



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 09:15 PM UTC

PDB ID : 1PZU / pdb_00001pzu
Title : An asymmetric NFAT1-RHR homodimer on a pseudo-palindromic, Kappa-B site
Authors : Jin, L.; Sliz, P.; Chen, L.; Macian, F.; Rao, A.; Hogan, P.G.; Harrison, S.C.
Deposited on : 2003-07-14
Resolution : 3.10 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	:	4-5-2 with Phenix2.0
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

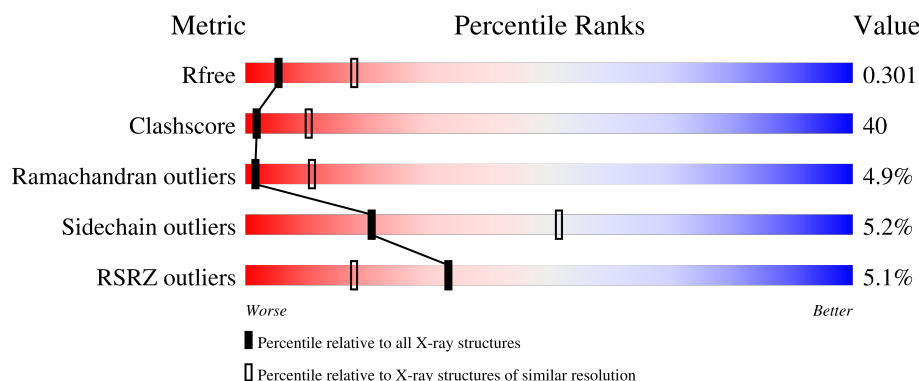
1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.10 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}	180053	1456 (3.10-3.10)
Clashscore	190562	1539 (3.10-3.10)
Ramachandran outliers	187476	1467 (3.10-3.10)
Sidechain outliers	187428	1467 (3.10-3.10)
RSRZ outliers	180081	1456 (3.10-3.10)

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	T	14	14% 43% 43%
1	V	14	14% 86%
1	X	14	7% 79% 7% 7%
2	W	14	7% 57% 36%
2	Y	14	29% 64% 7%

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Mol	Chain	Length	Quality of chain
2	Z	14	86%14%
3	B	301	5% 42%43%6%8%
3	D	301	7% 42%43%6%8%
3	H	301	5% 42%42%7%8%
3	I	301	4% 42%43%6%8%
3	L	301	5% 41%44%7%8%
3	M	301	4% 44%41%6%8%

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 14952 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 DNA chain called 5'-D(*TP*TP*GP*AP*GP*GP*AP*AP*TP*TP*TP*C P*CP*A)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	X	14	Total	C	N	O	P	0	0	0
			285	138	51	83	13			
1	V	14	Total	C	N	O	P	0	0	0
			285	138	51	83	13			
1	T	14	Total	C	N	O	P	37	0	0
			285	138	51	83	13			

- Molecule 2 is a DNA chain called 5'-D(*AP*AP*TP*GP*GP*AP*AP*AP*TP*TP*CP*C P*TP*C)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	Y	14	Total	C	N	O	P	0	0	0
			283	137	52	81	13			
2	Z	14	Total	C	N	O	P	0	0	0
			283	137	52	81	13			
2	W	14	Total	C	N	O	P	0	0	0
			283	137	52	81	13			

- Molecule 3 is a protein called Nuclear factor of activated T-cells, cytoplasmic 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	B	276	Total	C	N	O	S	0	0	0
			2208	1386	401	412	9			
3	D	276	Total	C	N	O	S	0	0	0
			2208	1386	401	412	9			
3	H	276	Total	C	N	O	S	0	0	0
			2208	1386	401	412	9			
3	I	276	Total	C	N	O	S	0	0	0
			2208	1386	401	412	9			
3	L	276	Total	C	N	O	S	0	0	0
			2208	1386	401	412	9			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	M	276	Total	C	N	O	S	0	0	0
			2208	1386	401	412	9			

There are 108 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	378	MET	-	cloning artifact	UNP Q13469
B	379	ARG	-	cloning artifact	UNP Q13469
B	380	GLY	-	cloning artifact	UNP Q13469
B	381	SER	-	cloning artifact	UNP Q13469
B	382	HIS	-	expression tag	UNP Q13469
B	383	HIS	-	expression tag	UNP Q13469
B	384	HIS	-	expression tag	UNP Q13469
B	385	HIS	-	expression tag	UNP Q13469
B	386	HIS	-	expression tag	UNP Q13469
B	387	HIS	-	expression tag	UNP Q13469
B	388	THR	-	cloning artifact	UNP Q13469
B	389	ASP	-	cloning artifact	UNP Q13469
B	390	PRO	-	cloning artifact	UNP Q13469
B	391	HIS	-	cloning artifact	UNP Q13469
B	392	ALA	-	cloning artifact	UNP Q13469
B	393	SER	-	cloning artifact	UNP Q13469
B	394	SER	-	cloning artifact	UNP Q13469
B	395	VAL	-	cloning artifact	UNP Q13469
D	378	MET	-	cloning artifact	UNP Q13469
D	379	ARG	-	cloning artifact	UNP Q13469
D	380	GLY	-	cloning artifact	UNP Q13469
D	381	SER	-	cloning artifact	UNP Q13469
D	382	HIS	-	expression tag	UNP Q13469
D	383	HIS	-	expression tag	UNP Q13469
D	384	HIS	-	expression tag	UNP Q13469
D	385	HIS	-	expression tag	UNP Q13469
D	386	HIS	-	expression tag	UNP Q13469
D	387	HIS	-	expression tag	UNP Q13469
D	388	THR	-	cloning artifact	UNP Q13469
D	389	ASP	-	cloning artifact	UNP Q13469
D	390	PRO	-	cloning artifact	UNP Q13469
D	391	HIS	-	cloning artifact	UNP Q13469
D	392	ALA	-	cloning artifact	UNP Q13469
D	393	SER	-	cloning artifact	UNP Q13469
D	394	SER	-	cloning artifact	UNP Q13469
D	395	VAL	-	cloning artifact	UNP Q13469

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Chain	Residue	Modelled	Actual	Comment	Reference
H	378	MET	-	cloning artifact	UNP Q13469
H	379	ARG	-	cloning artifact	UNP Q13469
H	380	GLY	-	cloning artifact	UNP Q13469
H	381	SER	-	cloning artifact	UNP Q13469
H	382	HIS	-	expression tag	UNP Q13469
H	383	HIS	-	expression tag	UNP Q13469
H	384	HIS	-	expression tag	UNP Q13469
H	385	HIS	-	expression tag	UNP Q13469
H	386	HIS	-	expression tag	UNP Q13469
H	387	HIS	-	expression tag	UNP Q13469
H	388	THR	-	cloning artifact	UNP Q13469
H	389	ASP	-	cloning artifact	UNP Q13469
H	390	PRO	-	cloning artifact	UNP Q13469
H	391	HIS	-	cloning artifact	UNP Q13469
H	392	ALA	-	cloning artifact	UNP Q13469
H	393	SER	-	cloning artifact	UNP Q13469
H	394	SER	-	cloning artifact	UNP Q13469
H	395	VAL	-	cloning artifact	UNP Q13469
I	378	MET	-	cloning artifact	UNP Q13469
I	379	ARG	-	cloning artifact	UNP Q13469
I	380	GLY	-	cloning artifact	UNP Q13469
I	381	SER	-	cloning artifact	UNP Q13469
I	382	HIS	-	expression tag	UNP Q13469
I	383	HIS	-	expression tag	UNP Q13469
I	384	HIS	-	expression tag	UNP Q13469
I	385	HIS	-	expression tag	UNP Q13469
I	386	HIS	-	expression tag	UNP Q13469
I	387	HIS	-	expression tag	UNP Q13469
I	388	THR	-	cloning artifact	UNP Q13469
I	389	ASP	-	cloning artifact	UNP Q13469
I	390	PRO	-	cloning artifact	UNP Q13469
I	391	HIS	-	cloning artifact	UNP Q13469
I	392	ALA	-	cloning artifact	UNP Q13469
I	393	SER	-	cloning artifact	UNP Q13469
I	394	SER	-	cloning artifact	UNP Q13469
I	395	VAL	-	cloning artifact	UNP Q13469
L	378	MET	-	cloning artifact	UNP Q13469
L	379	ARG	-	cloning artifact	UNP Q13469
L	380	GLY	-	cloning artifact	UNP Q13469
L	381	SER	-	cloning artifact	UNP Q13469
L	382	HIS	-	expression tag	UNP Q13469
L	383	HIS	-	expression tag	UNP Q13469

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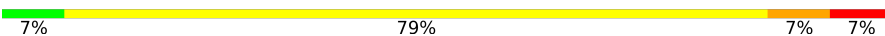
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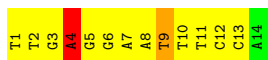
Chain	Residue	Modelled	Actual	Comment	Reference
L	384	HIS	-	expression tag	UNP Q13469
L	385	HIS	-	expression tag	UNP Q13469
L	386	HIS	-	expression tag	UNP Q13469
L	387	HIS	-	expression tag	UNP Q13469
L	388	THR	-	cloning artifact	UNP Q13469
L	389	ASP	-	cloning artifact	UNP Q13469
L	390	PRO	-	cloning artifact	UNP Q13469
L	391	HIS	-	cloning artifact	UNP Q13469
L	392	ALA	-	cloning artifact	UNP Q13469
L	393	SER	-	cloning artifact	UNP Q13469
L	394	SER	-	cloning artifact	UNP Q13469
L	395	VAL	-	cloning artifact	UNP Q13469
M	378	MET	-	cloning artifact	UNP Q13469
M	379	ARG	-	cloning artifact	UNP Q13469
M	380	GLY	-	cloning artifact	UNP Q13469
M	381	SER	-	cloning artifact	UNP Q13469
M	382	HIS	-	expression tag	UNP Q13469
M	383	HIS	-	expression tag	UNP Q13469
M	384	HIS	-	expression tag	UNP Q13469
M	385	HIS	-	expression tag	UNP Q13469
M	386	HIS	-	expression tag	UNP Q13469
M	387	HIS	-	expression tag	UNP Q13469
M	388	THR	-	cloning artifact	UNP Q13469
M	389	ASP	-	cloning artifact	UNP Q13469
M	390	PRO	-	cloning artifact	UNP Q13469
M	391	HIS	-	cloning artifact	UNP Q13469
M	392	ALA	-	cloning artifact	UNP Q13469
M	393	SER	-	cloning artifact	UNP Q13469
M	394	SER	-	cloning artifact	UNP Q13469
M	395	VAL	-	cloning artifact	UNP Q13469

3 Residue-property plots [i](#)

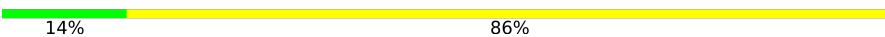
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

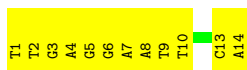
- Molecule 1: 5'-D(*TP*TP*GP*AP*GP*GP*AP*AP*TP*TP*TP*CP*CP*A)-3'

Chain X: 

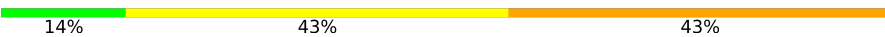


- Molecule 1: 5'-D(*TP*TP*GP*AP*GP*GP*AP*AP*TP*TP*TP*CP*CP*A)-3'

Chain V: 



- Molecule 1: 5'-D(*TP*TP*GP*AP*GP*GP*AP*AP*TP*TP*TP*CP*CP*A)-3'

Chain T: 

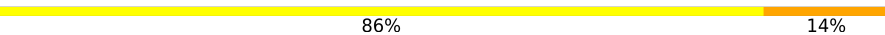


- Molecule 2: 5'-D(*AP*AP*TP*GP*GP*AP*AP*AP*TP*TP*CP*CP*TP*C)-3'

Chain Y: 



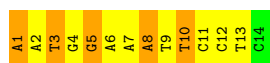
- Molecule 2: 5'-D(*AP*AP*TP*GP*GP*AP*AP*AP*TP*TP*CP*CP*TP*C)-3'

Chain Z: 

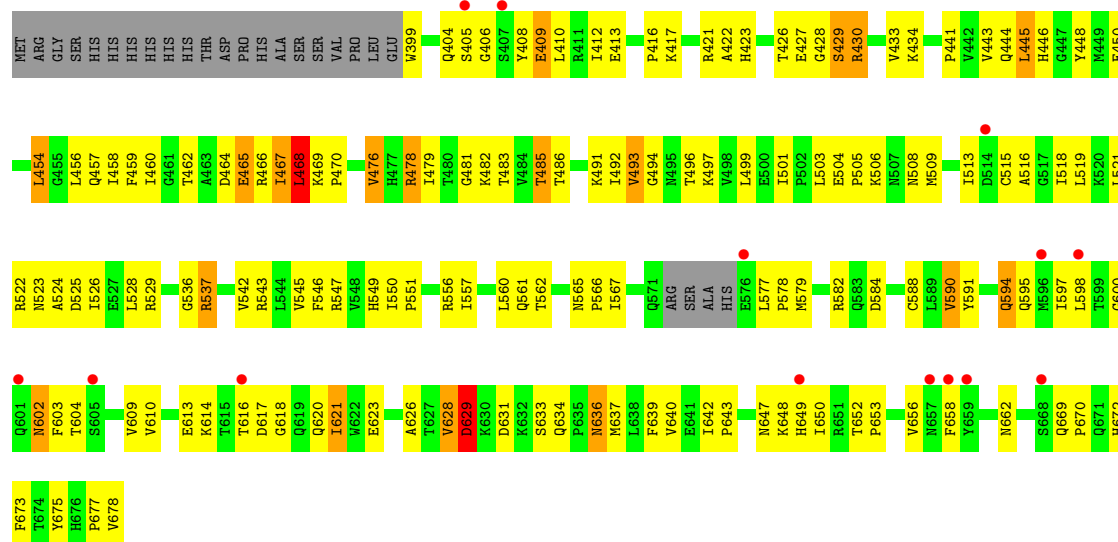


- Molecule 2: 5'-D(*AP*AP*TP*GP*GP*AP*AP*AP*TP*TP*CP*CP*TP*C)-3'

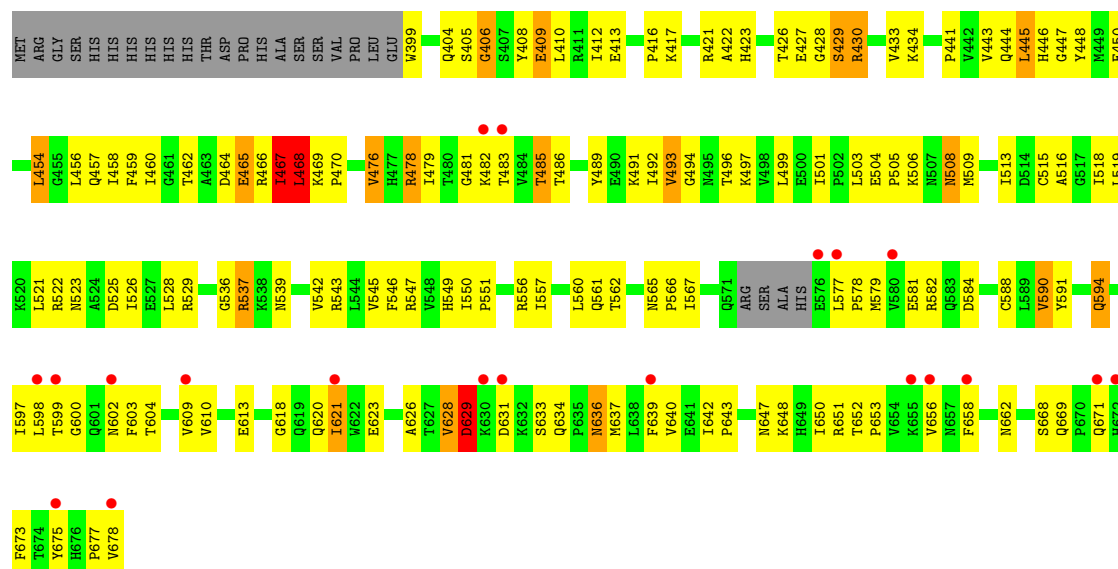
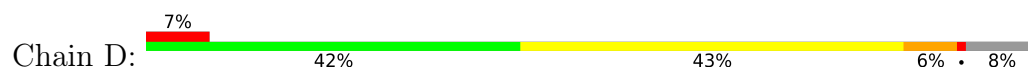
Chain W: 



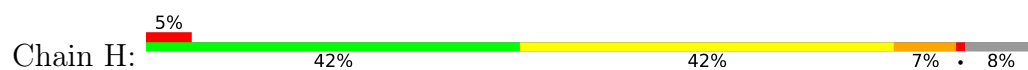
• Molecule 3: Nuclear factor of activated T-cells, cytoplasmic 2

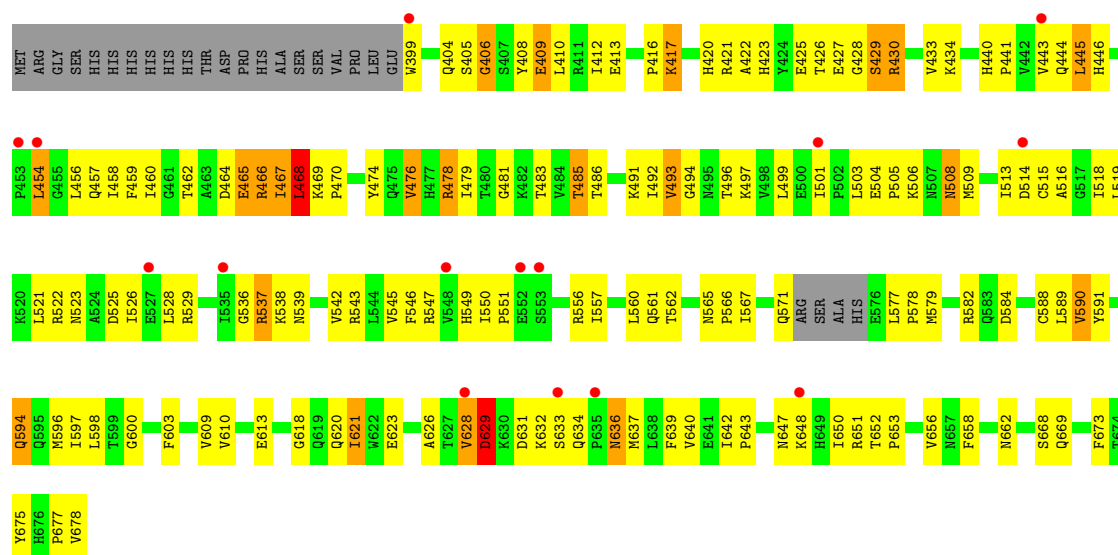


• Molecule 3: Nuclear factor of activated T-cells, cytoplasmic 2

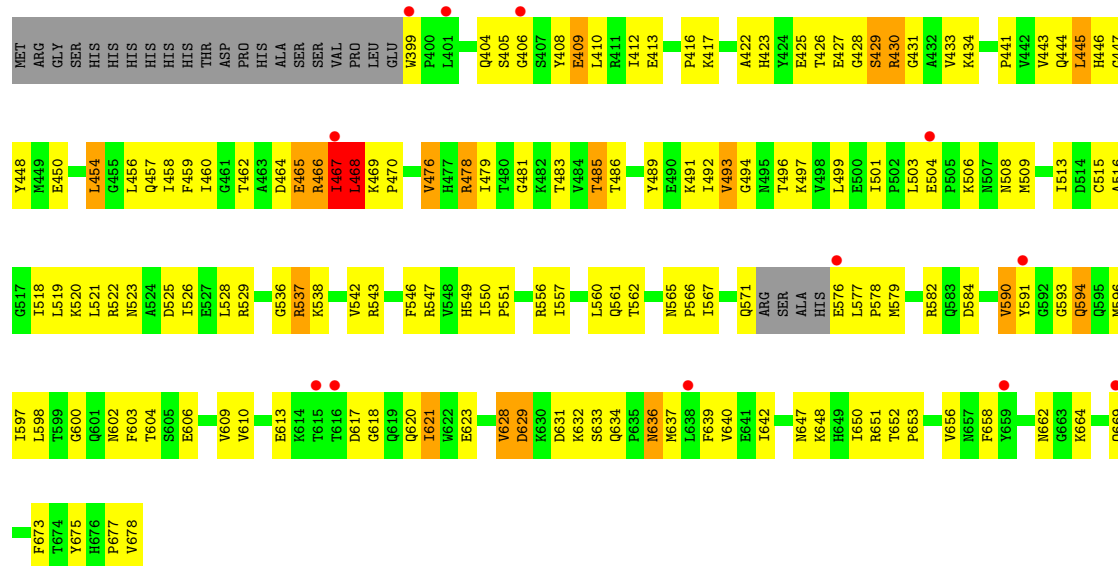


• Molecule 3: Nuclear factor of activated T-cells, cytoplasmic 2

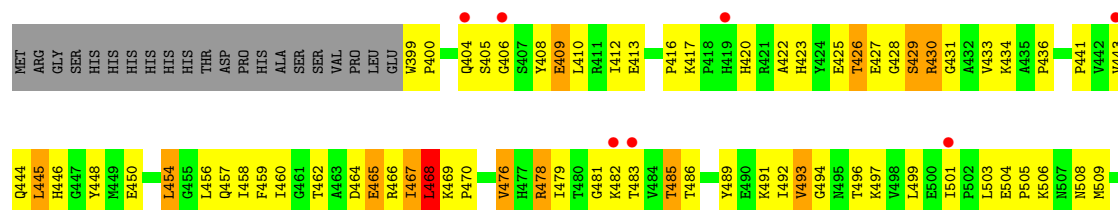


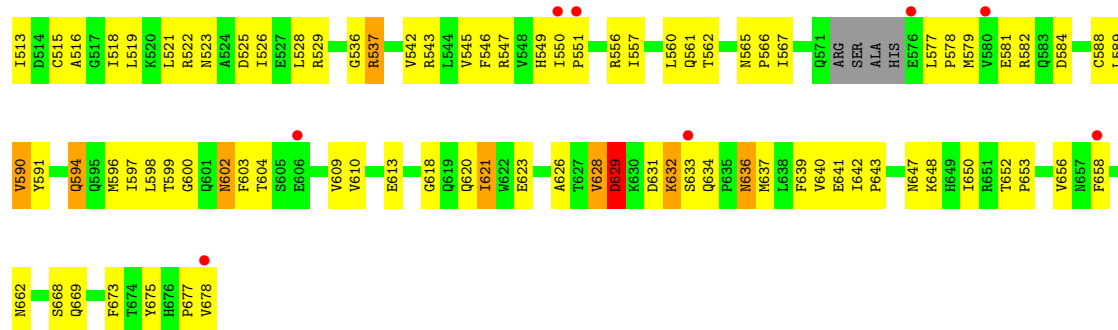


• Molecule 3: Nuclear factor of activated T-cells, cytoplasmic 2

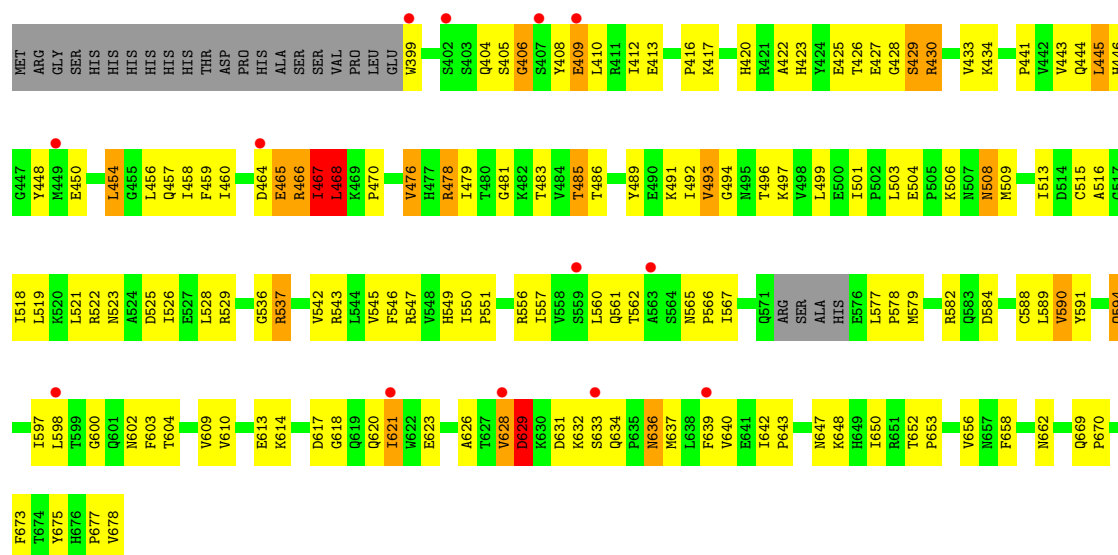
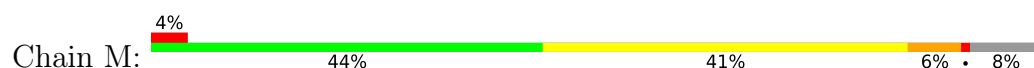


• Molecule 3: Nuclear factor of activated T-cells, cytoplasmic 2





• Molecule 3: Nuclear factor of activated T-cells, cytoplasmic 2



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	81.70Å 122.90Å 241.60Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.78 – 3.10 29.78 – 3.10	Depositor EDS
% Data completeness (in resolution range)	82.4 (29.78-3.10) 82.3 (29.78-3.10)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.13 (at 3.12Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.296 , 0.319 0.284 , 0.301	Depositor DCC
R_{free} test set	1857 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	65.9	Xtriage
Anisotropy	0.438	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 61.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.86	EDS
Total number of atoms	14952	wwPDB-VP
Average B, all atoms (Å ²)	68.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.23% 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

5.1 Standard geometry

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	T	0.51	0/319	1.08	5/491 (1.0%)
1	V	0.46	0/319	0.95	0/491
1	X	0.52	0/319	1.11	2/491 (0.4%)
2	W	0.53	0/317	1.08	2/487 (0.4%)
2	Y	0.48	0/317	1.05	2/487 (0.4%)
2	Z	0.48	0/317	1.04	3/487 (0.6%)
3	B	0.54	0/2255	0.95	2/3048 (0.1%)
3	D	0.52	0/2255	0.95	4/3048 (0.1%)
3	H	0.48	0/2255	0.95	7/3048 (0.2%)
3	I	0.51	0/2255	0.95	8/3048 (0.3%)
3	L	0.46	0/2255	0.94	5/3048 (0.2%)
3	M	0.51	0/2255	0.95	6/3048 (0.2%)
All	All	0.50	0/15438	0.97	46/21222 (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	T	0	1
1	X	0	1
2	W	0	4
2	Y	0	1
2	Z	0	1
All	All	0	8

There are no bond length outliers.

All (46) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	L	446	HIS	N-CA-C	7.07	122.37	111.56

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	Y	4	DG	C5'-C4'-C3'	-7.07	104.30	114.90
3	M	446	HIS	N-CA-C	7.02	122.29	111.56
3	B	446	HIS	N-CA-C	6.78	121.93	111.56
3	I	446	HIS	N-CA-C	6.71	121.83	111.56
3	H	629	ASP	N-CA-C	6.70	119.61	109.23
1	T	3	DG	N9-C1'-C2'	6.68	123.52	113.50
3	B	629	ASP	N-CA-C	6.67	119.57	109.23
1	T	9	DT	C5'-C4'-C3'	-6.65	104.92	114.90
2	Z	3	DT	C5'-C4'-C3'	-6.61	104.98	114.90
1	X	9	DT	C5'-C4'-C3'	-6.51	105.13	114.90
1	X	4	DA	N9-C1'-C2'	6.50	123.26	113.50
3	I	629	ASP	N-CA-C	6.48	119.75	109.50
3	M	629	ASP	N-CA-C	6.45	119.70	109.50
3	L	629	ASP	N-CA-C	6.44	119.67	109.50
2	W	10	DT	C5'-C4'-C3'	-6.42	105.26	114.90
3	D	629	ASP	N-CA-C	6.14	119.20	109.50
3	D	446	HIS	N-CA-C	6.11	122.42	110.56
3	H	446	HIS	N-CA-C	5.94	122.09	110.56
2	Z	7	DA	C5'-C4'-C3'	-5.55	106.58	114.90
3	D	447	GLY	N-CA-C	5.53	120.54	114.40
3	M	632	LYS	N-CA-C	-5.46	105.83	113.37
3	I	466	ARG	N-CA-C	5.45	122.41	110.80
2	Y	9	DT	N1-C1'-C2'	5.44	121.67	113.50
2	W	9	DT	N1-C1'-C2'	5.38	121.56	113.50
3	L	425	GLU	N-CA-C	-5.35	106.02	112.54
3	M	425	GLU	N-CA-C	-5.28	106.09	112.54
3	I	632	LYS	N-CA-C	-5.26	106.11	113.37
1	T	11	DT	N1-C1'-C2'	5.26	121.39	113.50
3	I	447	GLY	N-CA-C	5.25	120.22	114.40
3	D	467	ILE	N-CA-C	-5.21	98.50	109.34
3	I	467	ILE	N-CA-C	-5.18	98.56	109.34
2	Z	3	DT	C4'-C3'-O3'	5.15	117.73	110.00
3	I	431	GLY	N-CA-C	5.15	119.17	112.68
3	I	425	GLU	N-CA-C	-5.15	106.26	112.54
3	H	466	ARG	N-CA-C	5.15	121.76	110.80
3	M	467	ILE	N-CA-C	-5.14	98.65	109.34
1	T	8	DA	C2'-C3'-O3'	5.12	119.17	111.50
1	T	10	DT	C5'-C4'-O4'	-5.11	101.74	109.40
3	H	417	LYS	CA-C-N	5.10	124.59	119.19
3	H	417	LYS	C-N-CA	5.10	124.59	119.19
3	H	632	LYS	N-CA-C	-5.10	106.33	113.37
3	L	466	ARG	N-CA-C	5.06	121.58	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	L	632	LYS	N-CA-C	-5.06	106.39	113.37
3	H	425	GLU	N-CA-C	-5.01	106.42	112.54
3	M	466	ARG	N-CA-C	5.01	121.48	110.80

There are no chirality outliers.

All (8) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	T	4	DA	Sidechain
2	W	1	DA	Sidechain
2	W	3	DT	Sidechain
2	W	5	DG	Sidechain
2	W	8	DA	Sidechain
1	X	4	DA	Sidechain
2	Y	4	DG	Sidechain
2	Z	14	DC	Sidechain

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	T	285	0	161	18	0
1	V	285	0	161	32	0
1	X	285	0	161	33	0
2	W	283	0	160	28	0
2	Y	283	0	160	20	0
2	Z	283	0	160	25	0
3	B	2208	0	2214	180	1
3	D	2208	0	2214	181	0
3	H	2208	0	2214	172	0
3	I	2208	0	2214	173	1
3	L	2208	0	2214	183	0
3	M	2208	0	2214	174	0
All	All	14952	0	14247	1162	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 40.

All (1162) 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)
2:W:2:DA:H2''	2:W:3:DT:H5''	1.18	1.15
1:X:5:DG:H2''	1:X:6:DG:H5'	1.25	1.12
2:Y:4:DG:H2''	2:Y:5:DG:H5'	1.28	1.11
1:V:3:DG:C2'	1:V:4:DA:H5''	1.82	1.10
2:Y:2:DA:H2''	2:Y:3:DT:H5''	1.29	1.08
1:X:11:DT:H2''	1:X:12:DC:H5'	1.35	1.08
1:V:3:DG:H2''	1:V:4:DA:C5'	1.84	1.08
2:Y:4:DG:H2''	2:Y:5:DG:C5'	1.87	1.04
1:V:2:DT:H2''	1:V:3:DG:C5'	1.88	1.04
2:Z:10:DT:H2''	2:Z:11:DC:H5''	1.35	1.04
1:T:3:DG:H2''	1:T:4:DA:H5''	1.41	1.02
1:V:2:DT:H2''	1:V:3:DG:H5''	1.37	1.02
1:X:5:DG:H2''	1:X:6:DG:C5'	1.89	1.01
1:X:2:DT:H2''	1:X:3:DG:H5'	1.40	1.00
2:Z:1:DA:H2''	2:Z:2:DA:H5'	1.43	1.00
3:D:506:LYS:H	3:D:506:LYS:HD2	1.30	0.96
2:Y:2:DA:C2'	2:Y:3:DT:H5''	1.93	0.96
2:Z:10:DT:H2''	2:Z:11:DC:C5'	1.95	0.96
3:B:506:LYS:H	3:B:506:LYS:HD2	1.33	0.93
3:M:492:ILE:HG22	3:M:493:VAL:H	1.32	0.93
3:I:506:LYS:HD2	3:I:506:LYS:H	1.34	0.93
3:L:492:ILE:HG22	3:L:493:VAL:H	1.34	0.92
3:H:506:LYS:H	3:H:506:LYS:HD2	1.35	0.92
3:H:492:ILE:HG22	3:H:493:VAL:H	1.35	0.91
3:D:492:ILE:HG22	3:D:493:VAL:H	1.35	0.91
3:L:506:LYS:H	3:L:506:LYS:HD2	1.32	0.91
3:M:506:LYS:H	3:M:506:LYS:HD2	1.35	0.91
3:I:492:ILE:HG22	3:I:493:VAL:H	1.34	0.91
2:Y:2:DA:H2''	2:Y:3:DT:C5'	2.00	0.91
2:W:2:DA:C2'	2:W:3:DT:H5''	2.01	0.90
2:W:1:DA:H2''	2:W:2:DA:H5'	1.53	0.90
3:L:399:TRP:HB3	3:L:547:ARG:HH22	1.39	0.88
3:M:628:VAL:HG22	3:M:629:ASP:H	1.39	0.88
2:W:10:DT:H2''	2:W:11:DC:H5'	1.54	0.87
3:B:492:ILE:HG22	3:B:493:VAL:H	1.35	0.87
3:B:491:LYS:HZ3	3:B:497:LYS:HD2	1.40	0.86
3:M:399:TRP:HB3	3:M:547:ARG:HH22	1.38	0.86
3:I:628:VAL:HG22	3:I:629:ASP:H	1.38	0.86
1:X:1:DT:H2'	1:X:2:DT:H71	1.56	0.86
1:V:5:DG:H2''	1:V:6:DG:H5'	1.58	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:399:TRP:HB3	3:D:547:ARG:HH22	1.39	0.85
3:L:628:VAL:HG22	3:L:629:ASP:H	1.39	0.85
3:B:399:TRP:HB3	3:B:547:ARG:HH22	1.43	0.84
3:B:628:VAL:HG22	3:B:629:ASP:H	1.43	0.83
3:H:565:ASN:HB3	3:H:566:PRO:HD2	1.60	0.83
3:H:399:TRP:HB3	3:H:547:ARG:HH22	1.44	0.83
2:W:4:DG:H2''	2:W:5:DG:H5'	1.60	0.83
3:H:628:VAL:HG22	3:H:629:ASP:H	1.43	0.83
3:I:399:TRP:HB3	3:I:547:ARG:HH22	1.43	0.82
3:D:423:HIS:HB3	3:D:430:ARG:HG3	1.62	0.82
3:D:628:VAL:HG22	3:D:629:ASP:H	1.42	0.82
3:M:565:ASN:HB3	3:M:566:PRO:HD2	1.61	0.82
3:D:405:SER:HA	3:D:560:LEU:HD22	1.61	0.82
3:H:491:LYS:HZ3	3:H:497:LYS:HD2	1.46	0.81
3:L:669:GLN:HG3	3:M:669:GLN:OE1	1.78	0.81
3:L:478:ARG:CZ	3:L:491:LYS:HE3	2.11	0.81
2:Z:10:DT:C2''	2:Z:11:DC:H5''	2.11	0.80
3:H:423:HIS:HB3	3:H:430:ARG:HG3	1.63	0.80
3:B:584:ASP:HB3	3:B:597:ILE:H	1.46	0.80
3:L:423:HIS:HB3	3:L:430:ARG:HG3	1.62	0.80
1:X:6:DG:H2''	1:X:7:DA:H5''	1.64	0.80
3:M:423:HIS:HB3	3:M:430:ARG:HG3	1.64	0.80
3:L:584:ASP:HB3	3:L:597:ILE:H	1.47	0.79
1:X:11:DT:H2''	1:X:12:DC:C5'	2.10	0.79
3:M:584:ASP:HB3	3:M:597:ILE:H	1.47	0.79
3:D:565:ASN:HB3	3:D:566:PRO:HD2	1.65	0.79
3:B:478:ARG:CZ	3:B:491:LYS:HE3	2.12	0.79
3:I:423:HIS:HB3	3:I:430:ARG:HG3	1.64	0.78
3:L:669:GLN:H	3:M:669:GLN:HE22	1.26	0.78
1:V:3:DG:H2''	1:V:4:DA:H5''	0.89	0.78
3:B:423:HIS:HB3	3:B:430:ARG:HG3	1.63	0.78
3:I:584:ASP:HB3	3:I:597:ILE:H	1.46	0.78
3:L:460:ILE:HG12	3:L:476:VAL:HG12	1.65	0.78
3:B:504:GLU:HB3	3:B:506:LYS:HD3	1.64	0.78
3:B:460:ILE:HG12	3:B:476:VAL:HG12	1.66	0.78
3:H:478:ARG:CZ	3:H:491:LYS:HE3	2.12	0.78
3:I:460:ILE:HG12	3:I:476:VAL:HG12	1.66	0.78
3:L:621:ILE:HD13	3:L:621:ILE:H	1.48	0.78
3:B:506:LYS:HD2	3:B:506:LYS:N	1.98	0.78
3:I:506:LYS:HD2	3:I:506:LYS:N	1.99	0.78
3:L:565:ASN:HB3	3:L:566:PRO:HD2	1.66	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:584:ASP:HB3	3:D:597:ILE:H	1.49	0.77
3:B:565:ASN:HB3	3:B:566:PRO:HD2	1.65	0.77
3:D:506:LYS:HD2	3:D:506:LYS:N	1.98	0.77
3:H:506:LYS:HD2	3:H:506:LYS:N	1.99	0.77
3:L:506:LYS:HD2	3:L:506:LYS:N	1.98	0.77
3:H:479:ILE:CG1	3:H:515:CYS:HA	2.15	0.77
3:M:479:ILE:HG13	3:M:515:CYS:HA	1.65	0.77
1:X:1:DT:H2''	1:X:2:DT:C5'	2.13	0.77
1:V:2:DT:H2''	1:V:3:DG:H5'	1.67	0.77
3:I:565:ASN:HB3	3:I:566:PRO:HD2	1.67	0.77
3:H:621:ILE:HD13	3:H:621:ILE:H	1.48	0.76
1:T:7:DA:H2''	1:T:8:DA:C8	2.20	0.76
3:B:621:ILE:H	3:B:621:ILE:HD13	1.50	0.76
3:M:621:ILE:HD13	3:M:621:ILE:H	1.50	0.76
3:D:460:ILE:HG12	3:D:476:VAL:HG12	1.67	0.76
3:I:479:ILE:HG13	3:I:515:CYS:HA	1.67	0.76
1:X:9:DT:H2''	1:X:10:DT:H5'	1.66	0.76
3:B:479:ILE:HG13	3:B:515:CYS:HA	1.67	0.76
3:L:504:GLU:HB3	3:L:506:LYS:HD3	1.67	0.76
1:T:3:DG:C2'	1:T:4:DA:H5''	2.16	0.76
3:H:479:ILE:HG13	3:H:515:CYS:HA	1.66	0.76
3:H:584:ASP:HB3	3:H:597:ILE:H	1.48	0.76
3:I:479:ILE:CG1	3:I:515:CYS:HA	2.16	0.76
3:I:504:GLU:HB3	3:I:506:LYS:HD3	1.68	0.76
3:L:669:GLN:H	3:M:669:GLN:NE2	1.84	0.76
3:M:506:LYS:HD2	3:M:506:LYS:N	1.99	0.76
3:D:504:GLU:HB3	3:D:506:LYS:HD3	1.67	0.76
3:M:460:ILE:HG12	3:M:476:VAL:HG12	1.68	0.76
3:M:478:ARG:CZ	3:M:491:LYS:HE3	2.16	0.75
2:W:7:DA:H2''	2:W:8:DA:H5'	1.68	0.75
3:D:621:ILE:HD13	3:D:621:ILE:H	1.51	0.75
3:M:405:SER:HA	3:M:560:LEU:HD22	1.67	0.75
3:L:479:ILE:HG13	3:L:515:CYS:HA	1.69	0.75
3:H:504:GLU:HB3	3:H:506:LYS:HD3	1.67	0.75
1:X:9:DT:H2''	1:X:10:DT:C5'	2.16	0.75
3:I:478:ARG:CZ	3:I:491:LYS:HE3	2.16	0.75
3:H:460:ILE:HG12	3:H:476:VAL:HG12	1.68	0.74
3:I:621:ILE:HD13	3:I:621:ILE:H	1.50	0.74
3:L:478:ARG:NE	3:L:491:LYS:HE3	2.02	0.74
1:T:6:DG:H2''	1:T:7:DA:O5'	1.88	0.74
3:H:405:SER:HA	3:H:560:LEU:HD22	1.68	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:M:504:GLU:HB3	3:M:506:LYS:HD3	1.68	0.74
2:W:2:DA:H2''	2:W:3:DT:C5'	2.09	0.74
3:M:479:ILE:CG1	3:M:515:CYS:HA	2.17	0.74
3:B:405:SER:HA	3:B:560:LEU:HD22	1.69	0.73
3:D:479:ILE:HG13	3:D:515:CYS:HA	1.69	0.73
3:B:669:GLN:HE22	3:D:668:SER:CA	2.01	0.73
3:L:405:SER:HA	3:L:560:LEU:HD22	1.68	0.73
1:V:1:DT:C6	1:V:2:DT:H72	2.23	0.73
3:B:479:ILE:CG1	3:B:515:CYS:HA	2.18	0.73
3:H:528:LEU:HD13	3:H:528:LEU:O	1.89	0.73
3:H:613:GLU:HG2	3:H:621:ILE:HD11	1.71	0.73
3:B:528:LEU:HD13	3:B:528:LEU:O	1.88	0.73
3:D:478:ARG:CZ	3:D:491:LYS:HE3	2.17	0.73
3:I:613:GLU:HG2	3:I:621:ILE:HD11	1.71	0.73
3:L:479:ILE:CG1	3:L:515:CYS:HA	2.19	0.73
3:B:506:LYS:H	3:B:506:LYS:CD	2.02	0.72
1:V:7:DA:P	3:I:664:LYS:HB3	2.29	0.72
3:B:482:LYS:HB3	3:I:606:GLU:OE2	1.90	0.72
2:Z:2:DA:H2''	2:Z:3:DT:O5'	1.90	0.72
3:H:478:ARG:NE	3:H:491:LYS:HE3	2.05	0.72
3:B:478:ARG:NE	3:B:491:LYS:HE3	2.05	0.71
3:L:506:LYS:H	3:L:506:LYS:CD	2.03	0.71
1:X:1:DT:H2''	1:X:2:DT:H5'	1.72	0.71
3:I:491:LYS:HZ3	3:I:497:LYS:HD2	1.54	0.71
3:I:506:LYS:H	3:I:506:LYS:CD	2.03	0.71
3:M:613:GLU:HG2	3:M:621:ILE:HD11	1.73	0.71
3:B:491:LYS:NZ	3:B:497:LYS:HD2	2.06	0.71
3:D:479:ILE:CG1	3:D:515:CYS:HA	2.20	0.71
3:D:491:LYS:NZ	3:D:497:LYS:HD2	2.05	0.71
3:D:613:GLU:HG2	3:D:621:ILE:HD11	1.72	0.71
3:H:460:ILE:HG23	3:H:542:VAL:CG1	2.22	0.70
3:D:399:TRP:HB3	3:D:547:ARG:NH2	2.06	0.70
1:X:11:DT:H5''	3:L:426:THR:HG21	1.74	0.70
2:Z:3:DT:H4'	2:Z:3:DT:OP1	1.91	0.70
3:I:478:ARG:NE	3:I:491:LYS:HE3	2.07	0.70
2:Z:1:DA:H2''	2:Z:2:DA:C5'	2.19	0.70
3:D:506:LYS:H	3:D:506:LYS:CD	2.03	0.70
3:L:528:LEU:HD13	3:L:528:LEU:O	1.91	0.70
3:L:669:GLN:N	3:M:669:GLN:HE22	1.90	0.70
3:M:528:LEU:HD13	3:M:528:LEU:O	1.92	0.69
3:D:491:LYS:HZ3	3:D:497:LYS:HD2	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:M:506:LYS:H	3:M:506:LYS:CD	2.04	0.69
3:H:491:LYS:NZ	3:H:497:LYS:HD2	2.08	0.69
3:L:578:PRO:HD3	3:L:662:ASN:ND2	2.08	0.69
3:L:399:TRP:CB	3:L:547:ARG:HH12	2.04	0.69
1:V:5:DG:H1'	1:V:6:DG:H5''	1.75	0.69
2:Z:5:DG:H2''	2:Z:6:DA:O5'	1.93	0.69
2:Z:11:DC:H2''	2:Z:12:DC:H5'	1.75	0.69
3:I:528:LEU:HD13	3:I:528:LEU:O	1.93	0.69
3:H:399:TRP:CB	3:H:547:ARG:HH12	2.05	0.68
3:I:491:LYS:NZ	3:I:497:LYS:HD2	2.08	0.68
3:L:613:GLU:HG2	3:L:621:ILE:HD11	1.75	0.68
3:M:399:TRP:HB3	3:M:547:ARG:NH2	2.07	0.68
3:M:460:ILE:HG23	3:M:542:VAL:CG1	2.24	0.68
3:M:578:PRO:HD3	3:M:662:ASN:ND2	2.07	0.68
3:D:481:GLY:HA3	3:D:485:THR:HB	1.75	0.68
3:L:399:TRP:HB3	3:L:547:ARG:NH2	2.06	0.68
3:I:399:TRP:CB	3:I:547:ARG:HH12	2.06	0.68
3:I:628:VAL:HG22	3:I:629:ASP:N	2.08	0.68
3:H:460:ILE:HG23	3:H:542:VAL:HG11	1.75	0.68
3:M:478:ARG:NE	3:M:491:LYS:HE3	2.09	0.68
3:I:405:SER:HA	3:I:560:LEU:HD22	1.73	0.68
3:L:460:ILE:HG23	3:L:542:VAL:CG1	2.24	0.68
3:L:481:GLY:HA3	3:L:485:THR:HB	1.75	0.68
3:B:613:GLU:HG2	3:B:621:ILE:HD11	1.74	0.68
3:H:634:GLN:HB2	3:H:637:MET:HB3	1.76	0.67
3:L:399:TRP:HB2	3:L:547:ARG:HH12	1.58	0.67
3:D:578:PRO:HD3	3:D:662:ASN:ND2	2.08	0.67
3:I:481:GLY:HA3	3:I:485:THR:HB	1.76	0.67
3:M:481:GLY:HA3	3:M:485:THR:HB	1.75	0.67
3:B:634:GLN:HB2	3:B:637:MET:HB3	1.75	0.67
2:Z:12:DC:H2'	2:Z:13:DT:H71	1.75	0.67
2:W:5:DG:H2''	2:W:6:DA:O5'	1.95	0.67
3:B:669:GLN:NE2	3:D:668:SER:HA	2.09	0.67
3:I:399:TRP:HB3	3:I:547:ARG:NH2	2.10	0.67
3:L:634:GLN:HB2	3:L:637:MET:HB3	1.76	0.67
3:D:634:GLN:HB2	3:D:637:MET:HB3	1.76	0.67
3:I:634:GLN:HB2	3:I:637:MET:HB3	1.77	0.67
3:H:669:GLN:HG3	3:I:669:GLN:OE1	1.95	0.67
3:M:491:LYS:NZ	3:M:497:LYS:HD2	2.10	0.66
3:M:491:LYS:HZ3	3:M:497:LYS:HD2	1.59	0.66
3:D:399:TRP:CB	3:D:547:ARG:HH12	2.07	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:636:ASN:HD22	3:H:636:ASN:H	1.44	0.66
3:B:399:TRP:HB3	3:B:547:ARG:NH2	2.10	0.66
3:H:459:PHE:HA	3:H:476:VAL:HG11	1.76	0.66
3:L:491:LYS:NZ	3:L:497:LYS:HD2	2.10	0.66
3:M:399:TRP:CB	3:M:547:ARG:HH12	2.08	0.66
1:V:6:DG:H2''	1:V:7:DA:O5'	1.96	0.66
3:B:399:TRP:CB	3:B:547:ARG:HH12	2.08	0.66
3:M:399:TRP:HB2	3:M:547:ARG:HH12	1.60	0.66
1:X:2:DT:H2''	1:X:3:DG:C5'	2.23	0.66
3:L:628:VAL:HG22	3:L:629:ASP:N	2.10	0.66
3:L:636:ASN:HD22	3:L:636:ASN:H	1.42	0.66
3:B:578:PRO:HD3	3:B:662:ASN:ND2	2.10	0.66
3:B:427:GLU:CD	3:B:430:ARG:HH12	2.04	0.66
3:B:481:GLY:HA3	3:B:485:THR:HB	1.77	0.66
3:D:478:ARG:NE	3:D:491:LYS:HE3	2.10	0.66
3:H:506:LYS:H	3:H:506:LYS:CD	2.06	0.66
3:I:636:ASN:H	3:I:636:ASN:HD22	1.43	0.66
2:Y:3:DT:H2''	2:Y:4:DG:C8	2.31	0.65
3:H:399:TRP:HB3	3:H:547:ARG:NH2	2.10	0.65
3:I:399:TRP:HB2	3:I:547:ARG:HH12	1.60	0.65
1:X:1:DT:H2''	1:X:2:DT:H5''	1.79	0.65
3:L:430:ARG:HG3	3:L:430:ARG:HH11	1.61	0.65
3:I:578:PRO:HD3	3:I:662:ASN:ND2	2.10	0.65
3:D:399:TRP:HB2	3:D:547:ARG:HH12	1.61	0.65
1:V:7:DA:OP1	3:I:664:LYS:HB3	1.96	0.65
1:X:6:DG:C2'	1:X:7:DA:H5''	2.27	0.65
3:L:410:LEU:O	3:L:562:THR:HG21	1.97	0.65
2:Y:4:DG:C2'	2:Y:5:DG:C5'	2.72	0.65
1:T:9:DT:H2''	1:T:10:DT:H5'	1.78	0.65
3:H:481:GLY:HA3	3:H:485:THR:HB	1.77	0.65
3:M:636:ASN:H	3:M:636:ASN:HD22	1.43	0.65
2:W:1:DA:H8	2:W:1:DA:HO5'	1.45	0.64
3:D:636:ASN:H	3:D:636:ASN:HD22	1.45	0.64
3:M:631:ASP:C	3:M:633:SER:H	2.04	0.64
1:T:5:DG:H2''	1:T:6:DG:H5'	1.78	0.64
3:B:460:ILE:HG23	3:B:542:VAL:CG1	2.27	0.64
3:M:634:GLN:HB2	3:M:637:MET:HB3	1.78	0.64
3:D:628:VAL:HG22	3:D:629:ASP:N	2.12	0.64
3:I:427:GLU:CD	3:I:430:ARG:HH12	2.05	0.64
3:L:542:VAL:CG1	3:L:543:ARG:N	2.61	0.64
3:D:598:LEU:HD21	3:D:658:PHE:HE1	1.63	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:399:TRP:HB2	3:H:547:ARG:HH12	1.62	0.64
3:D:460:ILE:HG23	3:D:542:VAL:CG1	2.28	0.64
3:H:542:VAL:CG1	3:H:543:ARG:N	2.61	0.64
3:L:581:GLU:OE1	3:M:614:LYS:HD2	1.97	0.64
3:M:479:ILE:HD12	3:M:479:ILE:O	1.98	0.64
3:B:598:LEU:HD21	3:B:658:PHE:HE1	1.63	0.64
2:W:10:DT:H2''	2:W:11:DC:C5'	2.26	0.63
3:M:410:LEU:O	3:M:562:THR:HG21	1.98	0.63
3:D:528:LEU:HD13	3:D:528:LEU:O	1.98	0.63
3:H:628:VAL:HG22	3:H:629:ASP:N	2.13	0.63
3:M:628:VAL:HG22	3:M:629:ASP:N	2.10	0.63
1:V:2:DT:C2'	1:V:3:DG:C5'	2.71	0.63
3:B:479:ILE:HD12	3:B:481:GLY:H	1.64	0.63
2:Y:4:DG:H2''	2:Y:5:DG:H5''	1.75	0.63
3:H:598:LEU:HD21	3:H:658:PHE:HE1	1.64	0.62
3:L:631:ASP:C	3:L:633:SER:H	2.07	0.62
3:L:459:PHE:HA	3:L:476:VAL:HG11	1.81	0.62
2:Z:10:DT:H2''	2:Z:11:DC:H5'	1.82	0.62
3:B:636:ASN:HD22	3:B:636:ASN:H	1.48	0.62
3:L:542:VAL:HG12	3:L:543:ARG:N	2.14	0.62
2:Z:3:DT:H2''	2:Z:4:DG:C8	2.35	0.62
3:B:628:VAL:HG22	3:B:629:ASP:N	2.13	0.62
3:H:427:GLU:CD	3:H:430:ARG:HH12	2.08	0.62
3:L:479:ILE:HD12	3:L:481:GLY:H	1.64	0.62
3:D:459:PHE:HA	3:D:476:VAL:HG11	1.80	0.62
3:I:479:ILE:HD12	3:I:479:ILE:O	2.00	0.62
3:L:598:LEU:HD21	3:L:658:PHE:HE1	1.64	0.62
3:I:460:ILE:HG23	3:I:542:VAL:CG1	2.30	0.61
3:I:467:ILE:O	3:I:468:LEU:C	2.42	0.61
3:B:399:TRP:HB2	3:B:547:ARG:HH12	1.63	0.61
3:L:427:GLU:CD	3:L:430:ARG:HH12	2.08	0.61
3:B:467:ILE:O	3:B:468:LEU:C	2.43	0.61
3:H:578:PRO:HD3	3:H:662:ASN:ND2	2.15	0.61
3:B:459:PHE:HA	3:B:476:VAL:HG11	1.81	0.61
3:M:648:LYS:C	3:M:648:LYS:HD3	2.26	0.61
3:H:478:ARG:HB3	3:H:499:LEU:HD21	1.82	0.61
3:H:631:ASP:C	3:H:633:SER:H	2.06	0.61
3:I:584:ASP:CB	3:I:597:ILE:H	2.13	0.61
3:I:636:ASN:HD22	3:I:636:ASN:N	1.98	0.61
3:L:598:LEU:HD21	3:L:658:PHE:CE1	2.35	0.61
3:D:542:VAL:CG1	3:D:543:ARG:N	2.62	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:459:PHE:HA	3:I:476:VAL:HG11	1.83	0.61
2:W:4:DG:H2''	2:W:5:DG:C5'	2.30	0.61
3:B:542:VAL:CG1	3:B:543:ARG:N	2.64	0.61
2:Y:5:DG:H2''	2:Y:6:DA:O5'	2.00	0.61
3:D:410:LEU:O	3:D:562:THR:HG21	2.00	0.61
3:D:427:GLU:CD	3:D:430:ARG:HH12	2.07	0.61
3:I:479:ILE:HD12	3:I:481:GLY:H	1.66	0.61
3:H:542:VAL:HG12	3:H:543:ARG:N	2.15	0.61
3:I:648:LYS:HD3	3:I:648:LYS:C	2.26	0.61
3:M:459:PHE:HA	3:M:476:VAL:HG11	1.83	0.61
3:I:631:ASP:C	3:I:633:SER:H	2.07	0.60
3:L:584:ASP:CB	3:L:597:ILE:H	2.14	0.60
3:M:427:GLU:CD	3:M:430:ARG:HH12	2.09	0.60
3:B:479:ILE:HD12	3:B:479:ILE:O	2.01	0.60
3:L:636:ASN:HD22	3:L:636:ASN:N	1.97	0.60
3:M:492:ILE:HG22	3:M:493:VAL:N	2.11	0.60
3:D:598:LEU:HD21	3:D:658:PHE:CE1	2.37	0.60
3:H:459:PHE:HA	3:H:476:VAL:CG1	2.31	0.60
3:I:542:VAL:CG1	3:I:543:ARG:N	2.65	0.60
3:M:501:ILE:C	3:M:501:ILE:HD12	2.26	0.60
3:L:460:ILE:HG23	3:L:542:VAL:HG11	1.82	0.60
2:Z:11:DC:H2''	2:Z:12:DC:C5'	2.32	0.60
2:W:11:DC:H2''	2:W:12:DC:H5'	1.84	0.60
3:B:598:LEU:HD21	3:B:658:PHE:CE1	2.36	0.60
3:D:467:ILE:O	3:D:468:LEU:C	2.45	0.60
3:D:479:ILE:HD12	3:D:481:GLY:H	1.66	0.60
3:H:636:ASN:HD22	3:H:636:ASN:N	1.99	0.60
3:L:413:GLU:HG3	3:L:444:GLN:HE21	1.65	0.60
3:H:445:LEU:HD11	3:H:550:ILE:HD11	1.84	0.60
1:X:2:DT:C2'	1:X:3:DG:H5'	2.23	0.60
3:D:556:ARG:HG2	3:D:557:ILE:H	1.64	0.60
3:H:479:ILE:HD12	3:H:481:GLY:H	1.66	0.60
3:D:631:ASP:C	3:D:633:SER:H	2.07	0.60
3:M:478:ARG:HB3	3:M:499:LEU:HD21	1.84	0.60
3:M:584:ASP:CB	3:M:597:ILE:H	2.14	0.60
3:H:410:LEU:O	3:H:562:THR:HG21	2.00	0.59
3:I:478:ARG:HB3	3:I:499:LEU:HD21	1.83	0.59
3:I:598:LEU:HD21	3:I:658:PHE:HE1	1.66	0.59
3:L:478:ARG:HB3	3:L:499:LEU:HD21	1.83	0.59
2:Z:6:DA:H2''	2:Z:7:DA:C8	2.38	0.59
3:B:614:LYS:HD2	3:D:581:GLU:OE1	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:479:ILE:HD12	3:D:479:ILE:O	2.02	0.59
3:L:436:PRO:HG3	3:L:632:LYS:HE2	1.84	0.59
3:D:478:ARG:HB3	3:D:499:LEU:HD21	1.84	0.59
3:B:648:LYS:HD3	3:B:648:LYS:C	2.27	0.59
3:L:556:ARG:HG2	3:L:557:ILE:H	1.67	0.59
3:H:648:LYS:HD3	3:H:648:LYS:C	2.27	0.59
3:D:648:LYS:HD3	3:D:648:LYS:C	2.26	0.59
3:H:598:LEU:HD21	3:H:658:PHE:CE1	2.38	0.59
3:I:410:LEU:O	3:I:562:THR:HG21	2.02	0.59
3:M:479:ILE:HD12	3:M:481:GLY:H	1.67	0.59
3:H:628:VAL:HG13	3:H:629:ASP:N	2.17	0.59
3:M:636:ASN:HD22	3:M:636:ASN:N	1.98	0.59
3:M:542:VAL:CG1	3:M:543:ARG:N	2.66	0.59
3:H:413:GLU:HG3	3:H:444:GLN:HE21	1.67	0.59
3:H:441:PRO:HG2	3:H:513:ILE:HB	1.84	0.59
3:B:669:GLN:HE22	3:D:668:SER:HB2	1.67	0.59
3:I:571:GLN:O	3:I:576:GLU:OE2	2.20	0.59
3:M:460:ILE:HG23	3:M:542:VAL:HG11	1.84	0.59
3:M:556:ARG:HG2	3:M:557:ILE:H	1.68	0.59
1:X:7:DA:H2''	1:X:8:DA:C8	2.38	0.58
3:I:598:LEU:HD21	3:I:658:PHE:CE1	2.38	0.58
3:L:430:ARG:HH11	3:L:430:ARG:CG	2.16	0.58
1:V:2:DT:C2'	1:V:3:DG:H5''	2.23	0.58
3:B:410:LEU:O	3:B:562:THR:HG21	2.02	0.58
3:D:542:VAL:HG12	3:D:543:ARG:N	2.16	0.58
3:L:648:LYS:HD3	3:L:648:LYS:C	2.28	0.58
3:H:479:ILE:HD12	3:H:479:ILE:O	2.03	0.58
3:M:413:GLU:HG3	3:M:444:GLN:HE21	1.67	0.58
3:M:430:ARG:HG3	3:M:430:ARG:HH11	1.68	0.58
3:B:459:PHE:HA	3:B:476:VAL:CG1	2.34	0.58
3:H:584:ASP:CB	3:H:597:ILE:H	2.16	0.58
3:L:423:HIS:HB3	3:L:430:ARG:CG	2.31	0.58
3:B:556:ARG:HG2	3:B:557:ILE:H	1.68	0.58
3:B:669:GLN:HE22	3:D:668:SER:CB	2.15	0.58
3:D:501:ILE:HD12	3:D:501:ILE:C	2.29	0.58
3:D:636:ASN:HD22	3:D:636:ASN:N	2.00	0.58
3:I:413:GLU:HG3	3:I:444:GLN:HE21	1.69	0.58
3:M:598:LEU:HD21	3:M:658:PHE:HE1	1.68	0.58
3:B:669:GLN:HE22	3:D:668:SER:HA	1.64	0.58
3:I:571:GLN:O	3:I:576:GLU:CD	2.47	0.58
3:L:445:LEU:HD11	3:L:550:ILE:HD11	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:631:ASP:C	3:B:633:SER:H	2.09	0.58
1:X:8:DA:H2''	1:X:9:DT:OP2	2.03	0.58
3:B:636:ASN:HD22	3:B:636:ASN:N	2.01	0.58
3:D:413:GLU:HG3	3:D:444:GLN:HE21	1.69	0.58
3:H:467:ILE:O	3:H:468:LEU:C	2.47	0.58
3:H:501:ILE:C	3:H:501:ILE:HD12	2.28	0.58
3:L:478:ARG:HG2	3:L:491:LYS:HD2	1.85	0.58
3:B:542:VAL:HG12	3:B:543:ARG:N	2.18	0.57
3:B:584:ASP:CB	3:B:597:ILE:H	2.15	0.57
3:H:408:TYR:O	3:H:409:GLU:HB2	2.04	0.57
3:I:526:ILE:O	3:I:529:ARG:HG2	2.04	0.57
3:M:526:ILE:O	3:M:529:ARG:HG2	2.04	0.57
1:V:2:DT:C2'	1:V:3:DG:H5'	2.33	0.57
3:B:501:ILE:HD12	3:B:501:ILE:C	2.30	0.57
3:D:460:ILE:HG23	3:D:542:VAL:HG11	1.86	0.57
3:I:501:ILE:HD12	3:I:501:ILE:C	2.28	0.57
3:L:467:ILE:O	3:L:468:LEU:C	2.48	0.57
3:M:479:ILE:HD12	3:M:479:ILE:C	2.30	0.57
3:M:542:VAL:HG12	3:M:543:ARG:N	2.19	0.57
3:B:650:ILE:HG13	3:B:677:PRO:HB3	1.87	0.57
3:I:492:ILE:HG22	3:I:493:VAL:N	2.13	0.57
3:B:430:ARG:HG3	3:B:430:ARG:HH11	1.69	0.57
3:I:503:LEU:HB3	3:I:509:MET:CE	2.35	0.57
1:V:5:DG:H1'	1:V:6:DG:C5'	2.34	0.57
3:B:460:ILE:HG23	3:B:542:VAL:HG11	1.85	0.57
3:H:417:LYS:HG3	3:H:434:LYS:O	2.04	0.57
3:B:413:GLU:HG3	3:B:444:GLN:HE21	1.68	0.57
3:M:459:PHE:HA	3:M:476:VAL:CG1	2.34	0.57
3:D:459:PHE:HA	3:D:476:VAL:CG1	2.35	0.56
3:I:628:VAL:HG13	3:I:629:ASP:N	2.20	0.56
2:W:12:DC:H5'	2:W:12:DC:H6	1.69	0.56
3:B:478:ARG:HB3	3:B:499:LEU:HD21	1.87	0.56
3:D:628:VAL:HG13	3:D:629:ASP:N	2.20	0.56
3:D:613:GLU:O	3:D:621:ILE:HD13	2.06	0.56
3:D:650:ILE:HG13	3:D:677:PRO:HB3	1.87	0.56
3:H:423:HIS:HB3	3:H:430:ARG:CG	2.34	0.56
2:Z:7:DA:H1'	2:Z:8:DA:H5'	1.87	0.56
3:L:491:LYS:HZ3	3:L:497:LYS:HD2	1.70	0.56
3:M:598:LEU:HD21	3:M:658:PHE:CE1	2.41	0.56
2:Y:12:DC:H1'	2:Y:13:DT:H5''	1.87	0.56
3:B:526:ILE:O	3:B:529:ARG:HG2	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:408:TYR:O	3:I:409:GLU:HB2	2.05	0.56
3:H:478:ARG:HG2	3:H:491:LYS:HD2	1.88	0.56
3:I:441:PRO:HG2	3:I:513:ILE:HB	1.88	0.56
3:I:556:ARG:HG2	3:I:557:ILE:H	1.71	0.56
3:D:478:ARG:HG2	3:D:491:LYS:HD2	1.87	0.56
3:D:620:GLN:OE1	3:D:623:GLU:HB2	2.06	0.56
3:H:556:ARG:HG2	3:H:557:ILE:H	1.71	0.56
3:M:478:ARG:H	3:M:478:ARG:HD2	1.71	0.56
3:B:670:PRO:HD3	3:D:579:MET:HB3	1.88	0.56
3:B:479:ILE:HD12	3:B:479:ILE:C	2.30	0.55
3:H:526:ILE:O	3:H:529:ARG:HG2	2.06	0.55
3:I:430:ARG:HG3	3:I:430:ARG:HH11	1.69	0.55
1:V:5:DG:C2'	1:V:6:DG:H5'	2.35	0.55
3:B:423:HIS:HB3	3:B:430:ARG:CG	2.35	0.55
3:L:417:LYS:HG3	3:L:434:LYS:O	2.05	0.55
3:B:408:TYR:O	3:B:409:GLU:HB2	2.05	0.55
3:D:526:ILE:O	3:D:529:ARG:HG2	2.06	0.55
3:I:566:PRO:O	3:I:567:ILE:HD13	2.06	0.55
3:L:526:ILE:O	3:L:529:ARG:HG2	2.06	0.55
3:I:459:PHE:HA	3:I:476:VAL:CG1	2.37	0.55
3:M:408:TYR:O	3:M:409:GLU:HB2	2.06	0.55
3:D:423:HIS:HB3	3:D:430:ARG:CG	2.33	0.55
3:H:428:GLY:O	3:H:429:SER:C	2.50	0.55
3:I:460:ILE:HG23	3:I:542:VAL:HG11	1.88	0.55
3:M:441:PRO:HG2	3:M:513:ILE:HB	1.89	0.55
3:B:491:LYS:HZ3	3:B:497:LYS:CD	2.16	0.55
3:D:479:ILE:HD12	3:D:479:ILE:C	2.31	0.55
3:L:459:PHE:HA	3:L:476:VAL:CG1	2.36	0.55
3:H:492:ILE:HG22	3:H:493:VAL:N	2.15	0.55
3:L:441:PRO:HG2	3:L:513:ILE:HB	1.89	0.55
3:L:628:VAL:HG13	3:L:629:ASP:N	2.22	0.55
3:M:399:TRP:HB2	3:M:547:ARG:NH1	2.22	0.55
3:B:492:ILE:HG22	3:B:493:VAL:N	2.15	0.55
3:L:501:ILE:HD12	3:L:501:ILE:C	2.32	0.55
3:M:417:LYS:HG3	3:M:434:LYS:O	2.07	0.55
1:V:2:DT:O2	2:W:1:DA:H2	1.90	0.54
3:I:417:LYS:HG3	3:I:434:LYS:O	2.06	0.54
3:I:445:LEU:HD11	3:I:550:ILE:HD11	1.89	0.54
3:L:479:ILE:HD12	3:L:479:ILE:O	2.06	0.54
3:B:427:GLU:OE1	3:B:430:ARG:NH1	2.40	0.54
3:B:582:ARG:NH1	3:B:582:ARG:HB2	2.23	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:613:GLU:O	3:H:621:ILE:HD13	2.05	0.54
3:H:650:ILE:HG13	3:H:677:PRO:HB3	1.88	0.54
3:I:542:VAL:HG12	3:I:543:ARG:N	2.22	0.54
1:T:13:DC:H2''	1:T:14:DA:C8	2.42	0.54
2:W:12:DC:H5'	2:W:12:DC:C6	2.42	0.54
3:D:584:ASP:CB	3:D:597:ILE:H	2.17	0.54
3:H:479:ILE:HD12	3:H:479:ILE:C	2.32	0.54
3:I:399:TRP:HB2	3:I:547:ARG:NH1	2.23	0.54
3:I:479:ILE:HD12	3:I:479:ILE:C	2.32	0.54
3:M:620:GLN:OE1	3:M:623:GLU:HB2	2.07	0.54
3:H:430:ARG:HG3	3:H:430:ARG:HH11	1.72	0.54
3:H:620:GLN:OE1	3:H:623:GLU:HB2	2.08	0.54
3:D:422:ALA:HB1	3:D:518:ILE:O	2.07	0.54
3:M:584:ASP:HB2	3:M:597:ILE:HB	1.88	0.54
1:V:4:DA:H4'	1:V:4:DA:OP1	2.08	0.54
3:B:441:PRO:HG2	3:B:513:ILE:HB	1.90	0.54
3:D:582:ARG:NH1	3:D:582:ARG:HB2	2.23	0.54
3:I:503:LEU:HB3	3:I:509:MET:HE1	1.88	0.54
3:L:620:GLN:OE1	3:L:623:GLU:HB2	2.07	0.54
3:M:417:LYS:O	3:M:567:ILE:HD12	2.08	0.54
3:M:547:ARG:HG2	3:M:561:GLN:HB2	1.90	0.54
3:D:417:LYS:O	3:D:567:ILE:HD12	2.07	0.54
1:X:9:DT:H2''	1:X:10:DT:H5''	1.89	0.54
3:B:547:ARG:HG2	3:B:561:GLN:HB2	1.90	0.54
3:D:399:TRP:HB2	3:D:547:ARG:NH1	2.23	0.54
3:M:478:ARG:HD2	3:M:478:ARG:N	2.22	0.54
1:X:7:DA:H2''	1:X:8:DA:H8	1.71	0.54
3:H:478:ARG:H	3:H:478:ARG:HD2	1.73	0.54
3:H:547:ARG:HG2	3:H:561:GLN:HB2	1.90	0.54
3:D:445:LEU:HD11	3:D:550:ILE:HD11	1.89	0.54
3:H:503:LEU:HB3	3:H:509:MET:CE	2.38	0.54
1:X:12:DC:H2''	1:X:13:DC:H5'	1.90	0.53
3:I:464:ASP:O	3:I:465:GLU:HG2	2.09	0.53
3:I:522:ARG:HB2	3:I:525:ASP:OD2	2.09	0.53
3:I:571:GLN:O	3:I:576:GLU:OE1	2.27	0.53
3:L:549:HIS:O	3:L:551:PRO:HD3	2.08	0.53
3:L:578:PRO:HD3	3:L:662:ASN:HD22	1.72	0.53
3:M:467:ILE:O	3:M:468:LEU:C	2.50	0.53
3:D:430:ARG:HG3	3:D:430:ARG:HH11	1.73	0.53
3:H:669:GLN:H	3:I:669:GLN:HE22	1.56	0.53
3:I:650:ILE:HG13	3:I:677:PRO:HB3	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:408:TYR:O	3:L:409:GLU:HB2	2.06	0.53
1:X:3:DG:H2''	1:X:4:DA:OP2	2.09	0.53
3:B:620:GLN:OE1	3:B:623:GLU:HB2	2.09	0.53
3:D:408:TYR:O	3:D:409:GLU:HB2	2.07	0.53
3:L:456:LEU:HD23	3:L:501:ILE:HD11	1.91	0.53
3:M:478:ARG:HG2	3:M:491:LYS:HD2	1.90	0.53
3:M:578:PRO:HD3	3:M:662:ASN:HD22	1.70	0.53
3:B:628:VAL:HG13	3:B:629:ASP:N	2.24	0.53
3:D:441:PRO:HG2	3:D:513:ILE:HB	1.89	0.53
3:I:584:ASP:HB2	3:I:597:ILE:HB	1.90	0.53
3:L:428:GLY:O	3:L:429:SER:C	2.50	0.53
3:B:617:ASP:HA	3:D:637:MET:SD	2.48	0.53
3:I:478:ARG:N	3:I:478:ARG:HD2	2.24	0.53
3:L:399:TRP:HB2	3:L:547:ARG:NH1	2.22	0.53
2:Z:8:DA:H2''	2:Z:9:DT:H5'	1.90	0.53
3:B:600:GLY:N	3:B:603:PHE:HE2	2.06	0.53
3:D:478:ARG:H	3:D:478:ARG:HD2	1.73	0.53
3:L:669:GLN:H	3:M:669:GLN:CD	2.15	0.53
2:Y:14:DC:H2''	2:Z:1:DA:C8	2.43	0.53
3:B:478:ARG:HD2	3:B:478:ARG:N	2.24	0.53
3:H:399:TRP:HB2	3:H:547:ARG:NH1	2.23	0.53
3:L:503:LEU:HB3	3:L:509:MET:CE	2.38	0.53
2:W:4:DG:C2'	2:W:5:DG:H5'	2.35	0.53
3:H:458:ILE:HG12	3:H:546:PHE:CD1	2.44	0.53
3:H:566:PRO:O	3:H:567:ILE:HD13	2.09	0.53
3:I:423:HIS:HB3	3:I:430:ARG:CG	2.37	0.53
3:M:628:VAL:HG13	3:M:629:ASP:N	2.23	0.53
3:L:650:ILE:HG13	3:L:677:PRO:HB3	1.91	0.53
3:M:631:ASP:C	3:M:633:SER:N	2.67	0.53
3:D:578:PRO:HD3	3:D:662:ASN:HD22	1.72	0.52
3:H:454:LEU:HD23	3:H:509:MET:HE2	1.90	0.52
3:H:458:ILE:HD11	3:H:513:ILE:HD12	1.91	0.52
3:L:458:ILE:HD11	3:L:513:ILE:HD12	1.91	0.52
3:B:456:LEU:HD23	3:B:501:ILE:HD11	1.91	0.52
3:H:584:ASP:HB2	3:H:597:ILE:HB	1.91	0.52
3:I:478:ARG:HG2	3:I:491:LYS:HD2	1.91	0.52
3:L:582:ARG:HB2	3:L:582:ARG:NH1	2.24	0.52
3:M:423:HIS:HB3	3:M:430:ARG:CG	2.35	0.52
3:M:428:GLY:O	3:M:429:SER:C	2.52	0.52
3:D:547:ARG:HG2	3:D:561:GLN:HB2	1.92	0.52
3:M:650:ILE:HG13	3:M:677:PRO:HB3	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Y:6:DA:H2''	2:Y:7:DA:C8	2.43	0.52
3:H:427:GLU:OE1	3:H:430:ARG:NH1	2.42	0.52
3:L:479:ILE:HD12	3:L:479:ILE:C	2.34	0.52
3:M:613:GLU:O	3:M:621:ILE:HD13	2.09	0.52
2:Y:14:DC:H2''	2:Z:1:DA:H8	1.74	0.52
3:D:478:ARG:HD2	3:D:478:ARG:N	2.25	0.52
3:M:565:ASN:HB3	3:M:566:PRO:CD	2.37	0.52
3:M:600:GLY:N	3:M:603:PHE:HE2	2.07	0.52
3:H:503:LEU:HD22	3:H:509:MET:C	2.34	0.52
3:I:582:ARG:NH1	3:I:582:ARG:HB2	2.24	0.52
3:M:427:GLU:OE1	3:M:430:ARG:NH1	2.43	0.52
3:M:503:LEU:HB3	3:M:509:MET:CE	2.39	0.52
2:Y:4:DG:C2'	2:Y:5:DG:H5''	2.37	0.52
3:B:613:GLU:O	3:B:621:ILE:HD13	2.10	0.52
3:I:422:ALA:HB1	3:I:518:ILE:O	2.10	0.52
3:I:578:PRO:HD3	3:I:662:ASN:HD22	1.73	0.52
3:L:417:LYS:O	3:L:567:ILE:HD12	2.09	0.52
3:M:430:ARG:HH11	3:M:430:ARG:CG	2.22	0.52
3:M:458:ILE:HG12	3:M:546:PHE:CD1	2.44	0.52
2:W:11:DC:N4	3:D:427:GLU:OE2	2.43	0.52
3:B:584:ASP:HB2	3:B:597:ILE:HB	1.92	0.52
1:V:1:DT:H5''	1:T:14:DA:H1'	1.91	0.52
3:I:478:ARG:HD2	3:I:478:ARG:H	1.75	0.52
3:L:416:PRO:HG2	3:L:567:ILE:HD11	1.92	0.52
3:L:427:GLU:OE1	3:L:430:ARG:NH1	2.43	0.52
3:L:478:ARG:H	3:L:478:ARG:HD2	1.74	0.52
3:L:547:ARG:HG2	3:L:561:GLN:HB2	1.91	0.52
1:X:2:DT:H1'	1:X:3:DG:H5''	1.91	0.52
1:X:4:DA:OP2	1:X:4:DA:H2'	2.10	0.52
3:B:399:TRP:HB2	3:B:547:ARG:NH1	2.25	0.52
3:B:486:THR:HG22	3:B:486:THR:O	2.10	0.52
3:D:522:ARG:HB2	3:D:525:ASP:OD2	2.10	0.52
3:I:428:GLY:O	3:I:429:SER:C	2.52	0.52
3:L:505:PRO:HD2	3:L:506:LYS:HZ3	1.75	0.52
1:V:9:DT:H1'	1:V:10:DT:H5''	1.92	0.51
3:H:549:HIS:O	3:H:551:PRO:HD3	2.10	0.51
1:T:3:DG:H2''	1:T:4:DA:C5'	2.26	0.51
3:I:427:GLU:OE1	3:I:430:ARG:NH1	2.43	0.51
3:L:478:ARG:HD2	3:L:478:ARG:N	2.25	0.51
3:L:522:ARG:HB2	3:L:525:ASP:OD2	2.11	0.51
3:M:636:ASN:N	3:M:636:ASN:ND2	2.59	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Y:2:DA:C1'	2:Y:3:DT:H5''	2.40	0.51
2:W:1:DA:H2''	2:W:2:DA:C5'	2.35	0.51
3:H:422:ALA:HB1	3:H:518:ILE:O	2.10	0.51
3:H:478:ARG:HD2	3:H:478:ARG:N	2.23	0.51
3:H:636:ASN:N	3:H:636:ASN:ND2	2.58	0.51
3:L:584:ASP:HB2	3:L:597:ILE:HB	1.91	0.51
3:L:613:GLU:O	3:L:621:ILE:HD13	2.10	0.51
3:H:501:ILE:HD12	3:H:501:ILE:O	2.11	0.51
3:I:430:ARG:HH11	3:I:430:ARG:CG	2.24	0.51
3:M:422:ALA:HB1	3:M:518:ILE:O	2.10	0.51
2:Z:7:DA:H2''	2:Z:8:DA:H5'	1.92	0.51
3:B:478:ARG:HG2	3:B:491:LYS:HD2	1.92	0.51
3:D:503:LEU:HB3	3:D:509:MET:CE	2.40	0.51
3:L:412:ILE:HD11	3:L:546:PHE:HD2	1.75	0.51
3:B:478:ARG:HD2	3:B:478:ARG:H	1.74	0.51
3:H:459:PHE:CZ	3:H:545:VAL:HG11	2.46	0.51
2:Z:6:DA:H4'	2:Z:6:DA:OP1	2.11	0.51
3:M:460:ILE:HG23	3:M:542:VAL:HG13	1.90	0.51
1:X:5:DG:H2''	1:X:6:DG:H5''	1.83	0.51
3:B:416:PRO:HG2	3:B:567:ILE:HD11	1.92	0.51
3:B:428:GLY:O	3:B:429:SER:C	2.52	0.51
3:M:416:PRO:HG2	3:M:567:ILE:HD11	1.93	0.51
3:B:464:ASP:O	3:B:465:GLU:HG2	2.10	0.51
3:B:609:VAL:HG21	3:B:640:VAL:HG21	1.93	0.51
3:D:428:GLY:O	3:D:429:SER:C	2.53	0.51
3:H:582:ARG:HB2	3:H:582:ARG:NH1	2.26	0.51
3:I:636:ASN:N	3:I:636:ASN:ND2	2.58	0.51
3:L:454:LEU:HD23	3:L:509:MET:HE2	1.91	0.51
3:L:503:LEU:HD22	3:L:509:MET:C	2.36	0.51
3:H:417:LYS:O	3:H:567:ILE:HD12	2.10	0.50
3:H:491:LYS:HZ3	3:H:497:LYS:CD	2.21	0.50
3:I:549:HIS:O	3:I:551:PRO:HD3	2.10	0.50
3:H:522:ARG:HB2	3:H:525:ASP:OD2	2.11	0.50
3:H:631:ASP:C	3:H:633:SER:N	2.69	0.50
3:I:620:GLN:OE1	3:I:623:GLU:HB2	2.10	0.50
3:L:412:ILE:HD13	3:L:443:VAL:HG22	1.93	0.50
3:B:578:PRO:HD3	3:B:662:ASN:HD22	1.74	0.50
3:B:670:PRO:HD3	3:D:579:MET:CE	2.42	0.50
3:D:647:ASN:O	3:D:650:ILE:HG23	2.10	0.50
3:I:458:ILE:HD11	3:I:513:ILE:HD12	1.93	0.50
3:L:464:ASP:O	3:L:465:GLU:HG2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:636:ASN:N	3:D:636:ASN:ND2	2.60	0.50
3:I:417:LYS:O	3:I:567:ILE:HD12	2.11	0.50
3:I:458:ILE:HG12	3:I:546:PHE:CD1	2.47	0.50
3:L:399:TRP:CB	3:L:547:ARG:NH1	2.74	0.50
3:L:423:HIS:HB3	3:L:430:ARG:HB2	1.92	0.50
3:M:459:PHE:CZ	3:M:545:VAL:HG11	2.46	0.50
3:D:412:ILE:HD13	3:D:443:VAL:HG22	1.91	0.50
3:I:416:PRO:HG2	3:I:567:ILE:HD11	1.94	0.50
3:M:468:LEU:HD23	3:M:543:ARG:NH2	2.27	0.50
3:D:549:HIS:O	3:D:551:PRO:HD3	2.11	0.50
3:D:584:ASP:HB2	3:D:597:ILE:HB	1.93	0.50
3:I:613:GLU:O	3:I:621:ILE:HD13	2.12	0.50
3:L:412:ILE:HD11	3:L:546:PHE:CD2	2.46	0.50
2:Z:12:DC:C2'	2:Z:13:DT:H71	2.42	0.50
3:B:430:ARG:HH11	3:B:430:ARG:CG	2.24	0.50
3:B:458:ILE:HD11	3:B:513:ILE:HD12	1.93	0.50
3:D:454:LEU:HD23	3:D:509:MET:HE2	1.94	0.50
3:H:464:ASP:O	3:H:465:GLU:HG2	2.11	0.50
3:H:668:SER:HB2	3:I:669:GLN:HE22	1.76	0.50
3:I:577:LEU:HB2	3:I:578:PRO:HD2	1.94	0.50
3:L:492:ILE:HG22	3:L:493:VAL:N	2.13	0.50
2:Y:2:DA:H1'	2:Y:3:DT:H5''	1.93	0.50
3:B:491:LYS:NZ	3:B:497:LYS:CD	2.75	0.50
3:H:503:LEU:HB3	3:H:509:MET:HE1	1.92	0.50
3:M:566:PRO:O	3:M:567:ILE:HD13	2.12	0.50
3:D:633:SER:HA	3:D:639:PHE:HE1	1.77	0.50
3:M:501:ILE:HD12	3:M:501:ILE:O	2.12	0.50
3:B:633:SER:HA	3:B:639:PHE:HE1	1.77	0.49
3:L:430:ARG:CG	3:L:430:ARG:NH1	2.72	0.49
3:L:599:THR:HG23	3:M:617:ASP:O	2.11	0.49
1:T:7:DA:H2''	1:T:8:DA:H8	1.72	0.49
3:D:399:TRP:CB	3:D:547:ARG:NH1	2.76	0.49
3:B:412:ILE:HD13	3:B:443:VAL:HG22	1.94	0.49
3:B:417:LYS:HG3	3:B:434:LYS:O	2.12	0.49
3:D:590:VAL:HG23	3:D:591:TYR:H	1.78	0.49
3:H:647:ASN:O	3:H:650:ILE:HG23	2.12	0.49
3:M:445:LEU:HD11	3:M:550:ILE:HD11	1.94	0.49
3:D:430:ARG:CG	3:D:430:ARG:HH11	2.25	0.49
3:H:423:HIS:HB3	3:H:430:ARG:HB2	1.95	0.49
3:I:609:VAL:HG21	3:I:640:VAL:HG21	1.94	0.49
3:I:631:ASP:C	3:I:633:SER:N	2.70	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:V:5:DG:H2''	1:V:6:DG:C5'	2.37	0.49
3:D:565:ASN:HB3	3:D:566:PRO:CD	2.40	0.49
3:I:594:GLN:HB2	3:I:642:ILE:HD12	1.94	0.49
3:L:460:ILE:HG23	3:L:542:VAL:HG13	1.92	0.49
3:M:578:PRO:O	3:M:579:MET:HG3	2.12	0.49
1:T:5:DG:H1'	1:T:6:DG:C5'	2.43	0.49
3:B:445:LEU:HD11	3:B:550:ILE:HD11	1.95	0.49
3:H:412:ILE:HD13	3:H:443:VAL:HG22	1.94	0.49
3:I:600:GLY:N	3:I:603:PHE:HE2	2.11	0.49
3:I:648:LYS:HE2	3:I:678:VAL:HB	1.95	0.49
3:M:456:LEU:HD11	3:M:546:PHE:HB3	1.95	0.49
1:V:7:DA:OP2	3:I:664:LYS:HB3	2.11	0.49
3:H:433:VAL:HG23	3:H:516:ALA:O	2.12	0.49
3:L:468:LEU:HD23	3:L:543:ARG:NH2	2.27	0.49
3:M:522:ARG:HB2	3:M:525:ASP:OD2	2.13	0.49
3:B:454:LEU:HD23	3:B:509:MET:HE2	1.95	0.49
3:B:503:LEU:HB3	3:B:509:MET:CE	2.43	0.49
3:D:521:LEU:HD13	3:D:526:ILE:HD11	1.95	0.49
3:H:486:THR:HG22	3:H:486:THR:O	2.12	0.49
3:H:600:GLY:N	3:H:603:PHE:HE2	2.11	0.49
3:I:547:ARG:HG2	3:I:561:GLN:HB2	1.93	0.49
3:I:456:LEU:HD23	3:I:501:ILE:HD11	1.94	0.49
1:X:6:DG:H2''	1:X:7:DA:C5'	2.38	0.49
3:B:566:PRO:O	3:B:567:ILE:HD13	2.13	0.49
3:B:609:VAL:HG21	3:B:640:VAL:CG2	2.43	0.49
3:B:670:PRO:CD	3:D:579:MET:HB3	2.43	0.49
3:D:417:LYS:HG3	3:D:434:LYS:O	2.12	0.49
3:D:631:ASP:C	3:D:633:SER:N	2.71	0.49
3:L:631:ASP:C	3:L:633:SER:N	2.70	0.49
3:M:456:LEU:HD23	3:M:501:ILE:HD11	1.95	0.49
3:D:505:PRO:HD2	3:D:506:LYS:HZ3	1.78	0.48
3:D:594:GLN:HB2	3:D:642:ILE:HD12	1.95	0.48
3:I:423:HIS:O	3:I:519:LEU:HD12	2.13	0.48
3:L:579:MET:CE	3:M:670:PRO:HD3	2.43	0.48
3:L:590:VAL:HG23	3:L:591:TYR:H	1.78	0.48
3:M:582:ARG:HB2	3:M:582:ARG:NH1	2.27	0.48
3:L:503:LEU:HB3	3:L:509:MET:HE1	1.95	0.48
3:L:600:GLY:N	3:L:603:PHE:HE2	2.10	0.48
3:L:633:SER:HA	3:L:639:PHE:HE1	1.77	0.48
3:M:464:ASP:O	3:M:465:GLU:HG2	2.13	0.48
3:B:636:ASN:N	3:B:636:ASN:ND2	2.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:460:ILE:HG23	3:D:542:VAL:HG13	1.95	0.48
3:H:577:LEU:HB2	3:H:578:PRO:HD2	1.96	0.48
3:I:412:ILE:HD11	3:I:546:PHE:CD2	2.48	0.48
3:I:454:LEU:HD23	3:I:509:MET:HE2	1.94	0.48
3:I:503:LEU:HD22	3:I:509:MET:C	2.38	0.48
3:L:668:SER:CA	3:M:669:GLN:HE22	2.26	0.48
1:X:5:DG:C2'	1:X:6:DG:C5'	2.78	0.48
2:W:4:DG:H1'	2:W:5:DG:C5'	2.44	0.48
3:H:460:ILE:HG23	3:H:542:VAL:HG13	1.94	0.48
3:M:412:ILE:HD13	3:M:443:VAL:HG22	1.94	0.48
3:M:458:ILE:HG12	3:M:546:PHE:HD1	1.79	0.48
3:M:647:ASN:O	3:M:650:ILE:HG23	2.13	0.48
3:H:565:ASN:HB3	3:H:566:PRO:CD	2.37	0.48
3:I:633:SER:HA	3:I:639:PHE:HE1	1.78	0.48
3:L:668:SER:HA	3:M:669:GLN:NE2	2.28	0.48
2:Z:10:DT:C2'	2:Z:11:DC:C5'	2.80	0.48
3:D:503:LEU:HD22	3:D:509:MET:C	2.38	0.48
3:D:647:ASN:HD22	3:D:650:ILE:HG22	1.79	0.48
3:M:454:LEU:HD23	3:M:509:MET:HE2	1.96	0.48
2:W:12:DC:H2''	2:W:13:DT:O5'	2.14	0.48
3:H:479:ILE:HG13	3:H:515:CYS:CA	2.39	0.48
3:I:479:ILE:HG13	3:I:515:CYS:CA	2.40	0.48
3:B:669:GLN:HE22	3:D:669:GLN:H	1.61	0.48
3:D:456:LEU:HD23	3:D:501:ILE:HD11	1.96	0.48
3:I:481:GLY:CA	3:I:485:THR:HB	2.43	0.48
3:I:521:LEU:HD13	3:I:526:ILE:HD11	1.96	0.48
3:B:594:GLN:HB2	3:B:642:ILE:HD12	1.94	0.48
3:B:669:GLN:NE2	3:D:668:SER:HB2	2.28	0.48
3:I:412:ILE:HD13	3:I:443:VAL:HG22	1.95	0.48
3:L:486:THR:O	3:L:486:THR:HG22	2.13	0.48
3:L:566:PRO:O	3:L:567:ILE:HD13	2.13	0.48
3:M:412:ILE:HD11	3:M:546:PHE:HD2	1.79	0.48
1:T:5:DG:H1'	1:T:6:DG:H5''	1.96	0.48
3:D:416:PRO:HG2	3:D:567:ILE:HD11	1.94	0.48
3:H:578:PRO:HD3	3:H:662:ASN:HD22	1.79	0.48
3:B:460:ILE:HG23	3:B:542:VAL:HG13	1.95	0.47
3:D:459:PHE:CZ	3:D:545:VAL:HG11	2.49	0.47
3:D:464:ASP:O	3:D:465:GLU:HG2	2.14	0.47
3:H:416:PRO:HG2	3:H:567:ILE:HD11	1.96	0.47
3:I:412:ILE:HD11	3:I:546:PHE:HD2	1.79	0.47
3:I:503:LEU:HD13	3:I:509:MET:HE3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:M:458:ILE:HD11	3:M:513:ILE:HD12	1.96	0.47
3:M:633:SER:HA	3:M:639:PHE:HE1	1.78	0.47
3:M:647:ASN:HD22	3:M:650:ILE:HG22	1.79	0.47
3:D:501:ILE:HD12	3:D:501:ILE:O	2.14	0.47
3:H:647:ASN:HD22	3:H:650:ILE:HG22	1.77	0.47
3:L:521:LEU:HD13	3:L:526:ILE:HD11	1.95	0.47
3:M:464:ASP:O	3:M:465:GLU:C	2.57	0.47
3:L:458:ILE:HG12	3:L:546:PHE:CD1	2.49	0.47
3:M:521:LEU:HD13	3:M:526:ILE:HD11	1.97	0.47
3:B:417:LYS:O	3:B:567:ILE:HD12	2.14	0.47
3:B:590:VAL:HG23	3:B:591:TYR:H	1.79	0.47
3:D:423:HIS:O	3:D:519:LEU:HD12	2.15	0.47
3:D:458:ILE:HD11	3:D:513:ILE:HD12	1.94	0.47
3:D:481:GLY:CA	3:D:485:THR:HB	2.43	0.47
3:H:481:GLY:CA	3:H:485:THR:HB	2.44	0.47
3:L:652:THR:HG23	3:L:653:PRO:HD2	1.97	0.47
3:B:579:MET:O	3:B:600:GLY:HA3	2.14	0.47
3:D:503:LEU:HB3	3:D:509:MET:HE1	1.95	0.47
3:L:422:ALA:HB1	3:L:518:ILE:O	2.14	0.47
3:M:481:GLY:CA	3:M:485:THR:HB	2.42	0.47
3:M:503:LEU:HB3	3:M:509:MET:HE1	1.97	0.47
3:B:503:LEU:HD22	3:B:509:MET:C	2.39	0.47
3:I:399:TRP:CB	3:I:547:ARG:NH1	2.75	0.47
3:I:460:ILE:HG23	3:I:542:VAL:HG13	1.96	0.47
3:I:609:VAL:HG21	3:I:640:VAL:CG2	2.44	0.47
3:B:468:LEU:HD23	3:B:543:ARG:NH2	2.30	0.47
3:B:501:ILE:HD12	3:B:501:ILE:O	2.14	0.47
3:B:522:ARG:HB2	3:B:525:ASP:OD2	2.15	0.47
3:B:565:ASN:HB3	3:B:566:PRO:CD	2.42	0.47
3:B:647:ASN:O	3:B:650:ILE:HG23	2.14	0.47
3:D:468:LEU:HD23	3:D:543:ARG:NH2	2.30	0.47
3:D:536:GLY:O	3:D:537:ARG:C	2.58	0.47
3:D:566:PRO:O	3:D:567:ILE:HD13	2.14	0.47
3:H:412:ILE:HD11	3:H:546:PHE:HD2	1.80	0.47
3:H:609:VAL:HG21	3:H:640:VAL:HG21	1.97	0.47
3:L:433:VAL:HG23	3:L:516:ALA:O	2.14	0.47
3:M:491:LYS:NZ	3:M:497:LYS:CD	2.77	0.47
3:M:549:HIS:O	3:M:551:PRO:HD3	2.13	0.47
3:M:590:VAL:HG23	3:M:591:TYR:H	1.79	0.47
2:W:7:DA:C2	2:W:8:DA:C4	3.02	0.47
3:B:549:HIS:O	3:B:551:PRO:HD3	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:492:ILE:HG22	3:D:493:VAL:N	2.15	0.47
3:D:600:GLY:N	3:D:603:PHE:HE2	2.12	0.47
3:L:594:GLN:HB2	3:L:642:ILE:HD12	1.95	0.47
3:M:656:VAL:HG22	3:M:673:PHE:O	2.15	0.47
3:B:423:HIS:O	3:B:519:LEU:HD12	2.15	0.47
3:B:522:ARG:O	3:B:523:ASN:C	2.58	0.47
3:B:669:GLN:NE2	3:D:669:GLN:H	2.13	0.47
3:D:486:THR:HG22	3:D:486:THR:O	2.14	0.47
1:X:9:DT:C2'	1:X:10:DT:H5''	2.45	0.47
2:W:12:DC:H1'	2:W:13:DT:H5'	1.96	0.47
3:B:577:LEU:HB2	3:B:578:PRO:HD2	1.97	0.47
3:B:648:LYS:HE2	3:B:678:VAL:HB	1.96	0.47
3:H:399:TRP:CB	3:H:547:ARG:NH1	2.74	0.47
3:I:458:ILE:HG12	3:I:546:PHE:HD1	1.80	0.47
2:W:4:DG:H1'	2:W:5:DG:H5''	1.98	0.46
3:B:631:ASP:C	3:B:633:SER:N	2.73	0.46
3:D:470:PRO:HB3	3:D:496:THR:HG21	1.96	0.46
3:I:501:ILE:HD12	3:I:501:ILE:O	2.15	0.46
3:I:522:ARG:O	3:I:523:ASN:C	2.56	0.46
3:I:579:MET:O	3:I:600:GLY:HA3	2.15	0.46
1:V:13:DC:H2''	1:V:14:DA:C8	2.51	0.46
3:B:458:ILE:HG12	3:B:546:PHE:CD1	2.50	0.46
3:D:610:VAL:O	3:D:658:PHE:HA	2.15	0.46
3:D:626:ALA:HB2	3:D:643:PRO:HD3	1.97	0.46
3:H:412:ILE:HD11	3:H:546:PHE:CD2	2.49	0.46
3:H:466:ARG:HA	3:H:466:ARG:HD2	1.80	0.46
3:H:669:GLN:H	3:I:669:GLN:NE2	2.12	0.46
3:L:579:MET:HB3	3:M:670:PRO:HD3	1.98	0.46
3:M:628:VAL:CG2	3:M:629:ASP:H	2.17	0.46
2:Z:9:DT:C6	2:Z:10:DT:H72	2.50	0.46
3:H:445:LEU:HD11	3:H:550:ILE:CD1	2.46	0.46
3:L:470:PRO:HB3	3:L:496:THR:HG21	1.96	0.46
3:L:647:ASN:O	3:L:650:ILE:HG23	2.15	0.46
3:M:399:TRP:CB	3:M:547:ARG:NH1	2.77	0.46
3:M:479:ILE:HG13	3:M:515:CYS:CA	2.39	0.46
3:M:494:GLY:C	3:M:496:THR:H	2.23	0.46
3:B:399:TRP:CB	3:B:547:ARG:NH1	2.77	0.46
2:W:7:DA:H2''	2:W:8:DA:C5'	2.41	0.46
3:D:412:ILE:HD11	3:D:546:PHE:CD2	2.50	0.46
3:M:412:ILE:HD11	3:M:546:PHE:CD2	2.50	0.46
3:M:610:VAL:O	3:M:658:PHE:HA	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:433:VAL:HG23	3:B:516:ALA:O	2.16	0.46
3:B:610:VAL:O	3:B:658:PHE:HA	2.16	0.46
3:H:505:PRO:HD2	3:H:506:LYS:HZ3	1.81	0.46
3:H:590:VAL:HG23	3:H:591:TYR:H	1.79	0.46
3:L:626:ALA:HB2	3:L:643:PRO:HD3	1.98	0.46
3:L:668:SER:HB2	3:M:669:GLN:HE22	1.81	0.46
3:D:588:CYS:SG	3:D:594:GLN:CD	2.99	0.46
3:D:609:VAL:HG21	3:D:640:VAL:HG21	1.98	0.46
3:H:421:ARG:HG2	3:H:430:ARG:HD2	1.97	0.46
3:I:433:VAL:HG23	3:I:516:ALA:O	2.16	0.46
3:D:458:ILE:HG12	3:D:546:PHE:CD1	2.51	0.46
3:D:556:ARG:HG2	3:D:557:ILE:N	2.30	0.46
3:H:609:VAL:HG21	3:H:640:VAL:CG2	2.46	0.46
3:I:462:THR:HG23	3:I:469:LYS:O	2.16	0.46
3:I:464:ASP:C	3:I:465:GLU:HG2	2.41	0.46
3:M:503:LEU:HD22	3:M:509:MET:C	2.40	0.46
3:B:462:THR:HG23	3:B:469:LYS:O	2.16	0.46
3:I:656:VAL:HG22	3:I:673:PHE:O	2.15	0.46
1:T:11:DT:H1'	1:T:12:DC:H5''	1.98	0.46
3:B:412:ILE:HD11	3:B:546:PHE:CD2	2.51	0.46
3:B:464:ASP:O	3:B:465:GLU:C	2.59	0.46
3:D:577:LEU:HB2	3:D:578:PRO:HD2	1.97	0.46
3:I:491:LYS:NZ	3:I:497:LYS:CD	2.76	0.46
3:L:600:GLY:O	3:L:636:ASN:HB2	2.16	0.46
3:M:430:ARG:CG	3:M:430:ARG:NH1	2.78	0.46
1:V:7:DA:H2''	1:V:8:DA:C8	2.51	0.45
3:B:479:ILE:HG13	3:B:515:CYS:CA	2.41	0.45
3:B:505:PRO:HD2	3:B:506:LYS:HZ3	1.81	0.45
3:D:427:GLU:OE1	3:D:430:ARG:NH1	2.49	0.45
3:D:464:ASP:O	3:D:465:GLU:C	2.59	0.45
3:H:457:GLN:O	3:H:546:PHE:HA	2.16	0.45
3:H:491:LYS:NZ	3:H:497:LYS:CD	2.77	0.45
3:L:494:GLY:C	3:L:496:THR:H	2.25	0.45
1:X:11:DT:C2'	1:X:12:DC:C5'	2.89	0.45
3:B:653:PRO:HA	3:B:675:TYR:O	2.16	0.45
3:H:468:LEU:HD23	3:H:543:ARG:NH2	2.32	0.45
3:H:600:GLY:O	3:H:636:ASN:HB2	2.17	0.45
3:L:423:HIS:HB3	3:L:430:ARG:CB	2.46	0.45
3:L:459:PHE:CZ	3:L:545:VAL:HG11	2.51	0.45
3:M:577:LEU:HB2	3:M:578:PRO:HD2	1.98	0.45
3:B:412:ILE:HD11	3:B:546:PHE:HD2	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:481:GLY:CA	3:B:485:THR:HB	2.44	0.45
3:D:609:VAL:HG21	3:D:640:VAL:CG2	2.46	0.45
3:D:653:PRO:HA	3:D:675:TYR:O	2.15	0.45
3:H:456:LEU:HD11	3:H:546:PHE:HB3	1.97	0.45
3:I:647:ASN:O	3:I:650:ILE:HG23	2.16	0.45
3:I:648:LYS:HE2	3:I:678:VAL:CB	2.46	0.45
3:M:600:GLY:O	3:M:636:ASN:HB2	2.16	0.45
1:T:9:DT:H2''	1:T:10:DT:C5'	2.45	0.45
3:D:648:LYS:HE2	3:D:678:VAL:HB	1.98	0.45
3:H:423:HIS:O	3:H:519:LEU:HD12	2.16	0.45
3:L:609:VAL:HG21	3:L:640:VAL:HG21	1.99	0.45
3:H:521:LEU:HD13	3:H:526:ILE:HD11	1.99	0.45
3:H:522:ARG:O	3:H:523:ASN:C	2.59	0.45
3:H:648:LYS:HE2	3:H:678:VAL:HB	1.99	0.45
1:V:4:DA:H2''	1:V:5:DG:C8	2.51	0.45
3:H:456:LEU:HD23	3:H:501:ILE:HD11	1.99	0.45
3:I:653:PRO:HA	3:I:675:TYR:O	2.17	0.45
3:L:637:MET:SD	3:M:617:ASP:HA	2.57	0.45
3:B:652:THR:HG23	3:B:653:PRO:HD2	1.99	0.45
3:B:672:HIS:NE2	3:D:671:GLN:OE1	2.46	0.45
3:H:610:VAL:O	3:H:658:PHE:HA	2.17	0.45
3:M:594:GLN:HB2	3:M:642:ILE:HD12	1.98	0.45
2:Y:4:DG:C2'	2:Y:5:DG:H5'	2.21	0.45
3:H:458:ILE:HG12	3:H:546:PHE:HD1	1.78	0.45
3:H:594:GLN:HB2	3:H:642:ILE:HD12	1.99	0.45
3:L:565:ASN:HB3	3:L:566:PRO:CD	2.41	0.45
3:M:648:LYS:HE2	3:M:678:VAL:HB	1.99	0.45
2:W:7:DA:H1'	2:W:8:DA:H5''	1.98	0.45
3:D:456:LEU:HD11	3:D:546:PHE:HB3	1.98	0.45
3:H:470:PRO:HB3	3:H:496:THR:HG21	1.98	0.45
3:H:633:SER:HA	3:H:639:PHE:HE1	1.80	0.45
3:I:423:HIS:HB3	3:I:430:ARG:HB2	1.99	0.45
3:L:412:ILE:CD1	3:L:443:VAL:HG22	2.47	0.45
3:L:481:GLY:C	3:L:483:THR:N	2.75	0.45
3:L:656:VAL:HG22	3:L:673:PHE:O	2.17	0.45
1:T:6:DG:C2'	1:T:7:DA:O5'	2.63	0.44
3:B:423:HIS:HB3	3:B:430:ARG:HB2	1.98	0.44
3:L:445:LEU:HD11	3:L:550:ILE:CD1	2.47	0.44
3:B:600:GLY:O	3:B:636:ASN:HB2	2.18	0.44
3:D:491:LYS:NZ	3:D:497:LYS:CD	2.76	0.44
3:D:579:MET:O	3:D:600:GLY:HA3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:412:ILE:CD1	3:H:443:VAL:HG22	2.47	0.44
3:I:578:PRO:O	3:I:579:MET:HG3	2.17	0.44
3:L:448:TYR:CZ	3:L:450:GLU:HB2	2.52	0.44
3:L:464:ASP:O	3:L:465:GLU:C	2.60	0.44
3:M:481:GLY:C	3:M:483:THR:N	2.75	0.44
3:B:521:LEU:HD13	3:B:526:ILE:HD11	1.99	0.44
3:D:412:ILE:HD11	3:D:546:PHE:HD2	1.81	0.44
3:L:436:PRO:HB2	3:L:632:LYS:CB	2.47	0.44
3:B:430:ARG:CG	3:B:430:ARG:NH1	2.78	0.44
3:D:629:ASP:HB2	3:D:639:PHE:HB2	1.99	0.44
3:I:430:ARG:CG	3:I:430:ARG:NH1	2.77	0.44
1:X:10:DT:H2'	1:X:11:DT:O5'	2.17	0.44
3:B:456:LEU:HD11	3:B:546:PHE:HB3	2.00	0.44
3:B:656:VAL:HG22	3:B:673:PHE:O	2.18	0.44
3:H:656:VAL:HG22	3:H:673:PHE:O	2.17	0.44
3:I:486:THR:O	3:I:486:THR:HG22	2.17	0.44
3:I:633:SER:O	3:I:634:GLN:HG2	2.18	0.44
3:L:481:GLY:CA	3:L:485:THR:HB	2.43	0.44
3:M:522:ARG:O	3:M:523:ASN:C	2.60	0.44
3:M:609:VAL:HG21	3:M:640:VAL:HG21	1.99	0.44
3:B:470:PRO:HB3	3:B:496:THR:HG21	1.99	0.44
3:B:503:LEU:HB3	3:B:509:MET:HE1	2.00	0.44
3:B:578:PRO:O	3:B:579:MET:HG3	2.17	0.44
3:B:670:PRO:HD3	3:D:579:MET:HE3	2.00	0.44
3:D:462:THR:HG23	3:D:469:LYS:O	2.18	0.44
3:H:430:ARG:CG	3:H:430:ARG:HH11	2.28	0.44
3:H:464:ASP:O	3:H:465:GLU:C	2.61	0.44
3:H:579:MET:O	3:H:600:GLY:HA3	2.18	0.44
3:I:465:GLU:O	3:I:466:ARG:HB2	2.16	0.44
3:B:422:ALA:HB1	3:B:518:ILE:O	2.18	0.44
3:D:522:ARG:O	3:D:523:ASN:C	2.59	0.44
3:D:656:VAL:HG22	3:D:673:PHE:O	2.18	0.44
3:B:648:LYS:HE2	3:B:678:VAL:CB	2.48	0.44
3:D:423:HIS:HB3	3:D:430:ARG:HB2	2.00	0.44
3:D:578:PRO:O	3:D:579:MET:HG3	2.17	0.44
3:L:479:ILE:HG13	3:L:515:CYS:CA	2.43	0.44
1:T:5:DG:C2'	1:T:6:DG:H5'	2.45	0.44
3:L:458:ILE:HG12	3:L:546:PHE:HD1	1.82	0.44
3:L:610:VAL:O	3:L:658:PHE:HA	2.17	0.44
3:L:636:ASN:N	3:L:636:ASN:ND2	2.58	0.44
3:M:503:LEU:HD13	3:M:509:MET:HE3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:M:508:ASN:HD22	3:M:508:ASN:HA	1.60	0.44
2:W:4:DG:C2'	2:W:5:DG:C5'	2.93	0.43
3:H:653:PRO:HA	3:H:675:TYR:O	2.17	0.43
3:I:470:PRO:HB3	3:I:496:THR:HG21	1.99	0.43
3:L:501:ILE:HD12	3:L:501:ILE:O	2.18	0.43
3:L:556:ARG:HG2	3:L:557:ILE:N	2.33	0.43
3:M:423:HIS:O	3:M:519:LEU:HD12	2.17	0.43
3:D:590:VAL:HG23	3:D:591:TYR:N	2.34	0.43
3:I:652:THR:HG23	3:I:653:PRO:HD2	2.00	0.43
3:L:462:THR:HG23	3:L:469:LYS:O	2.18	0.43
3:B:647:ASN:HD22	3:B:650:ILE:HG22	1.83	0.43
3:H:481:GLY:C	3:H:483:THR:N	2.76	0.43
3:H:579:MET:HG2	3:I:669:GLN:HG2	2.00	0.43
3:L:577:LEU:HB2	3:L:578:PRO:HD2	1.99	0.43
3:M:423:HIS:HB3	3:M:430:ARG:HB2	2.00	0.43
3:M:433:VAL:HG23	3:M:516:ALA:O	2.18	0.43
3:M:633:SER:O	3:M:634:GLN:HG2	2.18	0.43
1:X:9:DT:C2'	1:X:10:DT:C5'	2.94	0.43
3:D:600:GLY:O	3:D:636:ASN:HB2	2.18	0.43
3:H:478:ARG:H	3:H:478:ARG:CD	2.31	0.43
3:I:481:GLY:C	3:I:483:THR:N	2.75	0.43
3:I:590:VAL:HG23	3:I:591:TYR:H	1.82	0.43
3:L:668:SER:HB2	3:M:669:GLN:NE2	2.33	0.43
3:M:470:PRO:HB3	3:M:496:THR:HG21	1.98	0.43
3:M:486:THR:O	3:M:486:THR:HG22	2.17	0.43
3:B:481:GLY:C	3:B:483:THR:N	2.75	0.43
3:H:508:ASN:HD22	3:H:508:ASN:HA	1.58	0.43
3:I:457:GLN:O	3:I:546:PHE:HA	2.17	0.43
3:I:464:ASP:O	3:I:465:GLU:CG	2.66	0.43
1:V:7:DA:OP1	3:I:664:LYS:CB	2.66	0.43
1:V:8:DA:H1'	1:V:9:DT:H5'	1.99	0.43
3:B:459:PHE:CZ	3:B:545:VAL:HG11	2.53	0.43
3:B:464:ASP:C	3:B:465:GLU:HG2	2.43	0.43
3:B:633:SER:O	3:B:634:GLN:HG2	2.18	0.43
3:D:494:GLY:C	3:D:496:THR:H	2.26	0.43
3:D:633:SER:HA	3:D:639:PHE:CE1	2.53	0.43
3:H:423:HIS:HB3	3:H:430:ARG:CB	2.48	0.43
3:I:647:ASN:HD22	3:I:650:ILE:HG22	1.83	0.43
3:L:456:LEU:HD11	3:L:546:PHE:HB3	2.00	0.43
3:D:412:ILE:CD1	3:D:443:VAL:HG22	2.48	0.43
3:H:464:ASP:C	3:H:465:GLU:HG2	2.44	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:468:LEU:HD23	3:I:543:ARG:NH2	2.34	0.43
3:M:579:MET:O	3:M:600:GLY:HA3	2.17	0.43
3:M:609:VAL:HG21	3:M:640:VAL:CG2	2.48	0.43
3:D:421:ARG:HG2	3:D:430:ARG:HD2	2.01	0.43
3:D:652:THR:HG23	3:D:653:PRO:HD2	2.00	0.43
3:H:406:GLY:H	3:H:560:LEU:CD2	2.30	0.43
3:I:412:ILE:CD1	3:I:443:VAL:HG22	2.49	0.43
3:I:633:SER:HA	3:I:639:PHE:CE1	2.54	0.43
3:L:579:MET:O	3:L:600:GLY:HA3	2.18	0.43
2:Y:12:DC:H2''	2:Y:13:DT:H5'	2.00	0.43
2:Y:13:DT:H2''	2:Y:14:DC:C6	2.54	0.43
3:B:465:GLU:O	3:B:466:ARG:HB2	2.19	0.43
3:B:669:GLN:OE1	3:D:669:GLN:HG3	2.18	0.43
3:L:464:ASP:C	3:L:465:GLU:HG2	2.44	0.43
3:L:609:VAL:HG21	3:L:640:VAL:CG2	2.49	0.43
3:L:647:ASN:HD22	3:L:650:ILE:HG22	1.84	0.43
2:Y:3:DT:OP2	3:L:431:GLY:HA3	2.19	0.43
3:L:653:PRO:HA	3:L:675:TYR:O	2.18	0.43
3:M:547:ARG:NE	3:M:561:GLN:OE1	2.38	0.43
3:M:588:CYS:SG	3:M:589:LEU:N	2.92	0.43
3:I:464:ASP:O	3:I:465:GLU:C	2.61	0.42
3:I:600:GLY:O	3:I:636:ASN:HB2	2.18	0.42
3:L:579:MET:HE3	3:M:670:PRO:HD3	2.00	0.42
3:L:633:SER:HA	3:L:639:PHE:CE1	2.54	0.42
3:M:457:GLN:O	3:M:546:PHE:HA	2.19	0.42
3:M:626:ALA:HB2	3:M:643:PRO:HD3	2.01	0.42
3:B:590:VAL:HG23	3:B:591:TYR:N	2.34	0.42
3:D:537:ARG:C	3:D:539:ASN:H	2.27	0.42
3:H:468:LEU:C	3:H:468:LEU:HD13	2.43	0.42
3:H:503:LEU:HD13	3:H:509:MET:HE3	1.99	0.42
3:L:522:ARG:O	3:L:523:ASN:C	2.61	0.42
3:D:464:ASP:C	3:D:465:GLU:HG2	2.44	0.42
3:H:588:CYS:SG	3:H:589:LEU:N	2.92	0.42
3:B:494:GLY:C	3:B:496:THR:H	2.27	0.42
3:D:479:ILE:HG13	3:D:515:CYS:CA	2.43	0.42
3:D:481:GLY:C	3:D:483:THR:N	2.77	0.42
3:L:464:ASP:O	3:L:465:GLU:CG	2.68	0.42
3:L:633:SER:O	3:L:634:GLN:HG2	2.19	0.42
3:M:464:ASP:C	3:M:465:GLU:HG2	2.45	0.42
3:M:468:LEU:C	3:M:468:LEU:HD13	2.44	0.42
3:B:448:TYR:CZ	3:B:450:GLU:HB2	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:458:ILE:HG12	3:D:546:PHE:HD1	1.83	0.42
3:H:462:THR:HG23	3:H:469:LYS:O	2.19	0.42
3:M:652:THR:HG23	3:M:653:PRO:HD2	2.01	0.42
3:M:653:PRO:HA	3:M:675:TYR:O	2.20	0.42
3:B:617:ASP:O	3:D:599:THR:HG23	2.20	0.42
3:D:430:ARG:CG	3:D:430:ARG:NH1	2.80	0.42
3:D:478:ARG:HB2	3:D:489:TYR:CE2	2.55	0.42
3:H:536:GLY:O	3:H:537:ARG:C	2.62	0.42
3:I:596:MET:HE3	3:I:598:LEU:HD11	2.02	0.42
3:L:590:VAL:HG23	3:L:591:TYR:N	2.34	0.42
3:M:412:ILE:CD1	3:M:443:VAL:HG22	2.50	0.42
1:X:10:DT:OP1	3:L:523:ASN:N	2.53	0.42
3:H:494:GLY:C	3:H:496:THR:H	2.26	0.42
3:H:578:PRO:O	3:H:579:MET:HG3	2.19	0.42
3:H:590:VAL:HG23	3:H:591:TYR:N	2.34	0.42
3:H:652:THR:HG23	3:H:653:PRO:HD2	2.01	0.42
3:L:648:LYS:HE2	3:L:678:VAL:HB	2.01	0.42
2:Z:7:DA:C2'	2:Z:8:DA:H5'	2.48	0.42
3:B:458:ILE:HG12	3:B:546:PHE:HD1	1.84	0.42
3:B:503:LEU:HD13	3:B:509:MET:HE3	2.02	0.42
3:D:457:GLN:O	3:D:546:PHE:HA	2.20	0.42
3:L:423:HIS:O	3:L:519:LEU:HD12	2.20	0.42
3:L:588:CYS:SG	3:L:589:LEU:N	2.93	0.42
3:B:464:ASP:O	3:B:465:GLU:CG	2.67	0.42
3:D:503:LEU:HD13	3:D:509:MET:HE3	2.02	0.42
3:I:629:ASP:HB2	3:I:639:PHE:HB2	2.02	0.42
3:L:503:LEU:HD13	3:L:509:MET:HE3	2.02	0.42
3:L:621:ILE:HD13	3:L:621:ILE:N	2.25	0.42
3:L:629:ASP:HB2	3:L:639:PHE:HB2	2.01	0.42
3:M:590:VAL:HG23	3:M:591:TYR:N	2.35	0.42
3:M:633:SER:HA	3:M:639:PHE:CE1	2.54	0.42
3:I:448:TYR:CZ	3:I:450:GLU:HB2	2.54	0.42
3:I:593:GLY:O	3:I:594:GLN:C	2.63	0.42
3:I:610:VAL:O	3:I:658:PHE:HA	2.19	0.42
3:L:668:SER:CA	3:M:669:GLN:NE2	2.82	0.42
2:Z:6:DA:N7	3:H:571:GLN:NE2	2.52	0.41
2:W:3:DT:H2''	2:W:4:DG:C8	2.54	0.41
3:B:468:LEU:C	3:B:468:LEU:HD13	2.45	0.41
3:B:633:SER:HA	3:B:639:PHE:CE1	2.54	0.41
3:I:456:LEU:HD11	3:I:546:PHE:HB3	2.01	0.41
3:I:536:GLY:O	3:I:537:ARG:C	2.63	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:651:ARG:HA	3:I:651:ARG:HD3	1.86	0.41
3:L:478:ARG:H	3:L:478:ARG:CD	2.32	0.41
3:M:448:TYR:CZ	3:M:450:GLU:HB2	2.55	0.41
3:D:448:TYR:CZ	3:D:454:LEU:HD21	2.55	0.41
3:L:468:LEU:C	3:L:468:LEU:HD13	2.46	0.41
2:W:6:DA:H2"	2:W:7:DA:C8	2.55	0.41
3:B:629:ASP:HB2	3:B:639:PHE:HB2	2.03	0.41
3:I:621:ILE:HD13	3:I:621:ILE:N	2.28	0.41
3:L:436:PRO:HB2	3:L:632:LYS:HB3	2.03	0.41
3:M:526:ILE:C	3:M:528:LEU:N	2.78	0.41
3:M:578:PRO:C	3:M:579:MET:HG3	2.44	0.41
3:B:485:THR:O	3:B:485:THR:CG2	2.66	0.41
3:B:600:GLY:H	3:B:603:PHE:HE2	1.68	0.41
3:D:465:GLU:O	3:D:466:ARG:HB2	2.20	0.41
3:D:493:VAL:HB	3:D:494:GLY:H	1.62	0.41
3:I:478:ARG:HB2	3:I:489:TYR:CE2	2.56	0.41
3:I:485:THR:O	3:I:485:THR:CG2	2.68	0.41
3:L:596:MET:HE3	3:L:598:LEU:HD11	2.02	0.41
3:B:421:ARG:HG2	3:B:430:ARG:HD2	2.02	0.41
3:B:556:ARG:HG2	3:B:557:ILE:N	2.34	0.41
3:B:669:GLN:HE22	3:D:669:GLN:N	2.17	0.41
3:D:526:ILE:C	3:D:528:LEU:N	2.78	0.41
3:H:464:ASP:O	3:H:465:GLU:CG	2.68	0.41
3:H:485:THR:O	3:H:485:THR:CG2	2.67	0.41
3:I:494:GLY:C	3:I:496:THR:H	2.27	0.41
3:L:457:GLN:O	3:L:546:PHE:HA	2.21	0.41
3:M:491:LYS:HZ3	3:M:497:LYS:CD	2.32	0.41
1:V:7:DA:OP1	3:I:664:LYS:HD3	2.20	0.41
3:D:633:SER:O	3:D:634:GLN:HG2	2.21	0.41
3:H:547:ARG:NE	3:H:561:GLN:OE1	2.36	0.41
3:D:582:ARG:CB	3:D:582:ARG:HH11	2.33	0.41
3:H:668:SER:CA	3:I:669:GLN:HE22	2.34	0.41
3:I:466:ARG:O	3:I:467:ILE:CG1	2.69	0.41
3:L:469:LYS:O	3:L:470:PRO:C	2.64	0.41
1:V:8:DA:H2"	1:V:9:DT:OP2	2.20	0.41
3:B:457:GLN:O	3:B:546:PHE:HA	2.21	0.41
3:B:524:ALA:O	3:B:525:ASP:C	2.64	0.41
3:B:588:CYS:SG	3:B:594:GLN:CD	3.04	0.41
3:D:406:GLY:H	3:D:560:LEU:CD2	2.34	0.41
3:H:454:LEU:HD23	3:H:509:MET:CE	2.51	0.41
3:I:445:LEU:HD11	3:I:550:ILE:CD1	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:602:ASN:O	3:L:604:THR:HG23	2.21	0.41
3:B:505:PRO:HG2	3:B:506:LYS:HD2	2.03	0.41
3:D:481:GLY:O	3:D:482:LYS:C	2.64	0.41
3:H:596:MET:HE3	3:H:598:LEU:HD11	2.03	0.41
3:I:466:ARG:C	3:I:467:ILE:HG13	2.46	0.41
3:I:493:VAL:HB	3:I:494:GLY:H	1.66	0.41
3:L:399:TRP:HA	3:L:400:PRO:HD3	1.94	0.41
3:L:478:ARG:HB2	3:L:489:TYR:CE2	2.56	0.41
3:L:588:CYS:SG	3:L:594:GLN:CD	3.04	0.41
3:M:465:GLU:O	3:M:466:ARG:HB2	2.20	0.41
3:M:577:LEU:HD12	3:M:577:LEU:O	2.21	0.41
1:X:12:DC:H2'	1:X:13:DC:C5'	2.51	0.41
3:B:412:ILE:CD1	3:B:443:VAL:HG22	2.51	0.41
3:B:481:GLY:O	3:B:482:LYS:C	2.64	0.41
3:D:648:LYS:HE2	3:D:678:VAL:CB	2.51	0.41
3:L:578:PRO:O	3:L:579:MET:HG3	2.21	0.41
3:M:602:ASN:O	3:M:604:THR:HG23	2.21	0.41
3:B:626:ALA:HB2	3:B:643:PRO:HD3	2.03	0.40
3:D:433:VAL:HG23	3:D:516:ALA:O	2.20	0.40
3:D:508:ASN:HD22	3:D:508:ASN:HA	1.62	0.40
3:H:408:TYR:O	3:H:409:GLU:CB	2.69	0.40
3:H:440:HIS:CG	3:H:514:ASP:HB3	2.56	0.40
3:H:621:ILE:H	3:H:621:ILE:CD1	2.27	0.40
3:H:637:MET:SD	3:I:617:ASP:HA	2.62	0.40
3:I:602:ASN:O	3:I:604:THR:HG23	2.21	0.40
3:D:448:TYR:CZ	3:D:450:GLU:HB2	2.56	0.40
3:D:602:ASN:O	3:D:604:THR:HG23	2.22	0.40
3:H:460:ILE:HG21	3:H:474:TYR:HB3	2.03	0.40
3:H:633:SER:O	3:H:634:GLN:HG2	2.22	0.40
3:I:556:ARG:HG2	3:I:557:ILE:N	2.36	0.40
3:I:565:ASN:HB3	3:I:566:PRO:CD	2.43	0.40
3:M:536:GLY:O	3:M:537:ARG:C	2.64	0.40
3:D:651:ARG:HD3	3:D:651:ARG:HA	1.81	0.40
3:H:430:ARG:CG	3:H:430:ARG:NH1	2.81	0.40
3:L:526:ILE:C	3:L:528:LEU:N	2.78	0.40
3:L:536:GLY:O	3:L:537:ARG:C	2.65	0.40
3:M:478:ARG:HB2	3:M:489:TYR:CE2	2.56	0.40
3:B:595:GLN:HE21	3:B:595:GLN:HB3	1.70	0.40
3:B:600:GLY:N	3:B:603:PHE:CE2	2.88	0.40
3:B:602:ASN:O	3:B:604:THR:HG23	2.21	0.40
3:D:445:LEU:HD11	3:D:550:ILE:CD1	2.50	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:537:ARG:C	3:H:539:ASN:H	2.30	0.40
3:H:626:ALA:HB2	3:H:643:PRO:HD3	2.03	0.40
3:H:651:ARG:HA	3:H:651:ARG:HD3	1.84	0.40
3:I:519:LEU:HD12	3:I:520:LYS:H	1.86	0.40
3:L:641:GLU:O	3:L:642:ILE:C	2.65	0.40
3:M:406:GLY:H	3:M:560:LEU:CD2	2.33	0.40
3:M:466:ARG:HD2	3:M:466:ARG:HA	1.81	0.40
3:M:629:ASP:HB2	3:M:639:PHE:HB2	2.03	0.40
1:V:1:DT:C5'	1:T:14:DA:O3'	2.69	0.40
1:V:1:DT:H2''	1:V:2:DT:OP2	2.22	0.40
1:T:13:DC:H2''	1:T:14:DA:H8	1.85	0.40
3:B:536:GLY:O	3:B:537:ARG:C	2.65	0.40
3:H:589:LEU:O	3:H:590:VAL:C	2.65	0.40
3:L:481:GLY:O	3:L:482:LYS:C	2.64	0.40
3:M:526:ILE:C	3:M:528:LEU:H	2.29	0.40

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:649:HIS:NE2	3:I:602:ASN:ND2[4_556]	2.09	0.11

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	
3	B	272/301 (90%)	213 (78%)	45 (16%)	14 (5%)	1	10
3	D	272/301 (90%)	212 (78%)	48 (18%)	12 (4%)	2	12
3	H	272/301 (90%)	215 (79%)	43 (16%)	14 (5%)	1	10
3	I	272/301 (90%)	212 (78%)	47 (17%)	13 (5%)	2	11

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	L	272/301 (90%)	211 (78%)	47 (17%)	14 (5%)	1	10
3	M	272/301 (90%)	214 (79%)	45 (16%)	13 (5%)	2	11
All	All	1632/1806 (90%)	1277 (78%)	275 (17%)	80 (5%)	1	11

All (80) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	B	406	GLY
3	B	467	ILE
3	B	590	VAL
3	B	628	VAL
3	D	406	GLY
3	D	467	ILE
3	D	590	VAL
3	D	628	VAL
3	H	406	GLY
3	H	590	VAL
3	H	628	VAL
3	I	406	GLY
3	I	467	ILE
3	I	590	VAL
3	I	628	VAL
3	L	406	GLY
3	L	467	ILE
3	L	590	VAL
3	L	628	VAL
3	M	406	GLY
3	M	467	ILE
3	M	590	VAL
3	M	628	VAL
3	B	409	GLU
3	D	409	GLU
3	D	465	GLU
3	H	409	GLU
3	H	429	SER
3	H	467	ILE
3	I	409	GLU
3	I	429	SER
3	I	594	GLN
3	L	409	GLU
3	L	429	SER

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Mol	Chain	Res	Type
3	M	409	GLU
3	M	465	GLU
3	M	594	GLN
3	B	404	GLN
3	B	429	SER
3	B	465	GLU
3	B	468	LEU
3	B	594	GLN
3	D	404	GLN
3	D	429	SER
3	D	468	LEU
3	D	594	GLN
3	H	404	GLN
3	H	465	GLU
3	H	468	LEU
3	H	594	GLN
3	I	404	GLN
3	I	465	GLU
3	I	468	LEU
3	L	404	GLN
3	L	465	GLU
3	L	468	LEU
3	L	594	GLN
3	M	404	GLN
3	M	429	SER
3	M	468	LEU
3	H	420	HIS
3	L	420	HIS
3	M	420	HIS
3	B	602	ASN
3	B	616	THR
3	H	538	LYS
3	D	493	VAL
3	I	538	LYS
3	L	602	ASN
3	M	493	VAL
3	H	493	VAL
3	I	493	VAL
3	L	493	VAL
3	B	493	VAL
3	B	618	GLY
3	H	618	GLY

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Mol	Chain	Res	Type
3	D	618	GLY
3	I	618	GLY
3	L	618	GLY
3	M	618	GLY

5.3.2 Protein sidechains ⓘ

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	
3	B	247/269 (92%)	234 (95%)	13 (5%)	20	51
3	D	247/269 (92%)	234 (95%)	13 (5%)	20	51
3	H	247/269 (92%)	234 (95%)	13 (5%)	20	51
3	I	247/269 (92%)	235 (95%)	12 (5%)	22	53
3	L	247/269 (92%)	234 (95%)	13 (5%)	20	51
3	M	247/269 (92%)	234 (95%)	13 (5%)	20	51
All	All	1482/1614 (92%)	1405 (95%)	77 (5%)	21	51

All (77) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	B	426	THR
3	B	430	ARG
3	B	445	LEU
3	B	454	LEU
3	B	468	LEU
3	B	476	VAL
3	B	478	ARG
3	B	485	THR
3	B	508	ASN
3	B	537	ARG
3	B	621	ILE
3	B	629	ASP
3	B	636	ASN
3	D	426	THR

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Mol	Chain	Res	Type
3	D	430	ARG
3	D	445	LEU
3	D	454	LEU
3	D	468	LEU
3	D	476	VAL
3	D	478	ARG
3	D	485	THR
3	D	508	ASN
3	D	537	ARG
3	D	621	ILE
3	D	629	ASP
3	D	636	ASN
3	H	426	THR
3	H	430	ARG
3	H	445	LEU
3	H	454	LEU
3	H	468	LEU
3	H	476	VAL
3	H	478	ARG
3	H	485	THR
3	H	508	ASN
3	H	537	ARG
3	H	621	ILE
3	H	629	ASP
3	H	636	ASN
3	I	426	THR
3	I	430	ARG
3	I	445	LEU
3	I	454	LEU
3	I	468	LEU
3	I	476	VAL
3	I	478	ARG
3	I	485	THR
3	I	508	ASN
3	I	537	ARG
3	I	621	ILE
3	I	636	ASN
3	L	426	THR
3	L	430	ARG
3	L	445	LEU
3	L	454	LEU
3	L	468	LEU

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Mol	Chain	Res	Type
3	L	476	VAL
3	L	478	ARG
3	L	485	THR
3	L	508	ASN
3	L	537	ARG
3	L	621	ILE
3	L	629	ASP
3	L	636	ASN
3	M	426	THR
3	M	430	ARG
3	M	445	LEU
3	M	454	LEU
3	M	468	LEU
3	M	476	VAL
3	M	478	ARG
3	M	485	THR
3	M	508	ASN
3	M	537	ARG
3	M	621	ILE
3	M	629	ASP
3	M	636	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (86) such sidechains are listed below:

Mol	Chain	Res	Type
3	B	440	HIS
3	B	444	GLN
3	B	446	HIS
3	B	451	ASN
3	B	477	HIS
3	B	495	ASN
3	B	508	ASN
3	B	523	ASN
3	B	594	GLN
3	B	595	GLN
3	B	601	GLN
3	B	634	GLN
3	B	636	ASN
3	B	647	ASN
3	B	669	GLN
3	B	671	GLN
3	D	440	HIS

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Mol	Chain	Res	Type
3	D	444	GLN
3	D	446	HIS
3	D	451	ASN
3	D	477	HIS
3	D	495	ASN
3	D	508	ASN
3	D	523	ASN
3	D	594	GLN
3	D	595	GLN
3	D	601	GLN
3	D	636	ASN
3	D	647	ASN
3	D	672	HIS
3	D	676	HIS
3	H	420	HIS
3	H	440	HIS
3	H	444	GLN
3	H	451	ASN
3	H	477	HIS
3	H	495	ASN
3	H	508	ASN
3	H	523	ASN
3	H	595	GLN
3	H	601	GLN
3	H	636	ASN
3	H	647	ASN
3	H	672	HIS
3	I	444	GLN
3	I	451	ASN
3	I	477	HIS
3	I	495	ASN
3	I	508	ASN
3	I	523	ASN
3	I	594	GLN
3	I	595	GLN
3	I	601	GLN
3	I	634	GLN
3	I	636	ASN
3	I	647	ASN
3	I	657	ASN
3	I	676	HIS
3	L	420	HIS

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Mol	Chain	Res	Type
3	L	440	HIS
3	L	444	GLN
3	L	451	ASN
3	L	477	HIS
3	L	495	ASN
3	L	508	ASN
3	L	523	ASN
3	L	595	GLN
3	L	634	GLN
3	L	636	ASN
3	L	647	ASN
3	L	672	HIS
3	M	440	HIS
3	M	444	GLN
3	M	446	HIS
3	M	451	ASN
3	M	477	HIS
3	M	495	ASN
3	M	508	ASN
3	M	523	ASN
3	M	594	GLN
3	M	595	GLN
3	M	601	GLN
3	M	636	ASN
3	M	647	ASN
3	M	669	GLN
3	M	676	HIS

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

There are no such residues in this entry.

5.8 Polymer linkage issues

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	T	12/14 (85%)	-0.43	0 100 100	18, 23, 30, 31	0
1	V	14/14 (100%)	-0.03	0 100 100	25, 30, 38, 38	0
1	X	14/14 (100%)	0.05	0 100 100	21, 28, 34, 47	0
2	W	14/14 (100%)	-0.29	0 100 100	19, 26, 33, 38	0
2	Y	14/14 (100%)	-0.22	0 100 100	21, 27, 42, 48	0
2	Z	14/14 (100%)	0.01	0 100 100	22, 31, 41, 41	0
3	B	276/301 (91%)	0.64	14 (5%) 33 18	8, 60, 142, 160	0
3	D	276/301 (91%)	0.59	20 (7%) 21 11	14, 68, 153, 172	0
3	H	276/301 (91%)	0.69	15 (5%) 31 17	45, 72, 106, 114	0
3	I	276/301 (91%)	0.59	12 (4%) 40 22	21, 70, 90, 107	0
3	L	276/301 (91%)	0.66	15 (5%) 31 17	33, 79, 98, 112	0
3	M	276/301 (91%)	0.59	13 (4%) 36 19	14, 66, 87, 106	0
All	All	1738/1890 (91%)	0.59	89 (5%) 33 18	8, 69, 141, 172	0

All (89) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	D	482	LYS	5.0
3	B	596	MET	4.6
3	H	501	ILE	4.4
3	M	402	SER	3.8
3	D	656	VAL	3.8
3	B	576	GLU	3.7
3	H	453	PRO	3.7
3	D	576	GLU	3.7
3	L	483	THR	3.6
3	H	454	LEU	3.5
3	I	401	LEU	3.5

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Mol	Chain	Res	Type	RSRZ
3	D	483	THR	3.3
3	L	419	HIS	3.3
3	D	631	ASP	3.3
3	M	639	PHE	3.2
3	L	501	ILE	3.0
3	B	616	THR	3.0
3	B	407	SER	2.9
3	H	443	VAL	2.9
3	H	552	GLU	2.9
3	L	576	GLU	2.9
3	D	672	HIS	2.8
3	L	406	GLY	2.8
3	I	591	TYR	2.8
3	D	678	VAL	2.8
3	D	598	LEU	2.8
3	I	576	GLU	2.7
3	I	406	GLY	2.7
3	L	404	GLN	2.7
3	I	399	TRP	2.7
3	D	630	LYS	2.6
3	B	659	TYR	2.6
3	L	633	SER	2.6
3	B	405	SER	2.5
3	M	407	SER	2.5
3	M	409	GLU	2.5
3	D	655	LYS	2.5
3	L	580	VAL	2.5
3	D	658	PHE	2.5
3	B	605	SER	2.4
3	H	399	TRP	2.4
3	I	616	THR	2.4
3	L	678	VAL	2.4
3	M	628	VAL	2.4
3	B	601	GLN	2.4
3	H	553	SER	2.4
3	M	464	ASP	2.4
3	L	550	ILE	2.4
3	H	635	PRO	2.4
3	M	399	TRP	2.4
3	I	615	THR	2.3
3	H	633	SER	2.3
3	B	649	HIS	2.3

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Mol	Chain	Res	Type	RSRZ
3	D	577	LEU	2.3
3	D	580	VAL	2.3
3	D	621	ILE	2.3
3	L	551	PRO	2.3
3	I	467	ILE	2.2
3	H	648	LYS	2.2
3	L	443	VAL	2.2
3	M	559	SER	2.2
3	L	482	LYS	2.2
3	M	598	LEU	2.2
3	I	504	GLU	2.2
3	H	514	ASP	2.2
3	H	548	VAL	2.1
3	I	659	TYR	2.1
3	H	535	ILE	2.1
3	B	658	PHE	2.1
3	L	658	PHE	2.1
3	D	609	VAL	2.1
3	M	621	ILE	2.1
3	M	449	MET	2.1
3	B	668	SER	2.1
3	M	633	SER	2.1
3	D	639	PHE	2.1
3	L	606	GLU	2.1
3	B	657	ASN	2.1
3	B	514	ASP	2.1
3	M	563	ALA	2.1
3	D	602	ASN	2.1
3	D	599	THR	2.1
3	I	669	GLN	2.1
3	H	527	GLU	2.1
3	H	628	VAL	2.0
3	B	598	LEU	2.0
3	D	675	TYR	2.0
3	D	671	GLN	2.0
3	I	638	LEU	2.0

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides 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.