



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 02:34 PM UTC

PDB ID : 1H1C / pdb_00001h1c
Title : Histidinol-phosphate aminotransferase (HisC) from *Thermotoga maritima*
Authors : Vega, M.C.; Fernandez, F.J.; Wilmanns, M.
Deposited on : 2002-07-08
Resolution : 2.85 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 Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

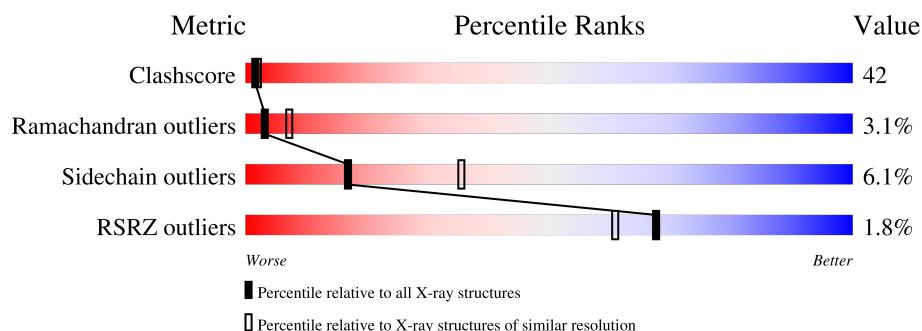
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.85 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	190562	1446 (2.88-2.84)
Ramachandran outliers	187476	1406 (2.88-2.84)
Sidechain outliers	187428	1407 (2.88-2.84)
RSRZ outliers	180081	1408 (2.88-2.84)

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.

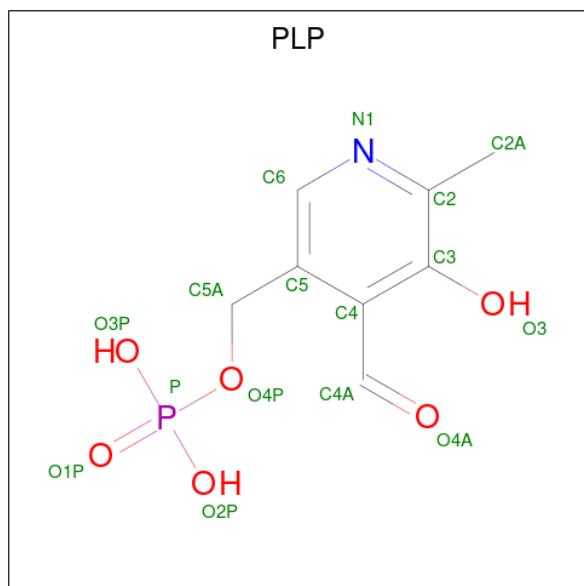
Mol	Chain	Length	Quality of chain
1	A	335	% 41% 51% 6%
1	B	335	37% 51% 6%
1	C	335	5% 31% 52% 9% 7%
1	D	335	% 39% 51% 8%

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 HISTIDINOL-PHOSPHATE AMINOTRANSFERASE.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	330	Total 2727	C 1754	N 460	O 504	S 1	Se 8	0	0	1
1	B	315	Total 2606	C 1677	N 438	O 482	S 1	Se 8	0	0	0
1	C	310	Total 2554	C 1642	N 431	O 472	S 1	Se 8	0	0	1
1	D	329	Total 2728	C 1754	N 460	O 505	S 1	Se 8	0	0	0

- Molecule 2 is PYRIDOXAL-5'-PHOSPHATE (CCD ID: PLP) (formula: $C_8H_{10}NO_6P$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total 15	C 8	N 1	O 5	P 1	0	0
2	B	1	Total 15	C 8	N 1	O 5	P 1	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	C	1	Total	C	N	O	P	0	0
			15	8	1	5	1		
2	D	1	Total	C	N	O	P	0	0
			15	8	1	5	1		

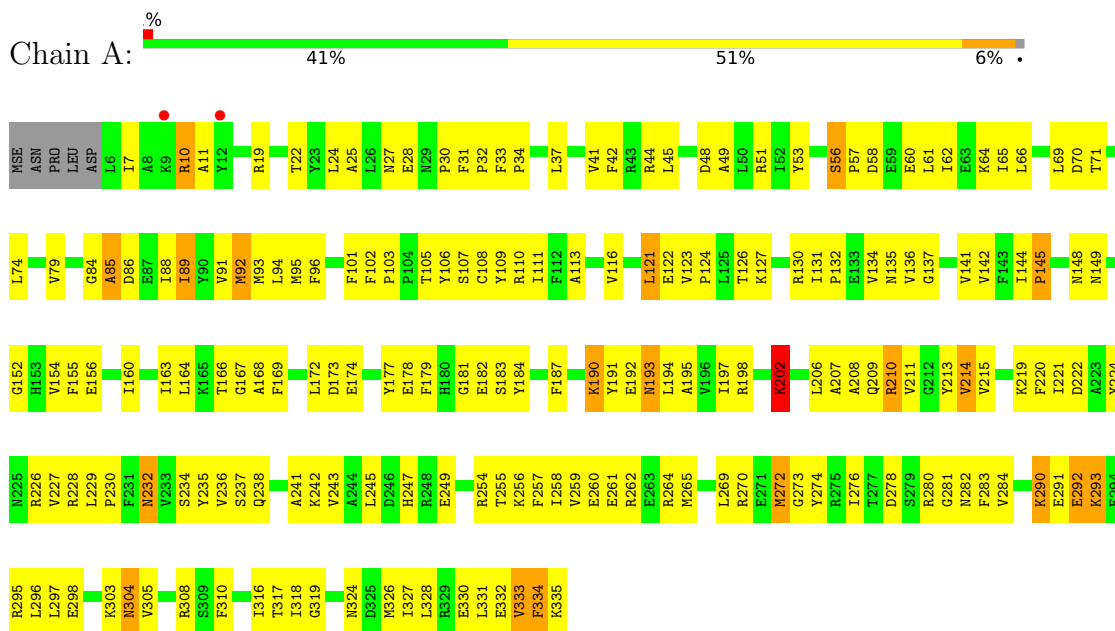
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	54	Total	O	0	0
			54	54		
3	B	34	Total	O	0	0
			34	34		
3	C	20	Total	O	0	0
			20	20		
3	D	25	Total	O	0	0
			25	25		

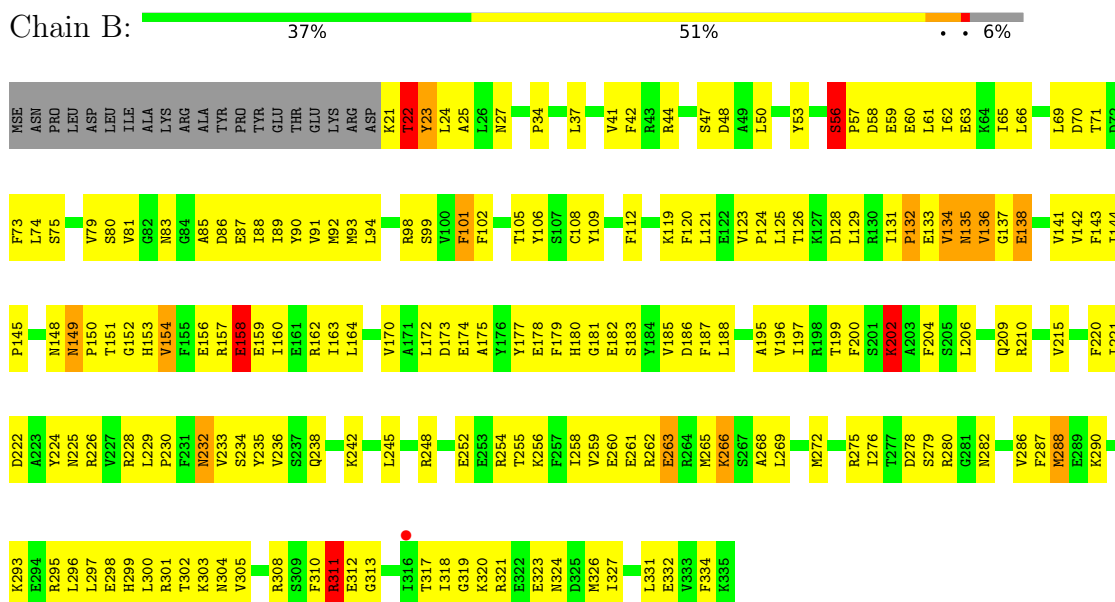
3 Residue-property plots

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.

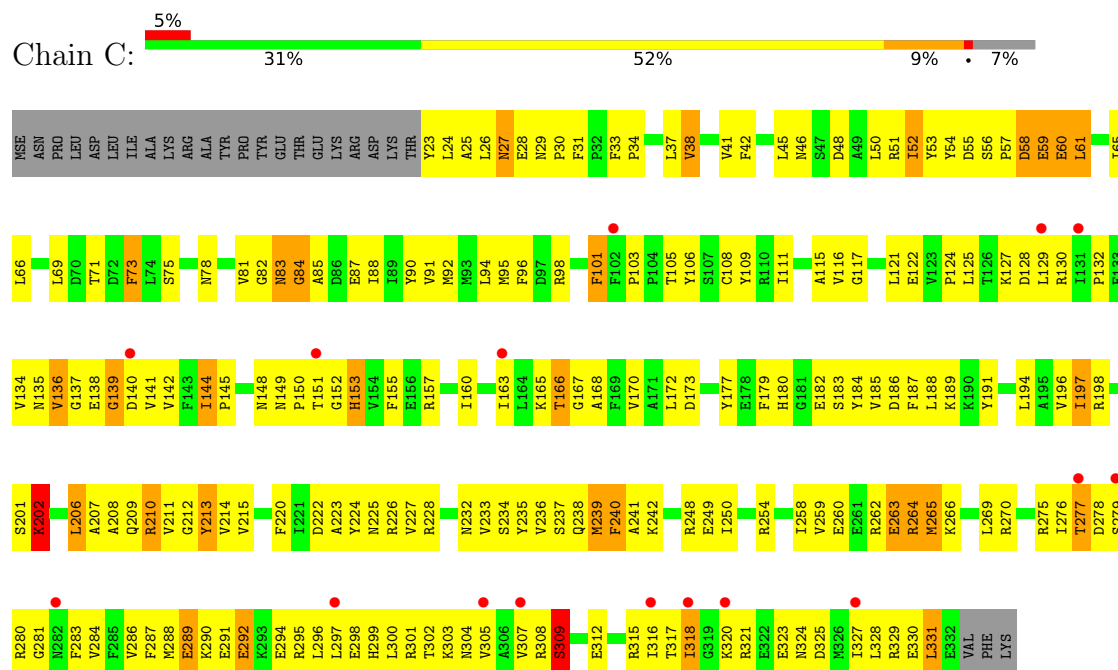
• Molecule 1: HISTIDINOL-PHOSPHATE AMINOTRANSFERASE



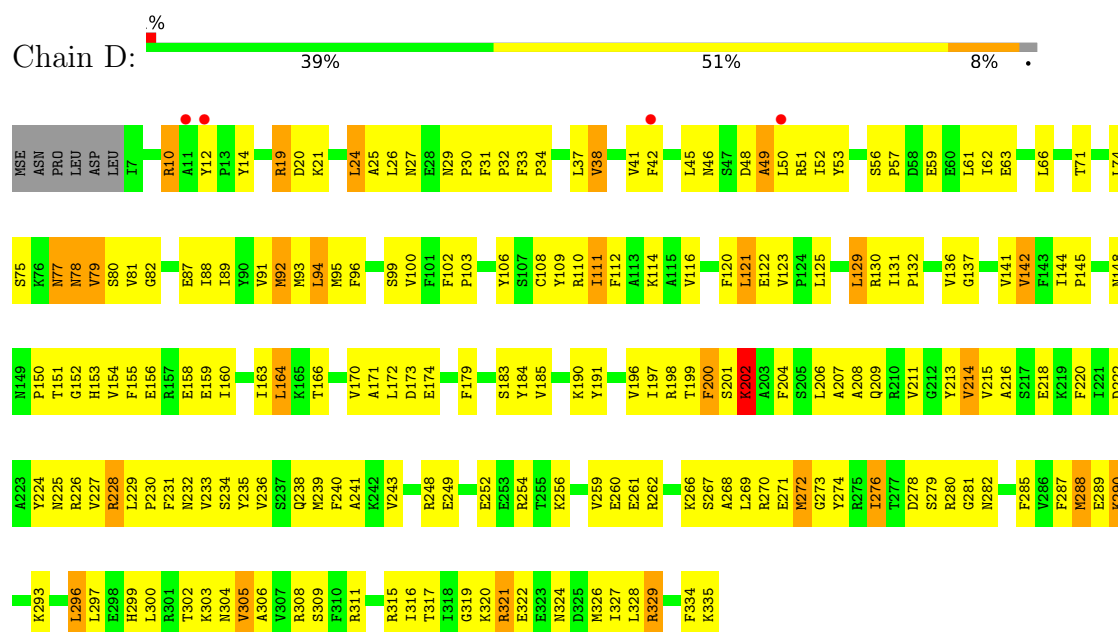
• Molecule 1: HISTIDINOL-PHOSPHATE AMINOTRANSFERASE



• Molecule 1: HISTIDINOL-PHOSPHATE AMINOTRANSFERASE



• Molecule 1: HISTIDINOL-PHOSPHATE AMINOTRANSFERASE



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α , β , γ	189.67Å 146.17Å 54.29Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	20.00 – 2.85 20.00 – 2.85	Depositor EDS
% Data completeness (in resolution range)	93.4 (20.00-2.85) 93.1 (20.00-2.85)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.70 (at 2.83Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.258 , 0.272 (Not available) , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å ²)	49.9	Xtriage
Anisotropy	0.180	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.23 , 26.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.44$, $\langle L^2 \rangle = 0.27$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	10808	wwPDB-VP
Average B, all atoms (Å ²)	45.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.44% 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

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

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	0.57	1/2778 (0.0%)	1.07	17/3733 (0.5%)
1	B	0.55	0/2654	1.06	15/3563 (0.4%)
1	C	0.51	1/2601 (0.0%)	1.03	16/3495 (0.5%)
1	D	0.53	0/2779	1.02	15/3731 (0.4%)
All	All	0.54	2/10812 (0.0%)	1.04	63/14522 (0.4%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	1	0
1	B	1	0
1	C	0	1
1	D	1	0
All	All	3	1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	334	PHE	C-N	-6.06	1.24	1.33
1	C	331	LEU	C-N	-5.63	1.25	1.33

All (63) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	202	LYS	N-CA-C	8.64	129.20	110.80
1	B	202	LYS	N-CA-C	8.22	128.31	110.80
1	A	202	LYS	N-CA-C	8.14	128.13	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	56	SER	CA-C-N	-7.67	109.18	120.46
1	B	56	SER	C-N-CA	-7.67	109.18	120.46
1	C	202	LYS	N-CA-C	7.67	127.13	110.80
1	C	292	GLU	N-CA-C	-7.55	104.07	113.28
1	A	79	VAL	N-CA-C	7.44	119.55	108.46
1	D	49	ALA	N-CA-C	-7.27	105.33	114.56
1	A	56	SER	CA-C-N	-7.10	110.96	119.84
1	A	56	SER	C-N-CA	-7.10	110.96	119.84
1	A	293	LYS	N-CA-C	-7.04	103.03	111.69
1	D	131	ILE	CA-C-N	6.95	126.91	120.03
1	D	131	ILE	C-N-CA	6.95	126.91	120.03
1	B	313	GLY	N-CA-C	6.94	119.80	110.43
1	C	312	GLU	N-CA-C	6.89	119.63	111.71
1	B	149	ASN	N-CA-C	-6.89	98.90	109.64
1	B	158	GLU	N-CA-C	-6.73	103.94	111.28
1	C	240	PHE	N-CA-C	-6.68	103.25	111.33
1	D	38	VAL	N-CA-C	-6.66	104.00	110.72
1	D	19	ARG	N-CA-C	6.65	120.02	110.24
1	D	79	VAL	N-CA-C	6.62	118.96	108.89
1	D	94	LEU	N-CA-C	-6.52	105.36	113.38
1	B	254	ARG	N-CA-C	-6.40	103.82	111.69
1	B	266	LYS	N-CA-C	-6.38	103.62	111.40
1	A	49	ALA	N-CA-C	-6.24	106.30	114.04
1	A	202	LYS	CB-CA-C	6.17	122.69	110.42
1	B	202	LYS	CB-CA-C	6.16	122.68	110.42
1	C	38	VAL	N-CA-C	-6.07	103.92	110.23
1	A	89	ILE	CB-CA-C	-6.06	104.12	111.88
1	B	182	GLU	N-CA-C	6.05	118.70	110.35
1	C	265	MSE	N-CA-C	-6.02	105.91	113.20
1	C	202	LYS	CB-CA-C	6.01	122.39	110.42
1	C	197	ILE	N-CA-C	5.95	114.92	106.53
1	D	89	ILE	N-CA-C	-5.94	104.53	110.30
1	A	167	GLY	N-CA-C	-5.93	107.63	114.69
1	D	25	ALA	N-CA-C	5.93	120.24	111.87
1	D	200	PHE	N-CA-C	-5.91	106.12	113.38
1	B	154	VAL	N-CA-C	5.86	116.31	107.75
1	D	281	GLY	N-CA-C	-5.84	104.25	112.60
1	C	139	GLY	N-CA-C	-5.83	106.70	115.32
1	A	182	GLU	N-CA-C	5.81	118.19	110.53
1	C	31	PHE	N-CA-C	5.80	116.97	109.72
1	C	309	SER	N-CA-C	5.68	122.90	110.80
1	D	202	LYS	CB-CA-C	5.68	121.72	110.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	84	GLY	N-CA-C	-5.47	105.79	112.68
1	B	204	PHE	N-CA-C	5.47	119.94	113.16
1	D	78	ASN	N-CA-C	-5.46	106.98	113.97
1	B	25	ALA	N-CA-C	5.43	120.78	113.72
1	A	111	ILE	CB-CA-C	-5.41	105.04	111.97
1	A	227	VAL	N-CA-C	5.37	116.02	110.82
1	C	197	ILE	CB-CA-C	-5.30	105.44	111.59
1	C	149	ASN	N-CA-C	-5.28	100.23	109.48
1	A	70	ASP	N-CA-C	5.25	117.58	111.02
1	C	111	ILE	CB-CA-C	-5.22	105.20	111.88
1	B	311	ARG	N-CA-C	-5.18	101.26	109.76
1	A	85	ALA	N-CA-C	-5.18	105.75	111.71
1	B	23	TYR	N-CA-C	5.17	117.15	108.73
1	A	84	GLY	N-CA-C	-5.15	106.19	112.68
1	C	52	ILE	N-CA-C	5.10	116.31	108.71
1	A	273	GLY	N-CA-C	-5.01	108.06	114.37
1	D	77	ASN	N-CA-C	5.01	119.11	113.15
1	A	107	SER	N-CA-C	5.00	118.16	111.75

All (3) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	A	202	LYS	CA
1	B	202	LYS	CA
1	D	202	LYS	CA

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	90	TYR	Sidechain

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	2727	0	2700	216	0
1	B	2606	0	2580	211	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	2554	0	2523	284	0
1	D	2728	0	2702	222	0
2	A	15	0	6	1	0
2	B	15	0	6	2	0
2	C	15	0	6	0	0
2	D	15	0	6	0	0
3	A	54	0	0	4	0
3	B	34	0	0	7	0
3	C	20	0	0	6	0
3	D	25	0	0	2	0
All	All	10808	0	10529	892	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 42.

All (892) 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:D:56:SER:HB3	1:D:57:PRO:HD3	1.28	1.16
1:A:58:ASP:HB2	1:A:238:GLN:NE2	1.60	1.14
1:D:24:LEU:HD13	1:D:327:ILE:HD11	1.23	1.09
1:A:24:LEU:HD13	1:A:327:ILE:HD11	1.36	1.07
1:C:58:ASP:HB3	1:C:238:GLN:HE22	1.20	1.06
1:A:56:SER:HB3	1:A:57:PRO:HD3	1.39	1.05
1:A:58:ASP:HB2	1:A:238:GLN:HE22	1.07	1.02
1:D:288:MSE:CE	1:D:293:LYS:HA	1.88	1.02
1:D:288:MSE:HE2	1:D:293:LYS:HA	1.38	1.01
1:B:142:VAL:HG22	1:B:144:ILE:HD11	1.43	1.00
1:D:93:MSE:HE1	1:D:112:PHE:HB3	1.51	0.93
1:B:56:SER:HB3	1:B:57:PRO:HD3	1.51	0.93
1:B:22:THR:HG21	1:B:326:MSE:HE3	1.51	0.93
1:A:190:LYS:HD2	1:A:190:LYS:H	1.37	0.90
1:C:145:PRO:O	1:C:148:ASN:HA	1.71	0.89
1:A:48:ASP:OD2	1:A:51:ARG:HD3	1.73	0.87
1:D:71:THR:OG1	1:D:74:LEU:HD23	1.73	0.87
1:B:106:TYR:CE2	1:B:108:CYS:HB2	2.10	0.87
1:A:134:VAL:HB	1:A:136:VAL:HG23	1.54	0.87
1:B:65:ILE:HD13	1:B:245:LEU:HD11	1.56	0.86
1:A:209:GLN:HE22	1:B:236:VAL:H	1.18	0.86
1:A:232:ASN:H	1:A:232:ASN:HD22	1.23	0.86
1:D:88:ILE:HD13	1:D:214:VAL:HG22	1.58	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:93:MSE:HE1	1:D:112:PHE:CB	2.07	0.84
1:C:58:ASP:HB3	1:C:238:GLN:NE2	1.91	0.84
1:D:136:VAL:HG23	1:D:166:THR:HG21	1.58	0.84
1:B:162:ARG:HG2	1:B:162:ARG:HH11	1.43	0.84
1:C:210:ARG:HE	1:D:231:PHE:HB3	1.43	0.83
1:A:197:ILE:HD13	1:A:214:VAL:HG13	1.60	0.82
1:C:297:LEU:O	1:C:301:ARG:HB2	1.80	0.81
1:A:58:ASP:CB	1:A:238:GLN:HE22	1.93	0.81
1:A:210:ARG:HA	1:A:210:ARG:NH1	1.95	0.81
1:A:316:ILE:HG21	1:A:327:ILE:HD13	1.63	0.81
1:A:88:ILE:HG21	1:A:197:ILE:HD12	1.63	0.81
1:A:210:ARG:HA	1:A:210:ARG:HH11	1.47	0.80
1:D:56:SER:HB3	1:D:57:PRO:CD	2.11	0.79
1:A:10:ARG:H	1:A:10:ARG:HD2	1.45	0.79
1:B:174:GLU:CD	1:B:183:SER:HB2	2.07	0.79
1:C:88:ILE:HG21	1:C:197:ILE:HD12	1.64	0.79
1:D:137:GLY:HA2	1:D:166:THR:HG22	1.64	0.79
1:C:91:VAL:HG12	1:C:95:MSE:HE2	1.65	0.79
1:D:24:LEU:CD1	1:D:327:ILE:HD11	2.10	0.79
1:C:292:GLU:O	1:C:296:LEU:HG	1.82	0.78
1:B:248:ARG:HD3	3:B:2023:HOH:O	1.85	0.77
1:C:106:TYR:HB3	1:C:109:TYR:CE2	2.19	0.77
1:B:174:GLU:OE1	1:B:183:SER:HB2	1.86	0.76
1:B:265:MSE:HE3	1:B:324:ASN:HB3	1.68	0.76
1:C:328:LEU:HD12	1:C:329:ARG:N	2.00	0.76
1:C:125:LEU:HD23	1:C:132:PRO:HD3	1.68	0.76
1:A:92:MSE:HG3	1:A:95:MSE:HE2	1.68	0.75
1:B:89:ILE:HD13	1:B:109:TYR:HE1	1.50	0.75
1:C:134:VAL:C	1:C:136:VAL:H	1.94	0.75
1:C:248:ARG:HD3	1:C:248:ARG:H	1.51	0.75
1:C:130:ARG:NE	1:C:130:ARG:HA	2.02	0.75
1:A:95:MSE:HE1	1:A:220:PHE:CZ	2.21	0.75
1:A:93:MSE:HE1	1:A:113:ALA:HB2	1.68	0.74
1:B:265:MSE:O	1:B:269:LEU:HG	1.87	0.74
1:A:58:ASP:CB	1:A:238:GLN:NE2	2.46	0.74
1:B:37:LEU:O	1:B:41:VAL:HG23	1.86	0.74
1:B:225:ASN:ND2	1:B:228:ARG:HE	1.86	0.74
1:D:88:ILE:O	1:D:92:MSE:HB2	1.87	0.73
1:B:142:VAL:HG11	1:B:163:ILE:HG21	1.69	0.73
1:C:222:ASP:O	1:C:226:ARG:HG3	1.88	0.73
1:C:249:GLU:HG3	1:C:250:ILE:N	2.02	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:96:PHE:CG	1:A:141:VAL:HB	2.22	0.73
1:D:20:ASP:HB3	1:D:304:ASN:O	1.89	0.73
1:D:239:MSE:HA	1:D:239:MSE:HE2	1.71	0.73
1:D:46:ASN:HD22	1:D:49:ALA:HB2	1.54	0.73
1:D:224:TYR:O	1:D:228:ARG:HG2	1.88	0.73
1:A:91:VAL:HG21	1:A:224:TYR:HE1	1.52	0.72
1:B:145:PRO:O	1:B:148:ASN:HA	1.88	0.72
1:B:225:ASN:HD22	1:B:228:ARG:HE	1.37	0.72
1:B:56:SER:HB3	1:B:57:PRO:CD	2.20	0.72
1:C:65:ILE:HD12	1:C:213:TYR:HD1	1.54	0.72
1:C:150:PRO:CB	3:C:2017:HOH:O	2.37	0.72
1:D:190:LYS:HG3	1:D:191:TYR:CD1	2.24	0.72
1:D:93:MSE:CE	1:D:112:PHE:HB3	2.19	0.72
1:A:236:VAL:H	1:B:209:GLN:HE22	1.38	0.72
1:C:275:ARG:HB3	1:C:275:ARG:NH1	2.04	0.72
1:A:56:SER:HB3	1:A:57:PRO:CD	2.16	0.72
1:D:56:SER:CB	1:D:57:PRO:HD3	2.14	0.71
1:A:69:LEU:HD21	1:A:215:VAL:HG21	1.72	0.71
1:A:232:ASN:HD22	1:A:232:ASN:N	1.88	0.71
1:C:239:MSE:CE	1:C:242:LYS:HE3	2.19	0.71
1:C:210:ARG:HA	1:C:210:ARG:HH11	1.55	0.71
1:A:137:GLY:HA2	1:A:166:THR:HG22	1.70	0.71
1:A:224:TYR:CE2	1:A:228:ARG:HD3	2.25	0.71
1:A:91:VAL:CG2	1:A:224:TYR:HE1	2.02	0.71
1:A:254:ARG:O	1:A:258:ILE:HG12	1.91	0.71
1:B:133:GLU:O	1:B:134:VAL:HG13	1.90	0.71
1:A:303:LYS:HD2	1:A:330:GLU:OE2	1.91	0.71
1:D:92:MSE:HA	1:D:95:MSE:HE3	1.71	0.70
1:D:106:TYR:CE2	1:D:108:CYS:HB2	2.26	0.70
1:B:61:LEU:HD12	1:B:238:GLN:HB3	1.72	0.70
1:C:225:ASN:CG	1:C:228:ARG:HH12	1.98	0.70
1:C:283:PHE:HA	1:C:318:ILE:HD13	1.73	0.70
1:B:125:LEU:HD22	1:B:129:LEU:O	1.91	0.70
1:D:100:VAL:HG23	1:D:121:LEU:HB3	1.73	0.70
1:A:193:ASN:N	1:A:193:ASN:HD22	1.88	0.70
1:B:22:THR:HG23	1:B:305:VAL:HA	1.72	0.70
1:C:73:PHE:H	1:C:73:PHE:HD1	1.38	0.70
1:C:299:HIS:O	1:C:302:THR:HG22	1.92	0.70
1:D:81:VAL:HG22	1:D:82:GLY:H	1.57	0.70
1:B:296:LEU:HD12	1:B:297:LEU:HD12	1.74	0.70
1:C:290:LYS:HE2	1:C:292:GLU:OE1	1.92	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:93:MSE:HE1	1:B:112:PHE:CB	2.22	0.70
1:D:91:VAL:HG23	1:D:95:MSE:CE	2.22	0.69
1:D:296:LEU:HD22	1:D:300:LEU:HG	1.73	0.69
1:C:303:LYS:HB2	1:C:305:VAL:HG22	1.73	0.69
1:D:172:LEU:HD22	1:D:184:TYR:HB2	1.72	0.69
1:A:91:VAL:HG21	1:A:224:TYR:CE1	2.26	0.69
1:B:293:LYS:O	1:B:297:LEU:HD13	1.93	0.69
1:C:27:ASN:HB2	1:C:202:LYS:HE2	1.75	0.69
1:C:236:VAL:HG23	1:D:209:GLN:NE2	2.08	0.69
1:A:256:LYS:O	1:A:260:GLU:HG3	1.92	0.69
1:A:259:VAL:HG23	1:A:260:GLU:N	2.07	0.69
1:A:193:ASN:HD22	1:A:193:ASN:H	1.41	0.68
1:B:177:TYR:CD2	1:B:183:SER:HB3	2.28	0.68
1:C:24:LEU:HD22	1:C:317:THR:O	1.93	0.68
1:B:93:MSE:HE1	1:B:112:PHE:HB3	1.75	0.68
1:B:129:LEU:HD13	1:B:153:HIS:ND1	2.08	0.68
1:B:326:MSE:HG2	3:B:2034:HOH:O	1.92	0.68
1:B:323:GLU:O	1:B:326:MSE:HB3	1.93	0.68
1:D:225:ASN:ND2	1:D:228:ARG:HH11	1.92	0.68
1:A:333:VAL:HG23	1:A:334:PHE:CD1	2.29	0.68
1:C:259:VAL:HG23	1:C:260:GLU:N	2.09	0.68
1:B:142:VAL:CG2	1:B:144:ILE:HD11	2.21	0.68
1:C:127:LYS:H	1:C:127:LYS:HD2	1.57	0.68
1:C:236:VAL:H	1:D:209:GLN:HE22	1.41	0.68
1:B:299:HIS:O	1:B:302:THR:HG22	1.94	0.67
1:B:58:ASP:HB2	1:B:238:GLN:NE2	2.09	0.67
1:C:275:ARG:HB3	1:C:275:ARG:HH11	1.58	0.67
1:A:32:PRO:HB3	1:B:48:ASP:HA	1.75	0.67
1:A:236:VAL:HG23	1:B:209:GLN:NE2	2.09	0.67
1:D:225:ASN:ND2	1:D:228:ARG:NH1	2.43	0.67
1:A:130:ARG:NH1	1:A:130:ARG:HB3	2.10	0.67
1:D:56:SER:O	1:D:238:GLN:NE2	2.28	0.67
1:D:303:LYS:HB3	1:D:305:VAL:HG12	1.77	0.67
1:B:123:VAL:HG21	1:B:134:VAL:HG11	1.77	0.67
1:D:27:ASN:HA	1:D:317:THR:HG23	1.77	0.66
1:A:292:GLU:OE2	1:A:295:ARG:HD3	1.95	0.66
1:B:56:SER:CB	1:B:57:PRO:HD3	2.24	0.66
1:D:256:LYS:O	1:D:260:GLU:HG3	1.96	0.66
1:A:209:GLN:NE2	1:B:236:VAL:H	1.93	0.66
1:B:142:VAL:HG22	1:B:144:ILE:CD1	2.23	0.66
1:A:283:PHE:HA	1:A:318:ILE:CD1	2.26	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:232:ASN:H	1:A:232:ASN:ND2	1.94	0.65
1:B:275:ARG:O	1:B:287:PHE:HB2	1.96	0.65
1:C:30:PRO:HA	1:D:51:ARG:HH21	1.62	0.65
1:D:59:GLU:O	1:D:63:GLU:HG3	1.96	0.65
1:D:145:PRO:O	1:D:148:ASN:HA	1.96	0.65
1:A:88:ILE:HD12	1:A:214:VAL:CG2	2.27	0.65
1:A:130:ARG:HB3	1:A:130:ARG:HH11	1.61	0.65
1:B:295:ARG:HB3	1:B:334:PHE:HZ	1.61	0.65
1:B:321:ARG:HD3	3:B:2033:HOH:O	1.95	0.65
1:A:24:LEU:HD22	1:A:317:THR:O	1.96	0.65
1:C:262:ARG:O	1:C:265:MSE:HG2	1.97	0.65
1:B:255:THR:HG21	3:B:2025:HOH:O	1.96	0.65
1:C:65:ILE:HD12	1:C:213:TYR:CD1	2.31	0.65
1:C:71:THR:HB	1:C:73:PHE:CE1	2.31	0.65
1:C:239:MSE:HE2	1:C:242:LYS:HE3	1.76	0.65
1:A:7:ILE:HG23	1:A:7:ILE:O	1.98	0.64
1:B:179:PHE:CE2	1:B:282:ASN:HB3	2.32	0.64
1:B:22:THR:HG21	1:B:305:VAL:HG22	1.78	0.64
1:C:81:VAL:HG23	1:C:212:GLY:O	1.96	0.64
1:C:23:TYR:OH	1:C:26:LEU:HD23	1.97	0.64
1:C:259:VAL:HG23	1:C:260:GLU:H	1.61	0.64
1:C:275:ARG:HH11	1:C:275:ARG:CB	2.11	0.64
1:B:21:LYS:HA	1:B:304:ASN:HB3	1.80	0.63
1:A:56:SER:OG	1:A:232:ASN:ND2	2.31	0.63
1:B:57:PRO:HG3	1:B:81:VAL:HG12	1.79	0.63
1:C:34:PRO:CG	1:C:37:LEU:HD12	2.29	0.63
1:D:190:LYS:HE2	1:D:191:TYR:CE1	2.33	0.63
1:C:92:MSE:HE3	1:C:220:PHE:CZ	2.33	0.63
1:C:145:PRO:O	1:C:148:ASN:CA	2.46	0.63
1:C:148:ASN:HB2	1:C:155:PHE:HE1	1.64	0.63
1:D:201:SER:OG	1:D:207:ALA:HA	1.97	0.63
1:C:144:ILE:N	1:C:144:ILE:HD13	2.13	0.63
1:C:248:ARG:HD3	1:C:248:ARG:N	2.14	0.63
1:D:52:ILE:HG22	1:D:53:TYR:N	2.14	0.63
1:A:190:LYS:H	1:A:190:LYS:CD	2.10	0.63
1:C:228:ARG:HD2	1:C:232:ASN:HD22	1.64	0.63
1:B:308:ARG:HE	1:B:308:ARG:HA	1.64	0.63
1:D:321:ARG:HG3	1:D:321:ARG:HH11	1.64	0.62
1:C:56:SER:O	1:C:58:ASP:N	2.31	0.62
1:C:103:PRO:HD3	1:C:122:GLU:HB2	1.81	0.62
1:B:73:PHE:HE2	1:B:188:LEU:HB2	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:91:VAL:HG12	1:C:95:MSE:CE	2.29	0.62
1:A:145:PRO:O	1:A:148:ASN:HA	1.99	0.62
1:B:296:LEU:HD12	1:B:296:LEU:C	2.24	0.62
1:A:316:ILE:CG2	1:A:327:ILE:HD13	2.30	0.62
1:B:60:GLU:OE1	1:B:242:LYS:HD2	2.00	0.62
1:C:34:PRO:HG2	1:C:37:LEU:HD12	1.82	0.62
1:C:137:GLY:O	1:C:168:ALA:HB2	2.00	0.62
1:D:225:ASN:HD22	1:D:228:ARG:HH11	1.48	0.61
1:A:95:MSE:HE1	1:A:220:PHE:CE1	2.34	0.61
1:C:144:ILE:HD13	1:C:144:ILE:H	1.64	0.61
1:C:198:ARG:HB2	1:C:213:TYR:CE2	2.35	0.61
1:C:238:GLN:O	1:C:241:ALA:HB3	2.00	0.61
1:B:143:PHE:C	1:B:144:ILE:HD13	2.26	0.61
1:A:190:LYS:HD2	1:A:190:LYS:N	2.11	0.61
1:B:332:GLU:C	1:B:334:PHE:H	2.09	0.61
1:D:46:ASN:HA	3:D:2005:HOH:O	2.01	0.61
1:B:287:PHE:O	1:B:288:MSE:HB3	2.00	0.61
1:B:101:PHE:N	1:B:101:PHE:CD1	2.68	0.61
1:C:187:PHE:C	1:C:189:LYS:H	2.07	0.61
1:C:125:LEU:HD23	1:C:132:PRO:CD	2.31	0.60
1:D:100:VAL:HG13	1:D:142:VAL:HB	1.83	0.60
1:C:138:GLU:CD	1:C:139:GLY:N	2.59	0.60
1:D:311:ARG:HG2	1:D:311:ARG:HH21	1.65	0.60
1:C:183:SER:HB2	1:C:185:VAL:HG23	1.81	0.60
1:C:262:ARG:HB2	1:C:318:ILE:HG12	1.83	0.60
1:D:142:VAL:HG11	1:D:163:ILE:HG21	1.83	0.60
1:A:30:PRO:HG2	1:A:31:PHE:CD1	2.37	0.60
1:A:134:VAL:C	1:A:136:VAL:H	2.10	0.60
1:B:232:ASN:ND2	1:B:233:VAL:HG22	2.17	0.60
1:C:85:ALA:HA	1:C:88:ILE:HD13	1.84	0.60
1:C:92:MSE:HA	1:C:95:MSE:HE3	1.83	0.60
1:C:307:VAL:HA	3:C:2018:HOH:O	2.02	0.60
1:A:94:LEU:CD2	1:A:116:VAL:HG13	2.32	0.60
1:B:108:CYS:HB3	1:B:112:PHE:CE2	2.36	0.60
1:A:145:PRO:HA	1:A:173:ASP:HB3	1.84	0.59
1:A:283:PHE:HA	1:A:318:ILE:HD13	1.84	0.59
1:C:264:ARG:HH22	1:C:321:ARG:NH1	1.98	0.59
1:C:26:LEU:C	1:C:28:GLU:H	2.11	0.59
1:C:254:ARG:O	1:C:258:ILE:HG12	2.00	0.59
1:A:64:LYS:HB3	1:A:245:LEU:HD12	1.83	0.59
1:A:208:ALA:HB3	1:B:50:LEU:HA	1.82	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:324:ASN:O	1:C:327:ILE:HG12	2.03	0.59
1:B:66:LEU:HD11	1:B:79:VAL:HG21	1.85	0.59
1:C:130:ARG:HA	1:C:130:ARG:CZ	2.33	0.59
1:C:129:LEU:O	1:C:130:ARG:CZ	2.51	0.59
1:D:94:LEU:HD21	1:D:116:VAL:HB	1.84	0.59
1:B:142:VAL:HG11	1:B:163:ILE:CG2	2.33	0.58
1:D:288:MSE:HE2	1:D:293:LYS:CA	2.23	0.58
1:C:87:GLU:O	1:C:91:VAL:HG23	2.03	0.58
1:C:228:ARG:HD2	1:C:232:ASN:ND2	2.19	0.58
1:D:46:ASN:HD22	1:D:49:ALA:CB	2.16	0.58
1:A:202:LYS:HE3	1:B:53:TYR:OH	2.04	0.58
1:A:261:GLU:OE2	1:A:264:ARG:NH1	2.36	0.58
1:C:208:ALA:HB3	1:D:50:LEU:HA	1.86	0.58
1:D:164:LEU:HD22	1:D:170:VAL:HG21	1.84	0.58
1:D:248:ARG:O	1:D:252:GLU:HG3	2.03	0.58
1:B:162:ARG:HG2	1:B:162:ARG:NH1	2.15	0.58
1:A:10:ARG:H	1:A:10:ARG:CD	2.14	0.58
1:C:127:LYS:O	1:C:129:LEU:HD12	2.02	0.58
1:D:185:VAL:HG22	1:D:196:VAL:HG21	1.86	0.58
1:B:71:THR:OG1	1:B:74:LEU:HG	2.04	0.58
1:A:86:ASP:OD1	2:A:1202:PLP:H5A2	2.03	0.58
1:C:270:ARG:HD2	1:C:270:ARG:C	2.28	0.58
1:D:30:PRO:HB3	1:D:319:GLY:HA2	1.86	0.58
1:D:272:MSE:HE3	1:D:274:TYR:CE1	2.39	0.57
1:A:145:PRO:O	1:A:145:PRO:HG2	2.03	0.57
1:D:31:PHE:HB3	1:D:254:ARG:HH21	1.68	0.57
1:D:91:VAL:HG21	1:D:224:TYR:CE1	2.39	0.57
1:B:34:PRO:HG2	1:B:37:LEU:HD12	1.86	0.57
1:B:92:MSE:HE3	1:B:220:PHE:CZ	2.38	0.57
1:B:160:ILE:HD12	1:B:160:ILE:H	1.70	0.57
1:B:232:ASN:HD22	1:B:233:VAL:HG22	1.69	0.57
1:D:172:LEU:CD2	1:D:184:TYR:HB2	2.34	0.57
1:D:261:GLU:HA	1:D:261:GLU:OE1	2.03	0.57
1:D:190:LYS:HG3	1:D:191:TYR:HD1	1.68	0.57
1:A:22:THR:HG22	1:A:304:ASN:O	2.03	0.57
1:B:22:THR:CG2	1:B:305:VAL:HG22	2.34	0.57
1:C:213:TYR:N	1:C:213:TYR:CD2	2.73	0.57
1:B:87:GLU:O	1:B:91:VAL:HG13	2.05	0.57
1:D:100:VAL:HG23	1:D:121:LEU:O	2.05	0.57
1:B:91:VAL:HG21	1:B:224:TYR:CE1	2.40	0.57
1:C:234:SER:O	1:C:238:GLN:HG3	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:10:ARG:HD2	1:D:10:ARG:N	2.19	0.57
1:D:95:MSE:HE1	1:D:224:TYR:HD1	1.69	0.57
1:A:37:LEU:HD21	1:A:247:HIS:CD2	2.40	0.56
1:A:290:LYS:HG2	3:A:2045:HOH:O	2.05	0.56
1:C:57:PRO:HD2	1:D:14:TYR:OH	2.06	0.56
1:D:266:LYS:O	1:D:270:ARG:HG3	2.05	0.56
1:A:30:PRO:HB3	1:A:319:GLY:HA2	1.88	0.56
1:B:62:ILE:O	1:B:66:LEU:HD13	2.05	0.56
1:C:211:VAL:HG11	1:C:241:ALA:HB2	1.87	0.56
1:C:263:GLU:OE1	1:C:266:LYS:HD3	2.04	0.56
1:D:229:LEU:O	1:D:232:ASN:OD1	2.24	0.56
1:B:85:ALA:O	1:B:88:ILE:HB	2.06	0.56
1:D:12:TYR:HE1	1:D:114:LYS:HZ3	1.49	0.56
1:A:269:LEU:O	1:A:274:TYR:HB2	2.06	0.56
1:B:265:MSE:HA	1:B:268:ALA:HB3	1.88	0.56
1:D:197:ILE:N	1:D:197:ILE:HD12	2.20	0.56
1:D:61:LEU:HD22	1:D:238:GLN:HG2	1.87	0.55
1:D:316:ILE:HG21	1:D:327:ILE:HD13	1.87	0.55
1:D:172:LEU:HB3	1:D:196:VAL:HG12	1.87	0.55
1:C:180:HIS:CD2	1:C:182:GLU:H	2.24	0.55
1:C:223:ALA:O	1:C:227:VAL:HG23	2.06	0.55
1:C:250:ILE:O	1:C:254:ARG:HG3	2.07	0.55
1:B:259:VAL:HG23	1:B:260:GLU:N	2.21	0.55
1:C:148:ASN:HD22	1:C:151:THR:HG22	1.72	0.55
1:C:210:ARG:HA	1:C:210:ARG:NH1	2.20	0.55
1:C:325:ASP:HB3	1:C:329:ARG:HE	1.71	0.55
1:B:152:GLY:HA3	1:B:279:SER:HB2	1.88	0.55
1:D:88:ILE:HD13	1:D:214:VAL:CG2	2.33	0.55
1:A:22:THR:HG21	1:A:305:VAL:HG22	1.89	0.55
1:A:265:MSE:HG3	1:A:328:LEU:HD21	1.87	0.55
1:B:99:SER:O	1:B:120:PHE:HA	2.06	0.55
1:C:134:VAL:C	1:C:136:VAL:N	2.65	0.55
1:A:24:LEU:CD1	1:A:327:ILE:HD11	2.25	0.55
1:B:23:TYR:C	1:B:24:LEU:HD22	2.32	0.55
1:C:65:ILE:HG13	1:C:66:LEU:N	2.22	0.55
1:C:148:ASN:O	1:C:152:GLY:HA2	2.05	0.55
1:A:56:SER:O	1:A:58:ASP:N	2.40	0.55
1:B:89:ILE:HD13	1:B:109:TYR:CE1	2.38	0.55
1:B:327:ILE:HD13	3:B:2034:HOH:O	2.07	0.55
1:C:239:MSE:HE3	1:C:242:LYS:HE3	1.88	0.55
1:B:58:ASP:HB3	1:B:61:LEU:H	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:121:LEU:CD1	1:B:123:VAL:HG23	2.37	0.55
1:C:249:GLU:HG3	1:C:250:ILE:H	1.71	0.55
1:D:81:VAL:HG22	1:D:82:GLY:N	2.21	0.55
1:D:222:ASP:O	1:D:226:ARG:HG2	2.07	0.55
1:B:137:GLY:O	1:B:138:GLU:C	2.49	0.54
1:B:179:PHE:CZ	1:B:282:ASN:HB3	2.43	0.54
1:D:311:ARG:HG2	1:D:311:ARG:NH2	2.22	0.54
1:A:44:ARG:CZ	1:A:243:VAL:HG12	2.37	0.54
1:A:272:MSE:HB3	1:A:274:TYR:CD1	2.43	0.54
1:C:185:VAL:HG22	1:C:196:VAL:HG21	1.90	0.54
1:C:265:MSE:O	1:C:269:LEU:HG	2.07	0.54
1:B:261:GLU:HG2	1:B:324:ASN:ND2	2.22	0.54
1:C:320:LYS:O	1:C:323:GLU:HB2	2.08	0.54
1:A:131:ILE:HG21	1:A:163:ILE:HD11	1.89	0.54
1:B:157:ARG:HA	1:B:160:ILE:HD13	1.90	0.54
1:B:252:GLU:HG2	3:B:2024:HOH:O	2.07	0.54
1:B:296:LEU:HB3	1:B:334:PHE:CZ	2.42	0.54
1:D:99:SER:O	1:D:120:PHE:HA	2.07	0.54
1:B:157:ARG:HG3	1:B:158:GLU:OE1	2.07	0.54
1:B:272:MSE:SE	1:B:332:GLU:HB2	2.58	0.54
1:C:45:LEU:HD12	1:C:46:ASN:N	2.23	0.54
1:A:22:THR:HG23	1:A:305:VAL:HA	1.89	0.54
1:C:95:MSE:HE1	1:C:224:TYR:HD2	1.73	0.54
1:A:332:GLU:C	1:A:334:PHE:H	2.16	0.54
1:B:69:LEU:HD13	1:B:74:LEU:HD21	1.88	0.54
1:D:269:LEU:HD23	1:D:272:MSE:CE	2.38	0.54
1:C:134:VAL:O	1:C:136:VAL:N	2.41	0.54
1:D:141:VAL:HG13	1:D:141:VAL:O	2.08	0.54
1:D:196:VAL:CG2	1:D:215:VAL:HB	2.38	0.54
1:C:24:LEU:HB3	1:C:317:THR:H	1.73	0.53
1:C:52:ILE:HD12	1:D:19:ARG:NH2	2.23	0.53
1:C:211:VAL:CG2	1:C:237:SER:HB3	2.38	0.53
1:C:289:GLU:OE1	1:C:289:GLU:N	2.40	0.53
1:A:69:LEU:HD21	1:A:215:VAL:CG2	2.38	0.53
1:A:209:GLN:HE22	1:B:236:VAL:N	1.96	0.53
1:A:88:ILE:HD13	1:A:224:TYR:OH	2.08	0.53
1:B:276:ILE:HG22	1:B:286:VAL:HA	1.90	0.53
1:B:296:LEU:CD1	1:B:297:LEU:HD12	2.38	0.53
1:C:129:LEU:HD12	1:C:129:LEU:N	2.22	0.53
1:D:46:ASN:ND2	1:D:48:ASP:C	2.66	0.53
1:D:91:VAL:HG21	1:D:224:TYR:HE1	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:45:LEU:CD1	1:C:235:TYR:HE2	2.20	0.53
1:C:264:ARG:HH22	1:C:321:ARG:HH12	1.57	0.53
1:C:325:ASP:O	1:C:329:ARG:HB3	2.09	0.53
1:D:27:ASN:HA	1:D:317:THR:CG2	2.39	0.53
1:D:48:ASP:OD2	1:D:51:ARG:HD3	2.08	0.53
1:A:106:TYR:CE2	1:A:108:CYS:HB2	2.44	0.53
1:A:148:ASN:O	1:A:152:GLY:HA2	2.08	0.53
1:A:259:VAL:HG23	1:A:260:GLU:H	1.73	0.53
1:B:160:ILE:HD12	1:B:160:ILE:N	2.23	0.53
1:B:262:ARG:O	1:B:266:LYS:HG3	2.08	0.53
1:C:209:GLN:OE1	1:D:234:SER:HB2	2.08	0.53
1:D:100:VAL:CG2	1:D:121:LEU:HB3	2.37	0.53
1:C:225:ASN:HB3	1:D:14:TYR:CG	2.43	0.53
1:C:232:ASN:OD1	1:C:233:VAL:N	2.42	0.53
1:D:152:GLY:HA3	1:D:279:SER:OG	2.08	0.53
1:A:142:VAL:HG11	1:A:163:ILE:HG21	1.89	0.53
1:B:183:SER:OG	1:B:185:VAL:HG23	2.09	0.53
1:B:287:PHE:HD2	1:B:312:GLU:O	1.91	0.53
1:C:144:ILE:HG12	1:C:144:ILE:O	2.09	0.53
1:A:42:PHE:CD2	1:B:42:PHE:HB2	2.43	0.53
1:B:56:SER:OG	1:B:232:ASN:ND2	2.41	0.53
1:B:296:LEU:O	1:B:300:LEU:HG	2.08	0.53
1:D:121:LEU:HD22	1:D:123:VAL:HG23	1.90	0.53
1:A:53:TYR:OH	1:B:202:LYS:HE3	2.09	0.53
1:B:174:GLU:OE2	1:B:183:SER:HB2	2.09	0.53
1:D:56:SER:HB2	1:D:230:PRO:O	2.09	0.52
1:A:48:ASP:CG	1:A:51:ARG:HD3	2.32	0.52
1:C:38:VAL:O	1:C:41:VAL:HB	2.08	0.52
1:C:316:ILE:HD12	1:C:316:ILE:N	2.23	0.52
1:C:134:VAL:O	1:C:136:VAL:HG13	2.09	0.52
1:B:75:SER:HB3	1:D:21:LYS:HE2	1.90	0.52
1:C:308:ARG:HG3	1:C:309:SER:H	1.74	0.52
1:C:329:ARG:C	1:C:331:LEU:H	2.15	0.52
1:C:56:SER:HB2	1:C:57:PRO:HD3	1.90	0.52
1:C:130:ARG:NH2	1:C:155:PHE:CD2	2.76	0.52
1:C:151:THR:CG2	1:C:153:HIS:ND1	2.72	0.52
1:C:265:MSE:HE1	1:C:327:ILE:CD1	2.39	0.52
1:C:291:GLU:O	1:C:295:ARG:HB2	2.09	0.52
1:D:79:VAL:HG12	1:D:80:SER:N	2.24	0.52
1:D:130:ARG:HH21	1:D:130:ARG:HG3	1.75	0.52
1:A:136:VAL:HG12	1:A:168:ALA:HB2	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:93:MSE:HE1	1:D:112:PHE:C	2.35	0.52
1:B:173:ASP:OD1	1:B:175:ALA:HB2	2.09	0.52
1:C:61:LEU:O	1:C:65:ILE:HG23	2.10	0.52
1:C:82:GLY:O	1:C:84:GLY:N	2.43	0.52
1:C:173:ASP:HA	1:C:197:ILE:HB	1.91	0.52
1:D:33:PHE:O	1:D:34:PRO:C	2.51	0.52
1:D:233:VAL:CG1	1:D:238:GLN:HG3	2.40	0.52
1:C:160:ILE:O	1:C:163:ILE:HD12	2.10	0.52
1:B:85:ALA:HA	1:B:88:ILE:HD12	1.92	0.52
1:B:91:VAL:HG21	1:B:224:TYR:HE1	1.75	0.52
1:C:197:ILE:HD13	1:C:214:VAL:HG23	1.91	0.51
1:C:264:ARG:NH2	1:C:321:ARG:NH1	2.58	0.51
1:B:61:LEU:O	1:B:65:ILE:HG12	2.10	0.51
1:C:52:ILE:HD12	1:D:19:ARG:HH22	1.75	0.51
1:D:321:ARG:O	1:D:322:GLU:C	2.53	0.51
1:B:263:GLU:OE2	1:B:266:LYS:HE2	2.09	0.51
1:C:186:ASP:O	1:C:189:LYS:HG3	2.11	0.51
1:D:160:ILE:HG22	1:D:164:LEU:HD23	1.91	0.51
1:A:198:ARG:HB2	1:A:213:TYR:CE1	2.45	0.51
1:A:94:LEU:HD21	1:A:116:VAL:HG13	1.91	0.51
1:A:333:VAL:HG23	1:A:334:PHE:CE1	2.45	0.51
1:D:12:TYR:CE1	1:D:114:LYS:NZ	2.76	0.51
1:D:316:ILE:CG2	1:D:327:ILE:HD13	2.40	0.51
1:B:164:LEU:HD23	1:B:170:VAL:CG2	2.41	0.51
1:D:87:GLU:OE1	1:D:232:ASN:ND2	2.43	0.51
1:B:124:PRO:O	1:B:132:PRO:HG3	2.11	0.51
1:A:197:ILE:CD1	1:A:214:VAL:HG13	2.37	0.51
1:C:150:PRO:HB3	3:C:2017:HOH:O	2.05	0.51
1:A:193:ASN:H	1:A:193:ASN:ND2	2.05	0.51
1:B:102:PHE:HE2	1:B:144:ILE:HD12	1.76	0.51
1:D:46:ASN:HD21	1:D:48:ASP:C	2.18	0.51
1:A:265:MSE:HE1	1:A:318:ILE:HG13	1.93	0.50
1:B:91:VAL:CG2	1:B:224:TYR:HE1	2.24	0.50
1:C:71:THR:HB	1:C:73:PHE:HE1	1.74	0.50
1:C:179:PHE:HE1	1:C:258:ILE:HG13	1.76	0.50
1:D:57:PRO:HB3	1:D:62:ILE:HD11	1.92	0.50
1:C:213:TYR:N	1:C:213:TYR:HD2	2.09	0.50
1:C:283:PHE:CA	1:C:318:ILE:HD13	2.41	0.50
1:D:34:PRO:O	1:D:38:VAL:HG23	2.11	0.50
1:D:34:PRO:HB2	1:D:37:LEU:HG	1.93	0.50
1:A:19:ARG:HH22	1:A:28:GLU:CD	2.18	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:21:LYS:O	1:B:21:LYS:HG3	2.11	0.50
1:C:320:LYS:HB2	1:C:323:GLU:HG2	1.94	0.50
1:A:96:PHE:CD2	1:A:141:VAL:HB	2.45	0.50
1:C:163:ILE:C	1:C:166:THR:HG22	2.36	0.50
1:A:136:VAL:HG12	1:A:137:GLY:N	2.27	0.50
1:B:44:ARG:HG2	1:B:44:ARG:NH2	2.27	0.50
1:B:99:SER:HA	1:B:141:VAL:HG13	1.94	0.50
1:D:77:ASN:O	1:D:218:GLU:HA	2.11	0.50
1:D:163:ILE:O	1:D:166:THR:HB	2.11	0.50
1:A:259:VAL:CG2	1:A:260:GLU:N	2.74	0.50
1:C:98:ARG:O	1:C:140:ASP:HB2	2.12	0.50
1:D:88:ILE:HG21	1:D:214:VAL:HG22	1.93	0.50
1:D:145:PRO:HA	1:D:173:ASP:HB3	1.93	0.50
1:A:71:THR:HB	3:A:2011:HOH:O	2.12	0.50
1:A:224:TYR:CZ	1:A:228:ARG:HD3	2.46	0.50
1:D:31:PHE:CB	1:D:254:ARG:HE	2.25	0.50
1:A:106:TYR:HB3	1:A:109:TYR:CE2	2.47	0.49
1:A:272:MSE:HE2	1:A:274:TYR:CE1	2.46	0.49
1:C:73:PHE:CD1	1:C:73:PHE:N	2.74	0.49
1:D:268:ALA:O	1:D:271:GLU:HB3	2.11	0.49
1:C:286:VAL:CG1	1:C:288:MSE:HE3	2.42	0.49
1:D:110:ARG:NH2	1:D:122:GLU:OE1	2.34	0.49
1:D:160:ILE:O	1:D:164:LEU:HD23	2.12	0.49
1:A:45:LEU:HD12	1:A:235:TYR:HE2	1.77	0.49
1:A:91:VAL:CG2	1:A:224:TYR:CE1	2.89	0.49
1:C:211:VAL:HG22	1:C:237:SER:HB3	1.94	0.49
1:C:265:MSE:HE1	1:C:327:ILE:HD11	1.94	0.49
1:D:142:VAL:HG22	1:D:144:ILE:HG13	1.94	0.49
1:D:218:GLU:H	1:D:218:GLU:CD	2.19	0.49
1:A:330:GLU:OE1	1:A:330:GLU:HA	2.11	0.49
1:C:125:LEU:HA	1:C:132:PRO:HD3	1.92	0.49
1:C:144:ILE:HD11	1:C:170:VAL:CG1	2.42	0.49
1:C:172:LEU:HD21	1:C:196:VAL:HG22	1.93	0.49
1:C:187:PHE:C	1:C:189:LYS:N	2.70	0.49
1:D:31:PHE:CB	1:D:254:ARG:HH21	2.25	0.49
1:A:229:LEU:HD21	1:B:90:TYR:HB2	1.94	0.49
1:B:150:PRO:HG3	1:B:310:PHE:CD2	2.47	0.49
1:B:261:GLU:O	1:B:265:MSE:HG2	2.12	0.49
1:C:125:LEU:HD22	1:C:130:ARG:C	2.37	0.49
1:A:326:MSE:HE3	1:A:327:ILE:N	2.27	0.49
1:B:311:ARG:O	1:B:312:GLU:HB2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:145:PRO:O	1:C:145:PRO:HG2	2.11	0.49
1:C:198:ARG:CB	1:C:213:TYR:CE2	2.96	0.49
1:C:324:ASN:O	1:C:328:LEU:HG	2.12	0.49
1:D:94:LEU:CD2	1:D:116:VAL:HB	2.42	0.49
1:D:156:GLU:O	1:D:159:GLU:HB2	2.13	0.49
1:C:24:LEU:HD12	1:C:327:ILE:HG21	1.95	0.49
1:A:308:ARG:HG3	1:A:310:PHE:CE2	2.47	0.49
1:B:131:ILE:HD12	1:B:159:GLU:HB3	1.95	0.49
1:B:222:ASP:O	1:B:226:ARG:HG3	2.12	0.49
1:C:106:TYR:CE2	1:C:108:CYS:HB2	2.48	0.49
1:C:165:LYS:C	1:C:167:GLY:H	2.21	0.49
1:C:259:VAL:CG2	1:C:260:GLU:H	2.26	0.49
1:D:96:PHE:CD2	1:D:141:VAL:HB	2.48	0.49
1:D:158:GLU:HG3	1:D:159:GLU:N	2.27	0.49
1:C:184:TYR:C	1:C:186:ASP:H	2.19	0.49
1:C:303:LYS:O	1:C:304:ASN:HB2	2.12	0.49
1:D:10:ARG:CD	1:D:10:ARG:H	2.24	0.49
1:A:136:VAL:HG12	1:A:168:ALA:CB	2.42	0.48
1:B:133:GLU:OE1	1:B:133:GLU:HA	2.13	0.48
1:D:66:LEU:HD21	1:D:75:SER:HA	1.94	0.48
1:A:10:ARG:HD2	1:A:10:ARG:N	2.22	0.48
1:A:88:ILE:HG21	1:A:197:ILE:CD1	2.39	0.48
1:B:152:GLY:C	1:B:279:SER:HA	2.39	0.48
1:B:303:LYS:O	1:B:305:VAL:HG23	2.13	0.48
1:C:34:PRO:HG3	1:C:37:LEU:HD12	1.94	0.48
1:C:129:LEU:O	1:C:130:ARG:NH1	2.47	0.48
1:C:228:ARG:NE	1:C:232:ASN:ND2	2.61	0.48
1:C:277:THR:O	1:C:279:SER:N	2.46	0.48
1:D:53:TYR:HB3	1:D:231:PHE:CZ	2.48	0.48
1:A:262:ARG:HD3	1:A:281:GLY:O	2.13	0.48
1:B:73:PHE:CE2	1:B:188:LEU:HB2	2.48	0.48
1:C:201:SER:OG	1:C:207:ALA:HA	2.12	0.48
1:D:259:VAL:HG23	1:D:260:GLU:N	2.28	0.48
1:A:296:LEU:HD21	1:A:331:LEU:HD23	1.94	0.48
1:B:34:PRO:CG	1:B:37:LEU:HD12	2.43	0.48
1:B:135:ASN:O	1:B:136:VAL:O	2.31	0.48
1:B:145:PRO:O	1:B:148:ASN:CA	2.59	0.48
1:D:46:ASN:ND2	1:D:49:ALA:HB2	2.26	0.48
1:D:199:THR:OG1	1:D:201:SER:HB2	2.14	0.48
1:D:236:VAL:O	1:D:239:MSE:HB2	2.14	0.48
1:A:174:GLU:OE1	1:A:183:SER:HB2	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:179:PHE:HE1	1:A:258:ILE:HG13	1.78	0.48
1:A:272:MSE:HE3	1:A:331:LEU:C	2.37	0.48
1:B:56:SER:OG	1:B:233:VAL:HG22	2.13	0.48
1:C:121:LEU:HD23	1:C:122:GLU:N	2.28	0.48
1:A:22:THR:HG23	1:A:22:THR:O	2.12	0.48
1:C:56:SER:CB	1:C:57:PRO:HD3	2.43	0.48
1:B:56:SER:CB	1:B:57:PRO:CD	2.88	0.48
1:A:209:GLN:O	1:A:211:VAL:HG23	2.14	0.48
1:A:230:PRO:HD3	1:B:112:PHE:HE1	1.79	0.48
1:C:75:SER:H	1:C:78:ASN:CG	2.22	0.48
1:C:115:ALA:HB1	1:D:227:VAL:HA	1.95	0.48
1:C:225:ASN:HA	1:C:228:ARG:NH1	2.29	0.48
1:D:96:PHE:CG	1:D:141:VAL:HB	2.49	0.48
1:A:179:PHE:CZ	1:A:282:ASN:HB3	2.49	0.47
1:B:44:ARG:HG2	1:B:44:ARG:HH21	1.78	0.47
1:C:58:ASP:O	1:C:59:GLU:C	2.56	0.47
1:A:198:ARG:CB	1:A:213:TYR:CZ	2.97	0.47
1:A:242:LYS:O	1:A:243:VAL:C	2.54	0.47
1:C:92:MSE:HA	1:C:95:MSE:HG2	1.96	0.47
1:A:33:PHE:O	1:A:34:PRO:C	2.55	0.47
1:A:92:MSE:HA	1:A:95:MSE:HE2	1.96	0.47
1:B:121:LEU:HD13	1:B:123:VAL:HG23	1.96	0.47
1:B:265:MSE:SE	1:B:318:ILE:HD13	2.64	0.47
1:C:94:LEU:HD21	1:C:116:VAL:HB	1.95	0.47
1:C:298:GLU:OE1	1:C:301:ARG:NH2	2.47	0.47
1:D:145:PRO:HG2	1:D:148:ASN:OD1	2.14	0.47
1:D:261:GLU:OE2	1:D:321:ARG:HG2	2.15	0.47
1:A:144:ILE:O	1:A:172:LEU:HD12	2.13	0.47
1:B:66:LEU:CD1	1:B:79:VAL:HG21	2.43	0.47
1:D:32:PRO:O	1:D:254:ARG:NH2	2.48	0.47
1:B:70:ASP:OD1	1:B:70:ASP:O	2.32	0.47
1:D:52:ILE:CG2	1:D:53:TYR:N	2.76	0.47
1:A:191:TYR:HB3	1:A:193:ASN:ND2	2.30	0.47
1:A:228:ARG:NH1	1:A:229:LEU:O	2.48	0.47
1:A:290:LYS:O	1:A:293:LYS:N	2.43	0.47
1:B:91:VAL:O	1:B:94:LEU:HB2	2.14	0.47
1:A:318:ILE:HD12	1:A:318:ILE:N	2.28	0.47
1:C:142:VAL:HG23	1:C:144:ILE:HD12	1.97	0.47
1:C:303:LYS:HE3	1:C:330:GLU:OE1	2.15	0.47
1:C:324:ASN:OD1	1:C:327:ILE:HD11	2.14	0.47
1:D:150:PRO:HB2	1:D:315:ARG:HG3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:22:THR:CG2	1:A:305:VAL:HA	2.44	0.47
1:A:193:ASN:N	1:A:193:ASN:ND2	2.59	0.47
1:A:207:ALA:O	1:A:210:ARG:HD2	2.15	0.47
1:B:185:VAL:HG22	1:B:196:VAL:HG21	1.96	0.47
1:B:298:GLU:OE2	1:B:301:ARG:NH2	2.48	0.47
1:C:138:GLU:OE2	1:C:139:GLY:N	2.48	0.47
1:C:150:PRO:HG3	3:C:2017:HOH:O	2.15	0.47
1:C:225:ASN:CG	1:C:228:ARG:NH1	2.69	0.47
1:C:26:LEU:O	1:C:28:GLU:N	2.44	0.47
1:C:239:MSE:CE	1:C:242:LYS:CE	2.91	0.47
1:A:22:THR:CG2	1:A:305:VAL:HG22	2.45	0.47
1:A:209:GLN:NE2	1:B:236:VAL:HG23	2.31	0.46
1:A:257:PHE:O	1:A:261:GLU:HB2	2.15	0.46
1:B:79:VAL:HG12	1:B:80:SER:N	2.31	0.46
1:C:81:VAL:HG22	1:C:82:GLY:N	2.30	0.46
1:C:180:HIS:HD2	1:C:182:GLU:H	1.61	0.46
1:A:94:LEU:HD21	1:B:94:LEU:HD21	1.96	0.46
1:A:126:THR:HG22	1:A:127:LYS:N	2.30	0.46
1:A:278:ASP:OD1	1:A:278:ASP:O	2.33	0.46
1:C:83:ASN:ND2	1:C:210:ARG:HB2	2.30	0.46
1:C:184:TYR:C	1:C:186:ASP:N	2.73	0.46
1:C:259:VAL:CG2	1:C:260:GLU:N	2.77	0.46
1:D:155:PHE:HB2	1:D:160:ILE:HD11	1.96	0.46
1:D:289:GLU:O	1:D:290:LYS:C	2.59	0.46
1:B:83:ASN:ND2	1:B:210:ARG:HB2	2.29	0.46
1:C:101:PHE:HB2	1:C:105:THR:HG21	1.97	0.46
1:C:173:ASP:OD1	1:C:173:ASP:O	2.34	0.46
1:C:249:GLU:HG3	1:C:250:ILE:HG13	1.97	0.46
1:C:265:MSE:O	1:C:269:LEU:CG	2.63	0.46
1:D:45:LEU:HD12	1:D:235:TYR:CE2	2.50	0.46
1:D:269:LEU:HD23	1:D:272:MSE:HE2	1.96	0.46
1:A:136:VAL:O	1:A:166:THR:HG21	2.16	0.46
1:A:283:PHE:CA	1:A:318:ILE:HD13	2.46	0.46
1:B:210:ARG:HH12	2:B:1202:PLP:P	2.39	0.46
1:C:210:ARG:HH21	1:D:231:PHE:HB2	1.80	0.46
1:A:261:GLU:HG2	1:A:324:ASN:ND2	2.30	0.46
1:B:80:SER:HB2	1:B:221:ILE:HG23	1.97	0.46
1:B:263:GLU:OE2	1:B:266:LYS:CE	2.64	0.46
1:C:65:ILE:O	1:C:69:LEU:HD13	2.14	0.46
1:C:145:PRO:HG2	1:C:148:ASN:HA	1.98	0.46
1:A:25:ALA:HB1	1:A:308:ARG:NH2	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:236:VAL:HG11	1:B:236:VAL:HG11	1.98	0.46
1:A:265:MSE:HE1	1:A:318:ILE:CD1	2.45	0.46
1:B:86:ASP:OD2	2:B:1202:PLP:H5A2	2.15	0.46
1:D:163:ILE:N	1:D:163:ILE:HD12	2.30	0.46
1:D:297:LEU:HD21	1:D:309:SER:HB2	1.97	0.46
1:C:138:GLU:CD	1:C:138:GLU:C	2.82	0.46
1:C:213:TYR:HD2	1:C:213:TYR:H	1.63	0.46
1:A:121:LEU:HD13	1:A:122:GLU:N	2.31	0.46
1:A:179:PHE:CE2	1:A:282:ASN:HB3	2.51	0.46
1:B:124:PRO:O	1:B:132:PRO:CG	2.64	0.46
1:C:324:ASN:HA	1:C:327:ILE:HG12	1.97	0.46
1:A:88:ILE:HD12	1:A:214:VAL:HG22	1.98	0.46
1:C:29:ASN:HB2	1:C:202:LYS:O	2.15	0.46
1:C:165:LYS:C	1:C:167:GLY:N	2.74	0.46
1:C:201:SER:HB3	1:C:207:ALA:HB2	1.98	0.46
1:D:329:ARG:HG2	1:D:329:ARG:HH21	1.80	0.46
1:C:151:THR:HG21	1:C:153:HIS:ND1	2.31	0.45
1:C:258:ILE:O	1:C:259:VAL:C	2.58	0.45
1:D:56:SER:CB	1:D:57:PRO:CD	2.84	0.45
1:A:110:ARG:O	1:A:113:ALA:HB3	2.16	0.45
1:D:99:SER:HA	1:D:141:VAL:CG1	2.47	0.45
1:C:52:ILE:CD1	1:D:19:ARG:NH2	2.78	0.45
1:C:130:ARG:HH22	1:C:153:HIS:HE2	1.64	0.45
1:C:300:LEU:HA	1:C:303:LYS:HD2	1.97	0.45
1:D:174:GLU:OE1	1:D:183:SER:HA	2.17	0.45
1:A:190:LYS:CD	1:A:190:LYS:N	2.76	0.45
1:B:150:PRO:CB	1:B:310:PHE:CE2	3.00	0.45
1:C:96:PHE:CD2	1:C:141:VAL:HB	2.51	0.45
1:C:210:ARG:HD2	1:C:210:ARG:N	2.31	0.45
1:D:12:TYR:HE1	1:D:114:LYS:NZ	2.10	0.45
1:A:27:ASN:HA	1:A:317:THR:CG2	2.47	0.45
1:C:52:ILE:CD1	1:D:19:ARG:HH22	2.29	0.45
1:C:81:VAL:CG2	1:C:82:GLY:N	2.79	0.45
1:C:106:TYR:HB3	1:C:109:TYR:CD2	2.51	0.45
1:C:228:ARG:CD	1:C:232:ASN:ND2	2.80	0.45
1:D:62:ILE:O	1:D:66:LEU:HB2	2.16	0.45
1:A:178:GLU:O	1:A:255:THR:HG21	2.17	0.45
1:B:154:VAL:HG11	1:B:180:HIS:CD2	2.51	0.45
1:B:224:TYR:CE2	1:B:228:ARG:HD3	2.51	0.45
1:B:288:MSE:HE1	1:B:296:LEU:HD23	1.99	0.45
1:C:145:PRO:HA	1:C:173:ASP:HB3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:264:ARG:NH2	1:C:321:ARG:HH12	2.14	0.45
1:D:41:VAL:HG13	1:D:243:VAL:HG21	1.97	0.45
1:B:332:GLU:C	1:B:334:PHE:N	2.73	0.45
1:C:233:VAL:HG23	1:C:233:VAL:O	2.16	0.45
1:D:92:MSE:CE	1:D:171:ALA:HB2	2.47	0.45
1:A:44:ARG:NH2	3:A:2008:HOH:O	2.50	0.45
1:B:61:LEU:O	1:B:61:LEU:HD23	2.17	0.45
1:B:319:GLY:O	1:B:324:ASN:ND2	2.49	0.45
1:C:183:SER:CB	1:C:185:VAL:HG23	2.47	0.45
1:C:316:ILE:HG21	1:C:327:ILE:HG21	1.99	0.45
1:C:144:ILE:N	1:C:144:ILE:CD1	2.80	0.45
1:C:329:ARG:O	1:C:331:LEU:N	2.43	0.45
1:D:200:PHE:O	1:D:204:PHE:HB2	2.17	0.45
1:A:27:ASN:O	1:A:202:LYS:HD2	2.17	0.44
1:B:143:PHE:O	1:B:144:ILE:HD13	2.17	0.44
1:B:288:MSE:HE2	1:B:293:LYS:HA	2.00	0.44
1:B:320:LYS:O	1:B:323:GLU:N	2.48	0.44
1:C:284:VAL:CG2	1:C:316:ILE:HB	2.46	0.44
1:A:191:TYR:HB3	1:A:193:ASN:HD21	1.83	0.44
1:B:24:LEU:HD22	1:B:24:LEU:N	2.32	0.44
1:B:71:THR:HB	1:B:73:PHE:CE1	2.52	0.44
1:C:151:THR:HG23	1:C:153:HIS:ND1	2.32	0.44
1:C:185:VAL:HG12	1:C:185:VAL:O	2.17	0.44
1:A:270:ARG:NE	1:A:276:ILE:HD11	2.32	0.44
1:A:272:MSE:CE	1:A:331:LEU:CB	2.95	0.44
1:D:326:MSE:HE2	1:D:327:ILE:HG13	1.98	0.44
1:A:85:ALA:O	1:A:89:ILE:HG12	2.17	0.44
1:B:259:VAL:CG2	1:B:260:GLU:N	2.81	0.44
1:C:177:TYR:CD2	1:C:183:SER:HB3	2.52	0.44
1:C:265:MSE:HG3	1:C:284:VAL:HG11	1.99	0.44
1:C:266:LYS:NZ	1:C:278:ASP:HA	2.32	0.44
1:D:26:LEU:HD21	1:D:308:ARG:NH2	2.32	0.44
1:C:150:PRO:CG	3:C:2017:HOH:O	2.63	0.44
1:C:151:THR:HG23	1:C:153:HIS:H	1.83	0.44
1:C:163:ILE:HD12	1:C:163:ILE:C	2.42	0.44
1:C:286:VAL:HG12	1:C:288:MSE:HE3	1.99	0.44
1:B:66:LEU:HD21	1:B:75:SER:C	2.42	0.44
1:C:283:PHE:CD1	1:C:283:PHE:N	2.86	0.44
1:C:318:ILE:CD1	1:C:318:ILE:N	2.80	0.44
1:D:130:ARG:HG3	1:D:130:ARG:NH2	2.33	0.44
1:D:239:MSE:HA	1:D:239:MSE:CE	2.43	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:276:ILE:HB	1:D:285:PHE:O	2.16	0.44
1:B:129:LEU:HB3	1:B:153:HIS:CE1	2.52	0.44
1:B:160:ILE:O	1:B:164:LEU:HG	2.18	0.44
1:B:172:LEU:HD23	1:B:172:LEU:HA	1.85	0.44
1:A:60:GLU:HG3	1:A:242:LYS:HD3	2.00	0.44
1:A:290:LYS:O	1:A:292:GLU:N	2.39	0.44
1:C:323:GLU:HA	1:C:323:GLU:OE1	2.17	0.44
1:D:45:LEU:HD12	1:D:235:TYR:HE2	1.82	0.44
1:D:125:LEU:HA	1:D:132:PRO:HD3	1.98	0.44
1:D:183:SER:C	1:D:184:TYR:HD1	2.26	0.44
1:D:288:MSE:HE3	1:D:293:LYS:HA	1.91	0.44
1:B:58:ASP:N	1:B:238:GLN:HE22	2.16	0.43
1:B:162:ARG:NH1	1:B:162:ARG:CG	2.74	0.43
1:C:228:ARG:HE	1:C:232:ASN:ND2	2.16	0.43
1:A:177:TYR:HE2	1:A:181:GLY:O	2.01	0.43
1:A:198:ARG:HB3	1:A:213:TYR:CZ	2.53	0.43
1:A:297:LEU:O	1:A:298:GLU:C	2.61	0.43
1:B:105:THR:HA	1:B:149:ASN:O	2.17	0.43
1:B:150:PRO:HG3	1:B:310:PHE:CE2	2.53	0.43
1:B:150:PRO:HB3	1:B:310:PHE:CE2	2.53	0.43
1:C:303:LYS:HE3	1:C:330:GLU:HG2	2.00	0.43
1:C:318:ILE:O	1:C:318:ILE:HG22	2.17	0.43
1:D:100:VAL:CG1	1:D:142:VAL:HB	2.48	0.43
1:D:269:LEU:HA	1:D:272:MSE:HE2	2.01	0.43
1:A:58:ASP:O	1:A:62:ILE:HG12	2.17	0.43
1:C:29:ASN:O	1:D:51:ARG:NE	2.51	0.43
1:C:42:PHE:CD2	1:D:42:PHE:HB2	2.52	0.43
1:C:50:LEU:HA	1:D:208:ALA:HB3	2.00	0.43
1:D:321:ARG:HH11	1:D:321:ARG:CG	2.30	0.43
1:A:234:SER:OG	1:A:237:SER:HB2	2.18	0.43
1:B:93:MSE:HE1	1:B:112:PHE:C	2.42	0.43
1:D:29:ASN:HB2	1:D:202:LYS:O	2.18	0.43
1:A:136:VAL:O	1:A:166:THR:CG2	2.66	0.43
1:A:163:ILE:O	1:A:166:THR:HB	2.19	0.43
1:A:269:LEU:HD21	1:A:331:LEU:HD12	2.00	0.43
1:B:154:VAL:O	1:B:154:VAL:HG23	2.17	0.43
1:D:278:ASP:HB3	3:D:2018:HOH:O	2.18	0.43
1:A:210:ARG:HH11	1:A:210:ARG:CA	2.23	0.43
1:A:272:MSE:CE	1:A:331:LEU:HB2	2.49	0.43
1:C:287:PHE:C	1:C:288:MSE:HG2	2.43	0.43
1:D:51:ARG:HG3	1:D:52:ILE:HG13	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:239:MSE:O	1:D:243:VAL:HG22	2.19	0.43
1:A:209:GLN:NE2	1:B:235:TYR:HB3	2.34	0.43
1:C:148:ASN:ND2	1:C:151:THR:HG22	2.33	0.43
1:C:299:HIS:CD2	1:C:303:LYS:NZ	2.87	0.43
1:C:327:ILE:O	1:C:331:LEU:HD13	2.18	0.43
1:A:48:ASP:CG	1:A:48:ASP:O	2.62	0.43
1:A:211:VAL:HG11	1:A:241:ALA:HB2	1.99	0.43
1:B:186:ASP:C	1:B:188:LEU:N	2.75	0.43
1:C:33:PHE:CE1	1:C:206:LEU:HD11	2.54	0.43
1:C:172:LEU:HD22	1:C:194:LEU:HD11	2.00	0.43
1:C:289:GLU:N	1:C:289:GLU:CD	2.77	0.43
1:D:200:PHE:HD1	1:D:211:VAL:O	2.01	0.43
1:D:287:PHE:C	1:D:288:MSE:HG2	2.43	0.43
1:B:151:THR:O	1:B:279:SER:HB3	2.19	0.43
1:C:236:VAL:HG23	1:D:209:GLN:HE22	1.81	0.43
1:A:94:LEU:HD23	1:A:116:VAL:HG13	2.01	0.43
1:A:156:GLU:O	1:A:160:ILE:HD12	2.19	0.43
1:C:69:LEU:HD21	1:C:215:VAL:HG21	2.00	0.43
1:C:303:LYS:HE3	1:C:330:GLU:CG	2.49	0.43
1:D:99:SER:HA	1:D:141:VAL:HG12	2.01	0.43
1:D:166:THR:HG22	1:D:166:THR:O	2.19	0.43
1:B:320:LYS:O	1:B:321:ARG:C	2.62	0.42
1:A:208:ALA:CB	1:B:50:LEU:HA	2.49	0.42
1:B:290:LYS:H	1:B:290:LYS:HD2	1.84	0.42
1:C:129:LEU:HD12	1:C:129:LEU:H	1.84	0.42
1:D:267:SER:O	1:D:268:ALA:C	2.60	0.42
1:A:274:TYR:OH	1:A:335:LYS:N	2.52	0.42
1:C:191:TYR:CD1	1:C:191:TYR:N	2.87	0.42
1:D:74:LEU:N	1:D:74:LEU:HD22	2.35	0.42
1:D:216:ALA:HB3	1:D:220:PHE:HD2	1.83	0.42
1:A:69:LEU:HD23	1:A:74:LEU:HD13	2.01	0.42
1:A:88:ILE:CG2	1:A:197:ILE:HD12	2.41	0.42
1:A:280:ARG:HA	1:A:280:ARG:HD3	1.79	0.42
1:A:330:GLU:O	1:A:334:PHE:HD1	2.03	0.42
1:B:56:SER:HB2	1:B:230:PRO:O	2.19	0.42
1:B:86:ASP:O	1:B:87:GLU:C	2.62	0.42
1:B:158:GLU:OE1	1:B:158:GLU:N	2.52	0.42
1:B:296:LEU:C	1:B:296:LEU:CD1	2.91	0.42
1:C:45:LEU:HD12	1:C:45:LEU:C	2.44	0.42
1:C:208:ALA:HB1	1:D:235:TYR:HB2	2.01	0.42
1:C:262:ARG:NE	1:C:281:GLY:O	2.48	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:286:VAL:HG12	1:C:287:PHE:N	2.35	0.42
1:D:334:PHE:CD2	1:D:335:LYS:HG3	2.54	0.42
1:A:33:PHE:O	1:B:47:SER:OG	2.37	0.42
1:C:187:PHE:O	1:C:189:LYS:N	2.53	0.42
1:C:239:MSE:O	1:C:240:PHE:C	2.62	0.42
1:D:74:LEU:HD13	1:D:78:ASN:ND2	2.35	0.42
1:D:110:ARG:O	1:D:114:LYS:HG2	2.19	0.42
1:A:123:VAL:HG12	1:A:132:PRO:HG3	2.02	0.42
1:A:219:LYS:HB2	1:A:219:LYS:HE3	1.87	0.42
1:A:332:GLU:C	1:A:334:PHE:N	2.77	0.42
1:C:52:ILE:O	1:D:208:ALA:HB2	2.20	0.42
1:D:57:PRO:HG3	1:D:81:VAL:HG12	2.02	0.42
1:D:198:ARG:HB2	1:D:213:TYR:CZ	2.54	0.42
1:D:288:MSE:HB2	1:D:293:LYS:HB2	2.00	0.42
1:A:141:VAL:O	1:A:141:VAL:HG13	2.20	0.42
1:B:178:GLU:OE2	1:B:178:GLU:N	2.42	0.42
1:C:57:PRO:CD	1:C:228:ARG:NH2	2.82	0.42
1:C:60:GLU:O	1:C:61:LEU:C	2.63	0.42
1:D:66:LEU:HD12	1:D:66:LEU:HA	1.91	0.42
1:D:299:HIS:O	1:D:302:THR:HB	2.20	0.42
1:A:130:ARG:HH11	1:A:130:ARG:CB	2.30	0.42
1:A:145:PRO:CA	1:A:173:ASP:HB3	2.50	0.42
1:B:65:ILE:HD13	1:B:245:LEU:CD1	2.38	0.42
1:C:325:ASP:HB3	1:C:329:ARG:NE	2.35	0.42
1:D:320:LYS:O	1:D:324:ASN:ND2	2.53	0.42
1:A:110:ARG:HD2	1:A:122:GLU:OE2	2.20	0.42
1:A:209:GLN:O	1:A:210:ARG:C	2.62	0.42
1:B:27:ASN:HA	1:B:317:THR:CG2	2.49	0.42
1:B:91:VAL:CG2	1:B:224:TYR:CE1	3.03	0.42
1:B:134:VAL:O	1:B:135:ASN:C	2.62	0.42
1:D:74:LEU:HD12	1:D:78:ASN:HB3	2.02	0.42
1:D:151:THR:HG1	1:D:153:HIS:CE1	2.31	0.42
1:A:265:MSE:O	1:A:269:LEU:HG	2.19	0.42
1:A:272:MSE:HE1	1:A:331:LEU:HB2	2.02	0.42
1:C:83:ASN:ND2	3:C:2006:HOH:O	2.52	0.42
1:C:320:LYS:H	1:C:323:GLU:HG3	1.85	0.42
1:D:111:ILE:CG1	1:D:112:PHE:N	2.82	0.42
1:D:305:VAL:HG21	1:D:326:MSE:HE1	2.01	0.42
1:B:74:LEU:HD12	1:B:74:LEU:O	2.20	0.41
1:D:270:ARG:O	1:D:273:GLY:N	2.48	0.41
1:A:105:THR:HA	1:A:149:ASN:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:199:THR:OG1	1:B:200:PHE:N	2.52	0.41
1:C:53:TYR:OH	1:D:202:LYS:HE3	2.20	0.41
1:C:75:SER:N	1:C:78:ASN:OD1	2.45	0.41
1:D:91:VAL:HG23	1:D:95:MSE:HE3	1.99	0.41
1:D:100:VAL:O	1:D:142:VAL:HA	2.19	0.41
1:A:102:PHE:HA	1:A:103:PRO:HD2	1.91	0.41
1:B:179:PHE:CE1	1:B:258:ILE:HG21	2.55	0.41
1:C:92:MSE:CA	1:C:95:MSE:HE3	2.49	0.41
1:C:210:ARG:HD2	1:C:210:ARG:H	1.86	0.41
1:A:62:ILE:O	1:A:66:LEU:CD2	2.69	0.41
1:A:210:ARG:NH1	1:A:210:ARG:CA	2.77	0.41
1:A:221:ILE:O	1:A:222:ASP:C	2.63	0.41
1:B:301:ARG:O	1:B:301:ARG:HG2	2.20	0.41
1:C:157:ARG:HG3	1:C:187:PHE:CZ	2.55	0.41
1:D:102:PHE:HA	1:D:103:PRO:HD2	1.95	0.41
1:A:61:LEU:O	1:A:65:ILE:HG12	2.20	0.41
1:A:326:MSE:CE	1:A:327:ILE:HG13	2.50	0.41
1:D:142:VAL:HG11	1:D:163:ILE:CG2	2.51	0.41
1:D:233:VAL:HG11	1:D:238:GLN:HG3	2.02	0.41
1:D:303:LYS:O	1:D:304:ASN:HB2	2.19	0.41
1:A:62:ILE:O	1:A:66:LEU:HD23	2.21	0.41
1:C:249:GLU:CG	1:C:250:ILE:N	2.76	0.41
1:D:79:VAL:CG1	1:D:80:SER:N	2.83	0.41
1:D:100:VAL:HG13	1:D:142:VAL:CB	2.48	0.41
1:D:106:TYR:HB3	1:D:109:TYR:CD2	2.56	0.41
1:D:106:TYR:HB3	1:D:109:TYR:CE2	2.56	0.41
1:D:152:GLY:HA3	1:D:279:SER:CB	2.50	0.41
1:B:195:ALA:HA	1:B:215:VAL:O	2.20	0.41
1:B:296:LEU:HB3	1:B:334:PHE:CE2	2.56	0.41
1:D:145:PRO:O	1:D:148:ASN:CA	2.68	0.41
1:D:305:VAL:CG2	1:D:306:ALA:N	2.84	0.41
1:A:259:VAL:CG2	1:A:260:GLU:H	2.33	0.41
1:C:210:ARG:HE	1:D:231:PHE:CB	2.23	0.41
1:C:303:LYS:HE3	1:C:330:GLU:CD	2.46	0.41
1:D:12:TYR:OH	1:D:110:ARG:NH1	2.51	0.41
1:D:262:ARG:NH1	1:D:280:ARG:HA	2.35	0.41
1:A:95:MSE:HE1	1:A:220:PHE:HZ	1.81	0.41
1:A:134:VAL:C	1:A:136:VAL:N	2.76	0.41
1:A:194:LEU:HD12	1:A:195:ALA:H	1.85	0.41
1:A:290:LYS:C	1:A:292:GLU:H	2.24	0.41
1:B:262:ARG:HH11	1:B:263:GLU:CD	2.29	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:24:LEU:HD13	1:C:317:THR:O	2.21	0.41
1:C:81:VAL:HA	1:C:213:TYR:HA	2.02	0.41
1:C:88:ILE:HG21	1:C:197:ILE:CD1	2.45	0.41
1:C:160:ILE:HA	1:C:163:ILE:HD11	2.02	0.41
1:C:201:SER:CB	1:C:207:ALA:HA	2.51	0.41
1:C:262:ARG:O	1:C:266:LYS:HG3	2.21	0.41
1:D:300:LEU:HD22	1:D:305:VAL:HG11	2.02	0.41
1:A:154:VAL:HG12	1:A:155:PHE:O	2.21	0.41
1:A:160:ILE:HD13	1:A:184:TYR:HE2	1.86	0.41
1:A:169:PHE:HB2	3:A:2026:HOH:O	2.21	0.41
1:A:274:TYR:CE1	1:A:331:LEU:HB3	2.56	0.41
1:C:54:TYR:CE2	1:C:235:TYR:HD1	2.39	0.41
1:C:115:ALA:C	1:C:117:GLY:H	2.28	0.41
1:C:298:GLU:OE1	1:C:298:GLU:HA	2.21	0.41
1:D:240:PHE:O	1:D:241:ALA:C	2.64	0.41
1:A:33:PHE:CD1	1:A:206:LEU:HD13	2.57	0.40
1:B:98:ARG:HG3	1:B:119:LYS:O	2.21	0.40
1:B:225:ASN:HD22	1:B:228:ARG:NE	2.10	0.40
1:A:37:LEU:O	1:A:41:VAL:HG23	2.21	0.40
1:A:326:MSE:HE1	1:A:327:ILE:HG13	2.02	0.40
1:B:269:LEU:HD23	1:B:272:MSE:CE	2.51	0.40
1:B:278:ASP:OD1	1:B:280:ARG:NH2	2.54	0.40
1:B:308:ARG:HA	1:B:308:ARG:NE	2.34	0.40
1:D:179:PHE:CE1	1:D:282:ASN:HB3	2.56	0.40
1:D:329:ARG:HG2	1:D:329:ARG:NH2	2.37	0.40
1:A:226:ARG:HH11	1:A:226:ARG:HG3	1.86	0.40
1:B:156:GLU:O	1:B:159:GLU:HB2	2.21	0.40
1:C:124:PRO:O	1:C:132:PRO:HG3	2.22	0.40
1:C:184:TYR:HD2	1:C:187:PHE:CE1	2.39	0.40
1:D:41:VAL:HG23	1:D:42:PHE:N	2.36	0.40
1:D:129:LEU:N	1:D:129:LEU:CD1	2.85	0.40
1:A:173:ASP:C	1:A:173:ASP:OD1	2.64	0.40
1:B:173:ASP:HA	1:B:197:ILE:HB	2.02	0.40
1:B:256:LYS:HB2	1:B:256:LYS:HE3	1.81	0.40
1:B:269:LEU:HD22	1:B:331:LEU:HD23	2.04	0.40
1:B:300:LEU:HD22	1:B:305:VAL:HG11	2.03	0.40
1:C:48:ASP:OD1	1:C:51:ARG:NH1	2.53	0.40
1:C:172:LEU:HD11	1:C:184:TYR:HB2	2.03	0.40
1:C:280:ARG:HD3	1:C:280:ARG:HA	1.89	0.40
1:C:301:ARG:C	1:C:303:LYS:H	2.28	0.40
1:D:248:ARG:O	1:D:249:GLU:C	2.65	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:58:ASP:H	1:B:238:GLN:HE22	1.69	0.40
1:B:59:GLU:O	1:B:63:GLU:HG3	2.21	0.40
1:B:248:ARG:CD	3:B:2023:HOH:O	2.55	0.40
1:C:37:LEU:O	1:C:41:VAL:HG23	2.21	0.40
1:C:65:ILE:CG1	1:C:66:LEU:N	2.84	0.40
1:C:128:ASP:OD1	1:C:130:ARG:CG	2.70	0.40
1:C:129:LEU:N	1:C:129:LEU:CD1	2.85	0.40
1:C:225:ASN:OD1	1:C:228:ARG:NH1	2.54	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	328/335 (98%)	290 (88%)	31 (10%)	7 (2%)	5	13
1	B	313/335 (93%)	269 (86%)	34 (11%)	10 (3%)	3	7
1	C	228/335 (68%)	177 (78%)	39 (17%)	12 (5%)	1	2
1	D	101/335 (30%)	91 (90%)	9 (9%)	1 (1%)	12	25
All	All	970/1340 (72%)	827 (85%)	113 (12%)	30 (3%)	3	7

All (30) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	290	LYS
1	A	291	GLU
1	B	135	ASN
1	B	136	VAL
1	A	210	ARG
1	A	292	GLU
1	B	126	THR

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Mol	Chain	Res	Type
1	B	181	GLY
1	C	135	ASN
1	C	153	HIS
1	A	11	ALA
1	A	135	ASN
1	B	132	PRO
1	B	234	SER
1	C	27	ASN
1	C	59	GLU
1	C	83	ASN
1	C	188	LEU
1	C	202	LYS
1	B	138	GLU
1	B	288	MSE
1	A	333	VAL
1	B	22	THR
1	B	56	SER
1	C	25	ALA
1	C	60	GLU
1	C	61	LEU
1	C	166	THR
1	D	290	LYS
1	C	136	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	295/292 (101%)	277 (94%)	18 (6%)	17	35
1	B	283/292 (97%)	271 (96%)	12 (4%)	26	51
1	C	277/292 (95%)	258 (93%)	19 (7%)	14	30
1	D	295/292 (101%)	274 (93%)	21 (7%)	13	28
All	All	1150/1168 (98%)	1080 (94%)	70 (6%)	17	35

All (70) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	10	ARG
1	A	92	MSE
1	A	101	PHE
1	A	121	LEU
1	A	124	PRO
1	A	145	PRO
1	A	164	LEU
1	A	187	PHE
1	A	190	LYS
1	A	192	GLU
1	A	193	ASN
1	A	202	LYS
1	A	214	VAL
1	A	232	ASN
1	A	249	GLU
1	A	272	MSE
1	A	284	VAL
1	A	304	ASN
1	B	22	THR
1	B	101	PHE
1	B	128	ASP
1	B	134	VAL
1	B	158	GLU
1	B	187	PHE
1	B	202	LYS
1	B	206	LEU
1	B	229	LEU
1	B	232	ASN
1	B	263	GLU
1	B	311	ARG
1	C	55	ASP
1	C	58	ASP
1	C	73	PHE
1	C	101	PHE
1	C	144	ILE
1	C	202	LYS
1	C	206	LEU
1	C	210	ARG
1	C	213	TYR
1	C	239	MSE
1	C	263	GLU
1	C	264	ARG
1	C	276	ILE

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Mol	Chain	Res	Type
1	C	277	THR
1	C	289	GLU
1	C	294	GLU
1	C	309	SER
1	C	315	ARG
1	C	318	ILE
1	D	10	ARG
1	D	24	LEU
1	D	92	MSE
1	D	111	ILE
1	D	121	LEU
1	D	129	LEU
1	D	142	VAL
1	D	154	VAL
1	D	164	LEU
1	D	202	LYS
1	D	206	LEU
1	D	214	VAL
1	D	228	ARG
1	D	272	MSE
1	D	276	ILE
1	D	288	MSE
1	D	296	LEU
1	D	305	VAL
1	D	321	ARG
1	D	328	LEU
1	D	329	ARG

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	27	ASN
1	A	83	ASN
1	A	193	ASN
1	A	209	GLN
1	A	232	ASN
1	A	238	GLN
1	B	83	ASN
1	B	146	ASN
1	B	180	HIS
1	B	209	GLN
1	B	225	ASN

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Mol	Chain	Res	Type
1	B	232	ASN
1	B	238	GLN
1	B	247	HIS
1	C	77	ASN
1	C	83	ASN
1	C	148	ASN
1	C	238	GLN
1	D	46	ASN
1	D	78	ASN
1	D	135	ASN
1	D	209	GLN
1	D	225	ASN
1	D	238	GLN
1	D	304	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

4 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	PLP	B	1202	1	15,15,16	4.45	6 (40%)	21,22,23	2.50	10 (47%)
2	PLP	D	1202	1	15,15,16	4.48	5 (33%)	21,22,23	2.50	8 (38%)
2	PLP	A	1202	1	15,15,16	4.59	4 (26%)	21,22,23	2.55	8 (38%)
2	PLP	C	1202	1	15,15,16	4.25	4 (26%)	21,22,23	2.40	10 (47%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PLP	B	1202	1	-	0/6/6/8	0/1/1/1
2	PLP	D	1202	1	-	0/6/6/8	0/1/1/1
2	PLP	A	1202	1	-	0/6/6/8	0/1/1/1
2	PLP	C	1202	1	-	0/6/6/8	0/1/1/1

All (19) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	1202	PLP	C5-C4	13.18	1.55	1.40
2	A	1202	PLP	C5-C4	13.17	1.55	1.40
2	B	1202	PLP	C5-C4	12.81	1.55	1.40
2	C	1202	PLP	C5-C4	12.71	1.54	1.40
2	A	1202	PLP	C3-C2	10.14	1.51	1.41
2	B	1202	PLP	C3-C2	8.51	1.49	1.41
2	D	1202	PLP	C3-C2	7.93	1.49	1.41
2	C	1202	PLP	C3-C2	7.49	1.48	1.41
2	C	1202	PLP	C2-N1	4.99	1.42	1.33
2	D	1202	PLP	C2-N1	4.83	1.42	1.33
2	B	1202	PLP	C6-N1	4.53	1.43	1.34
2	D	1202	PLP	C6-N1	4.48	1.43	1.34
2	B	1202	PLP	C2-N1	3.81	1.40	1.33
2	A	1202	PLP	C6-N1	3.52	1.41	1.34
2	A	1202	PLP	C2-N1	3.44	1.40	1.33
2	C	1202	PLP	C6-N1	3.42	1.41	1.34
2	D	1202	PLP	C4A-C4	-2.24	1.47	1.51
2	B	1202	PLP	C5A-C5	2.18	1.56	1.50
2	B	1202	PLP	C6-C5	2.07	1.41	1.37

All (36) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	1202	PLP	C2A-C2-C3	6.11	127.95	120.80
2	C	1202	PLP	C2A-C2-C3	5.68	127.45	120.80
2	B	1202	PLP	C2A-C2-C3	5.43	127.15	120.80
2	D	1202	PLP	C2A-C2-C3	4.82	126.43	120.80
2	D	1202	PLP	C5-C6-N1	-4.78	116.06	123.83
2	A	1202	PLP	C6-C5-C4	4.25	121.58	118.10
2	D	1202	PLP	C6-N1-C2	4.22	126.84	119.20
2	A	1202	PLP	C6-N1-C2	4.09	126.61	119.20
2	D	1202	PLP	C6-C5-C4	4.07	121.43	118.10
2	B	1202	PLP	C5-C6-N1	-4.00	117.33	123.83
2	B	1202	PLP	C6-N1-C2	3.96	126.37	119.20
2	A	1202	PLP	C5-C6-N1	-3.75	117.73	123.83
2	B	1202	PLP	C6-C5-C4	3.59	121.04	118.10
2	C	1202	PLP	C6-N1-C2	3.55	125.64	119.20
2	D	1202	PLP	C3-C2-N1	-3.53	116.51	120.96
2	A	1202	PLP	C3-C2-N1	-3.38	116.69	120.96
2	C	1202	PLP	O3-C3-C4	3.32	126.76	118.10
2	C	1202	PLP	C4A-C4-C5	3.30	124.34	120.94
2	A	1202	PLP	C4A-C4-C5	3.29	124.33	120.94
2	C	1202	PLP	C3-C2-N1	-3.28	116.82	120.96
2	B	1202	PLP	C3-C2-N1	-3.27	116.84	120.96
2	C	1202	PLP	C5-C6-N1	-3.14	118.73	123.83
2	B	1202	PLP	O3-C3-C4	3.04	126.05	118.10
2	D	1202	PLP	C5A-C5-C4	-3.04	116.63	122.64
2	B	1202	PLP	C4A-C4-C5	3.00	124.03	120.94
2	A	1202	PLP	O3-C3-C4	2.91	125.70	118.10
2	D	1202	PLP	O3-C3-C4	2.89	125.64	118.10
2	C	1202	PLP	C6-C5-C4	2.77	120.37	118.10
2	B	1202	PLP	C5A-C5-C4	-2.73	117.24	122.64
2	C	1202	PLP	O3-C3-C2	-2.46	112.47	117.58
2	C	1202	PLP	C5A-C5-C4	-2.36	117.98	122.64
2	B	1202	PLP	O3-C3-C2	-2.32	112.77	117.58
2	B	1202	PLP	O4P-C5A-C5	2.18	113.43	109.36
2	A	1202	PLP	C5A-C5-C4	-2.17	118.34	122.64
2	D	1202	PLP	O4P-C5A-C5	2.15	113.39	109.36
2	C	1202	PLP	O4P-P-O1P	-2.04	100.92	106.44

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	1202	PLP	2	0
2	A	1202	PLP	1	0

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	322/335 (96%)	-0.16	2 (0%) 85 82	12, 33, 60, 90	0
1	B	307/335 (91%)	-0.15	1 (0%) 90 89	11, 35, 72, 91	0
1	C	302/335 (90%)	0.59	16 (5%) 32 24	16, 60, 97, 99	0
1	D	321/335 (95%)	-0.06	4 (1%) 76 71	20, 39, 74, 95	0
All	All	1252/1340 (93%)	0.05	23 (1%) 67 61	11, 40, 88, 99	0

All (23) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	129	LEU	4.2
1	C	131	ILE	3.9
1	D	12	TYR	3.2
1	C	327	ILE	3.1
1	C	151	THR	3.0
1	B	316	ILE	2.7
1	C	297	LEU	2.5
1	C	307	VAL	2.5
1	C	163	ILE	2.5
1	C	282	ASN	2.5
1	C	316	ILE	2.4
1	C	102	PHE	2.4
1	C	140	ASP	2.3
1	D	11	ALA	2.3
1	D	50	LEU	2.3
1	C	320	LYS	2.3
1	D	42	PHE	2.2
1	C	279	SER	2.2
1	C	305	VAL	2.2
1	C	277	THR	2.2
1	A	12	TYR	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	9	LYS	2.1
1	C	318	ILE	2.1

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	PLP	C	1202	15/16	0.88	0.13	39,49,55,55	0
2	PLP	D	1202	15/16	0.94	0.10	25,34,36,39	0
2	PLP	B	1202	15/16	0.95	0.10	23,27,29,29	0
2	PLP	A	1202	15/16	0.97	0.09	16,23,25,26	0

6.5 Other polymers [i](#)

There are no such residues in this entry.