Full wwPDB X-ray Structure Validation Report ⓘ

Oct 26, 2023 – 12:39 PM EDT

PDB ID	:	8FUF
Title	:	Crystal structure of human O-GlcNAc transferase (OGT) in complex with an exosite-binding peptide (ZNF831) and UDP-GlcNAc
Authors	:	Xie, J.; Jiang, J.
Deposited on	:	2023-01-17
Resolution	:	3.69 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

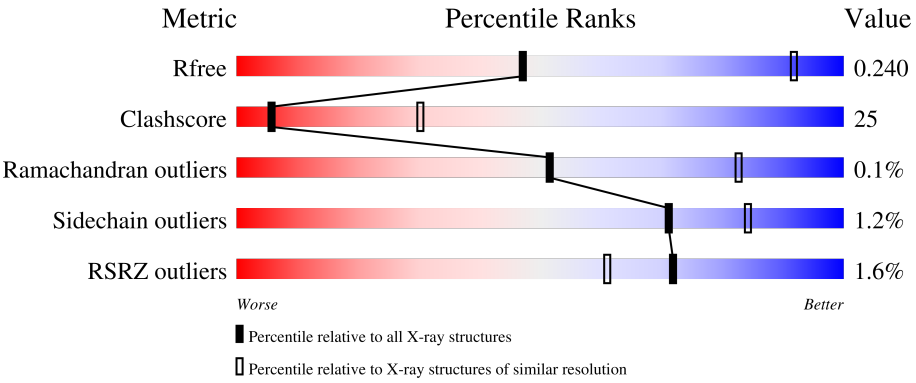
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.69 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1049 (3.88-3.52)
Clashscore	141614	1027 (3.86-3.54)
Ramachandran outliers	138981	1069 (3.88-3.52)
Sidechain outliers	138945	1065 (3.88-3.52)
RSRZ outliers	127900	1578 (3.90-3.50)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% 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	723	56% 40%
1	C	723	57% 38%
1	E	723	51% 44%
1	G	723	51% 44%
2	B	13	46% 38% 15%

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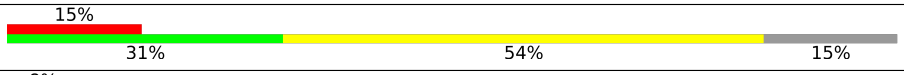
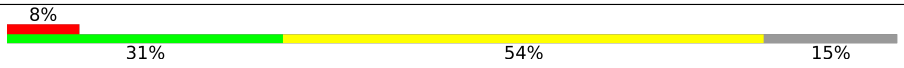
Mol	Chain	Length	Quality of chain
2	D	13	
2	F	13	
2	H	13	

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 22524 atoms, of which 32 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 UDP-N-acetylglucosamine--peptide N-acetylglucosaminyltransferase 110 kDa subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	695	Total	C	N	O	S	5	0	0
			5492	3485	960	1010	37			
1	C	695	Total	C	N	O	S	5	0	0
			5492	3485	960	1010	37			
1	E	695	Total	C	N	O	S	5	0	0
			5492	3485	960	1010	37			
1	G	695	Total	C	N	O	S	5	0	0
			5492	3485	960	1010	37			

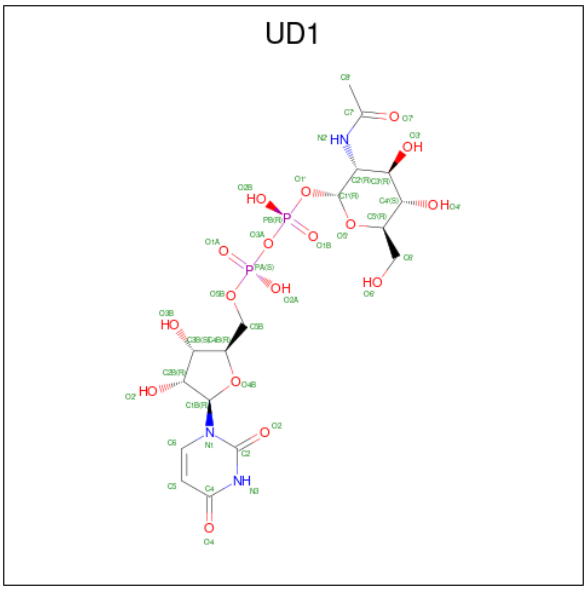
There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	309	GLY	-	expression tag	UNP O15294
A	310	PRO	-	expression tag	UNP O15294
A	311	GLY	-	expression tag	UNP O15294
A	312	SER	-	expression tag	UNP O15294
C	309	GLY	-	expression tag	UNP O15294
C	310	PRO	-	expression tag	UNP O15294
C	311	GLY	-	expression tag	UNP O15294
C	312	SER	-	expression tag	UNP O15294
E	309	GLY	-	expression tag	UNP O15294
E	310	PRO	-	expression tag	UNP O15294
E	311	GLY	-	expression tag	UNP O15294
E	312	SER	-	expression tag	UNP O15294
G	309	GLY	-	expression tag	UNP O15294
G	310	PRO	-	expression tag	UNP O15294
G	311	GLY	-	expression tag	UNP O15294
G	312	SER	-	expression tag	UNP O15294

- Molecule 2 is a protein called Zinc finger protein 831.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	11	Total	C	H	N	O	0	0	0
			100	64	8	15	13			
2	D	11	Total	C	H	N	O	0	0	0
			100	64	8	15	13			
2	F	11	Total	C	H	N	O	0	0	0
			100	64	8	15	13			
2	H	11	Total	C	H	N	O	0	0	0
			100	64	8	15	13			

- Molecule 3 is URIDINE-DIPHOSPHATE-N-ACETYLGLUCOSAMINE (three-letter code: UD1) (formula: $C_{17}H_{27}N_3O_{17}P_2$) (labeled as "Ligand of Interest" by depositor).



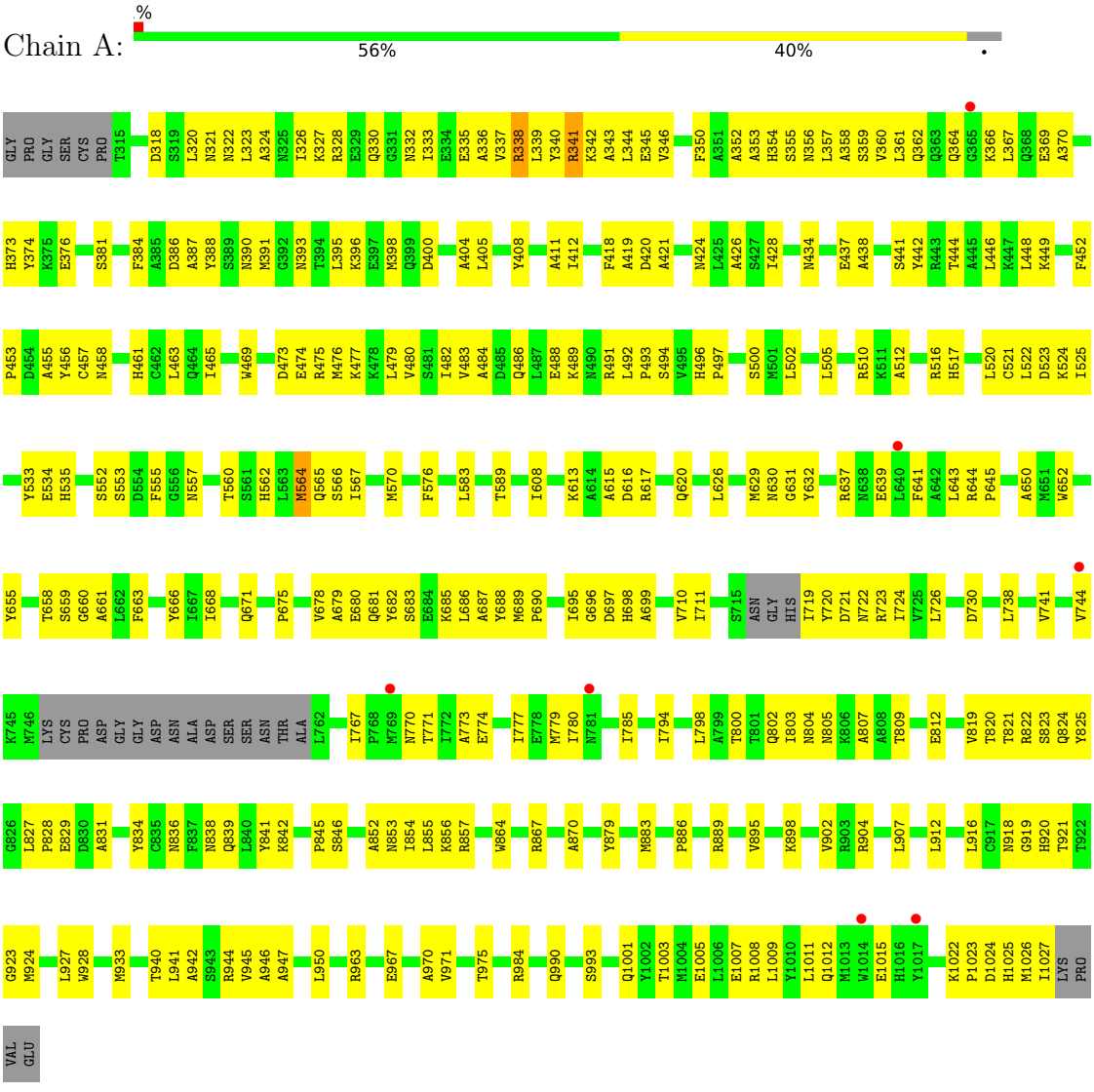
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			39	17	3	17	2		
3	C	1	Total	C	N	O	P	0	0
			39	17	3	17	2		
3	E	1	Total	C	N	O	P	0	0
			39	17	3	17	2		
3	G	1	Total	C	N	O	P	0	0
			39	17	3	17	2		

3 Residue-property plots (i)

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

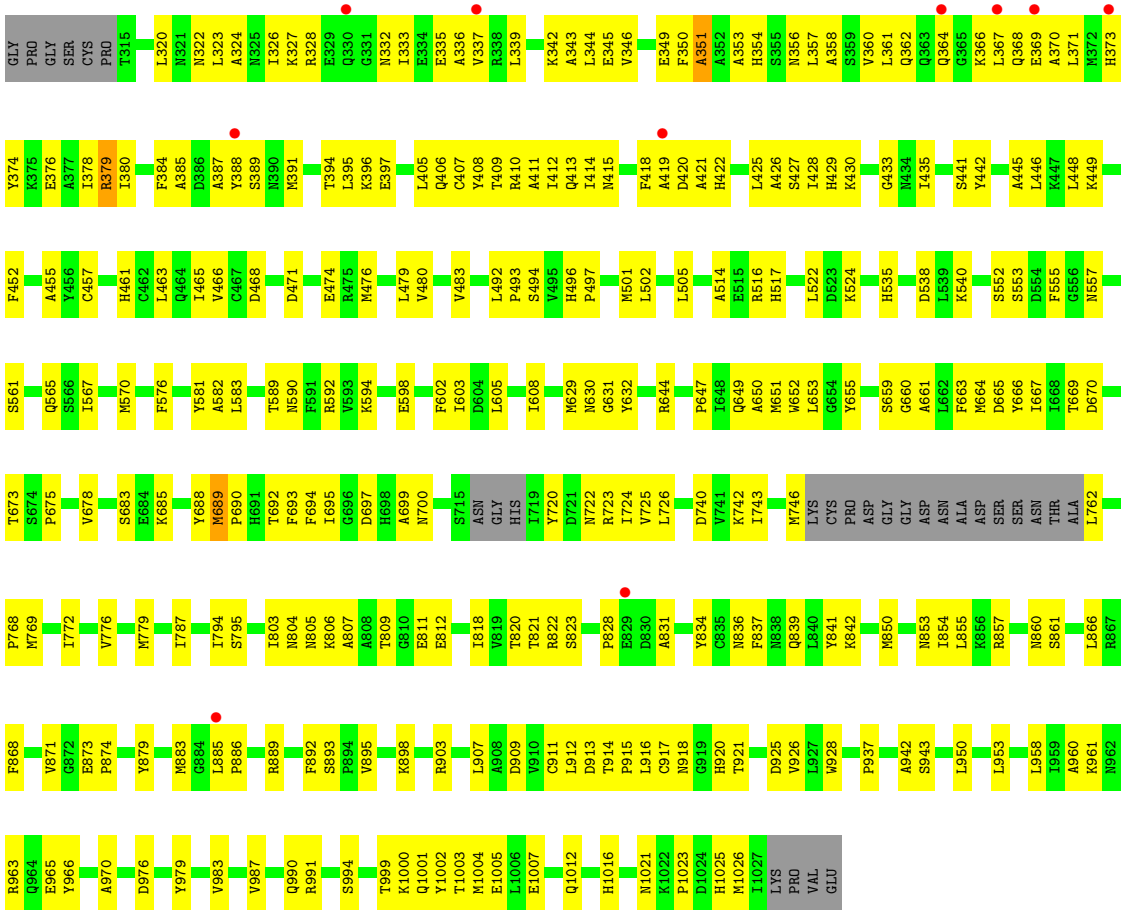
• Molecule 1: UDP-N-acetylglucosamine--peptide N-acetylglucosaminyltransferase 110 kDa subunit

Chain A:



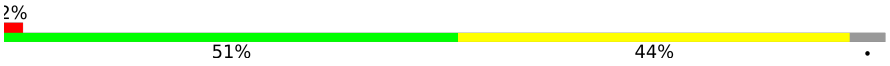
• Molecule 1: UDP-N-acetylglucosamine--peptide N-acetylglucosaminyltransferase 110 kDa subunit

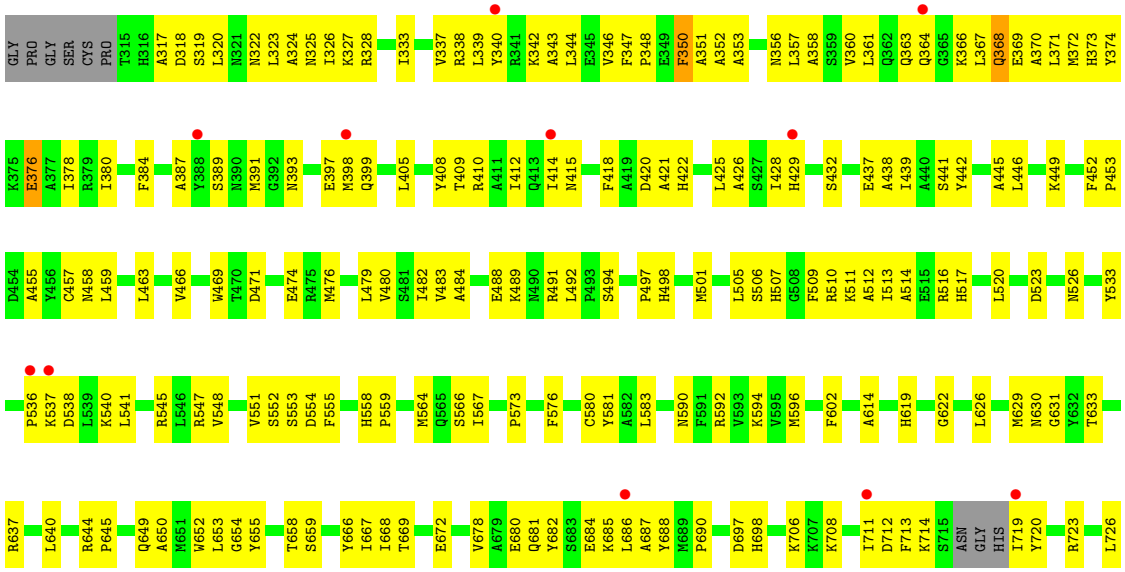
Chain C:

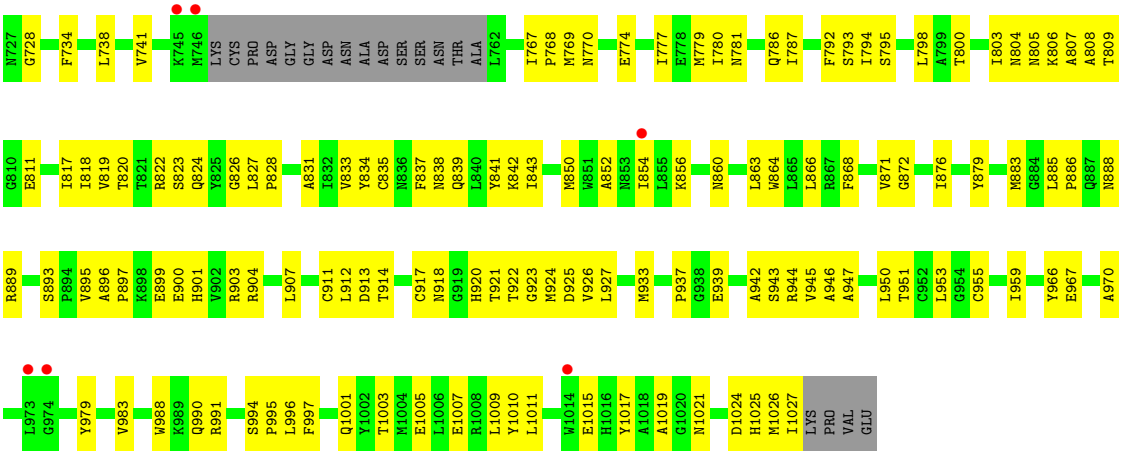


• Molecule 1: UDP-N-acetylglucosamine--peptide N-acetylglucosaminyltransferase 110 kDa subunit

Chain E:

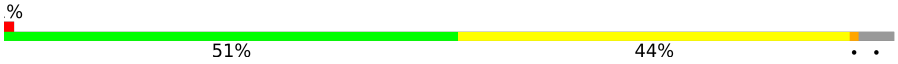


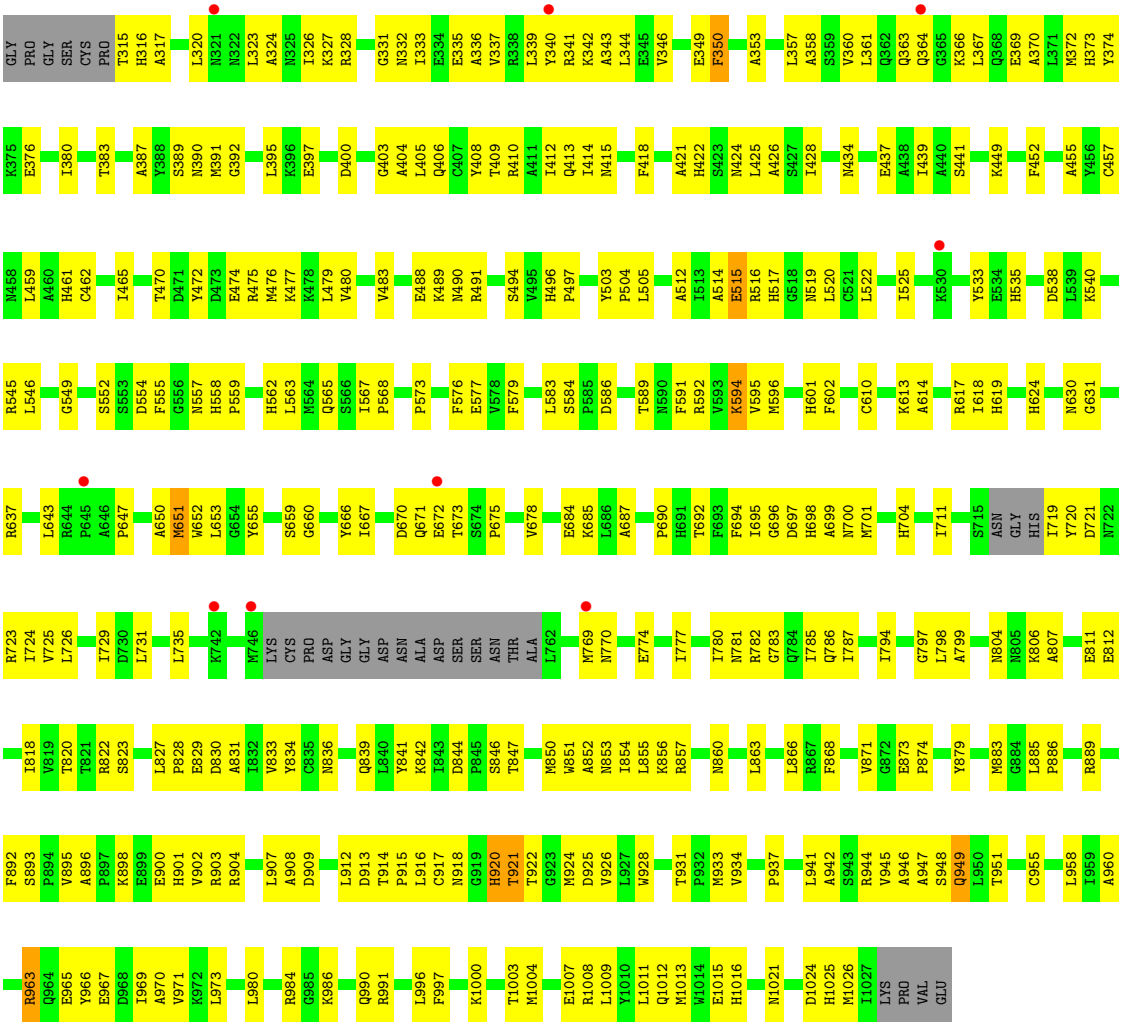




• Molecule 1: UDP-N-acetylglucosamine--peptide N-acetylglucosaminyltransferase 110 kDa subunit

Chain G:





• Molecule 2: Zinc finger protein 831

Chain B:

• Molecule 2: Zinc finger protein 831

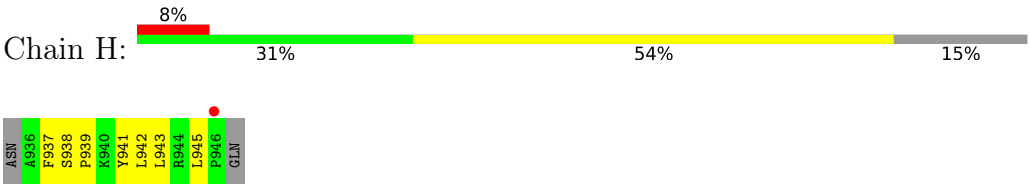
Chain D:

• Molecule 2: Zinc finger protein 831

Chain F:

• Molecule 2: Zinc finger protein 831

Chain H:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 3 2 1	Depositor
Cell constants a, b, c, α, β, γ	274.01Å 274.01Å 143.08Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	53.06 – 3.69 53.06 – 3.69	Depositor EDS
% Data completeness (in resolution range)	99.1 (53.06-3.69) 91.6 (53.06-3.69)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.43 (at 3.67Å)	Xtriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.198 , 0.242 0.199 , 0.240	Depositor DCC
R_{free} test set	1989 reflections (3.01%)	wwPDB-VP
Wilson B-factor (Å^2)	111.4	Xtriage
Anisotropy	0.477	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 115.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.47$, $< L^2 > = 0.30$	Xtriage
Estimated twinning fraction	0.029 for -h,-k,l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	22524	wwPDB-VP
Average B, all atoms (Å^2)	135.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.40% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: UD1

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	0.24	0/5618	0.44	0/7619
1	C	0.24	0/5618	0.44	0/7619
1	E	0.24	0/5618	0.43	0/7619
1	G	0.24	0/5618	0.44	0/7619
2	B	0.26	0/95	0.55	0/128
2	D	0.23	0/95	0.58	0/128
2	F	0.24	0/95	0.53	0/128
2	H	0.26	0/95	0.55	0/128
All	All	0.24	0/22852	0.44	0/30988

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5492	0	5464	273	0
1	C	5492	0	5464	252	0
1	E	5492	0	5464	305	0
1	G	5492	0	5464	291	0
2	B	92	8	100	10	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	92	8	100	10	0
2	F	92	8	100	19	0
2	H	92	8	100	16	0
3	A	39	0	25	6	0
3	C	39	0	25	3	0
3	E	39	0	25	2	0
3	G	39	0	25	11	0
All	All	22492	32	22356	1138	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 25.

All (1138) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:712:ASP:HA	1:E:719:ILE:HD11	1.32	1.08
1:C:388:TYR:HA	1:C:391:MET:HB3	1.37	1.06
1:A:854:ILE:HD11	1:A:967:GLU:HA	1.33	1.05
1:E:798:LEU:HD11	1:E:824:GLN:HB3	1.38	1.02
1:E:777:ILE:HG12	2:F:943:LEU:HD23	1.44	0.97
1:E:631:GLY:HA3	1:E:655:TYR:HB2	1.45	0.97
1:E:826:GLY:HA3	2:F:940:LYS:HE3	1.47	0.96
1:E:426:ALA:HB2	1:E:441:SER:HB2	1.47	0.95
1:G:317:ALA:HB1	1:G:343:ALA:HB1	1.50	0.92
1:A:798:LEU:HG	1:A:824:GLN:HE21	1.31	0.92
1:E:842:LYS:HB2	1:E:914:THR:HG21	1.53	0.91
1:G:324:ALA:HB2	1:G:339:LEU:HB2	1.54	0.90
1:E:374:TYR:HB3	1:E:391:MET:HE2	1.55	0.88
1:A:327:LYS:HD2	1:A:332:ASN:HD22	1.39	0.87
1:C:605:LEU:HA	1:C:608:ILE:HD12	1.57	0.87
1:A:726:LEU:HD22	1:A:819:VAL:HG22	1.58	0.85
1:C:839:GLN:HG2	1:C:868:PHE:CE2	2.11	0.85
1:A:362:GLN:HE22	1:A:370:ALA:HB1	1.42	0.85
2:D:938:SER:OG	2:D:939:PRO:HD2	1.77	0.85
1:A:426:ALA:HB2	1:A:441:SER:HB2	1.60	0.84
1:C:396:LYS:HE2	1:C:428:ILE:HG22	1.58	0.84
1:C:673:THR:HG21	1:C:693:PHE:HE1	1.44	0.83
1:C:570:MET:SD	1:C:999:THR:OG1	2.35	0.83
1:G:336:ALA:HA	1:G:339:LEU:HD13	1.61	0.83
1:A:358:ALA:HB2	1:A:373:HIS:HB2	1.60	0.82
1:A:335:GLU:HB3	1:A:338:ARG:HH11	1.41	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:552:SER:HB2	1:E:629:MET:HB2	1.61	0.82
1:G:559:PRO:HB2	3:G:1201:UD1:H6'2	1.60	0.81
1:E:333:ILE:HD11	1:E:360:VAL:HB	1.63	0.80
2:H:942:LEU:H	2:H:942:LEU:HD23	1.45	0.79
1:E:405:LEU:O	1:E:409:THR:HG23	1.83	0.79
1:E:323:LEU:O	1:E:326:ILE:HG22	1.83	0.79
1:C:644:ARG:HA	1:C:649:GLN:HE22	1.47	0.79
1:E:713:PHE:HE1	1:E:720:TYR:H	1.29	0.79
1:A:675:PRO:O	1:A:678:VAL:HG12	1.82	0.78
1:A:366:LYS:HB3	1:A:369:GLU:HB2	1.65	0.78
1:E:553:SER:HB3	1:E:583:LEU:HB2	1.64	0.78
1:E:947:ALA:O	1:E:951:THR:HG23	1.83	0.78
1:C:552:SER:HB2	1:C:629:MET:HB2	1.66	0.78
1:E:933:MET:SD	1:E:950:LEU:HD21	2.24	0.78
1:G:337:VAL:O	1:G:341:ARG:HG2	1.83	0.78
2:D:942:LEU:HD23	2:D:942:LEU:H	1.49	0.78
1:E:325:ASN:O	1:E:328:ARG:HG2	1.84	0.77
1:C:836:ASN:HD21	1:C:914:THR:HG23	1.49	0.77
2:F:938:SER:HB2	2:F:939:PRO:HD2	1.66	0.77
2:F:945:LEU:O	2:F:945:LEU:HD12	1.84	0.77
1:C:378:ILE:HD12	1:C:388:TYR:HD2	1.50	0.76
1:A:395:LEU:HG	1:A:400:ASP:HB3	1.66	0.76
1:E:327:LYS:HE3	1:E:327:LYS:HA	1.66	0.76
1:G:335:GLU:O	1:G:339:LEU:HD12	1.86	0.76
1:A:322:ASN:O	1:A:326:ILE:HG12	1.86	0.76
1:A:823:SER:CB	2:B:943:LEU:HD11	2.16	0.75
1:E:805:ASN:O	1:E:809:THR:HG23	1.85	0.75
1:G:839:GLN:HB2	1:G:841:TYR:CD1	2.22	0.75
1:E:323:LEU:HB3	1:E:339:LEU:HD21	1.68	0.75
1:E:777:ILE:HG23	2:F:943:LEU:HB3	1.68	0.75
1:G:512:ALA:O	1:G:516:ARG:HG2	1.86	0.75
1:A:564:MET:HA	1:A:567:ILE:HD13	1.69	0.75
1:A:689:MET:HE3	1:A:690:PRO:HD2	1.68	0.75
1:A:780:ILE:O	2:B:939:PRO:HD3	1.86	0.75
1:A:361:LEU:CD1	1:A:369:GLU:HG2	2.16	0.74
1:C:408:TYR:O	1:C:412:ILE:HD12	1.87	0.74
1:G:823:SER:HA	2:H:941:TYR:CE2	2.23	0.74
1:E:900:GLU:O	1:E:904:ARG:HG2	1.86	0.74
1:A:484:ALA:O	1:A:488:GLU:HG2	1.88	0.73
1:E:854:ILE:HD11	1:E:967:GLU:HA	1.71	0.73
1:E:405:LEU:HD11	1:G:414:ILE:HG12	1.71	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:724:ILE:HG23	1:C:821:THR:HG22	1.70	0.72
1:G:687:ALA:HB1	1:G:1009:LEU:HD21	1.71	0.72
1:A:327:LYS:HB3	1:A:336:ALA:HB2	1.70	0.72
1:A:521:CYS:O	1:A:525:ILE:HG23	1.89	0.72
1:C:371:LEU:HD11	1:C:395:LEU:HD21	1.72	0.72
1:A:644:ARG:HH21	1:A:663:PHE:HA	1.54	0.72
1:A:359:SER:HA	1:A:362:GLN:HG2	1.69	0.72
1:A:473:ASP:O	1:A:477:LYS:HG2	1.89	0.72
1:C:405:LEU:HD13	1:C:428:ILE:CD1	2.19	0.72
1:G:366:LYS:HG3	1:G:369:GLU:CD	2.09	0.72
1:C:366:LYS:HG3	1:C:368:GLN:O	1.90	0.72
1:A:1003:THR:O	1:A:1007:GLU:HG3	1.89	0.72
1:C:426:ALA:HB2	1:C:441:SER:HB2	1.72	0.72
1:G:918:ASN:HD22	1:G:946:ALA:H	1.37	0.72
1:E:678:VAL:HG21	1:E:681:GLN:NE2	2.05	0.71
1:G:426:ALA:HB2	1:G:441:SER:HB2	1.71	0.71
1:C:673:THR:HG21	1:C:693:PHE:CE1	2.25	0.71
1:A:525:ILE:HD12	1:A:643:LEU:HD12	1.71	0.71
1:G:405:LEU:O	1:G:409:THR:HG23	1.88	0.71
1:E:914:THR:HG22	1:E:917:CYS:H	1.56	0.71
1:G:320:LEU:HD12	1:G:343:ALA:HA	1.72	0.71
1:G:909:ASP:HA	1:G:984:ARG:NH2	2.05	0.71
1:E:774:GLU:OE2	2:F:945:LEU:HD13	1.90	0.71
1:A:583:LEU:HD22	1:A:637:ARG:HD3	1.72	0.71
1:A:854:ILE:HD12	1:A:970:ALA:HB3	1.73	0.71
1:C:873:GLU:HG3	1:C:892:PHE:CD2	2.25	0.70
1:A:800:THR:HA	1:A:803:ILE:HG22	1.73	0.70
1:C:409:THR:O	1:C:413:GLN:HG3	1.91	0.70
1:G:317:ALA:HB1	1:G:343:ALA:CB	2.20	0.70
1:C:697:ASP:OD2	1:C:700:ASN:HB3	1.91	0.70
1:C:805:ASN:O	1:C:809:THR:HG23	1.92	0.70
1:G:320:LEU:HD13	1:G:342:LYS:HG3	1.73	0.70
1:E:357:LEU:O	1:E:361:LEU:HG	1.92	0.70
1:E:371:LEU:HD12	1:E:372:MET:N	2.07	0.69
1:G:831:ALA:HB1	1:G:860:ASN:O	1.92	0.69
1:A:361:LEU:HD11	1:A:369:GLU:HG2	1.75	0.69
1:G:462:CYS:HA	1:G:465:ILE:HD12	1.73	0.69
1:A:841:TYR:OH	3:A:1201:UD1:H8'1	1.92	0.69
1:E:426:ALA:HB2	1:E:441:SER:CB	2.20	0.69
1:A:442:TYR:O	1:A:446:LEU:HG	1.92	0.69
1:E:839:GLN:HA	1:E:868:PHE:HD2	1.55	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:833:VAL:HG21	1:G:908:ALA:HA	1.74	0.69
1:C:418:PHE:CE2	1:C:420:ASP:HB2	2.26	0.69
1:E:800:THR:HA	1:E:803:ILE:HD12	1.73	0.69
1:E:357:LEU:HD23	1:E:373:HIS:NE2	2.08	0.69
1:A:852:ALA:O	1:A:856:LYS:HG3	1.92	0.69
1:C:590:ASN:HD22	1:C:811:GLU:HB3	1.58	0.69
1:E:366:LYS:HZ2	1:E:368:GLN:HB2	1.57	0.69
1:E:852:ALA:O	1:E:856:LYS:HG2	1.93	0.69
1:G:366:LYS:HG3	1:G:369:GLU:OE1	1.92	0.69
1:G:476:MET:HE2	1:G:504:PRO:HD2	1.74	0.69
1:A:418:PHE:CE1	1:A:420:ASP:HB2	2.28	0.69
1:C:822:ARG:HG3	1:C:907:LEU:HD22	1.75	0.69
1:E:806:LYS:CD	1:E:811:GLU:HB2	2.23	0.69
1:C:652:TRP:NE1	1:C:653:LEU:HD13	2.07	0.69
1:G:333:ILE:O	1:G:337:VAL:HG23	1.92	0.69
1:G:591:PHE:O	1:G:595:VAL:HG23	1.92	0.69
1:C:433:GLY:O	1:C:435:ILE:HD12	1.92	0.68
1:C:388:TYR:O	1:C:407:CYS:HB3	1.93	0.68
1:A:687:ALA:HB1	1:A:1009:LEU:HD21	1.74	0.68
1:G:357:LEU:O	1:G:360:VAL:HG12	1.93	0.68
1:G:562:HIS:CE1	1:G:898:LYS:HE3	2.29	0.68
1:C:367:LEU:HD13	1:C:397:GLU:HB2	1.76	0.68
1:G:1003:THR:O	1:G:1007:GLU:HG3	1.93	0.68
1:C:650:ALA:HB2	1:C:666:TYR:HB2	1.75	0.68
1:E:489:LYS:HB2	1:E:491:ARG:HG3	1.74	0.68
1:G:408:TYR:CE2	1:G:424:ASN:HB3	2.28	0.68
1:A:690:PRO:HG2	1:A:1005:GLU:CD	2.14	0.68
2:B:938:SER:HB2	2:B:939:PRO:HD2	1.74	0.68
1:G:586:ASP:HA	1:G:592:ARG:HD3	1.76	0.68
1:C:332:ASN:ND2	1:C:335:GLU:HB3	2.08	0.67
1:E:826:GLY:HA3	2:F:940:LYS:CE	2.23	0.67
1:E:323:LEU:CB	1:E:339:LEU:HD21	2.24	0.67
1:G:781:ASN:HA	2:H:939:PRO:HG2	1.75	0.67
1:G:833:VAL:CG2	1:G:908:ALA:HA	2.24	0.67
1:G:852:ALA:O	1:G:856:LYS:HG3	1.95	0.67
1:A:426:ALA:HB2	1:A:441:SER:CB	2.24	0.67
1:A:827:LEU:HD11	1:A:864:TRP:CE3	2.30	0.67
1:A:357:LEU:HD13	1:A:373:HIS:CE1	2.28	0.67
1:G:461:HIS:O	1:G:465:ILE:HG13	1.94	0.67
1:C:349:GLU:HA	1:C:380:ILE:HD13	1.77	0.67
1:E:822:ARG:HD3	1:E:827:LEU:HB2	1.75	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:836:ASN:ND2	1:C:914:THR:HG23	2.10	0.67
1:C:1012:GLN:HB3	1:C:1026:MET:CE	2.24	0.67
1:E:360:VAL:O	1:E:364:GLN:HG2	1.95	0.67
1:A:726:LEU:CD2	1:A:819:VAL:HG22	2.26	0.67
1:E:669:THR:HG21	1:E:686:LEU:HD22	1.76	0.66
1:A:854:ILE:HD11	1:A:967:GLU:CA	2.19	0.66
1:C:853:ASN:O	1:C:857:ARG:HG3	1.95	0.66
1:E:344:LEU:CD2	1:E:353:ALA:HB1	2.26	0.66
1:G:671:GLN:O	1:G:672:GLU:HB3	1.95	0.66
1:C:374:TYR:HB3	1:C:391:MET:CE	2.26	0.66
1:C:669:THR:HA	1:C:693:PHE:CD1	2.30	0.66
1:C:1003:THR:O	1:C:1007:GLU:HG3	1.95	0.66
1:C:324:ALA:HB2	1:C:339:LEU:CB	2.26	0.66
1:G:327:LYS:HE2	1:G:335:GLU:HG2	1.78	0.66
1:E:714:LYS:O	1:E:714:LYS:HG2	1.95	0.66
1:G:576:PHE:CZ	1:G:1007:GLU:HB3	2.30	0.66
1:C:1001:GLN:O	1:C:1005:GLU:HG3	1.95	0.66
1:G:839:GLN:HG2	1:G:868:PHE:CE2	2.31	0.66
1:E:333:ILE:O	1:E:337:VAL:HG23	1.95	0.66
1:G:692:THR:HG21	1:G:996:LEU:HD13	1.78	0.66
1:A:923:GLY:O	1:A:927:LEU:HG	1.97	0.65
1:C:374:TYR:O	1:C:378:ILE:HG12	1.95	0.65
1:E:342:LYS:O	1:E:346:VAL:HG23	1.96	0.65
1:G:725:VAL:HG12	1:G:820:THR:HB	1.77	0.65
1:A:828:PRO:HG2	1:A:831:ALA:HB3	1.77	0.65
1:C:644:ARG:HA	1:C:649:GLN:NE2	2.12	0.65
1:E:545:ARG:HD3	1:E:573:PRO:O	1.96	0.65
1:G:963:ARG:H	1:G:963:ARG:HD3	1.62	0.65
1:C:376:GLU:O	1:C:380:ILE:HG13	1.96	0.65
1:G:777:ILE:HG23	2:H:943:LEU:HD11	1.78	0.65
1:A:940:THR:O	1:A:944:ARG:HG3	1.97	0.65
1:E:950:LEU:HD12	1:E:959:ILE:HD13	1.79	0.65
1:G:395:LEU:CD1	1:G:400:ASP:HB2	2.27	0.65
1:G:650:ALA:HB2	1:G:666:TYR:HB2	1.79	0.65
1:G:839:GLN:HB2	1:G:841:TYR:HD1	1.60	0.65
1:E:351:ALA:HA	1:E:380:ILE:HD12	1.78	0.65
1:G:973:LEU:O	1:G:980:LEU:HD22	1.97	0.65
1:A:842:LYS:NZ	1:A:919:GLY:HA2	2.12	0.64
1:G:408:TYR:O	1:G:412:ILE:HG12	1.97	0.64
1:E:990:GLN:O	1:E:994:SER:HB3	1.97	0.64
1:C:406:GLN:O	1:C:410:ARG:HD3	1.97	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:953:LEU:O	1:E:990:GLN:HG3	1.97	0.64
1:C:866:LEU:HD13	1:C:893:SER:O	1.98	0.64
1:C:660:GLY:HA2	1:C:683:SER:HB3	1.80	0.64
1:G:555:PHE:O	1:G:592:ARG:HD2	1.98	0.64
1:G:576:PHE:CE2	1:G:1007:GLU:HB3	2.33	0.64
1:G:900:GLU:O	1:G:904:ARG:HG2	1.98	0.64
1:A:405:LEU:HD13	1:A:428:ILE:CD1	2.28	0.64
1:A:710:VAL:HG11	1:A:721:ASP:HA	1.80	0.64
1:A:362:GLN:NE2	1:A:370:ALA:HB1	2.11	0.63
1:A:1001:GLN:O	1:A:1005:GLU:HG3	1.97	0.63
1:A:535:HIS:HE1	1:A:644:ARG:HG3	1.63	0.63
1:G:1000:LYS:O	1:G:1004:MET:HG3	1.97	0.63
1:A:405:LEU:HD13	1:A:428:ILE:HD11	1.79	0.63
1:E:344:LEU:HD22	1:E:353:ALA:HB1	1.79	0.63
1:E:927:LEU:HG	1:E:933:MET:HE2	1.79	0.63
1:G:395:LEU:HD23	1:G:404:ALA:N	2.13	0.63
1:G:449:LYS:HE3	1:G:452:PHE:HD1	1.62	0.63
1:A:502:LEU:HD11	1:A:841:TYR:CD1	2.33	0.63
1:E:777:ILE:CG2	2:F:943:LEU:HB3	2.28	0.63
1:G:490:ASN:HA	1:G:516:ARG:HH22	1.63	0.63
1:A:327:LYS:HD2	1:A:332:ASN:ND2	2.13	0.63
1:A:805:ASN:O	1:A:809:THR:HG23	1.98	0.63
1:C:324:ALA:HB2	1:C:339:LEU:HB3	1.81	0.63
1:C:828:PRO:CG	1:C:831:ALA:HB3	2.27	0.63
1:G:324:ALA:HB2	1:G:339:LEU:CB	2.28	0.63
2:H:938:SER:HB2	2:H:939:PRO:CD	2.29	0.63
1:A:326:ILE:O	1:A:330:GLN:HG2	1.98	0.63
1:E:357:LEU:O	1:E:360:VAL:HG22	1.99	0.63
1:E:798:LEU:CD1	1:E:824:GLN:HB3	2.22	0.63
1:G:924:MET:HE3	1:G:997:PHE:CE1	2.33	0.63
1:A:564:MET:HA	1:A:567:ILE:CD1	2.29	0.63
1:A:941:LEU:O	1:A:945:VAL:HG23	1.99	0.63
1:A:564:MET:O	1:A:564:MET:HE2	1.99	0.63
1:E:506:SER:HG	1:E:509:PHE:HD1	1.47	0.62
1:G:592:ARG:O	1:G:596:MET:HG3	1.99	0.62
1:C:374:TYR:HB3	1:C:391:MET:HE3	1.80	0.62
1:C:378:ILE:CD1	1:C:388:TYR:HD2	2.12	0.62
1:G:797:GLY:HA2	1:G:818:ILE:HG23	1.81	0.62
1:A:444:THR:O	1:A:448:LEU:HG	1.99	0.62
1:A:723:ARG:NH2	1:A:829:GLU:HB3	2.14	0.62
1:E:497:PRO:HD3	1:E:517:HIS:CE1	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:853:ASN:O	1:G:857:ARG:HG3	1.99	0.62
1:G:854:ILE:HD13	1:G:970:ALA:CB	2.29	0.62
1:A:320:LEU:HD22	1:A:342:LYS:HB3	1.81	0.62
1:A:668:ILE:HA	1:A:687:ALA:HB3	1.81	0.62
1:C:479:LEU:O	1:C:483:VAL:HG23	1.99	0.62
1:G:651:MET:SD	1:G:659:SER:HB3	2.40	0.62
1:A:408:TYR:CZ	1:A:424:ASN:HB3	2.35	0.62
1:A:479:LEU:O	1:A:483:VAL:HG23	2.00	0.62
1:A:898:LYS:O	1:A:902:VAL:HG23	2.00	0.62
1:E:426:ALA:HB3	1:E:442:TYR:CD1	2.35	0.62
1:C:371:LEU:HD11	1:C:395:LEU:CD2	2.30	0.62
1:A:384:PHE:HD2	1:A:387:ALA:HB2	1.64	0.62
1:C:720:TYR:HD2	1:C:723:ARG:CD	2.12	0.62
1:C:376:GLU:O	1:C:379:ARG:HG3	2.00	0.61
1:E:823:SER:HA	2:F:941:TYR:CE2	2.35	0.61
1:G:610:CYS:HB3	1:G:613:LYS:HD2	1.81	0.61
1:A:486:GLN:OE1	1:A:493:PRO:HA	2.00	0.61
1:C:405:LEU:HD13	1:C:428:ILE:HD13	1.80	0.61
1:C:831:ALA:HB1	1:C:860:ASN:O	2.00	0.61
1:G:942:ALA:O	1:G:945:VAL:HG22	2.00	0.61
1:C:553:SER:HB3	1:C:583:LEU:HB2	1.81	0.61
1:C:669:THR:O	1:C:688:TYR:HA	2.01	0.61
1:C:670:ASP:OD2	1:C:692:THR:HA	1.98	0.61
1:G:476:MET:CE	1:G:504:PRO:HD2	2.29	0.61
1:A:984:ARG:HG2	1:A:984:ARG:HH11	1.65	0.61
1:C:350:PHE:HD1	1:C:353:ALA:H	1.47	0.61
1:A:323:LEU:HD22	1:A:339:LEU:HG	1.81	0.61
1:E:512:ALA:O	1:E:516:ARG:HG2	2.00	0.61
1:E:596:MET:HG2	1:E:602:PHE:CD2	2.35	0.61
1:A:838:ASN:HD21	1:A:919:GLY:HA3	1.65	0.61
1:C:557:ASN:HB2	1:C:589:THR:HG21	1.80	0.61
1:G:374:TYR:HB3	1:G:391:MET:HG2	1.83	0.61
1:A:853:ASN:O	1:A:857:ARG:HG3	2.01	0.61
1:E:831:ALA:HB1	1:E:860:ASN:O	2.01	0.61
1:A:324:ALA:HB2	1:A:339:LEU:HB3	1.83	0.60
1:A:388:TYR:HB3	1:A:411:ALA:HB2	1.81	0.60
1:A:453:PRO:HB3	1:A:482:ILE:HG21	1.82	0.60
1:E:726:LEU:HG	1:E:819:VAL:HG22	1.83	0.60
2:H:942:LEU:H	2:H:942:LEU:CD2	2.14	0.60
1:A:660:GLY:HA2	1:A:683:SER:HB3	1.82	0.60
1:C:322:ASN:O	1:C:326:ILE:HG13	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:723:ARG:O	1:G:724:ILE:HD13	2.01	0.60
1:G:886:PRO:HG2	1:G:889:ARG:HG2	1.84	0.60
1:C:685:LYS:HD3	1:C:1025:HIS:CE1	2.36	0.60
1:A:395:LEU:HD12	1:A:398:MET:HE2	1.82	0.60
1:A:457:CYS:SG	1:A:494:SER:HB2	2.42	0.60
1:G:1007:GLU:O	1:G:1011:LEU:HG	2.01	0.60
1:A:920:HIS:HE1	1:A:942:ALA:HA	1.66	0.60
1:C:332:ASN:HD22	1:C:335:GLU:HB3	1.65	0.60
1:A:920:HIS:CD2	3:A:1201:UD1:HN2'	2.20	0.60
1:C:358:ALA:HB2	1:C:373:HIS:HB2	1.82	0.60
1:E:828:PRO:CG	1:E:831:ALA:HB3	2.31	0.60
1:G:670:ASP:O	1:G:673:THR:HB	2.02	0.60
1:E:850:MET:HE3	1:E:967:GLU:HG3	1.83	0.60
1:G:374:TYR:HB3	1:G:391:MET:CG	2.32	0.60
1:G:920:HIS:HE1	3:G:1201:UD1:H8'2	1.66	0.60
1:A:357:LEU:HD13	1:A:373:HIS:HE1	1.66	0.59
1:C:324:ALA:HA	1:C:339:LEU:HD12	1.83	0.59
1:E:338:ARG:O	1:E:342:LYS:HG2	2.01	0.59
1:E:340:TYR:O	1:E:344:LEU:HD23	2.02	0.59
1:E:712:ASP:CA	1:E:719:ILE:HD11	2.20	0.59
1:G:820:THR:HG22	1:G:907:LEU:HD11	1.83	0.59
1:G:770:ASN:O	1:G:774:GLU:HG3	2.01	0.59
1:E:911:CYS:O	1:E:933:MET:HA	2.02	0.59
1:E:376:GLU:O	1:E:380:ILE:HG13	2.03	0.59
1:E:920:HIS:CD2	1:E:945:VAL:HG21	2.38	0.59
1:G:333:ILE:HG22	1:G:364:GLN:HE22	1.67	0.59
1:G:476:MET:HE2	1:G:504:PRO:CD	2.31	0.59
1:G:565:GLN:HB2	1:G:594:LYS:HD2	1.85	0.59
1:A:335:GLU:HA	1:A:338:ARG:HD3	1.85	0.59
1:A:418:PHE:HD1	1:A:421:ALA:H	1.51	0.59
1:G:395:LEU:HD11	1:G:400:ASP:HB2	1.84	0.59
1:G:822:ARG:HB3	1:G:827:LEU:HB2	1.84	0.59
1:E:350:PHE:CE1	1:E:352:ALA:HB3	2.37	0.59
1:E:806:LYS:HD3	1:E:811:GLU:HB2	1.84	0.59
1:E:953:LEU:HD13	1:E:996:LEU:CD2	2.33	0.59
1:A:476:MET:O	1:A:480:VAL:HG23	2.03	0.59
1:A:1025:HIS:HB3	1:A:1027:ILE:HD11	1.84	0.59
1:C:323:LEU:O	1:C:327:LYS:HG2	2.03	0.59
1:C:379:ARG:CZ	1:C:380:ILE:HG12	2.33	0.59
1:C:720:TYR:HD2	1:C:723:ARG:HD3	1.67	0.59
1:C:787:ILE:HG13	1:C:794:ILE:HB	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:408:TYR:O	1:E:412:ILE:HG13	2.03	0.59
1:E:449:LYS:HE3	1:E:452:PHE:CD1	2.38	0.59
1:A:502:LEU:HA	1:A:916:LEU:HD11	1.85	0.58
1:A:1022:LYS:HB3	1:A:1023:PRO:HD2	1.84	0.58
1:C:855:LEU:O	1:C:889:ARG:NH2	2.35	0.58
1:G:320:LEU:HD12	1:G:343:ALA:CA	2.33	0.58
1:G:361:LEU:HB2	1:G:370:ALA:HB2	1.83	0.58
1:G:842:LYS:HG2	1:G:917:CYS:HB2	1.83	0.58
1:E:714:LYS:HZ1	2:F:946:PRO:HB2	1.69	0.58
1:G:834:TYR:O	1:G:863:LEU:HD12	2.03	0.58
1:A:534:GLU:HA	1:A:534:GLU:OE1	2.03	0.58
1:A:358:ALA:HA	1:A:361:LEU:HB2	1.85	0.58
1:E:868:PHE:CD1	1:E:895:VAL:HG21	2.38	0.58
1:E:886:PRO:HG2	1:E:889:ARG:HG2	1.85	0.58
1:G:854:ILE:HD13	1:G:970:ALA:HB3	1.86	0.58
1:C:693:PHE:CG	1:C:693:PHE:O	2.57	0.58
1:E:688:TYR:CD2	1:E:1027:ILE:HD13	2.39	0.58
1:E:779:MET:SD	1:E:787:ILE:HG23	2.44	0.58
1:C:426:ALA:HB2	1:C:441:SER:CB	2.33	0.58
1:C:695:ILE:HB	1:C:1002:TYR:CD2	2.39	0.58
1:E:950:LEU:HD12	1:E:959:ILE:CD1	2.34	0.58
1:C:576:PHE:CE2	1:C:1007:GLU:HB3	2.39	0.58
1:A:357:LEU:O	1:A:357:LEU:HD23	2.03	0.58
1:C:364:GLN:O	1:C:524:LYS:HA	2.04	0.58
1:E:361:LEU:HB2	1:E:370:ALA:HB2	1.85	0.58
1:E:457:CYS:SG	1:E:494:SER:HB2	2.44	0.58
1:C:361:LEU:HB3	1:C:370:ALA:HB2	1.86	0.58
1:E:690:PRO:HG2	1:E:1005:GLU:OE1	2.04	0.58
1:E:822:ARG:HD3	1:E:827:LEU:CB	2.33	0.58
1:E:868:PHE:HD1	1:E:895:VAL:HG21	1.69	0.57
1:G:369:GLU:CD	1:G:369:GLU:H	2.06	0.57
1:A:895:VAL:HG13	3:A:1201:UD1:C4	2.33	0.57
1:E:644:ARG:HA	1:E:649:GLN:OE1	2.04	0.57
1:G:320:LEU:HB2	1:G:343:ALA:HB2	1.86	0.57
1:A:675:PRO:HD2	1:A:678:VAL:HG11	1.87	0.57
1:A:821:THR:CG2	1:A:824:GLN:HG3	2.34	0.57
1:C:913:ASP:O	1:C:915:PRO:HD3	2.05	0.57
1:E:652:TRP:NE1	1:E:653:LEU:HD13	2.19	0.57
1:G:559:PRO:CB	3:G:1201:UD1:H6'2	2.30	0.57
1:C:342:LYS:HA	1:C:345:GLU:OE1	2.04	0.57
1:C:669:THR:HA	1:C:693:PHE:CG	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:449:LYS:HE3	1:A:452:PHE:CD1	2.39	0.57
1:A:632:TYR:HE1	1:A:659:SER:HA	1.69	0.57
1:C:435:ILE:HD12	1:C:435:ILE:H	1.69	0.57
1:C:538:ASP:OD2	1:C:540:LYS:HD2	2.04	0.57
1:G:358:ALA:HB2	1:G:373:HIS:HB2	1.86	0.57
1:C:357:LEU:HD23	1:C:373:HIS:CE1	2.40	0.57
1:C:983:VAL:O	1:C:987:VAL:HG23	2.05	0.57
1:E:415:ASN:ND2	1:E:418:PHE:HB2	2.20	0.57
1:G:719:ILE:HG13	1:G:720:TYR:H	1.69	0.57
1:G:731:LEU:O	1:G:735:LEU:HG	2.05	0.57
1:A:358:ALA:HB3	1:A:374:TYR:CE1	2.40	0.57
1:G:403:GLY:HA2	1:G:406:GLN:HB3	1.85	0.57
1:G:415:ASN:ND2	1:G:418:PHE:HB2	2.20	0.57
1:A:562:HIS:ND1	1:A:898:LYS:HE2	2.20	0.56
1:C:502:LEU:HA	1:C:916:LEU:HD11	1.87	0.56
1:G:697:ASP:OD1	1:G:700:ASN:HB3	2.04	0.56
1:A:361:LEU:HD13	1:A:369:GLU:HG2	1.86	0.56
1:C:358:ALA:HB1	1:C:374:TYR:CE2	2.40	0.56
1:C:480:VAL:HG22	1:C:505:LEU:HD23	1.87	0.56
1:E:479:LEU:O	1:E:483:VAL:HG23	2.05	0.56
1:E:854:ILE:HD13	1:E:970:ALA:CB	2.35	0.56
1:A:1008:ARG:O	1:A:1012:GLN:HG3	2.05	0.56
1:E:317:ALA:HB2	1:E:346:VAL:HB	1.87	0.56
1:E:927:LEU:HD22	1:E:953:LEU:HD22	1.85	0.56
1:G:913:ASP:O	1:G:915:PRO:HD3	2.04	0.56
1:A:341:ARG:O	1:A:345:GLU:HG2	2.05	0.56
1:G:624:HIS:O	1:G:647:PRO:HG2	2.04	0.56
1:G:879:TYR:O	1:G:883:MET:HG3	2.06	0.56
1:C:357:LEU:O	1:C:361:LEU:HD13	2.06	0.56
1:C:879:TYR:O	1:C:883:MET:HG3	2.04	0.56
1:G:367:LEU:HD21	1:G:397:GLU:HG2	1.86	0.56
1:A:838:ASN:HB3	1:A:842:LYS:HD2	1.86	0.56
1:C:522:LEU:HD21	1:C:663:PHE:CE1	2.41	0.56
1:E:668:ILE:HD13	1:E:687:ALA:HB3	1.86	0.56
1:G:490:ASN:CA	1:G:516:ARG:HH22	2.17	0.56
1:C:918:ASN:HB2	1:C:942:ALA:O	2.05	0.56
1:G:452:PHE:HD2	1:G:455:ALA:HB3	1.71	0.56
1:E:827:LEU:HD11	1:E:864:TRP:CE3	2.41	0.56
1:G:457:CYS:SG	1:G:494:SER:HB2	2.46	0.56
1:A:719:ILE:HG23	1:A:744:VAL:HG11	1.88	0.56
1:C:492:LEU:HD12	1:C:493:PRO:HD2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:538:ASP:OD2	1:E:540:LYS:HD2	2.06	0.56
1:G:342:LYS:O	1:G:346:VAL:HG23	2.06	0.56
1:G:366:LYS:HE3	1:G:369:GLU:OE2	2.06	0.56
1:G:777:ILE:CG2	2:H:943:LEU:HD11	2.36	0.56
1:C:327:LYS:HB2	1:C:336:ALA:HB2	1.88	0.55
1:C:631:GLY:HA3	1:C:655:TYR:HB2	1.87	0.55
1:E:426:ALA:HB3	1:E:442:TYR:CE1	2.41	0.55
1:A:335:GLU:HB3	1:A:338:ARG:NH1	2.16	0.55
1:A:975:THR:HG21	1:G:488:GLU:OE2	2.06	0.55
1:E:340:TYR:HB2	1:E:357:LEU:HD13	1.88	0.55
1:E:854:ILE:HD13	1:E:970:ALA:HB3	1.88	0.55
1:A:521:CYS:O	1:A:524:LYS:HG2	2.07	0.55
1:E:820:THR:HG22	1:E:907:LEU:HD11	1.87	0.55
1:E:826:GLY:CA	2:F:940:LYS:HE3	2.29	0.55
1:E:839:GLN:HB3	1:E:841:TYR:HD2	1.71	0.55
1:G:323:LEU:O	1:G:326:ILE:HG12	2.07	0.55
1:G:361:LEU:CB	1:G:370:ALA:HB2	2.36	0.55
1:A:374:TYR:CE2	1:A:390:ASN:HB3	2.42	0.55
1:A:560:THR:O	1:A:564:MET:HG3	2.06	0.55
1:A:984:ARG:HG2	1:A:984:ARG:NH1	2.21	0.55
1:A:1026:MET:C	1:A:1027:ILE:HD12	2.27	0.55
1:E:901:HIS:HA	1:E:904:ARG:HE	1.70	0.55
1:A:419:ALA:HA	1:A:448:LEU:HD12	1.86	0.55
1:C:868:PHE:CD1	1:C:895:VAL:HG21	2.42	0.55
1:E:432:SER:OG	1:G:383:THR:HG21	2.06	0.55
1:E:913:ASP:OD2	1:E:933:MET:HG2	2.06	0.55
1:G:947:ALA:O	1:G:951:THR:HG23	2.07	0.55
1:A:685:LYS:HE3	1:A:1024:ASP:HA	1.87	0.55
1:C:320:LEU:HD12	1:C:343:ALA:HA	1.88	0.55
1:G:554:ASP:HB3	1:G:558:HIS:CG	2.42	0.55
1:A:521:CYS:HA	1:A:524:LYS:CD	2.37	0.55
1:A:807:ALA:HA	1:A:812:GLU:O	2.08	0.55
1:E:826:GLY:HA2	2:F:941:TYR:HD2	1.72	0.55
1:G:426:ALA:HB2	1:G:441:SER:CB	2.35	0.55
1:G:552:SER:HA	1:G:630:ASN:OD1	2.07	0.55
1:A:689:MET:CE	1:A:690:PRO:HD2	2.37	0.54
1:C:823:SER:CB	2:D:943:LEU:HD21	2.37	0.54
1:G:614:ALA:O	1:G:618:ILE:HD12	2.06	0.54
1:G:896:ALA:HB2	1:G:904:ARG:NH2	2.22	0.54
1:A:658:THR:HG21	1:A:681:GLN:O	2.06	0.54
1:C:1000:LYS:O	1:C:1004:MET:HG3	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:783:GLY:HA3	2:H:938:SER:HB3	1.89	0.54
1:G:1011:LEU:O	1:G:1015:GLU:HG2	2.06	0.54
1:A:553:SER:HB3	1:A:583:LEU:HB2	1.87	0.54
1:C:419:ALA:HB2	1:C:448:LEU:HB2	1.88	0.54
1:E:738:LEU:HB2	1:E:741:VAL:CG2	2.37	0.54
1:E:839:GLN:HB3	1:E:841:TYR:CD2	2.42	0.54
1:C:388:TYR:OH	1:C:414:ILE:HD12	2.08	0.54
1:C:555:PHE:O	1:C:592:ARG:HD3	2.07	0.54
1:C:594:LYS:O	1:C:598:GLU:HG3	2.07	0.54
1:E:492:LEU:CD1	1:E:520:LEU:HD11	2.38	0.54
1:E:872:GLY:O	1:E:876:ILE:HG12	2.07	0.54
1:G:344:LEU:O	1:G:344:LEU:HD23	2.08	0.54
1:A:354:HIS:CE1	1:A:376:GLU:HG2	2.43	0.54
1:A:517:HIS:HA	1:A:520:LEU:HG	1.90	0.54
1:C:769:MET:CE	2:D:945:LEU:HB2	2.37	0.54
1:E:734:PHE:CE1	1:E:738:LEU:HD11	2.43	0.54
1:E:1011:LEU:O	1:E:1015:GLU:HG2	2.06	0.54
1:G:545:ARG:HD2	1:G:573:PRO:O	2.07	0.54
1:E:425:LEU:O	1:E:428:ILE:HG13	2.07	0.54
1:G:389:SER:HB2	1:G:424:ASN:OD1	2.08	0.54
1:G:449:LYS:HE3	1:G:452:PHE:CD1	2.40	0.54
1:G:496:HIS:CG	1:G:497:PRO:HD2	2.41	0.54
1:G:941:LEU:O	1:G:945:VAL:HG13	2.08	0.54
1:A:434:ASN:OD1	1:A:437:GLU:HB2	2.07	0.54
1:A:730:ASP:OD2	1:C:1000:LYS:HE2	2.07	0.54
1:A:804:ASN:ND2	1:A:807:ALA:HB2	2.23	0.54
2:B:938:SER:CB	2:B:939:PRO:HD2	2.38	0.54
1:C:807:ALA:HA	1:C:812:GLU:O	2.08	0.54
1:E:432:SER:CB	1:G:383:THR:HG21	2.38	0.54
1:G:332:ASN:ND2	1:G:335:GLU:HB2	2.23	0.54
1:G:855:LEU:HD12	1:G:885:LEU:HD11	1.89	0.54
1:C:590:ASN:ND2	1:C:811:GLU:HB3	2.22	0.54
1:C:823:SER:HA	2:D:941:TYR:CE2	2.43	0.54
1:C:950:LEU:HD13	1:C:958:LEU:HB2	1.89	0.54
1:E:672:GLU:HG2	1:E:951:THR:HG21	1.90	0.54
1:G:583:LEU:HD22	1:G:637:ARG:HD3	1.90	0.54
1:A:1011:LEU:O	1:A:1015:GLU:HG2	2.07	0.54
1:C:342:LYS:O	1:C:346:VAL:HG23	2.08	0.54
1:E:469:TRP:CH2	1:E:843:ILE:HG22	2.43	0.54
1:A:374:TYR:HD2	1:A:391:MET:HA	1.74	0.53
1:A:720:TYR:CD2	1:A:723:ARG:HD3	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:632:TYR:HB2	1:C:655:TYR:CE2	2.43	0.53
1:E:466:VAL:HG12	1:E:871:VAL:CG2	2.38	0.53
1:E:547:ARG:HH11	1:E:622:GLY:HA3	1.73	0.53
1:E:804:ASN:ND2	1:E:807:ALA:HB2	2.23	0.53
1:G:963:ARG:HD3	1:G:963:ARG:N	2.23	0.53
1:C:652:TRP:CD1	1:C:653:LEU:HD13	2.43	0.53
1:E:378:ILE:HD11	1:E:387:ALA:HB3	1.89	0.53
1:E:712:ASP:O	1:E:769:MET:HG2	2.08	0.53
1:E:768:PRO:HG2	1:E:770:ASN:ND2	2.22	0.53
1:G:452:PHE:HD2	1:G:455:ALA:CB	2.21	0.53
1:G:692:THR:HG21	1:G:996:LEU:CD1	2.38	0.53
1:A:419:ALA:HB2	1:A:448:LEU:HB2	1.90	0.53
1:E:658:THR:HB	1:E:682:TYR:HA	1.90	0.53
1:E:685:LYS:HE3	1:E:1024:ASP:HA	1.90	0.53
1:G:720:TYR:CD2	1:G:723:ARG:HD3	2.44	0.53
1:A:652:TRP:CD1	1:A:668:ILE:HD12	2.42	0.53
1:G:847:THR:HG23	1:G:915:PRO:HD2	1.91	0.53
1:A:780:ILE:HG21	1:A:821:THR:HG21	1.90	0.53
1:E:367:LEU:HD13	1:E:398:MET:SD	2.48	0.53
1:G:685:LYS:HD3	1:G:1025:HIS:CE1	2.43	0.53
1:G:965:GLU:O	1:G:969:ILE:HG12	2.09	0.53
1:E:650:ALA:HB2	1:E:666:TYR:HB2	1.91	0.53
1:A:469:TRP:CD2	1:A:845:PRO:HG3	2.44	0.53
1:C:358:ALA:HB1	1:C:374:TYR:CD2	2.44	0.53
1:C:427:SER:O	1:C:430:LYS:HB3	2.08	0.53
1:C:828:PRO:HG2	1:C:831:ALA:HB3	1.91	0.53
1:C:921:THR:N	3:C:1201:UD1:O2B	2.42	0.53
1:G:533:TYR:HB3	1:G:619:HIS:NE2	2.24	0.53
1:G:846:SER:O	1:G:850:MET:HG3	2.09	0.53
1:A:608:ILE:CG2	1:A:613:LYS:HG2	2.39	0.53
1:C:351:ALA:H	1:C:354:HIS:HD2	1.57	0.53
1:E:418:PHE:CZ	1:E:420:ASP:HB2	2.44	0.53
1:A:344:LEU:HD12	1:A:353:ALA:HB1	1.90	0.53
1:A:352:ALA:O	1:A:356:ASN:ND2	2.42	0.53
1:C:690:PRO:HG2	1:C:1005:GLU:CD	2.30	0.53
1:E:510:ARG:HA	1:E:513:ILE:HD12	1.91	0.53
1:A:779:MET:CE	1:A:794:ILE:HG22	2.39	0.52
1:C:670:ASP:CG	1:C:692:THR:HA	2.29	0.52
1:C:823:SER:HB3	2:D:943:LEU:HD21	1.90	0.52
1:C:886:PRO:HG2	1:C:889:ARG:HG2	1.91	0.52
1:A:512:ALA:O	1:A:516:ARG:HG2	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:344:LEU:HD11	1:C:354:HIS:NE2	2.24	0.52
1:E:551:VAL:HG22	1:E:581:TYR:HB2	1.91	0.52
1:C:660:GLY:HA2	1:C:683:SER:CB	2.39	0.52
1:G:324:ALA:N	1:G:339:LEU:HD22	2.24	0.52
2:H:938:SER:HB2	2:H:939:PRO:HD2	1.91	0.52
1:E:476:MET:O	1:E:480:VAL:HG23	2.10	0.52
1:A:521:CYS:CB	1:A:639:GLU:HG3	2.39	0.52
1:E:564:MET:CA	1:E:567:ILE:HD13	2.40	0.52
1:E:580:CYS:HB2	1:E:602:PHE:HD1	1.74	0.52
1:E:806:LYS:HD2	1:E:811:GLU:CB	2.39	0.52
1:A:333:ILE:HD11	1:A:360:VAL:HB	1.92	0.52
1:E:995:PRO:HB3	1:E:1001:GLN:OE1	2.10	0.52
1:G:833:VAL:HG23	1:G:909:ASP:H	1.75	0.52
1:G:963:ARG:H	1:G:963:ARG:CD	2.21	0.52
1:C:742:LYS:O	1:C:743:ILE:HD13	2.10	0.52
1:E:828:PRO:HG2	1:E:831:ALA:HB3	1.91	0.52
1:G:480:VAL:HG22	1:G:505:LEU:HD23	1.91	0.52
1:A:461:HIS:O	1:A:465:ILE:HG13	2.09	0.52
1:C:371:LEU:HD23	1:C:371:LEU:O	2.10	0.52
1:C:446:LEU:HD23	1:C:452:PHE:HB3	1.92	0.52
1:A:344:LEU:CD1	1:A:353:ALA:HB1	2.39	0.52
1:C:979:TYR:O	1:C:983:VAL:HG23	2.09	0.52
1:G:798:LEU:O	1:G:798:LEU:HD23	2.10	0.52
1:G:898:LYS:NZ	3:G:1201:UD1:H1B	2.25	0.52
1:A:626:LEU:HG	1:A:641:PHE:CZ	2.45	0.52
1:A:842:LYS:HZ3	1:A:919:GLY:HA2	1.75	0.52
1:A:722:ASN:OD1	1:A:822:ARG:NH2	2.44	0.51
1:C:374:TYR:CG	1:C:391:MET:HB2	2.45	0.51
1:A:800:THR:HA	1:A:803:ILE:CG2	2.39	0.51
1:A:836:ASN:HD21	1:A:838:ASN:HD22	1.57	0.51
1:E:511:LYS:HD3	1:E:680:GLU:O	2.09	0.51
1:G:317:ALA:HA	1:G:320:LEU:HG	1.92	0.51
1:G:828:PRO:HG2	1:G:831:ALA:HB3	1.92	0.51
1:G:695:ILE:HG13	1:G:696:GLY:H	1.74	0.51
1:E:818:ILE:HG21	1:E:903:ARG:HD2	1.92	0.51
1:E:918:ASN:O	1:E:920:HIS:ND1	2.44	0.51
1:A:333:ILE:O	1:A:337:VAL:HG12	2.11	0.51
1:A:650:ALA:HB2	1:A:666:TYR:HB2	1.92	0.51
1:A:834:TYR:CD1	1:A:912:LEU:HD21	2.45	0.51
1:C:779:MET:HE1	1:C:794:ILE:HG22	1.91	0.51
1:E:922:THR:O	1:E:926:VAL:HG12	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:358:ALA:HB3	1:A:374:TYR:CD1	2.46	0.51
1:A:918:ASN:HB2	1:A:942:ALA:O	2.10	0.51
1:C:694:PHE:CZ	1:C:920:HIS:HB3	2.46	0.51
1:E:711:ILE:HG12	1:E:767:ILE:HB	1.93	0.51
1:G:834:TYR:O	1:G:863:LEU:HA	2.11	0.51
1:A:453:PRO:HB3	1:A:482:ILE:CG2	2.40	0.51
1:C:324:ALA:HB2	1:C:339:LEU:HB2	1.92	0.51
1:C:405:LEU:HD13	1:C:428:ILE:HD11	1.91	0.51
1:E:713:PHE:O	1:E:714:LYS:HB3	2.10	0.51
1:E:793:SER:O	1:E:794:ILE:HD13	2.11	0.51
1:A:535:HIS:CE1	1:A:644:ARG:HG3	2.45	0.51
1:E:514:ALA:HB1	1:E:659:SER:O	2.11	0.51
1:E:564:MET:HA	1:E:567:ILE:HD13	1.93	0.51
1:E:669:THR:O	1:E:688:TYR:HA	2.11	0.51
1:A:921:THR:N	3:A:1201:UD1:O2B	2.43	0.51
1:E:567:ILE:H	1:E:567:ILE:HD12	1.76	0.51
1:E:918:ASN:HB3	1:E:946:ALA:H	1.75	0.51
1:G:408:TYR:CZ	1:G:424:ASN:HB3	2.45	0.51
1:A:821:THR:HG22	1:A:824:GLN:HG3	1.94	0.50
1:E:835:CYS:O	1:E:911:CYS:HA	2.11	0.50
1:A:800:THR:O	1:A:803:ILE:HG22	2.10	0.50
1:A:990:GLN:HA	1:A:993:SER:OG	2.11	0.50
1:G:350:PHE:CD2	1:G:353:ALA:HB2	2.47	0.50
1:G:818:ILE:HG21	1:G:903:ARG:CZ	2.42	0.50
1:C:823:SER:HA	2:D:941:TYR:CZ	2.46	0.50
1:C:953:LEU:HD12	1:C:994:SER:OG	2.11	0.50
1:G:535:HIS:ND1	1:G:647:PRO:HA	2.27	0.50
1:C:502:LEU:HD21	1:C:841:TYR:HE2	1.76	0.50
1:E:779:MET:SD	1:E:787:ILE:HG12	2.51	0.50
1:E:953:LEU:HD13	1:E:996:LEU:HD23	1.92	0.50
1:E:988:TRP:HA	1:E:991:ARG:HD3	1.93	0.50
1:C:675:PRO:O	1:C:678:VAL:HG22	2.11	0.50
1:E:507:HIS:NE2	1:E:939:GLU:HB3	2.26	0.50
1:E:555:PHE:O	1:E:592:ARG:HD2	2.12	0.50
1:A:567:ILE:HD12	1:A:567:ILE:H	1.76	0.50
1:E:559:PRO:HB2	3:E:1201:UD1:H6'2	1.94	0.50
1:C:871:VAL:O	1:C:874:PRO:HD2	2.12	0.50
1:A:395:LEU:HB3	1:A:404:ALA:HB2	1.93	0.50
1:A:564:MET:CA	1:A:567:ILE:HD13	2.41	0.50
1:C:428:ILE:HG13	1:C:429:HIS:N	2.27	0.50
1:E:466:VAL:HG12	1:E:871:VAL:HG23	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:533:TYR:HB3	1:G:619:HIS:CD2	2.47	0.50
1:A:388:TYR:CB	1:A:411:ALA:HB2	2.41	0.50
1:C:476:MET:O	1:C:480:VAL:HG23	2.11	0.50
1:E:374:TYR:CB	1:E:391:MET:HE2	2.35	0.50
1:E:687:ALA:HB1	1:E:1009:LEU:HD21	1.94	0.50
1:E:781:ASN:HA	2:F:939:PRO:HG3	1.93	0.50
1:G:412:ILE:HG23	1:G:422:HIS:CE1	2.47	0.50
1:G:836:ASN:HD21	1:G:914:THR:HG22	1.76	0.50
1:C:514:ALA:HB1	1:C:659:SER:O	2.12	0.49
1:E:806:LYS:HD2	1:E:811:GLU:HB2	1.94	0.49
1:E:827:LEU:HD13	1:E:833:VAL:HG11	1.94	0.49
1:C:418:PHE:HD2	1:C:421:ALA:H	1.60	0.49
1:C:457:CYS:SG	1:C:494:SER:HB2	2.52	0.49
1:E:726:LEU:CD2	1:E:819:VAL:HG22	2.42	0.49
1:E:918:ASN:HB2	1:E:942:ALA:O	2.12	0.49
1:C:385:ALA:O	1:C:389:SER:HB3	2.11	0.49
1:E:442:TYR:CE2	1:E:458:ASN:HB3	2.48	0.49
1:E:937:PRO:HA	1:E:943:SER:O	2.12	0.49
1:G:366:LYS:HG3	1:G:369:GLU:OE2	2.11	0.49
1:G:839:GLN:HG2	1:G:868:PHE:HE2	1.78	0.49
1:A:320:LEU:HB2	1:A:343:ALA:HB2	1.94	0.49
1:A:374:TYR:CZ	1:A:390:ASN:HB3	2.48	0.49
1:C:834:TYR:CD2	1:C:912:LEU:HD21	2.47	0.49
3:C:1201:UD1:N2'	3:C:1201:UD1:O1B	2.44	0.49
1:G:327:LYS:HE2	1:G:335:GLU:CG	2.43	0.49
1:G:333:ILE:CG2	1:G:364:GLN:HE22	2.25	0.49
1:G:515:GLU:HA	1:G:660:GLY:O	2.13	0.49
1:C:746:MET:CE	1:C:762:LEU:HA	2.42	0.49
1:C:769:MET:HE2	2:D:946:PRO:HD2	1.93	0.49
1:G:836:ASN:HD21	1:G:914:THR:CG2	2.25	0.49
1:G:901:HIS:HB2	3:G:1201:UD1:N3	2.27	0.49
1:A:359:SER:O	1:A:362:GLN:HG2	2.13	0.49
1:C:779:MET:CE	1:C:794:ILE:HG22	2.43	0.49
1:E:320:LEU:HB2	1:E:343:ALA:HB2	1.93	0.49
1:E:669:THR:CG2	1:E:686:LEU:HD22	2.40	0.49
1:E:950:LEU:HB2	1:E:959:ILE:HD11	1.93	0.49
1:G:525:ILE:HD12	1:G:643:LEU:HD23	1.93	0.49
1:A:321:ASN:HD21	1:A:356:ASN:HD21	1.61	0.49
1:C:425:LEU:O	1:C:428:ILE:HG12	2.13	0.49
1:E:564:MET:CB	1:E:567:ILE:HD13	2.43	0.49
1:C:937:PRO:HA	1:C:943:SER:O	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:452:PHE:HD2	1:E:455:ALA:CB	2.25	0.49
1:E:652:TRP:CE2	1:E:653:LEU:HD13	2.48	0.49
1:G:374:TYR:CB	1:G:391:MET:HG2	2.43	0.49
1:A:359:SER:CA	1:A:362:GLN:HG2	2.41	0.49
1:A:522:LEU:O	1:A:525:ILE:HG12	2.12	0.49
1:A:854:ILE:CD1	1:A:970:ALA:HB3	2.42	0.49
1:G:967:GLU:O	1:G:971:VAL:HG23	2.13	0.49
1:A:557:ASN:HB2	1:A:589:THR:HG21	1.95	0.49
1:C:388:TYR:HE1	1:C:411:ALA:CA	2.26	0.49
1:C:425:LEU:O	1:C:429:HIS:HD2	1.96	0.49
1:G:439:ILE:HG23	1:G:459:LEU:HD11	1.95	0.49
1:G:723:ARG:HD2	1:G:829:GLU:O	2.13	0.49
1:G:376:GLU:O	1:G:380:ILE:HG12	2.12	0.48
1:G:1009:LEU:O	1:G:1013:MET:HG3	2.12	0.48
1:E:327:LYS:HA	1:E:327:LYS:CE	2.33	0.48
1:G:839:GLN:HB2	1:G:841:TYR:CE1	2.48	0.48
1:G:851:TRP:CD1	1:G:912:LEU:HD13	2.48	0.48
1:A:497:PRO:HB2	1:A:655:TYR:OH	2.13	0.48
1:C:822:ARG:NH2	1:C:909:ASP:OD1	2.46	0.48
1:E:439:ILE:HG23	1:E:459:LEU:HD11	1.95	0.48
1:E:480:VAL:HG22	1:E:505:LEU:HD23	1.96	0.48
1:E:708:LYS:HG2	1:E:988:TRP:CH2	2.48	0.48
1:G:933:MET:O	1:G:958:LEU:HB3	2.14	0.48
1:A:576:PHE:CE1	1:A:1007:GLU:HB3	2.48	0.48
1:C:667:ILE:O	1:C:667:ILE:HG23	2.12	0.48
1:E:410:ARG:HH12	1:G:410:ARG:HH12	1.61	0.48
1:E:685:LYS:HD2	1:E:1025:HIS:CE1	2.48	0.48
1:E:826:GLY:HA2	2:F:941:TYR:CD2	2.48	0.48
1:E:834:TYR:O	1:E:863:LEU:HD12	2.13	0.48
1:G:650:ALA:CB	1:G:666:TYR:HB2	2.43	0.48
1:G:723:ARG:HA	1:G:822:ARG:HG3	1.95	0.48
1:A:699:ALA:HA	1:A:928:TRP:CZ2	2.49	0.48
1:C:387:ALA:O	1:C:388:TYR:CG	2.67	0.48
1:C:651:MET:SD	1:C:664:MET:HG3	2.53	0.48
1:C:722:ASN:ND2	1:C:909:ASP:OD2	2.46	0.48
1:E:1019:ALA:HB3	1:E:1021:ASN:OD1	2.13	0.48
1:A:479:LEU:HA	1:A:482:ILE:HD12	1.96	0.48
1:C:466:VAL:HG12	1:C:871:VAL:CG2	2.43	0.48
1:E:854:ILE:CD1	1:E:967:GLU:HA	2.42	0.48
1:E:498:HIS:O	1:E:501:MET:HG2	2.13	0.48
1:E:713:PHE:O	1:E:769:MET:HE3	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:898:LYS:HZ3	3:G:1201:UD1:H1B	1.79	0.48
1:A:785:ILE:HG12	1:A:802:GLN:NE2	2.29	0.48
1:G:476:MET:HE1	1:G:503:TYR:HD1	1.79	0.48
1:G:937:PRO:HB2	1:G:944:ARG:HG2	1.95	0.48
1:A:426:ALA:HB3	1:A:442:TYR:CE1	2.49	0.48
1:C:327:LYS:HB3	1:C:332:ASN:HB3	1.95	0.48
1:E:367:LEU:HA	1:E:370:ALA:HB3	1.94	0.48
1:E:583:LEU:HD13	1:E:637:ARG:HB2	1.95	0.48
1:G:799:ALA:HA	2:H:937:PHE:HZ	1.79	0.48
1:G:841:TYR:OH	3:G:1201:UD1:C8'	2.62	0.48
1:A:738:LEU:HB2	1:A:741:VAL:CG2	2.44	0.47
1:A:886:PRO:HG2	1:A:889:ARG:HG2	1.96	0.47
1:C:419:ALA:HB1	1:C:445:ALA:O	2.14	0.47
1:E:818:ILE:HG21	1:E:903:ARG:CD	2.44	0.47
1:G:392:GLY:HA3	1:G:408:TYR:CE1	2.49	0.47
1:G:516:ARG:O	1:G:520:LEU:HG	2.14	0.47
1:G:596:MET:HA	1:G:602:PHE:CD2	2.48	0.47
1:E:453:PRO:HB3	1:E:482:ILE:HG21	1.97	0.47
1:A:367:LEU:HD23	1:A:367:LEU:H	1.79	0.47
1:A:442:TYR:CE2	1:A:458:ASN:HB3	2.48	0.47
1:A:469:TRP:CE3	1:A:845:PRO:HG3	2.49	0.47
1:C:356:ASN:O	1:C:360:VAL:HG12	2.15	0.47
1:C:466:VAL:HG12	1:C:871:VAL:HG21	1.96	0.47
1:E:523:ASP:HA	1:E:526:ASN:OD1	2.15	0.47
1:E:564:MET:HA	1:E:567:ILE:CD1	2.44	0.47
1:E:713:PHE:HA	1:E:769:MET:HE2	1.95	0.47
1:G:557:ASN:HB2	1:G:589:THR:HG21	1.96	0.47
1:G:563:LEU:HD22	1:G:696:GLY:HA2	1.97	0.47
1:G:675:PRO:O	1:G:678:VAL:HG22	2.14	0.47
1:G:692:THR:HA	1:G:948:SER:OG	2.14	0.47
1:A:821:THR:HG22	1:A:824:GLN:OE1	2.15	0.47
1:A:1025:HIS:HB3	1:A:1027:ILE:CD1	2.44	0.47
1:C:818:ILE:HG21	1:C:903:ARG:NE	2.30	0.47
1:C:855:LEU:HD12	1:C:861:SER:OG	2.14	0.47
1:E:658:THR:CB	1:E:682:TYR:HA	2.44	0.47
1:E:734:PHE:HE1	1:E:738:LEU:HD11	1.78	0.47
1:G:474:GLU:HA	1:G:477:LYS:HG2	1.96	0.47
1:A:426:ALA:HB3	1:A:442:TYR:CD1	2.49	0.47
1:A:685:LYS:HD2	1:A:1025:HIS:N	2.30	0.47
1:C:452:PHE:HD2	1:C:455:ALA:CB	2.27	0.47
1:C:553:SER:CB	1:C:583:LEU:HB2	2.43	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:698:HIS:CE1	1:A:924:MET:HB3	2.49	0.47
1:C:976:ASP:HB3	1:C:979:TYR:HB3	1.96	0.47
1:G:514:ALA:HB1	1:G:659:SER:O	2.13	0.47
1:A:350:PHE:CD2	1:A:353:ALA:HB2	2.49	0.47
1:A:879:TYR:O	1:A:883:MET:HG3	2.14	0.47
2:B:942:LEU:C	2:B:943:LEU:HD12	2.35	0.47
1:C:323:LEU:HA	1:C:326:ILE:HD12	1.97	0.47
1:C:839:GLN:HG2	1:C:868:PHE:HE2	1.70	0.47
1:G:799:ALA:HB2	2:H:937:PHE:CE2	2.50	0.47
1:E:728:GLY:HA3	1:E:817:ILE:HD13	1.96	0.47
1:G:342:LYS:O	1:G:342:LYS:HD3	2.14	0.47
1:G:1008:ARG:O	1:G:1012:GLN:HG3	2.15	0.47
1:A:552:SER:HA	1:A:630:ASN:OD1	2.15	0.47
1:C:471:ASP:HB3	1:C:474:GLU:OE2	2.15	0.47
1:C:650:ALA:CB	1:C:666:TYR:HB2	2.45	0.47
1:E:886:PRO:HB2	1:E:888:ASN:OD1	2.14	0.47
1:E:979:TYR:O	1:E:983:VAL:HG23	2.15	0.47
1:G:538:ASP:HB2	1:G:540:LYS:HD3	1.97	0.47
1:G:896:ALA:HB1	1:G:900:GLU:HB3	1.97	0.47
1:A:685:LYS:CE	1:A:1024:ASP:HA	2.45	0.47
1:C:349:GLU:HA	1:C:380:ILE:CD1	2.44	0.47
1:C:452:PHE:HD2	1:C:455:ALA:HB3	1.80	0.47
1:C:837:PHE:HD1	1:C:866:LEU:HD23	1.79	0.47
1:E:953:LEU:HB3	1:E:955:CYS:SG	2.54	0.47
1:A:823:SER:OG	2:B:943:LEU:HD11	2.15	0.46
1:E:374:TYR:HB3	1:E:391:MET:CE	2.38	0.46
1:E:554:ASP:HB3	1:E:558:HIS:CG	2.50	0.46
1:E:706:LYS:O	1:E:991:ARG:NH2	2.48	0.46
1:G:412:ILE:CD1	1:G:421:ALA:HB3	2.44	0.46
1:A:489:LYS:HB2	1:A:491:ARG:HG3	1.97	0.46
1:A:820:THR:HA	1:A:824:GLN:OE1	2.15	0.46
1:C:374:TYR:HB3	1:C:391:MET:HE2	1.97	0.46
1:C:395:LEU:HD12	1:C:407:CYS:SG	2.55	0.46
1:E:492:LEU:HD11	1:E:520:LEU:HD11	1.97	0.46
1:G:558:HIS:CG	1:G:559:PRO:HD2	2.49	0.46
1:G:920:HIS:O	1:G:921:THR:HB	2.15	0.46
3:G:1201:UD1:H1'	3:G:1201:UD1:O7'	2.15	0.46
1:A:474:GLU:OE1	1:A:474:GLU:N	2.36	0.46
1:C:497:PRO:HD3	1:C:517:HIS:NE2	2.30	0.46
1:E:626:LEU:HB3	1:E:649:GLN:HG2	1.97	0.46
1:C:834:TYR:HD2	1:C:912:LEU:HD21	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:850:MET:HE1	1:C:963:ARG:HA	1.97	0.46
1:E:856:LYS:HD3	1:E:885:LEU:HD21	1.98	0.46
1:A:533:TYR:CD2	1:A:645:PRO:HA	2.50	0.46
1:A:723:ARG:HA	1:A:822:ARG:HG3	1.98	0.46
1:A:723:ARG:HH21	1:A:829:GLU:HB3	1.80	0.46
1:G:546:LEU:CD1	1:G:624:HIS:HB2	2.46	0.46
1:A:366:LYS:HB3	1:A:369:GLU:CB	2.42	0.46
1:C:344:LEU:CD2	1:C:353:ALA:HB1	2.45	0.46
1:E:923:GLY:O	1:E:927:LEU:HD12	2.15	0.46
1:G:476:MET:O	1:G:480:VAL:HG23	2.15	0.46
1:G:797:GLY:HA3	1:G:903:ARG:HH12	1.80	0.46
1:A:566:SER:O	1:A:570:MET:HG3	2.16	0.46
1:C:388:TYR:HE1	1:C:411:ALA:N	2.13	0.46
1:C:582:ALA:HB2	1:C:602:PHE:CZ	2.50	0.46
1:C:855:LEU:HD23	1:C:885:LEU:CD1	2.46	0.46
1:E:410:ARG:NH1	1:G:410:ARG:HH22	2.14	0.46
1:E:484:ALA:O	1:E:488:GLU:HG2	2.16	0.46
1:E:786:GLN:HB2	1:E:794:ILE:O	2.15	0.46
1:E:988:TRP:O	1:E:991:ARG:HG2	2.16	0.46
1:A:492:LEU:HD13	1:A:520:LEU:HD21	1.98	0.46
1:A:779:MET:HE3	1:A:794:ILE:HG22	1.96	0.46
1:A:800:THR:CA	1:A:803:ILE:HG22	2.44	0.46
1:C:320:LEU:HB2	1:C:343:ALA:HB2	1.97	0.46
1:G:780:ILE:O	2:H:939:PRO:HD3	2.16	0.46
1:G:873:GLU:HG3	1:G:892:PHE:CD2	2.50	0.46
1:A:384:PHE:HD2	1:A:387:ALA:CB	2.29	0.46
1:A:675:PRO:HD2	1:A:678:VAL:CG1	2.46	0.46
1:C:328:ARG:O	1:C:328:ARG:NH1	2.38	0.46
1:C:552:SER:HA	1:C:630:ASN:OD1	2.15	0.46
1:E:347:PHE:HD1	1:E:348:PRO:HD2	1.81	0.46
1:E:937:PRO:HB2	1:E:944:ARG:NH1	2.31	0.46
1:G:723:ARG:NH1	1:G:829:GLU:OE1	2.49	0.46
1:G:769:MET:HE2	2:H:945:LEU:HB2	1.98	0.46
1:G:945:VAL:O	1:G:949:GLN:HG3	2.15	0.46
1:A:333:ILE:HA	1:A:336:ALA:HB3	1.98	0.46
1:A:525:ILE:HB	1:A:643:LEU:HD11	1.98	0.46
1:A:855:LEU:HB3	1:A:889:ARG:NH2	2.31	0.46
1:E:323:LEU:O	1:E:327:LYS:HG2	2.15	0.46
1:E:426:ALA:HB1	1:E:438:ALA:O	2.15	0.46
1:G:549:GLY:HA2	1:G:579:PHE:O	2.16	0.46
1:G:652:TRP:CG	1:G:653:LEU:N	2.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:822:ARG:HA	1:A:907:LEU:HD13	1.97	0.45
1:C:911:CYS:HB2	1:C:926:VAL:HG21	1.97	0.45
1:E:446:LEU:HD21	1:E:455:ALA:HB3	1.97	0.45
1:E:923:GLY:C	1:E:927:LEU:HD12	2.36	0.45
1:G:409:THR:O	1:G:413:GLN:HG3	2.16	0.45
1:A:374:TYR:CD2	1:A:391:MET:HA	2.51	0.45
1:E:808:ALA:HB1	1:E:897:PRO:HB3	1.98	0.45
1:G:721:ASP:OD2	1:G:984:ARG:HD3	2.17	0.45
1:G:787:ILE:HG13	1:G:794:ILE:HB	1.99	0.45
1:G:797:GLY:HA3	1:G:903:ARG:NH1	2.31	0.45
1:G:926:VAL:HG13	1:G:931:THR:HB	1.97	0.45
1:A:521:CYS:HB2	1:A:639:GLU:HG3	1.97	0.45
1:C:953:LEU:O	1:C:990:GLN:NE2	2.46	0.45
1:E:838:ASN:HB3	1:E:842:LYS:HD2	1.99	0.45
1:G:822:ARG:HH12	1:G:831:ALA:H	1.63	0.45
1:A:496:HIS:CG	1:A:497:PRO:HD2	2.51	0.45
1:C:673:THR:CG2	1:C:693:PHE:HE1	2.22	0.45
1:E:452:PHE:HD2	1:E:455:ALA:HB3	1.80	0.45
1:E:548:VAL:HG21	1:E:1010:TYR:CD2	2.51	0.45
1:E:912:LEU:HB3	1:E:966:TYR:OH	2.17	0.45
1:E:953:LEU:HG	1:E:990:GLN:HB3	1.97	0.45
1:G:711:ILE:HG13	1:G:726:LEU:HD11	1.99	0.45
1:G:960:ALA:HB1	1:G:965:GLU:HB3	1.99	0.45
1:A:497:PRO:HD3	1:A:517:HIS:CE1	2.52	0.45
1:A:521:CYS:HA	1:A:524:LYS:HD3	1.98	0.45
1:C:516:ARG:HD2	1:C:516:ARG:N	2.31	0.45
1:C:850:MET:HE1	1:C:966:TYR:HB3	1.98	0.45
1:E:841:TYR:CZ	1:E:842:LYS:HE2	2.51	0.45
1:E:953:LEU:HD13	1:E:996:LEU:HD22	1.98	0.45
1:E:1003:THR:O	1:E:1007:GLU:HG3	2.16	0.45
1:G:479:LEU:O	1:G:483:VAL:HG23	2.16	0.45
1:A:327:LYS:HD2	1:A:332:ASN:HB3	1.99	0.45
1:A:846:SER:HB2	1:A:963:ARG:HH12	1.81	0.45
1:C:368:GLN:OE1	1:C:369:GLU:OE2	2.35	0.45
1:C:535:HIS:ND1	1:C:647:PRO:HA	2.31	0.45
1:E:780:ILE:O	2:F:939:PRO:HD3	2.17	0.45
1:G:562:HIS:HE1	1:G:898:LYS:HE3	1.76	0.45
1:A:350:PHE:CE1	1:A:352:ALA:HB3	2.52	0.45
1:A:480:VAL:HG13	1:A:505:LEU:HD23	1.98	0.45
2:D:942:LEU:H	2:D:942:LEU:CD2	2.23	0.45
1:E:808:ALA:HB1	1:E:897:PRO:CB	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:315:THR:OG1	1:G:316:HIS:N	2.47	0.45
1:A:412:ILE:HG13	1:A:421:ALA:HB1	1.97	0.45
1:E:412:ILE:HG12	1:E:421:ALA:HB3	1.99	0.45
1:G:584:SER:O	1:G:592:ARG:NH1	2.50	0.45
1:A:381:SER:OG	1:A:384:PHE:HB2	2.17	0.45
1:A:446:LEU:HD21	1:A:455:ALA:HB3	1.99	0.45
1:A:661:ALA:HB1	1:A:663:PHE:CE2	2.52	0.45
1:A:898:LYS:NZ	3:A:1201:UD1:O3B	2.42	0.45
1:A:945:VAL:HG12	1:A:946:ALA:N	2.32	0.45
1:C:324:ALA:CA	1:C:339:LEU:HD12	2.45	0.45
1:C:661:ALA:HB1	1:C:663:PHE:CE1	2.52	0.45
1:E:720:TYR:HB3	1:E:723:ARG:HB2	1.98	0.45
1:E:850:MET:HE1	1:E:966:TYR:HB3	1.98	0.45
1:A:616:ASP:O	1:A:620:GLN:HG2	2.17	0.45
1:G:405:LEU:HD11	1:G:425:LEU:CD1	2.47	0.45
1:A:615:ALA:HB3	1:A:643:LEU:HD23	1.99	0.44
1:C:333:ILE:O	1:C:337:VAL:HG23	2.17	0.44
1:C:497:PRO:HD3	1:C:517:HIS:CD2	2.52	0.44
1:C:720:TYR:CD2	1:C:723:ARG:CD	2.98	0.44
1:E:324:ALA:N	1:E:339:LEU:HD23	2.32	0.44
1:G:470:THR:O	1:G:475:ARG:NH2	2.50	0.44
1:C:850:MET:CE	1:C:966:TYR:HB3	2.46	0.44
1:E:344:LEU:HD21	1:E:353:ALA:HB1	1.97	0.44
1:E:393:ASN:O	1:E:397:GLU:HG2	2.16	0.44
1:G:871:VAL:O	1:G:874:PRO:HD2	2.17	0.44
1:C:854:ILE:HG21	1:C:970:ALA:CB	2.47	0.44
1:E:516:ARG:O	1:E:520:LEU:HG	2.16	0.44
2:F:945:LEU:N	2:F:946:PRO:HD3	2.32	0.44
1:G:928:TRP:O	1:G:991:ARG:NH1	2.49	0.44
1:C:873:GLU:HG3	1:C:892:PHE:CE2	2.52	0.44
1:G:489:LYS:HB2	1:G:491:ARG:HG3	1.99	0.44
1:G:934:VAL:HG12	1:G:966:TYR:CE1	2.52	0.44
1:A:644:ARG:HA	1:A:644:ARG:HD3	1.67	0.44
1:G:476:MET:HE1	1:G:503:TYR:CD1	2.53	0.44
1:G:873:GLU:N	1:G:874:PRO:HD2	2.33	0.44
1:A:355:SER:O	1:A:374:TYR:HE1	2.00	0.44
1:A:456:TYR:OH	1:A:475:ARG:HA	2.17	0.44
1:C:720:TYR:CD2	1:C:723:ARG:HD2	2.52	0.44
1:C:804:ASN:ND2	1:C:807:ALA:HB2	2.33	0.44
2:D:937:PHE:O	2:D:937:PHE:CG	2.70	0.44
1:E:698:HIS:HE1	1:E:924:MET:HB3	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:927:LEU:HG	1:E:933:MET:CE	2.45	0.44
1:G:323:LEU:HG	1:G:339:LEU:HD21	2.00	0.44
1:G:324:ALA:CA	1:G:339:LEU:HD22	2.47	0.44
1:G:785:ILE:HG22	1:G:786:GLN:HG2	2.00	0.44
1:A:770:ASN:O	1:A:774:GLU:HG3	2.18	0.44
1:A:839:GLN:HB2	1:A:841:TYR:CD2	2.53	0.44
1:C:415:ASN:ND2	1:C:418:PHE:HB2	2.33	0.44
1:C:1012:GLN:HB3	1:C:1026:MET:HE2	1.97	0.44
1:E:480:VAL:HG22	1:E:505:LEU:CD2	2.48	0.44
1:E:667:ILE:HG23	1:E:667:ILE:O	2.17	0.44
1:A:384:PHE:CD2	1:A:387:ALA:HB2	2.50	0.44
1:A:552:SER:HB2	1:A:629:MET:HB2	2.00	0.44
1:A:695:ILE:HD12	1:A:696:GLY:H	1.81	0.44
1:C:842:LYS:HD3	1:C:917:CYS:HB3	1.99	0.44
1:E:533:TYR:HD2	1:E:619:HIS:CG	2.35	0.44
1:E:678:VAL:O	1:E:678:VAL:HG13	2.17	0.44
1:G:366:LYS:HD2	1:G:366:LYS:HA	1.65	0.44
1:G:369:GLU:HA	1:G:372:MET:HG2	1.99	0.44
1:A:358:ALA:HB2	1:A:373:HIS:CB	2.40	0.44
1:A:771:THR:HA	1:A:774:GLU:HG3	2.00	0.44
1:C:480:VAL:HG22	1:C:505:LEU:CD2	2.48	0.44
1:C:806:LYS:HA	1:C:806:LYS:HD3	1.63	0.44
1:G:836:ASN:ND2	1:G:912:LEU:O	2.50	0.44
1:A:367:LEU:HD12	1:A:398:MET:HG2	2.00	0.43
1:C:724:ILE:HG23	1:C:821:THR:CG2	2.45	0.43
1:C:725:VAL:HG12	1:C:820:THR:O	2.18	0.43
1:C:772:ILE:O	1:C:776:VAL:HG23	2.18	0.43
3:C:1201:UD1:H1'	3:C:1201:UD1:O1A	2.18	0.43
1:E:614:ALA:HB3	1:E:640:LEU:HD21	2.00	0.43
1:E:630:ASN:O	1:E:633:THR:OG1	2.31	0.43
1:E:827:LEU:CD1	1:E:833:VAL:HG11	2.48	0.43
1:E:921:THR:O	1:E:925:ASP:OD2	2.35	0.43
1:C:720:TYR:HD2	1:C:723:ARG:HD2	1.81	0.43
1:C:854:ILE:HG21	1:C:970:ALA:HB1	2.00	0.43
1:C:937:PRO:HD2	1:C:960:ALA:O	2.18	0.43
1:E:340:TYR:CE1	1:E:356:ASN:HB2	2.53	0.43
1:E:793:SER:C	1:E:794:ILE:HD13	2.37	0.43
1:G:670:ASP:OD1	1:G:671:GLN:O	2.36	0.43
1:G:860:ASN:OD1	1:G:860:ASN:C	2.56	0.43
1:A:821:THR:N	1:A:824:GLN:OE1	2.50	0.43
1:A:1007:GLU:O	1:A:1011:LEU:HG	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:379:ARG:NH1	1:C:380:ILE:HG12	2.34	0.43
1:E:357:LEU:HD12	1:E:360:VAL:CG2	2.49	0.43
1:E:553:SER:CB	1:E:583:LEU:HB2	2.40	0.43
1:E:672:GLU:OE2	1:E:951:THR:HG21	2.18	0.43
1:G:725:VAL:CG1	1:G:820:THR:HB	2.46	0.43
1:G:833:VAL:HG23	1:G:908:ALA:HA	2.00	0.43
1:G:844:ASP:OD2	1:G:916:LEU:HD22	2.17	0.43
1:A:720:TYR:HD2	1:A:723:ARG:HD3	1.83	0.43
1:A:933:MET:CE	1:A:946:ALA:HB1	2.49	0.43
1:C:463:LEU:HD22	1:C:468:ASP:HB3	2.00	0.43
1:C:605:LEU:HA	1:C:608:ILE:CD1	2.37	0.43
1:E:698:HIS:HE1	1:E:924:MET:CB	2.31	0.43
1:G:519:ASN:HA	1:G:522:LEU:HD12	1.99	0.43
1:G:901:HIS:CE1	1:G:922:THR:HG23	2.53	0.43
1:A:967:GLU:O	1:A:971:VAL:HG23	2.18	0.43
1:C:496:HIS:CG	1:C:497:PRO:HD2	2.54	0.43
1:C:567:ILE:HD12	1:C:1003:THR:OG1	2.18	0.43
1:E:439:ILE:HD13	1:E:463:LEU:HD23	2.00	0.43
1:E:684:GLU:CD	1:E:684:GLU:H	2.21	0.43
1:E:698:HIS:ND1	1:E:997:PHE:HE2	2.17	0.43
1:G:374:TYR:HB3	1:G:391:MET:HG3	2.00	0.43
1:A:710:VAL:HA	1:A:724:ILE:O	2.18	0.43
1:A:500:SER:HB2	1:A:510:ARG:HD3	2.01	0.43
1:A:821:THR:HG23	1:A:824:GLN:H	1.83	0.43
1:C:461:HIS:O	1:C:465:ILE:HG13	2.19	0.43
1:C:850:MET:CE	1:C:963:ARG:HA	2.49	0.43
1:E:492:LEU:HD13	1:E:520:LEU:HD11	2.00	0.43
1:E:866:LEU:HA	1:E:893:SER:O	2.19	0.43
1:E:899:GLU:CD	1:E:903:ARG:HE	2.21	0.43
1:G:408:TYR:CE2	1:G:428:ILE:HD11	2.53	0.43
1:G:769:MET:CE	2:H:945:LEU:HB2	2.49	0.43
2:H:941:TYR:HD1	2:H:942:LEU:O	2.02	0.43
1:A:393:ASN:O	1:A:396:LYS:HB2	2.19	0.43
1:A:631:GLY:HA3	1:A:655:TYR:HB2	2.01	0.43
1:C:360:VAL:HG13	1:C:361:LEU:HD12	2.00	0.43
1:C:368:GLN:C	1:C:370:ALA:H	2.21	0.43
1:G:685:LYS:HD2	1:G:1025:HIS:N	2.34	0.43
1:G:807:ALA:HA	1:G:812:GLU:O	2.19	0.43
1:G:898:LYS:O	1:G:902:VAL:HG23	2.18	0.43
1:A:463:LEU:HD13	1:A:475:ARG:NH2	2.33	0.43
2:B:937:PHE:CG	2:B:937:PHE:O	2.72	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:366:LYS:HD2	1:E:366:LYS:HA	1.78	0.43
1:E:366:LYS:HG3	1:E:369:GLU:HB3	2.01	0.43
1:E:545:ARG:HD2	1:E:576:PHE:O	2.19	0.43
1:E:933:MET:SD	1:E:933:MET:N	2.91	0.43
1:G:546:LEU:HD11	1:G:624:HIS:HB2	1.99	0.43
1:G:699:ALA:HA	1:G:928:TRP:CH2	2.54	0.43
1:G:857:ARG:CZ	1:G:971:VAL:HG21	2.49	0.43
1:A:426:ALA:HB1	1:A:438:ALA:O	2.19	0.43
1:A:552:SER:HB3	1:A:555:PHE:CE2	2.53	0.43
1:C:1016:HIS:CD2	1:C:1021:ASN:HB2	2.54	0.43
1:E:666:TYR:HE2	1:E:1026:MET:HG2	1.84	0.43
1:G:586:ASP:HA	1:G:592:ARG:CD	2.48	0.43
1:A:682:TYR:CD2	1:A:686:LEU:HD21	2.54	0.42
1:A:834:TYR:HD1	1:A:912:LEU:HD21	1.84	0.42
1:C:699:ALA:HA	1:C:928:TRP:CH2	2.53	0.42
1:E:318:ASP:OD1	1:E:322:ASN:ND2	2.52	0.42
1:E:378:ILE:CD1	1:E:387:ALA:HB3	2.49	0.42
1:E:497:PRO:HB2	1:E:655:TYR:OH	2.18	0.42
1:E:686:LEU:HD23	1:E:686:LEU:HA	1.88	0.42
3:E:1201:UD1:H2B	3:E:1201:UD1:H6	1.84	0.42
1:A:895:VAL:HG13	3:A:1201:UD1:O4	2.19	0.42
1:E:319:SER:O	1:E:323:LEU:HD23	2.19	0.42
1:E:453:PRO:HB3	1:E:482:ILE:CG2	2.48	0.42
1:G:372:MET:SD	1:G:372:MET:N	2.92	0.42
1:G:841:TYR:OH	3:G:1201:UD1:H8'1	2.19	0.42
1:G:898:LYS:NZ	3:G:1201:UD1:O3B	2.49	0.42
1:G:955:CYS:HB3	1:G:958:LEU:HD12	2.01	0.42
1:A:321:ASN:HD21	1:A:356:ASN:ND2	2.17	0.42
1:C:350:PHE:CD1	1:C:353:ALA:HB2	2.54	0.42
1:C:387:ALA:C	1:C:389:SER:H	2.22	0.42
1:C:474:GLU:H	1:C:474:GLU:CD	2.22	0.42
1:C:725:VAL:C	1:C:726:LEU:HD12	2.39	0.42
1:E:734:PHE:HD2	1:E:792:PHE:CB	2.31	0.42
1:G:631:GLY:HA3	1:G:655:TYR:HB2	2.01	0.42
1:G:695:ILE:HG13	1:G:696:GLY:N	2.34	0.42
1:A:823:SER:HB3	2:B:943:LEU:HD11	1.99	0.42
1:C:326:ILE:HG13	1:C:326:ILE:H	1.62	0.42
1:C:665:ASP:HB3	1:C:1023:PRO:CG	2.49	0.42
1:C:795:SER:HB2	1:C:803:ILE:CD1	2.49	0.42
1:E:326:ILE:HD12	1:E:326:ILE:HA	1.88	0.42
1:E:357:LEU:HD23	1:E:373:HIS:CD2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1012:GLN:HB2	1:G:1026:MET:CE	2.50	0.42
1:A:405:LEU:HD13	1:A:428:ILE:HD12	2.01	0.42
1:C:357:LEU:HA	1:C:360:VAL:HG12	2.01	0.42
1:E:471:ASP:HA	1:E:474:GLU:OE2	2.20	0.42
1:G:704:HIS:HB3	1:G:729:ILE:HD11	2.01	0.42
1:G:937:PRO:HB3	1:G:944:ARG:HA	2.01	0.42
2:H:943:LEU:O	2:H:943:LEU:HD12	2.20	0.42
1:A:327:LYS:HD2	1:A:332:ASN:CB	2.49	0.42
1:A:679:ALA:O	1:A:680:GLU:HB2	2.20	0.42
1:E:429:HIS:CE1	1:E:437:GLU:HG2	2.54	0.42
1:E:653:LEU:HB3	1:E:654:GLY:H	1.54	0.42
1:A:945:VAL:C	1:A:947:ALA:H	2.22	0.42
1:C:349:GLU:CA	1:C:380:ILE:HD13	2.48	0.42
1:C:449:LYS:O	1:C:452:PHE:HB2	2.20	0.42
1:C:928:TRP:O	1:C:991:ARG:NH1	2.51	0.42
1:E:566:SER:OG	1:E:697:ASP:OD1	2.34	0.42
1:E:738:LEU:HB2	1:E:741:VAL:HG23	2.01	0.42
1:G:698:HIS:NE2	1:G:925:ASP:OD1	2.37	0.42
1:G:920:HIS:O	3:G:1201:UD1:PB	2.78	0.42
1:A:342:LYS:O	1:A:346:VAL:HG23	2.20	0.42
1:A:719:ILE:CG2	1:A:744:VAL:HG11	2.50	0.42
1:A:825:TYR:CZ	1:A:904:ARG:HG2	2.55	0.42
1:G:472:TYR:O	1:G:476:MET:HG2	2.20	0.42
1:G:787:ILE:CG1	1:G:794:ILE:HB	2.50	0.42
1:A:690:PRO:HG2	1:A:1005:GLU:OE1	2.19	0.42
1:C:723:ARG:O	1:C:724:ILE:C	2.58	0.42
1:E:350:PHE:HE1	1:E:352:ALA:HB3	1.83	0.42
1:E:422:HIS:HB2	1:E:445:ALA:HB2	2.01	0.42
1:E:678:VAL:HG21	1:E:681:GLN:HE21	1.81	0.42
1:E:795:SER:HB3	1:E:803:ILE:HD13	2.01	0.42
1:G:667:ILE:HG22	1:G:684:GLU:HB2	2.02	0.42
1:G:804:ASN:OD1	1:G:806:LYS:HB2	2.19	0.42
1:A:854:ILE:HD13	1:A:971:VAL:HG23	2.02	0.42
1:E:358:ALA:HB2	1:E:373:HIS:HB2	2.01	0.42
1:E:726:LEU:CG	1:E:819:VAL:HG22	2.48	0.42
1:E:896:ALA:HB1	1:E:900:GLU:HB3	2.01	0.42
1:E:1007:GLU:O	1:E:1011:LEU:HG	2.19	0.42
1:G:497:PRO:HD3	1:G:517:HIS:CE1	2.55	0.42
1:G:723:ARG:NH1	1:G:830:ASP:HB3	2.35	0.42
1:A:324:ALA:HB1	1:A:340:TYR:CD2	2.55	0.41
1:A:565:GLN:NE2	1:A:697:ASP:OD2	2.43	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:360:VAL:O	1:C:364:GLN:N	2.45	0.41
1:E:340:TYR:CB	1:E:357:LEU:HD13	2.49	0.41
1:E:645:PRO:HD2	1:E:649:GLN:OE1	2.19	0.41
1:G:685:LYS:HD2	1:G:1024:ASP:HA	2.01	0.41
1:A:688:TYR:O	1:A:1009:LEU:HD22	2.20	0.41
1:A:867:ARG:HB3	1:A:870:ALA:HA	2.02	0.41
1:E:358:ALA:HB2	1:E:373:HIS:CB	2.50	0.41
1:G:565:GLN:HE22	1:G:591:PHE:HD1	1.68	0.41
1:G:797:GLY:HA2	1:G:818:ILE:CG2	2.49	0.41
1:A:318:ASP:C	1:A:318:ASP:OD1	2.59	0.41
1:A:332:ASN:O	1:A:336:ALA:N	2.53	0.41
1:A:446:LEU:CD2	1:A:455:ALA:HB3	2.50	0.41
1:C:461:HIS:CE1	1:C:465:ILE:HD11	2.56	0.41
1:E:698:HIS:CE1	1:E:924:MET:HB3	2.55	0.41
1:G:349:GLU:HB3	1:G:380:ILE:HD12	2.02	0.41
1:A:946:ALA:O	1:A:950:LEU:HD13	2.20	0.41
1:E:580:CYS:HB2	1:E:602:PHE:CD1	2.54	0.41
1:E:714:LYS:HZ1	2:F:946:PRO:CB	2.33	0.41
1:E:818:ILE:CG2	1:E:903:ARG:HD2	2.49	0.41
1:G:387:ALA:HA	1:G:390:ASN:OD1	2.19	0.41
1:G:567:ILE:HB	1:G:568:PRO:HD3	2.02	0.41
1:C:342:LYS:HA	1:C:342:LYS:HD2	1.84	0.41
1:C:885:LEU:HD23	1:C:885:LEU:HA	1.81	0.41
1:E:780:ILE:O	2:F:939:PRO:HG3	2.21	0.41
1:E:824:GLN:H	1:E:824:GLN:HG3	1.68	0.41
1:G:782:ARG:HE	1:G:782:ARG:HB3	1.77	0.41
1:G:687:ALA:O	1:G:1009:LEU:HD21	2.20	0.41
1:G:697:ASP:O	1:G:701:MET:HG3	2.20	0.41
1:A:452:PHE:HD2	1:A:455:ALA:CB	2.32	0.41
1:A:502:LEU:HD11	1:A:841:TYR:HD1	1.80	0.41
1:C:581:TYR:CE1	1:C:603:ILE:HD13	2.55	0.41
1:C:839:GLN:HB2	1:C:841:TYR:CD1	2.55	0.41
1:C:961:LYS:HG3	1:C:965:GLU:OE1	2.21	0.41
1:G:439:ILE:HG23	1:G:459:LEU:CD1	2.51	0.41
1:A:461:HIS:CE1	1:A:465:ILE:HD11	2.56	0.41
1:C:501:MET:HG3	1:C:502:LEU:HG	2.02	0.41
1:C:522:LEU:HD21	1:C:663:PHE:HE1	1.83	0.41
1:C:689:MET:HE1	1:C:1002:TYR:CE2	2.54	0.41
1:C:850:MET:HE2	1:C:966:TYR:CD2	2.56	0.41
1:E:804:ASN:HD22	1:E:807:ALA:HB2	1.84	0.41
1:G:946:ALA:HA	1:G:949:GLN:HG3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:367:LEU:HD23	1:A:367:LEU:N	2.35	0.41
1:A:564:MET:HE2	1:A:564:MET:HB2	1.88	0.41
1:A:679:ALA:C	1:A:681:GLN:H	2.24	0.41
1:C:561:SER:O	1:C:565:GLN:HB3	2.21	0.41
1:E:351:ALA:HB2	1:E:380:ILE:HB	2.03	0.41
1:E:422:HIS:CB	1:E:445:ALA:HB2	2.50	0.41
1:E:536:PRO:HB3	1:E:541:LEU:HD21	2.02	0.41
1:E:879:TYR:O	1:E:883:MET:HG3	2.21	0.41
1:G:596:MET:HE3	1:G:602:PHE:CE1	2.56	0.41
2:B:942:LEU:N	2:B:942:LEU:HD22	2.36	0.41
1:E:410:ARG:O	1:E:414:ILE:HD12	2.21	0.41
1:E:828:PRO:HB2	1:E:831:ALA:HB3	2.02	0.41
1:G:434:ASN:OD1	1:G:437:GLU:HB2	2.21	0.41
1:G:589:THR:HA	1:G:811:GLU:OE2	2.21	0.41
1:G:855:LEU:HB3	1:G:889:ARG:NH2	2.36	0.41
1:G:866:LEU:HA	1:G:893:SER:O	2.21	0.41
1:A:711:ILE:HG12	1:A:767:ILE:HB	2.03	0.40
1:A:773:ALA:O	1:A:777:ILE:HG13	2.21	0.40
1:C:740:ASP:HB2	1:C:768:PRO:HG3	2.03	0.40
1:E:537:LYS:HD2	1:E:1017:TYR:OH	2.21	0.40
1:E:590:ASN:O	1:E:594:LYS:HG3	2.20	0.40
1:E:714:LYS:HB3	1:E:769:MET:HG3	2.03	0.40
2:F:938:SER:HB2	2:F:939:PRO:CD	2.43	0.40
1:G:833:VAL:HG23	1:G:909:ASP:N	2.37	0.40
1:A:324:ALA:HB1	1:A:340:TYR:CE2	2.56	0.40
2:B:938:SER:CB	2:B:939:PRO:CD	2.99	0.40
1:C:999:THR:OG1	1:C:1000:LYS:N	2.54	0.40
1:E:398:MET:O	1:E:399:GLN:HB2	2.21	0.40
1:E:537:LYS:HD2	1:E:1017:TYR:CZ	2.56	0.40
1:G:320:LEU:CD1	1:G:342:LYS:HG3	2.46	0.40
1:E:837:PHE:O	1:E:922:THR:HG21	2.21	0.40
1:G:324:ALA:HB3	1:G:340:TYR:CE1	2.56	0.40
1:G:328:ARG:NH1	1:G:363:GLN:OE1	2.54	0.40
1:C:362:GLN:HG3	1:C:394:THR:HG23	2.02	0.40
1:C:426:ALA:HB1	1:C:442:TYR:CD2	2.56	0.40
1:E:911:CYS:HB3	1:E:933:MET:HB3	2.02	0.40
1:G:986:LYS:O	1:G:990:GLN:HG2	2.21	0.40
1:C:422:HIS:HB2	1:C:445:ALA:HB2	2.04	0.40
1:C:689:MET:HE3	1:C:689:MET:HB3	1.96	0.40
1:E:738:LEU:HD12	1:E:767:ILE:HD11	2.03	0.40
1:G:327:LYS:O	1:G:331:GLY:HA3	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:328:ARG:NH2	1:G:360:VAL:HA	2.37	0.40
1:G:412:ILE:HD11	1:G:421:ALA:CB	2.52	0.40
1:G:577:GLU:OE2	1:G:601:HIS:NE2	2.55	0.40
1:G:868:PHE:HB2	1:G:895:VAL:HG12	2.03	0.40
1:G:1016:HIS:O	1:G:1021:ASN:HB2	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	689/723 (95%)	664 (96%)	24 (4%)	1 (0%)	51 83
1	C	689/723 (95%)	662 (96%)	26 (4%)	1 (0%)	51 83
1	E	689/723 (95%)	658 (96%)	31 (4%)	0	100 100
1	G	689/723 (95%)	653 (95%)	34 (5%)	2 (0%)	41 74
2	B	9/13 (69%)	8 (89%)	1 (11%)	0	100 100
2	D	9/13 (69%)	9 (100%)	0	0	100 100
2	F	9/13 (69%)	5 (56%)	4 (44%)	0	100 100
2	H	9/13 (69%)	8 (89%)	1 (11%)	0	100 100
All	All	2792/2944 (95%)	2667 (96%)	121 (4%)	4 (0%)	51 83

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	364	GLN
1	G	921	THR
1	C	351	ALA
1	G	690	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	597/618 (97%)	589 (99%)	8 (1%)	69 83
1	C	597/618 (97%)	592 (99%)	5 (1%)	81 89
1	E	597/618 (97%)	591 (99%)	6 (1%)	76 86
1	G	597/618 (97%)	588 (98%)	9 (2%)	65 81
2	B	10/12 (83%)	10 (100%)	0	100 100
2	D	10/12 (83%)	10 (100%)	0	100 100
2	F	10/12 (83%)	10 (100%)	0	100 100
2	H	10/12 (83%)	10 (100%)	0	100 100
All	All	2428/2520 (96%)	2400 (99%)	28 (1%)	71 84

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	328	ARG
1	A	338	ARG
1	A	341	ARG
1	A	386	ASP
1	A	523	ASP
1	A	564	MET
1	A	617	ARG
1	A	671	GLN
1	C	379	ARG
1	C	384	PHE
1	C	689	MET
1	C	898	LYS
1	C	925	ASP
1	E	350	PHE
1	E	363	GLN
1	E	368	GLN
1	E	376	GLU
1	E	384	PHE
1	E	389	SER

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Mol	Chain	Res	Type
1	G	350	PHE
1	G	515	GLU
1	G	594	LYS
1	G	617	ARG
1	G	651	MET
1	G	694	PHE
1	G	920	HIS
1	G	949	GLN
1	G	963	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (17) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	321	ASN
1	A	332	ASN
1	A	373	HIS
1	A	802	GLN
1	A	836	ASN
1	A	920	HIS
1	C	332	ASN
1	C	354	HIS
1	C	373	HIS
1	C	393	ASN
1	C	498	HIS
1	C	590	ASN
1	C	649	GLN
1	E	681	GLN
1	G	364	GLN
1	G	557	ASN
1	G	918	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

4 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
3	UD1	A	1201	-	38,41,41	0.33	0	57,62,62	0.66	2 (3%)
3	UD1	E	1201	-	38,41,41	0.34	0	57,62,62	0.67	2 (3%)
3	UD1	C	1201	-	38,41,41	0.34	0	57,62,62	0.67	2 (3%)
3	UD1	G	1201	-	38,41,41	0.39	0	57,62,62	0.71	2 (3%)

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
3	UD1	A	1201	-	-	8/26/63/63	0/3/3/3
3	UD1	E	1201	-	-	15/26/63/63	0/3/3/3
3	UD1	C	1201	-	-	7/26/63/63	0/3/3/3
3	UD1	G	1201	-	-	13/26/63/63	0/3/3/3

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	E	1201	UD1	PB-O1'-C1'	-3.54	106.05	119.74
3	C	1201	UD1	PB-O1'-C1'	-3.51	106.19	119.74
3	A	1201	UD1	PB-O1'-C1'	-3.34	106.83	119.74
3	G	1201	UD1	O3A-PB-O1'	3.25	109.03	102.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	1201	UD1	O3A-PB-O1'	2.95	108.44	102.48
3	A	1201	UD1	O3A-PB-O1'	2.94	108.42	102.48
3	E	1201	UD1	O3A-PB-O1'	2.81	108.14	102.48
3	G	1201	UD1	PB-O1'-C1'	-2.78	108.99	119.74

There are no chirality outliers.

All (43) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	C	1201	UD1	O5'-C1'-O1'-PB
3	E	1201	UD1	C5B-O5B-PA-O1A
3	E	1201	UD1	C5B-O5B-PA-O2A
3	G	1201	UD1	C1'-C2'-N2'-C7'
3	G	1201	UD1	C1'-O1'-PB-O3A
3	G	1201	UD1	C1'-O1'-PB-O1B
3	G	1201	UD1	C5B-O5B-PA-O1A
3	G	1201	UD1	C5B-O5B-PA-O2A
3	A	1201	UD1	C3B-C4B-C5B-O5B
3	A	1201	UD1	O4B-C4B-C5B-O5B
3	C	1201	UD1	O4B-C4B-C5B-O5B
3	G	1201	UD1	C3B-C4B-C5B-O5B
3	G	1201	UD1	O4B-C4B-C5B-O5B
3	A	1201	UD1	C1'-O1'-PB-O3A
3	E	1201	UD1	C8'-C7'-N2'-C2'
3	E	1201	UD1	O7'-C7'-N2'-C2'
3	C	1201	UD1	C3B-C4B-C5B-O5B
3	E	1201	UD1	C2B-C1B-N1-C6
3	E	1201	UD1	C2B-C1B-N1-C2
3	E	1201	UD1	C4'-C5'-C6'-O6'
3	G	1201	UD1	PB-O3A-PA-O5B
3	G	1201	UD1	C3'-C2'-N2'-C7'
3	E	1201	UD1	O4B-C1B-N1-C2
3	E	1201	UD1	C5B-O5B-PA-O3A
3	E	1201	UD1	O4B-C1B-N1-C6
3	G	1201	UD1	PA-O3A-PB-O2B
3	A	1201	UD1	C4'-C5'-C6'-O6'
3	E	1201	UD1	O5'-C5'-C6'-O6'
3	C	1201	UD1	C2B-C1B-N1-C6
3	E	1201	UD1	O5'-C1'-O1'-PB
3	E	1201	UD1	PA-O3A-PB-O1B
3	G	1201	UD1	PB-O3A-PA-O1A
3	G	1201	UD1	C1'-O1'-PB-O2B

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Mol	Chain	Res	Type	Atoms
3	C	1201	UD1	O4B-C1B-N1-C6
3	E	1201	UD1	PA-O3A-PB-O2B
3	G	1201	UD1	C5B-O5B-PA-O3A
3	C	1201	UD1	O4B-C1B-N1-C2
3	E	1201	UD1	O4B-C4B-C5B-O5B
3	A	1201	UD1	PA-O3A-PB-O2B
3	A	1201	UD1	O4B-C1B-N1-C6
3	A	1201	UD1	C2B-C1B-N1-C6
3	C	1201	UD1	C2B-C1B-N1-C2
3	A	1201	UD1	O5'-C5'-C6'-O6'

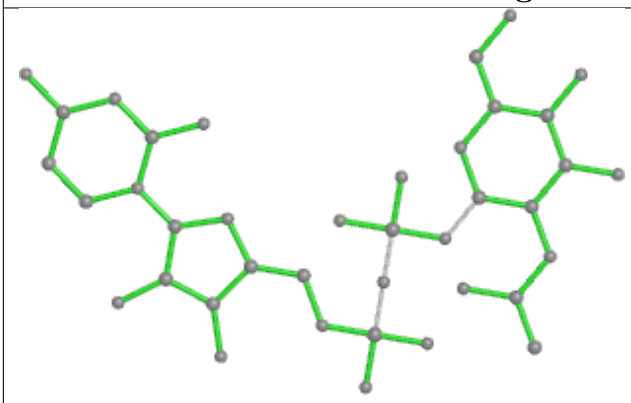
There are no ring outliers.

4 monomers are involved in 22 short contacts:

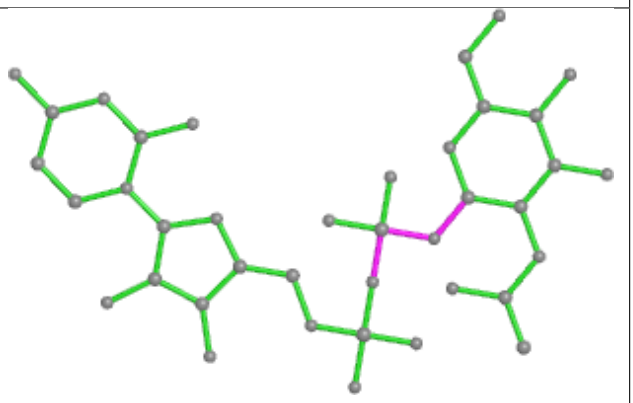
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	1201	UD1	6	0
3	E	1201	UD1	2	0
3	C	1201	UD1	3	0
3	G	1201	UD1	11	0

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 then 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.

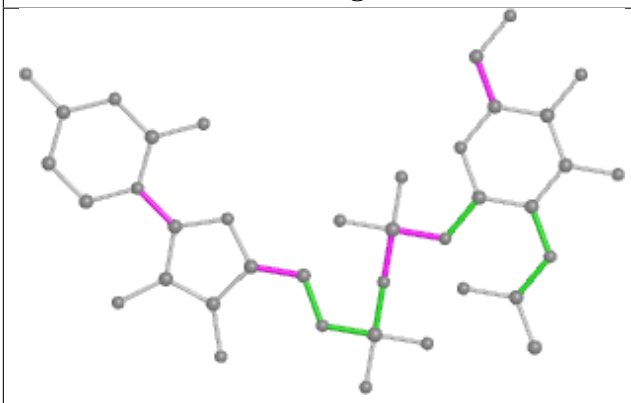
Ligand UD1 A 1201



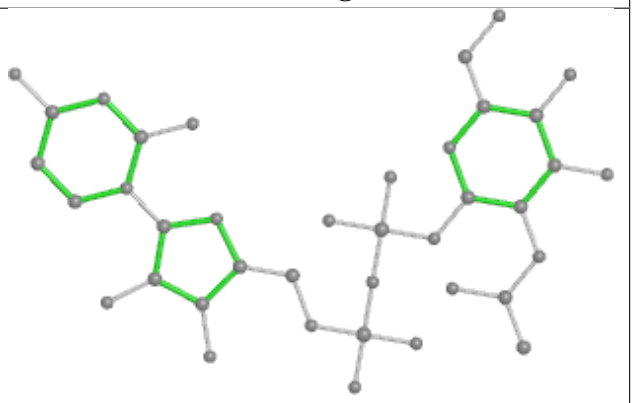
Bond lengths



Bond angles

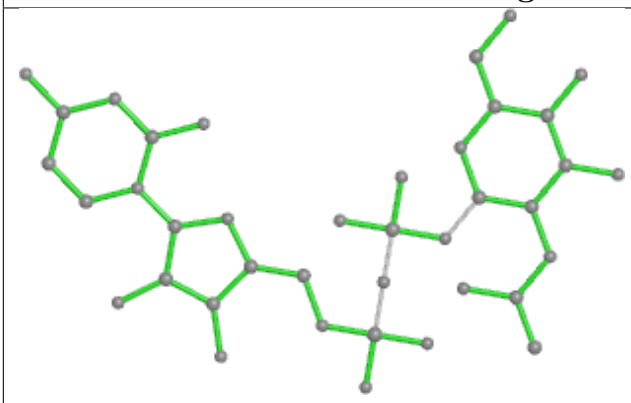


Torsions

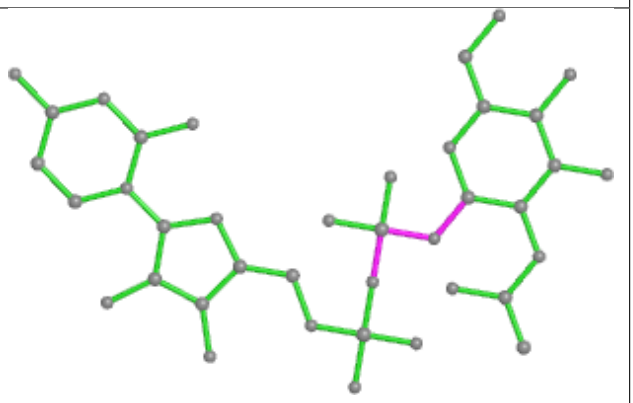


Rings

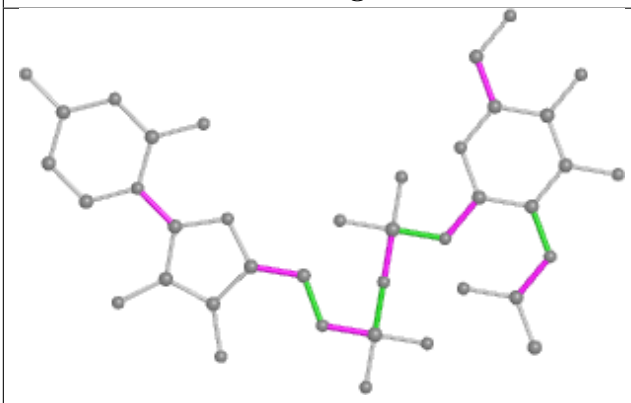
Ligand UD1 E 1201



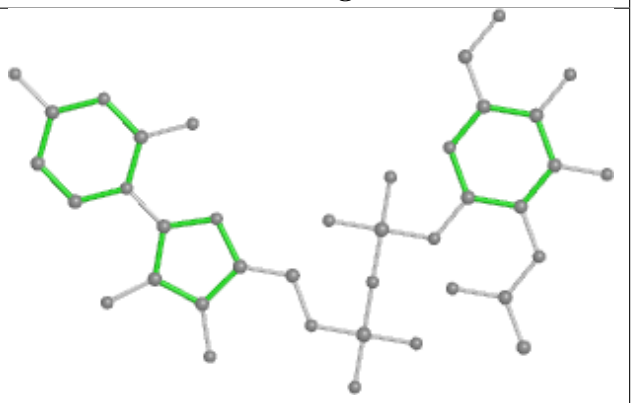
Bond lengths



Bond angles

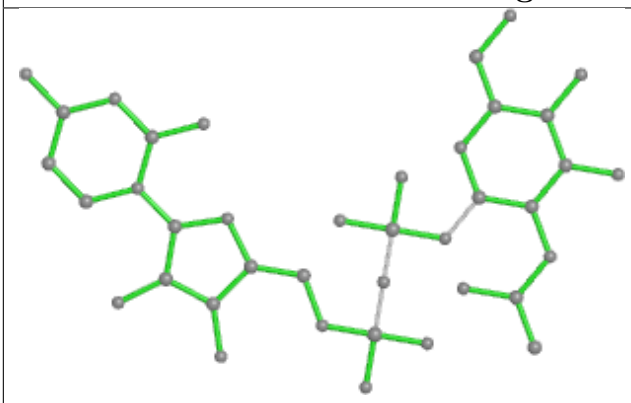


Torsions

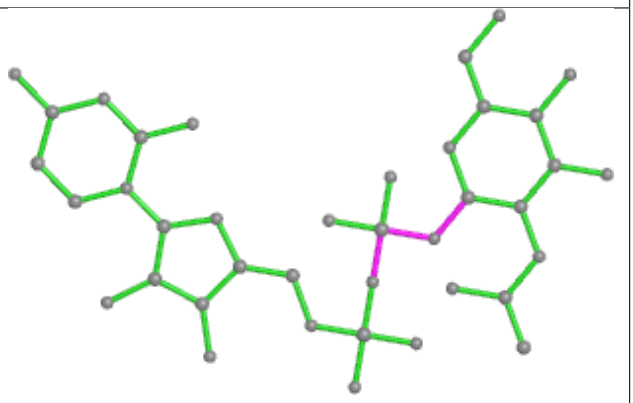


Rings

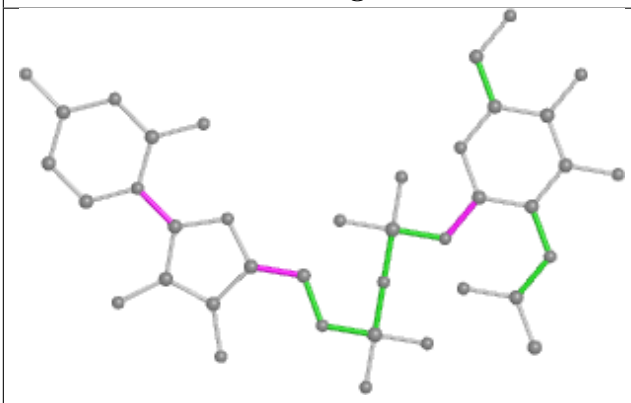
Ligand UD1 C 1201



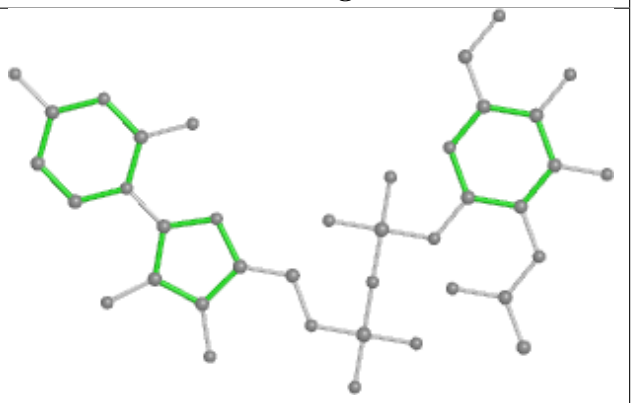
Bond lengths



Bond angles

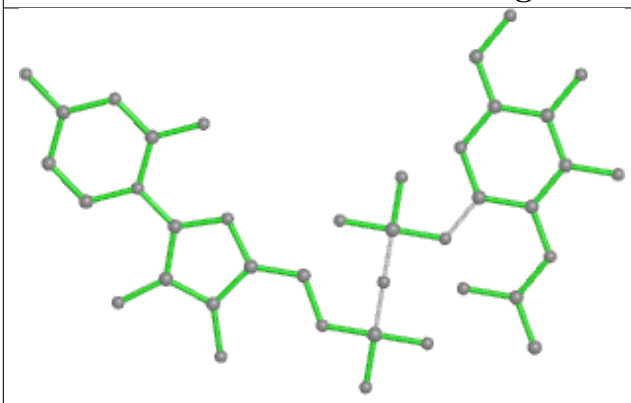


Torsions

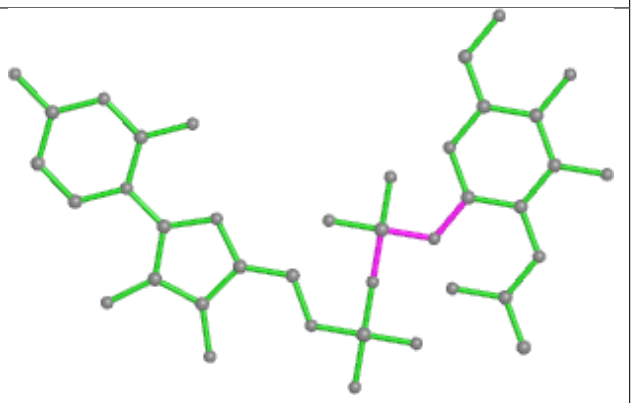


Rings

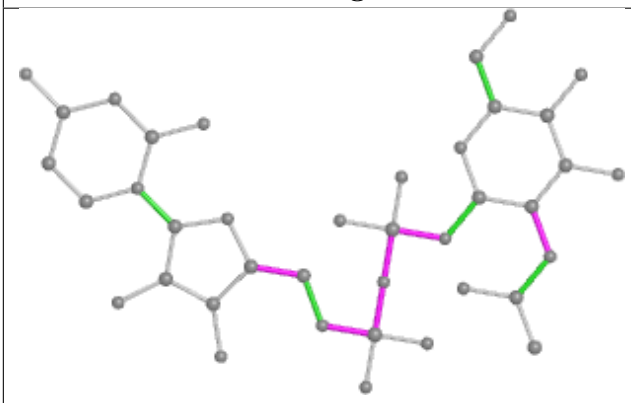
Ligand UD1 G 1201



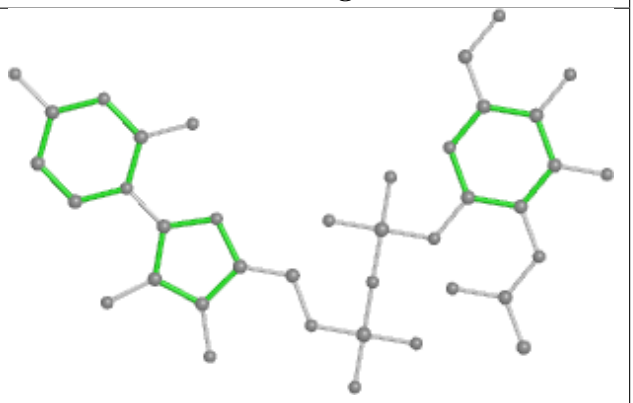
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	A	695/723 (96%)	0.03	7 (1%) 82 73	85, 121, 173, 217	1 (0%)
1	C	695/723 (96%)	0.04	10 (1%) 75 64	89, 125, 180, 215	1 (0%)
1	E	695/723 (96%)	0.07	17 (2%) 59 47	102, 146, 180, 218	1 (0%)
1	G	695/723 (96%)	0.03	9 (1%) 77 67	90, 127, 180, 217	1 (0%)
2	B	11/13 (84%)	-0.01	0 100 100	110, 123, 186, 188	0
2	D	11/13 (84%)	0.36	0 100 100	141, 145, 193, 199	0
2	F	11/13 (84%)	0.35	2 (18%) 1 1	134, 158, 195, 213	0
2	H	11/13 (84%)	0.29	1 (9%) 9 7	103, 130, 185, 203	0
All	All	2824/2944 (95%)	0.04	46 (1%) 72 61	85, 131, 179, 218	4 (0%)

All (46) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	365	GLY	3.9
1	C	367	LEU	3.4
1	G	364	GLN	3.4
1	C	388	TYR	3.3
1	E	719	ILE	3.1
1	E	536	PRO	3.0
1	G	340	TYR	2.9
1	E	340	TYR	2.9
1	E	745	LYS	2.8
1	C	364	GLN	2.7
1	E	414	ILE	2.6
1	C	373	HIS	2.6
1	A	1014	TRP	2.6
1	E	973	LEU	2.6
1	A	769	MET	2.5
2	F	936	ALA	2.5

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Mol	Chain	Res	Type	RSRZ
1	C	330	GLN	2.5
1	E	364	GLN	2.4
1	E	854	ILE	2.4
1	A	1017	TYR	2.4
1	E	711	ILE	2.4
1	A	781	ASN	2.4
1	A	744	VAL	2.4
1	G	672	GLU	2.4
1	G	742	LYS	2.4
1	E	746	MET	2.3
1	E	388	TYR	2.3
1	E	398	MET	2.3
1	E	537	LYS	2.3
2	H	946	PRO	2.3
1	C	369	GLU	2.3
1	E	974	GLY	2.3
2	F	946	PRO	2.3
1	C	337	VAL	2.2
1	G	530	LYS	2.2
1	E	1014	TRP	2.2
1	C	419	ALA	2.2
1	G	321	ASN	2.2
1	G	746	MET	2.1
1	A	640	LEU	2.1
1	C	829	GLU	2.1
1	E	686	LEU	2.1
1	G	769	MET	2.1
1	G	645	PRO	2.1
1	C	885	LEU	2.1
1	E	429	HIS	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

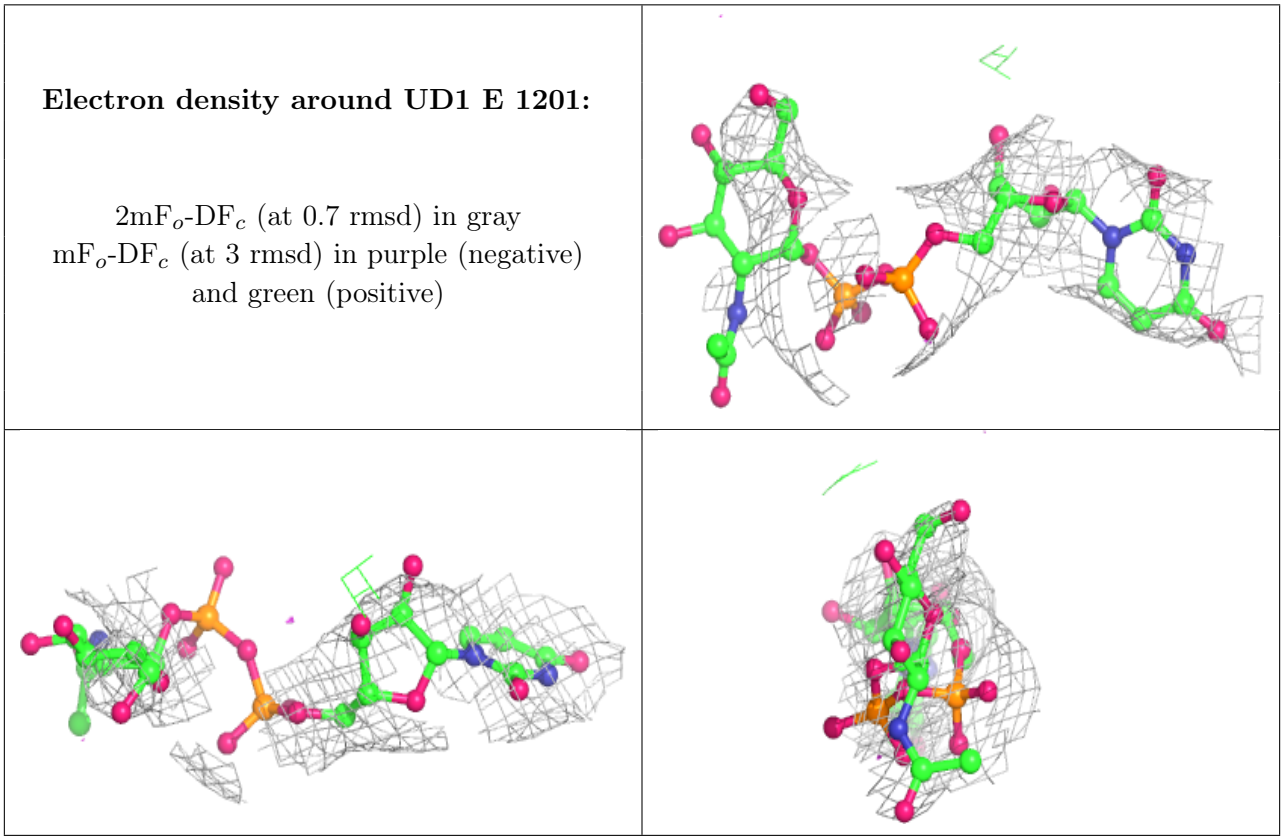
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	UD1	E	1201	39/39	0.91	0.31	109,153,236,247	10
3	UD1	C	1201	39/39	0.92	0.35	85,123,179,185	6
3	UD1	G	1201	39/39	0.92	0.31	91,143,223,251	9
3	UD1	A	1201	39/39	0.95	0.31	87,114,178,183	9

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.

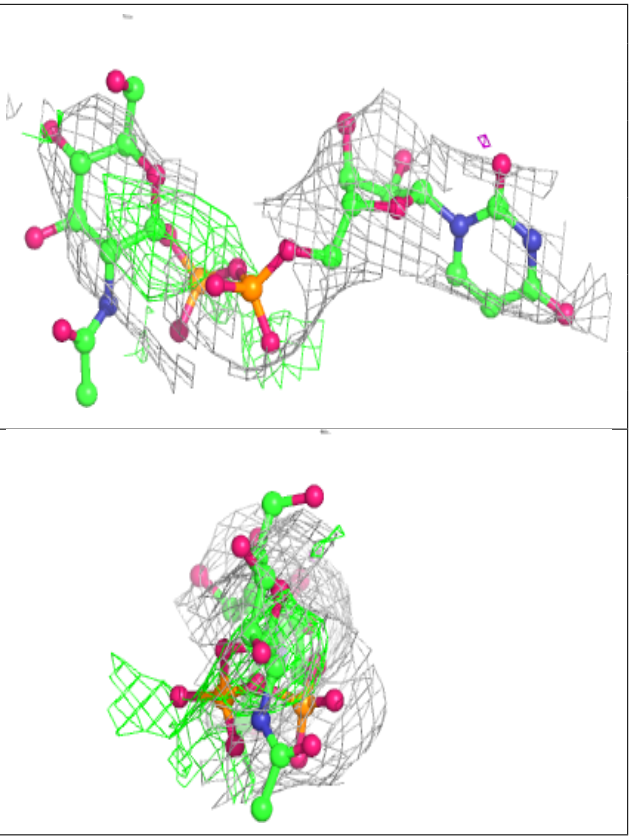
Electron density around UD1 E 1201:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



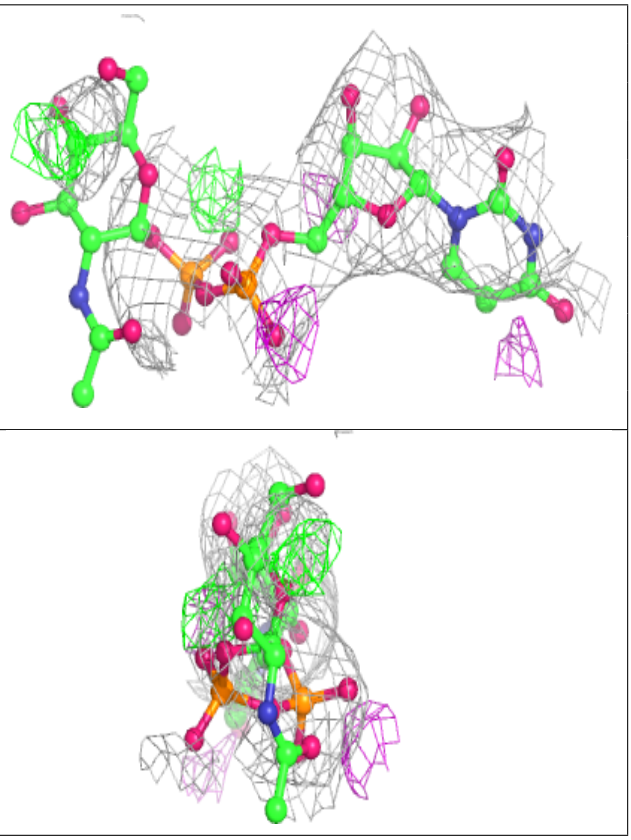
Electron density around UD1 C 1201:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



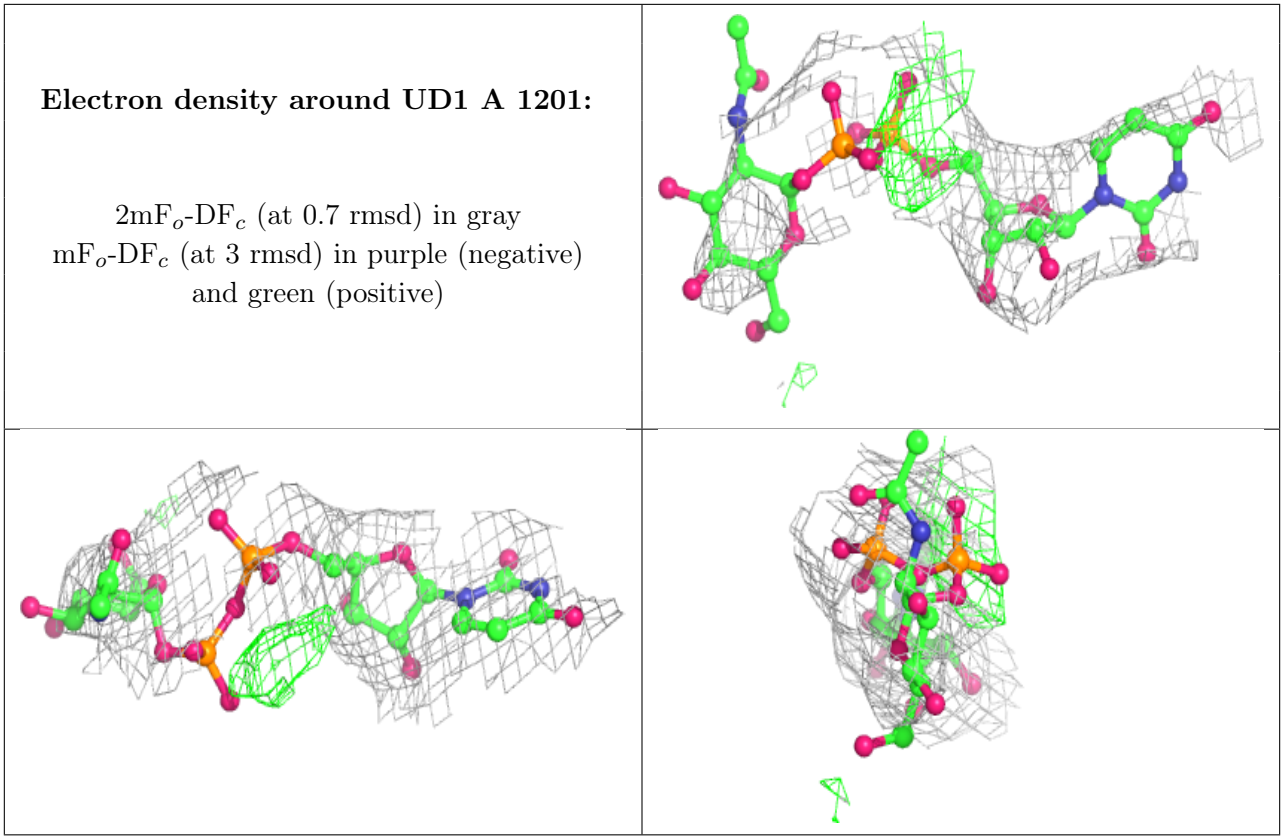
Electron density around UD1 G 1201:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around UD1 A 1201:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers (i)

There are no such residues in this entry.