Full wwPDB X-ray Structure Validation Report (i)

Feb 12, 2024 – 03:51 AM EST

PDB ID	:	3H2T
Title	:	Crystal structure of gene product 6, baseplate protein of bacteriophage T4
Authors	:	Aksyuk, A.A.; Leiman, P.G.; Shneider, M.M.; Mesyanzhinov, V.V.; Rossmann, M.G.
Deposited on	:	2009-04-14
Resolution	:	3.20 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) 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 (1)) were used in the production of this report:

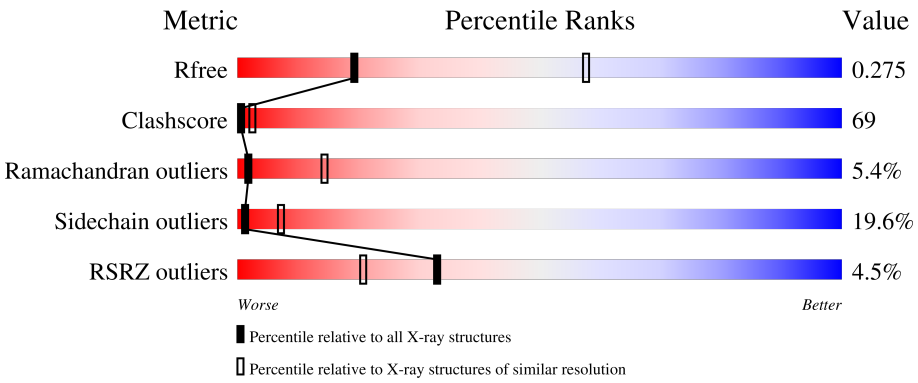
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation 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 3.20 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1133 (3.20-3.20)
Clashscore	141614	1253 (3.20-3.20)
Ramachandran outliers	138981	1234 (3.20-3.20)
Sidechain outliers	138945	1233 (3.20-3.20)
RSRZ outliers	127900	1095 (3.20-3.20)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=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	335	4% 34% 47% 14% • •
1	B	335	5% 35% 44% 16% • •

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 5251 atoms, of which 2 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 Baseplate structural protein Gp6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	326	2622	1667	424	528	3	0	0	0
1	B	324	2608	1658	422	525	3	0	0	0

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	661	LEU	-	expression tag	UNP P19060
A	662	GLU	-	expression tag	UNP P19060
A	663	HIS	-	expression tag	UNP P19060
A	664	HIS	-	expression tag	UNP P19060
A	665	HIS	-	expression tag	UNP P19060
A	666	HIS	-	expression tag	UNP P19060
A	667	HIS	-	expression tag	UNP P19060
A	668	HIS	-	expression tag	UNP P19060
B	661	LEU	-	expression tag	UNP P19060
B	662	GLU	-	expression tag	UNP P19060
B	663	HIS	-	expression tag	UNP P19060
B	664	HIS	-	expression tag	UNP P19060
B	665	HIS	-	expression tag	UNP P19060
B	666	HIS	-	expression tag	UNP P19060
B	667	HIS	-	expression tag	UNP P19060
B	668	HIS	-	expression tag	UNP P19060

- Molecule 2 is water.

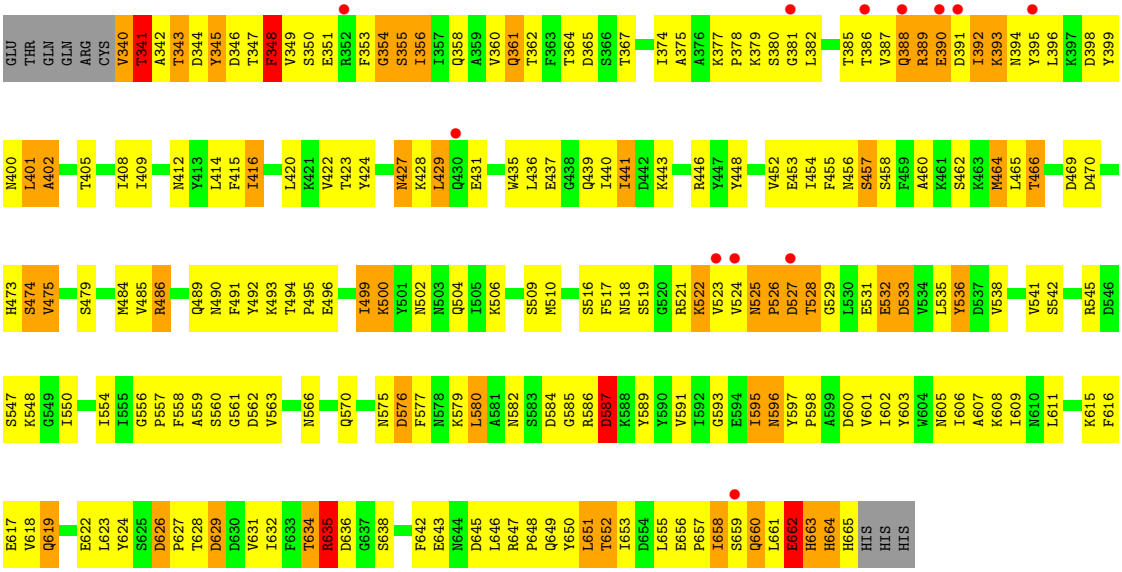
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	O			
2	A	8	8	8		0	0
			Total	H	O		
2	B	11	13	2	11	0	0

3 Residue-property plots (i)

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

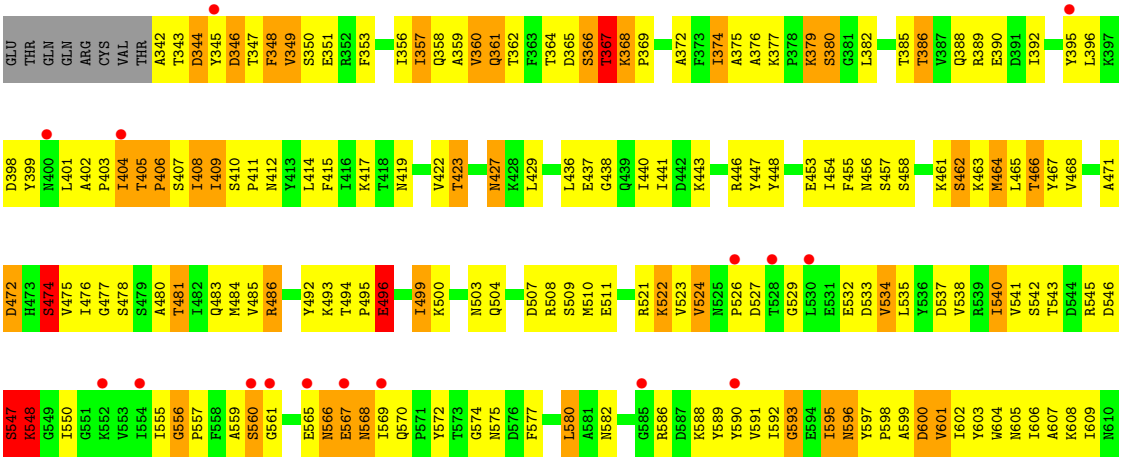
- Molecule 1: Baseplate structural protein Gp6

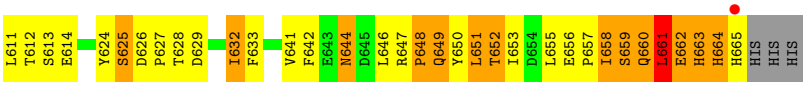
Chain A:



- Molecule 1: Baseplate structural protein Gp6

Chain B:




L611
T612
S613
E614
Y624
S625
D626
P627
T628
D629
I632
F633
V641
F642
E643
N644
D645
L646
R647
P648
Q649
Y650
L651
T652
I653
D654
L655
E656
P657
I658
S659
Q660
L661
E662
H663
H664
H665
HIS
HIS
HIS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	76.77Å 94.58Å 136.22Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	44.86 – 3.20 44.86 – 3.20	Depositor EDS
% Data completeness (in resolution range)	99.6 (44.86-3.20) 99.6 (44.86-3.20)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.57 (at 3.19Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.230 , 0.322 0.269 , 0.275	Depositor DCC
R_{free} test set	854 reflections (5.05%)	wwPDB-VP
Wilson B-factor (Å^2)	80.9	Xtriage
Anisotropy	0.481	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 84.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.89	EDS
Total number of atoms	5251	wwPDB-VP
Average B, all atoms (Å^2)	92.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.27% 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 (i)

5.1 Standard geometry (i)

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	0.50	0/2677	0.86	8/3637 (0.2%)
1	B	0.51	0/2663	0.96	11/3617 (0.3%)
All	All	0.51	0/5340	0.91	19/7254 (0.3%)

There are no bond length outliers.

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	405	THR	C-N-CD	-29.01	56.78	120.60
1	A	389	ARG	CB-CA-C	-19.61	71.19	110.40
1	B	474	SER	N-CA-CB	-10.98	94.02	110.50
1	A	646	LEU	N-CA-CB	-10.45	89.50	110.40
1	B	548	LYS	N-CA-C	9.95	137.85	111.00
1	B	534	VAL	N-CA-CB	-9.72	90.11	111.50
1	A	457	SER	N-CA-CB	9.62	124.92	110.50
1	A	456	ASN	CB-CA-C	-8.72	92.96	110.40
1	B	472	ASP	CB-CA-C	8.45	127.30	110.40
1	B	398	ASP	CB-CA-C	7.97	126.35	110.40
1	A	645	ASP	CB-CA-C	7.86	126.12	110.40
1	A	527	ASP	C-N-CA	-6.14	106.35	121.70
1	A	457	SER	N-CA-C	-6.10	94.53	111.00
1	B	644	ASN	CB-CA-C	-6.08	98.25	110.40
1	B	547	SER	N-CA-C	-6.01	94.78	111.00
1	A	525	ASN	C-N-CD	-5.88	107.66	120.60
1	B	533	ASP	N-CA-C	-5.77	95.42	111.00
1	B	533	ASP	CB-CA-C	-5.63	99.15	110.40
1	B	367	THR	CB-CA-C	-5.35	97.14	111.60

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	2622	0	2546	387	28
1	B	2608	0	2530	339	16
2	A	8	0	0	3	0
2	B	11	2	0	5	0
All	All	5249	2	5076	708	28

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 69.

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:A:661:LEU:HD13	1:A:662:GLU:N	1.06	1.36
1:A:385:THR:CG2	1:A:389:ARG:N	1.88	1.36
1:A:559:ALA:C	1:A:561:GLY:HA3	1.49	1.33
1:A:525:ASN:CB	1:A:526:PRO:HD2	1.59	1.31
1:B:661:LEU:C	1:B:661:LEU:HD13	1.48	1.27
1:A:385:THR:CG2	1:A:389:ARG:H	1.44	1.27
1:A:385:THR:HG21	1:A:389:ARG:N	1.44	1.26
1:A:389:ARG:CA	1:A:392:ILE:HG12	1.67	1.25
1:A:401:LEU:C	1:A:401:LEU:HD23	1.55	1.25
1:A:385:THR:HG23	1:A:387:VAL:CG2	1.65	1.24
1:A:582:ASN:HA	2:A:701:HOH:O	1.06	1.23
1:B:409:ILE:HD12	1:B:409:ILE:C	1.59	1.23
1:B:646:LEU:HD23	1:B:646:LEU:O	1.36	1.22
1:A:401:LEU:HD23	1:A:402:ALA:N	1.54	1.21
1:B:408:ILE:C	1:B:408:ILE:HD12	1.56	1.21
1:A:629:ASP:HA	1:B:664:HIS:CE1	1.75	1.21
1:A:661:LEU:CD1	1:A:662:GLU:N	2.03	1.19
1:A:559:ALA:O	1:A:561:GLY:HA3	1.39	1.19
1:B:661:LEU:O	1:B:663:HIS:N	1.72	1.19
1:B:367:THR:O	1:B:369:PRO:HD3	1.42	1.18
1:B:367:THR:HG23	1:B:368:LYS:H	1.00	1.16
1:B:409:ILE:HD12	1:B:409:ILE:O	1.44	1.16
1:A:661:LEU:HD13	1:A:661:LEU:C	1.58	1.15

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:340:VAL:HA	1:A:345:TYR:OH	1.43	1.15
1:A:385:THR:CG2	1:A:387:VAL:HG23	1.76	1.15
1:A:525:ASN:O	1:A:528:THR:HG23	1.43	1.15
1:A:340:VAL:C	1:A:345:TYR:HE1	1.49	1.15
1:A:392:ILE:CG1	1:A:393:LYS:H	1.60	1.14
1:B:647:ARG:NH1	1:B:649:GLN:OE1	1.78	1.14
1:A:392:ILE:HG13	1:A:393:LYS:N	1.58	1.12
1:A:353:PHE:O	1:A:355:SER:N	1.80	1.12
1:B:353:PHE:HZ	1:B:395:TYR:CE2	1.67	1.11
1:A:391:ASP:O	1:A:394:ASN:HB2	1.51	1.11
1:A:392:ILE:O	1:A:394:ASN:N	1.82	1.11
1:A:502:ASN:ND2	1:A:635:ARG:HB3	1.66	1.11
1:A:631:VAL:HG21	1:B:476:ILE:CG2	1.80	1.11
1:B:366:SER:C	1:B:367:THR:HG22	1.68	1.10
1:A:385:THR:HG21	1:A:389:ARG:CA	1.82	1.09
1:A:502:ASN:HD22	1:A:635:ARG:HB3	1.08	1.09
1:A:635:ARG:HG2	1:A:636:ASP:H	1.09	1.08
1:B:565:GLU:HB3	1:B:570:GLN:HE21	0.95	1.07
1:A:525:ASN:HB3	1:A:526:PRO:HD2	1.25	1.07
1:A:525:ASN:CG	1:A:526:PRO:HD2	1.74	1.07
1:A:389:ARG:HA	1:A:392:ILE:CG1	1.86	1.06
1:A:392:ILE:HG13	1:A:393:LYS:H	0.90	1.06
1:B:408:ILE:HD12	1:B:408:ILE:O	1.52	1.06
1:A:661:LEU:O	1:A:662:GLU:O	1.74	1.05
1:A:340:VAL:C	1:A:345:TYR:CE1	2.30	1.05
1:A:389:ARG:HA	1:A:392:ILE:HG12	1.08	1.04
1:A:385:THR:O	1:A:388:GLN:N	1.90	1.04
1:B:367:THR:HG23	1:B:368:LYS:N	1.70	1.04
1:A:353:PHE:CD1	1:A:395:TYR:CE2	2.46	1.03
1:B:569:ILE:HG22	1:B:569:ILE:O	1.55	1.03
1:B:662:GLU:O	1:B:663:HIS:HB2	1.60	1.02
1:B:660:GLN:HA	1:B:661:LEU:HB2	1.41	1.02
1:A:385:THR:HG22	1:A:389:ARG:N	1.69	1.02
1:B:565:GLU:CB	1:B:570:GLN:HE21	1.73	1.02
1:B:661:LEU:HD13	1:B:661:LEU:O	1.60	1.01
1:A:661:LEU:CD1	1:A:662:GLU:HB2	1.89	1.01
1:A:635:ARG:CG	1:A:636:ASP:H	1.70	1.01
1:B:661:LEU:O	1:B:661:LEU:HD22	1.60	1.00
1:B:403:PRO:O	1:B:405:THR:CG2	2.09	1.00
1:A:559:ALA:C	1:A:561:GLY:CA	2.30	1.00
1:B:409:ILE:C	1:B:409:ILE:CD1	2.29	1.00

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:525:ASN:CG	1:A:526:PRO:CD	2.30	0.99
1:A:665:HIS:CE1	1:B:342:ALA:HB3	1.97	0.99
1:B:565:GLU:HB3	1:B:570:GLN:NE2	1.79	0.98
1:B:353:PHE:CZ	1:B:395:TYR:CE2	2.51	0.97
1:B:660:GLN:HA	1:B:661:LEU:CB	1.95	0.96
1:A:401:LEU:C	1:A:401:LEU:CD2	2.30	0.96
1:A:401:LEU:HD23	1:A:402:ALA:CB	1.96	0.96
1:B:343:THR:O	1:B:347:THR:HG23	1.65	0.95
1:B:661:LEU:C	1:B:661:LEU:CD1	2.30	0.95
1:A:401:LEU:CD2	1:A:402:ALA:N	2.30	0.95
1:A:385:THR:HG21	1:A:390:GLU:H	1.31	0.95
1:A:661:LEU:HD13	1:A:662:GLU:H	1.26	0.95
1:A:525:ASN:CB	1:A:526:PRO:CD	2.44	0.95
1:A:385:THR:HG22	1:A:389:ARG:H	1.22	0.95
1:A:340:VAL:HA	1:A:345:TYR:CZ	2.01	0.94
1:B:503:ASN:HD21	1:B:633:PHE:H	0.96	0.94
1:A:385:THR:HG21	1:A:390:GLU:N	1.81	0.94
1:B:403:PRO:O	1:B:405:THR:HG23	1.64	0.93
1:A:401:LEU:HD23	1:A:402:ALA:CA	1.97	0.93
1:A:340:VAL:C	1:A:341:THR:HG23	1.89	0.93
1:A:353:PHE:CD1	1:A:395:TYR:HE2	1.84	0.93
1:B:566:ASN:N	1:B:570:GLN:HE22	1.66	0.92
1:A:392:ILE:HA	1:A:395:TYR:CD1	2.04	0.92
1:B:557:PRO:HG2	1:B:580:LEU:HD11	1.51	0.92
1:A:635:ARG:CG	1:A:636:ASP:N	2.30	0.91
1:A:401:LEU:CD2	1:A:402:ALA:HB2	2.00	0.91
1:B:647:ARG:CG	1:B:650:TYR:CD1	2.53	0.91
1:A:519:SER:HB2	1:A:562:ASP:OD1	1.71	0.91
1:A:661:LEU:CD1	1:A:661:LEU:C	2.29	0.90
1:A:629:ASP:HA	1:B:664:HIS:NE2	1.87	0.90
1:B:409:ILE:HD13	1:B:410:SER:O	1.72	0.90
1:A:664:HIS:O	1:A:665:HIS:CG	2.25	0.90
1:B:647:ARG:HG2	1:B:650:TYR:CD1	2.08	0.89
1:A:436:LEU:HD22	1:A:655:LEU:HD21	1.53	0.89
1:B:366:SER:O	1:B:367:THR:HG22	1.73	0.89
1:A:340:VAL:O	1:A:345:TYR:HE1	1.55	0.89
1:A:635:ARG:HH22	1:B:661:LEU:HD12	1.36	0.89
1:A:353:PHE:CZ	1:A:395:TYR:CD2	2.60	0.89
1:A:385:THR:O	1:A:385:THR:HG22	1.70	0.89
1:A:661:LEU:HG	1:B:456:ASN:HB3	1.55	0.88
1:A:631:VAL:HG21	1:B:476:ILE:HG21	1.53	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:401:LEU:HD23	1:A:402:ALA:HB2	1.55	0.87
1:A:631:VAL:HG21	1:B:476:ILE:HG22	1.57	0.87
1:A:661:LEU:O	1:A:662:GLU:C	2.08	0.86
1:A:340:VAL:CA	1:A:345:TYR:CE1	2.58	0.86
1:A:347:THR:OG1	1:A:348:PHE:N	2.05	0.86
1:A:517:PHE:HD2	1:A:536:TYR:HE2	1.18	0.86
1:A:660:GLN:HG3	1:A:661:LEU:N	1.90	0.85
1:A:385:THR:HG23	1:A:387:VAL:HG23	0.86	0.85
1:B:662:GLU:O	1:B:663:HIS:CB	2.20	0.85
1:A:353:PHE:CE1	1:A:395:TYR:CE2	2.65	0.85
1:A:560:SER:N	1:A:561:GLY:CA	2.39	0.84
1:B:496:GLU:H	1:B:496:GLU:CD	1.80	0.84
1:A:385:THR:CG2	1:A:390:GLU:H	1.91	0.84
1:B:664:HIS:CG	1:B:664:HIS:O	2.29	0.84
1:B:567:GLU:HA	1:B:570:GLN:OE1	1.78	0.84
1:A:341:THR:O	1:A:345:TYR:CD1	2.30	0.84
1:A:582:ASN:CA	2:A:701:HOH:O	1.75	0.84
1:B:408:ILE:C	1:B:408:ILE:CD1	2.30	0.84
1:A:582:ASN:CB	2:A:701:HOH:O	2.06	0.83
1:B:345:TYR:CD1	1:B:345:TYR:O	2.30	0.83
1:A:385:THR:HA	1:A:387:VAL:HG22	1.60	0.83
1:B:657:PRO:C	1:B:658:ILE:HD13	1.99	0.83
1:B:379:LYS:HG3	1:B:380:SER:N	1.94	0.83
1:A:340:VAL:CA	1:A:345:TYR:HE1	1.90	0.82
1:A:557:PRO:HB3	1:A:587:ASP:HA	1.60	0.82
1:A:341:THR:HG1	1:A:344:ASP:HB2	1.44	0.82
1:B:345:TYR:CE1	1:B:349:VAL:HG23	2.14	0.82
1:A:661:LEU:HD13	1:A:662:GLU:CA	2.10	0.82
1:B:659:SER:O	1:B:660:GLN:HG3	1.80	0.82
1:B:503:ASN:ND2	1:B:633:PHE:H	1.77	0.82
1:B:543:THR:HG22	1:B:577:PHE:HB3	1.60	0.82
1:A:519:SER:HB2	1:A:562:ASP:CG	2.00	0.82
1:A:392:ILE:O	1:A:395:TYR:N	2.13	0.81
1:A:635:ARG:HG2	1:A:636:ASP:N	1.90	0.81
1:A:635:ARG:NH2	1:B:661:LEU:HD12	1.95	0.81
1:A:345:TYR:HD1	1:A:345:TYR:N	1.77	0.81
1:B:367:THR:CG2	1:B:368:LYS:H	1.87	0.81
1:B:595:ILE:HD12	1:B:595:ILE:H	1.45	0.81
1:A:340:VAL:HA	1:A:345:TYR:CE1	2.15	0.80
1:A:440:ILE:HD11	1:A:653:ILE:HD13	1.64	0.80
1:A:525:ASN:OD1	1:A:526:PRO:CD	2.30	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:353:PHE:HZ	1:B:395:TYR:HE2	1.21	0.80
1:B:582:ASN:HD21	1:B:586:ARG:HB2	1.43	0.80
1:A:353:PHE:CE1	1:A:395:TYR:CD2	2.70	0.80
1:B:366:SER:O	1:B:367:THR:CG2	2.29	0.80
1:A:629:ASP:HA	1:B:664:HIS:HE1	1.47	0.80
1:B:567:GLU:O	1:B:568:ASN:CB	2.30	0.80
1:A:388:GLN:O	1:A:389:ARG:CG	2.30	0.79
1:B:659:SER:O	1:B:660:GLN:CG	2.29	0.79
1:A:396:LEU:HD22	1:A:408:ILE:HD13	1.62	0.79
1:B:661:LEU:O	1:B:661:LEU:CD2	2.29	0.79
1:B:661:LEU:O	1:B:661:LEU:CD1	2.29	0.79
1:A:389:ARG:O	1:A:393:LYS:HB3	1.82	0.78
1:A:457:SER:H	1:A:634:THR:CG2	1.97	0.78
1:B:366:SER:O	1:B:367:THR:CB	2.30	0.78
1:A:524:VAL:HG22	1:A:529:GLY:O	1.84	0.78
1:B:374:ILE:HG12	1:B:408:ILE:HA	1.65	0.78
1:B:408:ILE:O	1:B:408:ILE:CD1	2.30	0.78
1:A:388:GLN:O	1:A:389:ARG:CB	2.30	0.78
1:A:361:GLN:HG2	1:A:455:PHE:CG	2.19	0.78
1:B:367:THR:O	1:B:369:PRO:CD	2.30	0.77
1:B:647:ARG:HD2	1:B:650:TYR:CE1	2.19	0.77
1:A:385:THR:CA	1:A:387:VAL:HG22	2.14	0.77
1:A:392:ILE:HA	1:A:395:TYR:CE1	2.19	0.77
1:B:403:PRO:O	1:B:405:THR:HG22	1.85	0.77
1:B:569:ILE:O	1:B:569:ILE:CG2	2.30	0.76
1:A:353:PHE:CE2	1:A:395:TYR:HD2	2.02	0.76
1:B:345:TYR:HE1	1:B:349:VAL:CG2	1.99	0.76
1:B:661:LEU:HD13	1:B:662:GLU:N	2.01	0.76
1:A:385:THR:HG22	1:A:388:GLN:N	2.00	0.76
1:B:408:ILE:O	1:B:409:ILE:CG2	2.34	0.76
1:A:532:GLU:N	1:A:532:GLU:CD	2.36	0.76
1:B:408:ILE:HD12	1:B:409:ILE:N	2.01	0.76
1:B:646:LEU:HD23	1:B:646:LEU:C	2.05	0.76
1:A:401:LEU:O	1:A:402:ALA:HB3	1.85	0.76
1:A:340:VAL:CA	1:A:345:TYR:OH	2.30	0.75
1:A:355:SER:OG	1:A:356:ILE:HG23	1.85	0.75
1:B:644:ASN:O	1:B:644:ASN:ND2	2.20	0.75
1:A:416:ILE:HG13	1:A:448:TYR:OH	1.86	0.75
1:A:347:THR:O	1:A:349:VAL:N	2.20	0.74
1:A:345:TYR:CD1	1:A:345:TYR:N	2.51	0.74
1:B:427:ASN:H	1:B:427:ASN:ND2	1.84	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:366:SER:C	1:B:367:THR:CG2	2.42	0.74
1:B:437:GLU:O	1:B:441:ILE:HG22	1.88	0.74
1:A:526:PRO:O	1:A:528:THR:HG22	1.87	0.73
1:A:629:ASP:HB3	1:A:631:VAL:O	1.89	0.73
1:A:665:HIS:CE1	1:B:342:ALA:CB	2.71	0.73
1:B:408:ILE:O	1:B:409:ILE:HG22	1.89	0.73
1:B:496:GLU:CD	1:B:496:GLU:N	2.41	0.73
1:A:518:ASN:OD1	1:A:533:ASP:HB2	1.89	0.72
1:A:389:ARG:CA	1:A:392:ILE:CG1	2.53	0.72
1:A:340:VAL:O	1:A:345:TYR:CE1	2.37	0.72
1:B:503:ASN:HD21	1:B:633:PHE:N	1.79	0.72
1:A:392:ILE:C	1:A:394:ASN:N	2.43	0.71
1:A:664:HIS:O	1:A:665:HIS:ND1	2.23	0.71
1:A:340:VAL:O	1:A:344:ASP:HB2	1.91	0.71
1:A:385:THR:CG2	1:A:387:VAL:CG2	2.50	0.71
1:B:342:ALA:O	1:B:346:ASP:CG	2.29	0.70
1:A:358:GLN:HB2	1:A:379:LYS:HA	1.73	0.70
1:B:342:ALA:C	1:B:346:ASP:OD2	2.29	0.70
1:A:340:VAL:HA	1:A:345:TYR:HH	1.53	0.70
1:A:440:ILE:HD11	1:A:653:ILE:CD1	2.21	0.70
1:A:401:LEU:HD23	1:A:401:LEU:O	1.92	0.70
1:A:587:ASP:OD2	1:A:587:ASP:C	2.30	0.70
1:B:385:THR:HG23	1:B:388:GLN:H	1.56	0.70
1:B:568:ASN:CG	1:B:569:ILE:H	1.94	0.70
1:A:345:TYR:HD1	1:A:345:TYR:H	1.36	0.70
1:B:345:TYR:CD1	1:B:345:TYR:C	2.65	0.70
1:A:392:ILE:O	1:A:393:LYS:C	2.30	0.70
1:A:506:LYS:O	1:A:509:SER:HB3	1.92	0.70
1:B:659:SER:O	1:B:660:GLN:CD	2.30	0.70
1:A:353:PHE:CZ	1:A:395:TYR:HD2	2.09	0.69
1:A:587:ASP:CG	1:A:587:ASP:O	2.30	0.69
1:A:661:LEU:CD1	1:A:662:GLU:CB	2.68	0.69
1:B:344:ASP:C	1:B:344:ASP:OD1	2.29	0.69
1:B:567:GLU:O	1:B:568:ASN:CG	2.30	0.69
1:A:392:ILE:HA	1:A:395:TYR:HD1	1.57	0.69
1:A:353:PHE:CG	1:A:395:TYR:HE2	2.09	0.69
1:A:517:PHE:CD2	1:A:536:TYR:HE2	2.07	0.69
1:A:522:LYS:N	1:A:522:LYS:HD3	2.07	0.69
1:A:385:THR:HG21	1:A:389:ARG:C	2.13	0.69
1:B:345:TYR:CE1	1:B:349:VAL:CG2	2.74	0.69
1:B:566:ASN:N	1:B:570:GLN:NE2	2.41	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:567:GLU:O	1:B:568:ASN:HB3	1.92	0.69
1:A:401:LEU:O	1:A:402:ALA:CB	2.40	0.69
1:A:661:LEU:HD12	1:A:662:GLU:HB2	1.73	0.69
1:A:385:THR:HG22	1:A:388:GLN:CA	2.22	0.69
1:A:388:GLN:O	1:A:389:ARG:HB2	1.92	0.68
1:A:385:THR:HG22	1:A:388:GLN:C	2.14	0.68
1:A:388:GLN:O	1:A:389:ARG:HG3	1.92	0.68
1:B:646:LEU:O	1:B:646:LEU:CD2	2.30	0.68
1:B:664:HIS:CD2	2:B:719:HOH:O	2.46	0.68
1:B:647:ARG:HG3	1:B:650:TYR:CD1	2.29	0.68
1:B:660:GLN:CA	1:B:661:LEU:CB	2.71	0.68
1:A:440:ILE:HG13	1:A:441:ILE:N	2.09	0.68
1:A:389:ARG:HG2	1:A:392:ILE:HD11	1.75	0.68
1:A:347:THR:O	1:A:350:SER:N	2.26	0.68
1:A:395:TYR:HB2	1:A:408:ILE:HG12	1.76	0.67
1:A:340:VAL:O	1:A:341:THR:HG23	1.95	0.67
1:A:342:ALA:HB1	1:A:362:THR:HB	1.74	0.67
1:A:385:THR:CB	1:A:389:ARG:H	2.07	0.67
1:A:563:VAL:HG22	1:A:611:LEU:HD21	1.75	0.67
1:B:523:VAL:HG12	1:B:532:GLU:H	1.58	0.67
1:A:424:TYR:CE2	1:A:429:LEU:HD12	2.30	0.67
1:B:408:ILE:C	1:B:409:ILE:HG23	2.15	0.67
1:B:521:ARG:HH22	1:B:559:ALA:HB3	1.59	0.67
1:A:629:ASP:CA	1:B:664:HIS:NE2	2.57	0.67
1:A:556:GLY:HA3	1:A:589:TYR:CD1	2.30	0.66
1:B:540:ILE:HG22	1:B:555:ILE:HG13	1.77	0.66
1:B:396:LEU:CD2	1:B:406:PRO:HG2	2.25	0.66
1:A:385:THR:CG2	1:A:385:THR:O	2.44	0.66
1:A:401:LEU:CG	1:A:402:ALA:N	2.57	0.66
1:A:454:ILE:CG2	1:A:455:PHE:N	2.58	0.66
1:B:365:ASP:OD1	1:B:367:THR:HG21	1.96	0.66
1:B:401:LEU:HG	1:B:403:PRO:HD2	1.75	0.66
1:A:342:ALA:CB	1:A:362:THR:HG22	2.26	0.66
1:A:595:ILE:HD13	1:A:597:TYR:CE2	2.31	0.65
1:B:557:PRO:HG2	1:B:580:LEU:CD1	2.26	0.65
1:B:647:ARG:HD2	1:B:650:TYR:CZ	2.30	0.65
1:A:548:LYS:O	1:A:548:LYS:HG2	1.96	0.65
1:B:365:ASP:C	1:B:367:THR:HG22	2.17	0.65
1:B:366:SER:O	1:B:367:THR:HB	1.96	0.65
1:A:457:SER:H	1:A:634:THR:HG23	1.56	0.65
1:A:519:SER:CB	1:A:562:ASP:OD1	2.44	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:385:THR:C	1:A:387:VAL:H	1.99	0.65
1:A:545:ARG:HB3	1:A:597:TYR:CD2	2.32	0.65
1:A:341:THR:OG1	1:A:344:ASP:HB2	1.96	0.65
1:A:516:SER:HB2	1:A:617:GLU:CD	2.17	0.64
1:B:440:ILE:HG22	1:B:471:ALA:HB3	1.79	0.64
1:B:566:ASN:O	1:B:570:GLN:NE2	2.30	0.64
1:B:659:SER:O	1:B:660:GLN:NE2	2.30	0.64
1:A:385:THR:C	1:A:387:VAL:N	2.50	0.64
1:B:422:VAL:CG1	1:B:475:VAL:HG13	2.27	0.64
1:A:389:ARG:CG	1:A:392:ILE:HD11	2.26	0.64
1:B:345:TYR:HE1	1:B:349:VAL:HG21	1.62	0.64
1:B:344:ASP:OD1	1:B:345:TYR:N	2.31	0.63
1:A:533:ASP:OD2	1:A:533:ASP:N	2.32	0.63
1:A:597:TYR:HB2	1:A:598:PRO:HD3	1.80	0.63
1:B:404:ILE:HD13	1:B:404:ILE:H	1.63	0.63
1:B:647:ARG:CD	1:B:650:TYR:CE1	2.81	0.63
1:B:657:PRO:C	1:B:658:ILE:CD1	2.67	0.63
1:A:436:LEU:HD23	1:A:436:LEU:C	2.19	0.63
1:A:343:THR:CG2	1:A:344:ASP:N	2.60	0.63
1:A:343:THR:HG22	1:A:344:ASP:N	2.13	0.63
1:A:525:ASN:OD1	1:A:526:PRO:HD3	1.98	0.63
1:B:396:LEU:O	1:B:399:TYR:O	2.17	0.63
1:B:465:LEU:HD21	1:B:480:ALA:HB2	1.81	0.63
1:B:499:ILE:HD12	1:B:500:LYS:N	2.14	0.63
1:A:340:VAL:HG12	1:A:345:TYR:OH	1.99	0.62
1:A:518:ASN:HA	1:A:535:LEU:HD22	1.80	0.62
1:A:392:ILE:CG1	1:A:393:LYS:N	2.30	0.62
1:A:340:VAL:CG1	1:A:345:TYR:OH	2.48	0.62
1:A:634:THR:OG1	1:A:635:ARG:N	2.30	0.62
1:A:340:VAL:C	1:A:341:THR:CG2	2.62	0.62
1:B:566:ASN:C	1:B:570:GLN:HE22	2.03	0.62
1:A:378:PRO:O	1:A:379:LYS:HB3	1.99	0.62
1:A:408:ILE:HD12	1:A:408:ILE:H	1.64	0.62
1:B:415:PHE:HB2	1:B:485:VAL:HB	1.81	0.62
1:A:358:GLN:HB2	1:A:379:LYS:CA	2.30	0.62
1:A:436:LEU:HD22	1:A:655:LEU:CD2	2.29	0.62
1:A:524:VAL:HG13	1:A:529:GLY:O	1.99	0.62
1:B:347:THR:OG1	1:B:348:PHE:N	2.30	0.62
1:B:376:ALA:O	1:B:411:PRO:HD3	2.00	0.62
1:B:647:ARG:HH11	1:B:649:GLN:CD	1.99	0.62
1:A:353:PHE:CG	1:A:395:TYR:CE2	2.87	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:427:ASN:ND2	1:A:660:GLN:HB2	2.15	0.61
1:B:647:ARG:HG2	1:B:650:TYR:CE1	2.35	0.61
1:A:521:ARG:O	1:A:533:ASP:HA	2.00	0.61
1:B:408:ILE:C	1:B:409:ILE:CG2	2.68	0.61
1:A:647:ARG:HG3	1:A:650:TYR:CD1	2.36	0.61
1:B:343:THR:O	1:B:347:THR:CG2	2.44	0.61
1:A:341:THR:O	1:A:345:TYR:CE1	2.53	0.61
1:B:348:PHE:O	1:B:349:VAL:C	2.39	0.61
1:A:342:ALA:HB1	1:A:362:THR:CB	2.30	0.60
1:A:443:LYS:HE3	1:A:470:ASP:O	2.01	0.60
1:A:429:LEU:HD22	1:A:431:GLU:O	2.02	0.60
1:A:389:ARG:HA	1:A:392:ILE:CD1	2.31	0.60
1:A:415:PHE:HB2	1:A:485:VAL:HB	1.81	0.60
1:A:500:LYS:HB3	1:A:600:ASP:O	2.00	0.60
1:A:353:PHE:CE2	1:A:395:TYR:CD2	2.86	0.60
1:B:359:ALA:HB1	1:B:455:PHE:CE2	2.37	0.60
1:B:550:ILE:HD13	1:B:596:ASN:HA	1.84	0.60
1:B:593:GLY:HA3	1:B:603:TYR:O	2.02	0.60
1:A:509:SER:OG	1:A:626:ASP:N	2.34	0.60
1:A:356:ILE:HG12	1:A:356:ILE:O	1.98	0.60
1:A:504:GLN:HE22	1:A:598:PRO:HA	1.66	0.60
1:A:342:ALA:HB1	1:A:362:THR:O	2.02	0.59
1:B:656:GLU:OE1	1:B:664:HIS:O	2.20	0.59
1:A:525:ASN:CG	1:A:526:PRO:HD3	2.20	0.59
1:A:401:LEU:CD2	1:A:402:ALA:CA	2.74	0.59
1:B:537:ASP:O	1:B:538:VAL:HG23	2.00	0.59
1:B:557:PRO:HG3	1:B:589:TYR:CZ	2.38	0.59
1:B:509:SER:OG	1:B:626:ASP:N	2.32	0.59
1:A:457:SER:H	1:A:634:THR:HG21	1.66	0.59
1:B:664:HIS:O	1:B:664:HIS:CD2	2.54	0.59
1:B:568:ASN:OD1	1:B:569:ILE:N	2.30	0.59
1:A:385:THR:CG2	1:A:388:GLN:C	2.66	0.59
1:B:348:PHE:O	1:B:351:GLU:N	2.21	0.59
1:B:350:SER:HA	1:B:357:ILE:HD11	1.84	0.59
1:A:525:ASN:HB3	1:A:526:PRO:CD	2.17	0.58
1:A:531:GLU:C	1:A:532:GLU:CD	2.61	0.58
1:A:661:LEU:HD11	1:A:662:GLU:HB2	1.78	0.58
1:B:453:GLU:CD	1:B:641:VAL:HG23	2.23	0.58
1:B:464:MET:HG3	1:B:465:LEU:N	2.17	0.58
1:A:524:VAL:HG13	1:A:529:GLY:H	1.69	0.58
1:B:402:ALA:N	1:B:403:PRO:CD	2.66	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:647:ARG:CG	1:B:650:TYR:CE1	2.85	0.58
1:A:486:ARG:NH1	1:A:500:LYS:O	2.36	0.58
1:B:396:LEU:HD21	1:B:406:PRO:HG2	1.85	0.58
1:A:664:HIS:O	1:A:665:HIS:CB	2.51	0.58
1:B:409:ILE:HD12	1:B:410:SER:N	2.16	0.58
1:B:504:GLN:NE2	1:B:597:TYR:O	2.37	0.58
1:A:517:PHE:HD2	1:A:536:TYR:CE2	2.09	0.57
1:B:593:GLY:HA3	1:B:604:TRP:HA	1.86	0.57
1:B:346:ASP:OD2	1:B:361:GLN:HA	2.03	0.57
1:B:440:ILE:HG22	1:B:471:ALA:CB	2.33	0.57
1:A:536:TYR:CD1	1:A:586:ARG:HD3	2.39	0.57
1:A:566:ASN:O	1:A:570:GLN:NE2	2.35	0.57
1:A:424:TYR:CB	1:A:475:VAL:H	2.17	0.57
1:B:657:PRO:O	1:B:658:ILE:CD1	2.53	0.57
1:A:635:ARG:HH22	1:B:661:LEU:CD1	2.14	0.57
1:B:346:ASP:OD1	1:B:362:THR:OG1	2.23	0.57
1:A:382:LEU:HD21	1:A:643:GLU:HG3	1.87	0.57
1:B:656:GLU:OE1	1:B:664:HIS:HB2	2.04	0.57
1:A:493:LYS:HE2	1:A:494:THR:O	2.04	0.57
1:A:385:THR:OG1	1:A:391:ASP:HB3	2.05	0.57
1:A:387:VAL:O	1:A:388:GLN:CD	2.44	0.56
1:A:499:ILE:HD11	1:A:623:LEU:HD23	1.86	0.56
1:B:396:LEU:HD13	1:B:406:PRO:HD2	1.86	0.56
1:A:617:GLU:HG3	1:A:618:VAL:HG13	1.85	0.56
1:B:389:ARG:NH2	1:B:410:SER:OG	2.37	0.56
1:B:409:ILE:CD1	1:B:410:SER:N	2.67	0.56
1:A:349:VAL:C	1:A:351:GLU:H	2.08	0.56
1:A:387:VAL:C	1:A:388:GLN:CG	2.73	0.56
1:B:565:GLU:C	1:B:570:GLN:NE2	2.58	0.56
1:B:405:THR:O	1:B:406:PRO:O	2.23	0.56
1:A:408:ILE:HD12	1:A:408:ILE:N	2.19	0.56
1:B:656:GLU:OE1	1:B:664:HIS:CB	2.53	0.56
1:A:427:ASN:ND2	1:A:427:ASN:H	2.03	0.56
1:B:427:ASN:ND2	1:B:427:ASN:N	2.54	0.56
1:A:379:LYS:HG2	1:A:379:LYS:O	2.05	0.56
1:A:454:ILE:HG22	1:A:455:PHE:N	2.20	0.56
1:B:568:ASN:CG	1:B:569:ILE:N	2.59	0.56
1:A:448:TYR:CD1	1:A:642:PHE:HB2	2.41	0.55
1:A:532:GLU:N	1:A:532:GLU:OE2	2.39	0.55
1:B:499:ILE:HG23	1:B:602:ILE:HB	1.87	0.55
1:B:596:ASN:HD22	1:B:599:ALA:H	1.54	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:388:GLN:O	1:A:389:ARG:NE	2.39	0.55
1:B:359:ALA:O	1:B:376:ALA:HA	2.06	0.55
1:A:342:ALA:CB	1:A:362:THR:CG2	2.84	0.55
1:B:534:VAL:HG12	1:B:534:VAL:O	2.07	0.55
1:B:658:ILE:HD13	1:B:658:ILE:N	2.21	0.55
1:A:342:ALA:HB1	1:A:362:THR:CG2	2.37	0.55
1:A:386:THR:C	1:A:388:GLN:H	2.07	0.55
1:A:605:ASN:HB3	1:A:608:LYS:HG3	1.89	0.55
1:A:358:GLN:OE1	1:A:377:LYS:HE3	2.07	0.55
1:A:635:ARG:HG3	1:A:636:ASP:N	2.19	0.55
1:A:347:THR:O	1:A:348:PHE:C	2.44	0.55
1:B:347:THR:O	1:B:348:PHE:C	2.46	0.54
1:B:365:ASP:OD1	1:B:367:THR:CG2	2.55	0.54
1:B:647:ARG:HD3	1:B:649:GLN:HG3	1.88	0.54
1:A:560:SER:N	1:A:561:GLY:HA2	2.20	0.54
1:A:631:VAL:CG2	1:B:476:ILE:CG2	2.72	0.54
1:A:385:THR:C	1:A:387:VAL:HG22	2.28	0.54
1:B:657:PRO:O	1:B:658:ILE:HD12	2.08	0.54
1:B:365:ASP:O	1:B:367:THR:N	2.40	0.54
1:A:385:THR:O	1:A:388:GLN:CA	2.56	0.54
1:A:392:ILE:C	1:A:394:ASN:H	2.08	0.54
1:B:356:ILE:O	1:B:379:LYS:HB3	2.06	0.54
1:B:644:ASN:ND2	1:B:644:ASN:C	2.59	0.54
1:A:412:ASN:O	1:A:638:SER:HA	2.08	0.53
1:B:396:LEU:HD22	1:B:406:PRO:HG2	1.90	0.53
1:B:409:ILE:CD1	1:B:410:SER:O	2.50	0.53
1:B:647:ARG:NH2	2:B:703:HOH:O	2.26	0.53
1:B:648:PRO:HD2	1:B:649:GLN:HG2	1.89	0.53
1:B:359:ALA:HB1	1:B:455:PHE:HE2	1.73	0.53
1:B:542:SER:HB2	1:B:595:ILE:HG12	1.91	0.53
1:B:559:ALA:O	1:B:561:GLY:N	2.42	0.53
1:B:664:HIS:HD2	2:B:719:HOH:O	1.89	0.53
1:A:428:LYS:HD2	1:A:473:HIS:HD2	1.74	0.53
1:B:567:GLU:CA	1:B:570:GLN:OE1	2.56	0.53
1:B:453:GLU:O	1:B:454:ILE:HG13	2.09	0.53
1:B:596:ASN:HB3	1:B:601:VAL:HG23	1.90	0.53
1:A:651:LEU:CD2	1:A:653:ILE:HG13	2.39	0.53
1:A:343:THR:O	1:A:347:THR:HG23	2.09	0.52
1:A:385:THR:HB	1:A:392:ILE:HG23	1.90	0.52
1:A:387:VAL:C	1:A:388:GLN:CD	2.68	0.52
1:A:526:PRO:O	1:A:528:THR:CG2	2.55	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:536:TYR:HB2	1:A:586:ARG:NH1	2.23	0.52
1:A:631:VAL:CG2	1:B:476:ILE:HG22	2.34	0.52
1:B:343:THR:HB	1:B:347:THR:CG2	2.39	0.52
1:B:526:PRO:HA	1:B:529:GLY:O	2.08	0.52
1:B:646:LEU:C	1:B:646:LEU:CD2	2.72	0.52
1:B:547:SER:O	1:B:548:LYS:HG2	2.09	0.52
1:B:596:ASN:ND2	1:B:599:ALA:H	2.06	0.52
1:A:382:LEU:HD12	1:A:647:ARG:HH21	1.74	0.52
1:A:491:PHE:CZ	1:A:616:PHE:HB2	2.45	0.52
1:A:533:ASP:O	1:A:535:LEU:HD23	2.10	0.52
1:B:628:THR:HG22	1:B:629:ASP:OD1	2.10	0.52
1:A:388:GLN:C	1:A:389:ARG:HG3	2.30	0.52
1:B:486:ARG:HG2	1:B:499:ILE:CD1	2.40	0.52
1:A:342:ALA:CB	1:A:362:THR:O	2.58	0.52
1:B:472:ASP:OD2	1:B:474:SER:HB3	2.10	0.52
1:B:440:ILE:HD11	1:B:653:ILE:HD13	1.91	0.52
1:B:565:GLU:OE2	1:B:590:TYR:OH	2.28	0.52
1:A:348:PHE:HZ	1:A:400:ASN:HD21	1.58	0.51
1:B:353:PHE:CZ	1:B:395:TYR:HE2	2.11	0.51
1:B:523:VAL:HG11	1:B:532:GLU:HB2	1.92	0.51
1:B:408:ILE:HD12	1:B:409:ILE:CA	2.40	0.51
1:B:348:PHE:O	1:B:350:SER:N	2.43	0.51
1:A:448:TYR:CE1	1:A:642:PHE:HB2	2.45	0.51
1:A:452:VAL:HG22	1:A:458:SER:O	2.10	0.51
1:A:554:ILE:HG22	1:A:591:VAL:HA	1.92	0.51
1:A:619:GLN:HE21	1:A:619:GLN:HA	1.74	0.51
1:A:492:TYR:O	1:A:606:ILE:HG13	2.11	0.51
1:B:382:LEU:HD12	1:B:646:LEU:HD13	1.92	0.51
1:A:462:SER:HB3	1:B:478:SER:O	2.11	0.51
1:B:661:LEU:O	1:B:661:LEU:CG	2.58	0.51
1:B:361:GLN:HE22	1:B:456:ASN:HD21	1.57	0.51
1:B:396:LEU:HD13	1:B:405:THR:O	2.11	0.51
1:B:342:ALA:O	1:B:346:ASP:OD2	2.29	0.51
1:B:443:LYS:HG3	1:B:471:ALA:HB2	1.93	0.51
1:B:658:ILE:CD1	1:B:658:ILE:N	2.74	0.51
1:B:409:ILE:CD1	1:B:410:SER:C	2.79	0.50
1:B:567:GLU:O	1:B:568:ASN:OD1	2.29	0.50
1:B:492:TYR:CE1	1:B:606:ILE:HB	2.46	0.50
1:A:340:VAL:O	1:A:341:THR:O	2.29	0.50
1:B:476:ILE:HG22	1:B:477:GLY:N	2.18	0.50
1:B:566:ASN:O	1:B:568:ASN:OD1	2.30	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:595:ILE:HD12	1:B:595:ILE:N	2.21	0.50
1:A:517:PHE:HE1	1:A:615:LYS:HD2	1.77	0.50
1:B:365:ASP:CG	1:B:367:THR:HG21	2.31	0.50
1:A:387:VAL:O	1:A:388:GLN:OE1	2.30	0.50
1:A:522:LYS:N	1:A:522:LYS:CD	2.72	0.50
1:B:365:ASP:HB3	1:B:368:LYS:HB2	1.92	0.50
1:B:566:ASN:O	1:B:570:GLN:OE1	2.30	0.50
1:B:660:GLN:CA	1:B:661:LEU:HB2	2.26	0.50
1:B:342:ALA:O	1:B:346:ASP:OD1	2.30	0.50
1:A:342:ALA:HA	1:A:362:THR:HG21	1.93	0.50
1:B:409:ILE:HD13	1:B:410:SER:C	2.31	0.50
1:A:466:THR:HB	1:B:466:THR:HB	1.94	0.50
1:A:437:GLU:C	1:A:439:GLN:H	2.15	0.49
1:B:507:ASP:OD1	1:B:545:ARG:HG3	2.12	0.49
1:A:607:ALA:O	1:A:609:ILE:O	2.30	0.49
1:A:651:LEU:HD23	1:A:652:THR:N	2.26	0.49
1:A:340:VAL:CA	1:A:345:TYR:CZ	2.82	0.49
1:B:448:TYR:O	1:B:453:GLU:HG3	2.12	0.49
1:B:567:GLU:C	1:B:568:ASN:OD1	2.51	0.49
1:B:510:MET:HB3	1:B:542:SER:HB3	1.94	0.49
1:A:559:ALA:O	1:A:561:GLY:CA	2.34	0.49
1:B:423:THR:HB	1:B:656:GLU:HB3	1.94	0.49
1:A:466:THR:CG2	1:B:466:THR:HB	2.43	0.49
1:B:412:ASN:ND2	1:B:486:ARG:NH2	2.61	0.49
1:B:347:THR:O	1:B:348:PHE:O	2.30	0.49
1:B:402:ALA:H	1:B:403:PRO:CD	2.24	0.49
1:B:625:SER:HA	2:B:712:HOH:O	2.13	0.49
1:B:655:LEU:N	1:B:655:LEU:HD12	2.27	0.49
1:A:358:GLN:HB2	1:A:379:LYS:CB	2.43	0.49
1:A:558:PHE:O	1:A:586:ARG:HB3	2.13	0.49
1:B:447:TYR:HB2	1:B:467:TYR:CG	2.48	0.49
1:A:342:ALA:HB2	1:A:362:THR:HG22	1.94	0.48
1:A:510:MET:HB3	1:A:542:SER:OG	2.12	0.48
1:A:575:ASN:O	1:A:576:ASP:HB2	2.14	0.48
1:A:361:GLN:NE2	1:A:361:GLN:HA	2.27	0.48
1:A:457:SER:N	1:A:634:THR:HG23	2.26	0.48
1:A:495:PRO:HD2	1:A:499:ILE:HG22	1.93	0.48
1:A:536:TYR:CD1	1:A:586:ARG:CD	2.97	0.48
1:A:392:ILE:O	1:A:394:ASN:CA	2.58	0.48
1:B:492:TYR:CE1	1:B:611:LEU:O	2.66	0.48
1:A:545:ARG:HB3	1:A:597:TYR:CE2	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:408:ILE:O	1:B:409:ILE:HG23	2.09	0.48
1:B:492:TYR:HE1	1:B:611:LEU:O	1.97	0.48
1:A:361:GLN:CG	1:A:455:PHE:CD1	2.97	0.48
1:B:662:GLU:O	1:B:662:GLU:HG2	2.13	0.48
1:A:342:ALA:HB1	1:A:362:THR:HG22	1.94	0.48
1:A:518:ASN:OD1	1:A:533:ASP:CB	2.60	0.48
1:B:597:TYR:HB2	1:B:598:PRO:HD3	1.95	0.48
1:A:389:ARG:O	1:A:393:LYS:CB	2.59	0.48
1:A:424:TYR:HB3	1:A:475:VAL:H	1.79	0.48
1:B:346:ASP:HB3	1:B:360:VAL:HB	1.95	0.48
1:A:401:LEU:HG	1:A:402:ALA:N	2.27	0.47
1:B:653:ILE:HG22	1:B:655:LEU:HD12	1.96	0.47
1:B:448:TYR:CD1	1:B:642:PHE:HB2	2.48	0.47
1:B:651:LEU:HD22	1:B:652:THR:N	2.29	0.47
1:A:361:GLN:HG2	1:A:455:PHE:CD1	2.50	0.47
1:A:531:GLU:C	1:A:532:GLU:OE1	2.52	0.47
1:A:658:ILE:HD13	1:A:658:ILE:HA	1.52	0.47
1:B:408:ILE:HD12	1:B:409:ILE:HA	1.95	0.47
1:A:448:TYR:CG	1:A:642:PHE:HB2	2.49	0.47
1:A:587:ASP:OD2	1:A:587:ASP:O	2.30	0.47
1:B:508:ARG:HG2	1:B:577:PHE:HA	1.96	0.47
1:B:592:ILE:O	1:B:593:GLY:O	2.32	0.47
1:B:353:PHE:CE2	1:B:392:ILE:HD13	2.50	0.47
1:B:448:TYR:CE1	1:B:642:PHE:HB2	2.50	0.47
1:B:463:LYS:O	1:B:466:THR:HG23	2.14	0.47
1:B:522:LYS:HG2	1:B:524:VAL:HG23	1.97	0.47
1:B:486:ARG:HG2	1:B:499:ILE:HD11	1.96	0.47
1:A:596:ASN:HB3	1:A:601:VAL:HG22	1.97	0.47
1:B:385:THR:HG22	1:B:388:GLN:OE1	2.15	0.47
1:B:492:TYR:O	1:B:606:ILE:HG12	2.14	0.47
1:A:389:ARG:CA	1:A:392:ILE:CD1	2.91	0.47
1:A:660:GLN:HG3	1:A:661:LEU:H	1.77	0.47
1:A:536:TYR:HD1	1:A:586:ARG:HD3	1.79	0.46
1:A:579:LYS:HB3	1:A:589:TYR:OH	2.14	0.46
1:B:566:ASN:CA	1:B:570:GLN:HE22	2.26	0.46
1:A:431:GLU:HB2	1:A:435:TRP:CE3	2.50	0.46
1:B:345:TYR:C	1:B:345:TYR:HD1	2.18	0.46
1:B:596:ASN:ND2	1:B:598:PRO:HD2	2.31	0.46
1:B:664:HIS:O	1:B:665:HIS:CB	2.63	0.46
1:A:340:VAL:O	1:A:341:THR:CB	2.63	0.46
1:A:626:ASP:HA	1:A:627:PRO:HD3	1.65	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:656:GLU:OE1	1:B:664:HIS:CG	2.68	0.46
1:A:556:GLY:HA3	1:A:589:TYR:HD1	1.74	0.46
1:B:483:GLN:NE2	2:B:712:HOH:O	2.44	0.46
1:B:658:ILE:CG2	1:B:659:SER:N	2.79	0.46
1:A:485:VAL:HG22	1:A:624:TYR:CD2	2.51	0.46
1:A:386:THR:O	1:A:388:GLN:HG3	2.16	0.45
1:A:396:LEU:O	1:A:399:TYR:CE1	2.69	0.45
1:B:346:ASP:OD1	1:B:346:ASP:N	2.47	0.45
1:B:365:ASP:HB3	1:B:367:THR:HG23	1.97	0.45
1:B:541:VAL:HG12	1:B:542:SER:N	2.31	0.45
1:B:545:ARG:NH1	1:B:597:TYR:HB3	2.32	0.45
1:B:648:PRO:HD2	1:B:649:GLN:H	1.82	0.45
1:A:460:ALA:HB2	1:A:631:VAL:HG22	1.99	0.45
1:B:366:SER:N	1:B:367:THR:HG22	2.31	0.45
1:B:540:ILE:HG22	1:B:555:ILE:CG1	2.43	0.45
1:A:353:PHE:O	1:A:354:GLY:C	2.48	0.45
1:A:420:LEU:HD12	1:A:479:SER:O	2.15	0.45
1:A:629:ASP:HB2	1:A:632:ILE:HD13	1.99	0.45
1:B:386:THR:O	1:B:390:GLU:HG3	2.16	0.45
1:B:408:ILE:O	1:B:408:ILE:CG1	2.64	0.45
1:B:605:ASN:OD1	1:B:607:ALA:HB3	2.17	0.45
1:A:340:VAL:O	1:A:341:THR:CG2	2.64	0.45
1:B:481:THR:O	1:B:481:THR:HG22	2.16	0.45
1:B:511:GLU:O	1:B:511:GLU:HG3	2.17	0.45
1:B:660:GLN:HA	1:B:661:LEU:HB3	1.90	0.45
1:B:566:ASN:O	1:B:570:GLN:CD	2.55	0.45
1:A:401:LEU:CD2	1:A:402:ALA:CB	2.69	0.45
1:A:519:SER:O	1:A:533:ASP:HB2	2.16	0.45
1:B:401:LEU:CD1	1:B:403:PRO:HD2	2.46	0.45
1:B:565:GLU:CB	1:B:570:GLN:NE2	2.55	0.45
1:A:492:TYR:HA	1:A:606:ILE:HD12	1.98	0.45
1:B:455:PHE:O	1:B:456:ASN:HB2	2.15	0.45
1:A:595:ILE:HG23	1:A:602:ILE:HG12	1.99	0.45
1:B:401:LEU:CG	1:B:403:PRO:HD2	2.43	0.45
1:B:607:ALA:C	1:B:609:ILE:H	2.20	0.45
1:B:644:ASN:C	1:B:644:ASN:HD22	2.20	0.44
1:A:346:ASP:OD1	1:A:362:THR:HB	2.17	0.44
1:A:517:PHE:CE1	1:A:615:LYS:HB3	2.52	0.44
1:B:458:SER:HB2	1:B:632:ILE:O	2.17	0.44
1:B:524:VAL:HG12	1:B:524:VAL:O	2.17	0.44
1:A:358:GLN:HB2	1:A:379:LYS:HB2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:502:ASN:ND2	1:A:635:ARG:CB	2.59	0.44
1:B:508:ARG:HA	1:B:542:SER:O	2.17	0.44
1:A:656:GLU:HA	1:A:657:PRO:HD3	1.82	0.44
1:A:341:THR:O	1:A:341:THR:OG1	2.33	0.44
1:A:554:ILE:HD11	1:A:577:PHE:CD2	2.52	0.44
1:A:582:ASN:C	1:A:585:GLY:H	2.21	0.44
1:B:484:MET:O	1:B:624:TYR:HA	2.17	0.44
1:B:484:MET:HG3	1:B:627:PRO:HG3	2.00	0.44
1:A:582:ASN:HB2	1:A:585:GLY:C	2.37	0.44
1:B:448:TYR:CG	1:B:642:PHE:HB2	2.53	0.44
1:B:462:SER:O	1:B:466:THR:CG2	2.66	0.44
1:B:500:LYS:HB3	1:B:500:LYS:HE2	1.80	0.44
1:A:386:THR:C	1:A:388:GLN:N	2.67	0.44
1:A:401:LEU:HD21	1:A:402:ALA:HB2	1.96	0.44
1:A:440:ILE:CG1	1:A:441:ILE:N	2.79	0.44
1:A:510:MET:SD	1:A:602:ILE:HG21	2.57	0.44
1:B:377:LYS:HB2	1:B:411:PRO:HG2	1.99	0.44
1:B:389:ARG:HA	1:B:392:ILE:HG22	1.99	0.44
1:B:353:PHE:CZ	1:B:395:TYR:CD2	3.05	0.44
1:A:365:ASP:OD2	1:A:367:THR:HB	2.18	0.44
1:A:349:VAL:C	1:A:351:GLU:N	2.71	0.43
1:B:405:THR:OG1	1:B:406:PRO:HD2	2.15	0.43
1:B:438:GLY:HA2	1:B:441:ILE:CG2	2.47	0.43
1:B:560:SER:HB2	1:B:588:LYS:NZ	2.33	0.43
1:B:461:LYS:O	1:B:461:LYS:HG2	2.18	0.43
1:A:385:THR:HA	1:A:387:VAL:CG2	2.41	0.43
1:B:377:LYS:CE	1:B:641:VAL:HG21	2.48	0.43
1:A:375:ALA:HA	1:A:409:ILE:HD12	2.00	0.43
1:B:365:ASP:O	1:B:366:SER:C	2.54	0.43
1:B:388:GLN:O	1:B:392:ILE:HG22	2.19	0.43
1:B:358:GLN:HB3	1:B:379:LYS:HA	1.99	0.43
1:B:401:LEU:HD12	1:B:401:LEU:HA	1.63	0.43
1:B:464:MET:O	1:B:468:VAL:HG23	2.18	0.43
1:A:340:VAL:O	1:A:341:THR:OG1	2.30	0.43
1:A:361:GLN:HA	1:A:361:GLN:HE21	1.84	0.43
1:A:441:ILE:O	1:A:441:ILE:HG13	2.17	0.43
1:A:516:SER:HB2	1:A:617:GLU:OE1	2.18	0.43
1:B:448:TYR:C	1:B:453:GLU:HG3	2.39	0.43
1:B:572:TYR:HB2	1:B:591:VAL:HG23	1.99	0.43
1:B:607:ALA:O	1:B:609:ILE:N	2.52	0.43
1:A:650:TYR:O	1:A:651:LEU:HB2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:379:LYS:O	1:A:379:LYS:CG	2.66	0.43
1:B:375:ALA:HA	1:B:409:ILE:O	2.19	0.43
1:B:595:ILE:H	1:B:595:ILE:CD1	2.24	0.43
1:B:658:ILE:HD12	1:B:658:ILE:HA	1.67	0.43
1:A:458:SER:HB2	1:A:632:ILE:O	2.19	0.43
1:A:469:ASP:HA	1:A:475:VAL:HG11	2.00	0.43
1:A:557:PRO:HD3	1:A:580:LEU:HD11	2.01	0.43
1:A:347:THR:C	1:A:349:VAL:N	2.73	0.42
1:A:484:MET:HG3	1:A:627:PRO:HG3	2.00	0.42
1:A:593:GLY:HA3	1:A:603:TYR:O	2.19	0.42
1:A:607:ALA:C	1:A:609:ILE:O	2.57	0.42
1:A:492:TYR:CE1	1:A:606:ILE:HB	2.54	0.42
1:A:541:VAL:CG1	1:A:542:SER:N	2.82	0.42
1:A:556:GLY:CA	1:A:589:TYR:CD1	3.01	0.42
1:B:565:GLU:C	1:B:570:GLN:HE22	2.12	0.42
1:B:495:PRO:O	1:B:496:GLU:C	2.57	0.42
1:B:648:PRO:CD	1:B:649:GLN:H	2.32	0.42
1:B:664:HIS:CD2	1:B:664:HIS:C	2.90	0.42
1:A:647:ARG:N	1:A:648:PRO:HD3	2.34	0.42
1:A:550:ILE:HG12	1:A:596:ASN:HA	2.02	0.42
1:B:365:ASP:CG	1:B:367:THR:CG2	2.88	0.42
1:B:572:TYR:HB2	1:B:591:VAL:CG2	2.49	0.42
1:A:346:ASP:OD1	1:A:362:THR:CB	2.67	0.42
1:A:533:ASP:O	1:A:535:LEU:CD2	2.67	0.42
1:B:542:SER:HB2	1:B:595:ILE:CD1	2.50	0.42
1:B:545:ARG:CZ	1:B:597:TYR:HB3	2.50	0.42
1:A:385:THR:CG2	1:A:390:GLU:N	2.60	0.42
1:A:556:GLY:CA	1:A:589:TYR:HD1	2.32	0.42
1:B:447:TYR:HB2	1:B:467:TYR:CD1	2.54	0.42
1:B:592:ILE:CD1	1:B:606:ILE:HD13	2.49	0.42
1:B:653:ILE:HG22	1:B:655:LEU:CD1	2.49	0.42
1:A:424:TYR:O	1:A:658:ILE:HB	2.20	0.42
1:A:356:ILE:O	1:A:356:ILE:CG1	2.63	0.41
1:B:494:THR:HG22	1:B:499:ILE:HG22	2.01	0.41
1:B:496:GLU:N	1:B:496:GLU:OE1	2.30	0.41
1:A:424:TYR:HB2	1:A:475:VAL:H	1.85	0.41
1:A:448:TYR:CZ	1:A:642:PHE:HB2	2.55	0.41
1:A:595:ILE:HG23	1:A:602:ILE:HG23	2.02	0.41
1:B:448:TYR:CZ	1:B:642:PHE:HB2	2.55	0.41
1:A:493:LYS:HE3	1:A:493:LYS:HB2	1.91	0.41
1:A:448:TYR:HA	1:A:452:VAL:HB	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:599:ALA:O	1:B:600:ASP:C	2.59	0.41
1:A:408:ILE:H	1:A:408:ILE:CD1	2.30	0.41
1:A:582:ASN:C	1:A:584:ASP:N	2.74	0.41
1:B:422:VAL:HG11	1:B:475:VAL:HG13	2.01	0.41
1:B:546:ASP:CG	1:B:547:SER:O	2.59	0.41
1:A:361:GLN:HG2	1:A:455:PHE:CB	2.51	0.41
1:A:453:GLU:O	1:A:454:ILE:HG13	2.21	0.41
1:A:464:MET:CG	1:A:465:LEU:N	2.82	0.41
1:A:523:VAL:HG22	1:A:524:VAL:H	1.86	0.41
1:A:525:ASN:OD1	1:A:526:PRO:N	2.53	0.41
1:A:595:ILE:CG2	1:A:602:ILE:HG12	2.51	0.41
1:A:651:LEU:HD23	1:A:651:LEU:C	2.40	0.41
1:B:541:VAL:HG12	1:B:542:SER:H	1.86	0.41
1:B:663:HIS:HE1	1:B:665:HIS:O	2.04	0.41
1:A:420:LEU:HG	1:A:422:VAL:HG23	2.03	0.41
1:A:454:ILE:HG23	1:A:455:PHE:N	2.34	0.41
1:B:372:ALA:O	1:B:406:PRO:HA	2.21	0.41
1:B:455:PHE:O	1:B:456:ASN:CB	2.69	0.41
1:B:647:ARG:HD3	1:B:649:GLN:CG	2.51	0.41
1:A:661:LEU:HD22	1:A:661:LEU:HA	1.75	0.40
1:B:396:LEU:HD13	1:B:405:THR:OG1	2.21	0.40
1:A:524:VAL:CG2	1:A:529:GLY:O	2.64	0.40
1:A:385:THR:OG1	1:A:391:ASP:CB	2.69	0.40
1:A:353:PHE:O	1:A:355:SER:HB3	2.21	0.40
1:A:382:LEU:CD1	1:A:647:ARG:HH21	2.33	0.40
1:B:358:GLN:HE21	1:B:377:LYS:NZ	2.19	0.40
1:B:356:ILE:O	1:B:379:LYS:N	2.48	0.40
1:B:441:ILE:HD11	1:B:644:ASN:CG	2.42	0.40
1:B:556:GLY:HA2	1:B:557:PRO:HD3	1.90	0.40

All (28) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:381:GLY:CA	1:A:527:ASP:CG[4_455]	0.41	1.79
1:A:663:HIS:C	1:B:662:GLU:OE1[3_554]	0.57	1.63
1:A:381:GLY:C	1:A:527:ASP:OD2[4_455]	0.68	1.52
1:A:663:HIS:O	1:B:662:GLU:CD[3_554]	0.68	1.52
1:A:663:HIS:CB	1:B:662:GLU:OE2[3_554]	0.89	1.31
1:A:663:HIS:O	1:B:662:GLU:OE1[3_554]	0.95	1.25

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:381:GLY:N	1:A:527:ASP:OD1[4_455]	0.99	1.21
1:A:381:GLY:CA	1:A:527:ASP:OD2[4_455]	1.13	1.07
1:A:381:GLY:CA	1:A:527:ASP:OD1[4_455]	1.30	0.90
1:A:663:HIS:C	1:B:662:GLU:CD[3_554]	1.31	0.89
1:A:380:SER:C	1:A:527:ASP:OD1[4_455]	1.34	0.86
1:A:664:HIS:N	1:B:662:GLU:OE1[3_554]	1.43	0.77
1:A:382:LEU:N	1:A:527:ASP:OD2[4_455]	1.60	0.60
1:A:381:GLY:N	1:A:527:ASP:CG[4_455]	1.66	0.54
1:A:663:HIS:CA	1:B:662:GLU:OE2[3_554]	1.67	0.53
1:A:381:GLY:O	1:A:527:ASP:OD2[4_455]	1.68	0.52
1:A:663:HIS:O	1:B:662:GLU:CG[3_554]	1.69	0.51
1:A:380:SER:O	1:A:527:ASP:OD1[4_455]	1.74	0.46
1:A:381:GLY:CA	1:A:527:ASP:CB[4_455]	1.76	0.44
1:A:381:GLY:C	1:A:527:ASP:CG[4_455]	1.76	0.44
1:A:663:HIS:O	1:B:662:GLU:OE2[3_554]	1.76	0.44
1:A:663:HIS:CG	1:B:662:GLU:OE2[3_554]	1.83	0.37
1:A:663:HIS:C	1:B:662:GLU:OE2[3_554]	1.86	0.34
1:A:663:HIS:CA	1:B:662:GLU:OE1[3_554]	1.94	0.26
1:A:663:HIS:CA	1:B:662:GLU:CD[3_554]	1.95	0.25
1:A:663:HIS:CB	1:B:662:GLU:CD[3_554]	1.97	0.23
1:A:663:HIS:CD2	1:B:663:HIS:CD2[3_554]	2.09	0.11
1:A:664:HIS:CA	1:B:662:GLU:OE1[3_554]	2.19	0.01

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	324/335 (97%)	260 (80%)	48 (15%)	16 (5%)	2 17
1	B	322/335 (96%)	261 (81%)	42 (13%)	19 (6%)	1 12
All	All	646/670 (96%)	521 (81%)	90 (14%)	35 (5%)	2 14

All (35) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	348	PHE
1	A	354	GLY
1	A	392	ILE
1	A	393	LYS
1	A	526	PRO
1	A	576	ASP
1	A	635	ARG
1	A	662	GLU
1	B	368	LYS
1	B	406	PRO
1	B	556	GLY
1	B	568	ASN
1	B	593	GLY
1	B	660	GLN
1	B	661	LEU
1	B	662	GLU
1	A	402	ALA
1	A	474	SER
1	A	490	ASN
1	A	664	HIS
1	B	367	THR
1	B	560	SER
1	B	600	ASP
1	A	341	THR
1	A	587	ASP
1	A	651	LEU
1	B	348	PHE
1	B	574	GLY
1	B	608	LYS
1	B	663	HIS
1	B	349	VAL
1	B	625	SER
1	B	496	GLU
1	A	475	VAL
1	B	524	VAL

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	295/304 (97%)	239 (81%)	56 (19%)	1 8
1	B	293/304 (96%)	234 (80%)	59 (20%)	1 6
All	All	588/608 (97%)	473 (80%)	115 (20%)	1 7

All (115) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	340	VAL
1	A	341	THR
1	A	343	THR
1	A	345	TYR
1	A	348	PHE
1	A	355	SER
1	A	356	ILE
1	A	360	VAL
1	A	361	GLN
1	A	364	THR
1	A	374	ILE
1	A	388	GLN
1	A	390	GLU
1	A	398	ASP
1	A	401	LEU
1	A	405	THR
1	A	414	LEU
1	A	416	ILE
1	A	423	THR
1	A	427	ASN
1	A	429	LEU
1	A	441	ILE
1	A	446	ARG
1	A	464	MET
1	A	466	THR
1	A	474	SER
1	A	486	ARG
1	A	489	GLN
1	A	496	GLU
1	A	499	ILE
1	A	500	LYS
1	A	522	LYS
1	A	528	THR
1	A	532	GLU
1	A	533	ASP

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Mol	Chain	Res	Type
1	A	536	TYR
1	A	538	VAL
1	A	547	SER
1	A	580	LEU
1	A	587	ASP
1	A	595	ILE
1	A	596	ASN
1	A	619	GLN
1	A	622	GLU
1	A	626	ASP
1	A	628	THR
1	A	629	ASP
1	A	634	THR
1	A	635	ARG
1	A	649	GLN
1	A	652	THR
1	A	658	ILE
1	A	659	SER
1	A	660	GLN
1	A	662	GLU
1	A	663	HIS
1	B	344	ASP
1	B	346	ASP
1	B	357	ILE
1	B	360	VAL
1	B	361	GLN
1	B	364	THR
1	B	366	SER
1	B	367	THR
1	B	374	ILE
1	B	379	LYS
1	B	380	SER
1	B	386	THR
1	B	404	ILE
1	B	407	SER
1	B	408	ILE
1	B	409	ILE
1	B	414	LEU
1	B	417	LYS
1	B	419	ASN
1	B	423	THR
1	B	427	ASN

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Mol	Chain	Res	Type
1	B	429	LEU
1	B	436	LEU
1	B	446	ARG
1	B	457	SER
1	B	462	SER
1	B	464	MET
1	B	466	THR
1	B	474	SER
1	B	481	THR
1	B	486	ARG
1	B	493	LYS
1	B	496	GLU
1	B	499	ILE
1	B	522	LYS
1	B	527	ASP
1	B	535	LEU
1	B	540	ILE
1	B	547	SER
1	B	548	LYS
1	B	566	ASN
1	B	567	GLU
1	B	575	ASN
1	B	580	LEU
1	B	595	ILE
1	B	596	ASN
1	B	601	VAL
1	B	612	THR
1	B	613	SER
1	B	614	GLU
1	B	632	ILE
1	B	648	PRO
1	B	649	GLN
1	B	651	LEU
1	B	652	THR
1	B	658	ILE
1	B	659	SER
1	B	661	LEU
1	B	664	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (24) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	361	GLN
1	A	427	ASN
1	A	473	HIS
1	A	502	ASN
1	A	504	GLN
1	A	596	ASN
1	A	610	ASN
1	A	619	GLN
1	B	358	GLN
1	B	394	ASN
1	B	412	ASN
1	B	427	ASN
1	B	456	ASN
1	B	483	GLN
1	B	490	ASN
1	B	503	ASN
1	B	504	GLN
1	B	570	GLN
1	B	575	ASN
1	B	578	ASN
1	B	582	ASN
1	B	596	ASN
1	B	644	ASN
1	B	663	HIS

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)

There are no ligands in this entry.

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 (i)

6.1 Protein, DNA and RNA chains (i)

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	326/335 (97%)	0.33	12 (3%)	41	26	20, 84, 154, 227	0
1	B	324/335 (96%)	0.33	17 (5%)	27	15	25, 84, 151, 276	0
All	All	650/670 (97%)	0.33	29 (4%)	33	21	20, 84, 154, 276	0

All (29) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	395	TYR	4.8
1	B	528	THR	4.2
1	B	530	LEU	3.8
1	B	400	ASN	3.8
1	A	352	ARG	3.8
1	B	561	GLY	3.3
1	B	567	GLU	3.3
1	A	524	VAL	2.9
1	A	527	ASP	2.9
1	A	430	GLN	2.7
1	A	386	THR	2.7
1	A	388	GLN	2.5
1	B	552	LYS	2.5
1	A	381	GLY	2.5
1	B	345	TYR	2.4
1	A	391	ASP	2.4
1	B	565	GLU	2.4
1	B	526	PRO	2.3
1	B	554	ILE	2.3
1	B	395	TYR	2.2
1	B	404	ILE	2.2
1	A	390	GLU	2.2
1	B	585	GLY	2.2
1	A	523	VAL	2.2

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Mol	Chain	Res	Type	RSRZ
1	B	665	HIS	2.2
1	A	659	SER	2.2
1	B	569	ILE	2.1
1	B	590	TYR	2.0
1	B	560	SER	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.