



# Full wwPDB X-ray Structure Validation Report ⓘ

Aug 27, 2023 – 05:50 PM EDT

PDB ID : 3HK7  
Title : Crystal structure of uronate isomerase from *Bacillus halodurans* complexed with zinc and D-Arabinarate, monoclinic crystal form  
Authors : Fedorov, A.A.; Fedorov, E.V.; Nguyen, T.T.; Raushel, F.M.; Almo, S.C.  
Deposited on : 2009-05-22  
Resolution : 2.20 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](mailto: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>.

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

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.35  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.35

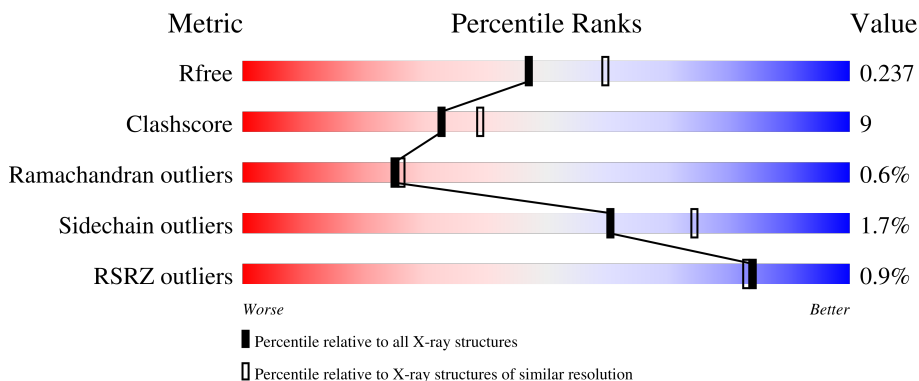
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.20 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	130704	4898 (2.20-2.20)
Clashscore	141614	5594 (2.20-2.20)
Ramachandran outliers	138981	5503 (2.20-2.20)
Sidechain outliers	138945	5504 (2.20-2.20)
RSRZ outliers	127900	4800 (2.20-2.20)

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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	427	 2% 70% 26% .
1	B	427	 2% 66% 30% ..
1	C	427	 82% 14% ..
1	D	427	 81% 15% .
1	E	427	 % 72% 24% ..

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Mol	Chain	Length	Quality of chain
1	F	427	 <p>% 77% 19% ..</p>
1	G	427	 <p>2% 71% 25% ..</p>
1	H	427	 <p>81% 15% ..</p>
1	I	427	 <p>76% 19% ..</p>
1	J	427	 <p>79% 16% ..</p>
1	K	427	 <p>79% 18% .</p>
1	L	427	 <p>79% 17% ..</p>

## 2 Entry composition

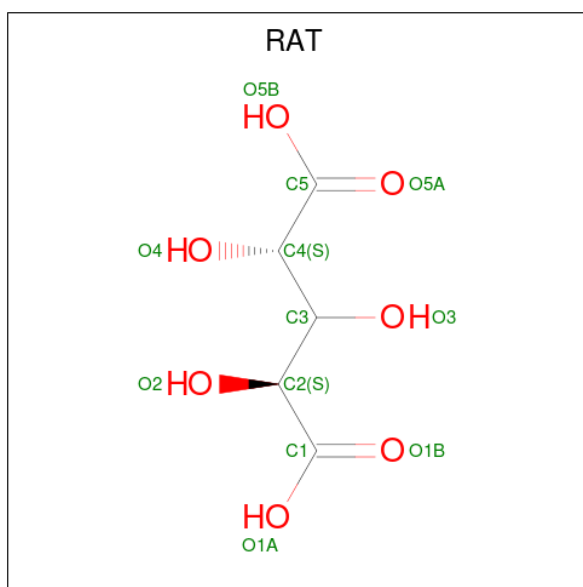
There are 7 unique types of molecules in this entry. The entry contains 42940 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Uronate isomerase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	413	3404	2170	588	626	20	0	0	0
1	B	413	3404	2170	588	626	20	0	0	0
1	C	413	3404	2170	588	626	20	0	0	0
1	D	413	3404	2170	588	626	20	0	0	0
1	E	413	3404	2170	588	626	20	0	0	0
1	F	413	3404	2170	588	626	20	0	0	0
1	G	413	3404	2170	588	626	20	0	0	0
1	H	413	3404	2170	588	626	20	0	0	0
1	I	413	3404	2170	588	626	20	0	0	0
1	J	413	3404	2170	588	626	20	0	0	0
1	K	413	3404	2170	588	626	20	0	0	0
1	L	413	3404	2170	588	626	20	0	0	0

- Molecule 2 is D-arabinaric acid (three-letter code: RAT) (formula: C<sub>5</sub>H<sub>8</sub>O<sub>7</sub>).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C O 12 5 7	0	0
2	B	1	Total C O 12 5 7	0	0
2	C	1	Total C O 12 5 7	0	0
2	D	1	Total C O 12 5 7	0	0
2	E	1	Total C O 12 5 7	0	0
2	F	1	Total C O 12 5 7	0	0
2	G	1	Total C O 12 5 7	0	0
2	H	1	Total C O 12 5 7	0	0
2	I	1	Total C O 12 5 7	0	0
2	J	1	Total C O 12 5 7	0	0
2	K	1	Total C O 12 5 7	0	0
2	L	1	Total C O 12 5 7	0	0

- Molecule 3 is CARBONATE ION (three-letter code: CO3) (formula: CO<sub>3</sub>).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C O 4 1 3	0	0
3	A	1	Total C O 4 1 3	0	0
3	C	1	Total C O 4 1 3	0	0
3	D	1	Total C O 4 1 3	0	0
3	E	1	Total C O 4 1 3	0	0
3	E	1	Total C O 4 1 3	0	0
3	G	1	Total C O 4 1 3	0	0
3	H	1	Total C O 4 1 3	0	0
3	I	1	Total C O 4 1 3	0	0
3	J	1	Total C O 4 1 3	0	0
3	K	1	Total C O 4 1 3	0	0
3	K	1	Total C O 4 1 3	0	0

- Molecule 4 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total Zn 1 1	0	0
4	B	1	Total Zn 1 1	0	0
4	C	1	Total Zn 1 1	0	0
4	D	1	Total Zn 1 1	0	0
4	E	1	Total Zn 1 1	0	0
4	F	1	Total Zn 1 1	0	0
4	G	1	Total Zn 1 1	0	0
4	H	1	Total Zn 1 1	0	0
4	I	1	Total Zn 1 1	0	0
4	J	1	Total Zn 1 1	0	0
4	K	1	Total Zn 1 1	0	0
4	L	1	Total Zn 1 1	0	0

- Molecule 5 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total Na 1 1	0	0
5	D	1	Total Na 1 1	0	0
5	H	1	Total Na 1 1	0	0
5	L	1	Total Na 1 1	0	0

- Molecule 6 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	B	1	Total Cl 1 1	0	0
6	E	1	Total Cl 1 1	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	G	1	Total Cl 1 1	0	0
6	J	1	Total Cl 1 1	0	0

- Molecule 7 is water.

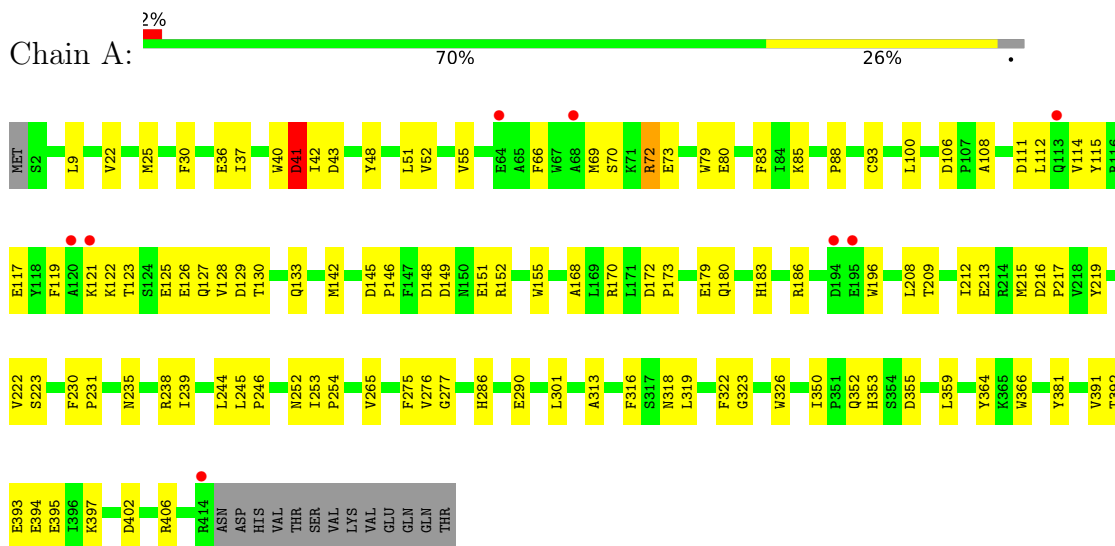
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	111	Total O 111 111	0	0
7	B	89	Total O 89 89	0	0
7	C	182	Total O 182 182	0	0
7	D	204	Total O 204 204	0	0
7	E	160	Total O 160 160	0	0
7	F	166	Total O 166 166	0	0
7	G	110	Total O 110 110	0	0
7	H	178	Total O 178 178	0	0
7	I	122	Total O 122 122	0	0
7	J	165	Total O 165 165	0	0
7	K	194	Total O 194 194	0	0
7	L	199	Total O 199 199	0	0



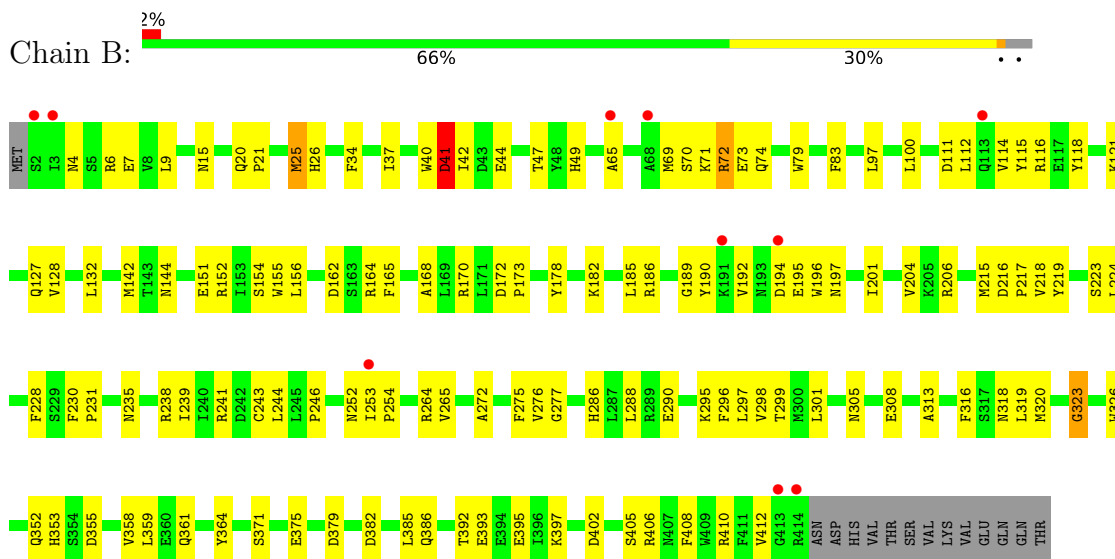
### 3 Residue-property plots [i](#)

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

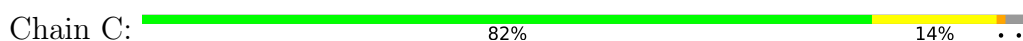
- Molecule 1: Uronate isomerase

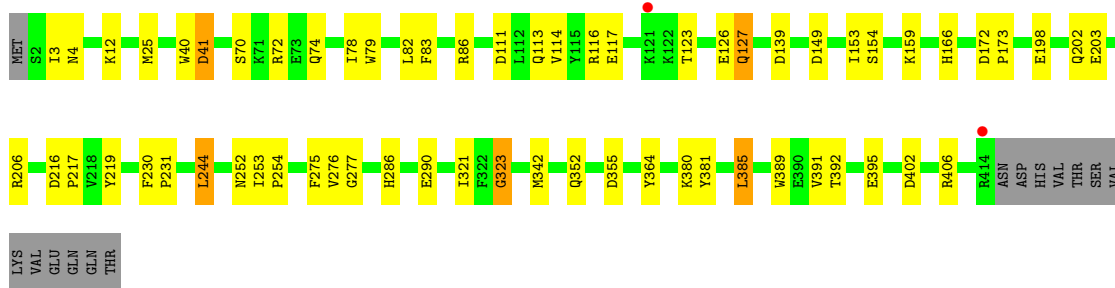


- Molecule 1: Uronate isomerase

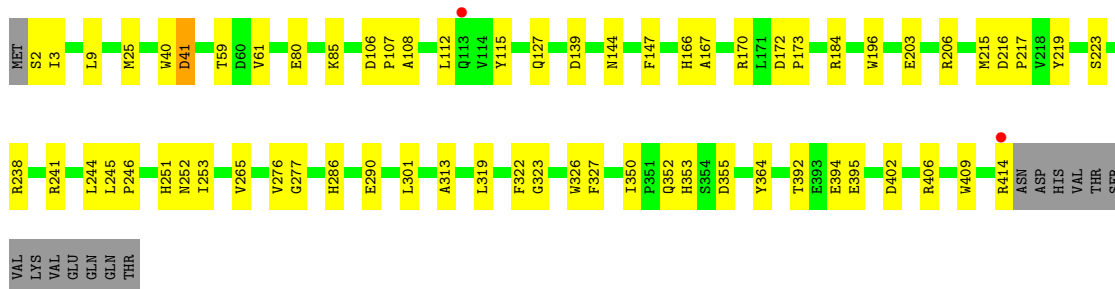
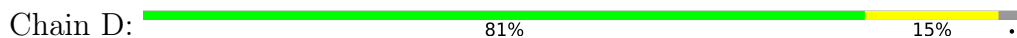


- Molecule 1: Uronate isomerase

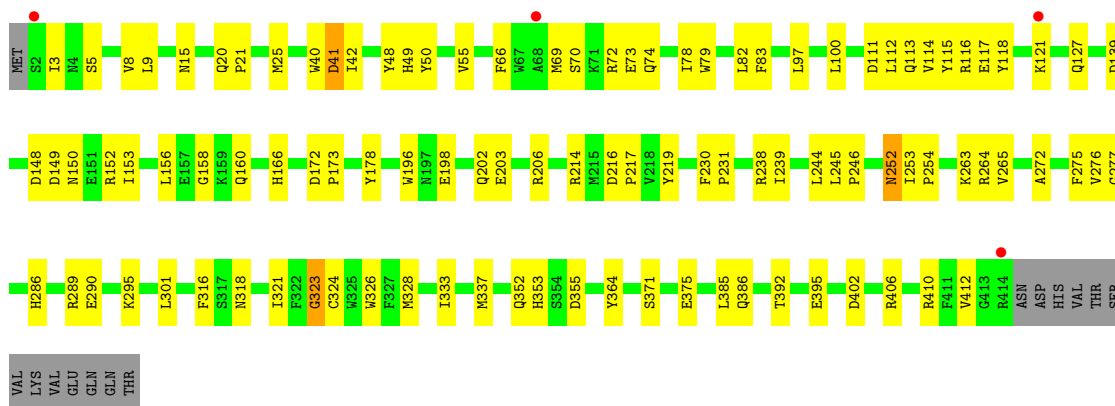
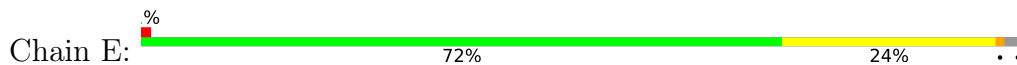




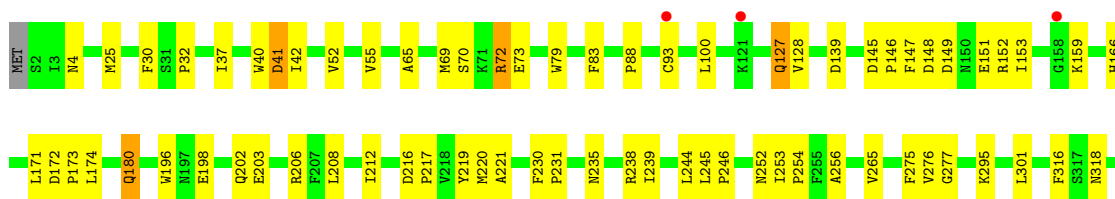
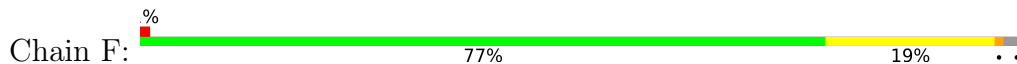
• Molecule 1: Uronate isomerase



• Molecule 1: Uronate isomerase

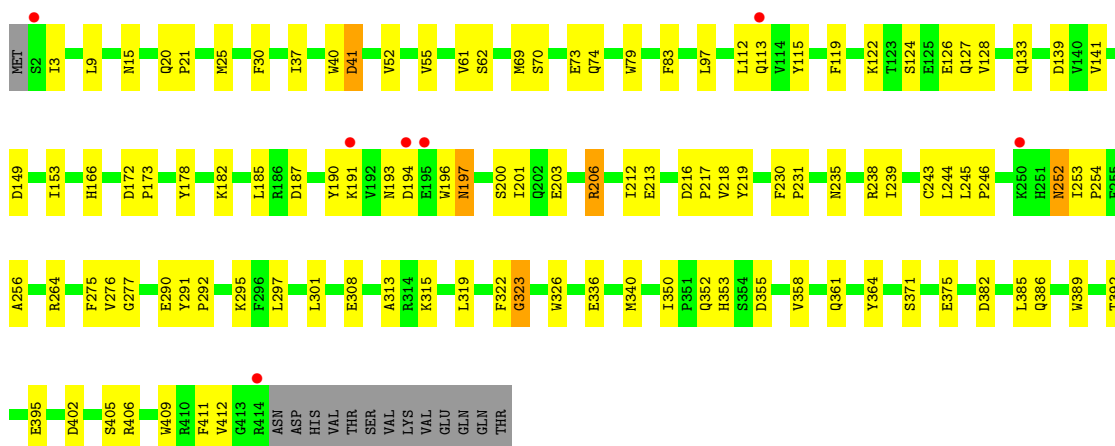


• Molecule 1: Uronate isomerase

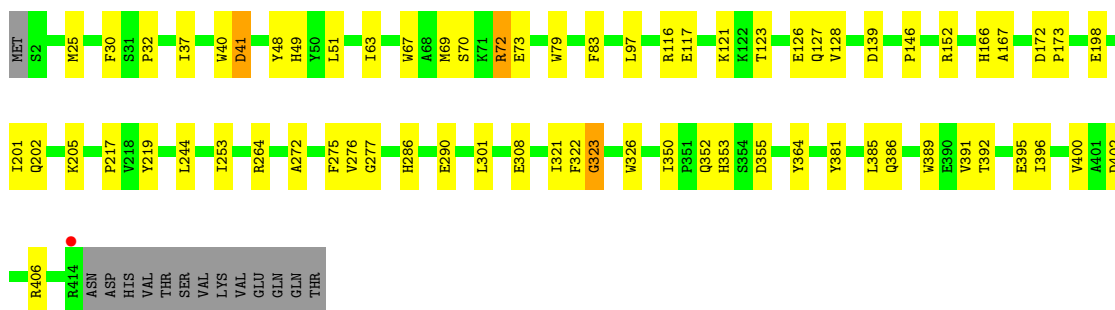
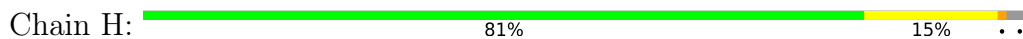




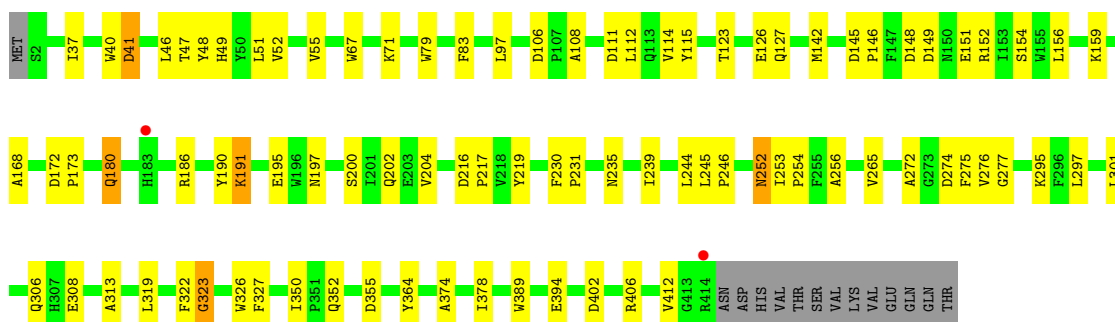
- Molecule 1: Uronate isomerase




- Molecule 1: Uronate isomerase

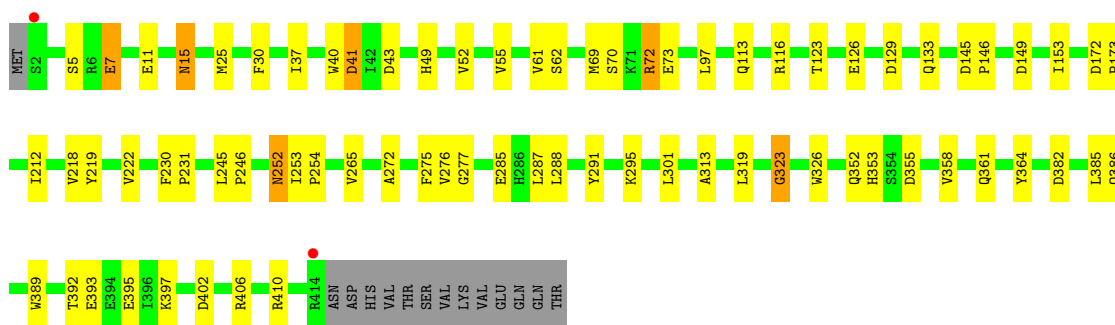


- Molecule 1: Uronate isomerase




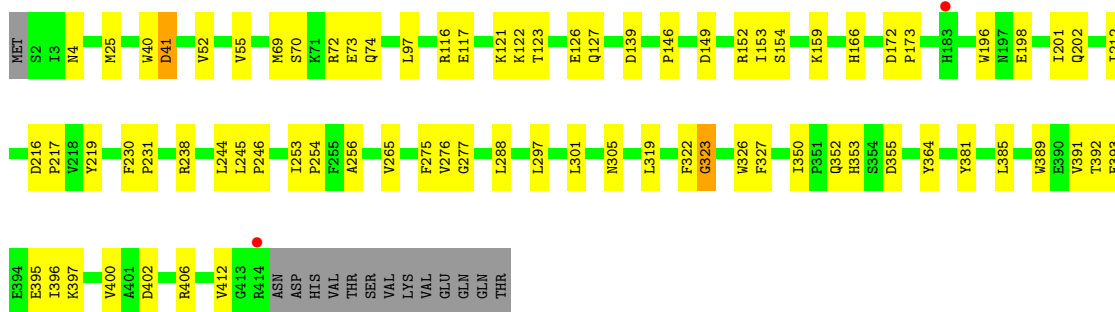
- Molecule 1: Uronate isomerase

Chain J:  79% 16% ..




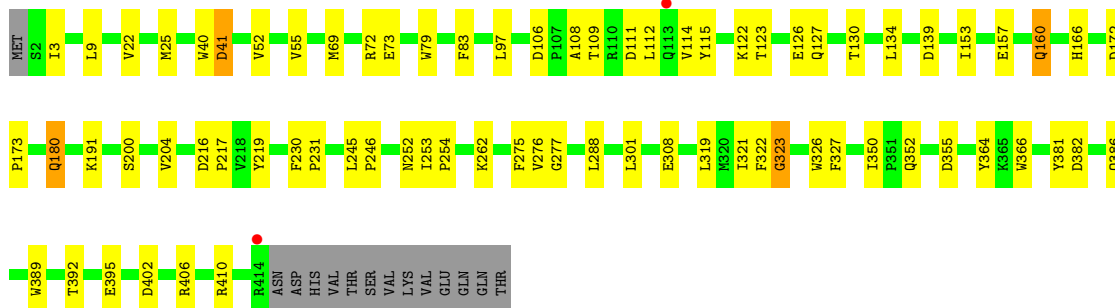
• Molecule 1: Uronate isomerase

Chain K:  79% 18% .



• Molecule 1: Uronate isomerase

Chain L:  79% 17% ..



## 4 Data and refinement statistics i

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	274.82Å 156.52Å 185.96Å 90.00° 116.20° 90.00°	Depositor
Resolution (Å)	24.99 – 2.20 39.78 – 2.10	Depositor EDS
% Data completeness (in resolution range)	98.8 (24.99-2.20) 97.7 (39.78-2.10)	Depositor EDS
$R_{merge}$	0.07	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.87 (at 2.10Å)	Xtrriage
Refinement program	CNS 1.1	Depositor
R, $R_{free}$	0.213 , 0.245 0.207 , 0.237	Depositor DCC
$R_{free}$ test set	20190 reflections (5.03%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	26.0	Xtrriage
Anisotropy	0.309	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.36 , 44.1	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	0.000 for $1/2^*h-3/2^*k,-1/2^*h-1/2^*k,-1/2^*h+1/2^*k-1$ 0.000 for $1/2^*h+3/2^*k,1/2^*h-1/2^*k,-1/2^*h-1/2^*k-1$	Xtrriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	42940	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	29.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 47.80 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 9.4235e-05. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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

Bond lengths and bond angles in the following residue types are not validated in this section: RAT, CL, NA, CO3, ZN

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	0.32	0/3488	0.60	0/4726
1	B	0.32	0/3488	0.58	0/4726
1	C	0.35	0/3488	0.62	0/4726
1	D	0.35	0/3488	0.63	0/4726
1	E	0.34	0/3488	0.62	0/4726
1	F	0.34	0/3488	0.61	0/4726
1	G	0.33	0/3488	0.60	0/4726
1	H	0.34	0/3488	0.62	0/4726
1	I	0.33	0/3488	0.61	0/4726
1	J	0.34	0/3488	0.62	0/4726
1	K	0.35	0/3488	0.61	0/4726
1	L	0.35	0/3488	0.62	0/4726
All	All	0.34	0/41856	0.61	0/56712

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3404	0	3328	75	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	3404	0	3328	87	0
1	C	3404	0	3328	42	0
1	D	3404	0	3328	41	0
1	E	3404	0	3328	76	0
1	F	3404	0	3328	60	0
1	G	3404	0	3328	71	0
1	H	3404	0	3328	46	0
1	I	3404	0	3328	63	0
1	J	3404	0	3328	46	0
1	K	3404	0	3328	53	0
1	L	3404	0	3328	53	0
2	A	12	0	5	0	0
2	B	12	0	5	0	0
2	C	12	0	5	0	0
2	D	12	0	5	0	0
2	E	12	0	5	0	0
2	F	12	0	5	0	0
2	G	12	0	5	0	0
2	H	12	0	5	0	0
2	I	12	0	5	0	0
2	J	12	0	5	0	0
2	K	12	0	5	0	0
2	L	12	0	5	0	0
3	A	8	0	0	0	0
3	C	4	0	0	0	0
3	D	4	0	0	0	0
3	E	8	0	0	0	0
3	G	4	0	0	0	0
3	H	4	0	0	0	0
3	I	4	0	0	0	0
3	J	4	0	0	0	0
3	K	8	0	0	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
4	C	1	0	0	0	0
4	D	1	0	0	0	0
4	E	1	0	0	0	0
4	F	1	0	0	0	0
4	G	1	0	0	0	0
4	H	1	0	0	0	0
4	I	1	0	0	0	0
4	J	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	K	1	0	0	0	0
4	L	1	0	0	0	0
5	A	1	0	0	0	0
5	D	1	0	0	0	0
5	H	1	0	0	0	0
5	L	1	0	0	0	0
6	B	1	0	0	0	0
6	E	1	0	0	0	0
6	G	1	0	0	0	0
6	J	1	0	0	0	0
7	A	111	0	0	2	0
7	B	89	0	0	2	0
7	C	182	0	0	4	0
7	D	204	0	0	4	0
7	E	160	0	0	2	0
7	F	166	0	0	1	0
7	G	110	0	0	3	0
7	H	178	0	0	2	0
7	I	122	0	0	4	0
7	J	165	0	0	2	0
7	K	194	0	0	3	0
7	L	199	0	0	4	0
All	All	42940	0	39996	701	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 9.

All (701) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:72:ARG:HB2	1:A:72:ARG:HH11	1.14	1.10
1:E:55:VAL:HG11	1:E:78:ILE:HG12	1.43	0.99
1:C:127:GLN:HA	1:C:127:GLN:HE21	1.30	0.95
1:H:32:PRO:HG3	1:H:128:VAL:HG21	1.49	0.93
1:F:32:PRO:HG3	1:F:128:VAL:HG21	1.49	0.92
1:B:34:PHE:HB3	1:B:37:ILE:HD11	1.51	0.92
1:E:333:ILE:HG22	1:E:337:MET:HE2	1.49	0.91
1:K:385:LEU:HD11	1:K:391:VAL:HG12	1.54	0.90
1:A:72:ARG:HB2	1:A:72:ARG:NH1	1.88	0.88
1:E:72:ARG:HH11	1:E:72:ARG:HB2	1.40	0.85
1:A:127:GLN:HE21	1:A:127:GLN:HA	1.44	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:333:ILE:HG22	1:E:337:MET:CE	2.09	0.83
1:B:162:ASP:OD1	1:B:164:ARG:HG2	1.79	0.82
1:L:109:THR:HG22	1:L:111:ASP:HB2	1.60	0.82
1:F:127:GLN:HE21	1:F:127:GLN:HA	1.45	0.80
1:E:3:ILE:HG23	1:E:8:VAL:HG13	1.66	0.76
1:E:333:ILE:CG2	1:E:337:MET:HE2	2.15	0.76
1:F:72:ARG:HH11	1:F:72:ARG:HB2	1.49	0.76
1:L:127:GLN:HE21	1:L:127:GLN:HA	1.51	0.75
1:B:9:LEU:HD22	1:B:385:LEU:HD22	1.69	0.73
1:E:324:CYS:HB3	1:E:337:MET:HE1	1.70	0.73
1:B:402:ASP:HA	1:B:406:ARG:HB2	1.70	0.73
1:E:72:ARG:HB2	1:E:72:ARG:NH1	2.03	0.72
1:C:149:ASP:O	1:C:153:ILE:HG12	1.90	0.72
1:E:371:SER:O	1:E:375:GLU:HG3	1.89	0.71
1:E:9:LEU:HD22	1:E:385:LEU:HD22	1.73	0.71
1:K:385:LEU:HD11	1:K:391:VAL:CG1	2.21	0.71
1:L:109:THR:CG2	1:L:111:ASP:HB2	2.21	0.70
1:E:410:ARG:HD3	7:E:462:HOH:O	1.91	0.70
1:I:191:LYS:HE3	1:I:191:LYS:HA	1.75	0.69
1:A:48:TYR:HB3	1:A:51:LEU:HD13	1.74	0.68
1:C:402:ASP:HA	1:C:406:ARG:HB2	1.75	0.68
1:I:149:ASP:HA	1:I:152:ARG:HH12	1.60	0.67
1:K:72:ARG:NH2	1:K:116:ARG:HD3	2.10	0.67
1:A:127:GLN:HA	1:A:127:GLN:NE2	2.09	0.67
1:C:127:GLN:HA	1:C:127:GLN:NE2	2.08	0.66
1:E:55:VAL:HG12	1:E:82:LEU:HG	1.78	0.66
1:B:219:TYR:HB3	1:B:254:PRO:HG2	1.78	0.66
1:I:180:GLN:H	1:I:180:GLN:NE2	1.94	0.66
1:I:154:SER:OG	1:I:159:LYS:HD2	1.95	0.66
1:G:402:ASP:HA	1:G:406:ARG:HB2	1.78	0.65
1:A:402:ASP:HA	1:A:406:ARG:HB2	1.79	0.65
1:I:308:GLU:HG2	7:I:431:HOH:O	1.96	0.65
1:B:162:ASP:HB3	1:B:165:PHE:HD2	1.59	0.65
1:B:40:TRP:O	1:B:41:ASP:HB3	1.97	0.65
7:G:1677:HOH:O	1:H:321:ILE:HG12	1.96	0.65
1:K:381:TYR:O	1:K:385:LEU:HD13	1.97	0.65
1:B:371:SER:O	1:B:375:GLU:HG3	1.97	0.64
1:L:127:GLN:HA	1:L:127:GLN:NE2	2.11	0.64
1:E:392:THR:OG1	1:E:395:GLU:HG3	1.96	0.64
1:I:323:GLY:HA2	1:I:352:GLN:HA	1.78	0.64
1:H:323:GLY:HA2	1:H:352:GLN:HA	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:80:GLU:O	1:A:85:LYS:HG2	1.97	0.63
1:E:69:MET:HE2	1:E:73:GLU:HB3	1.80	0.63
1:C:342:MET:SD	1:C:380:LYS:HG3	2.38	0.63
1:K:323:GLY:HA2	1:K:352:GLN:HA	1.81	0.63
1:B:254:PRO:HG3	1:B:412:VAL:HG12	1.80	0.63
1:F:208:LEU:HD22	1:F:220:MET:CE	2.28	0.63
1:F:25:MET:HG3	7:F:443:HOH:O	1.99	0.62
1:K:245:LEU:HB2	1:K:246:PRO:HD3	1.81	0.62
1:E:149:ASP:O	1:E:153:ILE:HG12	1.99	0.62
1:I:180:GLN:H	1:I:180:GLN:HE21	1.48	0.62
1:G:25:MET:HG3	7:G:441:HOH:O	1.98	0.62
1:E:328:MET:HB3	1:E:337:MET:CE	2.30	0.62
1:J:392:THR:OG1	1:J:395:GLU:HG3	1.99	0.62
1:L:323:GLY:HA2	1:L:352:GLN:HA	1.80	0.62
1:E:5:SER:OG	1:E:8:VAL:HG12	2.00	0.61
1:F:171:LEU:HD11	1:F:220:MET:HE2	1.82	0.61
1:B:41:ASP:OD1	1:B:44:GLU:HG2	2.00	0.61
1:B:392:THR:OG1	1:B:395:GLU:HG3	2.00	0.61
1:G:178:TYR:CE2	1:G:182:LYS:HE2	2.34	0.61
1:H:25:MET:HG3	7:H:438:HOH:O	1.99	0.61
1:I:265:VAL:HG21	1:I:275:PHE:HB2	1.83	0.61
1:A:72:ARG:HH11	1:A:72:ARG:CB	2.04	0.61
1:H:72:ARG:NH2	1:H:116:ARG:HD3	2.17	0.60
1:A:112:LEU:HA	1:A:115:TYR:CD2	2.36	0.60
1:C:203:GLU:OE2	1:C:206:ARG:HD3	2.02	0.60
1:B:70:SER:O	1:B:74:GLN:HG3	2.01	0.60
1:F:4:ASN:HB2	7:I:750:HOH:O	2.02	0.60
1:B:352:GLN:HG3	1:B:353:HIS:N	2.16	0.59
1:D:144:ASN:HB2	1:D:215:MET:CE	2.32	0.59
1:B:144:ASN:HA	1:B:151:GLU:OE2	2.01	0.59
1:C:323:GLY:HA2	1:C:352:GLN:HA	1.84	0.59
1:E:214:ARG:HG2	1:E:214:ARG:HH11	1.67	0.59
1:A:25:MET:HG3	7:A:487:HOH:O	2.02	0.59
1:F:127:GLN:HA	1:F:127:GLN:NE2	2.16	0.59
1:G:197:ASN:ND2	1:G:200:SER:H	1.99	0.59
1:J:254:PRO:HG3	1:J:295:LYS:HE3	1.83	0.59
1:D:402:ASP:HA	1:D:406:ARG:HB2	1.85	0.59
1:A:323:GLY:HA2	1:A:352:GLN:HA	1.83	0.59
1:B:20:GLN:NE2	1:B:21:PRO:HD2	2.18	0.58
1:H:392:THR:OG1	1:H:395:GLU:HG3	2.03	0.58
1:I:202:GLN:HA	1:I:202:GLN:NE2	2.18	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:392:THR:OG1	1:G:395:GLU:HG3	2.02	0.58
1:A:394:GLU:HB2	7:A:446:HOH:O	2.03	0.58
1:C:392:THR:OG1	1:C:395:GLU:HG3	2.02	0.58
1:G:3:ILE:HG21	1:G:9:LEU:HB2	1.85	0.58
1:J:402:ASP:HA	1:J:406:ARG:HB2	1.85	0.58
1:E:245:LEU:HB2	1:E:246:PRO:HD3	1.84	0.58
1:B:323:GLY:HA2	1:B:352:GLN:HA	1.86	0.57
1:D:170:ARG:NH2	1:D:223:SER:HB3	2.20	0.57
1:G:9:LEU:HD22	1:G:385:LEU:HD22	1.86	0.57
1:D:2:SER:N	1:H:386:GLN:NE2	2.52	0.57
1:K:254:PRO:HG3	1:K:412:VAL:HG12	1.84	0.57
1:G:193:ASN:HD22	1:G:197:ASN:HD21	1.51	0.57
1:L:3:ILE:HG21	1:L:9:LEU:HD13	1.87	0.57
1:A:393:GLU:HG2	1:A:397:LYS:HE3	1.86	0.57
1:D:323:GLY:HA2	1:D:352:GLN:HA	1.86	0.57
1:I:127:GLN:OE1	1:I:127:GLN:HA	2.04	0.57
1:D:392:THR:OG1	1:D:395:GLU:HG3	2.04	0.57
1:B:172:ASP:HB2	1:B:173:PRO:HD3	1.87	0.57
1:E:323:GLY:HA2	1:E:352:GLN:HA	1.86	0.57
1:K:123:THR:OG1	1:K:126:GLU:HG3	2.05	0.57
1:I:180:GLN:NE2	1:I:180:GLN:N	2.52	0.56
1:L:180:GLN:H	1:L:180:GLN:NE2	2.03	0.56
1:G:382:ASP:O	1:G:386:GLN:HG2	2.04	0.56
1:A:52:VAL:O	1:A:55:VAL:HG12	2.06	0.56
1:D:172:ASP:HB2	1:D:173:PRO:HD3	1.87	0.56
1:E:70:SER:O	1:E:74:GLN:HG3	2.04	0.56
1:E:328:MET:HB3	1:E:337:MET:HE2	1.87	0.56
1:F:392:THR:OG1	1:F:395:GLU:HG3	2.04	0.56
1:L:191:LYS:NZ	1:L:191:LYS:HB3	2.20	0.56
1:D:106:ASP:OD2	1:D:108:ALA:HB3	2.06	0.56
1:D:394:GLU:HG2	7:D:570:HOH:O	2.05	0.56
1:K:117:GLU:O	1:K:121:LYS:HD2	2.06	0.56
1:A:106:ASP:OD2	1:A:108:ALA:HB3	2.06	0.56
1:B:218:VAL:HG23	1:B:219:TYR:CD2	2.40	0.56
1:E:352:GLN:HG3	1:E:353:HIS:N	2.21	0.56
1:G:70:SER:O	1:G:74:GLN:HG3	2.05	0.56
1:I:106:ASP:OD2	1:I:108:ALA:HB3	2.06	0.55
1:K:392:THR:OG1	1:K:395:GLU:HG3	2.06	0.55
1:F:254:PRO:HG3	1:F:295:LYS:HE3	1.89	0.55
1:F:402:ASP:HA	1:F:406:ARG:HB2	1.89	0.55
1:E:402:ASP:HA	1:E:406:ARG:HB2	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:245:LEU:HB2	1:I:246:PRO:HD3	1.89	0.55
1:F:70:SER:OG	1:F:73:GLU:HG3	2.07	0.55
1:H:286:HIS:CE1	1:H:290:GLU:HG3	2.42	0.55
1:B:40:TRP:O	1:B:41:ASP:CB	2.55	0.55
1:B:265:VAL:HG21	1:B:275:PHE:HB2	1.88	0.55
1:G:219:TYR:HB3	1:G:254:PRO:HG2	1.88	0.55
1:G:371:SER:O	1:G:375:GLU:HG3	2.07	0.55
1:H:30:PHE:CE2	1:H:37:ILE:HG13	2.42	0.55
1:H:381:TYR:O	1:H:385:LEU:HD23	2.07	0.55
1:A:127:GLN:HE21	1:A:127:GLN:CA	2.13	0.55
1:B:410:ARG:HB3	1:B:410:ARG:NH1	2.22	0.55
1:A:301:LEU:HD11	1:A:326:TRP:HB3	1.89	0.54
1:B:47:THR:OG1	1:B:71:LYS:HE3	2.07	0.54
1:B:189:GLY:O	1:B:206:ARG:NH2	2.40	0.54
1:C:219:TYR:HA	1:C:253:ILE:CG2	2.38	0.54
1:F:208:LEU:O	1:F:212:ILE:HG13	2.08	0.54
1:A:183:HIS:HA	1:A:186:ARG:HD2	1.89	0.54
1:D:144:ASN:HB2	1:D:215:MET:HE1	1.87	0.54
1:B:410:ARG:CB	1:B:410:ARG:HH11	2.21	0.54
1:A:149:ASP:OD1	1:A:152:ARG:NH2	2.40	0.54
1:A:245:LEU:HB2	1:A:246:PRO:HD3	1.89	0.54
1:G:122:LYS:HG3	1:G:126:GLU:HB2	1.89	0.54
1:G:245:LEU:HB2	1:G:246:PRO:HD3	1.89	0.54
1:E:265:VAL:HG21	1:E:275:PHE:HB2	1.90	0.54
1:E:324:CYS:CB	1:E:337:MET:HE1	2.36	0.54
1:G:3:ILE:N	1:G:3:ILE:HD12	2.22	0.54
1:E:49:HIS:HB2	1:E:272:ALA:HB2	1.90	0.54
1:I:313:ALA:HA	1:I:319:LEU:HD23	1.89	0.54
1:B:111:ASP:OD1	1:B:114:VAL:HG23	2.08	0.54
1:B:128:VAL:O	1:B:132:LEU:HG	2.08	0.54
1:B:316:PHE:HB3	1:B:318:ASN:OD1	2.07	0.54
1:C:276:VAL:HG22	1:C:277:GLY:N	2.23	0.54
1:E:117:GLU:O	1:E:121:LYS:HG3	2.07	0.54
1:F:323:GLY:HA2	1:F:352:GLN:HA	1.89	0.54
1:D:245:LEU:HB2	1:D:246:PRO:HD3	1.90	0.53
1:G:323:GLY:HA2	1:G:352:GLN:HA	1.88	0.53
1:H:301:LEU:HD11	1:H:326:TRP:HB3	1.89	0.53
1:I:123:THR:OG1	1:I:126:GLU:HG3	2.08	0.53
1:I:202:GLN:HA	1:I:202:GLN:HE21	1.72	0.53
1:J:385:LEU:HA	1:J:389:TRP:O	2.08	0.53
1:K:198:GLU:O	1:K:202:GLN:HG2	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:185:LEU:HB3	1:G:190:TYR:HB2	1.91	0.53
1:G:308:GLU:HG2	7:G:434:HOH:O	2.07	0.53
1:C:219:TYR:HB3	1:C:254:PRO:HG2	1.90	0.53
1:G:197:ASN:C	1:G:197:ASN:HD22	2.12	0.53
1:E:55:VAL:CG1	1:E:78:ILE:HG12	2.29	0.53
1:J:323:GLY:HA2	1:J:352:GLN:HA	1.90	0.53
1:B:72:ARG:HH21	1:B:116:ARG:HD3	1.74	0.53
1:L:122:LYS:NZ	1:L:127:GLN:NE2	2.57	0.53
1:H:127:GLN:OE1	1:H:127:GLN:HA	2.09	0.52
1:J:30:PHE:CE2	1:J:37:ILE:HG13	2.44	0.52
1:A:40:TRP:O	1:A:41:ASP:CG	2.47	0.52
1:A:172:ASP:HB2	1:A:173:PRO:HD3	1.92	0.52
1:A:265:VAL:HG21	1:A:275:PHE:HB2	1.89	0.52
1:J:393:GLU:HG2	1:J:397:LYS:HE3	1.92	0.52
1:K:402:ASP:HA	1:K:406:ARG:HB2	1.91	0.52
1:B:44:GLU:OE2	1:B:71:LYS:HE2	2.09	0.52
1:B:65:ALA:O	1:B:69:MET:HG3	2.08	0.52
1:B:155:TRP:CZ3	1:B:215:MET:HA	2.44	0.52
1:G:276:VAL:HG22	1:G:277:GLY:N	2.24	0.52
1:I:186:ARG:HA	1:I:190:TYR:O	2.10	0.52
1:B:195:GLU:HG3	1:B:197:ASN:ND2	2.25	0.52
1:C:3:ILE:HD12	1:C:12:LYS:HD2	1.91	0.52
1:E:148:ASP:OD2	1:E:150:ASN:HB3	2.09	0.52
1:K:393:GLU:HG2	1:K:397:LYS:NZ	2.24	0.52
1:A:111:ASP:OD1	1:A:114:VAL:HG23	2.10	0.52
1:H:48:TYR:HB3	1:H:51:LEU:HD23	1.92	0.52
1:F:180:GLN:H	1:F:180:GLN:NE2	2.07	0.52
1:F:180:GLN:NE2	1:F:180:GLN:N	2.58	0.52
1:F:219:TYR:HA	1:F:253:ILE:CG2	2.40	0.52
1:L:392:THR:OG1	1:L:395:GLU:HG3	2.09	0.52
1:B:182:LYS:HA	1:B:185:LEU:HD12	1.90	0.52
1:B:186:ARG:NH1	1:B:192:VAL:O	2.41	0.52
1:H:276:VAL:HG22	1:H:277:GLY:N	2.24	0.52
1:J:276:VAL:HG22	1:J:277:GLY:N	2.24	0.52
1:C:381:TYR:O	1:C:385:LEU:HD22	2.10	0.52
1:F:196:TRP:CD1	1:F:238:ARG:HD2	2.45	0.52
1:F:276:VAL:HG22	1:F:277:GLY:N	2.25	0.52
1:G:235:ASN:O	1:G:239:ILE:HG13	2.09	0.52
1:B:230:PHE:HA	1:B:231:PRO:C	2.30	0.52
1:D:139:ASP:OD1	1:D:166:HIS:HE1	1.93	0.52
1:J:313:ALA:HA	1:J:319:LEU:HD23	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:70:SER:OG	1:H:73:GLU:HG3	2.10	0.51
1:H:123:THR:OG1	1:H:126:GLU:HG3	2.11	0.51
1:I:149:ASP:HA	1:I:152:ARG:NH1	2.23	0.51
1:D:3:ILE:HG21	1:D:9:LEU:HD13	1.92	0.51
1:F:245:LEU:HB2	1:F:246:PRO:HD3	1.92	0.51
1:G:230:PHE:HA	1:G:231:PRO:C	2.30	0.51
1:H:117:GLU:O	1:H:121:LYS:HG3	2.10	0.51
1:J:70:SER:OG	1:J:73:GLU:HG3	2.10	0.51
1:K:172:ASP:HB2	1:K:173:PRO:HD3	1.92	0.51
1:K:219:TYR:HB3	1:K:254:PRO:HG2	1.92	0.51
1:A:286:HIS:CE1	1:A:290:GLU:HG3	2.46	0.51
1:B:410:ARG:NH1	1:B:410:ARG:CB	2.73	0.51
1:F:139:ASP:OD1	1:F:166:HIS:HE1	1.93	0.51
1:A:170:ARG:NH2	1:A:223:SER:HB3	2.26	0.51
1:E:254:PRO:HG3	1:E:412:VAL:HG12	1.93	0.51
1:L:245:LEU:HB2	1:L:246:PRO:HD3	1.93	0.51
1:E:79:TRP:O	1:E:83:PHE:HB2	2.11	0.51
1:H:402:ASP:HA	1:H:406:ARG:HB2	1.93	0.51
1:A:392:THR:OG1	1:A:395:GLU:HG3	2.10	0.51
1:B:252:ASN:ND2	1:B:295:LYS:HE2	2.26	0.51
1:F:172:ASP:HB2	1:F:173:PRO:HD3	1.91	0.51
1:H:396:ILE:O	1:H:400:VAL:HG23	2.11	0.51
1:L:172:ASP:HB2	1:L:173:PRO:HD3	1.93	0.51
1:B:112:LEU:HA	1:B:115:TYR:CD2	2.46	0.51
1:C:286:HIS:CE1	1:C:290:GLU:HG3	2.46	0.51
1:F:252:ASN:ND2	1:F:295:LYS:HE2	2.26	0.51
1:G:122:LYS:HD3	1:G:127:GLN:CA	2.41	0.51
1:A:393:GLU:CG	1:A:397:LYS:HE3	2.40	0.50
1:I:47:THR:OG1	1:I:71:LYS:HE2	2.10	0.50
1:C:321:ILE:HG12	7:C:1266:HOH:O	2.12	0.50
1:L:139:ASP:OD1	1:L:166:HIS:HE1	1.93	0.50
1:B:410:ARG:HH11	1:B:410:ARG:HB2	1.76	0.50
1:C:70:SER:O	1:C:74:GLN:HG3	2.11	0.50
1:C:79:TRP:O	1:C:83:PHE:HB2	2.11	0.50
1:E:198:GLU:OE2	1:E:202:GLN:HG2	2.11	0.50
1:E:219:TYR:HA	1:E:253:ILE:HG23	1.93	0.50
1:G:196:TRP:CD1	1:G:238:ARG:HD2	2.46	0.50
1:H:219:TYR:HA	1:H:253:ILE:CG2	2.41	0.50
1:I:172:ASP:HB2	1:I:173:PRO:HD3	1.93	0.50
1:B:264:ARG:NH1	1:B:264:ARG:HB2	2.26	0.50
1:F:235:ASN:O	1:F:239:ILE:HG13	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:40:TRP:O	1:I:41:ASP:CG	2.49	0.50
1:I:112:LEU:HA	1:I:115:TYR:CD2	2.46	0.50
1:D:167:ALA:HB1	1:D:215:MET:HE3	1.93	0.50
1:I:191:LYS:HE3	1:I:191:LYS:CA	2.40	0.50
1:I:374:ALA:O	1:I:378:ILE:HG13	2.12	0.50
1:E:172:ASP:HB2	1:E:173:PRO:HD3	1.94	0.50
1:K:265:VAL:HG21	1:K:275:PHE:HB2	1.93	0.50
1:B:301:LEU:HD11	1:B:326:TRP:HB3	1.94	0.50
1:B:308:GLU:HG2	7:B:439:HOH:O	2.12	0.50
1:G:290:GLU:C	1:G:292:PRO:HD3	2.33	0.50
1:G:97:LEU:HD13	1:H:389:TRP:HB2	1.94	0.49
1:L:130:THR:O	1:L:134:LEU:HG	2.12	0.49
1:A:70:SER:OG	1:A:73:GLU:HG3	2.12	0.49
1:B:79:TRP:O	1:B:83:PHE:HB2	2.12	0.49
1:K:70:SER:OG	1:K:73:GLU:HG3	2.12	0.49
1:C:25:MET:HG3	7:C:431:HOH:O	2.12	0.49
1:D:40:TRP:O	1:D:41:ASP:CG	2.50	0.49
1:D:196:TRP:CD1	1:D:238:ARG:HD2	2.47	0.49
1:G:40:TRP:O	1:G:41:ASP:CG	2.51	0.49
1:A:212:ILE:HD13	1:A:253:ILE:HD12	1.95	0.49
1:A:391:VAL:HG23	1:A:391:VAL:O	2.12	0.49
1:C:4:ASN:HB2	7:K:1425:HOH:O	2.10	0.49
1:G:30:PHE:CD2	1:G:37:ILE:HG13	2.46	0.49
1:A:122:LYS:HZ3	1:A:127:GLN:HE22	1.59	0.49
1:F:79:TRP:O	1:F:83:PHE:HB2	2.13	0.49
1:G:172:ASP:HB2	1:G:173:PRO:HD3	1.94	0.49
1:H:385:LEU:HD21	1:H:391:VAL:CG1	2.42	0.49
1:K:276:VAL:HG22	1:K:277:GLY:N	2.26	0.49
1:A:313:ALA:HA	1:A:319:LEU:HD23	1.94	0.49
1:D:219:TYR:HA	1:D:253:ILE:HG22	1.95	0.49
1:G:30:PHE:CE2	1:G:37:ILE:HG13	2.48	0.49
7:C:1313:HOH:O	1:K:4:ASN:HB2	2.11	0.49
1:F:52:VAL:O	1:F:55:VAL:HG12	2.13	0.49
1:G:139:ASP:OD1	1:G:166:HIS:HE1	1.96	0.49
1:G:389:TRP:HB2	1:I:97:LEU:HD13	1.95	0.49
1:L:402:ASP:HA	1:L:406:ARG:HB2	1.95	0.49
1:A:79:TRP:O	1:A:83:PHE:HB2	2.13	0.49
1:E:276:VAL:HG22	1:E:277:GLY:N	2.27	0.49
1:G:124:SER:O	1:G:128:VAL:HG23	2.12	0.49
1:G:301:LEU:HD11	1:G:326:TRP:HB3	1.95	0.49
1:J:230:PHE:HA	1:J:231:PRO:C	2.33	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:127:GLN:OE1	1:K:127:GLN:HA	2.13	0.49
1:L:276:VAL:HG22	1:L:277:GLY:N	2.28	0.49
1:F:198:GLU:OE2	1:F:202:GLN:NE2	2.45	0.48
1:I:301:LEU:CD1	1:I:326:TRP:HB3	2.43	0.48
1:K:139:ASP:OD1	1:K:166:HIS:HE1	1.96	0.48
1:L:9:LEU:HD21	1:L:381:TYR:HB3	1.93	0.48
1:A:209:THR:O	1:A:213:GLU:HG3	2.13	0.48
1:B:42:ILE:HD13	1:B:100:LEU:HD21	1.95	0.48
1:F:208:LEU:HD22	1:F:220:MET:HE1	1.95	0.48
1:J:5:SER:HB2	1:J:7:GLU:HG2	1.94	0.48
1:J:149:ASP:O	1:J:153:ILE:HG13	2.12	0.48
1:A:235:ASN:O	1:A:239:ILE:HG13	2.13	0.48
1:G:149:ASP:O	1:G:153:ILE:HG13	2.13	0.48
1:H:381:TYR:O	1:H:385:LEU:CD2	2.61	0.48
1:A:66:PHE:O	1:A:69:MET:HG2	2.14	0.48
1:B:219:TYR:HA	1:B:253:ILE:CG2	2.42	0.48
1:E:219:TYR:HB3	1:E:254:PRO:HG2	1.94	0.48
1:J:69:MET:HB3	1:J:73:GLU:HB2	1.96	0.48
1:I:276:VAL:HG22	1:I:277:GLY:N	2.28	0.48
1:E:3:ILE:HG23	1:E:8:VAL:CG1	2.39	0.48
1:G:336:GLU:O	1:G:340:MET:HG3	2.14	0.48
1:A:117:GLU:O	1:A:121:LYS:HG2	2.14	0.48
1:B:216:ASP:N	1:B:217:PRO:CD	2.77	0.48
1:B:276:VAL:HG22	1:B:277:GLY:N	2.28	0.48
1:E:97:LEU:HD13	1:F:389:TRP:HB2	1.96	0.48
1:F:42:ILE:HD13	1:F:100:LEU:HD21	1.95	0.48
1:I:67:TRP:HA	1:I:67:TRP:CE3	2.48	0.48
1:J:172:ASP:HB2	1:J:173:PRO:HD3	1.95	0.48
1:A:219:TYR:HB3	1:A:254:PRO:HG2	1.96	0.48
1:A:322:PHE:HA	1:A:350:ILE:O	2.14	0.48
1:B:195:GLU:HG3	1:B:197:ASN:HD22	1.78	0.48
1:C:172:ASP:HB2	1:C:173:PRO:HD3	1.95	0.48
1:C:219:TYR:HA	1:C:253:ILE:HG22	1.95	0.48
1:E:70:SER:OG	1:E:73:GLU:HG3	2.14	0.48
1:A:208:LEU:O	1:A:212:ILE:HG13	2.13	0.48
1:B:152:ARG:NH1	1:B:156:LEU:HD11	2.29	0.48
1:G:352:GLN:HG3	1:G:353:HIS:N	2.28	0.48
1:J:288:LEU:CD2	1:J:319:LEU:HB2	2.44	0.48
1:L:322:PHE:HA	1:L:350:ILE:O	2.13	0.48
1:A:128:VAL:HA	1:A:359:LEU:HD21	1.95	0.47
1:E:112:LEU:HA	1:E:115:TYR:CD2	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:352:GLN:HG3	1:J:353:HIS:N	2.28	0.47
1:K:25:MET:HG3	7:K:445:HOH:O	2.13	0.47
1:L:122:LYS:NZ	1:L:127:GLN:HE22	2.12	0.47
1:G:295:LYS:HD3	1:G:411:PHE:O	2.13	0.47
1:G:313:ALA:HA	1:G:319:LEU:HD23	1.96	0.47
1:H:385:LEU:HD21	1:H:391:VAL:HG11	1.97	0.47
1:D:301:LEU:HD11	1:D:326:TRP:HB3	1.96	0.47
1:G:291:TYR:N	1:G:292:PRO:HD3	2.29	0.47
1:J:410:ARG:HD3	7:J:466:HOH:O	2.13	0.47
1:A:172:ASP:OD1	1:A:222:VAL:HA	2.15	0.47
1:D:170:ARG:HH21	1:D:223:SER:HB3	1.79	0.47
1:D:286:HIS:CE1	1:D:290:GLU:HG3	2.49	0.47
1:J:382:ASP:O	1:J:386:GLN:HG2	2.14	0.47
1:F:148:ASP:OD2	1:F:151:GLU:HG3	2.14	0.47
1:L:69:MET:HB3	1:L:73:GLU:HB2	1.97	0.47
1:A:301:LEU:CD1	1:A:326:TRP:HB3	2.44	0.47
1:I:111:ASP:OD1	1:I:114:VAL:HG23	2.14	0.47
1:I:394:GLU:HG2	7:I:461:HOH:O	2.13	0.47
1:I:402:ASP:HA	1:I:406:ARG:HB2	1.96	0.47
1:K:72:ARG:HH22	1:K:116:ARG:HD3	1.79	0.47
1:K:352:GLN:HG3	1:K:353:HIS:N	2.29	0.47
1:L:180:GLN:NE2	1:L:180:GLN:N	2.62	0.47
1:L:308:GLU:HG2	7:L:462:HOH:O	2.13	0.47
1:B:264:ARG:HB2	1:B:264:ARG:HH11	1.80	0.47
1:F:352:GLN:HG3	1:F:353:HIS:N	2.29	0.47
1:G:112:LEU:HA	1:G:115:TYR:CD2	2.50	0.47
1:J:129:ASP:O	1:J:133:GLN:HB2	2.14	0.47
1:J:389:TRP:HB2	1:L:97:LEU:HD13	1.97	0.47
1:A:22:VAL:HG11	1:A:366:TRP:CE2	2.49	0.47
1:B:25:MET:HG3	7:B:446:HOH:O	2.15	0.47
1:G:20:GLN:NE2	1:G:21:PRO:HD2	2.30	0.47
1:I:230:PHE:HA	1:I:231:PRO:C	2.35	0.47
1:K:196:TRP:CZ2	1:K:201:ILE:HG12	2.49	0.47
1:K:202:GLN:HA	1:K:202:GLN:NE2	2.30	0.47
1:B:275:PHE:CG	1:B:276:VAL:N	2.83	0.47
1:I:146:PRO:O	1:I:152:ARG:HD3	2.14	0.47
1:I:254:PRO:HG2	1:I:412:VAL:HA	1.97	0.47
1:J:49:HIS:HB2	1:J:272:ALA:HB2	1.97	0.47
1:A:9:LEU:HD21	1:A:381:TYR:HB3	1.97	0.46
1:G:216:ASP:N	1:G:217:PRO:CD	2.79	0.46
1:L:127:GLN:HE21	1:L:127:GLN:CA	2.18	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:286:HIS:CE1	1:B:290:GLU:HG3	2.50	0.46
1:D:276:VAL:HG22	1:D:277:GLY:N	2.30	0.46
1:F:198:GLU:O	1:F:202:GLN:HG2	2.15	0.46
1:J:11:GLU:O	1:J:15:ASN:HB2	2.16	0.46
1:E:113:GLN:HE22	1:E:116:ARG:HH11	1.63	0.46
1:E:263:LYS:C	1:E:264:ARG:HG2	2.36	0.46
1:I:301:LEU:HD11	1:I:326:TRP:HB3	1.97	0.46
1:A:142:MET:O	1:A:168:ALA:HB3	2.16	0.46
1:F:203:GLU:OE2	1:F:206:ARG:NH1	2.49	0.46
1:K:149:ASP:HA	1:K:152:ARG:NH1	2.30	0.46
1:D:112:LEU:HA	1:D:115:TYR:CD2	2.50	0.46
1:I:252:ASN:HD21	1:I:295:LYS:CE	2.29	0.46
1:A:41:ASP:HA	1:A:119:PHE:CD1	2.51	0.46
1:A:393:GLU:O	1:A:397:LYS:HG3	2.16	0.46
1:B:301:LEU:CD1	1:B:326:TRP:HB3	2.46	0.46
1:I:200:SER:O	1:I:204:VAL:HG23	2.15	0.46
1:K:122:LYS:NZ	1:K:122:LYS:HB3	2.31	0.46
1:F:147:PHE:CZ	1:F:174:LEU:HB2	2.51	0.46
1:D:322:PHE:HA	1:D:350:ILE:O	2.16	0.45
1:E:20:GLN:NE2	1:E:21:PRO:HD2	2.31	0.45
1:F:230:PHE:HA	1:F:231:PRO:C	2.37	0.45
1:B:49:HIS:HB2	1:B:272:ALA:HB2	1.97	0.45
1:F:88:PRO:C	1:F:93:CYS:SG	2.95	0.45
1:F:149:ASP:OD1	1:F:152:ARG:NH2	2.50	0.45
1:F:180:GLN:H	1:F:180:GLN:HE21	1.63	0.45
1:G:193:ASN:HD22	1:G:197:ASN:ND2	2.13	0.45
1:H:139:ASP:OD1	1:H:166:HIS:HE1	1.99	0.45
1:B:219:TYR:CB	1:B:254:PRO:HG2	2.46	0.45
1:H:79:TRP:O	1:H:83:PHE:HB2	2.16	0.45
1:H:201:ILE:O	1:H:205:LYS:HG3	2.16	0.45
1:H:264:ARG:HH11	1:H:264:ARG:HB2	1.80	0.45
1:I:252:ASN:HD21	1:I:295:LYS:HE3	1.80	0.45
1:D:25:MET:HG3	7:D:438:HOH:O	2.14	0.45
1:K:154:SER:O	1:K:159:LYS:HB2	2.16	0.45
1:L:230:PHE:HA	1:L:231:PRO:C	2.37	0.45
1:A:219:TYR:HA	1:A:253:ILE:CG2	2.46	0.45
1:B:196:TRP:CD1	1:B:238:ARG:HD2	2.52	0.45
1:B:408:PHE:O	1:B:412:VAL:HG22	2.17	0.45
1:F:171:LEU:HD11	1:F:220:MET:CE	2.46	0.45
1:H:172:ASP:HB2	1:H:173:PRO:HD3	1.98	0.45
1:J:252:ASN:ND2	1:J:295:LYS:HE2	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:301:LEU:CD1	1:J:326:TRP:HB3	2.46	0.45
1:K:146:PRO:O	1:K:152:ARG:HD3	2.16	0.45
1:D:203:GLU:OE2	1:D:206:ARG:HD3	2.16	0.45
1:E:69:MET:CE	1:E:73:GLU:HB3	2.46	0.45
1:F:221:ALA:HB2	1:F:256:ALA:HB3	1.99	0.45
1:B:197:ASN:O	1:B:201:ILE:HG13	2.16	0.45
1:C:72:ARG:HG3	1:C:72:ARG:HH11	1.81	0.45
1:C:166:HIS:HD2	7:C:1096:HOH:O	1.99	0.45
1:E:113:GLN:NE2	1:E:116:ARG:HH11	2.15	0.45
1:L:382:ASP:O	1:L:386:GLN:HG2	2.17	0.45
1:A:128:VAL:HG23	1:A:129:ASP:N	2.32	0.45
1:D:352:GLN:HG3	1:D:353:HIS:N	2.31	0.45
1:L:153:ILE:O	1:L:157:GLU:HG3	2.16	0.45
1:E:252:ASN:ND2	1:E:295:LYS:HE2	2.32	0.45
1:H:308:GLU:HG2	7:H:471:HOH:O	2.16	0.45
1:I:37:ILE:CD1	1:I:151:GLU:HG2	2.47	0.45
1:I:152:ARG:O	1:I:156:LEU:HG	2.17	0.45
1:K:149:ASP:HA	1:K:152:ARG:HH12	1.82	0.45
1:H:30:PHE:CD2	1:H:37:ILE:HG13	2.52	0.45
1:J:287:LEU:O	1:J:291:TYR:HB2	2.17	0.45
1:K:216:ASP:N	1:K:217:PRO:CD	2.80	0.45
1:L:112:LEU:HA	1:L:115:TYR:CD2	2.51	0.45
1:B:215:MET:HB2	1:B:217:PRO:HD3	1.99	0.44
1:E:196:TRP:CD1	1:E:238:ARG:HD2	2.52	0.44
1:I:195:GLU:HG3	1:I:197:ASN:ND2	2.33	0.44
1:I:219:TYR:HA	1:I:253:ILE:CG2	2.47	0.44
1:L:40:TRP:O	1:L:41:ASP:CG	2.54	0.44
1:A:88:PRO:HB2	1:A:93:CYS:HB3	1.98	0.44
1:B:118:TYR:HA	1:B:121:LYS:NZ	2.33	0.44
1:B:190:TYR:HE1	1:B:206:ARG:HG2	1.82	0.44
1:B:235:ASN:O	1:B:239:ILE:HG13	2.17	0.44
1:E:139:ASP:OD1	1:E:166:HIS:HE1	2.00	0.44
1:F:40:TRP:O	1:F:41:ASP:CG	2.55	0.44
1:G:191:LYS:O	1:G:203:GLU:HG3	2.17	0.44
1:J:212:ILE:HD13	1:J:253:ILE:HD12	1.98	0.44
1:K:322:PHE:HA	1:K:350:ILE:O	2.17	0.44
1:B:297:LEU:HD23	1:B:320:MET:HB3	1.99	0.44
1:D:80:GLU:HG3	1:D:85:LYS:HE3	1.98	0.44
1:E:219:TYR:HA	1:E:253:ILE:CG2	2.47	0.44
1:F:276:VAL:CG2	1:F:277:GLY:N	2.80	0.44
1:G:252:ASN:HD21	1:G:295:LYS:HE3	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:123:THR:OG1	1:J:126:GLU:HG3	2.18	0.44
1:B:243:CYS:O	1:B:246:PRO:HG2	2.17	0.44
1:G:322:PHE:HA	1:G:350:ILE:O	2.18	0.44
1:H:275:PHE:CG	1:H:276:VAL:N	2.85	0.44
1:H:72:ARG:NH1	1:H:72:ARG:HG3	2.32	0.44
1:I:48:TYR:HB3	1:I:51:LEU:HD23	2.00	0.44
1:A:276:VAL:HG22	1:A:277:GLY:N	2.32	0.44
1:E:72:ARG:HH21	1:E:116:ARG:HD3	1.82	0.44
1:G:203:GLU:OE1	1:G:206:ARG:NH1	2.49	0.44
1:B:182:LYS:O	1:B:186:ARG:HG3	2.18	0.44
1:C:127:GLN:HE21	1:C:127:GLN:CA	2.08	0.44
1:E:244:LEU:C	1:E:244:LEU:HD13	2.38	0.44
1:J:40:TRP:O	1:J:41:ASP:CG	2.56	0.44
1:K:212:ILE:HD13	1:K:253:ILE:HD12	1.99	0.44
1:L:79:TRP:O	1:L:83:PHE:HB2	2.18	0.44
1:B:313:ALA:HA	1:B:319:LEU:HD23	1.99	0.44
1:D:326:TRP:HB3	1:D:327:PHE:H	1.64	0.44
1:H:69:MET:HB3	1:H:73:GLU:HB2	2.00	0.44
1:A:41:ASP:OD1	1:A:43:ASP:N	2.51	0.44
1:A:170:ARG:HH21	1:A:223:SER:HB3	1.83	0.44
1:C:139:ASP:OD1	1:C:166:HIS:HE1	2.01	0.44
1:F:41:ASP:C	1:F:41:ASP:OD1	2.56	0.44
1:F:219:TYR:HA	1:F:253:ILE:HG22	2.00	0.44
1:F:265:VAL:HG21	1:F:275:PHE:HB2	2.00	0.44
1:H:63:ILE:HD11	1:H:67:TRP:NE1	2.33	0.44
1:I:235:ASN:O	1:I:239:ILE:HG13	2.18	0.44
1:J:265:VAL:HG21	1:J:275:PHE:HB2	2.00	0.44
1:L:106:ASP:OD2	1:L:108:ALA:HB3	2.18	0.44
1:L:219:TYR:HB3	1:L:254:PRO:HG2	2.00	0.44
1:E:40:TRP:O	1:E:41:ASP:CG	2.56	0.43
1:E:316:PHE:HB3	1:E:318:ASN:OD1	2.18	0.43
1:J:245:LEU:HB2	1:J:246:PRO:HD3	1.99	0.43
1:L:180:GLN:H	1:L:180:GLN:HE21	1.66	0.43
1:A:9:LEU:HD21	1:A:381:TYR:CB	2.48	0.43
1:E:203:GLU:OE1	1:E:206:ARG:NH1	2.51	0.43
1:G:409:TRP:HA	1:G:412:VAL:HG22	2.00	0.43
1:H:67:TRP:HA	1:H:67:TRP:CE3	2.53	0.43
1:F:30:PHE:CE2	1:F:37:ILE:HG13	2.52	0.43
1:J:358:VAL:HB	1:J:361:GLN:HG3	1.99	0.43
1:A:230:PHE:HA	1:A:231:PRO:C	2.38	0.43
1:A:352:GLN:HG3	1:A:353:HIS:N	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:214:ARG:HG2	1:E:214:ARG:NH1	2.34	0.43
1:H:352:GLN:HG3	1:H:353:HIS:N	2.33	0.43
1:I:275:PHE:CG	1:I:276:VAL:N	2.86	0.43
1:D:127:GLN:OE1	1:D:127:GLN:HA	2.18	0.43
1:F:30:PHE:CD2	1:F:37:ILE:HG13	2.53	0.43
1:G:218:VAL:HG23	1:G:219:TYR:CD2	2.54	0.43
1:J:275:PHE:CG	1:J:276:VAL:N	2.87	0.43
1:K:230:PHE:HA	1:K:231:PRO:C	2.38	0.43
1:B:97:LEU:HD13	1:C:389:TRP:HB2	2.00	0.43
1:C:111:ASP:OD1	1:C:114:VAL:HG23	2.18	0.43
1:C:198:GLU:O	1:C:202:GLN:HG2	2.19	0.43
1:E:275:PHE:CG	1:E:276:VAL:N	2.87	0.43
1:G:358:VAL:HB	1:G:361:GLN:HG3	2.00	0.43
7:K:961:HOH:O	1:L:321:ILE:HG12	2.17	0.43
1:D:251:HIS:HB2	1:D:253:ILE:HG12	2.00	0.43
1:G:122:LYS:HD3	1:G:127:GLN:N	2.33	0.43
1:L:123:THR:OG1	1:L:126:GLU:HG3	2.19	0.43
1:L:301:LEU:HD11	1:L:326:TRP:HB3	2.01	0.43
1:F:149:ASP:O	1:F:153:ILE:HG13	2.19	0.43
1:F:336:GLU:O	1:F:340:MET:HG3	2.19	0.43
1:G:127:GLN:HA	1:G:127:GLN:OE1	2.17	0.43
1:K:396:ILE:O	1:K:400:VAL:HG23	2.18	0.43
1:E:158:GLY:O	1:E:160:GLN:HG2	2.19	0.43
1:A:196:TRP:CD1	1:A:238:ARG:HD2	2.53	0.43
1:B:6:ARG:NH2	1:B:379:ASP:OD1	2.51	0.43
1:G:243:CYS:C	1:G:246:PRO:HD2	2.38	0.43
1:G:256:ALA:HA	1:G:297:LEU:O	2.19	0.43
1:H:97:LEU:HD13	1:I:389:TRP:HB2	1.99	0.43
1:I:67:TRP:HA	1:I:67:TRP:HE3	1.83	0.43
1:J:30:PHE:CD2	1:J:37:ILE:HG13	2.53	0.43
1:J:219:TYR:HA	1:J:253:ILE:CG2	2.49	0.43
1:K:97:LEU:HD13	1:L:389:TRP:HB2	2.00	0.43
1:L:288:LEU:CD2	1:L:319:LEU:HB2	2.49	0.43
1:L:410:ARG:HD3	7:L:539:HOH:O	2.19	0.43
1:A:148:ASP:OD2	1:A:151:GLU:HG3	2.20	0.42
1:C:40:TRP:CE3	1:C:127:GLN:HG2	2.54	0.42
1:D:166:HIS:HD2	7:D:815:HOH:O	2.01	0.42
1:E:276:VAL:CG2	1:E:277:GLY:N	2.81	0.42
1:F:72:ARG:HH11	1:F:72:ARG:CB	2.23	0.42
1:K:288:LEU:HD11	1:K:319:LEU:HD22	2.02	0.42
1:L:111:ASP:OD1	1:L:114:VAL:HG23	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:72:ARG:HG3	1:C:72:ARG:NH1	2.34	0.42
1:C:154:SER:O	1:C:159:LYS:HB2	2.20	0.42
1:E:216:ASP:N	1:E:217:PRO:CD	2.83	0.42
1:F:385:LEU:CD1	1:F:391:VAL:HG23	2.49	0.42
1:G:69:MET:HB3	1:G:73:GLU:HB2	2.01	0.42
1:H:322:PHE:HA	1:H:350:ILE:O	2.19	0.42
1:I:40:TRP:O	1:I:41:ASP:CB	2.67	0.42
1:I:148:ASP:OD2	1:I:151:GLU:HG3	2.19	0.42
1:I:326:TRP:HB3	1:I:327:PHE:H	1.68	0.42
1:K:219:TYR:HA	1:K:253:ILE:CG2	2.49	0.42
1:L:160:GLN:HE21	1:L:160:GLN:HA	1.84	0.42
1:L:200:SER:O	1:L:204:VAL:HG23	2.19	0.42
1:C:216:ASP:N	1:C:217:PRO:CD	2.83	0.42
1:F:316:PHE:HB3	1:F:318:ASN:OD1	2.19	0.42
1:I:52:VAL:O	1:I:55:VAL:HG12	2.19	0.42
1:I:111:ASP:CG	1:I:114:VAL:HG23	2.40	0.42
1:I:195:GLU:HG3	1:I:197:ASN:HD22	1.85	0.42
1:K:69:MET:HB3	1:K:73:GLU:HB2	2.01	0.42
1:L:166:HIS:HD2	7:L:1341:HOH:O	2.01	0.42
1:A:40:TRP:O	1:A:41:ASP:CB	2.68	0.42
1:B:70:SER:OG	1:B:73:GLU:HG3	2.20	0.42
1:E:48:TYR:CD2	1:E:50:TYR:HB2	2.54	0.42
1:G:197:ASN:ND2	1:G:197:ASN:H	2.16	0.42
1:I:142:MET:O	1:I:168:ALA:HB3	2.19	0.42
1:J:25:MET:HG3	7:J:450:HOH:O	2.19	0.42
1:L:122:LYS:HZ1	1:L:127:GLN:NE2	2.17	0.42
1:A:122:LYS:HZ1	1:A:130:THR:CB	2.32	0.42
1:A:179:GLU:HB2	1:A:180:GLN:OE1	2.20	0.42
1:E:127:GLN:HA	1:E:127:GLN:OE1	2.20	0.42
1:G:25:MET:HA	1:G:141:VAL:CG2	2.50	0.42
1:K:196:TRP:CD1	1:K:238:ARG:HD2	2.54	0.42
1:L:52:VAL:O	1:L:55:VAL:HG12	2.19	0.42
1:D:40:TRP:O	1:D:41:ASP:CB	2.67	0.42
1:G:275:PHE:CG	1:G:276:VAL:N	2.87	0.42
1:H:49:HIS:HB2	1:H:272:ALA:HB2	2.01	0.42
1:K:70:SER:O	1:K:74:GLN:HG3	2.19	0.42
1:L:326:TRP:HB3	1:L:327:PHE:H	1.67	0.42
1:D:59:THR:OG1	1:D:61:VAL:HG13	2.19	0.42
1:F:216:ASP:N	1:F:217:PRO:CD	2.83	0.42
1:I:216:ASP:N	1:I:217:PRO:CD	2.83	0.42
1:J:97:LEU:HD13	1:K:389:TRP:HB2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:123:THR:OG1	1:A:126:GLU:HG3	2.19	0.42
1:A:216:ASP:N	1:A:217:PRO:CD	2.83	0.42
1:B:162:ASP:HB3	1:B:165:PHE:CD2	2.48	0.42
1:B:382:ASP:O	1:B:386:GLN:HG2	2.19	0.42
1:E:230:PHE:HA	1:E:231:PRO:C	2.39	0.42
1:H:198:GLU:OE2	1:H:202:GLN:HG2	2.19	0.42
1:K:149:ASP:O	1:K:153:ILE:HG13	2.20	0.42
1:K:244:LEU:HD13	1:K:244:LEU:C	2.41	0.42
1:A:40:TRP:O	1:A:41:ASP:OD2	2.38	0.41
1:F:65:ALA:O	1:F:69:MET:HG3	2.20	0.41
1:F:146:PRO:O	1:F:152:ARG:HB2	2.19	0.41
1:G:212:ILE:HD13	1:G:253:ILE:HD11	2.02	0.41
1:I:40:TRP:CE3	1:I:127:GLN:HG2	2.55	0.41
1:I:256:ALA:HA	1:I:297:LEU:O	2.20	0.41
1:J:172:ASP:OD1	1:J:222:VAL:HA	2.20	0.41
1:L:25:MET:HG3	7:L:438:HOH:O	2.20	0.41
1:D:238:ARG:HG2	1:D:241:ARG:NH2	2.35	0.41
1:E:286:HIS:CE1	1:E:290:GLU:HG3	2.55	0.41
1:H:40:TRP:O	1:H:41:ASP:CG	2.59	0.41
1:J:285:GLU:OE1	1:L:262:LYS:HE2	2.20	0.41
1:B:142:MET:O	1:B:168:ALA:HB3	2.20	0.41
1:B:238:ARG:HG2	1:B:241:ARG:NH2	2.35	0.41
1:B:358:VAL:HB	1:B:361:GLN:HG3	2.01	0.41
1:C:72:ARG:NH2	1:C:116:ARG:HD3	2.35	0.41
1:D:106:ASP:HA	1:D:107:PRO:HD3	1.83	0.41
1:E:42:ILE:HD13	1:E:100:LEU:HD21	2.02	0.41
1:G:264:ARG:HG3	1:G:264:ARG:HH11	1.84	0.41
1:H:167:ALA:O	1:H:217:PRO:HA	2.20	0.41
1:K:301:LEU:HD11	1:K:326:TRP:HB3	2.02	0.41
1:A:30:PHE:CE2	1:A:37:ILE:HG12	2.55	0.41
1:C:41:ASP:OD1	1:C:41:ASP:C	2.59	0.41
1:D:139:ASP:OD1	1:D:166:HIS:CE1	2.74	0.41
1:E:178:TYR:CD1	1:E:239:ILE:HD11	2.55	0.41
1:G:70:SER:OG	1:G:73:GLU:HG3	2.20	0.41
1:G:79:TRP:O	1:G:83:PHE:HB2	2.20	0.41
1:J:393:GLU:CG	1:J:397:LYS:HE3	2.51	0.41
1:A:42:ILE:HD13	1:A:100:LEU:HD21	2.02	0.41
1:A:244:LEU:HD13	1:A:244:LEU:C	2.40	0.41
1:B:151:GLU:O	1:B:154:SER:HB3	2.20	0.41
1:B:298:VAL:HG12	1:B:299:THR:N	2.36	0.41
1:C:40:TRP:O	1:C:41:ASP:CB	2.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:123:THR:OG1	1:C:126:GLU:HG3	2.20	0.41
1:K:40:TRP:O	1:K:41:ASP:CG	2.58	0.41
1:L:219:TYR:HA	1:L:253:ILE:CG2	2.50	0.41
1:B:127:GLN:HA	1:B:127:GLN:OE1	2.20	0.41
1:C:78:ILE:HG23	1:C:82:LEU:HD12	2.03	0.41
1:C:113:GLN:O	1:C:117:GLU:HG3	2.21	0.41
1:C:230:PHE:HA	1:C:231:PRO:C	2.41	0.41
1:E:3:ILE:CG2	1:E:8:VAL:HG13	2.45	0.41
1:E:41:ASP:OD1	1:E:41:ASP:C	2.58	0.41
1:E:66:PHE:CZ	1:E:74:GLN:HB3	2.55	0.41
1:E:301:LEU:CD1	1:E:326:TRP:HB3	2.50	0.41
1:I:145:ASP:HA	1:I:146:PRO:HD2	1.99	0.41
1:I:322:PHE:HA	1:I:350:ILE:O	2.19	0.41
1:J:52:VAL:O	1:J:55:VAL:HG12	2.21	0.41
1:G:301:LEU:CD1	1:G:326:TRP:HB3	2.50	0.41
1:J:218:VAL:HG23	1:J:219:TYR:CD2	2.56	0.41
1:B:224:LEU:HD13	1:B:228:PHE:CD1	2.55	0.41
1:C:244:LEU:HD13	1:C:244:LEU:C	2.40	0.41
1:F:385:LEU:HD12	1:F:389:TRP:O	2.20	0.41
1:G:315:LYS:HD2	1:I:274:ASP:O	2.20	0.41
1:J:72:ARG:NH2	1:J:116:ARG:HD3	2.36	0.41
1:A:40:TRP:CE3	1:A:127:GLN:HG2	2.56	0.41
1:B:128:VAL:HA	1:B:359:LEU:HD21	2.03	0.41
1:B:170:ARG:HH21	1:B:223:SER:HB3	1.86	0.41
1:B:288:LEU:HD23	1:B:296:PHE:CD2	2.56	0.41
1:D:313:ALA:HA	1:D:319:LEU:HD23	2.03	0.41
1:D:409:TRP:HE3	1:D:414:ARG:HB2	1.86	0.41
7:D:1369:HOH:O	1:E:321:ILE:HG12	2.19	0.41
1:E:111:ASP:CG	1:E:114:VAL:HG23	2.42	0.41
1:E:118:TYR:HA	1:E:121:LYS:NZ	2.36	0.41
1:F:301:LEU:CD1	1:F:326:TRP:HB3	2.51	0.41
1:G:41:ASP:HA	1:G:119:PHE:CD1	2.56	0.41
1:G:61:VAL:HG12	1:G:62:SER:O	2.20	0.41
1:H:146:PRO:O	1:H:152:ARG:HD3	2.21	0.41
1:J:43:ASP:OD2	1:J:72:ARG:NH1	2.54	0.41
1:K:275:PHE:CG	1:K:276:VAL:N	2.89	0.41
1:K:326:TRP:HB3	1:K:327:PHE:H	1.66	0.41
1:L:216:ASP:N	1:L:217:PRO:CD	2.83	0.41
1:A:145:ASP:HA	1:A:146:PRO:HD2	1.94	0.41
1:D:147:PHE:O	1:D:184:ARG:NH2	2.42	0.41
1:G:52:VAL:O	1:G:55:VAL:HG12	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:145:ASP:HA	1:J:146:PRO:HD2	1.96	0.41
1:K:276:VAL:CG2	1:K:277:GLY:N	2.84	0.41
1:A:275:PHE:CG	1:A:276:VAL:N	2.89	0.40
1:A:316:PHE:HB3	1:A:318:ASN:OD1	2.22	0.40
1:C:275:PHE:CG	1:C:276:VAL:N	2.90	0.40
1:D:265:VAL:O	1:E:289:ARG:HD3	2.20	0.40
1:E:25:MET:HG3	7:E:452:HOH:O	2.21	0.40
1:G:196:TRP:CZ2	1:G:201:ILE:HG12	2.56	0.40
1:B:204:VAL:HB	1:B:243:CYS:SG	2.62	0.40
1:B:244:LEU:C	1:B:244:LEU:HD13	2.41	0.40
1:H:276:VAL:CG2	1:H:277:GLY:N	2.84	0.40
1:I:306:GLN:HB2	7:I:471:HOH:O	2.22	0.40
1:K:301:LEU:CD1	1:K:326:TRP:HB3	2.52	0.40
1:A:125:GLU:O	1:A:128:VAL:HG22	2.21	0.40
1:B:72:ARG:NH2	1:B:116:ARG:HD3	2.35	0.40
1:D:216:ASP:N	1:D:217:PRO:CD	2.84	0.40
1:E:152:ARG:O	1:E:156:LEU:HG	2.21	0.40
1:I:79:TRP:O	1:I:83:PHE:HB2	2.21	0.40
1:L:40:TRP:CE3	1:L:127:GLN:HG2	2.56	0.40
1:B:393:GLU:HG2	1:B:397:LYS:NZ	2.35	0.40
1:F:275:PHE:CG	1:F:276:VAL:N	2.90	0.40
1:G:40:TRP:O	1:G:41:ASP:CB	2.70	0.40
1:G:244:LEU:HD13	1:G:244:LEU:C	2.42	0.40
1:I:49:HIS:HB2	1:I:272:ALA:HB2	2.02	0.40
1:K:52:VAL:O	1:K:55:VAL:HG12	2.22	0.40
1:L:275:PHE:CG	1:L:276:VAL:N	2.89	0.40
1:A:155:TRP:CZ3	1:A:215:MET:HA	2.56	0.40
1:B:178:TYR:CD1	1:B:239:ILE:HD11	2.56	0.40
1:C:276:VAL:CG2	1:C:277:GLY:N	2.84	0.40
1:F:145:ASP:HA	1:F:146:PRO:HD2	1.93	0.40
1:H:72:ARG:HG3	1:H:72:ARG:HH11	1.87	0.40
1:J:61:VAL:HG12	1:J:62:SER:O	2.22	0.40
1:K:256:ALA:HA	1:K:297:LEU:O	2.21	0.40
1:L:22:VAL:HG11	1:L:366:TRP:CE2	2.56	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	411/427 (96%)	396 (96%)	13 (3%)	2 (0%)	29	31
1	B	411/427 (96%)	391 (95%)	15 (4%)	5 (1%)	13	10
1	C	411/427 (96%)	397 (97%)	12 (3%)	2 (0%)	29	31
1	D	411/427 (96%)	403 (98%)	7 (2%)	1 (0%)	47	55
1	E	411/427 (96%)	395 (96%)	14 (3%)	2 (0%)	29	31
1	F	411/427 (96%)	397 (97%)	11 (3%)	3 (1%)	22	22
1	G	411/427 (96%)	397 (97%)	11 (3%)	3 (1%)	22	22
1	H	411/427 (96%)	399 (97%)	10 (2%)	2 (0%)	29	31
1	I	411/427 (96%)	396 (96%)	13 (3%)	2 (0%)	29	31
1	J	411/427 (96%)	399 (97%)	10 (2%)	2 (0%)	29	31
1	K	411/427 (96%)	403 (98%)	6 (2%)	2 (0%)	29	31
1	L	411/427 (96%)	397 (97%)	12 (3%)	2 (0%)	29	31
All	All	4932/5124 (96%)	4770 (97%)	134 (3%)	28 (1%)	25	26

All (28) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	41	ASP
1	C	41	ASP
1	D	41	ASP
1	E	41	ASP
1	F	159	LYS
1	G	41	ASP
1	H	41	ASP
1	I	41	ASP
1	J	41	ASP
1	A	41	ASP
1	F	41	ASP
1	I	323	GLY

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Mol	Chain	Res	Type
1	K	41	ASP
1	L	41	ASP
1	G	323	GLY
1	A	36	GLU
1	B	405	SER
1	G	405	SER
1	J	323	GLY
1	B	26	HIS
1	H	323	GLY
1	B	25	MET
1	L	323	GLY
1	E	323	GLY
1	B	323	GLY
1	C	323	GLY
1	F	323	GLY
1	K	323	GLY

### 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	373/387 (96%)	367 (98%)	6 (2%)	62 76
1	B	373/387 (96%)	364 (98%)	9 (2%)	49 62
1	C	373/387 (96%)	365 (98%)	8 (2%)	53 67
1	D	373/387 (96%)	369 (99%)	4 (1%)	73 85
1	E	373/387 (96%)	368 (99%)	5 (1%)	69 81
1	F	373/387 (96%)	366 (98%)	7 (2%)	57 71
1	G	373/387 (96%)	362 (97%)	11 (3%)	42 54
1	H	373/387 (96%)	369 (99%)	4 (1%)	73 85
1	I	373/387 (96%)	366 (98%)	7 (2%)	57 71
1	J	373/387 (96%)	366 (98%)	7 (2%)	57 71
1	K	373/387 (96%)	370 (99%)	3 (1%)	81 90

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	L	373/387 (96%)	367 (98%)	6 (2%)	62	76
All	All	4476/4644 (96%)	4399 (98%)	77 (2%)	60	74

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

Mol	Chain	Res	Type
1	A	41	ASP
1	A	72	ARG
1	A	133	GLN
1	A	252	ASN
1	A	355	ASP
1	A	364	TYR
1	B	4	ASN
1	B	7	GLU
1	B	15	ASN
1	B	41	ASP
1	B	72	ARG
1	B	194	ASP
1	B	305	ASN
1	B	355	ASP
1	B	364	TYR
1	C	86	ARG
1	C	127	GLN
1	C	244	LEU
1	C	252	ASN
1	C	355	ASP
1	C	364	TYR
1	C	385	LEU
1	C	391	VAL
1	D	244	LEU
1	D	252	ASN
1	D	355	ASP
1	D	364	TYR
1	E	15	ASN
1	E	252	ASN
1	E	355	ASP
1	E	364	TYR
1	E	386	GLN
1	F	72	ARG
1	F	127	GLN
1	F	180	GLN
1	F	244	LEU

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Mol	Chain	Res	Type
1	F	355	ASP
1	F	364	TYR
1	F	385	LEU
1	G	15	ASN
1	G	113	GLN
1	G	133	GLN
1	G	187	ASP
1	G	194	ASP
1	G	197	ASN
1	G	206	ARG
1	G	213	GLU
1	G	252	ASN
1	G	355	ASP
1	G	364	TYR
1	H	72	ARG
1	H	244	LEU
1	H	355	ASP
1	H	364	TYR
1	I	46	LEU
1	I	180	GLN
1	I	191	LYS
1	I	244	LEU
1	I	252	ASN
1	I	355	ASP
1	I	364	TYR
1	J	7	GLU
1	J	15	ASN
1	J	72	ARG
1	J	113	GLN
1	J	252	ASN
1	J	355	ASP
1	J	364	TYR
1	K	305	ASN
1	K	355	ASP
1	K	364	TYR
1	L	72	ARG
1	L	160	GLN
1	L	180	GLN
1	L	252	ASN
1	L	355	ASP
1	L	364	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (69)

such sidechains are listed below:

Mol	Chain	Res	Type
1	A	18	ASN
1	A	113	GLN
1	A	127	GLN
1	A	202	GLN
1	A	252	ASN
1	A	293	ASN
1	B	4	ASN
1	B	202	GLN
1	B	252	ASN
1	B	286	HIS
1	C	18	ASN
1	C	127	GLN
1	C	150	ASN
1	C	160	GLN
1	C	166	HIS
1	C	252	ASN
1	D	18	ASN
1	D	150	ASN
1	D	166	HIS
1	D	252	ASN
1	D	330	ASN
1	E	18	ASN
1	E	113	GLN
1	E	166	HIS
1	E	252	ASN
1	F	18	ASN
1	F	101	GLN
1	F	127	GLN
1	F	166	HIS
1	F	180	GLN
1	F	252	ASN
1	F	293	ASN
1	F	386	GLN
1	G	166	HIS
1	G	193	ASN
1	G	197	ASN
1	G	252	ASN
1	H	18	ASN
1	H	150	ASN
1	H	160	GLN
1	H	166	HIS
1	H	193	ASN

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Mol	Chain	Res	Type
1	H	235	ASN
1	H	286	HIS
1	H	386	GLN
1	I	18	ASN
1	I	166	HIS
1	I	180	GLN
1	I	202	GLN
1	I	252	ASN
1	I	293	ASN
1	J	4	ASN
1	J	18	ASN
1	J	150	ASN
1	J	166	HIS
1	J	252	ASN
1	K	18	ASN
1	K	113	GLN
1	K	150	ASN
1	K	160	GLN
1	K	166	HIS
1	K	202	GLN
1	K	252	ASN
1	K	386	GLN
1	L	127	GLN
1	L	160	GLN
1	L	166	HIS
1	L	180	GLN
1	L	252	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry

Of 44 ligands modelled in this entry, 20 are monoatomic - leaving 24 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	CO3	K	430	-	2,3,3	0.37	0	2,3,3	0.04	0
2	RAT	D	428	4	11,11,11	1.14	0	14,15,15	1.32	1 (7%)
3	CO3	E	430	-	2,3,3	0.47	0	2,3,3	0.17	0
2	RAT	L	428	4	11,11,11	1.17	1 (9%)	14,15,15	1.47	1 (7%)
3	CO3	E	429	-	2,3,3	0.48	0	2,3,3	0.11	0
3	CO3	C	429	-	2,3,3	0.39	0	2,3,3	0.09	0
2	RAT	E	428	4	11,11,11	1.23	1 (9%)	14,15,15	1.32	2 (14%)
3	CO3	K	429	-	2,3,3	0.35	0	2,3,3	0.06	0
3	CO3	D	429	-	2,3,3	0.43	0	2,3,3	0.14	0
3	CO3	G	429	-	2,3,3	0.34	0	2,3,3	0.14	0
3	CO3	A	429	-	2,3,3	0.41	0	2,3,3	0.22	0
2	RAT	K	428	4	11,11,11	1.11	0	14,15,15	1.29	1 (7%)
3	CO3	J	429	-	2,3,3	0.37	0	2,3,3	0.02	0
2	RAT	J	428	4	11,11,11	1.18	0	14,15,15	1.32	1 (7%)
3	CO3	A	430	-	2,3,3	0.40	0	2,3,3	0.09	0
3	CO3	H	429	-	2,3,3	0.32	0	2,3,3	0.03	0
3	CO3	I	429	-	2,3,3	0.44	0	2,3,3	0.21	0
2	RAT	H	428	4	11,11,11	1.08	0	14,15,15	1.23	1 (7%)
2	RAT	I	428	4	11,11,11	1.22	1 (9%)	14,15,15	1.51	2 (14%)
2	RAT	B	428	4	11,11,11	1.22	1 (9%)	14,15,15	1.48	2 (14%)
2	RAT	C	428	4	11,11,11	1.16	1 (9%)	14,15,15	1.33	1 (7%)
2	RAT	A	428	4	11,11,11	1.23	1 (9%)	14,15,15	1.53	2 (14%)
2	RAT	G	428	4	11,11,11	1.19	1 (9%)	14,15,15	1.42	2 (14%)
2	RAT	F	428	4	11,11,11	1.26	1 (9%)	14,15,15	1.40	1 (7%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.



Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	RAT	I	428	4	-	0/16/16/16	-
2	RAT	D	428	4	-	0/16/16/16	-
2	RAT	B	428	4	-	5/16/16/16	-
2	RAT	C	428	4	-	0/16/16/16	-
2	RAT	A	428	4	-	0/16/16/16	-
2	RAT	G	428	4	-	5/16/16/16	-
2	RAT	F	428	4	-	1/16/16/16	-
2	RAT	H	428	4	-	0/16/16/16	-
2	RAT	J	428	4	-	7/16/16/16	-
2	RAT	K	428	4	-	1/16/16/16	-
2	RAT	L	428	4	-	1/16/16/16	-
2	RAT	E	428	4	-	5/16/16/16	-

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	428	RAT	C4-C5	2.59	1.56	1.52
2	B	428	RAT	C4-C5	2.58	1.56	1.52
2	F	428	RAT	C4-C5	2.57	1.56	1.52
2	C	428	RAT	C4-C5	2.37	1.55	1.52
2	L	428	RAT	C4-C5	2.09	1.55	1.52
2	A	428	RAT	C4-C5	2.07	1.55	1.52
2	I	428	RAT	C4-C5	2.07	1.55	1.52
2	G	428	RAT	C4-C5	2.01	1.55	1.52

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L	428	RAT	C3-C4-C5	3.69	113.96	109.32
2	I	428	RAT	C3-C4-C5	3.63	113.89	109.32
2	A	428	RAT	C3-C4-C5	3.56	113.79	109.32
2	B	428	RAT	C3-C4-C5	3.42	113.62	109.32
2	F	428	RAT	C3-C4-C5	3.38	113.57	109.32
2	G	428	RAT	C3-C4-C5	3.28	113.44	109.32
2	J	428	RAT	C3-C4-C5	3.17	113.30	109.32
2	K	428	RAT	C3-C4-C5	3.08	113.20	109.32
2	D	428	RAT	C3-C4-C5	3.07	113.18	109.32
2	E	428	RAT	C3-C4-C5	3.02	113.12	109.32
2	C	428	RAT	C3-C4-C5	2.89	112.95	109.32
2	H	428	RAT	C3-C4-C5	2.68	112.69	109.32
2	A	428	RAT	C3-C2-C1	2.60	112.59	109.32
2	B	428	RAT	C3-C2-C1	2.60	112.58	109.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	G	428	RAT	C3-C2-C1	2.19	112.08	109.32
2	I	428	RAT	C3-C2-C1	2.08	111.94	109.32
2	E	428	RAT	C3-C2-C1	2.07	111.92	109.32

There are no chirality outliers.

All (25) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	G	428	RAT	O1A-C1-C2-O2
2	G	428	RAT	O1B-C1-C2-O2
2	G	428	RAT	O1B-C1-C2-C3
2	B	428	RAT	O1A-C1-C2-O2
2	B	428	RAT	O1A-C1-C2-C3
2	B	428	RAT	O1B-C1-C2-C3
2	B	428	RAT	O1B-C1-C2-O2
2	J	428	RAT	O1B-C1-C2-C3
2	J	428	RAT	O1A-C1-C2-C3
2	J	428	RAT	O1A-C1-C2-O2
2	E	428	RAT	O1A-C1-C2-C3
2	G	428	RAT	O1A-C1-C2-C3
2	J	428	RAT	O1B-C1-C2-O2
2	E	428	RAT	O1B-C1-C2-C3
2	E	428	RAT	O1A-C1-C2-O2
2	B	428	RAT	C2-C3-C4-O4
2	E	428	RAT	C2-C3-C4-O4
2	F	428	RAT	C2-C3-C4-O4
2	G	428	RAT	C2-C3-C4-O4
2	J	428	RAT	C2-C3-C4-O4
2	K	428	RAT	C2-C3-C4-O4
2	J	428	RAT	C3-C4-C5-O5B
2	J	428	RAT	O4-C4-C5-O5B
2	L	428	RAT	C2-C3-C4-O4
2	E	428	RAT	O1B-C1-C2-O2

There are no ring outliers.

No monomer is involved in short contacts.

## 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 [i](#)

### 6.1 Protein, DNA and RNA chains [i](#)

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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	413/427 (96%)	-0.21	8 (1%) 66 65	17, 33, 53, 67	0
1	B	413/427 (96%)	-0.01	10 (2%) 59 56	19, 37, 61, 83	0
1	C	413/427 (96%)	-0.50	2 (0%) 91 90	16, 25, 41, 61	0
1	D	413/427 (96%)	-0.54	2 (0%) 91 90	14, 24, 39, 63	0
1	E	413/427 (96%)	-0.40	4 (0%) 82 81	15, 27, 44, 72	0
1	F	413/427 (96%)	-0.33	5 (1%) 79 77	15, 27, 49, 67	0
1	G	413/427 (96%)	-0.21	7 (1%) 70 68	18, 31, 51, 71	0
1	H	413/427 (96%)	-0.50	1 (0%) 95 94	15, 25, 42, 61	0
1	I	413/427 (96%)	-0.31	2 (0%) 91 90	16, 30, 51, 67	0
1	J	413/427 (96%)	-0.53	2 (0%) 91 90	15, 25, 41, 73	0
1	K	413/427 (96%)	-0.51	2 (0%) 91 90	14, 24, 43, 63	0
1	L	413/427 (96%)	-0.58	2 (0%) 91 90	15, 23, 39, 62	0
All	All	4956/5124 (96%)	-0.39	47 (0%) 84 83	14, 27, 49, 83	0

All (47) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	414	ARG	5.2
1	A	120	ALA	4.5
1	B	2	SER	4.3
1	F	158	GLY	3.8
1	L	414	ARG	3.6
1	B	414	ARG	3.5
1	F	414	ARG	3.4
1	K	414	ARG	3.4
1	H	414	ARG	3.1
1	I	414	ARG	3.1
1	E	414	ARG	3.1

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Mol	Chain	Res	Type	RSRZ
1	G	194	ASP	3.0
1	A	68	ALA	3.0
1	G	414	ARG	2.9
1	C	414	ARG	2.8
1	B	191	LYS	2.7
1	A	113	GLN	2.6
1	F	413	GLY	2.6
1	G	250	LYS	2.6
1	B	253	ILE	2.6
1	G	113	GLN	2.6
1	G	191	LYS	2.6
1	A	414	ARG	2.5
1	B	3	ILE	2.5
1	K	183	HIS	2.5
1	E	2	SER	2.5
1	B	68	ALA	2.4
1	G	2	SER	2.4
1	B	113	GLN	2.4
1	B	65	ALA	2.4
1	A	194	ASP	2.3
1	A	121	LYS	2.3
1	E	121	LYS	2.3
1	B	194	ASP	2.3
1	J	414	ARG	2.3
1	L	113	GLN	2.3
1	J	2	SER	2.2
1	A	64	GLU	2.2
1	I	183	HIS	2.2
1	D	113	GLN	2.2
1	B	413	GLY	2.2
1	A	195	GLU	2.1
1	C	121	LYS	2.1
1	G	195	GLU	2.1
1	F	93	CYS	2.1
1	F	121	LYS	2.1
1	E	68	ALA	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 monosaccharides in this entry.

### 6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
5	NA	H	431	1/1	0.91	0.12	23,23,23,23	0
2	RAT	I	428	12/12	0.94	0.12	31,33,33,34	0
2	RAT	E	428	12/12	0.94	0.12	23,26,28,30	0
2	RAT	F	428	12/12	0.95	0.12	25,26,29,30	0
2	RAT	D	428	12/12	0.95	0.10	25,26,28,28	0
2	RAT	K	428	12/12	0.95	0.11	22,25,27,27	0
2	RAT	L	428	12/12	0.95	0.12	23,26,29,30	0
3	CO3	A	429	4/4	0.95	0.11	27,27,28,31	0
2	RAT	B	428	12/12	0.95	0.12	31,33,34,34	0
2	RAT	G	428	12/12	0.96	0.14	27,30,31,32	0
2	RAT	J	428	12/12	0.96	0.12	21,25,29,30	0
2	RAT	A	428	12/12	0.97	0.09	31,32,35,36	0
3	CO3	I	429	4/4	0.97	0.16	25,27,28,30	0
4	ZN	B	429	1/1	0.97	0.07	42,42,42,42	0
5	NA	A	432	1/1	0.97	0.11	25,25,25,25	0
2	RAT	C	428	12/12	0.97	0.09	17,23,25,25	0
2	RAT	H	428	12/12	0.98	0.09	23,25,27,28	0
3	CO3	K	430	4/4	0.98	0.14	20,21,23,23	0
4	ZN	A	431	1/1	0.98	0.05	33,33,33,33	0
3	CO3	E	429	4/4	0.98	0.13	16,16,18,20	0
3	CO3	G	429	4/4	0.98	0.07	20,22,22,24	0
3	CO3	H	429	4/4	0.98	0.12	20,21,21,21	0
5	NA	L	430	1/1	0.98	0.12	22,22,22,22	0
3	CO3	E	430	4/4	0.99	0.15	24,24,25,29	0
3	CO3	C	429	4/4	0.99	0.13	25,25,26,26	0
3	CO3	D	429	4/4	0.99	0.11	20,21,21,26	0
4	ZN	D	430	1/1	0.99	0.02	23,23,23,23	0
4	ZN	E	431	1/1	0.99	0.05	30,30,30,30	0
4	ZN	F	429	1/1	0.99	0.05	30,30,30,30	0
4	ZN	G	430	1/1	0.99	0.05	36,36,36,36	0
4	ZN	H	430	1/1	0.99	0.07	32,32,32,32	0
4	ZN	I	430	1/1	0.99	0.06	33,33,33,33	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
4	ZN	J	430	1/1	0.99	0.09	32,32,32,32	0
3	CO3	A	430	4/4	0.99	0.12	21,21,22,26	0
5	NA	D	431	1/1	0.99	0.12	18,18,18,18	0
3	CO3	J	429	4/4	0.99	0.10	18,19,20,22	0
3	CO3	K	429	4/4	0.99	0.12	19,19,21,22	0
6	CL	B	430	1/1	0.99	0.12	21,21,21,21	0
6	CL	G	431	1/1	0.99	0.14	21,21,21,21	0
4	ZN	C	430	1/1	1.00	0.05	26,26,26,26	0
4	ZN	K	431	1/1	1.00	0.07	31,31,31,31	0
6	CL	E	432	1/1	1.00	0.06	13,13,13,13	0
4	ZN	L	429	1/1	1.00	0.13	35,35,35,35	0
6	CL	J	431	1/1	1.00	0.07	14,14,14,14	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.