



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 7, 2026 – 01:12 AM UTC

PDB ID : 2HYD / pdb\_00002hyd  
Title : Multidrug ABC transporter SAV1866  
Authors : Dawson, R.J.P.; Locher, K.P.  
Deposited on : 2006-08-05  
Resolution : 3.00 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 : 4-5-2 with Phenix2.0  
Mogul : 2022.3.0, CSD as543be (2022)  
Xtrriage (Phenix) : 2.0  
EDS : 3.0  
Buster-report : wwPDB partial adaption of 1.1.7 (2018)  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
CCP4 : 9.0.010 (Gargrove)  
Density-Fitness : 1.0.12  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

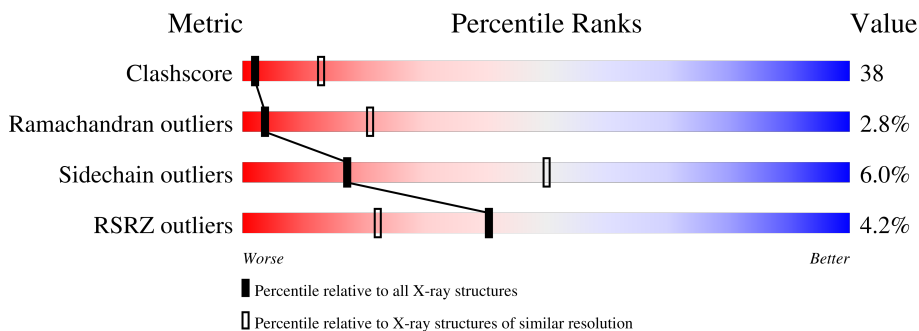
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.00 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))
Clashscore	190562	2977 (3.00-3.00)
Ramachandran outliers	187476	2877 (3.00-3.00)
Sidechain outliers	187428	2880 (3.00-3.00)
RSRZ outliers	180081	2671 (3.00-3.00)

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	578	
1	B	578	

## 2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 9240 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

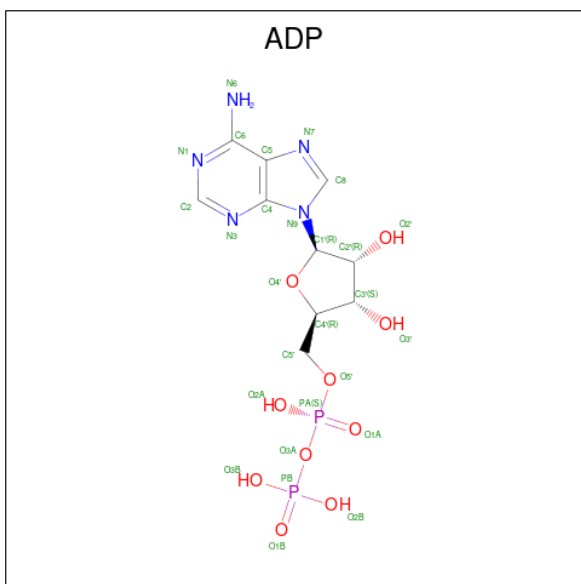
- Molecule 1 is a protein called ABC transporter homolog.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	578	Total 4584	C 2967	N 774	O 834	S 9	1	0	0
1	B	578	Total 4584	C 2967	N 774	O 834	S 9	1	0	0

- Molecule 2 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total 1	Na 1	0	0
2	B	1	Total 1	Na 1	0	0

- Molecule 3 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: C<sub>10</sub>H<sub>15</sub>N<sub>5</sub>O<sub>10</sub>P<sub>2</sub>).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
3	B	1	Total	C	N	O	P	0	0
			27	10	5	10	2		

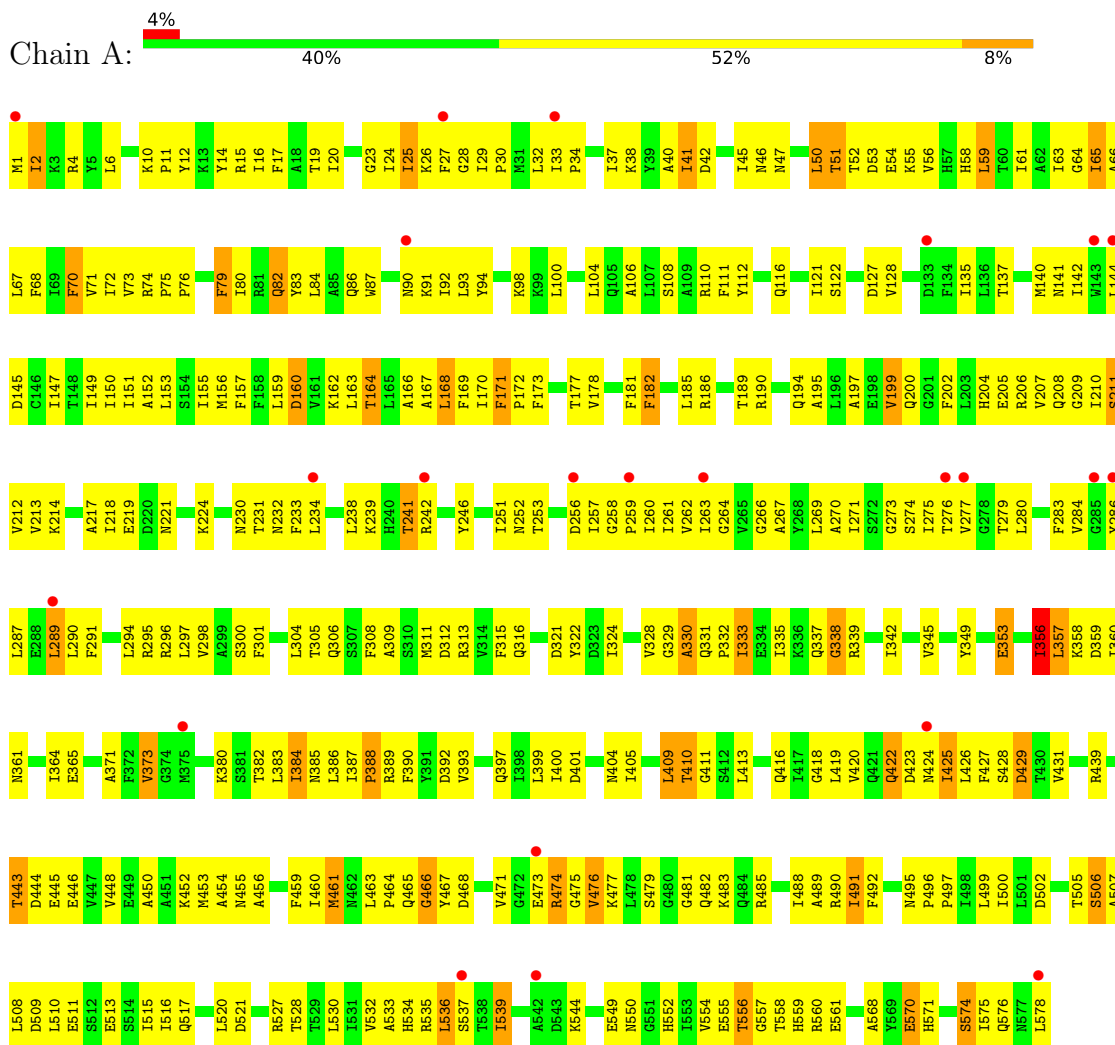
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	8	Total	O	0	0
			8	8		
4	B	8	Total	O	0	0
			8	8		

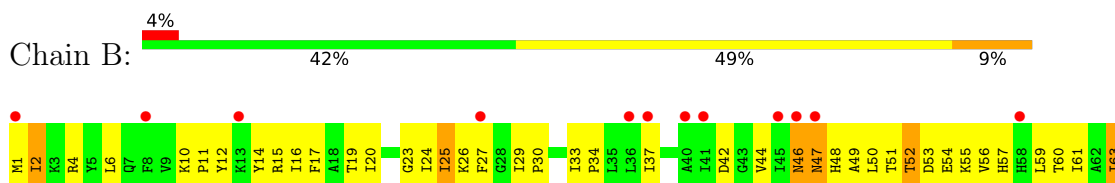
### 3 Residue-property plots i

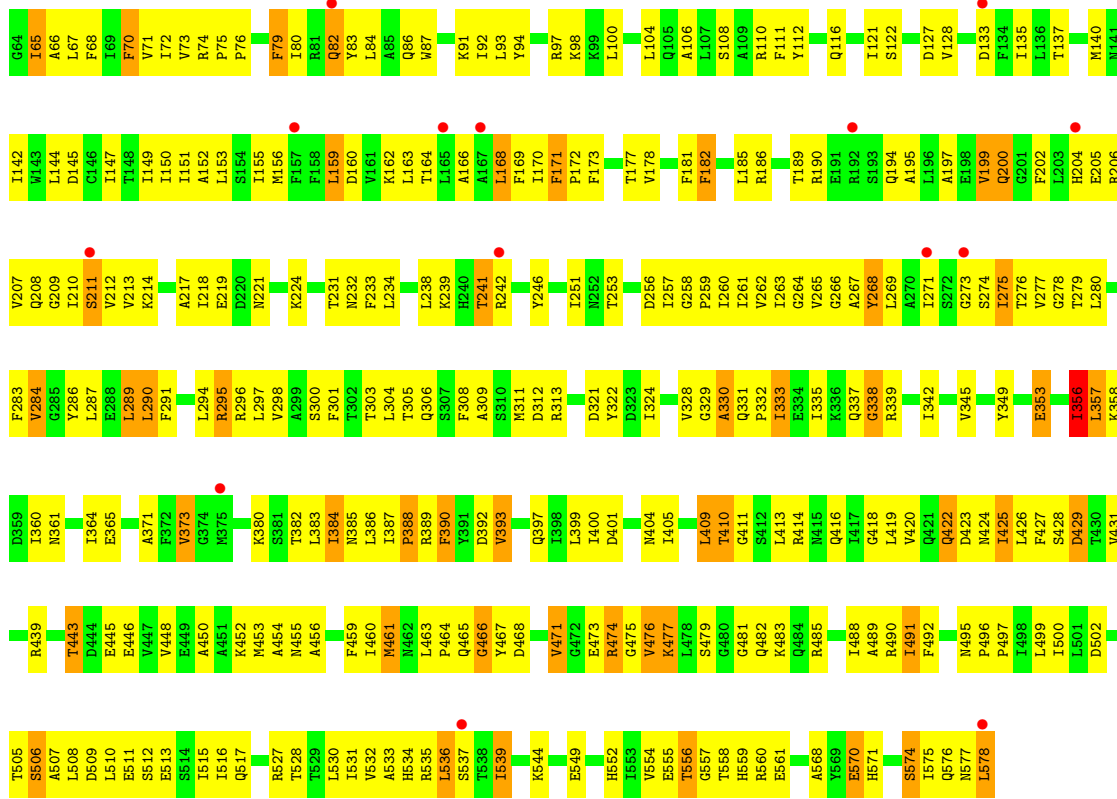
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: ABC transporter homolog



- Molecule 1: ABC transporter homolog





## 4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	161.28Å 103.95Å 181.01Å 90.00° 97.99° 90.00°	Depositor
Resolution (Å)	(Not available) – 3.00 179.26 – 3.00	Depositor EDS
% Data completeness (in resolution range)	(Not available) ((Not available)-3.00) 99.0 (179.26-3.00)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.83 (at 3.00Å)	Xtrriage
Refinement program	CNS 1.1	Depositor
R, $R_{free}$	0.255 , 0.272 0.249 , (Not available)	Depositor DCC
$R_{free}$ test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	78.1	Xtrriage
Anisotropy	0.411	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.28 , 74.1	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	9240	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	102.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.81% 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: ADP, NA

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	0.52	1/4669 (0.0%)	1.02	22/6328 (0.3%)
1	B	0.66	5/4669 (0.1%)	1.04	28/6328 (0.4%)
All	All	0.60	6/9338 (0.1%)	1.03	50/12656 (0.4%)

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	46	ASN	C-N	-15.37	1.12	1.33
1	B	48	HIS	CA-CB	14.95	1.73	1.53
1	B	47	ASN	CB-CG	14.29	1.87	1.52
1	B	356	ILE	CA-CB	-5.69	1.47	1.54
1	A	356	ILE	CA-CB	-5.47	1.47	1.54
1	B	47	ASN	N-CA	5.08	1.52	1.46

All (50) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	63	ILE	N-CA-C	-10.17	101.10	112.80
1	B	61	ILE	N-CA-C	-9.41	104.31	113.53
1	A	50	LEU	N-CA-C	8.57	122.38	108.41
1	B	47	ASN	CA-CB-CG	-8.05	104.55	112.60
1	A	507	ALA	N-CA-C	7.67	122.22	113.02
1	B	507	ALA	N-CA-C	7.65	122.20	113.02
1	A	357	LEU	N-CA-C	-7.25	97.09	108.90
1	B	388	PRO	N-CA-C	-7.24	105.51	114.20
1	B	53	ASP	N-CA-C	-7.21	105.40	114.56
1	A	388	PRO	N-CA-C	-7.17	105.60	114.20
1	B	409	LEU	N-CA-C	-7.09	97.68	109.46
1	B	357	LEU	N-CA-C	-7.01	97.47	108.90
1	A	409	LEU	N-CA-C	-6.94	97.94	109.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	262	VAL	N-CA-C	-6.85	103.54	111.00
1	A	70	PHE	N-CA-C	6.81	118.70	111.28
1	B	70	PHE	N-CA-C	6.69	118.57	111.28
1	B	49	ALA	O-C-N	6.64	130.45	122.21
1	A	59	LEU	N-CA-C	-6.41	104.22	111.14
1	B	419	LEU	N-CA-C	6.34	118.86	108.52
1	A	419	LEU	N-CA-C	6.34	118.85	108.52
1	A	51	THR	N-CA-C	-6.23	101.88	110.35
1	B	17	PHE	N-CA-C	-6.13	104.51	111.07
1	A	17	PHE	N-CA-C	-6.12	104.52	111.07
1	A	166	ALA	N-CA-C	-6.07	104.95	112.90
1	A	147	ILE	N-CA-C	-5.96	104.70	110.42
1	A	164	THR	N-CA-C	-5.88	105.36	112.54
1	B	2	ILE	N-CA-C	-5.57	104.94	110.62
1	B	147	ILE	N-CA-C	-5.57	105.08	110.42
1	A	2	ILE	N-CA-C	-5.56	104.95	110.62
1	B	52	THR	N-CA-C	-5.53	106.74	112.93
1	A	557	GLY	N-CA-C	5.46	118.72	110.75
1	B	333	ILE	N-CA-C	5.43	115.78	108.17
1	A	333	ILE	N-CA-C	5.42	115.77	108.17
1	B	534	HIS	N-CA-C	-5.39	107.25	113.88
1	B	557	GLY	N-CA-C	5.34	118.54	110.75
1	B	98	LYS	N-CA-C	-5.31	105.39	111.07
1	B	47	ASN	CA-C-O	5.29	126.21	120.55
1	A	476	VAL	N-CA-C	5.28	116.64	110.62
1	B	275	ILE	N-CA-C	5.27	117.65	108.90
1	B	46	ASN	O-C-N	5.26	130.89	122.42
1	A	534	HIS	N-CA-C	-5.20	107.48	113.88
1	A	98	LYS	N-CA-C	-5.20	105.61	111.28
1	B	425	ILE	N-CA-C	5.15	116.95	108.97
1	A	425	ILE	N-CA-C	5.12	116.91	108.97
1	B	200	GLN	N-CA-C	-5.11	104.79	111.02
1	B	476	VAL	N-CA-C	5.09	116.43	110.62
1	B	531	ILE	N-CA-C	5.08	115.43	108.12
1	B	390	PHE	N-CA-C	-5.04	106.99	113.23
1	B	471	VAL	N-CA-C	-5.01	104.55	110.21
1	A	40	ALA	N-CA-C	-5.01	105.47	111.03

There are no chirality outliers.

There are no planarity outliers.

## 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	4584	0	4713	377	0
1	B	4584	0	4713	392	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
3	A	27	0	12	7	0
3	B	27	0	12	5	0
4	A	8	0	0	3	0
4	B	8	0	0	2	0
All	All	9240	0	9450	708	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 38.

All (708) 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:B:47:ASN:CG	1:B:47:ASN:CB	1.87	1.47
1:A:15:ARG:H	1:A:15:ARG:HD2	1.01	1.15
1:B:15:ARG:H	1:B:15:ARG:HD2	1.01	1.09
1:A:52:THR:HA	1:A:55:LYS:HE2	1.10	1.09
1:B:44:VAL:HG13	1:B:55:LYS:HB2	1.36	1.08
1:B:276:THR:HG22	1:B:278:GLY:H	1.22	1.03
1:B:464:PRO:HB2	1:B:465:GLN:NE2	1.80	0.97
1:A:263:ILE:HG22	1:B:63:ILE:HD11	1.45	0.97
1:A:455:ASN:HD22	1:A:515:ILE:HG21	1.28	0.96
1:A:464:PRO:HB2	1:A:465:GLN:NE2	1.80	0.95
1:B:455:ASN:HD22	1:B:515:ILE:HG21	1.30	0.94
1:A:15:ARG:HD2	1:A:15:ARG:N	1.83	0.93
1:A:558:THR:HB	1:A:561:GLU:HG3	1.51	0.92
1:A:276:THR:HG22	1:A:277:VAL:H	1.33	0.92
1:B:156:MET:HB3	1:B:164:THR:HG22	1.53	0.91
1:B:505:THR:HG21	1:B:513:GLU:OE2	1.71	0.90
1:B:15:ARG:HD2	1:B:15:ARG:N	1.83	0.90
1:A:505:THR:HG21	1:A:513:GLU:OE2	1.71	0.90
1:B:558:THR:HB	1:B:561:GLU:HG3	1.51	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:51:THR:HB	1:B:54:GLU:HG2	1.54	0.89
1:A:52:THR:HA	1:A:55:LYS:CE	2.01	0.89
1:A:234:LEU:CD2	1:B:94:TYR:HB2	2.04	0.87
1:B:75:PRO:HB2	1:B:76:PRO:HD3	1.57	0.87
1:A:52:THR:CA	1:A:55:LYS:HE2	2.00	0.86
1:A:75:PRO:HB2	1:A:76:PRO:HD3	1.57	0.86
1:A:121:ILE:HD13	1:B:204:HIS:CD2	2.10	0.86
1:B:262:VAL:HG11	1:B:287:LEU:HD21	1.59	0.85
1:A:142:ILE:HD11	1:A:304:LEU:HD11	1.59	0.84
1:A:473:GLU:O	1:A:476:VAL:HG23	1.78	0.84
1:B:142:ILE:HD11	1:B:304:LEU:HD11	1.59	0.83
1:B:51:THR:CB	1:B:54:GLU:HG2	2.10	0.81
1:B:473:GLU:O	1:B:476:VAL:HG23	1.81	0.81
1:A:162:LYS:H	1:A:162:LYS:HD3	1.45	0.81
1:A:485:ARG:HG2	1:A:516:ILE:HD11	1.63	0.80
1:B:485:ARG:HG2	1:B:516:ILE:HD11	1.63	0.79
1:B:397:GLN:HE21	1:B:399:LEU:HD11	1.48	0.79
1:A:94:TYR:HB2	1:B:234:LEU:HD13	1.65	0.79
1:A:260:ILE:HG21	1:B:67:LEU:HD21	1.63	0.78
1:B:276:THR:HG22	1:B:278:GLY:N	1.97	0.78
1:B:461:MET:HE2	1:B:461:MET:HA	1.66	0.77
1:B:106:ALA:HB3	1:B:322:TYR:HE2	1.50	0.77
1:B:380:LYS:HE3	3:B:701:ADP:O2B	1.85	0.76
1:A:397:GLN:HE21	1:A:399:LEU:HD11	1.47	0.76
1:A:106:ALA:HB3	1:A:322:TYR:HE2	1.51	0.76
1:A:275:ILE:HG22	1:A:276:THR:H	1.49	0.75
1:A:67:LEU:HD21	1:B:260:ILE:HG21	1.66	0.75
1:B:387:ILE:HB	1:B:388:PRO:HD3	1.69	0.75
1:A:2:ILE:HD11	1:A:308:PHE:HE2	1.52	0.75
1:B:2:ILE:HD11	1:B:308:PHE:HE2	1.52	0.75
1:B:162:LYS:H	1:B:162:LYS:HD3	1.51	0.74
1:A:461:MET:HE2	1:A:461:MET:HA	1.68	0.74
1:A:387:ILE:HB	1:A:388:PRO:HD3	1.69	0.73
1:B:155:ILE:HG21	1:B:286:TYR:CE2	2.24	0.73
1:B:25:ILE:HG22	1:B:25:ILE:O	1.87	0.72
1:A:25:ILE:O	1:A:25:ILE:HG22	1.88	0.72
1:A:45:ILE:HG21	1:B:277:VAL:HG11	1.72	0.72
1:A:455:ASN:ND2	1:A:515:ILE:HG21	2.03	0.72
1:B:12:TYR:OH	1:B:91:LYS:HG2	1.89	0.71
1:A:276:THR:HG22	1:A:277:VAL:N	2.05	0.71
1:B:455:ASN:ND2	1:B:515:ILE:HG21	2.05	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:443:THR:HG22	1:A:445:GLU:OE1	1.90	0.71
1:B:443:THR:HG22	1:B:445:GLU:OE1	1.90	0.71
1:A:12:TYR:OH	1:A:91:LYS:HG2	1.91	0.71
1:B:106:ALA:CB	1:B:322:TYR:HE2	2.03	0.71
1:B:364:ILE:HD13	1:B:530:LEU:HD21	1.73	0.71
1:A:330:ALA:O	1:A:331:GLN:HG2	1.91	0.70
1:A:387:ILE:C	1:A:389:ARG:H	1.99	0.70
1:B:258:GLY:HA3	1:B:291:PHE:CE2	2.27	0.70
1:B:358:LYS:HD2	1:B:552:HIS:NE2	2.06	0.70
1:A:358:LYS:HD2	1:A:552:HIS:NE2	2.06	0.70
1:A:106:ALA:CB	1:A:322:TYR:HE2	2.03	0.69
1:A:495:ASN:CG	1:A:527:ARG:HH22	1.98	0.69
1:A:15:ARG:H	1:A:15:ARG:CD	1.92	0.69
1:B:380:LYS:HB2	3:B:701:ADP:O2B	1.91	0.69
1:A:260:ILE:HG21	1:B:67:LEU:CD2	2.23	0.69
1:A:364:ILE:HD13	1:A:530:LEU:HD21	1.74	0.69
1:A:258:GLY:HA3	1:A:291:PHE:CE2	2.27	0.69
1:A:555:GLU:OE1	1:A:568:ALA:HB3	1.92	0.69
1:B:15:ARG:H	1:B:15:ARG:CD	1.92	0.69
1:B:495:ASN:CG	1:B:527:ARG:HH22	1.99	0.69
1:A:185:LEU:HB2	1:A:305:THR:HG21	1.75	0.68
1:B:185:LEU:HB2	1:B:305:THR:HG21	1.74	0.68
1:A:160:ASP:O	1:A:164:THR:HG23	1.94	0.68
1:B:330:ALA:O	1:B:331:GLN:HG2	1.93	0.67
1:A:337:GLN:O	1:A:401:ASP:OD2	2.12	0.67
1:B:387:ILE:C	1:B:389:ARG:H	2.00	0.67
1:B:549:GLU:HB2	1:B:554:VAL:HG21	1.76	0.67
1:A:549:GLU:HB2	1:A:554:VAL:HG21	1.77	0.67
1:B:337:GLN:O	1:B:401:ASP:OD2	2.12	0.67
1:B:555:GLU:OE1	1:B:568:ALA:HB3	1.94	0.66
1:B:42:ASP:HA	1:B:46:ASN:HB2	1.77	0.66
1:B:410:THR:HG22	1:B:411:GLY:N	2.10	0.66
1:A:37:ILE:CG1	1:B:263:ILE:HD11	2.25	0.66
1:B:47:ASN:HD22	1:B:50:LEU:HD21	1.61	0.66
1:B:331:GLN:O	1:B:333:ILE:HG13	1.95	0.66
1:A:204:HIS:HD2	1:B:204:HIS:ND1	1.93	0.66
1:A:464:PRO:HB2	1:A:465:GLN:HE22	1.60	0.66
1:B:431:VAL:HG11	1:B:460:ILE:HD13	1.77	0.66
1:A:331:GLN:O	1:A:333:ILE:HG13	1.96	0.66
1:A:410:THR:HG22	1:A:411:GLY:N	2.10	0.66
1:B:162:LYS:HE2	1:B:275:ILE:HD11	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:431:VAL:HG11	1:A:460:ILE:HD13	1.79	0.65
1:A:304:LEU:O	1:A:308:PHE:HD1	1.79	0.65
1:B:464:PRO:HB2	1:B:465:GLN:HE22	1.59	0.65
1:B:428:SER:HB2	1:B:473:GLU:HA	1.79	0.65
1:A:256:ASP:HB3	1:B:70:PHE:HD2	1.60	0.65
1:B:47:ASN:ND2	1:B:50:LEU:HD21	2.12	0.65
1:A:156:MET:HB3	1:A:164:THR:HG22	1.78	0.65
1:A:275:ILE:HG22	1:A:276:THR:N	2.12	0.65
1:A:384:ILE:HD12	1:A:532:VAL:CG2	2.27	0.65
1:B:209:GLY:O	1:B:212:VAL:HG12	1.97	0.65
1:B:304:LEU:O	1:B:308:PHE:HD1	1.79	0.64
1:B:266:GLY:HA3	1:B:280:LEU:HD11	1.78	0.64
1:A:70:PHE:HD2	1:B:256:ASP:HB3	1.61	0.64
1:B:384:ILE:HD12	1:B:532:VAL:CG2	2.27	0.64
1:A:170:ILE:HG13	1:A:258:GLY:HA2	1.80	0.64
1:A:380:LYS:HE3	3:A:700:ADP:O2B	1.96	0.64
1:A:418:GLY:HA3	1:A:496:PRO:HG3	1.79	0.64
1:A:353:GLU:HG2	1:B:464:PRO:HG3	1.80	0.64
1:A:234:LEU:HD21	1:B:94:TYR:HB2	1.80	0.64
1:B:418:GLY:HA3	1:B:496:PRO:HG3	1.80	0.64
1:A:47:ASN:HD22	1:A:50:LEU:HG	1.63	0.63
1:B:456:ALA:O	1:B:460:ILE:HG13	1.98	0.63
1:A:234:LEU:HD22	1:B:94:TYR:HB2	1.80	0.63
1:A:574:SER:O	1:A:578:LEU:HB2	1.98	0.63
1:B:47:ASN:CG	1:B:47:ASN:CA	2.69	0.63
1:B:495:ASN:ND2	1:B:527:ARG:HH22	1.97	0.63
1:B:160:ASP:OD2	1:B:163:LEU:HB2	1.99	0.63
1:B:210:ILE:HG22	1:B:214:LYS:HG2	1.80	0.63
1:A:67:LEU:CD2	1:B:260:ILE:HG21	2.28	0.62
1:B:24:ILE:C	1:B:26:LYS:H	2.07	0.62
1:A:271:ILE:HD13	1:B:56:VAL:HG22	1.79	0.62
1:B:170:ILE:HG13	1:B:258:GLY:HA2	1.80	0.62
1:A:309:ALA:O	1:A:312:ASP:HB2	2.00	0.62
1:A:479:SER:CB	3:B:701:ADP:O2A	2.47	0.62
1:A:122:SER:HB2	1:A:200:GLN:HG3	1.81	0.62
1:A:456:ALA:O	1:A:460:ILE:HG13	2.00	0.62
1:A:24:ILE:C	1:A:26:LYS:H	2.07	0.62
1:A:73:VAL:O	1:A:76:PRO:HD2	2.00	0.62
1:A:142:ILE:CD1	1:A:304:LEU:HD11	2.29	0.62
1:B:122:SER:HB2	1:B:200:GLN:HG3	1.81	0.62
1:A:464:PRO:HG3	1:B:353:GLU:HG2	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:116:GLN:HG2	4:B:803:HOH:O	1.99	0.62
1:A:209:GLY:O	1:A:212:VAL:HG12	2.00	0.62
1:A:389:ARG:HD2	1:A:405:ILE:HG22	1.82	0.62
1:A:47:ASN:HD22	1:A:50:LEU:CG	2.13	0.62
1:A:448:VAL:O	1:A:452:LYS:HG3	2.00	0.62
1:B:475:GLY:O	1:B:483:LYS:HE2	2.00	0.62
1:A:121:ILE:CD1	1:B:204:HIS:CD2	2.81	0.61
1:A:116:GLN:HA	1:B:473:GLU:OE1	2.00	0.61
1:A:495:ASN:ND2	1:A:527:ARG:HH22	1.99	0.61
1:A:202:PHE:CE2	1:A:206:ARG:HG3	2.35	0.61
1:B:142:ILE:CD1	1:B:304:LEU:HD11	2.30	0.61
1:B:335:ILE:HD13	1:B:400:ILE:HG21	1.83	0.61
1:A:210:ILE:HG22	1:A:214:LYS:HG2	1.81	0.61
1:A:428:SER:HB2	1:A:473:GLU:HA	1.81	0.61
1:A:159:LEU:HD23	1:A:283:PHE:HD1	1.64	0.61
3:A:700:ADP:O2A	1:B:479:SER:CB	2.49	0.61
1:A:137:THR:O	1:A:142:ILE:HG13	2.01	0.61
1:B:137:THR:O	1:B:142:ILE:HG13	2.00	0.60
1:A:269:LEU:HB3	1:A:274:SER:CB	2.31	0.60
1:A:37:ILE:HG12	1:B:263:ILE:HD11	1.82	0.60
1:A:475:GLY:O	1:A:483:LYS:HE2	2.01	0.60
1:B:276:THR:C	1:B:278:GLY:H	2.09	0.60
1:A:275:ILE:HG21	1:A:279:THR:OG1	2.01	0.60
1:A:19:THR:HG21	1:A:140:MET:HE3	1.84	0.60
1:A:335:ILE:HD13	1:A:400:ILE:HG21	1.82	0.60
1:B:202:PHE:CE2	1:B:206:ARG:HG3	2.36	0.60
1:B:448:VAL:O	1:B:452:LYS:HG3	2.02	0.60
1:B:506:SER:O	1:B:535:ARG:NH2	2.34	0.60
1:A:324:ILE:HD11	1:A:390:PHE:C	2.27	0.60
1:B:389:ARG:HD2	1:B:405:ILE:HG22	1.82	0.60
1:B:19:THR:HG21	1:B:140:MET:HE3	1.84	0.60
1:B:309:ALA:O	1:B:312:ASP:HB2	2.01	0.60
1:A:324:ILE:HD13	1:A:389:ARG:O	2.02	0.60
1:A:380:LYS:HB2	3:A:700:ADP:O2B	2.01	0.59
1:A:506:SER:O	1:A:535:ARG:NH2	2.34	0.59
1:B:73:VAL:O	1:B:76:PRO:HD2	2.02	0.59
1:B:276:THR:HB	1:B:279:THR:OG1	2.02	0.59
1:A:41:ILE:HG22	1:A:42:ASP:N	2.17	0.59
1:A:178:VAL:HG13	1:A:301:PHE:CE1	2.37	0.59
1:A:479:SER:HB2	3:B:701:ADP:O2A	2.03	0.59
1:B:324:ILE:HD13	1:B:389:ARG:O	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:80:ILE:O	1:A:84:LEU:HB2	2.02	0.59
1:B:121:ILE:HD12	1:B:204:HIS:CE1	2.37	0.59
1:A:205:GLU:OE1	1:B:428:SER:N	2.34	0.59
1:A:167:ALA:O	1:A:169:PHE:N	2.36	0.58
1:A:453:MET:HE2	1:A:453:MET:HA	1.85	0.58
1:B:80:ILE:O	1:B:84:LEU:HB2	2.03	0.58
1:B:210:ILE:O	1:B:211:SER:C	2.46	0.58
1:B:324:ILE:HD11	1:B:390:PHE:C	2.28	0.58
1:B:387:ILE:C	1:B:389:ARG:N	2.60	0.58
1:A:106:ALA:CB	1:A:322:TYR:CE2	2.86	0.58
1:B:197:ALA:O	1:B:200:GLN:HB2	2.03	0.58
1:B:1:MET:HE1	1:B:186:ARG:NH2	2.18	0.58
1:B:106:ALA:CB	1:B:322:TYR:CE2	2.86	0.58
1:B:275:ILE:HG22	1:B:276:THR:N	2.18	0.58
1:A:1:MET:HE1	1:A:186:ARG:NH2	2.18	0.58
1:A:210:ILE:O	1:A:211:SER:C	2.44	0.58
1:A:197:ALA:O	1:A:200:GLN:HB2	2.04	0.58
1:B:156:MET:HE3	1:B:283:PHE:CZ	2.38	0.58
1:B:178:VAL:HG13	1:B:301:PHE:CE1	2.38	0.58
1:A:221:ASN:O	1:A:224:LYS:HB2	2.04	0.57
1:B:2:ILE:HD11	1:B:308:PHE:CE2	2.37	0.57
1:B:181:PHE:O	1:B:182:PHE:C	2.47	0.57
1:A:2:ILE:HD11	1:A:308:PHE:CE2	2.37	0.57
1:B:177:THR:HB	1:B:251:ILE:HD13	1.86	0.57
1:B:221:ASN:O	1:B:224:LYS:HB2	2.04	0.57
1:B:549:GLU:HB2	1:B:554:VAL:CG2	2.35	0.57
1:A:153:LEU:HD11	1:A:168:LEU:HD21	1.87	0.57
1:A:181:PHE:O	1:A:182:PHE:C	2.47	0.57
1:A:230:ASN:O	1:A:234:LEU:HG	2.04	0.57
1:A:384:ILE:HD13	1:A:500:ILE:CG2	2.34	0.57
1:B:461:MET:HA	1:B:461:MET:CE	2.34	0.57
1:A:387:ILE:C	1:A:389:ARG:N	2.60	0.57
1:B:371:ALA:CB	1:B:539:ILE:HG13	2.35	0.57
1:B:453:MET:HE2	1:B:453:MET:HA	1.85	0.57
1:A:267:ALA:HA	1:A:280:LEU:HD21	1.87	0.57
1:B:384:ILE:HD13	1:B:500:ILE:CG2	2.34	0.57
1:A:349:TYR:CE1	1:A:356:ILE:HD12	2.40	0.57
1:B:26:LYS:O	1:B:30:PRO:HD2	2.05	0.57
1:A:26:LYS:O	1:A:30:PRO:HD2	2.05	0.56
1:B:108:SER:N	4:B:816:HOH:O	2.35	0.56
1:A:428:SER:N	1:B:205:GLU:OE1	2.36	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:371:ALA:HB2	1:B:539:ILE:HG13	1.87	0.56
1:B:429:ASP:O	1:B:471:VAL:HG22	2.04	0.56
1:A:177:THR:HB	1:A:251:ILE:HD13	1.87	0.56
1:A:206:ARG:NH1	1:B:427:PHE:CE1	2.74	0.56
1:A:429:ASP:O	1:A:471:VAL:HG22	2.04	0.56
1:B:71:VAL:HG12	1:B:71:VAL:O	2.04	0.56
1:B:153:LEU:HD11	1:B:168:LEU:HD21	1.88	0.56
1:B:349:TYR:CE1	1:B:356:ILE:HD12	2.41	0.56
1:A:399:LEU:HD23	1:A:404:ASN:HA	1.88	0.56
1:A:253:THR:OG1	1:B:75:PRO:HG3	2.06	0.56
1:A:71:VAL:HG12	1:A:71:VAL:O	2.05	0.56
1:A:371:ALA:CB	1:A:539:ILE:HG13	2.35	0.56
1:A:349:TYR:HE1	1:A:356:ILE:HD12	1.71	0.56
1:A:549:GLU:HB2	1:A:554:VAL:CG2	2.36	0.56
1:B:194:GLN:O	1:B:197:ALA:HB3	2.06	0.56
1:B:267:ALA:C	1:B:269:LEU:H	2.13	0.55
1:B:450:ALA:O	1:B:453:MET:HB2	2.06	0.55
1:A:33:ILE:HB	1:A:34:PRO:CD	2.36	0.55
1:A:479:SER:O	1:A:483:LYS:HG3	2.06	0.55
1:B:51:THR:OG1	1:B:54:GLU:HG2	2.05	0.55
1:A:450:ALA:O	1:A:453:MET:HB2	2.06	0.55
1:A:65:ILE:HG22	1:A:66:ALA:N	2.22	0.55
1:A:155:ILE:HD13	1:A:286:TYR:CE2	2.41	0.55
1:B:33:ILE:HB	1:B:34:PRO:CD	2.37	0.55
1:B:349:TYR:HE1	1:B:356:ILE:HD12	1.72	0.55
1:B:425:ILE:O	1:B:426:LEU:HD23	2.07	0.55
1:B:479:SER:O	1:B:483:LYS:HG3	2.06	0.55
1:A:371:ALA:HB2	1:A:539:ILE:HG13	1.88	0.55
1:A:162:LYS:HD3	1:A:162:LYS:N	2.19	0.55
1:A:461:MET:HA	1:A:461:MET:CE	2.36	0.55
1:B:63:ILE:HG22	1:B:63:ILE:O	2.07	0.55
1:B:491:ILE:HD13	1:B:499:LEU:HD22	1.89	0.55
1:A:75:PRO:HG3	1:B:253:THR:OG1	2.07	0.54
1:A:145:ASP:OD1	1:A:296:ARG:HD2	2.07	0.54
1:A:459:PHE:CD1	1:A:459:PHE:C	2.86	0.54
1:B:145:ASP:OD1	1:B:296:ARG:HD2	2.07	0.54
1:B:171:PHE:CE1	1:B:294:LEU:HD11	2.43	0.54
1:B:399:LEU:HD23	1:B:404:ASN:HA	1.88	0.54
1:A:157:PHE:HA	1:A:164:THR:HG21	1.90	0.54
1:A:194:GLN:O	1:A:197:ALA:HB3	2.06	0.54
1:B:384:ILE:HG22	1:B:385:ASN:N	2.22	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:60:THR:HG22	1:B:60:THR:O	2.07	0.54
1:A:491:ILE:HD13	1:A:499:LEU:HD22	1.89	0.54
1:A:439:ARG:NH2	1:A:446:GLU:OE2	2.40	0.54
1:A:373:VAL:HG13	1:A:533:ALA:O	2.07	0.54
1:B:488:ILE:CD1	1:B:516:ILE:HD13	2.38	0.54
1:B:106:ALA:HB3	1:B:322:TYR:CE2	2.38	0.54
1:B:12:TYR:HA	1:B:15:ARG:HD3	1.90	0.54
1:B:52:THR:HG22	1:B:52:THR:O	2.08	0.54
1:B:459:PHE:CD1	1:B:459:PHE:C	2.86	0.54
1:A:12:TYR:HA	1:A:15:ARG:HD3	1.90	0.54
1:A:156:MET:HE2	1:A:283:PHE:CZ	2.43	0.54
1:A:384:ILE:HG22	1:A:385:ASN:N	2.23	0.54
1:B:439:ARG:NH2	1:B:446:GLU:OE2	2.41	0.54
1:A:58:HIS:HA	1:A:61:ILE:HG12	1.90	0.53
1:A:488:ILE:CD1	1:A:516:ILE:HD13	2.37	0.53
1:A:59:LEU:HD21	1:B:267:ALA:HB3	1.90	0.53
1:B:373:VAL:HG13	1:B:533:ALA:O	2.08	0.53
3:A:700:ADP:O2A	1:B:479:SER:HB2	2.09	0.53
1:A:466:GLY:O	1:A:468:ASP:N	2.41	0.53
1:B:213:VAL:HG13	1:B:218:ILE:HG13	1.90	0.53
1:B:420:VAL:HG23	1:B:491:ILE:CD1	2.39	0.53
1:A:213:VAL:HG13	1:A:218:ILE:HG13	1.90	0.53
1:A:217:ALA:HA	1:A:219:GLU:OE1	2.09	0.53
1:A:420:VAL:HG23	1:A:491:ILE:CD1	2.39	0.53
1:B:24:ILE:O	1:B:26:LYS:N	2.41	0.53
1:B:156:MET:CB	1:B:164:THR:HG22	2.34	0.53
1:B:330:ALA:HB1	1:B:409:LEU:CD2	2.39	0.53
1:B:491:ILE:HG22	1:B:492:PHE:N	2.24	0.53
1:B:571:HIS:O	1:B:575:ILE:HG13	2.09	0.53
1:A:159:LEU:HD23	1:A:283:PHE:CD1	2.44	0.53
1:A:171:PHE:CE1	1:A:294:LEU:HD11	2.44	0.53
1:B:269:LEU:HB3	1:B:274:SER:OG	2.09	0.53
1:B:328:VAL:HG23	1:B:329:GLY:N	2.23	0.53
1:A:439:ARG:NH2	1:A:446:GLU:CD	2.67	0.52
1:B:357:LEU:HD22	1:B:360:ILE:HD11	1.91	0.52
1:A:571:HIS:O	1:A:575:ILE:HG13	2.09	0.52
1:B:65:ILE:HG22	1:B:66:ALA:N	2.23	0.52
1:B:163:LEU:O	1:B:166:ALA:HB3	2.09	0.52
1:B:337:GLN:O	1:B:339:ARG:N	2.43	0.52
1:B:466:GLY:O	1:B:468:ASP:N	2.42	0.52
1:A:425:ILE:O	1:A:426:LEU:HD23	2.07	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:491:ILE:HG22	1:A:492:PHE:N	2.22	0.52
1:A:328:VAL:HG23	1:A:329:GLY:N	2.25	0.52
1:A:330:ALA:HB1	1:A:409:LEU:CD2	2.40	0.52
1:B:217:ALA:HA	1:B:219:GLU:OE1	2.10	0.52
1:B:357:LEU:HB3	1:B:360:ILE:HD12	1.90	0.52
1:B:439:ARG:NH2	1:B:446:GLU:CD	2.68	0.52
1:B:56:VAL:O	1:B:56:VAL:HG12	2.10	0.52
1:B:443:THR:C	1:B:445:GLU:N	2.67	0.52
1:A:242:ARG:HG2	1:B:83:TYR:CE1	2.45	0.52
1:B:277:VAL:HG12	1:B:277:VAL:O	2.10	0.52
1:B:384:ILE:CD1	1:B:532:VAL:HG23	2.40	0.52
1:B:418:GLY:CA	1:B:496:PRO:HG3	2.40	0.52
1:B:536:LEU:N	1:B:536:LEU:HD23	2.25	0.52
1:A:269:LEU:HB3	1:A:274:SER:HB3	1.92	0.52
1:A:418:GLY:CA	1:A:496:PRO:HG3	2.39	0.52
1:A:427:PHE:CE1	1:B:206:ARG:NH1	2.78	0.51
1:A:337:GLN:O	1:A:339:ARG:N	2.43	0.51
1:A:357:LEU:HD22	1:A:360:ILE:HD11	1.92	0.51
1:A:558:THR:HG22	1:A:560:ARG:H	1.75	0.51
1:B:170:ILE:HD11	1:B:257:ILE:HG22	1.93	0.51
1:B:59:LEU:O	1:B:59:LEU:HG	2.10	0.51
1:A:190:ARG:HG3	1:A:190:ARG:HH11	1.75	0.51
1:A:384:ILE:CD1	1:A:532:VAL:HG23	2.40	0.51
1:A:41:ILE:HA	1:A:45:ILE:HD12	1.93	0.51
1:B:405:ILE:HG23	1:B:413:LEU:CD2	2.41	0.51
1:B:276:THR:CG2	1:B:278:GLY:H	2.08	0.51
1:A:47:ASN:ND2	1:A:50:LEU:HG	2.26	0.51
1:A:357:LEU:HB3	1:A:360:ILE:HD12	1.91	0.51
1:A:51:THR:OG1	1:A:54:GLU:HG2	2.11	0.51
1:B:110:ARG:O	1:B:111:PHE:C	2.52	0.51
1:A:332:PRO:HD3	1:A:409:LEU:HD12	1.91	0.50
1:A:169:PHE:HD2	1:A:261:ILE:HD13	1.77	0.50
1:A:170:ILE:HD11	1:A:257:ILE:HG22	1.93	0.50
3:A:700:ADP:O2A	1:B:479:SER:HB3	2.10	0.50
1:B:169:PHE:HD2	1:B:261:ILE:HD13	1.77	0.50
1:A:443:THR:HB	1:A:446:GLU:HG3	1.93	0.50
1:B:212:VAL:HG13	1:B:213:VAL:N	2.26	0.50
1:B:558:THR:O	1:B:559:HIS:C	2.55	0.50
1:A:24:ILE:O	1:A:26:LYS:N	2.40	0.50
1:A:536:LEU:HD23	1:A:536:LEU:N	2.25	0.50
1:B:276:THR:C	1:B:278:GLY:N	2.70	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:169:PHE:CD2	1:A:261:ILE:HD13	2.47	0.50
1:B:332:PRO:HD3	1:B:409:LEU:HD12	1.92	0.50
1:A:276:THR:CG2	1:A:277:VAL:H	2.12	0.50
1:A:473:GLU:O	1:A:474:ARG:HB3	2.11	0.50
1:B:190:ARG:HG3	1:B:190:ARG:HH11	1.75	0.50
1:A:37:ILE:HG13	1:B:263:ILE:HD11	1.92	0.50
1:A:459:PHE:CZ	1:A:482:GLN:HG2	2.47	0.50
1:B:558:THR:HG22	1:B:560:ARG:H	1.76	0.50
1:A:83:TYR:CE1	1:B:242:ARG:HG2	2.47	0.49
1:A:106:ALA:HB3	1:A:322:TYR:CE2	2.38	0.49
1:A:121:ILE:HD11	1:B:204:HIS:HA	1.94	0.49
1:A:167:ALA:C	1:A:169:PHE:N	2.70	0.49
1:B:169:PHE:CD2	1:B:261:ILE:HD13	2.47	0.49
1:A:405:ILE:HG23	1:A:413:LEU:CD2	2.42	0.49
1:A:2:ILE:O	1:A:6:LEU:HG	2.12	0.49
1:B:384:ILE:HD12	1:B:532:VAL:HG21	1.94	0.49
1:B:459:PHE:CZ	1:B:482:GLN:HG2	2.48	0.49
1:A:159:LEU:O	1:A:160:ASP:HB2	2.12	0.49
1:A:269:LEU:HB3	1:A:274:SER:OG	2.12	0.49
1:A:384:ILE:HD12	1:A:532:VAL:HG23	1.93	0.49
1:A:75:PRO:CB	1:A:76:PRO:HD3	2.38	0.49
1:A:110:ARG:O	1:A:111:PHE:C	2.53	0.49
1:A:167:ALA:C	1:A:169:PHE:H	2.19	0.49
1:A:443:THR:C	1:A:445:GLU:N	2.66	0.49
1:B:473:GLU:O	1:B:474:ARG:HB3	2.12	0.49
1:A:267:ALA:HA	1:A:280:LEU:CD2	2.42	0.49
1:A:558:THR:O	1:A:559:HIS:C	2.55	0.49
1:B:51:THR:HB	1:B:54:GLU:CG	2.35	0.49
1:B:260:ILE:C	1:B:262:VAL:H	2.21	0.49
1:A:24:ILE:O	1:A:27:PHE:HD1	1.96	0.49
1:A:195:ALA:HB1	1:A:233:PHE:HA	1.95	0.49
1:A:206:ARG:NH1	1:B:427:PHE:CD1	2.80	0.49
1:A:422:GLN:HG3	1:A:423:ASP:N	2.28	0.49
1:B:24:ILE:O	1:B:27:PHE:HD1	1.95	0.49
1:B:422:GLN:HG3	1:B:423:ASP:N	2.27	0.49
1:B:443:THR:HB	1:B:446:GLU:HG3	1.93	0.49
1:A:297:LEU:HA	1:A:300:SER:HB2	1.95	0.49
1:A:479:SER:HB3	3:B:701:ADP:O2A	2.13	0.49
1:B:160:ASP:O	1:B:164:THR:HG23	2.12	0.49
1:B:262:VAL:HG12	1:B:263:ILE:N	2.27	0.49
1:A:90:ASN:O	1:B:234:LEU:HD11	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:16:ILE:O	1:B:20:ILE:HG13	2.13	0.48
1:B:266:GLY:O	1:B:280:LEU:HD22	2.12	0.48
1:B:384:ILE:HD12	1:B:532:VAL:HG23	1.92	0.48
1:A:106:ALA:HB1	1:A:322:TYR:CE2	2.48	0.48
1:A:108:SER:HB3	4:A:805:HOH:O	2.13	0.48
1:B:2:ILE:O	1:B:6:LEU:HG	2.12	0.48
1:B:297:LEU:HA	1:B:300:SER:HB2	1.94	0.48
1:A:505:THR:HG22	1:A:505:THR:O	2.13	0.48
1:B:260:ILE:C	1:B:262:VAL:N	2.70	0.48
1:B:34:PRO:HA	1:B:37:ILE:HD12	1.95	0.48
1:A:284:VAL:HG11	1:B:37:ILE:HG23	1.94	0.48
1:A:284:VAL:HG11	1:B:37:ILE:CG2	2.43	0.48
1:B:152:ALA:HB2	1:B:289:LEU:HD13	1.95	0.48
1:A:284:VAL:HA	1:A:287:LEU:HG	1.96	0.48
1:A:329:GLY:O	1:A:330:ALA:C	2.56	0.48
1:B:155:ILE:HD13	1:B:286:TYR:HE2	1.79	0.48
1:B:502:ASP:HA	1:B:532:VAL:HB	1.96	0.48
1:B:106:ALA:HB1	1:B:322:TYR:CE2	2.48	0.48
1:B:275:ILE:CG2	1:B:276:THR:N	2.77	0.48
1:B:488:ILE:HG22	1:B:492:PHE:HE1	1.79	0.48
1:B:195:ALA:HB1	1:B:233:PHE:HA	1.95	0.47
1:A:384:ILE:HD12	1:A:532:VAL:HG21	1.94	0.47
1:B:474:ARG:HH11	1:B:474:ARG:CG	2.27	0.47
1:A:474:ARG:CG	1:A:474:ARG:HH11	2.27	0.47
1:B:25:ILE:O	1:B:25:ILE:CG2	2.59	0.47
1:A:33:ILE:HB	1:A:34:PRO:HD3	1.96	0.47
1:B:329:GLY:O	1:B:330:ALA:C	2.57	0.47
1:A:460:ILE:O	1:A:466:GLY:HA2	2.15	0.47
1:A:502:ASP:HA	1:A:532:VAL:HB	1.96	0.47
1:A:510:LEU:HD13	1:B:576:GLN:HG3	1.96	0.47
1:B:86:GLN:O	1:B:87:TRP:C	2.58	0.47
1:A:16:ILE:O	1:A:20:ILE:HG13	2.13	0.47
1:A:90:ASN:O	1:B:234:LEU:CD1	2.62	0.47
1:A:260:ILE:CD1	1:B:67:LEU:HD23	2.44	0.47
1:A:466:GLY:C	1:A:468:ASP:N	2.72	0.47
1:A:481:GLY:CA	1:A:508:LEU:HD23	2.45	0.47
1:A:488:ILE:HD12	1:A:516:ILE:HD13	1.97	0.47
1:B:159:LEU:HD23	1:B:283:PHE:HA	1.96	0.47
1:A:1:MET:O	1:A:4:ARG:HB2	2.15	0.47
1:A:212:VAL:CG1	1:A:213:VAL:N	2.77	0.47
1:B:481:GLY:CA	1:B:508:LEU:HD23	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:24:ILE:C	1:A:26:LYS:N	2.72	0.47
1:A:212:VAL:HG13	1:A:213:VAL:N	2.28	0.47
1:A:481:GLY:HA2	1:A:508:LEU:HD23	1.96	0.47
1:B:24:ILE:C	1:B:26:LYS:N	2.73	0.47
1:B:27:PHE:O	1:B:30:PRO:HG2	2.15	0.47
1:B:212:VAL:CG1	1:B:213:VAL:N	2.77	0.47
1:A:93:LEU:HD22	1:A:128:VAL:HG12	1.97	0.47
1:A:488:ILE:HG22	1:A:492:PHE:HE1	1.80	0.47
1:B:170:ILE:HG13	1:B:258:GLY:CA	2.44	0.47
1:B:259:PRO:HD3	1:B:291:PHE:CD2	2.51	0.47
1:B:173:PHE:HD1	1:B:173:PHE:H	1.63	0.46
1:B:271:ILE:C	1:B:273:GLY:H	2.22	0.46
1:B:508:LEU:CD1	1:B:516:ILE:HD12	2.46	0.46
1:B:474:ARG:O	1:B:474:ARG:HG3	2.15	0.46
1:A:153:LEU:CD1	1:A:168:LEU:HD21	2.45	0.46
1:B:481:GLY:HA2	1:B:508:LEU:HD23	1.96	0.46
1:A:86:GLN:O	1:A:87:TRP:C	2.58	0.46
1:A:142:ILE:HD11	1:A:304:LEU:CD1	2.38	0.46
1:B:163:LEU:HG	1:B:283:PHE:CE2	2.50	0.46
1:B:405:ILE:HG23	1:B:413:LEU:HD21	1.98	0.46
1:A:427:PHE:CD1	1:B:206:ARG:NH1	2.84	0.46
1:A:51:THR:CB	1:A:54:GLU:HG2	2.46	0.46
1:A:170:ILE:HG13	1:A:258:GLY:CA	2.43	0.46
1:A:556:THR:O	1:A:556:THR:HG22	2.16	0.46
1:B:1:MET:HE1	1:B:186:ARG:HH21	1.81	0.46
1:B:544:LYS:HE3	1:B:556:THR:HG23	1.97	0.46
1:A:152:ALA:HB2	1:A:289:LEU:HD13	1.96	0.46
1:A:568:ALA:O	1:A:571:HIS:HB3	2.16	0.46
1:B:466:GLY:C	1:B:468:ASP:N	2.72	0.46
1:A:38:LYS:HG3	1:A:42:ASP:OD2	2.16	0.46
1:A:479:SER:OG	1:A:482:GLN:HB2	2.15	0.46
1:A:544:LYS:HE3	1:A:556:THR:HG23	1.98	0.46
1:B:33:ILE:HB	1:B:34:PRO:HD3	1.97	0.46
1:B:509:ASP:OD1	1:B:512:SER:OG	2.21	0.46
1:A:1:MET:HE1	1:A:186:ARG:HH21	1.80	0.45
1:A:208:GLN:OE1	1:B:208:GLN:NE2	2.25	0.45
1:B:162:LYS:H	1:B:162:LYS:CD	2.25	0.45
1:B:505:THR:O	1:B:505:THR:HG22	2.14	0.45
1:A:209:GLY:HA2	1:B:425:ILE:HD13	1.99	0.45
1:A:308:PHE:HA	1:A:311:MET:HG2	1.99	0.45
1:A:474:ARG:HG3	1:A:474:ARG:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:153:LEU:CD1	1:B:168:LEU:HD21	2.47	0.45
1:A:27:PHE:O	1:A:30:PRO:HG2	2.16	0.45
1:A:173:PHE:H	1:A:173:PHE:HD1	1.63	0.45
1:B:1:MET:O	1:B:4:ARG:HB2	2.15	0.45
1:B:75:PRO:CB	1:B:76:PRO:HD3	2.38	0.45
1:B:488:ILE:HD12	1:B:516:ILE:HD13	1.98	0.45
1:A:47:ASN:HD22	1:A:50:LEU:CD2	2.29	0.45
1:A:67:LEU:HD23	1:B:260:ILE:CD1	2.46	0.45
1:A:260:ILE:HD13	1:B:67:LEU:HD23	1.97	0.45
1:B:460:ILE:O	1:B:466:GLY:HA2	2.16	0.45
1:B:570:GLU:OE1	1:B:570:GLU:C	2.60	0.45
1:A:453:MET:HB3	1:A:492:PHE:CE2	2.52	0.45
1:B:568:ALA:O	1:B:571:HIS:HB3	2.16	0.45
1:A:163:LEU:HG	1:A:283:PHE:CE2	2.52	0.45
1:A:474:ARG:CG	1:A:474:ARG:NH1	2.79	0.45
1:A:536:LEU:HG	1:B:510:LEU:HD11	1.98	0.45
1:B:27:PHE:HZ	1:B:144:LEU:HB3	1.82	0.45
1:B:93:LEU:HD22	1:B:128:VAL:HG12	1.99	0.45
1:A:185:LEU:CB	1:A:305:THR:HG21	2.45	0.45
1:A:405:ILE:HG23	1:A:413:LEU:HD21	1.99	0.45
1:A:508:LEU:CD1	1:A:516:ILE:HD12	2.46	0.45
1:B:92:ILE:HD12	1:B:135:ILE:HD13	1.99	0.45
1:B:284:VAL:HA	1:B:287:LEU:HG	1.98	0.45
1:B:308:PHE:HA	1:B:311:MET:HG2	1.99	0.45
1:B:453:MET:HB3	1:B:492:PHE:CE2	2.52	0.45
1:A:108:SER:N	4:A:806:HOH:O	2.45	0.44
1:B:181:PHE:CE2	1:B:246:TYR:HD2	2.35	0.44
1:B:364:ILE:HD13	1:B:530:LEU:CD2	2.45	0.44
1:A:181:PHE:CE2	1:A:246:TYR:HD2	2.35	0.44
1:A:570:GLU:C	1:A:570:GLU:OE1	2.60	0.44
1:B:474:ARG:CG	1:B:474:ARG:NH1	2.79	0.44
1:A:29:ILE:N	1:A:30:PRO:HD2	2.32	0.44
1:A:259:PRO:HD3	1:A:291:PHE:CD2	2.52	0.44
1:A:275:ILE:CG2	1:A:276:THR:H	2.26	0.44
1:A:45:ILE:HG22	1:A:46:ASN:OD1	2.16	0.44
1:A:270:ALA:HA	1:A:275:ILE:O	2.17	0.44
1:B:338:GLY:HA3	1:B:528:THR:OG1	2.17	0.44
1:A:68:PHE:CD1	1:A:72:ILE:HD12	2.53	0.44
1:A:92:ILE:HD12	1:A:135:ILE:HD13	2.00	0.44
1:A:264:GLY:HA2	1:B:63:ILE:HG13	1.99	0.44
1:A:150:ILE:O	1:A:151:ILE:C	2.61	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:267:ALA:HB3	1:B:59:LEU:HD21	2.00	0.44
1:B:479:SER:OG	1:B:482:GLN:HB2	2.16	0.44
1:A:66:ALA:HB1	1:B:260:ILE:HD11	2.00	0.44
1:A:338:GLY:HA3	1:A:528:THR:OG1	2.18	0.44
1:A:466:GLY:C	1:A:468:ASP:H	2.26	0.44
1:A:576:GLN:HG3	1:B:510:LEU:HD13	2.00	0.44
1:B:150:ILE:O	1:B:151:ILE:C	2.61	0.44
1:B:466:GLY:C	1:B:468:ASP:H	2.26	0.44
1:B:574:SER:O	1:B:578:LEU:HB2	2.17	0.44
1:B:75:PRO:HB2	1:B:76:PRO:CD	2.38	0.44
1:A:127:ASP:OD1	1:A:313:ARG:HD3	2.17	0.44
1:A:273:GLY:O	1:A:274:SER:C	2.61	0.44
1:A:517:GLN:OE1	1:A:517:GLN:HA	2.18	0.44
1:B:68:PHE:CD1	1:B:72:ILE:HD12	2.52	0.44
1:B:268:TYR:O	1:B:268:TYR:CD2	2.71	0.44
1:B:294:LEU:O	1:B:298:VAL:HG23	2.17	0.44
1:A:63:ILE:O	1:A:64:GLY:C	2.61	0.43
1:A:489:ALA:O	1:A:490:ARG:C	2.61	0.43
1:B:153:LEU:HD21	1:B:168:LEU:HD21	2.00	0.43
1:B:195:ALA:O	1:B:199:VAL:HG13	2.17	0.43
1:A:27:PHE:HZ	1:A:144:LEU:HB3	1.82	0.43
1:B:100:LEU:O	1:B:104:LEU:HG	2.17	0.43
1:B:260:ILE:O	1:B:262:VAL:N	2.52	0.43
1:B:383:LEU:O	1:B:386:LEU:HB2	2.18	0.43
1:A:51:THR:HB	1:A:54:GLU:HG2	2.00	0.43
1:A:100:LEU:O	1:A:104:LEU:HG	2.18	0.43
1:A:156:MET:C	1:A:164:THR:HG21	2.43	0.43
1:A:266:GLY:HA3	1:A:280:LEU:HD11	1.99	0.43
1:A:67:LEU:HD23	1:B:260:ILE:HD13	2.00	0.43
1:A:204:HIS:HA	1:B:121:ILE:HD11	2.00	0.43
1:A:260:ILE:O	1:A:263:ILE:N	2.51	0.43
1:A:505:THR:O	1:A:506:SER:C	2.61	0.43
1:B:251:ILE:CG2	1:B:298:VAL:HG22	2.48	0.43
1:A:383:LEU:O	1:A:386:LEU:HB2	2.18	0.43
1:A:464:PRO:O	1:A:465:GLN:HB2	2.18	0.43
1:B:10:LYS:C	1:B:12:TYR:H	2.26	0.43
1:B:51:THR:HG22	1:B:52:THR:N	2.33	0.43
1:B:142:ILE:HD11	1:B:304:LEU:CD1	2.39	0.43
1:B:290:LEU:HD23	1:B:290:LEU:HA	1.83	0.43
1:B:357:LEU:HB3	1:B:360:ILE:CD1	2.48	0.43
1:B:505:THR:O	1:B:506:SER:C	2.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:294:LEU:O	1:A:298:VAL:HG23	2.17	0.43
1:A:510:LEU:HD11	1:B:536:LEU:HG	2.00	0.43
1:B:357:LEU:HD22	1:B:360:ILE:CD1	2.49	0.43
1:B:464:PRO:O	1:B:465:GLN:HB2	2.19	0.43
1:B:517:GLN:HA	1:B:517:GLN:OE1	2.19	0.43
1:A:153:LEU:HD21	1:A:168:LEU:HD21	2.00	0.43
1:A:241:THR:HG22	1:A:242:ARG:N	2.34	0.43
1:A:439:ARG:HH22	1:A:446:GLU:CD	2.27	0.43
1:B:156:MET:C	1:B:164:THR:CG2	2.92	0.43
1:B:163:LEU:HD23	1:B:283:PHE:CG	2.54	0.43
1:B:280:LEU:HA	1:B:280:LEU:HD12	1.85	0.43
1:B:342:ILE:HG23	1:B:345:VAL:HG21	2.01	0.43
1:A:34:PRO:HA	1:A:37:ILE:HD12	2.01	0.43
1:A:157:PHE:N	1:A:164:THR:HG21	2.34	0.43
1:A:349:TYR:OH	1:A:382:THR:HG23	2.18	0.43
1:A:357:LEU:HD11	1:A:383:LEU:HA	2.01	0.43
1:B:263:ILE:O	1:B:264:GLY:C	2.61	0.43
1:B:349:TYR:OH	1:B:382:THR:HG23	2.19	0.43
1:A:94:TYR:CG	1:B:234:LEU:HD22	2.54	0.43
1:A:189:THR:HG21	1:A:306:GLN:HA	2.00	0.43
1:B:189:THR:HG21	1:B:306:GLN:HA	2.00	0.43
1:B:267:ALA:C	1:B:269:LEU:N	2.74	0.43
1:A:14:TYR:HB2	1:A:15:ARG:NH1	2.34	0.42
1:A:61:ILE:O	1:A:65:ILE:HB	2.19	0.42
1:A:195:ALA:O	1:A:199:VAL:HG13	2.18	0.42
1:B:177:THR:CG2	1:B:251:ILE:HD13	2.49	0.42
1:B:268:TYR:O	1:B:268:TYR:CG	2.71	0.42
1:B:357:LEU:HD11	1:B:383:LEU:HA	2.01	0.42
1:B:454:ALA:O	1:B:455:ASN:HB3	2.19	0.42
1:A:91:LYS:O	1:A:94:TYR:HB3	2.19	0.42
1:B:29:ILE:N	1:B:30:PRO:HD2	2.34	0.42
1:B:91:LYS:O	1:B:94:TYR:HB3	2.19	0.42
1:B:276:THR:HG22	1:B:278:GLY:CA	2.49	0.42
1:B:509:ASP:OD2	1:B:511:GLU:HB3	2.19	0.42
1:B:556:THR:O	1:B:556:THR:HG22	2.18	0.42
1:A:284:VAL:CG1	1:B:37:ILE:HD13	2.49	0.42
1:A:342:ILE:HG23	1:A:345:VAL:HG21	2.00	0.42
1:A:357:LEU:HB3	1:A:360:ILE:CD1	2.48	0.42
1:B:54:GLU:O	1:B:57:HIS:HB3	2.19	0.42
1:B:416:GLN:HB3	1:B:497:PRO:CG	2.49	0.42
1:B:489:ALA:O	1:B:490:ARG:C	2.61	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:505:THR:HG21	1:B:513:GLU:CD	2.42	0.42
1:A:74:ARG:NH2	1:B:295:ARG:NH2	2.66	0.42
1:A:251:ILE:CG2	1:A:298:VAL:HG22	2.49	0.42
1:A:505:THR:O	1:A:505:THR:CG2	2.67	0.42
1:B:539:ILE:HA	1:B:539:ILE:HD12	1.71	0.42
1:A:153:LEU:HD23	1:A:153:LEU:HA	1.88	0.42
1:A:357:LEU:HD11	1:A:383:LEU:CA	2.49	0.42
1:A:496:PRO:O	1:A:527:ARG:NH1	2.53	0.42
1:B:495:ASN:HD21	1:B:527:ARG:HH22	1.68	0.42
1:A:171:PHE:HB2	1:A:172:PRO:HD3	2.02	0.42
1:A:177:THR:CG2	1:A:251:ILE:HD13	2.50	0.42
1:A:364:ILE:HD13	1:A:530:LEU:CD2	2.46	0.42
1:B:127:ASP:OD1	1:B:313:ARG:HD3	2.19	0.42
1:B:238:LEU:O	1:B:239:LYS:C	2.63	0.42
1:B:463:LEU:O	1:B:464:PRO:C	2.62	0.42
1:A:27:PHE:HD1	1:A:27:PHE:H	1.67	0.42
1:A:141:ASN:O	1:A:142:ILE:C	2.63	0.42
1:A:291:PHE:CD1	1:A:291:PHE:N	2.88	0.42
1:A:315:PHE:O	1:A:316:GLN:C	2.62	0.42
1:A:454:ALA:O	1:A:455:ASN:HB3	2.19	0.42
1:B:145:ASP:O	1:B:149:ILE:HG13	2.20	0.42
1:B:185:LEU:CB	1:B:305:THR:HG21	2.44	0.42
1:A:10:LYS:C	1:A:12:TYR:H	2.27	0.42
1:A:145:ASP:O	1:A:149:ILE:HG13	2.20	0.42
1:A:549:GLU:O	1:A:550:ASN:C	2.63	0.42
1:B:241:THR:HG22	1:B:242:ARG:N	2.34	0.42
1:B:474:ARG:HH11	1:B:474:ARG:HG3	1.85	0.42
1:A:207:VAL:HG13	1:B:112:TYR:CE2	2.55	0.42
1:A:231:THR:O	1:A:232:ASN:C	2.62	0.42
1:A:233:PHE:HE2	1:B:97:ARG:HH12	1.68	0.42
1:A:304:LEU:O	1:A:305:THR:C	2.63	0.42
1:A:570:GLU:OE1	1:A:574:SER:HB2	2.20	0.42
1:B:570:GLU:OE1	1:B:574:SER:HB2	2.20	0.42
1:A:178:VAL:HG13	1:A:301:PHE:CD1	2.55	0.42
1:A:263:ILE:CG2	1:B:63:ILE:HD11	2.33	0.42
1:A:274:SER:OG	1:A:275:ILE:N	2.53	0.42
3:A:700:ADP:C5	1:B:477:LYS:HA	2.54	0.42
1:B:171:PHE:HB2	1:B:172:PRO:HD3	2.02	0.42
1:A:443:THR:C	1:A:445:GLU:H	2.27	0.41
1:A:455:ASN:OD1	1:A:455:ASN:O	2.38	0.41
1:A:536:LEU:HD23	1:A:536:LEU:H	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:700:ADP:N1	1:B:477:LYS:HG2	2.35	0.41
1:B:357:LEU:HD11	1:B:383:LEU:CA	2.49	0.41
1:A:23:GLY:O	1:A:26:LYS:HB2	2.20	0.41
1:A:520:LEU:O	1:A:521:ASP:C	2.63	0.41
1:B:505:THR:O	1:B:505:THR:CG2	2.67	0.41
1:B:14:TYR:HB2	1:B:15:ARG:NH1	2.34	0.41
1:B:79:PHE:O	1:B:80:ILE:C	2.63	0.41
1:B:160:ASP:OD2	1:B:163:LEU:N	2.49	0.41
1:B:178:VAL:HG13	1:B:301:PHE:CD1	2.56	0.41
1:B:231:THR:O	1:B:232:ASN:C	2.62	0.41
1:B:439:ARG:HH22	1:B:446:GLU:CD	2.27	0.41
1:A:74:ARG:O	1:A:75:PRO:C	2.63	0.41
1:A:171:PHE:CB	1:A:172:PRO:HD3	2.50	0.41
1:A:357:LEU:HD22	1:A:360:ILE:CD1	2.50	0.41
1:B:71:VAL:O	1:B:71:VAL:CG1	2.68	0.41
1:B:265:VAL:O	1:B:269:LEU:HG	2.21	0.41
1:B:558:THR:HB	1:B:561:GLU:CG	2.37	0.41
1:A:238:LEU:O	1:A:239:LYS:C	2.64	0.41
1:A:509:ASP:OD2	1:A:511:GLU:HB3	2.20	0.41
1:B:82:GLN:O	1:B:83:TYR:C	2.63	0.41
1:B:304:LEU:O	1:B:305:THR:C	2.63	0.41
1:B:397:GLN:NE2	1:B:399:LEU:HD11	2.25	0.41
1:A:416:GLN:HB3	1:A:497:PRO:CG	2.50	0.41
1:B:291:PHE:CD1	1:B:291:PHE:N	2.88	0.41
1:A:28:GLY:O	1:A:32:LEU:HG	2.20	0.41
1:A:425:ILE:HG22	1:A:426:LEU:N	2.36	0.41
1:B:536:LEU:HD23	1:B:536:LEU:H	1.84	0.41
1:A:74:ARG:HB3	1:A:75:PRO:HD3	2.03	0.41
1:A:82:GLN:O	1:A:83:TYR:C	2.63	0.41
1:A:170:ILE:HD11	1:A:257:ILE:CG2	2.50	0.41
1:A:251:ILE:HG21	1:A:298:VAL:HG22	2.03	0.41
1:B:345:VAL:HG13	1:B:393:VAL:CG2	2.51	0.41
1:A:51:THR:C	1:A:53:ASP:N	2.78	0.41
1:A:453:MET:HA	1:A:453:MET:CE	2.50	0.41
1:A:463:LEU:O	1:A:464:PRO:C	2.63	0.41
1:B:153:LEU:HD23	1:B:153:LEU:HA	1.84	0.41
1:B:266:GLY:O	1:B:280:LEU:HD13	2.21	0.41
1:B:339:ARG:O	1:B:400:ILE:HA	2.21	0.41
1:B:425:ILE:HG22	1:B:426:LEU:N	2.35	0.41
1:B:455:ASN:OD1	1:B:455:ASN:O	2.38	0.41
1:B:508:LEU:HD13	1:B:516:ILE:HD12	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:112:TYR:CE2	1:B:207:VAL:HG13	2.56	0.41
1:A:169:PHE:CD2	1:A:261:ILE:CD1	3.04	0.41
1:A:342:ILE:O	1:A:361:ASN:HA	2.21	0.41
1:A:425:ILE:HD13	1:B:209:GLY:HA2	2.03	0.41
1:B:171:PHE:CB	1:B:172:PRO:HD3	2.51	0.41
1:B:294:LEU:HD23	1:B:294:LEU:HA	1.92	0.41
1:B:342:ILE:O	1:B:361:ASN:HA	2.21	0.41
1:A:448:VAL:HG12	1:A:452:LYS:HE3	2.03	0.40
1:B:74:ARG:O	1:B:75:PRO:C	2.64	0.40
1:B:170:ILE:HD11	1:B:257:ILE:CG2	2.50	0.40
1:A:260:ILE:HG22	1:A:261:ILE:N	2.36	0.40
1:B:12:TYR:CZ	1:B:91:LYS:HG2	2.55	0.40
1:B:133:ASP:HB3	1:B:303:THR:CG2	2.51	0.40
1:A:12:TYR:CZ	1:A:91:LYS:HG2	2.57	0.40
1:A:47:ASN:HD22	1:A:50:LEU:HD21	1.85	0.40
1:A:70:PHE:CD2	1:B:256:ASP:HB3	2.49	0.40
1:A:79:PHE:O	1:A:80:ILE:C	2.64	0.40
1:A:339:ARG:O	1:A:400:ILE:HA	2.22	0.40
1:A:443:THR:O	1:A:444:ASP:C	2.65	0.40
1:B:74:ARG:HB3	1:B:75:PRO:HD3	2.03	0.40
1:B:251:ILE:HG21	1:B:298:VAL:HG22	2.02	0.40
1:B:267:ALA:O	1:B:269:LEU:N	2.55	0.40
1:B:558:THR:HG22	1:B:560:ARG:N	2.36	0.40
1:A:207:VAL:O	1:A:210:ILE:HG13	2.20	0.40
1:B:289:LEU:HA	1:B:289:LEU:HD23	1.76	0.40
1:B:443:THR:C	1:B:445:GLU:H	2.28	0.40
1:B:496:PRO:O	1:B:527:ARG:NH1	2.54	0.40
1:A:93:LEU:HD23	1:A:93:LEU:HA	1.92	0.40
1:A:252:ASN:O	1:A:253:THR:C	2.65	0.40
1:A:359:ASP:OD1	1:A:359:ASP:C	2.64	0.40
4:A:807:HOH:O	1:B:414:ARG:HD2	2.21	0.40
1:B:23:GLY:O	1:B:26:LYS:HB2	2.20	0.40
1:B:266:GLY:CA	1:B:280:LEU:HD11	2.50	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	576/578 (100%)	487 (84%)	73 (13%)	16 (3%)	4	21
1	B	576/578 (100%)	480 (83%)	80 (14%)	16 (3%)	4	21
All	All	1152/1156 (100%)	967 (84%)	153 (13%)	32 (3%)	4	21

All (32) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	25	ILE
1	A	41	ILE
1	A	338	GLY
1	B	25	ILE
1	B	338	GLY
1	A	160	ASP
1	A	168	LEU
1	A	182	PHE
1	A	466	GLY
1	A	467	TYR
1	A	506	SER
1	B	182	PHE
1	B	466	GLY
1	B	506	SER
1	A	79	PHE
1	A	330	ALA
1	A	574	SER
1	B	79	PHE
1	B	330	ALA
1	B	467	TYR
1	B	574	SER
1	A	477	LYS
1	A	537	SER
1	B	168	LEU
1	B	268	TYR

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Mol	Chain	Res	Type
1	B	477	LYS
1	B	537	SER
1	B	11	PRO
1	A	11	PRO
1	B	171	PHE
1	B	284	VAL
1	A	171	PHE

### 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	499/499 (100%)	470 (94%)	29 (6%)	18	51
1	B	499/499 (100%)	468 (94%)	31 (6%)	16	49
All	All	998/998 (100%)	938 (94%)	60 (6%)	17	50

All (60) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	56	VAL
1	A	65	ILE
1	A	82	GLN
1	A	199	VAL
1	A	211	SER
1	A	241	THR
1	A	289	LEU
1	A	290	LEU
1	A	295	ARG
1	A	321	ASP
1	A	353	GLU
1	A	356	ILE
1	A	365	GLU
1	A	373	VAL
1	A	384	ILE
1	A	392	ASP

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	393	VAL
1	A	410	THR
1	A	422	GLN
1	A	424	ASN
1	A	429	ASP
1	A	443	THR
1	A	461	MET
1	A	474	ARG
1	A	491	ILE
1	A	536	LEU
1	A	539	ILE
1	A	556	THR
1	A	570	GLU
1	B	65	ILE
1	B	82	GLN
1	B	159	LEU
1	B	199	VAL
1	B	211	SER
1	B	241	THR
1	B	289	LEU
1	B	290	LEU
1	B	295	ARG
1	B	321	ASP
1	B	353	GLU
1	B	356	ILE
1	B	365	GLU
1	B	373	VAL
1	B	384	ILE
1	B	392	ASP
1	B	393	VAL
1	B	410	THR
1	B	422	GLN
1	B	424	ASN
1	B	429	ASP
1	B	443	THR
1	B	461	MET
1	B	474	ARG
1	B	491	ILE
1	B	536	LEU
1	B	539	ILE
1	B	556	THR
1	B	570	GLU

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Mol	Chain	Res	Type
1	B	577	ASN
1	B	578	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	47	ASN
1	A	105	GLN
1	A	126	ASN
1	A	200	GLN
1	A	204	HIS
1	A	306	GLN
1	A	385	ASN
1	A	397	GLN
1	A	455	ASN
1	A	465	GLN
1	A	482	GLN
1	B	47	ASN
1	B	48	HIS
1	B	105	GLN
1	B	116	GLN
1	B	119	GLN
1	B	126	ASN
1	B	200	GLN
1	B	306	GLN
1	B	385	ASN
1	B	397	GLN
1	B	465	GLN
1	B	482	GLN

### 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 4 ligands modelled in this entry, 2 are monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	ADP	B	701	-	28,29,29	1.08	1 (3%)	43,45,45	1.94	11 (25%)
3	ADP	A	700	-	28,29,29	1.12	1 (3%)	43,45,45	1.92	12 (27%)

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	ADP	B	701	-	-	1/16/32/32	0/3/3/3
3	ADP	A	700	-	-	1/16/32/32	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	700	ADP	C5-N7	-2.57	1.34	1.39
3	B	701	ADP	C5-N7	-2.34	1.34	1.39

All (23) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	701	ADP	N3-C2-N1	-4.60	121.63	128.58
3	B	701	ADP	C5-C4-N3	-4.51	120.51	126.72
3	A	700	ADP	N3-C2-N1	-4.48	121.80	128.58
3	A	700	ADP	C5-C4-N3	-4.38	120.69	126.72
3	B	701	ADP	N3-C4-N9	3.66	133.39	127.17

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	700	ADP	N3-C4-N9	3.55	133.21	127.17
3	B	701	ADP	C2-N3-C4	3.48	120.34	111.83
3	A	700	ADP	C2-N3-C4	3.46	120.28	111.83
3	A	700	ADP	PA-O5'-C5'	-3.34	102.21	121.35
3	B	701	ADP	PA-O5'-C5'	-3.31	102.38	121.35
3	B	701	ADP	C5-N7-C8	3.22	108.51	103.45
3	A	700	ADP	C5-N7-C8	3.15	108.41	103.45
3	B	701	ADP	C4-C5-N7	-2.93	107.23	110.58
3	A	700	ADP	C4-C5-N7	-2.83	107.35	110.58
3	B	701	ADP	O2A-PA-O3A	2.71	114.59	107.27
3	A	700	ADP	O2A-PA-O3A	2.69	114.55	107.27
3	A	700	ADP	C2'-C3'-C4'	2.43	107.31	102.61
3	B	701	ADP	N9-C8-N7	-2.39	110.55	113.94
3	B	701	ADP	C2'-C3'-C4'	2.35	107.15	102.61
3	A	700	ADP	N9-C8-N7	-2.32	110.64	113.94
3	A	700	ADP	O3B-PB-O3A	2.12	111.74	104.64
3	B	701	ADP	O3B-PB-O3A	2.11	111.71	104.64
3	A	700	ADP	C5'-C4'-C3'	-2.04	107.85	115.21

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	700	ADP	C5'-O5'-PA-O1A
3	B	701	ADP	C5'-O5'-PA-O1A

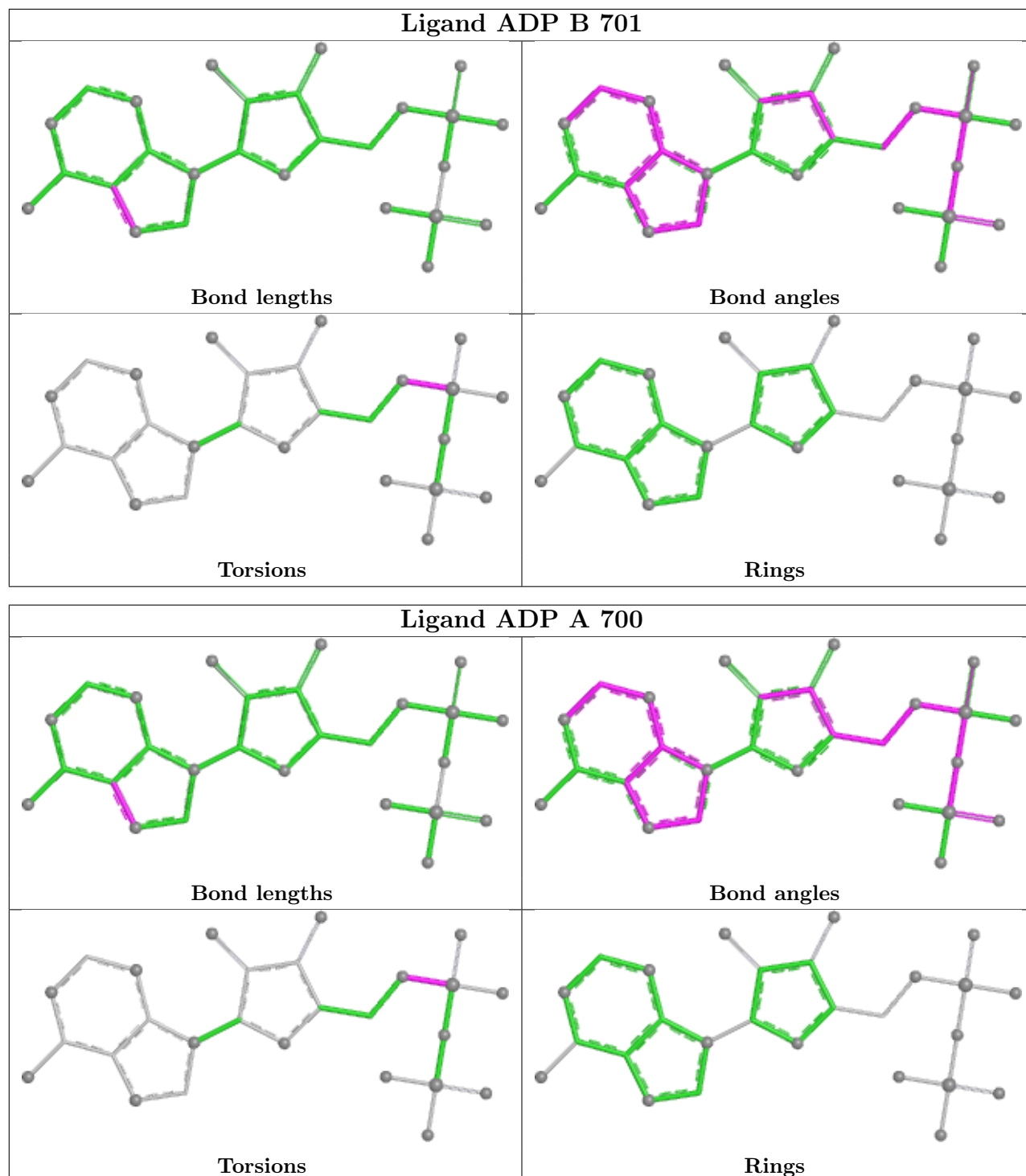
There are no ring outliers.

2 monomers are involved in 12 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	701	ADP	5	0
3	A	700	ADP	7	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 ⓘ

There are no such residues in this entry.

## 5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	B	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	46:ASN	C	47:ASN	N	1.12

## 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<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	578/578 (100%)	0.36	23 (3%)	42 23	56, 97, 162, 200	2 (0%)
1	B	578/578 (100%)	0.42	26 (4%)	38 20	54, 94, 162, 200	2 (0%)
All	All	1156/1156 (100%)	0.39	49 (4%)	40 22	54, 96, 162, 200	4 (0%)

All (49) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	47	ASN	3.9
1	A	234	LEU	3.9
1	B	375	MET	3.7
1	A	277	VAL	3.6
1	A	578	LEU	3.5
1	B	37	ILE	3.5
1	A	375	MET	3.4
1	A	276	THR	3.4
1	B	133	ASP	3.3
1	A	143	TRP	3.2
1	A	286	TYR	3.2
1	B	537	SER	3.0
1	B	46	ASN	2.9
1	B	204	HIS	2.9
1	B	242	ARG	2.9
1	B	13	LYS	2.9
1	B	45	ILE	2.9
1	B	27	PHE	2.8
1	A	1	MET	2.8
1	A	33	ILE	2.8
1	B	211	SER	2.6
1	A	27	PHE	2.6
1	B	157	PHE	2.6
1	B	41	ILE	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	285	GLY	2.6
1	B	8	PHE	2.5
1	B	167	ALA	2.5
1	B	192	ARG	2.5
1	A	289	LEU	2.4
1	B	1	MET	2.4
1	B	58	HIS	2.3
1	B	578	LEU	2.3
1	A	259	PRO	2.3
1	B	40	ALA	2.3
1	A	133	ASP	2.3
1	A	424	ASN	2.2
1	B	36	LEU	2.2
1	B	165	LEU	2.2
1	B	271	ILE	2.2
1	A	242	ARG	2.2
1	B	82	GLN	2.1
1	A	537	SER	2.1
1	A	542	ALA	2.1
1	A	90	ASN	2.1
1	B	273	GLY	2.1
1	A	473	GLU	2.1
1	A	263	ILE	2.0
1	A	256	ASP	2.0
1	A	144	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](#)

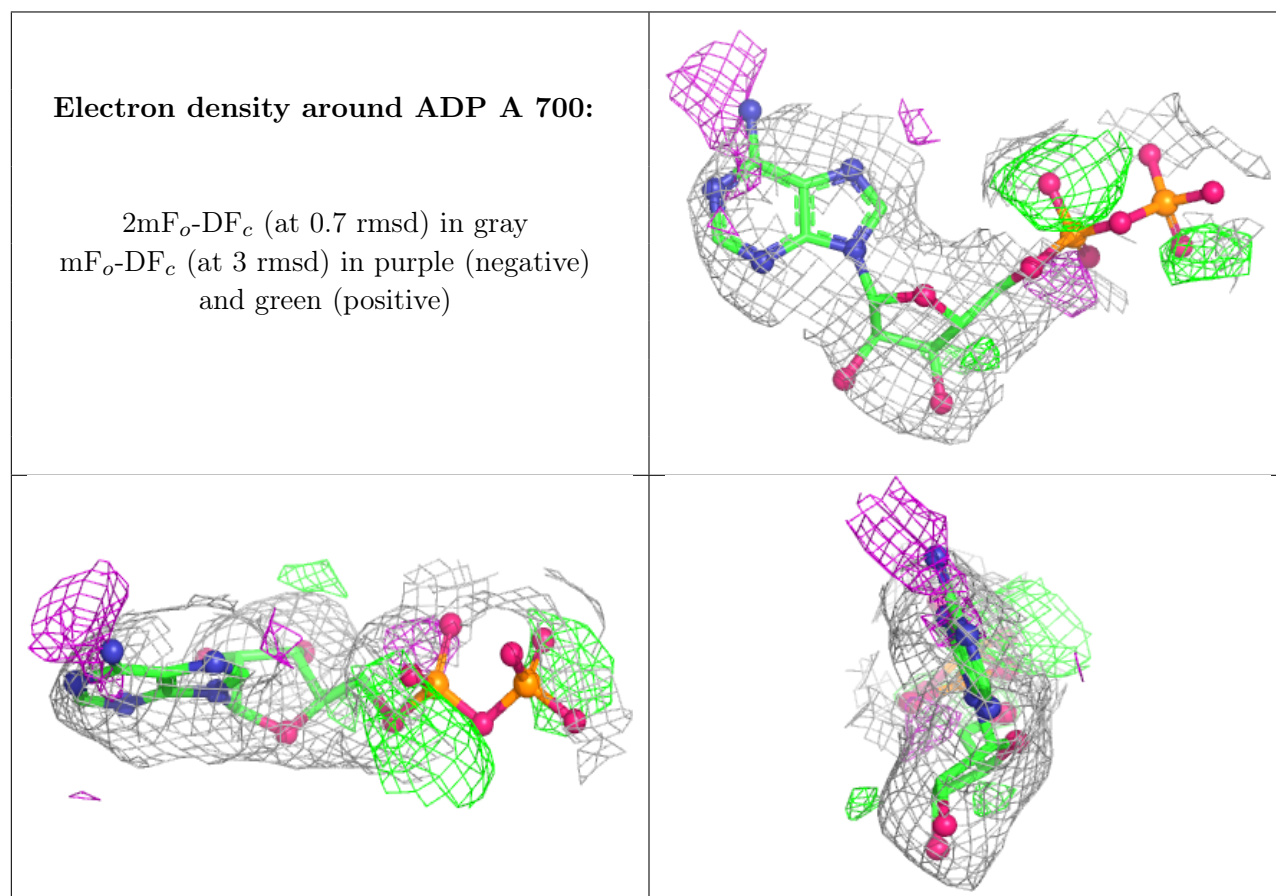
There are no oligosaccharides in this entry.

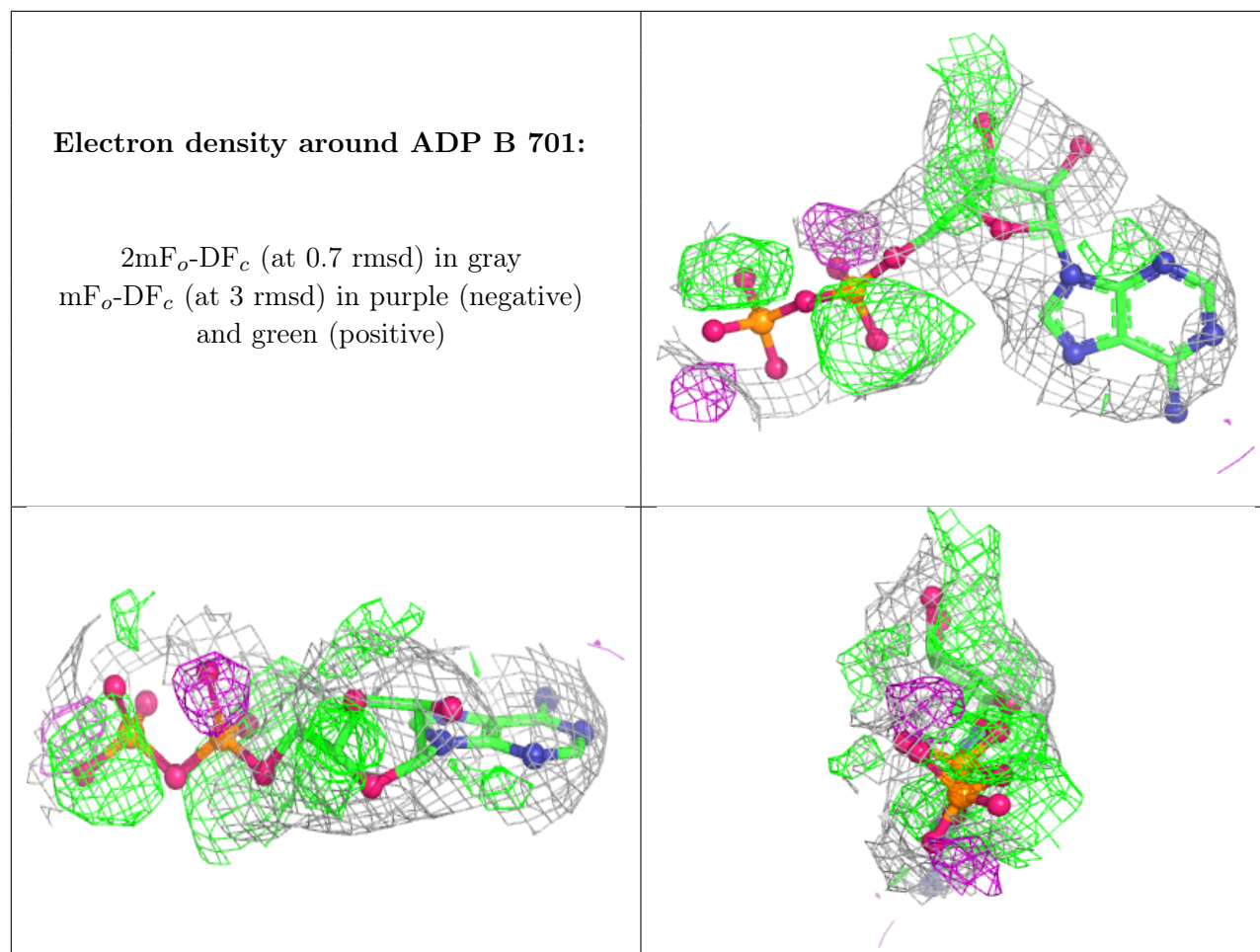
## 6.4 Ligands [i](#)

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( $\text{\AA}^2$ )	Q<0.9
2	NA	B	910	1/1	0.91	0.28	31,31,31,31	0
3	ADP	A	700	27/27	0.92	0.12	80,83,85,85	0
3	ADP	B	701	27/27	0.92	0.13	78,83,84,85	0
2	NA	A	900	1/1	0.94	0.26	24,24,24,24	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.