



Full wwPDB X-ray Structure Validation Report ⓘ

Apr 28, 2025 – 07:02 PM EDT

PDB ID : 3H2T / pdb_00003h2t
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 ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity	:	4-5-2 with Phenix2.0rc1
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.006 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

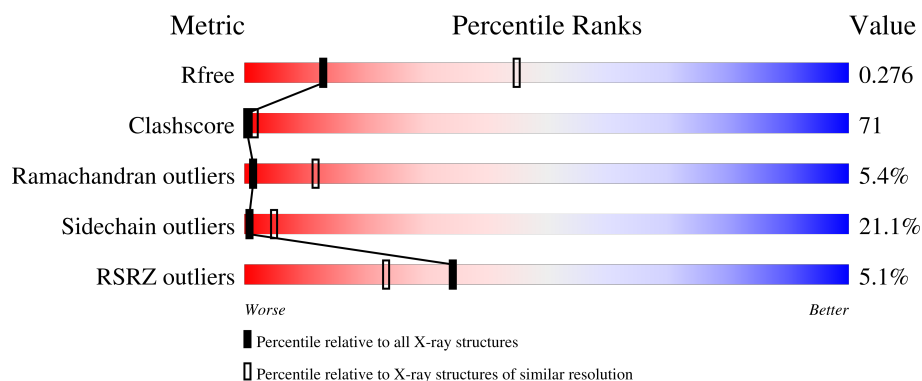
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.20 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}	164625	1370 (3.20-3.20)
Clashscore	180529	1497 (3.20-3.20)
Ramachandran outliers	177936	1479 (3.20-3.20)
Sidechain outliers	177891	1478 (3.20-3.20)
RSRZ outliers	164620	1371 (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 $\leq 5\%$. 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	335	5% 30% 49% 15% • •
1	B	335	5% 33% 40% 19% • •

2 Entry composition

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
1	A	326	Total	C	N	O	S	0	0	0
			2622	1667	424	528	3			
1	B	324	Total	C	N	O	S	0	0	0
			2608	1658	422	525	3			

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

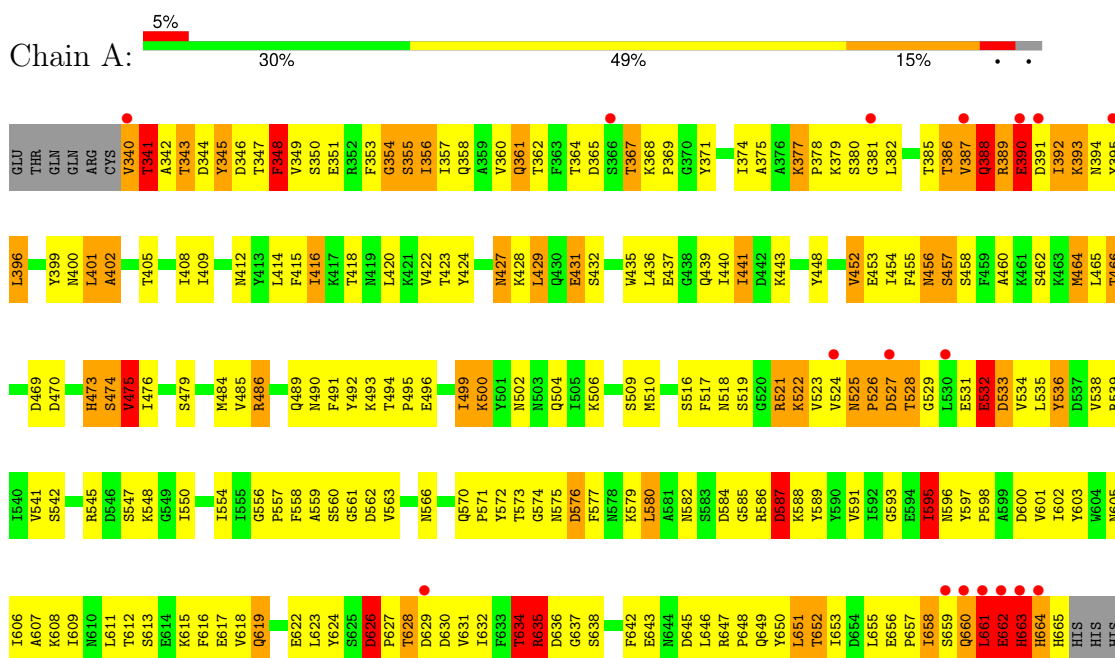
- Molecule 2 is water.

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

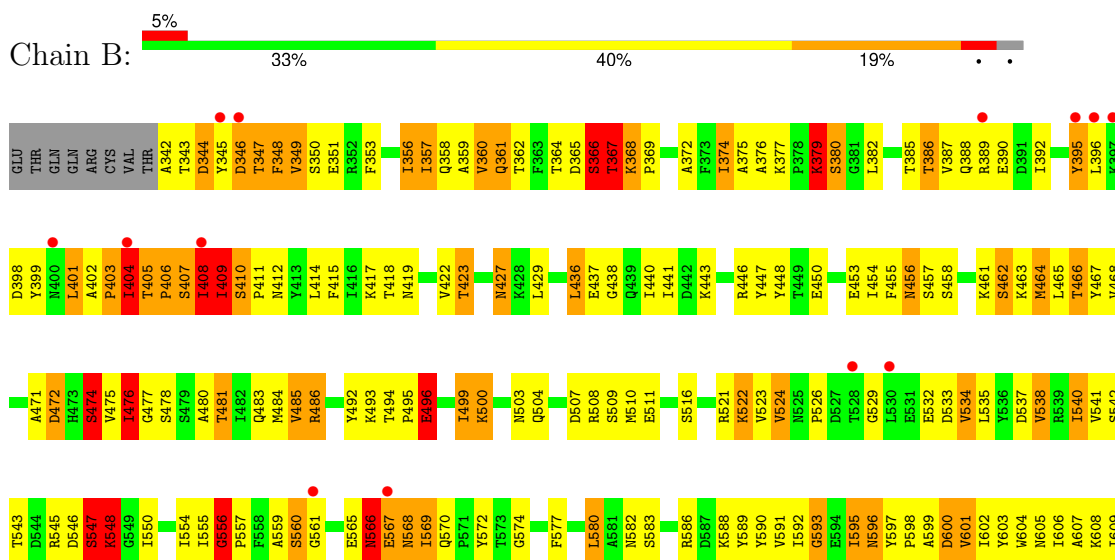
3 Residue-property plots

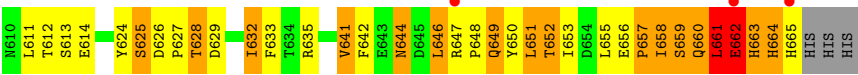
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

• Molecule 1: Baseplate structural protein Gp6



• Molecule 1: Baseplate structural protein Gp6





4 Data and refinement statistics

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
$\langle I/\sigma(I) \rangle$ ¹	3.57 (at 3.19Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.230 , 0.322 0.272 , 0.276	Depositor DCC
R_{free} test set	853 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 , 88.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	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.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

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	0.67	0/2677	1.25	42/3637 (1.2%)
1	B	0.73	3/2663 (0.1%)	1.29	42/3617 (1.2%)
All	All	0.70	3/5340 (0.1%)	1.27	84/7254 (1.2%)

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	409	ILE	CA-CB	-9.64	1.48	1.55
1	B	476	ILE	CA-CB	-6.12	1.45	1.54
1	B	408	ILE	CA-CB	-5.83	1.47	1.54

All (84) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	389	ARG	CB-CA-C	-21.79	71.19	111.06
1	B	548	LYS	N-CA-C	17.48	137.85	113.56
1	B	405	THR	C-N-CD	-16.64	56.78	125.00
1	A	646	LEU	N-CA-CB	-14.18	89.50	110.49
1	B	534	VAL	N-CA-CB	-12.80	90.11	111.23
1	B	556	GLY	CA-C-N	11.71	131.82	119.76
1	B	556	GLY	C-N-CA	11.71	131.82	119.76
1	B	474	SER	N-CA-CB	-10.39	94.02	111.27
1	A	387	VAL	N-CA-C	-10.23	100.19	112.98
1	B	547	SER	N-CA-C	-10.12	94.78	109.96
1	B	398	ASP	CB-CA-C	9.70	126.35	110.92
1	A	457	SER	N-CA-C	-9.68	94.53	108.96
1	A	525	ASN	N-CA-C	9.42	116.45	108.07
1	A	452	VAL	N-CA-C	9.29	119.80	111.81
1	A	645	ASP	CB-CA-C	9.27	126.12	110.74
1	B	472	ASP	CB-CA-C	8.97	127.30	110.62
1	B	379	LYS	N-CA-C	-8.88	101.51	111.82
1	A	456	ASN	CB-CA-C	-8.77	92.96	110.42
1	A	432	SER	N-CA-C	8.69	121.10	110.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	457	SER	N-CA-CB	8.46	124.92	111.56
1	B	405	THR	CA-C-N	8.32	130.24	119.84
1	B	405	THR	C-N-CA	8.32	130.24	119.84
1	B	644	ASN	N-CA-C	8.14	122.49	112.23
1	B	366	SER	N-CA-C	-7.89	97.80	109.15
1	A	452	VAL	CB-CA-C	-7.84	102.53	111.55
1	A	527	ASP	CA-C-N	-7.84	106.35	122.58
1	A	527	ASP	C-N-CA	-7.84	106.35	122.58
1	B	635	ARG	N-CA-C	-7.70	97.60	108.23
1	A	573	THR	N-CA-C	7.62	119.58	111.28
1	A	388	GLN	N-CA-C	7.37	121.23	111.28
1	B	533	ASP	CB-CA-C	-7.21	99.15	111.41
1	B	566	ASN	N-CA-C	-7.21	98.35	109.52
1	A	389	ARG	N-CA-C	7.02	123.72	113.40
1	B	583	SER	N-CA-C	-7.00	104.00	114.64
1	A	634	THR	N-CA-C	-6.87	99.22	109.86
1	B	407	SER	N-CA-C	-6.83	98.11	109.24
1	A	574	GLY	N-CA-C	6.82	123.79	111.03
1	B	410	SER	CA-C-N	6.73	126.71	119.78
1	B	410	SER	C-N-CA	6.73	126.71	119.78
1	B	367	THR	CB-CA-C	-6.67	97.14	110.42
1	B	404	ILE	N-CA-C	-6.59	100.66	109.30
1	B	657	PRO	CB-CA-C	-6.53	103.47	111.11
1	A	626	ASP	CA-C-N	6.52	126.47	120.21
1	A	626	ASP	C-N-CA	6.52	126.47	120.21
1	A	368	LYS	CA-C-N	6.35	126.71	119.92
1	A	368	LYS	C-N-CA	6.35	126.71	119.92
1	B	476	ILE	CB-CA-C	-6.33	102.34	112.16
1	B	641	VAL	N-CA-C	6.20	116.54	108.35
1	A	661	LEU	CA-C-N	-6.08	109.93	121.54
1	A	661	LEU	C-N-CA	-6.08	109.93	121.54
1	A	588	LYS	N-CA-C	-6.04	97.97	107.93
1	A	630	ASP	N-CA-C	-6.01	105.71	113.16
1	B	644	ASN	CB-CA-C	-5.95	98.25	110.38
1	B	533	ASP	N-CA-C	-5.93	95.42	107.41
1	A	532	GLU	CB-CA-C	-5.80	109.91	116.63
1	B	472	ASP	N-CA-C	-5.78	99.94	108.79
1	B	635	ARG	CB-CA-C	-5.77	101.97	113.80
1	B	662	GLU	CA-C-N	-5.76	110.53	121.54
1	B	662	GLU	C-N-CA	-5.76	110.53	121.54
1	B	401	LEU	CB-CA-C	5.71	119.50	109.80
1	A	476	ILE	CB-CA-C	-5.70	104.57	112.04

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	637	GLY	N-CA-C	-5.70	107.80	115.21
1	B	405	THR	O-C-N	5.59	127.55	121.23
1	A	377	LYS	CA-C-N	5.51	125.22	119.82
1	A	377	LYS	C-N-CA	5.51	125.22	119.82
1	A	539	ARG	N-CA-C	5.50	116.63	108.60
1	B	347	THR	CB-CA-C	-5.42	102.36	110.88
1	A	595	ILE	CB-CA-C	-5.35	103.56	110.84
1	A	431	GLU	CB-CA-C	-5.31	101.27	110.45
1	A	628	THR	N-CA-C	-5.29	106.50	113.17
1	B	395	TYR	N-CA-C	-5.18	106.98	113.72
1	B	398	ASP	N-CA-C	-5.18	104.69	111.02
1	B	450	GLU	N-CA-C	5.17	116.72	111.14
1	A	473	HIS	N-CA-C	-5.14	106.96	113.18
1	B	403	PRO	CB-CA-C	5.12	117.94	111.39
1	A	386	THR	CA-C-N	5.09	129.34	121.34
1	A	386	THR	C-N-CA	5.09	129.34	121.34
1	B	456	ASN	CB-CA-C	-5.08	100.74	110.65
1	A	521	ARG	N-CA-C	5.08	116.66	110.41
1	B	628	THR	N-CA-C	-5.07	105.46	111.69
1	A	390	GLU	N-CA-C	-5.04	106.39	112.54
1	A	386	THR	N-CA-C	-5.04	106.83	112.87
1	B	569	ILE	CB-CA-C	-5.03	103.04	111.29
1	A	663	HIS	CB-CA-C	-5.01	104.15	111.77

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2622	0	2546	399	28
1	B	2608	0	2530	351	16
2	A	8	0	0	3	0
2	B	11	2	0	5	0
All	All	5249	2	5076	731	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 71.

All (731) 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:559:ALA:C	1:A:561:GLY:HA3	1.49	1.37
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:B:661:LEU:C	1:B:661:LEU:HD13	1.48	1.32
1:A:525:ASN:CB	1:A:526:PRO:HD2	1.59	1.31
1:A:401:LEU:C	1:A:401:LEU:HD23	1.55	1.30
1:B:409:ILE:HD12	1:B:409:ILE:C	1.59	1.27
1:A:385:THR:CG2	1:A:389:ARG:H	1.44	1.27
1:B:408:ILE:C	1:B:408:ILE:HD12	1.56	1.26
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: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: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:A:629:ASP:HA	1:B:664:HIS:CE1	1.75	1.21
1:A:661:LEU:HD13	1:A:661:LEU:C	1.58	1.20
1:A:340:VAL:C	1:A:345:TYR:HE1	1.49	1.19
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: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: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:B:366:SER:C	1:B:367:THR:HG22	1.68	1.12
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:A:525:ASN:CG	1:A:526:PRO:HD2	1.74	1.11
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:631:VAL:HG21	1:B:476:ILE:CG2	1.80	1.11
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:340:VAL:C	1:A:345:TYR:CE1	2.30	1.08
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: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:525:ASN:CG	1:A:526:PRO:CD	2.30	1.05
1:A:389:ARG:HA	1:A:392:ILE:HG12	1.08	1.04
1:A:559:ALA:C	1:A:561:GLY:CA	2.30	1.04
1:B:409:ILE:C	1:B:409:ILE:CD1	2.29	1.04
1:A:385:THR:O	1:A:388:GLN:N	1.90	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:B:408:ILE:C	1:B:408:ILE:CD1	2.30	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:A:401:LEU:C	1:A:401:LEU:CD2	2.30	1.00
1:B:403:PRO:O	1:B:405:THR:CG2	2.09	1.00
1:B:661:LEU:C	1:B:661:LEU:CD1	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:A:340:VAL:C	1:A:341:THR:HG23	1.89	0.97
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: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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:385:THR:HG22	1:A:389:ARG:H	1.22	0.95
1:B:367:THR:HG23	1:B:368:LYS:N	1.70	0.94
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: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:661:LEU:O	1:A:662:GLU:C	2.08	0.91
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: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:496:GLU:H	1:B:496:GLU:CD	1.80	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
1:B:657:PRO:C	1:B:658:ILE:HD13	1.99	0.88
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:519:SER:HB2	1:A:562:ASP:CG	2.00	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:661:LEU:C	1:A:661:LEU:CD1	2.29	0.85
1:A:353:PHE:CE1	1:A:395:TYR:CE2	2.65	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:560:SER:N	1:A:561:GLY:CA	2.39	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: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: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: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:532:GLU:N	1:A:532:GLU:CD	2.36	0.80
1:B:646:LEU:HD23	1:B:646:LEU:C	2.05	0.80
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
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:366:SER:C	1:B:367:THR:CG2	2.42	0.79
1:B:661:LEU:O	1:B:661:LEU:CD1	2.29	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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:496:GLU:CD	1:B:496:GLU:N	2.41	0.76
1:A:392:ILE:C	1:A:394:ASN:N	2.43	0.76
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:B:408:ILE:HD12	1:B:409:ILE:N	2.01	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:342:ALA:O	1:B:346:ASP:CG	2.29	0.75
1:B:644:ASN:O	1:B:644:ASN:ND2	2.20	0.75
1:B:342:ALA:C	1:B:346:ASP:OD2	2.29	0.75
1:A:587:ASP:OD2	1:A:587:ASP:C	2.30	0.75
1:B:568:ASN:CG	1:B:569:ILE:H	1.94	0.75
1:A:392:ILE:O	1:A:393:LYS:C	2.30	0.75
1:A:416:ILE:HG13	1:A:448:TYR:OH	1.86	0.75
1:B:345:TYR:CD1	1:B:345:TYR:C	2.65	0.75
1:B:659:SER:O	1:B:660:GLN:CD	2.30	0.74
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:A:587:ASP:CG	1:A:587:ASP:O	2.30	0.74
1:B:344:ASP:C	1:B:344:ASP:OD1	2.29	0.74
1:B:567:GLU:O	1:B:568:ASN:CG	2.30	0.74
1:B:427:ASN:H	1:B:427:ASN:ND2	1.84	0.74
1:B:437:GLU:O	1:B:441:ILE:HG22	1.88	0.74
1:A:385:THR:HG21	1:A:389:ARG:C	2.13	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:A:385:THR:HG22	1:A:388:GLN:C	2.14	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:B:408:ILE:O	1:B:408:ILE:CD1	2.30	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:B:408:ILE:C	1:B:409:ILE:HG23	2.15	0.72
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:A:358:GLN:HB2	1:A:379:LYS:HA	1.73	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:B:385:THR:HG23	1:B:388:GLN:H	1.56	0.70
1:A:345:TYR:HD1	1:A:345:TYR:H	1.36	0.70
1:B:365:ASP:C	1:B:367:THR:HG22	2.17	0.70
1:A:506:LYS:O	1:A:509:SER:HB3	1.92	0.70
1:A:353:PHE:CZ	1:A:395:TYR:HD2	2.09	0.69
1:A:661:LEU:CD1	1:A:662:GLU:CB	2.68	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:516:SER:HB2	1:A:617:GLU:CD	2.17	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: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
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:C	1:A:387:VAL:H	1.99	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:A:531:GLU:C	1:A:532:GLU:CD	2.61	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:647:ARG:HG3	1:B:650:TYR:CD1	2.29	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:385:THR:CG2	1:A:388:GLN:C	2.66	0.68
1:A:395:TYR:HB2	1:A:408:ILE:HG12	1.76	0.67
1:B:657:PRO:C	1:B:658:ILE:CD1	2.67	0.67
1:A:340:VAL:O	1:A:341:THR:HG23	1.95	0.67
1:A:436:LEU:HD23	1:A:436:LEU:C	2.19	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:B:566:ASN:C	1:B:570:GLN:HE22	2.03	0.67
1:A:424:TYR:CE2	1:A:429:LEU:HD12	2.30	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:647:ARG:HH11	1:B:649:GLN:CD	1.99	0.66
1:A:340:VAL:C	1:A:341:THR:CG2	2.62	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:B:408:ILE:C	1:B:409:ILE:CG2	2.68	0.66
1:A:385:THR:C	1:A:387:VAL:N	2.50	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:348:PHE:O	1:B:349:VAL:C	2.39	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:B:510:MET:HE2	1:B:542:SER:HB3	1.78	0.65
1:A:548:LYS:O	1:A:548:LYS:HG2	1.96	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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:A:525:ASN:CG	1:A:526:PRO:HD3	2.20	0.63
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:453:GLU:CD	1:B:641:VAL:HG23	2.23	0.63
1:B:647:ARG:CD	1:B:650:TYR:CE1	2.81	0.63
1:B:660:GLN:CA	1:B:661:LEU:CB	2.71	0.63
1:A:386:THR:C	1:A:388:GLN:H	2.07	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: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:387:VAL:C	1:A:388:GLN:CD	2.68	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:A:353:PHE:CG	1:A:395:TYR:CE2	2.87	0.62
1:A:427:ASN:ND2	1:A:660:GLN:HB2	2.15	0.61
1:A:387:VAL:O	1:A:388:GLN:CD	2.44	0.61
1:B:647:ARG:HG2	1:B:650:TYR:CE1	2.35	0.61
1:A:392:ILE:C	1:A:394:ASN:H	2.08	0.61
1:A:521:ARG:O	1:A:533:ASP:HA	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:647:ARG:HG3	1:A:650:TYR:CD1	2.36	0.61
1:B:565:GLU:C	1:B:570:GLN:NE2	2.58	0.61
1:B:343:THR:O	1:B:347:THR:CG2	2.44	0.61
1:B:646:LEU:C	1:B:646:LEU:CD2	2.72	0.61
1:A:341:THR:O	1:A:345:TYR:CE1	2.53	0.61
1:A:387:VAL:C	1:A:388:GLN:CG	2.73	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:B:418:THR:HG21	1:B:464:MET:HE1	1.84	0.60
1:A:389:ARG:HA	1:A:392:ILE:CD1	2.31	0.60
1:A:349:VAL:C	1:A:351:GLU:H	2.08	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:568:ASN:CG	1:B:569:ILE:N	2.59	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:347:THR:O	1:A:348:PHE:C	2.44	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:B:347:THR:O	1:B:348:PHE:C	2.46	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: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:385:THR:C	1:A:387:VAL:HG22	2.28	0.59
1:A:525:ASN:HB3	1:A:526:PRO:CD	2.17	0.58
1:A:661:LEU:HD11	1:A:662:GLU:HB2	1.78	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:644:ASN:ND2	1:B:644:ASN:C	2.59	0.58
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: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:B:565:GLU:C	1:B:570:GLN:HE22	2.12	0.57
1:A:385:THR:OG1	1:A:391:ASP:HB3	2.05	0.57
1:A:388:GLN:C	1:A:389:ARG:HG3	2.30	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: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:409:ILE:CD1	1:B:410:SER:C	2.79	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:A:448:TYR:CD1	1:A:642:PHE:HB2	2.41	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
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:B:365:ASP:CG	1:B:367:THR:HG21	2.31	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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:B:365:ASP:OD1	1:B:367:THR:CG2	2.55	0.54
1:B:409:ILE:HD13	1:B:410:SER:C	2.31	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:437:GLU:C	1:A:439:GLN:H	2.15	0.54
1:A:631:VAL:CG2	1:B:476:ILE:CG2	2.72	0.54
1:A:532:GLU:N	1:A:532:GLU:OE2	2.39	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:B:356:ILE:O	1:B:379:LYS:HB3	2.06	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:567:GLU:C	1:B:568:ASN:OD1	2.51	0.53
1:B:596:ASN:HB3	1:B:601:VAL:HG23	1.90	0.53
1:A:531:GLU:C	1:A:532:GLU:OE1	2.52	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:526:PRO:O	1:A:528:THR:CG2	2.55	0.52
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:B:661:LEU:C	1:B:661:LEU:HD22	2.30	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: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: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:409:ILE:HD12	1:B:410:SER:N	2.16	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: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:345:TYR:C	1:B:345:TYR:HD1	2.18	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:661:LEU:C	1:B:663:HIS:N	2.61	0.51
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
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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:353:PHE:O	1:A:354:GLY:C	2.48	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:567:GLU:O	1:B:568:ASN:OD1	2.29	0.50
1:A:466:THR:HB	1:B:466:THR:HB	1.94	0.50
1:B:566:ASN:O	1:B:570:GLN:CD	2.55	0.50
1:B:507:ASP:OD1	1:B:545:ARG:HG3	2.12	0.49
1:B:607:ALA:C	1:B:609:ILE:H	2.20	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: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:A:582:ASN:C	1:A:585:GLY:H	2.21	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:A:582:ASN:HB2	1:A:585:GLY:C	2.37	0.49
1:B:447:TYR:HB2	1:B:467:TYR:CG	2.48	0.49
1:B:661:LEU:O	1:B:661:LEU:CG	2.58	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:B:644:ASN:C	1:B:644:ASN:HD22	2.20	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:386:THR:C	1:A:388:GLN:N	2.67	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:361:GLN:CG	1:A:455:PHE:CD1	2.97	0.48
1:B:365:ASP:O	1:B:366:SER:C	2.54	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:B:662:GLU:O	1:B:662:GLU:HG2	2.13	0.48
1:A:349:VAL:C	1:A:351:GLU:N	2.71	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:B:448:TYR:C	1:B:453:GLU:HG3	2.39	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:418:THR:HG21	1:A:464:MET:HE1	1.96	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:B:565:GLU:OE2	1:B:590:TYR:OH	2.28	0.47
1:A:347:THR:C	1:A:349:VAL:N	2.73	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:A:607:ALA:C	1:A:609:ILE:O	2.57	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:495:PRO:O	1:B:496:GLU:C	2.57	0.47
1:B:522:LYS:HG2	1:B:524:VAL:HG23	1.97	0.47
1:B:664:HIS:CD2	1:B:664:HIS:C	2.90	0.47
1:B:365:ASP:CG	1:B:367:THR:CG2	2.88	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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
1:B:599:ALA:O	1:B:600:ASP:C	2.59	0.46
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:546:ASP:CG	1:B:547:SER:O	2.59	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:A:651:LEU:HD23	1:A:651:LEU:C	2.40	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: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: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:660:GLN:HA	1:B:661:LEU:HB3	1.90	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:437:GLU:C	1:A:439:GLN:N	2.75	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:441:ILE:HD11	1:B:644:ASN:CG	2.42	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:511:GLU:O	1:B:511:GLU:HG3	2.17	0.45
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
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:B:365:ASP:C	1:B:367:THR:CG2	2.90	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: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: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:B:402:ALA:O	1:B:403:PRO:C	2.59	0.44
1:A:365:ASP:OD2	1:A:367:THR:HB	2.18	0.44
1:B:607:ALA:C	1:B:609:ILE:N	2.76	0.44
1:A:534:VAL:C	1:A:535:LEU:HD23	2.43	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:567:GLU:C	1:B:568:ASN:CG	2.86	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:B:492:TYR:OH	1:B:611:LEU:O	2.34	0.43
1:A:375:ALA:HA	1:A:409:ILE:HD12	2.00	0.43
1:B:388:GLN:O	1:B:392:ILE:HG22	2.19	0.43
1:A:524:VAL:HG22	1:A:529:GLY:C	2.42	0.43
1:A:526:PRO:O	1:A:527:ASP:C	2.59	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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
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:484:MET:HG3	1:A:627:PRO:HG3	2.00	0.42
1:A:582:ASN:C	1:A:584:ASP:N	2.74	0.42
1:A:593:GLY:HA3	1:A:603:TYR:O	2.19	0.42
1:A:492:TYR:CE1	1:A:606:ILE:HB	2.54	0.42
1:A:556:GLY:CA	1:A:589:TYR:CD1	3.01	0.42
1:B:648:PRO:CD	1:B:649:GLN:H	2.32	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: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:436:LEU:O	1:B:437:GLU:C	2.63	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:B:600:ASP:CG	1:B:600:ASP:O	2.62	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:541:VAL:CG1	1:A:542:SER:N	2.82	0.41
1:A:448:TYR:HA	1:A:452:VAL:HB	2.02	0.41
1:A:408:ILE:H	1:A:408:ILE:CD1	2.30	0.41
1:B:422:VAL:HG11	1:B:475:VAL:HG13	2.01	0.41
1:A:361:GLN:HG2	1:A:455:PHE:CB	2.51	0.41
1:A:369:PRO:C	1:A:371:TYR:H	2.29	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:516:SER:H	1:A:617:GLU:CD	2.29	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:571:PRO:O	1:A:572:TYR:C	2.63	0.41
1:A:595:ILE:CG2	1:A:602:ILE:HG12	2.51	0.41
1:A:636:ASP:C	1:A:638:SER:H	2.27	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:455:PHE:O	1:A:456:ASN:C	2.64	0.40
1:A:629:ASP:CG	1:B:664:HIS:NE2	2.78	0.40
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:A:518:ASN:OD1	1:A:533:ASP:CG	2.65	0.40
1:B:358:GLN:HE21	1:B:377:LYS:NZ	2.19	0.40
1:B:507:ASP:C	1:B:509:SER:H	2.28	0.40
1:B:507:ASP:C	1:B:509:SER:N	2.80	0.40
1:B:356:ILE:O	1:B:379:LYS:N	2.48	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
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 14

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	322/335 (96%)	261 (81%)	42 (13%)	19 (6%)	1	10
All	All	646/670 (96%)	521 (81%)	90 (14%)	35 (5%)	1	12

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 ⓘ

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%)	236 (80%)	59 (20%)	1	5
1	B	293/304 (96%)	228 (78%)	65 (22%)	1	4
All	All	588/608 (97%)	464 (79%)	124 (21%)	1	5

All (124) 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	357	ILE
1	A	360	VAL
1	A	361	GLN
1	A	364	THR
1	A	367	THR
1	A	374	ILE
1	A	388	GLN
1	A	390	GLU
1	A	396	LEU
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	464	MET
1	A	466	THR
1	A	474	SER

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Mol	Chain	Res	Type
1	A	475	VAL
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
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	612	THR
1	A	613	SER
1	A	619	GLN
1	A	622	GLU
1	A	626	ASP
1	A	628	THR
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	661	LEU
1	A	662	GLU
1	A	663	HIS
1	B	344	ASP
1	B	346	ASP
1	B	356	ILE
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

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Mol	Chain	Res	Type
1	B	379	LYS
1	B	380	SER
1	B	386	THR
1	B	387	VAL
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
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	476	ILE
1	B	481	THR
1	B	485	VAL
1	B	486	ARG
1	B	493	LYS
1	B	496	GLU
1	B	499	ILE
1	B	500	LYS
1	B	516	SER
1	B	522	LYS
1	B	535	LEU
1	B	538	VAL
1	B	540	ILE
1	B	547	SER
1	B	548	LYS
1	B	554	ILE
1	B	566	ASN
1	B	567	GLU
1	B	580	LEU
1	B	595	ILE
1	B	596	ASN

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Mol	Chain	Res	Type
1	B	601	VAL
1	B	612	THR
1	B	613	SER
1	B	614	GLU
1	B	632	ILE
1	B	646	LEU
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 (25) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	361	GLN
1	A	427	ASN
1	A	456	ASN
1	A	473	HIS
1	A	490	ASN
1	A	502	ASN
1	A	504	GLN
1	A	596	ASN
1	A	605	ASN
1	A	610	ASN
1	A	619	GLN
1	A	644	ASN
1	B	358	GLN
1	B	361	GLN
1	B	394	ASN
1	B	412	ASN
1	B	427	ASN
1	B	489	GLN
1	B	490	ASN
1	B	503	ASN
1	B	570	GLN
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 oligosaccharides 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

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, 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%)	0.31	17 (5%) 34 23	20, 84, 154, 227	0
1	B	324/335 (96%)	0.33	16 (4%) 36 25	25, 84, 151, 276	0
All	All	650/670 (97%)	0.32	33 (5%) 34 23	20, 84, 154, 276	0

All (33) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	567	GLU	5.4
1	A	390	GLU	5.4
1	B	395	TYR	4.8
1	A	659	SER	4.7
1	B	530	LEU	4.6
1	B	345	TYR	4.5
1	A	662	GLU	4.1
1	A	381	GLY	3.5
1	B	561	GLY	3.4
1	A	395	TYR	3.4
1	A	663	HIS	3.3
1	A	629	ASP	3.2
1	B	396	LEU	3.1
1	A	527	ASP	3.1
1	A	387	VAL	3.1
1	B	528	THR	3.0
1	A	340	VAL	3.0
1	B	389	ARG	2.9
1	B	665	HIS	2.8
1	A	391	ASP	2.8
1	B	408	ILE	2.8
1	B	404	ILE	2.7
1	A	660	GLN	2.6
1	B	346	ASP	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	664	HIS	2.5
1	A	661	LEU	2.4
1	B	397	LYS	2.3
1	A	530	LEU	2.2
1	B	400	ASN	2.2
1	B	662	GLU	2.1
1	A	524	VAL	2.1
1	B	647	ARG	2.1
1	A	366	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.