Full wwPDB X-ray Structure Validation Report ⓘ

Oct 8, 2023 – 10:44 AM EDT

PDB ID	:	6ED1
Title	:	Bacteroides dorei Beta-glucuronidase
Authors	:	Biernat, K.A.; Redinbo, M.R.
Deposited on	:	2018-08-08
Resolution	:	2.90 Å(reported)

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

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

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

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

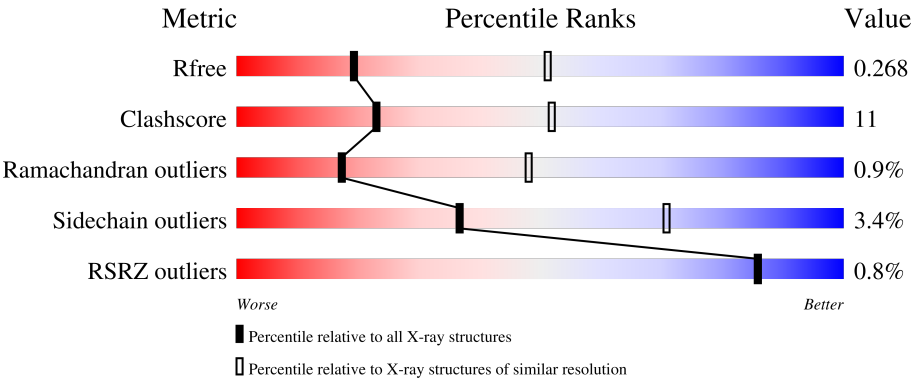
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35.1

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 2.90 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	1957 (2.90-2.90)
Clashscore	141614	2172 (2.90-2.90)
Ramachandran outliers	138981	2115 (2.90-2.90)
Sidechain outliers	138945	2117 (2.90-2.90)
RSRZ outliers	127900	1906 (2.90-2.90)

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	879	69% 27%
1	B	879	71% 26%
1	C	879	72% 24%
1	D	879	65% 31%

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 27956 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 Glycosyl hydrolase family 2, sugar binding domain protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	860	Total	C	N	O	S	0	0	0
			6901	4411	1179	1281	30			
1	B	860	Total	C	N	O	S	0	0	0
			6914	4416	1181	1287	30			
1	C	860	Total	C	N	O	S	0	0	0
			6909	4413	1178	1289	29			
1	D	860	Total	C	N	O	S	0	0	0
			6857	4382	1167	1279	29			

There are 92 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	initiating methionine	UNP C3R9X4
A	2	HIS	-	expression tag	UNP C3R9X4
A	3	HIS	-	expression tag	UNP C3R9X4
A	4	HIS	-	expression tag	UNP C3R9X4
A	5	HIS	-	expression tag	UNP C3R9X4
A	6	HIS	-	expression tag	UNP C3R9X4
A	7	HIS	-	expression tag	UNP C3R9X4
A	8	SER	-	expression tag	UNP C3R9X4
A	9	SER	-	expression tag	UNP C3R9X4
A	10	GLY	-	expression tag	UNP C3R9X4
A	11	VAL	-	expression tag	UNP C3R9X4
A	12	ASP	-	expression tag	UNP C3R9X4
A	13	LEU	-	expression tag	UNP C3R9X4
A	14	GLY	-	expression tag	UNP C3R9X4
A	15	THR	-	expression tag	UNP C3R9X4
A	16	GLU	-	expression tag	UNP C3R9X4
A	17	ASN	-	expression tag	UNP C3R9X4
A	18	LEU	-	expression tag	UNP C3R9X4
A	19	TYR	-	expression tag	UNP C3R9X4
A	20	PHE	-	expression tag	UNP C3R9X4
A	21	GLN	-	expression tag	UNP C3R9X4

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Chain	Residue	Modelled	Actual	Comment	Reference
A	22	SER	-	expression tag	UNP C3R9X4
A	23	ASN	-	expression tag	UNP C3R9X4
B	1	MET	-	initiating methionine	UNP C3R9X4
B	2	HIS	-	expression tag	UNP C3R9X4
B	3	HIS	-	expression tag	UNP C3R9X4
B	4	HIS	-	expression tag	UNP C3R9X4
B	5	HIS	-	expression tag	UNP C3R9X4
B	6	HIS	-	expression tag	UNP C3R9X4
B	7	HIS	-	expression tag	UNP C3R9X4
B	8	SER	-	expression tag	UNP C3R9X4
B	9	SER	-	expression tag	UNP C3R9X4
B	10	GLY	-	expression tag	UNP C3R9X4
B	11	VAL	-	expression tag	UNP C3R9X4
B	12	ASP	-	expression tag	UNP C3R9X4
B	13	LEU	-	expression tag	UNP C3R9X4
B	14	GLY	-	expression tag	UNP C3R9X4
B	15	THR	-	expression tag	UNP C3R9X4
B	16	GLU	-	expression tag	UNP C3R9X4
B	17	ASN	-	expression tag	UNP C3R9X4
B	18	LEU	-	expression tag	UNP C3R9X4
B	19	TYR	-	expression tag	UNP C3R9X4
B	20	PHE	-	expression tag	UNP C3R9X4
B	21	GLN	-	expression tag	UNP C3R9X4
B	22	SER	-	expression tag	UNP C3R9X4
B	23	ASN	-	expression tag	UNP C3R9X4
C	1	MET	-	initiating methionine	UNP C3R9X4
C	2	HIS	-	expression tag	UNP C3R9X4
C	3	HIS	-	expression tag	UNP C3R9X4
C	4	HIS	-	expression tag	UNP C3R9X4
C	5	HIS	-	expression tag	UNP C3R9X4
C	6	HIS	-	expression tag	UNP C3R9X4
C	7	HIS	-	expression tag	UNP C3R9X4
C	8	SER	-	expression tag	UNP C3R9X4
C	9	SER	-	expression tag	UNP C3R9X4
C	10	GLY	-	expression tag	UNP C3R9X4
C	11	VAL	-	expression tag	UNP C3R9X4
C	12	ASP	-	expression tag	UNP C3R9X4
C	13	LEU	-	expression tag	UNP C3R9X4
C	14	GLY	-	expression tag	UNP C3R9X4
C	15	THR	-	expression tag	UNP C3R9X4
C	16	GLU	-	expression tag	UNP C3R9X4
C	17	ASN	-	expression tag	UNP C3R9X4

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Chain	Residue	Modelled	Actual	Comment	Reference
C	18	LEU	-	expression tag	UNP C3R9X4
C	19	TYR	-	expression tag	UNP C3R9X4
C	20	PHE	-	expression tag	UNP C3R9X4
C	21	GLN	-	expression tag	UNP C3R9X4
C	22	SER	-	expression tag	UNP C3R9X4
C	23	ASN	-	expression tag	UNP C3R9X4
D	1	MET	-	initiating methionine	UNP C3R9X4
D	2	HIS	-	expression tag	UNP C3R9X4
D	3	HIS	-	expression tag	UNP C3R9X4
D	4	HIS	-	expression tag	UNP C3R9X4
D	5	HIS	-	expression tag	UNP C3R9X4
D	6	HIS	-	expression tag	UNP C3R9X4
D	7	HIS	-	expression tag	UNP C3R9X4
D	8	SER	-	expression tag	UNP C3R9X4
D	9	SER	-	expression tag	UNP C3R9X4
D	10	GLY	-	expression tag	UNP C3R9X4
D	11	VAL	-	expression tag	UNP C3R9X4
D	12	ASP	-	expression tag	UNP C3R9X4
D	13	LEU	-	expression tag	UNP C3R9X4
D	14	GLY	-	expression tag	UNP C3R9X4
D	15	THR	-	expression tag	UNP C3R9X4
D	16	GLU	-	expression tag	UNP C3R9X4
D	17	ASN	-	expression tag	UNP C3R9X4
D	18	LEU	-	expression tag	UNP C3R9X4
D	19	TYR	-	expression tag	UNP C3R9X4
D	20	PHE	-	expression tag	UNP C3R9X4
D	21	GLN	-	expression tag	UNP C3R9X4
D	22	SER	-	expression tag	UNP C3R9X4
D	23	ASN	-	expression tag	UNP C3R9X4

- Molecule 2 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total Na 1 1	0	0
2	B	1	Total Na 1 1	0	0
2	C	1	Total Na 1 1	0	0
2	D	1	Total Na 1 1	0	0

- Molecule 3 is water.

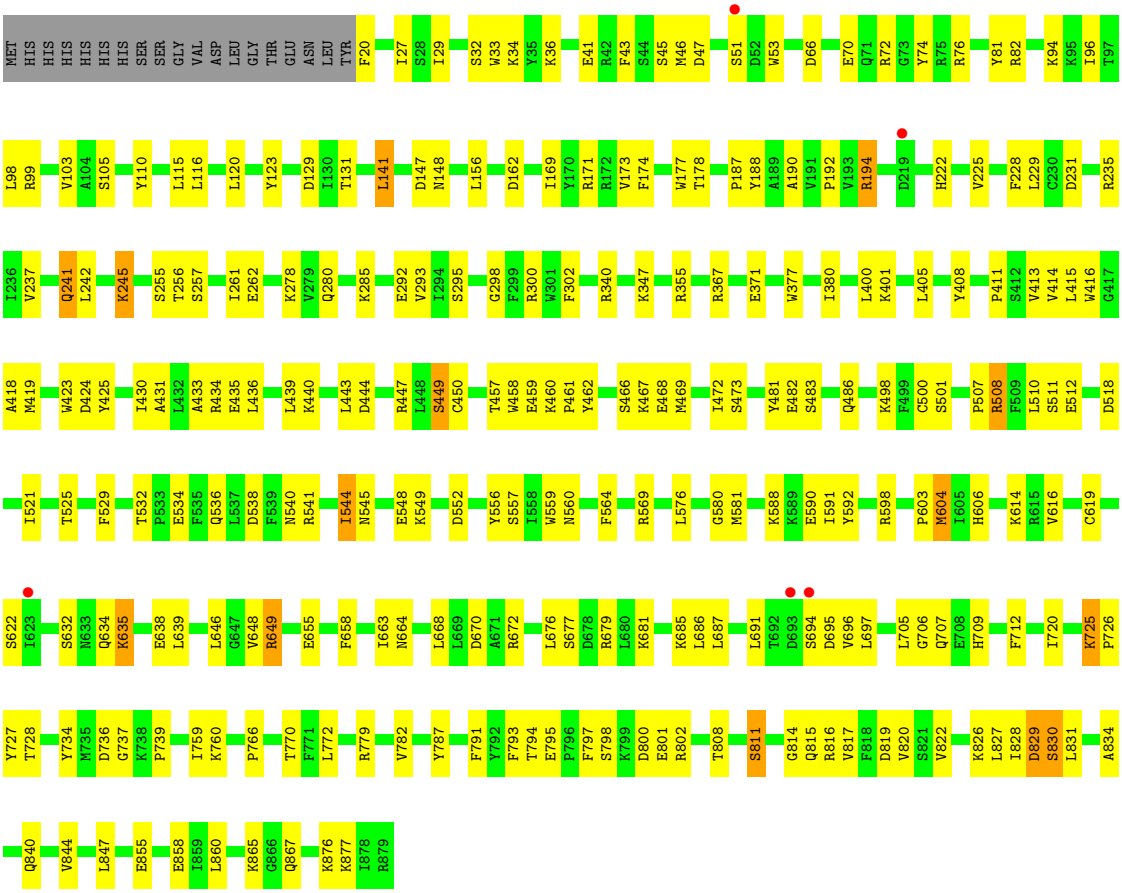
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	98	Total O 98 98	0	0
3	B	123	Total O 123 123	0	0
3	C	80	Total O 80 80	0	0
3	D	70	Total O 70 70	0	0

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.

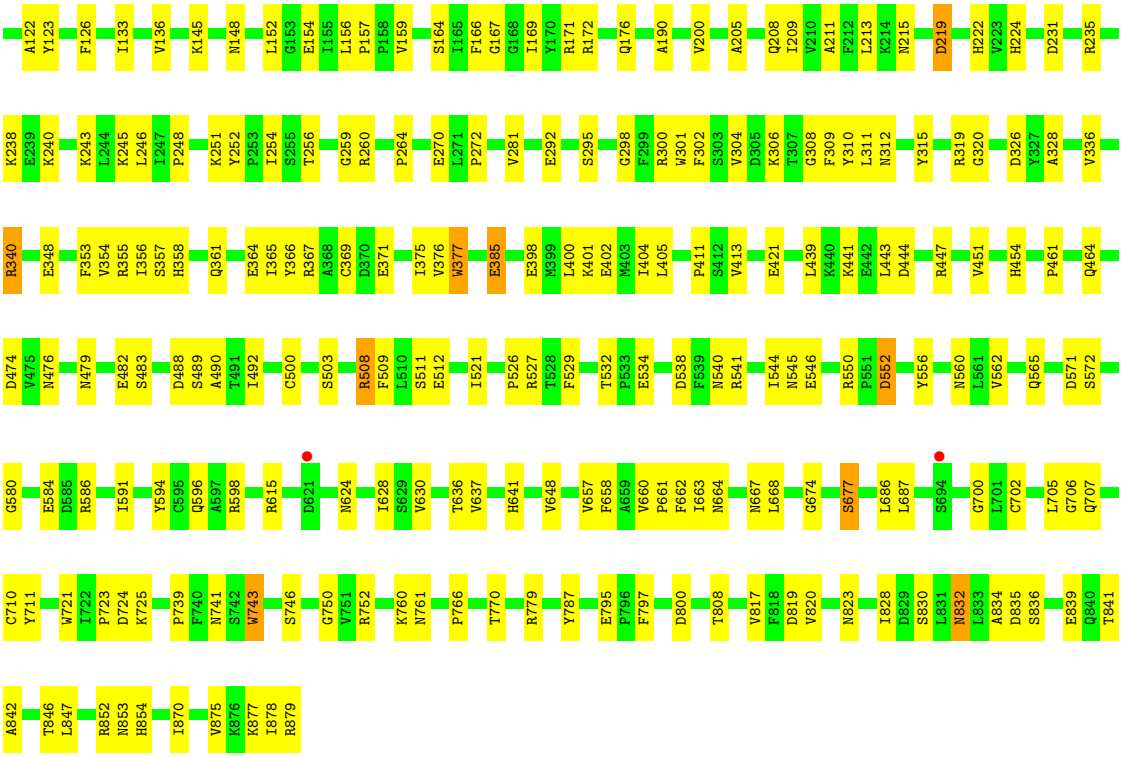
• Molecule 1: Glycosyl hydrolase family 2, sugar binding domain protein

Chain A:



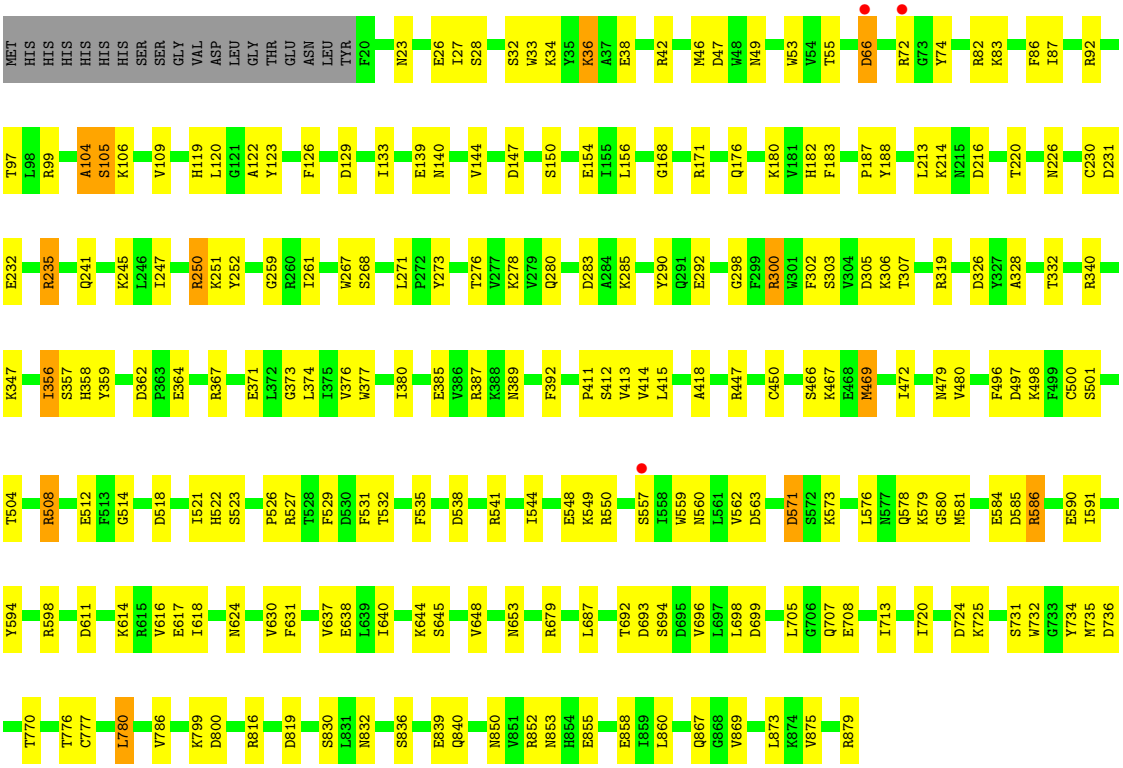
• Molecule 1: Glycosyl hydrolase family 2, sugar binding domain protein

Chain B:



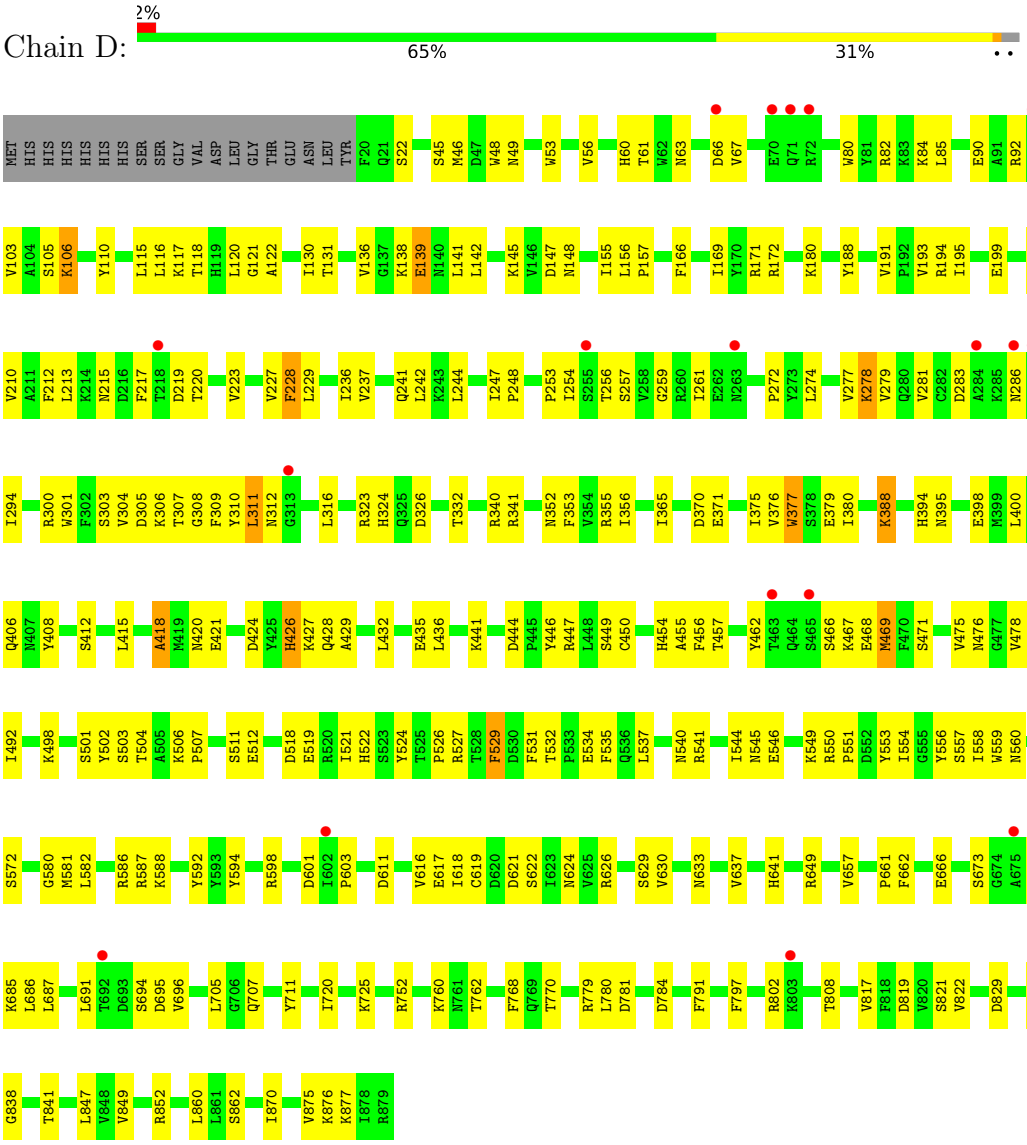
• Molecule 1: Glycosyl hydrolase family 2, sugar binding domain protein

Chain C:



• Molecule 1: Glycosyl hydrolase family 2, sugar binding domain protein

Chain D:


2%
65%
31%
MET HIS HIS HIS HIS HIS HIS SER SER GLY VAL ASP LEU GLY THR GLU ASN LEU TYR F20 Q21 S22 S45 M46 D47 W48 N49 W53 V56 H60 T61 W62 N63 D66 V67 E70 Q71 R72 W80 Y81 R82 K83 K84 L85 E90 A91 R92 D93 I96 G102
V103 A104 S105 K106 Y110 L115 L116 K117 T118 H119 L120 G121 A122 I130 T131 V136 G137 K138 E139 N140 L141 L142 K145 V146 D147 N148 I155 L156 P157 F166 I169 Y170 R171 R172 K180 Y188 V191 P192 V193 R194 I195 E199 A205 S206 M207 Q208 I209
V210 A211 F212 L213 K214 N215 D216 F217 T218 D219 T220 V223 V227 F228 L229 I236 V237 Q241 L242 K243 L244 I247 P248 P253 I254 S255 T256 S257 V258 G259 R260 I261 E262 N263 P272 Y273 L274 V277 K278 V279 Q280 V281 C282 D283 A284 K285 N286 G287 E288 E292 V293
I294 R300 W301 F302 S303 V304 D305 K306 T307 G308 F309 Y310 L311 N312 G313 L316 R323 H324 Q325 D326 T332 R340 R341 N352 F353 V354 R355 I356 I365 D370 E371 I375 V376 W377 S378 E379 I380 K388 H394 N395 E398 M399 L400 K401 E402 M403 I404 L405
Q406 N407 Y408 S412 L415 A418 M419 N420 E421 D424 Y425 H426 K427 Q428 A429 L432 E435 L436 K441 D444 P445 Y446 R447 L448 S449 C450 H454 A455 F456 T457 Y462 T463 Q464 S465 S466 K467 E468 M469 F470 S471 V475 N476 G477 V478 M479 E482 S483
I492 K498 S501 Y502 S503 T504 A505 K506 P507 S511 E512 D518 E519 R520 I521 H522 S523 Y524 T525 P526 R527 T528 F529 D530 F531 T532 P533 E534 F535 Q536 L537 N540 R541 I544 N545 E546 K549 R550 P551 D552 Y553 I554 G555 Y556 S557 I558 W559 N560 D567 G570 D571
S572 G580 M581 L582 R586 R587 K588 Y592 Y593 Y594 R598 D601 I602 P603 D611 V616 E617 I618 C619 D620 D621 S622 I623 N624 V625 R626 S629 V630 N633 V637 H641 R649 V657 P661 F662 E666 S673 G674 A675 L676 S677 K681
K685 L686 L687 L691 T692 D693 S694 D695 V696 L705 G706 Q707 Y711 I720 K725 R762 K760 N761 T762 F768 Q769 T770 R779 L780 D781 D784 F791 F797 R802 K803 T808 V817 F818 D819 V820 S821 V822 D829 N832 D835 S836 Y837
G838 T841 L847 V848 V849 R852 L860 L861 S862 I870 V875 K876 K877 I878 R879

4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	242.66Å 101.36Å 168.60Å 90.00° 94.97° 90.00°	Depositor
Resolution (Å)	29.54 – 2.90 29.54 – 2.90	Depositor EDS
% Data completeness (in resolution range)	99.5 (29.54-2.90) 99.5 (29.54-2.90)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.14 (at 2.90Å)	Xtriage
Refinement program	PHENIX (1.14_3260)	Depositor
R, R_{free}	0.178 , 0.268 0.178 , 0.268	Depositor DCC
R_{free} test set	1988 reflections (2.21%)	wwPDB-VP
Wilson B-factor (Å^2)	33.2	Xtriage
Anisotropy	0.665	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 54.5	EDS
L-test for twinning[2]	$< \|L\| > = 0.44$, $< L^2 > = 0.26$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	27956	wwPDB-VP
Average B, all atoms (Å^2)	29.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 8.46% 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: NA

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	A	0.48	0/7071	0.62	0/9580
1	B	0.50	0/7084	0.64	0/9596
1	C	0.46	0/7079	0.61	0/9592
1	D	0.46	0/7027	0.62	0/9532
All	All	0.47	0/28261	0.62	0/38300

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	D	0	2

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	D	223	VAL	Peptide
1	D	303	SER	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	6901	0	6764	152	2
1	B	6914	0	6771	142	0
1	C	6909	0	6760	156	0
1	D	6857	0	6660	183	2
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
3	A	98	0	0	6	0
3	B	123	0	0	6	0
3	C	80	0	0	7	0
3	D	70	0	0	8	0
All	All	27956	0	26955	621	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 11.

All (621) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:668:LEU:HD12	1:A:681:LYS:HG2	1.50	0.93
1:B:159:VAL:HG11	1:B:385:GLU:HG2	1.50	0.93
1:D:617:GLU:OE1	1:D:626:ARG:NH1	2.07	0.86
1:D:220:THR:HG22	1:D:247:ILE:HA	1.58	0.86
1:B:852:ARG:NH1	1:C:292:GLU:OE1	2.10	0.85
1:D:316:LEU:HD21	1:D:352:ASN:HD21	1.43	0.84
1:B:292:GLU:OE1	1:C:852:ARG:NH2	2.12	0.82
1:B:340:ARG:NH2	1:B:371:GLU:OE2	2.13	0.82
1:D:779:ARG:NH1	1:D:781:ASP:OD1	2.14	0.81
1:A:820:VAL:HG22	1:A:828:ILE:HB	1.61	0.81
1:D:649:ARG:NH1	3:D:1001:HOH:O	2.13	0.80
1:B:503:SER:O	1:B:508:ARG:NH1	2.15	0.80
1:D:694:SER:HB3	1:D:696:VAL:HG12	1.63	0.79
1:D:817:VAL:HG22	1:D:832:ASN:HB2	1.67	0.77
1:B:231:ASP:HB3	1:B:235:ARG:H	1.50	0.76
1:B:97:THR:HG23	1:B:176:GLN:HG3	1.66	0.76
1:D:306:LYS:NZ	1:D:504:THR:O	2.15	0.76
1:D:626:ARG:HH11	1:D:626:ARG:HG3	1.49	0.75
1:C:616:VAL:HG23	1:C:720:ILE:HD12	1.69	0.75
1:D:326:ASP:O	1:D:586:ARG:NH2	2.19	0.75
1:B:421:GLU:HG2	1:B:454:HIS:HB3	1.69	0.74
1:C:638:GLU:HB2	1:C:648:VAL:HG22	1.70	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:278:LYS:HD3	1:D:294:ILE:HG22	1.71	0.72
1:C:640:ILE:HA	1:C:645:SER:HA	1.72	0.70
1:B:156:LEU:HD12	1:B:157:PRO:HD2	1.73	0.70
1:B:820:VAL:HG22	1:B:828:ILE:HB	1.73	0.70
1:D:156:LEU:HD12	1:D:157:PRO:HD2	1.72	0.70
1:D:172:ARG:NH2	3:D:1007:HOH:O	2.25	0.70
1:A:449:SER:HB3	1:A:473:SER:HB3	1.74	0.69
1:A:802:ARG:HG2	1:A:808:THR:HG21	1.75	0.69
1:C:230:CYS:HB2	1:C:276:THR:HG22	1.73	0.69
1:D:102:GLY:HA3	1:D:171:ARG:HG3	1.73	0.68
1:D:215:ASN:HD21	1:D:217:PHE:HB2	1.58	0.68
1:D:797:PHE:O	1:D:802:ARG:NH1	2.26	0.68
1:B:706:GLY:HA2	1:B:739:PRO:HB3	1.76	0.68
1:C:47:ASP:O	3:C:1002:HOH:O	2.12	0.68
1:B:66:ASP:OD1	3:B:1002:HOH:O	2.12	0.68
1:D:621:ASP:OD1	1:D:622:SER:N	2.24	0.68
1:D:760:LYS:HB3	1:D:841:THR:HG22	1.73	0.68
1:A:816:ARG:NH1	1:A:867:GLN:O	2.27	0.67
1:C:303:SER:OG	3:C:1001:HOH:O	2.10	0.67
1:D:340:ARG:NH2	1:D:371:GLU:OE1	2.28	0.67
1:B:209:ILE:HG12	1:B:256:THR:HG22	1.76	0.67
1:A:105:SER:HB2	1:A:147:ASP:O	1.95	0.67
1:B:546:GLU:O	1:B:550:ARG:HG3	1.95	0.67
1:B:641:HIS:HE1	1:B:661:PRO:O	1.78	0.67
1:D:256:THR:HG22	1:D:257:SER:H	1.60	0.67
1:B:264:PRO:O	3:B:1003:HOH:O	2.13	0.66
1:D:521:ILE:HG22	1:D:532:THR:HG22	1.77	0.66
1:D:616:VAL:HG23	1:D:720:ILE:HD12	1.77	0.66
1:B:57:ASP:OD2	3:B:1001:HOH:O	2.12	0.66
1:C:42:ARG:HG3	1:C:42:ARG:HH11	1.60	0.66
1:A:355:ARG:HH12	1:A:512:GLU:HG3	1.61	0.66
1:C:319:ARG:NH1	1:C:548:GLU:OE2	2.28	0.66
1:A:614:LYS:HG3	1:A:720:ILE:HD11	1.78	0.65
1:B:356:ILE:HG23	1:B:361:GLN:HG3	1.77	0.65
1:C:326:ASP:HB3	1:C:332:THR:HG22	1.78	0.65
1:C:544:ILE:HG21	1:C:598:ARG:HE	1.61	0.65
1:A:663:ILE:HD12	1:A:664:ASN:O	1.96	0.65
1:D:518:ASP:HB3	1:D:521:ILE:HD12	1.77	0.65
1:A:581:MET:HE3	1:A:591:ILE:HG23	1.78	0.65
1:A:431:ALA:O	1:A:435:GLU:HG3	1.96	0.65
1:A:706:GLY:HA2	1:A:739:PRO:HB3	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:238:LYS:HZ3	1:B:260:ARG:HG3	1.61	0.64
1:B:123:TYR:O	1:B:171:ARG:NH2	2.30	0.64
1:B:527:ARG:NH1	3:B:1006:HOH:O	2.30	0.64
1:D:570:GLY:O	3:D:1002:HOH:O	2.15	0.64
1:D:377:TRP:CE3	1:D:415:LEU:HD13	2.32	0.64
1:A:129:ASP:OD1	1:A:131:THR:HG22	1.98	0.64
1:B:761:ASN:HB3	1:B:842:ALA:HB3	1.79	0.63
1:A:123:TYR:O	1:A:171:ARG:NH2	2.31	0.63
1:C:598:ARG:HH12	1:C:653:ASN:HA	1.62	0.63
1:C:630:VAL:HG11	1:C:637:VAL:HG21	1.82	0.62
1:D:227:VAL:HG22	1:D:279:VAL:HG22	1.81	0.62
1:D:526:PRO:HG3	1:D:534:GLU:HB3	1.82	0.62
1:C:120:LEU:HB3	1:C:156:LEU:HD13	1.79	0.62
1:A:298:GLY:N	1:A:411:PRO:HG3	2.15	0.62
1:A:619:CYS:HB3	1:A:686:LEU:HD22	1.82	0.62
1:B:641:HIS:NE2	1:B:667:ASN:OD1	2.33	0.62
1:C:105:SER:H	1:C:122:ALA:HA	1.65	0.62
1:D:483:SER:HB2	1:D:492:ILE:HD11	1.82	0.62
1:A:340:ARG:NH2	1:A:371:GLU:OE2	2.32	0.62
1:A:603:PRO:HB2	1:A:676:LEU:HD11	1.81	0.62
1:D:155:ILE:O	1:D:395:ASN:ND2	2.33	0.62
1:D:194:ARG:H	1:D:194:ARG:HD2	1.64	0.62
1:A:826:LYS:NZ	3:A:1001:HOH:O	2.15	0.61
1:C:154:GLU:HG3	1:C:389:ASN:HD21	1.65	0.61
1:D:205:ALA:HB3	1:D:261:ILE:HB	1.82	0.61
1:D:498:LYS:O	1:D:501:SER:HB2	2.01	0.61
1:D:541:ARG:HB2	1:D:594:TYR:OH	2.01	0.61
1:A:408:TYR:HE1	1:A:444:ASP:HB2	1.63	0.61
1:A:829:ASP:O	1:A:830:SER:HB3	2.00	0.61
1:C:579:LYS:NZ	3:C:1007:HOH:O	2.34	0.61
1:C:581:MET:HE1	1:C:591:ILE:HG13	1.82	0.61
1:C:245:LYS:HE3	1:C:247:ILE:HD11	1.81	0.61
1:C:705:LEU:HD11	1:C:873:LEU:HB2	1.82	0.61
1:A:43:PHE:O	1:A:82:ARG:NH2	2.34	0.61
1:D:191:VAL:O	1:D:194:ARG:NH1	2.34	0.61
1:B:545:ASN:OD1	1:B:598:ARG:NH1	2.32	0.61
1:D:519:GLU:OE1	3:D:1003:HOH:O	2.16	0.61
1:D:603:PRO:HB2	1:D:676:LEU:HD11	1.84	0.60
1:D:540:ASN:O	1:D:544:ILE:HG12	2.02	0.60
1:D:309:PHE:HB2	1:D:554:ILE:HB	1.82	0.60
1:D:304:VAL:HG22	1:D:507:PRO:HG3	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:502:TYR:O	1:D:504:THR:N	2.34	0.60
1:A:569:ARG:NH2	3:A:1009:HOH:O	2.35	0.60
1:A:590:GLU:OE2	1:A:606:HIS:NE2	2.25	0.60
1:B:22:SER:HB3	1:C:850:ASN:O	2.00	0.60
1:B:707:GLN:HE21	1:B:770:THR:HG21	1.66	0.60
1:B:479:ASN:OD1	1:B:511:SER:HB2	2.02	0.59
1:B:401:LYS:HG2	1:B:443:LEU:HD11	1.83	0.59
1:D:427:LYS:HD3	1:D:427:LYS:N	2.17	0.59
1:B:172:ARG:NH2	3:B:1011:HOH:O	2.35	0.59
1:C:280:GLN:HG2	1:C:292:GLU:HG3	1.84	0.59
1:D:546:GLU:O	1:D:550:ARG:HD2	2.01	0.59
1:B:376:VAL:HB	1:B:413:VAL:HA	1.83	0.59
1:B:741:ASN:ND2	1:B:750:GLY:HA2	2.18	0.59
1:C:86:PHE:CE1	1:C:139:GLU:HB2	2.38	0.59
1:D:85:LEU:HD22	1:D:142:LEU:HD22	1.85	0.59
1:B:306:LYS:O	1:B:552:ASP:HA	2.03	0.59
1:B:367:ARG:NH2	1:C:698:LEU:O	2.34	0.59
1:B:560:ASN:O	1:B:580:GLY:HA2	2.03	0.59
1:D:415:LEU:HD22	1:D:450:CYS:HB3	1.84	0.59
1:C:500:CYS:HB3	1:C:508:ARG:HH21	1.66	0.59
1:D:191:VAL:HG23	1:D:405:LEU:O	2.03	0.58
1:A:96:ILE:H	1:A:131:THR:HB	1.68	0.58
1:C:617:GLU:OE2	1:C:624:ASN:ND2	2.34	0.58
1:A:639:LEU:HD23	1:A:646:LEU:HD12	1.86	0.58
1:A:222:HIS:NE2	1:A:245:LYS:HD2	2.18	0.58
1:C:725:LYS:HE2	1:C:732:TRP:O	2.04	0.58
1:B:461:PRO:HA	1:B:464:GLN:HG3	1.85	0.58
1:A:759:ILE:HD12	1:A:794:THR:HG21	1.86	0.58
1:C:66:ASP:HB3	1:C:74:TYR:HB2	1.86	0.58
1:D:219:ASP:O	1:D:248:PRO:HG3	2.04	0.58
1:C:512:GLU:HB2	1:C:559:TRP:HB2	1.85	0.57
1:C:387:ARG:HB2	1:C:392:PHE:CD1	2.39	0.57
1:D:526:PRO:HB2	1:D:535:PHE:HB2	1.86	0.57
1:B:710:CYS:O	1:B:723:PRO:HG3	2.05	0.57
1:A:638:GLU:HB2	1:A:648:VAL:HG22	1.86	0.57
1:C:226:ASN:OD1	1:C:241:GLN:NE2	2.33	0.57
1:B:482:GLU:O	1:B:483:SER:HB3	2.04	0.57
1:D:236:ILE:HD12	1:D:236:ILE:H	1.69	0.57
1:B:852:ARG:NH2	1:C:23:ASN:OD1	2.38	0.57
1:D:67:VAL:HG13	1:D:567:ASP:HB2	1.86	0.57
1:A:518:ASP:HB3	1:A:521:ILE:HD12	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:630:VAL:HG11	1:B:637:VAL:HG21	1.86	0.56
1:D:80:TRP:CE2	1:D:145:LYS:HG3	2.40	0.56
1:A:588:LYS:HD3	1:A:592:TYR:CE2	2.40	0.56
1:B:795:GLU:HB3	1:B:839:GLU:HA	1.86	0.56
1:A:498:LYS:O	1:A:501:SER:HB2	2.06	0.56
1:A:634:GLN:HB3	3:A:1039:HOH:O	2.04	0.56
1:A:74:TYR:CE1	1:A:76:ARG:HD3	2.41	0.56
1:A:798:SER:OG	1:A:801:GLU:HG3	2.05	0.56
1:B:105:SER:H	1:B:122:ALA:HB2	1.71	0.56
1:B:115:LEU:HD11	1:B:118:THR:HG22	1.88	0.56
1:B:817:VAL:HG22	1:B:832:ASN:HB2	1.85	0.56
1:C:526:PRO:O	1:C:527:ARG:HD3	2.06	0.56
1:C:531:PHE:CZ	1:C:571:ASP:HB3	2.41	0.56
1:C:694:SER:HB3	1:C:696:VAL:HG12	1.88	0.56
1:D:603:PRO:HA	1:D:633:ASN:HD22	1.70	0.56
1:A:466:SER:OG	1:A:467:LYS:N	2.38	0.56
1:D:791:PHE:CE2	1:D:847:LEU:HD12	2.41	0.56
1:A:34:LYS:HD2	1:A:53:TRP:HB2	1.87	0.56
1:A:791:PHE:O	1:A:844:VAL:HA	2.05	0.56
1:A:36:LYS:HE3	1:A:53:TRP:CD1	2.41	0.55
1:A:538:ASP:OD2	1:A:541:ARG:NH1	2.39	0.55
1:A:787:TYR:CZ	1:A:877:LYS:HG3	2.41	0.55
1:C:34:LYS:HD3	1:C:55:THR:HG22	1.87	0.55
1:D:147:ASP:OD1	1:D:148:ASN:N	2.39	0.55
1:A:440:LYS:HD2	1:A:449:SER:OG	2.06	0.55
1:C:119:HIS:CD2	1:C:126:PHE:HB3	2.41	0.55
1:D:305:ASP:CG	1:D:307:THR:HG22	2.26	0.55
1:A:726:PRO:HG3	1:A:734:TYR:CZ	2.42	0.55
1:A:649:ARG:HG3	1:A:658:PHE:CE1	2.41	0.55
1:B:208:GLN:NE2	1:B:256:THR:O	2.39	0.55
1:A:672:ARG:HG2	1:A:677:SER:HB3	1.88	0.55
1:B:377:TRP:HZ3	1:B:509:PHE:CD1	2.25	0.55
1:A:811:SER:O	1:A:814:GLY:N	2.24	0.55
1:D:705:LEU:HD12	1:D:870:ILE:HG12	1.88	0.55
1:A:616:VAL:HG22	1:A:685:LYS:HB3	1.89	0.55
1:D:316:LEU:HD21	1:D:352:ASN:ND2	2.19	0.54
1:C:305:ASP:OD1	1:C:307:THR:HG22	2.08	0.54
1:C:340:ARG:NH2	1:C:371:GLU:OE2	2.40	0.54
1:D:618:ILE:HD13	1:D:725:LYS:HE3	1.90	0.54
1:D:832:ASN:O	1:D:836:SER:HB2	2.07	0.54
1:A:99:ARG:HD3	1:A:174:PHE:HB2	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:705:LEU:HB3	1:A:772:LEU:HD12	1.89	0.54
1:C:133:ILE:H	1:C:133:ILE:HD12	1.72	0.54
1:A:436:LEU:O	1:A:440:LYS:HG3	2.07	0.53
1:B:77:GLY:H	1:B:148:ASN:HB3	1.73	0.53
1:C:736:ASP:OD2	1:C:776:THR:OG1	2.26	0.53
1:A:192:PRO:HG2	1:A:293:VAL:HG11	1.89	0.53
1:A:33:TRP:CE3	1:A:81:TYR:HB3	2.42	0.53
1:D:311:LEU:HD13	1:D:375:ILE:HD11	1.90	0.53
1:D:466:SER:OG	1:D:467:LYS:N	2.41	0.53
1:D:544:ILE:HD12	1:D:556:TYR:CE2	2.43	0.53
1:A:103:VAL:HG22	1:A:169:ILE:HG23	1.91	0.53
1:A:736:ASP:OD1	1:A:737:GLY:N	2.42	0.53
1:D:305:ASP:OD1	1:D:307:THR:HG22	2.09	0.53
1:B:80:TRP:CE2	1:B:145:LYS:HG3	2.44	0.53
1:B:677:SER:HB3	1:C:679:ARG:HH22	1.74	0.53
1:C:415:LEU:HB3	1:C:450:CYS:SG	2.49	0.53
1:C:526:PRO:HB2	1:C:535:PHE:HB2	1.90	0.53
1:D:469:MET:SD	1:D:469:MET:N	2.81	0.53
1:A:120:LEU:HB3	1:A:156:LEU:HD13	1.90	0.53
1:A:541:ARG:NH1	3:A:1002:HOH:O	2.42	0.53
1:A:725:LYS:NZ	1:A:728:THR:HG22	2.23	0.53
1:B:62:TRP:HZ2	1:B:148:ASN:HB2	1.74	0.53
1:D:380:ILE:HD11	1:D:400:LEU:HD12	1.91	0.53
1:D:394:HIS:O	1:D:398:GLU:HG2	2.09	0.53
1:B:308:GLY:HA3	1:B:315:TYR:HE1	1.74	0.52
1:D:784:ASP:O	1:D:877:LYS:NZ	2.41	0.52
1:D:63:ASN:HA	1:D:66:ASP:HB2	1.91	0.52
1:A:228:PHE:HB2	1:A:278:LYS:HB3	1.92	0.52
1:C:523:SER:HB2	1:C:532:THR:HG21	1.91	0.52
1:C:541:ARG:HG2	1:C:594:TYR:OH	2.09	0.52
1:D:518:ASP:OD1	1:D:572:SER:OG	2.27	0.52
1:B:677:SER:HB3	1:C:679:ARG:HH12	1.74	0.52
1:B:238:LYS:NZ	1:B:260:ARG:HG3	2.24	0.52
1:C:376:VAL:HB	1:C:413:VAL:HA	1.91	0.52
1:D:415:LEU:HB3	1:D:450:CYS:SG	2.49	0.52
1:A:29:ILE:HD11	1:A:173:VAL:HG12	1.92	0.52
1:A:424:ASP:OD1	1:A:460:LYS:HE3	2.10	0.52
1:C:562:VAL:HG11	1:C:586:ARG:NH1	2.24	0.52
1:D:90:GLU:HG3	1:D:90:GLU:O	2.10	0.52
1:D:256:THR:HG22	1:D:257:SER:N	2.24	0.52
1:D:307:THR:HG23	1:D:310:TYR:OH	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:42:ARG:HG3	1:C:42:ARG:NH1	2.25	0.52
1:C:97:THR:HG22	1:C:129:ASP:HA	1.91	0.52
1:A:815:GLN:OE1	1:A:865:LYS:NZ	2.41	0.52
1:D:45:SER:HB2	1:D:48:TRP:HB2	1.91	0.52
1:D:208:GLN:HA	1:D:257:SER:HA	1.91	0.52
1:A:298:GLY:H	1:A:411:PRO:HG3	1.75	0.52
1:A:822:VAL:HG12	1:A:827:LEU:HD23	1.92	0.52
1:A:222:HIS:CE1	1:A:245:LYS:HD2	2.45	0.51
1:C:497:ASP:OD1	1:C:550:ARG:NH1	2.42	0.51
1:D:529:PHE:HB3	1:D:752:ARG:HD2	1.93	0.51
1:B:224:HIS:ND1	1:B:243:LYS:HG2	2.25	0.51
1:B:104:ALA:HB3	1:B:167:GLY:HA2	1.92	0.51
1:D:274:LEU:HD21	1:D:370:ASP:HB2	1.93	0.51
1:C:527:ARG:NH2	3:C:1008:HOH:O	2.42	0.51
1:D:707:GLN:HB2	1:D:770:THR:HG21	1.92	0.51
1:A:76:ARG:NE	1:A:148:ASN:O	2.40	0.51
1:A:413:VAL:HG11	1:A:416:TRP:CH2	2.46	0.51
1:C:585:ASP:O	1:C:586:ARG:HB2	2.10	0.51
1:D:105:SER:HB2	1:D:147:ASP:O	2.11	0.51
1:D:304:VAL:HG22	1:D:507:PRO:CG	2.41	0.51
1:A:408:TYR:CE1	1:A:444:ASP:HB2	2.45	0.51
1:A:481:TYR:OH	1:A:512:GLU:OE2	2.29	0.51
1:D:421:GLU:HG3	1:D:479:ASN:ND2	2.26	0.51
1:B:319:ARG:HG2	1:B:556:TYR:CE1	2.46	0.50
1:C:479:ASN:CG	1:C:512:GLU:HG2	2.32	0.50
1:B:328:ALA:HB2	1:B:584:GLU:HG3	1.93	0.50
1:D:215:ASN:ND2	1:D:217:PHE:HB2	2.25	0.50
1:A:510:LEU:HB3	1:A:556:TYR:CB	2.41	0.50
1:B:320:GLY:HA3	1:B:353:PHE:O	2.11	0.50
1:B:521:ILE:HG22	1:B:532:THR:HG22	1.92	0.50
1:D:457:THR:HA	1:D:462:TYR:CD2	2.46	0.50
1:B:636:THR:HG23	1:B:648:VAL:HG13	1.93	0.50
1:C:105:SER:O	3:C:1003:HOH:O	2.20	0.50
1:C:560:ASN:O	1:C:580:GLY:HA2	2.11	0.50
1:C:692:THR:OG1	1:C:693:ASP:OD1	2.28	0.50
1:D:105:SER:H	1:D:122:ALA:HB2	1.77	0.50
1:D:432:LEU:HA	1:D:435:GLU:OE1	2.11	0.50
1:A:27:ILE:HG22	1:A:177:TRP:HZ3	1.77	0.50
1:A:791:PHE:HB3	1:A:793:PHE:CE2	2.47	0.50
1:A:827:LEU:HG	1:A:847:LEU:HD22	1.94	0.50
1:C:816:ARG:HD3	1:C:867:GLN:O	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:624:ASN:O	1:D:662:PHE:HB2	2.12	0.50
1:B:398:GLU:O	1:B:402:GLU:HG3	2.11	0.49
1:B:400:LEU:HD23	1:B:439:LEU:HD23	1.93	0.49
1:C:214:LYS:HE2	1:C:251:LYS:HG2	1.93	0.49
1:B:87:ILE:HG22	1:B:136:VAL:HG13	1.94	0.49
1:D:229:LEU:O	1:D:237:VAL:HG22	2.12	0.49
1:A:532:THR:HB	1:A:534:GLU:OE1	2.11	0.49
1:D:819:ASP:HB2	1:D:862:SER:OG	2.12	0.49
1:C:816:ARG:HD2	1:C:869:VAL:HG22	1.95	0.49
1:D:82:ARG:NH2	1:D:141:LEU:HD21	2.27	0.49
1:A:380:ILE:HG13	1:A:418:ALA:HA	1.94	0.49
1:A:110:TYR:CE2	1:A:115:LEU:HB2	2.47	0.49
1:B:164:SER:HB2	1:B:166:PHE:CE1	2.47	0.49
1:C:267:TRP:CH2	1:C:412:SER:HA	2.48	0.49
1:D:549:LYS:O	1:D:551:PRO:HD3	2.12	0.49
1:B:211:ALA:HB3	1:B:254:ILE:HD11	1.95	0.49
1:D:180:LYS:HB2	1:D:217:PHE:CE2	2.47	0.49
1:C:180:LYS:HB3	1:C:216:ASP:HB2	1.95	0.49
1:A:794:THR:HG23	1:A:840:GLN:HA	1.95	0.49
1:C:306:LYS:NZ	1:C:504:THR:O	2.42	0.49
1:C:581:MET:HE3	1:C:591:ILE:HG23	1.95	0.49
1:B:103:VAL:HG22	1:B:126:PHE:HE2	1.78	0.48
1:B:444:ASP:OD2	1:B:447:ARG:HD2	2.13	0.48
1:B:664:ASN:HB2	1:B:686:LEU:HD12	1.95	0.48
1:D:278:LYS:HD3	1:D:294:ILE:CG2	2.42	0.48
1:A:261:ILE:O	1:A:262:GLU:HB2	2.14	0.48
1:A:614:LYS:HG3	1:A:720:ILE:CD1	2.42	0.48
1:B:663:ILE:HD12	1:B:664:ASN:O	2.12	0.48
1:C:518:ASP:HB3	1:C:521:ILE:HD12	1.94	0.48
1:D:629:SER:HB3	1:D:657:VAL:HG22	1.94	0.48
1:B:246:LEU:HA	1:B:252:TYR:CE2	2.47	0.48
1:C:123:TYR:O	1:C:171:ARG:NH2	2.45	0.48
1:C:171:ARG:HD2	1:C:362:ASP:OD1	2.14	0.48
1:C:298:GLY:N	1:C:411:PRO:HG3	2.27	0.48
1:C:644:LYS:HA	1:C:644:LYS:HD3	1.49	0.48
1:B:308:GLY:HA3	1:B:315:TYR:CE1	2.48	0.48
1:D:832:ASN:ND2	3:D:1019:HOH:O	2.47	0.48
1:A:229:LEU:O	1:A:237:VAL:HG22	2.13	0.48
1:C:498:LYS:O	1:C:501:SER:HB3	2.12	0.48
1:C:713:ILE:HG13	1:C:720:ILE:HG12	1.94	0.48
1:D:117:LYS:HG3	1:D:118:THR:N	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:283:ASP:HB3	1:D:286:ASN:HB3	1.93	0.48
1:D:821:SER:HB2	1:D:860:LEU:HD12	1.95	0.48
1:A:423:TRP:O	1:A:460:LYS:HB2	2.13	0.48
1:D:279:VAL:O	1:D:292:GLU:HA	2.13	0.48
1:D:630:VAL:HG11	1:D:637:VAL:HG11	1.94	0.48
1:A:560:ASN:O	1:A:580:GLY:HA2	2.14	0.48
1:A:725:LYS:HZ1	1:A:728:THR:HG22	1.79	0.48
1:A:817:VAL:HA	1:A:831:LEU:O	2.14	0.48
1:D:388:LYS:HE3	1:D:428:GLN:OE1	2.14	0.48
1:A:457:THR:HG21	1:A:498:LYS:HD3	1.96	0.48
1:B:103:VAL:HG12	1:B:169:ILE:HG23	1.96	0.48
1:D:106:LYS:HG3	1:D:120:LEU:HD23	1.95	0.48
1:D:110:TYR:CE2	1:D:115:LEU:HB2	2.49	0.48
1:D:195:ILE:CD1	1:D:277:VAL:HG11	2.43	0.48
1:D:822:VAL:HG11	1:D:849:VAL:HG21	1.96	0.48
1:A:355:ARG:NH1	1:A:512:GLU:HG3	2.27	0.48
1:C:87:ILE:HD12	1:C:140:ASN:ND2	2.29	0.48
1:B:25:SER:HB2	1:C:850:ASN:HD21	1.79	0.47
1:D:522:HIS:NE2	1:D:611:ASP:OD2	2.38	0.47
1:D:666:GLU:OE2	1:D:681:LYS:HD3	2.14	0.47
1:A:468:GLU:HG2	1:D:446:TYR:OH	2.14	0.47
1:B:105:SER:H	1:B:122:ALA:CB	2.27	0.47
1:C:522:HIS:NE2	1:C:611:ASP:OD2	2.35	0.47
1:D:355:ARG:NE	1:D:379:GLU:OE2	2.43	0.47
1:D:524:TYR:CE1	1:D:626:ARG:NH1	2.83	0.47
1:B:624:ASN:O	1:B:662:PHE:HB2	2.14	0.47
1:D:193:VAL:HG23	1:D:210:VAL:O	2.14	0.47
1:C:356:ILE:HG12	1:C:376:VAL:HG13	1.96	0.47
1:A:797:PHE:HB3	1:A:801:GLU:HB2	1.96	0.47
1:B:60:HIS:ND1	1:B:81:TYR:OH	2.40	0.47
1:B:172:ARG:NH2	1:B:336:VAL:HG21	2.30	0.47
1:B:355:ARG:NH1	1:B:512:GLU:HG3	2.30	0.47
1:D:685:LYS:HE3	1:D:687:LEU:HD21	1.95	0.47
1:A:355:ARG:NH1	1:A:511:SER:HB2	2.30	0.47
1:C:231:ASP:HB3	1:C:235:ARG:H	1.80	0.47
1:C:347:LYS:HB2	1:C:374:LEU:HD11	1.97	0.47
1:B:62:TRP:CZ2	1:B:148:ASN:HB2	2.50	0.47
1:B:222:HIS:NE2	1:B:245:LYS:HG3	2.29	0.47
1:B:846:THR:C	1:B:847:LEU:HD12	2.35	0.47
1:C:302:PHE:HZ	1:C:447:ARG:HA	1.80	0.47
1:D:380:ILE:HG13	1:D:418:ALA:HA	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:641:HIS:HE1	1:D:661:PRO:O	1.97	0.47
1:A:94:LYS:HB3	1:A:178:THR:O	2.15	0.47
1:B:364:GLU:OE1	1:B:367:ARG:NH1	2.44	0.47
1:B:500:CYS:HB3	1:B:508:ARG:NH2	2.29	0.47
1:B:705:LEU:HD12	1:B:870:ILE:HG12	1.95	0.47
1:B:832:ASN:OD1	1:B:835:ASP:HB2	2.14	0.47
1:B:853:ASN:OD1	1:B:854:HIS:N	2.48	0.47
1:A:797:PHE:CG	1:A:808:THR:HG23	2.50	0.47
1:D:466:SER:OG	1:D:468:GLU:N	2.41	0.47
1:B:166:PHE:H	1:B:166:PHE:HD1	1.62	0.47
1:B:795:GLU:HG2	1:B:834:ALA:HB2	1.97	0.47
1:C:46:MET:HG2	3:C:1029:HOH:O	2.15	0.47
1:D:587:ARG:NH2	3:D:1003:HOH:O	2.42	0.47
1:B:355:ARG:HH12	1:B:512:GLU:HG3	1.80	0.46
1:C:598:ARG:NH1	1:C:653:ASN:CA	2.78	0.46
1:C:614:LYS:HE3	1:C:614:LYS:HB3	1.81	0.46
1:D:376:VAL:HG23	1:D:412:SER:HB2	1.97	0.46
1:A:466:SER:OG	1:A:468:GLU:HG3	2.15	0.46
1:A:510:LEU:HB3	1:A:556:TYR:HB2	1.96	0.46
1:C:598:ARG:HH11	1:C:598:ARG:HG2	1.81	0.46
1:D:780:LEU:HD22	1:D:875:VAL:HG21	1.97	0.46
1:B:304:VAL:HG12	1:B:309:PHE:HD1	1.79	0.46
1:D:588:LYS:HD3	1:D:592:TYR:CE2	2.50	0.46
1:A:795:GLU:HG2	1:A:834:ALA:HB2	1.97	0.46
1:C:357:SER:HB2	1:C:358:HIS:ND1	2.31	0.46
1:A:46:MET:HA	1:A:141:LEU:HD22	1.98	0.46
1:C:26:GLU:OE2	1:C:99:ARG:NH1	2.49	0.46
1:C:66:ASP:HB3	1:C:74:TYR:CB	2.44	0.46
1:C:104:ALA:HB3	1:C:168:GLY:H	1.80	0.46
1:C:598:ARG:HH12	1:C:653:ASN:CA	2.26	0.46
1:D:797:PHE:CG	1:D:808:THR:HG22	2.50	0.46
1:C:300:ARG:HH22	1:C:302:PHE:HE1	1.63	0.46
1:A:120:LEU:HB3	1:A:156:LEU:CD1	2.46	0.46
1:A:280:GLN:HG2	1:A:292:GLU:HG3	1.98	0.46
1:C:86:PHE:CZ	1:C:139:GLU:HB2	2.50	0.46
1:D:46:MET:HA	1:D:141:LEU:HD22	1.98	0.46
1:D:617:GLU:HG2	1:D:711:TYR:CE1	2.51	0.46
1:A:415:LEU:HB3	1:A:450:CYS:SG	2.56	0.46
1:B:743:TRP:HZ3	1:B:752:ARG:O	1.99	0.46
1:C:708:GLU:OE2	1:C:734:TYR:OH	2.20	0.46
1:A:231:ASP:OD2	1:A:235:ARG:NH1	2.33	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:458:TRP:HZ2	1:A:486:GLN:NE2	2.14	0.46
1:C:594:TYR:CZ	1:C:598:ARG:HD2	2.51	0.46
1:A:367:ARG:NH1	3:A:1019:HOH:O	2.48	0.46
1:C:123:TYR:CG	1:C:359:TYR:HB2	2.51	0.46
1:C:694:SER:C	1:C:696:VAL:H	2.19	0.46
1:D:402:GLU:HG2	1:D:406:GLN:NE2	2.31	0.46
1:A:190:ALA:HB2	1:A:405:LEU:HB3	1.98	0.45
1:A:302:PHE:CE2	1:A:414:VAL:HG13	2.50	0.45
1:A:797:PHE:CD2	1:A:808:THR:HG23	2.51	0.45
1:D:188:TYR:HD1	1:D:402:GLU:HG3	1.80	0.45
1:D:531:PHE:CZ	1:D:571:ASP:HB3	2.51	0.45
1:A:401:LYS:HG2	1:A:443:LEU:HD21	1.99	0.45
1:A:444:ASP:OD2	1:A:447:ARG:HD2	2.16	0.45
1:B:200:VAL:HG13	1:B:205:ALA:HB2	1.98	0.45
1:B:238:LYS:NZ	1:B:259:GLY:O	2.48	0.45
1:B:240:LYS:HD3	1:B:256:THR:OG1	2.17	0.45
1:C:36:LYS:HG2	1:C:38:GLU:HB3	1.98	0.45
1:C:389:ASN:HB2	1:C:392:PHE:HB2	1.96	0.45
1:D:444:ASP:OD2	1:D:447:ARG:NH1	2.42	0.45
1:D:432:LEU:O	1:D:436:LEU:HG	2.16	0.45
1:C:278:LYS:HD3	1:C:292:GLU:OE2	2.16	0.45
1:C:576:LEU:HD23	1:C:578:GLN:HG2	1.99	0.45
1:B:847:LEU:HG	1:C:27:ILE:HD12	1.99	0.45
1:C:853:ASN:HB3	1:C:855:GLU:HG3	1.97	0.45
1:D:355:ARG:NH2	1:D:420:ASN:OD1	2.50	0.45
1:A:697:LEU:HB3	1:A:877:LYS:HB2	1.98	0.45
1:B:272:PRO:HG2	3:B:1042:HOH:O	2.17	0.45
1:B:326:ASP:OD2	1:B:565:GLN:NE2	2.46	0.45
1:D:206:SER:HA	1:D:259:GLY:HA2	1.98	0.45
1:D:475:VAL:HG11	1:D:554:ILE:HD11	1.97	0.45
1:A:668:LEU:CD1	1:A:681:LYS:HE2	2.47	0.45
1:A:707:GLN:HE21	1:A:770:THR:HG21	1.81	0.45
1:B:878:ILE:O	1:B:879:ARG:HB3	2.17	0.45
1:C:544:ILE:CG2	1:C:598:ARG:HE	2.28	0.45
1:A:70:GLU:CD	1:A:760:LYS:HG2	2.37	0.45
1:B:441:LYS:NZ	1:B:474:ASP:OD2	2.50	0.45
1:B:541:ARG:HG3	1:B:594:TYR:OH	2.16	0.45
1:C:182:HIS:CE1	1:C:214:LYS:HD2	2.52	0.45
1:D:558:ILE:HG21	1:D:581:MET:SD	2.57	0.45
1:A:545:ASN:OD1	1:A:598:ARG:NH1	2.23	0.45
1:A:635:LYS:NZ	3:A:1022:HOH:O	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:311:LEU:HD22	1:B:375:ILE:HD11	1.97	0.45
1:B:171:ARG:HH12	1:B:361:GLN:HA	1.83	0.44
1:C:328:ALA:HB2	1:C:584:GLU:HG3	1.99	0.44
1:C:414:VAL:HG12	1:C:415:LEU:HD12	1.98	0.44
1:C:594:TYR:HB2	1:C:631:PHE:CE2	2.53	0.44
1:D:582:LEU:HD23	1:D:588:LYS:HA	1.99	0.44
1:A:687:LEU:HD21	1:A:696:VAL:HG21	1.99	0.44
1:C:106:LYS:HB3	1:C:147:ASP:HB3	1.98	0.44
1:C:154:GLU:HG3	1:C:154:GLU:O	2.17	0.44
1:A:242:LEU:HD11	1:A:256:THR:OG1	2.17	0.44
1:A:727:TYR:CE1	1:A:779:ARG:HB2	2.52	0.44
1:A:820:VAL:HG22	1:A:828:ILE:CB	2.40	0.44
1:C:469:MET:HA	1:C:472:ILE:CD1	2.48	0.44
1:B:301:TRP:CE2	1:B:312:ASN:HA	2.51	0.44
1:B:400:LEU:O	1:B:404:ILE:HG13	2.18	0.44
1:C:573:LYS:NZ	3:C:1009:HOH:O	2.43	0.44
1:D:103:VAL:HG22	1:D:169:ILE:HG23	1.99	0.44
1:A:545:ASN:O	1:A:549:LYS:HG2	2.17	0.44
1:C:268:SER:HB3	1:C:271:LEU:H	1.83	0.44
1:C:731:SER:OG	1:C:732:TRP:N	2.50	0.44
1:D:195:ILE:HD13	1:D:277:VAL:HG11	1.99	0.44
1:D:482:GLU:HB2	1:D:492:ILE:HG12	1.99	0.44
1:D:581:MET:HB3	1:D:581:MET:HE3	1.52	0.44
1:D:637:VAL:HA	1:D:673:SER:HB2	1.98	0.44
1:A:858:GLU:OE1	1:A:860:LEU:HD11	2.18	0.44
1:C:387:ARG:HB2	1:C:392:PHE:CG	2.53	0.44
1:A:444:ASP:OD2	1:A:447:ARG:HB2	2.17	0.44
1:C:278:LYS:HE2	1:C:278:LYS:HB2	1.63	0.44
1:B:213:LEU:HD21	1:B:281:VAL:HG21	2.00	0.44
1:C:562:VAL:HG12	1:C:563:ASP:O	2.18	0.44
1:D:838:GLY:O	1:D:841:THR:OG1	2.36	0.44
1:A:98:LEU:HD23	1:A:98:LEU:HA	1.86	0.44
1:B:23:ASN:ND2	1:C:852:ARG:NH1	2.66	0.44
1:C:480:VAL:HG21	1:C:496:PHE:HE2	1.83	0.44
1:A:430:ILE:H	1:A:430:ILE:HG12	1.65	0.43
1:A:540:ASN:ND2	1:A:591:ILE:HD11	2.33	0.43
1:B:302:PHE:HA	1:B:310:TYR:O	2.19	0.43
1:B:540:ASN:O	1:B:544:ILE:HD12	2.18	0.43
1:D:380:ILE:HG23	1:D:403:MET:SD	2.58	0.43
1:D:441:LYS:HA	1:D:444:ASP:O	2.18	0.43
1:C:187:PRO:HG2	1:C:188:TYR:CD2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:56:VAL:HG11	1:D:60:HIS:CD2	2.54	0.43
1:D:304:VAL:HG21	1:D:475:VAL:HG22	2.01	0.43
1:D:559:TRP:HA	1:D:560:ASN:HA	1.74	0.43
1:A:340:ARG:HE	1:A:367:ARG:HH12	1.67	0.43
1:A:604:MET:HE2	1:A:632:SER:HA	2.00	0.43
1:B:152:LEU:C	1:B:154:GLU:H	2.20	0.43
1:B:724:ASP:OD1	1:B:725:LYS:N	2.50	0.43
1:D:691:LEU:HA	1:D:691:LEU:HD23	1.78	0.43
1:A:482:GLU:O	1:A:483:SER:HB3	2.19	0.43
1:B:357:SER:HB2	1:B:358:HIS:HA	2.01	0.43
1:B:365:ILE:HG22	1:B:366:TYR:CD2	2.54	0.43
1:B:797:PHE:CD1	1:B:808:THR:HG22	2.53	0.43
1:B:832:ASN:O	1:B:836:SER:HB2	2.18	0.43
1:A:99:ARG:HB3	1:A:174:PHE:HB2	2.00	0.43
1:A:559:TRP:HA	1:A:560:ASN:HA	1.78	0.43
1:D:61:THR:OG1	1:D:166:PHE:HB3	2.19	0.43
1:D:455:ALA:HB2	1:D:478:VAL:HG22	2.00	0.43
1:A:225:VAL:O	1:A:241:GLN:HA	2.18	0.43
1:A:664:ASN:HB2	1:A:686:LEU:HD12	1.99	0.43
1:B:377:TRP:CZ3	1:B:509:PHE:CD1	3.06	0.43
1:B:572:SER:HB2	1:B:766:PRO:HG3	2.00	0.43
1:C:36:LYS:HD2	1:C:53:TRP:CE2	2.53	0.43
1:C:590:GLU:HG2	1:C:611:ASP:OD1	2.18	0.43
1:C:707:GLN:HB2	1:C:770:THR:HG21	2.01	0.43
1:C:735:MET:HG3	1:C:777:CYS:SG	2.58	0.43
1:C:786:VAL:HB	1:C:879:ARG:HG3	1.99	0.43
1:D:48:TRP:CG	1:D:49:ASN:N	2.87	0.43
1:D:84:LYS:HD3	1:D:139:GLU:OE2	2.19	0.43
1:D:308:GLY:C	1:D:554:ILE:HG22	2.39	0.43
1:D:832:ASN:OD1	1:D:835:ASP:HB2	2.19	0.43
1:B:687:LEU:HA	1:B:687:LEU:HD23	1.79	0.43
1:C:618:ILE:CD1	1:C:687:LEU:HD23	2.49	0.43
1:C:780:LEU:HD22	1:C:875:VAL:HG21	2.01	0.43
1:B:152:LEU:O	1:B:154:GLU:N	2.52	0.43
1:C:283:ASP:HB2	1:C:290:TYR:CE2	2.54	0.43
1:C:598:ARG:NH1	1:C:653:ASN:HA	2.31	0.43
1:D:426:HIS:CE1	1:D:429:ALA:H	2.37	0.43
1:D:476:ASN:HD22	1:D:503:SER:HB2	1.83	0.43
1:A:115:LEU:HD12	1:A:116:LEU:N	2.34	0.43
1:A:425:TYR:HD1	1:A:461:PRO:HG3	1.84	0.43
1:A:536:GLN:O	1:A:540:ASN:ND2	2.45	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:846:THR:HB	1:C:28:SER:HB3	2.01	0.43
1:C:544:ILE:HG22	1:C:598:ARG:HH21	1.84	0.43
1:A:400:LEU:HD23	1:A:439:LEU:HG	2.00	0.42
1:A:500:CYS:HB3	1:A:508:ARG:HH21	1.84	0.42
1:B:853:ASN:O	1:B:854:HIS:ND1	2.52	0.42
1:B:711:TYR:CD1	1:B:723:PRO:HD3	2.54	0.42
1:B:787:TYR:CE1	1:B:877:LYS:HB2	2.54	0.42
1:C:364:GLU:OE2	1:C:367:ARG:NH1	2.52	0.42
1:A:552:ASP:OD1	1:A:552:ASP:N	2.49	0.42
1:C:232:GLU:HB2	1:C:273:TYR:OH	2.19	0.42
1:C:480:VAL:HG21	1:C:496:PHE:CE2	2.55	0.42
1:C:858:GLU:OE1	1:C:860:LEU:HD21	2.19	0.42
1:C:638:GLU:HB2	1:C:648:VAL:CG2	2.46	0.42
1:D:545:ASN:OD1	1:D:598:ARG:NH1	2.45	0.42
1:A:416:TRP:HB2	1:A:440:LYS:HD3	2.01	0.42
1:C:26:GLU:HG2	1:C:176:GLN:HB3	2.01	0.42
1:A:457:THR:HA	1:A:462:TYR:CD2	2.54	0.42
1:B:215:ASN:O	1:B:248:PRO:HA	2.20	0.42
1:C:183:PHE:CE2	1:C:213:LEU:HD11	2.54	0.42
1:C:873:LEU:HD12	1:C:873:LEU:HA	1.77	0.42
1:A:548:GLU:OE2	1:A:556:TYR:OH	2.25	0.42
1:C:300:ARG:HE	1:C:411:PRO:HA	1.84	0.42
1:C:559:TRP:HA	1:C:560:ASN:HA	1.81	0.42
1:C:250:ARG:HB3	1:C:252:TYR:CE2	2.55	0.42
1:C:705:LEU:HA	1:C:724:ASP:OD2	2.20	0.42
1:D:103:VAL:O	1:D:122:ALA:HA	2.20	0.42
1:D:326:ASP:HB3	1:D:332:THR:HG22	2.02	0.42
1:D:537:LEU:HG	1:D:541:ARG:HH11	1.84	0.42
1:D:619:CYS:HB3	1:D:686:LEU:HG	2.02	0.42
1:D:705:LEU:HD23	1:D:705:LEU:HA	1.84	0.42
1:B:562:VAL:HG11	1:B:586:ARG:CZ	2.50	0.42
1:C:220:THR:HG23	1:C:247:ILE:HA	2.01	0.42
1:C:832:ASN:O	1:C:836:SER:HB2	2.20	0.42
1:C:839:GLU:HG3	1:C:840:GLN:HG3	2.02	0.42
1:D:454:HIS:CE1	1:D:456:PHE:HB2	2.55	0.42
1:D:456:PHE:N	1:D:456:PHE:CD2	2.88	0.42
1:B:348:GLU:O	1:B:596:GLN:NE2	2.52	0.42
1:D:527:ARG:NH1	3:D:1023:HOH:O	2.53	0.42
1:A:564:PHE:O	1:A:576:LEU:HD12	2.20	0.41
1:B:298:GLY:N	1:B:411:PRO:HG3	2.35	0.41
1:B:660:VAL:HB	1:B:662:PHE:CE2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:53:TRP:CZ3	1:C:82:ARG:HD3	2.55	0.41
1:A:187:PRO:HG2	1:A:188:TYR:CE2	2.56	0.41
1:A:194:ARG:HD3	1:A:194:ARG:N	2.35	0.41
1:A:419:MET:HE1	1:A:433:ALA:HB2	2.02	0.41
1:A:458:TRP:HZ2	1:A:486:GLN:HE21	1.68	0.41
1:B:111:LEU:HD23	1:B:133:ILE:HB	2.02	0.41
1:B:532:THR:HB	1:B:534:GLU:OE1	2.21	0.41
1:C:109:VAL:HG22	1:C:144:VAL:HG13	2.01	0.41
1:B:63:ASN:HA	1:B:66:ASP:HB2	2.02	0.41
1:C:259:GLY:O	1:C:261:ILE:HG13	2.20	0.41
1:D:92:ARG:NH2	1:D:136:VAL:O	2.53	0.41
1:B:32:SER:O	1:B:32:SER:OG	2.31	0.41
1:A:540:ASN:O	1:A:544:ILE:HG12	2.21	0.41
1:B:760:LYS:HB2	1:B:841:THR:HG23	2.02	0.41
1:D:106:LYS:HG3	1:D:120:LEU:CD2	2.51	0.41
1:D:220:THR:CG2	1:D:248:PRO:HD3	2.51	0.41
1:D:353:PHE:HE2	1:D:557:SER:OG	2.02	0.41
1:A:876:LYS:HB2	1:A:876:LYS:HE3	1.78	0.41
1:C:154:GLU:HG3	1:C:389:ASN:ND2	2.34	0.41
1:C:373:GLY:O	1:C:374:LEU:HG	2.20	0.41
1:D:53:TRP:CZ3	1:D:82:ARG:HD3	2.56	0.41
1:D:355:ARG:HH12	1:D:512:GLU:HG3	1.86	0.41
1:D:560:ASN:O	1:D:580:GLY:HA2	2.21	0.41
1:A:691:LEU:HD13	1:A:782:VAL:HG12	2.03	0.41
1:A:694:SER:OG	1:A:695:ASP:N	2.53	0.41
1:D:116:LEU:CD1	1:D:130:ILE:HG22	2.50	0.41
1:D:301:TRP:CE2	1:D:312:ASN:HA	2.56	0.41
1:A:434:ARG:HG2	1:A:472:ILE:HD13	2.02	0.41
1:B:251:LYS:HB3	1:B:251:LYS:HE2	1.70	0.41
1:B:451:VAL:HG12	1:B:476:ASN:HA	2.03	0.41
1:C:380:ILE:HG13	1:C:418:ALA:HA	2.02	0.41
1:D:121:GLY:H	1:D:156:LEU:HD21	1.86	0.41
1:B:591:ILE:HD12	1:B:591:ILE:HA	1.80	0.41
1:C:33:TRP:CD2	1:C:83:LYS:HB2	2.55	0.41
1:C:705:LEU:HD23	1:C:724:ASP:OD2	2.21	0.41
1:D:241:GLN:C	1:D:242:LEU:HD23	2.41	0.41
1:C:300:ARG:HD3	1:C:300:ARG:N	2.35	0.41
1:D:66:ASP:O	3:D:1004:HOH:O	2.20	0.41
1:D:323:ARG:CZ	1:D:365:ILE:HD11	2.51	0.41
1:C:466:SER:OG	1:C:467:LYS:N	2.54	0.40
1:D:462:TYR:HD1	1:D:502:TYR:CE2	2.38	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:544:ILE:HD12	1:D:556:TYR:HE2	1.87	0.40
1:A:458:TRP:HD1	1:A:459:GLU:OE1	2.03	0.40
1:B:526:PRO:HG3	1:B:534:GLU:HB3	2.03	0.40
1:B:700:GLY:HA2	1:B:875:VAL:O	2.20	0.40
1:C:302:PHE:CZ	1:C:447:ARG:HA	2.56	0.40
1:D:96:ILE:H	1:D:131:THR:HG23	1.86	0.40
1:D:213:LEU:HD21	1:D:281:VAL:HG21	2.04	0.40
1:A:712:PHE:CE1	1:A:766:PRO:HG2	2.56	0.40
1:B:354:VAL:HG11	1:B:369:CYS:SG	2.61	0.40
1:B:702:CYS:HB3	1:B:721:TRP:CD2	2.56	0.40
1:C:514:GLY:HA3	1:C:559:TRP:O	2.21	0.40
1:D:228:PHE:CD1	1:D:228:PHE:N	2.89	0.40
1:D:695:ASP:OD1	1:D:695:ASP:N	2.48	0.40
1:A:525:THR:O	1:A:525:THR:OG1	2.31	0.40
1:B:190:ALA:HB2	1:B:405:LEU:HB3	2.03	0.40
1:B:304:VAL:HG23	1:B:304:VAL:O	2.20	0.40
1:B:628:ILE:O	1:B:657:VAL:HA	2.22	0.40
1:D:212:PHE:HE1	1:D:253:PRO:HB3	1.86	0.40
1:D:213:LEU:CD1	1:D:254:ILE:HD11	2.51	0.40
1:D:762:THR:HG21	1:D:768:PHE:CD2	2.56	0.40
1:D:876:LYS:HB2	1:D:876:LYS:HE3	1.69	0.40
1:A:507:PRO:HA	1:A:508:ARG:NH1	2.37	0.40
1:A:668:LEU:HD21	1:A:679:ARG:NH2	2.36	0.40
1:B:488:ASP:O	1:B:490:ALA:N	2.54	0.40
1:D:194:ARG:HB3	1:D:408:TYR:CE2	2.57	0.40

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:292:GLU:OE1	1:D:852:ARG:NH1[1_565]	2.06	0.14
1:A:855:GLU:OE2	1:D:22:SER:OG[1_565]	2.11	0.09

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	858/879 (98%)	783 (91%)	69 (8%)	6 (1%)	22	54
1	B	858/879 (98%)	786 (92%)	63 (7%)	9 (1%)	15	45
1	C	858/879 (98%)	780 (91%)	69 (8%)	9 (1%)	15	45
1	D	858/879 (98%)	771 (90%)	79 (9%)	8 (1%)	17	48
All	All	3432/3516 (98%)	3120 (91%)	280 (8%)	32 (1%)	17	48

All (32) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	830	SER
1	B	830	SER
1	C	104	ALA
1	C	105	SER
1	B	32	SER
1	B	219	ASP
1	B	823	ASN
1	C	830	SER
1	A	32	SER
1	A	66	ASP
1	A	709	HIS
1	B	489	SER
1	C	49	ASN
1	C	356	ILE
1	C	586	ARG
1	D	138	LYS
1	D	424	ASP
1	D	571	ASP
1	B	66	ASP
1	B	571	ASP
1	C	32	SER
1	C	571	ASP
1	D	272	PRO
1	D	388	LYS
1	D	553	TYR
1	A	162	ASP
1	B	492	ILE
1	B	674	GLY
1	C	285	LYS
1	D	418	ALA

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Mol	Chain	Res	Type
1	A	544	ILE
1	D	356	ILE

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	750/775 (97%)	717 (96%)	33 (4%)	28	61
1	B	752/775 (97%)	727 (97%)	25 (3%)	38	72
1	C	752/775 (97%)	731 (97%)	21 (3%)	43	76
1	D	739/775 (95%)	717 (97%)	22 (3%)	41	75
All	All	2993/3100 (96%)	2892 (97%)	101 (3%)	37	71

All (101) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	20	PHE
1	A	41	GLU
1	A	45	SER
1	A	47	ASP
1	A	51	SER
1	A	72	ARG
1	A	141	LEU
1	A	194	ARG
1	A	241	GLN
1	A	245	LYS
1	A	255	SER
1	A	257	SER
1	A	285	LYS
1	A	295	SER
1	A	300	ARG
1	A	347	LYS
1	A	377	TRP
1	A	449	SER
1	A	469	MET

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Mol	Chain	Res	Type
1	A	508	ARG
1	A	529	PHE
1	A	557	SER
1	A	604	MET
1	A	622	SER
1	A	635	LYS
1	A	649	ARG
1	A	655	GLU
1	A	670	ASP
1	A	725	LYS
1	A	800	ASP
1	A	811	SER
1	A	819	ASP
1	A	829	ASP
1	B	28	SER
1	B	47	ASP
1	B	66	ASP
1	B	117	LYS
1	B	219	ASP
1	B	270	GLU
1	B	295	SER
1	B	300	ARG
1	B	340	ARG
1	B	377	TRP
1	B	385	GLU
1	B	508	ARG
1	B	529	PHE
1	B	538	ASP
1	B	552	ASP
1	B	615	ARG
1	B	658	PHE
1	B	668	LEU
1	B	677	SER
1	B	743	TRP
1	B	746	SER
1	B	779	ARG
1	B	800	ASP
1	B	819	ASP
1	B	832	ASN
1	C	36	LYS
1	C	66	ASP
1	C	72	ARG

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Mol	Chain	Res	Type
1	C	92	ARG
1	C	150	SER
1	C	235	ARG
1	C	250	ARG
1	C	300	ARG
1	C	377	TRP
1	C	385	GLU
1	C	469	MET
1	C	508	ARG
1	C	529	PHE
1	C	538	ASP
1	C	549	LYS
1	C	557	SER
1	C	699	ASP
1	C	780	LEU
1	C	799	LYS
1	C	800	ASP
1	C	819	ASP
1	D	106	LYS
1	D	139	GLU
1	D	199	GLU
1	D	228	PHE
1	D	244	LEU
1	D	278	LYS
1	D	300	ARG
1	D	311	LEU
1	D	324	HIS
1	D	341	ARG
1	D	377	TRP
1	D	426	HIS
1	D	449	SER
1	D	469	MET
1	D	471	SER
1	D	483	SER
1	D	506	LYS
1	D	511	SER
1	D	529	PHE
1	D	601	ASP
1	D	677	SER
1	D	829	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	575	ASN
1	D	215	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

Of 4 ligands modelled in this entry, 4 are 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	860/879 (97%)	-0.39	5 (0%)	89	89	11, 27, 44, 65	0
1	B	860/879 (97%)	-0.44	2 (0%)	95	95	11, 23, 41, 57	0
1	C	860/879 (97%)	-0.35	3 (0%)	94	94	14, 27, 48, 61	0
1	D	860/879 (97%)	-0.16	19 (2%)	62	59	15, 33, 59, 77	0
All	All	3440/3516 (97%)	-0.34	29 (0%)	86	86	11, 27, 51, 77	0

All (29) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	465	SER	3.0
1	D	72	ARG	3.0
1	D	218	THR	3.0
1	C	66	ASP	2.8
1	D	263	ASN	2.8
1	D	66	ASP	2.7
1	B	694	SER	2.7
1	D	463	THR	2.6
1	D	93	ASP	2.5
1	D	287	GLY	2.5
1	D	284	ALA	2.5
1	D	692	THR	2.3
1	D	313	GLY	2.3
1	D	286	ASN	2.3
1	A	623	ILE	2.3
1	D	71	GLN	2.2
1	D	803	LYS	2.2
1	D	602	ILE	2.2
1	D	255	SER	2.2
1	D	70	GLU	2.1
1	A	694	SER	2.1

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Mol	Chain	Res	Type	RSRZ
1	D	675	ALA	2.1
1	D	288	GLU	2.1
1	C	72	ARG	2.1
1	A	51	SER	2.1
1	B	621	ASP	2.0
1	A	219	ASP	2.0
1	A	693	ASP	2.0
1	C	557	SER	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

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	NA	A	901	1/1	0.88	0.12	27,27,27,27	0
2	NA	C	901	1/1	0.89	0.15	21,21,21,21	0
2	NA	D	901	1/1	0.91	0.13	17,17,17,17	0
2	NA	B	901	1/1	0.99	0.17	15,15,15,15	0

6.5 Other polymers (i)

There are no such residues in this entry.