Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 12:19 PM UTC

PDB ID	:	6VTG / pdb_00006vtg
Title	:	Naegleria gruberi RNA ligase E227A mutant apo
Authors	:	Unciuleac, M.C.; Goldgur, Y.; Shuman, S.
Deposited on	:	2020-02-12
Resolution	:	2.49 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:

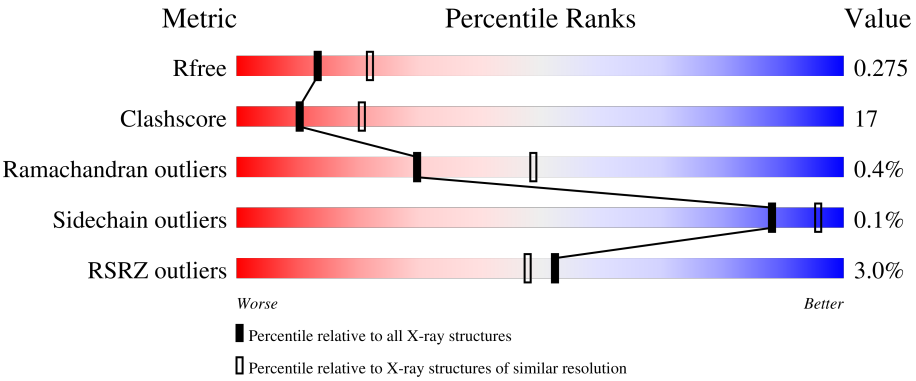
MolProbity	:	4-5-2 with Phenix2.0
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.49 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}	180053	5829 (2.50-2.50)
Clashscore	190562	6492 (2.50-2.50)
Ramachandran outliers	187476	6378 (2.50-2.50)
Sidechain outliers	187428	6380 (2.50-2.50)
RSRZ outliers	180081	5833 (2.50-2.50)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	340	2% 66% 32% ·
1	B	340	3% 68% 31% ·
1	C	340	% 79% 19% ·
1	D	340	6% 61% 36% · ·

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 10944 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called RNA ligase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	340	Total	C	N	O	S	0	0	0
			2713	1708	480	515	10			
1	B	340	Total	C	N	O	S	0	0	0
			2713	1708	480	515	10			
1	C	340	Total	C	N	O	S	0	0	0
			2713	1708	480	515	10			
1	D	340	Total	C	N	O	S	0	0	0
			2713	1708	480	515	10			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	0	SER	-	expression tag	UNP D2W2Z5
A	227	ALA	GLU	engineered mutation	UNP D2W2Z5
B	0	SER	-	expression tag	UNP D2W2Z5
B	227	ALA	GLU	engineered mutation	UNP D2W2Z5
C	0	SER	-	expression tag	UNP D2W2Z5
C	227	ALA	GLU	engineered mutation	UNP D2W2Z5
D	0	SER	-	expression tag	UNP D2W2Z5
D	227	ALA	GLU	engineered mutation	UNP D2W2Z5

- Molecule 2 is water.

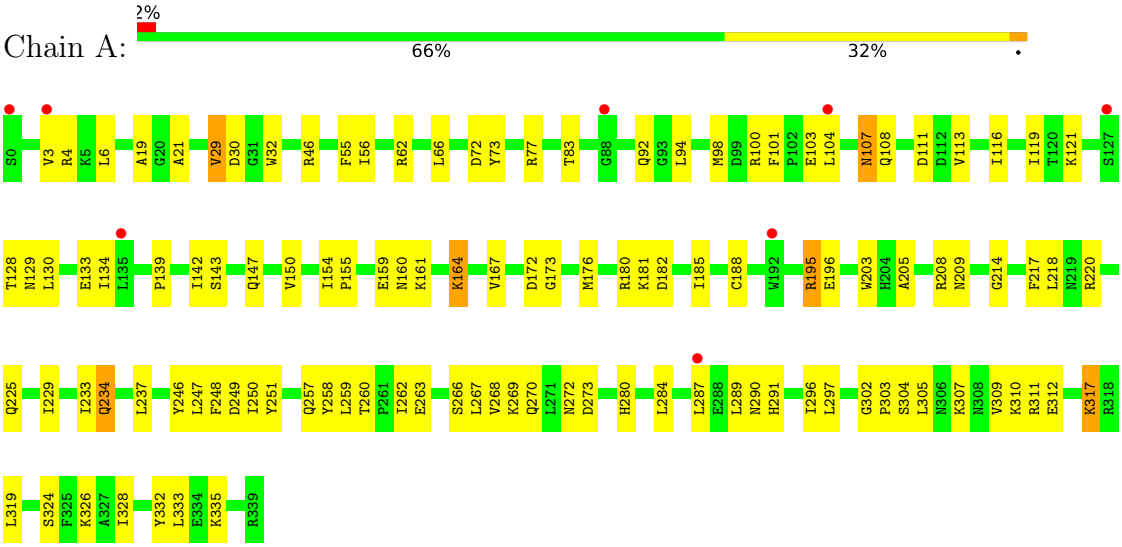
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	5	Total	O	0	0
			5	5		
2	B	45	Total	O	0	0
			45	45		
2	C	35	Total	O	0	0
			35	35		
2	D	7	Total	O	0	0
			7	7		

3 Residue-property plots (i)

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

• Molecule 1: RNA ligase

Chain A:

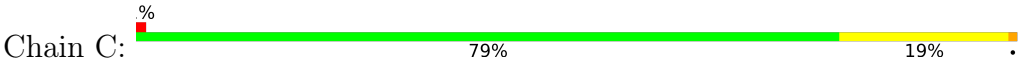


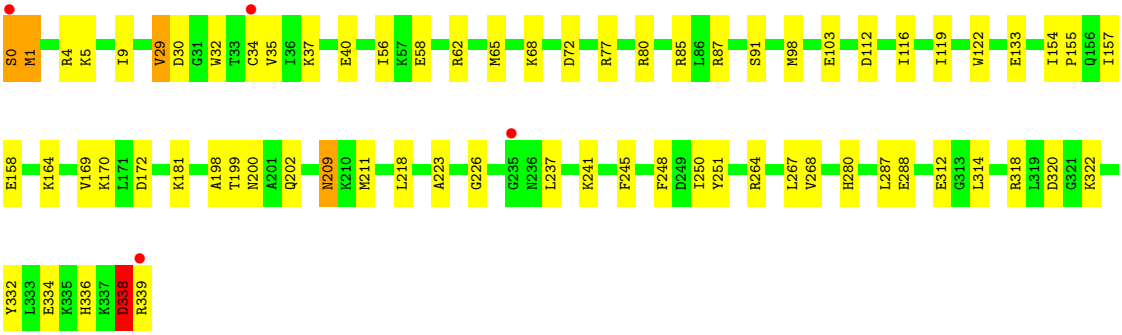
• Molecule 1: RNA ligase

Chain B:

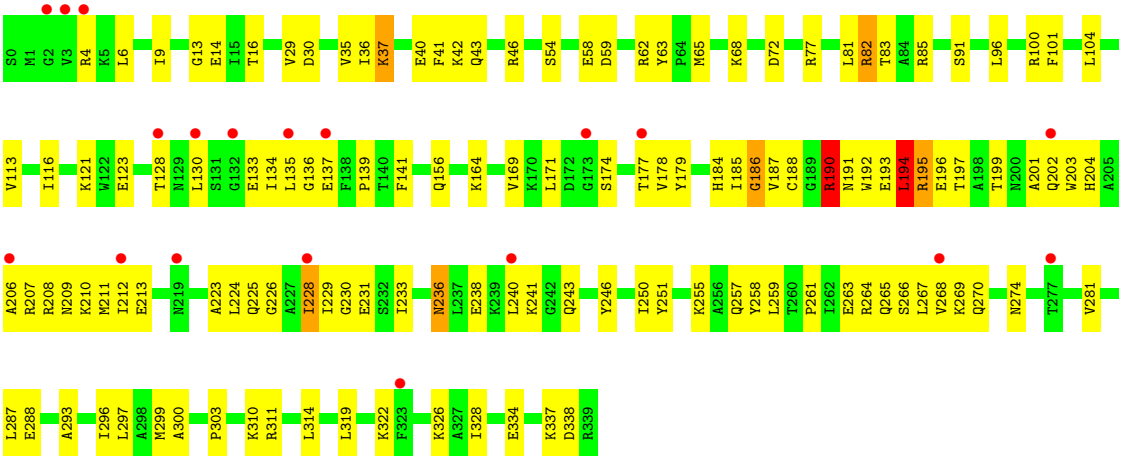
• Molecule 1: RNA ligase

Chain C:





• Molecule 1: RNA ligase



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	124.10Å 104.04Å 119.97Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.73 – 2.49 29.73 – 2.49	Depositor EDS
% Data completeness (in resolution range)	97.8 (29.73-2.49) 93.3 (29.73-2.49)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.86 (at 2.51Å)	Xtriage
Refinement program	PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.215 , 0.273 0.218 , 0.275	Depositor DCC
R_{free} test set	1983 reflections (3.65%)	wwPDB-VP
Wilson B-factor (Å^2)	55.9	Xtriage
Anisotropy	0.085	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 66.6	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	0.019 for l,-k,h	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	10944	wwPDB-VP
Average B, all atoms (Å^2)	82.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 29.05 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.6568e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

[1] Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

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	0.46	0/2760	0.83	7/3717 (0.2%)
1	B	0.52	1/2760 (0.0%)	0.91	13/3717 (0.3%)
1	C	0.52	0/2760	0.81	6/3717 (0.2%)
1	D	0.67	3/2760 (0.1%)	1.07	21/3717 (0.6%)
All	All	0.55	4/11040 (0.0%)	0.91	47/14868 (0.3%)

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	0	2
1	B	0	3
1	C	0	4
1	D	0	5
All	All	0	14

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	186	GLY	CA-C	17.87	1.66	1.52
1	D	82	ARG	CB-CG	-6.26	1.33	1.52
1	B	2	GLY	CA-C	6.09	1.57	1.52
1	D	190	ARG	CB-CG	5.39	1.68	1.52

All (47) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	190	ARG	CD-NE-CZ	11.28	140.19	124.40
1	D	186	GLY	O-C-N	11.17	133.59	123.42
1	B	158	GLU	CA-CB-CG	-10.69	92.73	114.10
1	D	82	ARG	CG-CD-NE	-10.14	89.68	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	37	LYS	CA-CB-CG	-10.04	94.01	114.10
1	B	164	LYS	CB-CG-CD	9.83	133.92	111.30
1	C	4	ARG	NE-CZ-NH2	9.17	127.45	119.20
1	D	190	ARG	NE-CZ-NH1	-8.75	112.75	121.50
1	D	190	ARG	CA-CB-CG	8.66	131.42	114.10
1	D	194	LEU	CA-C-N	8.48	136.97	121.70
1	D	194	LEU	C-N-CA	8.48	136.97	121.70
1	B	21	ALA	CA-C-N	-8.21	109.37	123.25
1	B	21	ALA	C-N-CA	-8.21	109.37	123.25
1	C	4	ARG	NE-CZ-NH1	-8.04	113.46	121.50
1	A	164	LYS	CD-CE-NZ	6.86	133.84	111.90
1	B	322	LYS	CG-CD-CE	-6.73	95.82	111.30
1	A	107	ASN	CA-C-N	6.73	133.21	120.97
1	A	107	ASN	C-N-CA	6.73	133.21	120.97
1	B	322	LYS	CB-CG-CD	6.72	126.75	111.30
1	D	190	ARG	CB-CG-CD	6.65	126.60	111.30
1	C	338	ASP	CA-C-N	-6.28	110.39	121.70
1	C	338	ASP	C-N-CA	-6.28	110.39	121.70
1	B	22	GLU	CB-CG-CD	-6.27	101.94	112.60
1	B	195	ARG	CB-CG-CD	6.20	125.56	111.30
1	B	157	ILE	CA-C-N	-6.16	112.47	122.26
1	B	157	ILE	C-N-CA	-6.16	112.47	122.26
1	B	164	LYS	CD-CE-NZ	-6.10	92.39	111.90
1	B	22	GLU	CA-CB-CG	6.01	126.12	114.10
1	B	195	ARG	N-CA-CB	5.94	119.96	110.46
1	D	37	LYS	CB-CA-C	5.65	118.86	109.53
1	A	164	LYS	CA-CB-CG	5.55	125.20	114.10
1	D	322	LYS	CB-CA-C	5.47	119.63	110.44
1	D	322	LYS	CG-CD-CE	5.43	123.79	111.30
1	D	236	ASN	CA-C-N	-5.41	111.03	121.58
1	D	236	ASN	C-N-CA	-5.41	111.03	121.58
1	C	4	ARG	CG-CD-NE	5.41	123.91	112.00
1	D	13	GLY	CA-C-N	-5.39	114.11	122.09
1	D	13	GLY	C-N-CA	-5.39	114.11	122.09
1	D	322	LYS	N-CA-CB	-5.28	102.50	111.27
1	D	228	ILE	CG1-CB-CG2	-5.27	94.90	110.70
1	A	234	GLN	N-CA-CB	-5.26	103.72	111.71
1	D	36	ILE	CA-C-N	-5.24	114.34	122.09
1	D	36	ILE	C-N-CA	-5.24	114.34	122.09
1	A	317	LYS	CA-CB-CG	5.17	124.45	114.10
1	A	195	ARG	CB-CG-CD	5.13	123.09	111.30
1	C	209	ASN	CB-CA-C	-5.04	99.92	109.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	186	GLY	CA-C-O	-5.03	116.58	121.76

There are no chirality outliers.

All (14) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	181	LYS	Peptide
1	A	29	VAL	Peptide
1	B	158	GLU	Sidechain
1	B	181	LYS	Peptide
1	B	29	VAL	Peptide
1	C	0	SER	Peptide
1	C	181	LYS	Peptide
1	C	29	VAL	Peptide
1	C	338	ASP	Peptide
1	D	128	THR	Peptide
1	D	190	ARG	Sidechain
1	D	194	LEU	Peptide
1	D	238	GLU	Peptide
1	D	29	VAL	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2713	0	2713	104	2
1	B	2713	0	2713	80	0
1	C	2713	0	2713	60	0
1	D	2713	0	2713	130	2
2	A	5	0	0	6	0
2	B	45	0	0	12	0
2	C	35	0	0	6	0
2	D	7	0	0	4	0
All	All	10944	0	10852	368	2

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 17.

All (368) 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:4:ARG:NH2	1:D:121:LYS:HB2	1.52	1.20
1:A:108:GLN:HB3	1:A:111:ASP:CG	1.77	1.09
1:A:269:LYS:N	2:A:401:HOH:O	1.85	1.06
1:B:57:LYS:NZ	2:B:401:HOH:O	1.89	1.04
1:A:108:GLN:HB3	1:A:111:ASP:OD1	1.56	1.03
1:A:108:GLN:CB	1:A:111:ASP:OD1	2.17	0.93
1:A:317:LYS:HB3	1:A:324:SER:HB3	1.50	0.92
1:D:58:GLU:OE1	1:D:77:ARG:NH1	2.02	0.90
1:D:137:GLU:HG3	1:D:192:TRP:CE3	2.07	0.90
1:D:4:ARG:NH2	1:D:121:LYS:CB	2.35	0.89
1:A:257:GLN:NE2	2:A:402:HOH:O	2.05	0.88
1:C:5:LYS:HE3	1:C:112:ASP:HB2	1.52	0.88
1:A:100:ARG:NH2	2:A:403:HOH:O	2.08	0.86
1:D:288:GLU:O	1:D:288:GLU:HG2	1.75	0.85
1:D:196:GLU:OE2	2:D:401:HOH:O	1.94	0.84
1:D:4:ARG:HH21	1:D:121:LYS:HB2	1.39	0.82
1:B:1:MET:O	2:B:402:HOH:O	1.96	0.81
1:D:82:ARG:HH22	1:D:337:LYS:CB	1.96	0.79
1:C:172:ASP:OD2	1:C:332:TYR:OH	2.02	0.78
1:B:132:GLY:HA3	1:B:194:LEU:HD23	1.64	0.78
1:C:338:ASP:HB2	1:C:339:ARG:HH11	1.47	0.78
1:D:190:ARG:NH1	1:D:191:ASN:HD21	1.82	0.77
1:D:259:LEU:HD21	1:D:267:LEU:HD12	1.67	0.77
1:B:208:ARG:NH2	1:B:244:ASP:OD2	2.19	0.76
1:D:137:GLU:HG3	1:D:192:TRP:HE3	1.51	0.75
1:A:234:GLN:OE1	1:A:234:GLN:N	2.20	0.75
1:A:161:LYS:HD2	1:A:290:ASN:HA	1.67	0.74
1:C:338:ASP:HB2	1:C:339:ARG:NH1	2.02	0.74
1:A:62:ARG:NH2	1:A:103:GLU:OE2	2.21	0.74
1:A:233:ILE:HA	1:A:234:GLN:OE1	1.89	0.73
1:D:82:ARG:NH2	1:D:337:LYS:O	2.22	0.73
1:C:339:ARG:HH11	1:C:339:ARG:HG2	1.52	0.73
1:D:134:ILE:HG12	1:D:192:TRP:HB3	1.68	0.73
1:B:24:ILE:O	2:B:403:HOH:O	2.07	0.72
1:A:205:ALA:O	1:A:209:ASN:ND2	2.21	0.72
1:D:210:LYS:HZ1	1:D:212:ILE:HB	1.54	0.72
1:D:130:LEU:HD22	1:D:202:GLN:HG3	1.71	0.72
1:C:209:ASN:ND2	1:C:211:MET:SD	2.63	0.71
1:D:82:ARG:HH22	1:D:337:LYS:HB3	1.54	0.71
1:D:113:VAL:HA	1:D:116:ILE:HD13	1.71	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:103:GLU:HB3	1:D:310:LYS:HE3	1.73	0.71
1:D:82:ARG:HD3	1:D:83:THR:O	1.91	0.71
1:D:82:ARG:NH2	1:D:337:LYS:HG2	2.06	0.70
1:A:310:LYS:CE	1:A:335:LYS:HD2	2.22	0.70
1:D:223:ALA:HB3	1:D:251:TYR:HB3	1.74	0.70
1:A:269:LYS:CA	2:A:401:HOH:O	2.32	0.70
1:B:1:MET:HE1	1:B:4:ARG:HG3	1.74	0.69
1:A:268:VAL:HG12	1:A:272:ASN:HD21	1.58	0.68
1:B:60:ASN:OD1	2:B:404:HOH:O	2.12	0.68
1:A:310:LYS:HE3	1:A:335:LYS:HD2	1.76	0.68
1:D:225:GLN:NE2	1:D:258:TYR:OH	2.27	0.67
1:D:190:ARG:NH1	1:D:191:ASN:ND2	2.42	0.67
1:D:14:GLU:OE2	1:D:16:THR:HG22	1.95	0.66
1:D:177:THR:HG22	1:D:225:GLN:HG2	1.77	0.66
1:B:250:ILE:HD12	1:B:264:ARG:HG3	1.78	0.66
1:B:172:ASP:OD2	1:B:332:TYR:OH	2.14	0.66
1:C:209:ASN:OD1	1:C:211:MET:N	2.29	0.66
1:B:182:ASP:OD1	1:B:221:ASN:ND2	2.21	0.66
1:D:116:ILE:HD12	1:D:116:ILE:H	1.59	0.66
1:C:62:ARG:NH2	1:C:103:GLU:OE2	2.29	0.65
1:D:82:ARG:NH2	1:D:337:LYS:CB	2.59	0.65
1:D:259:LEU:HD23	1:D:264:ARG:HA	1.78	0.65
1:D:85:ARG:NH1	1:D:334:GLU:OE2	2.29	0.65
1:D:190:ARG:NH1	1:D:191:ASN:OD1	2.30	0.65
1:D:133:GLU:O	1:D:195:ARG:HG3	1.98	0.64
1:B:125:PRO:O	2:B:405:HOH:O	2.14	0.64
1:A:269:LYS:CB	2:A:401:HOH:O	2.44	0.64
1:B:11:THR:O	2:B:406:HOH:O	2.15	0.64
1:A:3:VAL:HG12	1:A:4:ARG:H	1.63	0.63
1:A:108:GLN:CB	1:A:111:ASP:CG	2.62	0.63
1:D:82:ARG:HH22	1:D:337:LYS:CG	2.11	0.63
1:A:62:ARG:HH22	1:A:103:GLU:CD	2.06	0.63
1:A:237:LEU:O	1:A:309:VAL:HG11	1.98	0.62
1:A:154:ILE:HG23	1:A:155:PRO:HD3	1.81	0.62
1:C:211:MET:HE1	1:C:245:PHE:CE1	2.33	0.62
1:B:80:ARG:NH1	2:B:411:HOH:O	2.32	0.62
1:A:260:THR:OG1	1:A:263:GLU:HG3	1.99	0.62
1:D:263:GLU:O	1:D:267:LEU:HG	1.99	0.61
1:C:199:THR:HG23	2:C:403:HOH:O	1.99	0.61
1:D:230:GLY:O	1:D:236:ASN:HB2	2.00	0.61
1:A:167:VAL:HG23	1:A:284:LEU:HB2	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:148:GLU:OE1	1:B:149:ARG:N	2.31	0.61
1:B:260:THR:OG1	1:B:263:GLU:HG3	2.01	0.61
1:D:194:LEU:C	1:D:203:TRP:HE1	2.09	0.61
1:D:137:GLU:HG3	1:D:192:TRP:CZ3	2.36	0.60
1:B:157:ILE:C	1:B:158:GLU:HG2	2.19	0.60
1:B:247:LEU:HD23	1:B:280:HIS:CD2	2.36	0.60
1:D:82:ARG:HH22	1:D:337:LYS:HG2	1.65	0.60
1:D:207:ARG:HD2	2:D:401:HOH:O	2.01	0.60
1:B:20:GLY:HA3	1:B:87:ARG:HH21	1.66	0.60
1:B:247:LEU:HD23	1:B:280:HIS:HD2	1.64	0.60
1:C:87:ARG:NE	2:C:401:HOH:O	2.05	0.59
1:D:210:LYS:HE3	1:D:213:GLU:OE1	2.02	0.59
1:A:161:LYS:CD	1:A:290:ASN:HA	2.32	0.59
1:D:169:VAL:HG13	1:D:311:ARG:HD2	1.85	0.59
1:A:173:GLY:HA3	1:A:229:ILE:HG22	1.84	0.58
1:B:135:LEU:HD12	1:B:195:ARG:HG3	1.84	0.58
1:A:56:ILE:HA	1:A:119:ILE:HD12	1.84	0.58
1:B:158:GLU:OE2	1:B:291:HIS:O	2.20	0.58
1:C:199:THR:N	2:C:403:HOH:O	2.34	0.58
1:D:201:ALA:HA	1:D:204:HIS:HB3	1.86	0.58
1:A:268:VAL:O	1:A:272:ASN:ND2	2.37	0.57
1:B:196:GLU:HB2	1:B:203:TRP:CD2	2.39	0.57
1:D:201:ALA:O	1:D:204:HIS:HB3	2.04	0.57
1:D:210:LYS:HE3	1:D:213:GLU:HG3	1.85	0.57
1:C:209:ASN:OD1	1:C:211:MET:CB	2.52	0.57
1:C:80:ARG:HD2	1:C:122:TRP:CD2	2.39	0.57
1:D:266:SER:O	1:D:269:LYS:HB3	2.05	0.57
1:A:180:ARG:HB2	1:A:185:ILE:HD13	1.87	0.57
1:B:173:GLY:HA3	1:B:229:ILE:HG22	1.85	0.57
1:B:268:VAL:O	1:B:272:ASN:ND2	2.36	0.57
1:D:35:VAL:HG23	1:D:91:SER:HB2	1.86	0.56
1:D:194:LEU:HA	1:D:195:ARG:HB2	1.86	0.56
1:D:224:LEU:HD23	1:D:250:ILE:HG12	1.87	0.56
1:B:195:ARG:HH11	1:B:195:ARG:HG2	1.70	0.56
1:D:82:ARG:HG2	1:D:83:THR:N	2.20	0.56
1:A:296:ILE:HD12	1:A:297:LEU:N	2.20	0.56
1:B:287:LEU:HD13	1:B:288:GLU:C	2.30	0.56
1:C:9:ILE:HD12	1:C:98:MET:HE1	1.88	0.56
1:A:268:VAL:HG12	1:A:272:ASN:ND2	2.19	0.56
1:B:82:ARG:NH1	1:B:337:LYS:HD2	2.21	0.56
1:C:85:ARG:NH1	1:C:334:GLU:OE2	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:156:GLN:OE1	1:D:156:GLN:N	2.38	0.56
1:B:134:ILE:H	1:B:134:ILE:HD12	1.70	0.56
1:A:29:VAL:O	1:A:32:TRP:N	2.33	0.56
1:D:4:ARG:HH22	1:D:121:LYS:CB	2.17	0.56
1:B:292:THR:O	1:B:296:ILE:HG12	2.05	0.56
1:D:250:ILE:HB	1:D:259:LEU:HD22	1.88	0.56
1:C:209:ASN:OD1	1:C:211:MET:CG	2.53	0.55
1:B:320:ASP:O	1:B:322:LYS:HG3	2.06	0.55
1:D:4:ARG:HH21	1:D:6:LEU:HD11	1.72	0.55
1:A:143:SER:O	1:A:225:GLN:NE2	2.40	0.55
1:A:139:PRO:HB2	1:A:142:ILE:HG13	1.88	0.55
1:B:240:LEU:HG	1:B:241:LYS:N	2.22	0.55
1:D:231:GLU:HA	1:D:236:ASN:ND2	2.22	0.55
1:A:147:GLN:O	1:A:326:LYS:HE2	2.07	0.54
1:B:128:THR:O	1:B:131:SER:OG	2.15	0.54
1:A:161:LYS:CE	1:A:290:ASN:HA	2.36	0.54
1:C:164:LYS:NZ	1:C:288:GLU:OE1	2.41	0.54
1:D:231:GLU:HA	1:D:236:ASN:HD22	1.71	0.54
1:A:66:LEU:HD21	1:A:94:LEU:HD13	1.90	0.54
1:A:182:ASP:CG	1:C:338:ASP:OD2	2.50	0.54
1:C:56:ILE:HG12	1:C:119:ILE:HD12	1.89	0.54
1:D:190:ARG:NH1	1:D:191:ASN:CG	2.66	0.54
1:D:194:LEU:HB3	1:D:195:ARG:HB3	1.91	0.53
1:B:85:ARG:O	1:B:86:LEU:HD23	2.09	0.53
1:B:127:SER:HB2	1:B:130:LEU:HD12	1.90	0.53
1:B:337:LYS:HD3	2:B:409:HOH:O	2.08	0.53
1:D:206:ALA:HA	1:D:211:MET:HE3	1.90	0.53
1:B:80:ARG:HH12	1:B:338:ASP:HA	1.73	0.53
1:B:160:ASN:HB3	1:B:289:LEU:HD23	1.90	0.53
1:D:82:ARG:NH2	1:D:337:LYS:CA	2.71	0.53
1:D:187:VAL:HB	1:D:203:TRP:NE1	2.24	0.53
1:A:133:GLU:HA	1:A:195:ARG:CD	2.39	0.53
1:A:196:GLU:HB3	1:A:203:TRP:CE2	2.43	0.53
1:A:108:GLN:CD	1:A:111:ASP:OD1	2.52	0.53
1:C:155:PRO:O	1:C:158:GLU:HB2	2.09	0.53
1:C:0:SER:O	1:C:1:MET:O	2.27	0.52
1:A:302:GLY:O	1:A:311:ARG:HG2	2.10	0.52
1:D:96:LEU:HD22	1:D:100:ARG:HH21	1.73	0.52
1:C:85:ARG:HH11	1:C:334:GLU:CD	2.17	0.52
1:A:30:ASP:HB3	1:A:154:ILE:HG21	1.92	0.52
1:B:59:ASP:HB3	1:B:63:TYR:HD2	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:338:ASP:OD1	1:D:338:ASP:N	2.43	0.52
1:B:63:TYR:OH	2:B:407:HOH:O	2.18	0.52
1:D:4:ARG:HH22	1:D:121:LYS:CG	2.23	0.52
1:B:320:ASP:CG	1:B:322:LYS:HB2	2.35	0.52
1:D:204:HIS:CE1	1:D:208:ARG:HH21	2.28	0.51
1:B:161:LYS:HG3	1:B:290:ASN:HA	1.91	0.51
1:B:35:VAL:HG23	1:B:91:SER:HB2	1.92	0.51
1:D:9:ILE:HD11	1:D:104:LEU:HD13	1.91	0.51
1:D:37:LYS:O	1:D:40:GLU:HB2	2.10	0.51
1:D:130:LEU:HD21	1:D:201:ALA:HB3	1.92	0.51
1:B:237:LEU:HD22	1:B:332:TYR:HE2	1.76	0.51
1:B:62:ARG:NH1	1:B:103:GLU:OE2	2.44	0.51
1:D:82:ARG:NH2	1:D:337:LYS:CG	2.70	0.51
1:A:161:LYS:HD3	1:A:289:LEU:O	2.10	0.50
1:C:209:ASN:OD1	1:C:211:MET:HG2	2.11	0.50
1:B:207:ARG:HE	1:B:212:ILE:HD13	1.75	0.50
1:D:42:LYS:HD2	1:D:43:GLN:H	1.76	0.50
1:A:167:VAL:HG11	1:A:287:LEU:HD12	1.94	0.50
1:A:196:GLU:HB3	1:A:203:TRP:CD2	2.46	0.50
1:A:208:ARG:HG3	1:A:208:ARG:HH11	1.76	0.50
1:A:260:THR:HB	1:A:319:LEU:O	2.11	0.50
1:C:200:ASN:ND2	1:C:202:GLN:OE1	2.45	0.50
1:A:130:LEU:O	1:A:134:ILE:HG12	2.12	0.50
1:D:210:LYS:NZ	1:D:213:GLU:H	2.10	0.49
1:B:1:MET:N	2:B:402:HOH:O	2.04	0.49
1:C:336:HIS:O	1:C:339:ARG:HB2	2.12	0.49
1:A:307:LYS:O	1:A:307:LYS:HG2	2.11	0.49
1:C:170:LYS:HG2	1:C:312:GLU:OE2	2.12	0.49
1:A:303:PRO:O	1:A:311:ARG:NE	2.40	0.49
1:C:241:LYS:H	1:C:241:LYS:HD3	1.76	0.49
1:C:68:LYS:HE3	2:C:410:HOH:O	2.12	0.49
1:D:4:ARG:HB3	1:D:4:ARG:CZ	2.43	0.49
1:D:82:ARG:C	1:D:82:ARG:CD	2.85	0.49
1:A:3:VAL:HG12	1:A:4:ARG:N	2.26	0.49
1:C:116:ILE:HD12	1:C:116:ILE:H	1.78	0.49
1:D:326:LYS:HD2	1:D:328:ILE:HD11	1.94	0.48
1:B:237:LEU:HG	1:B:309:VAL:HG11	1.95	0.48
1:D:82:ARG:HH21	1:D:337:LYS:CA	2.26	0.48
1:D:134:ILE:HG23	1:D:136:GLY:N	2.28	0.48
1:C:318:ARG:NH2	1:C:320:ASP:OD2	2.46	0.48
1:C:339:ARG:HH11	1:C:339:ARG:CG	2.25	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:4:ARG:NH2	1:D:121:LYS:CG	2.76	0.48
1:A:128:THR:HG22	1:A:129:ASN:N	2.28	0.48
1:D:82:ARG:NH2	1:D:337:LYS:HB3	2.25	0.48
1:A:270:GLN:N	2:A:401:HOH:O	2.42	0.48
1:B:115:GLU:OE2	2:B:408:HOH:O	2.20	0.48
1:C:85:ARG:HD2	1:C:334:GLU:OE1	2.14	0.48
1:D:82:ARG:HD3	1:D:82:ARG:C	2.38	0.48
1:A:62:ARG:NH2	1:A:101:PHE:HD1	2.11	0.48
1:A:262:ILE:O	1:A:266:SER:N	2.38	0.48
1:D:54:SER:OG	1:D:81:LEU:HD12	2.13	0.48
1:D:178:VAL:HA	1:D:186:GLY:O	2.14	0.48
1:B:137:GLU:N	1:B:137:GLU:CD	2.72	0.48
1:D:62:ARG:HD3	1:D:101:PHE:CE2	2.49	0.48
1:D:197:THR:HG22	1:D:199:THR:H	1.79	0.48
1:B:226:GLY:HA3	1:B:246:TYR:O	2.14	0.47
1:D:255:LYS:HB2	1:D:257:GLN:HG2	1.96	0.47
1:D:261:PRO:HG2	1:D:319:LEU:HA	1.96	0.47
1:B:37:LYS:O	1:B:40:GLU:HB2	2.14	0.47
1:D:223:ALA:O	1:D:250:ILE:HA	2.14	0.47
1:D:229:ILE:O	1:D:243:GLN:HA	2.15	0.47
1:D:121:LYS:HD3	1:D:123:GLU:HG3	1.95	0.47
1:A:259:LEU:HB3	1:A:263:GLU:HB2	1.96	0.47
1:B:1:MET:C	2:B:402:HOH:O	2.53	0.47
1:B:237:LEU:HG	1:B:237:LEU:O	2.14	0.47
1:A:160:ASN:O	1:A:289:LEU:HD23	2.15	0.47
1:A:233:ILE:CA	1:A:234:GLN:OE1	2.60	0.47
1:C:58:GLU:OE1	1:C:77:ARG:HD3	2.14	0.47
1:D:190:ARG:HH11	1:D:190:ARG:HB3	1.80	0.47
1:A:150:VAL:HG11	1:A:296:ILE:CD1	2.45	0.47
1:A:161:LYS:CD	1:A:289:LEU:O	2.63	0.47
1:B:301:ASP:OD1	1:B:329:SER:OG	2.32	0.47
1:C:133:GLU:N	1:C:133:GLU:OE1	2.48	0.47
1:C:318:ARG:HH21	1:C:322:LYS:HB2	1.79	0.47
1:D:209:ASN:OD1	1:D:211:MET:HG3	2.15	0.46
1:A:83:THR:HG22	1:A:92:GLN:HG2	1.96	0.46
1:A:208:ARG:HH11	1:A:208:ARG:CG	2.28	0.46
1:A:268:VAL:CG1	1:A:272:ASN:HD21	2.27	0.46
1:B:137:GLU:CD	1:B:137:GLU:H	2.23	0.46
1:A:150:VAL:HG21	1:A:296:ILE:CD1	2.46	0.46
1:C:209:ASN:OD1	1:C:211:MET:HB3	2.15	0.46
1:B:185:ILE:HG21	1:B:212:ILE:HG23	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:135:LEU:HD11	1:D:195:ARG:H	1.81	0.46
1:A:19:ALA:C	1:A:21:ALA:H	2.24	0.46
1:D:164:LYS:HA	1:D:287:LEU:O	2.16	0.46
1:A:108:GLN:HB2	1:A:111:ASP:OD1	2.11	0.46
1:A:176:MET:HA	1:A:188:CYS:O	2.16	0.46
1:C:85:ARG:NH1	1:C:334:GLU:CD	2.74	0.45
1:B:319:LEU:HD23	1:B:319:LEU:HA	1.63	0.45
1:A:304:SER:HB2	1:A:311:ARG:HA	1.99	0.45
1:D:179:TYR:O	1:D:185:ILE:HA	2.17	0.45
1:A:83:THR:HG21	1:A:333:LEU:HD13	1.99	0.45
1:B:144:LYS:HE2	1:B:190:ARG:O	2.17	0.45
1:A:155:PRO:O	1:A:159:GLU:HG3	2.17	0.45
1:C:154:ILE:HB	1:C:155:PRO:HD3	1.99	0.45
1:D:233:ILE:HD12	1:D:233:ILE:N	2.32	0.45
1:B:261:PRO:HG2	1:B:319:LEU:HD23	1.99	0.44
1:B:288:GLU:H	1:B:288:GLU:CD	2.22	0.44
1:D:230:GLY:HA3	1:D:243:GLN:HG3	1.99	0.44
1:D:259:LEU:HD12	1:D:259:LEU:HA	1.76	0.44
1:D:303:PRO:O	1:D:311:ARG:HD3	2.18	0.44
1:A:317:LYS:HD3	1:A:324:SER:HB3	1.98	0.44
1:A:128:THR:HG21	1:B:134:ILE:HB	2.00	0.44
1:A:182:ASP:HB3	1:C:338:ASP:OD2	2.17	0.44
1:D:300:ALA:HA	1:D:314:LEU:HG	1.99	0.44
1:A:328:ILE:HD12	1:A:328:ILE:H	1.82	0.44
1:C:157:ILE:HD13	1:C:157:ILE:HA	1.79	0.44
1:D:190:ARG:HH12	1:D:191:ASN:ND2	2.14	0.44
1:A:250:ILE:HD13	1:A:267:LEU:HD23	2.00	0.44
1:C:29:VAL:O	1:C:32:TRP:N	2.43	0.44
1:D:287:LEU:HD23	1:D:288:GLU:C	2.43	0.44
1:A:104:LEU:HA	1:A:107:ASN:OD1	2.18	0.44
1:A:317:LYS:HB3	1:A:324:SER:CB	2.35	0.44
1:C:312:GLU:HG3	1:C:332:TYR:CE1	2.52	0.44
1:A:6:LEU:HD11	1:A:121:LYS:HB2	2.00	0.43
1:A:214:GLY:O	1:A:218:LEU:HG	2.18	0.43
1:D:4:ARG:NH2	1:D:121:LYS:HG3	2.33	0.43
1:D:42:LYS:HD2	1:D:42:LYS:HA	1.71	0.43
1:A:180:ARG:CB	1:A:185:ILE:HD13	2.48	0.43
1:A:246:TYR:CE2	1:A:305:LEU:HD11	2.53	0.43
1:D:68:LYS:HA	1:D:68:LYS:HD2	1.88	0.43
1:A:160:ASN:C	1:A:289:LEU:HD23	2.43	0.43
1:A:247:LEU:HG	1:A:248:PHE:N	2.31	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:310:LYS:CD	1:A:335:LYS:HD2	2.48	0.43
1:C:169:VAL:HA	1:C:314:LEU:HD23	2.00	0.43
1:D:174:SER:O	1:D:228:ILE:HG22	2.18	0.43
1:D:296:ILE:HA	1:D:299:MET:HE3	2.01	0.43
1:B:231:GLU:O	1:B:243:GLN:NE2	2.48	0.43
1:C:34:CYS:SG	2:C:425:HOH:O	2.62	0.43
1:C:198:ALA:N	2:C:403:HOH:O	2.50	0.43
1:D:59:ASP:HB3	1:D:63:TYR:HD2	1.82	0.43
1:D:264:ARG:O	1:D:268:VAL:HG12	2.18	0.43
1:C:268:VAL:HG21	1:C:280:HIS:HD2	1.83	0.43
1:B:20:GLY:O	1:B:87:ARG:NH2	2.52	0.43
1:B:59:ASP:HB3	1:B:63:TYR:CD2	2.52	0.43
1:B:82:ARG:HH11	1:B:337:LYS:HD2	1.82	0.43
1:B:267:LEU:C	1:B:267:LEU:HD23	2.43	0.43
1:D:65:MET:HE3	1:D:65:MET:H	1.83	0.43
1:D:207:ARG:HE	1:D:210:LYS:HE2	1.83	0.43
1:A:246:TYR:CZ	1:A:305:LEU:HD11	2.54	0.42
1:B:97:PRO:HB2	1:B:99:ASP:OD1	2.18	0.42
1:B:197:THR:HB	1:B:199:THR:HG22	2.00	0.42
1:A:113:VAL:HG12	1:A:116:ILE:HD12	2.01	0.42
1:A:55:PHE:CZ	1:A:73:TYR:HB3	2.54	0.42
1:A:249:ASP:HB3	1:A:258:TYR:CE2	2.54	0.42
1:A:269:LYS:O	1:A:273:ASP:N	2.35	0.42
1:B:46:ARG:HG3	1:B:98:MET:HG3	2.01	0.42
1:B:217:PHE:CZ	1:D:72:ASP:HB2	2.53	0.42
1:D:288:GLU:CD	1:D:288:GLU:H	2.27	0.42
1:A:150:VAL:HG21	1:A:296:ILE:HD11	2.01	0.42
1:A:180:ARG:HB2	1:A:185:ILE:CD1	2.50	0.42
1:D:171:LEU:HD12	1:D:281:VAL:HG12	2.02	0.42
1:D:184:HIS:NE2	1:D:193:GLU:OE1	2.44	0.42
1:D:201:ALA:HA	1:D:204:HIS:CB	2.49	0.42
1:B:96:LEU:HA	1:B:96:LEU:HD23	1.81	0.42
1:D:4:ARG:HH22	1:D:121:LYS:HG3	1.84	0.42
1:C:218:LEU:HA	1:C:218:LEU:HD23	1.78	0.42
1:D:43:GLN:O	2:D:402:HOH:O	2.21	0.42
1:D:187:VAL:HB	1:D:203:TRP:CE2	2.55	0.42
1:D:41:PHE:HZ	1:D:96:LEU:C	2.28	0.42
1:A:247:LEU:HD21	1:A:250:ILE:HG13	2.01	0.42
1:C:223:ALA:HB3	1:C:251:TYR:HB3	2.01	0.42
1:C:250:ILE:HD13	1:C:267:LEU:HD22	2.02	0.42
1:D:265:GLN:NE2	2:D:403:HOH:O	2.37	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:293:ALA:HA	1:D:296:ILE:HD12	2.02	0.42
1:B:20:GLY:C	1:B:87:ARG:NH2	2.78	0.41
1:C:336:HIS:HB3	1:C:339:ARG:HG3	2.02	0.41
1:B:147:GLN:HB2	1:B:326:LYS:HG2	2.02	0.41
1:A:142:ILE:HA	1:A:251:TYR:CE2	2.56	0.41
1:B:85:ARG:NH1	1:B:334:GLU:OE1	2.53	0.41
1:C:37:LYS:O	1:C:40:GLU:HB2	2.19	0.41
1:D:259:LEU:HD12	1:D:263:GLU:OE1	2.20	0.41
1:A:180:ARG:HD3	1:A:220:ARG:O	2.20	0.41
1:A:217:PHE:CZ	1:C:72:ASP:HB2	2.55	0.41
1:B:55:PHE:CZ	1:B:73:TYR:HB3	2.55	0.41
1:C:287:LEU:HD12	1:C:288:GLU:N	2.35	0.41
1:A:161:LYS:HZ1	1:A:291:HIS:N	2.18	0.41
1:B:58:GLU:OE1	1:B:77:ARG:HD3	2.20	0.41
1:C:65:MET:SD	1:C:65:MET:N	2.93	0.41
1:D:82:ARG:HH21	1:D:337:LYS:C	2.28	0.41
1:D:139:PRO:HB3	1:D:141:PHE:CE1	2.56	0.41
1:D:230:GLY:HA3	1:D:233:ILE:HD13	2.02	0.41
1:C:172:ASP:HB2	1:C:237:LEU:HD21	2.03	0.41
1:D:177:THR:OG1	1:D:188:CYS:HB2	2.20	0.41
1:D:240:LEU:HG	1:D:241:LYS:N	2.34	0.41
1:A:247:LEU:HD23	1:A:280:HIS:HD2	1.85	0.41
1:B:80:ARG:HD2	1:B:122:TRP:CD2	2.55	0.41
1:D:226:GLY:HA3	1:D:246:TYR:O	2.21	0.41
1:D:334:GLU:O	1:D:337:LYS:HG3	2.21	0.41
1:A:312:GLU:HG3	1:A:332:TYR:CE1	2.55	0.41
1:C:264:ARG:O	1:C:268:VAL:HG23	2.21	0.41
1:D:139:PRO:HB3	1:D:141:PHE:CZ	2.55	0.41
1:B:69:GLN:HG3	1:B:79:THR:CG2	2.51	0.41
1:A:172:ASP:OD2	1:A:237:LEU:HD23	2.21	0.40
1:C:35:VAL:HG23	1:C:91:SER:HB2	2.02	0.40
1:C:80:ARG:HH22	1:C:339:ARG:N	2.19	0.40
1:A:108:GLN:OE1	1:A:111:ASP:OD1	2.39	0.40
1:A:128:THR:HG22	1:A:129:ASN:H	1.86	0.40
1:B:37:LYS:HE3	1:B:37:LYS:HB3	1.52	0.40
1:D:46:ARG:H	1:D:46:ARG:HG2	1.68	0.40
1:D:130:LEU:HA	1:D:130:LEU:HD23	1.89	0.40
1:A:46:ARG:O	1:A:98:MET:HG2	2.22	0.40
1:B:157:ILE:HG22	1:B:158:GLU:HG2	2.02	0.40
1:C:226:GLY:HA2	1:C:248:PHE:CE2	2.57	0.40
1:D:297:LEU:HD23	1:D:297:LEU:HA	1.91	0.40

All (2) 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:72:ASP:OD2	1:D:270:GLN:NE2[4_555]	2.17	0.03
1:A:77:ARG:NH1	1:D:274:ASN:OD1[4_555]	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	338/340 (99%)	327 (97%)	11 (3%)	0	100	100
1	B	338/340 (99%)	327 (97%)	10 (3%)	1 (0%)	36	55
1	C	338/340 (99%)	323 (96%)	13 (4%)	2 (1%)	21	38
1	D	338/340 (99%)	323 (96%)	13 (4%)	2 (1%)	21	38
All	All	1352/1360 (99%)	1300 (96%)	47 (4%)	5 (0%)	30	49

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	1	MET
1	B	30	ASP
1	D	195	ARG
1	C	30	ASP
1	D	30	ASP

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	293/293 (100%)	292 (100%)	1 (0%)	86 94
1	B	293/293 (100%)	293 (100%)	0	100 100
1	C	293/293 (100%)	293 (100%)	0	100 100
1	D	293/293 (100%)	293 (100%)	0	100 100
All	All	1172/1172 (100%)	1171 (100%)	1 (0%)	88 96

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	164	LYS

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

Mol	Chain	Res	Type
1	A	76	GLN
1	A	89	GLN
1	A	92	GLN
1	A	272	ASN
1	B	28	HIS
1	B	69	GLN
1	B	108	GLN
1	B	191	ASN
1	B	257	GLN
1	C	76	GLN
1	C	225	GLN
1	C	272	ASN
1	C	336	HIS
1	D	28	HIS
1	D	202	GLN
1	D	204	HIS
1	D	243	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

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, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	A	340/340 (100%)	0.46	8 (2%) 59 55	50, 91, 124, 173	0
1	B	340/340 (100%)	0.08	10 (2%) 53 49	35, 70, 109, 149	0
1	C	340/340 (100%)	-0.02	4 (1%) 76 73	34, 61, 103, 134	0
1	D	340/340 (100%)	0.60	19 (5%) 30 26	55, 99, 139, 161	0
All	All	1360/1360 (100%)	0.28	41 (3%) 52 48	34, 80, 126, 173	0

All (41) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	235	GLY	3.7
1	C	34	CYS	3.3
1	D	130	LEU	3.3
1	D	2	GLY	3.3
1	A	3	VAL	3.3
1	B	339	ARG	3.1
1	D	3	VAL	3.1
1	D	206	ALA	2.9
1	B	338	ASP	2.8
1	C	0	SER	2.7
1	D	135	LEU	2.7
1	D	212	ILE	2.7
1	D	240	LEU	2.7
1	B	145	THR	2.6
1	B	3	VAL	2.6
1	D	173	GLY	2.5
1	A	88	GLY	2.4
1	D	228	ILE	2.4
1	A	0	SER	2.4
1	B	2	GLY	2.4
1	D	132	GLY	2.4

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Mol	Chain	Res	Type	RSRZ
1	D	202	GLN	2.4
1	B	234	GLN	2.3
1	A	192	TRP	2.3
1	A	104	LEU	2.3
1	C	339	ARG	2.2
1	D	4	ARG	2.2
1	A	135	LEU	2.2
1	B	135	LEU	2.2
1	D	268	VAL	2.2
1	A	287	LEU	2.2
1	B	294	GLU	2.1
1	B	1	MET	2.1
1	D	128	THR	2.1
1	D	277	THR	2.1
1	D	323	PHE	2.0
1	D	219	ASN	2.0
1	B	158	GLU	2.0
1	D	137	GLU	2.0
1	D	177	THR	2.0
1	A	127	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 oligosaccharides 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.