



# Full wwPDB X-ray Structure Validation Report ⓘ

Dec 15, 2024 – 09:45 PM EST

PDB ID : 6CCV  
Title : Crystal structure of a Mycobacterium smegmatis RNA polymerase transcription initiation complex with inhibitor Rifampicin  
Authors : Lilic, M.; Darst, S.A.; Campbell, E.A.  
Deposited on : 2018-02-07  
Resolution : 3.05 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 : 2022.3.0, CSD as543be (2022)  
Xtriage (Phenix) : 1.21  
EDS : 3.0  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
CCP4 : 9.0.004 (Gargrove)  
Density-Fitness : 1.0.11  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.40

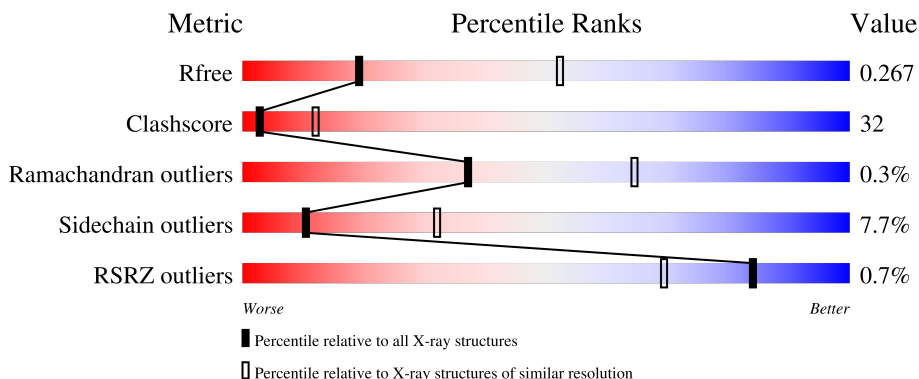
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.05 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	164625	2258 (3.10-3.02)
Clashscore	180529	2399 (3.10-3.02)
Ramachandran outliers	177936	2269 (3.10-3.02)
Sidechain outliers	177891	2268 (3.10-3.02)
RSRZ outliers	164620	2258 (3.10-3.02)

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	350	 28% 33% 38%
1	B	350	 27% 37% 33%
1	T	350	 12% 85%
2	C	1169	 46% 44% 6%
3	D	1317	 50% 40% 5%

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Mol	Chain	Length	Quality of chain
4	E	107	
5	F	466	
6	G	17	
7	J	114	
8	O	31	
9	P	26	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
10	SO4	D	2004	-	-	X	-
14	GLU	D	2012	-	-	X	-

## 2 Entry composition [i](#)

There are 15 unique types of molecules in this entry. The entry contains 26582 atoms, of which 48 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 DNA-directed RNA polymerase subunit alpha.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	218	Total	C	N	O	S	0	0	0
			1605	1015	276	311	3			
1	B	233	Total	C	N	O	S	0	0	0
			1667	1054	289	322	2			
1	T	53	Total	C	N	O	S	0	0	0
			342	208	65	68	1			

- Molecule 2 is a protein called DNA-directed RNA polymerase subunit beta.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	C	1099	Total	C	N	O	S	0	0	0
			8262	5174	1450	1603	35			

- Molecule 3 is a protein called DNA-directed RNA polymerase subunit beta'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	D	1246	Total	C	N	O	S	0	0	0
			9555	5995	1720	1800	40			

- Molecule 4 is a protein called DNA-directed RNA polymerase subunit omega.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
4	E	76	Total	C	N	O	0	0	0
			592	378	100	114			

- Molecule 5 is a protein called RNA polymerase sigma factor SigA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	F	305	Total	C	N	O	S	0	0	0
			2414	1512	436	459	7			

- Molecule 6 is a protein called Unknown Peptide.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
6	G	17	Total	C	N	O	0	0	0
			85	51	17	17			

- Molecule 7 is a protein called RNA polymerase-binding protein RbpA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	J	83	Total	C	N	O	S	0	0	0
			671	422	119	128	2			

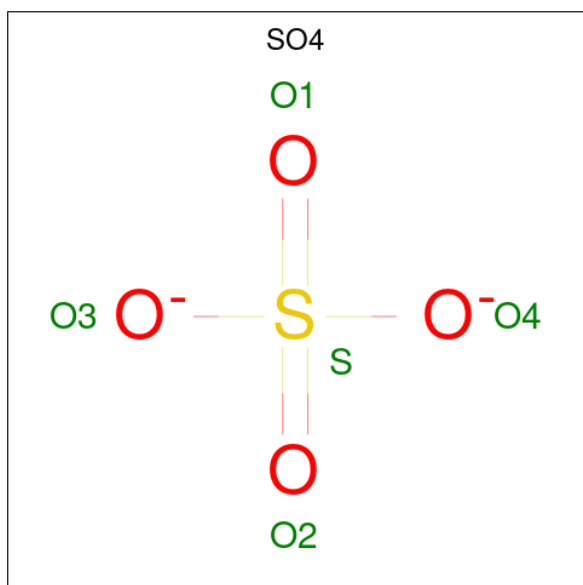
- Molecule 8 is a DNA chain called DNA (31-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	O	31	Total	C	N	O	P	0	0	0
			634	305	114	185	30			

- Molecule 9 is a DNA chain called DNA (26-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
9	P	26	Total	C	N	O	P	0	0	0
			526	254	94	153	25			

- Molecule 10 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S).



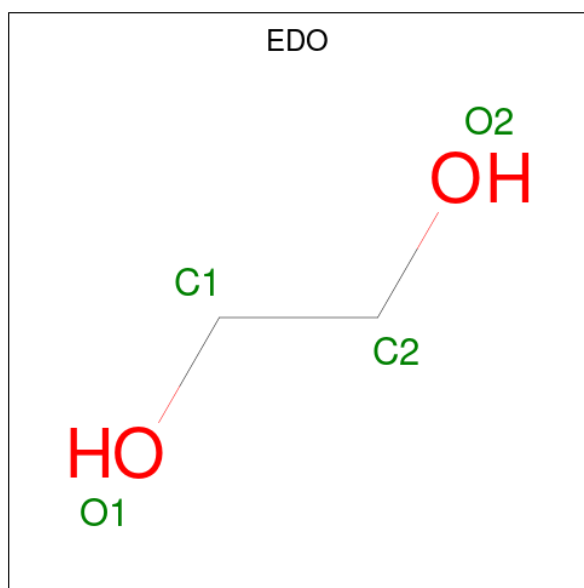
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
10	C	1	Total	O	S	0	0
			5	4	1		

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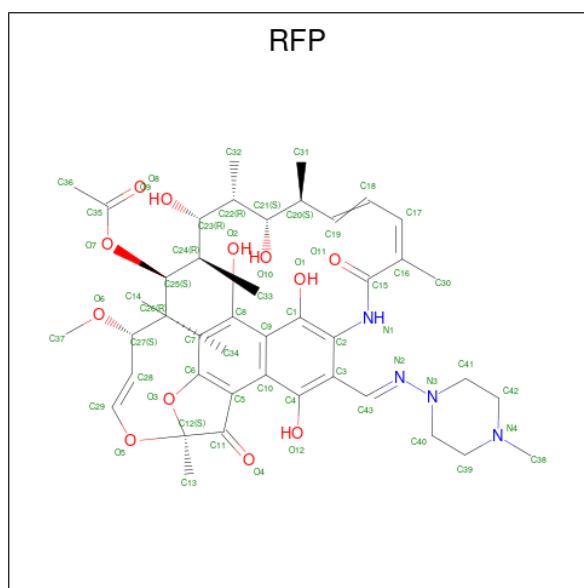
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
10	C	1	Total	O	S	0	0
			5	4	1		
10	C	1	Total	O	S	0	0
			5	4	1		
10	C	1	Total	O	S	0	0
			5	4	1		
10	D	1	Total	O	S	0	0
			5	4	1		
10	D	1	Total	O	S	0	0
			5	4	1		
10	D	1	Total	O	S	0	0
			5	4	1		
10	D	1	Total	O	S	0	0
			5	4	1		
10	D	1	Total	O	S	0	0
			5	4	1		
10	F	1	Total	O	S	0	0
			5	4	1		
10	F	1	Total	O	S	0	0
			5	4	1		
10	F	1	Total	O	S	0	0
			5	4	1		
10	F	1	Total	O	S	0	0
			5	4	1		

- Molecule 11 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
11	C	1	Total	C	H	O	0	0
			10	2	6	2		
11	C	1	Total	C	H	O	0	0
			10	2	6	2		
11	D	1	Total	C	H	O	0	0
			10	2	6	2		
11	D	1	Total	C	H	O	0	0
			10	2	6	2		
11	D	1	Total	C	H	O	0	0
			10	2	6	2		
11	F	1	Total	C	H	O	0	0
			10	2	6	2		
11	F	1	Total	C	H	O	0	0
			10	2	6	2		

- Molecule 12 is RIFAMPICIN (three-letter code: RFP) (formula:  $C_{43}H_{58}N_4O_{12}$ ).

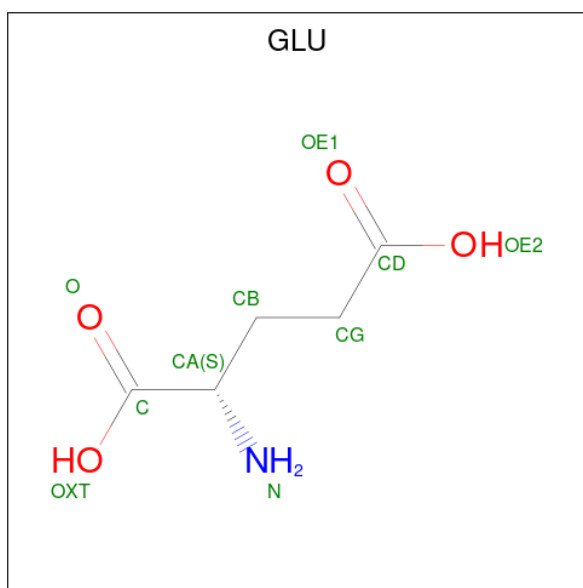


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	
12	C	1	Total	C	N	O	0	0
			59	43	4	12		

- Molecule 13 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
13	D	2	Total	Zn	0	0
			2	2		

- Molecule 14 is GLUTAMIC ACID (three-letter code: GLU) (formula: C<sub>5</sub>H<sub>9</sub>NO<sub>4</sub>).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
14	D	1	9	5	1	3	0	0

- Molecule 15 is water.

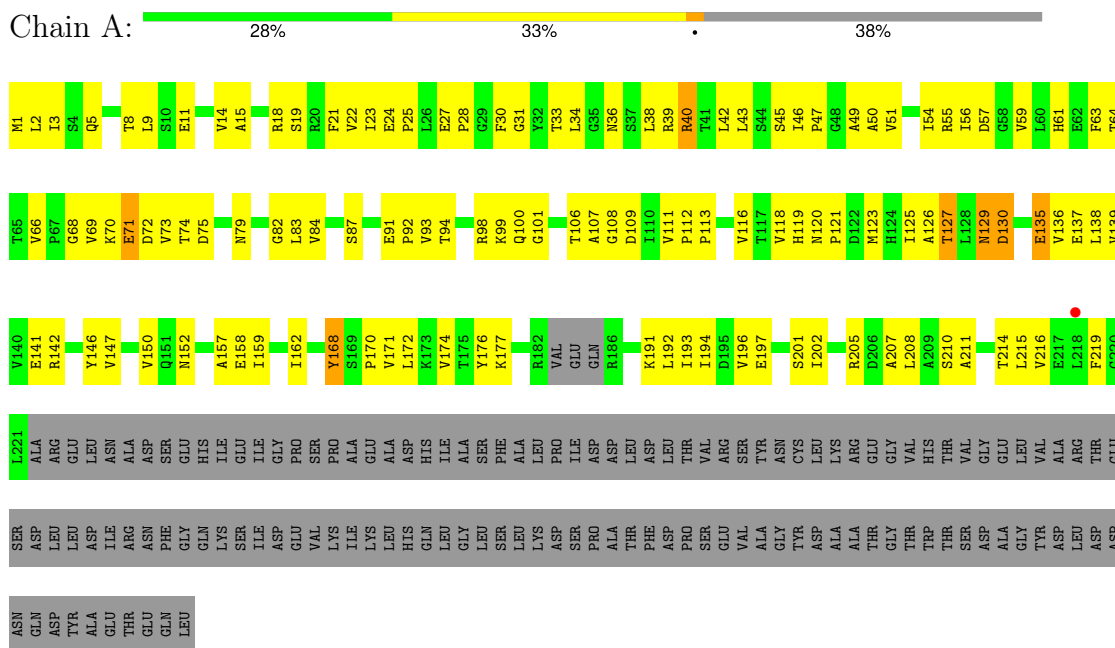
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
15	C	5	Total O 5 5	0	0
15	D	8	Total O 8 8	0	0
15	F	1	Total O 1 1	0	0



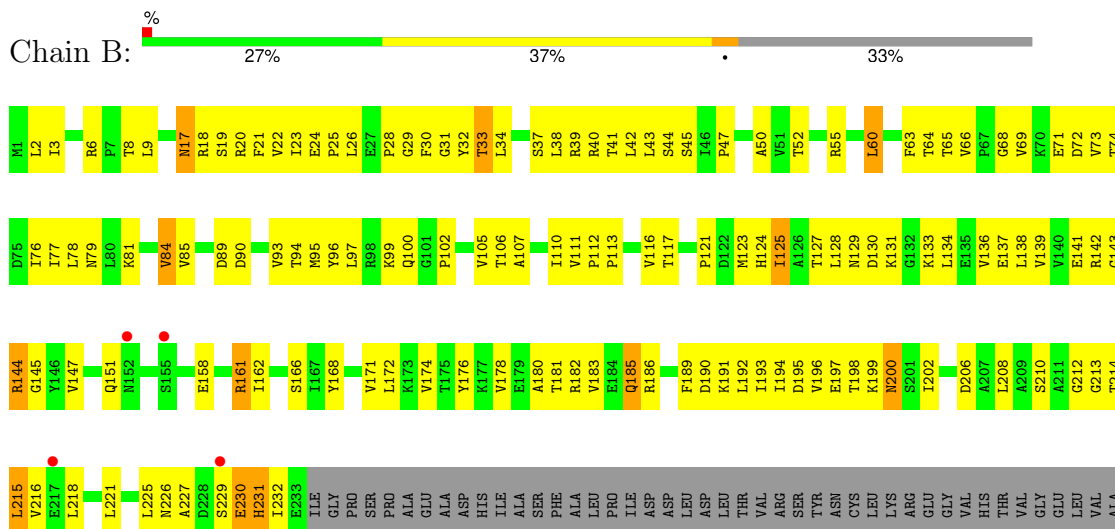
### 3 Residue-property plots

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

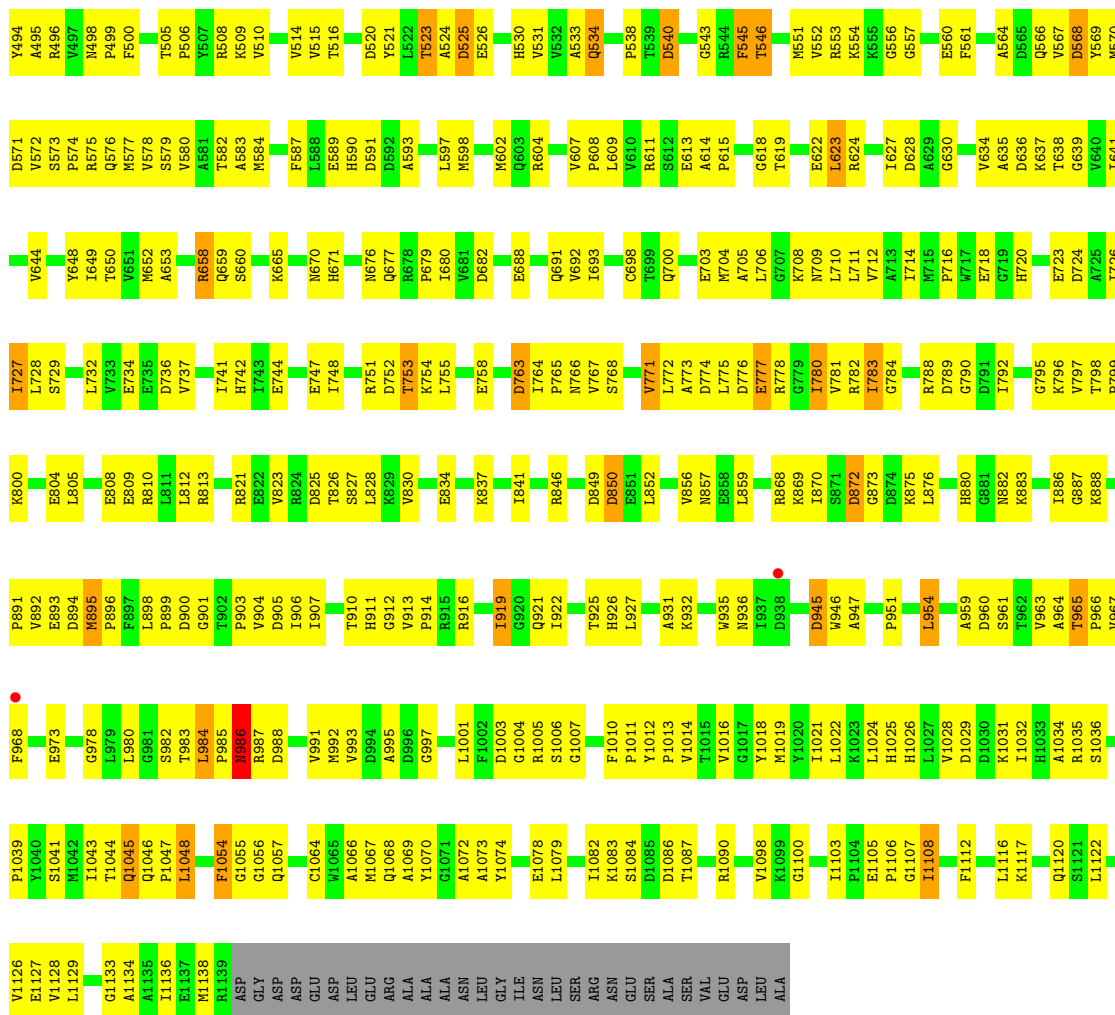
- Molecule 1: DNA-directed RNA polymerase subunit alpha



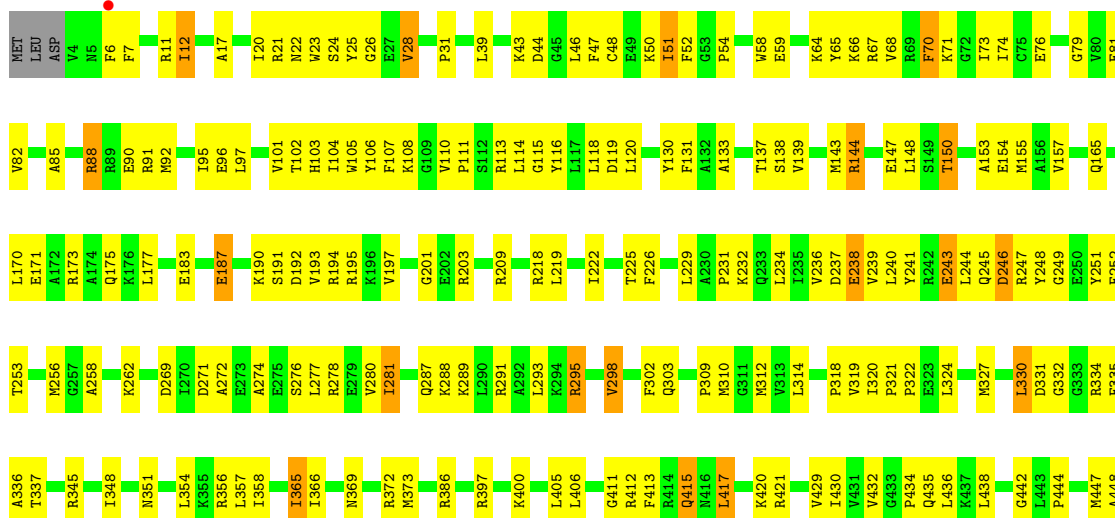
- Molecule 1: DNA-directed RNA polymerase subunit alpha



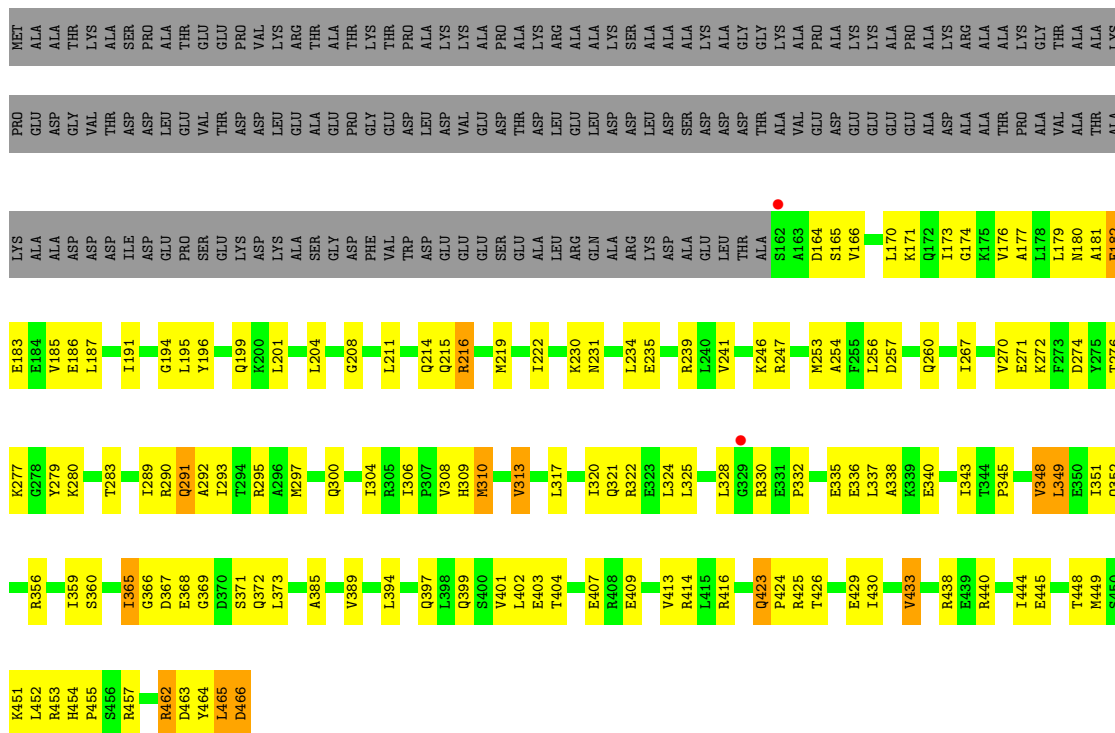




• Molecule 3: DNA-directed RNA polymerase subunit beta'





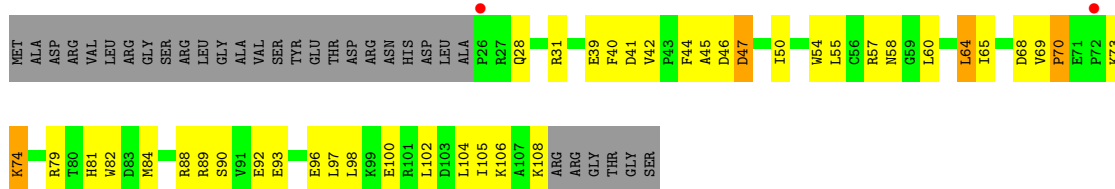


• Molecule 6: Unknown Peptide

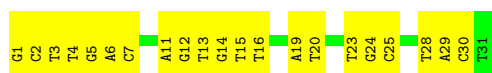


There are no outlier residues recorded for this chain.

• Molecule 7: RNA polymerase-binding protein RbpA



• Molecule 8: DNA (31-MER)



• Molecule 9: DNA (26-MER)





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	132.35Å 162.32Å 139.40Å 90.00° 107.37° 90.00°	Depositor
Resolution (Å)	57.12 – 3.05 57.12 – 3.05	Depositor EDS
% Data completeness (in resolution range)	98.0 (57.12-3.05) 97.9 (57.12-3.05)	Depositor EDS
$R_{merge}$	0.15	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	6.22 (at 2.86Å)	Xtrriage
Refinement program	PHENIX (1.12_2829: ???)	Depositor
R, $R_{free}$	0.223 , 0.269 0.225 , 0.267	Depositor DCC
$R_{free}$ test set	105258 reflections (1.66%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	78.8	Xtrriage
Anisotropy	0.164	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.29 , 60.2	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.51$ , $\langle L^2 \rangle = 0.35$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	26582	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	95.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.50% of the height of the origin peak. No significant pseudotranslation is detected.*

<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 [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: EDO, RFP, SO4, 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	0.23	0/1629	0.45	0/2220
1	B	0.23	0/1693	0.43	0/2316
1	T	0.22	0/343	0.37	0/468
2	C	0.24	0/8408	0.43	0/11428
3	D	0.24	0/9706	0.43	1/13140 (0.0%)
4	E	0.24	0/604	0.43	0/822
5	F	0.22	0/2445	0.39	0/3300
7	J	0.23	0/685	0.42	0/927
8	O	0.51	0/710	0.94	0/1095
9	P	0.57	0/589	0.93	0/906
All	All	0.26	0/26812	0.47	1/36622 (0.0%)

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
2	C	0	5
3	D	0	3
All	All	0	8

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	579	LEU	CA-CB-CG	5.98	129.06	115.30

There are no chirality outliers.

All (8) planarity outliers are listed below:



Mol	Chain	Res	Type	Group
2	C	1133	GLY	Peptide
2	C	324	LEU	Peptide
2	C	540	ASP	Peptide
2	C	985	PRO	Peptide
2	C	986	ASN	Peptide
3	D	1085	GLN	Peptide
3	D	1193	ARG	Peptide
3	D	934	ASN	Peptide

## 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1605	0	1623	141	0
1	B	1667	0	1636	166	0
1	T	342	0	275	15	0
2	C	8262	0	8009	627	1
3	D	9555	0	9509	600	1
4	E	592	0	583	40	0
5	F	2414	0	2434	151	0
6	G	85	0	19	0	0
7	J	671	0	660	48	0
8	O	634	0	350	40	0
9	P	526	0	296	15	0
10	C	20	0	0	3	0
10	D	25	0	0	3	0
10	F	20	0	0	1	0
11	C	8	12	12	0	0
11	D	16	24	24	3	0
11	F	8	12	12	3	0
12	C	59	0	58	9	0
13	D	2	0	0	0	0
14	D	9	0	5	10	0
15	C	5	0	0	0	0
15	D	8	0	0	1	0
15	F	1	0	0	0	0
All	All	26534	48	25505	1669	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 32.

All (1669) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:603:THR:HG22	3:D:604:LYS:HG3	1.19	1.15
1:A:197:GLU:OE1	2:C:987:ARG:NH1	1.87	1.07
2:C:203:LEU:HG	2:C:217:ILE:HG22	1.35	1.07
2:C:771:VAL:HG22	2:C:772:LEU:HD12	1.35	1.07
2:C:53:GLU:OE2	2:C:60:ARG:NH1	1.89	1.06
3:D:1266:SER:HB3	14:D:2012:GLU:HG3	1.37	1.04
3:D:1009:LEU:HD12	3:D:1146:GLN:HG3	1.36	1.04
7:J:106:LYS:HE2	7:J:106:LYS:HA	1.38	1.03
3:D:929:VAL:HG12	3:D:935:VAL:HG22	1.34	1.03
2:C:710:LEU:HD22	2:C:1021:ILE:HD11	1.38	1.02
5:F:324:LEU:HD22	5:F:332:PRO:HB3	1.43	1.01
1:A:177:LYS:HE2	1:A:193:ILE:HD11	1.41	1.01
3:D:951:LEU:HB3	3:D:956:ILE:HD11	1.40	1.00
3:D:922:ARG:HB3	3:D:961:VAL:HG21	1.40	1.00
3:D:656:LYS:HE3	3:D:656:LYS:H	1.26	0.99
3:D:288:LYS:HD2	3:D:291:ARG:HH21	1.26	0.99
2:C:204:GLU:OE1	2:C:216:ARG:NH1	1.96	0.98
3:D:755:ILE:HD12	3:D:776:ILE:HD11	1.45	0.97
2:C:348:VAL:HB	2:C:349:PRO:HD2	1.46	0.96
2:C:602:MET:HE1	2:C:883:LYS:HB3	1.48	0.96
3:D:59:GLU:OE2	3:D:66:LYS:NZ	2.00	0.95
7:J:68:ASP:HA	7:J:69:VAL:HB	1.47	0.95
2:C:758:GLU:HG2	2:C:798:THR:HG22	1.49	0.95
3:D:432:VAL:HG22	3:D:434:PRO:HD3	1.49	0.95
2:C:176:VAL:HG12	2:C:195:VAL:HG22	1.45	0.94
2:C:540:ASP:HB2	2:C:546:THR:HG22	1.50	0.94
2:C:649:ILE:HD11	2:C:679:PRO:HB3	1.48	0.93
2:C:624:ARG:NH1	2:C:628:ASP:OD2	2.01	0.93
3:D:1265:ILE:HG23	14:D:2012:GLU:HG2	1.48	0.93
1:T:252:ASP:OD2	1:T:261:TYR:OH	1.86	0.93
2:C:635:ALA:HB2	2:C:693:ILE:HD11	1.51	0.92
5:F:308:VAL:HG21	8:O:23:DT:H71	1.51	0.92
3:D:581:MET:HE2	3:D:716:LYS:HA	1.52	0.91
5:F:253:MET:HE2	5:F:300:GLN:HB2	1.49	0.91
1:A:1:MET:N	1:B:142:ARG:O	2.03	0.91
2:C:984:LEU:HD13	2:C:991:VAL:HG23	1.52	0.91
3:D:400:LYS:HE2	3:D:405:LEU:HD23	1.51	0.91
2:C:1045:GLN:HG2	2:C:1087:THR:HG22	1.53	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:F:438:ARG:NH1	9:P:20:DG:N7	2.19	0.90
3:D:47:PHE:O	3:D:88:ARG:NH2	2.04	0.90
2:C:444:ARG:HH21	2:C:491:LEU:HD23	1.35	0.89
1:A:31:GLY:HA2	1:A:192:LEU:HD23	1.54	0.89
2:C:531:VAL:HG13	2:C:552:VAL:HG13	1.55	0.88
1:B:24:GLU:OE2	1:B:191:LYS:HD3	1.73	0.88
2:C:132:ASN:HB3	2:C:135:THR:HG22	1.56	0.87
2:C:799:PRO:HA	2:C:823:VAL:HG12	1.56	0.87
3:D:1232:ARG:NH1	3:D:1236:ASP:OD2	2.07	0.86
2:C:215:VAL:HG22	2:C:225:VAL:HA	1.56	0.86
2:C:1048:LEU:HD23	2:C:1048:LEU:H	1.40	0.86
3:D:627:LEU:HD13	3:D:667:LEU:HD12	1.57	0.86
2:C:394:ARG:HG3	2:C:398:GLN:HG3	1.54	0.86
1:A:152:ASN:HB2	1:A:157:ALA:HB3	1.56	0.86
3:D:710:GLN:OE1	4:E:27:ASP:HB2	1.74	0.86
2:C:88:GLU:HG2	2:C:92:GLY:HA2	1.57	0.86
2:C:92:GLY:O	2:C:133:ASN:ND2	2.08	0.86
3:D:579:LEU:HD23	3:D:807:THR:HB	1.57	0.86
5:F:324:LEU:HD23	5:F:328:LEU:HD13	1.58	0.86
2:C:584:MET:HA	2:C:619:THR:HG21	1.56	0.85
4:E:86:GLU:OE2	4:E:94:ARG:NH1	2.09	0.85
1:B:9:LEU:HD21	1:B:208:LEU:HD21	1.56	0.85
2:C:41:VAL:O	2:C:624:ARG:NH2	2.09	0.84
5:F:399:GLN:NE2	5:F:403:GLU:OE2	2.10	0.84
1:A:40:ARG:NH1	1:B:33:THR:HG22	1.93	0.84
2:C:1100:GLY:HA3	3:D:458:LYS:HE3	1.58	0.83
3:D:417:LEU:HG	3:D:1254:ILE:HG23	1.60	0.83
3:D:886:ARG:HH12	14:D:2012:GLU:HA	1.43	0.83
3:D:603:THR:CG2	3:D:604:LYS:HG3	2.07	0.83
2:C:711:LEU:HD23	2:C:904:VAL:HA	1.60	0.83
3:D:1265:ILE:CG2	14:D:2012:GLU:HG2	2.09	0.83
1:A:40:ARG:HD3	1:B:33:THR:HG22	1.61	0.83
1:B:95:MET:HG2	1:B:113:PRO:HD2	1.60	0.83
3:D:642:PRO:HD3	3:D:656:LYS:HD2	1.59	0.83
5:F:320:ILE:HG23	5:F:340:GLU:HG2	1.60	0.83
2:C:763:ASP:HB3	2:C:821:ARG:HH22	1.43	0.82
7:J:31:ARG:NH2	7:J:39:GLU:OE1	2.13	0.82
3:D:1248:GLY:O	3:D:1252:ASN:ND2	2.13	0.82
3:D:590:THR:HG21	3:D:630:ARG:HH21	1.45	0.82
2:C:773:ALA:O	2:C:782:ARG:NH2	2.13	0.81
3:D:922:ARG:HB3	3:D:961:VAL:CG2	2.10	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:910:THR:HG23	3:D:730:VAL:HG23	1.62	0.80
2:C:51:SER:OG	2:C:373:GLY:N	2.13	0.80
2:C:404:THR:HG22	2:C:407:THR:HG23	1.63	0.80
3:D:706:ILE:HD12	4:E:36:PRO:HB3	1.63	0.80
5:F:253:MET:HE3	5:F:297:MET:HA	1.63	0.80
1:A:40:ARG:HH11	1:B:33:THR:HG22	1.46	0.80
1:B:100:GLN:HA	1:B:133:LYS:HA	1.63	0.80
4:E:84:LEU:H	4:E:84:LEU:HD12	1.47	0.79
1:T:251:ILE:HA	1:T:272:VAL:HG22	1.61	0.79
3:D:1088:ARG:HG2	3:D:1089:VAL:H	1.44	0.79
1:A:113:PRO:HD2	1:A:116:VAL:HG21	1.65	0.79
1:B:3:ILE:HA	1:B:232:ILE:CB	2.13	0.78
3:D:892:THR:OG1	3:D:894:ARG:NH1	2.13	0.78
5:F:368:GLU:HG2	5:F:369:GLY:H	1.47	0.78
1:B:47:PRO:HA	1:B:144:ARG:HG3	1.65	0.78
3:D:1079:ASP:OD1	3:D:1079:ASP:N	2.16	0.78
3:D:12:ILE:HD11	3:D:1221:TRP:CD2	2.19	0.78
2:C:574:PRO:O	2:C:575:ARG:HG2	1.83	0.78
1:A:56:ILE:HG12	1:A:136:VAL:HB	1.66	0.78
2:C:578:VAL:HG13	2:C:582:THR:HB	1.66	0.78
3:D:1164:ARG:NH1	10:D:2004:SO4:O1	2.17	0.77
1:B:84:VAL:HB	1:B:199:LYS:HD3	1.65	0.77
3:D:603:THR:HG22	3:D:604:LYS:CG	2.10	0.77
12:C:1205:RFP:H392	10:C:1206:SO4:O4	1.85	0.77
3:D:735:VAL:HG12	3:D:840:ARG:HD2	1.66	0.77
4:E:84:LEU:HB2	4:E:85:GLN:HE21	1.48	0.77
8:O:14:DG:H2''	8:O:15:DT:OP2	1.84	0.77
8:O:19:DA:H2''	8:O:20:DT:O5'	1.85	0.77
3:D:327:MET:HE2	5:F:304:ILE:HD11	1.65	0.77
2:C:590:HIS:HB3	2:C:919:ILE:CD1	2.15	0.76
3:D:1275:PRO:HG3	4:E:76:VAL:HG11	1.68	0.76
1:B:74:THR:HG21	3:D:611:VAL:HG11	1.67	0.76
1:A:98:ARG:HG2	1:A:135:GLU:HG2	1.68	0.76
3:D:1009:LEU:CD1	3:D:1146:GLN:HG3	2.15	0.76
2:C:150:MET:HA	2:C:150:MET:HE2	1.68	0.76
3:D:607:PRO:O	3:D:609:GLN:HG2	1.85	0.76
3:D:588:LEU:HD22	3:D:668:GLY:HA3	1.67	0.75
3:D:815:THR:HG22	3:D:820:LYS:HA	1.68	0.75
2:C:448:ALA:HB1	2:C:454:LEU:HD11	1.67	0.75
2:C:935:TRP:HB2	2:C:982:SER:HB3	1.68	0.75
2:C:265:LEU:HD21	2:C:284:GLN:HA	1.68	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:1275:PRO:HB3	4:E:79:LEU:HD11	1.69	0.75
3:D:327:MET:HG3	3:D:337:THR:HB	1.69	0.75
3:D:21:ARG:NE	3:D:96:GLU:OE2	2.18	0.75
2:C:299:LEU:HB3	2:C:323:THR:HB	1.68	0.75
1:A:38:LEU:HD13	1:A:208:LEU:HD11	1.68	0.75
3:D:962:ARG:NH1	3:D:977:CYS:SG	2.59	0.75
3:D:1086:ARG:HD2	3:D:1086:ARG:H	1.51	0.74
3:D:1276:THR:HG22	4:E:102:GLU:HG3	1.69	0.74
5:F:280:LYS:HG2	8:O:30:DC:OP2	1.87	0.74
1:A:70:LYS:HB3	1:A:127:THR:HG23	1.67	0.74
3:D:721:TYR:O	3:D:725:ARG:HG2	1.86	0.74
8:O:15:DT:OP1	1:T:258:VAL:HG21	1.87	0.74
8:O:12:DG:H2''	8:O:13:DT:H5'	1.70	0.74
1:A:14:VAL:HG13	1:A:18:ARG:HG3	1.68	0.74
2:C:568:ASP:OD1	2:C:568:ASP:N	2.20	0.74
3:D:796:ASN:HD21	3:D:798:ILE:HB	1.51	0.74
2:C:1127:GLU:OE1	3:D:11:ARG:NH2	2.20	0.74
2:C:1129:LEU:HA	2:C:1134:ALA:O	1.87	0.74
3:D:1041:PRO:HB3	3:D:1116:ALA:HB3	1.69	0.74
8:O:6:DA:H2''	8:O:7:DC:H5'	1.67	0.74
2:C:754:LYS:HE2	2:C:754:LYS:H	1.53	0.73
3:D:365:ILE:H	3:D:365:ILE:HD12	1.51	0.73
3:D:781:THR:HG22	3:D:814:ARG:HD2	1.68	0.73
3:D:922:ARG:CB	3:D:961:VAL:HG21	2.18	0.73
3:D:937:ILE:HD12	3:D:951:LEU:HG	1.69	0.73
1:A:66:VAL:O	1:A:69:VAL:HG22	1.88	0.73
2:C:732:LEU:HD22	2:C:737:VAL:HG11	1.69	0.73
3:D:641:ARG:HA	3:D:656:LYS:NZ	2.03	0.73
1:B:24:GLU:OE2	1:B:181:THR:HG21	1.89	0.73
2:C:324:LEU:O	2:C:324:LEU:HD22	1.88	0.73
3:D:924:LEU:HD21	3:D:959:VAL:HG13	1.70	0.73
4:E:30:LEU:O	4:E:33:THR:HG22	1.88	0.72
3:D:1168:ILE:HD13	3:D:1176:PHE:HB3	1.69	0.72
2:C:508:ARG:HD3	2:C:515:VAL:HG11	1.70	0.72
2:C:729:SER:HA	2:C:895:MET:HE1	1.72	0.72
2:C:510:VAL:N	2:C:568:ASP:O	2.18	0.72
3:D:1071:ASP:HB2	3:D:1073:GLY:N	2.05	0.72
2:C:224:PRO:O	2:C:227:VAL:HG22	1.90	0.72
2:C:429:GLN:HG2	12:C:1205:RFP:H343	1.71	0.72
5:F:462:ARG:HH12	5:F:465:LEU:HD12	1.55	0.71
3:D:622:MET:HE3	3:D:667:LEU:HD13	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:P:11:DA:H2''	9:P:12:DA:O5'	1.90	0.71
2:C:482:GLY:O	2:C:485:ILE:HG13	1.90	0.71
3:D:453:LYS:HB3	3:D:454:PRO:HD3	1.72	0.71
2:C:589:GLU:OE1	2:C:589:GLU:N	2.22	0.71
2:C:1108:ILE:H	2:C:1108:ILE:HD12	1.55	0.71
2:C:891:PRO:HB2	2:C:893:GLU:HG2	1.72	0.71
3:D:111:PRO:O	3:D:113:ARG:NH1	2.24	0.70
3:D:190:LYS:NZ	3:D:192:ASP:HB3	2.06	0.70
3:D:277:LEU:HD11	3:D:295:ARG:HG2	1.73	0.70
2:C:176:VAL:HG22	2:C:307:VAL:HG12	1.71	0.70
2:C:764:ILE:HB	2:C:767:VAL:HG21	1.73	0.70
8:O:14:DG:H3'	1:T:258:VAL:HG11	1.73	0.70
3:D:951:LEU:HB3	3:D:956:ILE:CD1	2.20	0.70
2:C:96:LEU:HA	2:C:129:GLU:O	1.91	0.70
2:C:797:VAL:HG12	2:C:823:VAL:HB	1.72	0.70
3:D:596:THR:HG22	3:D:626:ALA:O	1.92	0.69
3:D:642:PRO:CD	3:D:656:LYS:HD2	2.21	0.69
2:C:650:THR:HG22	2:C:660:SER:OG	1.91	0.69
3:D:735:VAL:HG22	3:D:798:ILE:HD11	1.74	0.69
3:D:1081:LEU:HB3	3:D:1113:MET:HE1	1.73	0.69
2:C:637:LYS:HD2	2:C:659:GLN:NE2	2.07	0.69
2:C:894:ASP:HA	2:C:1004:GLY:HA3	1.74	0.69
2:C:1128:VAL:HG13	2:C:1136:ILE:HB	1.74	0.69
3:D:1009:LEU:HD12	3:D:1146:GLN:CG	2.18	0.69
1:A:36:ASN:HB2	1:A:176:TYR:OH	1.93	0.69
2:C:41:VAL:HG22	2:C:494:TYR:HE1	1.57	0.69
2:C:302:VAL:O	2:C:306:LYS:HG2	1.91	0.69
2:C:804:GLU:HG3	3:D:66:LYS:HE3	1.74	0.69
3:D:442:GLY:HA3	3:D:523:GLN:HB2	1.72	0.69
5:F:253:MET:CE	5:F:300:GLN:HB2	2.21	0.69
3:D:641:ARG:HA	3:D:656:LYS:HZ3	1.57	0.69
2:C:379:GLN:HG2	2:C:421:PHE:HB2	1.75	0.69
3:D:139:VAL:HG12	3:D:231:PRO:HD3	1.74	0.69
4:E:62:ASN:O	4:E:66:ASN:ND2	2.26	0.69
3:D:735:VAL:HG22	3:D:798:ILE:CD1	2.23	0.69
3:D:911:ARG:NH1	3:D:949:ASP:OD1	2.24	0.69
5:F:201:LEU:HD11	5:F:219:MET:HB3	1.75	0.68
2:C:215:VAL:O	2:C:223:GLN:HB2	1.93	0.68
2:C:984:LEU:HB3	2:C:991:VAL:HG22	1.74	0.68
3:D:73:ILE:O	3:D:82:VAL:HG12	1.93	0.68
3:D:772:SER:O	3:D:776:ILE:HG13	1.93	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:895:MET:HG3	2:C:896:PRO:HD2	1.74	0.68
2:C:361:ILE:H	2:C:361:ILE:HD12	1.59	0.68
3:D:929:VAL:HG12	3:D:935:VAL:CG2	2.18	0.68
2:C:94:MET:CE	2:C:395:MET:HB3	2.23	0.68
2:C:742:HIS:CD2	2:C:868:ARG:HG3	2.28	0.68
3:D:1247:ASN:O	3:D:1260:PRO:HG3	1.94	0.68
2:C:602:MET:HE2	2:C:1024:LEU:HD21	1.74	0.68
5:F:454:HIS:ND1	5:F:455:PRO:HD2	2.08	0.68
1:B:74:THR:CG2	3:D:611:VAL:HG11	2.23	0.68
2:C:623:LEU:HA	2:C:703:GLU:HA	1.75	0.68
5:F:330:ARG:NH2	5:F:336:GLU:OE2	2.26	0.68
2:C:494:TYR:HB3	2:C:506:PRO:HG3	1.75	0.68
2:C:1098:VAL:HG11	3:D:469:ILE:HD12	1.75	0.67
1:B:79:ASN:OD1	3:D:636:ARG:NH2	2.27	0.67
2:C:333:ILE:O	2:C:337:VAL:HG23	1.94	0.67
2:C:768:SER:O	2:C:771:VAL:HG13	1.93	0.67
2:C:921:GLN:HB2	2:C:1019:MET:HE1	1.76	0.67
2:C:1003:ASP:OD1	2:C:1006:SER:N	2.23	0.67
3:D:1122:VAL:HG23	3:D:1126:GLN:HE21	1.59	0.67
1:T:264:LEU:HB3	1:T:269:VAL:CG2	2.24	0.67
1:B:107:ALA:O	1:B:110:ILE:HG22	1.93	0.67
2:C:771:VAL:HG23	2:C:792:ILE:HD13	1.76	0.67
1:A:177:LYS:HE2	1:A:193:ILE:CD1	2.22	0.67
3:D:70:PHE:HB2	3:D:73:ILE:HD13	1.75	0.67
2:C:476:PRO:O	3:D:856:ARG:NH2	2.27	0.67
2:C:1100:GLY:CA	3:D:458:LYS:HE3	2.24	0.67
12:C:1205:RFP:H313	12:C:1205:RFP:H402	1.77	0.67
3:D:106:TYR:HB3	3:D:312:MET:HE3	1.75	0.67
3:D:822:LEU:HD23	3:D:834:PRO:HA	1.77	0.67
2:C:169:GLN:OE1	2:C:370:ARG:NH2	2.26	0.67
3:D:155:MET:HE3	3:D:219:LEU:HB3	1.77	0.67
5:F:399:GLN:O	5:F:403:GLU:HG2	1.94	0.67
9:P:11:DA:H4'	9:P:12:DA:OP1	1.95	0.67
2:C:613:GLU:O	2:C:705:ALA:HB1	1.94	0.67
2:C:935:TRP:CB	2:C:982:SER:HB3	2.25	0.67
2:C:433:GLN:HE21	2:C:670:ASN:H	1.42	0.67
2:C:449:LEU:HB2	12:C:1205:RFP:H143	1.77	0.67
2:C:732:LEU:HA	2:C:737:VAL:CG1	2.24	0.67
1:A:152:ASN:CB	1:A:157:ALA:HB3	2.25	0.67
2:C:224:PRO:HB2	2:C:227:VAL:HG13	1.77	0.67
2:C:437:LEU:HB2	2:C:704:MET:CE	2.25	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:228:LEU:HD21	2:C:268:ILE:HG12	1.77	0.66
2:C:1034:ALA:HB2	3:D:447:MET:HG3	1.77	0.66
1:A:129:ASN:H	1:A:129:ASN:HD22	1.43	0.66
2:C:545:PHE:CD2	2:C:564:ALA:HB1	2.30	0.66
2:C:753:THR:HG21	2:C:799:PRO:HD2	1.78	0.66
8:O:19:DA:H4'	8:O:20:DT:OP1	1.95	0.66
1:A:63:PHE:HE1	2:C:741:ILE:HD13	1.61	0.66
2:C:375:LEU:HD13	2:C:427:LEU:HD22	1.76	0.66
2:C:872:ASP:OD1	2:C:872:ASP:N	2.17	0.66
3:D:74:ILE:HD12	7:J:42:VAL:HG13	1.77	0.66
3:D:139:VAL:CG1	3:D:231:PRO:HD3	2.26	0.66
3:D:1071:ASP:N	3:D:1072:GLY:HA2	2.09	0.66
2:C:102:ARG:HG2	2:C:125:PHE:HB2	1.78	0.66
3:D:931:ALA:O	3:D:932:ASN:ND2	2.28	0.66
4:E:57:ARG:NE	4:E:95:GLU:OE1	2.25	0.66
3:D:144:ARG:NH2	3:D:229:LEU:O	2.28	0.66
3:D:622:MET:CE	3:D:667:LEU:HD13	2.26	0.66
3:D:846:LEU:H	3:D:846:LEU:HD12	1.61	0.66
2:C:344:THR:O	2:C:355:PRO:HA	1.95	0.65
2:C:728:LEU:CD2	2:C:906:ILE:HG22	2.26	0.65
5:F:368:GLU:HG2	5:F:369:GLY:N	2.11	0.65
2:C:1116:LEU:O	2:C:1120:GLN:HG3	1.96	0.65
2:C:729:SER:OG	2:C:905:ASP:HA	1.97	0.65
2:C:1014:VAL:HG13	3:D:729:THR:HG21	1.78	0.65
1:A:56:ILE:HB	1:A:59:VAL:HG22	1.79	0.65
1:B:95:MET:HG2	1:B:113:PRO:CD	2.26	0.65
5:F:338:ALA:HB2	5:F:348:VAL:HG11	1.79	0.65
2:C:727:ILE:HG13	2:C:907:ILE:HB	1.79	0.65
3:D:17:ALA:O	3:D:21:ARG:HG3	1.97	0.65
1:B:29:GLY:HA2	1:B:190:ASP:OD2	1.96	0.65
2:C:984:LEU:CB	2:C:991:VAL:HG22	2.26	0.65
3:D:76:GLU:HA	7:J:44:PHE:HE2	1.61	0.65
1:A:108:GLY:CA	1:A:121:PRO:HB3	2.27	0.65
2:C:584:MET:HA	2:C:619:THR:CG2	2.27	0.65
2:C:710:LEU:HD13	2:C:1021:ILE:HG12	1.79	0.65
3:D:880:SER:O	3:D:995:GLY:HA3	1.97	0.64
2:C:728:LEU:HD22	2:C:906:ILE:HG22	1.79	0.64
2:C:899:PRO:HD2	2:C:992:MET:CE	2.27	0.64
3:D:886:ARG:HH12	14:D:2012:GLU:CA	2.11	0.64
5:F:180:ASN:OD1	5:F:183:GLU:HG3	1.96	0.64
1:A:66:VAL:HB	1:A:69:VAL:HG21	1.78	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:202:ILE:CG1	1:B:206:ASP:HB2	2.27	0.64
2:C:132:ASN:HB3	2:C:135:THR:CG2	2.28	0.64
2:C:429:GLN:OE1	2:C:442:HIS:NE2	2.30	0.64
2:C:509:LYS:O	2:C:516:THR:HG22	1.97	0.64
8:O:5:DG:H2''	8:O:6:DA:OP2	1.97	0.64
2:C:590:HIS:HB3	2:C:919:ILE:HD13	1.79	0.64
3:D:956:ILE:HD12	3:D:956:ILE:O	1.97	0.64
2:C:215:VAL:HG22	2:C:225:VAL:CA	2.28	0.64
2:C:718:GLU:H	3:D:724:THR:HG21	1.63	0.64
5:F:397:GLN:O	5:F:401:VAL:HG23	1.98	0.64
3:D:411:GLY:O	3:D:415:GLN:HB3	1.98	0.64
8:O:6:DA:C2'	8:O:7:DC:H5'	2.28	0.64
2:C:87:ILE:HD12	2:C:388:GLU:HG3	1.80	0.64
3:D:951:LEU:HD22	3:D:956:ILE:HG12	1.80	0.64
3:D:1086:ARG:HD2	3:D:1086:ARG:N	2.12	0.64
5:F:204:LEU:O	5:F:208:GLY:N	2.31	0.64
1:B:124:HIS:HE1	1:B:127:THR:HG23	1.63	0.64
2:C:203:LEU:HG	2:C:217:ILE:CG2	2.18	0.64
2:C:873:GLY:HA3	2:C:1028:VAL:HG11	1.80	0.64
3:D:799:ILE:CG2	3:D:803:LYS:HE2	2.28	0.64
1:B:6:ARG:O	1:B:25:PRO:HD2	1.97	0.63
1:B:147:VAL:HG13	1:B:166:SER:HB2	1.80	0.63
3:D:320:ILE:HG12	3:D:321:PRO:HD2	1.80	0.63
3:D:614:SER:HB2	3:D:615:PRO:HD2	1.79	0.63
3:D:673:ASN:HA	3:D:676:LEU:HD13	1.79	0.63
1:B:144:ARG:NH1	1:B:144:ARG:HB2	2.14	0.63
1:B:162:ILE:HG23	3:D:607:PRO:HG2	1.79	0.63
3:D:1081:LEU:CB	3:D:1113:MET:HE1	2.28	0.63
2:C:754:LYS:H	2:C:754:LYS:CE	2.11	0.63
3:D:155:MET:CE	3:D:219:LEU:HB3	2.28	0.63
3:D:468:ASN:ND2	5:F:463:ASP:OD2	2.32	0.63
3:D:799:ILE:HG21	3:D:803:LYS:HE2	1.80	0.63
5:F:191:ILE:O	5:F:195:LEU:HD13	1.97	0.63
2:C:533:ALA:HB3	2:C:570:MET:HG3	1.81	0.63
2:C:534:GLN:HE21	2:C:534:GLN:HA	1.61	0.63
3:D:1071:ASP:HB2	3:D:1072:GLY:C	2.19	0.63
4:E:29:PRO:HB2	4:E:33:THR:HG23	1.79	0.63
5:F:254:ALA:HA	10:F:502:SO4:O3	1.97	0.63
2:C:338:ARG:HH11	2:C:343:GLN:HE22	1.44	0.63
2:C:751:ARG:NH1	3:D:332:GLY:O	2.32	0.63
2:C:1043:ILE:HG23	2:C:1044:THR:H	1.64	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:661:TRP:CZ3	3:D:663:ALA:HB2	2.34	0.63
1:B:41:THR:O	1:B:45:SER:HB3	1.98	0.63
2:C:52:PHE:HZ	2:C:150:MET:HE2	1.63	0.63
3:D:781:THR:O	3:D:784:VAL:HG23	1.98	0.63
3:D:920:PHE:HE1	3:D:945:ASP:HA	1.62	0.63
1:A:42:LEU:O	1:A:171:VAL:HG11	1.98	0.63
2:C:727:ILE:HD12	2:C:907:ILE:HD12	1.81	0.63
3:D:1123:LEU:HA	3:D:1131:VAL:CG2	2.28	0.63
1:B:112:PRO:HB2	1:B:116:VAL:HG23	1.81	0.62
2:C:228:LEU:CD2	2:C:268:ILE:HG12	2.29	0.62
2:C:892:VAL:CG2	2:C:903:PRO:HG2	2.29	0.62
5:F:219:MET:HA	5:F:219:MET:HE2	1.81	0.62
1:A:9:LEU:HD23	1:B:221:LEU:O	1.98	0.62
2:C:560:GLU:HG3	2:C:561:PHE:H	1.63	0.62
2:C:1086:ASP:O	2:C:1090:ARG:HG2	1.99	0.62
3:D:138:SER:HB3	3:D:253:THR:OG1	1.99	0.62
3:D:1168:ILE:O	3:D:1178:PRO:HA	1.99	0.62
2:C:398:GLN:HB3	2:C:403:ILE:CG2	2.29	0.62
2:C:434:ASN:OD1	2:C:1025:HIS:ND1	2.31	0.62
3:D:444:PRO:HG3	3:D:521:ALA:O	1.99	0.62
3:D:642:PRO:HG3	3:D:661:TRP:CE2	2.35	0.62
5:F:402:LEU:HD23	5:F:414:ARG:HE	1.65	0.62
2:C:393:GLU:OE2	5:F:247:ARG:HD3	2.00	0.62
3:D:567:SER:HB3	3:D:574:LEU:HD13	1.81	0.62
2:C:132:ASN:CB	2:C:135:THR:HG22	2.28	0.62
2:C:783:ILE:HD13	2:C:784:GLY:N	2.15	0.62
3:D:430:ILE:HD13	3:D:541:MET:HG3	1.81	0.62
5:F:276:THR:HG23	7:J:89:ARG:NH2	2.15	0.62
1:B:72:ASP:OD1	1:B:73:VAL:N	2.27	0.62
3:D:52:PHE:O	3:D:91:ARG:HD2	2.00	0.62
2:C:87:ILE:O	2:C:95:SER:HA	2.00	0.62
2:C:193:VAL:CG1	2:C:205:PHE:HB2	2.29	0.62
9:P:11:DA:H2'	9:P:12:DA:C8	2.35	0.62
2:C:896:PRO:HB2	2:C:1001:LEU:HD13	1.82	0.62
3:D:648:ALA:O	3:D:652:GLU:HB2	2.00	0.62
3:D:665:THR:HG22	3:D:684:ASN:ND2	2.15	0.62
7:J:47:ASP:OD1	7:J:47:ASP:N	2.25	0.62
1:A:82:GLY:HA3	1:A:123:MET:HE1	1.80	0.62
2:C:742:HIS:HD2	2:C:868:ARG:HG3	1.64	0.62
3:D:587:TYR:O	3:D:590:THR:HG22	2.00	0.62
3:D:1085:GLN:O	3:D:1086:ARG:O	2.18	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:714:ILE:O	2:C:910:THR:OG1	2.18	0.61
2:C:1084:SER:OG	3:D:420:LYS:HD3	1.98	0.61
1:A:211:ALA:O	1:A:215:LEU:N	2.33	0.61
2:C:128:ALA:HB1	2:C:405:PRO:HB3	1.80	0.61
2:C:641:ILE:HG21	2:C:644:VAL:HG13	1.80	0.61
3:D:666:THR:OG1	3:D:669:ARG:HG3	2.00	0.61
2:C:29:ARG:CD	2:C:964:ALA:HB2	2.30	0.61
2:C:426:GLN:OE1	2:C:450:GLY:HA2	2.00	0.61
3:D:12:ILE:HD11	3:D:1221:TRP:CE3	2.34	0.61
3:D:64:LYS:NZ	3:D:76:GLU:OE2	2.32	0.61
3:D:567:SER:HB3	3:D:574:LEU:CD1	2.30	0.61
4:E:29:PRO:HG2	4:E:34:ASN:HB2	1.80	0.61
3:D:706:ILE:O	3:D:710:GLN:HG3	2.01	0.61
3:D:755:ILE:HD12	3:D:776:ILE:CD1	2.25	0.61
3:D:755:ILE:CD1	3:D:776:ILE:HD11	2.27	0.61
2:C:1079:LEU:HD23	2:C:1083:LYS:HD2	1.82	0.61
3:D:460:LEU:HD11	3:D:472:ALA:CB	2.30	0.61
3:D:177:LEU:HD23	3:D:177:LEU:O	2.00	0.61
3:D:527:LEU:HD22	3:D:575:ALA:O	2.00	0.61
2:C:593:ALA:HB2	3:D:852:THR:HG22	1.83	0.61
2:C:732:LEU:HA	2:C:737:VAL:HG12	1.83	0.61
3:D:988:VAL:HG23	3:D:992:GLU:HG3	1.81	0.61
1:B:69:VAL:HG12	1:B:128:LEU:HA	1.81	0.61
3:D:622:MET:CE	3:D:629:VAL:HG22	2.31	0.61
5:F:181:ALA:O	5:F:185:VAL:HG23	2.00	0.61
1:B:76:ILE:HG23	1:B:125:ILE:CD1	2.31	0.61
2:C:729:SER:OG	2:C:904:VAL:O	2.19	0.61
2:C:575:ARG:NH2	2:C:966:PRO:HB2	2.15	0.60
2:C:764:ILE:HB	2:C:767:VAL:CG2	2.31	0.60
1:A:207:ALA:O	1:A:210:SER:OG	2.13	0.60
1:B:105:VAL:HG23	1:B:128:LEU:HD13	1.82	0.60
3:D:846:LEU:O	3:D:850:ILE:HG12	2.01	0.60
2:C:525:ASP:OD1	2:C:525:ASP:N	2.32	0.60
7:J:96:GLU:O	7:J:100:GLU:HG3	2.01	0.60
2:C:444:ARG:NH2	2:C:492:SER:O	2.34	0.60
2:C:900:ASP:OD2	2:C:992:MET:HG3	2.01	0.60
3:D:573:PRO:HG2	3:D:576:MET:CE	2.31	0.60
2:C:899:PRO:HD2	2:C:992:MET:HE1	1.83	0.60
2:C:946:TRP:CE2	2:C:978:GLY:HA3	2.36	0.60
3:D:889:ASP:OD2	3:D:891:GLU:N	2.35	0.60
3:D:886:ARG:NH1	14:D:2012:GLU:HB3	2.16	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:34:LEU:HD11	1:B:192:LEU:HD22	1.83	0.60
2:C:412:ARG:NH1	5:F:322:ARG:HH11	1.99	0.60
2:C:467:HIS:CG	2:C:468:PRO:HD2	2.37	0.60
2:C:498:ASN:OD1	2:C:499:PRO:HD2	2.01	0.60
2:C:533:ALA:HB2	2:C:567:VAL:HG11	1.84	0.60
2:C:932:LYS:HG2	2:C:1018:TYR:CE2	2.35	0.60
1:B:64:THR:O	1:B:65:THR:OG1	2.18	0.60
3:D:579:LEU:CD2	3:D:807:THR:HB	2.28	0.60
1:A:14:VAL:CG1	1:A:18:ARG:HG3	2.32	0.60
1:B:24:GLU:HG3	1:B:191:LYS:HG3	1.83	0.60
2:C:30:VAL:HG11	2:C:954:LEU:HG	1.84	0.60
3:D:505:HIS:CD2	3:D:1004:GLU:HG3	2.37	0.60
3:D:668:GLY:HA2	3:D:671:MET:HE3	1.82	0.60
1:A:24:GLU:OE1	1:A:191:LYS:HD3	2.02	0.60
2:C:404:THR:OG1	2:C:405:PRO:HD2	2.02	0.60
2:C:637:LYS:HD2	2:C:659:GLN:HE22	1.65	0.60
3:D:1121:GLU:OE2	3:D:1124:ARG:NH2	2.26	0.60
5:F:204:LEU:HD11	5:F:211:LEU:HD21	1.84	0.60
5:F:394:LEU:HB2	5:F:464:TYR:CE1	2.36	0.60
2:C:338:ARG:HH11	2:C:343:GLN:NE2	2.00	0.59
2:C:752:ASP:OD1	2:C:857:ASN:ND2	2.35	0.59
4:E:57:ARG:HH22	4:E:76:VAL:HG13	1.66	0.59
2:C:765:PRO:HD2	2:C:825:ASP:HB2	1.85	0.59
3:D:781:THR:CG2	3:D:814:ARG:HD2	2.31	0.59
3:D:1249:LEU:HD12	3:D:1250:LYS:N	2.17	0.59
5:F:274:ASP:OD1	7:J:89:ARG:NH2	2.25	0.59
5:F:462:ARG:NH1	5:F:465:LEU:HB2	2.17	0.59
3:D:287:GLN:CG	3:D:288:LYS:HZ2	2.16	0.59
3:D:1011:MET:CB	3:D:1029:LEU:HB2	2.32	0.59
5:F:308:VAL:HG21	8:O:23:DT:C7	2.27	0.59
1:A:9:LEU:HD13	1:A:23:ILE:CG1	2.31	0.59
2:C:622:GLU:HB3	2:C:703:GLU:HB2	1.84	0.59
3:D:435:GLN:OE1	3:D:435:GLN:N	2.31	0.59
3:D:550:GLU:O	3:D:554:GLU:HG3	2.02	0.59
1:A:14:VAL:HG12	1:A:19:SER:HA	1.84	0.59
1:B:102:PRO:HG3	1:B:131:LYS:H	1.66	0.59
1:B:144:ARG:HB2	1:B:144:ARG:HH11	1.65	0.59
3:D:1166:VAL:HA	3:D:1207:VAL:HG23	1.83	0.59
3:D:432:VAL:CG2	3:D:434:PRO:HD3	2.30	0.59
3:D:930:ASP:O	3:D:932:ASN:N	2.28	0.59
3:D:980:ARG:HD3	3:D:985:GLY:O	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:76:ILE:HG23	1:B:125:ILE:HD11	1.85	0.59
5:F:444:ILE:O	5:F:448:THR:HG23	2.03	0.59
1:A:216:VAL:HG13	1:B:216:VAL:HG23	1.85	0.59
1:B:63:PHE:CZ	3:D:604:LYS:HG2	2.37	0.59
2:C:935:TRP:HB2	2:C:982:SER:CB	2.32	0.59
3:D:981:SER:HB3	3:D:984:THR:OG1	2.02	0.59
2:C:437:LEU:HB2	2:C:704:MET:HE1	1.85	0.59
5:F:234:LEU:HD23	5:F:270:VAL:HG21	1.84	0.59
1:B:158:GLU:HB3	1:B:161:ARG:HB2	1.84	0.59
1:B:162:ILE:CG2	3:D:607:PRO:HG2	2.33	0.59
2:C:718:GLU:H	3:D:724:THR:CG2	2.16	0.59
2:C:876:LEU:HD11	2:C:886:ILE:HD11	1.83	0.59
3:D:58:TRP:CG	3:D:68:VAL:HG22	2.38	0.59
3:D:193:VAL:O	3:D:197:VAL:HG23	2.03	0.59
3:D:585:LEU:HD12	3:D:692:GLN:NE2	2.18	0.59
1:A:2:LEU:HD12	1:B:143:GLY:HA2	1.84	0.58
1:B:22:VAL:HA	1:B:192:LEU:O	2.03	0.58
1:B:183:VAL:HG22	3:D:488:GLU:OE2	2.03	0.58
2:C:575:ARG:HE	2:C:967:VAL:HG22	1.67	0.58
3:D:937:ILE:CD1	3:D:951:LEU:HG	2.33	0.58
2:C:231:ALA:HB1	2:C:265:LEU:HD13	1.85	0.58
9:P:11:DA:H2''	9:P:12:DA:C5'	2.33	0.58
2:C:716:PRO:O	3:D:724:THR:HB	2.03	0.58
3:D:920:PHE:CE2	3:D:948:ILE:HG13	2.37	0.58
5:F:335:GLU:N	5:F:335:GLU:OE1	2.34	0.58
2:C:338:ARG:HB3	2:C:343:GLN:HG2	1.84	0.58
2:C:1028:VAL:HG12	3:D:429:VAL:CG1	2.34	0.58
3:D:656:LYS:HE3	3:D:656:LYS:N	2.08	0.58
3:D:656:LYS:O	3:D:656:LYS:HG2	2.03	0.58
2:C:545:PHE:HD2	2:C:564:ALA:HB1	1.67	0.58
3:D:1100:LEU:HD23	3:D:1101:SER:N	2.18	0.58
5:F:345:PRO:O	5:F:348:VAL:HG13	2.03	0.58
5:F:369:GLY:O	5:F:371:SER:N	2.37	0.58
1:A:33:THR:CG2	1:B:37:SER:HA	2.34	0.58
2:C:508:ARG:HD3	2:C:515:VAL:CG1	2.33	0.58
3:D:330:LEU:HD22	3:D:330:LEU:H	1.68	0.58
2:C:52:PHE:CZ	2:C:150:MET:HE2	2.39	0.58
2:C:380:ILE:HG12	2:C:418:ILE:HD11	1.86	0.58
3:D:238:GLU:O	3:D:238:GLU:HG3	2.02	0.58
3:D:1054:VAL:HG11	3:D:1100:LEU:HD21	1.86	0.58
3:D:505:HIS:HD2	3:D:1004:GLU:HG3	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:573:SER:HB2	2:C:574:PRO:HD2	1.86	0.58
3:D:859:LEU:O	3:D:862:THR:HG22	2.03	0.58
4:E:57:ARG:HH12	4:E:76:VAL:HG12	1.69	0.58
1:A:42:LEU:O	1:A:46:ILE:HG12	2.04	0.57
2:C:771:VAL:HG23	2:C:792:ILE:CD1	2.34	0.57
3:D:527:LEU:HD21	3:D:581:MET:CE	2.34	0.57
7:J:68:ASP:HA	7:J:69:VAL:CB	2.22	0.57
1:B:212:GLY:O	1:B:216:VAL:HG12	2.05	0.57
2:C:578:VAL:HG13	2:C:582:THR:CB	2.33	0.57
2:C:636:ASP:OD1	2:C:636:ASP:N	2.34	0.57
1:A:40:ARG:HD3	1:B:33:THR:CG2	2.33	0.57
2:C:538:PRO:O	2:C:546:THR:HG23	2.04	0.57
3:D:116:TYR:HB3	3:D:298:VAL:HG11	1.86	0.57
3:D:656:LYS:H	3:D:656:LYS:CE	2.08	0.57
3:D:59:GLU:HG2	3:D:66:LYS:HG3	1.84	0.57
3:D:668:GLY:HA2	3:D:671:MET:CE	2.32	0.57
3:D:904:GLY:HA3	3:D:910:ILE:CG2	2.35	0.57
2:C:249:MET:O	2:C:253:LEU:HD23	2.05	0.57
3:D:737:VAL:HG13	3:D:738:PRO:HD2	1.87	0.57
2:C:590:HIS:O	2:C:919:ILE:HD11	2.04	0.57
2:C:732:LEU:CD2	2:C:737:VAL:HG11	2.34	0.57
3:D:20:ILE:HD13	3:D:318:PRO:HD3	1.85	0.57
3:D:137:THR:HG22	3:D:253:THR:O	2.04	0.57
3:D:1266:SER:H	14:D:2012:GLU:N	2.03	0.57
1:B:151:GLN:OE1	1:B:151:GLN:N	2.30	0.57
2:C:106:VAL:HG11	2:C:120:TYR:CE1	2.39	0.57
2:C:348:VAL:HB	2:C:349:PRO:CD	2.28	0.57
2:C:809:GLU:O	2:C:813:ARG:HG2	2.05	0.57
3:D:693:ALA:O	3:D:697:ASN:HB2	2.05	0.57
3:D:920:PHE:CE1	3:D:945:ASP:HA	2.40	0.57
4:E:57:ARG:O	4:E:57:ARG:HD3	2.04	0.57
1:A:21:PHE:HB2	1:A:194:ILE:HG12	1.87	0.57
1:B:76:ILE:HA	1:B:79:ASN:HB2	1.85	0.57
2:C:128:ALA:CB	2:C:405:PRO:HB3	2.35	0.57
2:C:622:GLU:OE1	2:C:622:GLU:N	2.38	0.57
3:D:218:ARG:O	3:D:222:ILE:HG13	2.04	0.57
4:E:85:GLN:NE2	4:E:85:GLN:H	2.02	0.57
2:C:477:ILE:CD1	3:D:852:THR:HG21	2.34	0.57
2:C:481:GLU:O	2:C:485:ILE:HD11	2.05	0.57
2:C:412:ARG:HD2	5:F:322:ARG:NE	2.19	0.57
1:B:32:TYR:CE2	1:B:178:VAL:HG21	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:231:ALA:HB1	2:C:265:LEU:CD1	2.34	0.56
2:C:299:LEU:CB	2:C:323:THR:HB	2.35	0.56
2:C:710:LEU:O	2:C:1018:TYR:HA	2.04	0.56
2:C:1048:LEU:O	2:C:1055:GLY:HA3	2.05	0.56
3:D:785:GLY:O	3:D:789:GLU:HG3	2.04	0.56
3:D:1037:GLU:HG2	3:D:1039:ARG:NH1	2.20	0.56
1:B:22:VAL:HG12	1:B:193:ILE:HD12	1.87	0.56
1:B:102:PRO:HB3	1:B:130:ASP:HA	1.87	0.56
2:C:748:ILE:HD11	2:C:796:LYS:NZ	2.20	0.56
3:D:240:LEU:HD23	3:D:244:LEU:HG	1.88	0.56
3:D:1168:ILE:HD11	3:D:1182:THR:HG21	1.86	0.56
5:F:166:VAL:O	5:F:170:LEU:HG	2.05	0.56
5:F:423:GLN:HG3	5:F:423:GLN:O	2.05	0.56
8:O:11:DA:H2''	8:O:12:DG:H5''	1.88	0.56
1:A:33:THR:HG21	1:B:37:SER:HA	1.88	0.56
1:A:210:SER:HB3	1:B:229:SER:HB3	1.87	0.56
2:C:432:ASP:HB2	12:C:1205:RFP:H20C	1.86	0.56
2:C:892:VAL:HG22	2:C:903:PRO:HG2	1.86	0.56
2:C:1072:ALA:HB1	3:D:554:GLU:OE2	2.04	0.56
7:J:106:LYS:O	7:J:108:LYS:HG3	2.05	0.56
2:C:262:ASP:OD2	2:C:280:LYS:HE2	2.05	0.56
2:C:534:GLN:HA	2:C:534:GLN:NE2	2.21	0.56
2:C:710:LEU:CD2	2:C:1021:ILE:HD11	2.26	0.56
3:D:665:THR:HG21	3:D:682:PHE:CE2	2.41	0.56
5:F:272:LYS:HE3	8:O:25:DC:OP1	2.05	0.56
1:B:85:VAL:HG23	1:B:117:THR:C	2.26	0.56
2:C:776:ASP:HB2	2:C:777:GLU:OE1	2.05	0.56
2:C:805:LEU:HD22	2:C:805:LEU:H	1.70	0.56
3:D:106:TYR:HB3	3:D:312:MET:CE	2.34	0.56
3:D:130:TYR:O	3:D:372:ARG:HD3	2.06	0.56
3:D:281:ILE:HG22	3:D:289:LYS:HG3	1.86	0.56
3:D:460:LEU:HD11	3:D:472:ALA:HB1	1.87	0.56
3:D:884:ILE:HD12	3:D:885:VAL:O	2.05	0.56
3:D:957:THR:O	3:D:958:THR:HG23	2.05	0.56
1:A:39:ARG:O	1:A:43:LEU:HD13	2.05	0.56
1:B:143:GLY:HA3	1:B:168:TYR:CD1	2.41	0.56
1:B:180:ALA:HA	1:B:189:PHE:O	2.05	0.56
2:C:698:CYS:O	2:C:705:ALA:N	2.30	0.56
5:F:180:ASN:OD1	5:F:182:GLU:HG2	2.06	0.56
1:A:66:VAL:HB	1:A:69:VAL:CG2	2.36	0.56
1:B:147:VAL:CG1	1:B:166:SER:HB2	2.35	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:229:LEU:HD11	2:C:234:TRP:CE3	2.41	0.56
2:C:899:PRO:CD	2:C:992:MET:HE1	2.36	0.56
3:D:274:ALA:O	3:D:278:ARG:HG2	2.06	0.56
3:D:708:VAL:O	3:D:712:VAL:HG23	2.06	0.56
7:J:74:LYS:O	7:J:74:LYS:HD3	2.06	0.56
1:A:8:THR:O	1:A:23:ILE:HA	2.06	0.56
1:B:2:LEU:CB	1:B:231:HIS:HA	2.36	0.56
2:C:269:TYR:CE2	2:C:278:PRO:HB3	2.41	0.56
2:C:523:THR:HG23	2:C:526:GLU:CD	2.25	0.56
3:D:1088:ARG:HG2	3:D:1089:VAL:N	2.16	0.56
3:D:1276:THR:CG2	4:E:102:GLU:HG3	2.34	0.56
1:B:63:PHE:CD1	3:D:604:LYS:HA	2.41	0.56
1:B:95:MET:CB	1:B:110:ILE:HD11	2.36	0.56
2:C:556:GLY:N	2:C:557:GLY:HA2	2.21	0.56
3:D:31:PRO:HB2	3:D:345:ARG:HG2	1.86	0.56
3:D:588:LEU:HD22	3:D:668:GLY:CA	2.35	0.56
2:C:714:ILE:O	2:C:714:ILE:HG22	2.06	0.55
3:D:58:TRP:HZ3	3:D:71:LYS:HB2	1.70	0.55
4:E:85:GLN:HE21	4:E:85:GLN:H	1.54	0.55
1:A:40:ARG:HH11	1:B:33:THR:CG2	2.19	0.55
2:C:204:GLU:O	2:C:216:ARG:N	2.38	0.55
2:C:215:VAL:N	2:C:223:GLN:O	2.40	0.55
2:C:598:MET:O	2:C:602:MET:HG3	2.06	0.55
2:C:623:LEU:HD12	2:C:623:LEU:H	1.70	0.55
2:C:1011:PRO:HB2	2:C:1012:TYR:CD2	2.41	0.55
3:D:103:HIS:CE1	3:D:105:TRP:HB2	2.41	0.55
3:D:930:ASP:OD1	3:D:934:ASN:HB2	2.06	0.55
5:F:359:ILE:HG22	5:F:360:SER:H	1.70	0.55
8:O:16:DT:H5'	8:O:16:DT:H6	1.71	0.55
1:B:21:PHE:HB2	1:B:194:ILE:HG22	1.88	0.55
1:B:94:THR:HA	1:B:138:LEU:O	2.05	0.55
2:C:186:THR:HG23	2:C:188:LYS:H	1.72	0.55
2:C:265:LEU:HD11	2:C:287:LEU:HG	1.87	0.55
1:A:70:LYS:NZ	2:C:682:ASP:OD1	2.38	0.55
1:B:74:THR:HG21	3:D:608:GLU:OE1	2.06	0.55
2:C:704:MET:CE	2:C:706:LEU:HD21	2.37	0.55
3:D:1229:GLU:O	3:D:1233:VAL:HG23	2.06	0.55
8:O:6:DA:H1'	8:O:7:DC:H5'	1.88	0.55
8:O:14:DG:C8	8:O:15:DT:H72	2.41	0.55
2:C:280:LYS:NZ	2:C:280:LYS:HB3	2.21	0.55
2:C:328:ASP:O	2:C:332:THR:HG23	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:509:LYS:HA	2:C:569:TYR:HA	1.87	0.55
3:D:448:ALA:HB1	3:D:491:ILE:HD11	1.88	0.55
3:D:468:ASN:OD1	3:D:470:LYS:HB2	2.06	0.55
3:D:1181:LEU:CD1	3:D:1213:LYS:HE2	2.36	0.55
3:D:872:LEU:HG	3:D:876:LEU:CD2	2.37	0.55
3:D:924:LEU:HD21	3:D:959:VAL:CG1	2.36	0.55
2:C:167:VAL:HG13	2:C:445:ARG:O	2.07	0.55
2:C:935:TRP:HA	2:C:983:THR:HG23	1.89	0.55
2:C:984:LEU:HD13	2:C:991:VAL:CG2	2.33	0.55
2:C:1068:GLN:NE2	3:D:1249:LEU:HD13	2.22	0.55
3:D:70:PHE:O	3:D:82:VAL:HG11	2.07	0.55
3:D:190:LYS:HZ2	3:D:192:ASP:HB3	1.69	0.55
3:D:237:ASP:HB3	3:D:240:LEU:HB3	1.88	0.55
5:F:321:GLN:O	5:F:325:LEU:HB2	2.07	0.55
5:F:430:ILE:O	5:F:433:VAL:HG13	2.06	0.55
1:A:193:ILE:HD12	1:A:193:ILE:O	2.07	0.55
2:C:233:GLY:HA2	2:C:261:THR:CB	2.37	0.55
3:D:190:LYS:HD2	3:D:192:ASP:H	1.71	0.55
3:D:740:GLN:HE21	3:D:740:GLN:H	1.54	0.55
1:B:93:VAL:HG11	1:B:116:VAL:HG11	1.87	0.55
2:C:437:LEU:HB2	2:C:704:MET:HE2	1.89	0.55
2:C:578:VAL:HG12	2:C:579:SER:O	2.07	0.55
2:C:583:ALA:O	2:C:619:THR:HG21	2.06	0.55
1:A:177:LYS:HG2	1:A:193:ILE:HD11	1.89	0.55
1:B:39:ARG:O	1:B:43:LEU:HB2	2.07	0.55
2:C:227:VAL:HG23	2:C:268:ILE:HD11	1.88	0.55
2:C:1035:ARG:CZ	2:C:1047:PRO:HB3	2.37	0.55
3:D:704:PRO:HD2	3:D:707:VAL:HG21	1.89	0.55
3:D:923:THR:O	3:D:961:VAL:HG23	2.06	0.55
3:D:1071:ASP:N	3:D:1071:ASP:OD2	2.40	0.55
5:F:219:MET:HA	5:F:219:MET:CE	2.37	0.55
2:C:921:GLN:HB2	2:C:1019:MET:CE	2.36	0.54
3:D:910:ILE:HG23	3:D:910:ILE:O	2.07	0.54
2:C:45:LEU:CD2	2:C:443:LYS:HD2	2.38	0.54
2:C:1026:HIS:HB3	2:C:1031:LYS:HE3	1.88	0.54
3:D:912:ASP:OD1	3:D:913:ALA:N	2.40	0.54
3:D:1089:VAL:HG13	3:D:1098:GLY:C	2.28	0.54
5:F:320:ILE:O	5:F:324:LEU:HB2	2.07	0.54
2:C:102:ARG:CG	2:C:125:PHE:HB2	2.38	0.54
2:C:454:LEU:HD22	2:C:459:ALA:CB	2.37	0.54
2:C:789:ASP:HA	2:C:830:VAL:HG13	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:527:LEU:CD1	3:D:712:VAL:HG12	2.37	0.54
3:D:747:ARG:O	3:D:751:GLU:HG3	2.08	0.54
3:D:962:ARG:HB3	3:D:977:CYS:HA	1.89	0.54
2:C:1028:VAL:HG12	3:D:429:VAL:HG12	1.88	0.54
3:D:1034:GLU:OE2	3:D:1041:PRO:HA	2.06	0.54
2:C:324:LEU:O	2:C:325:THR:O	2.25	0.54
2:C:338:ARG:NH1	2:C:343:GLN:HE22	2.05	0.54
2:C:435:ASN:HB2	2:C:436:PRO:HD2	1.90	0.54
3:D:951:LEU:CB	3:D:956:ILE:HD11	2.27	0.54
9:P:11:DA:H2'	9:P:12:DA:H8	1.70	0.54
2:C:412:ARG:HD2	5:F:322:ARG:HE	1.73	0.54
2:C:560:GLU:OE1	2:C:560:GLU:HA	2.08	0.54
2:C:614:ALA:HB1	2:C:615:PRO:HD2	1.89	0.54
2:C:736:ASP:OD1	2:C:869:LYS:HE2	2.08	0.54
3:D:334:ARG:HD3	5:F:356:ARG:HH21	1.72	0.54
4:E:81:GLU:OE1	4:E:81:GLU:HA	2.07	0.54
7:J:79:ARG:NH2	8:O:25:DC:OP1	2.41	0.54
1:A:34:LEU:HD11	1:B:218:LEU:HD13	1.90	0.54
1:B:63:PHE:CE2	3:D:603:THR:HG23	2.43	0.54
2:C:727:ILE:CG1	2:C:907:ILE:HB	2.38	0.54
3:D:226:PHE:CE1	3:D:248:TYR:HB3	2.43	0.54
3:D:740:GLN:O	3:D:744:ILE:HG13	2.08	0.54
3:D:878:ASP:OD1	3:D:1215:SER:HB2	2.07	0.54
1:A:63:PHE:CE1	2:C:741:ILE:HD13	2.41	0.54
1:B:20:ARG:HG2	1:B:195:ASP:OD1	2.08	0.54
2:C:221:ARG:HG3	2:C:222:ARG:HG3	1.90	0.54
2:C:477:ILE:HD11	3:D:852:THR:HG21	1.90	0.54
2:C:1126:VAL:HG12	3:D:12:ILE:HG23	1.90	0.54
3:D:67:ARG:NH1	5:F:423:GLN:HA	2.23	0.54
3:D:336:ALA:HA	5:F:359:ILE:O	2.08	0.54
3:D:661:TRP:HZ3	3:D:663:ALA:HB2	1.73	0.54
3:D:924:LEU:HD22	3:D:926:THR:O	2.08	0.54
5:F:385:ALA:O	5:F:389:VAL:HG23	2.08	0.54
1:A:82:GLY:HA3	1:A:123:MET:CE	2.37	0.54
2:C:652:MET:HE2	2:C:658:ARG:HD2	1.89	0.54
3:D:1071:ASP:HB2	3:D:1072:GLY:CA	2.38	0.54
3:D:1251:GLU:OE1	3:D:1251:GLU:N	2.37	0.54
1:A:34:LEU:HD11	1:B:218:LEU:CD1	2.38	0.53
1:A:98:ARG:O	1:A:99:LYS:HD2	2.08	0.53
3:D:599:TYR:HA	3:D:610:GLY:HA3	1.90	0.53
3:D:1168:ILE:HD13	3:D:1176:PHE:CB	2.36	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:86:GLU:OE1	4:E:91:ILE:HG12	2.07	0.53
5:F:194:GLY:HA2	5:F:222:ILE:HG22	1.90	0.53
1:A:68:GLY:CA	1:A:129:ASN:HD21	2.21	0.53
1:A:211:ALA:O	1:A:215:LEU:HB2	2.08	0.53
1:B:198:THR:HG21	1:B:202:ILE:HG23	1.90	0.53
2:C:178:PHE:HD1	2:C:193:VAL:HB	1.73	0.53
2:C:338:ARG:HB3	2:C:343:GLN:CG	2.37	0.53
2:C:510:VAL:HG11	2:C:567:VAL:HG12	1.90	0.53
2:C:911:HIS:CE1	3:D:579:LEU:O	2.61	0.53
3:D:799:ILE:HG23	3:D:803:LYS:HG3	1.90	0.53
2:C:754:LYS:HD3	3:D:39:LEU:CD1	2.38	0.53
3:D:269:ASP:OD2	3:D:272:ALA:N	2.40	0.53
1:T:260:SER:O	1:T:264:LEU:HG	2.08	0.53
1:A:18:ARG:HB2	1:A:196:VAL:O	2.09	0.53
2:C:676:ASN:OD1	2:C:677:GLN:N	2.41	0.53
1:A:71:GLU:OE2	1:A:126:ALA:HA	2.08	0.53
1:B:95:MET:HB2	1:B:110:ILE:HD11	1.89	0.53
2:C:114:LYS:HG2	2:C:161:GLY:O	2.09	0.53
5:F:306:ILE:CG2	5:F:310:MET:HB3	2.39	0.53
5:F:404:THR:OG1	5:F:457:ARG:NE	2.41	0.53
1:A:177:LYS:CE	1:A:193:ILE:HD11	2.27	0.53
1:A:219:PHE:CE1	1:B:215:LEU:HD13	2.44	0.53
2:C:250:MET:HA	2:C:253:LEU:HD21	1.89	0.53
2:C:272:LEU:C	2:C:274:PRO:HD3	2.29	0.53
2:C:481:GLU:HG2	2:C:597:LEU:CD2	2.38	0.53
2:C:510:VAL:HG23	2:C:514:VAL:C	2.29	0.53
2:C:538:PRO:HB2	2:C:546:THR:OG1	2.07	0.53
5:F:164:ASP:OD1	5:F:166:VAL:HG22	2.09	0.53
1:B:183:VAL:HG13	3:D:488:GLU:OE2	2.09	0.53
3:D:354:LEU:O	3:D:358:ILE:HG12	2.09	0.53
3:D:498:LEU:HD11	3:D:543:VAL:HG22	1.91	0.53
1:B:63:PHE:CE1	3:D:604:LYS:HA	2.44	0.53
2:C:45:LEU:HD22	2:C:443:LYS:HD2	1.91	0.53
2:C:751:ARG:HG2	2:C:856:VAL:HG22	1.89	0.53
2:C:910:THR:CG2	3:D:730:VAL:HG23	2.37	0.53
2:C:1117:LYS:HE2	3:D:90:GLU:O	2.09	0.53
3:D:498:LEU:CD1	3:D:543:VAL:HG22	2.39	0.53
2:C:144:PHE:O	2:C:411:ILE:HD13	2.09	0.53
3:D:26:GLY:HA3	3:D:51:ILE:HG23	1.91	0.53
3:D:844:THR:H	3:D:847:GLU:HB2	1.74	0.53
5:F:241:VAL:HG22	5:F:289:ILE:HD13	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:412:ARG:NH1	5:F:322:ARG:NH1	2.57	0.53
2:C:1001:LEU:HD21	2:C:1016:VAL:HG11	1.91	0.53
3:D:6:PHE:CD1	3:D:1257:LYS:HE3	2.44	0.53
3:D:759:TYR:CE1	3:D:766:HIS:HA	2.44	0.53
3:D:1275:PRO:HG3	4:E:76:VAL:CG1	2.39	0.53
5:F:272:LYS:HB2	7:J:84:MET:CE	2.39	0.53
1:A:108:GLY:HA2	1:A:121:PRO:HB3	1.90	0.52
1:B:84:VAL:HB	1:B:199:LYS:CD	2.37	0.52
3:D:66:LYS:HG2	3:D:66:LYS:O	2.08	0.52
3:D:745:LEU:O	3:D:749:GLU:HG2	2.08	0.52
3:D:850:ILE:O	3:D:853:HIS:HB2	2.09	0.52
1:A:40:ARG:NH1	1:B:33:THR:CG2	2.69	0.52
1:B:68:GLY:O	1:B:129:ASN:N	2.39	0.52
2:C:510:VAL:HG12	2:C:568:ASP:C	2.29	0.52
3:D:737:VAL:CG1	3:D:738:PRO:HD2	2.39	0.52
3:D:741:LYS:NZ	3:D:818:GLY:O	2.42	0.52
3:D:927:ASP:HB3	3:D:935:VAL:HG11	1.91	0.52
3:D:1153:LYS:O	3:D:1157:VAL:HG23	2.09	0.52
5:F:170:LEU:HA	5:F:173:ILE:HG12	1.90	0.52
8:O:16:DT:H5'	8:O:16:DT:C6	2.44	0.52
1:A:30:PHE:CE1	1:B:40:ARG:HG3	2.44	0.52
2:C:911:HIS:O	2:C:914:PRO:HD2	2.09	0.52
3:D:287:GLN:HG2	3:D:288:LYS:HZ2	1.75	0.52
3:D:1088:ARG:HA	3:D:1114:GLU:OE1	2.08	0.52
3:D:1088:ARG:HD2	3:D:1111:GLN:HB3	1.90	0.52
5:F:272:LYS:HE2	7:J:84:MET:HE2	1.92	0.52
2:C:613:GLU:HB3	2:C:708:LYS:HD3	1.91	0.52
2:C:766:ASN:HB3	5:F:465:LEU:HD21	1.90	0.52
2:C:1041:SER:HB3	2:C:1044:THR:O	2.09	0.52
3:D:890:CYS:SG	3:D:892:THR:HG22	2.49	0.52
4:E:35:PRO:HG2	4:E:40:LEU:HD11	1.91	0.52
1:B:124:HIS:CE1	1:B:127:THR:HG23	2.45	0.52
1:B:151:GLN:HG2	1:B:151:GLN:O	2.09	0.52
2:C:729:SER:HA	2:C:895:MET:CE	2.38	0.52
3:D:139:VAL:O	15:D:2101:HOH:O	2.19	0.52
3:D:1128:PRO:HG3	3:D:1206:PRO:CB	2.39	0.52
1:B:202:ILE:HG12	1:B:206:ASP:HB2	1.91	0.52
2:C:33:ALA:HB2	2:C:966:PRO:HG3	1.92	0.52
2:C:449:LEU:HD12	2:C:449:LEU:N	2.25	0.52
3:D:28:VAL:HG11	3:D:319:VAL:HG21	1.92	0.52
3:D:873:THR:O	3:D:877:VAL:HG23	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:F:234:LEU:CD2	5:F:270:VAL:HG21	2.39	0.52
5:F:359:ILE:HG22	5:F:360:SER:N	2.24	0.52
9:P:3:DC:H2''	9:P:4:DA:C8	2.45	0.52
1:A:22:VAL:HG23	1:A:193:ILE:HG22	1.92	0.52
2:C:560:GLU:CG	2:C:561:PHE:H	2.22	0.52
2:C:1028:VAL:O	2:C:1032:ILE:HG22	2.09	0.52
3:D:73:ILE:HD12	7:J:45:ALA:HB2	1.90	0.52
3:D:91:ARG:O	3:D:321:PRO:HG3	2.10	0.52
9:P:17:DT:O5'	1:T:290:GLY:HA3	2.09	0.52
1:A:14:VAL:HG13	1:A:15:ALA:H	1.74	0.52
1:A:70:LYS:HD3	1:A:127:THR:HG21	1.92	0.52
2:C:239:ILE:CG2	2:C:253:LEU:HD22	2.40	0.52
3:D:271:ASP:HA	3:D:303:GLN:NE2	2.23	0.52
3:D:631:ALA:O	3:D:666:THR:HA	2.10	0.52
3:D:676:LEU:HD12	3:D:676:LEU:N	2.25	0.52
3:D:881:GLN:HE22	3:D:1250:LYS:HE2	1.75	0.52
5:F:174:GLY:HA2	5:F:239:ARG:CZ	2.40	0.52
5:F:201:LEU:HD11	5:F:219:MET:CB	2.40	0.52
5:F:290:ARG:HH11	11:F:506:EDO:H22	1.74	0.52
1:A:11:GLU:OE1	1:A:205:ARG:NE	2.43	0.52
2:C:269:TYR:CD2	2:C:278:PRO:HB3	2.45	0.52
2:C:398:GLN:HB3	2:C:403:ILE:HG22	1.92	0.52
3:D:47:PHE:CD1	3:D:322:PRO:HB3	2.44	0.52
3:D:585:LEU:HD12	3:D:692:GLN:HE21	1.75	0.52
3:D:1037:GLU:OE2	3:D:1212:THR:HB	2.09	0.52
3:D:1056:LEU:HD21	3:D:1063:PHE:CD1	2.45	0.52
5:F:290:ARG:NH1	11:F:506:EDO:C1	2.73	0.52
5:F:293:ILE:O	5:F:297:MET:HG3	2.09	0.52
1:A:9:LEU:HD23	1:B:221:LEU:C	2.30	0.52
2:C:174:PRO:HA	2:C:196:ILE:HG23	1.92	0.52
12:C:1205:RFP:O11	12:C:1205:RFP:HC43	2.10	0.52
3:D:365:ILE:HD13	5:F:235:GLU:HG2	1.91	0.52
5:F:313:VAL:CG2	5:F:351:ILE:HD13	2.40	0.52
7:J:31:ARG:HG2	7:J:41:ASP:OD1	2.10	0.52
8:O:1:DG:H2''	8:O:2:DC:H5'	1.92	0.52
2:C:496:ARG:HH21	2:C:521:TYR:CB	2.23	0.51
2:C:720:HIS:O	3:D:432:VAL:HG11	2.10	0.51
2:C:754:LYS:HD3	3:D:39:LEU:HD12	1.92	0.51
2:C:508:ARG:HH11	2:C:570:MET:HE2	1.74	0.51
3:D:630:ARG:HH11	11:D:2011:EDO:H21	1.76	0.51
3:D:740:GLN:H	3:D:740:GLN:NE2	2.08	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:P:17:DT:H5''	1:T:290:GLY:N	2.25	0.51
1:A:99:LYS:HE3	1:A:109:ASP:OD1	2.09	0.51
2:C:652:MET:CE	2:C:658:ARG:HD2	2.40	0.51
2:C:849:ASP:O	2:C:850:ASP:O	2.28	0.51
2:C:1031:LYS:NZ	10:C:1203:SO4:S	2.83	0.51
2:C:1078:GLU:OE2	3:D:547:LEU:HB2	2.11	0.51
7:J:58:ASN:HD21	7:J:60:LEU:HD12	1.76	0.51
7:J:90:SER:N	7:J:93:GLU:OE1	2.36	0.51
2:C:148:PHE:HE1	2:C:380:ILE:HD11	1.75	0.51
2:C:176:VAL:HG13	2:C:307:VAL:HG11	1.92	0.51
2:C:578:VAL:HG13	2:C:582:THR:CG2	2.41	0.51
2:C:771:VAL:HG22	2:C:772:LEU:CD1	2.23	0.51
2:C:911:HIS:ND1	3:D:579:LEU:O	2.43	0.51
3:D:73:ILE:HG12	3:D:82:VAL:HG11	1.92	0.51
3:D:137:THR:HG22	3:D:253:THR:C	2.30	0.51
3:D:642:PRO:HD3	3:D:656:LYS:CD	2.34	0.51
3:D:739:PRO:HD3	3:D:791:PHE:CE2	2.45	0.51
5:F:317:LEU:O	5:F:317:LEU:HD23	2.10	0.51
5:F:465:LEU:O	5:F:466:ASP:HB2	2.10	0.51
1:B:28:PRO:HD3	1:B:189:PHE:CD1	2.46	0.51
2:C:973:GLU:CA	3:D:732:MET:HE3	2.40	0.51
3:D:579:LEU:HA	3:D:806:ALA:HB1	1.93	0.51
3:D:930:ASP:OD2	3:D:931:ALA:N	2.44	0.51
3:D:1119:PRO:HA	3:D:1122:VAL:CG1	2.40	0.51
3:D:1122:VAL:HG23	3:D:1126:GLN:NE2	2.24	0.51
5:F:289:ILE:O	5:F:293:ILE:HG13	2.10	0.51
7:J:28:GLN:HG2	7:J:46:ASP:HA	1.91	0.51
8:O:15:DT:OP2	8:O:15:DT:H6	1.93	0.51
2:C:433:GLN:CG	2:C:670:ASN:HB2	2.41	0.51
3:D:735:VAL:O	3:D:840:ARG:NE	2.39	0.51
8:O:12:DG:H2''	8:O:13:DT:C5'	2.41	0.51
8:O:15:DT:H2''	8:O:16:DT:OP2	2.11	0.51
2:C:151:MET:SD	2:C:155:GLY:HA2	2.50	0.51
2:C:747:GLU:HG3	2:C:859:LEU:HD21	1.91	0.51
2:C:796:LYS:HB3	2:C:826:THR:O	2.10	0.51
2:C:797:VAL:CG1	2:C:823:VAL:HB	2.40	0.51
3:D:225:THR:HG21	3:D:244:LEU:HD11	1.93	0.51
3:D:590:THR:HG23	3:D:630:ARG:HE	1.75	0.51
3:D:687:MET:HE2	3:D:695:ILE:CD1	2.41	0.51
3:D:1191:ASN:OD1	3:D:1202:ALA:HB3	2.11	0.51
5:F:338:ALA:HB1	5:F:343:ILE:O	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:F:394:LEU:HB2	5:F:464:TYR:CD1	2.46	0.51
7:J:50:ILE:HG22	7:J:64:LEU:HD11	1.93	0.51
1:A:147:VAL:HG12	1:A:168:TYR:HE2	1.76	0.51
1:A:219:PHE:HE1	1:B:38:LEU:HD21	1.75	0.51
2:C:1086:ASP:OD1	2:C:1107:GLY:N	2.41	0.51
3:D:43:LYS:O	3:D:44:ASP:HB2	2.11	0.51
3:D:641:ARG:O	3:D:682:PHE:HB2	2.11	0.51
1:A:27:GLU:OE2	1:B:144:ARG:NH2	2.44	0.50
1:B:33:THR:OG1	1:B:34:LEU:N	2.43	0.50
1:A:138:LEU:HD12	1:A:138:LEU:N	2.26	0.50
2:C:215:VAL:HG23	2:C:223:GLN:CB	2.41	0.50
2:C:965:THR:O	2:C:965:THR:OG1	2.25	0.50
3:D:642:PRO:HG3	3:D:661:TRP:CD2	2.46	0.50
3:D:738:PRO:HA	3:D:791:PHE:HD2	1.76	0.50
1:B:60:LEU:HD22	1:B:60:LEU:N	2.26	0.50
1:B:105:VAL:HG12	1:B:125:ILE:HG21	1.93	0.50
2:C:196:ILE:HG23	2:C:196:ILE:O	2.11	0.50
2:C:712:VAL:CG1	2:C:925:THR:HG23	2.41	0.50
3:D:249:GLY:HA2	3:D:252:PHE:CE2	2.47	0.50
1:A:36:ASN:CB	2:C:1007:GLY:HA3	2.41	0.50
3:D:444:PRO:HD2	3:D:447:MET:CE	2.41	0.50
3:D:951:LEU:C	3:D:956:ILE:HD11	2.31	0.50
7:J:97:LEU:HD23	7:J:97:LEU:O	2.11	0.50
1:T:264:LEU:HB3	1:T:269:VAL:HG21	1.92	0.50
1:B:30:PHE:HA	1:B:33:THR:HG23	1.92	0.50
1:B:85:VAL:HG23	1:B:117:THR:O	2.12	0.50
2:C:372:VAL:O	2:C:376:ILE:HG12	2.12	0.50
2:C:638:THR:HG23	2:C:688:GLU:HA	1.91	0.50
2:C:639:GLY:HA3	2:C:653:ALA:HA	1.92	0.50
2:C:910:THR:O	2:C:914:PRO:HD3	2.12	0.50
2:C:931:ALA:HB1	2:C:961:SER:O	2.11	0.50
5:F:164:ASP:OD1	5:F:165:SER:N	2.44	0.50
2:C:29:ARG:HG2	2:C:964:ALA:HB2	1.93	0.50
2:C:199:ARG:NH2	2:C:295:LYS:O	2.40	0.50
3:D:118:LEU:HB2	3:D:120:LEU:HD13	1.93	0.50
5:F:254:ALA:HB3	5:F:257:ASP:OD2	2.11	0.50
8:O:1:DG:H2''	8:O:2:DC:C5'	2.41	0.50
1:A:79:ASN:O	1:A:123:MET:HE1	2.11	0.50
1:A:214:THR:HG23	1:B:231:HIS:CG	2.47	0.50
2:C:169:GLN:HB2	2:C:427:LEU:HD21	1.94	0.50
2:C:726:ILE:O	2:C:887:GLY:N	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:898:LEU:HD23	2:C:1001:LEU:CD2	2.42	0.50
2:C:913:VAL:HB	2:C:914:PRO:HD3	1.93	0.50
1:A:5:GLN:HG3	1:A:25:PRO:CG	2.42	0.50
1:B:172:LEU:HD12	3:D:620:MET:SD	2.52	0.50
2:C:139:LYS:NZ	2:C:401:GLU:O	2.45	0.50
2:C:215:VAL:HG23	2:C:223:GLN:HB3	1.94	0.50
3:D:656:LYS:HB2	3:D:659:ASP:O	2.12	0.50
3:D:1081:LEU:HB3	3:D:1113:MET:CE	2.42	0.50
1:B:44:SER:HA	1:B:145:GLY:HA2	1.92	0.50
2:C:239:ILE:HG21	2:C:253:LEU:HD22	1.93	0.50
3:D:269:ASP:HB3	3:D:272:ALA:HB3	1.93	0.50
3:D:463:LEU:HB2	3:D:465:HIS:HD2	1.77	0.50
3:D:848:TYR:O	3:D:852:THR:HG23	2.12	0.50
1:A:119:HIS:CD2	1:A:201:SER:HA	2.47	0.49
2:C:44:LEU:HD13	2:C:440:LEU:HD21	1.94	0.49
2:C:132:ASN:O	2:C:136:GLY:N	2.43	0.49
2:C:250:MET:O	2:C:253:LEU:HG	2.12	0.49
2:C:444:ARG:NH1	2:C:580:VAL:HG23	2.27	0.49
2:C:480:PRO:O	2:C:485:ILE:HG12	2.11	0.49
2:C:493:VAL:HG12	2:C:494:TYR:CD1	2.47	0.49
5:F:253:MET:CE	5:F:297:MET:HA	2.39	0.49
1:B:47:PRO:HB3	1:B:144:ARG:HD2	1.94	0.49
2:C:361:ILE:HD12	2:C:361:ILE:N	2.27	0.49
2:C:506:PRO:HB2	2:C:572:VAL:HG11	1.92	0.49
2:C:980:LEU:HB3	2:C:995:ALA:HA	1.94	0.49
3:D:76:GLU:CD	3:D:76:GLU:H	2.15	0.49
5:F:462:ARG:HH12	5:F:465:LEU:CD1	2.23	0.49
5:F:465:LEU:HD23	5:F:466:ASP:N	2.26	0.49
2:C:44:LEU:CD1	2:C:440:LEU:HD21	2.42	0.49
2:C:704:MET:HE3	2:C:706:LEU:HD21	1.94	0.49
2:C:895:MET:HG3	2:C:896:PRO:CD	2.39	0.49
2:C:1029:ASP:OD1	3:D:520:LYS:HD2	2.12	0.49
3:D:58:TRP:CD1	3:D:68:VAL:HG22	2.47	0.49
3:D:150:THR:O	3:D:154:GLU:HG3	2.13	0.49
3:D:183:GLU:O	3:D:187:GLU:HG2	2.12	0.49
3:D:591:LEU:HD23	3:D:666:THR:HG22	1.94	0.49
3:D:651:PHE:C	3:D:653:ASN:H	2.15	0.49
3:D:726:SER:OG	3:D:728:VAL:HG23	2.11	0.49
3:D:1034:GLU:OE2	3:D:1042:ARG:N	2.44	0.49
1:A:146:TYR:CG	2:C:734:GLU:HG2	2.47	0.49
1:B:105:VAL:HB	1:B:125:ILE:HG23	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:193:VAL:HG12	2:C:205:PHE:HB2	1.94	0.49
2:C:1103:ILE:HD12	3:D:548:SER:HA	1.93	0.49
3:D:438:LEU:HA	3:D:525:HIS:CD2	2.47	0.49
1:A:130:ASP:OD1	1:A:130:ASP:N	2.44	0.49
1:B:50:ALA:HB3	1:B:168:TYR:HD2	1.77	0.49
2:C:494:TYR:HD2	2:C:572:VAL:HG21	1.76	0.49
2:C:623:LEU:H	2:C:623:LEU:CD1	2.25	0.49
3:D:114:LEU:HG	3:D:312:MET:HE2	1.95	0.49
3:D:373:MET:SD	5:F:256:LEU:HB3	2.53	0.49
8:O:15:DT:H1'	8:O:16:DT:H5''	1.94	0.49
1:A:112:PRO:HB2	1:A:116:VAL:HG23	1.95	0.49
2:C:231:ALA:HB1	2:C:287:LEU:HD11	1.95	0.49
2:C:390:VAL:O	2:C:394:ARG:HB2	2.13	0.49
2:C:1012:TYR:CG	3:D:727:GLY:HA3	2.48	0.49
3:D:28:VAL:HG21	3:D:46:LEU:HD23	1.94	0.49
3:D:527:LEU:HD21	3:D:581:MET:HE3	1.95	0.49
3:D:527:LEU:HD13	3:D:712:VAL:HG12	1.94	0.49
3:D:752:ALA:HB1	3:D:773:LEU:CD2	2.42	0.49
5:F:345:PRO:HA	5:F:348:VAL:CG1	2.42	0.49
5:F:365:ILE:HD12	5:F:366:GLY:N	2.27	0.49
7:J:50:ILE:CG2	7:J:64:LEU:HD11	2.43	0.49
9:P:23:DA:H2''	9:P:24:DA:O4'	2.12	0.49
2:C:41:VAL:HG13	2:C:493:VAL:CG1	2.43	0.49
2:C:51:SER:HB2	2:C:371:THR:OG1	2.12	0.49
2:C:227:VAL:CG2	2:C:268:ILE:HD11	2.42	0.49
2:C:560:GLU:HG3	2:C:561:PHE:N	2.27	0.49
2:C:758:GLU:CG	2:C:798:THR:HG22	2.34	0.49
2:C:882:ASN:HD21	2:C:1019:MET:CE	2.26	0.49
2:C:967:VAL:HG23	2:C:968:PHE:H	1.78	0.49
2:C:1032:ILE:HG21	3:D:520:LYS:HD3	1.93	0.49
2:C:1043:ILE:HG23	2:C:1044:THR:N	2.28	0.49
5:F:215:GLN:O	5:F:219:MET:HG2	2.13	0.49
5:F:324:LEU:CD2	5:F:328:LEU:HD22	2.42	0.49
5:F:462:ARG:O	5:F:462:ARG:HD3	2.13	0.49
1:A:24:GLU:CD	1:A:191:LYS:HD3	2.33	0.49
2:C:454:LEU:HD22	2:C:459:ALA:HB2	1.93	0.49
2:C:876:LEU:HD13	2:C:886:ILE:HG13	1.94	0.49
5:F:423:GLN:HG3	5:F:425:ARG:HE	1.78	0.49
1:A:192:LEU:C	1:A:192:LEU:HD12	2.33	0.49
2:C:32:PHE:O	2:C:34:LYS:HD2	2.13	0.49
2:C:496:ARG:HH21	2:C:521:TYR:HB2	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:789:ASP:HA	2:C:830:VAL:CG1	2.43	0.49
2:C:1073:ALA:HB1	3:D:1258:LEU:HG	1.94	0.49
3:D:88:ARG:O	3:D:322:PRO:HD2	2.12	0.49
3:D:397:ARG:HG3	3:D:397:ARG:O	2.11	0.49
5:F:164:ASP:OD1	5:F:166:VAL:N	2.43	0.49
1:A:24:GLU:HB3	1:A:191:LYS:HG3	1.95	0.48
1:B:71:GLU:HB3	1:B:76:ILE:HG13	1.95	0.48
2:C:23:VAL:HB	2:C:26:ALA:HB2	1.94	0.48
2:C:763:ASP:CB	2:C:821:ARG:HH22	2.18	0.48
3:D:24:SER:O	7:J:57:ARG:HD2	2.13	0.48
3:D:236:VAL:O	3:D:236:VAL:HG12	2.13	0.48
7:J:40:PHE:CZ	7:J:58:ASN:HB2	2.47	0.48
2:C:589:GLU:HB3	2:C:968:PHE:CD1	2.48	0.48
3:D:103:HIS:ND1	3:D:105:TRP:HB2	2.28	0.48
3:D:173:ARG:NH2	3:D:201:GLY:HA2	2.29	0.48
3:D:499:ASN:HB2	3:D:509:ILE:HG12	1.95	0.48
3:D:1266:SER:HA	3:D:1269:ARG:NH1	2.26	0.48
1:A:113:PRO:O	1:A:116:VAL:HG22	2.13	0.48
2:C:445:ARG:C	2:C:446:LEU:HD23	2.33	0.48
3:D:116:TYR:CB	3:D:298:VAL:HG11	2.43	0.48
2:C:1064:CYS:O	2:C:1068:GLN:HG3	2.13	0.48
3:D:153:ALA:O	3:D:157:VAL:HG23	2.13	0.48
2:C:334:GLU:O	2:C:338:ARG:HG2	2.13	0.48
2:C:916:ARG:NH2	10:C:1201:SO4:O1	2.46	0.48
2:C:1112:PHE:CE2	3:D:1255:ILE:HG22	2.49	0.48
3:D:1140:GLN:NE2	3:D:1155:ILE:HD12	2.29	0.48
5:F:290:ARG:NH1	11:F:506:EDO:H11	2.29	0.48
1:A:70:LYS:HB3	1:A:71:GLU:OE1	2.13	0.48
1:A:111:VAL:O	1:A:111:VAL:HG23	2.14	0.48
2:C:148:PHE:CE1	2:C:380:ILE:HD11	2.48	0.48
2:C:178:PHE:O	2:C:358:VAL:HG13	2.13	0.48
2:C:792:ILE:N	2:C:792:ILE:HD12	2.29	0.48
2:C:1034:ALA:O	2:C:1054:PHE:HE2	1.96	0.48
3:D:590:THR:CG2	3:D:630:ARG:HE	2.25	0.48
3:D:675:LEU:HD21	3:D:718:ALA:CB	2.43	0.48
3:D:884:ILE:HD11	3:D:886:ARG:NE	2.29	0.48
3:D:1054:VAL:CG2	3:D:1065:ILE:HG23	2.44	0.48
1:A:2:LEU:HD12	1:B:143:GLY:CA	2.42	0.48
1:B:55:ARG:HG2	1:B:137:GLU:HB3	1.96	0.48
2:C:412:ARG:CZ	5:F:322:ARG:HH11	2.27	0.48
2:C:727:ILE:HA	2:C:888:LYS:O	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:222:ILE:HG23	3:D:244:LEU:HD23	1.95	0.48
3:D:1193:ARG:O	3:D:1195:VAL:N	2.47	0.48
5:F:179:LEU:HB3	5:F:183:GLU:HB2	1.95	0.48
1:B:213:GLY:HA2	1:B:216:VAL:HG12	1.96	0.48
2:C:203:LEU:HD11	2:C:217:ILE:HB	1.96	0.48
2:C:1045:GLN:HG3	2:C:1090:ARG:HH21	1.79	0.48
3:D:461:VAL:HG23	3:D:472:ALA:HB2	1.96	0.48
1:A:55:ARG:HH22	1:A:158:GLU:HB2	1.79	0.48
1:A:68:GLY:HA3	1:A:129:ASN:HD21	1.79	0.48
1:B:112:PRO:CB	1:B:116:VAL:HG23	2.43	0.48
2:C:29:ARG:HD3	2:C:964:ALA:HB2	1.95	0.48
2:C:41:VAL:HG13	2:C:493:VAL:HG12	1.96	0.48
2:C:176:VAL:HG12	2:C:195:VAL:CG2	2.30	0.48
3:D:706:ILE:HD11	4:E:36:PRO:HA	1.94	0.48
3:D:735:VAL:CG2	3:D:798:ILE:HD11	2.44	0.48
1:A:64:THR:O	1:A:73:VAL:HG23	2.14	0.48
3:D:28:VAL:CG1	3:D:319:VAL:HG21	2.44	0.48
5:F:199:GLN:HG2	7:J:82:TRP:CE2	2.49	0.48
5:F:324:LEU:HB3	5:F:332:PRO:HG3	1.96	0.48
8:O:6:DA:C1'	8:O:7:DC:H5'	2.44	0.48
1:A:84:VAL:HG12	1:A:120:ASN:CG	2.35	0.47
2:C:472:GLY:H	2:C:577:MET:HA	1.78	0.47
2:C:571:ASP:HB3	2:C:576:GLN:HE21	1.78	0.47
2:C:602:MET:CE	2:C:883:LYS:HB3	2.33	0.47
2:C:609:LEU:HD12	2:C:708:LYS:HE3	1.94	0.47
2:C:1039:PRO:HB2	2:C:1048:LEU:HD21	1.96	0.47
3:D:1181:LEU:HD22	3:D:1207:VAL:HG11	1.96	0.47
5:F:277:LYS:HB3	5:F:279:TYR:CD2	2.49	0.47
1:B:32:TYR:CE1	2:C:1005:ARG:HD3	2.49	0.47
1:B:89:ASP:O	1:B:90:ASP:HB2	2.14	0.47
2:C:421:PHE:O	2:C:425:SER:HB3	2.14	0.47
1:A:40:ARG:NH2	2:C:894:ASP:HB3	2.29	0.47
1:A:100:GLN:OE1	1:A:101:GLY:N	2.35	0.47
2:C:31:SER:HA	2:C:964:ALA:O	2.14	0.47
2:C:531:VAL:HG22	2:C:552:VAL:CG1	2.43	0.47
2:C:774:ASP:HA	2:C:782:ARG:NH2	2.29	0.47
2:C:1045:GLN:HG2	2:C:1087:THR:CG2	2.35	0.47
7:J:74:LYS:HB2	7:J:74:LYS:HE2	1.73	0.47
1:A:93:VAL:HG22	1:A:113:PRO:HG2	1.96	0.47
1:B:147:VAL:HG13	1:B:147:VAL:O	2.15	0.47
2:C:531:VAL:HG13	2:C:552:VAL:CG1	2.36	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:92:MET:HG2	3:D:321:PRO:HD3	1.97	0.47
3:D:118:LEU:CB	3:D:120:LEU:HD13	2.44	0.47
3:D:133:ALA:CB	3:D:234:LEU:HD21	2.45	0.47
3:D:945:ASP:N	3:D:946:PRO:HD2	2.29	0.47
3:D:1275:PRO:CG	4:E:76:VAL:HG11	2.42	0.47
5:F:306:ILE:HG22	5:F:310:MET:HB3	1.97	0.47
9:P:20:DG:H2''	9:P:21:DT:H5'	1.96	0.47
1:A:83:LEU:HD23	1:A:123:MET:SD	2.54	0.47
1:B:21:PHE:HB2	1:B:194:ILE:CG2	2.44	0.47
2:C:154:LYS:HD2	2:C:630:GLY:HA3	1.95	0.47
2:C:935:TRP:CA	2:C:983:THR:HG23	2.44	0.47
3:D:102:THR:HG23	3:D:258:ALA:HB2	1.96	0.47
3:D:104:ILE:HD11	3:D:386:ARG:HG2	1.96	0.47
3:D:327:MET:CE	5:F:304:ILE:HD11	2.42	0.47
3:D:1252:ASN:HB3	3:D:1257:LYS:HB3	1.97	0.47
2:C:126:VAL:HG12	2:C:127:THR:N	2.30	0.47
2:C:159:ILE:HG13	2:C:422:PHE:HB3	1.96	0.47
3:D:753:ASP:O	3:D:757:ARG:N	2.42	0.47
3:D:915:VAL:O	3:D:920:PHE:HD2	1.98	0.47
2:C:36:ARG:O	2:C:38:PRO:HD3	2.15	0.47
2:C:70:GLU:CD	2:C:70:GLU:H	2.17	0.47
2:C:433:GLN:HE21	2:C:670:ASN:N	2.10	0.47
2:C:587:PHE:HB3	2:C:590:HIS:HD2	1.80	0.47
2:C:973:GLU:CB	3:D:732:MET:HE3	2.45	0.47
2:C:1043:ILE:HD13	3:D:412:ARG:HH22	1.79	0.47
3:D:278:ARG:HA	3:D:281:ILE:HD11	1.97	0.47
5:F:325:LEU:O	5:F:325:LEU:HD23	2.15	0.47
1:B:139:VAL:HG21	1:B:161:ARG:HH21	1.80	0.47
2:C:510:VAL:CG1	2:C:567:VAL:HG12	2.44	0.47
2:C:530:HIS:HB3	2:C:568:ASP:OD2	2.15	0.47
2:C:780:ILE:HD13	2:C:841:ILE:HG21	1.97	0.47
2:C:792:ILE:HD12	2:C:792:ILE:H	1.79	0.47
3:D:25:TYR:C	7:J:57:ARG:HG3	2.34	0.47
3:D:39:LEU:HD13	3:D:335:PHE:HZ	1.80	0.47
3:D:79:GLY:HA2	7:J:54:TRP:CH2	2.50	0.47
3:D:613:SER:N	3:D:617:GLU:OE1	2.43	0.47
3:D:686:GLN:O	3:D:686:GLN:HG3	2.15	0.47
3:D:735:VAL:HG11	3:D:816:LEU:CD2	2.45	0.47
5:F:214:GLN:HE21	5:F:214:GLN:HA	1.80	0.47
1:B:182:ARG:O	1:B:186:ARG:O	2.33	0.47
2:C:709:ASN:C	2:C:710:LEU:HD12	2.35	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:723:GLU:O	2:C:724:ASP:HB2	2.15	0.47
2:C:805:LEU:HD22	2:C:805:LEU:N	2.30	0.47
1:A:147:VAL:HG13	1:A:147:VAL:O	2.15	0.47
2:C:552:VAL:HG12	2:C:553:ARG:N	2.30	0.47
2:C:566:GLN:OE1	2:C:566:GLN:HA	2.15	0.47
2:C:710:LEU:HD13	2:C:1021:ILE:CG1	2.45	0.47
3:D:12:ILE:HG12	3:D:1221:TRP:CZ2	2.50	0.47
3:D:143:MET:HG2	3:D:251:TYR:CE1	2.50	0.47
3:D:245:GLN:O	3:D:249:GLY:HA3	2.15	0.47
3:D:330:LEU:HD22	3:D:330:LEU:N	2.29	0.47
3:D:406:LEU:HB3	3:D:413:PHE:HE1	1.79	0.47
3:D:694:ARG:CZ	3:D:694:ARG:HB3	2.44	0.47
3:D:1063:PHE:HB2	3:D:1081:LEU:HB2	1.97	0.47
5:F:291:GLN:HG3	5:F:292:ALA:N	2.30	0.47
8:O:19:DA:H2'	8:O:20:DT:C6	2.50	0.47
1:A:106:THR:HA	1:A:125:ILE:HD13	1.98	0.46
1:B:73:VAL:O	1:B:77:ILE:HG13	2.15	0.46
3:D:48:CYS:SG	3:D:50:LYS:HB3	2.55	0.46
3:D:612:TYR:OH	3:D:627:LEU:HG	2.15	0.46
1:A:70:LYS:CB	1:A:127:THR:HG23	2.39	0.46
1:A:113:PRO:HD2	1:A:116:VAL:CG2	2.43	0.46
1:B:102:PRO:CG	1:B:131:LYS:H	2.27	0.46
2:C:141:GLN:CD	2:C:406:GLN:HG2	2.35	0.46
2:C:434:ASN:O	2:C:608:PRO:HD3	2.15	0.46
3:D:58:TRP:CZ3	3:D:71:LYS:HE3	2.50	0.46
3:D:231:PRO:O	3:D:232:LYS:HB2	2.15	0.46
3:D:646:LEU:HD23	3:D:646:LEU:O	2.15	0.46
7:J:40:PHE:HZ	7:J:58:ASN:HB2	1.80	0.46
8:O:4:DT:H2''	8:O:5:DG:C8	2.49	0.46
1:A:192:LEU:HD12	1:A:192:LEU:O	2.15	0.46
1:B:74:THR:OG1	3:D:608:GLU:HG3	2.15	0.46
1:B:137:GLU:C	1:B:138:LEU:HD12	2.36	0.46
3:D:886:ARG:HH12	14:D:2012:GLU:CB	2.28	0.46
5:F:449:MET:O	5:F:453:ARG:HG3	2.15	0.46
1:A:43:LEU:HD11	1:A:174:VAL:HB	1.96	0.46
1:A:56:ILE:HB	1:A:59:VAL:CG2	2.45	0.46
2:C:30:VAL:CG1	2:C:954:LEU:HG	2.44	0.46
2:C:176:VAL:O	2:C:176:VAL:HG23	2.14	0.46
2:C:727:ILE:HG22	2:C:888:LYS:HB3	1.96	0.46
2:C:777:GLU:CD	2:C:777:GLU:H	2.18	0.46
2:C:1044:THR:OG1	2:C:1046:GLN:HG3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:C:1205:RFP:H20C	12:C:1205:RFP:H323	1.71	0.46
5:F:404:THR:HB	5:F:457:ARG:HH21	1.80	0.46
7:J:69:VAL:N	7:J:70:PRO:HD3	2.30	0.46
2:C:491:LEU:HG	2:C:495:ALA:HB3	1.98	0.46
2:C:891:PRO:HB2	2:C:893:GLU:CG	2.44	0.46
3:D:12:ILE:HD12	3:D:1237:ALA:CB	2.46	0.46
3:D:287:GLN:HG3	3:D:288:LYS:HD3	1.97	0.46
3:D:1231:THR:O	3:D:1235:THR:HG23	2.15	0.46
5:F:409:GLU:O	5:F:413:VAL:HG23	2.16	0.46
1:B:32:TYR:CZ	2:C:1005:ARG:HD3	2.51	0.46
1:B:226:ASN:O	1:B:227:ALA:HB3	2.15	0.46
2:C:404:THR:H	2:C:407:THR:HG1	1.60	0.46
2:C:614:ALA:HA	2:C:705:ALA:CB	2.45	0.46
3:D:131:PHE:C	3:D:256:MET:HE1	2.35	0.46
3:D:262:LYS:HG3	3:D:310:MET:CE	2.46	0.46
5:F:445:GLU:O	5:F:449:MET:HG2	2.15	0.46
1:B:52:THR:HG21	1:B:141:GLU:OE2	2.15	0.46
2:C:143:VAL:HA	2:C:406:GLN:HE22	1.81	0.46
2:C:204:GLU:HB2	2:C:216:ARG:NH1	2.30	0.46
2:C:1035:ARG:NH2	2:C:1047:PRO:HB3	2.30	0.46
3:D:171:GLU:O	3:D:175:GLN:HG3	2.16	0.46
3:D:819:MET:CE	3:D:821:GLY:HA2	2.46	0.46
1:A:45:SER:O	1:A:47:PRO:HD3	2.16	0.46
1:B:28:PRO:HA	1:B:29:GLY:HA2	1.51	0.46
1:B:210:SER:O	1:B:214:THR:HG23	2.16	0.46
2:C:375:LEU:CD1	2:C:427:LEU:HD22	2.44	0.46
3:D:108:LYS:O	3:D:108:LYS:HG3	2.16	0.46
3:D:1031:ARG:CZ	3:D:1035:LEU:HD21	2.46	0.46
3:D:1275:PRO:CB	4:E:79:LEU:HD11	2.43	0.46
7:J:73:LYS:C	7:J:74:LYS:HG3	2.36	0.46
1:B:77:ILE:O	1:B:81:LYS:HG3	2.16	0.46
2:C:935:TRP:HA	2:C:983:THR:H	1.81	0.46
2:C:1047:PRO:HD2	3:D:421:ARG:O	2.15	0.46
3:D:23:TRP:HB3	3:D:92:MET:HE3	1.98	0.46
3:D:452:PHE:CE1	3:D:491:ILE:HG12	2.51	0.46
3:D:735:VAL:HG12	3:D:840:ARG:CD	2.42	0.46
3:D:920:PHE:CZ	3:D:948:ILE:HG13	2.51	0.46
4:E:55:ALA:O	4:E:59:ARG:HG2	2.16	0.46
5:F:440:ARG:O	5:F:444:ILE:HG13	2.15	0.46
1:A:9:LEU:HD13	1:A:23:ILE:HG12	1.97	0.46
2:C:445:ARG:NH1	12:C:1205:RFP:C30	2.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:712:VAL:HA	2:C:906:ILE:HG13	1.98	0.46
3:D:320:ILE:CG1	3:D:321:PRO:HD2	2.45	0.46
3:D:581:MET:HE2	3:D:716:LYS:CA	2.34	0.46
5:F:345:PRO:HA	5:F:348:VAL:HG13	1.98	0.46
5:F:348:VAL:O	5:F:352:GLN:HG3	2.16	0.46
1:A:92:PRO:HB3	1:A:141:GLU:HG3	1.98	0.45
1:A:174:VAL:O	2:C:901:GLY:HA3	2.16	0.45
2:C:336:LEU:O	2:C:336:LEU:HD23	2.16	0.45
2:C:343:GLN:NE2	2:C:345:SER:O	2.49	0.45
2:C:627:ILE:HD12	2:C:628:ASP:N	2.31	0.45
2:C:1074:TYR:CZ	3:D:1258:LEU:HD21	2.51	0.45
3:D:190:LYS:HD2	3:D:192:ASP:HB3	1.97	0.45
3:D:238:GLU:HA	3:D:241:TYR:HB3	1.97	0.45
3:D:1249:LEU:HA	3:D:1260:PRO:HD2	1.98	0.45
1:A:107:ALA:HB3	1:A:121:PRO:HA	1.99	0.45
2:C:166:VAL:HG11	2:C:372:VAL:HG23	1.99	0.45
2:C:473:ARG:NH1	2:C:524:ALA:HA	2.31	0.45
2:C:523:THR:HG23	2:C:526:GLU:OE2	2.15	0.45
3:D:191:SER:O	3:D:195:ARG:HG2	2.16	0.45
3:D:278:ARG:O	3:D:281:ILE:HD12	2.16	0.45
3:D:1001:SER:O	3:D:1150:ILE:HD12	2.17	0.45
8:O:14:DG:H3'	1:T:258:VAL:CG1	2.45	0.45
1:A:9:LEU:HD13	1:A:23:ILE:HG13	1.97	0.45
1:A:137:GLU:C	1:A:138:LEU:HD12	2.37	0.45
2:C:32:PHE:HE1	2:C:963:VAL:CG1	2.29	0.45
3:D:630:ARG:HD3	11:D:2011:EDO:H21	1.98	0.45
3:D:796:ASN:HD22	3:D:799:ILE:H	1.64	0.45
3:D:875:ARG:HH22	3:D:1033:GLN:CD	2.20	0.45
3:D:1010:THR:O	3:D:1010:THR:OG1	2.30	0.45
1:A:56:ILE:HG12	1:A:136:VAL:CB	2.42	0.45
1:B:185:GLN:HE21	1:B:185:GLN:HB2	1.53	0.45
2:C:444:ARG:NH1	2:C:580:VAL:CG2	2.79	0.45
2:C:481:GLU:OE2	2:C:598:MET:HG2	2.17	0.45
3:D:95:ILE:HD13	3:D:348:ILE:HG12	1.98	0.45
3:D:656:LYS:HB2	3:D:659:ASP:CB	2.46	0.45
3:D:664:GLU:HG3	3:D:664:GLU:O	2.17	0.45
4:E:80:VAL:HG12	4:E:81:GLU:N	2.32	0.45
7:J:69:VAL:HG12	7:J:69:VAL:O	2.15	0.45
1:B:96:TYR:O	1:B:110:ILE:HG13	2.16	0.45
1:B:230:GLU:OE1	1:B:230:GLU:HA	2.17	0.45
2:C:203:LEU:C	2:C:204:GLU:HG3	2.37	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:554:LYS:O	2:C:557:GLY:HA2	2.15	0.45
2:C:623:LEU:HD13	2:C:624:ARG:H	1.81	0.45
3:D:1170:ASP:O	3:D:1202:ALA:HA	2.16	0.45
4:E:26:TYR:HE1	4:E:29:PRO:HD3	1.80	0.45
1:A:46:ILE:HD12	1:A:210:SER:OG	2.17	0.45
1:A:111:VAL:O	1:A:111:VAL:CG2	2.65	0.45
1:B:174:VAL:HA	1:B:195:ASP:O	2.16	0.45
2:C:481:GLU:HG2	2:C:597:LEU:HD21	1.98	0.45
1:T:264:LEU:O	1:T:269:VAL:HG22	2.15	0.45
2:C:984:LEU:CD1	2:C:991:VAL:HG23	2.36	0.45
2:C:1043:ILE:HD13	3:D:412:ARG:NH2	2.32	0.45
2:C:1103:ILE:CD1	3:D:547:LEU:HB3	2.46	0.45
3:D:706:ILE:CD1	4:E:36:PRO:HB3	2.42	0.45
3:D:796:ASN:ND2	3:D:798:ILE:HB	2.25	0.45
3:D:1181:LEU:HD11	3:D:1213:LYS:HE2	1.99	0.45
3:D:1219:ASP:O	3:D:1242:ARG:NH2	2.50	0.45
1:A:24:GLU:HB3	1:A:191:LYS:CG	2.46	0.45
1:B:22:VAL:CG1	1:B:193:ILE:HD12	2.46	0.45
2:C:158:ILE:HD12	2:C:158:ILE:N	2.31	0.45
2:C:898:LEU:HD23	2:C:1001:LEU:HD23	1.99	0.45
2:C:1117:LYS:HD2	2:C:1117:LYS:HA	1.72	0.45
3:D:288:LYS:HD2	3:D:291:ARG:NH2	2.11	0.45
7:J:28:GLN:CG	7:J:46:ASP:HA	2.47	0.45
1:T:251:ILE:HA	1:T:272:VAL:CG2	2.40	0.45
1:B:8:THR:O	1:B:23:ILE:HA	2.17	0.45
2:C:51:SER:OG	2:C:371:THR:HG23	2.17	0.45
2:C:947:ALA:O	2:C:951:PRO:HD2	2.17	0.45
3:D:321:PRO:HD2	3:D:324:LEU:HD12	1.97	0.45
5:F:187:LEU:O	5:F:191:ILE:HG13	2.17	0.45
1:A:54:ILE:C	1:A:54:ILE:HD12	2.37	0.45
1:A:152:ASN:HD21	2:C:837:LYS:NZ	2.14	0.45
2:C:44:LEU:H	2:C:44:LEU:HG	1.56	0.45
2:C:85:SER:HA	2:C:86:PRO:HA	1.70	0.45
2:C:432:ASP:HA	2:C:671:HIS:NE2	2.32	0.45
2:C:714:ILE:HD13	2:C:922:ILE:CD1	2.47	0.45
2:C:723:GLU:HB3	3:D:536:PHE:HD1	1.82	0.45
2:C:984:LEU:HG	2:C:984:LEU:O	2.17	0.45
3:D:276:SER:O	3:D:280:VAL:HG23	2.17	0.45
3:D:704:PRO:HB3	4:E:38:ASP:CG	2.37	0.45
8:O:16:DT:O2	9:P:11:DA:H2	2.00	0.45
2:C:608:PRO:HA	2:C:698:CYS:SG	2.56	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:1126:VAL:HG23	2:C:1126:VAL:O	2.18	0.44
3:D:190:LYS:CE	3:D:192:ASP:HB3	2.47	0.44
3:D:505:HIS:ND1	3:D:507:LEU:HB2	2.32	0.44
3:D:525:HIS:O	3:D:528:VAL:HG22	2.17	0.44
3:D:770:ASN:O	3:D:774:VAL:HG23	2.17	0.44
3:D:972:GLY:HA2	10:D:2004:SO4:O2	2.17	0.44
3:D:1123:LEU:HD22	3:D:1208:LEU:HB2	1.98	0.44
5:F:365:ILE:HG23	5:F:365:ILE:O	2.16	0.44
2:C:229:LEU:O	2:C:229:LEU:HD12	2.16	0.44
2:C:591:ASP:OD2	2:C:880:HIS:ND1	2.41	0.44
2:C:712:VAL:HG11	2:C:925:THR:HG23	1.99	0.44
3:D:357:LEU:HD13	3:D:366:ILE:HG22	1.98	0.44
3:D:436:LEU:O	3:D:716:LYS:NZ	2.51	0.44
3:D:1056:LEU:HD23	3:D:1057:GLU:N	2.31	0.44
3:D:1132:GLN:NE2	3:D:1163:LEU:HD12	2.32	0.44
1:B:47:PRO:HA	1:B:144:ARG:CG	2.42	0.44
1:B:111:VAL:O	1:B:111:VAL:HG13	2.17	0.44
2:C:634:VAL:HG13	2:C:691:GLN:O	2.18	0.44
2:C:1045:GLN:CG	2:C:1090:ARG:HH21	2.30	0.44
3:D:759:TYR:CD2	3:D:769:ARG:HD3	2.52	0.44
3:D:1056:LEU:HD21	3:D:1063:PHE:CE1	2.52	0.44
1:B:74:THR:O	1:B:78:LEU:HG	2.17	0.44
2:C:323:THR:OG1	2:C:324:LEU:N	2.50	0.44
2:C:448:ALA:O	2:C:454:LEU:HD12	2.17	0.44
2:C:498:ASN:ND2	2:C:500:PHE:HB2	2.32	0.44
2:C:534:GLN:HE21	2:C:534:GLN:CA	2.21	0.44
3:D:1056:LEU:HD23	3:D:1057:GLU:H	1.81	0.44
3:D:1086:ARG:H	3:D:1086:ARG:CD	2.11	0.44
5:F:373:LEU:O	5:F:373:LEU:HD23	2.18	0.44
1:T:269:VAL:O	1:T:269:VAL:HG23	2.17	0.44
1:A:49:ALA:HB2	1:A:87:SER:H	1.83	0.44
2:C:344:THR:O	2:C:344:THR:HG22	2.18	0.44
2:C:505:THR:CG2	2:C:506:PRO:HD2	2.47	0.44
2:C:772:LEU:HD12	2:C:772:LEU:N	2.33	0.44
3:D:825:ASN:CB	3:D:826:PRO:HD2	2.48	0.44
5:F:271:GLU:HA	7:J:81:HIS:NE2	2.33	0.44
5:F:373:LEU:HD23	5:F:373:LEU:C	2.38	0.44
1:A:172:LEU:C	1:A:172:LEU:HD23	2.38	0.44
2:C:572:VAL:HG22	2:C:576:GLN:CD	2.38	0.44
2:C:986:ASN:OD1	2:C:986:ASN:N	2.51	0.44
2:C:1014:VAL:HG13	3:D:729:THR:CG2	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:1069:ALA:HB3	3:D:506:ARG:HB3	1.99	0.44
3:D:988:VAL:CG2	3:D:992:GLU:HG3	2.46	0.44
9:P:4:DA:H2"	9:P:5:DC:H6	1.82	0.44
1:A:50:ALA:HB3	1:A:168:TYR:CE1	2.52	0.44
2:C:1066:ALA:HB1	3:D:506:ARG:HA	1.99	0.44
2:C:1070:TYR:CD1	3:D:559:MET:HG2	2.52	0.44
3:D:929:VAL:HG23	3:D:929:VAL:O	2.18	0.44
3:D:1132:GLN:CG	3:D:1163:LEU:HD12	2.47	0.44
5:F:231:ASN:O	5:F:235:GLU:HG3	2.18	0.44
8:O:6:DA:H2"	8:O:7:DC:OP2	2.17	0.44
2:C:119:THR:HB	2:C:160:ASN:H	1.83	0.44
2:C:680:ILE:HG12	2:C:693:ILE:O	2.18	0.44
3:D:110:VAL:O	3:D:110:VAL:HG13	2.18	0.44
3:D:556:ARG:O	3:D:560:LEU:HB2	2.17	0.44
3:D:744:ILE:O	3:D:748:HIS:HD2	2.01	0.44
3:D:1165:ARG:HE	3:D:1209:MET:HE1	1.83	0.44
3:D:1272:GLN:OE1	3:D:1272:GLN:HA	2.18	0.44
5:F:199:GLN:HG2	7:J:82:TRP:CZ2	2.53	0.44
2:C:1036:SER:HB3	3:D:450:GLU:O	2.17	0.44
3:D:143:MET:CE	3:D:251:TYR:HA	2.48	0.44
3:D:573:PRO:HG2	3:D:576:MET:HE2	1.99	0.44
2:C:614:ALA:H	2:C:700:GLN:NE2	2.16	0.43
2:C:641:ILE:CG2	2:C:644:VAL:HG13	2.48	0.43
2:C:846:ARG:N	2:C:857:ASN:O	2.50	0.43
2:C:1011:PRO:HB2	2:C:1012:TYR:HD2	1.82	0.43
3:D:397:ARG:NH2	5:F:360:SER:OG	2.50	0.43
3:D:638:THR:HG22	3:D:660:ALA:HB2	2.00	0.43
3:D:1057:GLU:HB2	3:D:1064:LYS:HB3	1.99	0.43
7:J:98:LEU:HG	7:J:102:LEU:CD1	2.47	0.43
2:C:508:ARG:HD2	2:C:570:MET:HE3	1.99	0.43
2:C:1057:GLN:O	3:D:421:ARG:HA	2.17	0.43
3:D:444:PRO:HD2	3:D:447:MET:HE2	2.00	0.43
1:A:215:LEU:HD12	1:A:215:LEU:HA	1.84	0.43
1:B:24:GLU:HA	1:B:25:PRO:HA	1.67	0.43
2:C:94:MET:SD	2:C:395:MET:HB3	2.57	0.43
2:C:335:TYR:O	2:C:335:TYR:HD1	2.00	0.43
2:C:767:VAL:HG21	2:C:772:LEU:HD11	1.99	0.43
2:C:780:ILE:O	2:C:780:ILE:HG13	2.17	0.43
3:D:12:ILE:HD12	3:D:1237:ALA:HB1	2.00	0.43
3:D:65:TYR:HB3	3:D:70:PHE:CE2	2.54	0.43
3:D:115:GLY:O	3:D:119:ASP:N	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:J:65:ILE:O	7:J:65:ILE:HG22	2.18	0.43
1:A:54:ILE:CD1	1:A:162:ILE:HB	2.48	0.43
1:A:219:PHE:CE1	1:B:38:LEU:HD21	2.52	0.43
5:F:310:MET:O	5:F:313:VAL:HG13	2.17	0.43
7:J:88:ARG:HG3	7:J:89:ARG:N	2.33	0.43
1:A:72:ASP:OD1	1:A:75:ASP:N	2.41	0.43
1:B:34:LEU:O	1:B:38:LEU:HD23	2.19	0.43
1:B:55:ARG:O	1:B:55:ARG:HG3	2.18	0.43
1:B:138:LEU:HD12	1:B:138:LEU:N	2.33	0.43
2:C:100:ASP:OD2	2:C:102:ARG:NH2	2.50	0.43
2:C:169:GLN:HB2	2:C:427:LEU:CD2	2.48	0.43
2:C:614:ALA:HA	2:C:705:ALA:HB2	2.00	0.43
2:C:973:GLU:HA	3:D:732:MET:HE3	2.00	0.43
3:D:85:ALA:O	3:D:88:ARG:HB2	2.18	0.43
3:D:527:LEU:HD11	3:D:712:VAL:HG12	2.00	0.43
3:D:937:ILE:HD12	3:D:951:LEU:CG	2.42	0.43
3:D:948:ILE:O	3:D:952:LEU:HD22	2.19	0.43
3:D:1005:PRO:HG3	3:D:1150:ILE:HD11	2.00	0.43
5:F:295:ARG:NH2	8:O:24:DG:O6	2.51	0.43
1:B:50:ALA:HB3	1:B:168:TYR:CD2	2.54	0.43
2:C:126:VAL:HG12	2:C:127:THR:H	1.82	0.43
2:C:475:CYS:HB2	2:C:579:SER:HB3	1.99	0.43
2:C:498:ASN:HD22	2:C:500:PHE:HB2	1.82	0.43
2:C:720:HIS:CE1	2:C:888:LYS:HD3	2.53	0.43
2:C:780:ILE:HD11	2:C:841:ILE:HD13	2.00	0.43
2:C:1048:LEU:H	2:C:1048:LEU:CD2	2.19	0.43
3:D:589:THR:OG1	3:D:686:GLN:HA	2.18	0.43
3:D:778:GLN:HA	3:D:778:GLN:HE21	1.83	0.43
5:F:196:TYR:HA	7:J:82:TRP:CZ3	2.53	0.43
7:J:28:GLN:N	7:J:44:PHE:O	2.50	0.43
1:A:106:THR:C	1:A:125:ILE:HD13	2.39	0.43
2:C:291:PHE:HB3	2:C:324:LEU:CD1	2.48	0.43
2:C:644:VAL:O	2:C:644:VAL:HG23	2.18	0.43
2:C:780:ILE:HD12	2:C:781:VAL:O	2.19	0.43
2:C:797:VAL:HG11	2:C:823:VAL:CG2	2.49	0.43
2:C:945:ASP:OD1	2:C:945:ASP:N	2.50	0.43
3:D:243:GLU:O	3:D:247:ARG:HG3	2.19	0.43
3:D:886:ARG:HH12	14:D:2012:GLU:HB3	1.83	0.43
1:A:8:THR:OG1	1:A:24:GLU:O	2.29	0.43
1:A:84:VAL:HG13	1:A:84:VAL:O	2.19	0.43
1:B:196:VAL:HG13	1:B:196:VAL:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:178:PHE:CD1	2:C:193:VAL:HB	2.54	0.43
2:C:376:ILE:HD13	2:C:421:PHE:CE2	2.53	0.43
2:C:534:GLN:HB2	2:C:551:MET:HB2	2.01	0.43
2:C:959:ALA:O	2:C:960:ASP:HB2	2.18	0.43
2:C:1078:GLU:HG3	2:C:1082:ILE:HD11	2.00	0.43
5:F:176:VAL:HG12	5:F:177:ALA:N	2.33	0.43
8:O:12:DG:H1'	8:O:13:DT:H5''	2.01	0.43
2:C:65:ALA:HB1	2:C:70:GLU:OE1	2.19	0.43
2:C:275:GLY:O	5:F:171:LYS:HD2	2.18	0.43
3:D:716:LYS:HE3	3:D:717:ASP:OD1	2.18	0.43
3:D:1081:LEU:HB3	3:D:1113:MET:SD	2.59	0.43
1:B:38:LEU:O	1:B:42:LEU:HD13	2.18	0.43
1:B:97:LEU:HB3	1:B:136:VAL:CG1	2.49	0.43
2:C:177:TYR:CZ	2:C:366:ASN:HB3	2.53	0.43
2:C:437:LEU:HD12	2:C:706:LEU:HD11	2.01	0.43
2:C:493:VAL:HG23	2:C:578:VAL:O	2.18	0.43
2:C:648:TYR:CE2	2:C:650:THR:HG23	2.53	0.43
12:C:1205:RFP:O4	12:C:1205:RFP:O12	2.35	0.43
3:D:119:ASP:C	3:D:120:LEU:HD12	2.40	0.43
3:D:460:LEU:C	3:D:460:LEU:HD12	2.40	0.43
3:D:650:LEU:HB3	3:D:651:PHE:CD2	2.54	0.43
3:D:875:ARG:HD2	3:D:1212:THR:OG1	2.18	0.43
8:O:2:DC:H2'	8:O:3:DT:C7	2.49	0.43
2:C:1003:ASP:HB2	2:C:1010:PHE:CZ	2.54	0.42
3:D:114:LEU:HG	3:D:312:MET:CE	2.49	0.42
3:D:573:PRO:HG2	3:D:576:MET:HE3	1.99	0.42
3:D:716:LYS:HB3	3:D:716:LYS:HE2	1.81	0.42
3:D:819:MET:HE2	3:D:821:GLY:HA2	2.00	0.42
5:F:349:LEU:HD12	5:F:349:LEU:HA	1.80	0.42
5:F:416:ARG:HA	5:F:430:ILE:HD11	2.01	0.42
1:T:279:THR:HG23	1:T:282:ASP:H	1.83	0.42
2:C:217:ILE:HD11	2:C:272:LEU:HD11	2.01	0.42
2:C:299:LEU:C	2:C:299:LEU:HD12	2.39	0.42
2:C:475:CYS:HA	2:C:577:MET:O	2.19	0.42
2:C:602:MET:CE	2:C:1024:LEU:HD21	2.45	0.42
2:C:648:TYR:CD2	2:C:650:THR:HG23	2.54	0.42
2:C:748:ILE:HD11	2:C:796:LYS:HZ3	1.82	0.42
2:C:895:MET:HE2	2:C:895:MET:HB2	1.68	0.42
3:D:656:LYS:NZ	3:D:656:LYS:O	2.45	0.42
3:D:676:LEU:HD12	3:D:676:LEU:H	1.83	0.42
3:D:1069:PRO:HB2	3:D:1073:GLY:H	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:J:106:LYS:HA	7:J:106:LYS:CE	2.22	0.42
1:B:30:PHE:HA	1:B:33:THR:CG2	2.49	0.42
2:C:788:ARG:O	2:C:830:VAL:HG11	2.20	0.42
2:C:1048:LEU:HD23	2:C:1048:LEU:N	2.22	0.42
3:D:133:ALA:HB3	3:D:234:LEU:HD21	2.01	0.42
3:D:203:ARG:NE	3:D:203:ARG:HA	2.32	0.42
3:D:513:GLU:OE1	4:E:32:ILE:HG12	2.19	0.42
3:D:889:ASP:OD2	3:D:962:ARG:NH2	2.52	0.42
3:D:1160:ARG:O	3:D:1164:ARG:HG3	2.19	0.42
4:E:95:GLU:HB3	4:E:101:LEU:CD2	2.49	0.42
1:A:82:GLY:CA	1:A:123:MET:HE1	2.49	0.42
2:C:508:ARG:HD2	2:C:570:MET:CE	2.50	0.42
2:C:1012:TYR:HB3	2:C:1013:PRO:HD2	2.01	0.42
3:D:103:HIS:HB3	3:D:106:TYR:HD2	1.85	0.42
3:D:302:PHE:CE2	3:D:309:PRO:HA	2.55	0.42
3:D:397:ARG:HH21	5:F:360:SER:CB	2.32	0.42
3:D:1161:GLN:HA	3:D:1164:ARG:HD3	2.00	0.42
5:F:211:LEU:HB2	5:F:216:ARG:HD2	1.99	0.42
1:A:57:ASP:N	1:A:57:ASP:OD1	2.52	0.42
1:A:210:SER:HB3	1:B:229:SER:CB	2.48	0.42
1:B:63:PHE:CD1	1:B:63:PHE:N	2.87	0.42
2:C:88:GLU:CG	2:C:92:GLY:HA2	2.39	0.42
2:C:217:ILE:O	2:C:217:ILE:HG13	2.18	0.42
2:C:494:TYR:HB3	2:C:506:PRO:CG	2.46	0.42
2:C:876:LEU:N	2:C:876:LEU:HD12	2.35	0.42
2:C:900:ASP:OD1	2:C:986:ASN:ND2	2.52	0.42
3:D:667:LEU:O	3:D:667:LEU:HD23	2.20	0.42
2:C:41:VAL:HG22	2:C:494:TYR:CE1	2.45	0.42
2:C:510:VAL:HG11	2:C:567:VAL:CG1	2.49	0.42
2:C:991:VAL:HG12	2:C:993:VAL:H	1.84	0.42
3:D:54:PRO:HG3	3:D:81:GLU:O	2.19	0.42
3:D:246:ASP:OD1	3:D:246:ASP:N	2.52	0.42
4:E:98:GLY:O	4:E:100:LEU:HD12	2.19	0.42
5:F:230:LYS:O	5:F:234:LEU:HG	2.20	0.42
8:O:11:DA:H2''	8:O:12:DG:C5'	2.49	0.42
1:A:40:ARG:HD3	1:B:33:THR:CB	2.49	0.42
1:A:125:ILE:N	1:A:125:ILE:HD12	2.33	0.42
1:B:213:GLY:HA2	1:B:216:VAL:CG1	2.50	0.42
2:C:180:GLU:HG3	2:C:180:GLU:O	2.19	0.42
2:C:613:GLU:HB3	2:C:708:LYS:CD	2.50	0.42
2:C:665:LYS:NZ	2:C:677:GLN:O	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:331:ASP:N	3:D:331:ASP:OD1	2.52	0.42
3:D:806:ALA:O	11:D:2007:EDO:O2	2.30	0.42
3:D:813:THR:O	3:D:813:THR:HG22	2.20	0.42
5:F:426:THR:OG1	5:F:429:GLU:HG3	2.20	0.42
1:B:18:ARG:HG3	1:B:197:GLU:HG3	2.01	0.42
1:B:107:ALA:HB3	1:B:121:PRO:HA	2.01	0.42
3:D:139:VAL:HG11	3:D:231:PRO:HD3	2.01	0.42
3:D:170:LEU:HD13	3:D:209:ARG:NH2	2.34	0.42
3:D:369:ASN:ND2	5:F:260:GLN:OE1	2.50	0.42
7:J:106:LYS:HE2	7:J:106:LYS:CA	2.27	0.42
2:C:70:GLU:OE1	2:C:70:GLU:N	2.53	0.42
2:C:171:VAL:HG12	2:C:172:ARG:N	2.35	0.42
2:C:203:LEU:CD1	2:C:217:ILE:HB	2.50	0.42
2:C:623:LEU:HB3	2:C:703:GLU:HB3	2.02	0.42
3:D:68:VAL:O	3:D:68:VAL:HG12	2.20	0.42
3:D:248:TYR:HA	3:D:251:TYR:CD2	2.55	0.42
3:D:735:VAL:CG1	3:D:816:LEU:HD22	2.50	0.42
3:D:863:ALA:O	3:D:866:THR:HG22	2.20	0.42
3:D:900:LEU:HD23	3:D:900:LEU:C	2.40	0.42
3:D:934:ASN:O	3:D:935:VAL:C	2.57	0.42
3:D:1123:LEU:HB2	3:D:1131:VAL:HG21	2.02	0.42
4:E:30:LEU:N	4:E:30:LEU:HD12	2.35	0.42
5:F:320:ILE:HG23	5:F:340:GLU:CG	2.41	0.42
9:P:4:DA:H2'	9:P:5:DC:C6	2.55	0.42
1:B:22:VAL:HG12	1:B:193:ILE:CD1	2.50	0.42
1:B:32:TYR:CD1	2:C:1005:ARG:HD3	2.54	0.42
1:B:66:VAL:HG12	1:B:69:VAL:HG22	2.01	0.42
1:B:105:VAL:HG12	1:B:125:ILE:CG2	2.49	0.42
2:C:29:ARG:CG	2:C:964:ALA:HB2	2.49	0.42
2:C:310:LYS:HE3	2:C:335:TYR:CE2	2.55	0.42
2:C:466:VAL:CG2	3:D:853:HIS:HA	2.50	0.42
2:C:509:LYS:HB3	2:C:569:TYR:CE2	2.54	0.42
2:C:716:PRO:HD3	2:C:910:THR:OG1	2.20	0.42
4:E:26:TYR:O	4:E:27:ASP:CG	2.58	0.42
5:F:423:GLN:CG	5:F:425:ARG:HE	2.33	0.42
8:O:28:DT:H2'	8:O:29:DA:C8	2.54	0.42
1:A:107:ALA:HB1	1:A:118:VAL:HG11	2.02	0.41
1:B:26:LEU:HD12	1:B:31:GLY:HA2	2.01	0.41
1:B:183:VAL:HG13	3:D:488:GLU:CD	2.41	0.41
2:C:150:MET:HA	2:C:150:MET:CE	2.42	0.41
2:C:152:THR:HG21	2:C:158:ILE:HD11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:795:GLY:HA2	2:C:827:SER:OG	2.20	0.41
2:C:875:LYS:C	2:C:876:LEU:HD12	2.40	0.41
2:C:980:LEU:HD13	2:C:980:LEU:HA	1.94	0.41
2:C:992:MET:HB3	2:C:992:MET:HE2	1.84	0.41
2:C:1003:ASP:HB2	2:C:1010:PHE:CE1	2.55	0.41
3:D:97:LEU:HA	3:D:351:ASN:OD1	2.19	0.41
5:F:338:ALA:HB2	5:F:348:VAL:CG1	2.49	0.41
1:A:11:GLU:CD	1:A:205:ARG:HG2	2.40	0.41
1:B:32:TYR:CZ	2:C:1005:ARG:NH1	2.88	0.41
1:B:171:VAL:O	1:B:171:VAL:HG23	2.20	0.41
1:B:172:LEU:O	3:D:616:ALA:HB1	2.19	0.41
2:C:235:THR:HG22	2:C:236:ASN:N	2.35	0.41
2:C:427:LEU:HD12	2:C:427:LEU:N	2.35	0.41
2:C:691:GLN:HG2	2:C:692:VAL:N	2.35	0.41
3:D:961:VAL:HG22	3:D:962:ARG:N	2.35	0.41
3:D:1031:ARG:NH2	3:D:1035:LEU:HD21	2.34	0.41
3:D:1054:VAL:HG12	3:D:1104:ASP:O	2.21	0.41
3:D:1112:LEU:HD12	3:D:1112:LEU:HA	1.87	0.41
3:D:1119:PRO:HA	3:D:1122:VAL:HG12	2.01	0.41
5:F:186:GLU:OE1	5:F:186:GLU:HA	2.21	0.41
5:F:438:ARG:NH1	9:P:20:DG:C5	2.83	0.41
2:C:202:TRP:H	2:C:202:TRP:HD1	1.68	0.41
2:C:236:ASN:HA	2:C:239:ILE:HD12	2.01	0.41
2:C:1105:GLU:HG3	2:C:1106:PRO:HD2	2.03	0.41
3:D:76:GLU:HA	7:J:44:PHE:CE2	2.48	0.41
3:D:527:LEU:HD21	3:D:581:MET:HE1	2.03	0.41
3:D:748:HIS:CE1	3:D:780:ALA:HB2	2.55	0.41
3:D:822:LEU:HD23	3:D:834:PRO:CA	2.47	0.41
3:D:1266:SER:N	14:D:2012:GLU:N	2.66	0.41
5:F:320:ILE:HG22	5:F:337:LEU:HD12	2.01	0.41
1:A:94:THR:HG22	1:A:139:VAL:HG22	2.02	0.41
1:B:99:LYS:HE2	1:B:99:LYS:HB3	1.75	0.41
2:C:763:ASP:HB3	2:C:821:ARG:NH2	2.24	0.41
3:D:636:ARG:HD3	3:D:660:ALA:HB1	2.01	0.41
3:D:742:GLN:O	3:D:746:GLU:HG2	2.20	0.41
3:D:904:GLY:HA3	3:D:910:ILE:HG22	2.02	0.41
5:F:201:LEU:CD2	5:F:211:LEU:HD11	2.50	0.41
5:F:324:LEU:CD2	5:F:332:PRO:HB3	2.32	0.41
7:J:98:LEU:HG	7:J:102:LEU:HD13	2.01	0.41
1:B:151:GLN:O	1:B:151:GLN:CG	2.68	0.41
2:C:573:SER:O	2:C:576:GLN:HG3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:356:ARG:NH1	10:D:2010:SO4:O3	2.52	0.41
3:D:594:GLY:HA2	3:D:598:GLU:OE1	2.20	0.41
3:D:633:ILE:C	3:D:633:ILE:HD12	2.41	0.41
3:D:801:ILE:HG22	3:D:807:THR:O	2.20	0.41
3:D:904:GLY:HA3	3:D:910:ILE:HG21	2.02	0.41
8:O:15:DT:P	1:T:258:VAL:HG21	2.60	0.41
1:A:33:THR:HG22	1:B:37:SER:HA	2.03	0.41
2:C:154:LYS:O	2:C:443:LYS:HE3	2.21	0.41
2:C:609:LEU:HD13	2:C:737:VAL:O	2.20	0.41
2:C:894:ASP:HA	2:C:1004:GLY:CA	2.48	0.41
2:C:1035:ARG:HD3	2:C:1056:GLY:CA	2.51	0.41
3:D:1168:ILE:CD1	3:D:1176:PHE:HB3	2.45	0.41
2:C:76:GLY:O	2:C:80:VAL:HG23	2.21	0.41
2:C:774:ASP:HA	2:C:782:ARG:HH21	1.86	0.41
2:C:870:ILE:O	2:C:870:ILE:HG23	2.20	0.41
2:C:1026:HIS:HB3	2:C:1031:LYS:CE	2.50	0.41
3:D:442:GLY:HA3	3:D:517:VAL:HG21	2.02	0.41
3:D:884:ILE:HD11	3:D:886:ARG:CD	2.50	0.41
3:D:1041:PRO:HB3	3:D:1116:ALA:CB	2.43	0.41
1:A:50:ALA:HB3	1:A:168:TYR:CD1	2.56	0.41
1:A:120:ASN:N	1:A:121:PRO:HD3	2.36	0.41
2:C:53:GLU:O	2:C:57:GLY:N	2.51	0.41
2:C:94:MET:HE1	2:C:395:MET:HB3	1.99	0.41
2:C:246:SER:CB	2:C:337:VAL:HG11	2.51	0.41
2:C:926:HIS:CE1	2:C:997:GLY:HA3	2.56	0.41
2:C:935:TRP:HA	2:C:982:SER:HB3	2.02	0.41
3:D:110:VAL:HA	3:D:111:PRO:HA	1.91	0.41
3:D:190:LYS:NZ	3:D:192:ASP:CB	2.80	0.41
3:D:612:TYR:HB2	3:D:635:VAL:CG1	2.50	0.41
8:O:6:DA:H1'	8:O:7:DC:C5'	2.50	0.41
1:B:17:ASN:OD1	1:B:17:ASN:N	2.40	0.41
1:B:137:GLU:HG2	1:B:138:LEU:N	2.36	0.41
2:C:265:LEU:CD2	2:C:284:GLN:HA	2.44	0.41
2:C:387:MET:O	2:C:391:VAL:HG23	2.20	0.41
2:C:427:LEU:HD12	2:C:427:LEU:H	1.85	0.41
2:C:461:LEU:N	2:C:461:LEU:HD23	2.36	0.41
2:C:714:ILE:HD13	2:C:922:ILE:HD12	2.03	0.41
2:C:755:LEU:HD21	2:C:800:LYS:O	2.21	0.41
3:D:47:PHE:HD1	3:D:322:PRO:HB3	1.86	0.41
3:D:191:SER:HA	3:D:194:ARG:HE	1.85	0.41
3:D:417:LEU:HD12	3:D:417:LEU:HA	1.77	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:706:ILE:CD1	4:E:36:PRO:HA	2.51	0.41
3:D:738:PRO:HA	3:D:791:PHE:CD2	2.56	0.41
3:D:885:VAL:O	3:D:990:ILE:O	2.38	0.41
3:D:927:ASP:OD1	3:D:938:GLU:HA	2.21	0.41
3:D:1168:ILE:HD13	3:D:1176:PHE:CG	2.55	0.41
5:F:174:GLY:HA2	5:F:239:ARG:NH2	2.36	0.41
5:F:214:GLN:HA	5:F:214:GLN:NE2	2.35	0.41
5:F:246:LYS:HE2	5:F:246:LYS:HB3	1.84	0.41
1:B:200:ASN:ND2	1:B:200:ASN:H	2.18	0.41
2:C:540:ASP:O	2:C:543:GLY:N	2.46	0.41
2:C:744:GLU:HG3	2:C:834:GLU:OE2	2.21	0.41
3:D:190:LYS:CD	3:D:192:ASP:HB3	2.51	0.41
3:D:293:LEU:HD23	3:D:293:LEU:C	2.41	0.41
3:D:320:ILE:HG12	3:D:321:PRO:CD	2.49	0.41
5:F:283:THR:OG1	8:O:29:DA:H8	2.04	0.41
1:A:40:ARG:HH21	2:C:894:ASP:HB3	1.85	0.40
1:A:61:HIS:HD2	2:C:783:ILE:CD1	2.34	0.40
1:A:170:PRO:HB3	1:A:202:ILE:HG12	2.04	0.40
2:C:808:GLU:O	2:C:812:LEU:HD13	2.21	0.40
2:C:935:TRP:C	2:C:983:THR:HG23	2.42	0.40
3:D:48:CYS:SG	3:D:51:ILE:HG13	2.61	0.40
3:D:1168:ILE:HD11	3:D:1182:THR:CG2	2.51	0.40
5:F:201:LEU:HD21	5:F:211:LEU:HD11	2.03	0.40
5:F:309:HIS:O	5:F:313:VAL:HG12	2.21	0.40
5:F:313:VAL:HG21	5:F:351:ILE:HD13	2.03	0.40
1:A:27:GLU:HB3	1:A:28:PRO:HD2	2.02	0.40
2:C:728:LEU:HA	2:C:905:ASP:O	2.20	0.40
2:C:912:GLY:O	2:C:916:ARG:HG3	2.21	0.40
3:D:321:PRO:HA	3:D:322:PRO:HD3	1.96	0.40
3:D:603:THR:HG22	3:D:604:LYS:HE2	2.04	0.40
3:D:622:MET:HE1	3:D:629:VAL:HG13	2.03	0.40
3:D:1045:ALA:HA	3:D:1046:PRO:HD3	1.89	0.40
5:F:267:ILE:O	5:F:271:GLU:HG3	2.21	0.40
5:F:451:LYS:O	5:F:454:HIS:HB3	2.21	0.40
7:J:58:ASN:HD21	7:J:60:LEU:CD1	2.34	0.40
1:A:11:GLU:OE2	1:B:225:LEU:HD22	2.22	0.40
2:C:199:ARG:HB3	2:C:199:ARG:NH1	2.36	0.40
2:C:727:ILE:CD1	2:C:907:ILE:HD12	2.49	0.40
2:C:798:THR:HG23	2:C:826:THR:OG1	2.21	0.40
2:C:852:LEU:HD23	2:C:856:VAL:HG12	2.03	0.40
2:C:1074:TYR:CE2	4:E:52:ILE:HD11	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:22:ASN:HA	7:J:57:ARG:HH12	1.86	0.40
3:D:736:LEU:HD13	3:D:736:LEU:HA	1.70	0.40
3:D:796:ASN:ND2	3:D:798:ILE:H	2.20	0.40
3:D:837:SER:HB2	3:D:847:GLU:OE1	2.21	0.40
4:E:80:VAL:CG2	4:E:100:LEU:HD22	2.52	0.40
5:F:308:VAL:HG23	5:F:309:HIS:N	2.37	0.40
8:O:11:DA:C2'	8:O:12:DG:H5''	2.51	0.40
1:A:210:SER:CB	1:B:229:SER:HB3	2.49	0.40
1:B:19:SER:O	1:B:196:VAL:HG12	2.22	0.40
1:B:95:MET:HB3	1:B:110:ILE:HD11	2.02	0.40
1:B:106:THR:HA	1:B:123:MET:O	2.22	0.40
1:B:134:LEU:C	1:B:134:LEU:HD23	2.42	0.40
2:C:203:LEU:O	2:C:204:GLU:HG3	2.21	0.40
2:C:597:LEU:C	2:C:597:LEU:HD23	2.42	0.40
2:C:618:GLY:O	2:C:964:ALA:HA	2.21	0.40
2:C:748:ILE:HB	2:C:828:LEU:HD22	2.02	0.40
2:C:1028:VAL:HG12	3:D:429:VAL:HG11	2.02	0.40
2:C:1105:GLU:HA	2:C:1106:PRO:HD3	1.97	0.40
3:D:784:VAL:O	3:D:788:LEU:HB2	2.21	0.40
5:F:317:LEU:HD21	5:F:337:LEU:CD2	2.51	0.40
1:B:113:PRO:O	1:B:116:VAL:HG22	2.21	0.40
2:C:123:PRO:HB3	2:C:144:PHE:HE1	1.86	0.40
2:C:204:GLU:N	2:C:216:ARG:O	2.47	0.40
2:C:479:THR:OG1	2:C:480:PRO:HD2	2.22	0.40
2:C:560:GLU:CG	2:C:561:PHE:N	2.85	0.40
2:C:614:ALA:CB	2:C:700:GLN:HE21	2.35	0.40
2:C:790:GLY:H	2:C:830:VAL:HG12	1.86	0.40
2:C:810:ARG:NH2	5:F:424:PRO:HG3	2.37	0.40
2:C:1067:MET:HE2	2:C:1067:MET:HB2	1.87	0.40
3:D:898:VAL:HG11	3:D:919:ALA:HB2	2.04	0.40
4:E:40:LEU:HB3	4:E:50:LEU:HD11	2.03	0.40
7:J:74:LYS:O	7:J:74:LYS:CD	2.69	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)
2:C:658:ARG:NH1	3:D:147:GLU:OE1[2_356]	1.99	0.21

## 5.3 Torsion angles

### 5.3.1 Protein backbone

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	214/350 (61%)	204 (95%)	9 (4%)	1 (0%)	25	54
1	B	231/350 (66%)	211 (91%)	20 (9%)	0	100	100
1	T	51/350 (15%)	51 (100%)	0	0	100	100
2	C	1093/1169 (94%)	1040 (95%)	51 (5%)	2 (0%)	44	71
3	D	1234/1317 (94%)	1185 (96%)	45 (4%)	4 (0%)	37	64
4	E	72/107 (67%)	66 (92%)	5 (7%)	1 (1%)	9	30
5	F	303/466 (65%)	299 (99%)	4 (1%)	0	100	100
7	J	81/114 (71%)	77 (95%)	3 (4%)	1 (1%)	11	34
All	All	3279/4223 (78%)	3133 (96%)	137 (4%)	9 (0%)	37	64

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	D	931	ALA
3	D	1010	THR
2	C	325	THR
3	D	1086	ARG
2	C	850	ASP
3	D	932	ASN
4	E	27	ASP
1	A	91	GLU
7	J	70	PRO

### 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	
1	A	174/297 (59%)	161 (92%)	13 (8%)	11	33
1	B	171/297 (58%)	158 (92%)	13 (8%)	11	32
1	T	26/297 (9%)	25 (96%)	1 (4%)	28	55
2	C	860/984 (87%)	798 (93%)	62 (7%)	12	35
3	D	989/1095 (90%)	913 (92%)	76 (8%)	10	32
4	E	62/86 (72%)	51 (82%)	11 (18%)	1	5
5	F	253/379 (67%)	236 (93%)	17 (7%)	13	37
7	J	72/98 (74%)	65 (90%)	7 (10%)	6	22
All	All	2607/3533 (74%)	2407 (92%)	200 (8%)	10	32

All (200) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	ILE
1	A	40	ARG
1	A	51	VAL
1	A	71	GLU
1	A	74	THR
1	A	127	THR
1	A	129	ASN
1	A	130	ASP
1	A	135	GLU
1	A	142	ARG
1	A	150	VAL
1	A	159	ILE
1	A	168	TYR
1	B	17	ASN
1	B	33	THR
1	B	60	LEU
1	B	84	VAL
1	B	125	ILE
1	B	144	ARG
1	B	161	ARG
1	B	176	TYR
1	B	185	GLN
1	B	200	ASN
1	B	215	LEU
1	B	230	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	231	HIS
2	C	44	LEU
2	C	67	ASP
2	C	70	GLU
2	C	102	ARG
2	C	119	THR
2	C	124	LEU
2	C	202	TRP
2	C	215	VAL
2	C	236	ASN
2	C	273	ARG
2	C	294	GLU
2	C	299	LEU
2	C	301	ARG
2	C	323	THR
2	C	324	LEU
2	C	335	TYR
2	C	346	MET
2	C	398	GLN
2	C	437	LEU
2	C	447	SER
2	C	454	LEU
2	C	461	LEU
2	C	466	VAL
2	C	520	ASP
2	C	523	THR
2	C	525	ASP
2	C	534	GLN
2	C	545	PHE
2	C	546	THR
2	C	568	ASP
2	C	604	ARG
2	C	607	VAL
2	C	611	ARG
2	C	623	LEU
2	C	658	ARG
2	C	727	ILE
2	C	753	THR
2	C	763	ASP
2	C	771	VAL
2	C	775	LEU
2	C	777	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	C	778	ARG
2	C	780	ILE
2	C	783	ILE
2	C	872	ASP
2	C	895	MET
2	C	919	ILE
2	C	927	LEU
2	C	936	ASN
2	C	945	ASP
2	C	954	LEU
2	C	965	THR
2	C	984	LEU
2	C	986	ASN
2	C	988	ASP
2	C	1022	LEU
2	C	1045	GLN
2	C	1048	LEU
2	C	1054	PHE
2	C	1108	ILE
2	C	1122	LEU
2	C	1138	MET
3	D	7	PHE
3	D	12	ILE
3	D	28	VAL
3	D	51	ILE
3	D	70	PHE
3	D	88	ARG
3	D	101	VAL
3	D	107	PHE
3	D	144	ARG
3	D	148	LEU
3	D	150	THR
3	D	165	GLN
3	D	187	GLU
3	D	238	GLU
3	D	239	VAL
3	D	243	GLU
3	D	246	ASP
3	D	281	ILE
3	D	295	ARG
3	D	298	VAL
3	D	314	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	330	LEU
3	D	365	ILE
3	D	415	GLN
3	D	417	LEU
3	D	449	LEU
3	D	451	LEU
3	D	456	VAL
3	D	467	GLN
3	D	499	ASN
3	D	507	LEU
3	D	558	LEU
3	D	566	LEU
3	D	588	LEU
3	D	591	LEU
3	D	627	LEU
3	D	635	VAL
3	D	650	LEU
3	D	656	LYS
3	D	675	LEU
3	D	687	MET
3	D	724	THR
3	D	736	LEU
3	D	740	GLN
3	D	767	THR
3	D	779	ASP
3	D	784	VAL
3	D	791	PHE
3	D	799	ILE
3	D	830	PHE
3	D	831	ILE
3	D	841	GLU
3	D	846	LEU
3	D	853	HIS
3	D	862	THR
3	D	876	LEU
3	D	900	LEU
3	D	914	HIS
3	D	930	ASP
3	D	934	ASN
3	D	939	ARG
3	D	945	ASP
3	D	952	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	D	1056	LEU
3	D	1063	PHE
3	D	1071	ASP
3	D	1079	ASP
3	D	1086	ARG
3	D	1110	ASP
3	D	1112	LEU
3	D	1183	GLU
3	D	1186	GLU
3	D	1190	GLU
3	D	1208	LEU
3	D	1222	LEU
3	D	1278	GLU
4	E	37	ILE
4	E	50	LEU
4	E	53	TYR
4	E	57	ARG
4	E	59	ARG
4	E	75	TYR
4	E	76	VAL
4	E	85	GLN
4	E	101	LEU
4	E	102	GLU
4	E	103	HIS
5	F	182	GLU
5	F	216	ARG
5	F	291	GLN
5	F	310	MET
5	F	313	VAL
5	F	348	VAL
5	F	349	LEU
5	F	365	ILE
5	F	367	ASP
5	F	372	GLN
5	F	407	GLU
5	F	423	GLN
5	F	433	VAL
5	F	452	LEU
5	F	462	ARG
5	F	465	LEU
5	F	466	ASP
7	J	47	ASP

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Mol	Chain	Res	Type
7	J	55	LEU
7	J	64	LEU
7	J	74	LYS
7	J	92	GLU
7	J	104	LEU
7	J	105	ILE
1	T	284	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (50) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	36	ASN
1	A	124	HIS
1	A	129	ASN
1	B	124	HIS
1	B	185	GLN
2	C	48	GLN
2	C	160	ASN
2	C	343	GLN
2	C	398	GLN
2	C	433	GLN
2	C	576	GLN
2	C	590	HIS
2	C	603	GLN
2	C	700	GLN
2	C	720	HIS
2	C	721	ASN
2	C	911	HIS
2	C	936	ASN
3	D	165	GLN
3	D	287	GLN
3	D	303	GLN
3	D	416	ASN
3	D	465	HIS
3	D	494	HIS
3	D	499	ASN
3	D	515	GLN
3	D	564	ASN
3	D	600	GLN
3	D	684	ASN
3	D	692	GLN
3	D	740	GLN

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Mol	Chain	Res	Type
3	D	748	HIS
3	D	778	GLN
3	D	796	ASN
3	D	881	GLN
3	D	888	HIS
3	D	932	ASN
3	D	1085	GLN
3	D	1126	GLN
3	D	1140	GLN
3	D	1146	GLN
4	E	62	ASN
4	E	85	GLN
4	E	103	HIS
5	F	214	GLN
5	F	321	GLN
5	F	372	GLN
5	F	397	GLN
5	F	454	HIS
7	J	58	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 oligosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

Of 25 ligands modelled in this entry, 2 are monoatomic - leaving 23 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$
10	SO4	C	1201	-	4,4,4	0.24	0	6,6,6	0.08	0
10	SO4	D	2006	-	4,4,4	0.24	0	6,6,6	0.07	0
11	EDO	D	2008	-	3,3,3	0.42	0	2,2,2	0.35	0
11	EDO	D	2011	-	3,3,3	0.42	0	2,2,2	0.31	0
12	RFP	C	1205	-	63,63,63	2.73	18 (28%)	94,94,94	1.89	20 (21%)
10	SO4	D	2003	-	4,4,4	0.23	0	6,6,6	0.10	0
10	SO4	F	503	-	4,4,4	0.24	0	6,6,6	0.08	0
11	EDO	C	1207	-	3,3,3	0.41	0	2,2,2	0.37	0
10	SO4	F	502	-	4,4,4	0.24	0	6,6,6	0.07	0
10	SO4	C	1203	-	4,4,4	0.23	0	6,6,6	0.07	0
10	SO4	D	2005	-	4,4,4	0.24	0	6,6,6	0.08	0
10	SO4	C	1202	-	4,4,4	0.24	0	6,6,6	0.08	0
10	SO4	F	504	-	4,4,4	0.24	0	6,6,6	0.08	0
10	SO4	D	2010	-	4,4,4	0.24	0	6,6,6	0.07	0
11	EDO	D	2007	-	3,3,3	0.42	0	2,2,2	0.35	0
10	SO4	F	501	-	4,4,4	0.23	0	6,6,6	0.07	0
11	EDO	F	506	-	3,3,3	0.42	0	2,2,2	0.31	0
11	EDO	D	2009	-	3,3,3	0.44	0	2,2,2	0.31	0
14	GLU	D	2012	-	7,8,9	0.92	0	4,9,11	1.10	0
10	SO4	D	2004	-	4,4,4	0.23	0	6,6,6	0.08	0
10	SO4	C	1206	-	4,4,4	0.24	0	6,6,6	0.06	0
11	EDO	C	1204	-	3,3,3	0.40	0	2,2,2	0.46	0
11	EDO	F	505	-	3,3,3	0.42	0	2,2,2	0.31	0

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
11	EDO	D	2009	-	-	1/1/1/1	-
12	RFP	C	1205	-	-	12/60/85/85	0/5/5/5
11	EDO	D	2011	-	-	1/1/1/1	-
14	GLU	D	2012	-	-	3/6/7/9	-
11	EDO	C	1207	-	-	0/1/1/1	-
11	EDO	D	2008	-	-	0/1/1/1	-
11	EDO	D	2007	-	-	0/1/1/1	-
11	EDO	C	1204	-	-	1/1/1/1	-
11	EDO	F	505	-	-	1/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
11	EDO	F	506	-	-	1/1/1/1	-

All (18) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
12	C	1205	RFP	C17-C16	8.76	1.58	1.34
12	C	1205	RFP	C15-N1	7.39	1.50	1.35
12	C	1205	RFP	C1-C9	7.04	1.63	1.43
12	C	1205	RFP	C18-C19	6.92	1.59	1.33
12	C	1205	RFP	C29-C28	5.89	1.60	1.30
12	C	1205	RFP	O3-C6	5.76	1.48	1.37
12	C	1205	RFP	C18-C17	5.04	1.58	1.43
12	C	1205	RFP	C2-N1	4.92	1.52	1.43
12	C	1205	RFP	C3-C43	4.07	1.55	1.46
12	C	1205	RFP	C12-C11	-3.51	1.40	1.54
12	C	1205	RFP	O7-C35	3.34	1.42	1.35
12	C	1205	RFP	O5-C29	3.31	1.47	1.39
12	C	1205	RFP	O7-C25	-2.78	1.40	1.44
12	C	1205	RFP	C5-C11	2.31	1.52	1.42
12	C	1205	RFP	C6-C7	2.28	1.43	1.39
12	C	1205	RFP	N3-N2	2.20	1.44	1.38
12	C	1205	RFP	O11-C15	-2.19	1.19	1.23
12	C	1205	RFP	C30-C16	2.02	1.55	1.50

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
12	C	1205	RFP	C2-C3-C4	6.72	123.46	119.19
12	C	1205	RFP	C2-C3-C43	-6.48	117.11	123.99
12	C	1205	RFP	O3-C6-C7	6.17	131.63	121.16
12	C	1205	RFP	O7-C35-C36	5.34	120.61	111.09
12	C	1205	RFP	C20-C21-C22	-3.54	107.80	114.97
12	C	1205	RFP	C24-C23-C22	-3.48	109.62	115.41
12	C	1205	RFP	O4-C11-C12	2.82	126.24	120.56
12	C	1205	RFP	C25-O7-C35	-2.76	113.42	117.72
12	C	1205	RFP	O4-C11-C5	-2.69	126.68	131.63
12	C	1205	RFP	C20-C19-C18	-2.67	120.59	126.11
12	C	1205	RFP	C30-C16-C15	2.62	121.65	115.22
12	C	1205	RFP	C3-C2-N1	2.42	123.49	119.33
12	C	1205	RFP	C40-C39-N4	2.37	114.67	110.86
12	C	1205	RFP	O3-C12-C11	2.35	108.38	104.55
12	C	1205	RFP	C4-C3-C43	2.18	119.43	116.63

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
12	C	1205	RFP	C5-C10-C4	-2.18	121.96	124.08
12	C	1205	RFP	C16-C15-N1	-2.16	108.71	116.19
12	C	1205	RFP	C39-C40-N3	2.15	114.01	110.51
12	C	1205	RFP	O3-C6-C5	-2.12	107.75	113.56
12	C	1205	RFP	C41-C42-N4	2.06	114.17	110.86

There are no chirality outliers.

All (20) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
12	C	1205	RFP	C4-C3-C43-N2
12	C	1205	RFP	C13-C12-O5-C29
12	C	1205	RFP	C26-C27-C28-C29
12	C	1205	RFP	O6-C27-C28-C29
12	C	1205	RFP	C43-N2-N3-C40
12	C	1205	RFP	C3-C2-N1-C15
12	C	1205	RFP	O3-C12-O5-C29
11	D	2011	EDO	O1-C1-C2-O2
11	F	505	EDO	O1-C1-C2-O2
12	C	1205	RFP	C11-C12-O5-C29
12	C	1205	RFP	C33-C24-C25-C26
12	C	1205	RFP	C18-C19-C20-C31
14	D	2012	GLU	OE2-CD-CG-CB
14	D	2012	GLU	OE1-CD-CG-CB
11	C	1204	EDO	O1-C1-C2-O2
11	F	506	EDO	O1-C1-C2-O2
12	C	1205	RFP	C33-C24-C25-O7
11	D	2009	EDO	O1-C1-C2-O2
12	C	1205	RFP	C2-C3-C43-N2
14	D	2012	GLU	N-CA-CB-CG

There are no ring outliers.

11 monomers are involved in 31 short contacts:

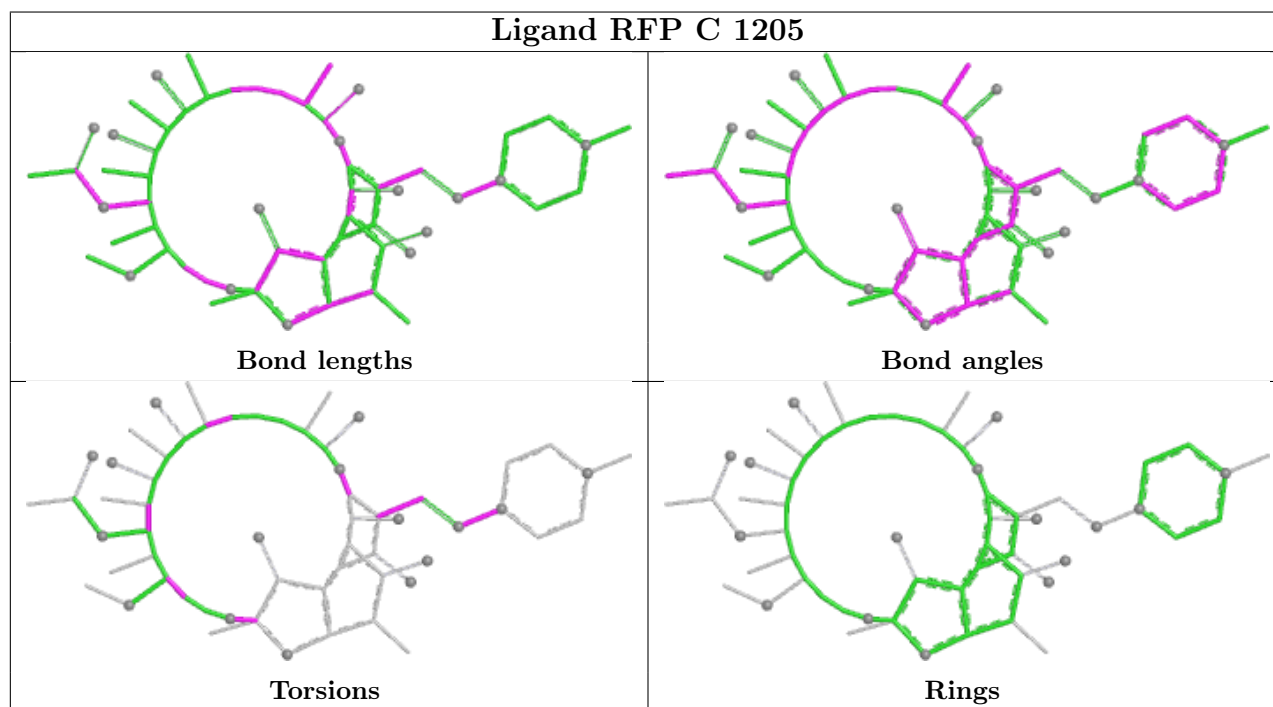
Mol	Chain	Res	Type	Clashes	Symm-Clashes
10	C	1201	SO4	1	0
11	D	2011	EDO	2	0
12	C	1205	RFP	9	0
10	F	502	SO4	1	0
10	C	1203	SO4	1	0
10	D	2010	SO4	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	D	2007	EDO	1	0
11	F	506	EDO	3	0
14	D	2012	GLU	10	0
10	D	2004	SO4	2	0
10	C	1206	SO4	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



## 5.7 Other polymers [i](#)

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	218/350 (62%)	0.01	1 (0%) 87 74	68, 97, 128, 146	0
1	B	233/350 (66%)	0.17	4 (1%) 69 49	85, 121, 145, 161	0
1	T	53/350 (15%)	0.42	0 100 100	123, 159, 184, 195	0
2	C	1099/1169 (94%)	-0.01	10 (0%) 81 65	47, 93, 154, 176	0
3	D	1246/1317 (94%)	-0.23	3 (0%) 92 85	41, 84, 140, 168	0
4	E	76/107 (71%)	-0.23	2 (2%) 57 37	61, 89, 131, 144	0
5	F	305/466 (65%)	-0.28	2 (0%) 84 69	46, 86, 135, 170	0
6	G	0/17	-	-	-	-
7	J	83/114 (72%)	0.03	2 (2%) 59 40	70, 111, 158, 173	0
8	O	31/31 (100%)	-0.85	0 100 100	59, 73, 96, 100	0
9	P	26/26 (100%)	-0.63	0 100 100	66, 80, 94, 104	0
All	All	3370/4297 (78%)	-0.11	24 (0%) 84 69	41, 92, 150, 195	0

All (24) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	155	SER	3.7
3	D	1171	SER	3.6
4	E	24	SER	2.8
2	C	229	LEU	2.8
7	J	72	PRO	2.7
1	B	217	GLU	2.6
5	F	329	GLY	2.6
2	C	21	ASN	2.5
2	C	455	SER	2.5
2	C	968	PHE	2.5
1	B	152	ASN	2.4
3	D	738	PRO	2.4

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Mol	Chain	Res	Type	RSRZ
7	J	26	PRO	2.4
2	C	938	ASP	2.4
2	C	332	THR	2.3
2	C	228	LEU	2.3
2	C	145	MET	2.2
1	B	229	SER	2.2
2	C	104	ASP	2.2
3	D	6	PHE	2.1
5	F	162	SER	2.1
2	C	254	GLU	2.1
4	E	28	THR	2.0
1	A	218	LEU	2.0

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

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

## 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<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.

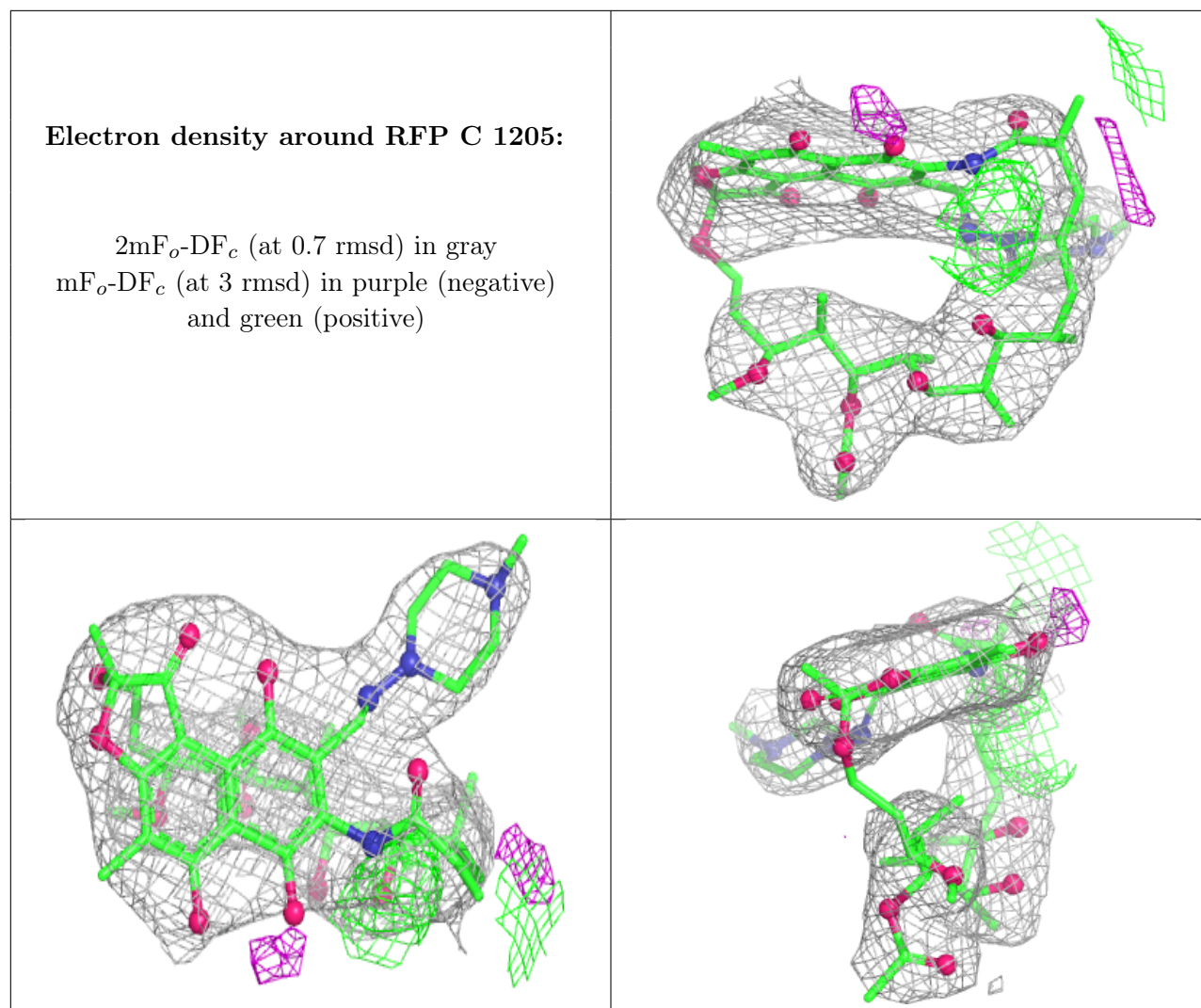
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
10	SO4	F	504	5/5	0.63	0.14	121,127,136,142	0
11	EDO	D	2007	4/4	0.69	0.15	75,94,113,123	0
11	EDO	D	2008	4/4	0.70	0.17	89,107,111,117	0
10	SO4	C	1203	5/5	0.71	0.09	114,127,160,168	0
10	SO4	C	1202	5/5	0.72	0.11	119,126,141,149	0
11	EDO	C	1207	4/4	0.73	0.25	94,113,134,134	0
10	SO4	F	503	5/5	0.73	0.12	104,110,129,130	0
10	SO4	C	1206	5/5	0.73	0.14	105,119,155,236	0
11	EDO	D	2011	4/4	0.77	0.23	73,87,105,105	0
11	EDO	F	505	4/4	0.78	0.15	81,97,121,121	0
10	SO4	D	2010	5/5	0.80	0.12	116,117,152,170	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
10	SO4	C	1201	5/5	0.81	0.11	101,114,125,135	0
10	SO4	D	2006	5/5	0.81	0.14	116,124,133,140	0
14	GLU	D	2012	9/10	0.83	0.15	90,97,100,110	0
10	SO4	D	2005	5/5	0.85	0.08	97,122,136,138	0
11	EDO	F	506	4/4	0.88	0.29	110,132,156,188	0
11	EDO	C	1204	4/4	0.89	0.13	61,74,92,92	0
10	SO4	F	501	5/5	0.90	0.06	104,105,128,134	0
10	SO4	F	502	5/5	0.90	0.07	79,101,117,120	0
12	RFP	C	1205	59/59	0.92	0.11	47,69,104,119	0
10	SO4	D	2003	5/5	0.93	0.08	64,76,98,102	0
10	SO4	D	2004	5/5	0.95	0.08	87,91,121,132	0
11	EDO	D	2009	4/4	0.96	0.12	65,87,104,104	0
13	ZN	D	2002	1/1	0.99	0.07	120,120,120,120	0
13	ZN	D	2001	1/1	0.99	0.11	129,129,129,129	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.



## 6.5 Other polymers [i](#)

There are no such residues in this entry.