Full wwPDB X-ray Structure Validation Report (i)

Apr 4, 2026 – 07:16 PM UTC

PDB ID	:	4Y5U / pdb_00004y5u
Title	:	Transcription factor
Authors	:	Li, J.; Niu, F.; Ouyang, S.; Liu, Z.
Deposited on	:	2015-02-12
Resolution	:	2.71 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:

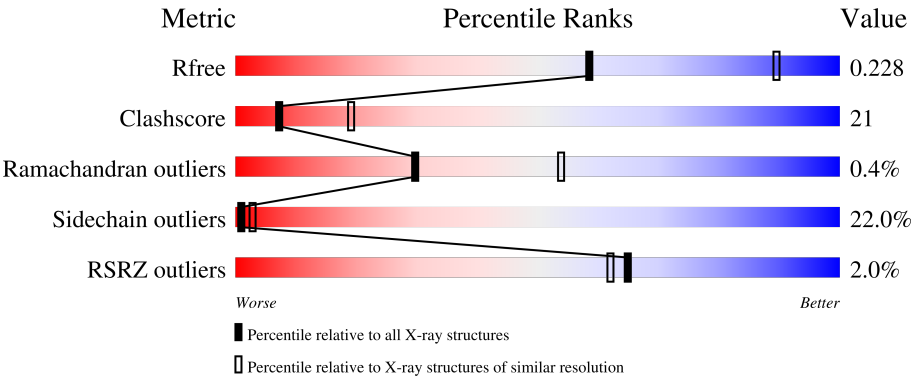
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.71 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	3538 (2.70-2.70)
Clashscore	190562	3843 (2.70-2.70)
Ramachandran outliers	187476	3778 (2.70-2.70)
Sidechain outliers	187428	3778 (2.70-2.70)
RSRZ outliers	180081	3538 (2.70-2.70)

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	549	.% 22% 38% 17% • 19%
1	B	549	2% 22% 39% 15% • 20%

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 7227 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 Signal transducer and activator of transcription 6.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	445	Total	C	N	O	P	S	0	0	0
			3550	2268	622	645	1	14			
1	B	438	Total	C	N	O	P	S	0	0	0
			3500	2240	611	634	1	14			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	110	SER	-	expression tag	UNP P42226
A	111	ASN	-	expression tag	UNP P42226
A	112	ALA	-	expression tag	UNP P42226
B	110	SER	-	expression tag	UNP P42226
B	111	ASN	-	expression tag	UNP P42226
B	112	ALA	-	expression tag	UNP P42226

- Molecule 2 is NICKEL (II) ION (CCD ID: NI) (formula: Ni).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Ni	0	0
			1	1		

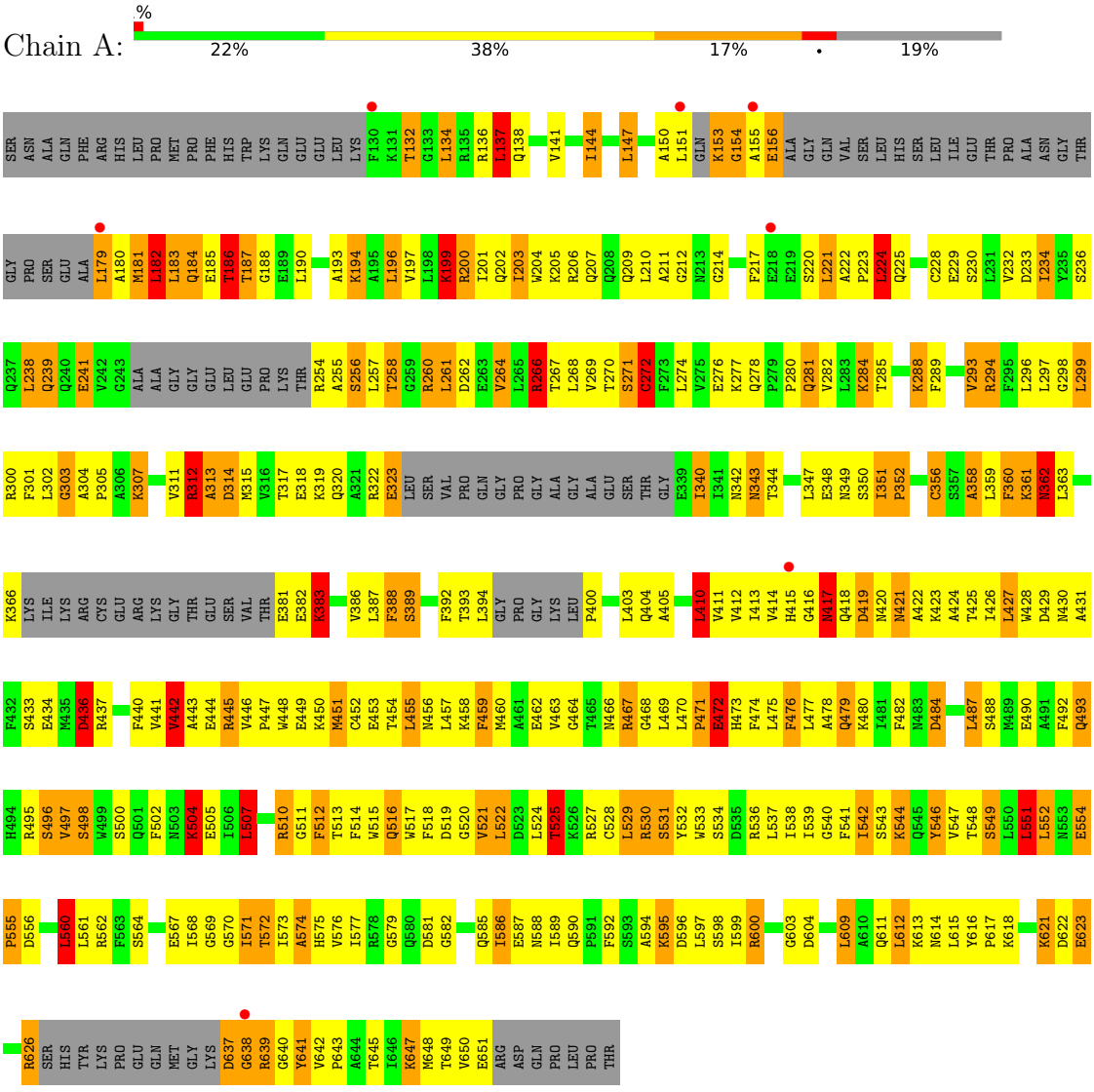
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	98	Total	O	0	0
			98	98		
3	B	78	Total	O	0	0
			78	78		

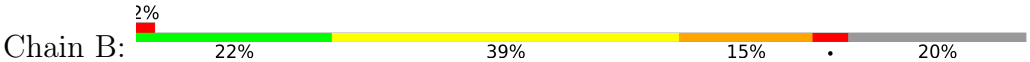
3 Residue-property plots (i)

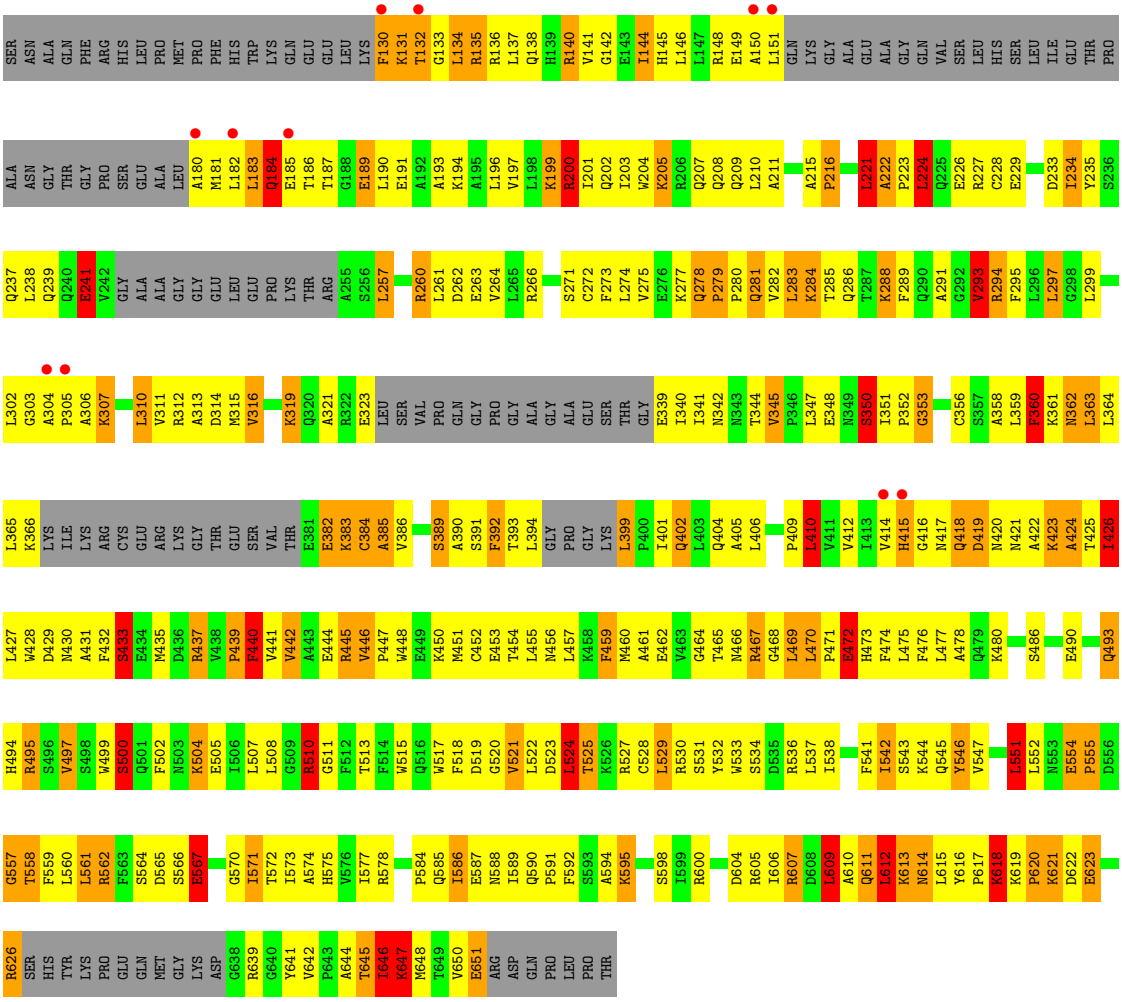
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: Signal transducer and activator of transcription 6



• Molecule 1: Signal transducer and activator of transcription 6




SER ASN ALA GLN PHE ARG HIS LEU PRO MET PRO PHE HIS TRP LYS GLN GLU GLU LEU LYS F130 K131 T132 G133 L134 R135 R136 L137 Q138 H139 R140 V141 G142 E143 I144 H145 L146 L147 R148 E149 A150 L151 GLN LYS GLY ALA GLU ALA GLY GLN VAL SER LEU HIS SER LEU ILE GLU THR PRO
ALA ASN GLY THR GLY PRO SER GLU ALA LEU A180 M181 L182 L183 Q184 E185 T186 T187 G188 E189 L190 E191 A192 A193 K194 A195 L196 V197 L198 K199 R200 I201 Q202 I203 W204 K205 R206 Q207 Q208 Q209 L210 A211 A215 P216 L221 A222 P223 L224 Q225 E226 R227 C228 E229 D233 I234 Y235 S236
Q237 L238 Q239 Q240 E241 V242 GLY ALA ALA GLY GLY GLU LEU GLU PRO LYS THR ARG A255 S256 L257 R260 L261 D262 E263 V264 L265 R266 S271 C272 F273 L274 V275 E276 K277 Q278 P279 P280 Q281 V282 L283 K284 T285 Q286 T287 K288 F289 Q290 A291 G292 V293 R294 F295 L296 L297 G298 L299
L302 G303 A304 P305 A306 K307 L310 V311 R312 A313 D314 M315 V316 K319 Q320 A321 R322 E323 LEU SER VAL PRO GLN GLY PRO GLY ALA GLY ALA GLU SER THR GLY E339 I340 I341 N342 N343 T344 V345 P346 L347 E348 N349 S350 I351 P352 G353 C356 S357 A358 L359 P360 K361 N362 L363 L364
L365 K366 LYS ILE LYS ARG CYS GLU ARG LYS GLY THR GLU SER VAL THR E381 E382 K383 C384 A385 V386 S389 A390 S391 F392 T393 L394 GLY PRO GLY LYS L399 P400 I401 Q402 L403 Q404 A405 L406 P409 L410 V411 V412 I413 V414 H415 G416 N417 Q418 D419 N420 N421 A422 K423 A424 T425 T426
L427 W428 D429 N430 A431 F432 S433 E434 M435 D436 R437 Y438 P439 F440 V441 V442 A443 E444 R445 V446 P447 W448 E449 K450 M451 C452 E453 T454 L455 N456 L457 K458 F459 M460 A461 E462 V463 G464 T465 N466 R467 G468 L469 L470 P471 E472 H473 F474 L475 F476 L477 A478 Q479 K480 S486 E490 Q493
H494 R495 S496 V497 S498 W499 S500 Q501 F502 N503 K504 E505 I506 L507 L508 G509 R510 G511 F512 T513 F514 W515 Q516 W517 F518 D519 G520 V521 L522 D523 L524 T525 K526 R527 C528 L529 R530 S531 Y532 W533 S534 D535 R536 L537 I538 F541 I542 S543 K544 Q545 Y546 V547 L551 L552 N553 E554 P555 D556
G557 T558 F559 L560 L561 R562 F563 S564 D565 S566 E567 G570 I571 T572 I573 A574 H575 V576 I577 R578 P584 Q585 I586 E587 N588 I589 Q590 P591 F592 S593 A594 K595 S598 I599 R600 D604 R605 I606 R607 D608 E609 A610 Q611 L612 K613 N614 L615 Y616 P617 K618 K619 P620 K621 D622 E623
R626 SER HIS TYR LYS PRO GLU GLN MET GLY LYS ASP G638 R639 G640 Y641 V642 P643 A644 T645 I646 K647 M648 T649 V650 E651 ARG ASP GLN PRO LEU PRO THR

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	66.15Å 94.32Å 179.36Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	46.36 – 2.71 46.36 – 2.71	Depositor EDS
% Data completeness (in resolution range)	90.8 (46.36-2.71) 89.1 (46.36-2.71)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.09	Depositor
$< I/\sigma(I) >$ [1]	4.79 (at 2.73Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.8.2_1309)	Depositor
R, R_{free}	0.185 , 0.253 0.197 , 0.228	Depositor DCC
R_{free} test set	2000 reflections (6.38%)	wwPDB-VP
Wilson B-factor (Å^2)	22.9	Xtriage
Anisotropy	0.093	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 46.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.43$, $< L^2 > = 0.26$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.90	EDS
Total number of atoms	7227	wwPDB-VP
Average B, all atoms (Å^2)	21.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.39% 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: NI, PTR

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	2.45	192/3594 (5.3%)	1.55	51/4843 (1.1%)
1	B	2.37	176/3545 (5.0%)	1.54	49/4782 (1.0%)
All	All	2.41	368/7139 (5.2%)	1.54	100/9625 (1.0%)

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	2
All	All	0	4

All (368) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	446	VAL	C-O	-9.76	1.16	1.24
1	A	517	TRP	C-O	-9.35	1.13	1.24
1	A	511	GLY	C-O	-9.10	1.17	1.24
1	B	446	VAL	C-O	-8.86	1.17	1.24
1	A	571	ILE	C-O	-8.83	1.14	1.24
1	B	525	THR	C-O	-8.81	1.13	1.24
1	A	453	GLU	C-O	-8.51	1.14	1.24
1	A	386	VAL	C-O	-8.23	1.15	1.24
1	B	538	ILE	C-O	-8.22	1.15	1.24
1	A	520	GLY	C-O	-8.19	1.14	1.23
1	B	497	VAL	C-O	-8.15	1.15	1.24
1	B	221	LEU	C-O	-8.13	1.13	1.24
1	A	600	ARG	C-O	-8.06	1.14	1.24
1	B	561	LEU	C-O	-8.06	1.14	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	451	MET	C-O	-7.97	1.14	1.24
1	A	199	LYS	C-O	-7.90	1.14	1.24
1	A	561	LEU	C-O	-7.88	1.14	1.24
1	B	571	ILE	C-O	-7.86	1.15	1.24
1	A	484	ASP	C-O	-7.81	1.14	1.23
1	B	533	TRP	C-O	-7.79	1.15	1.24
1	A	451	MET	C-O	-7.75	1.15	1.24
1	B	586	ILE	C-O	-7.74	1.15	1.24
1	B	386	VAL	C-O	-7.73	1.15	1.24
1	A	411	VAL	C-O	-7.72	1.15	1.24
1	B	573	ILE	C-O	-7.71	1.15	1.24
1	A	452	CYS	C-O	-7.60	1.15	1.24
1	B	468	GLY	C-O	-7.55	1.17	1.24
1	B	200	ARG	C-O	-7.50	1.15	1.24
1	B	460	MET	C-O	-7.50	1.15	1.24
1	B	316	VAL	C-O	-7.48	1.16	1.23
1	A	421	ASN	C-O	-7.45	1.15	1.24
1	A	538	ILE	C-O	-7.45	1.16	1.24
1	A	454	THR	C-O	-7.44	1.15	1.24
1	A	530	ARG	C-O	-7.40	1.15	1.24
1	A	422	ALA	C-O	-7.38	1.15	1.24
1	A	197	VAL	C-O	-7.36	1.15	1.24
1	A	569	GLY	C-O	-7.31	1.14	1.23
1	B	422	ALA	C-O	-7.25	1.15	1.24
1	A	467	ARG	C-O	-7.23	1.15	1.24
1	B	564	SER	C-O	-7.23	1.15	1.24
1	A	497	VAL	C-O	-7.23	1.15	1.24
1	B	425	THR	C-O	-7.15	1.15	1.24
1	A	206	ARG	C-O	-7.14	1.15	1.24
1	B	448	TRP	C-O	-7.11	1.15	1.24
1	A	221	LEU	C-O	-7.10	1.14	1.24
1	B	456	ASN	C-O	-7.09	1.15	1.24
1	A	596	ASP	C-O	-7.08	1.15	1.24
1	B	504	LYS	C-O	-7.07	1.13	1.23
1	B	520	GLY	C-O	-7.07	1.15	1.23
1	B	567	GLU	C-O	-7.07	1.14	1.23
1	A	358	ALA	C-O	-7.04	1.15	1.24
1	B	587	GLU	C-O	-7.04	1.15	1.24
1	B	350	SER	C-O	-7.00	1.16	1.24
1	B	470	LEU	C-O	-6.99	1.15	1.24
1	A	645	THR	C-O	-6.96	1.15	1.23
1	B	207	GLN	C-O	-6.95	1.16	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	517	TRP	C-O	-6.92	1.16	1.24
1	B	281	GLN	C-O	-6.91	1.15	1.24
1	A	389	SER	C-O	-6.91	1.16	1.24
1	A	228	CYS	C-O	-6.91	1.15	1.24
1	B	409	PRO	C-O	-6.89	1.15	1.23
1	A	531	SER	C-O	-6.88	1.16	1.24
1	B	466	ASN	C-O	-6.85	1.14	1.24
1	B	647	LYS	C-O	-6.83	1.15	1.23
1	B	216	PRO	CA-C	-6.80	1.46	1.52
1	A	502	PHE	C-O	-6.80	1.16	1.24
1	A	573	ILE	C-O	-6.79	1.16	1.24
1	B	614	ASN	C-O	-6.79	1.16	1.24
1	B	430	ASN	CA-C	-6.74	1.44	1.52
1	A	541	PHE	C-O	-6.73	1.15	1.23
1	A	521	VAL	C-O	-6.72	1.15	1.24
1	B	615	LEU	C-O	-6.72	1.15	1.23
1	B	494	HIS	C-O	-6.72	1.15	1.24
1	B	384	CYS	C-O	-6.72	1.16	1.23
1	B	532	TYR	C-O	-6.72	1.16	1.24
1	A	522	LEU	C-O	-6.70	1.16	1.24
1	A	405	ALA	C-O	-6.67	1.16	1.24
1	A	457	LEU	C-O	-6.64	1.16	1.24
1	A	447	PRO	C-O	-6.64	1.16	1.23
1	B	588	ASN	C-O	-6.64	1.16	1.24
1	A	268	LEU	C-O	-6.62	1.16	1.24
1	A	277	LYS	C-O	-6.62	1.16	1.24
1	A	649	THR	C-O	-6.62	1.15	1.23
1	A	555	PRO	C-O	-6.62	1.16	1.23
1	A	462	GLU	C-O	-6.57	1.16	1.24
1	A	445	ARG	C-O	-6.56	1.15	1.23
1	B	558	THR	C-O	-6.56	1.16	1.24
1	A	311	VAL	C-O	-6.54	1.17	1.24
1	B	427	LEU	C-O	-6.54	1.16	1.24
1	A	207	GLN	C-O	-6.52	1.16	1.24
1	A	514	PHE	C-O	-6.52	1.16	1.24
1	A	505	GLU	C-O	-6.52	1.16	1.24
1	B	465	THR	C-O	-6.52	1.15	1.23
1	A	615	LEU	C-O	-6.51	1.16	1.24
1	A	225	GLN	C-O	-6.51	1.16	1.24
1	A	599	ILE	C-O	-6.49	1.16	1.24
1	A	647	LYS	C-O	-6.49	1.16	1.23
1	A	488	SER	C-O	-6.47	1.16	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	293	VAL	C-O	-6.46	1.17	1.24
1	A	572	THR	C-O	-6.46	1.15	1.23
1	B	278	GLN	CA-C	-6.45	1.45	1.53
1	A	410	LEU	C-O	-6.44	1.15	1.23
1	B	193	ALA	C-O	-6.44	1.16	1.24
1	A	466	ASN	C-O	-6.42	1.15	1.24
1	B	283	LEU	C-O	-6.41	1.16	1.24
1	B	511	GLY	C-O	-6.41	1.15	1.23
1	B	471	PRO	C-O	-6.40	1.16	1.24
1	B	502	PHE	C-O	-6.39	1.16	1.24
1	A	529	LEU	C-O	-6.38	1.15	1.24
1	B	577	ILE	C-O	-6.38	1.17	1.24
1	B	430	ASN	C-O	-6.38	1.16	1.24
1	A	574	ALA	C-O	-6.36	1.16	1.24
1	A	575	HIS	C-O	-6.35	1.16	1.23
1	A	524	LEU	C-O	-6.33	1.16	1.24
1	A	356	CYS	C-O	-6.29	1.16	1.24
1	A	492	PHE	C-O	-6.28	1.15	1.23
1	A	504	LYS	C-O	-6.28	1.14	1.23
1	A	560	LEU	C-O	-6.27	1.15	1.23
1	B	541	PHE	C-O	-6.27	1.15	1.23
1	B	205	LYS	C-O	-6.26	1.16	1.24
1	A	512	PHE	C-O	-6.26	1.16	1.23
1	A	539	ILE	C-O	-6.25	1.17	1.24
1	B	467	ARG	C-O	-6.24	1.16	1.24
1	B	513	THR	C-O	-6.23	1.15	1.23
1	A	525	THR	C-O	-6.23	1.16	1.24
1	A	472	GLU	C-O	-6.22	1.16	1.24
1	A	230	SER	C-O	-6.21	1.16	1.24
1	A	294	ARG	C-O	-6.20	1.16	1.23
1	A	468	GLY	C-O	-6.18	1.18	1.24
1	B	478	ALA	C-O	-6.18	1.16	1.24
1	B	562	ARG	C-O	-6.18	1.16	1.23
1	A	614	ASN	C-O	-6.17	1.17	1.24
1	A	476	PHE	C-O	-6.16	1.17	1.24
1	B	294	ARG	C-O	-6.16	1.16	1.23
1	A	456	ASN	C-O	-6.15	1.17	1.24
1	B	521	VAL	C-O	-6.14	1.16	1.24
1	A	543	SER	C-O	-6.13	1.15	1.23
1	B	297	LEU	C-O	-6.13	1.15	1.24
1	B	447	PRO	C-O	-6.12	1.17	1.23
1	A	350	SER	C-O	-6.11	1.17	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	205	LYS	C-O	-6.09	1.17	1.24
1	A	588	ASN	C-O	-6.08	1.16	1.24
1	A	209	GLN	C-O	-6.06	1.16	1.24
1	B	314	ASP	C-O	-6.06	1.17	1.23
1	B	528	CYS	C-O	-6.05	1.16	1.24
1	B	222	ALA	C-O	-6.04	1.18	1.24
1	A	455	LEU	C-O	-6.04	1.17	1.24
1	B	646	ILE	C-O	-6.04	1.17	1.24
1	B	275	VAL	C-O	-6.02	1.18	1.24
1	A	498	SER	C-O	-6.01	1.15	1.23
1	B	645	THR	C-O	-6.01	1.16	1.23
1	B	611	GLN	C-O	-6.00	1.16	1.24
1	B	199	LYS	C-O	-6.00	1.17	1.24
1	B	455	LEU	C-O	-5.99	1.17	1.24
1	A	203	ILE	C-O	-5.99	1.17	1.24
1	A	471	PRO	C-O	-5.97	1.16	1.24
1	A	533	TRP	C-O	-5.96	1.17	1.24
1	B	293	VAL	C-O	-5.96	1.17	1.24
1	A	431	ALA	C-O	-5.95	1.17	1.24
1	A	272	CYS	C-O	-5.95	1.16	1.24
1	B	453	GLU	C-O	-5.95	1.17	1.24
1	A	315	MET	C-O	-5.93	1.16	1.24
1	B	348	GLU	C-O	-5.92	1.16	1.23
1	B	529	LEU	C-O	-5.91	1.16	1.24
1	B	272	CYS	C-O	-5.91	1.15	1.23
1	B	606	ILE	C-O	-5.91	1.17	1.24
1	A	212	GLY	C-O	-5.90	1.16	1.23
1	B	442	VAL	C-O	-5.90	1.17	1.23
1	A	229	GLU	C-O	-5.89	1.17	1.24
1	A	589	ILE	C-O	-5.88	1.16	1.24
1	A	568	ILE	C-O	-5.88	1.17	1.24
1	A	576	VAL	C-O	-5.86	1.17	1.24
1	B	274	LEU	C-O	-5.85	1.16	1.23
1	A	280	PRO	C-O	-5.85	1.16	1.23
1	A	478	ALA	C-O	-5.85	1.17	1.24
1	A	480	LYS	C-O	-5.85	1.17	1.24
1	B	476	PHE	C-O	-5.85	1.16	1.24
1	A	547	VAL	C-O	-5.83	1.17	1.24
1	A	592	PHE	C-O	-5.83	1.17	1.23
1	B	469	LEU	C-O	-5.83	1.17	1.24
1	A	587	GLU	C-O	-5.82	1.17	1.24
1	B	518	PHE	C-O	-5.82	1.17	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	204	TRP	C-O	-5.80	1.17	1.24
1	A	387	LEU	C-O	-5.80	1.16	1.24
1	A	190	LEU	C-O	-5.80	1.17	1.24
1	B	473	HIS	C-O	-5.80	1.17	1.24
1	B	474	PHE	C-O	-5.80	1.16	1.24
1	B	203	ILE	C-O	-5.79	1.17	1.24
1	B	644	ALA	C-O	-5.79	1.16	1.24
1	B	605	ARG	C-O	-5.78	1.17	1.24
1	A	621	LYS	C-O	-5.78	1.17	1.24
1	A	298	GLY	C-O	-5.76	1.16	1.23
1	A	426	ILE	C-O	-5.76	1.17	1.24
1	A	352	PRO	C-O	-5.75	1.17	1.24
1	A	428	TRP	C-O	-5.75	1.17	1.24
1	A	340	ILE	C-O	-5.74	1.18	1.24
1	B	356	CYS	C-O	-5.74	1.17	1.24
1	A	586	ILE	C-O	-5.74	1.17	1.24
1	A	567	GLU	C-O	-5.73	1.16	1.23
1	A	442	VAL	C-O	-5.73	1.17	1.23
1	A	448	TRP	C-O	-5.73	1.17	1.24
1	B	612	LEU	C-O	-5.72	1.17	1.24
1	B	574	ALA	C-O	-5.72	1.17	1.24
1	B	609	LEU	C-O	-5.72	1.17	1.24
1	B	410	LEU	C-O	-5.72	1.16	1.23
1	A	232	VAL	C-O	-5.71	1.17	1.24
1	A	590	GLN	CA-C	-5.71	1.47	1.53
1	A	464	GLY	C-O	-5.71	1.16	1.23
1	A	444	GLU	C-O	-5.70	1.17	1.24
1	A	458	LYS	C-O	-5.69	1.17	1.24
1	B	560	LEU	C-O	-5.69	1.16	1.23
1	B	446	VAL	N-CA	-5.69	1.41	1.46
1	B	224	LEU	C-O	-5.69	1.17	1.24
1	B	445	ARG	C-O	-5.69	1.17	1.23
1	B	353	GLY	C-O	-5.68	1.17	1.24
1	A	562	ARG	C-O	-5.68	1.16	1.23
1	A	474	PHE	C-O	-5.68	1.17	1.24
1	B	421	ASN	C-O	-5.68	1.17	1.24
1	B	524	LEU	C-O	-5.67	1.17	1.24
1	A	383	LYS	C-O	-5.67	1.17	1.24
1	B	477	LEU	C-O	-5.64	1.17	1.24
1	B	466	ASN	CA-C	-5.64	1.45	1.52
1	A	294	ARG	CZ-NH2	-5.63	1.26	1.33
1	A	527	ARG	C-O	-5.62	1.17	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	603	GLY	C-O	-5.62	1.17	1.23
1	A	544	LYS	C-O	-5.61	1.17	1.24
1	B	592	PHE	C-O	-5.61	1.17	1.23
1	A	264	VAL	C-O	-5.61	1.17	1.24
1	B	585	GLN	C-O	-5.61	1.16	1.24
1	A	542	ILE	C-O	-5.60	1.17	1.23
1	B	452	CYS	C-O	-5.60	1.17	1.24
1	A	314	ASP	C-O	-5.59	1.16	1.23
1	B	295	PHE	C-O	-5.58	1.17	1.24
1	B	531	SER	C-O	-5.58	1.17	1.24
1	B	542	ILE	C-O	-5.58	1.17	1.23
1	B	459	PHE	C-O	-5.58	1.17	1.24
1	B	604	ASP	C-O	-5.58	1.17	1.24
1	A	388	PHE	C-O	-5.56	1.17	1.24
1	A	188	GLY	C-O	-5.56	1.17	1.23
1	A	537	LEU	C-O	-5.56	1.16	1.24
1	A	534	SER	C-O	-5.55	1.17	1.24
1	B	522	LEU	C-O	-5.54	1.17	1.24
1	A	289	PHE	C-O	-5.53	1.16	1.23
1	A	434	GLU	C-O	-5.52	1.17	1.23
1	B	405	ALA	C-O	-5.52	1.17	1.24
1	B	595	LYS	C-O	-5.52	1.17	1.24
1	A	257	LEU	N-CA	-5.51	1.39	1.46
1	A	477	LEU	C-O	-5.51	1.17	1.24
1	B	347	LEU	C-O	-5.51	1.17	1.24
1	A	585	GLN	C-O	-5.51	1.17	1.23
1	B	294	ARG	CZ-NH2	-5.51	1.26	1.33
1	B	209	GLN	C-O	-5.50	1.17	1.24
1	B	464	GLY	C-O	-5.50	1.16	1.23
1	A	441	VAL	C-O	-5.50	1.17	1.24
1	B	211	ALA	C-O	-5.50	1.17	1.24
1	B	280	PRO	C-O	-5.50	1.17	1.23
1	A	220	SER	C-O	-5.49	1.17	1.23
1	A	507	LEU	C-O	-5.48	1.17	1.23
1	A	516	GLN	C-O	-5.48	1.17	1.24
1	A	513	THR	C-O	-5.47	1.16	1.23
1	B	589	ILE	C-O	-5.46	1.17	1.24
1	A	518	PHE	C-O	-5.45	1.17	1.24
1	A	604	ASP	C-O	-5.45	1.17	1.24
1	A	404	GLN	C-O	-5.45	1.17	1.24
1	B	565	ASP	C-O	-5.44	1.17	1.24
1	B	475	LEU	N-CA	-5.44	1.40	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	269	VAL	C-O	-5.43	1.18	1.24
1	B	572	THR	C-O	-5.43	1.17	1.23
1	A	348	GLU	C-O	-5.42	1.16	1.23
1	B	530	ARG	C-O	-5.42	1.17	1.24
1	A	487	LEU	C-O	-5.42	1.16	1.24
1	B	210	LEU	C-O	-5.41	1.17	1.24
1	B	197	VAL	C-O	-5.39	1.17	1.24
1	A	546	TYR	C-O	-5.39	1.17	1.24
1	B	412	VAL	C-O	-5.39	1.17	1.24
1	B	385	ALA	C-O	-5.38	1.17	1.23
1	B	519	ASP	C-O	-5.38	1.17	1.24
1	B	510	ARG	CA-C	-5.37	1.46	1.52
1	A	496	SER	C-O	-5.36	1.17	1.23
1	A	594	ALA	C-O	-5.35	1.17	1.24
1	A	134	LEU	C-O	-5.35	1.17	1.24
1	A	312	ARG	C-O	-5.33	1.17	1.23
1	B	441	VAL	C-O	-5.33	1.18	1.24
1	A	431	ALA	CA-C	-5.33	1.46	1.52
1	B	551	LEU	C-O	-5.33	1.17	1.24
1	A	224	LEU	C-O	-5.33	1.17	1.24
1	B	423	LYS	C-O	-5.32	1.17	1.24
1	B	291	ALA	C-O	-5.32	1.17	1.23
1	B	555	PRO	C-O	-5.31	1.17	1.23
1	B	500	SER	C-O	-5.31	1.18	1.24
1	B	534	SER	C-O	-5.31	1.17	1.24
1	B	480	LYS	C-O	-5.30	1.18	1.24
1	B	499	TRP	C-O	-5.30	1.17	1.24
1	B	420	ASN	C-O	-5.29	1.18	1.24
1	B	281	GLN	CA-C	-5.27	1.45	1.52
1	B	591	PRO	C-O	-5.27	1.17	1.23
1	B	537	LEU	C-O	-5.27	1.17	1.24
1	B	557	GLY	C-O	-5.26	1.17	1.24
1	A	425	THR	C-O	-5.26	1.18	1.24
1	A	201	ILE	C-O	-5.25	1.18	1.24
1	B	234	ILE	C-O	-5.25	1.18	1.24
1	A	137	LEU	C-O	-5.25	1.18	1.24
1	B	600	ARG	C-O	-5.25	1.17	1.23
1	B	282	VAL	C-O	-5.24	1.18	1.24
1	B	613	LYS	C-O	-5.23	1.17	1.24
1	B	428	TRP	C-O	-5.22	1.17	1.24
1	B	450	LYS	C-O	-5.22	1.17	1.24
1	A	262	ASP	C-O	-5.22	1.17	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	190	LEU	C-O	-5.22	1.18	1.24
1	B	431	ALA	C-O	-5.22	1.18	1.24
1	B	546	TYR	C-O	-5.21	1.17	1.24
1	B	273	PHE	C-O	-5.21	1.17	1.24
1	A	473	HIS	C-O	-5.21	1.18	1.24
1	A	360	PHE	C-O	-5.21	1.17	1.23
1	B	575	HIS	C-O	-5.21	1.17	1.23
1	B	457	LEU	C-O	-5.20	1.18	1.24
1	A	500	SER	C-O	-5.20	1.18	1.24
1	B	228	CYS	C-O	-5.20	1.18	1.24
1	B	584	PRO	C-O	-5.20	1.18	1.23
1	A	443	ALA	C-O	-5.19	1.17	1.23
1	A	274	LEU	C-O	-5.19	1.17	1.23
1	A	516	GLN	N-CA	-5.19	1.40	1.46
1	A	648	MET	C-O	-5.18	1.17	1.24
1	A	350	SER	CA-C	-5.17	1.46	1.52
1	B	196	LEU	C-O	-5.17	1.18	1.24
1	A	430	ASN	C-O	-5.16	1.18	1.24
1	B	360	PHE	C-O	-5.16	1.17	1.23
1	A	202	GLN	C-O	-5.16	1.18	1.24
1	A	564	SER	C-O	-5.16	1.17	1.23
1	A	450	LYS	C-O	-5.15	1.18	1.24
1	B	562	ARG	CZ-NH2	-5.15	1.26	1.33
1	A	532	TYR	C-O	-5.15	1.18	1.24
1	A	570	GLY	C-O	-5.15	1.16	1.23
1	A	297	LEU	C-O	-5.14	1.17	1.24
1	A	423	LYS	C-O	-5.14	1.18	1.24
1	A	540	GLY	C-O	-5.14	1.17	1.23
1	B	426	ILE	C-O	-5.13	1.18	1.24
1	A	459	PHE	C-O	-5.13	1.18	1.24
1	A	479	GLN	N-CA	-5.12	1.40	1.46
1	A	445	ARG	CA-C	-5.11	1.46	1.52
1	A	420	ASN	C-O	-5.11	1.18	1.24
1	B	545	GLN	C-O	-5.11	1.18	1.24
1	A	419	ASP	C-O	-5.11	1.17	1.24
1	B	277	LYS	C-O	-5.10	1.18	1.24
1	A	313	ALA	C-O	-5.10	1.18	1.24
1	B	472	GLU	C-O	-5.09	1.18	1.24
1	A	282	VAL	C-O	-5.09	1.18	1.24
1	A	234	ILE	C-O	-5.08	1.18	1.24
1	A	403	LEU	C-O	-5.08	1.17	1.24
1	A	193	ALA	C-O	-5.08	1.18	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	349	ASN	C-O	-5.07	1.17	1.23
1	B	235	TYR	C-O	-5.07	1.18	1.24
1	B	594	ALA	C-O	-5.07	1.18	1.24
1	B	647	LYS	CA-C	-5.07	1.46	1.52
1	A	412	VAL	C-O	-5.06	1.18	1.24
1	B	264	VAL	C-O	-5.06	1.18	1.24
1	B	404	GLN	C-O	-5.05	1.18	1.24
1	B	227	ARG	C-O	-5.05	1.18	1.24
1	A	266	ARG	C-O	-5.04	1.18	1.24
1	A	589	ILE	N-CA	-5.04	1.40	1.46
1	A	609	LEU	C-O	-5.04	1.18	1.24
1	B	476	PHE	CA-C	-5.03	1.46	1.52
1	A	480	LYS	N-CA	-5.03	1.40	1.46
1	B	440	PHE	C-O	-5.03	1.17	1.23
1	B	313	ALA	C-O	-5.02	1.18	1.24
1	B	620	PRO	C-O	-5.02	1.17	1.23
1	B	315	MET	C-O	-5.01	1.17	1.23
1	B	570	GLY	C-O	-5.00	1.16	1.23

All (100) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	241	GLU	N-CA-C	-11.46	95.40	110.53
1	A	502	PHE	N-CA-C	10.46	122.43	111.14
1	A	493	GLN	N-CA-C	9.61	121.75	111.28
1	B	502	PHE	N-CA-C	9.33	121.39	111.03
1	B	419	ASP	N-CA-C	8.99	124.48	112.88
1	B	618	LYS	N-CA-C	8.53	123.26	111.74
1	A	343	ASN	N-CA-C	8.31	123.22	112.41
1	A	361	LYS	N-CA-C	8.18	120.28	111.36
1	A	444	GLU	N-CA-C	8.17	120.26	111.36
1	A	437	ARG	N-CA-C	7.84	120.06	110.41
1	B	439	PRO	CA-C-N	7.63	132.95	122.34
1	B	439	PRO	C-N-CA	7.63	132.95	122.34
1	B	455	LEU	N-CA-C	7.58	119.62	111.36
1	A	351	ILE	CB-CA-C	-7.55	106.35	114.35
1	A	431	ALA	N-CA-C	7.49	119.52	111.36
1	A	427	LEU	N-CA-C	7.48	119.43	111.28
1	A	525	THR	N-CA-C	7.16	119.17	111.36
1	A	527	ARG	N-CA-C	7.16	118.87	111.14
1	B	527	ARG	N-CA-C	7.12	119.12	111.36
1	A	551	LEU	N-CA-C	7.09	120.05	111.82

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	460	MET	N-CA-C	7.02	118.72	111.14
1	A	597	LEU	N-CA-C	7.01	119.95	111.82
1	B	348	GLU	N-CA-C	7.01	120.93	109.72
1	A	211	ALA	CA-C-N	6.90	128.76	120.14
1	A	211	ALA	C-N-CA	6.90	128.76	120.14
1	B	545	GLN	N-CA-C	6.88	118.78	111.28
1	A	623	GLU	N-CA-C	6.76	118.44	111.14
1	B	622	ASP	N-CA-C	6.76	119.66	111.82
1	A	554	GLU	N-CA-C	6.74	119.91	110.07
1	B	480	LYS	N-CA-C	6.68	118.22	111.07
1	A	187	THR	N-CA-C	6.48	118.42	111.36
1	B	461	ALA	N-CA-C	6.42	118.08	111.14
1	B	462	GLU	N-CA-C	6.42	118.07	111.14
1	B	575	HIS	N-CA-C	6.33	118.76	108.76
1	A	382	GLU	N-CA-C	6.28	118.64	108.41
1	A	500	SER	N-CA-C	6.27	118.19	111.36
1	A	281	GLN	N-CA-C	6.26	119.08	111.82
1	B	383	LYS	N-CA-C	6.21	120.01	110.20
1	B	140	ARG	N-CA-C	6.15	118.06	111.36
1	A	622	ASP	N-CA-C	6.08	117.99	111.36
1	B	194	LYS	N-CA-C	6.06	117.96	111.36
1	A	528	CYS	N-CA-C	6.05	121.32	113.88
1	B	530	ARG	N-CA-C	6.04	117.54	111.07
1	A	552	LEU	N-CA-C	6.02	118.64	111.71
1	A	470	LEU	N-CA-C	5.97	118.79	110.07
1	A	522	LEU	N-CA-C	5.97	117.46	111.07
1	B	428	TRP	N-CA-C	5.96	117.86	111.36
1	B	493	GLN	N-CA-C	5.90	118.50	111.71
1	B	554	GLU	N-CA-C	5.88	119.20	110.39
1	A	423	LYS	N-CA-C	5.86	117.67	111.28
1	A	549	SER	N-CA-C	5.83	117.44	111.14
1	A	298	GLY	N-CA-C	5.82	120.87	113.24
1	B	505	GLU	CA-C-N	5.79	128.97	120.91
1	B	505	GLU	C-N-CA	5.79	128.97	120.91
1	B	607	ARG	N-CA-C	5.78	118.52	111.82
1	B	497	VAL	CB-CA-C	-5.76	102.06	110.81
1	A	571	ILE	CB-CA-C	5.69	119.06	110.63
1	A	272	CYS	N-CA-C	5.66	119.45	112.54
1	B	453	GLU	N-CA-CB	-5.66	101.81	110.01
1	A	303	GLY	CA-C-N	5.64	127.14	120.09
1	A	303	GLY	C-N-CA	5.64	127.14	120.09
1	A	575	HIS	N-CA-C	5.62	117.39	108.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	618	LYS	N-CA-C	5.61	119.31	111.74
1	B	521	VAL	N-CA-C	5.57	118.05	111.09
1	A	210	LEU	CA-C-N	5.57	130.01	120.72
1	A	210	LEU	C-N-CA	5.57	130.01	120.72
1	B	424	ALA	CA-C-N	5.54	127.64	120.44
1	B	424	ALA	C-N-CA	5.54	127.64	120.44
1	B	495	ARG	N-CA-C	5.53	117.82	110.53
1	B	433	SER	N-CA-C	5.47	117.78	110.35
1	A	473	HIS	N-CA-C	5.42	117.26	111.36
1	A	520	GLY	CA-C-O	-5.39	115.19	120.75
1	A	530	ARG	N-CA-C	5.38	117.14	111.28
1	A	520	GLY	N-CA-C	5.36	119.16	112.73
1	B	518	PHE	N-CA-C	5.34	116.78	111.07
1	A	417	ASN	N-CA-C	-5.34	103.44	110.33
1	A	522	LEU	CA-C-N	5.34	127.87	120.29
1	A	522	LEU	C-N-CA	5.34	127.87	120.29
1	A	186	THR	N-CA-C	-5.32	105.49	111.28
1	B	473	HIS	N-CA-C	5.24	117.07	111.36
1	B	646	ILE	CB-CA-C	5.23	118.60	110.96
1	B	279	PRO	N-CA-C	5.23	117.08	110.70
1	A	256	SER	N-CA-C	-5.20	105.51	111.07
1	B	533	TRP	N-CA-C	5.19	116.94	111.28
1	A	182	LEU	N-CA-C	-5.15	107.28	113.21
1	B	431	ALA	N-CA-C	5.15	116.70	111.14
1	B	362	ASN	N-CA-C	5.15	119.10	112.41
1	A	278	GLN	N-CA-C	5.14	117.18	110.08
1	B	427	LEU	N-CA-C	5.14	116.89	111.28
1	B	185	GLU	CA-C-N	5.09	127.61	120.28
1	B	185	GLU	C-N-CA	5.09	127.61	120.28
1	A	362	ASN	N-CA-C	5.08	116.87	108.49
1	A	132	THR	N-CA-C	-5.07	105.75	111.28
1	B	319	LYS	CA-C-N	5.06	127.07	120.28
1	B	319	LYS	C-N-CA	5.06	127.07	120.28
1	B	610	ALA	CA-C-N	5.05	127.55	120.28
1	B	610	ALA	C-N-CA	5.05	127.55	120.28
1	B	477	LEU	CA-C-N	5.04	127.54	120.28
1	B	477	LEU	C-N-CA	5.04	127.54	120.28
1	B	598	SER	N-CA-C	5.03	116.46	111.07

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	303	GLY	Peptide
1	A	436	ASP	Peptide
1	B	184	GLN	Peptide
1	B	418	GLN	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	3550	0	3614	146	1
1	B	3500	0	3568	153	0
2	A	1	0	0	0	0
3	A	98	0	0	8	0
3	B	78	0	0	12	0
All	All	7227	0	7182	295	1

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 21.

All (295) 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:183:LEU:O	1:B:186:THR:OG1	1.56	1.23
1:B:144:ILE:CG2	1:B:183:LEU:HD12	1.73	1.17
1:A:153:LYS:O	1:A:155:ALA:N	1.86	1.09
1:A:233:ASP:OD1	1:A:300:ARG:NH1	1.85	1.08
1:A:153:LYS:C	1:A:155:ALA:H	1.50	1.06
1:B:415:HIS:O	1:B:418:GLN:HB3	1.59	1.02
1:B:144:ILE:HG22	1:B:183:LEU:HD12	1.46	0.97
1:B:391:SER:HB3	1:B:402:GLN:HG2	1.48	0.95
1:A:184:GLN:HA	1:A:186:THR:H	1.33	0.93
1:A:184:GLN:N	1:A:184:GLN:OE1	2.02	0.92
1:A:233:ASP:CG	1:A:300:ARG:HH12	1.78	0.92
1:A:183:LEU:C	1:A:184:GLN:OE1	2.15	0.89
1:A:554:GLU:HB3	1:A:555:PRO:HD2	1.54	0.88
1:A:184:GLN:CB	1:A:187:THR:HG23	2.07	0.85
1:B:215:ALA:O	3:B:754:HOH:O	1.94	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:132:THR:HG23	3:A:867:HOH:O	1.76	0.83
1:A:153:LYS:C	1:A:155:ALA:N	2.25	0.83
1:B:359:LEU:CD2	1:B:361:LYS:HE3	2.10	0.81
1:B:184:GLN:N	1:B:184:GLN:OE1	2.14	0.80
1:B:495:ARG:NH1	3:B:762:HOH:O	2.12	0.80
1:B:144:ILE:HG22	1:B:183:LEU:CD1	2.11	0.79
1:A:184:GLN:HA	1:A:186:THR:N	1.98	0.79
1:A:429:ASP:O	1:A:433:SER:OG	2.00	0.79
1:A:307:LYS:HD2	1:A:307:LYS:C	2.08	0.79
1:A:639:ARG:HH11	1:A:639:ARG:HG3	1.46	0.79
1:A:266:ARG:O	1:A:270:THR:HG23	1.82	0.78
1:B:180:ALA:O	3:B:752:HOH:O	2.02	0.77
1:B:281:GLN:HA	1:B:410:LEU:HD12	1.64	0.77
1:B:429:ASP:OD1	1:B:437:ARG:NH2	2.18	0.77
1:B:399:LEU:O	1:B:399:LEU:HD22	1.85	0.76
1:B:239:GLN:OE1	1:B:261:LEU:HD12	1.85	0.76
1:A:184:GLN:HB3	1:A:187:THR:HG23	1.65	0.76
1:B:359:LEU:HD23	1:B:361:LYS:HE3	1.68	0.75
1:A:132:THR:CG2	3:A:867:HOH:O	2.33	0.75
1:A:351:ILE:HB	1:A:352:PRO:HD3	1.68	0.74
1:B:208:GLN:OE1	3:B:712:HOH:O	2.04	0.74
1:A:281:GLN:HA	1:A:410:LEU:HD12	1.70	0.74
1:B:310:LEU:HD21	1:B:344:THR:HB	1.67	0.74
1:B:651:GLU:O	3:B:769:HOH:O	2.05	0.73
1:B:140:ARG:NH1	1:B:189:GLU:OE1	2.22	0.73
1:A:134:LEU:O	1:A:138:GLN:HG3	1.89	0.72
1:B:262:ASP:OD2	3:B:772:HOH:O	2.07	0.72
1:A:643:PRO:HG2	1:B:651:GLU:HG2	1.72	0.72
1:A:137:LEU:O	1:A:141:VAL:HG23	1.90	0.71
1:B:284:LYS:HE3	1:B:285:THR:O	1.90	0.71
1:A:288:LYS:HG3	1:A:362:ASN:HB3	1.72	0.71
1:B:507:LEU:HB2	1:B:510:ARG:HG3	1.73	0.71
1:A:623:GLU:O	1:A:626:ARG:HD2	1.90	0.71
1:A:272:CYS:SG	1:A:296:LEU:HB2	2.31	0.70
1:A:322:ARG:C	1:A:323:GLU:HG2	2.16	0.70
1:A:317:THR:OG1	1:A:320:GLN:HG3	1.90	0.70
1:A:417:ASN:CB	1:A:418:GLN:HA	2.20	0.70
1:B:432:PHE:O	3:B:750:HOH:O	2.08	0.70
1:B:187:THR:O	1:B:191:GLU:HG3	1.92	0.70
1:B:525:THR:HA	1:B:529:LEU:HB2	1.74	0.69
1:A:650:VAL:HG12	1:A:651:GLU:H	1.55	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:184:GLN:HB2	1:A:187:THR:HG23	1.76	0.68
1:A:650:VAL:HG12	1:A:651:GLU:N	2.08	0.68
1:A:132:THR:O	1:A:136:ARG:HG3	1.94	0.67
1:A:626:ARG:O	1:A:626:ARG:HG2	1.93	0.67
1:A:284:LYS:HE3	1:A:415:HIS:HB2	1.77	0.67
1:B:383:LYS:HE3	3:B:727:HOH:O	1.96	0.65
1:A:187:THR:OG1	1:A:260:ARG:NH1	2.29	0.65
1:B:341:ILE:O	1:B:342:ASN:HB2	1.97	0.65
1:A:637:ASP:N	1:A:640:GLY:HA2	2.12	0.64
1:A:415:HIS:CD2	1:A:416:GLY:H	2.15	0.64
1:B:609:LEU:O	1:B:621:LYS:NZ	2.30	0.64
1:B:467:ARG:HD2	1:B:536:ARG:HG2	1.80	0.64
1:B:222:ALA:HB3	1:B:223:PRO:HD3	1.79	0.64
1:B:394:LEU:HD12	1:B:394:LEU:C	2.23	0.63
1:A:312:ARG:HD2	1:A:314:ASP:OD2	1.99	0.63
1:B:607:ARG:HH11	1:B:626:ARG:NH1	1.96	0.63
1:A:307:LYS:HD2	1:A:307:LYS:O	1.98	0.63
1:A:267:THR:O	1:A:271:SER:OG	2.17	0.62
1:B:137:LEU:O	1:B:141:VAL:HG23	1.98	0.62
1:B:201:ILE:O	1:B:205:LYS:HG3	1.99	0.62
1:B:310:LEU:CD2	1:B:344:THR:HB	2.30	0.62
1:B:351:ILE:HB	1:B:352:PRO:HD3	1.82	0.62
1:A:554:GLU:HB3	1:A:555:PRO:CD	2.28	0.62
1:B:345:VAL:HG12	1:B:358:ALA:HB1	1.81	0.62
1:B:144:ILE:HG22	1:B:183:LEU:CG	2.30	0.61
1:B:609:LEU:HD13	1:B:648:MET:HE2	1.82	0.61
1:B:607:ARG:NH1	1:B:626:ARG:NH1	2.49	0.60
1:B:144:ILE:CG2	1:B:183:LEU:CD1	2.62	0.60
1:B:359:LEU:HD21	1:B:361:LYS:HE3	1.83	0.60
1:A:239:GLN:OE1	1:A:261:LEU:HD12	2.01	0.60
1:B:389:SER:HB2	3:B:734:HOH:O	2.00	0.60
1:A:200:ARG:HB3	1:A:224:LEU:HD11	1.83	0.60
1:B:304:ALA:HB3	1:B:305:PRO:HD3	1.84	0.59
1:A:542:ILE:HD11	1:A:546:TYR:HD2	1.66	0.59
1:B:140:ARG:O	1:B:144:ILE:HG23	2.03	0.59
1:B:307:LYS:O	1:B:307:LYS:HG3	2.02	0.59
1:B:429:ASP:O	1:B:433:SER:HB2	2.03	0.59
1:A:417:ASN:CG	1:A:418:GLN:HA	2.28	0.59
1:B:260:ARG:NH2	3:B:702:HOH:O	2.34	0.59
1:B:284:LYS:HD2	1:B:415:HIS:HB3	1.85	0.58
1:B:417:ASN:CG	1:B:418:GLN:H	2.10	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:284:LYS:HD2	1:A:285:THR:H	1.67	0.58
1:B:142:GLY:O	1:B:145:HIS:HB3	2.02	0.58
1:B:562:ARG:O	1:B:571:ILE:HG13	2.04	0.58
1:B:311:VAL:HG22	1:B:390:ALA:HB2	1.84	0.58
1:B:144:ILE:HG23	1:B:183:LEU:HD12	1.79	0.58
1:B:524:LEU:HD13	1:B:529:LEU:HD12	1.86	0.58
1:A:222:ALA:HB3	1:A:223:PRO:HD3	1.85	0.57
1:A:144:ILE:HG22	1:A:183:LEU:HD13	1.85	0.57
1:B:399:LEU:HD22	1:B:399:LEU:C	2.30	0.57
1:A:199:LYS:O	1:A:203:ILE:HG12	2.05	0.56
1:A:301:PHE:CD1	1:A:394:LEU:HD11	2.41	0.56
1:A:284:LYS:HD3	1:A:415:HIS:H	1.71	0.56
1:B:567:GLU:HG3	3:B:733:HOH:O	2.06	0.56
1:A:638:GLY:CA	1:A:639:ARG:C	2.80	0.55
1:A:301:PHE:O	1:A:302:LEU:HD23	2.07	0.55
1:A:284:LYS:HD2	1:A:285:THR:N	2.21	0.55
1:A:179:LEU:N	1:A:182:LEU:CD1	2.69	0.55
1:A:421:ASN:OD1	3:A:801:HOH:O	2.18	0.55
1:B:144:ILE:HG21	1:B:183:LEU:HD12	1.77	0.54
1:B:524:LEU:HD13	1:B:529:LEU:CD1	2.37	0.54
1:A:415:HIS:O	1:A:416:GLY:C	2.49	0.54
1:A:637:ASP:N	1:A:637:ASP:OD1	2.40	0.54
1:B:415:HIS:CG	1:B:416:GLY:H	2.26	0.54
1:A:184:GLN:HB2	1:A:187:THR:CG2	2.38	0.54
1:A:415:HIS:CD2	1:A:416:GLY:N	2.75	0.53
1:B:440:PHE:CD1	1:B:440:PHE:N	2.74	0.53
1:A:150:ALA:N	1:A:151:LEU:CA	2.72	0.53
1:A:181:MET:C	1:A:183:LEU:H	2.16	0.53
1:A:525:THR:HG23	1:A:529:LEU:HB2	1.89	0.53
1:B:360:PHE:CD1	1:B:360:PHE:N	2.76	0.53
1:A:507:LEU:HB3	1:A:510:ARG:HG3	1.90	0.53
1:B:360:PHE:HB3	1:B:363:LEU:HD13	1.89	0.52
1:B:392:PHE:O	1:B:401:ILE:HG22	2.08	0.52
1:B:341:ILE:CG2	1:B:366:LYS:HZ2	2.22	0.52
1:B:200:ARG:HB3	1:B:224:LEU:HD11	1.91	0.52
1:B:429:ASP:CG	1:B:437:ARG:NH2	2.67	0.52
1:A:560:LEU:HD22	1:A:574:ALA:HB3	1.91	0.51
1:A:611:GLN:O	1:A:613:LYS:HE3	2.09	0.51
1:A:179:LEU:N	1:A:182:LEU:HD12	2.26	0.51
1:A:475:LEU:HD21	1:A:487:LEU:HD23	1.92	0.51
1:A:551:LEU:HB3	1:A:586:ILE:CD1	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:313:ALA:HB3	1:A:343:ASN:HB2	1.92	0.51
1:A:548:THR:O	1:A:552:LEU:HB2	2.10	0.51
1:B:149:GLU:HB3	1:B:151:LEU:HB2	1.93	0.51
1:B:144:ILE:CD1	1:B:241:GLU:HG2	2.41	0.51
1:B:149:GLU:HA	1:B:150:ALA:HB3	1.93	0.51
1:B:263:GLU:OE1	1:B:266:ARG:HD2	2.11	0.51
1:A:238:LEU:HB3	1:A:261:LEU:HD11	1.93	0.50
1:B:204:TRP:CE2	1:B:221:LEU:HD13	2.46	0.50
1:A:304:ALA:HB3	1:A:305:PRO:HD3	1.92	0.50
1:B:316:VAL:O	1:B:384:CYS:HB2	2.11	0.50
1:B:432:PHE:CG	1:B:446:VAL:HG11	2.46	0.50
1:A:479:GLN:HG2	1:A:484:ASP:O	2.11	0.50
1:A:552:LEU:HD13	1:A:586:ILE:HG12	1.93	0.50
1:B:554:GLU:HB3	1:B:555:PRO:HD2	1.93	0.50
1:A:137:LEU:HD22	1:A:234:ILE:HG21	1.94	0.49
1:B:137:LEU:HD13	1:B:234:ILE:HG21	1.94	0.49
1:B:239:GLN:C	1:B:241:GLU:O	2.55	0.49
1:B:394:LEU:C	1:B:394:LEU:CD1	2.85	0.49
1:B:416:GLY:HA2	1:B:417:ASN:C	2.36	0.49
1:A:459:PHE:O	1:A:463:VAL:HB	2.13	0.49
1:A:600:ARG:HD3	1:B:646:ILE:HD11	1.94	0.49
1:A:393:THR:HA	1:A:400:PRO:HA	1.94	0.49
1:B:183:LEU:C	1:B:184:GLN:OE1	2.55	0.49
1:A:184:GLN:CB	1:A:187:THR:CG2	2.87	0.49
1:B:399:LEU:C	1:B:399:LEU:CD2	2.85	0.49
1:A:542:ILE:HD11	1:A:546:TYR:CD2	2.46	0.49
1:A:556:ASP:OD2	1:A:613:LYS:NZ	2.44	0.48
1:A:144:ILE:HD11	1:A:241:GLU:HG3	1.95	0.48
1:A:194:LYS:HE3	1:A:194:LYS:HB3	1.53	0.48
1:B:239:GLN:NE2	1:B:262:ASP:OD1	2.46	0.48
1:B:239:GLN:O	1:B:241:GLU:O	2.32	0.48
1:A:650:VAL:CG1	1:A:651:GLU:H	2.23	0.48
1:B:490:GLU:O	1:B:493:GLN:HG2	2.14	0.48
1:B:281:GLN:HB3	1:B:426:ILE:HG13	1.96	0.48
1:B:278:GLN:OE1	1:B:279:PRO:HD2	2.13	0.48
1:A:147:LEU:HD13	1:A:183:LEU:HD12	1.94	0.48
1:A:150:ALA:N	1:A:151:LEU:HA	2.29	0.48
1:B:144:ILE:HG13	1:B:145:HIS:N	2.29	0.48
1:A:151:LEU:O	1:A:151:LEU:HG	2.13	0.47
1:A:445:ARG:HG2	1:A:498:SER:HB3	1.95	0.47
1:A:200:ARG:HD2	1:A:200:ARG:HA	1.63	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:149:GLU:HA	1:B:150:ALA:C	2.38	0.47
1:A:472:GLU:O	1:A:476:PHE:HD2	1.96	0.47
1:A:233:ASP:OD1	1:A:300:ARG:CZ	2.58	0.47
1:B:547:VAL:O	1:B:551:LEU:HB2	2.14	0.47
1:A:150:ALA:H	1:A:151:LEU:HA	1.79	0.47
1:B:424:ALA:HB2	1:B:515:TRP:CD1	2.49	0.47
1:A:144:ILE:CG1	1:A:241:GLU:HG3	2.45	0.47
1:A:318:GLU:OE2	1:A:440:PHE:N	2.36	0.47
1:A:638:GLY:HA3	1:A:639:ARG:CB	2.44	0.46
1:B:239:GLN:OE1	1:B:239:GLN:HA	2.14	0.46
1:A:638:GLY:HA3	1:A:639:ARG:HB3	1.98	0.46
1:A:154:GLY:O	1:A:156:GLU:HG3	2.15	0.46
1:A:383:LYS:NZ	3:A:877:HOH:O	2.40	0.46
1:B:360:PHE:HB2	1:B:363:LEU:HD22	1.98	0.46
1:B:619:LYS:HA	1:B:620:PRO:HD2	1.83	0.46
1:B:607:ARG:HA	1:B:621:LYS:HE3	1.98	0.46
1:A:179:LEU:N	1:A:182:LEU:HD11	2.30	0.46
1:A:451:MET:HE2	1:A:455:LEU:HG	1.98	0.46
1:A:519:ASP:O	1:A:522:LEU:HB2	2.16	0.46
1:A:616:TYR:HA	1:A:617:PRO:HA	1.62	0.45
1:B:558:THR:HA	1:B:614:ASN:O	2.16	0.45
1:A:194:LYS:HD3	1:A:267:THR:OG1	2.16	0.45
1:A:638:GLY:HA3	1:A:639:ARG:O	2.16	0.45
1:A:638:GLY:N	1:A:639:ARG:O	2.49	0.45
1:B:339:GLU:N	1:B:339:GLU:OE1	2.50	0.45
1:B:132:THR:O	1:B:135:ARG:HB3	2.15	0.45
1:B:134:LEU:O	1:B:138:GLN:OE1	2.35	0.45
1:A:347:LEU:HG	1:A:356:CYS:SG	2.57	0.45
1:A:424:ALA:HB2	1:A:515:TRP:CD1	2.52	0.45
1:A:638:GLY:CA	1:A:639:ARG:O	2.64	0.45
1:B:135:ARG:HA	1:B:138:GLN:OE1	2.16	0.45
1:B:144:ILE:HD12	1:B:241:GLU:HG2	1.98	0.45
1:B:312:ARG:HG3	1:B:312:ARG:HH11	1.82	0.45
1:B:385:ALA:HA	1:B:410:LEU:HD22	1.98	0.45
1:B:647:LYS:HB2	1:B:647:LYS:HE2	1.82	0.45
1:A:183:LEU:O	1:A:186:THR:HB	2.17	0.45
1:B:149:GLU:CA	1:B:150:ALA:HB3	2.46	0.45
1:B:419:ASP:O	1:B:423:LYS:HG3	2.15	0.45
1:B:620:PRO:HG2	1:B:623:GLU:CD	2.42	0.45
1:A:199:LYS:HB3	1:A:199:LYS:HE2	1.59	0.44
1:A:510:ARG:HD3	1:A:512:PHE:CZ	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:510:ARG:HD2	3:A:865:HOH:O	2.17	0.44
1:B:542:ILE:HD11	1:B:546:TYR:HD2	1.82	0.44
1:A:186:THR:HG22	1:A:238:LEU:HD21	2.00	0.44
1:B:350:SER:HB3	1:B:353:GLY:HA3	1.99	0.44
1:A:360:PHE:CD1	1:A:360:PHE:N	2.85	0.44
1:A:551:LEU:HB3	1:A:586:ILE:HD12	1.99	0.44
1:B:133:GLY:O	1:B:136:ARG:HB3	2.17	0.44
1:B:490:GLU:HA	1:B:493:GLN:HG2	1.99	0.44
1:A:579:GLY:O	1:A:582:GLY:N	2.51	0.44
1:A:595:LYS:O	1:A:598:SER:OG	2.35	0.44
1:B:470:LEU:HB2	1:B:472:GLU:HG2	2.00	0.44
1:A:293:VAL:CG2	1:A:358:ALA:HB3	2.47	0.44
1:B:130:PHE:HB3	1:B:131:LYS:H	1.58	0.44
1:B:202:GLN:HB3	1:B:435:MET:HE3	2.00	0.44
1:B:293:VAL:HG21	1:B:311:VAL:HG11	2.00	0.43
1:A:414:VAL:O	1:A:415:HIS:HB3	2.18	0.43
1:B:149:GLU:CD	1:B:149:GLU:N	2.76	0.43
1:B:288:LYS:NZ	1:B:362:ASN:OD1	2.51	0.43
1:B:618:LYS:O	1:B:618:LYS:HG3	2.16	0.43
1:A:183:LEU:HD23	1:A:183:LEU:HA	1.83	0.43
1:A:482:PHE:CE2	1:A:495:ARG:HG2	2.54	0.43
1:A:436:ASP:OD1	1:A:436:ASP:N	2.46	0.43
1:B:183:LEU:HD22	1:B:183:LEU:HA	1.78	0.43
1:B:639:ARG:HG2	3:B:738:HOH:O	2.18	0.43
1:A:153:LYS:N	3:A:863:HOH:O	2.51	0.43
1:A:312:ARG:O	1:A:388:PHE:HA	2.19	0.43
1:B:459:PHE:CD1	1:B:459:PHE:C	2.96	0.43
1:A:417:ASN:HB3	1:A:418:GLN:HA	1.97	0.43
1:A:504:LYS:HE3	1:A:504:LYS:HB3	1.78	0.43
1:B:616:TYR:HA	1:B:617:PRO:HA	1.67	0.43
1:A:255:ALA:HA	1:A:258:THR:OG1	2.18	0.42
1:A:299:LEU:HB2	3:A:823:HOH:O	2.19	0.42
1:A:552:LEU:HD12	1:A:552:LEU:HA	1.79	0.42
1:A:642:VAL:CG1	1:B:650:VAL:HG13	2.49	0.42
1:B:500:SER:HA	1:B:504:LYS:HB2	2.01	0.42
1:A:415:HIS:CG	1:A:416:GLY:H	2.35	0.42
1:B:233:ASP:O	1:B:237:GLN:HG3	2.19	0.42
1:B:551:LEU:HB3	1:B:586:ILE:CD1	2.49	0.42
1:B:229:GLU:HG3	1:B:297:LEU:HD23	2.00	0.42
1:B:283:LEU:HD11	1:B:289:PHE:CD1	2.54	0.42
1:A:467:ARG:NH1	1:A:536:ARG:HA	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:312:ARG:HG3	1:B:312:ARG:NH1	2.34	0.42
1:B:507:LEU:CB	1:B:510:ARG:HG3	2.48	0.42
1:A:641:PTR:HB2	1:B:590:GLN:HA	2.02	0.42
1:B:607:ARG:HH11	1:B:626:ARG:HH11	1.64	0.42
1:B:215:ALA:HA	1:B:216:PRO:HD3	1.75	0.42
1:A:221:LEU:HD12	1:A:276:GLU:HG3	2.02	0.42
1:B:613:LYS:O	1:B:621:LYS:HB3	2.20	0.42
1:B:543:SER:O	1:B:547:VAL:HG23	2.19	0.41
1:B:184:GLN:N	1:B:184:GLN:CD	2.73	0.41
1:B:221:LEU:HD12	1:B:221:LEU:HA	1.92	0.41
1:B:303:GLY:O	1:B:306:ALA:O	2.39	0.41
1:B:620:PRO:HG2	1:B:623:GLU:OE1	2.20	0.41
1:B:626:ARG:HH11	1:B:626:ARG:HD3	1.72	0.41
1:A:490:GLU:HG2	1:A:493:GLN:OE1	2.20	0.41
1:B:302:LEU:HA	1:B:302:LEU:HD23	1.79	0.41
1:B:341:ILE:HG12	1:B:364:LEU:HB3	2.02	0.41
1:A:519:ASP:HA	1:A:522:LEU:HD12	2.03	0.41
1:A:214:GLY:O	3:A:802:HOH:O	2.20	0.41
1:A:429:ASP:HA	1:A:442:VAL:HG11	2.03	0.41
1:B:321:ALA:HB1	1:B:406:LEU:HD21	2.02	0.41
1:B:345:VAL:CG1	1:B:358:ALA:HB1	2.48	0.41
1:B:382:GLU:H	1:B:382:GLU:HG2	1.68	0.41
1:B:415:HIS:CG	1:B:416:GLY:N	2.89	0.41
1:B:557:GLY:HA3	1:B:613:LYS:HD2	2.02	0.41
1:B:559:PHE:CD1	1:B:612:LEU:HG	2.56	0.41
1:B:237:GLN:O	1:B:241:GLU:HB2	2.20	0.41
1:B:257:LEU:HD12	1:B:257:LEU:HA	1.92	0.40
1:A:392:PHE:CZ	1:A:394:LEU:HD22	2.56	0.40
1:A:413:ILE:CD1	1:A:419:ASP:HB3	2.52	0.40
1:A:179:LEU:HD22	1:A:179:LEU:HA	1.84	0.40
1:A:612:LEU:O	1:A:621:LYS:HD3	2.21	0.40
1:B:406:LEU:HD12	1:B:406:LEU:HA	1.87	0.40
1:A:196:LEU:HD12	1:A:196:LEU:HA	1.84	0.40
1:A:639:ARG:HG3	1:A:639:ARG:NH1	2.24	0.40

All (1) 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:180:ALA:CB	1:A:344:THR:O[3_544]	1.90	0.30

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	428/549 (78%)	413 (96%)	13 (3%)	2 (0%)	24 48
1	B	423/549 (77%)	416 (98%)	6 (1%)	1 (0%)	43 68
All	All	851/1098 (78%)	829 (97%)	19 (2%)	3 (0%)	30 54

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	154	GLY
1	B	415	HIS
1	A	638	GLY

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	386/469 (82%)	303 (78%)	83 (22%)	1 3
1	B	382/469 (81%)	296 (78%)	86 (22%)	1 3
All	All	768/938 (82%)	599 (78%)	169 (22%)	1 3

All (169) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	137	LEU
1	A	144	ILE
1	A	147	LEU

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Mol	Chain	Res	Type
1	A	153	LYS
1	A	156	GLU
1	A	179	LEU
1	A	181	MET
1	A	182	LEU
1	A	183	LEU
1	A	184	GLN
1	A	185	GLU
1	A	186	THR
1	A	194	LYS
1	A	196	LEU
1	A	199	LYS
1	A	200	ARG
1	A	217	PHE
1	A	224	LEU
1	A	236	SER
1	A	238	LEU
1	A	239	GLN
1	A	241	GLU
1	A	254	ARG
1	A	256	SER
1	A	258	THR
1	A	260	ARG
1	A	261	LEU
1	A	264	VAL
1	A	266	ARG
1	A	271	SER
1	A	272	CYS
1	A	284	LYS
1	A	288	LYS
1	A	294	ARG
1	A	299	LEU
1	A	307	LYS
1	A	312	ARG
1	A	319	LYS
1	A	323	GLU
1	A	340	ILE
1	A	342	ASN
1	A	359	LEU
1	A	361	LYS
1	A	362	ASN
1	A	363	LEU

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Mol	Chain	Res	Type
1	A	366	LYS
1	A	381	GLU
1	A	383	LYS
1	A	389	SER
1	A	410	LEU
1	A	417	ASN
1	A	427	LEU
1	A	436	ASP
1	A	442	VAL
1	A	449	GLU
1	A	469	LEU
1	A	471	PRO
1	A	472	GLU
1	A	496	SER
1	A	497	VAL
1	A	504	LYS
1	A	507	LEU
1	A	510	ARG
1	A	516	GLN
1	A	521	VAL
1	A	525	THR
1	A	530	ARG
1	A	531	SER
1	A	544	LYS
1	A	549	SER
1	A	551	LEU
1	A	560	LEU
1	A	571	ILE
1	A	572	THR
1	A	577	ILE
1	A	581	ASP
1	A	595	LYS
1	A	609	LEU
1	A	612	LEU
1	A	626	ARG
1	A	637	ASP
1	A	639	ARG
1	A	647	LYS
1	B	130	PHE
1	B	131	LYS
1	B	132	THR
1	B	134	LEU

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Mol	Chain	Res	Type
1	B	135	ARG
1	B	144	ILE
1	B	146	LEU
1	B	148	ARG
1	B	181	MET
1	B	182	LEU
1	B	183	LEU
1	B	184	GLN
1	B	189	GLU
1	B	199	LYS
1	B	200	ARG
1	B	221	LEU
1	B	224	LEU
1	B	226	GLU
1	B	238	LEU
1	B	241	GLU
1	B	257	LEU
1	B	260	ARG
1	B	271	SER
1	B	284	LYS
1	B	286	GLN
1	B	288	LYS
1	B	293	VAL
1	B	294	ARG
1	B	299	LEU
1	B	307	LYS
1	B	310	LEU
1	B	319	LYS
1	B	323	GLU
1	B	340	ILE
1	B	345	VAL
1	B	350	SER
1	B	360	PHE
1	B	363	LEU
1	B	365	LEU
1	B	382	GLU
1	B	389	SER
1	B	392	PHE
1	B	393	THR
1	B	399	LEU
1	B	402	GLN
1	B	410	LEU

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Mol	Chain	Res	Type
1	B	414	VAL
1	B	426	ILE
1	B	433	SER
1	B	437	ARG
1	B	439	PRO
1	B	440	PHE
1	B	442	VAL
1	B	444	GLU
1	B	445	ARG
1	B	454	THR
1	B	469	LEU
1	B	472	GLU
1	B	486	SER
1	B	497	VAL
1	B	500	SER
1	B	508	LEU
1	B	510	ARG
1	B	521	VAL
1	B	523	ASP
1	B	524	LEU
1	B	544	LYS
1	B	551	LEU
1	B	552	LEU
1	B	561	LEU
1	B	566	SER
1	B	567	GLU
1	B	578	ARG
1	B	595	LYS
1	B	609	LEU
1	B	611	GLN
1	B	612	LEU
1	B	618	LYS
1	B	621	LYS
1	B	623	GLU
1	B	626	ARG
1	B	642	VAL
1	B	645	THR
1	B	646	ILE
1	B	647	LYS
1	B	651	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	342	ASN
1	A	362	ASN
1	A	415	HIS
1	A	420	ASN
1	A	421	ASN
1	A	494	HIS
1	B	202	GLN
1	B	207	GLN
1	B	286	GLN
1	B	320	GLN
1	B	342	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

2 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
1	PTR	A	641	1	15,16,17	2.93	7 (46%)	17,22,24	1.22	2 (11%)
1	PTR	B	641	1	15,16,17	2.46	5 (33%)	17,22,24	2.04	6 (35%)

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
1	PTR	A	641	1	-	0/10/11/13	0/1/1/1
1	PTR	B	641	1	-	0/10/11/13	0/1/1/1

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	641	PTR	P-OH	-5.43	1.49	1.59
1	A	641	PTR	P-O2P	-5.21	1.35	1.54
1	A	641	PTR	P-O3P	-5.10	1.35	1.54
1	B	641	PTR	P-O1P	-4.85	1.35	1.50
1	B	641	PTR	P-O2P	-4.53	1.38	1.54
1	B	641	PTR	P-O3P	-4.21	1.39	1.54
1	A	641	PTR	P-O1P	-3.98	1.38	1.50
1	B	641	PTR	P-OH	-3.56	1.53	1.59
1	A	641	PTR	OH-CZ	-2.60	1.34	1.40
1	A	641	PTR	CE2-CD2	-2.24	1.35	1.38
1	B	641	PTR	CA-N	-2.14	1.42	1.48
1	A	641	PTR	CA-N	-2.10	1.42	1.48

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	641	PTR	O3P-P-OH	4.24	117.85	105.32
1	B	641	PTR	O2P-P-OH	-3.98	93.56	105.32
1	B	641	PTR	O3P-P-O2P	3.20	119.79	107.80
1	B	641	PTR	CD1-CE1-CZ	3.03	123.19	119.73
1	A	641	PTR	P-OH-CZ	2.41	132.48	123.88
1	A	641	PTR	O2P-P-O1P	2.36	120.03	110.83
1	B	641	PTR	CE1-CD1-CG	-2.28	118.00	121.00
1	B	641	PTR	P-OH-CZ	2.09	131.32	123.88

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	641	PTR	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

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	444/549 (80%)	-0.21	7 (1%)	70	68	1, 17, 50, 73	0
1	B	437/549 (79%)	-0.12	11 (2%)	58	55	2, 18, 58, 90	0
All	All	881/1098 (80%)	-0.16	18 (2%)	65	62	1, 18, 54, 90	0

All (18) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	182	LEU	3.5
1	B	180	ALA	3.2
1	B	414	VAL	3.2
1	B	151	LEU	3.1
1	A	638	GLY	2.8
1	B	185	GLU	2.8
1	B	150	ALA	2.7
1	B	130	PHE	2.6
1	B	304	ALA	2.5
1	A	155	ALA	2.5
1	A	130	PHE	2.4
1	A	218	GLU	2.4
1	A	151	LEU	2.3
1	B	415	HIS	2.3
1	A	415	HIS	2.3
1	B	305	PRO	2.2
1	B	132	THR	2.1
1	A	179	LEU	2.1

6.2 Non-standard residues in protein, DNA, RNA chains

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
1	PTR	B	641	16/17	0.97	0.07	5,10,17,19	0
1	PTR	A	641	16/17	0.98	0.06	6,11,17,24	0

6.3 Carbohydrates (i)

There are no oligosaccharides in this entry.

6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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	NI	A	701	1/1	1.00	0.02	11,11,11,11	0

6.5 Other polymers (i)

There are no such residues in this entry.