Full wwPDB X-ray Structure Validation Report ⓘ

Dec 23, 2024 – 04:20 PM JST

PDB ID	:	8Y07
Title	:	Crystal structure of LbCas12a in complex with crRNA and 13nt target DNA
Authors	:	Lin, X.; Chen, J.; Liu, L.
Deposited on	:	2024-01-22
Resolution	:	2.85 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:

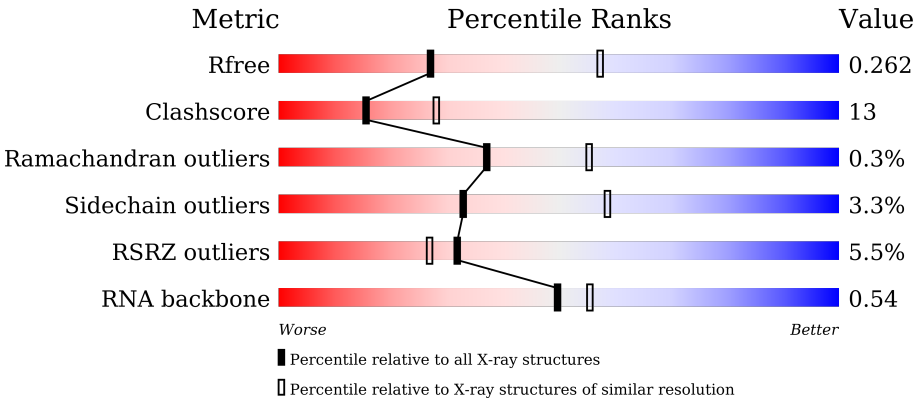
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.21
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.004 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.40

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.85 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}	164625	1268 (2.88-2.84)
Clashscore	180529	1351 (2.88-2.84)
Ramachandran outliers	177936	1318 (2.88-2.84)
Sidechain outliers	177891	1319 (2.88-2.84)
RSRZ outliers	164620	1269 (2.88-2.84)
RNA backbone	3690	1112 (3.10-2.62)

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	1228	4% 72% 25%
1	E	1228	7% 68% 29%
2	B	40	35% 35% 10% 18%
2	F	40	2% 55% 18% 10% 18%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
3	C	22	14% 55% 41% 5%
3	G	22	14% 36% 55% 9%
4	D	11	9% 64% 36%
4	H	11	9% 73% 27%

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
5	LI	A	1301	-	-	-	X
5	LI	E	1301	-	-	-	X

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 22604 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 LbCas12a.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	E	1214	Total	C	N	O	S	0	0	0
			9902	6371	1618	1884	29			
1	A	1214	Total	C	N	O	S	0	0	0
			9949	6402	1626	1892	29			

- Molecule 2 is a RNA chain called RNA (33-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	F	33	Total	C	N	O	P	0	0	0
			696	314	123	227	32			
2	B	33	Total	C	N	O	P	0	0	0
			696	314	123	227	32			

- Molecule 3 is a DNA chain called DNA (5'-D(P*TP*TP*TP*AP*CP*TP*GP*GP*AP*TP*GP*CP*GP*TP*AP*AP*AP*GP*GP*AP*CP*G)-3').

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	G	22	Total	C	N	O	P	0	0	0
			457	217	86	132	22			
3	C	22	Total	C	N	O	P	0	0	0
			457	217	86	132	22			

- Molecule 4 is a DNA chain called DNA (5'-D(*CP*GP*TP*CP*CP*TP*TP*TP*AP*TP*T)-3').

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	H	11	Total	C	N	O	P	0	0	0
			217	107	31	69	10			
4	D	11	Total	C	N	O	P	0	0	0
			217	107	31	69	10			

- Molecule 5 is LITHIUM ION (three-letter code: LI) (formula: Li).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	E	1	Total Li 1 1	0	0
5	F	1	Total Li 1 1	0	0
5	A	1	Total Li 1 1	0	0
5	B	1	Total Li 1 1	0	0

- Molecule 6 is water.

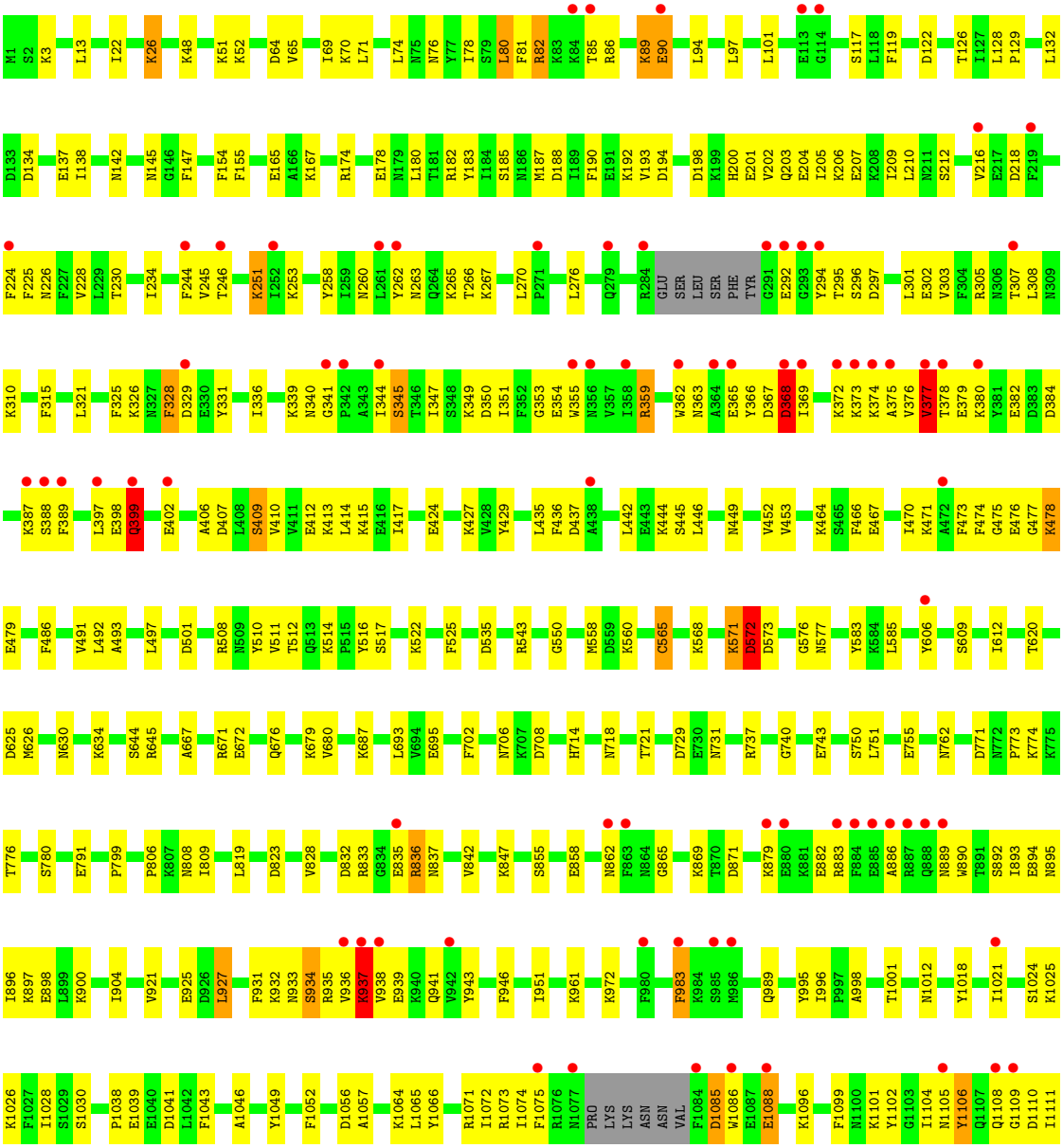
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	E	4	Total O 4 4	0	0
6	A	5	Total O 5 5	0	0

3 Residue-property plots (i)

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

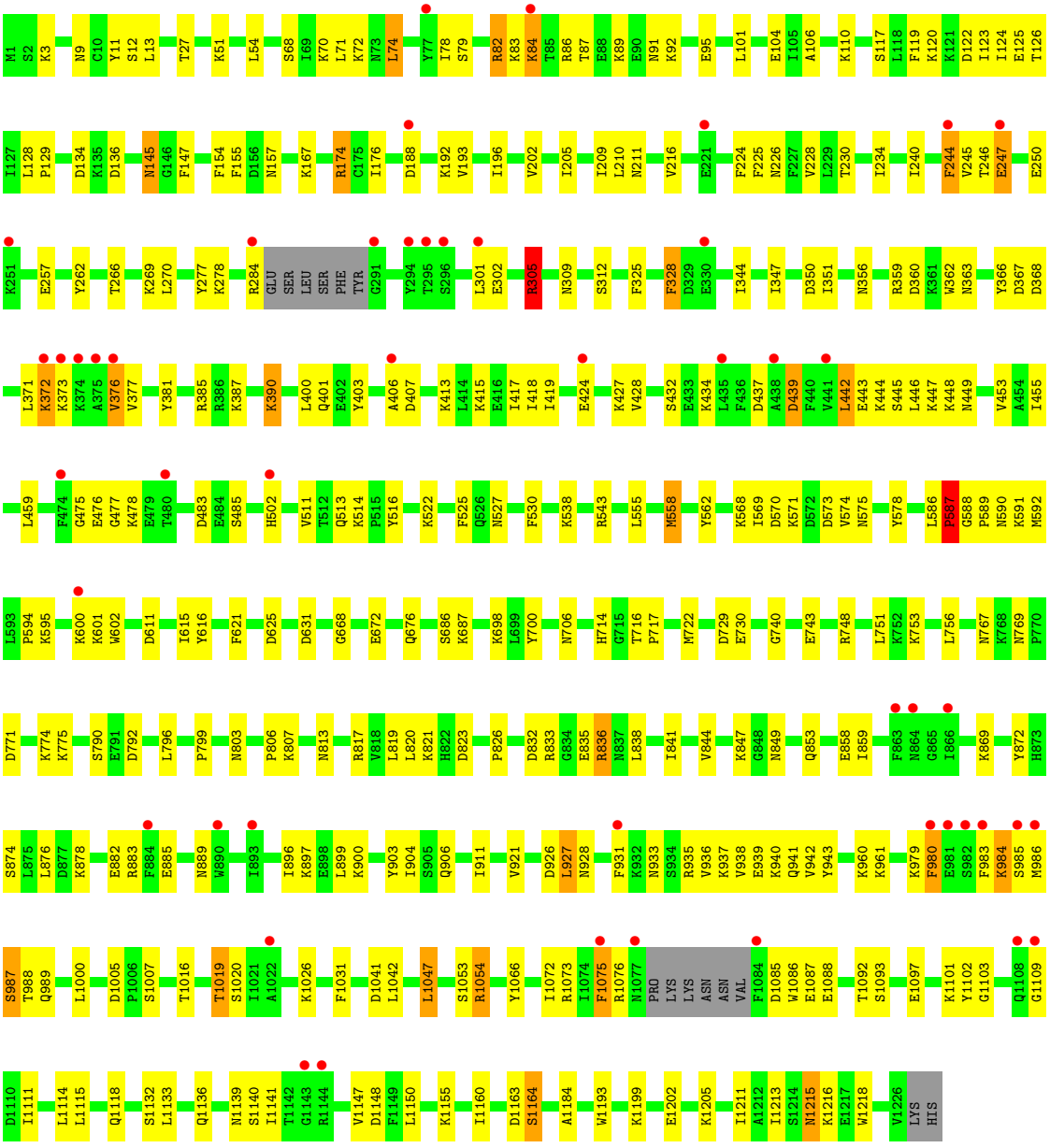
- Molecule 1: LbCas12a

Chain E:



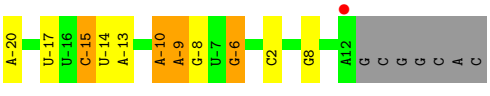
• Molecule 1: LbCas12a

Chain A:



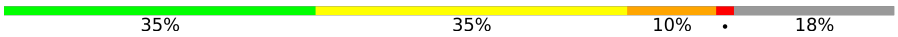
• Molecule 2: RNA (33-MER)

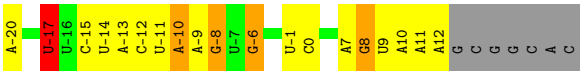
Chain F:



• Molecule 2: RNA (33-MER)

Chain B:



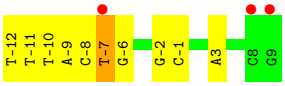


• Molecule 3: DNA (5'-D(P*TP*TP*TP*AP*CP*TP*GP*GP*AP*TP*GP*CP*GP*TP*AP*AP*AP*GP*GP*AP*CP*G)-3')

Chain G:

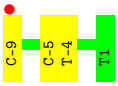
• Molecule 3: DNA (5'-D(P*TP*TP*TP*AP*CP*TP*GP*GP*AP*TP*GP*CP*GP*TP*AP*AP*AP*GP*GP*AP*CP*G)-3')

Chain C:



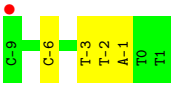
• Molecule 4: DNA (5'-D(*CP*GP*TP*CP*CP*TP*TP*TP*AP*TP*T)-3')

Chain H:



• Molecule 4: DNA (5'-D(*CP*GP*TP*CP*CP*TP*TP*TP*AP*TP*T)-3')

Chain D:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	121.66Å 142.67Å 202.69Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.05 – 2.85 49.05 – 2.85	Depositor EDS
% Data completeness (in resolution range)	98.3 (49.05-2.85) 98.2 (49.05-2.85)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.55 (at 2.86Å)	Xtriage
Refinement program	PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.209 , 0.264 0.208 , 0.262	Depositor DCC
R_{free} test set	4109 reflections (4.97%)	wwPDB-VP
Wilson B-factor (Å^2)	48.1	Xtriage
Anisotropy	0.027	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 58.7	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	0.91	EDS
Total number of atoms	22604	wwPDB-VP
Average B, all atoms (Å^2)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.99% 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: LI

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	0.59	7/10158 (0.1%)	0.75	26/13664 (0.2%)
1	E	0.56	8/10108 (0.1%)	0.73	13/13601 (0.1%)
2	B	0.82	0/778	1.43	8/1209 (0.7%)
2	F	0.77	0/778	1.40	6/1209 (0.5%)
3	C	1.06	0/513	1.19	3/791 (0.4%)
3	G	0.95	0/513	1.17	3/791 (0.4%)
4	D	1.31	1/240 (0.4%)	1.28	1/368 (0.3%)
4	H	1.20	0/240	1.20	0/368
All	All	0.64	16/23328 (0.1%)	0.85	60/32001 (0.2%)

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	1

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	84	LYS	CG-CD	14.58	2.02	1.52
1	A	84	LYS	CE-NZ	11.54	1.77	1.49
1	A	84	LYS	CB-CG	10.41	1.80	1.52
1	E	377	VAL	CB-CG1	-10.08	1.31	1.52
1	E	937	LYS	CB-CG	7.70	1.73	1.52
1	E	937	LYS	CE-NZ	7.28	1.67	1.49
4	D	-6	DC	C3'-O3'	-7.08	1.34	1.44
1	A	247	GLU	CB-CG	-7.06	1.38	1.52
1	E	90	GLU	CB-CG	5.92	1.63	1.52
1	A	600	LYS	CD-CE	5.88	1.66	1.51

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	89	LYS	CD-CE	5.70	1.65	1.51
1	A	847	LYS	CE-NZ	5.66	1.63	1.49
1	E	89	LYS	CE-NZ	5.24	1.62	1.49
1	E	762	ASN	C-N	-5.24	1.22	1.34
1	E	1088	GLU	CD-OE2	5.23	1.31	1.25
1	A	589	PRO	N-CD	5.10	1.54	1.47

All (60) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	305	ARG	NE-CZ-NH2	-11.28	114.66	120.30
1	A	84	LYS	CA-CB-CG	9.79	134.94	113.40
1	A	84	LYS	CD-CE-NZ	9.46	133.47	111.70
1	A	192	LYS	CD-CE-NZ	-9.37	90.16	111.70
1	A	305	ARG	CD-NE-CZ	9.19	136.46	123.60
1	E	572	ASP	CB-CG-OD1	-8.18	110.94	118.30
1	E	80	LEU	CB-CG-CD2	-8.17	97.12	111.00
3	C	-10	DT	O4'-C1'-N1	8.06	113.64	108.00
1	A	1054	ARG	NE-CZ-NH2	-7.96	116.32	120.30
1	E	377	VAL	CG1-CB-CG2	-7.89	98.28	110.90
1	A	167	LYS	CD-CE-NZ	7.73	129.47	111.70
1	A	84	LYS	CG-CD-CE	7.54	134.50	111.90
1	A	424	GLU	CA-CB-CG	7.50	129.90	113.40
1	E	399	GLN	CA-CB-CG	-7.49	96.93	113.40
1	A	927	LEU	CA-CB-CG	-7.30	98.51	115.30
2	F	-20	A	N1-C6-N6	7.29	122.97	118.60
3	G	-8	DC	O4'-C1'-N1	7.21	113.05	108.00
1	A	1054	ARG	CG-CD-NE	-7.15	96.78	111.80
3	C	-7	DT	O4'-C1'-N1	6.67	112.67	108.00
1	A	586	LEU	C-N-CD	6.53	142.10	128.40
2	F	-6	G	C2-N3-C4	6.47	115.14	111.90
2	B	-6	G	O5'-P-OP1	-6.41	99.93	105.70
1	E	478	LYS	CD-CE-NZ	-6.35	97.09	111.70
2	F	-9	A	O4'-C1'-N9	6.32	113.26	108.20
1	E	572	ASP	CB-CG-OD2	6.23	123.91	118.30
2	F	-15	C	N1-C2-O2	-6.21	115.18	118.90
2	B	-17	U	C5-C4-O4	5.97	129.48	125.90
2	B	-13	A	C8-N9-C4	-5.93	103.43	105.80
2	B	0	C	O4'-C1'-N1	5.92	112.94	108.20
2	B	-1	U	C5-C4-O4	-5.88	122.38	125.90
1	A	1054	ARG	NE-CZ-NH1	5.83	123.21	120.30
1	E	368	ASP	CB-CG-OD1	-5.78	113.10	118.30

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	G	-12	DT	O4'-C1'-N1	5.76	112.03	108.00
1	A	588	GLY	C-N-CD	5.70	140.36	128.40
1	A	84	LYS	CB-CG-CD	5.67	126.34	111.60
2	B	-12	C	N3-C2-O2	-5.63	117.96	121.90
1	A	390	LYS	CA-CB-CG	5.54	125.59	113.40
1	A	257	GLU	CA-CB-CG	5.49	125.49	113.40
1	E	89	LYS	CB-CG-CD	5.45	125.77	111.60
1	A	167	LYS	CB-CG-CD	5.42	125.70	111.60
2	F	-13	A	N1-C6-N6	5.41	121.84	118.60
1	A	74	LEU	CA-CB-CG	5.40	127.73	115.30
1	A	145	ASN	C-N-CA	-5.37	111.03	122.30
1	E	791	GLU	CA-CB-CG	5.34	125.14	113.40
2	B	-20	A	O4'-C1'-N9	5.30	112.44	108.20
1	A	847	LYS	CD-CE-NZ	-5.26	99.61	111.70
3	C	-6	DG	O4'-C1'-N9	5.26	111.68	108.00
1	A	587	PRO	CA-N-CD	-5.25	104.15	111.50
1	E	359	ARG	NE-CZ-NH2	-5.23	117.69	120.30
1	A	305	ARG	CG-CD-NE	5.18	122.68	111.80
1	E	737	ARG	NE-CZ-NH1	-5.17	117.72	120.30
2	F	2	C	C6-N1-C2	5.15	122.36	120.30
1	E	145	ASN	C-N-CA	-5.14	111.50	122.30
2	B	-8	G	N3-C4-N9	-5.13	122.92	126.00
1	A	1047	LEU	CA-CB-CG	5.13	127.09	115.30
3	G	-5	DG	O4'-C1'-N9	5.11	111.58	108.00
1	A	1103	GLY	C-N-CA	5.09	134.44	121.70
1	E	368	ASP	CB-CG-OD2	5.05	122.84	118.30
1	A	424	GLU	CB-CA-C	5.02	120.44	110.40
4	D	-3	DT	OP2-P-O3'	5.01	116.22	105.20

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	305	ARG	Sidechain

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	9949	0	9786	241	1
1	E	9902	0	9719	307	1
2	B	696	0	355	13	0
2	F	696	0	355	4	0
3	C	457	0	249	9	0
3	G	457	0	249	18	0
4	D	217	0	129	2	0
4	H	217	0	129	6	0
5	A	1	0	0	0	0
5	B	1	0	0	0	0
5	E	1	0	0	0	0
5	F	1	0	0	0	0
6	A	5	0	0	0	0
6	E	4	0	0	0	0
All	All	22604	0	20971	568	1

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 13.

All (568) 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:84:LYS:CB	1:A:84:LYS:CG	1.80	1.54
1:A:84:LYS:CE	1:A:84:LYS:NZ	1.77	1.47
1:A:84:LYS:CG	1:A:84:LYS:CD	2.02	1.36
1:A:82:ARG:NH1	1:A:188:ASP:OD1	1.67	1.27
1:E:837:ASN:OD1	1:E:855:SER:OG	1.59	1.18
1:E:935:ARG:O	1:E:938:VAL:HG12	1.50	1.11
1:E:883:ARG:HH12	1:E:896:ILE:HB	1.17	1.03
1:E:835:GLU:HG2	1:E:939:GLU:OE2	1.60	1.00
1:A:1075:PHE:HD1	1:A:1085:ASP:HA	1.30	0.96
1:A:538:LYS:NZ	3:C:3:DA:N7	2.15	0.94
1:E:625:ASP:OD1	1:E:626:MET:HG2	1.70	0.92
1:E:571:LYS:HD2	1:E:577:ASN:HD21	1.34	0.92
1:A:836:ARG:H	1:A:836:ARG:HD2	1.34	0.90
1:E:365:GLU:O	1:E:368:ASP:CG	2.14	0.86
1:E:202:VAL:HG13	1:E:216:VAL:HG21	1.57	0.85
1:E:1046:ALA:HB1	1:E:1064:LYS:HZ2	1.40	0.84
1:E:525:PHE:O	1:E:543:ARG:NH2	2.12	0.82
1:E:571:LYS:HE2	1:E:573:ASP:HB3	1.59	0.82
1:A:525:PHE:O	1:A:543:ARG:NH2	2.12	0.82
1:E:883:ARG:HD3	1:E:894:GLU:O	1.79	0.82

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:453:VAL:HG11	1:E:511:VAL:HG11	1.61	0.81
1:E:1046:ALA:HB1	1:E:1064:LYS:NZ	1.94	0.81
1:E:80:LEU:HG	1:E:90:GLU:HG2	1.63	0.81
1:E:833:ARG:HH21	1:E:927:LEU:HG	1.45	0.81
1:E:571:LYS:HE2	1:E:573:ASP:CB	2.12	0.80
1:E:522:LYS:HE3	1:E:743:GLU:HG2	1.63	0.80
1:E:573:ASP:O	1:E:577:ASN:ND2	2.16	0.79
1:E:706:ASN:HD21	1:E:721:THR:HG22	1.47	0.79
1:E:571:LYS:CE	1:E:573:ASP:H	1.95	0.79
1:A:611:ASP:O	1:A:615:ILE:HD13	1.83	0.78
1:E:836:ARG:CD	1:E:836:ARG:H	1.95	0.78
1:E:354:GLU:HG2	1:E:355:TRP:H	1.49	0.78
1:E:245:VAL:HG22	1:E:251:LYS:HE2	1.67	0.76
1:E:718:ASN:HB2	1:E:721:THR:HG23	1.65	0.76
1:A:514:LYS:H	1:A:514:LYS:HD3	1.51	0.76
1:A:836:ARG:H	1:A:836:ARG:CD	1.94	0.76
1:A:359:ARG:O	1:A:363:ASN:ND2	2.18	0.76
1:E:71:LEU:HB2	1:E:74:LEU:HD21	1.68	0.75
1:A:376:VAL:O	1:A:377:VAL:HG13	1.86	0.75
1:E:80:LEU:HD23	1:E:94:LEU:HB2	1.68	0.75
1:E:571:LYS:HD3	1:E:573:ASP:H	1.52	0.75
1:E:26:LYS:HE3	1:E:695:GLU:HA	1.68	0.74
1:E:883:ARG:NH1	1:E:896:ILE:HB	1.99	0.74
1:A:838:LEU:HD11	1:A:876:LEU:HD12	1.67	0.74
1:A:1075:PHE:CD1	1:A:1085:ASP:HA	2.21	0.74
1:E:836:ARG:H	1:E:836:ARG:HD2	1.50	0.74
1:E:303:VAL:O	1:E:307:THR:HG22	1.87	0.73
1:A:82:ARG:NH1	1:A:188:ASP:CG	2.41	0.73
1:A:756:LEU:HD11	1:A:790:SER:HB3	1.70	0.72
1:A:1053:SER:O	1:A:1054:ARG:HB2	1.89	0.72
1:E:378:THR:HG21	1:E:380:LYS:HZ3	1.55	0.72
1:A:174:ARG:NH2	1:A:278:LYS:O	2.21	0.72
1:E:202:VAL:HG13	1:E:216:VAL:CG2	2.19	0.72
1:E:350:ASP:HB3	1:E:417:ILE:HD13	1.71	0.71
1:E:835:GLU:HA	1:E:939:GLU:OE2	1.90	0.71
1:A:443:GLU:OE1	1:A:449:ASN:ND2	2.22	0.71
1:E:1021:ILE:HD12	1:E:1021:ILE:H	1.55	0.71
1:E:571:LYS:CD	1:E:573:ASP:H	2.04	0.70
1:A:774:LYS:NZ	2:B:-10:A:OP2	2.19	0.70
1:A:1016:THR:OG1	1:A:1132:SER:OG	2.08	0.70
1:A:3:LYS:HG2	1:A:819:LEU:HB3	1.72	0.70

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:832:ASP:HB2	1:A:1184:ALA:HB2	1.73	0.69
1:A:350:ASP:HB3	1:A:417:ILE:HD13	1.74	0.69
1:E:464:LYS:NZ	1:E:501:ASP:OD2	2.17	0.69
1:A:87:THR:OG1	1:A:89:LYS:HB3	1.93	0.69
1:E:571:LYS:HD2	1:E:577:ASN:ND2	2.07	0.68
1:E:983:PHE:CZ	3:G:-5:DG:H5"	2.28	0.68
1:A:1016:THR:HG1	1:A:1132:SER:HG	1.37	0.68
1:E:512:THR:O	1:E:893:ILE:HG13	1.93	0.68
1:E:365:GLU:O	1:E:368:ASP:OD1	2.11	0.68
1:A:356:ASN:ND2	1:A:360:ASP:OD1	2.27	0.68
1:E:625:ASP:OD1	1:E:626:MET:N	2.27	0.68
1:E:424:GLU:HA	1:E:427:LYS:HG2	1.75	0.68
1:E:200:HIS:O	1:E:204:GLU:N	2.27	0.67
1:A:885:GLU:O	1:A:889:ASN:ND2	2.28	0.67
1:E:297:ASP:OD1	1:E:510:TYR:OH	2.09	0.67
1:A:372:LYS:H	1:A:372:LYS:HD3	1.58	0.67
1:A:1075:PHE:HB2	1:A:1085:ASP:O	1.95	0.67
3:G:9:DG:H22	4:H:-9:DC:H42	1.41	0.67
1:E:996:ILE:HD11	1:E:1187:ILE:HG23	1.75	0.67
1:A:885:GLU:HG3	1:A:889:ASN:ND2	2.09	0.67
1:E:201:GLU:HB3	1:E:258:TYR:CE2	2.30	0.67
1:E:326:LYS:HG2	1:E:415:LYS:HE3	1.76	0.67
1:E:833:ARG:NH2	1:E:927:LEU:HG	2.11	0.66
1:A:302:GLU:HA	1:A:305:ARG:NH1	2.11	0.66
1:E:167:LYS:HB3	3:G:-3:DT:H5'	1.76	0.66
1:E:983:PHE:CE2	3:G:-5:DG:H5"	2.31	0.66
1:E:26:LYS:CE	1:E:695:GLU:HA	2.25	0.65
1:E:174:ARG:NE	1:E:178:GLU:OE2	2.28	0.65
1:A:595:LYS:NZ	4:D:-2:DT:O2	2.30	0.65
1:E:129:PRO:HB3	1:E:138:ILE:HG23	1.76	0.65
1:E:225:PHE:O	1:E:228:VAL:HG12	1.97	0.65
1:E:1071:ARG:O	1:E:1088:GLU:HG2	1.97	0.65
1:A:442:LEU:HD11	1:A:446:LEU:HD13	1.79	0.65
1:E:205:ILE:HG23	1:E:209:ILE:HD12	1.78	0.65
1:A:444:LYS:HD2	1:A:449:ASN:HA	1.79	0.65
1:E:351:ILE:HG21	1:E:410:VAL:HG13	1.79	0.65
1:E:375:ALA:O	1:E:377:VAL:N	2.29	0.65
1:A:1109:GLY:O	1:A:1111:ILE:HG23	1.96	0.64
1:E:1140:SER:OG	1:E:1148:ASP:HA	1.98	0.64
1:E:70:LYS:HA	1:E:226:ASN:OD1	1.98	0.64
1:A:1111:ILE:HD12	1:A:1115:LEU:HD21	1.80	0.64

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1141:ILE:HB	1:E:1144:ARG:CB	2.28	0.64
1:E:865:GLY:HA2	1:A:730:GLU:H	1.61	0.63
1:E:1086:TRP:CD1	1:E:1141:ILE:HG21	2.33	0.63
1:A:983:PHE:HB3	1:A:984:LYS:HA	1.79	0.63
1:E:307:THR:HG23	1:E:308:LEU:HD23	1.81	0.63
1:E:209:ILE:HG22	1:E:210:LEU:HD23	1.80	0.63
1:A:413:LYS:O	1:A:417:ILE:HG13	1.98	0.63
1:E:983:PHE:CZ	3:G:-5:DG:OP1	2.52	0.63
1:A:209:ILE:HG12	1:A:244:PHE:CE1	2.34	0.63
1:E:65:VAL:O	1:E:69:ILE:HG12	1.99	0.62
1:E:180:LEU:HG	1:E:225:PHE:CZ	2.35	0.62
1:E:1104:ILE:HG23	1:E:1114:LEU:HD13	1.81	0.62
1:E:1111:ILE:HD12	1:E:1115:LEU:HD21	1.81	0.62
1:A:475:GLY:O	1:A:476:GLU:HG3	1.99	0.61
1:E:359:ARG:HD2	1:E:359:ARG:O	2.00	0.61
1:A:86:ARG:HB3	1:A:91:ASN:OD1	2.00	0.61
1:E:134:ASP:O	1:E:138:ILE:HG13	1.99	0.61
1:E:363:ASN:HA	1:E:366:TYR:HB3	1.83	0.61
1:E:117:SER:HB3	1:E:122:ASP:HB2	1.82	0.61
1:E:477:GLY:HA2	1:E:478:LYS:HB2	1.83	0.61
1:A:68:SER:O	1:A:68:SER:OG	2.17	0.61
1:E:858:GLU:HG2	1:E:871:ASP:HA	1.83	0.60
1:E:1072:ILE:HG12	1:E:1088:GLU:HG3	1.83	0.60
1:E:1150:LEU:HD23	1:E:1162:TYR:HE2	1.66	0.60
1:E:64:ASP:OD1	1:E:65:VAL:N	2.34	0.60
1:A:230:THR:O	1:A:234:ILE:HG13	2.01	0.60
1:A:587:PRO:O	1:A:592:MET:HG3	2.01	0.60
1:A:1140:SER:OG	1:A:1148:ASP:HA	2.01	0.60
1:E:889:ASN:O	1:E:890:TRP:HB2	2.00	0.60
3:C:-9:DA:C2'	3:C:-8:DC:H5"	2.31	0.60
1:E:1109:GLY:O	1:E:1111:ILE:HG23	2.02	0.60
1:E:165:GLU:HB2	1:E:167:LYS:HE3	1.82	0.60
1:A:305:ARG:HH11	1:A:305:ARG:HB2	1.66	0.60
1:A:371:LEU:HD13	1:A:381:TYR:CZ	2.36	0.60
1:E:326:LYS:HA	1:E:415:LYS:HD2	1.83	0.60
1:E:1163:ASP:OD1	1:E:1165:ARG:NH1	2.35	0.60
1:A:483:ASP:OD2	1:A:485:SER:HB3	2.02	0.60
1:A:937:LYS:O	1:A:941:GLN:HG2	2.03	0.59
1:A:1202:GLU:HB2	1:A:1205:LYS:HE3	1.83	0.59
1:E:81:PHE:O	1:E:86:ARG:NH2	2.36	0.59
3:G:9:DG:H22	4:H:-9:DC:N4	2.01	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:301:LEU:C	1:A:305:ARG:NH1	2.56	0.59
1:A:428:VAL:HG11	1:A:459:LEU:HA	1.85	0.58
1:E:1057:ALA:HA	1:E:1216:LYS:HG2	1.84	0.58
1:E:253:LYS:HB2	1:E:258:TYR:CE1	2.38	0.58
1:A:368:ASP:N	1:A:368:ASP:OD1	2.36	0.58
1:E:206:LYS:HD2	1:E:212:SER:HA	1.86	0.58
1:E:78:ILE:O	1:E:82:ARG:HB2	2.04	0.57
1:E:336:ILE:CD1	1:E:486:PHE:CD2	2.88	0.57
1:E:961:LYS:O	1:A:961:LYS:HB3	2.03	0.57
1:E:1041:ASP:OD1	1:E:1096:LYS:NZ	2.36	0.57
1:E:3:LYS:HG2	1:E:819:LEU:HB3	1.86	0.57
2:F:-15:C:H2'	2:F:-14:U:C6	2.40	0.57
1:E:399:GLN:O	1:E:399:GLN:HG3	1.94	0.57
1:A:193:VAL:HG12	1:A:270:LEU:HD13	1.86	0.57
1:A:927:LEU:HD12	1:A:943:TYR:CD2	2.40	0.57
1:E:1043:PHE:HE1	1:E:1106:TYR:HB2	1.70	0.57
1:E:51:LYS:HD2	1:E:154:PHE:CD1	2.40	0.57
1:E:475:GLY:O	1:E:476:GLU:HG3	2.05	0.57
1:A:363:ASN:OD1	1:A:385:ARG:HD3	2.04	0.56
1:A:933:ASN:HB3	1:A:936:VAL:HG23	1.86	0.56
1:E:983:PHE:HZ	3:G:-5:DG:OP1	1.86	0.56
1:E:571:LYS:HD3	1:E:573:ASP:N	2.20	0.56
1:E:706:ASN:ND2	1:E:721:THR:HG22	2.19	0.56
1:E:354:GLU:HG2	1:E:355:TRP:N	2.20	0.56
3:G:9:DG:N2	4:H:-9:DC:H42	2.03	0.56
1:E:378:THR:HG21	1:E:380:LYS:NZ	2.19	0.56
2:B:-10:A:H5'	2:B:-8:G:N1	2.21	0.56
1:E:571:LYS:HD2	1:E:573:ASP:O	2.05	0.56
1:E:571:LYS:CD	1:E:577:ASN:HD21	2.14	0.56
1:E:806:PRO:O	1:E:809:ILE:HD11	2.06	0.56
1:A:387:LYS:O	1:A:390:LYS:HB2	2.05	0.56
1:E:245:VAL:CG2	1:E:251:LYS:HE2	2.36	0.56
1:E:679:LYS:HG3	1:E:680:VAL:N	2.20	0.56
1:E:302:GLU:HG2	1:E:305:ARG:HH12	1.70	0.55
1:E:837:ASN:OD1	1:E:855:SER:CB	2.53	0.55
1:A:1101:LYS:HG2	1:A:1102:TYR:CE1	2.41	0.55
1:A:748:ARG:HA	1:A:792:ASP:OD1	2.06	0.55
1:E:477:GLY:HA3	1:E:479:GLU:OE1	2.06	0.55
1:A:838:LEU:CD1	1:A:876:LEU:HD12	2.37	0.55
1:E:571:LYS:HD3	1:E:572:ASP:N	2.21	0.55
2:F:-10:A:H5'	2:F:-8:G:N1	2.21	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:119:PHE:HB3	1:A:155:PHE:HB3	1.88	0.55
1:A:1141:ILE:HG13	1:A:1147:VAL:HG21	1.89	0.55
2:B:8:G:H1	3:C:-8:DC:H42	1.54	0.55
1:E:310:LYS:HG3	1:E:429:TYR:CZ	2.42	0.55
1:A:301:LEU:O	1:A:305:ARG:HB2	2.06	0.55
1:E:80:LEU:O	1:E:86:ARG:NE	2.40	0.55
1:E:230:THR:O	1:E:234:ILE:HG13	2.07	0.55
1:E:203:GLN:HA	1:E:206:LYS:HB3	1.89	0.54
1:E:560:LYS:NZ	4:H:-5:DC:OP1	2.35	0.54
1:A:245:VAL:HG22	1:A:246:THR:O	2.07	0.54
1:E:1046:ALA:HA	1:E:1064:LYS:HD3	1.89	0.54
1:E:209:ILE:HG12	1:E:244:PHE:CE1	2.42	0.54
1:E:359:ARG:HD2	1:E:363:ASN:HD21	1.73	0.54
1:E:714:HIS:CD2	1:A:714:HIS:HD2	2.26	0.54
1:A:70:LYS:HA	1:A:226:ASN:OD1	2.07	0.54
1:A:301:LEU:O	1:A:305:ARG:NH1	2.39	0.54
1:A:885:GLU:HG3	1:A:889:ASN:HD21	1.71	0.54
1:A:751:LEU:HD13	1:A:756:LEU:HD21	1.88	0.54
1:A:841:ILE:HD11	1:A:911:ILE:HD11	1.88	0.54
1:E:328:PHE:CE2	1:E:397:LEU:HD11	2.43	0.54
1:E:1072:ILE:HD13	1:E:1141:ILE:HD11	1.90	0.54
1:E:1150:LEU:HD23	1:E:1162:TYR:CE2	2.42	0.54
1:E:571:LYS:CD	1:E:573:ASP:O	2.56	0.54
1:E:1074:ILE:HD13	1:E:1086:TRP:HB3	1.90	0.54
1:E:183:TYR:O	1:E:187:MET:HG3	2.08	0.53
1:A:833:ARG:HD3	1:A:927:LEU:CD1	2.38	0.53
1:E:345:SER:OG	1:E:355:TRP:HB3	2.09	0.53
1:A:988:THR:HB	1:A:1211:ILE:HD11	1.89	0.53
1:A:82:ARG:HH11	1:A:188:ASP:CG	2.12	0.53
1:A:1202:GLU:HB2	1:A:1205:LYS:CE	2.39	0.53
1:E:925:GLU:HB2	1:E:1187:ILE:HD13	1.89	0.53
1:A:1075:PHE:HD1	1:A:1085:ASP:CA	2.14	0.53
1:E:193:VAL:HG23	1:E:270:LEU:HD13	1.91	0.53
1:A:302:GLU:CA	1:A:305:ARG:NH1	2.72	0.52
3:C:-9:DA:H2"	3:C:-8:DC:O4'	2.09	0.52
1:E:644:SER:O	1:E:645:ARG:HB2	2.08	0.52
1:E:1075:PHE:HB2	1:E:1085:ASP:O	2.10	0.52
1:A:92:LYS:HA	1:A:95:GLU:HB3	1.91	0.52
1:E:80:LEU:CG	1:E:90:GLU:HG2	2.37	0.52
1:A:11:TYR:CD1	1:A:979:LYS:HG2	2.44	0.52
1:A:302:GLU:N	1:A:305:ARG:HH12	2.08	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:359:ARG:HG2	1:A:363:ASN:HD21	1.74	0.52
1:A:876:LEU:HD23	1:A:899:LEU:HD23	1.92	0.52
1:E:203:GLN:HA	1:E:206:LYS:CB	2.40	0.52
1:E:740:GLY:O	3:G:0:DG:H2"	2.10	0.52
1:E:882:GLU:O	1:E:886:ALA:HB3	2.09	0.52
1:E:442:LEU:HD11	1:E:446:LEU:HD13	1.92	0.51
1:A:591:LYS:HD2	4:D:-1:DA:C2	2.46	0.51
1:A:1202:GLU:HB2	1:A:1205:LYS:NZ	2.24	0.51
1:E:209:ILE:HG12	1:E:244:PHE:CD1	2.45	0.51
1:A:543:ARG:HG2	1:A:558:MET:HB2	1.92	0.51
1:A:980:PHE:HE1	1:A:985:SER:HG	1.59	0.51
1:E:776:THR:OG1	1:A:573:ASP:OD1	2.28	0.51
1:A:1019:THR:OG1	1:A:1020:SER:N	2.43	0.51
1:E:835:GLU:HA	1:E:939:GLU:CD	2.30	0.51
1:E:879:LYS:HA	1:E:882:GLU:HB2	1.91	0.51
1:A:51:LYS:HG2	1:A:154:PHE:CE1	2.46	0.51
2:B:9:U:H2'	2:B:10:A:C8	2.44	0.51
3:G:8:DC:H2"	3:G:9:DG:C4	2.46	0.51
1:A:226:ASN:H	1:A:226:ASN:HD22	1.57	0.51
1:E:359:ARG:HD2	1:E:359:ARG:C	2.31	0.51
1:E:1073:ARG:O	1:E:1086:TRP:HB2	2.11	0.51
1:A:309:ASN:O	1:A:312:SER:HB3	2.10	0.51
1:A:823:ASP:O	1:A:826:PRO:HD3	2.11	0.51
1:A:1150:LEU:H	1:A:1164:SER:HB3	1.75	0.51
1:E:307:THR:HG23	1:E:308:LEU:CD2	2.41	0.51
1:E:833:ARG:HB2	1:E:943:TYR:CD1	2.46	0.50
1:E:351:ILE:HA	1:E:413:LYS:HG2	1.93	0.50
1:E:368:ASP:OD1	1:E:369:ILE:N	2.43	0.50
1:E:85:THR:O	1:E:85:THR:OG1	2.25	0.50
1:A:205:ILE:HG23	1:A:209:ILE:HD12	1.94	0.50
1:E:326:LYS:CG	1:E:415:LYS:HE3	2.42	0.50
1:E:1146:ASP:OD1	1:E:1146:ASP:N	2.44	0.50
1:E:226:ASN:N	1:E:226:ASN:HD22	2.07	0.50
1:E:1038:PRO:HD2	1:E:1039:GLU:OE2	2.12	0.50
1:A:1042:LEU:HD23	1:A:1066:TYR:CD2	2.46	0.50
1:E:362:TRP:CZ3	1:E:389:PHE:HB2	2.47	0.50
1:E:398:GLU:O	1:E:402:GLU:HG3	2.12	0.50
1:E:630:ASN:O	1:E:634:LYS:HG3	2.11	0.50
1:A:1111:ILE:O	1:A:1115:LEU:HG	2.11	0.50
1:E:336:ILE:CD1	1:E:486:PHE:CG	2.95	0.50
1:E:882:GLU:O	1:E:886:ALA:N	2.38	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:51:LYS:HG2	1:A:154:PHE:CZ	2.47	0.50
1:E:996:ILE:HD11	1:E:1187:ILE:O	2.11	0.50
1:A:1076:ARG:HG3	1:A:1076:ARG:HH11	1.76	0.50
1:E:516:TYR:HB3	1:E:751:LEU:HD11	1.94	0.49
1:E:773:PRO:O	1:A:574:VAL:HG23	2.12	0.49
1:A:935:ARG:O	1:A:939:GLU:HG3	2.12	0.49
1:E:550:GLY:HA2	2:B:-10:A:N3	2.27	0.49
1:A:562:TYR:CE2	1:A:698:LYS:HE2	2.48	0.49
1:A:1213:ILE:HG12	1:A:1218:TRP:HB2	1.95	0.49
1:E:1111:ILE:O	1:E:1115:LEU:HG	2.13	0.49
2:F:-15:C:H2'	2:F:-14:U:H6	1.76	0.49
1:A:415:LYS:O	1:A:419:ILE:HG12	2.13	0.49
1:A:722:MET:HE1	1:A:960:LYS:HB3	1.95	0.49
1:A:1031:PHE:CE2	1:A:1047:LEU:HB3	2.48	0.49
1:E:833:ARG:NH2	1:E:927:LEU:HA	2.28	0.49
1:E:76:ASN:O	1:E:80:LEU:HD13	2.12	0.49
1:A:418:ILE:HG22	1:A:419:ILE:HD13	1.94	0.49
1:A:928:ASN:HB2	1:A:940:LYS:NZ	2.27	0.49
1:E:466:PHE:O	1:E:470:ILE:HG12	2.13	0.49
1:A:347:ILE:O	1:A:351:ILE:HG13	2.12	0.49
1:A:367:ASP:OD1	1:A:381:TYR:OH	2.21	0.49
1:E:180:LEU:HG	1:E:225:PHE:CE2	2.47	0.48
1:E:1104:ILE:HD11	1:E:1118:GLN:CG	2.43	0.48
1:A:106:ALA:O	1:A:110:LYS:HG3	2.13	0.48
1:A:444:LYS:HG2	1:A:445:SER:N	2.28	0.48
1:E:444:LYS:HG2	1:E:755:GLU:HG2	1.95	0.48
1:A:126:THR:C	1:A:129:PRO:HD2	2.34	0.48
1:A:202:VAL:HG13	1:A:216:VAL:HB	1.94	0.48
1:A:833:ARG:HD3	1:A:927:LEU:HD11	1.94	0.48
1:E:467:GLU:HA	1:E:497:LEU:HD21	1.95	0.48
1:E:474:PHE:HE2	1:E:491:VAL:HG22	1.78	0.48
1:A:210:LEU:HD21	1:A:240:ILE:HD11	1.95	0.48
1:E:305:ARG:HG3	1:E:305:ARG:HH11	1.79	0.48
1:E:336:ILE:HD11	1:E:486:PHE:CG	2.48	0.48
1:A:813:ASN:O	1:A:817:ARG:HG3	2.14	0.48
1:E:1001:THR:O	1:E:1186:ASN:ND2	2.43	0.48
2:B:9:U:H2'	2:B:10:A:H8	1.79	0.48
1:E:1110:ASP:OD1	1:E:1112:ARG:HD3	2.14	0.48
1:A:740:GLY:O	1:A:799:PRO:HG2	2.14	0.48
1:E:409:SER:OG	1:E:412:GLU:HB2	2.14	0.48
1:A:625:ASP:N	1:A:625:ASP:OD2	2.47	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1172:ASN:N	1:E:1172:ASN:OD1	2.46	0.48
1:E:26:LYS:HE2	1:E:26:LYS:H	1.79	0.48
1:E:862:ASN:OD1	1:E:862:ASN:N	2.43	0.48
1:A:587:PRO:HD2	1:A:592:MET:HG3	1.95	0.48
3:C:-9:DA:H2"	3:C:-8:DC:H5"	1.96	0.48
1:E:310:LYS:HE3	1:E:429:TYR:CD2	2.49	0.47
1:E:1018:TYR:CD1	1:E:1125:SER:HA	2.49	0.47
1:A:522:LYS:HE3	1:A:743:GLU:HG2	1.96	0.47
1:A:1066:TYR:CZ	1:A:1155:LYS:HE3	2.49	0.47
1:E:937:LYS:HB3	1:E:941:GLN:CB	2.43	0.47
1:E:1024:SER:O	1:E:1028:ILE:HG13	2.14	0.47
1:A:174:ARG:HA	1:A:174:ARG:HD3	1.68	0.47
1:E:1175:LEU:HD23	1:E:1175:LEU:HA	1.75	0.47
1:A:262:TYR:CZ	1:A:266:THR:HG21	2.49	0.47
1:A:833:ARG:CD	1:A:927:LEU:HD11	2.43	0.47
1:A:807:LYS:HA	1:A:807:LYS:HD3	1.76	0.47
1:A:1073:ARG:HB2	1:A:1133:LEU:HD21	1.95	0.47
1:E:203:GLN:O	1:E:206:LYS:HB3	2.14	0.47
1:A:74:LEU:O	1:A:78:ILE:HG13	2.14	0.47
1:E:933:ASN:HA	1:E:934:SER:HA	1.56	0.47
1:E:1196:GLY:O	1:E:1200:LYS:HG3	2.15	0.47
1:E:132:LEU:HD13	1:E:137:GLU:HB3	1.97	0.47
1:E:262:TYR:CZ	1:E:266:THR:HG21	2.49	0.47
1:E:996:ILE:HD11	1:E:1187:ILE:CG2	2.42	0.47
1:A:522:LYS:HE3	1:A:743:GLU:OE2	2.15	0.47
1:A:570:ASP:OD1	1:A:571:LYS:N	2.47	0.47
1:A:1041:ASP:O	1:A:1092:THR:HG21	2.14	0.47
1:E:932:LYS:O	1:E:936:VAL:HG12	2.14	0.47
1:E:983:PHE:CZ	3:G:-5:DG:C5'	2.98	0.47
1:A:11:TYR:CE1	1:A:979:LYS:HG2	2.49	0.47
1:A:101:LEU:HB3	1:A:176:ILE:HG12	1.97	0.47
1:A:616:TYR:HA	1:A:621:PHE:HE2	1.79	0.47
1:E:774:LYS:HE2	1:A:575:ASN:HA	1.97	0.47
1:E:1151:ILE:HA	1:E:1162:TYR:O	2.15	0.47
4:H:-5:DC:H2'	4:H:-4:DT:H71	1.97	0.47
1:E:571:LYS:HE2	1:E:573:ASP:H	1.75	0.46
1:A:428:VAL:O	1:A:432:SER:OG	2.25	0.46
1:E:1099:PHE:CD2	1:E:1106:TYR:HB3	2.50	0.46
1:E:48:LYS:O	1:E:52:LYS:HG3	2.16	0.46
1:E:344:ILE:HD12	1:E:347:ILE:HB	1.97	0.46
1:A:54:LEU:HD23	1:A:128:LEU:HD22	1.96	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:265:LYS:HD2	1:E:265:LYS:HA	1.68	0.46
1:A:878:LYS:O	1:A:882:GLU:HG3	2.16	0.46
1:E:349:LYS:HE2	1:E:355:TRP:CE2	2.49	0.46
1:A:477:GLY:HA2	1:A:478:LYS:C	2.36	0.46
1:A:876:LEU:HD23	1:A:876:LEU:HA	1.72	0.46
1:E:203:GLN:O	1:E:207:GLU:HG2	2.16	0.46
1:E:302:GLU:HG2	1:E:305:ARG:NH1	2.31	0.46
1:E:900:LYS:O	1:E:904:ILE:HG12	2.15	0.46
1:E:543:ARG:HG2	1:E:558:MET:HB2	1.96	0.46
1:E:1193:TRP:CD2	1:E:1213:ILE:HD12	2.50	0.46
1:E:190:PHE:O	1:E:194:ASP:HB2	2.16	0.46
1:E:937:LYS:O	1:E:938:VAL:C	2.54	0.46
1:A:120:LYS:O	1:A:123:ILE:HG22	2.16	0.46
1:E:832:ASP:HB2	1:E:1184:ALA:HB2	1.97	0.45
1:A:12:SER:HB3	1:A:803:ASN:O	2.15	0.45
1:E:302:GLU:OE1	1:E:305:ARG:NH2	2.50	0.45
1:E:336:ILE:HB	1:E:397:LEU:HG	1.97	0.45
1:E:576:GLY:O	1:E:687:LYS:HB3	2.16	0.45
1:E:1065:LEU:HD13	1:E:1135:LEU:HD21	1.97	0.45
1:A:302:GLU:CA	1:A:305:ARG:HH12	2.29	0.45
1:A:439:ASP:OD1	1:A:439:ASP:N	2.49	0.45
1:A:590:ASN:O	1:A:594:PRO:CD	2.65	0.45
3:C:-12:DT:H2'	3:C:-11:DT:C6	2.51	0.45
1:E:305:ARG:HD2	1:E:436:PHE:HA	1.98	0.45
1:E:406:ALA:HA	1:E:407:ASP:HA	1.63	0.45
1:E:1021:ILE:H	1:E:1021:ILE:CD1	2.24	0.45
1:A:362:TRP:CH2	1:A:366:TYR:HD1	2.33	0.45
1:A:400:LEU:O	1:A:403:TYR:HB2	2.15	0.45
1:A:928:ASN:HB2	1:A:940:LYS:HZ1	1.82	0.45
1:E:477:GLY:HA2	1:E:478:LYS:CB	2.44	0.45
1:A:516:TYR:HB3	1:A:751:LEU:HD11	1.99	0.45
1:E:672:GLU:O	1:E:676:GLN:HG3	2.16	0.45
1:E:1096:LYS:HG2	1:E:1106:TYR:CZ	2.52	0.45
1:A:767:ASN:ND2	2:B:-11:U:H3'	2.31	0.45
1:E:126:THR:C	1:E:129:PRO:HD2	2.36	0.45
1:E:198:ASP:HB3	1:E:201:GLU:CD	2.37	0.45
1:E:492:LEU:HD23	1:E:492:LEU:HA	1.83	0.45
1:A:1133:LEU:HA	1:A:1136:GLN:HG2	1.99	0.45
1:E:842:VAL:HG23	1:E:1184:ALA:HB3	1.97	0.45
2:B:-15:C:H2'	2:B:-14:U:C6	2.52	0.45
1:A:601:LYS:HD3	1:A:602:TRP:NE1	2.31	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:858:GLU:OE1	1:A:869:LYS:HD2	2.17	0.45
1:E:384:ASP:O	1:E:388:SER:N	2.42	0.44
1:E:1025:LYS:HE2	1:E:1124:TYR:OH	2.18	0.44
1:E:1030:SER:HB2	1:E:1052:PHE:CZ	2.53	0.44
1:A:668:GLY:O	1:A:672:GLU:HG3	2.18	0.44
1:A:706:ASN:HB2	2:B:-17:U:OP1	2.17	0.44
1:A:1136:GLN:O	1:A:1136:GLN:HG3	2.18	0.44
1:A:1136:GLN:HG3	1:A:1139:ASN:HD21	1.81	0.44
1:A:1031:PHE:CD2	1:A:1047:LEU:HB3	2.53	0.44
1:E:336:ILE:HD13	1:E:486:PHE:CD2	2.52	0.44
1:E:359:ARG:HD2	1:E:363:ASN:ND2	2.32	0.44
1:A:246:THR:HG22	1:A:250:GLU:H	1.82	0.44
1:A:325:PHE:CG	1:A:418:ILE:HG21	2.52	0.44
1:A:616:TYR:HA	1:A:621:PHE:CE2	2.53	0.44
1:A:926:ASP:O	1:A:927:LEU:HD23	2.17	0.44
1:E:568:LYS:HD3	1:E:568:LYS:HA	1.85	0.44
1:E:931:PHE:CB	1:E:936:VAL:HB	2.47	0.44
3:G:-9:DA:H2'	3:G:-8:DC:C6	2.53	0.44
1:E:365:GLU:O	1:E:368:ASP:OD2	2.35	0.44
1:A:277:TYR:HE1	2:B:8:G:OP1	1.99	0.44
1:A:987:SER:OG	1:A:988:THR:N	2.51	0.44
1:A:1114:LEU:HD12	1:A:1114:LEU:HA	1.76	0.44
3:C:-9:DA:C3'	3:C:-8:DC:H5"	2.48	0.44
1:A:72:LYS:HE2	1:A:104:GLU:OE1	2.18	0.44
1:E:71:LEU:CB	1:E:74:LEU:HD21	2.44	0.44
1:E:138:ILE:HG22	1:E:142:ASN:ND2	2.33	0.44
1:E:182:ARG:HA	1:E:185:SER:HB3	1.99	0.44
1:E:1026:LYS:O	1:E:1030:SER:OG	2.30	0.44
1:E:445:SER:N	1:E:755:GLU:OE1	2.50	0.44
1:E:708:ASP:OD2	1:E:721:THR:HG21	2.18	0.44
3:G:-2:DG:H2'	3:G:-1:DC:C6	2.52	0.44
1:A:883:ARG:NH2	1:A:896:ILE:HG21	2.33	0.44
1:A:71:LEU:HB2	1:A:74:LEU:HB2	2.00	0.44
1:A:193:VAL:O	1:A:196:ILE:HG12	2.18	0.44
1:A:1136:GLN:OE1	1:A:1139:ASN:ND2	2.50	0.44
1:E:771:ASP:OD2	1:E:869:LYS:NZ	2.50	0.43
1:A:373:LYS:HA	1:A:373:LYS:HD3	1.86	0.43
1:A:527:ASN:HB3	1:A:530:PHE:HB2	2.00	0.43
1:E:667:ALA:O	1:E:671:ARG:HG3	2.18	0.43
1:E:983:PHE:CE1	3:G:-5:DG:H5'	2.53	0.43
1:E:1066:TYR:CZ	1:E:1155:LYS:HE3	2.52	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:27:THR:HG23	1:A:700:TYR:HB3	2.00	0.43
1:A:128:LEU:HD12	1:A:128:LEU:HA	1.81	0.43
1:A:134:ASP:OD2	1:A:136:ASP:N	2.50	0.43
1:E:1101:LYS:HG2	1:E:1102:TYR:CE1	2.54	0.43
1:A:427:LYS:HA	1:A:427:LYS:HD3	1.81	0.43
1:E:260:ASN:HA	1:E:263:ASN:HB2	2.00	0.43
1:A:1072:ILE:HD13	1:A:1088:GLU:HG3	2.00	0.43
1:A:1075:PHE:N	1:A:1085:ASP:O	2.51	0.43
1:E:267:LYS:HA	1:E:267:LYS:HD3	1.89	0.43
1:A:569:ILE:HG22	1:A:686:SER:H	1.84	0.43
1:A:900:LYS:O	1:A:904:ILE:HG12	2.18	0.43
1:E:245:VAL:HG12	1:E:246:THR:O	2.18	0.43
1:E:321:LEU:HG	1:E:493:ALA:HB1	2.01	0.43
1:E:897:LYS:NZ	1:E:900:LYS:NZ	2.65	0.43
1:A:615:ILE:HD11	1:A:631:ASP:OD2	2.18	0.43
1:A:813:ASN:ND2	1:A:989:GLN:HG3	2.34	0.43
1:A:1193:TRP:CD2	1:A:1213:ILE:HD12	2.53	0.43
1:E:349:LYS:HG3	1:E:353:GLY:C	2.39	0.43
1:E:379:GLU:OE1	1:E:382:GLU:HB3	2.19	0.43
1:E:729:ASP:OD2	1:E:731:ASN:HB2	2.19	0.43
1:A:897:LYS:HE3	3:C:-7:DT:H3'	2.00	0.43
1:E:609:SER:HB2	1:E:612:ILE:HG12	2.00	0.43
1:A:117:SER:HB3	1:A:122:ASP:HB2	2.01	0.43
1:E:128:LEU:HB3	1:E:129:PRO:HD3	1.99	0.43
1:E:620:THR:HA	1:E:626:MET:O	2.19	0.43
1:E:951:ILE:HD11	1:E:995:TYR:OH	2.18	0.43
3:G:-4:DA:H2"	3:G:-3:DT:O5'	2.19	0.43
1:E:409:SER:HG	1:E:412:GLU:HB2	1.84	0.43
1:A:12:SER:O	1:A:979:LYS:HE2	2.19	0.43
1:E:414:LEU:HD13	1:E:473:PHE:HZ	1.84	0.42
1:E:904:ILE:HD12	1:E:946:PHE:HB2	2.01	0.42
1:A:820:LEU:HD11	1:A:921:VAL:HG11	2.01	0.42
1:A:938:VAL:O	1:A:942:VAL:HG23	2.19	0.42
1:E:22:ILE:O	1:E:702:PHE:HA	2.19	0.42
1:A:1000:LEU:HD12	1:A:1215:ASN:OD1	2.19	0.42
3:G:-7:DT:C2	3:G:-6:DG:C8	3.07	0.42
1:A:9:ASN:OD1	1:A:806:PRO:HA	2.19	0.42
1:A:376:VAL:O	1:A:377:VAL:CG1	2.64	0.42
1:A:833:ARG:CD	1:A:927:LEU:CD1	2.97	0.42
1:E:192:LYS:HD2	1:E:192:LYS:HA	1.35	0.42
1:E:414:LEU:HD13	1:E:473:PHE:CZ	2.54	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:435:LEU:HD11	1:E:452:VAL:HG13	2.01	0.42
1:A:210:LEU:O	1:A:211:ASN:HB2	2.19	0.42
1:E:228:VAL:HG21	1:E:276:LEU:HD12	2.01	0.42
1:E:359:ARG:HE	1:E:359:ARG:HB3	1.70	0.42
1:E:740:GLY:O	1:E:799:PRO:HG2	2.19	0.42
1:E:898:GLU:HG2	2:F:-15:C:H4'	2.00	0.42
1:E:119:PHE:HB3	1:E:155:PHE:HB3	2.02	0.42
1:E:301:LEU:HD11	1:E:442:LEU:HG	2.02	0.42
1:A:125:GLU:HG2	1:A:145:ASN:OD1	2.20	0.42
1:A:442:LEU:HD23	1:A:442:LEU:HA	1.74	0.42
1:E:359:ARG:O	1:E:363:ASN:ND2	2.52	0.42
1:E:585:LEU:O	3:G:2:DA:H4'	2.19	0.42
1:E:883:ARG:HH22	1:E:896:ILE:HG21	1.85	0.42
1:E:937:LYS:NZ	1:E:941:GLN:HA	2.34	0.42
1:A:1086:TRP:CE2	1:A:1141:ILE:HD13	2.55	0.42
1:A:1087:GLU:HG2	1:A:1088:GLU:N	2.34	0.42
1:E:886:ALA:O	1:E:889:ASN:HB2	2.20	0.42
1:A:246:THR:CG2	1:A:250:GLU:H	2.32	0.42
1:A:672:GLU:O	1:A:676:GLN:HG3	2.20	0.42
2:B:7:A:H2'	2:B:8:G:O4'	2.20	0.42
1:E:245:VAL:HG22	1:E:251:LYS:CE	2.44	0.42
1:E:349:LYS:HG3	1:E:354:GLU:HA	2.01	0.42
1:E:828:VAL:HG22	1:E:921:VAL:CG2	2.50	0.42
1:A:578:TYR:CE2	1:A:687:LYS:HG3	2.55	0.42
1:A:1093:SER:O	1:A:1097:GLU:HG3	2.20	0.42
1:A:54:LEU:HD11	1:A:124:ILE:HD11	2.00	0.41
1:A:154:PHE:HA	1:A:157:ASN:OD1	2.20	0.41
1:A:722:MET:CE	1:A:960:LYS:HD2	2.50	0.41
1:A:980:PHE:HZ	1:A:985:SER:HB3	1.85	0.41
1:E:26:LYS:HE2	1:E:26:LYS:HB2	1.69	0.41
1:E:218:ASP:HB3	1:E:224:PHE:CD1	2.55	0.41
1:A:406:ALA:HA	1:A:407:ASP:HA	1.67	0.41
1:A:434:LYS:HA	1:A:437:ASP:OD1	2.21	0.41
1:A:476:GLU:O	1:A:478:LYS:HB2	2.19	0.41
1:A:587:PRO:O	1:A:587:PRO:HD2	2.20	0.41
1:A:1102:TYR:HB3	1:A:1118:GLN:OE1	2.20	0.41
1:E:82:ARG:HH12	1:E:188:ASP:HA	1.86	0.41
1:E:937:LYS:O	1:E:941:GLN:N	2.41	0.41
1:A:1101:LYS:HG2	1:A:1102:TYR:CD1	2.54	0.41
1:E:294:TYR:CZ	1:E:303:VAL:HG11	2.55	0.41
1:E:325:PHE:O	1:E:328:PHE:HB2	2.21	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1145:THR:OG1	1:E:1146:ASP:OD1	2.38	0.41
1:E:97:LEU:O	1:E:101:LEU:HB2	2.20	0.41
1:E:514:LYS:NZ	1:E:895:ASN:HB2	2.34	0.41
1:E:1012:ASN:OD1	1:E:1135:LEU:HD13	2.20	0.41
1:A:325:PHE:O	1:A:328:PHE:HB2	2.21	0.41
3:C:-2:DG:H2'	3:C:-1:DC:C6	2.55	0.41
1:E:193:VAL:HG23	1:E:270:LEU:CD1	2.50	0.41
1:E:925:GLU:HG3	1:E:998:ALA:HB2	2.03	0.41
1:A:716:THR:HA	1:A:717:PRO:HD3	1.92	0.41
2:B:11:A:H2'	2:B:12:A:C8	2.56	0.41
1:E:961:LYS:HB3	1:A:961:LYS:O	2.20	0.41
3:G:-8:DC:H2"	3:G:-7:DT:O5'	2.20	0.41
1:A:444:LYS:HD2	1:A:449:ASN:CA	2.47	0.41
1:A:841:ILE:O	1:A:853:GLN:HA	2.20	0.41
1:A:1005:ASP:OD1	1:A:1007:SER:OG	2.37	0.41
1:E:339:LYS:HG2	1:E:340:ASN:N	2.35	0.41
1:E:535:ASP:HA	1:E:583:TYR:O	2.21	0.41
1:E:1105:ASN:ND2	1:E:1108:GLN:HB2	2.35	0.41
1:E:1192:LEU:HD23	1:E:1192:LEU:HA	1.78	0.41
1:A:844:VAL:HA	1:A:849:ASN:O	2.20	0.41
1:A:859:ILE:HG21	1:A:906:GLN:HB3	2.03	0.41
1:A:933:ASN:HB3	1:A:936:VAL:CG2	2.50	0.41
1:E:331:TYR:CD1	1:E:486:PHE:HB2	2.55	0.41
1:E:359:ARG:CD	1:E:363:ASN:HD21	2.32	0.41
1:E:565:CYS:SG	1:E:693:LEU:HD13	2.61	0.41
1:E:571:LYS:HE2	1:E:573:ASP:N	2.34	0.41
1:E:1101:LYS:HZ3	1:E:1102:TYR:HE1	1.69	0.41
4:H:-9:DC:H6	4:H:-9:DC:H2'	1.75	0.41
1:A:246:THR:HG22	1:A:250:GLU:N	2.35	0.41
1:A:247:GLU:O	1:A:247:GLU:HG2	2.21	0.41
1:A:447:LYS:NZ	1:A:513:GLN:OE1	2.53	0.41
1:A:453:VAL:HG11	1:A:511:VAL:HG11	2.02	0.41
1:A:455:ILE:HD13	1:A:455:ILE:HA	1.89	0.41
1:A:555:LEU:HD22	1:A:796:LEU:HD22	2.03	0.41
1:A:767:ASN:HD21	2:B:-11:U:H3'	1.86	0.41
1:A:769:ASN:HD21	1:A:771:ASP:HB2	1.86	0.41
1:A:931:PHE:O	1:A:931:PHE:CG	2.73	0.41
1:E:3:LYS:HE2	1:E:823:ASP:OD2	2.21	0.41
1:E:341:GLY:O	1:E:344:ILE:HG22	2.21	0.41
1:E:571:LYS:CE	1:E:573:ASP:N	2.73	0.41
1:A:1026:LYS:HE2	1:A:1026:LYS:HB2	1.69	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:387:LYS:HD2	1:E:387:LYS:HA	1.69	0.40
1:E:449:ASN:O	1:E:453:VAL:HG23	2.21	0.40
1:E:508:ARG:HG3	1:E:890:TRP:CE2	2.56	0.40
1:A:225:PHE:O	1:A:228:VAL:HG12	2.20	0.40
1:A:821:LYS:HG3	1:A:1199:LYS:HA	2.03	0.40
1:A:1075:PHE:CB	1:A:1085:ASP:O	2.67	0.40
1:E:295:THR:O	1:E:510:TYR:HE1	2.04	0.40
1:A:363:ASN:N	1:A:363:ASN:HD22	2.19	0.40
1:A:872:TYR:CD1	1:A:903:TYR:HB2	2.56	0.40
1:E:517:SER:H	1:E:750:SER:CB	2.34	0.40
1:A:344:ILE:HD12	1:A:344:ILE:HA	1.94	0.40
1:A:729:ASP:OD1	1:A:730:GLU:N	2.54	0.40
1:A:1160:ILE:HD12	1:A:1160:ILE:HA	1.96	0.40
1:E:3:LYS:HB2	1:E:3:LYS:HE3	1.53	0.40
1:E:477:GLY:CA	1:E:478:LYS:HB2	2.46	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1056:ASP:OD1	1:A:444:LYS:NZ[3_454]	2.18	0.02

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	1208/1228 (98%)	1176 (97%)	28 (2%)	4 (0%)	37	55
1	E	1208/1228 (98%)	1170 (97%)	34 (3%)	4 (0%)	37	55
All	All	2416/2456 (98%)	2346 (97%)	62 (3%)	8 (0%)	37	55

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	368	ASP
1	E	374	LYS
1	A	986	MET
1	A	587	PRO
1	A	1019	THR
1	E	377	VAL
1	A	376	VAL
1	E	376	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1081/1115 (97%)	1049 (97%)	32 (3%)	36	62
1	E	1071/1115 (96%)	1031 (96%)	40 (4%)	29	54
All	All	2152/2230 (96%)	2080 (97%)	72 (3%)	33	59

All (72) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	13	LEU
1	E	26	LYS
1	E	82	ARG
1	E	89	LYS
1	E	147	PHE
1	E	251	LYS
1	E	292	GLU
1	E	296	SER
1	E	315	PHE
1	E	328	PHE
1	E	329	ASP
1	E	345	SER
1	E	367	ASP
1	E	372	LYS
1	E	373	LYS
1	E	399	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	E	409	SER
1	E	437	ASP
1	E	471	LYS
1	E	565	CYS
1	E	571	LYS
1	E	572	ASP
1	E	606	TYR
1	E	780	SER
1	E	808	ASN
1	E	836	ARG
1	E	847	LYS
1	E	892	SER
1	E	927	LEU
1	E	934	SER
1	E	937	LYS
1	E	972	LYS
1	E	983	PHE
1	E	989	GLN
1	E	1049	TYR
1	E	1085	ASP
1	E	1106	TYR
1	E	1114	LEU
1	E	1121	LYS
1	E	1146	ASP
1	A	13	LEU
1	A	79	SER
1	A	82	ARG
1	A	83	LYS
1	A	147	PHE
1	A	174	ARG
1	A	224	PHE
1	A	244	PHE
1	A	269	LYS
1	A	284	ARG
1	A	328	PHE
1	A	372	LYS
1	A	401	GLN
1	A	439	ASP
1	A	442	LEU
1	A	448	LYS
1	A	502	HIS
1	A	558	MET

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	568	LYS
1	A	753	LYS
1	A	775	LYS
1	A	835	GLU
1	A	836	ARG
1	A	874	SER
1	A	980	PHE
1	A	984	LYS
1	A	987	SER
1	A	1075	PHE
1	A	1163	ASP
1	A	1164	SER
1	A	1215	ASN
1	A	1216	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (16) such sidechains are listed below:

Mol	Chain	Res	Type
1	E	73	ASN
1	E	76	ASN
1	E	142	ASN
1	E	211	ASN
1	E	311	ASN
1	E	363	ASN
1	E	399	GLN
1	E	577	ASN
1	E	607	ASN
1	E	714	HIS
1	E	1170	GLN
1	A	509	ASN
1	A	633	HIS
1	A	714	HIS
1	A	889	ASN
1	A	1139	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	B	32/40 (80%)	5 (15%)	0
2	F	32/40 (80%)	5 (15%)	0

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
All	All	64/80 (80%)	10 (15%)	0

All (10) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	F	-17	U
2	F	-10	A
2	F	-9	A
2	F	-6	G
2	F	8	G
2	B	-17	U
2	B	-10	A
2	B	-9	A
2	B	-6	G
2	B	8	G

There are no RNA pucker outliers to report.

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 4 ligands modelled in this entry, 4 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

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	1214/1228 (98%)	-0.01	49 (4%) 43 38	19, 48, 90, 148	0
1	E	1214/1228 (98%)	0.15	84 (6%) 24 20	22, 53, 105, 131	0
2	B	33/40 (82%)	-0.45	0 100 100	25, 30, 155, 178	0
2	F	33/40 (82%)	-0.48	1 (3%) 52 49	25, 28, 164, 183	0
3	C	22/22 (100%)	0.44	3 (13%) 8 8	25, 63, 155, 175	0
3	G	22/22 (100%)	0.39	3 (13%) 8 8	30, 65, 178, 189	0
4	D	11/11 (100%)	-0.03	1 (9%) 16 14	33, 36, 94, 110	0
4	H	11/11 (100%)	0.13	1 (9%) 16 14	39, 43, 85, 97	0
All	All	2560/2602 (98%)	0.06	142 (5%) 32 27	19, 50, 100, 189	0

All (142) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	883	ARG	5.4
1	E	888	GLN	5.0
1	E	1108	GLN	5.0
1	E	1077	ASN	4.7
1	E	1141	ILE	4.4
1	E	886	ALA	4.3
1	A	982	SER	4.1
1	A	1077	ASN	4.0
1	E	377	VAL	3.8
1	E	1075	PHE	3.8
1	A	866	ILE	3.8
1	E	374	LYS	3.7
1	E	884	PHE	3.6
1	E	373	LYS	3.6
3	C	9	DG	3.4
1	A	1022	ALA	3.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	E	1088	GLU	3.4
1	A	1109	GLY	3.4
1	E	291	GLY	3.3
1	A	372	LYS	3.3
4	H	-9	DC	3.3
1	E	889	ASN	3.3
1	E	375	ALA	3.3
1	E	1109	GLY	3.2
1	E	885	GLU	3.2
1	A	981	GLU	3.2
1	E	219	PHE	3.2
4	D	-9	DC	3.2
1	E	369	ILE	3.2
1	E	980	PHE	3.2
1	E	1142	THR	3.2
1	E	292	GLU	3.2
1	E	368	ASP	3.1
1	E	986	MET	3.1
1	A	291	GLY	3.1
1	E	983	PHE	3.1
1	E	293	GLY	3.1
1	A	931	PHE	3.0
1	A	376	VAL	3.0
1	A	1108	GLN	3.0
1	E	389	PHE	2.9
1	E	388	SER	2.9
1	E	1086	TRP	2.8
1	E	113	GLU	2.8
1	A	863	PHE	2.8
1	E	372	LYS	2.8
1	E	279	GLN	2.8
1	E	364	ALA	2.8
1	E	880	GLU	2.8
1	A	424	GLU	2.8
1	A	893	ILE	2.8
1	E	863	PHE	2.7
1	A	1075	PHE	2.7
1	E	397	LEU	2.7
1	A	502	HIS	2.7
1	E	606	TYR	2.6
1	A	980	PHE	2.6
1	A	330	GLU	2.6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	E	378	THR	2.6
1	A	188	ASP	2.6
1	E	365	GLU	2.6
1	E	985	SER	2.6
1	E	224	PHE	2.6
1	A	374	LYS	2.6
1	E	887	ARG	2.6
1	E	216	VAL	2.6
1	E	90	GLU	2.5
3	G	9	DG	2.5
1	E	1105	ASN	2.5
1	E	246	THR	2.5
1	E	438	ALA	2.5
1	E	84	LYS	2.4
1	E	879	LYS	2.4
1	A	373	LYS	2.4
1	E	342	PRO	2.4
1	E	938	VAL	2.4
1	E	271	PRO	2.4
1	A	375	ALA	2.4
1	A	296	SER	2.4
1	E	85	THR	2.4
1	A	295	THR	2.4
3	G	-12	DT	2.3
3	G	-7	DT	2.3
1	A	438	ALA	2.3
1	A	983	PHE	2.3
1	E	356	ASN	2.3
1	E	362	TRP	2.3
1	E	402	GLU	2.3
1	E	1123	PHE	2.3
1	E	341	GLY	2.3
1	E	472	ALA	2.3
1	E	1148	ASP	2.3
1	A	441	VAL	2.2
3	C	8	DC	2.2
1	E	244	PHE	2.2
1	A	986	MET	2.2
1	E	114	GLY	2.2
1	E	358	ILE	2.2
1	E	284	ARG	2.2
1	A	406	ALA	2.2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	E	307	THR	2.2
1	E	252	ILE	2.2
1	E	1021	ILE	2.2
1	A	1143	GLY	2.2
1	A	284	ARG	2.2
1	E	835	GLU	2.2
1	A	985	SER	2.2
1	E	936	VAL	2.2
1	E	1143	GLY	2.2
1	A	244	PHE	2.2
1	A	884	PHE	2.2
1	A	1144	ARG	2.2
1	E	380	LYS	2.2
1	E	399	GLN	2.1
1	E	294	TYR	2.1
1	E	387	LYS	2.1
1	A	435	LEU	2.1
1	E	1084	PHE	2.1
1	A	474	PHE	2.1
1	A	1084	PHE	2.1
1	A	77	TYR	2.1
1	E	937	LYS	2.1
1	E	262	TYR	2.1
1	A	864	ASN	2.1
1	E	942	VAL	2.1
1	E	329	ASP	2.1
3	C	-7	DT	2.1
1	A	221	GLU	2.1
1	E	344	ILE	2.1
2	F	12	A	2.1
1	A	600	LYS	2.1
1	E	261	LEU	2.0
1	E	1145	THR	2.0
1	E	355	TRP	2.0
1	A	84	LYS	2.0
1	A	251	LYS	2.0
1	A	301	LEU	2.0
1	A	480	THR	2.0
1	A	247	GLU	2.0
1	A	294	TYR	2.0
1	E	862	ASN	2.0
1	A	890	TRP	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	LI	A	1301	1/1	0.32	0.85	12,12,12,12	0
5	LI	E	1301	1/1	0.38	0.83	16,16,16,16	0
5	LI	F	101	1/1	0.82	0.80	2,2,2,2	0
5	LI	B	101	1/1	0.92	0.82	8,8,8,8	0

6.5 Other polymers (i)

There are no such residues in this entry.