Full wwPDB X-ray Structure Validation Report ⓘ

Dec 2, 2024 – 08:39 PM EST

PDB ID	:	8RRO
Title	:	G12V-TCR complex with HLA-A3
Authors	:	Sim, M.J.W.; Sun, P.D.
Deposited on	:	2024-01-23
Resolution	:	3.50 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:

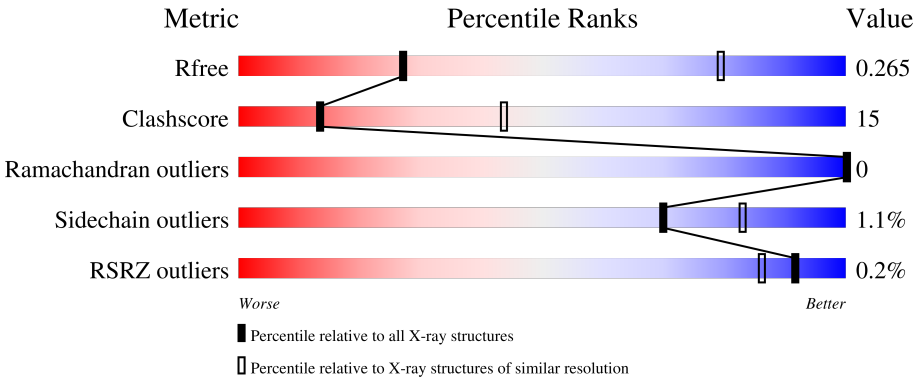
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.21
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.004 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation 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 3.50 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	1094 (3.56-3.44)
Clashscore	180529	1045 (3.54-3.46)
Ramachandran outliers	177936	1032 (3.54-3.46)
Sidechain outliers	177891	1033 (3.54-3.46)
RSRZ outliers	164620	1093 (3.56-3.44)

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%

Mol	Chain	Length	Quality of chain
1	A	206	57% 40% •
1	F	206	69% 29% •
1	K	206	2% 64% 33% • •
1	P	206	60% 36% • •
1	U	206	67% 29% • •
1	Z	206	66% 32% •

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Mol	Chain	Length	Quality of chain
1	e	206	93% 5%
1	j	206	94%
2	B	246	68% 29%
2	G	246	69% 28%
2	L	246	63% 33%
2	Q	246	71% 25%
2	V	246	71% 26%
2	a	246	97%
2	f	246	96%
2	k	246	96%
3	C	279	63% 33%
3	H	279	76% 22%
3	M	279	73% 24%
3	R	279	75% 24%
3	W	279	66% 33%
3	b	279	97%
3	g	279	97%
3	l	279	98%
4	D	100	71% 25%
4	I	100	71% 25%
4	N	100	63% 34%
4	S	100	76% 22%
4	X	100	70% 27%
4	c	100	94%
4	h	100	94%

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Mol	Chain	Length	Quality of chain
4	m	100	93%
5	E	10	20% 80%
5	J	10	40% 60%
5	O	10	60% 40%
5	T	10	50% 50%
5	Y	10	60% 40%
5	d	10	100%
5	i	10	100%
5	n	10	100%

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 53193 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 G12V-TCR alpha chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	202	Total	C	N	O	S	0	0	0
			1593	1003	265	317	8			
1	F	202	Total	C	N	O	S	0	0	0
			1591	1002	265	316	8			
1	K	203	Total	C	N	O	S	0	0	0
			1597	1005	266	318	8			
1	P	201	Total	C	N	O	S	0	0	0
			1587	1000	264	315	8			
1	U	201	Total	C	N	O	S	0	0	0
			1587	1000	264	315	8			
1	Z	201	Total	C	N	O	S	0	0	0
			1587	1000	264	315	8			
1	e	202	Total	C	N	O	S	0	0	0
			1593	1003	265	317	8			
1	j	200	Total	C	N	O	S	0	0	0
			1580	995	263	314	8			

- Molecule 2 is a protein called G12V-TCR beta chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	242	Total	C	N	O	S	0	0	0
			1958	1235	351	364	8			
2	G	240	Total	C	N	O	S	0	0	0
			1942	1226	349	359	8			
2	L	240	Total	C	N	O	S	0	0	0
			1942	1226	349	359	8			
2	Q	240	Total	C	N	O	S	0	0	0
			1942	1226	349	359	8			
2	V	240	Total	C	N	O	S	0	0	0
			1942	1226	349	359	8			
2	a	240	Total	C	N	O	S	0	0	0
			1942	1226	349	359	8			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	f	240	Total	C	N	O	S	0	0	0
			1942	1226	349	359	8			
2	k	240	Total	C	N	O	S	0	0	0
			1942	1226	349	359	8			

- Molecule 3 is a protein called HLA class I histocompatibility antigen, A alpha chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	274	Total	C	N	O	S	0	0	0
			2228	1386	403	430	9			
3	H	275	Total	C	N	O	S	0	0	0
			2237	1391	404	433	9			
3	M	276	Total	C	N	O	S	0	0	0
			2245	1397	405	434	9			
3	R	277	Total	C	N	O	S	0	0	0
			2251	1400	406	436	9			
3	W	276	Total	C	N	O	S	0	0	0
			2245	1397	405	434	9			
3	b	276	Total	C	N	O	S	0	0	0
			2245	1397	405	434	9			
3	g	274	Total	C	N	O	S	0	0	0
			2228	1386	403	430	9			
3	l	273	Total	C	N	O	S	0	0	0
			2214	1375	401	429	9			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	0	MET	-	initiating methionine	UNP P04439
H	0	MET	-	initiating methionine	UNP P04439
M	0	MET	-	initiating methionine	UNP P04439
R	0	MET	-	initiating methionine	UNP P04439
W	0	MET	-	initiating methionine	UNP P04439
b	0	MET	-	initiating methionine	UNP P04439
g	0	MET	-	initiating methionine	UNP P04439
l	0	MET	-	initiating methionine	UNP P04439

- Molecule 4 is a protein called Beta-2-microglobulin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	98	Total	C	N	O	S	0	0	0
			820	523	139	156	2			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	I	97	Total	C	N	O	S	0	0	0
			812	519	138	153	2			
4	N	98	Total	C	N	O	S	0	0	0
			820	523	139	156	2			
4	S	98	Total	C	N	O	S	0	0	0
			820	523	139	156	2			
4	X	98	Total	C	N	O	S	0	0	0
			820	523	139	156	2			
4	c	98	Total	C	N	O	S	0	0	0
			820	523	139	156	2			
4	h	97	Total	C	N	O	S	0	0	0
			812	519	138	153	2			
4	m	97	Total	C	N	O	S	0	0	0
			812	519	138	153	2			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	0	MET	-	initiating methionine	UNP P61769
I	0	MET	-	initiating methionine	UNP P61769
N	0	MET	-	initiating methionine	UNP P61769
S	0	MET	-	initiating methionine	UNP P61769
X	0	MET	-	initiating methionine	UNP P61769
c	0	MET	-	initiating methionine	UNP P61769
h	0	MET	-	initiating methionine	UNP P61769
m	0	MET	-	initiating methionine	UNP P61769

- Molecule 5 is a protein called GTPase KRas, N-terminally processed.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
5	E	10	Total	C	N	O	0	0	0
			62	40	11	11			
5	J	10	Total	C	N	O	0	0	0
			62	40	11	11			
5	O	10	Total	C	N	O	0	0	0
			62	40	11	11			
5	T	10	Total	C	N	O	0	0	0
			62	40	11	11			
5	Y	10	Total	C	N	O	0	0	0
			62	40	11	11			
5	d	10	Total	C	N	O	0	0	0
			62	40	11	11			

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
5	i	10	Total	C	N	O	0	0	0
			62	40	11	11			
5	n	10	Total	C	N	O	0	0	0
			62	40	11	11			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	6	VAL	GLY	variant	UNP P01116
J	6	VAL	GLY	variant	UNP P01116
O	6	VAL	GLY	variant	UNP P01116
T	6	VAL	GLY	variant	UNP P01116
Y	6	VAL	GLY	variant	UNP P01116
d	6	VAL	GLY	variant	UNP P01116
i	6	VAL	GLY	variant	UNP P01116
n	6	VAL	GLY	variant	UNP P01116

- Molecule 6 is water.

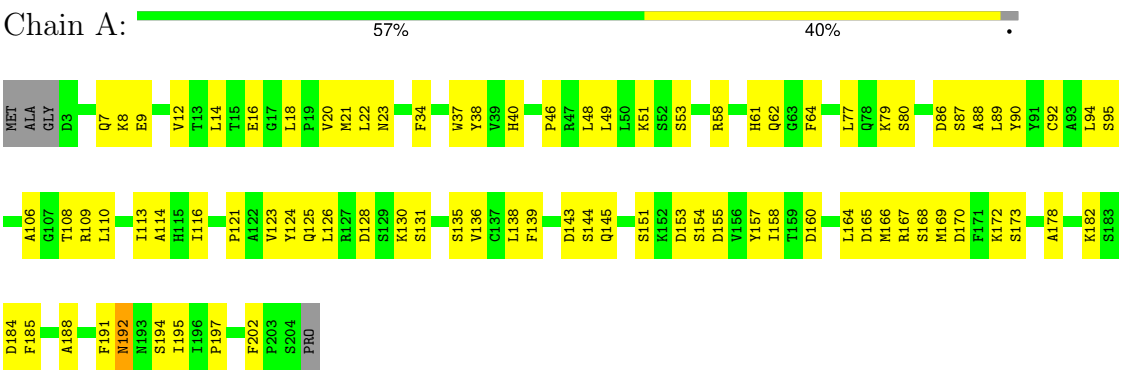
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	C	1	Total	O	0	0
			1	1		

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. 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. 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.

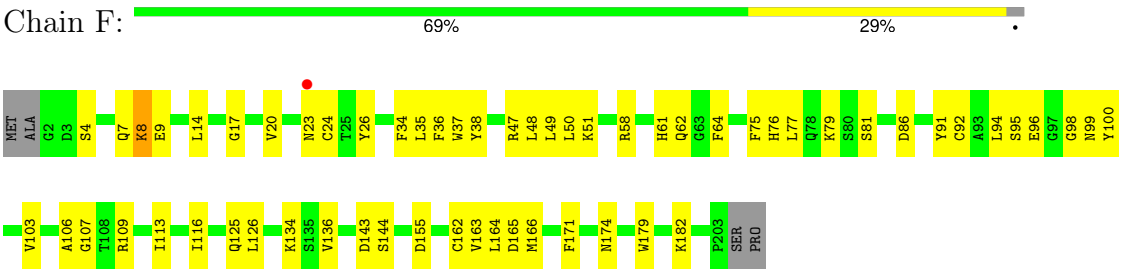
• Molecule 1: G12V-TCR alpha chain

Chain A:



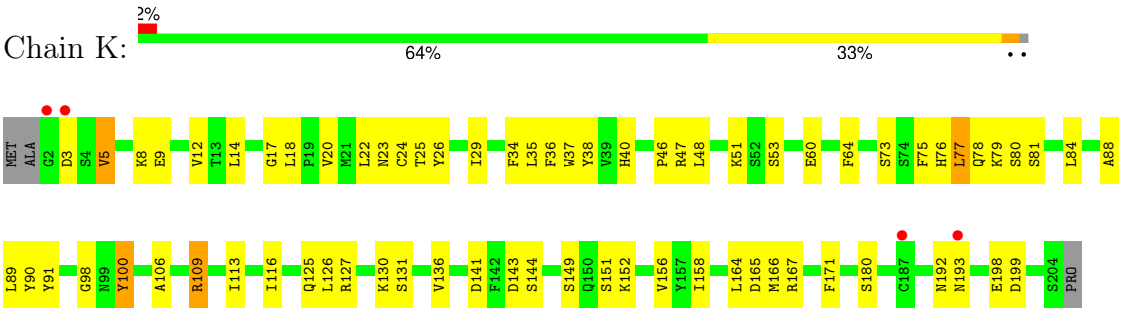
• Molecule 1: G12V-TCR alpha chain

Chain F:



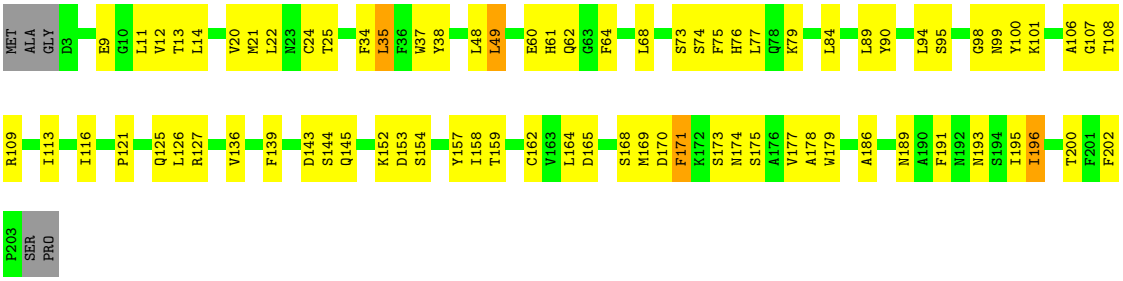
• Molecule 1: G12V-TCR alpha chain

Chain K:



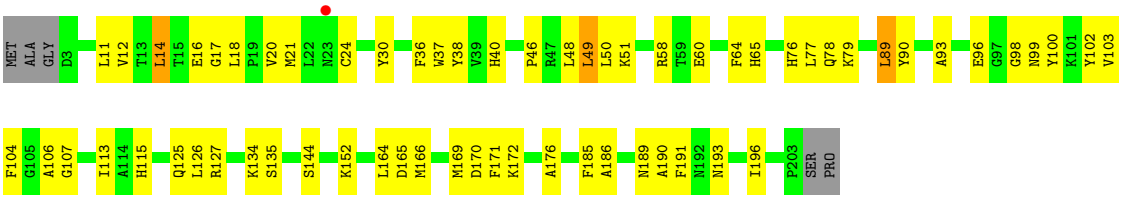
• Molecule 1: G12V-TCR alpha chain

Chain P:



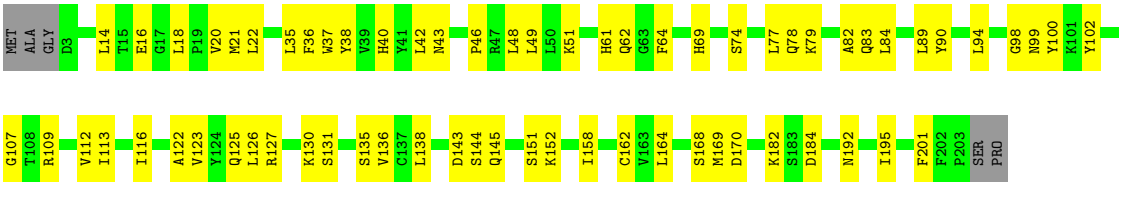
• Molecule 1: G12V-TCR alpha chain

Chain U:



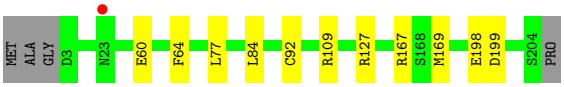
• Molecule 1: G12V-TCR alpha chain

Chain Z:



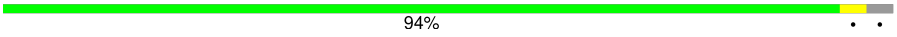
• Molecule 1: G12V-TCR alpha chain

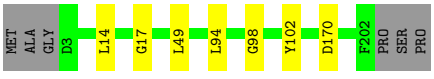
Chain e:



• Molecule 1: G12V-TCR alpha chain

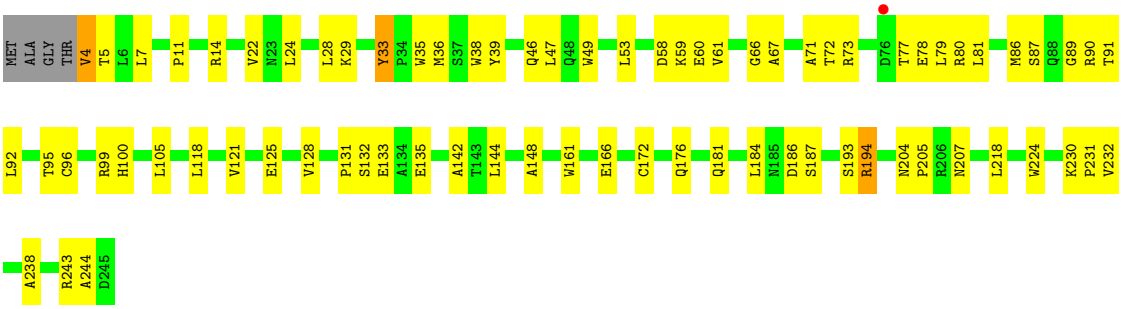
Chain j:





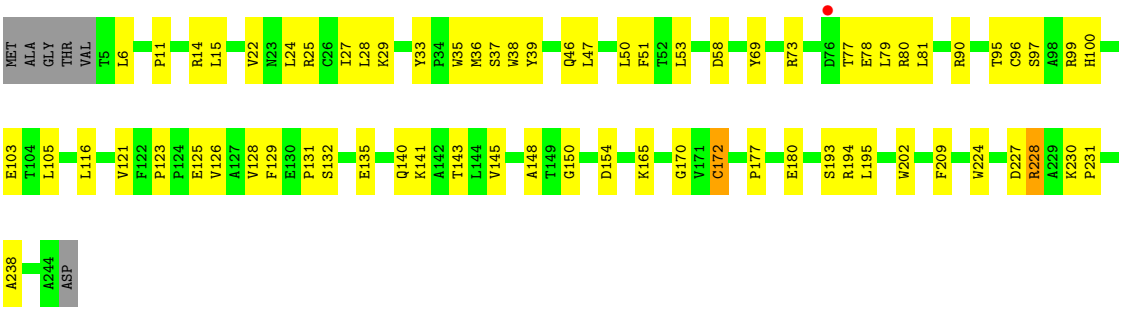
• Molecule 2: G12V-TCR beta chain

Chain B:



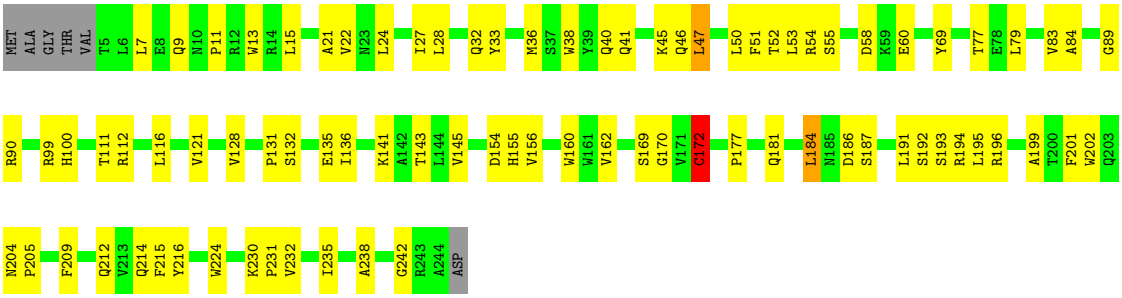
• Molecule 2: G12V-TCR beta chain

Chain G:



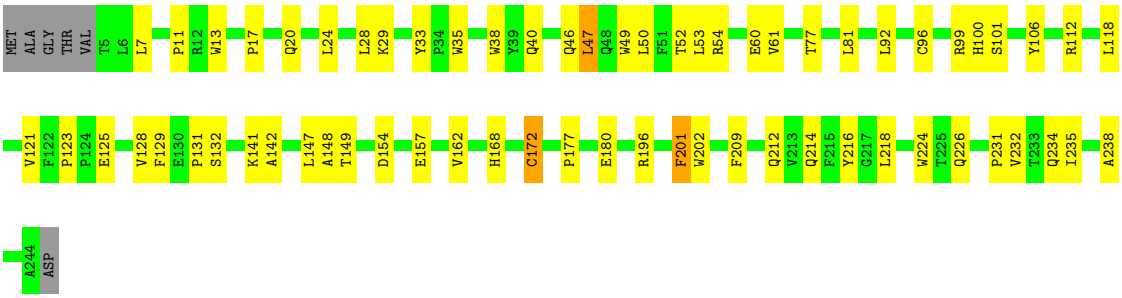
• Molecule 2: G12V-TCR beta chain

Chain L:



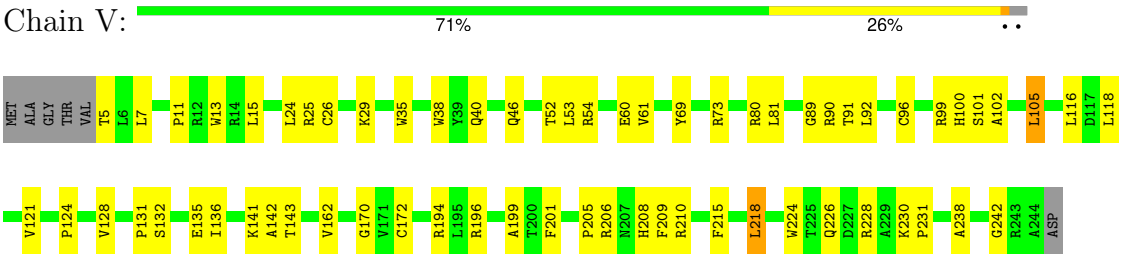
• Molecule 2: G12V-TCR beta chain

Chain Q:



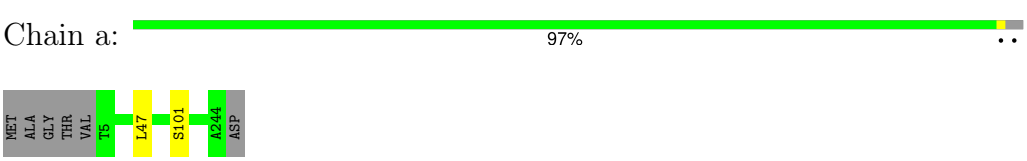
• Molecule 2: G12V-TCR beta chain

Chain V:



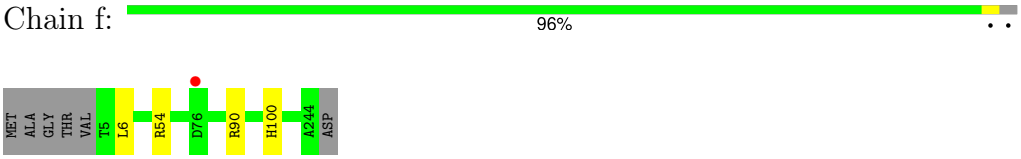
• Molecule 2: G12V-TCR beta chain

Chain a:



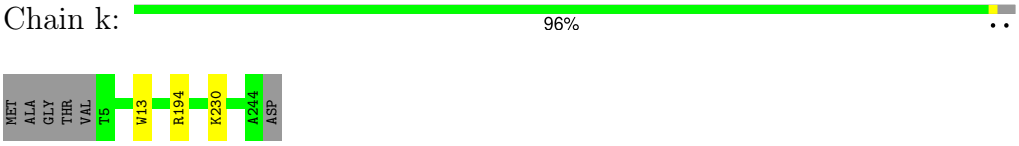
• Molecule 2: G12V-TCR beta chain

Chain f:



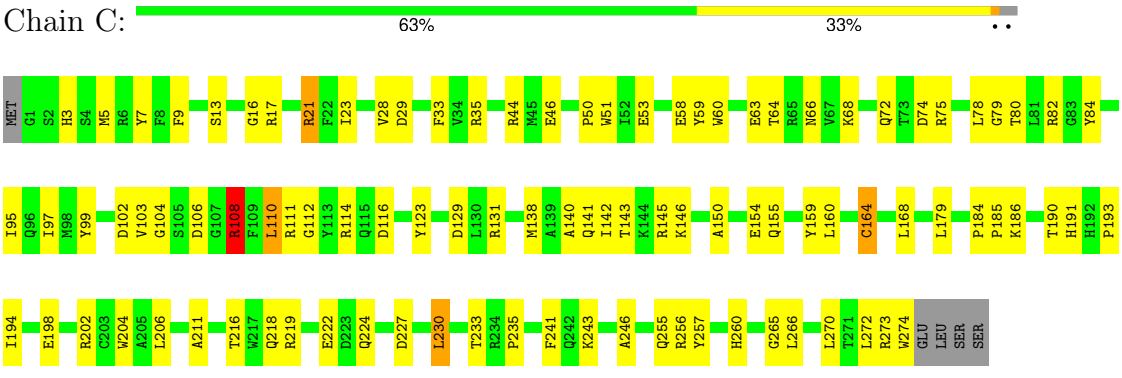
• Molecule 2: G12V-TCR beta chain

Chain k:



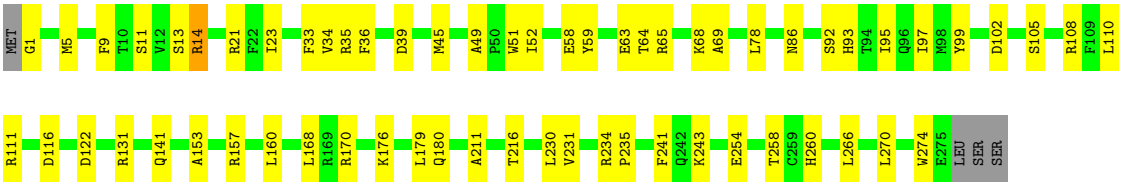
• Molecule 3: HLA class I histocompatibility antigen, A alpha chain

Chain C:



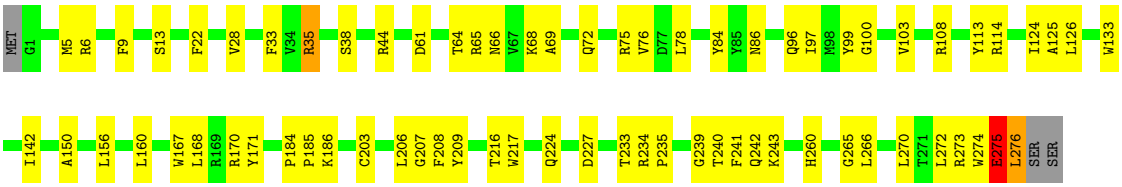
• Molecule 3: HLA class I histocompatibility antigen, A alpha chain

Chain H:



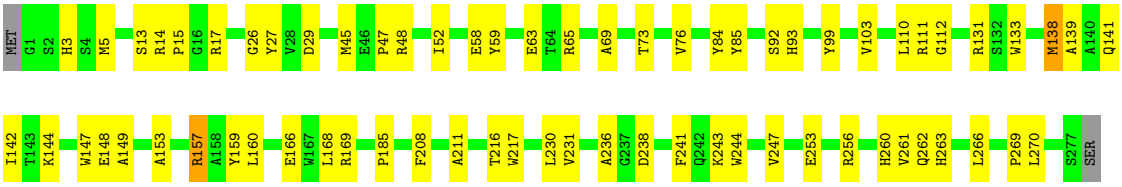
• Molecule 3: HLA class I histocompatibility antigen, A alpha chain

Chain M:



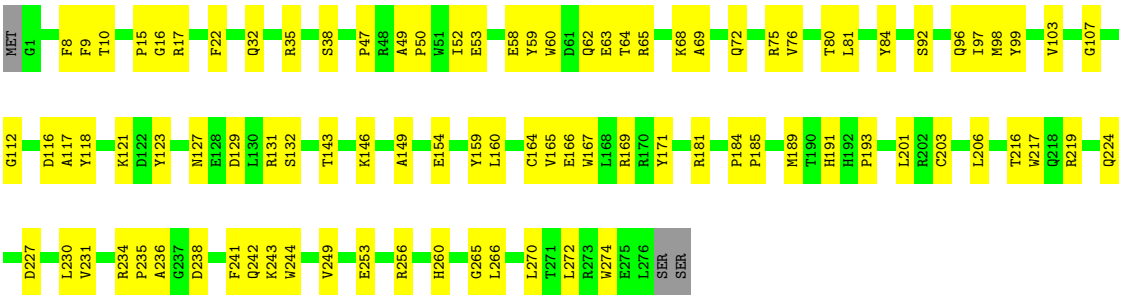
• Molecule 3: HLA class I histocompatibility antigen, A alpha chain

Chain R:



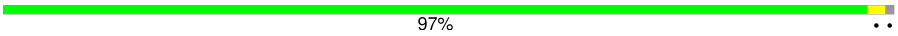
• Molecule 3: HLA class I histocompatibility antigen, A alpha chain

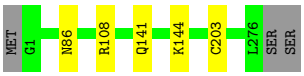
Chain W:



• Molecule 3: HLA class I histocompatibility antigen, A alpha chain

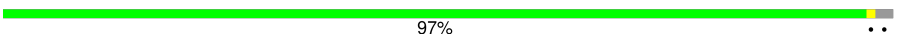
Chain b:

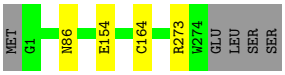




• Molecule 3: HLA class I histocompatibility antigen, A alpha chain

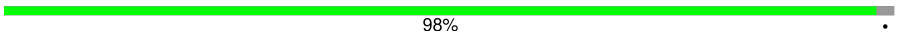
Chain g:

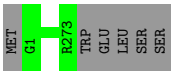




• Molecule 3: HLA class I histocompatibility antigen, A alpha chain

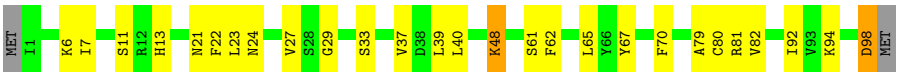
Chain l:





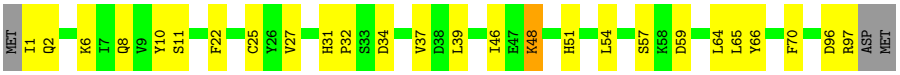
• Molecule 4: Beta-2-microglobulin

Chain D:



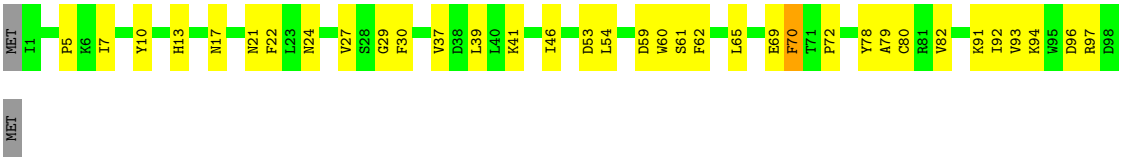
• Molecule 4: Beta-2-microglobulin

Chain I:



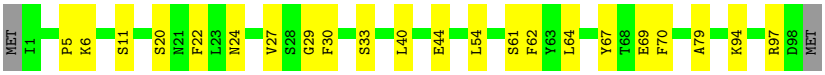
• Molecule 4: Beta-2-microglobulin

Chain N:



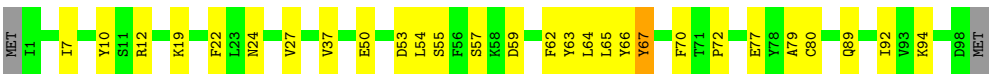
• Molecule 4: Beta-2-microglobulin

Chain S:



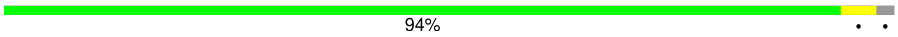
• Molecule 4: Beta-2-microglobulin

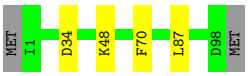
Chain X:



• Molecule 4: Beta-2-microglobulin

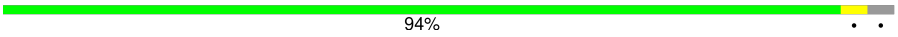
Chain c:

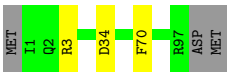




• Molecule 4: Beta-2-microglobulin

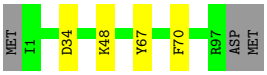
Chain h:





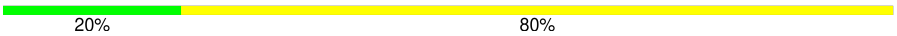
• Molecule 4: Beta-2-microglobulin

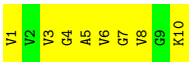
Chain m:



• Molecule 5: GTPase KRas, N-terminally processed

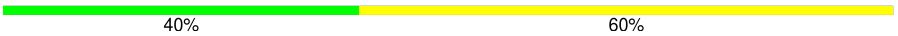
Chain E:





• Molecule 5: GTPase KRas, N-terminally processed

Chain J:

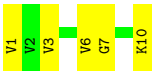


• Molecule 5: GTPase KRas, N-terminally processed

Chain O:

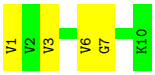
• Molecule 5: GTPase KRas, N-terminally processed

Chain T:



• Molecule 5: GTPase KRas, N-terminally processed

Chain Y:



• Molecule 5: GTPase KRas, N-terminally processed

Chain d: 100%

There are no outlier residues recorded for this chain.

• Molecule 5: GTPase KRas, N-terminally processed

Chain i: 100%

There are no outlier residues recorded for this chain.

• Molecule 5: GTPase KRas, N-terminally processed

Chain n: 100%

There are no outlier residues recorded for this chain.

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	131.48Å 195.79Å 442.86Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	46.46 – 3.50 46.46 – 3.50	Depositor EDS
% Data completeness (in resolution range)	84.4 (46.46-3.50) 95.4 (46.46-3.50)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.12 (at 3.48Å)	Xtriage
Refinement program	PHENIX (1.20.1_4487: ???)	Depositor
R, R_{free}	0.238 , 0.286 0.268 , 0.265	Depositor DCC
R_{free} test set	7238 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	80.5	Xtriage
Anisotropy	0.419	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 97.9	EDS
L-test for twinning[2]	$< \|L\| > = 0.32$, $< L^2 > = 0.16$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.86	EDS
Total number of atoms	53193	wwPDB-VP
Average B, all atoms (Å^2)	123.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.54% 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 (i)

5.1 Standard geometry (i)

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	0.62	0/1630	0.83	1/2209 (0.0%)
1	F	0.67	1/1628 (0.1%)	0.88	0/2206
1	K	0.77	4/1634 (0.2%)	0.90	3/2214 (0.1%)
1	P	0.65	1/1624 (0.1%)	0.93	4/2201 (0.2%)
1	U	0.66	1/1624 (0.1%)	0.89	3/2201 (0.1%)
1	Z	0.68	2/1624 (0.1%)	0.97	8/2201 (0.4%)
1	e	0.63	2/1630 (0.1%)	0.86	3/2209 (0.1%)
1	j	0.75	5/1616 (0.3%)	0.82	2/2189 (0.1%)
2	B	0.63	2/2010 (0.1%)	0.83	1/2739 (0.0%)
2	G	0.59	0/1994	0.81	1/2718 (0.0%)
2	L	0.59	0/1994	0.85	3/2718 (0.1%)
2	Q	0.57	0/1994	0.80	1/2718 (0.0%)
2	V	0.56	0/1994	0.82	3/2718 (0.1%)
2	a	0.55	0/1994	0.82	2/2718 (0.1%)
2	f	0.57	0/1994	0.85	3/2718 (0.1%)
2	k	0.52	1/1994 (0.1%)	0.80	0/2718
3	C	0.64	4/2288 (0.2%)	0.92	8/3106 (0.3%)
3	H	0.64	0/2297	0.83	0/3118
3	M	0.81	6/2305 (0.3%)	0.89	2/3129 (0.1%)
3	R	0.62	0/2311	0.85	3/3137 (0.1%)
3	W	0.59	0/2305	0.83	0/3129
3	b	0.66	0/2305	0.82	1/3129 (0.0%)
3	g	0.57	2/2288 (0.1%)	0.81	0/3106
3	l	0.55	0/2272	0.80	0/3083
4	D	0.67	2/843 (0.2%)	0.79	2/1142 (0.2%)
4	I	0.54	0/835	0.76	0/1131
4	N	0.54	0/843	0.79	0/1142
4	S	0.49	0/843	0.79	0/1142
4	X	0.52	0/843	0.79	0/1142
4	c	0.53	0/843	0.78	1/1142 (0.1%)
4	h	0.46	0/835	0.77	1/1131 (0.1%)
4	m	0.44	0/835	0.71	0/1131
5	E	0.76	0/61	1.04	0/80
5	J	0.85	0/61	0.99	0/80

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
5	O	0.76	0/61	0.83	0/80
5	T	0.92	0/61	1.01	0/80
5	Y	0.55	0/61	0.98	0/80
5	d	0.65	0/61	0.87	0/80
5	i	0.64	0/61	0.81	0/80
5	n	0.67	0/61	0.71	0/80
All	All	0.62	33/54557 (0.1%)	0.84	56/74075 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	F	0	1
1	K	0	2
1	e	0	2
2	V	0	1
3	C	0	2
3	H	0	2
3	M	0	2
All	All	0	13

All (33) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	M	275	GLU	CG-CD	16.88	1.77	1.51
3	M	275	GLU	CD-OE1	13.92	1.41	1.25
1	K	100	TYR	CD2-CE2	9.64	1.53	1.39
1	j	102	TYR	CD1-CE1	9.13	1.53	1.39
4	D	98	ASP	CB-CG	9.11	1.70	1.51
2	B	4	VAL	CB-CG2	9.07	1.71	1.52
1	j	17	GLY	C-N	-8.47	1.14	1.34
1	K	100	TYR	CD1-CE1	7.94	1.51	1.39
1	j	102	TYR	CD2-CE2	7.67	1.50	1.39
1	Z	99	ASN	CB-CG	7.60	1.68	1.51
3	M	276	LEU	C-O	7.40	1.37	1.23
4	D	98	ASP	C-O	6.88	1.36	1.23
1	j	102	TYR	CE2-CZ	6.74	1.47	1.38
3	M	275	GLU	CD-OE2	6.70	1.33	1.25
1	K	100	TYR	CE2-CZ	6.50	1.47	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	U	17	GLY	C-N	-6.22	1.19	1.34
3	C	164	CYS	CB-SG	5.65	1.91	1.82
3	M	276	LEU	CG-CD2	5.58	1.72	1.51
3	C	108	ARG	CB-CG	-5.56	1.37	1.52
1	e	64	PHE	CB-CG	-5.49	1.42	1.51
3	M	275	GLU	CB-CG	5.46	1.62	1.52
1	j	102	TYR	CE1-CZ	5.37	1.45	1.38
1	P	84	LEU	CG-CD2	-5.35	1.32	1.51
2	B	4	VAL	CB-CG1	5.26	1.64	1.52
3	g	154	GLU	CG-CD	5.26	1.59	1.51
1	e	92	CYS	CB-SG	-5.25	1.73	1.81
1	K	60	GLU	CB-CG	5.21	1.62	1.52
2	k	13	TRP	CB-CG	-5.13	1.41	1.50
1	F	95	SER	CA-CB	5.11	1.60	1.52
3	g	164	CYS	CB-SG	5.11	1.91	1.82
3	C	108	ARG	CZ-NH2	5.11	1.39	1.33
1	Z	100	TYR	CD1-CE1	5.02	1.46	1.39
3	C	110	LEU	CG-CD1	5.01	1.70	1.51

All (56) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	108	ARG	CG-CD-NE	-11.95	86.70	111.80
1	Z	99	ASN	N-CA-CB	-10.61	91.51	110.60
3	C	108	ARG	NE-CZ-NH2	-9.14	115.73	120.30
2	V	218	LEU	CB-CG-CD2	-8.97	95.75	111.00
3	C	110	LEU	CB-CG-CD1	7.88	124.40	111.00
4	D	98	ASP	CB-CG-OD1	7.73	125.25	118.30
1	Z	100	TYR	CB-CG-CD2	-7.53	116.48	121.00
3	C	230	LEU	CB-CG-CD1	-7.29	98.61	111.00
1	Z	100	TYR	CB-CG-CD1	7.28	125.36	121.00
1	U	89	LEU	CA-CB-CG	-7.26	98.59	115.30
2	f	6	LEU	CA-CB-CG	7.24	131.95	115.30
1	P	49	LEU	CB-CG-CD2	-7.08	98.97	111.00
3	M	275	GLU	CG-CD-OE1	6.97	132.25	118.30
3	C	108	ARG	CD-NE-CZ	6.80	133.12	123.60
3	C	108	ARG	CB-CA-C	-6.78	96.84	110.40
2	V	105	LEU	CA-CB-CG	6.75	130.82	115.30
3	R	157	ARG	CB-CG-CD	-6.73	94.11	111.60
2	L	47	LEU	CA-CB-CG	-6.66	99.98	115.30
3	b	144	LYS	CD-CE-NZ	6.53	126.73	111.70
2	a	47	LEU	CA-CB-CG	-6.48	100.39	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	K	22	LEU	CB-CG-CD1	-6.44	100.06	111.00
1	j	49	LEU	CB-CG-CD2	-6.37	100.17	111.00
1	Z	99	ASN	C-N-CA	-6.33	105.86	121.70
4	D	98	ASP	CB-CG-OD2	-6.33	112.60	118.30
1	P	35	LEU	CA-CB-CG	-6.26	100.91	115.30
1	P	100	TYR	CB-CG-CD2	-6.12	117.33	121.00
1	Z	35	LEU	CA-CB-CG	-6.05	101.39	115.30
2	L	172	CYS	CA-CB-SG	5.95	124.71	114.00
3	R	157	ARG	CG-CD-NE	5.92	124.24	111.80
1	Z	164	LEU	CB-CG-CD1	-5.92	100.94	111.00
1	e	77	LEU	CA-CB-CG	5.89	128.84	115.30
2	Q	47	LEU	CA-CB-CG	-5.84	101.86	115.30
2	a	101	SER	N-CA-CB	5.79	119.18	110.50
1	Z	98	GLY	C-N-CA	-5.76	107.29	121.70
2	G	6	LEU	CA-CB-CG	5.73	128.47	115.30
3	C	206	LEU	CA-CB-CG	5.72	128.46	115.30
1	Z	162	CYS	CA-CB-SG	5.71	124.28	114.00
1	A	89	LEU	CA-CB-CG	-5.67	102.26	115.30
3	C	272	LEU	CA-CB-CG	5.66	128.32	115.30
2	B	144	LEU	CA-CB-CG	5.63	128.25	115.30
3	R	157	ARG	CA-CB-CG	5.49	125.47	113.40
2	f	90	ARG	CG-CD-NE	-5.42	100.42	111.80
1	U	49	LEU	CB-CG-CD2	-5.38	101.86	111.00
1	K	77	LEU	CA-CB-CG	5.37	127.64	115.30
2	L	184	LEU	CA-CB-CG	5.37	127.64	115.30
1	j	98	GLY	N-CA-C	-5.30	99.84	113.10
4	c	87	LEU	CB-CG-CD1	-5.26	102.06	111.00
2	f	54	ARG	CB-CG-CD	5.25	125.25	111.60
1	K	100	TYR	CA-CB-CG	5.23	123.34	113.40
1	e	60	GLU	CB-CA-C	5.19	120.77	110.40
1	U	14	LEU	CB-CG-CD2	-5.14	102.27	111.00
1	P	196	ILE	CG1-CB-CG2	-5.11	100.17	111.40
3	M	275	GLU	CG-CD-OE2	-5.10	108.11	118.30
2	V	218	LEU	CA-CB-CG	-5.08	103.62	115.30
4	h	3	ARG	C-N-CA	5.03	134.26	121.70
1	e	84	LEU	CB-CG-CD2	-5.01	102.47	111.00

There are no chirality outliers.

All (13) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	109	ARG	Sidechain

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Mol	Chain	Res	Type	Group
3	C	108	ARG	Sidechain
3	C	21	ARG	Sidechain
1	F	109	ARG	Sidechain
3	H	14	ARG	Sidechain
3	H	170	ARG	Sidechain
1	K	100	TYR	Sidechain
1	K	109	ARG	Sidechain
3	M	170	ARG	Sidechain
3	M	275	GLU	Peptide
2	V	228	ARG	Sidechain
1	e	127	ARG	Sidechain
1	e	167	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	1593	0	1516	70	0
1	F	1591	0	1514	51	0
1	K	1597	0	1519	71	0
1	P	1587	0	1511	73	0
1	U	1587	0	1510	59	0
1	Z	1587	0	1511	53	1
1	e	1593	0	1516	0	0
1	j	1580	0	1503	0	1
2	B	1958	0	1896	56	0
2	G	1942	0	1883	60	0
2	L	1942	0	1883	70	0
2	Q	1942	0	1883	49	0
2	V	1942	0	1883	59	0
2	a	1942	0	1883	0	0
2	f	1942	0	1883	0	0
2	k	1942	0	1883	0	0
3	C	2228	0	2080	82	0
3	H	2237	0	2086	59	0
3	M	2245	0	2097	60	1
3	R	2251	0	2102	54	0
3	W	2245	0	2097	73	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	b	2245	0	2097	0	1
3	g	2228	0	2080	0	0
3	l	2214	0	2070	0	0
4	D	820	0	785	18	0
4	I	812	0	781	18	0
4	N	820	0	785	26	0
4	S	820	0	785	12	0
4	X	820	0	785	19	0
4	c	820	0	785	0	0
4	h	812	0	781	0	0
4	m	812	0	781	0	0
5	E	62	0	74	15	0
5	J	62	0	74	12	0
5	O	62	0	74	4	0
5	T	62	0	74	9	0
5	Y	62	0	74	10	0
5	d	62	0	74	0	0
5	i	62	0	74	0	0
5	n	62	0	74	0	0
6	C	1	0	0	0	0
All	All	53193	0	50746	984	2

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 15.

All (984) 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)
3:M:275:GLU:CD	3:M:275:GLU:CG	1.77	1.50
1:P:34:PHE:O	1:P:94:LEU:HD12	1.37	1.25
1:K:5:VAL:CG2	1:K:26:TYR:CB	2.33	1.06
1:K:5:VAL:HG22	1:K:26:TYR:HA	1.38	1.03
1:U:98:GLY:O	3:W:65:ARG:NH1	1.91	1.02
1:K:5:VAL:CG2	1:K:26:TYR:HB3	1.90	1.01
3:C:233:THR:HG22	3:C:243:LYS:HD2	1.44	0.98
3:H:230:LEU:HD11	3:H:243:LYS:HE3	1.44	0.98
1:K:5:VAL:HG21	1:K:26:TYR:HB3	1.45	0.96
1:K:5:VAL:HG22	1:K:26:TYR:CA	1.95	0.95
3:M:72:GLN:HG2	3:M:75:ARG:HH22	1.38	0.87
3:H:86:ASN:OD1	1:U:115:HIS:NE2	2.08	0.86
1:K:14:LEU:HD12	1:K:18:LEU:HB2	1.59	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:R:69:ALA:HB1	5:T:6:VAL:HG21	1.57	0.83
1:A:113:ILE:HD12	1:A:144:SER:HB3	1.60	0.83
1:A:34:PHE:HE1	1:A:51:LYS:HD2	1.45	0.82
3:C:108:ARG:NH1	1:P:165:ASP:OD2	2.11	0.81
1:P:34:PHE:O	1:P:94:LEU:CD1	2.24	0.81
1:P:113:ILE:HD12	1:P:144:SER:HB3	1.63	0.80
1:K:91:TYR:OH	2:L:45:LYS:O	1.98	0.80
1:U:113:ILE:HD12	1:U:144:SER:HB3	1.62	0.80
1:K:64:PHE:CE1	1:K:79:LYS:HD2	2.17	0.78
3:C:233:THR:CG2	3:C:243:LYS:HD2	2.13	0.78
2:G:53:LEU:O	2:G:73:ARG:NH1	2.17	0.78
1:A:160:ASP:OD2	2:B:176:GLN:NE2	2.16	0.78
1:F:113:ILE:HD12	1:F:144:SER:HB3	1.66	0.77
1:P:152:LYS:HD2	1:P:193:ASN:ND2	2.00	0.77
3:W:266:LEU:HD13	3:W:270:LEU:HG	1.66	0.77
3:C:112:GLY:HA3	3:C:160:LEU:HD13	1.66	0.77
4:N:7:ILE:HG12	4:N:27:VAL:HG12	1.67	0.76
3:W:15:PRO:HD3	3:W:92:SER:HB2	1.67	0.76
2:V:118:LEU:HD22	2:V:218:LEU:HD21	1.68	0.76
3:C:202:ARG:HG3	3:C:246:ALA:HB2	1.68	0.76
1:A:14:LEU:HD12	1:A:18:LEU:HB2	1.68	0.75
1:K:5:VAL:CG2	1:K:26:TYR:HA	2.15	0.75
3:W:112:GLY:HA3	3:W:160:LEU:HD13	1.67	0.75
2:V:128:VAL:HG23	2:V:238:ALA:HB3	1.68	0.74
2:G:99:ARG:HB2	2:G:103:GLU:HG3	1.69	0.74
3:M:72:GLN:HG2	3:M:75:ARG:NH2	2.02	0.74
1:A:38:TYR:HD1	1:A:48:LEU:HA	1.53	0.74
2:B:172:CYS:HB3	2:B:194:ARG:HB2	1.69	0.74
1:Z:116:ILE:HG13	1:Z:143:ASP:HA	1.68	0.74
2:V:118:LEU:CD2	2:V:218:LEU:HD21	2.18	0.74
1:Z:125:GLN:HG2	1:Z:127:ARG:HH22	1.53	0.73
1:Z:36:PHE:HE2	1:Z:102:TYR:HE2	1.36	0.73
1:K:5:VAL:HG22	1:K:26:TYR:CB	2.08	0.73
2:B:99:ARG:HH12	3:C:155:GLN:HG2	1.54	0.72
1:A:34:PHE:CD2	1:A:53:SER:HB3	2.25	0.72
1:P:121:PRO:HB2	1:P:200:THR:HG22	1.72	0.71
2:G:154:ASP:HB2	2:G:177:PRO:HG3	1.72	0.71
2:L:55:SER:HB3	3:M:75:ARG:HH21	1.55	0.71
1:Z:113:ILE:HD12	1:Z:144:SER:HB3	1.73	0.71
3:R:236:ALA:O	4:S:24:ASN:ND2	2.22	0.71
1:P:38:TYR:HD1	1:P:48:LEU:HA	1.55	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:U:14:LEU:HD12	1:U:18:LEU:HB2	1.72	0.71
2:Q:7:LEU:HD23	2:Q:28:LEU:HA	1.73	0.70
1:U:24:CYS:H	1:U:76:HIS:CD2	2.09	0.70
3:C:64:THR:HG22	3:C:68:LYS:HE2	1.72	0.70
3:C:202:ARG:NH1	4:D:98:ASP:OD2	2.24	0.70
3:C:235:PRO:HG2	4:D:65:LEU:HD22	1.74	0.70
3:C:108:ARG:HD2	1:P:170:ASP:OD1	1.93	0.69
1:P:171:PHE:CZ	2:Q:141:LYS:HE3	2.27	0.69
2:B:28:LEU:HD23	2:B:77:THR:HG22	1.75	0.69
3:M:266:LEU:HD13	3:M:270:LEU:HG	1.75	0.68
1:P:159:THR:HG22	1:P:177:VAL:H	1.58	0.68
3:H:216:THR:HG23	3:H:260:HIS:HB2	1.74	0.68
1:Z:64:PHE:CE1	1:Z:79:LYS:HD2	2.29	0.68
1:A:116:ILE:HG13	1:A:143:ASP:HA	1.74	0.68
3:C:5:MET:HB2	3:C:168:LEU:HD13	1.76	0.68
3:R:47:PRO:O	3:R:48:ARG:NH1	2.26	0.68
3:R:216:THR:HG23	3:R:260:HIS:HB2	1.75	0.67
1:Z:14:LEU:HD12	1:Z:18:LEU:HB2	1.76	0.67
3:C:84:TYR:HE2	3:C:142:ILE:HB	1.60	0.67
2:G:123:PRO:HD3	2:G:231:PRO:HB3	1.77	0.67
1:F:99:ASN:N	3:H:65:ARG:HH11	1.93	0.67
1:K:34:PHE:CD2	1:K:53:SER:HB3	2.30	0.67
3:H:266:LEU:HD13	3:H:270:LEU:HG	1.77	0.67
2:L:9:GLN:NE2	2:L:111:THR:OG1	2.28	0.67
2:Q:40:GLN:HB3	2:Q:50:LEU:HD11	1.76	0.67
1:F:35:LEU:HD22	1:F:75:PHE:HB2	1.76	0.67
3:R:112:GLY:HA3	3:R:160:LEU:HD13	1.77	0.67
2:Q:125:GLU:O	2:Q:148:ALA:HA	1.95	0.66
2:B:14:ARG:NH1	2:B:22:VAL:HG23	2.11	0.66
1:Z:64:PHE:HE1	1:Z:79:LYS:HD2	1.60	0.66
2:L:224:TRP:HB2	2:L:230:LYS:HG3	1.77	0.66
3:C:145:ARG:NH1	1:F:9:GLU:OE1	2.29	0.66
1:K:5:VAL:CG2	1:K:26:TYR:HB2	2.25	0.66
1:U:166:MET:HE2	1:U:169:MET:HB2	1.78	0.66
2:B:133:GLU:OE2	2:B:243:ARG:NH2	2.28	0.66
3:R:13:SER:HB3	3:R:93:HIS:H	1.61	0.66
4:S:5:PRO:HB3	4:S:30:PHE:HB3	1.76	0.66
2:B:184:LEU:HB3	2:B:186:ASP:OD1	1.96	0.66
1:F:64:PHE:CE1	1:F:79:LYS:HD2	2.31	0.66
3:R:159:TYR:OH	5:T:1:VAL:O	2.14	0.66
2:B:11:PRO:HD2	2:B:24:LEU:HD22	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:M:6:ARG:HG3	3:M:6:ARG:HH11	1.61	0.65
5:J:1:VAL:HG13	5:J:2:VAL:H	1.62	0.65
3:M:235:PRO:HG2	4:N:65:LEU:HD22	1.78	0.65
1:F:98:GLY:H	3:H:65:ARG:NH1	1.94	0.65
2:L:52:THR:O	2:L:53:LEU:HD23	1.96	0.65
3:C:216:THR:HG23	3:C:260:HIS:HB2	1.79	0.65
2:B:121:VAL:HG12	2:B:231:PRO:HB2	1.78	0.65
1:A:64:PHE:CE1	1:A:79:LYS:HD2	2.32	0.65
2:G:28:LEU:HD23	2:G:77:THR:HG22	1.78	0.65
3:W:216:THR:HG23	3:W:260:HIS:HB2	1.78	0.65
1:K:5:VAL:CG2	1:K:26:TYR:CA	2.66	0.64
1:U:60:GLU:HG2	1:U:64:PHE:O	1.97	0.64
4:I:96:ASP:OD1	4:I:97:ARG:N	2.29	0.64
3:C:191:HIS:HE1	3:C:193:PRO:HG3	1.62	0.64
1:K:164:LEU:HD12	2:L:172:CYS:HB3	1.78	0.64
3:M:69:ALA:HB1	5:O:6:VAL:HG21	1.80	0.64
1:F:96:GLU:O	1:F:99:ASN:OD1	2.16	0.63
1:K:152:LYS:HG3	1:K:192:ASN:HB3	1.80	0.63
1:Z:36:PHE:HE2	1:Z:102:TYR:CE2	2.16	0.63
1:U:102:TYR:HD2	2:V:105:LEU:HD22	1.64	0.63
2:B:118:LEU:HD22	2:B:218:LEU:HD21	1.80	0.63
2:B:100:HIS:CD2	5:E:6:VAL:H	2.14	0.63
2:G:99:ARG:HG2	5:J:7:GLY:HA2	1.81	0.63
1:K:38:TYR:CD1	1:K:48:LEU:HA	2.34	0.63
2:L:32:GLN:HE21	3:M:150:ALA:HB2	1.63	0.63
2:Q:128:VAL:HG23	2:Q:238:ALA:HB3	1.80	0.63
1:U:37:TRP:CD2	1:U:77:LEU:HD22	2.33	0.63
1:U:38:TYR:HD1	1:U:48:LEU:HA	1.63	0.63
3:C:7:TYR:HB3	3:C:9:PHE:HE1	1.62	0.63
1:U:38:TYR:CD1	1:U:48:LEU:HA	2.33	0.62
1:Z:38:TYR:CD1	1:Z:48:LEU:HA	2.34	0.62
1:F:47:ARG:HH22	1:F:62:GLN:HE22	1.45	0.62
2:L:99:ARG:NH1	5:O:5:ALA:O	2.33	0.62
2:G:11:PRO:HD2	2:G:24:LEU:HD22	1.81	0.62
4:D:48:LYS:HD2	4:D:48:LYS:O	1.99	0.62
1:P:38:TYR:CD1	1:P:48:LEU:HA	2.34	0.62
2:V:40:GLN:OE1	2:V:90:ARG:NH1	2.31	0.62
1:A:38:TYR:CD1	1:A:48:LEU:HA	2.34	0.62
4:N:39:LEU:HB3	4:N:46:ILE:HD12	1.81	0.62
1:P:37:TRP:NE1	1:P:77:LEU:HB2	2.14	0.62
1:Z:36:PHE:CE2	1:Z:102:TYR:HE2	2.18	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:255:GLN:O	3:C:273:ARG:HD2	1.99	0.62
3:M:6:ARG:HD3	3:M:100:GLY:HA3	1.82	0.62
3:M:5:MET:HB2	3:M:168:LEU:HD13	1.80	0.62
3:M:97:ILE:HD13	3:M:114:ARG:HH21	1.65	0.62
1:U:102:TYR:CD2	2:V:105:LEU:HD22	2.35	0.62
1:U:125:GLN:O	2:V:132:SER:HB2	2.00	0.62
1:K:167:ARG:H	2:L:169:SER:HB2	1.63	0.62
1:Z:49:LEU:HD21	1:Z:64:PHE:CD2	2.34	0.62
1:U:100:TYR:CE1	2:V:100:HIS:HD2	2.17	0.61
3:W:69:ALA:HB1	5:Y:6:VAL:HG21	1.81	0.61
1:Z:37:TRP:CD2	1:Z:77:LEU:HD22	2.36	0.61
1:F:99:ASN:H	3:H:65:ARG:HH11	1.48	0.61
3:W:58:GLU:HG2	3:W:59:TYR:N	2.16	0.61
3:W:235:PRO:O	4:X:10:TYR:OH	2.12	0.61
4:X:79:ALA:HB2	4:X:94:LYS:HG2	1.82	0.61
1:A:58:ARG:NE	2:Q:29:LYS:HE3	2.16	0.61
2:B:205:PRO:HD3	2:B:244:ALA:HB2	1.83	0.61
3:C:110:LEU:HD21	1:P:170:ASP:HB2	1.82	0.61
3:H:9:PHE:HE1	3:H:99:TYR:CE1	2.19	0.61
1:Z:38:TYR:HD1	1:Z:48:LEU:HA	1.65	0.61
1:P:98:GLY:O	3:R:65:ARG:NE	2.33	0.61
2:V:136:ILE:HG23	2:V:199:ALA:HB1	1.82	0.61
3:C:155:GLN:O	3:C:155:GLN:HG3	2.00	0.61
2:L:121:VAL:HG12	2:L:231:PRO:HB2	1.82	0.61
3:R:266:LEU:HD13	3:R:270:LEU:HG	1.83	0.61
1:P:22:LEU:HD13	1:P:108:THR:HB	1.83	0.61
2:Q:162:VAL:HG22	2:Q:209:PHE:HD1	1.66	0.61
4:S:33:SER:HB3	4:S:62:PHE:CE2	2.36	0.61
1:K:171:PHE:CD2	2:L:141:LYS:HE3	2.36	0.60
1:Z:61:HIS:HE1	1:Z:62:GLN:HE21	1.49	0.60
1:K:106:ALA:HA	2:L:46:GLN:OE1	2.01	0.60
3:M:9:PHE:CE1	3:M:99:TYR:CE1	2.89	0.60
1:A:188:ALA:HA	1:A:202:PHE:CE1	2.37	0.60
2:Q:38:TRP:O	2:Q:50:LEU:HB2	2.01	0.60
3:R:133:TRP:HE1	3:R:153:ALA:HB2	1.66	0.60
2:B:5:THR:O	2:B:29:LYS:HE2	2.01	0.60
3:M:9:PHE:CE1	3:M:99:TYR:HE1	2.19	0.60
1:K:9:GLU:HG2	1:K:12:VAL:HG22	1.83	0.60
2:Q:11:PRO:HD2	2:Q:24:LEU:HD22	1.84	0.60
2:G:50:LEU:HB3	2:G:51:PHE:CD1	2.37	0.60
3:M:216:THR:HG23	3:M:260:HIS:HB2	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Q:154:ASP:HB2	2:Q:177:PRO:HG3	1.82	0.60
3:R:15:PRO:HD3	3:R:92:SER:HB2	1.84	0.60
3:C:131:ARG:HG2	3:C:154:GLU:OE2	2.01	0.60
1:K:5:VAL:HG21	1:K:26:TYR:CB	2.12	0.59
3:W:159:TYR:OH	5:Y:1:VAL:O	2.17	0.59
1:Z:37:TRP:NE1	1:Z:77:LEU:HB2	2.17	0.59
1:F:165:ASP:OD1	1:F:166:MET:N	2.35	0.59
2:V:121:VAL:HG12	2:V:231:PRO:HB2	1.83	0.59
3:H:108:ARG:HH11	3:H:108:ARG:HG2	1.67	0.59
4:I:37:VAL:HB	4:I:66:TYR:CZ	2.37	0.59
3:W:72:GLN:HG2	3:W:75:ARG:NH2	2.17	0.59
4:D:37:VAL:HG22	4:D:82:VAL:HG22	1.85	0.59
1:U:127:ARG:CZ	1:U:127:ARG:HA	2.33	0.59
3:W:127:ASN:ND2	3:W:132:SER:OG	2.34	0.59
1:Z:21:MET:HA	1:Z:77:LEU:O	2.02	0.59
2:B:99:ARG:HB3	5:E:5:ALA:HB1	1.84	0.59
3:C:257:TYR:O	3:C:273:ARG:HG3	2.03	0.59
1:P:37:TRP:CE2	1:P:77:LEU:HB2	2.37	0.59
1:U:37:TRP:HB2	1:U:50:LEU:HD12	1.85	0.59
1:A:182:LYS:O	1:A:185:PHE:HD1	1.86	0.59
2:G:37:SER:HB2	2:G:95:THR:OG1	2.03	0.59
1:U:171:PHE:CE1	2:V:141:LYS:HE3	2.38	0.59
2:V:224:TRP:CE2	2:V:226:GLN:HB2	2.38	0.59
1:P:143:ASP:OD2	1:P:145:GLN:HG2	2.03	0.59
1:Z:79:LYS:NZ	1:Z:83:GLN:OE1	2.35	0.59
2:B:128:VAL:HG23	2:B:238:ALA:HB3	1.84	0.58
2:L:135:GLU:OE2	2:L:143:THR:N	2.36	0.58
1:A:37:TRP:NE1	1:A:77:LEU:HB2	2.18	0.58
2:B:66:GLY:HA2	2:B:87:SER:OG	2.02	0.58
3:C:185:PRO:HD2	3:C:266:LEU:HG	1.86	0.58
3:C:190:THR:HG1	3:C:204:TRP:HE1	1.51	0.58
2:G:29:LYS:HE3	1:U:58:ARG:NE	2.18	0.58
3:W:64:THR:HG22	3:W:68:LYS:HE2	1.85	0.58
3:W:159:TYR:CE1	3:W:164:CYS:HB2	2.39	0.58
1:F:34:PHE:O	1:F:94:LEU:HD12	2.04	0.58
3:M:99:TYR:CE2	5:O:3:VAL:HG23	2.38	0.58
2:B:66:GLY:O	2:B:86:MET:HA	2.04	0.58
3:C:219:ARG:HD2	3:C:256:ARG:HH22	1.67	0.58
1:U:106:ALA:HA	2:V:46:GLN:OE1	2.04	0.58
1:F:37:TRP:CD2	1:F:77:LEU:HD22	2.38	0.58
2:B:78:GLU:OE2	2:B:80:ARG:NH2	2.34	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:38:TYR:HD1	1:F:48:LEU:HA	1.68	0.58
1:K:125:GLN:O	2:L:132:SER:HB2	2.04	0.58
1:Z:40:HIS:HB2	1:Z:46:PRO:HG3	1.86	0.58
3:W:235:PRO:HA	3:W:241:PHE:HD1	1.69	0.57
1:K:198:GLU:HG2	1:K:199:ASP:N	2.19	0.57
2:B:35:TRP:O	2:B:96:CYS:HA	2.04	0.57
2:L:53:LEU:HD22	2:L:58:ASP:HB3	1.86	0.57
1:F:165:ASP:O	2:G:170:GLY:N	2.30	0.57
3:M:9:PHE:HE1	3:M:99:TYR:CE1	2.22	0.57
2:G:135:GLU:OE2	2:G:143:THR:N	2.38	0.57
3:H:69:ALA:HB1	5:J:6:VAL:HG21	1.87	0.57
1:K:5:VAL:HG22	1:K:26:TYR:HB3	1.74	0.57
3:W:107:GLY:C	3:W:169:ARG:HH21	2.07	0.57
2:Q:142:ALA:O	2:Q:196:ARG:HA	2.05	0.57
3:W:191:HIS:HE1	3:W:193:PRO:HG3	1.69	0.57
3:C:28:VAL:HG23	3:C:33:PHE:CE1	2.39	0.57
3:H:9:PHE:CE1	3:H:99:TYR:HE1	2.23	0.57
4:I:37:VAL:HB	4:I:66:TYR:CE2	2.40	0.57
1:K:35:LEU:HB3	1:K:75:PHE:CD2	2.40	0.57
4:N:24:ASN:HB3	4:N:65:LEU:HD11	1.86	0.57
2:V:25:ARG:HG3	2:V:80:ARG:HG2	1.86	0.57
4:D:79:ALA:HB2	4:D:94:LYS:HG2	1.87	0.56
3:H:9:PHE:CE1	3:H:99:TYR:CE1	2.94	0.56
3:H:13:SER:HA	3:H:78:LEU:HD21	1.86	0.56
3:H:131:ARG:HA	3:H:153:ALA:HB1	1.87	0.56
3:H:235:PRO:HG2	4:I:65:LEU:HD22	1.87	0.56
1:P:34:PHE:C	1:P:94:LEU:HD12	2.23	0.56
1:P:158:ILE:HG23	1:P:178:ALA:HB2	1.85	0.56
3:R:84:TYR:HE2	3:R:142:ILE:HB	1.68	0.56
1:A:14:LEU:HD11	1:A:20:VAL:HG22	1.87	0.56
1:F:64:PHE:HE1	1:F:79:LYS:HD2	1.70	0.56
3:W:231:VAL:HG22	3:W:244:TRP:O	2.06	0.56
3:C:224:GLN:HB3	3:C:227:ASP:HB2	1.87	0.56
1:K:116:ILE:HG13	1:K:143:ASP:HA	1.86	0.56
2:L:131:PRO:HD2	2:L:202:TRP:CZ2	2.41	0.56
2:Q:54:ARG:NH1	3:R:76:VAL:HG21	2.20	0.56
4:N:5:PRO:HA	4:N:30:PHE:HB3	1.87	0.56
3:R:262:GLN:HG2	3:R:269:PRO:HB3	1.88	0.56
2:V:172:CYS:HB3	2:V:194:ARG:HB2	1.88	0.56
4:D:23:LEU:HD23	4:D:39:LEU:HD13	1.88	0.56
1:F:116:ILE:HG13	1:F:143:ASP:HA	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:198:GLU:HG2	1:K:199:ASP:H	1.69	0.56
1:Z:182:LYS:HE2	1:Z:184:ASP:OD1	2.06	0.56
3:H:254:GLU:HB3	3:H:274:TRP:HD1	1.71	0.56
2:G:99:ARG:HB2	2:G:103:GLU:CG	2.35	0.56
3:W:97:ILE:HG23	3:W:116:ASP:OD1	2.06	0.56
3:M:235:PRO:O	4:N:10:TYR:OH	2.16	0.55
2:Q:13:TRP:CD1	2:Q:216:TYR:HD2	2.24	0.55
3:W:10:THR:HG23	3:W:96:GLN:HG2	1.87	0.55
1:P:35:LEU:HB3	1:P:75:PHE:CD2	2.41	0.55
3:C:97:ILE:HG23	3:C:116:ASP:OD1	2.06	0.55
4:X:19:LYS:O	4:X:72:PRO:HD2	2.06	0.55
3:R:85:TYR:HE1	3:R:139:ALA:HB3	1.70	0.55
1:U:11:LEU:HD23	1:U:12:VAL:N	2.21	0.55
1:U:49:LEU:HD21	1:U:64:PHE:CD2	2.41	0.55
1:F:163:VAL:HG22	1:F:174:ASN:OD1	2.06	0.55
3:H:13:SER:HB3	3:H:92:SER:HA	1.89	0.55
4:I:57:SER:HB2	4:I:59:ASP:OD1	2.07	0.55
1:A:37:TRP:CD2	1:A:77:LEU:HD22	2.42	0.55
1:F:14:LEU:HD11	1:F:20:VAL:HG22	1.88	0.55
1:F:49:LEU:HG	1:F:50:LEU:HD12	1.88	0.55
2:L:7:LEU:HD23	2:L:28:LEU:HA	1.88	0.55
1:P:64:PHE:CE1	1:P:79:LYS:HD2	2.42	0.55
1:P:186:ALA:O	1:P:189:ASN:HB2	2.07	0.55
4:X:57:SER:HB2	4:X:59:ASP:OD1	2.07	0.55
2:Q:35:TRP:O	2:Q:96:CYS:HA	2.07	0.55
2:G:165:LYS:HD2	3:W:131:ARG:HD2	1.88	0.55
2:L:54:ARG:NH1	3:M:76:VAL:HG21	2.22	0.55
3:M:22:PHE:HB3	3:M:38:SER:HB3	1.89	0.55
2:V:208:HIS:NE2	2:V:210:ARG:HB2	2.21	0.55
1:A:49:LEU:HD21	1:A:64:PHE:CD2	2.42	0.54
1:K:38:TYR:CE1	1:K:48:LEU:HA	2.42	0.54
1:K:126:LEU:HD22	2:L:145:VAL:HG23	1.87	0.54
3:R:253:GLU:HG2	3:R:256:ARG:HD3	1.90	0.54
1:A:64:PHE:HE1	1:A:79:LYS:HD2	1.72	0.54
3:C:230:LEU:HD11	3:C:243:LYS:HE3	1.90	0.54
1:F:38:TYR:CD1	1:F:48:LEU:HA	2.42	0.54
3:C:184:PRO:HB3	3:C:265:GLY:O	2.07	0.54
4:X:37:VAL:HB	4:X:66:TYR:CE2	2.42	0.54
3:H:49:ALA:O	3:H:52:ILE:HG22	2.07	0.54
2:V:5:THR:HG23	2:V:29:LYS:HE2	1.90	0.54
1:K:141:ASP:OD1	2:L:196:ARG:NH1	2.37	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:R:99:TYR:CZ	5:T:3:VAL:HG23	2.43	0.54
2:B:29:LYS:HE3	1:F:58:ARG:NE	2.23	0.54
3:C:273:ARG:HG2	3:C:274:TRP:N	2.22	0.54
3:M:6:ARG:HG3	3:M:6:ARG:NH1	2.23	0.54
1:P:37:TRP:CD2	1:P:77:LEU:HD22	2.43	0.54
2:B:60:GLU:HG2	2:B:61:VAL:N	2.23	0.54
2:V:142:ALA:O	2:V:196:ARG:HA	2.09	0.54
2:B:181:GLN:HB2	2:B:187:SER:HB2	1.90	0.53
3:M:224:GLN:HB3	3:M:227:ASP:HB2	1.90	0.53
1:P:99:ASN:ND2	1:P:101:LYS:O	2.41	0.53
2:Q:17:PRO:HB2	2:Q:20:GLN:HG2	1.90	0.53
3:R:230:LEU:HD21	3:R:243:LYS:HE3	1.88	0.53
3:H:11:SER:HA	3:H:21:ARG:O	2.08	0.53
3:H:216:THR:CG2	3:H:260:HIS:HB2	2.37	0.53
1:P:125:GLN:O	2:Q:132:SER:HB2	2.09	0.53
3:C:159:TYR:OH	5:E:1:VAL:O	2.25	0.53
3:W:230:LEU:HD11	3:W:243:LYS:HE3	1.91	0.53
1:A:21:MET:CE	3:R:149:ALA:HB2	2.37	0.53
1:F:99:ASN:HA	3:H:65:ARG:HD3	1.91	0.53
2:G:35:TRP:O	2:G:96:CYS:HA	2.09	0.53
2:G:228:ARG:HD3	2:G:228:ARG:N	2.24	0.53
3:H:102:ASP:HB2	3:H:111:ARG:HG3	1.88	0.53
1:K:116:ILE:CG1	1:K:143:ASP:HA	2.39	0.53
1:K:17:GLY:HA2	1:K:81:SER:OG	2.07	0.53
1:U:40:HIS:HD2	1:U:46:PRO:HD3	1.73	0.53
1:U:99:ASN:HB3	3:W:65:ARG:NH1	2.23	0.53
3:C:66:ASN:ND2	5:E:4:GLY:HA2	2.24	0.53
1:K:64:PHE:HE1	1:K:79:LYS:HD2	1.70	0.53
4:N:91:LYS:HE3	4:N:93:VAL:HG22	1.91	0.53
1:A:14:LEU:HB2	1:A:18:LEU:HD12	1.90	0.53
3:C:111:ARG:HH22	1:P:169:MET:HG3	1.72	0.53
3:H:211:ALA:HB2	3:H:241:PHE:CE2	2.44	0.53
1:Z:152:LYS:HG3	1:Z:192:ASN:HB3	1.90	0.53
2:G:14:ARG:NH1	2:G:22:VAL:HG23	2.24	0.53
2:G:100:HIS:NE2	5:J:5:ALA:HA	2.24	0.53
3:M:275:GLU:CG	3:M:275:GLU:OE2	2.52	0.53
3:R:131:ARG:HD3	3:R:157:ARG:NH2	2.23	0.53
3:W:123:TYR:OH	3:W:143:THR:OG1	2.21	0.53
1:Z:130:LYS:HG3	1:Z:131:SER:H	1.74	0.53
4:D:80:CYS:O	4:D:92:ILE:HA	2.09	0.53
1:A:130:LYS:HG3	1:A:131:SER:H	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:103:VAL:HA	3:C:108:ARG:O	2.10	0.52
3:C:111:ARG:HH12	1:P:168:SER:HA	1.73	0.52
3:H:23:ILE:HD13	4:I:54:LEU:HB3	1.92	0.52
1:A:37:TRP:CE2	1:A:77:LEU:HB2	2.43	0.52
4:I:54:LEU:HA	4:I:64:LEU:HD21	1.91	0.52
2:Q:123:PRO:HD3	2:Q:231:PRO:HB3	1.91	0.52
1:K:37:TRP:NE1	1:K:77:LEU:HB2	2.24	0.52
1:A:9:GLU:HG2	1:A:12:VAL:HG22	1.92	0.52
1:U:164:LEU:HB3	2:V:172:CYS:SG	2.49	0.52
3:H:1:GLY:N	3:H:105:SER:HB3	2.23	0.52
1:K:113:ILE:HD12	1:K:144:SER:HB3	1.91	0.52
3:M:64:THR:HG22	3:M:68:LYS:HE2	1.92	0.52
1:U:64:PHE:CE1	1:U:79:LYS:HD2	2.45	0.52
2:V:124:PRO:HD3	2:V:215:PHE:CG	2.45	0.52
2:L:136:ILE:HG23	2:L:199:ALA:HB1	1.90	0.52
3:R:3:HIS:ND1	3:R:29:ASP:OD2	2.41	0.52
3:R:211:ALA:HB2	3:R:241:PHE:CE2	2.44	0.52
1:U:98:GLY:O	3:W:65:ARG:HD2	2.09	0.52
4:N:54:LEU:HD11	4:N:62:PHE:HB3	1.91	0.52
3:R:45:MET:CE	3:R:63:GLU:HB3	2.40	0.52
5:J:1:VAL:HG13	5:J:2:VAL:N	2.25	0.52
1:P:126:LEU:HB2	1:P:136:VAL:HG23	1.91	0.52
3:W:47:PRO:HB3	3:W:60:TRP:CH2	2.44	0.52
1:Z:151:SER:HB3	1:Z:158:ILE:HG13	1.91	0.52
3:C:3:HIS:ND1	3:C:29:ASP:OD2	2.42	0.52
3:C:35:ARG:NH2	3:C:46:GLU:OE2	2.42	0.52
1:F:99:ASN:H	3:H:65:ARG:NH1	2.07	0.52
2:G:35:TRP:CZ2	2:G:100:HIS:HB3	2.45	0.52
1:K:156:VAL:HG22	1:K:180:SER:HB2	1.92	0.52
2:L:230:LYS:HG2	2:L:232:VAL:HG13	1.90	0.52
3:R:138:MET:HG3	3:R:139:ALA:N	2.24	0.52
4:X:79:ALA:HA	4:X:94:LYS:HA	1.92	0.52
1:A:139:PHE:HB2	1:A:191:PHE:CZ	2.45	0.52
1:Z:127:ARG:HH21	1:Z:135:SER:HB2	1.76	0.52
1:A:182:LYS:O	1:A:185:PHE:CD1	2.63	0.51
4:D:6:LYS:O	4:D:27:VAL:HA	2.09	0.51
1:P:61:HIS:ND1	1:P:62:GLN:HG3	2.24	0.51
4:S:11:SER:HA	4:S:22:PHE:O	2.09	0.51
1:U:14:LEU:HD12	1:U:18:LEU:CB	2.39	0.51
2:V:38:TRP:CE2	2:V:81:LEU:HB2	2.45	0.51
3:C:80:THR:HG22	3:C:84:TYR:CE1	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:J:1:VAL:HG22	5:J:2:VAL:N	2.26	0.51
4:N:96:ASP:OD1	4:N:97:ARG:N	2.43	0.51
3:W:22:PHE:HB3	3:W:38:SER:HB3	1.91	0.51
4:X:7:ILE:HG12	4:X:27:VAL:HG12	1.92	0.51
2:L:22:VAL:CG1	2:L:83:VAL:HB	2.41	0.51
3:R:185:PRO:HB3	3:R:208:PHE:HB3	1.92	0.51
3:C:219:ARG:HD2	3:C:256:ARG:NH2	2.26	0.51
2:Q:100:HIS:CD2	5:T:6:VAL:H	2.29	0.51
3:W:154:GLU:OE1	3:W:154:GLU:N	2.44	0.51
3:W:167:TRP:HE3	3:W:171:TYR:CE1	2.29	0.51
4:X:54:LEU:HD11	4:X:62:PHE:HB3	1.91	0.51
1:A:14:LEU:HD21	1:A:110:LEU:HD11	1.93	0.51
1:A:125:GLN:O	2:B:132:SER:HB2	2.10	0.51
2:B:67:ALA:HB3	2:B:90:ARG:HH12	1.75	0.51
2:B:99:ARG:HD3	5:E:7:GLY:HA2	1.91	0.51
1:P:68:LEU:HD12	1:P:74:SER:O	2.10	0.51
3:R:58:GLU:HG2	3:R:59:TYR:N	2.23	0.51
3:R:263:HIS:HB3	3:R:266:LEU:HG	1.91	0.51
1:U:93:ALA:HB2	1:U:104:PHE:HA	1.93	0.51
3:W:129:ASP:OD1	3:W:129:ASP:N	2.44	0.51
2:G:224:TRP:HB3	2:G:230:LYS:HD3	1.92	0.51
3:R:99:TYR:CE2	5:T:3:VAL:HG23	2.45	0.51
1:Z:61:HIS:CE1	1:Z:62:GLN:HE21	2.29	0.51
3:C:104:GLY:HA2	3:C:110:LEU:HD11	1.92	0.51
1:P:99:ASN:O	2:Q:101:SER:HB3	2.10	0.51
3:R:103:VAL:HG22	3:R:168:LEU:HD23	1.93	0.51
3:R:133:TRP:NE1	3:R:153:ALA:HB2	2.26	0.51
2:L:51:PHE:HD2	2:L:60:GLU:CD	2.14	0.51
3:M:273:ARG:HG2	3:M:274:TRP:H	1.74	0.51
2:Q:38:TRP:CD2	2:Q:81:LEU:HD22	2.46	0.51
1:U:100:TYR:CD1	2:V:100:HIS:HD2	2.28	0.51
3:W:9:PHE:CE1	3:W:99:TYR:CE2	3.00	0.51
1:Z:126:LEU:HB2	1:Z:136:VAL:HG23	1.92	0.51
2:B:36:MET:HA	2:B:95:THR:O	2.11	0.50
1:K:126:LEU:HB2	1:K:136:VAL:HG23	1.93	0.50
2:L:184:LEU:HB3	2:L:186:ASP:OD1	2.11	0.50
3:M:235:PRO:HA	3:M:241:PHE:HD1	1.75	0.50
4:S:40:LEU:HA	4:S:44:GLU:O	2.12	0.50
1:F:36:PHE:CD1	1:F:51:LYS:HB2	2.46	0.50
2:G:38:TRP:CD2	2:G:81:LEU:HD22	2.46	0.50
1:K:89:LEU:HG	1:K:109:ARG:HH21	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:89:GLY:O	2:B:90:ARG:HD3	2.11	0.50
3:H:86:ASN:CG	1:U:115:HIS:HE2	2.07	0.50
3:R:110:LEU:HB3	3:R:111:ARG:HD2	1.94	0.50
2:V:35:TRP:O	2:V:96:CYS:HA	2.12	0.50
1:A:128:ASP:HB3	1:A:131:SER:O	2.12	0.50
3:C:218:GLN:HA	3:C:222:GLU:O	2.11	0.50
2:L:51:PHE:HZ	2:L:69:TYR:HB3	1.76	0.50
1:P:35:LEU:HG	1:P:94:LEU:HD13	1.93	0.50
2:V:100:HIS:CE1	5:Y:6:VAL:HG22	2.47	0.50
3:R:138:MET:HA	3:R:141:GLN:HG3	1.94	0.50
2:V:54:ARG:HH12	3:W:76:VAL:HG11	1.76	0.50
1:Z:90:TYR:O	1:Z:107:GLY:HA2	2.11	0.50
2:Q:202:TRP:CE3	2:Q:209:PHE:HE2	2.30	0.50
2:G:29:LYS:O	1:U:58:ARG:NH1	2.45	0.50
1:U:176:ALA:HA	2:V:194:ARG:NH2	2.27	0.50
4:D:13:HIS:HB2	4:D:21:ASN:HD21	1.77	0.49
1:F:24:CYS:H	1:F:76:HIS:CD2	2.31	0.49
3:M:66:ASN:ND2	5:O:4:GLY:HA2	2.26	0.49
4:N:70:PHE:CE2	4:N:72:PRO:HB3	2.47	0.49
1:P:60:GLU:HG2	1:P:64:PHE:O	2.11	0.49
3:W:103:VAL:HG11	3:W:165:VAL:HG13	1.93	0.49
4:I:11:SER:HA	4:I:22:PHE:O	2.12	0.49
2:L:214:GLN:HG3	2:L:216:TYR:CE1	2.47	0.49
1:P:24:CYS:HB3	1:P:75:PHE:O	2.12	0.49
2:B:193:SER:C	2:B:194:ARG:HD3	2.32	0.49
4:D:29:GLY:HA2	4:D:61:SER:OG	2.11	0.49
1:K:164:LEU:HD11	2:L:170:GLY:O	2.12	0.49
2:L:55:SER:HB3	3:M:75:ARG:NH2	2.25	0.49
2:L:191:LEU:HG	2:L:192:SER:N	2.27	0.49
1:A:164:LEU:HG	1:A:173:SER:O	2.12	0.49
4:D:40:LEU:HD21	4:D:81:ARG:NH2	2.27	0.49
2:G:25:ARG:HH21	2:G:27:ILE:HD11	1.76	0.49
1:P:126:LEU:HB3	2:Q:129:PHE:HB3	1.94	0.49
3:C:58:GLU:HG2	3:C:59:TYR:N	2.28	0.49
3:C:211:ALA:HB2	3:C:241:PHE:CD2	2.48	0.49
3:M:124:ILE:HG12	3:M:125:ALA:N	2.28	0.49
1:P:164:LEU:HD12	2:Q:172:CYS:HB3	1.94	0.49
3:R:147:TRP:CZ2	5:T:10:LYS:HG2	2.48	0.49
2:V:53:LEU:O	2:V:73:ARG:NH1	2.44	0.49
2:V:201:PHE:HE1	2:V:209:PHE:HE1	1.60	0.49
1:F:106:ALA:HA	2:G:46:GLN:OE1	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:116:ILE:HB	1:K:143:ASP:HA	1.94	0.49
2:L:192:SER:OG	2:L:194:ARG:NH1	2.45	0.49
4:N:39:LEU:CB	4:N:46:ILE:HD12	2.42	0.49
2:V:99:ARG:HG2	5:Y:7:GLY:CA	2.43	0.49
2:V:135:GLU:OE2	2:V:143:THR:N	2.45	0.49
2:G:125:GLU:O	2:G:148:ALA:HA	2.12	0.49
2:G:129:PHE:HB2	2:G:145:VAL:HB	1.94	0.49
3:H:99:TYR:CE2	5:J:3:VAL:HG23	2.48	0.49
2:L:22:VAL:HG13	2:L:83:VAL:HB	1.94	0.49
2:Q:100:HIS:CD2	5:T:6:VAL:HG22	2.48	0.49
1:Z:20:VAL:O	1:Z:78:GLN:HA	2.12	0.49
1:A:169:MET:H	3:H:111:ARG:HH22	1.58	0.49
2:L:28:LEU:HB3	2:L:77:THR:HA	1.95	0.49
2:Q:201:PHE:O	2:Q:201:PHE:HD1	1.95	0.49
3:R:45:MET:HE2	3:R:63:GLU:HB3	1.94	0.49
1:U:191:PHE:O	1:U:196:ILE:HG13	2.13	0.49
4:X:54:LEU:HA	4:X:64:LEU:HD21	1.95	0.49
1:A:34:PHE:CE1	1:A:51:LYS:HD2	2.36	0.48
2:Q:157:GLU:HB2	2:Q:214:GLN:HB3	1.95	0.48
1:P:34:PHE:O	1:P:94:LEU:HA	2.13	0.48
3:W:80:THR:HG22	3:W:84:TYR:CE1	2.48	0.48
3:H:58:GLU:HG2	3:H:59:TYR:N	2.28	0.48
3:M:207:GLY:HA2	3:M:240:THR:HB	1.93	0.48
1:Z:16:GLU:HA	1:Z:82:ALA:HB3	1.95	0.48
3:C:233:THR:HG22	3:C:243:LYS:CD	2.32	0.48
2:L:32:GLN:NE2	3:M:150:ALA:HB2	2.29	0.48
1:P:34:PHE:HB2	1:P:95:SER:HB3	1.95	0.48
1:P:94:LEU:HD12	1:P:95:SER:H	1.79	0.48
2:V:13:TRP:CZ2	2:V:15:LEU:HG	2.48	0.48
3:W:235:PRO:HG2	4:X:65:LEU:HD22	1.94	0.48
1:F:26:TYR:CD1	1:F:35:LEU:HD21	2.49	0.48
2:G:39:TYR:CE1	2:G:105:LEU:HD21	2.48	0.48
3:H:69:ALA:HB1	5:J:6:VAL:CG2	2.44	0.48
1:K:164:LEU:HD21	2:L:170:GLY:HA2	1.94	0.48
3:M:186:LYS:N	3:M:186:LYS:HD2	2.28	0.48
2:V:162:VAL:HA	2:V:208:HIS:O	2.12	0.48
3:C:97:ILE:HD13	3:C:114:ARG:HH21	1.78	0.48
3:C:146:LYS:HE2	5:E:8:VAL:CG1	2.43	0.48
1:K:151:SER:HB3	1:K:158:ILE:HG13	1.95	0.48
3:M:103:VAL:HG13	3:M:168:LEU:HD23	1.94	0.48
1:Z:143:ASP:CG	1:Z:145:GLN:HG2	2.34	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:40:HIS:ND1	1:K:46:PRO:HG3	2.28	0.48
3:M:184:PRO:HB3	3:M:265:GLY:O	2.13	0.48
1:P:191:PHE:CD1	1:P:196:ILE:HG21	2.49	0.48
2:Q:121:VAL:HG12	2:Q:231:PRO:HB2	1.96	0.48
3:R:217:TRP:CE2	3:R:247:VAL:HG12	2.48	0.48
1:U:126:LEU:HD21	2:V:143:THR:O	2.14	0.48
2:L:193:SER:C	2:L:194:ARG:HD3	2.34	0.48
1:P:159:THR:CG2	1:P:177:VAL:H	2.27	0.48
3:R:13:SER:CB	3:R:93:HIS:H	2.25	0.48
3:C:99:TYR:CE2	5:E:3:VAL:HG23	2.49	0.48
3:H:258:THR:HG1	3:H:260:HIS:HE2	1.61	0.48
2:Q:202:TRP:HE3	2:Q:209:PHE:HE2	1.61	0.48
2:L:181:GLN:O	2:L:187:SER:HB2	2.14	0.48
3:H:231:VAL:HB	4:I:8:GLN:OE1	2.13	0.47
1:P:143:ASP:CG	1:P:145:GLN:HG2	2.34	0.47
1:P:171:PHE:CE1	1:P:173:SER:HB3	2.48	0.47
1:Z:36:PHE:HD1	1:Z:51:LYS:HB3	1.79	0.47
3:C:63:GLU:CD	5:E:1:VAL:HG23	2.34	0.47
3:R:236:ALA:HB3	3:R:238:ASP:OD1	2.14	0.47
3:W:235:PRO:HA	3:W:241:PHE:CD1	2.49	0.47
1:A:61:HIS:ND1	1:A:62:GLN:HG3	2.29	0.47
1:A:170:ASP:HB3	3:H:108:ARG:HH22	1.79	0.47
1:K:116:ILE:CB	1:K:143:ASP:HA	2.45	0.47
1:Z:37:TRP:CD1	1:Z:77:LEU:HD13	2.49	0.47
1:Z:69:HIS:HB2	1:Z:74:SER:OG	2.13	0.47
2:L:36:MET:O	2:L:52:THR:HG23	2.13	0.47
1:P:64:PHE:CD1	1:P:79:LYS:HD2	2.49	0.47
1:P:101:LYS:HB3	2:Q:49:TRP:CD2	2.49	0.47
1:Z:89:LEU:HA	1:Z:89:LEU:HD23	1.66	0.47
2:G:100:HIS:CD2	5:J:5:ALA:HA	2.50	0.47
3:H:45:MET:HG2	3:H:63:GLU:HB3	1.96	0.47
3:M:272:LEU:HD12	3:M:272:LEU:HA	1.78	0.47
2:Q:47:LEU:HD23	2:Q:47:LEU:HA	1.68	0.47
1:U:99:ASN:O	2:V:101:SER:HB3	2.13	0.47
3:W:166:GLU:HG2	3:W:167:TRP:N	2.30	0.47
2:B:53:LEU:O	2:B:73:ARG:NH1	2.48	0.47
1:F:155:ASP:HB2	1:F:182:LYS:HD2	1.95	0.47
2:G:38:TRP:CE2	2:G:81:LEU:HB2	2.49	0.47
1:K:25:THR:HA	1:K:73:SER:O	2.15	0.47
3:W:253:GLU:HB3	3:W:256:ARG:HD3	1.95	0.47
2:B:125:GLU:O	2:B:148:ALA:HA	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:112:GLY:CA	3:C:160:LEU:HD13	2.40	0.47
1:F:134:LYS:HE3	1:F:134:LYS:HB2	1.70	0.47
1:F:136:VAL:HG12	1:F:179:TRP:HB3	1.95	0.47
2:G:53:LEU:HD22	2:G:58:ASP:HB3	1.96	0.47
2:G:78:GLU:OE2	2:G:80:ARG:NH2	2.47	0.47
3:H:51:TRP:CZ2	3:H:179:LEU:HD11	2.50	0.47
4:I:51:HIS:HA	4:I:65:LEU:O	2.15	0.47
1:U:30:TYR:CD1	1:U:96:GLU:HG2	2.49	0.47
1:U:100:TYR:HB3	2:V:52:THR:HG21	1.96	0.47
3:W:99:TYR:CZ	5:Y:3:VAL:HG23	2.50	0.47
1:A:155:ASP:HB2	1:A:182:LYS:HD2	1.97	0.47
1:F:79:LYS:NZ	1:F:86:ASP:OD2	2.47	0.47
3:H:5:MET:HB2	3:H:168:LEU:HD13	1.96	0.47
3:H:23:ILE:HG21	4:I:54:LEU:HB3	1.97	0.47
3:H:99:TYR:CZ	5:J:3:VAL:HG23	2.50	0.47
2:L:38:TRP:O	2:L:50:LEU:HB2	2.15	0.47
1:P:11:LEU:C	1:P:11:LEU:HD23	2.35	0.47
2:V:61:VAL:HA	2:V:69:TYR:O	2.14	0.47
1:A:21:MET:HE1	3:R:149:ALA:HB2	1.95	0.47
2:B:58:ASP:O	2:B:72:THR:HA	2.14	0.47
2:B:230:LYS:HG2	2:B:232:VAL:HG13	1.97	0.47
3:C:51:TRP:CZ2	3:C:179:LEU:HD11	2.49	0.47
1:K:23:ASN:HA	1:K:76:HIS:ND1	2.29	0.47
1:Z:83:GLN:O	1:Z:112:VAL:HG21	2.15	0.47
1:A:87:SER:HA	1:A:110:LEU:O	2.15	0.46
4:I:25:CYS:O	4:I:65:LEU:HD12	2.15	0.46
2:L:89:GLY:C	2:L:90:ARG:HG3	2.35	0.46
2:L:193:SER:O	2:L:194:ARG:HD3	2.15	0.46
1:P:35:LEU:CD1	1:P:94:LEU:HD13	2.45	0.46
2:G:140:GLN:OE1	2:G:140:GLN:HA	2.14	0.46
1:K:166:MET:H	2:L:170:GLY:H	1.63	0.46
4:N:79:ALA:HA	4:N:94:LYS:HA	1.98	0.46
4:S:29:GLY:HA2	4:S:61:SER:OG	2.15	0.46
1:Z:40:HIS:ND1	1:Z:46:PRO:HG3	2.30	0.46
3:C:138:MET:HA	3:C:141:GLN:HB2	1.97	0.46
1:P:116:ILE:HG13	1:P:143:ASP:HA	1.96	0.46
1:P:171:PHE:CZ	1:P:173:SER:HB3	2.49	0.46
2:Q:28:LEU:HD23	2:Q:77:THR:HG22	1.97	0.46
1:Z:36:PHE:HE1	1:Z:51:LYS:HD2	1.79	0.46
3:C:159:TYR:CE2	5:E:3:VAL:HA	2.51	0.46
2:G:36:MET:HB2	2:G:73:ARG:NH1	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:176:LYS:HB2	3:H:180:GLN:HG3	1.97	0.46
1:K:127:ARG:HA	1:K:127:ARG:HD3	1.73	0.46
1:P:195:ILE:HG22	1:P:195:ILE:O	2.15	0.46
1:U:37:TRP:CE2	1:U:77:LEU:HB2	2.50	0.46
2:V:7:LEU:HD22	2:V:26:CYS:SG	2.55	0.46
2:V:35:TRP:CZ3	2:V:54:ARG:HB2	2.50	0.46
1:A:123:VAL:HA	1:A:138:LEU:O	2.15	0.46
2:B:99:ARG:HH12	3:C:155:GLN:CG	2.27	0.46
2:G:33:TYR:N	2:G:33:TYR:CD1	2.84	0.46
2:G:38:TRP:O	2:G:50:LEU:HB2	2.14	0.46
1:K:37:TRP:CE2	1:K:77:LEU:HB2	2.50	0.46
1:Z:126:LEU:O	1:Z:127:ARG:NH2	2.48	0.46
2:B:47:LEU:HD23	2:B:47:LEU:HA	1.74	0.46
2:G:69:TYR:OH	2:G:90:ARG:NH1	2.48	0.46
2:L:135:GLU:CD	2:L:143:THR:H	2.19	0.46
4:N:21:ASN:OD1	4:N:22:PHE:N	2.39	0.46
3:R:15:PRO:C	3:R:17:ARG:H	2.19	0.46
1:U:30:TYR:HE2	3:W:62:GLN:HB2	1.81	0.46
1:Z:116:ILE:CG1	1:Z:143:ASP:HA	2.42	0.46
2:L:205:PRO:HA	2:L:242:GLY:C	2.35	0.46
2:V:205:PRO:HA	2:V:242:GLY:C	2.36	0.46
2:B:81:LEU:HD23	2:B:81:LEU:HA	4.56	0.46
1:F:4:SER:HB2	1:F:103:VAL:HG11	1.98	0.46
3:H:97:ILE:HG23	3:H:116:ASP:OD1	2.16	0.46
1:K:23:ASN:OD1	1:K:76:HIS:CE1	2.69	0.46
2:L:27:ILE:HA	2:L:77:THR:O	2.15	0.46
2:L:154:ASP:HB2	2:L:177:PRO:HG3	1.97	0.46
4:N:21:ASN:O	4:N:69:GLU:HG3	2.15	0.46
1:Z:152:LYS:H	1:Z:192:ASN:HD22	1.63	0.46
3:R:52:ILE:O	3:R:52:ILE:HG13	2.14	0.46
2:Q:35:TRP:CZ3	2:Q:54:ARG:HB2	2.51	0.46
3:W:231:VAL:HG21	3:W:244:TRP:CD1	2.50	0.46
1:A:94:LEU:HG	1:A:95:SER:N	2.31	0.45
3:C:21:ARG:HH21	3:C:23:ILE:HD11	1.80	0.45
3:C:44:ARG:HG2	3:C:64:THR:HG21	1.97	0.45
1:F:126:LEU:HD22	2:G:145:VAL:HG23	1.97	0.45
1:A:79:LYS:HG2	1:A:80:SER:N	2.32	0.45
1:K:164:LEU:HD12	2:L:172:CYS:CB	2.46	0.45
2:L:89:GLY:O	2:L:90:ARG:HG3	2.16	0.45
3:M:185:PRO:HG2	3:M:266:LEU:HD11	1.98	0.45
4:N:54:LEU:HD21	4:N:62:PHE:CD1	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:P:106:ALA:HA	2:Q:46:GLN:OE1	2.16	0.45
3:R:216:THR:CG2	3:R:260:HIS:HB2	2.44	0.45
4:X:64:LEU:HD23	4:X:64:LEU:HA	1.60	0.45
1:F:17:GLY:HA2	1:F:81:SER:OG	2.16	0.45
4:S:79:ALA:HA	4:S:94:LYS:HA	1.97	0.45
4:D:24:ASN:HB3	4:D:65:LEU:HD11	1.98	0.45
2:G:36:MET:HB3	2:G:79:LEU:HD22	1.98	0.45
4:N:17:ASN:HA	4:N:72:PRO:O	2.16	0.45
2:V:131:PRO:HG2	2:V:142:ALA:HB1	1.97	0.45
1:A:165:ASP:OD1	1:A:166:MET:N	2.50	0.45
4:D:40:LEU:HB2	4:D:79:ALA:HB3	1.97	0.45
1:F:100:TYR:CE1	2:G:100:HIS:ND1	2.83	0.45
3:R:261:VAL:C	3:R:262:GLN:HG3	2.36	0.45
2:V:205:PRO:HA	2:V:242:GLY:CA	2.46	0.45
3:W:58:GLU:OE1	3:W:58:GLU:N	2.39	0.45
3:W:167:TRP:HE3	3:W:171:TYR:HE1	1.65	0.45
1:K:79:LYS:HG2	1:K:80:SER:N	2.32	0.45
2:B:5:THR:O	1:F:58:ARG:HD3	2.15	0.45
2:B:161:TRP:CE3	2:B:166:GLU:N	2.85	0.45
1:F:37:TRP:CH2	1:F:92:CYS:HB2	2.52	0.45
2:G:29:LYS:HE3	1:U:58:ARG:CZ	2.46	0.45
4:N:41:LYS:HG3	4:N:78:TYR:CE1	2.52	0.45
4:S:79:ALA:HB2	4:S:94:LYS:HG2	1.98	0.45
3:W:219:ARG:HE	3:W:256:ARG:HH22	1.65	0.45
3:C:80:THR:O	3:C:84:TYR:HD1	2.00	0.45
1:F:164:LEU:HB3	2:G:172:CYS:HB2	1.98	0.45
2:G:38:TRP:NE1	2:G:81:LEU:HB2	2.32	0.45
1:P:121:PRO:O	1:P:200:THR:HA	2.17	0.45
3:W:32:GLN:NE2	3:W:35:ARG:HB2	2.31	0.45
1:A:172:LYS:HE3	3:H:108:ARG:NH2	2.32	0.45
3:C:78:LEU:HA	3:C:95:ILE:HD11	1.99	0.45
4:D:7:ILE:HG12	4:D:27:VAL:HG12	1.98	0.45
2:L:162:VAL:HG22	2:L:209:PHE:HD1	1.82	0.45
1:P:186:ALA:HB3	1:P:189:ASN:ND2	2.32	0.45
1:U:166:MET:O	1:U:170:ASP:N	2.49	0.45
1:U:186:ALA:HB3	1:U:189:ASN:OD1	2.16	0.45
2:B:99:ARG:HH22	3:C:155:GLN:HB3	1.82	0.45
3:C:82:ARG:HG2	3:C:82:ARG:HH11	1.82	0.45
1:K:5:VAL:HG23	1:K:26:TYR:HB2	1.98	0.45
3:M:233:THR:OG1	3:M:243:LYS:HD2	2.17	0.45
3:W:146:LYS:O	3:W:149:ALA:HB3	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:4:VAL:HG12	2:B:4:VAL:O	2.17	0.44
2:B:100:HIS:CD2	5:E:6:VAL:N	2.84	0.44
3:C:63:GLU:OE2	5:E:1:VAL:HA	2.16	0.44
3:H:51:TRP:CZ2	3:H:179:LEU:HD21	2.53	0.44
3:H:131:ARG:NH1	3:H:157:ARG:HH12	2.15	0.44
2:L:51:PHE:CZ	2:L:69:TYR:HB3	2.52	0.44
3:M:35:ARG:HD2	4:N:53:ASP:OD1	2.17	0.44
2:Q:99:ARG:HA	5:T:7:GLY:HA2	1.98	0.44
3:W:184:PRO:HB3	3:W:265:GLY:O	2.16	0.44
3:W:224:GLN:HB3	3:W:227:ASP:HB2	1.99	0.44
1:Z:84:LEU:HA	1:Z:84:LEU:HD23	1.71	0.44
2:G:202:TRP:CE3	2:G:209:PHE:HE2	2.35	0.44
1:P:21:MET:HE2	1:P:76:HIS:HB3	1.99	0.44
4:X:80:CYS:O	4:X:92:ILE:HA	2.16	0.44
1:Z:21:MET:O	1:Z:22:LEU:HD23	2.17	0.44
1:A:167:ARG:HB3	3:H:110:LEU:O	2.17	0.44
4:I:48:LYS:HD2	4:I:48:LYS:O	2.17	0.44
4:N:59:ASP:O	4:N:60:TRP:HB2	2.17	0.44
3:R:231:VAL:HG21	3:R:244:TRP:CZ2	2.52	0.44
1:Z:61:HIS:ND1	1:Z:62:GLN:HG3	2.33	0.44
1:Z:169:MET:HB2	1:Z:169:MET:HE3	1.63	0.44
2:B:39:TYR:CD2	2:B:49:TRP:HA	2.53	0.44
2:G:35:TRP:HB2	2:G:97:SER:O	2.17	0.44
4:N:80:CYS:O	4:N:92:ILE:HA	2.18	0.44
1:P:37:TRP:CG	1:P:77:LEU:HD22	2.52	0.44
1:A:88:ALA:HB3	1:A:90:TYR:CE1	2.52	0.44
2:G:50:LEU:HB3	2:G:51:PHE:HD1	1.78	0.44
4:I:6:LYS:O	4:I:27:VAL:HA	2.18	0.44
3:M:209:TYR:HD2	3:M:239:GLY:O	2.00	0.44
2:Q:131:PRO:HD2	2:Q:202:TRP:CZ2	2.53	0.44
2:V:11:PRO:HD2	2:V:24:LEU:HD22	2.00	0.44
1:A:79:LYS:NZ	1:A:86:ASP:OD2	2.39	0.44
1:A:135:SER:HG	1:A:185:PHE:HZ	1.63	0.44
3:C:72:GLN:HG2	3:C:75:ARG:NH2	2.33	0.44
3:H:160:LEU:HD23	3:H:160:LEU:HA	1.67	0.44
1:K:91:TYR:CE1	2:L:47:LEU:HD12	2.53	0.44
3:M:44:ARG:NH1	3:M:61:ASP:OD1	2.40	0.44
4:N:13:HIS:HB2	4:N:21:ASN:ND2	2.33	0.44
2:Q:149:THR:HB	2:Q:180:GLU:OE2	2.17	0.44
1:F:7:GLN:HE22	1:F:107:GLY:HA2	1.82	0.44
1:P:196:ILE:HD12	1:P:202:PHE:HZ	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:R:15:PRO:CD	3:R:92:SER:HB2	2.48	0.44
4:S:54:LEU:HA	4:S:64:LEU:HD21	2.00	0.44
2:V:91:THR:C	2:V:92:LEU:HD23	2.38	0.44
1:Z:152:LYS:HB3	1:Z:152:LYS:HE2	1.76	0.44
2:B:72:THR:O	2:B:79:LEU:HD12	2.18	0.44
3:H:35:ARG:HG2	3:H:36:PHE:N	2.33	0.44
3:W:203:CYS:HB2	3:W:217:TRP:CZ2	2.53	0.44
3:C:186:LYS:N	3:C:186:LYS:HD2	2.33	0.44
3:H:108:ARG:HH11	3:H:108:ARG:CG	2.31	0.44
2:L:15:LEU:HD13	2:L:116:LEU:HD11	2.00	0.44
3:M:203:CYS:HB2	3:M:217:TRP:CZ2	2.53	0.44
3:H:235:PRO:HA	3:H:241:PHE:HD1	1.81	0.43
1:P:126:LEU:HB2	1:P:136:VAL:CG2	2.48	0.43
2:Q:232:VAL:O	2:Q:234:GLN:NE2	2.46	0.43
4:S:64:LEU:HA	4:S:64:LEU:HD23	1.75	0.43
1:Z:122:ALA:HB2	1:Z:201:PHE:CD2	2.53	0.43
2:B:7:LEU:HD23	2:B:7:LEU:HA	1.44	0.43
1:K:88:ALA:HB3	1:K:90:TYR:CE1	2.53	0.43
4:N:5:PRO:CA	4:N:30:PHE:HB3	2.47	0.43
3:R:159:TYR:CE1	5:T:3:VAL:HA	2.52	0.43
4:X:12:ARG:HB3	4:X:22:PHE:HB2	2.00	0.43
3:H:78:LEU:HA	3:H:95:ILE:HD11	1.99	0.43
3:H:102:ASP:HB3	3:H:110:LEU:HD12	2.00	0.43
1:K:24:CYS:H	1:K:76:HIS:CE1	2.36	0.43
1:P:90:TYR:O	1:P:107:GLY:HA2	2.18	0.43
1:U:185:PHE:CE1	1:U:190:ALA:HB2	2.53	0.43
2:V:60:GLU:HG2	2:V:61:VAL:N	2.33	0.43
1:A:22:LEU:HD22	1:A:108:THR:HG21	2.00	0.43
2:G:35:TRP:CE2	2:G:100:HIS:HB3	2.53	0.43
1:P:136:VAL:HG12	1:P:179:TRP:HB3	2.01	0.43
1:A:153:ASP:OD1	1:A:154:SER:N	2.51	0.43
1:F:50:LEU:HG	1:F:61:HIS:HB3	2.01	0.43
1:U:21:MET:HA	1:U:77:LEU:O	2.19	0.43
2:V:100:HIS:CE1	5:Y:6:VAL:H	2.35	0.43
2:V:136:ILE:HG23	2:V:199:ALA:CB	2.46	0.43
1:A:116:ILE:CG1	1:A:143:ASP:HA	2.44	0.43
3:C:216:THR:CG2	3:C:260:HIS:HB2	2.47	0.43
1:K:84:LEU:HA	1:K:84:LEU:HD23	1.76	0.43
1:K:126:LEU:HD22	2:L:145:VAL:CG2	2.49	0.43
3:W:50:PRO:HA	3:W:53:GLU:HG3	2.00	0.43
3:W:185:PRO:HD2	3:W:266:LEU:HG	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:157:TYR:O	1:A:178:ALA:HA	2.19	0.43
3:C:191:HIS:CE1	3:C:193:PRO:HG3	2.49	0.43
1:K:130:LYS:HG3	1:K:131:SER:H	1.82	0.43
2:L:112:ARG:NH1	2:L:155:HIS:ND1	2.66	0.43
2:L:212:GLN:HG3	2:L:235:ILE:CG2	2.49	0.43
1:P:89:LEU:HD23	1:P:89:LEU:HA	1.91	0.43
2:V:15:LEU:HA	2:V:15:LEU:HD23	1.83	0.43
3:W:112:GLY:CA	3:W:160:LEU:HD13	2.44	0.43
1:Z:37:TRP:CZ3	1:Z:90:TYR:HB3	2.53	0.43
1:A:21:MET:HA	1:A:77:LEU:O	2.18	0.43
2:B:59:LYS:HA	2:B:71:ALA:O	2.18	0.43
3:C:50:PRO:O	3:C:53:GLU:HG3	2.19	0.43
3:C:266:LEU:HD13	3:C:270:LEU:HG	2.01	0.43
2:G:150:GLY:N	2:G:180:GLU:OE2	2.41	0.43
1:K:38:TYR:HD1	1:K:47:ARG:O	2.02	0.43
2:L:160:TRP:CE3	2:L:195:LEU:HD22	2.54	0.43
1:U:127:ARG:NH2	1:U:134:LYS:O	2.52	0.43
1:Z:123:VAL:HA	1:Z:138:LEU:O	2.19	0.43
4:D:40:LEU:HD21	4:D:81:ARG:CZ	2.48	0.43
1:F:35:LEU:HB3	1:F:75:PHE:CD2	2.53	0.43
2:G:100:HIS:CD2	5:J:6:VAL:HG22	2.54	0.43
2:L:7:LEU:HD23	2:L:7:LEU:HA	1.83	0.43
2:V:38:TRP:NE1	2:V:81:LEU:HB2	2.33	0.43
2:V:224:TRP:CB	2:V:230:LYS:HG2	2.48	0.43
3:W:159:TYR:CE2	5:Y:3:VAL:HA	2.54	0.43
1:A:121:PRO:HG3	1:A:197:PRO:HG2	2.01	0.43
4:I:39:LEU:HB3	4:I:46:ILE:HD12	1.99	0.43
3:M:96:GLN:NE2	4:N:62:PHE:CE1	2.87	0.43
2:Q:224:TRP:CE2	2:Q:226:GLN:HB2	2.53	0.43
2:V:89:GLY:C	2:V:90:ARG:HG2	2.39	0.43
1:Z:195:ILE:H	1:Z:195:ILE:HG12	1.65	0.43
2:B:28:LEU:HB3	2:B:77:THR:HG22	2.00	0.42
2:B:91:THR:O	2:B:92:LEU:HD23	2.19	0.42
3:C:59:TYR:HE2	3:C:60:TRP:CZ3	2.36	0.42
3:C:72:GLN:C	3:C:74:ASP:H	2.22	0.42
1:F:125:GLN:O	2:G:132:SER:HB2	2.18	0.42
1:P:89:LEU:HD23	1:P:109:ARG:HA	2.01	0.42
2:V:89:GLY:O	2:V:90:ARG:HG2	2.19	0.42
3:W:234:ARG:HD2	4:X:10:TYR:CE1	2.53	0.42
2:B:131:PRO:HG2	2:B:142:ALA:HB1	2.01	0.42
3:C:102:ASP:HB2	3:C:111:ARG:HG3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:11:PRO:HD2	2:L:24:LEU:HD22	2.01	0.42
3:M:28:VAL:HG23	3:M:33:PHE:CE1	2.54	0.42
3:R:26:GLY:O	3:R:27:TYR:HD1	2.02	0.42
2:V:99:ARG:HG2	5:Y:7:GLY:HA2	2.01	0.42
1:A:194:SER:OG	1:A:195:ILE:N	2.52	0.42
2:B:33:TYR:N	2:B:33:TYR:CD1	2.87	0.42
2:B:100:HIS:NE2	5:E:5:ALA:HA	2.34	0.42
1:F:36:PHE:HD1	1:F:51:LYS:HB2	1.84	0.42
2:G:128:VAL:HG23	2:G:238:ALA:HB3	2.00	0.42
1:K:14:LEU:N	1:K:14:LEU:HD23	2.34	0.42
1:K:165:ASP:O	1:K:166:MET:HB3	2.18	0.42
3:M:206:LEU:HD22	3:M:242:GLN:HG2	2.02	0.42
1:P:25:THR:HA	1:P:73:SER:O	2.20	0.42
3:R:208:PHE:CE1	3:R:241:PHE:HB2	2.55	0.42
1:U:37:TRP:HB2	1:U:50:LEU:CD1	2.48	0.42
2:V:206:ARG:CZ	2:V:206:ARG:HB3	2.47	0.42
1:F:116:ILE:CG1	1:F:143:ASP:HA	2.49	0.42
2:L:40:GLN:HB3	2:L:50:LEU:HD11	2.00	0.42
1:P:49:LEU:HA	1:P:49:LEU:HD23	1.82	0.42
2:Q:38:TRP:CG	2:Q:81:LEU:HD22	2.54	0.42
3:R:112:GLY:CA	3:R:160:LEU:HD13	2.47	0.42
3:W:117:ALA:HB1	3:W:121:LYS:O	2.19	0.42
1:Z:37:TRP:CG	1:Z:77:LEU:HD22	2.54	0.42
1:A:166:MET:C	1:A:168:SER:N	2.73	0.42
1:F:36:PHE:HD1	1:F:51:LYS:CB	2.31	0.42
2:G:126:VAL:HG12	2:G:238:ALA:HB2	2.01	0.42
2:G:227:ASP:HB2	2:G:228:ARG:NH1	2.35	0.42
4:I:1:ILE:HG23	4:I:2:GLN:HG3	2.02	0.42
3:M:167:TRP:HE3	3:M:171:TYR:HH	1.64	0.42
3:M:274:TRP:HE1	3:M:276:LEU:HD23	1.83	0.42
3:R:14:ARG:HB3	3:R:17:ARG:HB2	2.01	0.42
2:G:131:PRO:HD2	2:G:202:TRP:CZ2	2.55	0.42
3:H:33:PHE:CD2	3:H:34:VAL:HG13	2.55	0.42
2:Q:33:TYR:HE2	2:Q:106:TYR:CE2	2.38	0.42
1:U:89:LEU:HA	1:U:89:LEU:HD23	1.44	0.42
3:W:72:GLN:HG2	3:W:75:ARG:HH22	1.83	0.42
1:A:37:TRP:CH2	1:A:92:CYS:HB2	2.54	0.42
1:A:106:ALA:HA	2:B:46:GLN:OE1	2.19	0.42
1:K:98:GLY:O	3:M:65:ARG:HD2	2.19	0.42
2:Q:60:GLU:HG2	2:Q:61:VAL:N	2.35	0.42
3:R:238:ASP:OD1	3:R:238:ASP:N	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:151:SER:HB3	1:A:158:ILE:HG13	2.01	0.42
1:A:167:ARG:O	3:H:111:ARG:NH1	2.53	0.42
1:K:29:ILE:HG21	1:K:29:ILE:HD13	1.80	0.42
2:L:40:GLN:HG2	2:L:50:LEU:HD21	2.01	0.42
3:M:234:ARG:HD2	4:N:10:TYR:CE1	2.55	0.42
1:A:37:TRP:CZ3	1:A:92:CYS:HB2	2.55	0.42
3:C:72:GLN:C	3:C:74:ASP:N	2.73	0.42
1:F:91:TYR:CD2	2:G:47:LEU:HD11	2.55	0.42
3:H:64:THR:HG22	3:H:68:LYS:HE2	2.02	0.42
3:M:84:TYR:HE2	3:M:142:ILE:HB	1.85	0.42
4:N:29:GLY:HA2	4:N:61:SER:OG	2.20	0.42
1:P:127:ARG:HA	1:P:127:ARG:HD3	1.69	0.42
1:U:36:PHE:HD1	1:U:51:LYS:CB	2.32	0.42
1:U:50:LEU:HD12	1:U:50:LEU:O	2.19	0.42
1:U:152:LYS:HG2	1:U:193:ASN:HD21	1.84	0.42
3:W:181:ARG:O	3:W:181:ARG:HG3	2.20	0.42
3:C:63:GLU:OE2	5:E:1:VAL:HG23	2.20	0.42
3:C:123:TYR:CE1	3:C:140:ALA:HB2	2.55	0.42
1:F:171:PHE:CE2	2:G:141:LYS:HE3	2.55	0.42
1:K:89:LEU:HD23	1:K:89:LEU:HA	1.80	0.42
2:Q:121:VAL:O	2:Q:231:PRO:HG3	2.20	0.42
3:R:166:GLU:O	3:R:169:ARG:N	2.53	0.42
3:W:206:LEU:HD22	3:W:242:GLN:HB3	2.00	0.42
1:K:5:VAL:HG22	1:K:25:THR:O	2.20	0.41
2:L:21:ALA:HA	2:L:84:ALA:HA	2.02	0.41
2:V:224:TRP:CZ2	2:V:226:GLN:HB2	2.55	0.41
3:W:189:MET:CE	3:W:272:LEU:HB3	2.50	0.41
4:X:55:SER:HB3	4:X:63:TYR:CE1	2.55	0.41
2:B:39:TYR:CE1	2:B:105:LEU:HD21	2.55	0.41
4:D:79:ALA:HA	4:D:94:LYS:HA	2.02	0.41
4:I:31:HIS:ND1	4:I:32:PRO:HA	2.35	0.41
2:L:32:GLN:C	2:L:33:TYR:HD1	2.22	0.41
3:M:124:ILE:HD11	3:M:133:TRP:HB3	2.01	0.41
1:P:13:THR:O	1:P:14:LEU:HD23	2.19	0.41
4:X:77:GLU:HB3	4:X:94:LYS:HE2	2.02	0.41
1:A:16:GLU:OE2	1:A:114:ALA:HA	2.19	0.41
1:A:182:LYS:HB3	1:A:184:ASP:OD1	2.20	0.41
1:A:192:ASN:C	1:A:194:SER:H	2.23	0.41
2:B:224:TRP:HB2	2:B:230:LYS:HG3	2.02	0.41
3:C:150:ALA:CB	5:E:8:VAL:HG21	2.51	0.41
1:F:8:LYS:HG2	1:F:23:ASN:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:40:HIS:HB2	1:K:46:PRO:HG3	2.03	0.41
1:P:162:CYS:O	1:P:174:ASN:HA	2.19	0.41
4:S:20:SER:OG	4:S:69:GLU:OE2	2.35	0.41
1:U:16:GLU:OE1	1:U:172:LYS:NZ	2.46	0.41
3:W:236:ALA:HB3	3:W:238:ASP:OD1	2.20	0.41
1:A:40:HIS:ND1	1:A:46:PRO:HG3	2.36	0.41
2:L:204:ASN:O	2:L:242:GLY:HA3	2.21	0.41
3:M:68:LYS:HE3	3:M:68:LYS:HB2	1.67	0.41
2:Q:52:THR:O	2:Q:53:LEU:HD23	2.21	0.41
2:V:101:SER:O	2:V:102:ALA:HB3	2.21	0.41
3:W:8:PHE:CE2	3:W:98:MET:HG3	2.55	0.41
3:C:129:ASP:OD1	3:C:129:ASP:N	2.54	0.41
1:K:149:SER:OG	1:K:193:ASN:HA	2.21	0.41
3:M:13:SER:HB3	3:M:78:LEU:HD22	2.03	0.41
3:M:185:PRO:HD2	3:M:266:LEU:HG	2.02	0.41
1:P:14:LEU:HD12	1:P:20:VAL:HG22	2.02	0.41
1:U:20:VAL:O	1:U:78:GLN:HA	2.21	0.41
3:W:189:MET:SD	3:W:274:TRP:HB2	2.60	0.41
3:W:201:LEU:HD12	3:W:249:VAL:HG11	2.03	0.41
2:G:170:GLY:O	2:G:195:LEU:HA	2.21	0.41
2:L:41:GLN:HE21	2:L:45:LYS:HD2	1.86	0.41
2:L:141:LYS:HE2	2:L:141:LYS:HB2	1.89	0.41
2:Q:147:LEU:HA	2:Q:147:LEU:HD23	1.77	0.41
3:W:9:PHE:HB2	3:W:97:ILE:HB	2.02	0.41
3:C:16:GLY:O	3:C:17:ARG:C	2.58	0.41
3:H:65:ARG:HA	3:H:68:LYS:HE2	2.03	0.41
1:U:64:PHE:HE2	1:U:90:TYR:CE2	2.39	0.41
1:U:165:ASP:O	2:V:170:GLY:HA2	2.21	0.41
2:V:141:LYS:HB2	2:V:141:LYS:HE2	1.79	0.41
3:W:63:GLU:OE2	5:Y:1:VAL:HG23	2.20	0.41
4:D:11:SER:HA	4:D:22:PHE:O	2.21	0.41
1:F:162:CYS:O	1:F:174:ASN:HA	2.20	0.41
3:H:52:ILE:O	3:H:52:ILE:HG13	2.20	0.41
1:K:20:VAL:O	1:K:78:GLN:HA	2.21	0.41
2:L:128:VAL:HG23	2:L:238:ALA:HB3	2.01	0.41
3:M:160:LEU:HA	3:M:160:LEU:HD23	1.73	0.41
4:N:37:VAL:HG22	4:N:82:VAL:HG22	2.01	0.41
2:Q:212:GLN:HG3	2:Q:235:ILE:HG23	2.01	0.41
1:U:98:GLY:HA3	3:W:62:GLN:HG3	2.03	0.41
1:A:34:PHE:O	1:A:94:LEU:HD12	2.21	0.41
1:A:139:PHE:HB2	1:A:191:PHE:CE2	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:204:ASN:HB3	2:B:207:ASN:ND2	2.35	0.41
2:G:15:LEU:HD23	2:G:15:LEU:HA	1.70	0.41
2:G:121:VAL:HG12	2:G:231:PRO:HB2	2.02	0.41
3:H:13:SER:HB3	3:H:93:HIS:H	1.85	0.41
2:L:156:VAL:HG12	2:L:215:PHE:HD1	1.85	0.41
3:M:185:PRO:HB3	3:M:208:PHE:HB3	2.03	0.41
1:P:139:PHE:O	1:P:175:SER:HA	2.20	0.41
2:Q:81:LEU:HD21	2:Q:92:LEU:HD13	2.03	0.41
3:R:5:MET:HB2	3:R:168:LEU:HD13	2.01	0.41
3:W:16:GLY:O	3:W:17:ARG:C	2.59	0.41
3:W:63:GLU:CD	5:Y:1:VAL:HG23	2.41	0.41
3:W:231:VAL:HG21	3:W:244:TRP:NE1	2.35	0.41
3:W:236:ALA:O	4:X:24:ASN:ND2	2.49	0.41
1:Z:42:LEU:HG	1:Z:43:ASN:N	2.34	0.41
1:A:135:SER:OG	1:A:185:PHE:CZ	2.74	0.41
2:B:38:TRP:CG	2:B:81:LEU:HD22	2.55	0.41
3:C:194:ILE:HD11	3:C:198:GLU:OE1	2.21	0.41
3:H:234:ARG:HD2	4:I:10:TYR:CE1	2.56	0.41
1:K:37:TRP:CD2	1:K:77:LEU:HD22	2.56	0.41
2:L:54:ARG:HH12	3:M:76:VAL:HG11	1.86	0.41
3:M:100:GLY:O	3:M:113:TYR:N	2.53	0.41
2:Q:99:ARG:NH1	2:Q:99:ARG:HG2	2.35	0.41
3:R:144:LYS:O	3:R:148:GLU:HG3	2.21	0.41
2:V:205:PRO:HA	2:V:242:GLY:HA3	2.02	0.41
1:A:21:MET:HE3	3:R:149:ALA:HB2	2.02	0.40
3:C:5:MET:HE2	3:C:164:CYS:SG	2.61	0.40
3:C:106:ASP:OD1	3:C:106:ASP:N	2.51	0.40
2:G:99:ARG:NH1	5:J:7:GLY:HA3	2.36	0.40
2:L:41:GLN:NE2	2:L:45:LYS:HD2	2.36	0.40
2:Q:118:LEU:HD13	2:Q:218:LEU:HD21	2.02	0.40
1:A:126:LEU:HB2	1:A:136:VAL:CG2	2.51	0.40
2:B:14:ARG:HH11	2:B:22:VAL:HG23	1.84	0.40
1:K:36:PHE:HD1	1:K:51:LYS:CB	2.33	0.40
2:L:38:TRP:HE1	2:L:79:LEU:HG	1.86	0.40
1:P:64:PHE:HE2	1:P:90:TYR:HE2	1.70	0.40
1:P:153:ASP:OD1	1:P:154:SER:N	2.54	0.40
1:P:157:TYR:O	1:P:178:ALA:HA	2.22	0.40
1:U:60:GLU:CG	1:U:65:HIS:HB3	2.51	0.40
1:U:93:ALA:HB1	1:U:103:VAL:O	2.22	0.40
1:Z:37:TRP:CE2	1:Z:77:LEU:HB2	2.56	0.40
1:A:7:GLN:HA	1:A:23:ASN:O	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:124:TYR:CD2	2:B:135:GLU:HB2	2.56	0.40
3:C:143:THR:HG21	5:E:10:LYS:HG2	2.03	0.40
3:C:219:ARG:HH11	3:C:256:ARG:HH22	1.68	0.40
4:D:33:SER:HB3	4:D:62:PHE:CE2	2.56	0.40
1:F:47:ARG:NH2	1:F:62:GLN:HE22	2.17	0.40
2:G:193:SER:C	2:G:194:ARG:HD3	2.41	0.40
3:H:14:ARG:NH2	3:H:39:ASP:OD2	2.51	0.40
4:S:6:LYS:O	4:S:27:VAL:HA	2.21	0.40
2:V:118:LEU:HD21	2:V:218:LEU:HD21	1.97	0.40
3:W:35:ARG:HD2	4:X:53:ASP:OD1	2.20	0.40
3:W:103:VAL:CG1	3:W:165:VAL:HG13	2.51	0.40
4:X:50:GLU:HB2	4:X:67:TYR:CE1	2.56	0.40
1:Z:168:SER:O	1:Z:169:MET:HB2	2.21	0.40
1:A:143:ASP:OD2	1:A:145:GLN:HG2	2.21	0.40
1:F:49:LEU:HD21	1:F:64:PHE:CD2	2.57	0.40
1:P:9:GLU:HG2	1:P:12:VAL:CG2	2.52	0.40
3:W:49:ALA:O	3:W:52:ILE:HG22	2.22	0.40
1:Z:21:MET:HE2	1:Z:78:GLN:HG2	2.03	0.40
1:A:8:LYS:HE3	1:A:8:LYS:HB2	1.84	0.40
3:C:79:GLY:O	3:C:82:ARG:HB3	2.20	0.40
3:C:131:ARG:NH2	2:Q:168:HIS:HE1	2.20	0.40
3:M:126:LEU:HD22	3:M:156:LEU:HD23	2.03	0.40
3:M:167:TRP:O	3:M:171:TYR:CG	2.74	0.40
3:M:206:LEU:HD22	3:M:242:GLN:CG	2.52	0.40
1:P:152:LYS:HD2	1:P:193:ASN:HD21	1.83	0.40
1:U:90:TYR:O	1:U:107:GLY:HA2	2.22	0.40
1:U:127:ARG:HH22	1:U:135:SER:HB3	1.86	0.40
3:W:81:LEU:HD12	3:W:118:TYR:CD1	2.56	0.40

All (2) 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)
3:b:108:ARG:NH2	1:j:170:ASP:OD1[4_545]	1.40	0.80
3:M:108:ARG:NH2	1:Z:170:ASP:OD1[3_555]	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	200/206 (97%)	186 (93%)	14 (7%)	0	100	100
1	F	200/206 (97%)	195 (98%)	5 (2%)	0	100	100
1	K	201/206 (98%)	185 (92%)	16 (8%)	0	100	100
1	P	199/206 (97%)	187 (94%)	12 (6%)	0	100	100
1	U	199/206 (97%)	192 (96%)	7 (4%)	0	100	100
1	Z	199/206 (97%)	192 (96%)	7 (4%)	0	100	100
1	e	200/206 (97%)	192 (96%)	8 (4%)	0	100	100
1	j	198/206 (96%)	187 (94%)	11 (6%)	0	100	100
2	B	240/246 (98%)	230 (96%)	10 (4%)	0	100	100
2	G	238/246 (97%)	232 (98%)	6 (2%)	0	100	100
2	L	238/246 (97%)	233 (98%)	5 (2%)	0	100	100
2	Q	238/246 (97%)	230 (97%)	8 (3%)	0	100	100
2	V	238/246 (97%)	228 (96%)	10 (4%)	0	100	100
2	a	238/246 (97%)	232 (98%)	6 (2%)	0	100	100
2	f	238/246 (97%)	229 (96%)	9 (4%)	0	100	100
2	k	238/246 (97%)	227 (95%)	11 (5%)	0	100	100
3	C	272/279 (98%)	258 (95%)	14 (5%)	0	100	100
3	H	273/279 (98%)	262 (96%)	11 (4%)	0	100	100
3	M	274/279 (98%)	264 (96%)	10 (4%)	0	100	100
3	R	275/279 (99%)	262 (95%)	13 (5%)	0	100	100
3	W	274/279 (98%)	263 (96%)	11 (4%)	0	100	100
3	b	274/279 (98%)	262 (96%)	12 (4%)	0	100	100
3	g	272/279 (98%)	262 (96%)	10 (4%)	0	100	100
3	l	271/279 (97%)	259 (96%)	12 (4%)	0	100	100
4	D	96/100 (96%)	95 (99%)	1 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	I	95/100 (95%)	94 (99%)	1 (1%)	0	100	100
4	N	96/100 (96%)	95 (99%)	1 (1%)	0	100	100
4	S	96/100 (96%)	95 (99%)	1 (1%)	0	100	100
4	X	96/100 (96%)	96 (100%)	0	0	100	100
4	c	96/100 (96%)	96 (100%)	0	0	100	100
4	h	95/100 (95%)	94 (99%)	1 (1%)	0	100	100
4	m	95/100 (95%)	93 (98%)	2 (2%)	0	100	100
5	E	8/10 (80%)	8 (100%)	0	0	100	100
5	J	8/10 (80%)	7 (88%)	1 (12%)	0	100	100
5	O	8/10 (80%)	8 (100%)	0	0	100	100
5	T	8/10 (80%)	8 (100%)	0	0	100	100
5	Y	8/10 (80%)	8 (100%)	0	0	100	100
5	d	8/10 (80%)	8 (100%)	0	0	100	100
5	i	8/10 (80%)	7 (88%)	1 (12%)	0	100	100
5	n	8/10 (80%)	8 (100%)	0	0	100	100
All	All	6516/6728 (97%)	6269 (96%)	247 (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	182/184 (99%)	181 (100%)	1 (0%)	86	93
1	F	181/184 (98%)	180 (99%)	1 (1%)	84	91
1	K	182/184 (99%)	179 (98%)	3 (2%)	58	76
1	P	181/184 (98%)	180 (99%)	1 (1%)	84	91
1	U	181/184 (98%)	181 (100%)	0	100	100
1	Z	181/184 (98%)	179 (99%)	2 (1%)	70	83

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	e	182/184 (99%)	178 (98%)	4 (2%)	47 70
1	j	180/184 (98%)	178 (99%)	2 (1%)	70 83
2	B	214/216 (99%)	212 (99%)	2 (1%)	75 86
2	G	212/216 (98%)	209 (99%)	3 (1%)	62 79
2	L	212/216 (98%)	208 (98%)	4 (2%)	52 73
2	Q	212/216 (98%)	209 (99%)	3 (1%)	62 79
2	V	212/216 (98%)	211 (100%)	1 (0%)	86 93
2	a	212/216 (98%)	212 (100%)	0	100 100
2	f	212/216 (98%)	211 (100%)	1 (0%)	86 93
2	k	212/216 (98%)	210 (99%)	2 (1%)	75 86
3	C	231/236 (98%)	230 (100%)	1 (0%)	89 95
3	H	232/236 (98%)	230 (99%)	2 (1%)	75 86
3	M	233/236 (99%)	231 (99%)	2 (1%)	75 86
3	R	234/236 (99%)	232 (99%)	2 (1%)	75 86
3	W	233/236 (99%)	233 (100%)	0	100 100
3	b	233/236 (99%)	230 (99%)	3 (1%)	65 81
3	g	231/236 (98%)	229 (99%)	2 (1%)	75 86
3	l	230/236 (98%)	230 (100%)	0	100 100
4	D	93/95 (98%)	90 (97%)	3 (3%)	34 62
4	I	92/95 (97%)	89 (97%)	3 (3%)	33 61
4	N	93/95 (98%)	92 (99%)	1 (1%)	70 83
4	S	93/95 (98%)	90 (97%)	3 (3%)	34 62
4	X	93/95 (98%)	90 (97%)	3 (3%)	34 62
4	c	93/95 (98%)	90 (97%)	3 (3%)	34 62
4	h	92/95 (97%)	90 (98%)	2 (2%)	47 70
4	m	92/95 (97%)	88 (96%)	4 (4%)	25 54
5	E	6/6 (100%)	6 (100%)	0	100 100
5	J	6/6 (100%)	6 (100%)	0	100 100
5	O	6/6 (100%)	6 (100%)	0	100 100
5	T	6/6 (100%)	6 (100%)	0	100 100
5	Y	6/6 (100%)	6 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
5	d	6/6 (100%)	6 (100%)	0	100 100
5	i	6/6 (100%)	6 (100%)	0	100 100
5	n	6/6 (100%)	6 (100%)	0	100 100
All	All	5794/5896 (98%)	5730 (99%)	64 (1%)	70 83

All (64) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	192	ASN
2	B	33	TYR
2	B	194	ARG
3	C	13	SER
4	D	48	LYS
4	D	67	TYR
4	D	70	PHE
1	F	8	LYS
2	G	116	LEU
2	G	172	CYS
2	G	228	ARG
3	H	122	ASP
3	H	141	GLN
4	I	34	ASP
4	I	48	LYS
4	I	70	PHE
1	K	3	ASP
1	K	5	VAL
1	K	8	LYS
2	L	13	TRP
2	L	100	HIS
2	L	172	CYS
2	L	201	PHE
3	M	35	ARG
3	M	86	ASN
4	N	70	PHE
1	P	171	PHE
2	Q	112	ARG
2	Q	172	CYS
2	Q	201	PHE
3	R	73	THR
3	R	138	MET
4	S	67	TYR

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Mol	Chain	Res	Type
4	S	70	PHE
4	S	97	ARG
2	V	116	LEU
4	X	67	TYR
4	X	70	PHE
4	X	89	GLN
1	Z	94	LEU
1	Z	109	ARG
3	b	86	ASN
3	b	141	GLN
3	b	203	CYS
4	c	34	ASP
4	c	48	LYS
4	c	70	PHE
1	e	109	ARG
1	e	169	MET
1	e	198	GLU
1	e	199	ASP
2	f	100	HIS
3	g	86	ASN
3	g	273	ARG
4	h	34	ASP
4	h	70	PHE
1	j	14	LEU
1	j	94	LEU
2	k	194	ARG
2	k	230	LYS
4	m	34	ASP
4	m	48	LYS
4	m	67	TYR
4	m	70	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (27) such sidechains are listed below:

Mol	Chain	Res	Type
3	C	66	ASN
3	C	191	HIS
4	D	17	ASN
1	F	76	HIS
3	M	66	ASN
1	P	189	ASN
1	U	40	HIS

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Mol	Chain	Res	Type
2	V	41	GLN
2	V	100	HIS
3	W	66	ASN
1	Z	61	HIS
1	Z	99	ASN
2	a	32	GLN
2	a	100	HIS
1	e	32	ASN
1	e	193	ASN
2	f	32	GLN
3	g	62	GLN
3	g	72	GLN
3	g	191	HIS
4	h	17	ASN
1	j	40	HIS
1	j	62	GLN
1	j	193	ASN
2	k	9	GLN
2	k	41	GLN
3	l	224	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	U	1
1	j	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	U	17:GLY	C	18:LEU	N	1.19
1	j	17:GLY	C	18:LEU	N	1.14

6 Fit of model and data

6.1 Protein, DNA and RNA chains

Warning: The R factor obtained from EDS is 0.3248, which does not match the depositor's R factor of 0.2378. Please interpret the results in this section carefully.

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	202/206 (98%)	-0.51	0 100 100	75, 107, 163, 181	0
1	F	202/206 (98%)	-0.43	1 (0%) 87 75	81, 106, 169, 182	0
1	K	203/206 (98%)	-0.34	4 (1%) 64 45	30, 107, 157, 194	0
1	P	201/206 (97%)	-0.45	0 100 100	79, 108, 183, 228	0
1	U	201/206 (97%)	-0.49	1 (0%) 87 75	74, 109, 197, 223	0
1	Z	201/206 (97%)	-0.40	0 100 100	86, 114, 182, 213	0
1	e	202/206 (98%)	-0.40	1 (0%) 87 75	84, 114, 178, 208	0
1	j	200/206 (97%)	-0.45	0 100 100	68, 112, 198, 238	0
2	B	242/246 (98%)	-0.55	1 (0%) 89 79	61, 116, 164, 184	0
2	G	240/246 (97%)	-0.56	1 (0%) 89 79	81, 120, 163, 185	0
2	L	240/246 (97%)	-0.59	0 100 100	79, 115, 151, 174	0
2	Q	240/246 (97%)	-0.49	0 100 100	82, 129, 164, 184	0
2	V	240/246 (97%)	-0.48	0 100 100	84, 138, 166, 174	0
2	a	240/246 (97%)	-0.50	0 100 100	85, 136, 177, 211	0
2	f	240/246 (97%)	-0.49	1 (0%) 89 79	83, 128, 171, 193	0
2	k	240/246 (97%)	-0.52	0 100 100	87, 135, 176, 198	0
3	C	274/279 (98%)	-0.52	0 100 100	30, 113, 189, 205	0
3	H	275/279 (98%)	-0.68	0 100 100	74, 104, 174, 206	0
3	M	276/279 (98%)	-0.61	0 100 100	55, 113, 155, 180	0
3	R	277/279 (99%)	-0.57	0 100 100	77, 105, 148, 179	0
3	W	276/279 (98%)	-0.63	0 100 100	78, 108, 160, 176	0
3	b	276/279 (98%)	-0.62	0 100 100	80, 104, 142, 183	0

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Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
3	g	274/279 (98%)	-0.59	0	100	100	85, 118, 209, 227	0
3	l	273/279 (97%)	-0.49	0	100	100	92, 128, 230, 253	0
4	D	98/100 (98%)	-0.69	0	100	100	76, 140, 165, 170	0
4	I	97/100 (97%)	-0.67	0	100	100	91, 115, 138, 179	0
4	N	98/100 (98%)	-0.59	0	100	100	95, 131, 161, 169	0
4	S	98/100 (98%)	-0.60	0	100	100	92, 125, 158, 166	0
4	X	98/100 (98%)	-0.69	0	100	100	99, 129, 152, 157	0
4	c	98/100 (98%)	-0.78	0	100	100	86, 112, 143, 157	0
4	h	97/100 (97%)	-0.61	0	100	100	104, 148, 170, 183	0
4	m	97/100 (97%)	-0.61	0	100	100	117, 159, 184, 193	0
5	E	10/10 (100%)	-0.43	0	100	100	95, 98, 109, 113	0
5	J	10/10 (100%)	-0.42	0	100	100	85, 92, 98, 103	0
5	O	10/10 (100%)	-0.23	0	100	100	96, 100, 104, 114	0
5	T	10/10 (100%)	-0.49	0	100	100	88, 90, 96, 103	0
5	Y	10/10 (100%)	-0.29	0	100	100	84, 96, 105, 108	0
5	d	10/10 (100%)	-0.37	0	100	100	89, 96, 102, 103	0
5	i	10/10 (100%)	-0.15	0	100	100	97, 101, 109, 113	0
5	n	10/10 (100%)	-0.14	0	100	100	102, 109, 117, 119	0
All	All	6596/6728 (98%)	-0.54	10 (0%)	92	86	30, 118, 177, 253	0

All (10) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	K	193	ASN	4.2
1	K	3	ASP	3.9
2	B	76	ASP	3.1
2	G	76	ASP	2.8
1	F	23	ASN	2.8
1	K	187	CYS	2.3
1	e	23	ASN	2.1
2	f	76	ASP	2.1
1	K	2	GLY	2.1
1	U	23	ASN	2.1

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.