



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 21, 2024 – 11:49 PM EST

PDB ID : 4QQW
Title : Crystal structure of T. fusca Cas3
Authors : Ke, A.; Huo, Y.; Nam, K.H.
Deposited on : 2014-06-30
Resolution : 2.66 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) : 1.13
EDS : 2.36
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) : 2.36

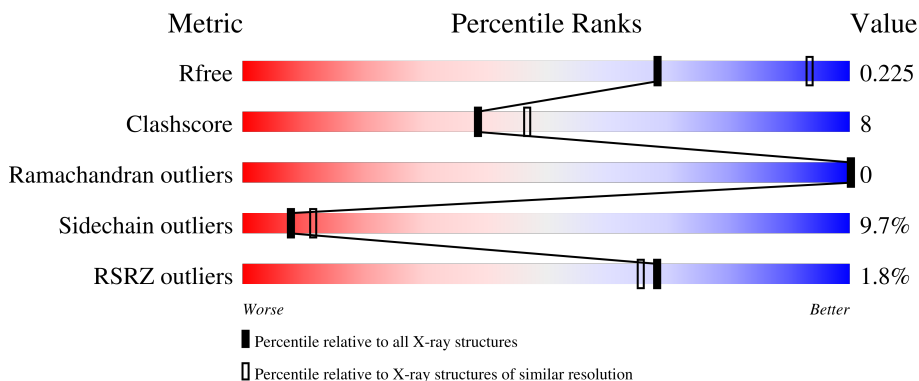
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.66 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.




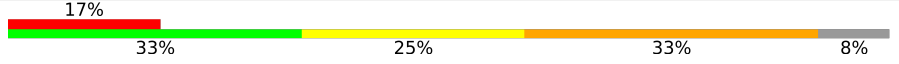
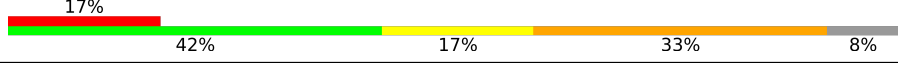
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1332 (2.68-2.64)
Clashscore	141614	1374 (2.68-2.64)
Ramachandran outliers	138981	1349 (2.68-2.64)
Sidechain outliers	138945	1349 (2.68-2.64)
RSRZ outliers	127900	1318 (2.68-2.64)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	964	<div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 74%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 17%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 20px;">74% 17% • 5%</p>
1	C	964	<div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 71%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 18%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 6%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 20px;">71% 18% • 6%</p>
1	E	964	<div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 73%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 17%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 7%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 20px;">73% 17% • 7%</p>
1	G	964	<div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 73%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 18%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 7%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 20px;">73% 18% • 7%</p>
2	B	12	<div style="display: flex; align-items: center;"> <div style="width: 8%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 42%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 17%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 33%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 8%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 20px;">42% 17% 33% 8%</p>

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Mol	Chain	Length	Quality of chain
2	D	12	
2	F	12	
2	H	12	

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 29038 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 CRISPR-associated helicase, Cas3 family.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	911	7082	4496	1260	1299	27	0	0	0
1	C	902	7001	4441	1243	1290	27	0	0	0
1	E	897	6971	4424	1241	1279	27	0	0	0
1	G	898	6973	4426	1239	1281	27	0	0	0

There are 80 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-19	MET	-	initiating methionine	UNP Q47PJ0
A	-18	GLY	-	expression tag	UNP Q47PJ0
A	-17	SER	-	expression tag	UNP Q47PJ0
A	-16	SER	-	expression tag	UNP Q47PJ0
A	-15	HIS	-	expression tag	UNP Q47PJ0
A	-14	HIS	-	expression tag	UNP Q47PJ0
A	-13	HIS	-	expression tag	UNP Q47PJ0
A	-12	HIS	-	expression tag	UNP Q47PJ0
A	-11	HIS	-	expression tag	UNP Q47PJ0
A	-10	HIS	-	expression tag	UNP Q47PJ0
A	-9	SER	-	expression tag	UNP Q47PJ0
A	-8	SER	-	expression tag	UNP Q47PJ0
A	-7	GLY	-	expression tag	UNP Q47PJ0
A	-6	LEU	-	expression tag	UNP Q47PJ0
A	-5	VAL	-	expression tag	UNP Q47PJ0
A	-4	PRO	-	expression tag	UNP Q47PJ0
A	-3	ARG	-	expression tag	UNP Q47PJ0
A	-2	GLY	-	expression tag	UNP Q47PJ0
A	-1	SER	-	expression tag	UNP Q47PJ0
A	0	HIS	-	expression tag	UNP Q47PJ0
C	-19	MET	-	initiating methionine	UNP Q47PJ0

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-18	GLY	-	expression tag	UNP Q47PJ0
C	-17	SER	-	expression tag	UNP Q47PJ0
C	-16	SER	-	expression tag	UNP Q47PJ0
C	-15	HIS	-	expression tag	UNP Q47PJ0
C	-14	HIS	-	expression tag	UNP Q47PJ0
C	-13	HIS	-	expression tag	UNP Q47PJ0
C	-12	HIS	-	expression tag	UNP Q47PJ0
C	-11	HIS	-	expression tag	UNP Q47PJ0
C	-10	HIS	-	expression tag	UNP Q47PJ0
C	-9	SER	-	expression tag	UNP Q47PJ0
C	-8	SER	-	expression tag	UNP Q47PJ0
C	-7	GLY	-	expression tag	UNP Q47PJ0
C	-6	LEU	-	expression tag	UNP Q47PJ0
C	-5	VAL	-	expression tag	UNP Q47PJ0
C	-4	PRO	-	expression tag	UNP Q47PJ0
C	-3	ARG	-	expression tag	UNP Q47PJ0
C	-2	GLY	-	expression tag	UNP Q47PJ0
C	-1	SER	-	expression tag	UNP Q47PJ0
C	0	HIS	-	expression tag	UNP Q47PJ0
E	-19	MET	-	initiating methionine	UNP Q47PJ0
E	-18	GLY	-	expression tag	UNP Q47PJ0
E	-17	SER	-	expression tag	UNP Q47PJ0
E	-16	SER	-	expression tag	UNP Q47PJ0
E	-15	HIS	-	expression tag	UNP Q47PJ0
E	-14	HIS	-	expression tag	UNP Q47PJ0
E	-13	HIS	-	expression tag	UNP Q47PJ0
E	-12	HIS	-	expression tag	UNP Q47PJ0
E	-11	HIS	-	expression tag	UNP Q47PJ0
E	-10	HIS	-	expression tag	UNP Q47PJ0
E	-9	SER	-	expression tag	UNP Q47PJ0
E	-8	SER	-	expression tag	UNP Q47PJ0
E	-7	GLY	-	expression tag	UNP Q47PJ0
E	-6	LEU	-	expression tag	UNP Q47PJ0
E	-5	VAL	-	expression tag	UNP Q47PJ0
E	-4	PRO	-	expression tag	UNP Q47PJ0
E	-3	ARG	-	expression tag	UNP Q47PJ0
E	-2	GLY	-	expression tag	UNP Q47PJ0
E	-1	SER	-	expression tag	UNP Q47PJ0
E	0	HIS	-	expression tag	UNP Q47PJ0
G	-19	MET	-	initiating methionine	UNP Q47PJ0
G	-18	GLY	-	expression tag	UNP Q47PJ0
G	-17	SER	-	expression tag	UNP Q47PJ0

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Chain	Residue	Modelled	Actual	Comment	Reference
G	-16	SER	-	expression tag	UNP Q47PJ0
G	-15	HIS	-	expression tag	UNP Q47PJ0
G	-14	HIS	-	expression tag	UNP Q47PJ0
G	-13	HIS	-	expression tag	UNP Q47PJ0
G	-12	HIS	-	expression tag	UNP Q47PJ0
G	-11	HIS	-	expression tag	UNP Q47PJ0
G	-10	HIS	-	expression tag	UNP Q47PJ0
G	-9	SER	-	expression tag	UNP Q47PJ0
G	-8	SER	-	expression tag	UNP Q47PJ0
G	-7	GLY	-	expression tag	UNP Q47PJ0
G	-6	LEU	-	expression tag	UNP Q47PJ0
G	-5	VAL	-	expression tag	UNP Q47PJ0
G	-4	PRO	-	expression tag	UNP Q47PJ0
G	-3	ARG	-	expression tag	UNP Q47PJ0
G	-2	GLY	-	expression tag	UNP Q47PJ0
G	-1	SER	-	expression tag	UNP Q47PJ0
G	0	HIS	-	expression tag	UNP Q47PJ0

- Molecule 2 is a DNA chain called DNA (5'-D(P*AP*AP*AP*AP*AP*AP*AP*AP*AP*AP*A)-3').

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	11	Total	C	N	O	P	0	0	0
			197	90	45	51	11			
2	D	11	Total	C	N	O	P	0	0	0
			197	90	45	51	11			
2	F	11	Total	C	N	O	P	0	0	0
			197	90	45	51	11			
2	H	11	Total	C	N	O	P	0	0	0
			197	90	45	51	11			

- Molecule 3 is FE (III) ION (three-letter code: FE) (formula: Fe).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	2	Total	Fe	0	0
			2	2		
3	C	2	Total	Fe	0	0
			2	2		
3	E	2	Total	Fe	0	0
			2	2		
3	G	2	Total	Fe	0	0
			2	2		

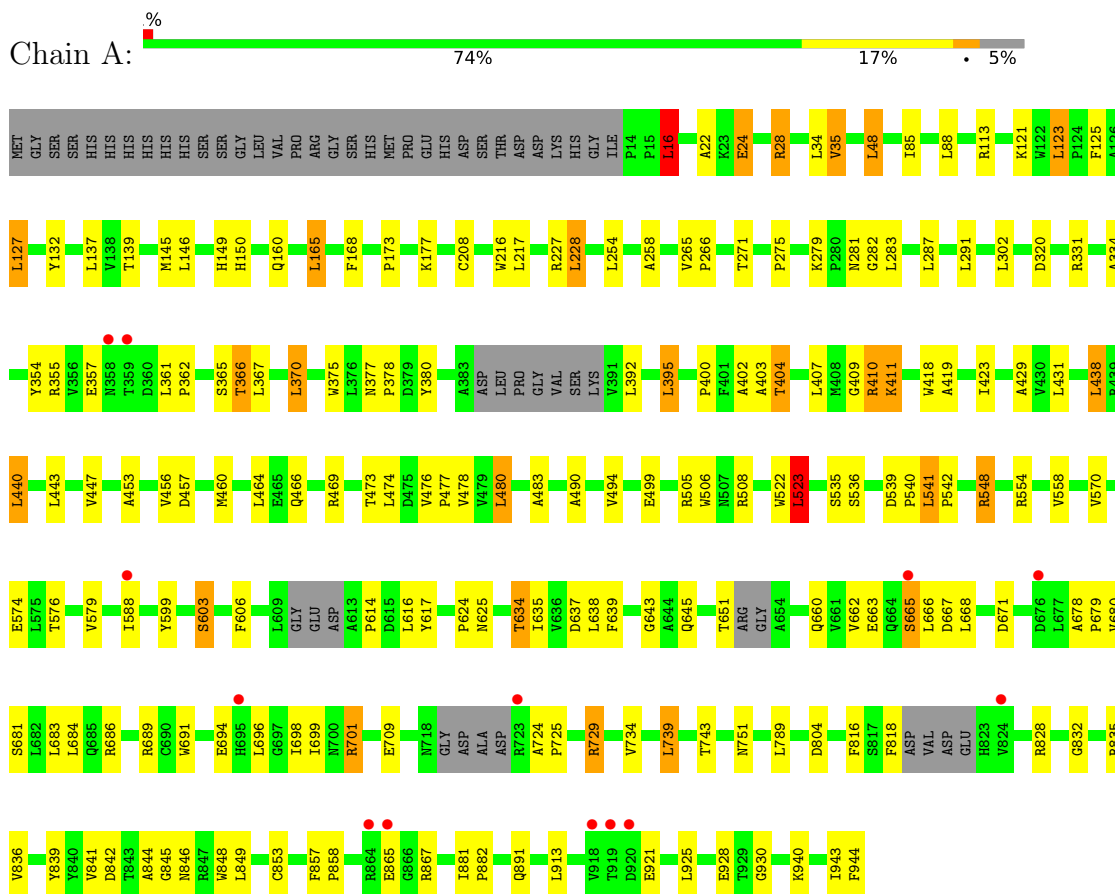
- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	61	Total O 61 61	0	0
4	B	3	Total O 3 3	0	0
4	C	62	Total O 62 62	0	0
4	D	1	Total O 1 1	0	0
4	E	51	Total O 51 51	0	0
4	G	37	Total O 37 37	0	0

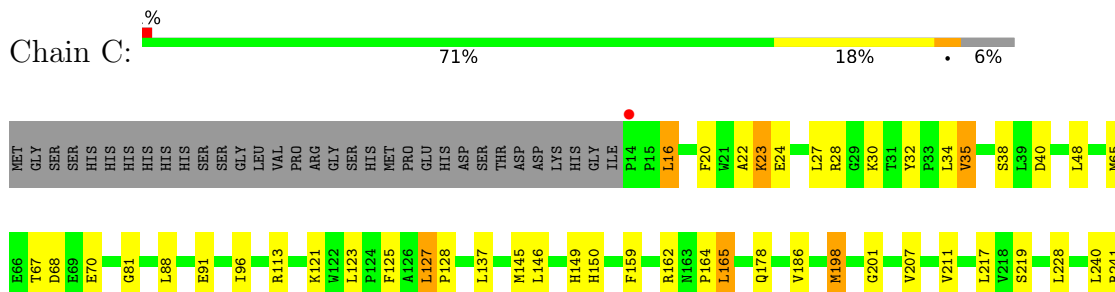
3 Residue-property plots

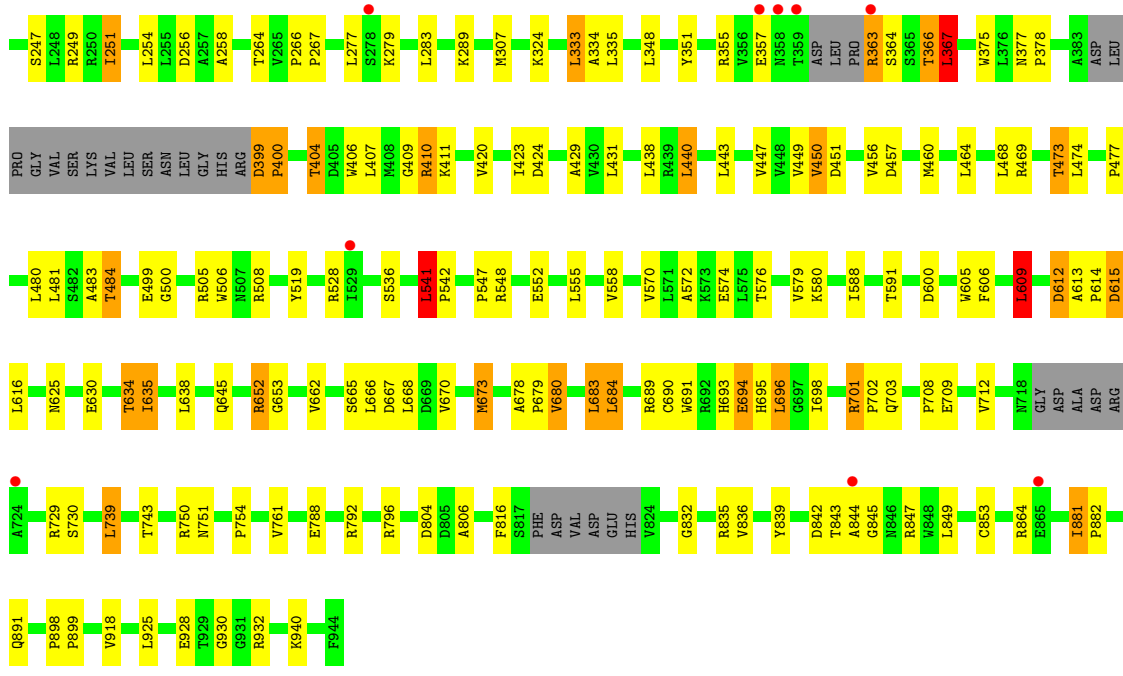
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: CRISPR-associated helicase, Cas3 family

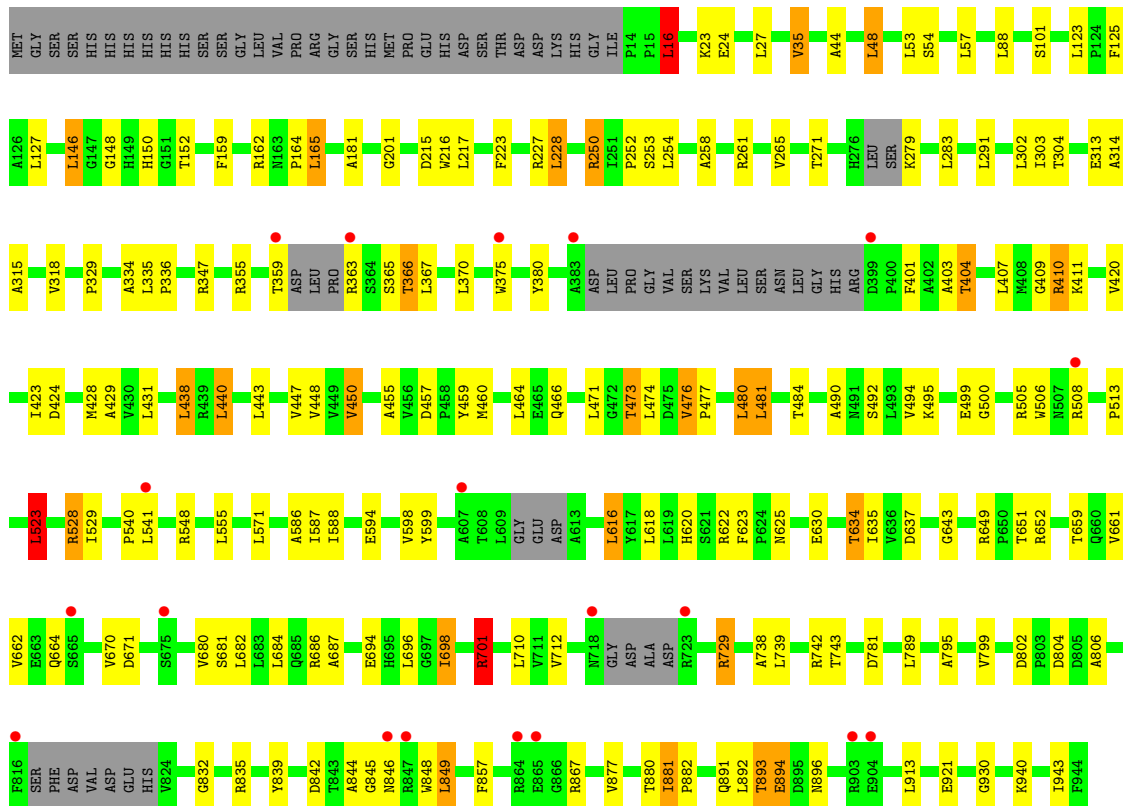
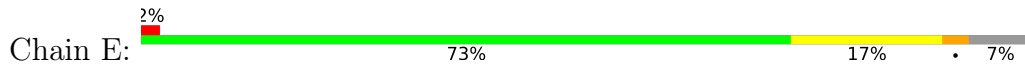


- Molecule 1: CRISPR-associated helicase, Cas3 family



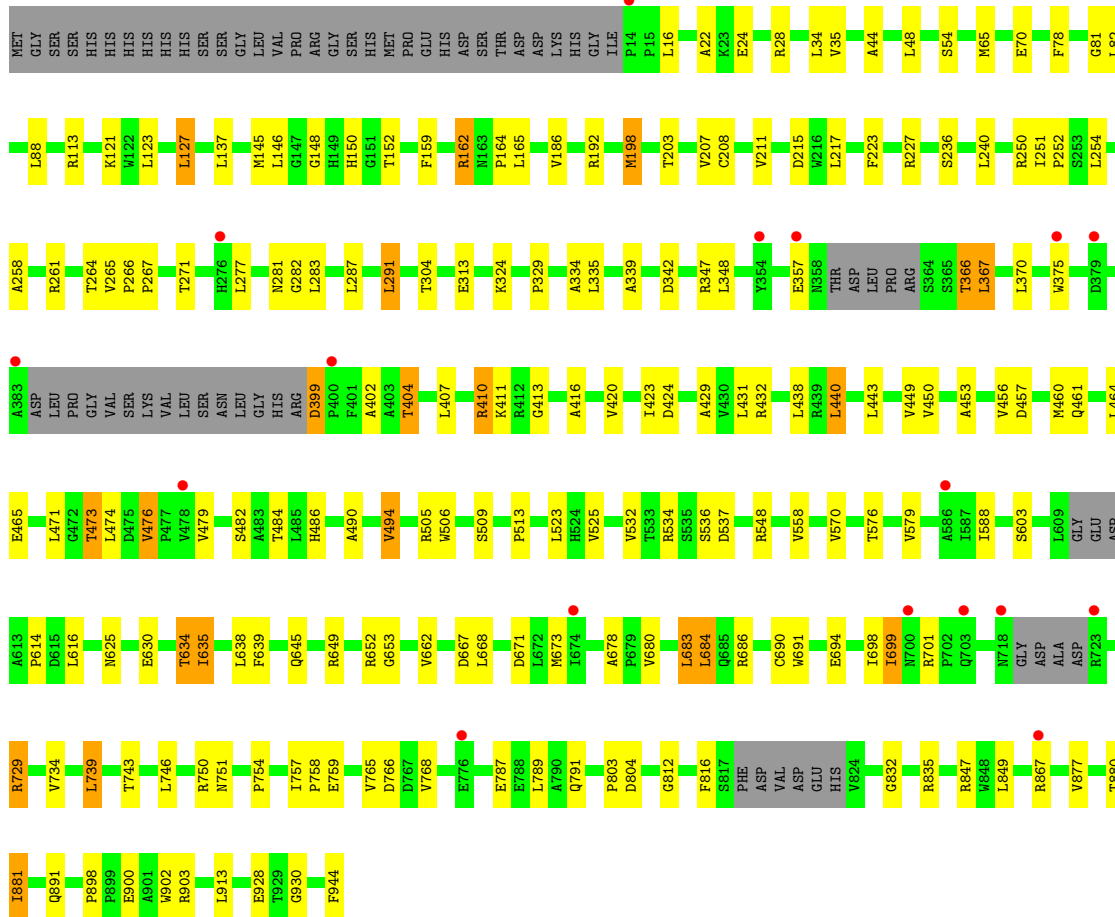


• Molecule 1: CRISPR-associated helicase, Cas3 family



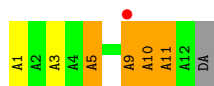
• Molecule 1: CRISPR-associated helicase, Cas3 family

Chain G: 2% 73% 18% 7%



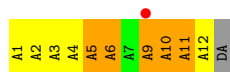
• Molecule 2: DNA (5'-D(P*AP*AP*AP*AP*AP*AP*AP*AP*AP*AP*A)-3')

Chain B: 8% 42% 17% 33% 8%



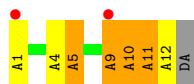
• Molecule 2: DNA (5'-D(P*AP*AP*AP*AP*AP*AP*AP*AP*AP*AP*A)-3')

Chain D: 8% 8% 42% 42% 8%

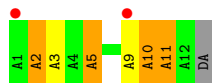
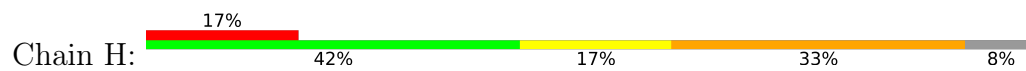


• Molecule 2: DNA (5'-D(P*AP*AP*AP*AP*AP*AP*AP*AP*AP*AP*A)-3')

Chain F: 17% 33% 25% 33% 8%



- Molecule 2: DNA (5'-D(P*AP*AP*AP*AP*AP*AP*AP*AP*AP*AP*AP*A)-3')



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	85.79Å 218.54Å 123.75Å 90.00° 105.00° 90.00°	Depositor
Resolution (Å)	30.21 – 2.66 30.21 – 2.66	Depositor EDS
% Data completeness (in resolution range)	92.1 (30.21-2.66) 89.4 (30.21-2.66)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.64 (at 2.68Å)	Xtrriage
Refinement program	PHENIX 1.8.2_1309	Depositor
R, R_{free}	0.173 , 0.226 0.174 , 0.225	Depositor DCC
R_{free} test set	2000 reflections (1.73%)	wwPDB-VP
Wilson B-factor (Å ²)	51.3	Xtrriage
Anisotropy	0.343	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 42.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	29038	wwPDB-VP
Average B, all atoms (Å ²)	58.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.98% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality i

5.1 Standard geometry i

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

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	0.48	1/7260 (0.0%)	0.64	7/9904 (0.1%)
1	C	0.51	3/7176 (0.0%)	0.67	11/9790 (0.1%)
1	E	0.46	0/7144	0.63	5/9743 (0.1%)
1	G	0.43	0/7147	0.60	2/9749 (0.0%)
2	B	1.23	1/222 (0.5%)	2.46	12/339 (3.5%)
2	D	1.12	0/222	2.26	17/339 (5.0%)
2	F	1.01	0/222	2.12	11/339 (3.2%)
2	H	0.95	0/222	1.88	8/339 (2.4%)
All	All	0.50	5/29615 (0.0%)	0.74	73/40542 (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
1	C	0	2
All	All	0	3

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	11	DA	N9-C4	5.72	1.41	1.37
1	C	400	PRO	N-CD	5.24	1.55	1.47
1	A	542	PRO	N-CD	5.16	1.55	1.47
1	C	702	PRO	N-CD	5.10	1.54	1.47
1	C	542	PRO	N-CD	5.05	1.54	1.47

All (73) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	11	DA	O4'-C1'-N9	16.86	119.80	108.00
2	D	9	DA	O4'-C1'-N9	14.44	118.10	108.00
2	B	11	DA	O4'-C4'-C3'	13.65	114.19	106.00
2	F	11	DA	O4'-C4'-C3'	11.12	112.67	106.00
2	H	9	DA	O4'-C1'-N9	10.87	115.61	108.00
2	D	11	DA	O4'-C4'-C3'	10.76	112.46	106.00
2	F	11	DA	O4'-C1'-N9	10.66	115.47	108.00
2	F	9	DA	O4'-C1'-N9	10.10	115.07	108.00
2	B	10	DA	O4'-C1'-N9	9.81	114.87	108.00
2	H	11	DA	O4'-C4'-C3'	9.75	111.85	106.00
2	F	10	DA	O4'-C1'-N9	9.62	114.73	108.00
2	B	10	DA	C1'-O4'-C4'	-9.43	100.67	110.10
2	D	10	DA	C1'-O4'-C4'	-9.04	101.06	110.10
2	B	11	DA	C4'-C3'-C2'	-8.80	95.18	103.10
2	F	10	DA	O4'-C1'-C2'	-8.79	98.86	105.90
2	B	10	DA	C4'-C3'-C2'	-8.48	95.47	103.10
1	C	16	LEU	CA-CB-CG	8.29	134.36	115.30
2	D	11	DA	O4'-C1'-N9	8.09	113.66	108.00
2	D	10	DA	O4'-C1'-N9	7.89	113.52	108.00
2	F	10	DA	C1'-O4'-C4'	-7.85	102.25	110.10
2	D	1	DA	O4'-C4'-C3'	-7.73	101.36	106.00
2	B	10	DA	O4'-C4'-C3'	7.69	110.61	106.00
2	B	10	DA	O4'-C1'-C2'	-7.68	99.76	105.90
2	B	9	DA	O4'-C1'-N9	7.58	113.30	108.00
1	A	523	LEU	CA-CB-CG	7.55	132.66	115.30
2	H	10	DA	O4'-C1'-N9	6.99	112.89	108.00
2	F	4	DA	O4'-C1'-N9	6.83	112.78	108.00
2	H	5	DA	O4'-C1'-N9	-6.76	103.27	108.00
2	B	5	DA	N1-C6-N6	6.74	122.64	118.60
2	D	5	DA	O4'-C1'-N9	-6.64	103.35	108.00
2	F	4	DA	C4'-C3'-C2'	-6.64	97.12	103.10
2	D	11	DA	N7-C8-N9	6.51	117.05	113.80
2	F	11	DA	C4'-C3'-C2'	-6.50	97.25	103.10
1	A	24	GLU	CB-CA-C	6.45	123.30	110.40
2	D	11	DA	C3'-C2'-C1'	6.40	110.18	102.50
1	E	523	LEU	CA-CB-CG	6.38	129.98	115.30
1	A	16	LEU	CA-CB-CG	6.29	129.77	115.30
2	D	6	DA	O4'-C1'-N9	-6.29	103.60	108.00
2	H	2	DA	O4'-C1'-N9	-6.22	103.65	108.00
2	H	10	DA	C1'-O4'-C4'	-6.19	103.91	110.10
1	C	613	ALA	C-N-CD	6.10	141.22	128.40
2	F	10	DA	C4'-C3'-C2'	-5.99	97.71	103.10
1	A	701	ARG	C-N-CD	5.96	140.91	128.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	539	ASP	C-N-CD	5.92	140.83	128.40
1	E	649	ARG	C-N-CD	5.92	140.83	128.40
2	B	11	DA	P-O3'-C3'	5.84	126.71	119.70
1	C	127	LEU	C-N-CD	5.83	140.63	128.40
1	C	367	LEU	CA-CB-CG	5.76	128.54	115.30
1	G	192	ARG	C-N-CD	5.70	140.36	128.40
1	E	701	ARG	C-N-CD	5.67	140.30	128.40
1	C	701	ARG	C-N-CD	5.62	140.19	128.40
1	A	541	LEU	C-N-CD	5.61	140.18	128.40
1	C	35	VAL	CB-CA-C	-5.60	100.75	111.40
1	C	541	LEU	C-N-CD	5.59	140.13	128.40
2	H	11	DA	C4'-C3'-C2'	-5.54	98.12	103.10
1	E	16	LEU	CA-CB-CG	5.49	127.93	115.30
2	D	11	DA	P-O3'-C3'	5.48	126.27	119.70
2	D	11	DA	C8-N9-C4	-5.45	103.62	105.80
2	D	11	DA	N1-C6-N6	5.43	121.86	118.60
1	C	335	LEU	CA-CB-CG	-5.40	102.88	115.30
2	D	11	DA	C4'-C3'-C2'	-5.35	98.29	103.10
1	E	35	VAL	CB-CA-C	-5.27	101.39	111.40
1	G	335	LEU	CA-CB-CG	-5.23	103.26	115.30
2	F	5	DA	N1-C6-N6	5.22	121.73	118.60
1	C	399	ASP	C-N-CD	5.21	139.35	128.40
2	H	5	DA	N1-C6-N6	5.19	121.72	118.60
1	C	128	PRO	CA-N-CD	-5.15	104.28	111.50
1	A	483	ALA	CB-CA-C	-5.14	102.39	110.10
2	D	10	DA	O4'-C1'-C2'	-5.14	101.79	105.90
2	D	10	DA	O4'-C4'-C3'	5.11	109.07	106.00
2	D	4	DA	N1-C6-N6	5.07	121.64	118.60
1	C	483	ALA	CB-CA-C	-5.06	102.51	110.10
2	B	3	DA	N1-C6-N6	5.04	121.62	118.60

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	409	GLY	Peptide
1	C	409	GLY	Peptide
1	C	609	LEU	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	7082	0	7030	114	0
1	C	7001	0	6944	120	0
1	E	6971	0	6921	101	0
1	G	6973	0	6923	93	0
2	B	197	0	99	9	0
2	D	197	0	99	10	0
2	F	197	0	99	10	0
2	H	197	0	99	9	0
3	A	2	0	0	0	0
3	C	2	0	0	0	0
3	E	2	0	0	0	0
3	G	2	0	0	0	0
4	A	61	0	0	0	0
4	B	3	0	0	0	0
4	C	62	0	0	3	0
4	D	1	0	0	0	0
4	E	51	0	0	2	0
4	G	37	0	0	1	0
All	All	29038	0	28214	429	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 8.

All (429) 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:844:ALA:H	1:C:845:GLY:HA2	1.29	0.95
1:C:694:GLU:HG2	1:C:701:ARG:HH21	1.33	0.93
1:C:256:ASP:HB3	1:C:363:ARG:HH22	1.33	0.93
1:A:665:SER:O	1:A:666:LEU:HD23	1.75	0.86
1:A:844:ALA:H	1:A:845:GLY:HA2	1.40	0.86
1:C:667:ASP:O	1:C:668:LEU:HD23	1.76	0.83
1:C:652:ARG:CB	1:C:652:ARG:HH11	1.93	0.81
1:C:150:HIS:CE1	2:D:11:DA:H5'	2.17	0.79
1:A:832:GLY:HA2	2:B:5:DA:H61	1.47	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:547:PRO:HG2	1:C:695:HIS:CE1	2.18	0.79
1:C:410:ARG:HD3	2:D:10:DA:H8	1.48	0.79
1:C:694:GLU:CG	1:C:701:ARG:HH21	1.97	0.78
1:E:429:ALA:HB1	1:E:440:LEU:HD13	1.66	0.77
1:A:848:TRP:CD1	1:A:853:CYS:SG	2.80	0.75
1:E:893:THR:OG1	1:E:894:GLU:N	2.17	0.75
1:G:832:GLY:HA2	2:H:5:DA:H61	1.50	0.75
1:E:150:HIS:CE1	2:F:11:DA:H5'	2.22	0.75
1:E:832:GLY:HA2	2:F:5:DA:H61	1.53	0.74
1:A:150:HIS:CE1	2:B:11:DA:H5'	2.23	0.73
1:C:410:ARG:HD3	2:D:10:DA:C8	2.23	0.72
1:A:429:ALA:HB1	1:A:440:LEU:HD13	1.72	0.71
1:C:404:THR:HG22	1:C:407:LEU:H	1.54	0.71
1:C:266:PRO:O	1:C:355:ARG:NH2	2.23	0.71
1:E:313:GLU:OE2	1:E:347:ARG:NH2	2.25	0.69
1:G:404:THR:HG22	1:G:407:LEU:H	1.54	0.69
1:A:844:ALA:N	1:A:845:GLY:HA2	2.02	0.69
1:E:359:THR:HG22	1:E:363:ARG:HH11	1.56	0.69
1:A:410:ARG:HD3	2:B:10:DA:H8	1.58	0.68
1:G:699:ILE:HD11	1:G:701:ARG:HG2	1.76	0.68
1:A:410:ARG:HD3	2:B:10:DA:C8	2.28	0.68
1:C:832:GLY:HA2	2:D:5:DA:H61	1.59	0.68
1:E:844:ALA:H	1:E:845:GLY:HA2	1.59	0.67
1:A:844:ALA:H	1:A:845:GLY:CA	2.07	0.67
1:E:302:LEU:HB3	1:E:523:LEU:HD22	1.76	0.67
1:C:541:LEU:HD13	1:C:541:LEU:C	2.16	0.66
1:G:150:HIS:HD1	2:H:11:DA:H5'	1.60	0.66
1:E:404:THR:HG22	1:E:407:LEU:H	1.59	0.66
1:G:150:HIS:CE1	2:H:11:DA:H5'	2.31	0.66
1:G:410:ARG:HD3	2:H:10:DA:H8	1.61	0.65
1:A:258:ALA:O	1:A:404:THR:HG21	1.97	0.65
1:C:844:ALA:N	1:C:845:GLY:HA2	1.97	0.65
1:G:150:HIS:ND1	2:H:11:DA:H5'	2.10	0.65
1:A:404:THR:CG2	1:A:407:LEU:H	2.10	0.65
1:G:645:GLN:HG2	1:G:698:ILE:HD13	1.79	0.65
1:E:844:ALA:H	1:E:845:GLY:CA	2.10	0.64
1:A:404:THR:HG22	1:A:407:LEU:HB2	1.79	0.64
1:C:679:PRO:HG3	1:C:739:LEU:HD13	1.80	0.63
1:G:678:ALA:HB3	1:G:683:LEU:HD13	1.80	0.63
1:C:429:ALA:HB1	1:C:440:LEU:HD13	1.80	0.63
1:C:652:ARG:HH11	1:C:652:ARG:HB3	1.64	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:893:THR:HG23	1:E:896:ASN:OD1	1.99	0.63
1:C:652:ARG:CG	1:C:653:GLY:H	2.12	0.62
1:C:447:VAL:HG22	1:C:477:PRO:HG2	1.81	0.62
1:E:844:ALA:N	1:E:845:GLY:HA2	2.12	0.62
1:G:410:ARG:HD3	2:H:10:DA:C8	2.34	0.62
1:C:404:THR:CG2	1:C:407:LEU:H	2.12	0.62
1:C:680:VAL:HG13	1:C:743:THR:HG23	1.81	0.62
1:A:366:THR:HB	1:A:402:ALA:O	2.00	0.61
1:E:842:ASP:OD1	1:E:846:ASN:N	2.31	0.61
1:A:540:PRO:HG2	1:A:541:LEU:HD22	1.82	0.61
1:C:591:THR:HG21	1:C:730:SER:HB2	1.83	0.61
1:G:404:THR:CG2	1:G:407:LEU:H	2.13	0.61
1:G:366:THR:HG21	1:G:404:THR:HB	1.81	0.61
1:G:258:ALA:O	1:G:404:THR:HG21	2.01	0.60
1:A:366:THR:HG21	1:A:404:THR:HB	1.83	0.60
1:C:864:ARG:NH1	4:C:1123:HOH:O	2.33	0.60
1:G:22:ALA:HB2	1:G:34:LEU:HA	1.83	0.60
1:C:665:SER:O	1:C:666:LEU:HD23	2.02	0.60
1:A:645:GLN:HA	1:A:698:ILE:HD13	1.84	0.60
1:A:150:HIS:ND1	2:B:11:DA:H5'	2.17	0.60
1:A:22:ALA:HB2	1:A:34:LEU:HA	1.82	0.60
1:G:900:GLU:HG3	1:G:903:ARG:HH12	1.66	0.60
1:G:162:ARG:H	1:G:162:ARG:NH1	2.00	0.59
1:C:125:PHE:HB2	1:C:165:LEU:HD13	1.85	0.59
1:G:614:PRO:HB3	1:G:653:GLY:HA3	1.85	0.59
1:C:891:GLN:O	1:C:930:GLY:HA2	2.03	0.58
1:C:366:THR:HG21	1:C:404:THR:HB	1.85	0.58
1:C:600:ASP:OD2	1:C:940:LYS:NZ	2.35	0.58
1:A:404:THR:HG22	1:A:407:LEU:H	1.69	0.57
1:C:23:LYS:NZ	1:C:219:SER:OG	2.37	0.57
1:C:22:ALA:HB2	1:C:34:LEU:HA	1.87	0.57
1:A:835:ARG:NH2	1:A:882:PRO:HD3	2.20	0.57
1:A:576:THR:O	1:A:579:VAL:HG22	2.04	0.57
1:A:828:ARG:HB2	2:B:5:DA:C2	2.40	0.57
1:C:150:HIS:ND1	2:D:11:DA:H5'	2.19	0.57
1:C:541:LEU:HD13	1:C:541:LEU:O	2.05	0.56
1:E:125:PHE:HB2	1:E:165:LEU:HD13	1.87	0.56
1:E:846:ASN:HB2	1:E:848:TRP:HE1	1.71	0.56
1:E:846:ASN:HB2	1:E:848:TRP:NE1	2.20	0.56
1:G:558:VAL:HG22	1:G:570:VAL:HG21	1.86	0.56
1:A:625:ASN:OD1	1:A:835:ARG:NH2	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:252:PRO:HB3	1:E:261:ARG:HH22	1.70	0.56
1:A:113:ARG:NH2	1:A:168:PHE:O	2.32	0.56
1:C:333:LEU:HD22	1:C:449:VAL:HB	1.87	0.56
1:E:844:ALA:HB3	1:E:845:GLY:HA2	1.88	0.55
1:G:313:GLU:OE2	1:G:347:ARG:NH2	2.37	0.55
1:C:247:SER:O	1:C:251:ILE:HD13	2.06	0.55
1:E:366:THR:HG21	1:E:404:THR:HB	1.87	0.55
1:A:691:TRP:HE3	1:A:694:GLU:HG3	1.71	0.55
1:A:696:LEU:N	1:A:696:LEU:HD12	2.22	0.55
1:C:258:ALA:O	1:C:404:THR:HG21	2.06	0.55
1:C:932:ARG:NH2	4:C:1133:HOH:O	2.26	0.55
1:G:691:TRP:CE3	1:G:694:GLU:HG3	2.42	0.55
1:A:281:ASN:OD1	1:A:282:GLY:N	2.39	0.55
1:A:361:LEU:HD13	1:A:400:PRO:HG3	1.89	0.55
1:C:348:LEU:HD23	1:C:367:LEU:HD11	1.89	0.55
1:E:315:ALA:HB2	1:E:481:LEU:HD21	1.88	0.55
1:G:750:ARG:NH2	1:G:754:PRO:O	2.41	0.54
1:C:588:ILE:HD12	1:C:662:VAL:HG11	1.89	0.54
1:A:848:TRP:HD1	1:A:853:CYS:HG	1.51	0.54
1:E:404:THR:CG2	1:E:407:LEU:H	2.19	0.54
1:G:159:PHE:CE2	1:G:164:PRO:HG3	2.43	0.54
1:G:287:LEU:O	1:G:291:LEU:HB2	2.08	0.54
1:C:678:ALA:HB3	1:C:683:LEU:HD13	1.90	0.54
1:E:250:ARG:NH1	1:E:253:SER:OG	2.40	0.54
1:G:399:ASP:N	1:G:399:ASP:OD1	2.41	0.53
1:E:410:ARG:NH1	2:F:9:DA:H8	2.06	0.53
1:A:844:ALA:HB3	1:A:845:GLY:HA2	1.89	0.53
1:A:698:ILE:HG12	1:A:698:ILE:O	2.08	0.53
1:G:366:THR:HB	1:G:402:ALA:O	2.08	0.53
1:C:615:ASP:OD1	1:C:615:ASP:N	2.42	0.53
1:C:652:ARG:HG3	1:C:653:GLY:H	1.74	0.53
1:G:429:ALA:HB1	1:G:440:LEU:HD13	1.89	0.53
1:A:132:TYR:HB3	1:A:139:THR:OG1	2.09	0.53
1:A:671:ASP:OD1	1:A:701:ARG:NH1	2.42	0.53
1:A:921:GLU:N	1:A:921:GLU:OE1	2.40	0.53
1:C:363:ARG:N	1:C:400:PRO:HA	2.24	0.53
1:E:586:ALA:HB2	1:E:670:VAL:HG11	1.91	0.53
1:E:630:GLU:O	1:E:634:THR:HG23	2.09	0.53
1:G:639:PHE:HB2	1:G:668:LEU:HD22	1.92	0.52
1:C:20:PHE:HE2	1:C:178:GLN:HG3	1.74	0.52
1:C:23:LYS:NZ	2:D:12:DA:OP2	2.41	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:652:ARG:CG	1:C:653:GLY:N	2.73	0.52
1:E:506:TRP:CH2	1:E:513:PRO:HD3	2.43	0.52
1:G:630:GLU:O	1:G:634:THR:HG23	2.09	0.52
1:C:842:ASP:O	1:C:845:GLY:HA2	2.09	0.52
1:C:844:ALA:H	1:C:845:GLY:CA	2.12	0.52
1:G:404:THR:HG22	1:G:407:LEU:HB2	1.92	0.52
1:A:639:PHE:HB2	1:A:668:LEU:HD22	1.92	0.52
1:A:665:SER:O	1:A:665:SER:OG	2.21	0.52
1:A:691:TRP:CE3	1:A:694:GLU:HG3	2.44	0.52
1:C:558:VAL:HG22	1:C:570:VAL:HG21	1.92	0.52
1:C:667:ASP:C	1:C:668:LEU:HD23	2.31	0.52
1:E:637:ASP:O	1:E:643:GLY:HA3	2.09	0.52
1:G:634:THR:O	1:G:638:LEU:HG	2.09	0.52
1:G:645:GLN:HG2	1:G:698:ILE:CD1	2.40	0.51
1:G:680:VAL:HG13	1:G:743:THR:HG23	1.92	0.51
1:E:258:ALA:O	1:E:404:THR:HG21	2.10	0.51
1:A:370:LEU:HD22	1:A:419:ALA:HB1	1.93	0.51
1:A:123:LEU:O	1:A:127:LEU:HB2	2.10	0.51
1:A:28:ARG:HH11	1:A:28:ARG:CG	2.24	0.51
1:A:678:ALA:HB3	1:A:683:LEU:HD13	1.93	0.51
1:A:696:LEU:N	1:A:696:LEU:CD1	2.73	0.51
1:G:506:TRP:CH2	1:G:513:PRO:HD3	2.46	0.51
1:A:457:ASP:H	1:A:460:MET:HE3	1.76	0.51
1:A:848:TRP:CD1	1:A:853:CYS:CB	2.94	0.51
1:C:38:SER:HB3	1:C:81:GLY:O	2.11	0.51
1:A:606:PHE:CD2	1:A:614:PRO:HD2	2.46	0.50
1:C:839:TYR:CE2	1:C:847:ARG:HD2	2.46	0.50
1:E:265:VAL:HG13	1:E:355:ARG:CZ	2.40	0.50
1:A:145:MET:HG3	1:A:208:CYS:HB2	1.93	0.50
1:A:865:GLU:HB3	1:A:867:ARG:HH21	1.77	0.50
1:C:450:VAL:HG13	1:C:480:LEU:HD12	1.93	0.50
1:E:891:GLN:O	1:E:930:GLY:HA2	2.11	0.50
1:G:456:VAL:HA	1:G:460:MET:HE3	1.94	0.50
1:E:495:LYS:O	1:E:499:GLU:HG3	2.11	0.50
1:E:410:ARG:HD3	2:F:10:DA:C8	2.47	0.50
1:E:201:GLY:HA3	1:E:806:ALA:O	2.12	0.50
1:A:667:ASP:O	1:A:668:LEU:HD23	2.11	0.49
1:G:457:ASP:H	1:G:460:MET:HE3	1.77	0.49
1:C:469:ARG:O	1:C:500:GLY:HA3	2.11	0.49
1:E:457:ASP:H	1:E:460:MET:HE3	1.77	0.49
1:C:201:GLY:HA3	1:C:806:ALA:O	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:694:GLU:HG2	1:E:701:ARG:HH21	1.78	0.49
1:A:558:VAL:HG22	1:A:570:VAL:HG21	1.94	0.49
1:E:159:PHE:CE2	1:E:164:PRO:HG3	2.47	0.49
1:E:314:ALA:O	1:E:318:VAL:HG23	2.12	0.49
1:G:694:GLU:HG2	1:G:701:ARG:HH21	1.77	0.49
1:E:540:PRO:HG2	1:E:541:LEU:HD22	1.95	0.49
1:G:832:GLY:CA	2:H:5:DA:H61	2.23	0.49
1:A:522:TRP:CE2	1:A:535:SER:HB3	2.47	0.49
1:C:351:TYR:CZ	1:C:355:ARG:HD3	2.48	0.49
1:C:457:ASP:H	1:C:460:MET:HE3	1.78	0.49
1:C:835:ARG:NH2	1:C:882:PRO:HD3	2.27	0.49
1:E:44:ALA:O	1:E:48:LEU:HB2	2.12	0.49
1:G:215:ASP:OD2	2:H:11:DA:H3'	2.12	0.49
1:A:848:TRP:CG	1:A:853:CYS:HA	2.48	0.49
1:G:680:VAL:HG11	1:G:746:LEU:HD23	1.93	0.49
1:G:691:TRP:HE3	1:G:694:GLU:HG3	1.75	0.49
1:A:410:ARG:NH1	2:B:9:DA:H8	2.10	0.49
1:E:150:HIS:ND1	2:F:11:DA:H5'	2.26	0.49
1:C:679:PRO:CG	1:C:739:LEU:HD13	2.42	0.49
1:E:101:SER:O	1:G:729:ARG:NH2	2.43	0.49
1:E:459:TYR:CD1	1:E:795:ALA:HB2	2.47	0.49
1:G:78:PHE:CZ	1:G:82:LEU:HD11	2.47	0.49
1:E:618:LEU:HD23	1:E:940:LYS:HA	1.94	0.49
1:C:241:ARG:NH2	4:C:1161:HOH:O	2.44	0.48
1:A:844:ALA:HB3	1:A:845:GLY:CA	2.43	0.48
1:C:606:PHE:CD2	1:C:614:PRO:HD2	2.47	0.48
1:C:684:LEU:HD23	1:C:761:VAL:HG13	1.95	0.48
1:E:682:LEU:O	1:E:686:ARG:HD3	2.13	0.48
1:E:742:ARG:NH1	1:E:781:ASP:OD1	2.46	0.48
1:C:576:THR:O	1:C:580:LYS:HG2	2.14	0.48
1:G:281:ASN:OD1	1:G:282:GLY:N	2.46	0.48
1:C:334:ALA:HB1	1:C:423:ILE:HA	1.96	0.48
1:E:455:ALA:O	4:E:1137:HOH:O	2.20	0.48
1:G:576:THR:O	1:G:579:VAL:HG22	2.14	0.48
1:G:625:ASN:OD1	1:G:835:ARG:NH2	2.47	0.48
1:C:363:ARG:HB2	1:C:364:SER:HB3	1.96	0.48
1:A:835:ARG:HH22	1:A:882:PRO:HD3	1.79	0.47
1:A:679:PRO:HG3	1:A:739:LEU:HD13	1.96	0.47
1:G:348:LEU:HD23	1:G:367:LEU:HD11	1.96	0.47
1:G:490:ALA:O	1:G:494:VAL:HG13	2.14	0.47
1:A:940:LYS:HE3	1:A:943:ILE:HD11	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:552:GLU:HB2	1:C:709:GLU:HG3	1.96	0.47
1:E:620:HIS:CE1	1:E:622:ARG:HB2	2.49	0.47
1:E:659:THR:O	1:E:661:VAL:N	2.47	0.47
1:G:898:PRO:HB2	1:G:902:TRP:HB2	1.95	0.47
1:A:680:VAL:HG13	1:A:743:THR:HG23	1.97	0.47
1:A:466:GLN:OE1	1:A:469:ARG:NH1	2.42	0.47
1:A:367:LEU:HD13	1:A:418:TRP:HB3	1.95	0.47
1:C:23:LYS:CE	2:D:12:DA:OP2	2.63	0.47
1:E:410:ARG:HD3	2:F:10:DA:H8	1.79	0.47
1:G:461:GLN:O	1:G:465:GLU:HG3	2.14	0.47
1:G:649:ARG:NH2	1:G:671:ASP:OD1	2.48	0.47
1:A:275:PRO:HG3	1:A:354:TYR:CZ	2.50	0.47
1:C:630:GLU:O	1:C:634:THR:HG23	2.14	0.47
1:E:380:TYR:CE1	1:E:403:ALA:HB2	2.49	0.47
1:A:320:ASP:HA	1:A:331:ARG:NH2	2.30	0.47
2:D:5:DA:H2''	2:D:6:DA:O5'	2.15	0.47
1:C:377:ASN:HA	1:C:378:PRO:HD3	1.77	0.46
1:C:451:ASP:HA	1:C:481:LEU:HB2	1.97	0.46
1:C:625:ASN:OD1	1:C:835:ARG:NH2	2.48	0.46
1:G:486:HIS:CD2	1:G:766:ASP:HA	2.51	0.46
1:A:832:GLY:HA2	2:B:5:DA:N6	2.23	0.46
1:E:659:THR:C	1:E:661:VAL:H	2.19	0.46
1:E:680:VAL:HG13	1:E:743:THR:HG23	1.98	0.46
1:G:252:PRO:HB3	1:G:261:ARG:HH22	1.80	0.46
1:A:265:VAL:HG13	1:A:355:ARG:NH1	2.31	0.46
1:C:652:ARG:HH11	1:C:652:ARG:HB2	1.75	0.46
1:E:250:ARG:O	1:E:250:ARG:HD3	2.15	0.46
1:G:207:VAL:O	1:G:211:VAL:HG23	2.14	0.46
1:C:691:TRP:CG	1:C:708:PRO:HB3	2.50	0.46
1:C:853:CYS:SG	1:C:918:VAL:HG11	2.55	0.46
1:G:449:VAL:HG22	1:G:479:VAL:HB	1.97	0.46
1:A:848:TRP:CD1	1:A:853:CYS:HB3	2.50	0.46
1:C:499:GLU:HG2	1:C:506:TRP:HD1	1.80	0.46
1:E:148:GLY:HA2	1:E:152:THR:O	2.16	0.46
1:C:652:ARG:CB	1:C:652:ARG:NH1	2.73	0.46
1:G:54:SER:OG	1:G:329:PRO:HD2	2.16	0.46
1:G:635:ILE:HA	1:G:635:ILE:HD13	1.66	0.46
1:C:267:PRO:HA	1:C:324:LYS:NZ	2.31	0.46
1:G:453:ALA:HB3	1:G:482:SER:HB2	1.98	0.46
1:G:678:ALA:O	1:G:743:THR:HG21	2.16	0.46
1:G:44:ALA:HA	1:G:251:ILE:HD13	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:757:ILE:HA	1:G:758:PRO:HA	1.75	0.45
1:A:149:HIS:CD2	1:A:150:HIS:CD2	3.04	0.45
1:A:453:ALA:O	1:A:456:VAL:HG13	2.17	0.45
1:A:617:TYR:CG	1:A:635:ILE:HD11	2.52	0.45
1:C:670:VAL:HG21	1:C:673:MET:HG3	1.97	0.45
1:G:267:PRO:HA	1:G:324:LYS:HE2	1.97	0.45
1:A:635:ILE:HD13	1:A:635:ILE:HA	1.74	0.45
1:C:468:LEU:HA	1:C:468:LEU:HD23	1.76	0.45
1:A:490:ALA:O	1:A:494:VAL:HG13	2.17	0.45
1:A:842:ASP:OD1	1:A:846:ASN:N	2.49	0.45
1:G:877:VAL:HA	1:G:880:THR:HG23	1.99	0.45
1:E:842:ASP:OD1	1:E:845:GLY:HA2	2.17	0.45
1:G:65:MET:HA	1:G:198:MET:O	2.16	0.45
1:G:227:ARG:HD3	1:G:250:ARG:HD2	1.99	0.45
1:C:65:MET:HA	1:C:198:MET:O	2.17	0.45
1:C:609:LEU:HD13	1:C:609:LEU:HA	1.72	0.45
1:G:236:SER:O	1:G:240:LEU:HG	2.16	0.45
1:C:652:ARG:HB3	1:C:652:ARG:NH1	2.31	0.45
1:E:839:TYR:CE1	1:E:913:LEU:HB3	2.52	0.45
1:A:160:GLN:OE1	1:C:796:ARG:HD2	2.17	0.44
1:E:16:LEU:HB3	1:E:181:ALA:HB1	1.98	0.44
1:E:303:ILE:HB	1:E:481:LEU:HD13	1.99	0.44
1:E:409:GLY:HA3	1:E:410:ARG:HE	1.81	0.44
1:E:447:VAL:HG22	1:E:477:PRO:HG2	1.99	0.44
1:E:671:ASP:OD1	1:E:701:ARG:NH1	2.50	0.44
1:E:473:THR:HG22	1:E:500:GLY:CA	2.47	0.44
1:C:635:ILE:HD13	1:C:635:ILE:HA	1.73	0.44
1:G:81:GLY:HA3	1:G:186:VAL:HG21	1.99	0.44
1:G:127:LEU:HD12	1:G:127:LEU:HA	1.87	0.44
1:G:203:THR:O	1:G:207:VAL:HG23	2.17	0.44
1:A:554:ARG:NH2	1:A:709:GLU:OE2	2.36	0.44
1:A:839:TYR:CE1	1:A:913:LEU:HB3	2.52	0.44
1:C:410:ARG:NH1	2:D:9:DA:H8	2.16	0.44
1:C:541:LEU:C	1:C:541:LEU:CD1	2.85	0.44
1:G:900:GLU:HG3	1:G:903:ARG:NH1	2.31	0.44
1:A:28:ARG:CG	1:A:28:ARG:NH1	2.79	0.44
1:E:490:ALA:O	1:E:494:VAL:HG13	2.18	0.44
1:E:505:ARG:HD2	1:E:802:ASP:OD2	2.18	0.44
1:A:377:ASN:HA	1:A:378:PRO:HD3	1.70	0.44
1:A:694:GLU:HG2	1:A:701:ARG:HH21	1.83	0.44
1:C:473:THR:HG22	1:C:500:GLY:CA	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:2:DA:H2''	2:H:3:DA:O5'	2.17	0.44
1:A:302:LEU:HB3	1:A:523:LEU:HD22	1.99	0.44
1:A:380:TYR:CE1	1:A:403:ALA:HB2	2.53	0.44
1:C:159:PHE:CE2	1:C:164:PRO:HG3	2.53	0.44
1:E:424:ASP:O	1:E:428:MET:HG3	2.18	0.44
1:E:844:ALA:CB	1:E:845:GLY:HA2	2.47	0.44
1:A:634:THR:O	1:A:638:LEU:HG	2.18	0.44
1:G:145:MET:HG3	1:G:208:CYS:HB2	1.98	0.44
1:G:339:ALA:O	1:G:342:ASP:HB2	2.18	0.44
1:C:666:LEU:O	1:C:689:ARG:NH1	2.51	0.43
1:E:466:GLN:HG2	1:E:799:VAL:HB	2.00	0.43
1:E:696:LEU:HD23	1:E:698:ILE:HD11	2.01	0.43
1:G:891:GLN:O	1:G:930:GLY:HA2	2.17	0.43
1:A:362:PRO:HB2	1:A:365:SER:HB2	1.99	0.43
1:E:27:LEU:HD13	1:E:228:LEU:HD21	2.01	0.43
1:E:849:LEU:HD13	1:E:857:PHE:HA	2.00	0.43
1:G:787:GLU:O	1:G:791:GLN:HG3	2.19	0.43
1:A:729:ARG:HG2	2:B:1:DA:N6	2.34	0.43
1:E:594:GLU:O	1:E:598:VAL:HG23	2.18	0.43
1:G:223:PHE:O	1:G:227:ARG:HG2	2.19	0.43
1:G:898:PRO:HA	1:G:913:LEU:HD11	2.01	0.43
1:C:333:LEU:HB2	1:C:420:VAL:HB	2.01	0.43
1:E:265:VAL:HG13	1:E:355:ARG:NH1	2.33	0.43
1:E:410:ARG:HG2	2:F:10:DA:H5''	2.01	0.43
1:E:738:ALA:O	1:E:742:ARG:HG3	2.19	0.43
1:A:548:ARG:HE	1:A:548:ARG:HB3	1.53	0.43
1:E:54:SER:OG	1:E:329:PRO:HD2	2.19	0.43
1:E:635:ILE:HD13	1:E:635:ILE:HA	1.68	0.43
1:G:432:ARG:NH1	1:G:812:GLY:O	2.52	0.43
1:A:125:PHE:HB2	1:A:165:LEU:HD13	2.01	0.43
1:E:571:LEU:HD11	1:E:598:VAL:HG13	2.00	0.43
1:C:67:THR:OG1	1:C:68:ASP:N	2.50	0.43
1:E:555:LEU:HD23	1:E:712:VAL:HB	2.01	0.43
1:E:216:TRP:CZ3	1:E:438:LEU:HD11	2.54	0.42
1:A:848:TRP:NE1	1:A:853:CYS:HB3	2.34	0.42
1:C:572:ALA:HA	1:C:605:TRP:CH2	2.54	0.42
1:C:665:SER:O	1:C:665:SER:OG	2.29	0.42
1:E:48:LEU:HD12	1:E:48:LEU:HA	1.76	0.42
1:E:687:ALA:HB2	1:E:710:LEU:HD22	2.01	0.42
1:A:173:PRO:O	1:A:177:LYS:HG3	2.19	0.42
1:A:599:TYR:O	1:A:603:SER:HB2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:410:ARG:HG3	1:C:410:ARG:HH11	1.84	0.42
1:A:624:PRO:HA	1:A:881:ILE:HG12	2.02	0.42
1:A:660:GLN:O	1:A:663:GLU:HB2	2.20	0.42
1:C:606:PHE:CE2	1:C:614:PRO:HD2	2.55	0.42
1:C:691:TRP:HA	1:C:701:ARG:NH2	2.35	0.42
1:E:23:LYS:NZ	2:F:12:DA:OP2	2.51	0.42
1:E:877:VAL:HA	1:E:880:THR:HG23	2.01	0.42
1:C:149:HIS:NE2	1:C:150:HIS:CD2	2.86	0.42
1:C:207:VAL:O	1:C:211:VAL:HG23	2.19	0.42
1:C:612:ASP:OD2	1:C:652:ARG:NE	2.52	0.42
1:C:693:HIS:O	1:C:696:LEU:HB2	2.19	0.42
1:E:471:LEU:HB3	1:E:476:VAL:HG22	2.02	0.42
1:G:471:LEU:HD22	1:G:476:VAL:HG21	2.01	0.42
1:A:844:ALA:CB	1:A:845:GLY:HA2	2.47	0.42
1:E:335:LEU:HB3	1:E:336:PRO:HD2	2.02	0.42
1:E:588:ILE:HD12	1:E:662:VAL:HG11	2.01	0.42
1:A:228:LEU:HD12	1:A:228:LEU:HA	1.91	0.42
1:A:334:ALA:HB1	1:A:423:ILE:HA	2.01	0.42
1:A:540:PRO:HG2	1:A:541:LEU:CD2	2.47	0.42
1:A:836:VAL:HG22	1:A:881:ILE:O	2.20	0.42
1:C:279:LYS:HD2	1:C:279:LYS:HA	1.89	0.42
1:C:844:ALA:N	1:C:845:GLY:CA	2.73	0.42
1:G:588:ILE:HD12	1:G:662:VAL:HG11	2.00	0.42
1:A:216:TRP:CZ3	1:A:438:LEU:HD11	2.55	0.42
1:A:637:ASP:O	1:A:643:GLY:HA3	2.20	0.42
1:C:576:THR:O	1:C:579:VAL:HG22	2.20	0.42
1:E:450:VAL:HG13	1:E:480:LEU:HD12	2.02	0.42
1:E:528:ARG:NE	4:E:1142:HOH:O	2.39	0.42
1:C:750:ARG:NH2	1:C:754:PRO:O	2.53	0.42
1:E:53:LEU:HG	1:E:57:LEU:HD23	2.01	0.42
1:G:370:LEU:HD21	1:G:413:GLY:C	2.40	0.42
1:A:265:VAL:HA	1:A:266:PRO:HD3	1.84	0.42
2:D:2:DA:H2''	2:D:3:DA:O5'	2.19	0.42
1:G:673:MET:HB2	1:G:690:CYS:SG	2.60	0.42
1:A:857:PHE:HA	1:A:858:PRO:HD2	1.95	0.41
1:C:836:VAL:HG22	1:C:881:ILE:O	2.20	0.41
1:E:599:TYR:CD1	1:E:616:LEU:HD13	2.54	0.41
1:E:940:LYS:HE3	1:E:943:ILE:HD11	2.02	0.41
1:C:634:THR:O	1:C:638:LEU:HG	2.19	0.41
1:C:694:GLU:HG2	1:C:701:ARG:NH2	2.16	0.41
1:G:684:LEU:HD12	1:G:684:LEU:HA	1.90	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:588:ILE:HD12	1:A:662:VAL:HG11	2.01	0.41
1:A:849:LEU:HD13	1:A:857:PHE:HA	2.02	0.41
1:E:146:LEU:HD12	1:E:146:LEU:HA	1.89	0.41
1:G:881:ILE:HD13	1:G:881:ILE:HG21	1.81	0.41
1:C:27:LEU:HD23	1:C:27:LEU:HA	1.85	0.41
1:C:240:LEU:HD23	1:C:240:LEU:HA	1.87	0.41
1:E:215:ASP:OD2	2:F:11:DA:H3'	2.21	0.41
1:G:148:GLY:HA2	1:G:152:THR:O	2.20	0.41
1:G:667:ASP:O	1:G:668:LEU:HD23	2.20	0.41
1:C:484:THR:HG22	1:C:519:TYR:CZ	2.55	0.41
1:G:525:VAL:HG22	1:G:532:VAL:HG22	2.01	0.41
1:G:534:ARG:NH2	1:G:537:ASP:OD1	2.53	0.41
1:G:739:LEU:HA	1:G:739:LEU:HD23	1.75	0.41
1:A:686:ARG:O	1:A:689:ARG:HG2	2.21	0.41
1:E:334:ALA:HB1	1:E:423:ILE:HA	2.02	0.41
1:A:410:ARG:HB3	1:A:411:LYS:H	1.47	0.41
1:C:404:THR:HG23	1:C:406:TRP:N	2.36	0.41
1:C:606:PHE:HA	1:C:609:LEU:HD23	2.03	0.41
1:C:696:LEU:HD12	1:C:696:LEU:HA	1.83	0.41
1:G:765:VAL:O	1:G:768:VAL:HG12	2.20	0.41
1:C:32:TYR:OH	1:C:40:ASP:OD2	2.27	0.41
1:C:645:GLN:HA	1:C:698:ILE:HD11	2.02	0.41
1:C:673:MET:HB2	1:C:690:CYS:SG	2.61	0.41
1:C:898:PRO:HA	1:C:899:PRO:HD3	1.90	0.41
1:A:48:LEU:HD12	1:A:48:LEU:HA	1.93	0.41
1:A:395:LEU:HD23	1:A:395:LEU:HA	1.88	0.41
1:A:478:VAL:HG12	1:A:480:LEU:HD13	2.03	0.41
1:A:499:GLU:HG2	1:A:505:ARG:HA	2.03	0.41
1:E:365:SER:O	1:E:401:PHE:HA	2.21	0.41
1:E:625:ASN:OD1	1:E:835:ARG:NH2	2.54	0.41
1:E:223:PHE:O	1:E:227:ARG:HG2	2.21	0.40
1:E:729:ARG:HG2	2:F:1:DA:N6	2.36	0.40
1:E:835:ARG:NH2	1:E:882:PRO:HD3	2.36	0.40
1:A:848:TRP:CB	1:A:853:CYS:HA	2.52	0.40
1:A:891:GLN:O	1:A:930:GLY:HA2	2.21	0.40
1:C:691:TRP:HA	1:C:701:ARG:HH22	1.86	0.40
1:G:407:LEU:HD13	1:G:416:ALA:HB2	2.04	0.40
1:G:473:THR:HG21	1:G:803:PRO:HG2	2.02	0.40
1:G:625:ASN:HA	4:G:1128:HOH:O	2.20	0.40
1:A:287:LEU:O	1:A:291:LEU:HB2	2.20	0.40
1:A:447:VAL:HG22	1:A:477:PRO:HG2	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:724:ALA:HA	1:A:725:PRO:HD3	1.91	0.40
1:C:788:GLU:HG2	1:C:792:ARG:NH2	2.37	0.40
1:E:623:PHE:O	1:E:881:ILE:HB	2.22	0.40
1:G:265:VAL:HA	1:G:266:PRO:HD3	1.87	0.40
1:G:334:ALA:HB1	1:G:423:ILE:HA	2.02	0.40
1:A:16:LEU:HD11	1:A:35:VAL:HG21	2.04	0.40
1:A:227:ARG:HA	1:A:227:ARG:HD2	1.88	0.40
1:A:698:ILE:O	1:A:698:ILE:CG1	2.70	0.40
1:C:555:LEU:HD23	1:C:712:VAL:HB	2.04	0.40
1:E:265:VAL:HG22	1:E:355:ARG:HB3	2.04	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	899/964 (93%)	867 (96%)	32 (4%)	0	100	100
1	C	892/964 (92%)	861 (96%)	31 (4%)	0	100	100
1	E	883/964 (92%)	855 (97%)	28 (3%)	0	100	100
1	G	886/964 (92%)	852 (96%)	34 (4%)	0	100	100
All	All	3560/3856 (92%)	3435 (96%)	125 (4%)	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	752/796 (94%)	689 (92%)	63 (8%)	11	16
1	C	742/796 (93%)	658 (89%)	84 (11%)	6	8
1	E	738/796 (93%)	671 (91%)	67 (9%)	9	13
1	G	739/796 (93%)	666 (90%)	73 (10%)	8	11
All	All	2971/3184 (93%)	2684 (90%)	287 (10%)	8	11

All (287) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	16	LEU
1	A	24	GLU
1	A	28	ARG
1	A	35	VAL
1	A	48	LEU
1	A	85	ILE
1	A	88	LEU
1	A	121	LYS
1	A	123	LEU
1	A	127	LEU
1	A	137	LEU
1	A	146	LEU
1	A	165	LEU
1	A	217	LEU
1	A	228	LEU
1	A	254	LEU
1	A	271	THR
1	A	279	LYS
1	A	283	LEU
1	A	357	GLU
1	A	366	THR
1	A	370	LEU
1	A	375	TRP
1	A	392	LEU
1	A	395	LEU
1	A	404	THR
1	A	410	ARG
1	A	411	LYS
1	A	431	LEU
1	A	438	LEU

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Mol	Chain	Res	Type
1	A	440	LEU
1	A	443	LEU
1	A	464	LEU
1	A	473	THR
1	A	474	LEU
1	A	476	VAL
1	A	480	LEU
1	A	506	TRP
1	A	508	ARG
1	A	523	LEU
1	A	536	SER
1	A	548	ARG
1	A	574	GLU
1	A	603	SER
1	A	616	LEU
1	A	634	THR
1	A	651	THR
1	A	665	SER
1	A	681	SER
1	A	684	LEU
1	A	699	ILE
1	A	729	ARG
1	A	734	VAL
1	A	739	LEU
1	A	751	ASN
1	A	789	LEU
1	A	804	ASP
1	A	816	PHE
1	A	818	PHE
1	A	841	VAL
1	A	925	LEU
1	A	928	GLU
1	A	944	PHE
1	C	16	LEU
1	C	23	LYS
1	C	24	GLU
1	C	28	ARG
1	C	30	LYS
1	C	35	VAL
1	C	48	LEU
1	C	70	GLU
1	C	88	LEU

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Mol	Chain	Res	Type
1	C	91	GLU
1	C	96	ILE
1	C	113	ARG
1	C	121	LYS
1	C	123	LEU
1	C	127	LEU
1	C	137	LEU
1	C	145	MET
1	C	146	LEU
1	C	162	ARG
1	C	165	LEU
1	C	186	VAL
1	C	198	MET
1	C	217	LEU
1	C	228	LEU
1	C	249	ARG
1	C	251	ILE
1	C	254	LEU
1	C	264	THR
1	C	277	LEU
1	C	283	LEU
1	C	289	LYS
1	C	307	MET
1	C	333	LEU
1	C	357	GLU
1	C	363	ARG
1	C	366	THR
1	C	367	LEU
1	C	375	TRP
1	C	399	ASP
1	C	404	THR
1	C	410	ARG
1	C	411	LYS
1	C	424	ASP
1	C	431	LEU
1	C	438	LEU
1	C	440	LEU
1	C	443	LEU
1	C	450	VAL
1	C	456	VAL
1	C	464	LEU
1	C	473	THR

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Mol	Chain	Res	Type
1	C	474	LEU
1	C	484	THR
1	C	505	ARG
1	C	508	ARG
1	C	528	ARG
1	C	536	SER
1	C	541	LEU
1	C	548	ARG
1	C	574	GLU
1	C	609	LEU
1	C	612	ASP
1	C	615	ASP
1	C	616	LEU
1	C	634	THR
1	C	635	ILE
1	C	652	ARG
1	C	673	MET
1	C	680	VAL
1	C	683	LEU
1	C	684	LEU
1	C	694	GLU
1	C	696	LEU
1	C	703	GLN
1	C	729	ARG
1	C	739	LEU
1	C	751	ASN
1	C	804	ASP
1	C	816	PHE
1	C	843	THR
1	C	849	LEU
1	C	881	ILE
1	C	925	LEU
1	C	928	GLU
1	E	16	LEU
1	E	24	GLU
1	E	35	VAL
1	E	48	LEU
1	E	88	LEU
1	E	123	LEU
1	E	127	LEU
1	E	146	LEU
1	E	162	ARG

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Mol	Chain	Res	Type
1	E	165	LEU
1	E	217	LEU
1	E	228	LEU
1	E	250	ARG
1	E	254	LEU
1	E	271	THR
1	E	279	LYS
1	E	283	LEU
1	E	291	LEU
1	E	304	THR
1	E	366	THR
1	E	367	LEU
1	E	370	LEU
1	E	375	TRP
1	E	404	THR
1	E	410	ARG
1	E	411	LYS
1	E	420	VAL
1	E	431	LEU
1	E	438	LEU
1	E	440	LEU
1	E	443	LEU
1	E	448	VAL
1	E	450	VAL
1	E	464	LEU
1	E	473	THR
1	E	474	LEU
1	E	476	VAL
1	E	480	LEU
1	E	481	LEU
1	E	484	THR
1	E	492	SER
1	E	508	ARG
1	E	523	LEU
1	E	528	ARG
1	E	529	ILE
1	E	548	ARG
1	E	587	ILE
1	E	616	LEU
1	E	634	THR
1	E	651	THR
1	E	652	ARG

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Mol	Chain	Res	Type
1	E	664	GLN
1	E	681	SER
1	E	684	LEU
1	E	698	ILE
1	E	701	ARG
1	E	729	ARG
1	E	739	LEU
1	E	789	LEU
1	E	804	ASP
1	E	849	LEU
1	E	867	ARG
1	E	881	ILE
1	E	892	LEU
1	E	893	THR
1	E	894	GLU
1	E	921	GLU
1	G	16	LEU
1	G	24	GLU
1	G	28	ARG
1	G	35	VAL
1	G	48	LEU
1	G	70	GLU
1	G	88	LEU
1	G	113	ARG
1	G	121	LYS
1	G	123	LEU
1	G	127	LEU
1	G	137	LEU
1	G	146	LEU
1	G	162	ARG
1	G	165	LEU
1	G	198	MET
1	G	217	LEU
1	G	254	LEU
1	G	264	THR
1	G	271	THR
1	G	277	LEU
1	G	283	LEU
1	G	291	LEU
1	G	304	THR
1	G	357	GLU
1	G	366	THR

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Mol	Chain	Res	Type
1	G	367	LEU
1	G	375	TRP
1	G	399	ASP
1	G	404	THR
1	G	410	ARG
1	G	411	LYS
1	G	420	VAL
1	G	424	ASP
1	G	431	LEU
1	G	438	LEU
1	G	440	LEU
1	G	443	LEU
1	G	450	VAL
1	G	464	LEU
1	G	473	THR
1	G	474	LEU
1	G	476	VAL
1	G	484	THR
1	G	494	VAL
1	G	505	ARG
1	G	509	SER
1	G	523	LEU
1	G	536	SER
1	G	548	ARG
1	G	603	SER
1	G	616	LEU
1	G	634	THR
1	G	635	ILE
1	G	652	ARG
1	G	683	LEU
1	G	684	LEU
1	G	686	ARG
1	G	699	ILE
1	G	729	ARG
1	G	734	VAL
1	G	739	LEU
1	G	751	ASN
1	G	759	GLU
1	G	789	LEU
1	G	804	ASP
1	G	816	PHE
1	G	847	ARG

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Mol	Chain	Res	Type
1	G	849	LEU
1	G	867	ARG
1	G	881	ILE
1	G	928	GLU
1	G	944	PHE

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	860	GLN
1	C	695	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 8 ligands modelled in this entry, 8 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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	911/964 (94%)	-0.35	13 (1%) 75 73	31, 52, 90, 115	0
1	C	902/964 (93%)	-0.38	10 (1%) 80 79	31, 50, 79, 107	0
1	E	897/964 (93%)	-0.27	19 (2%) 63 59	31, 55, 94, 134	0
1	G	898/964 (93%)	-0.28	17 (1%) 66 63	37, 58, 88, 127	0
2	B	11/12 (91%)	-0.06	1 (9%) 9 7	39, 55, 87, 107	0
2	D	11/12 (91%)	-0.12	1 (9%) 9 7	42, 54, 83, 96	0
2	F	11/12 (91%)	-0.03	2 (18%) 1 1	45, 61, 97, 108	0
2	H	11/12 (91%)	-0.01	2 (18%) 1 1	49, 64, 98, 110	0
All	All	3652/3904 (93%)	-0.32	65 (1%) 68 65	31, 54, 90, 134	0

All (65) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	G	723	ARG	5.4
1	A	920	ASP	4.8
1	C	363	ARG	4.5
2	B	9	DA	4.4
2	F	9	DA	4.2
1	E	865	GLU	4.1
2	D	9	DA	4.1
1	E	723	ARG	3.9
1	C	724	ALA	3.8
1	E	718	ASN	3.7
1	C	359	THR	3.7
1	G	276	HIS	3.6
1	E	375	TRP	3.6
1	C	844	ALA	3.5
1	E	847	ARG	3.5
2	H	9	DA	3.3

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Mol	Chain	Res	Type	RSRZ
1	E	363	ARG	3.2
1	C	865	GLU	3.2
1	A	695	HIS	3.1
1	A	723	ARG	2.9
1	G	383	ALA	2.8
2	H	1	DA	2.8
1	G	357	GLU	2.8
1	E	508	ARG	2.7
1	G	867	ARG	2.7
1	G	354	TYR	2.7
1	E	383	ALA	2.6
1	E	816	PHE	2.6
1	A	665	SER	2.5
1	A	864	ARG	2.5
1	A	358	ASN	2.5
1	A	588	ILE	2.5
2	F	1	DA	2.5
1	A	865	GLU	2.5
1	E	607	ALA	2.5
1	G	379	ASP	2.5
1	C	358	ASN	2.5
1	G	14	PRO	2.4
1	C	278	SER	2.4
1	E	665	SER	2.4
1	C	357	GLU	2.4
1	G	375	TRP	2.4
1	C	14	PRO	2.3
1	E	675	SER	2.3
1	G	718	ASN	2.3
1	A	919	THR	2.3
1	A	918	VAL	2.3
1	G	586	ALA	2.3
1	E	399	ASP	2.3
1	G	674	ILE	2.2
1	E	359	THR	2.2
1	E	903	ARG	2.2
1	G	700	ASN	2.1
1	G	478	VAL	2.1
1	E	864	ARG	2.1
1	A	676	ASP	2.1
1	E	541	LEU	2.1
1	G	400	PRO	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	824	VAL	2.1
1	C	529	ILE	2.1
1	E	904	GLU	2.1
1	E	846	ASN	2.1
1	G	703	GLN	2.1
1	G	776	GLU	2.0
1	A	359	THR	2.0

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

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
3	FE	G	1001	1/1	0.97	0.18	44,44,44,44	0
3	FE	C	1001	1/1	0.99	0.18	34,34,34,34	0
3	FE	C	1002	1/1	0.99	0.16	35,35,35,35	0
3	FE	E	1001	1/1	0.99	0.15	38,38,38,38	0
3	FE	E	1002	1/1	0.99	0.15	35,35,35,35	0
3	FE	A	1002	1/1	0.99	0.17	35,35,35,35	0
3	FE	G	1002	1/1	0.99	0.14	38,38,38,38	0
3	FE	A	1001	1/1	1.00	0.17	34,34,34,34	0

6.5 Other polymers [i](#)

There are no such residues in this entry.