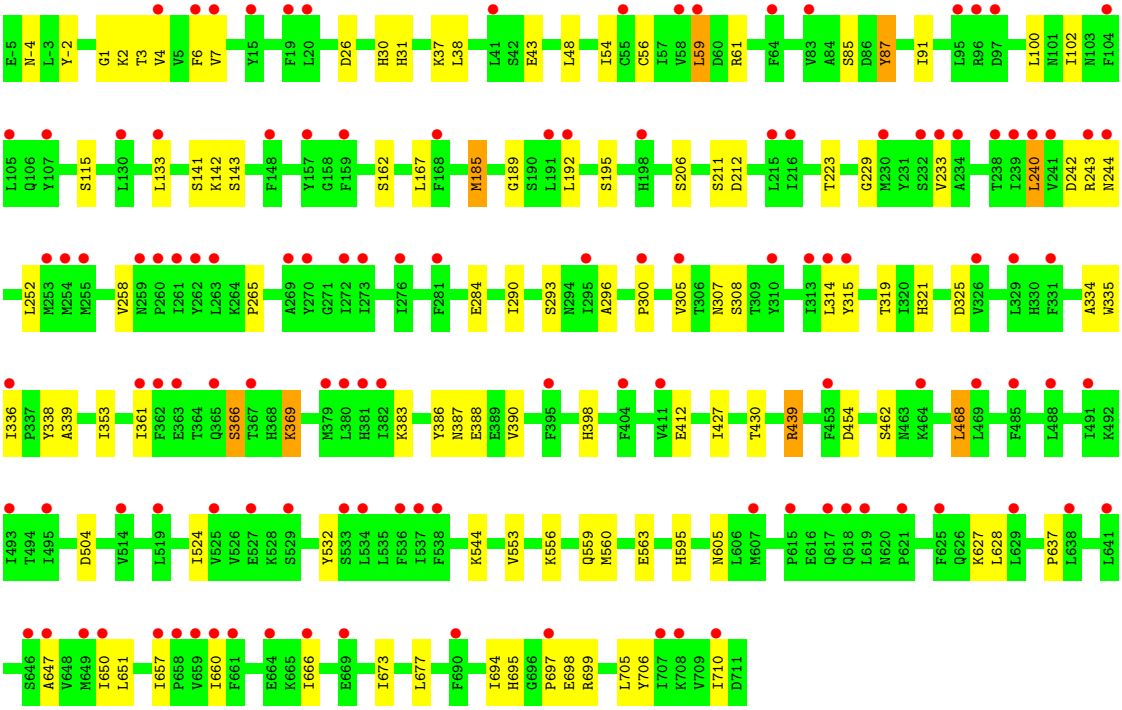






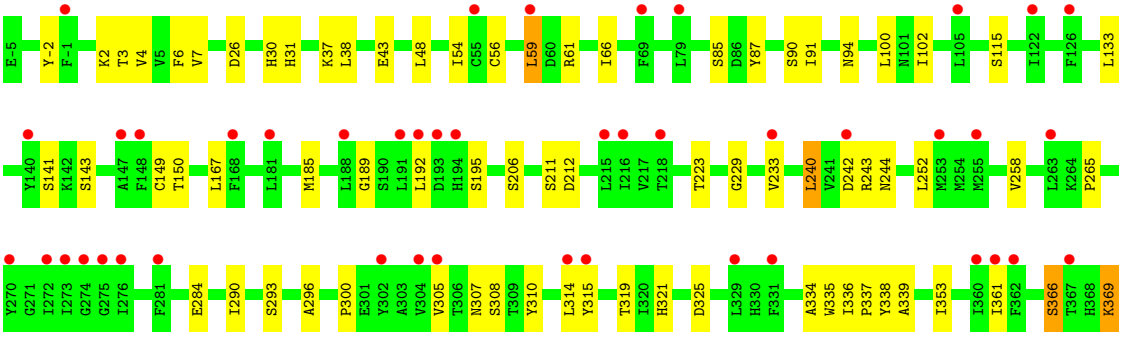
• Molecule 1: Lysine decarboxylase

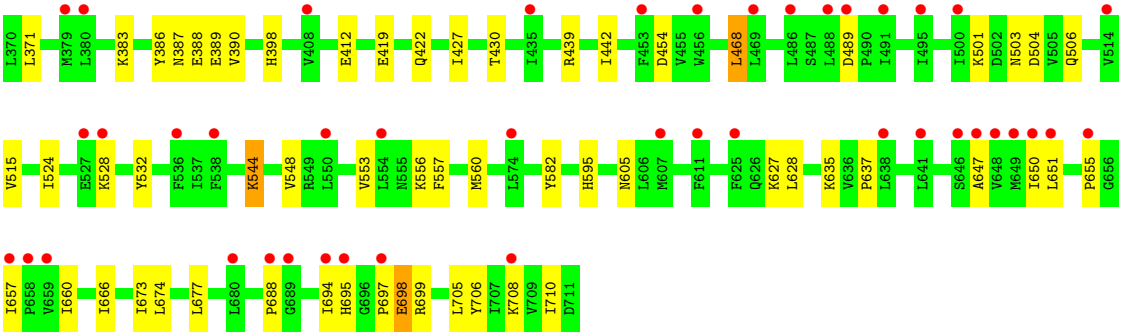
Chain C:



• Molecule 1: Lysine decarboxylase

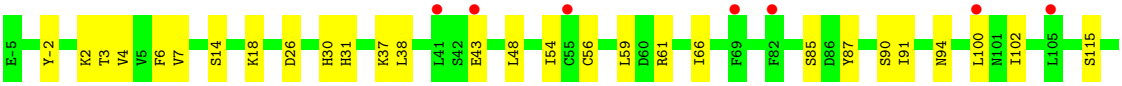
Chain D:

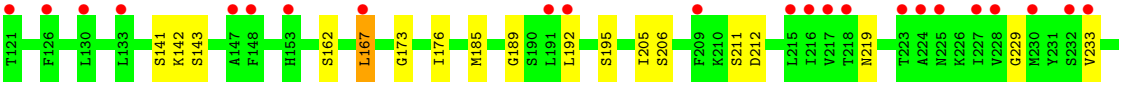


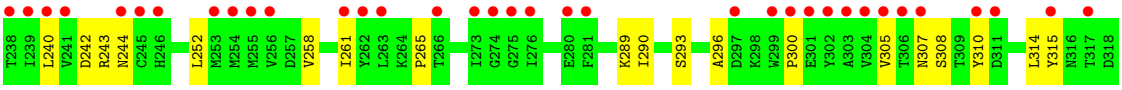


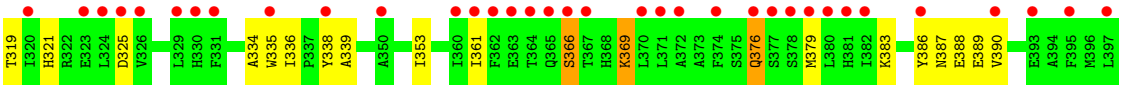
• Molecule 1: Lysine decarboxylase

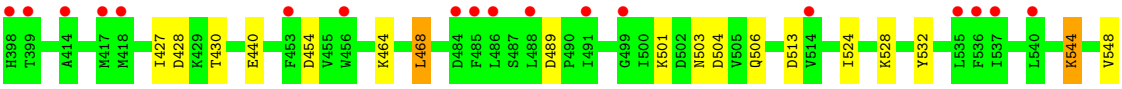
Chain E:

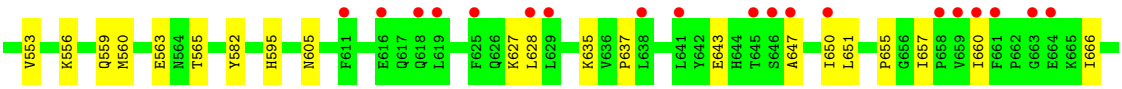


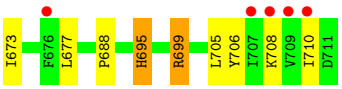












4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α, β, γ	165.27Å 318.25Å 184.02Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	89.27 – 3.40 146.67 – 3.40	Depositor EDS
% Data completeness (in resolution range)	99.1 (89.27-3.40) 99.2 (146.67-3.40)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.04 (at 3.41Å)	Xtriage
Refinement program	PHENIX dev_3689	Depositor
R, R_{free}	0.185 , 0.234 0.187 , 0.236	Depositor DCC
R_{free} test set	6662 reflections (10.00%)	wwPDB-VP
Wilson B-factor (Å^2)	151.9	Xtriage
Anisotropy	0.205	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 114.5	EDS
L-test for twinning[2]	$< \|L\| > = 0.47$, $< L^2 > = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	28440	wwPDB-VP
Average B, all atoms (Å^2)	165.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.49% 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: LLP

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	0.25	0/5815	0.45	0/7902
1	B	0.25	0/5821	0.44	0/7910
1	C	0.25	0/5793	0.44	0/7881
1	D	0.25	0/5808	0.45	0/7896
1	E	0.25	0/5793	0.44	0/7879
All	All	0.25	0/29030	0.44	0/39468

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	5697	0	5422	82	0
1	B	5703	0	5426	70	0
1	C	5675	0	5356	64	0
1	D	5690	0	5389	78	0
1	E	5675	0	5367	72	0
All	All	28440	0	26960	364	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

All (364) 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:293:SER:HB2	1:C:296:ALA:HB2	1.62	0.81
1:B:4:VAL:HG23	1:B:56:CYS:HB3	1.63	0.81
1:E:293:SER:HB2	1:E:296:ALA:HB2	1.61	0.81
1:D:293:SER:HB2	1:D:296:ALA:HB2	1.64	0.80
1:B:293:SER:HB2	1:B:296:ALA:HB2	1.64	0.80
1:A:293:SER:HB2	1:A:296:ALA:HB2	1.64	0.78
1:D:149:CYS:SG	1:D:150:THR:N	2.55	0.78
1:B:628:LEU:HD11	1:B:647:ALA:HB1	1.71	0.72
1:C:4:VAL:HG23	1:C:56:CYS:HB3	1.69	0.72
1:C:628:LEU:HD11	1:C:647:ALA:HB1	1.74	0.70
1:D:628:LEU:HD11	1:D:647:ALA:HB1	1.75	0.69
1:A:628:LEU:HD11	1:A:647:ALA:HB1	1.75	0.69
1:A:100:LEU:HB2	1:A:102:ILE:HG13	1.75	0.68
1:C:100:LEU:HB2	1:C:102:ILE:HG13	1.76	0.68
1:E:628:LEU:HD11	1:E:647:ALA:HB1	1.74	0.68
1:C:386:TYR:HE2	1:C:388:GLU:HG2	1.59	0.68
1:A:559:GLN:NE2	1:A:563:GLU:OE1	2.26	0.67
1:B:100:LEU:HB2	1:B:102:ILE:HG13	1.77	0.67
1:A:622:HIS:CE1	1:A:626:GLN:HE21	2.13	0.67
1:D:100:LEU:HB2	1:D:102:ILE:HG13	1.78	0.66
1:D:637:PRO:HA	1:D:706:TYR:HA	1.78	0.66
1:B:386:TYR:HE2	1:B:388:GLU:HG2	1.60	0.66
1:C:335:TRP:NE1	1:C:369:LLP:O3	2.27	0.65
1:A:637:PRO:HA	1:A:706:TYR:HA	1.79	0.65
1:E:4:VAL:HG23	1:E:56:CYS:HB3	1.79	0.65
1:B:559:GLN:NE2	1:B:563:GLU:OE1	2.31	0.64
1:B:335:TRP:NE1	1:B:369:LLP:O3	2.30	0.64
1:B:666:ILE:HG12	1:B:673:ILE:HD11	1.79	0.64
1:D:666:ILE:HG12	1:D:673:ILE:HD11	1.80	0.64
1:E:219:ASN:HA	1:E:376:GLN:HG2	1.80	0.64
1:E:666:ILE:HG12	1:E:673:ILE:HD11	1.80	0.63
1:A:335:TRP:NE1	1:A:369:LLP:O3	2.32	0.63
1:E:100:LEU:HB2	1:E:102:ILE:HG13	1.79	0.63
1:E:637:PRO:HA	1:E:706:TYR:HA	1.79	0.63
1:D:386:TYR:HE2	1:D:388:GLU:HG2	1.64	0.63
1:D:335:TRP:NE1	1:D:369:LLP:O3	2.30	0.63
1:B:325:ASP:OD1	1:B:356:ARG:NH1	2.31	0.62
1:B:637:PRO:HA	1:B:706:TYR:HA	1.80	0.62
1:A:386:TYR:HE2	1:A:388:GLU:HG2	1.65	0.62
1:A:666:ILE:HG12	1:A:673:ILE:HD11	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:61:ARG:HB2	1:E:85:SER:HB3	1.82	0.62
1:E:651:LEU:HB3	1:E:695:HIS:HB2	1.82	0.62
1:C:637:PRO:HA	1:C:706:TYR:HA	1.81	0.61
1:D:419:GLU:O	1:D:422:GLN:NE2	2.33	0.61
1:E:61:ARG:NH2	1:E:90:SER:O	2.33	0.61
1:D:61:ARG:HB2	1:D:85:SER:HB3	1.83	0.61
1:A:651:LEU:HB3	1:A:695:HIS:HB2	1.83	0.61
1:E:335:TRP:NE1	1:E:369:LLP:O3	2.33	0.61
1:A:61:ARG:HB2	1:A:85:SER:HB3	1.82	0.61
1:E:308:SER:HB3	1:E:314:LEU:HD23	1.83	0.61
1:B:189:GLY:HA3	1:B:195:SER:HB2	1.83	0.60
1:C:666:ILE:HG12	1:C:673:ILE:HD11	1.83	0.60
1:E:366:SER:HB3	1:E:369:LLP:HB3	1.83	0.60
1:E:48:LEU:HD21	1:E:54:ILE:HD11	1.83	0.60
1:E:261:ILE:HG21	1:E:289:LYS:HB3	1.83	0.60
1:B:366:SER:HB3	1:B:369:LLP:HB3	1.83	0.59
1:E:386:TYR:HE2	1:E:388:GLU:HG2	1.65	0.59
1:D:48:LEU:HD21	1:D:54:ILE:HD11	1.84	0.59
1:D:308:SER:HB3	1:D:314:LEU:HD23	1.85	0.59
1:A:366:SER:HB3	1:A:369:LLP:HB3	1.85	0.59
1:C:651:LEU:HB3	1:C:695:HIS:HB2	1.85	0.58
1:C:366:SER:HB3	1:C:369:LLP:HB3	1.84	0.58
1:C:559:GLN:NE2	1:C:563:GLU:OE1	2.35	0.58
1:B:308:SER:HB3	1:B:314:LEU:HD23	1.84	0.58
1:A:261:ILE:HG21	1:A:289:LYS:HB3	1.84	0.58
1:C:61:ARG:HB2	1:C:85:SER:HB3	1.86	0.58
1:E:290:ILE:HD11	1:E:300:PRO:HD3	1.85	0.58
1:E:650:ILE:HB	1:E:660:ILE:HG13	1.86	0.58
1:D:650:ILE:HB	1:D:660:ILE:HG13	1.86	0.57
1:B:212:ASP:HB2	1:B:383:LYS:HA	1.87	0.57
1:C:650:ILE:HB	1:C:660:ILE:HG13	1.86	0.57
1:A:290:ILE:HD11	1:A:300:PRO:HD3	1.86	0.57
1:C:-2:TYR:CD1	1:C:2:LYS:HD2	2.40	0.57
1:C:308:SER:HB3	1:C:314:LEU:HD23	1.85	0.57
1:E:100:LEU:HD12	1:E:102:ILE:HD11	1.85	0.57
1:E:242:ASP:HB2	1:E:305:VAL:HA	1.86	0.57
1:C:48:LEU:HD21	1:C:54:ILE:HD11	1.87	0.57
1:A:308:SER:HB3	1:A:314:LEU:HD23	1.85	0.57
1:A:501:LYS:HB2	1:A:506:GLN:NE2	2.20	0.57
1:A:524:ILE:HD12	1:A:553:VAL:HG11	1.87	0.57
1:C:290:ILE:HD11	1:C:300:PRO:HD3	1.85	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:-2:TYR:CD1	1:A:2:LYS:HD2	2.41	0.56
1:D:366:SER:HB3	1:D:369:LLP:HB3	1.88	0.56
1:A:48:LEU:HD21	1:A:54:ILE:HD11	1.86	0.56
1:B:650:ILE:HB	1:B:660:ILE:HG13	1.86	0.56
1:D:212:ASP:HB2	1:D:383:LYS:HA	1.88	0.56
1:D:556:LYS:O	1:D:560:MET:HG2	2.05	0.56
1:D:528:LYS:NZ	1:D:655:PRO:O	2.39	0.56
1:E:229:GLY:HA3	1:E:252:LEU:HD21	1.87	0.56
1:C:556:LYS:O	1:C:560:MET:HG2	2.06	0.55
1:A:556:LYS:O	1:A:560:MET:HG2	2.06	0.55
1:B:524:ILE:HD12	1:B:553:VAL:HG11	1.88	0.55
1:D:229:GLY:HA3	1:D:252:LEU:HD21	1.87	0.55
1:D:242:ASP:HB2	1:D:305:VAL:HA	1.89	0.55
1:E:212:ASP:HB2	1:E:383:LYS:HA	1.88	0.55
1:C:229:GLY:HA3	1:C:252:LEU:HD21	1.89	0.55
1:A:650:ILE:HB	1:A:660:ILE:HG13	1.88	0.54
1:A:353:ILE:HD11	1:A:361:ILE:HG13	1.89	0.54
1:B:48:LEU:HD21	1:B:54:ILE:HD11	1.89	0.54
1:D:38:LEU:HD13	1:D:43:GLU:HB3	1.89	0.54
1:E:-2:TYR:CD1	1:E:2:LYS:HD2	2.42	0.54
1:B:229:GLY:HA3	1:B:252:LEU:HD21	1.88	0.54
1:E:556:LYS:O	1:E:560:MET:HG2	2.08	0.54
1:D:290:ILE:HD11	1:D:300:PRO:HD3	1.89	0.54
1:B:556:LYS:O	1:B:560:MET:HG2	2.07	0.54
1:C:353:ILE:HD11	1:C:361:ILE:HG13	1.90	0.54
1:B:61:ARG:HB2	1:B:85:SER:HB3	1.91	0.53
1:A:212:ASP:HB2	1:A:383:LYS:HA	1.90	0.53
1:E:528:LYS:NZ	1:E:655:PRO:O	2.41	0.53
1:E:189:GLY:HA3	1:E:195:SER:HB2	1.91	0.53
1:C:242:ASP:HB2	1:C:305:VAL:HA	1.89	0.53
1:D:650:ILE:HG21	1:D:677:LEU:HD11	1.90	0.52
1:A:387:ASN:HB3	1:A:390:VAL:HG22	1.91	0.52
1:A:524:ILE:CD1	1:A:553:VAL:HG11	2.40	0.52
1:D:353:ILE:HD11	1:D:361:ILE:HG13	1.92	0.52
1:A:307:ASN:HB2	1:A:315:TYR:HD2	1.75	0.52
1:A:627:LYS:HG3	1:A:710:ILE:HD11	1.91	0.52
1:C:233:VAL:HG11	1:C:258:VAL:HG11	1.90	0.52
1:B:353:ILE:HD11	1:B:361:ILE:HG13	1.91	0.52
1:D:307:ASN:HB2	1:D:315:TYR:HD2	1.74	0.52
1:A:100:LEU:HD12	1:A:102:ILE:HD11	1.92	0.52
1:B:528:LYS:NZ	1:B:655:PRO:O	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:307:ASN:HB2	1:E:315:TYR:HD2	1.75	0.52
1:C:307:ASN:HB2	1:C:315:TYR:HD2	1.76	0.51
1:E:524:ILE:HD12	1:E:553:VAL:HG11	1.92	0.51
1:A:233:VAL:HG11	1:A:258:VAL:HG11	1.92	0.51
1:E:501:LYS:HB2	1:E:506:GLN:NE2	2.25	0.51
1:B:501:LYS:HB2	1:B:506:GLN:NE2	2.25	0.51
1:D:61:ARG:NH2	1:D:90:SER:O	2.43	0.51
1:B:627:LYS:HG3	1:B:710:ILE:HD11	1.93	0.51
1:A:336:ILE:HB	1:A:339:ALA:HB2	1.92	0.50
1:D:321:HIS:CD2	1:D:353:ILE:HD13	2.46	0.50
1:C:212:ASP:HB2	1:C:383:LYS:HA	1.93	0.50
1:A:189:GLY:HA3	1:A:195:SER:HB2	1.93	0.50
1:E:233:VAL:HG11	1:E:258:VAL:HG11	1.93	0.50
1:E:650:ILE:HG21	1:E:677:LEU:HD11	1.94	0.50
1:A:229:GLY:HA3	1:A:252:LEU:HD21	1.92	0.50
1:C:334:ALA:HA	1:C:366:SER:H	1.77	0.50
1:D:532:TYR:OH	1:D:595:HIS:ND1	2.37	0.50
1:C:38:LEU:HD13	1:C:43:GLU:HB3	1.93	0.50
1:D:334:ALA:HA	1:D:366:SER:H	1.75	0.50
1:B:242:ASP:HB2	1:B:305:VAL:HA	1.93	0.49
1:D:87:TYR:HD1	1:D:87:TYR:H	1.60	0.49
1:D:189:GLY:HA3	1:D:195:SER:OG	2.12	0.49
1:D:233:VAL:CG1	1:D:258:VAL:HG11	2.42	0.49
1:E:87:TYR:HD1	1:E:87:TYR:H	1.60	0.49
1:B:338:TYR:HB2	1:B:427:ILE:HG12	1.95	0.49
1:D:192:LEU:HD12	1:D:192:LEU:H	1.77	0.49
1:E:244:ASN:HD22	1:E:657:ILE:HD12	1.76	0.49
1:A:242:ASP:HB2	1:A:305:VAL:HA	1.95	0.49
1:C:100:LEU:HD12	1:C:102:ILE:HD11	1.94	0.49
1:B:38:LEU:HD13	1:B:43:GLU:HB3	1.94	0.49
1:B:336:ILE:HB	1:B:339:ALA:HB2	1.94	0.49
1:A:544:LYS:NZ	1:C:85:SER:OG	2.40	0.49
1:E:7:VAL:O	1:E:7:VAL:HG13	2.13	0.49
1:A:7:VAL:HG13	1:A:7:VAL:O	2.13	0.49
1:A:38:LEU:HD13	1:A:43:GLU:HB3	1.95	0.49
1:B:61:ARG:NH2	1:B:90:SER:O	2.46	0.49
1:D:100:LEU:HD12	1:D:102:ILE:HD11	1.95	0.49
1:E:338:TYR:OH	1:E:489:ASP:OD2	2.29	0.48
1:B:334:ALA:HA	1:B:366:SER:H	1.78	0.48
1:B:628:LEU:CD1	1:B:647:ALA:HB1	2.43	0.48
1:D:338:TYR:OH	1:D:489:ASP:OD2	2.23	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:605:ASN:OD1	1:E:605:ASN:N	2.46	0.48
1:B:192:LEU:HD12	1:B:192:LEU:H	1.78	0.48
1:B:290:ILE:HD11	1:B:300:PRO:HD3	1.94	0.48
1:C:321:HIS:CD2	1:C:353:ILE:HD13	2.49	0.48
1:A:439:ARG:HH11	1:A:442:ILE:HD11	1.78	0.48
1:B:650:ILE:HG21	1:B:677:LEU:HD11	1.95	0.48
1:C:244:ASN:HD22	1:C:657:ILE:HD12	1.79	0.48
1:B:321:HIS:CD2	1:B:353:ILE:HD13	2.49	0.48
1:A:321:HIS:CD2	1:A:353:ILE:HD13	2.49	0.48
1:A:650:ILE:HG21	1:A:677:LEU:HD11	1.95	0.48
1:E:192:LEU:H	1:E:192:LEU:HD12	1.78	0.48
1:C:387:ASN:HB3	1:C:390:VAL:HG22	1.96	0.48
1:C:650:ILE:HG21	1:C:677:LEU:HD11	1.96	0.48
1:D:7:VAL:HG13	1:D:59:LEU:HB3	1.96	0.48
1:B:387:ASN:HB3	1:B:390:VAL:HG22	1.95	0.47
1:C:189:GLY:HA3	1:C:195:SER:OG	2.13	0.47
1:E:321:HIS:CD2	1:E:353:ILE:HD13	2.48	0.47
1:C:61:ARG:HH22	1:C:91:ILE:HA	1.78	0.47
1:D:439:ARG:HH11	1:D:442:ILE:HD11	1.80	0.47
1:D:233:VAL:HG11	1:D:258:VAL:HG11	1.97	0.47
1:A:244:ASN:HD22	1:A:657:ILE:HD12	1.78	0.47
1:A:694:ILE:O	1:A:697:PRO:HD2	2.14	0.47
1:B:307:ASN:HB2	1:B:315:TYR:HD2	1.80	0.47
1:C:192:LEU:HD12	1:C:192:LEU:H	1.79	0.47
1:D:504:ASP:N	1:D:504:ASP:OD1	2.48	0.47
1:E:387:ASN:HB3	1:E:390:VAL:HG22	1.97	0.47
1:A:192:LEU:HD12	1:A:192:LEU:H	1.80	0.47
1:A:504:ASP:N	1:A:504:ASP:OD1	2.47	0.47
1:E:559:GLN:NE2	1:E:563:GLU:OE2	2.48	0.47
1:A:242:ASP:HB3	1:A:245:CYS:SG	2.55	0.47
1:D:6:PHE:O	1:D:37:LYS:HA	2.15	0.47
1:E:627:LYS:HG3	1:E:710:ILE:HD11	1.97	0.47
1:B:100:LEU:HD12	1:B:102:ILE:HD11	1.96	0.47
1:A:4:VAL:HG23	1:A:56:CYS:HB3	1.97	0.46
1:A:338:TYR:HB2	1:A:427:ILE:HG12	1.96	0.46
1:C:243:ARG:HB3	1:C:265:PRO:HD3	1.97	0.46
1:E:38:LEU:HD13	1:E:43:GLU:HB3	1.97	0.46
1:B:504:ASP:OD1	1:B:504:ASP:N	2.48	0.46
1:C:338:TYR:HB2	1:C:427:ILE:HG12	1.97	0.46
1:C:468:LEU:HD23	1:C:468:LEU:H	1.80	0.46
1:D:582:TYR:OH	1:D:688:PRO:O	2.32	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:353:ILE:HD11	1:E:361:ILE:HG13	1.96	0.46
1:E:468:LEU:HD23	1:E:468:LEU:H	1.80	0.46
1:C:504:ASP:OD1	1:C:504:ASP:N	2.48	0.46
1:D:4:VAL:HG23	1:D:56:CYS:HB3	1.96	0.46
1:D:627:LYS:HG3	1:D:710:ILE:HD11	1.97	0.46
1:A:61:ARG:NH2	1:A:90:SER:O	2.49	0.46
1:A:334:ALA:HA	1:A:366:SER:H	1.80	0.46
1:B:-2:TYR:CG	1:B:2:LYS:HD3	2.51	0.46
1:D:149:CYS:HG	1:D:150:THR:N	2.14	0.46
1:E:504:ASP:OD1	1:E:504:ASP:N	2.48	0.46
1:A:6:PHE:O	1:A:37:LYS:HA	2.15	0.46
1:E:338:TYR:HB2	1:E:427:ILE:HG12	1.97	0.46
1:C:7:VAL:HG13	1:C:59:LEU:HB3	1.98	0.46
1:C:233:VAL:CG1	1:C:258:VAL:HG11	2.46	0.46
1:E:336:ILE:HB	1:E:339:ALA:HB2	1.98	0.46
1:B:6:PHE:O	1:B:37:LYS:HA	2.16	0.46
1:C:244:ASN:OD1	1:C:265:PRO:HG2	2.16	0.46
1:D:524:ILE:HD12	1:D:553:VAL:HG11	1.98	0.46
1:B:651:LEU:HB3	1:B:695:HIS:HB2	1.98	0.45
1:C:628:LEU:CD1	1:C:647:ALA:HB1	2.45	0.45
1:D:-2:TYR:CD1	1:D:2:LYS:HD3	2.51	0.45
1:D:651:LEU:HB3	1:D:695:HIS:HB2	1.98	0.45
1:A:233:VAL:CG1	1:A:258:VAL:HG11	2.46	0.45
1:A:468:LEU:HD23	1:A:468:LEU:H	1.81	0.45
1:D:338:TYR:HB2	1:D:427:ILE:HG12	1.97	0.45
1:D:387:ASN:HB3	1:D:390:VAL:HG22	1.97	0.45
1:D:628:LEU:CD1	1:D:647:ALA:HB1	2.45	0.45
1:E:6:PHE:O	1:E:37:LYS:HA	2.15	0.45
1:E:233:VAL:CG1	1:E:258:VAL:HG11	2.46	0.45
1:A:243:ARG:HB3	1:A:265:PRO:HD3	1.98	0.45
1:E:334:ALA:HA	1:E:366:SER:H	1.82	0.45
1:D:61:ARG:NH2	1:D:91:ILE:HA	2.32	0.45
1:C:439:ARG:NH2	1:C:462:SER:O	2.50	0.45
1:C:605:ASN:OD1	1:C:605:ASN:N	2.46	0.45
1:D:336:ILE:HB	1:D:339:ALA:HB2	1.98	0.45
1:A:167:LEU:HD23	1:A:167:LEU:HA	1.77	0.45
1:B:468:LEU:HD23	1:B:468:LEU:H	1.82	0.45
1:C:524:ILE:HD12	1:C:553:VAL:HG11	1.97	0.45
1:A:582:TYR:OH	1:A:688:PRO:O	2.32	0.44
1:B:233:VAL:HG11	1:B:258:VAL:HG11	1.98	0.44
1:B:243:ARG:HB3	1:B:265:PRO:HD3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:532:TYR:OH	1:C:595:HIS:ND1	2.41	0.44
1:C:694:ILE:O	1:C:697:PRO:HD2	2.17	0.44
1:C:290:ILE:HG23	1:C:296:ALA:HB1	1.99	0.44
1:C:627:LYS:HG3	1:C:710:ILE:HD11	1.99	0.44
1:D:468:LEU:H	1:D:468:LEU:HD23	1.82	0.44
1:D:694:ILE:O	1:D:697:PRO:HD2	2.17	0.44
1:A:61:ARG:NH2	1:A:91:ILE:HA	2.32	0.44
1:C:6:PHE:O	1:C:37:LYS:HA	2.17	0.44
1:A:173:GLY:O	1:A:176:ILE:HG22	2.17	0.44
1:E:244:ASN:OD1	1:E:265:PRO:HG2	2.18	0.44
1:C:-4:ASN:OD1	1:C:142:LYS:HE3	2.17	0.44
1:A:318:ASP:HB3	1:A:322:ARG:HH21	1.82	0.44
1:D:30:HIS:O	1:D:31:HIS:ND1	2.51	0.44
1:C:30:HIS:O	1:C:31:HIS:ND1	2.51	0.44
1:D:605:ASN:OD1	1:D:605:ASN:N	2.46	0.44
1:E:628:LEU:CD1	1:E:647:ALA:HB1	2.46	0.44
1:B:140:TYR:OH	1:B:185:MET:HG2	2.17	0.44
1:B:694:ILE:O	1:B:697:PRO:HD2	2.18	0.44
1:A:187:GLU:OE1	1:A:187:GLU:N	2.49	0.44
1:C:185:MET:SD	1:C:185:MET:N	2.91	0.43
1:D:387:ASN:OD1	1:D:389:GLU:HB2	2.18	0.43
1:E:243:ARG:HB3	1:E:265:PRO:HD3	2.00	0.43
1:A:223:THR:HG23	1:A:398:HIS:HB3	1.99	0.43
1:A:492:LYS:HG3	1:A:537:ILE:HG22	2.00	0.43
1:B:36:LEU:HD23	1:B:36:LEU:HA	1.86	0.43
1:B:244:ASN:OD1	1:B:265:PRO:HG2	2.18	0.43
1:C:284:GLU:H	1:C:284:GLU:CD	2.20	0.43
1:D:307:ASN:HA	1:D:308:SER:HA	1.80	0.43
1:B:91:ILE:HD12	1:B:91:ILE:HA	1.90	0.43
1:A:13:LYS:HD3	1:A:13:LYS:N	2.32	0.43
1:A:235:ASP:HB2	1:A:257:ASP:HB3	2.01	0.43
1:E:307:ASN:HA	1:E:308:SER:HA	1.80	0.43
1:B:1:GLY:O	1:B:3:THR:HG23	2.19	0.43
1:B:434:ALA:HB1	1:B:493:ILE:HD11	2.01	0.43
1:D:133:LEU:HB3	1:D:412:GLU:OE1	2.19	0.43
1:D:167:LEU:HA	1:D:167:LEU:HD23	1.81	0.43
1:E:173:GLY:O	1:E:176:ILE:HG22	2.19	0.43
1:E:167:LEU:HD23	1:E:167:LEU:HA	1.77	0.43
1:B:7:VAL:HG13	1:B:7:VAL:O	2.19	0.43
1:D:501:LYS:HB2	1:D:506:GLN:OE1	2.19	0.43
1:A:307:ASN:HA	1:A:308:SER:HA	1.80	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:30:HIS:O	1:E:31:HIS:ND1	2.52	0.42
1:A:61:ARG:HH22	1:A:91:ILE:HA	1.83	0.42
1:A:284:GLU:OE1	1:A:284:GLU:N	2.50	0.42
1:B:-2:TYR:CD1	1:B:2:LYS:HD3	2.54	0.42
1:B:642:TYR:OH	1:B:668:GLU:OE1	2.37	0.42
1:E:3:THR:OG1	1:E:54:ILE:HG22	2.20	0.42
1:A:515:VAL:HG22	1:A:557:PHE:CZ	2.54	0.42
1:B:85:SER:O	1:B:106:GLN:HA	2.19	0.42
1:A:290:ILE:HG23	1:A:296:ALA:HB1	2.00	0.42
1:A:628:LEU:CD1	1:A:647:ALA:HB1	2.44	0.42
1:C:61:ARG:NH2	1:C:91:ILE:HA	2.34	0.42
1:E:699:ARG:NH2	1:E:705:LEU:HD11	2.35	0.42
1:D:-2:TYR:CG	1:D:2:LYS:HD3	2.54	0.42
1:D:515:VAL:HG22	1:D:557:PHE:CZ	2.55	0.42
1:E:532:TYR:OH	1:E:595:HIS:ND1	2.39	0.42
1:B:-4:ASN:OD1	1:B:142:LYS:HE3	2.19	0.42
1:B:95:LEU:HD13	1:B:102:ILE:HD12	2.02	0.42
1:C:61:ARG:HD2	1:C:85:SER:HB3	2.02	0.42
1:C:87:TYR:HD1	1:C:87:TYR:H	1.66	0.42
1:D:544:LYS:O	1:D:548:VAL:HG23	2.20	0.42
1:E:205:ILE:HG23	1:E:379:MET:HE1	2.02	0.42
1:E:310:TYR:CZ	1:E:528:LYS:HD2	2.55	0.42
1:A:36:LEU:HD23	1:A:36:LEU:HA	1.89	0.42
1:A:133:LEU:HB3	1:A:412:GLU:OE1	2.19	0.42
1:A:563:GLU:HB3	1:A:565:THR:HG23	2.02	0.42
1:C:1:GLY:O	1:C:3:THR:HG23	2.19	0.42
1:D:635:LYS:HA	1:D:708:LYS:HA	2.00	0.42
1:E:66:ILE:HG23	1:E:94:ASN:ND2	2.35	0.42
1:E:563:GLU:HB3	1:E:565:THR:HG23	2.02	0.41
1:A:698:GLU:O	1:A:705:LEU:HA	2.19	0.41
1:B:244:ASN:HD22	1:B:657:ILE:HD12	1.85	0.41
1:B:544:LYS:O	1:B:548:VAL:HG23	2.19	0.41
1:C:336:ILE:HB	1:C:339:ALA:HB2	2.02	0.41
1:C:698:GLU:O	1:C:705:LEU:HA	2.20	0.41
1:D:223:THR:HG23	1:D:398:HIS:HB3	2.02	0.41
1:A:244:ASN:OD1	1:A:265:PRO:HG2	2.20	0.41
1:B:87:TYR:HD1	1:B:87:TYR:H	1.67	0.41
1:B:173:GLY:O	1:B:176:ILE:HG22	2.20	0.41
1:D:66:ILE:HG23	1:D:94:ASN:ND2	2.35	0.41
1:D:244:ASN:OD1	1:D:265:PRO:HG2	2.21	0.41
1:D:698:GLU:O	1:D:705:LEU:HA	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:240:LEU:HD23	1:A:240:LEU:HA	1.91	0.41
1:A:337:PRO:HG2	1:A:371:LEU:HG	2.03	0.41
1:C:223:THR:HG23	1:C:398:HIS:HB3	2.02	0.41
1:D:337:PRO:HG2	1:D:371:LEU:HG	2.02	0.41
1:A:3:THR:OG1	1:A:54:ILE:HG22	2.21	0.41
1:B:90:SER:OG	1:E:440:GLU:OE1	2.38	0.41
1:C:240:LEU:HD23	1:C:240:LEU:HA	1.92	0.41
1:B:324:LEU:HA	1:B:324:LEU:HD23	1.77	0.41
1:B:337:PRO:HG2	1:B:371:LEU:HG	2.03	0.41
1:D:310:TYR:CZ	1:D:528:LYS:HD2	2.56	0.41
1:B:61:ARG:HH22	1:B:91:ILE:HA	1.86	0.41
1:C:133:LEU:HB3	1:C:412:GLU:OE1	2.19	0.41
1:D:3:THR:OG1	1:D:54:ILE:HG22	2.20	0.41
1:D:666:ILE:HD13	1:D:674:LEU:HB2	2.03	0.41
1:E:14:SER:O	1:E:18:LYS:HG2	2.20	0.41
1:E:91:ILE:HD12	1:E:91:ILE:HA	1.90	0.41
1:E:387:ASN:OD1	1:E:389:GLU:HB2	2.21	0.41
1:A:439:ARG:HA	1:A:439:ARG:HD3	1.87	0.41
1:A:544:LYS:O	1:A:548:VAL:HG23	2.21	0.41
1:B:642:TYR:HE1	1:B:671:LYS:HG3	1.86	0.41
1:B:698:GLU:O	1:B:705:LEU:HA	2.21	0.41
1:D:244:ASN:HD22	1:D:657:ILE:HD12	1.86	0.41
1:D:439:ARG:HD3	1:D:439:ARG:HA	1.86	0.41
1:E:635:LYS:HA	1:E:708:LYS:HA	2.03	0.41
1:A:91:ILE:HA	1:A:91:ILE:HD12	1.91	0.40
1:A:95:LEU:HD13	1:A:102:ILE:HD12	2.02	0.40
1:A:361:ILE:HB	1:A:383:LYS:HB3	2.04	0.40
1:D:91:ILE:HA	1:D:91:ILE:HD12	1.90	0.40
1:E:428:ASP:OD1	1:E:464:LYS:NZ	2.39	0.40
1:B:133:LEU:HB3	1:B:412:GLU:OE1	2.20	0.40
1:B:229:GLY:HA3	1:B:252:LEU:CD2	2.51	0.40
1:D:240:LEU:HD23	1:D:240:LEU:HA	1.92	0.40
1:D:243:ARG:HB3	1:D:265:PRO:HD3	2.02	0.40
1:D:284:GLU:OE1	1:D:284:GLU:N	2.52	0.40
1:A:642:TYR:OH	1:A:668:GLU:OE1	2.39	0.40
1:E:544:LYS:O	1:E:548:VAL:HG23	2.22	0.40
1:E:582:TYR:OH	1:E:688:PRO:O	2.34	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	714/717 (100%)	673 (94%)	41 (6%)	0	100	100
1	B	714/717 (100%)	669 (94%)	45 (6%)	0	100	100
1	C	714/717 (100%)	672 (94%)	42 (6%)	0	100	100
1	D	714/717 (100%)	669 (94%)	45 (6%)	0	100	100
1	E	714/717 (100%)	671 (94%)	43 (6%)	0	100	100
All	All	3570/3585 (100%)	3354 (94%)	216 (6%)	0	100	100

There are no Ramachandran outliers to report.

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	614/643 (96%)	590 (96%)	24 (4%)	32	61
1	B	614/643 (96%)	588 (96%)	26 (4%)	30	59
1	C	606/643 (94%)	585 (96%)	21 (4%)	36	65
1	D	610/643 (95%)	591 (97%)	19 (3%)	40	68
1	E	608/643 (95%)	583 (96%)	25 (4%)	30	59
All	All	3052/3215 (95%)	2937 (96%)	115 (4%)	33	61

All (115) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	26	ASP
1	A	59	LEU
1	A	87	TYR
1	A	115	SER
1	A	120	LYS
1	A	141	SER
1	A	143	SER
1	A	167	LEU
1	A	185	MET
1	A	206	SER
1	A	211	SER
1	A	240	LEU
1	A	255	MET
1	A	319	THR
1	A	325	ASP
1	A	359	HIS
1	A	366	SER
1	A	421	GLU
1	A	430	THR
1	A	454	ASP
1	A	468	LEU
1	A	544	LYS
1	A	695	HIS
1	A	699	ARG
1	B	26	ASP
1	B	31	HIS
1	B	59	LEU
1	B	87	TYR
1	B	115	SER
1	B	120	LYS
1	B	141	SER
1	B	143	SER
1	B	185	MET
1	B	206	SER
1	B	211	SER
1	B	240	LEU
1	B	255	MET
1	B	319	THR
1	B	325	ASP
1	B	359	HIS
1	B	366	SER
1	B	421	GLU
1	B	422	GLN

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Mol	Chain	Res	Type
1	B	430	THR
1	B	439	ARG
1	B	454	ASP
1	B	468	LEU
1	B	503	ASN
1	B	544	LYS
1	B	699	ARG
1	C	26	ASP
1	C	59	LEU
1	C	87	TYR
1	C	115	SER
1	C	141	SER
1	C	143	SER
1	C	162	SER
1	C	167	LEU
1	C	185	MET
1	C	206	SER
1	C	211	SER
1	C	240	LEU
1	C	319	THR
1	C	325	ASP
1	C	366	SER
1	C	430	THR
1	C	439	ARG
1	C	454	ASP
1	C	468	LEU
1	C	544	LYS
1	C	699	ARG
1	D	26	ASP
1	D	59	LEU
1	D	115	SER
1	D	141	SER
1	D	143	SER
1	D	185	MET
1	D	206	SER
1	D	211	SER
1	D	240	LEU
1	D	319	THR
1	D	325	ASP
1	D	366	SER
1	D	430	THR
1	D	454	ASP

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Mol	Chain	Res	Type
1	D	468	LEU
1	D	503	ASN
1	D	544	LYS
1	D	698	GLU
1	D	699	ARG
1	E	26	ASP
1	E	59	LEU
1	E	115	SER
1	E	141	SER
1	E	142	LYS
1	E	143	SER
1	E	162	SER
1	E	167	LEU
1	E	185	MET
1	E	206	SER
1	E	211	SER
1	E	240	LEU
1	E	319	THR
1	E	325	ASP
1	E	366	SER
1	E	376	GLN
1	E	430	THR
1	E	454	ASP
1	E	468	LEU
1	E	503	ASN
1	E	513	ASP
1	E	544	LYS
1	E	643	GLU
1	E	695	HIS
1	E	699	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	506	GLN
1	A	626	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

5 non-standard protein/DNA/RNA residues 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	$\#\|Z\| > 2$
1	LLP	B	369	1	23,24,25	1.71	3 (13%)	25,32,34	0.94	1 (4%)
1	LLP	D	369	1	23,24,25	1.71	3 (13%)	25,32,34	0.95	1 (4%)
1	LLP	E	369	1	23,24,25	1.70	3 (13%)	25,32,34	0.94	1 (4%)
1	LLP	C	369	1	23,24,25	1.71	3 (13%)	25,32,34	0.93	1 (4%)
1	LLP	A	369	1	23,24,25	1.71	3 (13%)	25,32,34	0.95	2 (8%)

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
1	LLP	B	369	1	-	12/16/17/19	0/1/1/1
1	LLP	D	369	1	-	12/16/17/19	0/1/1/1
1	LLP	E	369	1	-	12/16/17/19	0/1/1/1
1	LLP	C	369	1	-	12/16/17/19	0/1/1/1
1	LLP	A	369	1	-	12/16/17/19	0/1/1/1

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	369	LLP	C4-C5	-4.66	1.36	1.42
1	A	369	LLP	C4-C5	-4.64	1.36	1.42
1	C	369	LLP	C4-C5	-4.62	1.36	1.42
1	D	369	LLP	C4-C5	-4.62	1.36	1.42
1	E	369	LLP	C4-C5	-4.61	1.36	1.42
1	A	369	LLP	C4-C4'	3.88	1.54	1.46
1	D	369	LLP	C4-C4'	3.88	1.54	1.46
1	C	369	LLP	C4-C4'	3.86	1.54	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	369	LLP	C4-C4'	3.84	1.53	1.46
1	E	369	LLP	C4-C4'	3.80	1.53	1.46
1	D	369	LLP	C4-C3	-3.24	1.36	1.40
1	E	369	LLP	C4-C3	-3.23	1.36	1.40
1	B	369	LLP	C4-C3	-3.23	1.36	1.40
1	C	369	LLP	C4-C3	-3.22	1.36	1.40
1	A	369	LLP	C4-C3	-3.22	1.36	1.40

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	369	LLP	C5-C6-N1	-2.36	119.89	123.82
1	C	369	LLP	C5-C6-N1	-2.29	120.00	123.82
1	B	369	LLP	C5-C6-N1	-2.29	120.01	123.82
1	D	369	LLP	C5-C6-N1	-2.28	120.02	123.82
1	E	369	LLP	C5-C6-N1	-2.24	120.08	123.82
1	A	369	LLP	CE-NZ-C4'	2.12	125.41	118.90

There are no chirality outliers.

All (60) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	369	LLP	C4-C4'-NZ-CE
1	A	369	LLP	C5'-OP4-P-OP2
1	A	369	LLP	C5'-OP4-P-OP3
1	A	369	LLP	N-CA-CB-CG
1	A	369	LLP	C-CA-CB-CG
1	A	369	LLP	CG-CD-CE-NZ
1	B	369	LLP	C4-C4'-NZ-CE
1	B	369	LLP	C5'-OP4-P-OP2
1	B	369	LLP	C5'-OP4-P-OP3
1	B	369	LLP	N-CA-CB-CG
1	B	369	LLP	C-CA-CB-CG
1	B	369	LLP	CG-CD-CE-NZ
1	C	369	LLP	C4-C4'-NZ-CE
1	C	369	LLP	C5'-OP4-P-OP2
1	C	369	LLP	C5'-OP4-P-OP3
1	C	369	LLP	N-CA-CB-CG
1	C	369	LLP	C-CA-CB-CG
1	C	369	LLP	CG-CD-CE-NZ
1	D	369	LLP	C4-C4'-NZ-CE
1	D	369	LLP	C5'-OP4-P-OP2

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Mol	Chain	Res	Type	Atoms
1	D	369	LLP	C5'-OP4-P-OP3
1	D	369	LLP	N-CA-CB-CG
1	D	369	LLP	C-CA-CB-CG
1	D	369	LLP	CG-CD-CE-NZ
1	E	369	LLP	C4-C4'-NZ-CE
1	E	369	LLP	C5'-OP4-P-OP2
1	E	369	LLP	C5'-OP4-P-OP3
1	E	369	LLP	N-CA-CB-CG
1	E	369	LLP	C-CA-CB-CG
1	E	369	LLP	CG-CD-CE-NZ
1	A	369	LLP	C3-C4-C4'-NZ
1	B	369	LLP	C3-C4-C4'-NZ
1	C	369	LLP	C3-C4-C4'-NZ
1	D	369	LLP	C3-C4-C4'-NZ
1	E	369	LLP	C3-C4-C4'-NZ
1	B	369	LLP	CE-CD-CG-CB
1	C	369	LLP	CE-CD-CG-CB
1	E	369	LLP	CE-CD-CG-CB
1	A	369	LLP	CE-CD-CG-CB
1	D	369	LLP	CE-CD-CG-CB
1	A	369	LLP	CA-CB-CG-CD
1	B	369	LLP	CA-CB-CG-CD
1	C	369	LLP	CA-CB-CG-CD
1	D	369	LLP	CA-CB-CG-CD
1	E	369	LLP	CA-CB-CG-CD
1	A	369	LLP	C5'-OP4-P-OP1
1	B	369	LLP	C5'-OP4-P-OP1
1	C	369	LLP	C5'-OP4-P-OP1
1	D	369	LLP	C5'-OP4-P-OP1
1	E	369	LLP	C5'-OP4-P-OP1
1	A	369	LLP	C6-C5-C5'-OP4
1	B	369	LLP	C6-C5-C5'-OP4
1	C	369	LLP	C6-C5-C5'-OP4
1	D	369	LLP	C6-C5-C5'-OP4
1	E	369	LLP	C6-C5-C5'-OP4
1	A	369	LLP	C4-C5-C5'-OP4
1	B	369	LLP	C4-C5-C5'-OP4
1	C	369	LLP	C4-C5-C5'-OP4
1	D	369	LLP	C4-C5-C5'-OP4
1	E	369	LLP	C4-C5-C5'-OP4

There are no ring outliers.

5 monomers are involved in 10 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	B	369	LLP	2	0
1	D	369	LLP	2	0
1	E	369	LLP	2	0
1	C	369	LLP	2	0
1	A	369	LLP	2	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

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	716/717 (99%)	0.54	51 (7%) 16 18	101, 156, 213, 289	0
1	B	716/717 (99%)	0.59	67 (9%) 8 10	93, 163, 240, 304	0
1	C	716/717 (99%)	0.80	121 (16%) 1 2	97, 169, 251, 306	0
1	D	716/717 (99%)	0.61	87 (12%) 4 5	100, 156, 216, 275	0
1	E	716/717 (99%)	0.96	142 (19%) 1 1	98, 163, 240, 317	0
All	All	3580/3585 (99%)	0.70	468 (13%) 3 4	93, 161, 238, 317	0

All (468) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	281	PHE	8.9
1	E	302	TYR	7.1
1	E	625	PHE	6.9
1	E	215	LEU	6.7
1	E	646	SER	6.7
1	E	329	LEU	6.5
1	E	274	GLY	6.3
1	D	273	ILE	6.1
1	B	647	ALA	6.0
1	C	192	LEU	6.0
1	C	536	PHE	6.0
1	E	379	MET	5.9
1	C	253	MET	5.9
1	B	646	SER	5.8
1	C	453	PHE	5.8
1	E	377	SER	5.8
1	C	262	TYR	5.7
1	E	276	ILE	5.6
1	E	261	ILE	5.6
1	E	233	VAL	5.5

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Mol	Chain	Res	Type	RSRZ
1	E	315	TYR	5.4
1	E	240	LEU	5.4
1	C	629	LEU	5.2
1	B	514	VAL	5.2
1	E	275	GLY	5.2
1	B	618	GLN	5.1
1	E	380	LEU	5.1
1	E	303	ALA	5.1
1	C	281	PHE	5.1
1	E	239	ILE	5.0
1	C	658	PRO	5.0
1	E	192	LEU	5.0
1	E	708	LYS	5.0
1	B	687	LEU	4.9
1	C	661	PHE	4.9
1	D	281	PHE	4.8
1	C	646	SER	4.8
1	E	241	VAL	4.8
1	D	216	ILE	4.8
1	C	97	ASP	4.7
1	C	537	ILE	4.7
1	B	274	GLY	4.6
1	E	371	LEU	4.5
1	E	399	THR	4.5
1	E	300	PRO	4.5
1	E	378	SER	4.5
1	C	707	ILE	4.5
1	E	641	LEU	4.5
1	B	708	LYS	4.5
1	C	619	LEU	4.4
1	D	274	GLY	4.4
1	E	306	THR	4.4
1	E	362	PHE	4.4
1	E	395	PHE	4.4
1	E	393	GLU	4.3
1	C	233	VAL	4.3
1	D	272	ILE	4.3
1	E	647	ALA	4.3
1	E	367	THR	4.3
1	B	315	TYR	4.3
1	E	148	PHE	4.2
1	E	216	ILE	4.2

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Mol	Chain	Res	Type	RSRZ
1	E	331	PHE	4.2
1	C	261	ILE	4.2
1	E	304	VAL	4.1
1	B	689	GLY	4.1
1	C	491	ILE	4.1
1	C	641	LEU	4.1
1	C	273	ILE	4.1
1	B	641	LEU	4.0
1	E	661	PHE	4.0
1	E	372	ALA	4.0
1	B	536	PHE	4.0
1	C	625	PHE	4.0
1	D	192	LEU	4.0
1	D	641	LEU	4.0
1	B	594	LEU	4.0
1	E	629	LEU	3.9
1	A	262	TYR	3.9
1	B	574	LEU	3.9
1	D	650	ILE	3.9
1	B	515	VAL	3.8
1	E	619	LEU	3.8
1	C	234	ALA	3.8
1	A	372	ALA	3.8
1	C	534	LEU	3.8
1	A	234	ALA	3.8
1	E	365	GLN	3.8
1	C	95	LEU	3.8
1	C	315	TYR	3.8
1	D	611	PHE	3.7
1	E	650	ILE	3.7
1	B	598	MET	3.7
1	D	625	PHE	3.7
1	C	269	ALA	3.6
1	E	381	HIS	3.6
1	E	453	PHE	3.6
1	D	657	ILE	3.6
1	E	659	VAL	3.6
1	E	310	TYR	3.6
1	D	215	LEU	3.6
1	A	315	TYR	3.6
1	C	664	GLU	3.6
1	D	233	VAL	3.6

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Mol	Chain	Res	Type	RSRZ
1	E	217	VAL	3.6
1	E	417	MET	3.6
1	D	315	TYR	3.6
1	C	363	GLU	3.6
1	E	255	MET	3.6
1	E	262	TYR	3.6
1	E	361	ILE	3.5
1	B	263	LEU	3.5
1	B	262	TYR	3.5
1	B	690	PHE	3.5
1	C	660	ILE	3.5
1	E	324	LEU	3.5
1	D	453	PHE	3.5
1	C	96	ARG	3.5
1	C	690	PHE	3.4
1	E	660	ILE	3.4
1	D	191	LEU	3.4
1	E	238	THR	3.4
1	C	240	LEU	3.4
1	C	380	LEU	3.4
1	D	658	PRO	3.4
1	C	215	LEU	3.4
1	B	273	ILE	3.4
1	E	664	GLU	3.3
1	D	574	LEU	3.3
1	E	218	THR	3.3
1	B	664	GLU	3.3
1	E	638	LEU	3.3
1	D	314	LEU	3.3
1	E	263	LEU	3.3
1	D	456	TRP	3.3
1	D	302	TYR	3.3
1	C	615	PRO	3.3
1	A	367	THR	3.3
1	D	361	ILE	3.3
1	C	666	ILE	3.2
1	C	659	VAL	3.2
1	C	381	HIS	3.2
1	D	181	LEU	3.2
1	E	485	PHE	3.2
1	D	270	TYR	3.2
1	A	55	CYS	3.2

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Mol	Chain	Res	Type	RSRZ
1	B	707	ILE	3.2
1	C	244	ASN	3.2
1	E	320	ILE	3.2
1	D	305	VAL	3.2
1	C	708	LYS	3.2
1	A	239	ILE	3.2
1	A	281	PHE	3.2
1	C	300	PRO	3.2
1	E	230	MET	3.1
1	D	646	SER	3.1
1	E	397	LEU	3.1
1	E	224	ALA	3.1
1	C	657	ILE	3.1
1	E	223	THR	3.1
1	C	260	PRO	3.1
1	B	491	ILE	3.1
1	C	519	LEU	3.1
1	E	484	ASP	3.1
1	B	253	MET	3.1
1	D	607	MET	3.1
1	B	148	PHE	3.0
1	C	514	VAL	3.0
1	E	305	VAL	3.0
1	D	360	ILE	3.0
1	B	453	PHE	3.0
1	C	239	ILE	3.0
1	C	647	ALA	3.0
1	B	650	ILE	3.0
1	E	363	GLU	3.0
1	E	245	CYS	3.0
1	E	366	SER	3.0
1	B	181	LEU	2.9
1	B	611	PHE	2.9
1	B	269	ALA	2.9
1	B	15	TYR	2.9
1	E	191	LEU	2.9
1	B	638	LEU	2.9
1	E	374	PHE	2.9
1	B	374	PHE	2.9
1	D	-1	PHE	2.9
1	B	526	VAL	2.9
1	D	188	LEU	2.9

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Mol	Chain	Res	Type	RSRZ
1	C	255	MET	2.9
1	E	491	ILE	2.9
1	E	676	PHE	2.9
1	D	536	PHE	2.9
1	C	15	TYR	2.9
1	B	534	LEU	2.9
1	B	680	LEU	2.9
1	D	694	ILE	2.8
1	E	360	ILE	2.8
1	E	325	ASP	2.8
1	C	493	ILE	2.8
1	A	646	SER	2.8
1	E	299	TRP	2.8
1	A	677	LEU	2.8
1	E	311	ASP	2.8
1	A	215	LEU	2.8
1	C	485	PHE	2.8
1	C	495	ILE	2.8
1	C	529	SER	2.8
1	D	331	PHE	2.8
1	E	330	HIS	2.8
1	A	514	VAL	2.8
1	D	489	ASP	2.8
1	A	379	MET	2.8
1	C	488	LEU	2.8
1	E	326	VAL	2.8
1	E	456	TRP	2.8
1	C	331	PHE	2.8
1	E	536	PHE	2.8
1	C	254	MET	2.8
1	E	645	THR	2.8
1	C	329	LEU	2.8
1	E	370	LEU	2.8
1	E	663	GLY	2.8
1	E	280	GLU	2.8
1	B	694	ILE	2.8
1	B	69	PHE	2.8
1	C	148	PHE	2.8
1	D	680	LEU	2.7
1	D	263	LEU	2.7
1	E	376	GLN	2.7
1	D	362	PHE	2.7

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Mol	Chain	Res	Type	RSRZ
1	E	658	PRO	2.7
1	A	238	THR	2.7
1	C	404	PHE	2.7
1	C	159	PHE	2.7
1	C	243	ARG	2.7
1	E	254	MET	2.7
1	C	607	MET	2.7
1	C	216	ILE	2.7
1	D	495	ILE	2.7
1	C	133	LEU	2.7
1	C	669	GLU	2.7
1	E	514	VAL	2.7
1	C	241	VAL	2.7
1	C	270	TYR	2.6
1	B	619	LEU	2.6
1	D	194	HIS	2.6
1	D	647	ALA	2.6
1	A	362	PHE	2.6
1	C	198	HIS	2.6
1	C	105	LEU	2.6
1	C	382	ILE	2.6
1	D	380	LEU	2.6
1	D	379	MET	2.6
1	A	536	PHE	2.6
1	C	538	PHE	2.6
1	D	708	LYS	2.6
1	A	43	GLU	2.6
1	C	314	LEU	2.6
1	B	659	VAL	2.6
1	E	253	MET	2.6
1	D	688	PRO	2.6
1	E	225	ASN	2.6
1	E	297	ASP	2.6
1	D	488	LEU	2.6
1	C	365	GLN	2.5
1	E	266	THR	2.5
1	C	191	LEU	2.5
1	B	537	ILE	2.5
1	C	168	PHE	2.5
1	D	655	PRO	2.5
1	E	537	ILE	2.5
1	E	499	GLY	2.5

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Mol	Chain	Res	Type	RSRZ
1	E	709	VAL	2.5
1	E	244	ASN	2.5
1	C	7	VAL	2.5
1	C	305	VAL	2.5
1	C	104	PHE	2.5
1	C	232	SER	2.5
1	E	55	CYS	2.5
1	A	263	LEU	2.5
1	C	638	LEU	2.5
1	D	469	LEU	2.5
1	B	243	ARG	2.5
1	A	216	ILE	2.5
1	B	666	ILE	2.5
1	E	418	MET	2.5
1	A	168	PHE	2.5
1	D	500	ILE	2.5
1	E	209	PHE	2.5
1	B	604	PRO	2.5
1	C	157	TYR	2.5
1	C	310	TYR	2.5
1	E	167	LEU	2.5
1	C	362	PHE	2.5
1	E	133	LEU	2.5
1	E	535	LEU	2.5
1	D	689	GLY	2.5
1	A	231	TYR	2.5
1	E	628	LEU	2.5
1	B	711	ASP	2.5
1	C	649	MET	2.4
1	A	537	ILE	2.4
1	C	621	PRO	2.4
1	D	122	ILE	2.4
1	D	329	LEU	2.4
1	E	540	LEU	2.4
1	D	367	THR	2.4
1	A	495	ILE	2.4
1	D	304	VAL	2.4
1	D	638	LEU	2.4
1	E	488	LEU	2.4
1	D	69	PHE	2.4
1	E	69	PHE	2.4
1	D	435	ILE	2.4

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Mol	Chain	Res	Type	RSRZ
1	D	486	LEU	2.4
1	E	246	HIS	2.4
1	E	390	VAL	2.4
1	A	95	LEU	2.4
1	E	611	PHE	2.4
1	C	276	ILE	2.4
1	B	244	ASN	2.4
1	C	367	THR	2.4
1	A	690	PHE	2.4
1	D	649	MET	2.4
1	D	528	LYS	2.4
1	E	364	THR	2.4
1	A	453	PHE	2.4
1	B	399	THR	2.4
1	A	137	LEU	2.4
1	C	55	CYS	2.4
1	E	273	ILE	2.4
1	A	676	PHE	2.4
1	D	255	MET	2.4
1	C	295	ILE	2.4
1	E	710	ILE	2.4
1	C	64	PHE	2.3
1	C	617	GLN	2.3
1	B	660	ILE	2.3
1	D	218	THR	2.3
1	D	514	VAL	2.3
1	B	379	MET	2.3
1	C	107	TYR	2.3
1	E	232	SER	2.3
1	E	386	TYR	2.3
1	D	105	LEU	2.3
1	D	126	PHE	2.3
1	B	519	LEU	2.3
1	B	582	TYR	2.3
1	E	100	LEU	2.3
1	E	130	LEU	2.3
1	B	281	PHE	2.3
1	A	297	ASP	2.3
1	A	303	ALA	2.3
1	E	147	ALA	2.3
1	D	275	GLY	2.3
1	C	263	LEU	2.3

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Mol	Chain	Res	Type	RSRZ
1	D	59	LEU	2.3
1	B	230	MET	2.3
1	D	527	GLU	2.3
1	E	618	GLN	2.3
1	A	56	CYS	2.3
1	E	82	PHE	2.3
1	C	59	LEU	2.3
1	C	618	GLN	2.3
1	C	710	ILE	2.3
1	A	233	VAL	2.3
1	D	148	PHE	2.3
1	E	335	TRP	2.3
1	E	307	ASN	2.3
1	E	105	LEU	2.3
1	D	659	VAL	2.3
1	B	688	PRO	2.3
1	C	230	MET	2.3
1	C	272	ILE	2.3
1	D	408	VAL	2.3
1	B	663	GLY	2.3
1	C	313	ILE	2.3
1	B	311	ASP	2.2
1	A	404	PHE	2.2
1	A	96	ARG	2.2
1	D	79	LEU	2.2
1	C	20	LEU	2.2
1	A	72	ILE	2.2
1	C	83	VAL	2.2
1	C	650	ILE	2.2
1	A	48	LEU	2.2
1	A	330	HIS	2.2
1	D	550	LEU	2.2
1	E	41	LEU	2.2
1	A	413	THR	2.2
1	C	697	PRO	2.2
1	A	598	MET	2.2
1	C	336	ILE	2.2
1	D	554	LEU	2.2
1	D	55	CYS	2.2
1	E	227	ILE	2.2
1	D	538	PHE	2.2
1	D	648	VAL	2.2

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Mol	Chain	Res	Type	RSRZ
1	B	629	LEU	2.2
1	B	615	PRO	2.2
1	A	148	PHE	2.2
1	B	168	PHE	2.2
1	E	126	PHE	2.2
1	B	241	VAL	2.2
1	C	469	LEU	2.2
1	C	326	VAL	2.2
1	C	395	PHE	2.2
1	E	323	GLU	2.2
1	B	627	LYS	2.2
1	A	515	VAL	2.1
1	E	382	ILE	2.1
1	A	534	LEU	2.1
1	D	651	LEU	2.1
1	E	153	HIS	2.1
1	C	464	LYS	2.1
1	E	43	GLU	2.1
1	B	240	LEU	2.1
1	A	181	LEU	2.1
1	D	697	PRO	2.1
1	E	350	ALA	2.1
1	E	414	ALA	2.1
1	A	276	ILE	2.1
1	A	659	VAL	2.1
1	D	140	TYR	2.1
1	A	574	LEU	2.1
1	C	41	LEU	2.1
1	C	525	VAL	2.1
1	C	58	VAL	2.1
1	A	57	ILE	2.1
1	C	533	SER	2.1
1	C	130	LEU	2.1
1	D	242	ASP	2.1
1	E	317	THR	2.1
1	A	44	VAL	2.1
1	C	411	VAL	2.1
1	E	616	GLU	2.0
1	B	217	VAL	2.0
1	B	215	LEU	2.0
1	B	313	ILE	2.0
1	C	361	ILE	2.0

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Mol	Chain	Res	Type	RSRZ
1	E	707	ILE	2.0
1	D	193	ASP	2.0
1	E	398	HIS	2.0
1	A	371	LEU	2.0
1	A	638	LEU	2.0
1	B	239	ILE	2.0
1	C	259	ASN	2.0
1	C	379	MET	2.0
1	E	301	GLU	2.0
1	C	4	VAL	2.0
1	E	256	VAL	2.0
1	D	276	ILE	2.0
1	D	253	MET	2.0
1	E	338	TYR	2.0
1	A	105	LEU	2.0
1	E	486	LEU	2.0
1	C	6	PHE	2.0
1	D	168	PHE	2.0
1	E	121	THR	2.0
1	D	695	HIS	2.0
1	E	228	VAL	2.0
1	B	276	ILE	2.0
1	D	147	ALA	2.0
1	D	491	ILE	2.0
1	C	19	PHE	2.0
1	C	238	THR	2.0
1	C	527	GLU	2.0
1	B	617	GLN	2.0

6.2 Non-standard residues in protein, DNA, RNA chains (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
1	LLP	A	369	24/25	0.95	0.28	112,140,164,176	0
1	LLP	C	369	24/25	0.95	0.25	128,158,175,179	0
1	LLP	D	369	24/25	0.95	0.32	117,131,148,165	0
1	LLP	B	369	24/25	0.96	0.22	119,142,175,193	0
1	LLP	E	369	24/25	0.96	0.46	111,157,171,174	0

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.