Full wwPDB X-ray Structure Validation Report (i)

Dec 10, 2022 – 01:57 PM EST

PDB ID	:	1DE5
Title	:	L-RHAMNOSE ISOMERASE
Authors	:	Korndorfer, I.P.; Fessner, W.D.; Matthews, B.W.
Deposited on	:	1999-11-12
Resolution	:	2.20 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

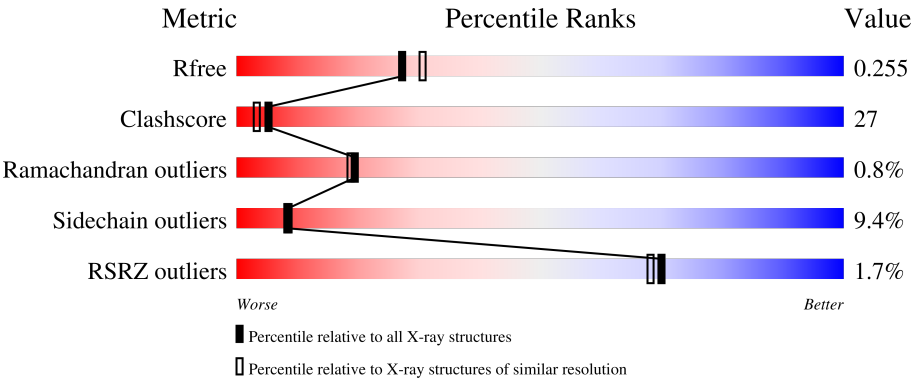
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.31.2
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

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 2.20 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	4898 (2.20-2.20)
Clashscore	141614	5594 (2.20-2.20)
Ramachandran outliers	138981	5503 (2.20-2.20)
Sidechain outliers	138945	5504 (2.20-2.20)
RSRZ outliers	127900	4800 (2.20-2.20)

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

Mol	Chain	Length	Quality of chain
1	A	426	3% 48% 37% 11%
1	B	426	% 48% 39% 9%
1	C	426	% 47% 41% 8%
1	D	426	% 46% 40% 11%

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 14315 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 L-RHAMNOSE ISOMERASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	417	Total	C	N	O	S	0	0	0
			3316	2094	588	621	13			
1	B	416	Total	C	N	O	S	0	0	0
			3309	2090	587	619	13			
1	C	416	Total	C	N	O	S	0	0	0
			3309	2090	587	619	13			
1	D	416	Total	C	N	O	S	0	0	0
			3309	2090	587	619	13			

There are 28 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	2	GLY	-	expression tag	UNP P32170
A	3	HIS	-	expression tag	UNP P32170
A	4	HIS	-	expression tag	UNP P32170
A	5	HIS	-	expression tag	UNP P32170
A	6	HIS	-	expression tag	UNP P32170
A	7	HIS	-	expression tag	UNP P32170
A	8	HIS	-	expression tag	UNP P32170
B	2	GLY	-	expression tag	UNP P32170
B	3	HIS	-	expression tag	UNP P32170
B	4	HIS	-	expression tag	UNP P32170
B	5	HIS	-	expression tag	UNP P32170
B	6	HIS	-	expression tag	UNP P32170
B	7	HIS	-	expression tag	UNP P32170
B	8	HIS	-	expression tag	UNP P32170
C	2	GLY	-	expression tag	UNP P32170
C	3	HIS	-	expression tag	UNP P32170
C	4	HIS	-	expression tag	UNP P32170
C	5	HIS	-	expression tag	UNP P32170
C	6	HIS	-	expression tag	UNP P32170
C	7	HIS	-	expression tag	UNP P32170
C	8	HIS	-	expression tag	UNP P32170

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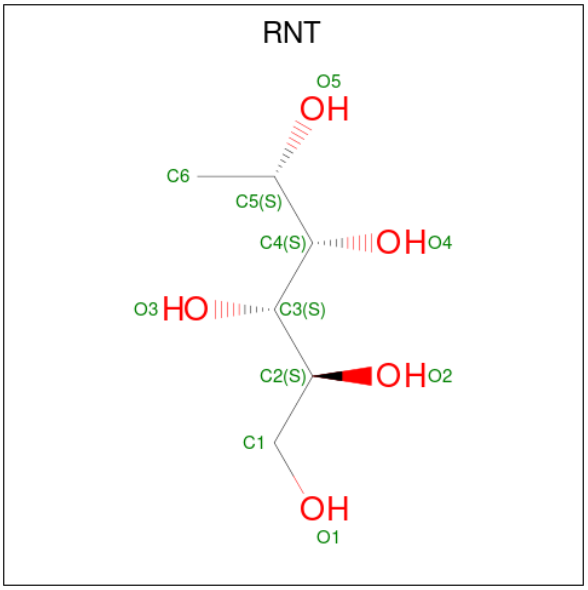
Chain	Residue	Modelled	Actual	Comment	Reference
D	2	GLY	-	expression tag	UNP P32170
D	3	HIS	-	expression tag	UNP P32170
D	4	HIS	-	expression tag	UNP P32170
D	5	HIS	-	expression tag	UNP P32170
D	6	HIS	-	expression tag	UNP P32170
D	7	HIS	-	expression tag	UNP P32170
D	8	HIS	-	expression tag	UNP P32170

- Molecule 2 is L-RHAMNITOL (three-letter code: RNT) (formula: $C_6H_{14}O_5$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C O 11 6 5	0	0
2	B	1	Total C O 11 6 5	0	0
2	C	1	Total C O 11 6 5	0	0
2	D	1	Total C O 11 6 5	0	0

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total Zn 1 1	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total Zn 1 1	0	0
3	C	1	Total Zn 1 1	0	0
3	D	1	Total Zn 1 1	0	0

- Molecule 4 is water.

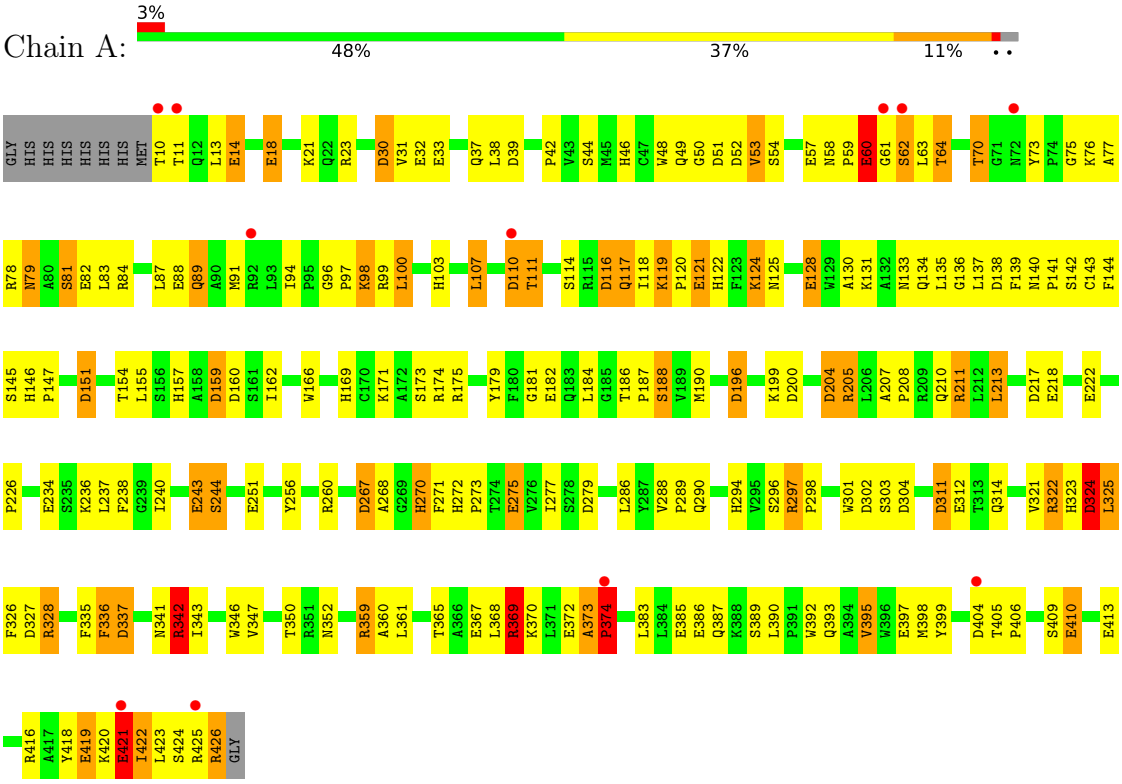
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	247	Total O 247 247	0	0
4	B	286	Total O 286 286	0	0
4	C	254	Total O 254 254	0	0
4	D	237	Total O 237 237	0	0

3 Residue-property plots (i)

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

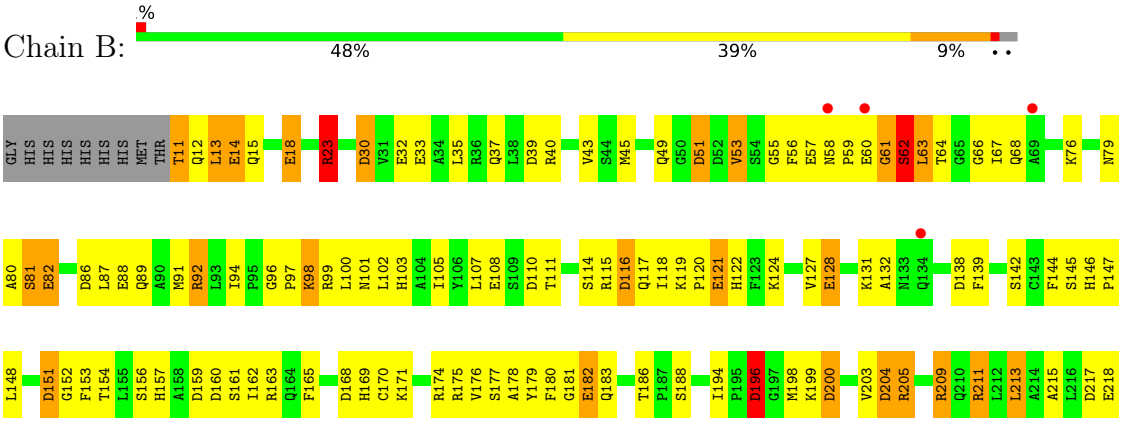
• Molecule 1: L-RHAMNOSE ISOMERASE

Chain A:



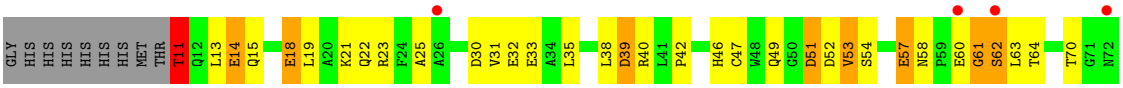
• Molecule 1: L-RHAMNOSE ISOMERASE

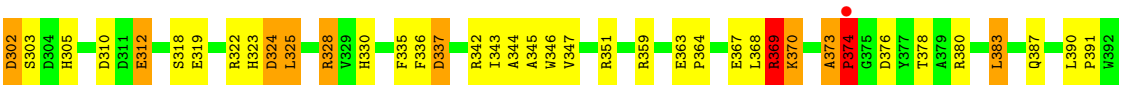
Chain B:



• Molecule 1: L-RHAMNOSE ISOMERASE

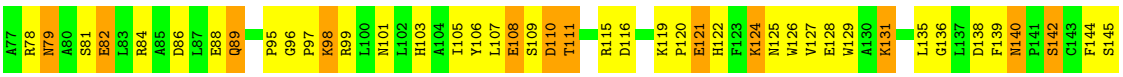
Chain C:

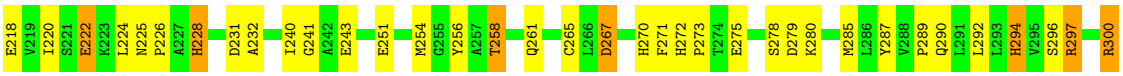


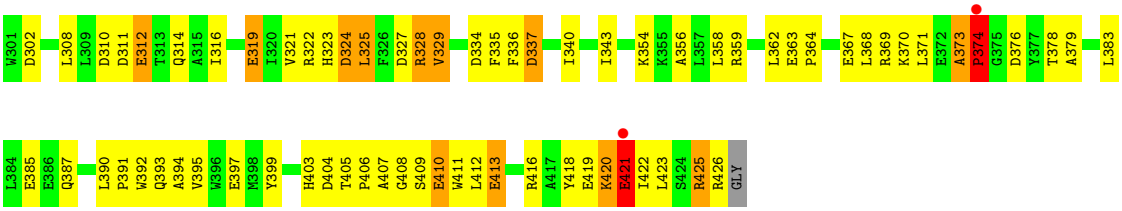


• Molecule 1: L-RHAMNOSE ISOMERASE

Chain D:






W301
D302
L308
L309
D310
D311
E312
T313
Q314
A315
I316
E319
I320
V321
R322
H323
D324
L325
F326
D327
R328
V329
D334
F335
F336
D337
I340
I343
K354
K355
A356
L357
L358
R359
L362
E363
P364
E367
L368
R369
K370
L371
E372
A373
P374
G375
D376
Y377
T378
A379
L383
L384
E385
E386
Q387
L390
P391
W392
Q393
A394
V395
W396
E397
M398
Y399
H403
D404
T405
P406
A407
G408
S409
E410
W411
L412
E413
R416
A417
Y418
E419
K420
E421
I422
L423
S424
R425
R426
GLY

4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	169.44Å 162.69Å 77.02Å 90.00° 110.68° 90.00°	Depositor
Resolution (Å)	15.00 – 2.20 14.91 – 2.20	Depositor EDS
% Data completeness (in resolution range)	81.0 (15.00-2.20) 86.4 (14.91-2.20)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.98 (at 2.20Å)	Xtriage
Refinement program	TNT	Depositor
R, R_{free}	0.156 , 0.275 0.152 , 0.255	Depositor DCC
R_{free} test set	4333 reflections (5.10%)	wwPDB-VP
Wilson B-factor (Å^2)	21.3	Xtriage
Anisotropy	0.529	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 90.0	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	14315	wwPDB-VP
Average B, all atoms (Å^2)	28.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.41% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

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

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	1.11	23/3396 (0.7%)	1.66	65/4612 (1.4%)
1	B	1.11	24/3389 (0.7%)	1.65	60/4602 (1.3%)
1	C	1.07	22/3389 (0.6%)	1.57	64/4602 (1.4%)
1	D	1.09	21/3389 (0.6%)	1.60	65/4602 (1.4%)
All	All	1.09	90/13563 (0.7%)	1.62	254/18418 (1.4%)

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	C	1	0
1	D	1	0
All	All	3	0

All (90) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	251	GLU	CD-OE2	9.14	1.35	1.25
1	D	222	GLU	CD-OE2	8.16	1.34	1.25
1	A	397	GLU	CD-OE2	7.99	1.34	1.25
1	B	128	GLU	CD-OE2	7.37	1.33	1.25
1	A	32	GLU	CD-OE2	7.09	1.33	1.25
1	B	182	GLU	CD-OE2	7.04	1.33	1.25
1	D	421	GLU	CD-OE2	7.04	1.33	1.25
1	D	60	GLU	CD-OE2	6.99	1.33	1.25
1	B	397	GLU	CD-OE2	6.98	1.33	1.25
1	A	243	GLU	CD-OE2	6.94	1.33	1.25
1	B	372	GLU	CD-OE2	6.93	1.33	1.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	14	GLU	CD-OE2	6.87	1.33	1.25
1	B	319	GLU	CD-OE2	6.82	1.33	1.25
1	B	363	GLU	CD-OE2	6.76	1.33	1.25
1	A	88	GLU	CD-OE2	6.76	1.33	1.25
1	D	108	GLU	CD-OE2	6.72	1.33	1.25
1	B	18	GLU	CD-OE2	6.68	1.32	1.25
1	D	367	GLU	CD-OE2	6.66	1.32	1.25
1	D	251	GLU	CD-OE2	6.65	1.32	1.25
1	A	421	GLU	CD-OE2	6.64	1.32	1.25
1	D	88	GLU	CD-OE2	6.55	1.32	1.25
1	D	218	GLU	CD-OE2	6.47	1.32	1.25
1	C	367	GLU	CD-OE2	6.45	1.32	1.25
1	D	413	GLU	CD-OE2	6.44	1.32	1.25
1	B	367	GLU	CD-OE2	6.43	1.32	1.25
1	B	218	GLU	CD-OE2	6.42	1.32	1.25
1	C	397	GLU	CD-OE2	6.38	1.32	1.25
1	B	60	GLU	CD-OE2	6.33	1.32	1.25
1	A	413	GLU	CD-OE2	6.32	1.32	1.25
1	A	218	GLU	CD-OE2	6.31	1.32	1.25
1	D	319	GLU	CD-OE2	6.26	1.32	1.25
1	C	88	GLU	CD-OE2	6.20	1.32	1.25
1	C	421	GLU	CD-OE2	6.20	1.32	1.25
1	B	421	GLU	CD-OE2	6.19	1.32	1.25
1	B	82	GLU	CD-OE2	6.16	1.32	1.25
1	A	312	GLU	CD-OE2	6.12	1.32	1.25
1	D	243	GLU	CD-OE2	6.11	1.32	1.25
1	B	222	GLU	CD-OE2	6.09	1.32	1.25
1	B	121	GLU	CD-OE2	6.07	1.32	1.25
1	A	182	GLU	CD-OE2	6.06	1.32	1.25
1	D	128	GLU	CD-OE2	6.04	1.32	1.25
1	D	312	GLU	CD-OE2	6.03	1.32	1.25
1	A	419	GLU	CD-OE2	6.01	1.32	1.25
1	B	312	GLU	CD-OE2	5.99	1.32	1.25
1	A	251	GLU	CD-OE2	5.98	1.32	1.25
1	C	128	GLU	CD-OE2	5.97	1.32	1.25
1	C	182	GLU	CD-OE2	5.94	1.32	1.25
1	D	14	GLU	CD-OE2	5.94	1.32	1.25
1	B	108	GLU	CD-OE2	5.88	1.32	1.25
1	A	128	GLU	CD-OE2	5.86	1.32	1.25
1	A	14	GLU	CD-OE2	5.84	1.32	1.25
1	B	14	GLU	CD-OE2	5.82	1.32	1.25
1	A	60	GLU	CD-OE2	5.81	1.32	1.25

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	57	GLU	CD-OE2	5.77	1.31	1.25
1	B	385	GLU	CD-OE2	5.71	1.31	1.25
1	C	121	GLU	CD-OE2	5.71	1.31	1.25
1	A	18	GLU	CD-OE2	5.69	1.31	1.25
1	B	251	GLU	CD-OE1	-5.66	1.19	1.25
1	C	312	GLU	CD-OE2	5.66	1.31	1.25
1	D	33	GLU	CD-OE2	5.60	1.31	1.25
1	C	410	GLU	CD-OE2	5.55	1.31	1.25
1	A	367	GLU	CD-OE2	5.54	1.31	1.25
1	A	372	GLU	CD-OE1	-5.53	1.19	1.25
1	A	222	GLU	CD-OE2	5.53	1.31	1.25
1	D	363	GLU	CD-OE2	5.50	1.31	1.25
1	B	234	GLU	CD-OE2	5.50	1.31	1.25
1	A	385	GLU	CD-OE2	5.48	1.31	1.25
1	A	385	GLU	CD-OE1	-5.46	1.19	1.25
1	A	121	GLU	CD-OE2	5.46	1.31	1.25
1	B	33	GLU	CD-OE2	5.44	1.31	1.25
1	C	222	GLU	CD-OE2	5.42	1.31	1.25
1	C	108	GLU	CD-OE1	-5.39	1.19	1.25
1	A	275	GLU	CD-OE2	5.37	1.31	1.25
1	D	18	GLU	CD-OE2	5.37	1.31	1.25
1	D	32	GLU	CD-OE2	5.35	1.31	1.25
1	C	32	GLU	CD-OE2	5.35	1.31	1.25
1	D	121	GLU	CD-OE2	5.33	1.31	1.25
1	C	18	GLU	CD-OE2	5.28	1.31	1.25
1	B	88	GLU	CD-OE2	5.27	1.31	1.25
1	C	60	GLU	CD-OE2	5.24	1.31	1.25
1	C	33	GLU	CD-OE2	5.18	1.31	1.25
1	B	410	GLU	CD-OE2	5.17	1.31	1.25
1	B	251	GLU	CD-OE2	5.14	1.31	1.25
1	A	410	GLU	CD-OE2	5.13	1.31	1.25
1	C	319	GLU	CD-OE2	5.12	1.31	1.25
1	D	140	ASN	CG-OD1	5.11	1.35	1.24
1	C	243	GLU	CD-OE2	5.10	1.31	1.25
1	D	82	GLU	CD-OE1	-5.04	1.20	1.25
1	C	312	GLU	CD-OE1	-5.03	1.20	1.25
1	C	218	GLU	CD-OE2	5.02	1.31	1.25

All (254) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	373	ALA	C-N-CD	-18.31	80.31	120.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	373	ALA	C-N-CD	-17.93	81.16	120.60
1	C	373	ALA	C-N-CD	-14.10	89.57	120.60
1	B	175	ARG	NE-CZ-NH2	-13.54	113.53	120.30
1	D	328	ARG	NE-CZ-NH2	-13.45	113.58	120.30
1	D	373	ALA	C-N-CD	-12.42	93.27	120.60
1	A	211	ARG	NE-CZ-NH2	-12.40	114.10	120.30
1	B	359	ARG	NE-CZ-NH2	-11.69	114.45	120.30
1	A	359	ARG	NE-CZ-NH2	-11.51	114.55	120.30
1	B	211	ARG	NE-CZ-NH2	-11.43	114.59	120.30
1	B	328	ARG	NE-CZ-NH1	11.07	125.84	120.30
1	B	279	ASP	CB-CG-OD2	-10.89	108.50	118.30
1	D	328	ARG	NE-CZ-NH1	10.70	125.65	120.30
1	A	39	ASP	CB-CG-OD2	-10.54	108.81	118.30
1	B	204	ASP	CB-CG-OD2	-10.48	108.87	118.30
1	A	204	ASP	CB-CG-OD1	10.40	127.66	118.30
1	B	39	ASP	CB-CG-OD2	-10.36	108.98	118.30
1	A	204	ASP	CB-CG-OD2	-10.32	109.01	118.30
1	A	205	ARG	NE-CZ-NH1	10.24	125.42	120.30
1	B	175	ARG	NE-CZ-NH1	10.18	125.39	120.30
1	D	205	ARG	NE-CZ-NH1	10.14	125.37	120.30
1	A	211	ARG	NE-CZ-NH1	10.06	125.33	120.30
1	C	39	ASP	CB-CG-OD2	-10.04	109.26	118.30
1	C	300	ARG	NE-CZ-NH1	9.96	125.28	120.30
1	B	204	ASP	CB-CG-OD1	9.85	127.17	118.30
1	A	51	ASP	CB-CG-OD2	-9.81	109.47	118.30
1	A	337	ASP	CB-CG-OD2	-9.79	109.49	118.30
1	D	204	ASP	CB-CG-OD2	-9.54	109.72	118.30
1	C	302	ASP	CB-CG-OD2	-9.52	109.73	118.30
1	A	60	GLU	N-CA-CB	9.31	127.36	110.60
1	D	204	ASP	CB-CG-OD1	9.27	126.64	118.30
1	A	30	ASP	CB-CG-OD2	-9.24	109.99	118.30
1	C	40	ARG	NE-CZ-NH2	-9.23	115.68	120.30
1	B	23	ARG	NE-CZ-NH1	9.08	124.84	120.30
1	D	337	ASP	CB-CG-OD1	9.04	126.44	118.30
1	A	51	ASP	CB-CG-OD1	9.04	126.43	118.30
1	B	211	ARG	NE-CZ-NH1	9.01	124.80	120.30
1	D	337	ASP	CB-CG-OD2	-8.83	110.35	118.30
1	D	426	ARG	NE-CZ-NH2	-8.71	115.94	120.30
1	C	260	ARG	NE-CZ-NH2	-8.65	115.97	120.30
1	C	337	ASP	CB-CG-OD2	-8.58	110.58	118.30
1	A	374	PRO	CA-N-CD	-8.53	99.56	111.50
1	B	39	ASP	CB-CG-OD1	8.53	125.98	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	328	ARG	NE-CZ-NH1	8.33	124.47	120.30
1	A	175	ARG	NE-CZ-NH1	8.27	124.44	120.30
1	C	279	ASP	CB-CG-OD1	8.14	125.62	118.30
1	B	205	ARG	NE-CZ-NH1	7.96	124.28	120.30
1	A	138	ASP	CB-CG-OD2	-7.95	111.15	118.30
1	D	196	ASP	CB-CG-OD2	-7.92	111.17	118.30
1	D	211	ARG	NE-CZ-NH2	-7.88	116.36	120.30
1	A	39	ASP	CB-CG-OD1	7.87	125.38	118.30
1	A	324	ASP	CB-CG-OD2	-7.86	111.23	118.30
1	A	30	ASP	CB-CG-OD1	7.86	125.37	118.30
1	B	310	ASP	CB-CG-OD2	-7.84	111.24	118.30
1	A	23	ARG	NE-CZ-NH1	7.84	124.22	120.30
1	D	39	ASP	CB-CG-OD2	-7.78	111.30	118.30
1	D	297	ARG	NE-CZ-NH1	7.76	124.18	120.30
1	B	328	ARG	NE-CZ-NH2	-7.73	116.43	120.30
1	A	426	ARG	NE-CZ-NH1	7.67	124.13	120.30
1	A	297	ARG	NE-CZ-NH1	7.66	124.13	120.30
1	D	231	ASP	CB-CG-OD2	-7.65	111.41	118.30
1	D	151	ASP	CB-CG-OD2	-7.64	111.42	118.30
1	B	279	ASP	CB-CG-OD1	7.62	125.16	118.30
1	C	196	ASP	CB-CG-OD2	-7.61	111.45	118.30
1	B	138	ASP	CB-CG-OD2	-7.58	111.48	118.30
1	D	116	ASP	CB-CG-OD2	-7.57	111.49	118.30
1	B	374	PRO	CA-N-CD	-7.50	101.00	111.50
1	C	138	ASP	CB-CG-OD2	-7.50	111.55	118.30
1	B	115	ARG	NE-CZ-NH1	7.49	124.04	120.30
1	A	311	ASP	CB-CG-OD1	7.48	125.03	118.30
1	B	209	ARG	NE-CZ-NH1	7.47	124.04	120.30
1	A	327	ASP	CB-CG-OD2	-7.31	111.72	118.30
1	C	39	ASP	CB-CG-OD1	7.31	124.88	118.30
1	A	327	ASP	CB-CG-OD1	7.28	124.85	118.30
1	C	160	ASP	CB-CG-OD2	-7.26	111.77	118.30
1	C	404	ASP	CB-CG-OD2	-7.25	111.77	118.30
1	B	200	ASP	CB-CG-OD2	-7.20	111.82	118.30
1	C	374	PRO	CA-N-CD	-7.17	101.46	111.50
1	D	52	ASP	CB-CG-OD2	-7.15	111.86	118.30
1	A	217	ASP	CB-CG-OD2	-7.14	111.88	118.30
1	B	217	ASP	CB-CG-OD2	-7.12	111.89	118.30
1	C	51	ASP	CB-CG-OD1	7.10	124.69	118.30
1	A	369	ARG	NE-CZ-NH1	7.10	123.85	120.30
1	B	115	ARG	NE-CZ-NH2	-7.07	116.76	120.30
1	A	116	ASP	CB-CG-OD2	-7.06	111.95	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	328	ARG	NE-CZ-NH2	-7.04	116.78	120.30
1	B	200	ASP	CB-CG-OD1	7.04	124.63	118.30
1	B	11	THR	N-CA-CB	7.03	123.66	110.30
1	C	138	ASP	CB-CG-OD1	7.03	124.63	118.30
1	C	116	ASP	CB-CG-OD2	-7.02	111.98	118.30
1	A	267	ASP	CB-CG-OD1	7.02	124.62	118.30
1	B	310	ASP	CB-CG-OD1	6.99	124.59	118.30
1	C	51	ASP	CB-CG-OD2	-6.97	112.03	118.30
1	B	327	ASP	CB-CG-OD2	-6.96	112.03	118.30
1	C	175	ARG	NE-CZ-NH1	6.94	123.77	120.30
1	B	217	ASP	CB-CG-OD1	6.93	124.54	118.30
1	D	30	ASP	CB-CG-OD1	6.93	124.54	118.30
1	B	168	ASP	CB-CG-OD2	-6.91	112.09	118.30
1	D	115	ARG	NE-CZ-NH1	6.88	123.74	120.30
1	B	209	ARG	NE-CZ-NH2	-6.85	116.87	120.30
1	A	337	ASP	CB-CG-OD1	6.85	124.46	118.30
1	C	110	ASP	CB-CG-OD2	-6.82	112.16	118.30
1	C	302	ASP	CB-CG-OD1	6.77	124.39	118.30
1	D	256	TYR	CB-CG-CD1	-6.75	116.95	121.00
1	B	91	MET	CA-CB-CG	-6.74	101.84	113.30
1	D	138	ASP	CB-CG-OD1	6.70	124.33	118.30
1	C	310	ASP	CB-CG-OD1	6.68	124.31	118.30
1	C	40	ARG	NE-CZ-NH1	6.68	123.64	120.30
1	B	311	ASP	CB-CG-OD1	6.67	124.31	118.30
1	B	160	ASP	CB-CG-OD1	6.66	124.30	118.30
1	A	159	ASP	CB-CG-OD2	-6.66	112.31	118.30
1	D	404	ASP	CB-CG-OD1	6.61	124.25	118.30
1	B	99	ARG	NE-CZ-NH1	6.57	123.58	120.30
1	C	267	ASP	CB-CG-OD1	6.55	124.19	118.30
1	D	115	ARG	NE-CZ-NH2	-6.53	117.04	120.30
1	C	168	ASP	CB-CG-OD2	-6.50	112.45	118.30
1	C	159	ASP	CB-CG-OD2	-6.49	112.46	118.30
1	C	205	ARG	NE-CZ-NH1	6.48	123.54	120.30
1	D	30	ASP	CB-CG-OD2	-6.45	112.50	118.30
1	D	334	ASP	CB-CG-OD1	6.41	124.07	118.30
1	A	62	SER	N-CA-C	6.39	128.26	111.00
1	D	302	ASP	CB-CG-OD2	-6.39	112.55	118.30
1	B	324	ASP	CB-CG-OD2	-6.36	112.57	118.30
1	C	369	ARG	NE-CZ-NH1	6.36	123.48	120.30
1	D	228	HIS	CB-CA-C	-6.36	97.68	110.40
1	A	116	ASP	CB-CG-OD1	6.36	124.02	118.30
1	A	205	ARG	NE-CZ-NH2	-6.35	117.12	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	404	ASP	CB-CG-OD1	6.33	124.00	118.30
1	A	324	ASP	CB-CG-OD1	6.32	123.99	118.30
1	D	175	ARG	NE-CZ-NH1	6.32	123.46	120.30
1	D	311	ASP	CB-CG-OD1	6.31	123.98	118.30
1	D	374	PRO	CA-N-CD	-6.31	102.67	111.50
1	D	151	ASP	CB-CG-OD1	6.30	123.97	118.30
1	B	359	ARG	NE-CZ-NH1	6.26	123.43	120.30
1	C	310	ASP	CB-CG-OD2	-6.24	112.69	118.30
1	B	260	ARG	NE-CZ-NH2	-6.22	117.19	120.30
1	C	300	ARG	NE-CZ-NH2	-6.22	117.19	120.30
1	C	260	ARG	NE-CZ-NH1	6.22	123.41	120.30
1	A	160	ASP	CB-CG-OD2	-6.21	112.71	118.30
1	A	342	ARG	NE-CZ-NH1	6.17	123.39	120.30
1	C	30	ASP	CB-CG-OD2	-6.16	112.76	118.30
1	B	57	GLU	CB-CA-C	-6.16	98.09	110.40
1	B	116	ASP	CB-CG-OD2	-6.14	112.77	118.30
1	A	322	ARG	NE-CZ-NH2	-6.14	117.23	120.30
1	B	160	ASP	CB-CG-OD2	-6.13	112.78	118.30
1	D	404	ASP	CB-CG-OD2	-6.11	112.80	118.30
1	D	267	ASP	CB-CG-OD1	6.09	123.78	118.30
1	C	376	ASP	CB-CG-OD2	-6.06	112.84	118.30
1	B	322	ARG	NE-CZ-NH2	6.04	123.32	120.30
1	D	138	ASP	CB-CG-OD2	-6.02	112.88	118.30
1	B	51	ASP	CB-CG-OD1	6.00	123.70	118.30
1	B	425	ARG	NE-CZ-NH1	6.00	123.30	120.30
1	D	369	ARG	NE-CZ-NH1	6.00	123.30	120.30
1	D	196	ASP	CB-CG-OD1	5.99	123.69	118.30
1	A	100	LEU	N-CA-CB	5.98	122.36	110.40
1	B	297	ARG	NE-CZ-NH1	5.97	123.29	120.30
1	B	62	SER	N-CA-C	5.97	127.11	111.00
1	A	200	ASP	CB-CG-OD1	5.96	123.67	118.30
1	D	39	ASP	CB-CG-OD1	5.96	123.66	118.30
1	B	86	ASP	CB-CG-OD2	-5.95	112.94	118.30
1	A	404	ASP	CB-CG-OD2	-5.94	112.95	118.30
1	D	179	TYR	CB-CG-CD2	-5.90	117.46	121.00
1	A	110	ASP	CB-CG-OD2	-5.90	112.99	118.30
1	B	30	ASP	CB-CG-OD1	5.86	123.58	118.30
1	B	304	ASP	CB-CG-OD2	-5.86	113.03	118.30
1	C	426	ARG	NE-CZ-NH1	5.86	123.23	120.30
1	C	404	ASP	CB-CG-OD1	5.83	123.55	118.30
1	A	60	GLU	C-N-CA	-5.83	110.06	122.30
1	D	36	ARG	NE-CZ-NH1	5.82	123.21	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	359	ARG	NE-CZ-NH1	5.81	123.21	120.30
1	C	110	ASP	CB-CG-OD1	5.77	123.50	118.30
1	A	187	PRO	N-CA-CB	5.77	110.22	103.30
1	D	376	ASP	CB-CG-OD1	5.77	123.49	118.30
1	C	204	ASP	CB-CG-OD1	5.76	123.48	118.30
1	D	160	ASP	CB-CG-OD2	-5.74	113.13	118.30
1	C	86	ASP	CB-CG-OD2	-5.72	113.15	118.30
1	C	351	ARG	NE-CZ-NH1	5.71	123.16	120.30
1	D	116	ASP	CB-CG-OD1	5.71	123.44	118.30
1	C	92	ARG	NE-CZ-NH1	5.71	123.16	120.30
1	B	151	ASP	CB-CG-OD2	-5.71	113.16	118.30
1	D	324	ASP	CB-CG-OD2	-5.70	113.17	118.30
1	B	311	ASP	CB-CG-OD2	-5.69	113.18	118.30
1	C	205	ARG	NE-CZ-NH2	-5.69	117.46	120.30
1	C	168	ASP	CB-CG-OD1	5.68	123.41	118.30
1	D	425	ARG	NE-CZ-NH1	5.66	123.13	120.30
1	A	342	ARG	NE-CZ-NH2	-5.66	117.47	120.30
1	A	404	ASP	CB-CG-OD1	5.66	123.39	118.30
1	C	151	ASP	CB-CG-OD2	-5.65	113.21	118.30
1	C	376	ASP	CB-CG-OD1	5.62	123.36	118.30
1	B	175	ARG	CD-NE-CZ	5.60	131.44	123.60
1	A	311	ASP	CB-CG-OD2	-5.59	113.27	118.30
1	A	175	ARG	NE-CZ-NH2	-5.56	117.52	120.30
1	C	231	ASP	CB-CG-OD2	-5.56	113.30	118.30
1	D	110	ASP	CB-CG-OD2	-5.55	113.30	118.30
1	C	279	ASP	CB-CG-OD2	-5.55	113.31	118.30
1	B	327	ASP	CB-CG-OD1	5.53	123.28	118.30
1	D	329	VAL	CB-CA-C	-5.53	100.90	111.40
1	C	11	THR	N-CA-CB	5.52	120.79	110.30
1	C	58	ASN	N-CA-CB	-5.50	100.71	110.60
1	A	217	ASP	CA-CB-CG	-5.49	101.32	113.40
1	D	51	ASP	CB-CG-OD2	-5.48	113.36	118.30
1	D	300	ARG	NE-CZ-NH2	-5.46	117.57	120.30
1	A	160	ASP	CB-CG-OD1	5.46	123.22	118.30
1	B	267	ASP	CB-CG-OD1	5.43	123.19	118.30
1	A	200	ASP	CB-CG-OD2	-5.42	113.42	118.30
1	D	302	ASP	CB-CG-OD1	5.42	123.17	118.30
1	D	11	THR	N-CA-CB	5.41	120.58	110.30
1	D	36	ARG	NE-CZ-NH2	-5.39	117.60	120.30
1	D	136	GLY	N-CA-C	-5.39	99.62	113.10
1	A	279	ASP	CB-CG-OD2	-5.37	113.46	118.30
1	A	369	ARG	N-CA-CB	-5.37	100.93	110.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	337	ASP	CB-CG-OD1	5.37	123.14	118.30
1	D	231	ASP	CB-CA-C	-5.37	99.65	110.40
1	C	60	GLU	N-CA-C	-5.36	96.54	111.00
1	D	327	ASP	CB-CG-OD2	-5.33	113.50	118.30
1	A	60	GLU	CB-CA-C	5.33	121.05	110.40
1	B	196	ASP	CB-CG-OD2	-5.33	113.51	118.30
1	A	151	ASP	CB-CG-OD2	-5.32	113.51	118.30
1	D	279	ASP	CB-CG-OD1	5.31	123.08	118.30
1	C	30	ASP	CB-CG-OD1	5.31	123.08	118.30
1	C	116	ASP	CB-CG-OD1	5.31	123.08	118.30
1	B	86	ASP	CB-CG-OD1	5.28	123.05	118.30
1	D	52	ASP	CB-CG-OD1	5.27	123.04	118.30
1	A	136	GLY	N-CA-C	-5.24	100.01	113.10
1	C	324	ASP	CB-CG-OD1	5.23	123.00	118.30
1	D	159	ASP	CB-CG-OD2	-5.22	113.60	118.30
1	D	62	SER	N-CA-CB	5.20	118.30	110.50
1	D	209	ARG	NE-CZ-NH2	-5.18	117.71	120.30
1	D	211	ARG	NE-CZ-NH1	5.17	122.88	120.30
1	C	150	ALA	CB-CA-C	5.16	117.84	110.10
1	A	322	ARG	N-CA-CB	5.16	119.88	110.60
1	C	91	MET	CA-CB-CG	-5.16	104.54	113.30
1	D	297	ARG	NE-CZ-NH2	-5.16	117.72	120.30
1	A	270	HIS	N-CA-CB	-5.13	101.37	110.60
1	C	209	ARG	NE-CZ-NH1	5.12	122.86	120.30
1	D	296	SER	N-CA-CB	-5.09	102.86	110.50
1	A	395	VAL	CA-CB-CG2	-5.08	103.28	110.90
1	C	328	ARG	NE-CZ-NH2	-5.08	117.76	120.30
1	D	168	ASP	CB-CG-OD1	5.08	122.87	118.30
1	C	276	VAL	CG1-CB-CG2	-5.08	102.78	110.90
1	C	52	ASP	CB-CG-OD1	5.07	122.86	118.30
1	A	174	ARG	NE-CZ-NH2	-5.06	117.77	120.30
1	D	294	HIS	N-CA-CB	5.05	119.70	110.60
1	B	110	ASP	CB-CG-OD2	-5.05	113.75	118.30
1	A	302	ASP	CB-CG-OD2	-5.05	113.76	118.30
1	A	84	ARG	NE-CZ-NH2	5.05	122.82	120.30
1	D	207	ALA	C-N-CD	5.04	138.99	128.40
1	B	302	ASP	CB-CG-OD2	-5.04	113.77	118.30
1	C	150	ALA	N-CA-C	5.03	124.58	111.00
1	C	378	THR	CA-CB-CG2	-5.03	105.36	112.40
1	C	150	ALA	N-CA-CB	5.03	117.13	110.10
1	B	215	ALA	N-CA-CB	-5.02	103.08	110.10
1	C	78	ARG	NE-CZ-NH1	5.01	122.81	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	380	ARG	NE-CZ-NH2	5.01	122.81	120.30

All (3) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	A	10	THR	CA
1	C	150	ALA	CA
1	D	70	THR	CB

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3316	0	3238	214	0
1	B	3309	0	3231	181	0
1	C	3309	0	3231	166	0
1	D	3309	0	3231	180	0
2	A	11	0	12	4	0
2	B	11	0	13	1	0
2	C	11	0	12	1	0
2	D	11	0	12	1	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
4	A	247	0	0	17	0
4	B	286	0	0	22	0
4	C	254	0	0	12	2
4	D	237	0	0	10	0
All	All	14315	0	12980	699	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 27.

All (699) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:269:GLY:HA2	1:B:298:PRO:HG3	1.38	1.04
1:A:369:ARG:HH11	1:A:369:ARG:HG3	1.25	1.00
1:D:64:THR:HG22	1:D:145:SER:H	1.27	1.00
1:D:422:ILE:HG22	1:D:423:LEU:HD23	1.41	0.99
1:C:272:HIS:HE1	4:D:4640:HOH:O	1.44	0.98
1:A:119:LYS:H	1:A:122:HIS:HD2	1.13	0.93
1:D:49:GLN:HE22	1:D:337:ASP:H	1.17	0.92
1:A:207:ALA:HB3	1:A:208:PRO:HD3	1.52	0.92
1:A:70:THR:HG22	1:C:199:LYS:NZ	1.85	0.91
1:C:368:LEU:HD21	1:C:383:LEU:HB3	1.53	0.91
1:C:142:SER:H	1:C:169:HIS:HE1	1.12	0.91
1:D:142:SER:H	1:D:169:HIS:HE1	1.14	0.91
1:A:70:THR:HG22	1:C:199:LYS:HZ2	1.36	0.90
1:D:119:LYS:H	1:D:122:HIS:HD2	1.20	0.89
1:D:182:GLU:OE1	1:D:228:HIS:CE1	2.26	0.87
1:B:64:THR:HG22	1:B:145:SER:HA	1.57	0.87
1:D:119:LYS:H	1:D:122:HIS:CD2	1.93	0.87
1:A:142:SER:H	1:A:169:HIS:HE1	1.19	0.86
1:B:146:HIS:CG	1:B:147:PRO:HD2	2.10	0.86
1:B:12:GLN:HE22	1:C:22:GLN:NE2	1.73	0.85
1:D:64:THR:HG22	1:D:145:SER:N	1.93	0.83
1:D:371:LEU:HD13	1:D:379:ALA:CB	2.08	0.83
1:C:207:ALA:HB3	1:C:208:PRO:HD3	1.61	0.83
1:B:92:ARG:HD3	4:B:2489:HOH:O	1.79	0.83
1:B:314:GLN:HE21	1:B:359:ARG:HH11	1.24	0.82
1:C:393:GLN:HB2	4:C:3548:HOH:O	1.79	0.81
1:D:371:LEU:HD13	1:D:379:ALA:HB1	1.64	0.80
1:C:79:ASN:ND2	1:C:82:GLU:H	1.78	0.80
1:C:119:LYS:H	1:C:122:HIS:HD2	1.27	0.80
1:B:205:ARG:HD2	4:B:2539:HOH:O	1.81	0.79
1:C:272:HIS:HB3	1:C:273:PRO:HD2	1.63	0.79
1:D:364:PRO:HD3	1:D:387:GLN:NE2	1.97	0.79
1:C:119:LYS:H	1:C:122:HIS:CD2	2.01	0.79
1:D:254:MET:O	1:D:258:THR:HG23	1.83	0.78
1:D:127:VAL:HG11	1:D:183:GLN:HG2	1.63	0.78
1:A:64:THR:HG22	1:A:145:SER:HA	1.65	0.78
2:A:1460:RNT:H12	4:A:1462:HOH:O	1.84	0.77
1:A:64:THR:HG23	4:A:1619:HOH:O	1.83	0.77
1:D:205:ARG:HD2	4:D:4584:HOH:O	1.84	0.77
1:C:167:ILE:HG21	1:C:218:GLU:OE2	1.86	0.76
1:C:92:ARG:HD3	4:C:3496:HOH:O	1.86	0.76
1:A:64:THR:HG22	1:A:145:SER:CA	2.15	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:79:ASN:HD22	1:D:81:SER:N	1.84	0.75
1:A:119:LYS:H	1:A:122:HIS:CD2	2.02	0.75
1:A:421:GLU:CD	1:A:422:ILE:HD12	2.06	0.75
1:C:84:ARG:O	1:C:88:GLU:HG3	1.86	0.74
1:A:64:THR:HG22	1:A:145:SER:H	1.51	0.74
1:A:110:ASP:HB2	4:A:1648:HOH:O	1.86	0.74
1:B:79:ASN:ND2	1:B:81:SER:HB2	2.02	0.74
1:B:49:GLN:HE22	1:B:337:ASP:H	1.34	0.74
1:B:142:SER:H	1:B:169:HIS:HE1	1.37	0.73
1:A:205:ARG:HD2	4:B:2470:HOH:O	1.87	0.73
1:B:64:THR:HG22	1:B:145:SER:CA	2.18	0.73
1:B:64:THR:HG23	4:B:2590:HOH:O	1.89	0.73
1:C:323:HIS:HB2	1:C:325:LEU:HD22	1.68	0.73
1:A:323:HIS:O	1:A:325:LEU:HD13	1.89	0.73
1:A:79:ASN:HD22	1:A:81:SER:H	1.36	0.73
1:B:119:LYS:H	1:B:122:HIS:CD2	2.06	0.73
1:C:205:ARG:HD2	4:D:4476:HOH:O	1.88	0.73
1:A:213:LEU:HD12	1:A:213:LEU:O	1.88	0.72
1:A:137:LEU:O	1:A:188:SER:HB2	1.87	0.72
1:D:406:PRO:HG2	1:D:411:TRP:HB3	1.70	0.72
1:C:156:SER:O	1:C:211:ARG:HD2	1.89	0.72
1:B:406:PRO:HG2	1:B:411:TRP:HB3	1.71	0.72
1:A:79:ASN:ND2	1:A:82:GLU:H	1.87	0.72
1:D:312:GLU:O	1:D:316:ILE:HG13	1.89	0.72
1:D:289:PRO:O	1:D:328:ARG:HD2	1.90	0.71
1:B:314:GLN:NE2	1:B:359:ARG:HH11	1.89	0.71
1:D:86:ASP:HB3	1:D:343:ILE:HD11	1.72	0.71
1:D:142:SER:H	1:D:169:HIS:CE1	2.05	0.71
1:C:137:LEU:O	1:C:188:SER:HB2	1.91	0.71
1:B:64:THR:HG21	4:B:2499:HOH:O	1.91	0.71
1:D:157:HIS:O	1:D:163:ARG:HD3	1.91	0.70
1:D:142:SER:N	1:D:169:HIS:HE1	1.88	0.70
1:A:64:THR:HG22	1:A:145:SER:N	2.06	0.70
1:B:421:GLU:HG2	1:B:422:ILE:HG13	1.72	0.70
1:D:11:THR:O	1:D:15:GLN:HG3	1.92	0.69
1:A:70:THR:CG2	1:C:199:LYS:HD2	2.23	0.69
1:B:119:LYS:HB3	1:B:120:PRO:HD2	1.75	0.69
1:B:205:ARG:O	1:B:209:ARG:HG3	1.93	0.69
1:A:50:GLY:HA3	1:A:83:LEU:HD11	1.75	0.68
1:D:79:ASN:HD22	1:D:81:SER:H	1.40	0.68
1:D:416:ARG:O	1:D:419:GLU:HB3	1.92	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:387:GLN:NE2	4:D:4669:HOH:O	2.27	0.68
1:A:142:SER:N	1:A:169:HIS:HE1	1.89	0.68
1:D:418:TYR:HE2	1:D:423:LEU:HD21	1.59	0.68
1:A:369:ARG:HG3	1:A:369:ARG:NH1	1.99	0.68
1:B:58:ASN:ND2	1:B:61:GLY:HA3	2.09	0.68
1:A:142:SER:H	1:A:169:HIS:CE1	2.09	0.67
1:B:421:GLU:HG3	4:B:2669:HOH:O	1.94	0.67
1:C:78:ARG:CZ	1:C:426:ARG:HB3	2.25	0.67
1:C:94:ILE:O	1:C:98:LYS:NZ	2.26	0.67
1:D:314:GLN:NE2	1:D:356:ALA:HA	2.10	0.67
1:B:66:GLY:HA2	1:B:240:ILE:O	1.94	0.67
1:C:134:GLN:HA	1:C:134:GLN:NE2	2.10	0.67
1:D:64:THR:CG2	1:D:145:SER:H	2.06	0.67
1:D:78:ARG:N	1:D:82:GLU:OE1	2.27	0.67
1:A:243:GLU:HB3	1:C:299:VAL:HG12	1.76	0.67
1:B:323:HIS:O	1:B:325:LEU:HD13	1.95	0.67
1:B:170:CYS:O	1:B:174:ARG:HG3	1.95	0.66
1:D:358:LEU:O	1:D:362:LEU:HG	1.95	0.66
1:A:114:SER:HB3	1:A:117:GLN:HG3	1.77	0.66
1:B:234:GLU:HB2	1:B:265:CYS:HB3	1.76	0.66
1:C:142:SER:N	1:C:169:HIS:HE1	1.90	0.66
1:D:373:ALA:HB3	1:D:374:PRO:HD2	1.77	0.66
1:A:244:SER:HB2	4:A:1610:HOH:O	1.95	0.65
1:A:94:ILE:O	1:A:98:LYS:NZ	2.28	0.65
1:B:367:GLU:HG3	4:B:2533:HOH:O	1.96	0.65
1:D:258:THR:O	1:D:261:GLN:NE2	2.28	0.65
1:C:79:ASN:HD21	1:C:82:GLU:H	1.44	0.65
1:A:204:ASP:OD2	1:B:369:ARG:NH1	2.30	0.65
1:A:387:GLN:O	1:A:390:LEU:HB2	1.97	0.65
1:D:412:LEU:HG	1:D:416:ARG:HD2	1.77	0.65
1:A:277:ILE:HG12	4:A:1616:HOH:O	1.97	0.65
1:B:79:ASN:HD22	1:B:81:SER:H	1.45	0.65
1:D:176:VAL:O	1:D:179:TYR:HB3	1.98	0.64
1:A:79:ASN:HD22	1:A:81:SER:N	1.94	0.64
1:A:94:ILE:HD13	1:A:350:THR:HB	1.79	0.64
1:A:119:LYS:N	1:A:122:HIS:HD2	1.91	0.64
1:B:58:ASN:HD21	1:B:61:GLY:HA3	1.62	0.64
1:C:35:LEU:HD21	1:C:395:VAL:HG12	1.79	0.64
1:C:369:ARG:NE	4:C:3699:HOH:O	2.29	0.64
1:A:87:LEU:HD22	1:A:100:LEU:HD13	1.78	0.64
1:A:421:GLU:OE1	1:A:422:ILE:N	2.30	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:84:ARG:HD2	1:D:129:TRP:CD1	2.32	0.64
1:A:405:THR:HG22	1:A:406:PRO:HD2	1.80	0.64
1:A:134:GLN:HA	1:A:134:GLN:NE2	2.12	0.64
1:A:154:THR:OG1	1:A:155:LEU:N	2.31	0.64
1:A:365:THR:O	1:A:369:ARG:HB2	1.98	0.64
1:B:142:SER:N	1:B:169:HIS:HE1	1.95	0.64
1:D:418:TYR:CE2	1:D:423:LEU:HD21	2.33	0.63
1:A:270:HIS:NE2	2:A:1460:RNT:O2	2.31	0.63
1:C:146:HIS:CG	1:C:147:PRO:HD2	2.33	0.63
1:A:91:MET:HG2	1:A:98:LYS:HD2	1.80	0.63
1:D:139:PHE:O	1:D:190:MET:HA	1.98	0.63
1:B:151:ASP:HB2	4:B:2485:HOH:O	1.97	0.63
1:A:422:ILE:HG22	1:A:423:LEU:N	2.13	0.63
1:B:64:THR:CG2	1:B:145:SER:H	2.12	0.63
1:B:127:VAL:O	1:B:131:LYS:HG3	1.99	0.63
1:B:154:THR:O	1:B:157:HIS:HB2	1.97	0.63
1:D:418:TYR:HA	1:D:421:GLU:OE1	1.98	0.63
1:C:285:MET:CE	1:C:325:LEU:HD11	2.30	0.62
1:A:146:HIS:CG	1:A:147:PRO:HD2	2.34	0.62
1:A:272:HIS:HB3	1:A:273:PRO:HD2	1.82	0.62
1:A:373:ALA:HB3	1:A:374:PRO:HD2	1.79	0.62
1:D:371:LEU:HD13	1:D:379:ALA:HB3	1.80	0.62
1:A:107:LEU:HD23	1:A:107:LEU:O	1.99	0.62
1:A:54:SER:HB3	1:A:59:PRO:O	1.99	0.62
1:A:387:GLN:NE2	1:A:390:LEU:HD12	2.15	0.62
1:A:49:GLN:HE21	1:A:335:PHE:HD1	1.47	0.62
1:B:205:ARG:HB3	1:B:245:TYR:CE1	2.35	0.62
1:A:314:GLN:HE21	1:A:359:ARG:HH11	1.46	0.62
1:D:289:PRO:O	1:D:290:GLN:HG3	2.00	0.62
1:B:118:ILE:HD12	1:B:176:VAL:HG21	1.81	0.61
1:D:120:PRO:HB3	1:D:179:TYR:CD2	2.34	0.61
1:C:79:ASN:HD22	1:C:81:SER:N	1.97	0.61
1:C:120:PRO:HB3	1:C:179:TYR:CD2	2.35	0.61
1:D:314:GLN:HE22	1:D:356:ALA:HA	1.65	0.61
1:A:121:GLU:HB3	4:A:1692:HOH:O	2.00	0.61
1:B:63:LEU:HD13	1:B:67:ILE:O	2.00	0.61
1:C:373:ALA:HB3	1:C:374:PRO:HD2	1.83	0.61
1:D:64:THR:HG23	4:D:4613:HOH:O	2.00	0.61
1:B:240:ILE:HD12	1:B:301:TRP:CZ3	2.35	0.61
1:B:89:GLN:HG3	1:B:418:TYR:CE1	2.36	0.60
1:B:240:ILE:HD13	1:D:240:ILE:CD1	2.30	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:152:GLY:O	1:C:196:ASP:HA	2.00	0.60
1:C:258:THR:HG23	4:C:3512:HOH:O	2.01	0.60
1:D:131:LYS:HE3	1:D:183:GLN:HG3	1.83	0.60
1:A:393:GLN:HB2	4:A:1530:HOH:O	2.00	0.60
1:D:61:GLY:O	1:D:62:SER:HB2	2.01	0.60
1:A:64:THR:HG21	4:A:1483:HOH:O	2.01	0.60
1:B:64:THR:HG22	1:B:145:SER:N	2.17	0.60
1:B:370:LYS:O	1:B:374:PRO:HD2	2.02	0.60
1:C:49:GLN:HE22	1:C:337:ASP:H	1.50	0.60
1:C:359:ARG:NH1	4:C:3701:HOH:O	2.35	0.60
1:B:64:THR:CG2	1:B:145:SER:HA	2.31	0.60
1:B:359:ARG:NH2	4:B:2700:HOH:O	2.34	0.60
1:A:91:MET:CE	1:A:135:LEU:HD11	2.31	0.59
1:B:176:VAL:O	1:B:179:TYR:HB3	2.02	0.59
1:C:134:GLN:HA	1:C:134:GLN:HE21	1.66	0.59
1:A:44:SER:HA	1:A:99:ARG:HB2	1.83	0.59
1:C:318:SER:O	1:C:322:ARG:HG3	2.01	0.59
1:D:64:THR:HG22	1:D:145:SER:CA	2.33	0.59
1:B:236:LYS:HE2	1:B:238:PHE:O	2.02	0.59
1:C:413:GLU:HA	1:C:413:GLU:OE1	2.00	0.59
1:B:64:THR:HG22	1:B:145:SER:H	1.68	0.59
1:D:290:GLN:HG2	1:D:328:ARG:HA	1.83	0.59
1:D:370:LYS:HG2	4:D:4529:HOH:O	2.01	0.59
1:A:405:THR:CG2	1:A:406:PRO:HD2	2.33	0.59
1:B:49:GLN:HE22	1:B:337:ASP:N	2.01	0.59
1:B:142:SER:H	1:B:169:HIS:CE1	2.20	0.58
1:C:343:ILE:O	1:C:347:VAL:HG23	2.03	0.58
1:B:413:GLU:N	1:B:413:GLU:OE2	2.36	0.58
1:C:99:ARG:HH12	1:C:186:THR:CG2	2.15	0.58
1:B:365:THR:O	1:B:369:ARG:HB2	2.03	0.58
1:D:397:GLU:HG2	1:D:407:ALA:HB1	1.85	0.58
1:D:175:ARG:HD3	1:D:222:GLU:OE1	2.04	0.58
1:D:79:ASN:ND2	1:D:82:GLU:H	2.01	0.58
1:C:142:SER:H	1:C:169:HIS:CE1	2.05	0.58
1:B:45:MET:O	1:B:100:LEU:HD12	2.04	0.58
1:B:55:GLY:HA3	1:B:105:ILE:HG13	1.86	0.58
1:B:89:GLN:HG3	1:B:418:TYR:CD1	2.39	0.58
1:D:275:GLU:OE1	1:D:280:LYS:NZ	2.34	0.58
1:D:57:GLU:HG3	4:D:4619:HOH:O	2.04	0.58
1:D:119:LYS:N	1:D:122:HIS:CD2	2.68	0.57
1:D:86:ASP:CB	1:D:343:ILE:HD11	2.32	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:272:HIS:CE1	1:D:275:GLU:HA	2.40	0.57
1:D:49:GLN:NE2	1:D:337:ASP:H	1.95	0.57
1:C:35:LEU:HD21	1:C:395:VAL:CG1	2.34	0.57
1:C:369:ARG:NH1	1:D:204:ASP:OD2	2.36	0.57
1:B:373:ALA:HB3	1:B:374:PRO:HD2	1.85	0.57
1:C:96:GLY:HA2	1:C:403:HIS:CE1	2.39	0.57
1:A:64:THR:CG2	1:A:145:SER:H	2.17	0.57
1:C:233:VAL:HB	1:C:253:TYR:CD2	2.40	0.57
1:C:120:PRO:HB3	1:C:179:TYR:CG	2.40	0.57
1:D:422:ILE:HG22	1:D:423:LEU:N	2.20	0.57
1:A:70:THR:HG22	1:C:199:LYS:CE	2.35	0.56
1:A:70:THR:HG22	1:C:199:LYS:HD2	1.87	0.56
1:C:177:SER:O	1:C:180:PHE:HB2	2.05	0.56
1:B:79:ASN:ND2	1:B:82:GLU:H	2.03	0.56
1:D:162:ILE:O	1:D:165:PHE:HB3	2.05	0.56
1:A:70:THR:HG23	4:C:3491:HOH:O	2.04	0.56
1:C:141:PRO:HD2	1:C:191:ASN:O	2.06	0.56
1:A:13:LEU:HD23	1:A:13:LEU:O	2.04	0.56
1:A:60:GLU:OE1	1:A:61:GLY:N	2.37	0.56
1:B:290:GLN:HG2	1:B:330:HIS:NE2	2.20	0.56
1:A:75:GLY:O	1:A:76:LYS:C	2.43	0.56
1:A:119:LYS:HB3	1:A:120:PRO:HD2	1.87	0.56
1:B:79:ASN:HD22	1:B:81:SER:HB2	1.71	0.56
1:A:79:ASN:ND2	1:A:82:GLU:HG3	2.21	0.55
1:A:238:PHE:CD2	1:C:300:ARG:HD3	2.41	0.55
1:C:181:GLY:HA2	1:C:186:THR:O	2.06	0.55
1:D:44:SER:HA	1:D:99:ARG:HB2	1.86	0.55
1:B:391:PRO:C	1:B:393:GLN:HE21	2.09	0.55
1:C:164:GLN:NE2	1:C:168:ASP:OD1	2.35	0.55
1:B:79:ASN:HD22	1:B:81:SER:N	2.03	0.55
1:B:267:ASP:HB3	1:B:270:HIS:CG	2.42	0.55
1:D:370:LYS:O	1:D:374:PRO:HD2	2.05	0.55
1:A:79:ASN:HD21	1:A:82:GLU:H	1.55	0.55
1:C:11:THR:HG23	1:C:15:GLN:HE21	1.72	0.55
1:B:213:LEU:HD12	1:B:213:LEU:O	2.07	0.55
1:B:405:THR:HG23	1:B:406:PRO:HD2	1.88	0.55
1:A:143:CYS:HA	1:A:166:TRP:CZ3	2.42	0.55
1:B:37:GLN:O	1:B:40:ARG:HB2	2.06	0.55
1:B:157:HIS:O	1:B:163:ARG:HD3	2.06	0.55
1:C:406:PRO:HG2	1:C:411:TRP:HB3	1.88	0.55
1:B:116:ASP:C	1:B:117:GLN:HG2	2.25	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:199:LYS:HZ2	1:D:70:THR:HG23	1.71	0.55
1:B:116:ASP:OD1	1:B:117:GLN:HG2	2.06	0.55
1:B:422:ILE:HD13	4:B:2724:HOH:O	2.05	0.55
1:A:424:SER:O	1:A:425:ARG:HG2	2.06	0.54
1:A:77:ALA:HB3	1:A:83:LEU:HD13	1.89	0.54
1:C:64:THR:OG1	1:C:145:SER:HA	2.07	0.54
1:D:216:LEU:O	1:D:220:ILE:HG12	2.08	0.54
1:A:288:VAL:HB	1:A:289:PRO:HD2	1.90	0.54
1:C:236:LYS:HG3	1:C:270:HIS:ND1	2.22	0.54
1:A:119:LYS:N	1:A:122:HIS:CD2	2.71	0.54
1:A:159:ASP:OD2	1:A:162:ILE:HG13	2.08	0.54
1:B:369:ARG:NH1	1:B:369:ARG:HG3	2.22	0.54
1:C:220:ILE:O	1:C:221:SER:C	2.46	0.54
1:D:27:VAL:HG23	1:D:27:VAL:O	2.08	0.54
1:A:49:GLN:NE2	1:A:335:PHE:HD1	2.06	0.54
1:A:304:ASP:HB3	1:A:336:PHE:H	1.73	0.54
1:A:370:LYS:O	1:A:374:PRO:HD2	2.08	0.54
1:A:389:SER:HA	1:D:393:GLN:HG2	1.90	0.54
1:B:369:ARG:NH1	4:B:2738:HOH:O	2.39	0.54
1:D:79:ASN:ND2	1:D:81:SER:N	2.55	0.54
1:D:119:LYS:HE2	1:D:121:GLU:OE2	2.08	0.54
1:D:199:LYS:HB2	1:D:241:GLY:O	2.08	0.54
1:A:268:ALA:HB3	1:A:296:SER:H	1.73	0.53
1:A:271:PHE:HB3	1:A:275:GLU:OE2	2.07	0.53
1:A:386:GLU:HB3	4:A:1542:HOH:O	2.07	0.53
1:B:49:GLN:NE2	1:B:336:PHE:HA	2.22	0.53
1:C:215:ALA:O	1:C:219:VAL:HG23	2.07	0.53
1:D:127:VAL:CG1	1:D:183:GLN:HG2	2.37	0.53
1:C:285:MET:HE3	1:C:325:LEU:HD11	1.91	0.53
1:D:156:SER:O	1:D:211:ARG:HD2	2.07	0.53
1:C:256:TYR:CZ	1:C:260:ARG:HG2	2.43	0.53
1:C:342:ARG:HG3	1:C:342:ARG:HH11	1.72	0.53
1:C:289:PRO:O	1:C:328:ARG:HD2	2.09	0.53
1:C:87:LEU:O	1:C:90:ALA:HB3	2.09	0.53
1:D:207:ALA:O	1:D:208:PRO:C	2.46	0.53
1:D:321:VAL:O	1:D:322:ARG:C	2.46	0.53
1:C:342:ARG:HG3	4:C:3625:HOH:O	2.09	0.53
1:A:87:LEU:CD2	1:A:100:LEU:HD13	2.38	0.53
1:D:358:LEU:HD21	1:D:395:VAL:HG12	1.91	0.53
1:A:213:LEU:HD12	1:A:213:LEU:C	2.28	0.53
1:A:421:GLU:OE1	1:A:422:ILE:HD12	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:405:THR:CG2	1:B:406:PRO:HD2	2.39	0.53
1:C:61:GLY:O	1:C:62:SER:HB2	2.08	0.53
1:D:225:ASN:O	1:D:228:HIS:N	2.39	0.53
1:B:146:HIS:ND1	1:B:147:PRO:HD2	2.24	0.52
1:C:236:LYS:HG3	1:C:270:HIS:CE1	2.44	0.52
1:B:213:LEU:HD12	1:B:213:LEU:C	2.29	0.52
1:C:51:ASP:OD2	1:C:51:ASP:N	2.41	0.52
1:D:406:PRO:HG2	1:D:411:TRP:CB	2.39	0.52
1:A:78:ARG:N	1:A:82:GLU:OE1	2.41	0.52
1:A:342:ARG:HG3	1:A:342:ARG:HH11	1.74	0.52
1:A:424:SER:C	1:A:425:ARG:HG2	2.29	0.52
1:C:272:HIS:HB3	1:C:273:PRO:CD	2.36	0.52
1:C:368:LEU:HD21	1:C:383:LEU:CB	2.33	0.52
1:D:422:ILE:CG2	1:D:423:LEU:HD23	2.28	0.52
1:D:97:PRO:C	1:D:98:LYS:HG2	2.29	0.52
1:A:50:GLY:HA3	1:A:83:LEU:CD1	2.40	0.52
1:B:61:GLY:C	4:B:2715:HOH:O	2.48	0.52
1:A:314:GLN:HE21	1:A:359:ARG:NH1	2.08	0.52
1:D:265:CYS:HB2	1:D:292:LEU:HD23	1.92	0.52
1:A:243:GLU:HB3	1:C:299:VAL:CG1	2.39	0.51
1:B:178:ALA:HB2	1:B:224:LEU:HD13	1.92	0.51
1:D:79:ASN:HD21	1:D:82:GLU:H	1.58	0.51
1:A:341:ASN:HB3	1:D:378:THR:HG21	1.92	0.51
1:A:422:ILE:HG22	1:A:423:LEU:HD23	1.92	0.51
1:B:64:THR:CG2	1:B:145:SER:N	2.73	0.51
1:C:46:HIS:NE2	1:C:335:PHE:O	2.43	0.51
1:C:119:LYS:N	1:C:122:HIS:CD2	2.75	0.51
1:A:301:TRP:CE2	1:A:303:SER:HB3	2.45	0.51
1:A:398:MET:HE3	4:A:1463:HOH:O	2.09	0.51
1:B:393:GLN:OE1	1:C:391:PRO:HA	2.10	0.51
1:C:359:ARG:NH2	4:C:3687:HOH:O	2.42	0.51
1:D:23:ARG:O	1:D:26:ALA:HB3	2.10	0.51
1:D:391:PRO:HA	4:D:4671:HOH:O	2.09	0.51
1:D:418:TYR:CE1	1:D:422:ILE:HD12	2.46	0.51
1:A:337:ASP:OD1	1:C:199:LYS:NZ	2.41	0.51
1:B:300:ARG:O	1:B:301:TRP:HB3	2.11	0.51
1:B:370:LYS:O	1:B:371:LEU:C	2.46	0.51
1:A:204:ASP:HB2	1:B:369:ARG:NH1	2.26	0.51
1:B:89:GLN:O	1:B:92:ARG:HG2	2.11	0.51
1:A:343:ILE:N	1:A:343:ILE:HD13	2.26	0.50
1:A:421:GLU:HA	1:A:425:ARG:NH2	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:12:GLN:HE22	1:C:22:GLN:HE22	1.55	0.50
1:B:61:GLY:N	4:B:2715:HOH:O	2.44	0.50
1:C:223:LYS:NZ	4:C:3504:HOH:O	2.30	0.50
1:A:267:ASP:HA	1:A:294:HIS:HB2	1.92	0.50
1:C:387:GLN:NE2	1:C:390:LEU:HD12	2.26	0.50
1:D:167:ILE:O	1:D:171:LYS:HG3	2.11	0.50
1:B:211:ARG:NH2	4:B:2721:HOH:O	2.44	0.50
1:D:368:LEU:HD21	1:D:383:LEU:HB3	1.93	0.50
1:A:240:ILE:HD11	1:C:240:ILE:HD12	1.94	0.50
1:A:421:GLU:O	1:A:425:ARG:HG3	2.10	0.50
1:C:46:HIS:HA	1:C:101:ASN:HB3	1.94	0.50
1:A:70:THR:HG21	1:C:241:GLY:HA2	1.92	0.50
1:B:289:PRO:O	1:B:328:ARG:HD2	2.11	0.50
1:C:323:HIS:HB2	1:C:325:LEU:CD2	2.38	0.50
1:A:373:ALA:CB	1:A:374:PRO:HD2	2.36	0.50
1:D:20:ALA:HB2	1:D:394:ALA:HB3	1.93	0.50
1:A:421:GLU:CG	1:A:422:ILE:HD12	2.42	0.49
1:C:123:PHE:O	1:C:126:TRP:HB2	2.12	0.49
1:B:182:GLU:HG3	1:B:228:HIS:ND1	2.27	0.49
1:C:79:ASN:ND2	1:C:81:SER:HB2	2.27	0.49
1:D:297:ARG:HD2	4:D:4581:HOH:O	2.11	0.49
1:A:124:LYS:NZ	1:A:125:ASN:ND2	2.60	0.49
1:C:370:LYS:O	1:C:374:PRO:HD2	2.12	0.49
1:D:323:HIS:HB2	1:D:325:LEU:HD22	1.92	0.49
1:A:11:THR:HB	1:A:14:GLU:H	1.78	0.49
1:A:18:GLU:OE1	1:A:18:GLU:HA	2.11	0.49
1:A:196:ASP:OD1	1:A:196:ASP:N	2.45	0.49
1:B:14:GLU:O	1:B:18:GLU:HG2	2.12	0.49
1:B:107:LEU:HG	1:B:107:LEU:O	2.12	0.49
1:C:75:GLY:O	1:C:76:LYS:C	2.45	0.49
1:D:119:LYS:N	1:D:122:HIS:HD2	2.01	0.49
1:B:124:LYS:O	1:B:128:GLU:HG3	2.13	0.49
1:B:229:HIS:O	1:B:230:ILE:HG13	2.13	0.49
1:B:152:GLY:O	1:B:196:ASP:HA	2.13	0.49
1:C:373:ALA:CB	1:C:374:PRO:HD2	2.42	0.49
1:A:64:THR:CG2	1:A:145:SER:HA	2.37	0.49
1:A:89:GLN:NE2	1:A:89:GLN:CA	2.75	0.49
1:B:293:LEU:CD1	1:B:320:ILE:HD11	2.43	0.49
1:B:351:ARG:HH22	1:B:405:THR:HG22	1.77	0.49
1:D:107:LEU:N	1:D:107:LEU:HD23	2.27	0.49
1:A:419:GLU:O	1:A:424:SER:HB3	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:14:GLU:OE2	1:B:18:GLU:OE2	2.30	0.49
1:B:151:ASP:OD2	1:B:157:HIS:NE2	2.46	0.49
1:A:52:ASP:C	1:A:53:VAL:HG23	2.31	0.49
1:B:269:GLY:HA2	1:B:298:PRO:CG	2.27	0.49
1:C:134:GLN:HE21	1:C:134:GLN:CA	2.24	0.49
1:C:269:GLY:HA2	1:C:298:PRO:HG3	1.94	0.49
1:A:46:HIS:HB2	1:A:48:TRP:CE2	2.48	0.48
1:C:15:GLN:HA	4:C:3685:HOH:O	2.12	0.48
1:A:13:LEU:HD23	1:A:13:LEU:C	2.34	0.48
1:A:79:ASN:ND2	1:A:81:SER:H	2.10	0.48
1:B:181:GLY:HA3	1:B:228:HIS:O	2.14	0.48
1:C:39:ASP:O	1:C:97:PRO:HG3	2.13	0.48
1:C:79:ASN:ND2	1:C:82:GLU:N	2.57	0.48
1:C:153:PHE:CD1	1:C:153:PHE:N	2.79	0.48
1:C:213:LEU:HD11	1:C:260:ARG:NH2	2.29	0.48
1:D:192:ILE:N	1:D:232:ALA:O	2.43	0.48
1:A:272:HIS:HB3	1:A:273:PRO:CD	2.44	0.48
1:B:119:LYS:H	1:B:122:HIS:HD2	1.59	0.48
1:A:78:ARG:NH2	1:A:426:ARG:HB3	2.28	0.48
1:B:228:HIS:CD2	1:B:228:HIS:N	2.77	0.48
1:A:78:ARG:HD3	4:A:1515:HOH:O	2.12	0.48
1:A:79:ASN:HD21	1:A:82:GLU:HG3	1.79	0.48
1:C:330:HIS:HB3	4:C:3522:HOH:O	2.13	0.48
1:A:286:LEU:HD22	4:B:2740:HOH:O	2.14	0.48
1:B:179:TYR:CE1	1:B:183:GLN:HG3	2.49	0.48
1:B:337:ASP:OD1	1:D:199:LYS:NZ	2.41	0.48
1:A:157:HIS:CD2	1:A:162:ILE:HG21	2.49	0.48
1:B:268:ALA:HB1	4:B:2576:HOH:O	2.14	0.48
1:C:79:ASN:HD21	1:C:82:GLU:N	2.09	0.48
1:A:134:GLN:NE2	1:A:134:GLN:CA	2.75	0.48
1:B:384:LEU:O	1:B:387:GLN:HB2	2.14	0.48
1:A:419:GLU:O	1:A:424:SER:N	2.46	0.47
1:B:270:HIS:NE2	2:B:2460:RNT:O2	2.47	0.47
1:B:124:LYS:O	1:B:124:LYS:HG2	2.13	0.47
1:B:128:GLU:HG2	4:B:2713:HOH:O	2.13	0.47
1:B:262:THR:O	1:B:289:PRO:HD2	2.13	0.47
1:B:162:ILE:O	1:B:165:PHE:HB3	2.14	0.47
1:A:133:ASN:O	1:A:134:GLN:HB2	2.13	0.47
1:C:103:HIS:CD2	2:C:3460:RNT:H61	2.49	0.47
1:D:56:PHE:O	1:D:59:PRO:HD3	2.15	0.47
1:A:114:SER:HB3	1:A:117:GLN:CG	2.43	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:314:GLN:NE2	1:A:359:ARG:HD3	2.29	0.47
1:B:23:ARG:HA	1:B:23:ARG:HD2	1.64	0.47
1:C:13:LEU:HD13	1:C:401:GLN:NE2	2.29	0.47
1:C:84:ARG:HG2	1:C:126:TRP:CZ3	2.50	0.47
1:C:99:ARG:HH12	1:C:186:THR:HG21	1.78	0.47
1:A:240:ILE:HD11	1:C:240:ILE:CD1	2.44	0.47
1:A:423:LEU:C	1:A:425:ARG:H	2.18	0.47
1:D:265:CYS:HA	1:D:292:LEU:O	2.14	0.47
1:A:352:ASN:ND2	1:D:385:GLU:OE1	2.48	0.47
1:A:370:LYS:O	1:A:374:PRO:HG2	2.15	0.47
1:B:94:ILE:O	1:B:98:LYS:NZ	2.34	0.47
1:B:301:TRP:HA	4:B:2519:HOH:O	2.14	0.46
1:B:364:PRO:O	1:B:368:LEU:HG	2.15	0.46
1:B:390:LEU:HD23	1:B:390:LEU:HA	1.81	0.46
1:C:174:ARG:HG2	1:C:190:MET:CE	2.45	0.46
1:D:46:HIS:ND1	1:D:46:HIS:N	2.61	0.46
1:B:114:SER:HB3	1:B:116:ASP:OD1	2.15	0.46
1:B:178:ALA:HA	1:B:229:HIS:HB2	1.97	0.46
1:C:14:GLU:OE2	1:C:18:GLU:HG3	2.16	0.46
1:C:21:LYS:HG3	1:C:31:VAL:HG22	1.97	0.46
1:C:363:GLU:HG3	1:C:364:PRO:HD2	1.96	0.46
1:D:267:ASP:CB	1:D:294:HIS:HB2	2.45	0.46
1:A:238:PHE:HB2	1:A:243:GLU:HA	1.98	0.46
1:B:146:HIS:CE1	1:B:148:LEU:HB2	2.50	0.46
1:C:115:ARG:HB2	1:C:165:PHE:CZ	2.51	0.46
1:D:109:SER:HB3	1:D:111:THR:O	2.15	0.46
1:D:297:ARG:NE	1:D:308:LEU:HG	2.31	0.46
1:A:324:ASP:OD1	1:A:326:PHE:HE2	1.99	0.46
1:A:21:LYS:HG3	1:A:31:VAL:CG2	2.46	0.46
1:D:181:GLY:HA2	1:D:186:THR:O	2.16	0.46
1:D:213:LEU:HD12	1:D:213:LEU:O	2.15	0.46
1:A:236:LYS:HG3	1:A:270:HIS:ND1	2.31	0.46
1:A:289:PRO:O	1:A:328:ARG:HD2	2.15	0.46
1:A:342:ARG:HG3	4:A:1608:HOH:O	2.15	0.46
1:B:421:GLU:HG2	1:B:421:GLU:O	2.15	0.46
1:C:271:PHE:HB3	1:C:275:GLU:OE2	2.16	0.46
1:D:108:GLU:OE2	1:D:125:ASN:HB2	2.16	0.46
1:D:170:CYS:O	1:D:174:ARG:HG3	2.15	0.46
1:A:393:GLN:NE2	1:D:393:GLN:NE2	2.64	0.46
1:B:51:ASP:OD1	1:B:55:GLY:N	2.42	0.46
1:B:418:TYR:HE2	1:B:423:LEU:HD21	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:373:ALA:CB	1:D:374:PRO:HD2	2.40	0.46
1:A:91:MET:HE2	1:A:135:LEU:HD21	1.98	0.46
1:B:199:LYS:NZ	1:D:70:THR:CG2	2.79	0.46
1:B:419:GLU:O	1:B:424:SER:N	2.44	0.46
1:C:47:CYS:HB3	1:C:100:LEU:HD11	1.98	0.46
1:C:103:HIS:O	1:C:104:ALA:C	2.52	0.46
1:B:56:PHE:CZ	1:B:80:ALA:HA	2.51	0.45
1:B:87:LEU:HD21	1:B:346:TRP:CZ2	2.51	0.45
1:B:177:SER:O	1:B:180:PHE:HB2	2.17	0.45
1:C:368:LEU:HB3	1:D:203:VAL:HG21	1.98	0.45
1:B:325:LEU:HD12	1:B:325:LEU:HA	1.49	0.45
1:B:383:LEU:HD23	1:B:383:LEU:HA	1.73	0.45
1:C:207:ALA:N	1:C:208:PRO:CD	2.79	0.45
1:B:240:ILE:CD1	1:B:301:TRP:CZ3	3.00	0.45
1:D:20:ALA:CB	1:D:394:ALA:HB3	2.47	0.45
1:D:89:GLN:CG	1:D:418:TYR:CD1	3.00	0.45
1:A:368:LEU:HD21	1:A:383:LEU:CB	2.47	0.45
1:C:22:GLN:O	1:C:23:ARG:C	2.52	0.45
1:D:224:LEU:O	1:D:226:PRO:HD3	2.16	0.45
1:C:128:GLU:O	1:C:131:LYS:HB2	2.17	0.45
1:C:236:LYS:HG3	1:C:270:HIS:CG	2.52	0.45
1:C:344:ALA:O	1:C:345:ALA:C	2.51	0.45
1:D:86:ASP:CA	1:D:343:ILE:HD11	2.46	0.45
1:D:300:ARG:HB3	4:D:4564:HOH:O	2.17	0.45
1:D:392:TRP:O	1:D:395:VAL:HB	2.17	0.45
1:A:73:TYR:O	1:A:342:ARG:NH2	2.35	0.45
1:A:89:GLN:C	1:A:89:GLN:HE21	2.18	0.45
1:A:181:GLY:HA2	1:A:186:THR:O	2.17	0.45
1:B:165:PHE:HA	4:B:2552:HOH:O	2.16	0.45
1:B:391:PRO:HA	1:B:393:GLN:NE2	2.32	0.45
1:C:370:LYS:O	1:C:374:PRO:HG2	2.17	0.45
1:D:95:PRO:O	1:D:354:LYS:NZ	2.31	0.45
1:D:285:MET:CE	1:D:325:LEU:HD11	2.47	0.45
1:D:410:GLU:H	1:D:410:GLU:HG3	1.30	0.45
1:D:19:LEU:HD23	1:D:19:LEU:HA	1.72	0.45
1:B:391:PRO:CA	1:B:393:GLN:NE2	2.80	0.44
1:B:418:TYR:CE2	1:B:423:LEU:HD21	2.52	0.44
1:D:278:SER:O	1:D:319:GLU:HG3	2.17	0.44
1:D:413:GLU:OE1	1:D:416:ARG:HD3	2.18	0.44
1:D:373:ALA:CB	1:D:374:PRO:CD	2.95	0.44
1:A:70:THR:HG22	1:C:199:LYS:CD	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:418:TYR:HE2	1:A:423:LEU:HD21	1.82	0.44
1:B:102:LEU:O	1:B:139:PHE:HA	2.18	0.44
1:B:240:ILE:HD13	1:D:240:ILE:HD13	1.98	0.44
1:B:398:MET:HE2	1:B:398:MET:HB2	1.84	0.44
1:C:95:PRO:HG3	1:C:400:CYS:SG	2.57	0.44
1:C:105:ILE:HG23	1:C:142:SER:CB	2.48	0.44
1:C:269:GLY:O	1:C:302:ASP:HB2	2.17	0.44
1:D:46:HIS:HB2	1:D:48:TRP:CE2	2.53	0.44
1:D:195:PRO:O	1:D:196:ASP:C	2.54	0.44
1:A:237:LEU:HB3	4:A:1607:HOH:O	2.16	0.44
1:A:405:THR:HG22	1:A:406:PRO:CD	2.47	0.44
1:B:13:LEU:HD11	1:B:397:GLU:HB3	1.99	0.44
1:B:79:ASN:ND2	1:B:81:SER:CB	2.78	0.44
1:D:46:HIS:NE2	1:D:335:PHE:O	2.51	0.44
1:A:321:VAL:HB	1:A:360:ALA:HB1	1.99	0.44
1:B:64:THR:O	1:B:144:PHE:HB2	2.17	0.44
1:C:410:GLU:H	1:C:410:GLU:HG3	1.42	0.44
1:D:79:ASN:ND2	1:D:81:SER:H	2.13	0.44
1:D:423:LEU:HD23	1:D:423:LEU:N	2.31	0.44
1:A:322:ARG:HD3	1:B:203:VAL:O	2.17	0.44
1:A:383:LEU:HD23	1:A:383:LEU:HA	1.82	0.44
1:B:119:LYS:CB	1:B:120:PRO:HD2	2.41	0.44
1:C:42:PRO:HA	1:C:97:PRO:HB2	2.00	0.44
1:A:89:GLN:CA	1:A:89:GLN:HE21	2.30	0.44
1:D:84:ARG:HD2	1:D:129:TRP:CG	2.53	0.44
1:D:96:GLY:H	1:D:403:HIS:CD2	2.35	0.44
1:A:421:GLU:OE1	1:A:422:ILE:HB	2.16	0.44
1:C:276:VAL:HB	1:C:312:GLU:OE2	2.17	0.44
1:C:154:THR:HB	1:C:166:TRP:CG	2.53	0.44
1:D:129:TRP:CZ3	1:D:135:LEU:HD12	2.52	0.44
1:C:119:LYS:N	1:C:122:HIS:HD2	2.06	0.43
1:A:392:TRP:O	1:A:395:VAL:HB	2.18	0.43
4:B:2652:HOH:O	1:D:199:LYS:HE3	2.18	0.43
1:B:153:PHE:HZ	1:B:198:MET:CE	2.31	0.43
1:A:159:ASP:HB3	1:A:162:ILE:HG13	2.00	0.43
1:A:341:ASN:OD1	1:A:343:ILE:N	2.51	0.43
1:B:159:ASP:OD2	1:B:162:ILE:HG13	2.17	0.43
1:B:314:GLN:HE21	1:B:359:ARG:NH1	2.05	0.43
1:A:416:ARG:HB3	4:A:1498:HOH:O	2.18	0.43
1:C:83:LEU:HD12	1:C:83:LEU:HA	1.81	0.43
1:C:134:GLN:NE2	1:C:134:GLN:CA	2.78	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:371:LEU:CD1	1:D:379:ALA:HB1	2.43	0.43
1:A:42:PRO:HA	1:A:97:PRO:HB2	2.00	0.43
1:A:130:ALA:O	1:A:131:LYS:C	2.55	0.43
1:A:373:ALA:CB	1:A:374:PRO:CD	2.96	0.43
1:A:393:GLN:OE1	1:D:393:GLN:OE1	2.37	0.43
1:B:100:LEU:HD12	1:B:100:LEU:HA	1.73	0.43
1:D:135:LEU:HA	1:D:135:LEU:HD23	1.77	0.43
1:A:151:ASP:HB2	4:A:1471:HOH:O	2.17	0.43
1:B:146:HIS:CD2	1:B:147:PRO:HD2	2.52	0.43
1:D:314:GLN:NE2	1:D:359:ARG:HD3	2.33	0.43
1:D:390:LEU:HB3	1:D:391:PRO:HD2	1.99	0.43
1:A:159:ASP:CG	1:A:162:ILE:HG13	2.39	0.43
1:C:13:LEU:HD21	1:C:398:MET:HA	2.00	0.43
1:A:420:LYS:O	1:A:424:SER:OG	2.26	0.43
1:C:300:ARG:HG2	1:C:300:ARG:HH11	1.84	0.43
1:D:89:GLN:HG3	1:D:418:TYR:CG	2.54	0.43
1:D:325:LEU:HB3	1:D:329:VAL:CG2	2.49	0.43
1:D:399:TYR:CE1	1:D:403:HIS:CE1	3.07	0.43
1:D:403:HIS:O	1:D:405:THR:HG23	2.19	0.43
1:A:121:GLU:N	4:A:1692:HOH:O	2.40	0.43
1:B:30:ASP:OD1	1:B:32:GLU:HB2	2.18	0.43
1:B:127:VAL:CG1	1:B:131:LYS:HE3	2.49	0.43
1:C:342:ARG:HG3	1:C:342:ARG:NH1	2.34	0.43
1:D:371:LEU:HD11	1:D:383:LEU:HD12	1.99	0.43
1:A:49:GLN:HE22	1:A:337:ASP:H	1.67	0.42
1:B:314:GLN:HE22	1:B:356:ALA:HA	1.83	0.42
1:A:135:LEU:HA	1:A:135:LEU:HD23	1.66	0.42
1:A:139:PHE:O	1:A:190:MET:HA	2.19	0.42
1:A:144:PHE:CD1	1:A:144:PHE:N	2.87	0.42
1:B:314:GLN:NE2	1:B:359:ARG:HD3	2.33	0.42
1:B:393:GLN:CG	1:C:393:GLN:HE22	2.32	0.42
1:D:84:ARG:HG2	1:D:126:TRP:CZ3	2.54	0.42
1:D:86:ASP:O	1:D:343:ILE:HD12	2.19	0.42
1:D:120:PRO:HB3	1:D:179:TYR:CG	2.54	0.42
1:A:207:ALA:HB1	1:A:211:ARG:NH2	2.35	0.42
1:A:418:TYR:CE2	1:A:423:LEU:HD21	2.55	0.42
1:B:43:VAL:HG23	1:B:354:LYS:HE2	2.02	0.42
1:D:131:LYS:CE	1:D:183:GLN:HG3	2.47	0.42
1:D:325:LEU:HD12	1:D:325:LEU:HA	1.68	0.42
1:A:311:ASP:OD1	1:D:310:ASP:HB2	2.19	0.42
1:D:124:LYS:O	1:D:124:LYS:HG2	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:30:ASP:HB3	1:A:33:GLU:HB3	2.01	0.42
1:A:207:ALA:HB3	1:A:208:PRO:CD	2.35	0.42
1:B:63:LEU:CD1	1:B:68:GLN:HA	2.49	0.42
1:C:420:LYS:O	1:C:424:SER:OG	2.28	0.42
1:D:58:ASN:O	1:D:59:PRO:C	2.58	0.42
1:A:89:GLN:NE2	1:A:89:GLN:HA	2.35	0.42
1:A:314:GLN:HE22	1:A:359:ARG:HD3	1.85	0.42
1:B:240:ILE:CD1	1:D:240:ILE:HD13	2.50	0.42
1:B:272:HIS:HB3	1:B:273:PRO:HD2	2.02	0.42
1:C:49:GLN:NE2	1:C:336:PHE:HA	2.35	0.42
1:D:86:ASP:HB3	1:D:343:ILE:CD1	2.45	0.42
1:A:213:LEU:HD11	1:A:260:ARG:NH2	2.35	0.42
1:A:213:LEU:CD1	1:A:256:TYR:HE1	2.32	0.42
1:A:386:GLU:O	1:A:387:GLN:C	2.55	0.42
1:B:105:ILE:HG23	1:B:142:SER:CB	2.49	0.42
1:C:170:CYS:O	1:C:174:ARG:HG3	2.19	0.42
1:A:94:ILE:HD11	1:A:347:VAL:HA	2.02	0.42
1:A:96:GLY:O	1:A:98:LYS:HE2	2.20	0.42
1:A:124:LYS:HE3	1:A:128:GLU:OE2	2.20	0.42
1:C:265:CYS:HA	1:C:292:LEU:O	2.20	0.42
1:A:46:HIS:NE2	1:A:49:GLN:HB2	2.34	0.42
1:A:49:GLN:NE2	1:A:335:PHE:CD1	2.81	0.42
1:A:111:THR:HG23	4:A:1648:HOH:O	2.19	0.42
1:A:234:GLU:OE2	1:A:267:ASP:HB2	2.20	0.42
1:A:405:THR:CG2	1:A:406:PRO:CD	2.98	0.42
1:A:418:TYR:O	1:A:421:GLU:OE1	2.37	0.42
1:B:100:LEU:HD12	1:B:101:ASN:H	1.85	0.42
1:D:153:PHE:CD2	1:D:196:ASP:HB3	2.54	0.42
1:D:408:GLY:O	1:D:411:TRP:HD1	2.02	0.42
1:A:204:ASP:CG	1:B:369:ARG:HH12	2.23	0.42
1:A:325:LEU:HA	1:A:325:LEU:HD12	1.59	0.42
1:B:96:GLY:HA3	1:B:97:PRO:HD2	1.82	0.42
1:B:369:ARG:CG	1:B:369:ARG:HH11	2.32	0.42
1:C:22:GLN:O	1:C:25:ALA:N	2.52	0.42
1:C:303:SER:OG	1:C:305:HIS:ND1	2.45	0.42
1:D:184:LEU:HD23	1:D:184:LEU:HA	1.66	0.42
1:D:297:ARG:HE	1:D:308:LEU:HG	1.84	0.42
1:A:119:LYS:HB3	1:A:120:PRO:CD	2.49	0.41
1:B:148:LEU:HD23	1:B:148:LEU:HA	1.91	0.41
1:C:102:LEU:O	1:C:139:PHE:HA	2.20	0.41
1:C:301:TRP:O	1:C:303:SER:N	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:1460:RNT:H4	2:A:1460:RNT:H11	1.92	0.41
1:B:301:TRP:CE2	1:B:303:SER:HB3	2.55	0.41
1:C:38:LEU:HD12	1:C:38:LEU:HA	1.88	0.41
1:C:100:LEU:HD21	1:C:102:LEU:HD21	2.02	0.41
1:C:285:MET:HE1	1:C:325:LEU:HD11	2.02	0.41
1:B:153:PHE:HZ	1:B:198:MET:HE3	1.86	0.41
1:A:38:LEU:HG	1:A:399:TYR:CZ	2.55	0.41
1:A:120:PRO:HB3	1:A:179:TYR:CG	2.55	0.41
1:B:37:GLN:CB	1:B:361:LEU:HD22	2.50	0.41
1:B:131:LYS:O	1:B:132:ALA:C	2.56	0.41
1:B:156:SER:O	1:B:211:ARG:HD2	2.19	0.41
1:C:146:HIS:CG	1:C:147:PRO:CD	3.03	0.41
1:B:15:GLN:OE1	1:C:19:LEU:HD21	2.21	0.41
1:C:115:ARG:HB2	1:C:165:PHE:HZ	1.86	0.41
1:C:131:LYS:O	1:C:134:GLN:NE2	2.53	0.41
1:A:297:ARG:HA	1:A:298:PRO:HD2	1.94	0.41
1:C:46:HIS:ND1	1:C:46:HIS:N	2.63	0.41
1:C:119:LYS:HB3	1:C:120:PRO:HD2	2.03	0.41
1:D:23:ARG:O	1:D:27:VAL:HG13	2.21	0.41
1:D:46:HIS:HA	1:D:101:ASN:HB3	2.02	0.41
1:D:56:PHE:C	1:D:59:PRO:HD3	2.41	0.41
1:D:162:ILE:O	1:D:163:ARG:C	2.59	0.41
1:A:119:LYS:HA	1:A:120:PRO:HD3	1.73	0.41
1:D:29:ILE:HD13	1:D:29:ILE:HA	1.88	0.41
1:A:210:GLN:HG3	1:B:286:LEU:HD21	2.01	0.41
1:B:12:GLN:NE2	1:C:22:GLN:NE2	2.55	0.41
1:B:240:ILE:CD1	1:D:240:ILE:CD1	2.98	0.41
1:C:104:ALA:C	1:C:106:TYR:H	2.24	0.41
1:D:53:VAL:HA	1:D:106:TYR:OH	2.20	0.41
1:D:267:ASP:HB2	1:D:294:HIS:HB2	2.02	0.41
1:D:272:HIS:O	1:D:273:PRO:C	2.56	0.41
1:A:75:GLY:O	1:A:426:ARG:HD2	2.21	0.41
1:A:111:THR:HG23	1:A:111:THR:H	1.46	0.41
1:A:114:SER:OG	1:A:116:ASP:OD1	2.28	0.41
1:A:125:ASN:O	1:A:128:GLU:HG2	2.21	0.41
1:A:236:LYS:HG3	1:A:270:HIS:CE1	2.54	0.41
1:B:35:LEU:HD22	1:B:399:TYR:HD1	1.86	0.41
1:B:199:LYS:HZ2	1:D:70:THR:CG2	2.33	0.41
1:C:99:ARG:HH12	1:C:186:THR:HG23	1.83	0.41
1:C:137:LEU:HB3	1:C:180:PHE:CD2	2.56	0.41
1:D:105:ILE:HG13	1:D:106:TYR:CD1	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:124:LYS:NZ	1:D:125:ASN:ND2	2.69	0.41
1:D:325:LEU:HB3	1:D:329:VAL:HG23	2.03	0.41
1:D:418:TYR:HA	1:D:421:GLU:CD	2.41	0.41
1:A:78:ARG:CZ	1:A:426:ARG:HB2	2.51	0.41
1:A:118:ILE:O	1:A:119:LYS:HG3	2.20	0.41
1:A:199:LYS:HE3	1:C:70:THR:OG1	2.21	0.41
1:B:213:LEU:HD11	1:B:260:ARG:NH2	2.35	0.41
1:C:201:ILE:H	1:C:201:ILE:HG12	1.60	0.41
1:D:270:HIS:CE1	2:D:4460:RNT:O2	2.74	0.41
1:A:146:HIS:HA	1:A:147:PRO:HD3	1.92	0.40
1:B:367:GLU:HG2	4:B:2706:HOH:O	2.21	0.40
1:D:22:GLN:O	1:D:23:ARG:C	2.59	0.40
1:A:37:GLN:CB	1:A:361:LEU:HD22	2.51	0.40
1:A:137:LEU:HB2	1:A:184:LEU:CD1	2.51	0.40
1:B:144:PHE:O	1:B:145:SER:C	2.58	0.40
1:B:204:ASP:HA	4:B:2618:HOH:O	2.21	0.40
1:B:276:VAL:HB	1:B:312:GLU:OE2	2.21	0.40
1:C:373:ALA:CB	1:C:374:PRO:CD	2.98	0.40
1:A:141:PRO:HB3	1:A:173:SER:OG	2.22	0.40
1:B:200:ASP:HA	1:B:244:SER:OG	2.21	0.40
1:C:255:GLY:HA3	1:D:287:TYR:CD1	2.57	0.40
1:C:323:HIS:CE1	1:D:206:LEU:HB3	2.56	0.40
1:C:406:PRO:HB3	1:C:410:GLU:OE1	2.22	0.40
1:D:144:PHE:CD1	1:D:144:PHE:N	2.89	0.40
1:A:58:ASN:N	1:A:59:PRO:HD3	2.36	0.40
1:A:270:HIS:CE1	2:A:1460:RNT:O2	2.74	0.40
1:A:368:LEU:HD21	1:A:383:LEU:HB3	2.03	0.40
1:B:127:VAL:HG12	1:B:131:LYS:HE3	2.04	0.40
1:B:182:GLU:HG3	1:B:228:HIS:CE1	2.56	0.40
1:C:119:LYS:O	1:C:122:HIS:N	2.49	0.40
1:D:107:LEU:N	1:D:107:LEU:CD2	2.83	0.40
1:D:271:PHE:HB3	1:D:275:GLU:CG	2.52	0.40
1:A:79:ASN:ND2	1:A:81:SER:N	2.65	0.40
1:A:83:LEU:HD12	1:A:83:LEU:HA	1.90	0.40
1:A:87:LEU:HD21	1:A:100:LEU:CD1	2.52	0.40
1:A:267:ASP:CB	1:A:294:HIS:HB2	2.51	0.40
1:B:373:ALA:CB	1:B:374:PRO:HD2	2.44	0.40
1:C:23:ARG:HH11	1:C:23:ARG:HD3	1.63	0.40
1:C:74:PRO:HA	4:C:3630:HOH:O	2.21	0.40
1:C:236:LYS:HE3	1:C:302:ASP:OD2	2.22	0.40
1:D:52:ASP:C	1:D:53:VAL:HG23	2.42	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:225:ASN:OD1	1:D:226:PRO:HD2	2.22	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)
4:C:3475:HOH:O	4:C:3475:HOH:O[2_556]	1.99	0.21
4:C:3481:HOH:O	4:C:3481:HOH:O[2_556]	2.15	0.05

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	415/426 (97%)	383 (92%)	32 (8%)	0	100	100
1	B	414/426 (97%)	386 (93%)	23 (6%)	5 (1%)	13	10
1	C	414/426 (97%)	387 (94%)	23 (6%)	4 (1%)	15	14
1	D	414/426 (97%)	384 (93%)	26 (6%)	4 (1%)	15	14
All	All	1657/1704 (97%)	1540 (93%)	104 (6%)	13 (1%)	19	19

All (13) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	62	SER
1	D	62	SER
1	B	61	GLY
1	B	59	PRO
1	C	61	GLY
1	C	62	SER
1	D	59	PRO
1	D	61	GLY

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Mol	Chain	Res	Type
1	B	325	LEU
1	D	420	LYS
1	C	201	ILE
1	B	53	VAL
1	C	53	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	352/359 (98%)	315 (90%)	37 (10%)	7 6
1	B	351/359 (98%)	318 (91%)	33 (9%)	8 8
1	C	351/359 (98%)	322 (92%)	29 (8%)	11 11
1	D	351/359 (98%)	318 (91%)	33 (9%)	8 8
All	All	1405/1436 (98%)	1273 (91%)	132 (9%)	8 8

All (132) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	10	THR
1	A	53	VAL
1	A	57	GLU
1	A	60	GLU
1	A	62	SER
1	A	63	LEU
1	A	64	THR
1	A	70	THR
1	A	79	ASN
1	A	81	SER
1	A	89	GLN
1	A	98	LYS
1	A	103	HIS
1	A	107	LEU
1	A	111	THR
1	A	117	GLN

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Mol	Chain	Res	Type
1	A	119	LYS
1	A	124	LYS
1	A	140	ASN
1	A	171	LYS
1	A	188	SER
1	A	196	ASP
1	A	213	LEU
1	A	226	PRO
1	A	244	SER
1	A	290	GLN
1	A	324	ASP
1	A	325	LEU
1	A	336	PHE
1	A	342	ARG
1	A	346	TRP
1	A	369	ARG
1	A	374	PRO
1	A	409	SER
1	A	410	GLU
1	A	421	GLU
1	A	422	ILE
1	B	11	THR
1	B	13	LEU
1	B	23	ARG
1	B	53	VAL
1	B	62	SER
1	B	63	LEU
1	B	76	LYS
1	B	81	SER
1	B	92	ARG
1	B	98	LYS
1	B	103	HIS
1	B	111	THR
1	B	121	GLU
1	B	161	SER
1	B	171	LYS
1	B	186	THR
1	B	188	SER
1	B	194	ILE
1	B	196	ASP
1	B	213	LEU
1	B	259	SER

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Mol	Chain	Res	Type
1	B	290	GLN
1	B	324	ASP
1	B	325	LEU
1	B	336	PHE
1	B	346	TRP
1	B	374	PRO
1	B	393	GLN
1	B	410	GLU
1	B	413	GLU
1	B	414	SER
1	B	420	LYS
1	B	421	GLU
1	C	11	THR
1	C	53	VAL
1	C	54	SER
1	C	57	GLU
1	C	63	LEU
1	C	78	ARG
1	C	92	ARG
1	C	98	LYS
1	C	103	HIS
1	C	111	THR
1	C	119	LYS
1	C	134	GLN
1	C	140	ASN
1	C	188	SER
1	C	192	ILE
1	C	196	ASP
1	C	244	SER
1	C	273	PRO
1	C	290	GLN
1	C	324	ASP
1	C	325	LEU
1	C	346	TRP
1	C	369	ARG
1	C	370	LYS
1	C	374	PRO
1	C	383	LEU
1	C	410	GLU
1	C	420	LYS
1	C	426	ARG
1	D	14	GLU

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Mol	Chain	Res	Type
1	D	27	VAL
1	D	36	ARG
1	D	53	VAL
1	D	62	SER
1	D	64	THR
1	D	76	LYS
1	D	79	ASN
1	D	89	GLN
1	D	98	LYS
1	D	103	HIS
1	D	110	ASP
1	D	111	THR
1	D	124	LYS
1	D	131	LYS
1	D	140	ASN
1	D	142	SER
1	D	161	SER
1	D	171	LYS
1	D	186	THR
1	D	188	SER
1	D	196	ASP
1	D	258	THR
1	D	324	ASP
1	D	325	LEU
1	D	336	PHE
1	D	340	ILE
1	D	374	PRO
1	D	409	SER
1	D	410	GLU
1	D	420	LYS
1	D	421	GLU
1	D	425	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (42) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	12	GLN
1	A	49	GLN
1	A	79	ASN
1	A	89	GLN
1	A	122	HIS
1	A	125	ASN

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Mol	Chain	Res	Type
1	A	134	GLN
1	A	169	HIS
1	A	314	GLN
1	A	387	GLN
1	B	49	GLN
1	B	58	ASN
1	B	79	ASN
1	B	122	HIS
1	B	125	ASN
1	B	169	HIS
1	B	228	HIS
1	B	314	GLN
1	B	393	GLN
1	C	15	GLN
1	C	22	GLN
1	C	49	GLN
1	C	79	ASN
1	C	122	HIS
1	C	125	ASN
1	C	134	GLN
1	C	169	HIS
1	C	191	ASN
1	C	272	HIS
1	C	387	GLN
1	C	401	GLN
1	D	49	GLN
1	D	79	ASN
1	D	89	GLN
1	D	122	HIS
1	D	125	ASN
1	D	134	GLN
1	D	169	HIS
1	D	228	HIS
1	D	314	GLN
1	D	387	GLN
1	D	403	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 8 ligands modelled in this entry, 4 are monoatomic - leaving 4 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	RNT	B	2460	3	9,10,10	0.94	0	10,13,13	1.30	2 (20%)
2	RNT	D	4460	3	9,10,10	1.09	1 (11%)	10,13,13	0.88	0
2	RNT	A	1460	3	9,10,10	0.86	0	10,13,13	1.18	1 (10%)
2	RNT	C	3460	3	9,10,10	1.07	2 (22%)	10,13,13	1.17	1 (10%)

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	RNT	B	2460	3	-	6/14/14/14	-
2	RNT	D	4460	3	-	6/14/14/14	-
2	RNT	A	1460	3	-	6/14/14/14	-
2	RNT	C	3460	3	-	6/14/14/14	-

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	3460	RNT	C2-C3	2.25	1.57	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	3460	RNT	O4-C4	2.05	1.47	1.43
2	D	4460	RNT	C4-C3	2.03	1.57	1.53

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2460	RNT	O3-C3-C2	2.71	115.37	108.81
2	B	2460	RNT	C1-C2-C3	2.26	117.31	112.41
2	C	3460	RNT	C1-C2-C3	2.15	117.08	112.41
2	A	1460	RNT	C1-C2-C3	2.07	116.89	112.41

There are no chirality outliers.

All (24) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1460	RNT	O1-C1-C2-C3
2	A	1460	RNT	C1-C2-C3-C4
2	A	1460	RNT	O2-C2-C3-C4
2	A	1460	RNT	O2-C2-C3-O3
2	B	2460	RNT	C1-C2-C3-C4
2	B	2460	RNT	O2-C2-C3-C4
2	B	2460	RNT	O2-C2-C3-O3
2	C	3460	RNT	C1-C2-C3-C4
2	C	3460	RNT	C1-C2-C3-O3
2	C	3460	RNT	O2-C2-C3-C4
2	C	3460	RNT	O2-C2-C3-O3
2	D	4460	RNT	C1-C2-C3-C4
2	D	4460	RNT	O2-C2-C3-C4
2	D	4460	RNT	O2-C2-C3-O3
2	A	1460	RNT	O1-C1-C2-O2
2	A	1460	RNT	C1-C2-C3-O3
2	B	2460	RNT	C1-C2-C3-O3
2	D	4460	RNT	C1-C2-C3-O3
2	B	2460	RNT	O1-C1-C2-C3
2	C	3460	RNT	O1-C1-C2-C3
2	D	4460	RNT	O1-C1-C2-C3
2	B	2460	RNT	O1-C1-C2-O2
2	D	4460	RNT	O1-C1-C2-O2
2	C	3460	RNT	O1-C1-C2-O2

There are no ring outliers.

4 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	2460	RNT	1	0
2	D	4460	RNT	1	0
2	A	1460	RNT	4	0
2	C	3460	RNT	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, 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	417/426 (97%)	-0.55	11 (2%) 56 53	11, 25, 55, 94	0
1	B	416/426 (97%)	-0.63	5 (1%) 79 77	13, 24, 48, 84	0
1	C	416/426 (97%)	-0.57	6 (1%) 75 73	12, 24, 49, 97	0
1	D	416/426 (97%)	-0.50	6 (1%) 75 73	12, 27, 57, 93	0
All	All	1665/1704 (97%)	-0.56	28 (1%) 70 68	11, 25, 52, 97	0

All (28) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	61	GLY	5.8
1	D	60	GLU	4.9
1	A	10	THR	4.0
1	C	134	GLN	3.6
1	D	62	SER	3.3
1	C	60	GLU	3.3
1	D	421	GLU	3.2
1	A	72	ASN	3.1
1	A	61	GLY	3.1
1	B	58	ASN	3.0
1	A	374	PRO	3.0
1	D	374	PRO	2.9
1	A	62	SER	2.7
1	B	60	GLU	2.6
1	A	421	GLU	2.6
1	C	62	SER	2.5
1	B	134	GLN	2.4
1	C	26	ALA	2.4
1	A	425	ARG	2.3
1	C	374	PRO	2.3
1	A	110	ASP	2.3

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Mol	Chain	Res	Type	RSRZ
1	C	72	ASN	2.3
1	B	374	PRO	2.2
1	B	69	ALA	2.2
1	A	92	ARG	2.2
1	A	404	ASP	2.1
1	A	11	THR	2.1
1	D	72	ASN	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} 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(Å^2)	Q<0.9
2	RNT	A	1460	11/11	0.91	0.15	25,26,40,44	0
2	RNT	C	3460	11/11	0.91	0.16	22,25,37,42	0
2	RNT	D	4460	11/11	0.92	0.15	21,22,34,40	0
2	RNT	B	2460	11/11	0.95	0.14	19,23,35,39	0
3	ZN	B	450	1/1	0.99	0.04	35,35,35,35	0
3	ZN	A	450	1/1	1.00	0.06	34,34,34,34	0
3	ZN	C	450	1/1	1.00	0.03	33,33,33,33	0
3	ZN	D	450	1/1	1.00	0.05	34,34,34,34	0

6.5 Other polymers (i)

There are no such residues in this entry.