Full wwPDB X-ray Structure Validation Report ⓘ

Nov 17, 2024 – 01:50 AM EST

PDB ID	:	3VE1
Title	:	The 2.9 angstrom crystal structure of Transferrin binding protein B (TbpB) from serogroup B M982 Neisseria meningitidis in complex with human transferrin
Authors	:	Calmettes, C.; Moraes, T.F.
Deposited on	:	2012-01-06
Resolution	:	2.96 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:

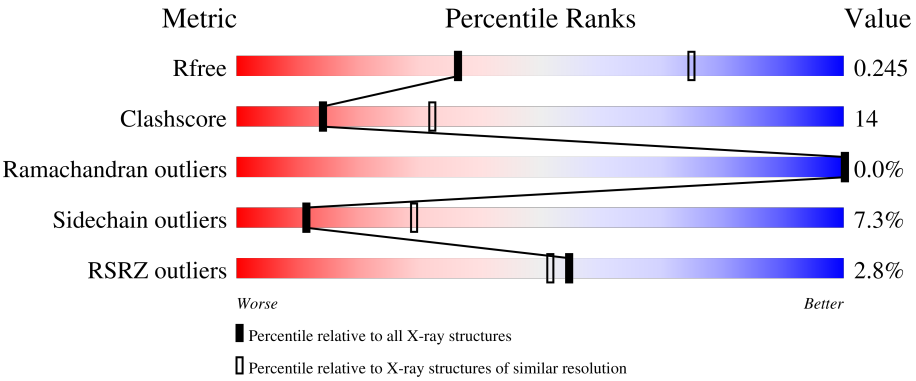
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.20.1
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

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 2.96 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}	164625	1044 (2.98-2.94)
Clashscore	180529	1097 (2.98-2.94)
Ramachandran outliers	177936	1049 (2.98-2.94)
Sidechain outliers	177891	1049 (2.98-2.94)
RSRZ outliers	164620	1044 (2.98-2.94)

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	658	4% 57% 22% • 18%
1	C	658	3% 57% 21% • 19%
2	B	679	2% 73% 24% • •
2	D	679	% 72% 24% •

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard

residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	GOL	B	704	-	-	X	-
3	GOL	D	703	-	-	X	-

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 19274 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 Transferrin-binding protein 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	537	Total	C	N	O	S	0	1	0
			4240	2657	732	844	7			
1	C	536	Total	C	N	O	S	0	0	0
			4215	2640	726	842	7			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	34	GLY	-	expression tag	UNP Q09057
A	35	SER	-	expression tag	UNP Q09057
C	34	GLY	-	expression tag	UNP Q09057
C	35	SER	-	expression tag	UNP Q09057

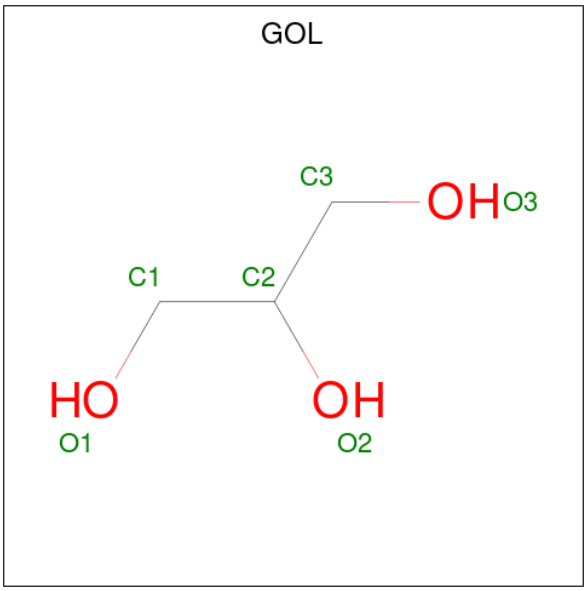
- Molecule 2 is a protein called Serotransferrin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	675	Total	C	N	O	S	0	2	0
			5254	3296	910	1001	47			
2	D	677	Total	C	N	O	S	0	3	0
			5274	3310	913	1004	47			

There are 6 discrepancies between the modelled and reference sequences:

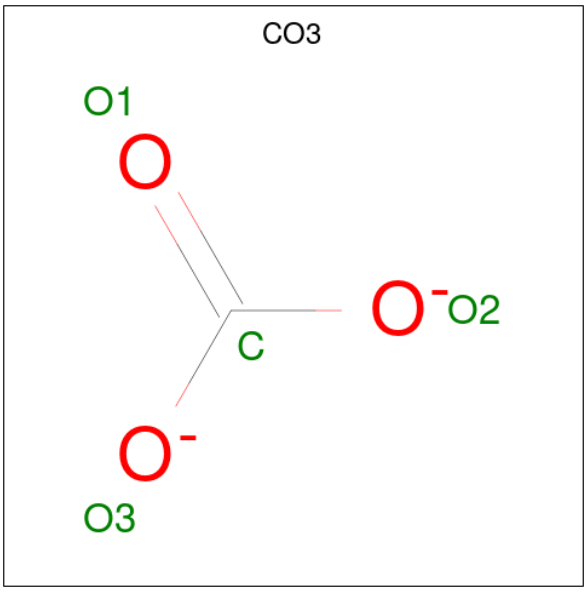
Chain	Residue	Modelled	Actual	Comment	Reference
B	413	ASP	ASN	SEE REMARK 999	UNP P02787
B	429	VAL	ILE	SEE REMARK 999	UNP P02787
B	611	ASP	ASN	SEE REMARK 999	UNP P02787
D	413	ASP	ASN	SEE REMARK 999	UNP P02787
D	429	VAL	ILE	SEE REMARK 999	UNP P02787
D	611	ASP	ASN	SEE REMARK 999	UNP P02787

- Molecule 3 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			6	3	3		
3	A	1	Total	C	O	0	0
			6	3	3		
3	B	1	Total	C	O	0	0
			6	3	3		
3	B	1	Total	C	O	0	0
			6	3	3		
3	B	1	Total	C	O	0	0
			6	3	3		
3	B	1	Total	C	O	0	0
			6	3	3		
3	B	1	Total	C	O	0	0
			6	3	3		
3	B	1	Total	C	O	0	0
			6	3	3		
3	C	1	Total	C	O	0	0
			6	3	3		
3	D	1	Total	C	O	0	0
			6	3	3		
3	D	1	Total	C	O	0	0
			6	3	3		
3	D	1	Total	C	O	0	0
			6	3	3		
3	D	1	Total	C	O	0	0
			6	3	3		

- Molecule 4 is CARBONATE ION (three-letter code: CO3) (formula: CO_3).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	B	1	Total C O 4 1 3	0	0
4	D	1	Total C O 4 1 3	0	0

- Molecule 5 is FE (III) ION (three-letter code: FE) (formula: Fe).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	B	1	Total Fe 1 1	0	0
5	D	1	Total Fe 1 1	0	0

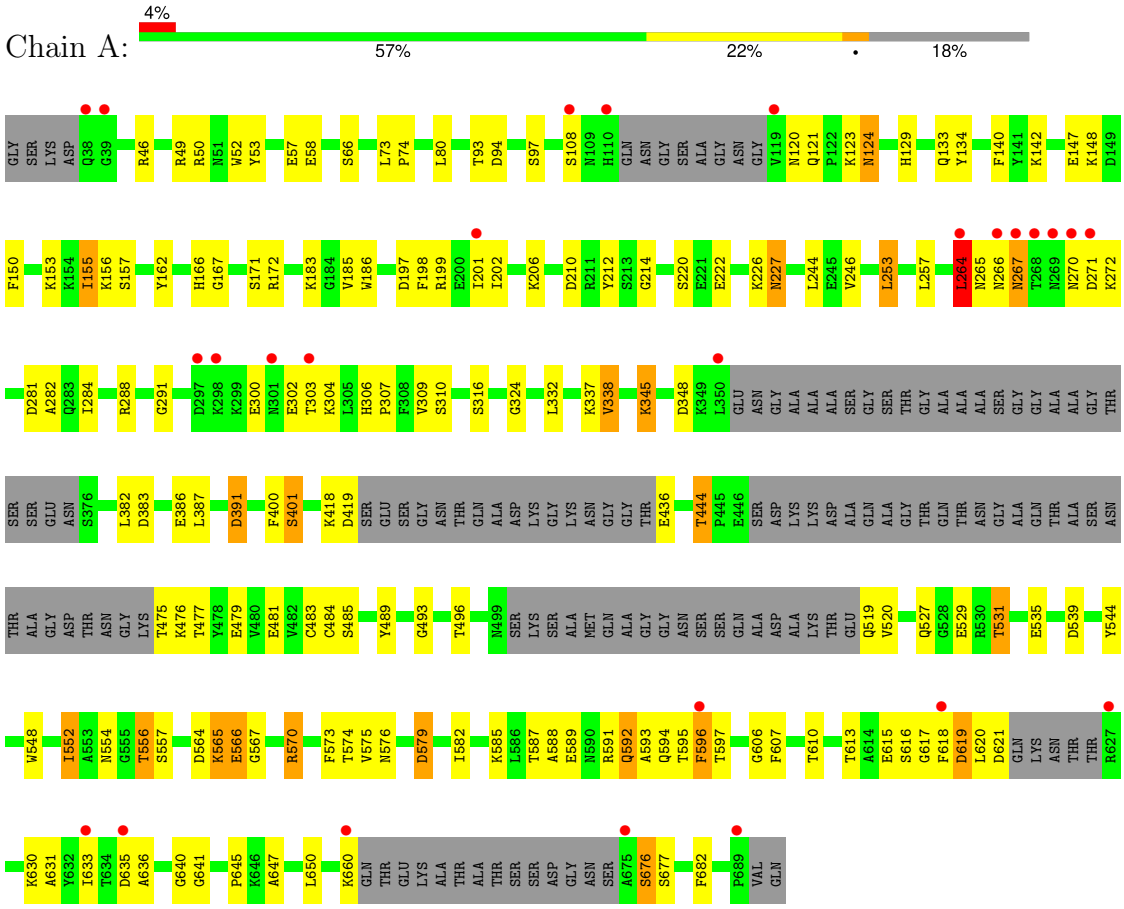
- Molecule 6 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	37	Total O 37 37	0	0
6	B	65	Total O 65 65	0	0
6	C	34	Total O 34 34	0	0
6	D	67	Total O 67 67	0	0

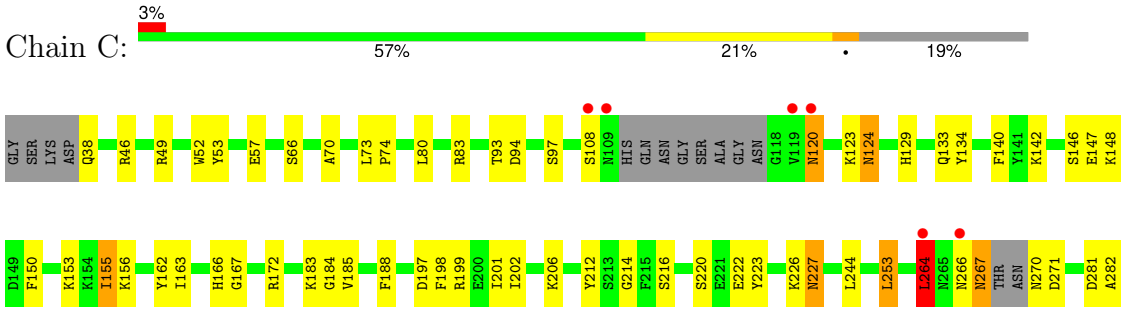
3 Residue-property plots (i)

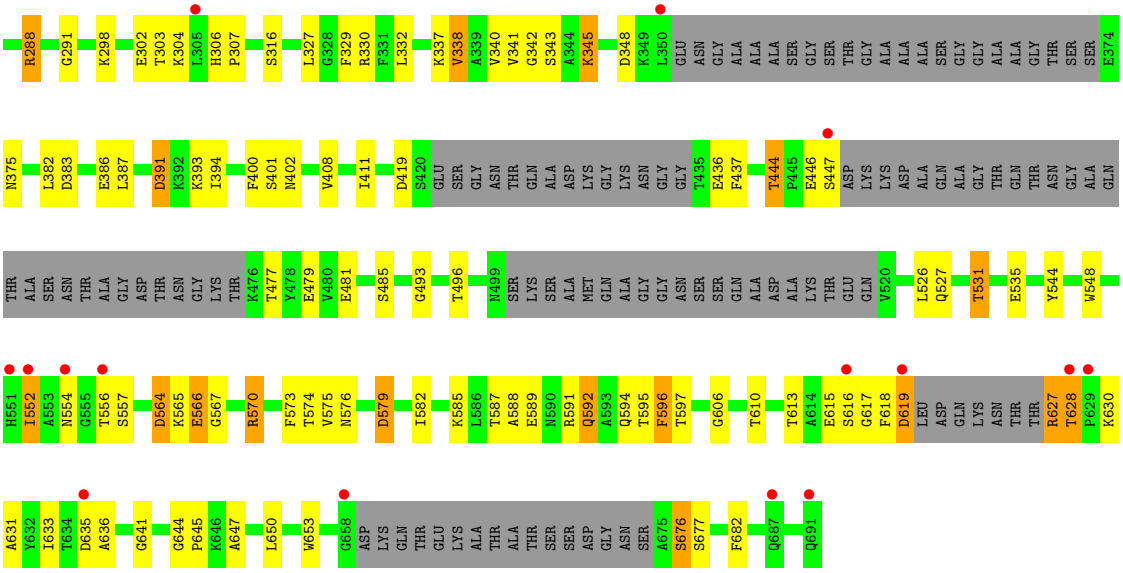
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: Transferrin-binding protein 2



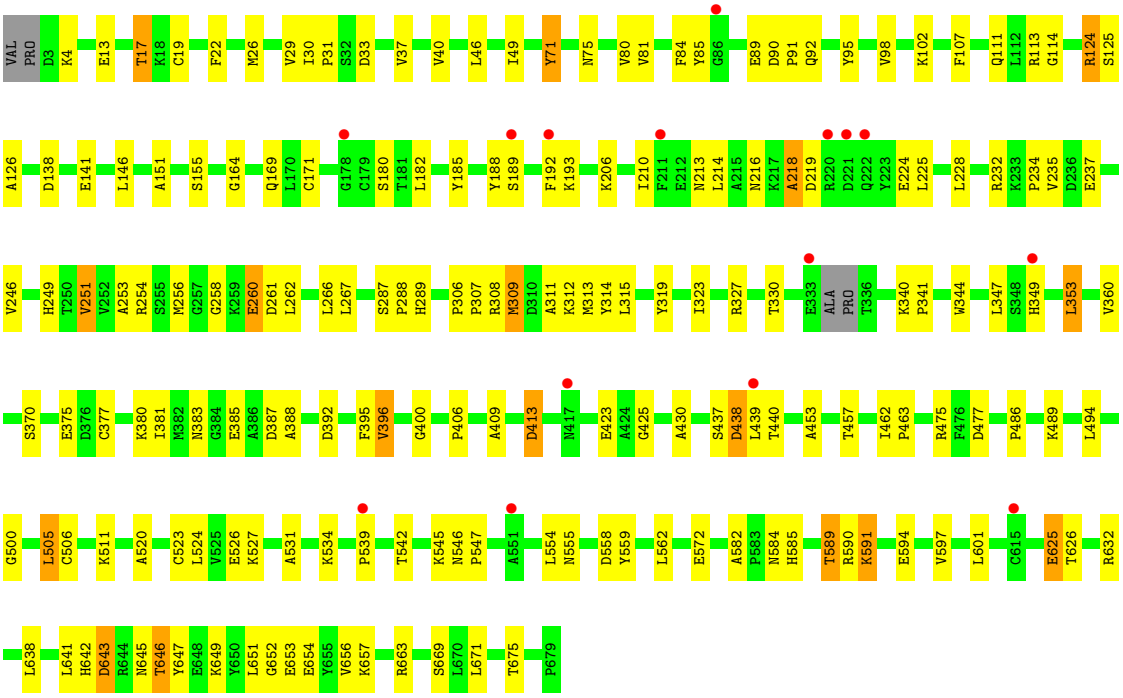
• Molecule 1: Transferrin-binding protein 2





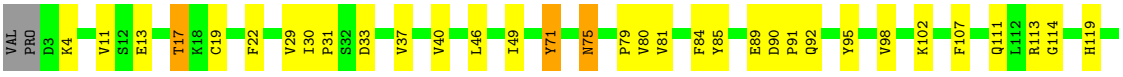
• Molecule 2: Serotransferrin

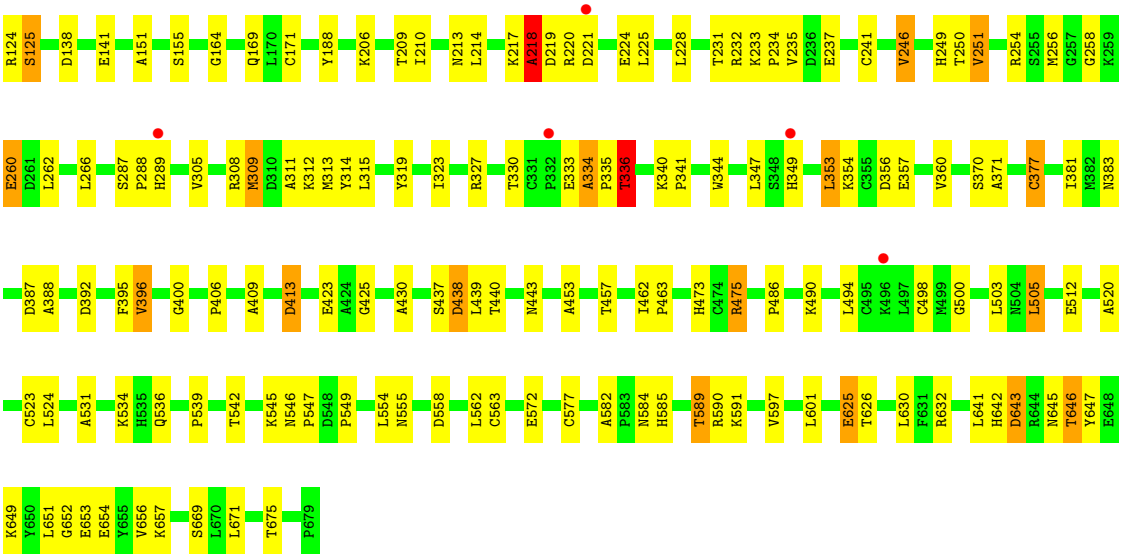
Chain B:



• Molecule 2: Serotransferrin

Chain D:




R124 S125 D138 E141 A151 S155 G164 Q169 L170 C171 Y188 K206 T209 I210 N213 L214 K217 A218 D219 R220 D221 E224 L225 L228 T231 R232 K233 P234 V235 D236 E237 C241 V246 H249 T250 V251 R254 S255 M256 G257 G258 K259
E260 D261 L262 L266 S287 P288 H289 V305 R308 M309 D310 A311 K312 M313 Y314 L315 Y319 I323 R327 T330 C331 P332 E333 A334 P335 T336 K340 P341 W344 L347 S348 H349 L353 K354 C355 D356 E357 V360 S370 A371 C377 I381 M382 N383
D387 A388 D392 F395 V396 G400 P406 A409 D413 E423 A424 G425 A430 S437 D438 L439 T440 N443 A453 T457 I462 P463 H473 C474 R475 P486 K490 L494 C495 K496 L497 C498 M499 G500 L503 N504 L505 E512 A520
C523 L524 A531 K534 H535 Q536 P539 T542 K545 N546 P547 D548 P549 L554 N555 D558 L562 C563 E572 C577 A582 P583 N584 H585 T589 R590 K591 V597 L601 E625 T626 L630 F631 R632 L641 H642 D643 R644 N645 T646 Y647 E648
K649 Y650 L651 G652 E653 E654 Y655 V656 K657 S669 L670 L671 T675 P679

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	128.02Å 153.51Å 169.51Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	37.93 – 2.96 37.93 – 2.96	Depositor EDS
% Data completeness (in resolution range)	99.5 (37.93-2.96) 99.5 (37.93-2.96)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	5.18 (at 2.95Å)	Xtriage
Refinement program	PHENIX 1.7.1_743	Depositor
R, R_{free}	0.207 , 0.249 0.203 , 0.245	Depositor DCC
R_{free} test set	2498 reflections (3.56%)	wwPDB-VP
Wilson B-factor (Å^2)	56.8	Xtriage
Anisotropy	0.194	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 60.0	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	19274	wwPDB-VP
Average B, all atoms (Å^2)	68.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 20.15 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 9.2640e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

[1] Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: FE, CO3, GOL

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	0.51	0/4331	0.71	4/5826 (0.1%)
1	C	0.52	0/4300	0.72	7/5782 (0.1%)
2	B	0.56	0/5375	0.68	1/7262 (0.0%)
2	D	0.57	0/5397	0.68	3/7295 (0.0%)
All	All	0.54	0/19403	0.69	15/26165 (0.1%)

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	C	0	2
2	D	0	2
All	All	0	6

There are no bond length outliers.

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	288	ARG	NE-CZ-NH2	-13.99	113.30	120.30
1	A	288	ARG	NE-CZ-NH1	-12.57	114.01	120.30
1	C	288	ARG	NE-CZ-NH1	12.40	126.50	120.30
1	A	288	ARG	NE-CZ-NH2	10.76	125.68	120.30
1	C	628	THR	C-N-CD	-9.48	99.74	120.60
2	B	218	ALA	N-CA-C	-7.42	90.95	111.00
1	C	628	THR	C-N-CA	6.69	150.09	122.00
1	C	288	ARG	CD-NE-CZ	6.23	132.33	123.60
1	A	288	ARG	CD-NE-CZ	5.97	131.96	123.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	218	ALA	N-CA-C	5.87	126.86	111.00
1	A	264	LEU	CA-CB-CG	5.49	127.94	115.30
2	D	334	ALA	N-CA-C	-5.40	96.42	111.00
1	C	264	LEU	CA-CB-CG	5.33	127.57	115.30
1	C	298	LYS	N-CA-C	-5.31	96.67	111.00
2	D	383	ASN	CB-CA-C	-5.15	100.10	110.40

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	108	SER	Peptide
1	A	564	ASP	Mainchain
1	C	108	SER	Peptide
1	C	564	ASP	Mainchain
2	D	218	ALA	Peptide
2	D	336	THR	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	4240	0	4066	133	0
1	C	4215	0	4040	127	0
2	B	5254	0	5065	136	0
2	D	5274	0	5088	139	0
3	A	12	0	16	2	0
3	B	36	0	48	8	0
3	C	6	0	8	3	0
3	D	24	0	32	5	0
4	B	4	0	0	0	0
4	D	4	0	0	0	0
5	B	1	0	0	0	0
5	D	1	0	0	0	0
6	A	37	0	0	3	0
6	B	65	0	0	8	0
6	C	34	0	0	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	D	67	0	0	4	0
All	All	19274	0	18363	525	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 14.

All (525) 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)
2:B:218:ALA:O	2:B:219:ASP:HB2	1.49	1.11
2:B:124:ARG:HB3	3:B:704:GOL:H11	1.37	1.06
2:D:49:ILE:HG22	2:D:75:ASN:HD22	1.23	1.04
1:C:587:THR:HG21	1:C:592:GLN:NE2	1.80	0.96
1:C:288:ARG:HD3	3:C:701:GOL:H32	1.45	0.96
1:C:587:THR:CG2	1:C:592:GLN:HE21	1.79	0.96
2:B:49:ILE:HG22	2:B:75:ASN:HD22	1.31	0.95
1:A:206:LYS:HE3	6:B:801:HOH:O	1.64	0.94
2:B:388:ALA:HB2	2:B:589:THR:HG23	1.51	0.92
1:C:206:LYS:HE3	6:D:849:HOH:O	1.71	0.91
1:A:556:THR:HG22	1:A:620:LEU:HG	1.54	0.89
1:A:554:ASN:HB2	1:A:676:SER:OG	1.74	0.87
1:C:587:THR:CG2	1:C:592:GLN:NE2	2.38	0.87
2:D:234:PRO:HD2	2:D:237:GLU:HG3	1.58	0.86
1:C:627:ARG:HD3	1:C:628:THR:HG23	1.57	0.86
2:B:234:PRO:HD2	2:B:237:GLU:HG3	1.59	0.84
2:D:388:ALA:HB2	2:D:589:THR:HG23	1.58	0.84
1:A:587:THR:HG21	1:A:592:GLN:NE2	1.93	0.83
1:C:554:ASN:HB2	1:C:676:SER:OG	1.79	0.83
2:B:4:LYS:HB2	2:B:262:LEU:HD21	1.61	0.82
2:D:210[A]:ILE:HD13	2:D:235:VAL:HG11	1.62	0.82
2:B:646:THR:HG23	2:B:649:LYS:HD2	1.62	0.81
2:D:646:THR:HG23	2:D:649:LYS:HD2	1.61	0.80
1:A:567:GLY:O	1:A:589:GLU:HA	1.82	0.79
2:B:288:PRO:HG2	2:B:289:HIS:HD2	1.48	0.79
1:A:479:GLU:HB3	1:A:496:THR:HG22	1.66	0.78
1:C:52:TRP:HA	1:C:57:GLU:HG3	1.66	0.78
2:B:643:ASP:OD1	2:B:643:ASP:N	2.14	0.78
1:C:567:GLY:O	1:C:589:GLU:HA	1.83	0.78
1:C:565:LYS:HB2	1:C:566:GLU:HA	1.66	0.77
2:D:643:ASP:OD1	2:D:643:ASP:N	2.18	0.77
1:A:594:GLN:HG2	1:A:619:ASP:OD2	1.85	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:479:GLU:HB3	1:C:496:THR:HG22	1.66	0.76
1:C:594:GLN:HG2	1:C:619:ASP:OD2	1.84	0.76
2:D:188:TYR:CZ	3:D:703:GOL:H32	2.21	0.76
2:B:288:PRO:HG2	2:B:289:HIS:CD2	2.21	0.76
2:D:13:GLU:O	2:D:17:THR:HG22	1.86	0.76
1:C:479:GLU:HB3	1:C:496:THR:CG2	2.16	0.75
1:A:52:TRP:HA	1:A:57:GLU:HG3	1.67	0.75
1:C:564:ASP:O	1:C:565:LYS:HG2	1.86	0.75
1:A:529:GLU:HB3	3:A:702:GOL:H32	1.68	0.75
2:D:210[A]:ILE:CD1	2:D:235:VAL:HG11	2.16	0.75
1:C:266:ASN:O	1:C:267:ASN:HB2	1.85	0.74
1:A:587:THR:CG2	1:A:592:GLN:HE21	2.00	0.74
1:A:266:ASN:O	1:A:267:ASN:HB2	1.86	0.74
1:A:479:GLU:HB3	1:A:496:THR:CG2	2.17	0.73
2:B:589:THR:HG21	2:B:597:VAL:HG21	1.69	0.73
1:C:288:ARG:CD	3:C:701:GOL:H32	2.19	0.73
1:A:265:ASN:HB2	2:B:526:GLU:O	1.87	0.73
1:A:587:THR:CG2	1:A:592:GLN:NE2	2.51	0.73
1:C:226:LYS:HG3	1:C:227:ASN:HD22	1.53	0.73
1:A:306:HIS:HB2	1:A:307:PRO:HD2	1.68	0.73
2:B:13:GLU:O	2:B:17:THR:HG22	1.89	0.73
1:C:616:SER:O	1:C:630:LYS:HD3	1.89	0.73
1:A:120:ASN:O	1:A:121:GLN:HB2	1.89	0.72
1:A:592:GLN:HB2	1:A:595:THR:HB	1.72	0.72
2:B:218:ALA:O	2:B:219:ASP:CB	2.28	0.72
2:D:210[B]:ILE:HD12	2:D:210[B]:ILE:H	1.54	0.71
1:A:616:SER:O	1:A:630:LYS:HD3	1.91	0.71
2:D:392:ASP:HA	2:D:585:HIS:CD2	2.24	0.71
1:A:49:ARG:HB3	1:A:156:LYS:HB3	1.72	0.70
1:A:300:GLU:HA	1:A:302:GLU:N	2.05	0.70
1:A:444:THR:HG23	1:A:477:THR:HG23	1.73	0.70
1:A:556:THR:O	1:A:620:LEU:HD11	1.91	0.70
2:D:218:ALA:HA	2:D:221:ASP:HB2	1.74	0.70
2:D:288:PRO:HG2	2:D:289:HIS:CD2	2.27	0.70
2:D:49:ILE:HG22	2:D:75:ASN:ND2	2.05	0.69
1:C:120:ASN:O	1:C:120:ASN:ND2	2.19	0.69
2:D:413:ASP:HB2	2:D:423:GLU:OE2	1.93	0.69
1:C:306:HIS:HB2	1:C:307:PRO:HD2	1.75	0.69
1:C:592:GLN:HA	1:C:594:GLN:H	1.59	0.68
2:B:81:VAL:HB	2:B:251:VAL:CG1	2.23	0.68
2:B:392:ASP:HA	2:B:585:HIS:CD2	2.28	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:49:ARG:HB3	1:C:156:LYS:HB3	1.75	0.68
2:D:288:PRO:HG2	2:D:289:HIS:HD2	1.58	0.68
1:C:124:ASN:HD21	1:C:185:VAL:HB	1.59	0.67
2:D:589:THR:HG21	2:D:597:VAL:HG21	1.76	0.67
1:A:120:ASN:HB2	1:A:121:GLN:OE1	1.95	0.67
1:A:226:LYS:HG3	1:A:227:ASN:HD22	1.60	0.67
2:D:4:LYS:HB2	2:D:262:LEU:HD21	1.75	0.67
2:D:188:TYR:OH	3:D:703:GOL:H32	1.95	0.67
1:A:197:ASP:OD1	1:A:199:ARG:HG3	1.96	0.66
1:C:124:ASN:ND2	1:C:185:VAL:HG11	2.10	0.66
2:B:81:VAL:HB	2:B:251:VAL:HG13	1.77	0.66
2:D:81:VAL:HB	2:D:251:VAL:CG1	2.25	0.66
1:C:226:LYS:HG3	1:C:227:ASN:ND2	2.11	0.66
1:A:613:THR:HG23	1:A:633:ILE:HB	1.78	0.65
1:C:592:GLN:HB2	1:C:595:THR:HB	1.78	0.65
1:C:444:THR:HG23	1:C:477:THR:HG23	1.78	0.65
2:D:387:ASP:O	2:D:589:THR:HG22	1.97	0.65
1:A:565:LYS:HB2	1:A:566:GLU:HA	1.79	0.65
1:A:227:ASN:HD22	1:A:227:ASN:N	1.93	0.65
2:D:217:LYS:O	2:D:218:ALA:HB3	1.97	0.64
1:C:124:ASN:ND2	1:C:185:VAL:CG1	2.60	0.64
1:C:391:ASP:OD1	1:C:391:ASP:N	2.30	0.64
2:D:218:ALA:HA	2:D:221:ASP:CB	2.28	0.64
1:A:226:LYS:HG3	1:A:227:ASN:ND2	2.13	0.63
1:C:197:ASP:OD1	1:C:199:ARG:HG3	1.98	0.63
2:D:71:TYR:OH	2:D:312:LYS:HE3	1.98	0.63
2:D:209:THR:O	2:D:213[A]:ASN:ND2	2.30	0.63
2:B:253:ALA:HB1	6:B:856:HOH:O	1.99	0.63
1:C:253:LEU:HG	1:C:282:ALA:HB3	1.80	0.63
2:D:457:THR:HG21	2:D:582:ALA:HB1	1.79	0.63
2:B:387:ASP:O	2:B:589:THR:HG22	1.98	0.62
1:C:587:THR:HG22	1:C:592:GLN:HE21	1.62	0.62
1:A:124:ASN:ND2	1:A:185:VAL:CG1	2.63	0.62
2:D:81:VAL:HB	2:D:251:VAL:HG13	1.81	0.62
1:C:588:ALA:HB3	1:C:594:GLN:HB3	1.82	0.62
2:D:430:ALA:HB3	2:D:562:LEU:HB2	1.82	0.61
1:C:613:THR:HG23	1:C:633:ILE:HB	1.81	0.61
2:B:375:GLU:OE2	3:B:707:GOL:H32	2.00	0.61
2:D:406:PRO:HD2	2:D:645:ASN:O	2.00	0.60
1:A:253:LEU:HG	1:A:282:ALA:HB3	1.82	0.60
1:A:576:ASN:CG	1:A:579:ASP:HB2	2.22	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:308:ARG:HB2	2:D:669:SER:HB3	1.83	0.60
1:A:53:TYR:CD1	1:A:153:LYS:HB3	2.37	0.60
2:B:406:PRO:HD2	2:B:645:ASN:O	2.00	0.60
2:B:323:ILE:HD11	2:B:327:ARG:NH2	2.17	0.60
1:A:206:LYS:CE	6:B:801:HOH:O	2.34	0.60
1:A:201:ILE:HG13	1:A:202:ILE:H	1.68	0.59
2:B:308:ARG:HB2	2:B:669:SER:HB3	1.84	0.59
2:D:323:ILE:HD11	2:D:327:ARG:NH2	2.18	0.59
1:C:587:THR:HG21	1:C:592:GLN:HE22	1.62	0.59
1:A:129:HIS:CD2	1:A:129:HIS:N	2.71	0.59
1:C:565:LYS:HB2	1:C:566:GLU:CA	2.32	0.59
2:B:71:TYR:OH	2:B:312:LYS:HE3	2.02	0.59
1:C:73:LEU:HD12	1:C:74:PRO:HD2	1.85	0.58
2:D:228:LEU:HB2	3:D:705:GOL:H32	1.85	0.58
2:D:327:ARG:HH11	2:D:327:ARG:HG2	1.68	0.58
1:C:146:SER:OG	2:D:356:ASP:OD2	2.22	0.58
1:C:155:ILE:HD12	2:D:360:VAL:HG21	1.84	0.58
2:B:413:ASP:HB2	2:B:423:GLU:OE2	2.03	0.58
2:D:19:CYS:O	2:D:22:PHE:HB3	2.03	0.58
1:C:227:ASN:HD22	1:C:227:ASN:N	2.01	0.58
2:B:31:PRO:HG3	1:C:133:GLN:HB3	1.86	0.57
1:A:391:ASP:OD1	1:A:391:ASP:N	2.33	0.57
2:D:457:THR:HG21	2:D:582:ALA:CB	2.33	0.57
2:D:319:TYR:O	2:D:323:ILE:HG22	2.05	0.57
1:C:53:TYR:CD1	1:C:153:LYS:HB3	2.39	0.57
1:C:201:ILE:HG13	1:C:202:ILE:H	1.68	0.57
1:C:345:LYS:HE3	1:C:348:ASP:OD1	2.05	0.57
2:B:319:TYR:O	2:B:323:ILE:HG22	2.05	0.57
2:D:652:GLY:O	2:D:656:VAL:HG13	2.05	0.56
2:B:84:PHE:CD1	2:B:91:PRO:HB3	2.40	0.56
2:B:327:ARG:HH11	2:B:327:ARG:HG2	1.70	0.56
2:B:192:PHE:CZ	2:B:210:ILE:HD12	2.40	0.56
1:C:124:ASN:HD22	1:C:185:VAL:HG11	1.68	0.56
2:D:231:THR:HB	6:D:820:HOH:O	2.06	0.56
1:A:529:GLU:CB	3:A:702:GOL:H32	2.36	0.56
2:B:671:LEU:O	2:B:675:THR:HG23	2.05	0.56
1:A:588:ALA:HB3	1:A:594:GLN:HB3	1.88	0.56
2:B:26:MET:HE1	2:B:30:ILE:HD11	1.88	0.56
1:A:124:ASN:HD22	1:A:124:ASN:C	2.10	0.55
1:A:345:LYS:HE3	1:A:348:ASP:OD1	2.06	0.55
2:B:256:MET:HE3	2:B:256:MET:HA	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:576:ASN:CG	1:C:579:ASP:HB2	2.26	0.55
2:D:80:VAL:HG11	2:D:260:GLU:HG2	1.89	0.55
1:A:124:ASN:ND2	1:A:185:VAL:HG11	2.22	0.55
1:A:265:ASN:HD22	2:B:527:LYS:HA	1.72	0.55
2:B:224:GLU:OE1	2:B:232:ARG:HD3	2.07	0.55
1:A:382:LEU:C	1:A:382:LEU:HD12	2.28	0.55
1:C:565:LYS:HG3	1:C:566:GLU:HG2	1.87	0.54
2:D:542:THR:HG22	2:D:554:LEU:HB3	1.89	0.54
2:D:653:GLU:HG3	2:D:654:GLU:N	2.22	0.54
1:A:332:LEU:HD12	1:A:338:VAL:O	2.07	0.54
2:D:437:SER:O	2:D:438:ASP:HB3	2.08	0.54
2:B:49:ILE:HG22	2:B:75:ASN:ND2	2.13	0.54
2:B:85:TYR:HD2	2:B:92:GLN:O	1.91	0.54
2:B:542:THR:HG22	2:B:554:LEU:HB3	1.90	0.54
2:B:457:THR:HG21	2:B:582:ALA:HB1	1.90	0.54
2:D:4:LYS:HD3	2:D:262:LEU:HD11	1.90	0.54
2:D:344:TRP:CZ3	2:D:601:LEU:HD11	2.42	0.53
2:B:19:CYS:O	2:B:22:PHE:HB3	2.08	0.53
2:D:84:PHE:CD1	2:D:91:PRO:HB3	2.43	0.53
1:A:124:ASN:HD21	1:A:185:VAL:CG1	2.21	0.53
2:B:80:VAL:HG11	2:B:260:GLU:HG2	1.90	0.53
2:B:430:ALA:HB3	2:B:562:LEU:HB2	1.89	0.53
1:C:124:ASN:HD21	1:C:185:VAL:CG1	2.21	0.53
2:D:500:GLY:HA3	2:D:505:LEU:HA	1.90	0.53
1:C:129:HIS:CG	1:C:183:LYS:HB2	2.43	0.53
1:C:124:ASN:HD21	1:C:185:VAL:CB	2.20	0.53
1:C:617:GLY:HA3	1:C:630:LYS:HB3	1.91	0.53
2:B:124:ARG:HB3	3:B:704:GOL:C1	2.26	0.53
1:A:531:THR:HG21	1:A:647:ALA:HA	1.90	0.53
1:C:544:TYR:HB2	1:C:573:PHE:HB2	1.91	0.53
1:A:617:GLY:HA3	1:A:630:LYS:HB3	1.91	0.52
1:C:206:LYS:CE	6:D:849:HOH:O	2.43	0.52
2:B:71:TYR:HB2	2:B:311:ALA:CB	2.40	0.52
1:C:650:LEU:C	1:C:650:LEU:HD12	2.29	0.52
2:D:344:TRP:HZ3	2:D:601:LEU:HD11	1.73	0.52
2:B:653:GLU:O	2:B:657:LYS:HG3	2.09	0.52
2:D:333:GLU:N	2:D:334:ALA:HB2	2.24	0.52
2:B:126:ALA:N	3:B:704:GOL:H12	2.25	0.52
1:A:618:PHE:O	1:A:619:ASP:OD2	2.28	0.52
2:D:85:TYR:HD2	2:D:92:GLN:O	1.93	0.52
2:D:217:LYS:O	2:D:218:ALA:CB	2.58	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:201:ILE:HG13	1:C:202:ILE:N	2.25	0.51
1:A:201:ILE:HG13	1:A:202:ILE:N	2.25	0.51
1:A:544:TYR:HB2	1:A:573:PHE:HB2	1.91	0.51
2:B:437:SER:O	2:B:438:ASP:HB3	2.09	0.51
2:B:652:GLY:O	2:B:656:VAL:HG13	2.11	0.51
2:B:323:ILE:HD11	2:B:327:ARG:CZ	2.41	0.51
1:C:382:LEU:C	1:C:382:LEU:HD12	2.31	0.51
2:D:81:VAL:HB	2:D:251:VAL:HG11	1.93	0.51
2:B:254:ARG:HB2	2:B:258:GLY:HA2	1.93	0.51
2:B:287:SER:OG	2:B:288:PRO:HD2	2.11	0.51
1:C:592:GLN:HG2	1:C:592:GLN:O	2.11	0.51
2:D:71:TYR:HB2	2:D:311:ALA:CB	2.41	0.51
2:D:425:GLY:HA2	2:D:584:ASN:OD1	2.10	0.51
2:B:425:GLY:HA2	2:B:584:ASN:OD1	2.11	0.51
2:D:646:THR:CG2	2:D:649:LYS:HD2	2.37	0.50
1:A:592:GLN:HA	1:A:593:ALA:HB3	1.93	0.50
1:A:650:LEU:C	1:A:650:LEU:HD12	2.32	0.50
2:B:4:LYS:HD3	2:B:262:LEU:HD11	1.94	0.50
2:B:113:ARG:NH1	6:B:811:HOH:O	2.43	0.50
2:D:371:ALA:HB3	2:D:377:CYS:SG	2.51	0.50
1:C:531:THR:HG21	1:C:647:ALA:HA	1.93	0.50
1:C:575:VAL:HG22	1:C:582:ILE:HG13	1.93	0.50
2:D:462:ILE:HB	2:D:463:PRO:HD3	1.92	0.50
2:D:98:VAL:HB	2:D:225:LEU:HD22	1.93	0.50
1:A:554:ASN:HB2	1:A:676:SER:HG	1.75	0.50
2:B:81:VAL:HB	2:B:251:VAL:HG11	1.94	0.50
1:A:552:ILE:HD11	1:A:631:ALA:HB1	1.94	0.49
2:B:126:ALA:H	3:B:704:GOL:H12	1.77	0.49
1:C:244:LEU:N	1:C:244:LEU:HD12	2.26	0.49
1:C:332:LEU:HD12	1:C:338:VAL:O	2.12	0.49
2:B:396:VAL:HG22	2:B:651:LEU:HD21	1.94	0.49
1:C:264:LEU:N	1:C:264:LEU:CD2	2.75	0.49
2:D:233:LYS:HD2	2:D:241:CYS:HB2	1.93	0.49
2:D:653:GLU:O	2:D:657:LYS:HG3	2.12	0.49
2:D:125:SER:H	3:D:703:GOL:H2	1.77	0.49
1:A:345:LYS:CE	1:A:348:ASP:OD1	2.61	0.49
2:B:396:VAL:CG2	2:B:651:LEU:HD21	2.42	0.49
1:A:266:ASN:O	1:A:267:ASN:CB	2.60	0.49
1:C:52:TRP:CH2	2:D:357:GLU:HA	2.48	0.49
1:C:93:THR:CG2	1:C:142:LYS:HD3	2.42	0.49
2:D:520:ALA:O	2:D:523:CYS:HB3	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:591:LYS:NZ	2:B:594:GLU:OE2	2.32	0.49
1:C:585:LYS:HA	1:C:596:PHE:O	2.13	0.49
2:D:335:PRO:CB	2:D:336:THR:HG22	2.42	0.49
1:A:270:ASN:O	1:A:271:ASP:HB2	2.13	0.49
2:B:37:VAL:HG22	2:B:266:LEU:HD21	1.95	0.49
2:B:409:ALA:HB2	2:B:641:LEU:HD21	1.94	0.49
2:D:671:LEU:O	2:D:675:THR:HG23	2.12	0.49
1:C:266:ASN:O	1:C:267:ASN:CB	2.59	0.49
1:A:594:GLN:HB3	1:A:618:PHE:CZ	2.48	0.48
2:D:254:ARG:HB2	2:D:258:GLY:HA2	1.94	0.48
1:A:264:LEU:N	1:A:264:LEU:CD2	2.76	0.48
1:A:592:GLN:O	1:A:592:GLN:HG2	2.11	0.48
1:C:552:ILE:HD11	1:C:631:ALA:HB1	1.94	0.48
1:A:281:ASP:O	1:A:291:GLY:HA3	2.14	0.48
2:B:17:THR:HG21	6:B:844:HOH:O	2.13	0.48
1:A:93:THR:CG2	1:A:142:LYS:HD3	2.43	0.48
2:B:188:TYR:CZ	2:B:206:LYS:HD3	2.49	0.48
2:B:309:MET:HE2	2:B:313:MET:HG2	1.95	0.48
2:B:457:THR:HG21	2:B:582:ALA:CB	2.43	0.48
1:C:618:PHE:O	1:C:619:ASP:OD2	2.31	0.48
1:A:539:ASP:HB3	6:A:836:HOH:O	2.13	0.48
1:A:575:VAL:HG22	1:A:582:ILE:HG13	1.96	0.48
2:D:224:GLU:OE1	2:D:232:ARG:HD3	2.13	0.48
2:B:534:LYS:HD2	2:B:632:ARG:NH2	2.29	0.48
1:C:46:ARG:HB2	1:C:162:TYR:CE1	2.49	0.48
6:C:834:HOH:O	2:D:353:LEU:HD12	2.13	0.48
2:D:323:ILE:HD11	2:D:327:ARG:CZ	2.44	0.48
2:B:653:GLU:HG3	2:B:654:GLU:N	2.28	0.48
1:C:267:ASN:O	1:C:270:ASN:HB3	2.14	0.48
2:D:256:MET:HE3	2:D:256:MET:HA	1.95	0.48
1:A:120:ASN:CB	1:A:121:GLN:OE1	2.61	0.48
2:B:164:GLY:HA3	2:B:171:CYS:SG	2.53	0.48
2:B:234:PRO:CD	2:B:237:GLU:HG3	2.37	0.48
1:C:198:PHE:HB3	1:C:306:HIS:HA	1.96	0.48
2:D:453:ALA:HA	2:D:486:PRO:HD2	1.96	0.48
2:D:462:ILE:HB	2:D:463:PRO:CD	2.44	0.48
2:B:289:HIS:CD2	2:B:289:HIS:N	2.81	0.48
2:B:462:ILE:HB	2:B:463:PRO:HD3	1.96	0.48
1:A:198:PHE:HB3	1:A:306:HIS:HA	1.94	0.47
1:A:565:LYS:HG3	1:A:566:GLU:HG2	1.96	0.47
1:C:606:GLY:HA2	1:C:641:GLY:HA2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:548:TRP:HB3	1:A:682:PHE:HB3	1.96	0.47
2:B:113:ARG:NH2	2:B:138:ASP:O	2.47	0.47
2:B:344:TRP:CZ3	2:B:601:LEU:HD11	2.49	0.47
1:A:519:GLN:HG2	1:A:520:VAL:HG23	1.96	0.47
2:B:151:ALA:HB1	2:B:169:GLN:HG2	1.97	0.47
2:B:349[A]:HIS:HE1	2:B:511:LYS:HE2	1.79	0.47
2:B:601:LEU:HA	2:B:601:LEU:HD23	1.57	0.47
1:C:565:LYS:HD3	1:C:566:GLU:OE2	2.15	0.47
2:D:396:VAL:CG2	2:D:651:LEU:HD21	2.45	0.47
1:A:619:ASP:O	1:A:620:LEU:C	2.52	0.47
1:C:570:ARG:HA	1:C:570:ARG:HD3	1.62	0.47
2:B:188:TYR:OH	2:B:206:LYS:HD3	2.15	0.47
2:B:189:SER:HB3	2:B:213:ASN:OD1	2.14	0.47
2:B:380:LYS:HD3	2:B:385:GLU:OE1	2.15	0.47
2:B:625:GLU:O	2:B:626:THR:OG1	2.29	0.47
2:B:308:ARG:HD2	2:B:308:ARG:O	2.15	0.46
1:C:594:GLN:CG	1:C:619:ASP:OD2	2.58	0.46
2:D:37:VAL:HG22	2:D:266:LEU:HD21	1.96	0.46
2:D:546:ASN:HA	2:D:547:PRO:HD3	1.74	0.46
1:A:436:GLU:O	1:A:485:SER:HB3	2.16	0.46
1:A:607:PHE:CZ	1:A:640:GLY:HA3	2.50	0.46
2:D:287:SER:OG	2:D:288:PRO:HD2	2.15	0.46
1:A:619:ASP:O	1:A:621:ASP:N	2.48	0.46
2:B:114:GLY:O	2:B:155:SER:HB3	2.14	0.46
1:C:393:LYS:HG2	1:C:394:ILE:N	2.31	0.46
1:C:446:GLU:CG	1:C:447:SER:H	2.27	0.46
2:D:218:ALA:HB2	2:D:221:ASP:OD2	2.15	0.46
2:D:536:GLN:O	2:D:539:PRO:HD2	2.15	0.46
1:A:265:ASN:ND2	2:B:527:LYS:HA	2.31	0.46
1:A:613:THR:CG2	1:A:633:ILE:HB	2.44	0.46
2:B:29:VAL:HG12	2:B:30:ILE:HD13	1.98	0.46
2:B:315:LEU:HD22	2:B:319:TYR:CE2	2.51	0.46
2:D:151:ALA:HB1	2:D:169:GLN:HG2	1.97	0.46
2:D:234:PRO:CD	2:D:237:GLU:HG3	2.36	0.46
2:B:453:ALA:HA	2:B:486:PRO:HD2	1.96	0.46
2:D:409:ALA:HB2	2:D:641:LEU:HD21	1.96	0.46
1:A:475:THR:O	1:A:476:LYS:HG2	2.16	0.46
2:B:344:TRP:HZ3	2:B:601:LEU:HD11	1.80	0.46
1:C:38:GLN:NE2	6:C:824:HOH:O	2.49	0.46
1:C:206:LYS:HE2	1:C:212:TYR:OH	2.16	0.46
1:C:345:LYS:CE	1:C:348:ASP:OD1	2.63	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:164:GLY:HA3	2:D:171:CYS:SG	2.56	0.46
1:A:588:ALA:HB3	1:A:594:GLN:CB	2.46	0.46
2:B:380:LYS:O	2:B:383:ASN:HB2	2.15	0.46
2:D:75:ASN:N	2:D:75:ASN:OD1	2.48	0.46
2:D:400:GLY:HA3	2:D:647:TYR:CG	2.51	0.46
1:A:594:GLN:CG	1:A:619:ASP:OD2	2.61	0.46
1:A:610:THR:HA	1:A:636:ALA:O	2.16	0.46
2:B:462:ILE:HB	2:B:463:PRO:CD	2.46	0.46
1:C:548:TRP:HB3	1:C:682:PHE:HB3	1.98	0.46
1:C:552:ILE:HD11	1:C:631:ALA:CB	2.46	0.46
2:D:11:VAL:O	2:D:11:VAL:CG1	2.64	0.46
2:D:309:MET:HE2	2:D:313:MET:HG2	1.97	0.46
2:D:625:GLU:O	2:D:626:THR:OG1	2.26	0.46
1:A:227:ASN:N	1:A:227:ASN:ND2	2.64	0.45
1:A:587:THR:HG21	1:A:592:GLN:HE22	1.77	0.45
2:B:89:GLU:OE1	2:B:89:GLU:N	2.49	0.45
1:C:129:HIS:N	1:C:129:HIS:CD2	2.84	0.45
1:A:134:TYR:O	1:A:167:GLY:HA2	2.16	0.45
1:A:552:ILE:HD11	1:A:631:ALA:CB	2.47	0.45
1:C:618:PHE:O	1:C:619:ASP:CB	2.65	0.45
2:D:188:TYR:OH	2:D:206:LYS:HD3	2.16	0.45
2:D:498:CYS:HB3	2:D:512:GLU:OE1	2.16	0.45
1:A:548:TRP:CD1	1:A:548:TRP:N	2.84	0.45
2:B:95:TYR:OH	3:B:703:GOL:H12	2.17	0.45
1:C:281:ASP:O	1:C:291:GLY:HA3	2.16	0.45
2:D:79:PRO:HB3	2:D:250:THR:HG21	1.97	0.45
1:A:585:LYS:O	1:A:585:LYS:HG3	2.15	0.45
1:C:73:LEU:HD12	1:C:74:PRO:CD	2.46	0.45
1:C:436:GLU:O	1:C:485:SER:HB3	2.17	0.45
2:D:214:LEU:HB2	2:D:220:ARG:CG	2.46	0.45
2:D:217:LYS:HG3	2:D:220:ARG:NH1	2.31	0.45
2:D:315:LEU:HD22	2:D:319:TYR:CE2	2.52	0.45
2:D:381:ILE:O	2:D:590:ARG:HD3	2.17	0.45
1:A:246:VAL:HG13	1:A:284:ILE:HD11	1.99	0.45
1:A:552:ILE:HD12	1:A:677:SER:O	2.17	0.45
2:D:188:TYR:CZ	2:D:206:LYS:HD3	2.52	0.45
1:A:46:ARG:HB2	1:A:162:TYR:CE1	2.52	0.45
1:A:129:HIS:CG	1:A:183:LYS:HB2	2.52	0.45
1:A:133:GLN:HB3	2:D:31:PRO:HG3	1.98	0.45
1:A:594:GLN:HB3	1:A:618:PHE:CE2	2.52	0.45
2:B:555:ASN:HB2	2:B:558:ASP:OD1	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:349[A]:HIS:CE1	2:B:511:LYS:HE2	2.52	0.45
2:B:477:ASP:OD1	2:B:477:ASP:N	2.47	0.45
2:D:114:GLY:O	2:D:155:SER:HB3	2.17	0.45
2:D:354:LYS:HD3	2:D:630:LEU:HD12	1.98	0.45
1:A:186:TRP:CE2	1:A:257:LEU:HB3	2.51	0.45
1:A:244:LEU:HD12	1:A:244:LEU:N	2.31	0.45
2:B:228:LEU:HD23	2:B:228:LEU:HA	1.77	0.45
1:C:552:ILE:HD12	1:C:677:SER:O	2.17	0.45
2:D:90:ASP:N	2:D:91:PRO:HD3	2.32	0.45
2:D:308:ARG:HD2	2:D:308:ARG:O	2.17	0.45
1:A:206:LYS:NZ	6:B:801:HOH:O	2.47	0.44
2:D:29:VAL:HG12	2:D:30:ILE:HD13	1.99	0.44
2:D:335:PRO:HA	2:D:336:THR:HA	1.43	0.44
2:D:554:LEU:HD23	2:D:554:LEU:HA	1.79	0.44
2:B:188:TYR:OH	3:B:704:GOL:H2	2.18	0.44
2:B:524:LEU:HB2	2:B:531:ALA:HB2	1.99	0.44
1:C:613:THR:CG2	1:C:633:ILE:HB	2.47	0.44
6:C:834:HOH:O	2:D:353:LEU:CD1	2.65	0.44
1:A:155:ILE:HD12	2:B:360:VAL:HG21	2.00	0.44
1:A:617:GLY:HA2	1:A:631:ALA:O	2.16	0.44
1:C:327:LEU:HD12	1:C:327:LEU:C	2.38	0.44
2:D:555:ASN:HB2	2:D:558:ASP:OD1	2.17	0.44
1:A:606:GLY:HA2	1:A:641:GLY:HA2	2.00	0.44
1:A:615:GLU:HA	1:A:616:SER:HA	1.60	0.44
2:B:85:TYR:N	2:B:85:TYR:CD2	2.86	0.44
1:C:80:LEU:HD13	1:C:140:PHE:CG	2.53	0.44
1:C:619:ASP:O	1:C:627:ARG:O	2.35	0.44
2:D:218:ALA:HA	2:D:221:ASP:CG	2.38	0.44
2:D:340:LYS:HB3	2:D:341:PRO:HD2	1.99	0.44
2:D:396:VAL:HG22	2:D:651:LEU:HD21	1.98	0.44
1:A:565:LYS:HB2	1:A:566:GLU:CA	2.46	0.44
2:B:505:LEU:O	2:B:506:CYS:HB3	2.18	0.44
1:C:554:ASN:HB2	1:C:676:SER:HG	1.80	0.44
1:C:585:LYS:O	1:C:585:LYS:HG3	2.18	0.44
2:B:400:GLY:HA3	2:B:647:TYR:CG	2.53	0.43
1:C:481:GLU:O	1:C:493:GLY:HA3	2.18	0.43
1:C:531:THR:HB	1:C:644:GLY:O	2.18	0.43
2:D:289:HIS:CD2	2:D:289:HIS:N	2.86	0.43
1:A:383:ASP:O	1:A:527:GLN:HA	2.18	0.43
2:B:306:PRO:HA	2:B:307:PRO:HD3	1.88	0.43
1:C:617:GLY:HA2	1:C:631:ALA:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:289:HIS:CD2	2:D:289:HIS:H	2.36	0.43
1:A:535:GLU:OE2	1:A:645:PRO:HA	2.19	0.43
2:B:381:ILE:O	2:B:590:ARG:HD3	2.18	0.43
1:A:565:LYS:HD3	1:A:566:GLU:OE2	2.18	0.43
1:C:386:GLU:C	1:C:387:LEU:HD12	2.39	0.43
1:C:548:TRP:N	1:C:548:TRP:CD1	2.86	0.43
1:A:585:LYS:HA	1:A:596:PHE:O	2.18	0.43
1:A:481:GLU:O	1:A:493:GLY:HA3	2.19	0.43
1:C:288:ARG:HD3	3:C:701:GOL:C3	2.32	0.43
2:D:80:VAL:O	2:D:305:VAL:HB	2.19	0.43
2:B:625:GLU:HA	2:B:625:GLU:OE1	2.19	0.43
1:C:288:ARG:HH21	1:C:402:ASN:HB2	1.82	0.43
2:D:534:LYS:HD2	2:D:632:ARG:NH2	2.34	0.43
1:A:214:GLY:HA2	6:A:804:HOH:O	2.19	0.43
2:B:180:SER:OG	2:B:182:LEU:HB2	2.19	0.43
2:B:311:ALA:O	2:B:315:LEU:HD12	2.19	0.43
1:C:70:ALA:O	1:C:83:ARG:NH1	2.52	0.43
2:D:400:GLY:HA3	2:D:647:TYR:CD1	2.53	0.43
2:D:625:GLU:OE1	2:D:625:GLU:HA	2.19	0.43
1:A:73:LEU:HD12	1:A:74:PRO:HD2	2.00	0.42
2:B:107:PHE:HA	2:B:111:GLN:OE1	2.19	0.42
2:B:262:LEU:HD12	2:B:262:LEU:HA	1.71	0.42
2:B:546:ASN:HA	2:B:547:PRO:HD3	1.76	0.42
2:B:663:ARG:NH1	6:B:855:HOH:O	2.52	0.42
1:C:610:THR:HA	1:C:636:ALA:O	2.19	0.42
2:B:340:LYS:HB3	2:B:341:PRO:HD2	2.01	0.42
2:B:392:ASP:N	6:B:864:HOH:O	2.48	0.42
1:C:188:PHE:CE2	1:C:216:SER:HB3	2.54	0.42
1:C:214:GLY:HA2	6:C:807:HOH:O	2.19	0.42
1:C:253:LEU:HD12	1:C:253:LEU:C	2.39	0.42
1:C:591:ARG:HA	1:C:592:GLN:HA	1.70	0.42
2:D:490:LYS:HE3	2:D:503:LEU:O	2.19	0.42
2:B:520:ALA:O	2:B:523:CYS:HB3	2.20	0.42
1:C:436:GLU:HG3	1:C:437:PHE:N	2.34	0.42
1:A:309:VAL:HG12	1:A:310:SER:N	2.34	0.42
1:A:418:LYS:O	1:A:419:ASP:C	2.57	0.42
1:A:570:ARG:HD3	1:A:570:ARG:HA	1.65	0.42
1:C:535:GLU:OE2	1:C:645:PRO:HA	2.19	0.42
2:D:642:HIS:HB3	2:D:643:ASP:OD1	2.20	0.42
1:A:124:ASN:HD22	1:A:185:VAL:HG11	1.84	0.42
1:A:386:GLU:C	1:A:387:LEU:HD12	2.40	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:98:VAL:HB	2:B:225:LEU:HD22	2.01	0.42
2:B:554:LEU:HD22	2:B:559:TYR:OH	2.20	0.42
1:A:124:ASN:HD21	1:A:185:VAL:HB	1.84	0.42
2:B:462:ILE:N	2:B:463:PRO:HD2	2.35	0.42
2:B:642:HIS:HB3	2:B:643:ASP:OD1	2.20	0.42
2:B:646:THR:CG2	2:B:649:LYS:HD2	2.41	0.42
1:C:134:TYR:O	1:C:167:GLY:HA2	2.20	0.42
1:C:330:ARG:HA	1:C:340:VAL:O	2.20	0.42
2:D:80:VAL:CG1	2:D:260:GLU:HG2	2.49	0.42
2:D:107:PHE:HA	2:D:111:GLN:OE1	2.19	0.42
2:D:563:CYS:N	2:D:577:CYS:SG	2.93	0.42
1:A:50:ARG:HD2	1:A:58:GLU:O	2.20	0.41
2:B:489:LYS:HD2	2:B:489:LYS:HA	1.94	0.41
2:D:539:PRO:O	2:D:545:LYS:HD2	2.19	0.41
1:C:304:LYS:HD3	1:C:304:LYS:HA	1.71	0.41
1:C:526:LEU:HD22	1:C:653:TRP:CE3	2.55	0.41
1:A:591:ARG:HA	1:A:592:GLN:HA	1.78	0.41
2:B:546:ASN:C	2:B:546:ASN:OD1	2.58	0.41
1:C:573:PHE:CZ	1:C:682:PHE:CE1	3.08	0.41
1:A:206:LYS:NZ	6:A:833:HOH:O	2.53	0.41
2:B:539:PRO:O	2:B:545:LYS:HD2	2.20	0.41
1:C:244:LEU:HD23	1:C:253:LEU:HD13	2.01	0.41
2:B:309:MET:HG2	2:B:314:TYR:HB2	2.02	0.41
2:B:500:GLY:HA3	2:B:505:LEU:HA	2.02	0.41
1:C:329:PHE:CZ	1:C:342:GLY:HA3	2.55	0.41
1:C:400:PHE:O	1:C:401:SER:HB2	2.20	0.41
2:D:89:GLU:OE1	2:D:89:GLU:N	2.53	0.41
2:D:95:TYR:CE2	2:D:246:VAL:HG22	2.56	0.41
1:A:418:LYS:HD3	1:A:418:LYS:N	2.34	0.41
1:A:483:CYS:HA	1:A:484:CYS:HA	1.89	0.41
1:A:489:TYR:CE2	1:A:645:PRO:HD2	2.55	0.41
2:B:146:LEU:HD12	2:B:146:LEU:HA	1.89	0.41
2:B:214:LEU:HA	2:B:214:LEU:HD23	1.82	0.41
1:C:184:GLY:HA3	1:C:343:SER:O	2.21	0.41
1:C:288:ARG:NH2	1:C:402:ASN:HB2	2.36	0.41
1:C:383:ASP:O	1:C:527:GLN:HA	2.21	0.41
1:C:615:GLU:HA	1:C:616:SER:HA	1.59	0.41
2:B:392:ASP:O	2:B:395:PHE:N	2.54	0.41
2:B:494:LEU:HD23	2:B:494:LEU:HA	1.90	0.41
1:A:400:PHE:O	1:A:401:SER:HB2	2.20	0.41
1:C:223:TYR:OH	2:D:549:PRO:HD2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:85:TYR:CD2	2:D:85:TYR:N	2.88	0.41
1:A:270:ASN:C	1:A:272:LYS:H	2.24	0.41
1:A:582:ILE:O	1:A:582:ILE:HG23	2.20	0.41
2:D:473:HIS:HE1	2:D:475:ARG:O	2.03	0.41
2:D:524:LEU:HB2	2:D:531:ALA:HB2	2.02	0.41
1:A:171:SER:OG	1:A:324:GLY:HA2	2.21	0.41
1:A:556:THR:HG22	1:A:620:LEU:CG	2.38	0.41
1:A:619:ASP:OD1	1:A:621:ASP:CB	2.69	0.41
2:D:119:HIS:CD2	2:D:119:HIS:N	2.89	0.41
2:D:494:LEU:HD23	2:D:494:LEU:HA	1.83	0.41
1:A:49:ARG:HG2	1:A:157:SER:O	2.21	0.40
1:A:147:GLU:O	1:A:155:ILE:HA	2.21	0.40
1:A:150:PHE:HE2	1:A:155:ILE:HD13	1.86	0.40
1:A:304:LYS:HD3	1:A:304:LYS:HA	1.74	0.40
2:B:228:LEU:HB2	3:B:706:GOL:H2	2.02	0.40
2:B:638:LEU:HD23	2:B:638:LEU:HA	1.90	0.40
2:D:113:ARG:NH2	2:D:138:ASP:O	2.54	0.40
2:D:125:SER:N	3:D:703:GOL:H2	2.36	0.40
2:D:349[A]:HIS:ND1	6:D:849:HOH:O	2.54	0.40
2:D:601:LEU:HD23	2:D:601:LEU:HA	1.61	0.40
2:B:90:ASP:N	2:B:91:PRO:HD3	2.36	0.40
2:B:185:TYR:HE1	2:B:193:LYS:HG2	1.86	0.40
1:C:163:ILE:HD12	1:C:341:VAL:HG22	2.02	0.40
1:C:270:ASN:OD1	1:C:271:ASP:N	2.45	0.40
1:C:408:VAL:O	1:C:411:ILE:HG13	2.20	0.40
2:D:210[A]:ILE:HD13	2:D:235:VAL:HG21	2.02	0.40
2:D:392:ASP:O	2:D:395:PHE:N	2.53	0.40
1:A:206:LYS:HE2	1:A:212:TYR:OH	2.20	0.40
2:B:192:PHE:CE1	2:B:210:ILE:HD12	2.56	0.40
2:B:400:GLY:HA3	2:B:647:TYR:CD1	2.57	0.40
2:D:210[A]:ILE:HD13	2:D:235:VAL:CG1	2.43	0.40
2:D:311:ALA:O	2:D:315:LEU:HD12	2.21	0.40
1:A:50:ARG:NH2	1:A:210:ASP:OD1	2.39	0.40
2:B:267:LEU:HD23	2:B:267:LEU:HA	1.76	0.40
2:B:349[B]:HIS:NE2	2:B:353:LEU:CD1	2.84	0.40
2:B:381:ILE:HD13	2:B:388:ALA:HA	2.03	0.40
1:C:147:GLU:O	1:C:155:ILE:HA	2.21	0.40
2:D:443:ASN:O	2:D:443:ASN:CG	2.60	0.40
1:A:80:LEU:HD13	1:A:140:PHE:CG	2.57	0.40
1:A:475:THR:O	1:A:476:LYS:CG	2.69	0.40
1:C:150:PHE:HE2	1:C:155:ILE:HD13	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:309:MET:HG2	2:D:314:TYR:HB2	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	522/658 (79%)	501 (96%)	20 (4%)	1 (0%)	44 67
1	C	518/658 (79%)	497 (96%)	21 (4%)	0	100 100
2	B	673/679 (99%)	639 (95%)	34 (5%)	0	100 100
2	D	678/679 (100%)	650 (96%)	28 (4%)	0	100 100
All	All	2391/2674 (89%)	2287 (96%)	103 (4%)	1 (0%)	100 100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	565	LYS

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	455/533 (85%)	417 (92%)	38 (8%)	9 24

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	C	452/533 (85%)	411 (91%)	41 (9%)	7 20
2	B	571/572 (100%)	536 (94%)	35 (6%)	15 36
2	D	573/572 (100%)	538 (94%)	35 (6%)	15 36
All	All	2051/2210 (93%)	1902 (93%)	149 (7%)	11 29

All (149) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	66	SER
1	A	94	ASP
1	A	97	SER
1	A	123	LYS
1	A	124	ASN
1	A	148	LYS
1	A	155	ILE
1	A	166	HIS
1	A	172	ARG
1	A	220	SER
1	A	222	GLU
1	A	227	ASN
1	A	253	LEU
1	A	264	LEU
1	A	267	ASN
1	A	303	THR
1	A	316	SER
1	A	337	LYS
1	A	338	VAL
1	A	345	LYS
1	A	391	ASP
1	A	401	SER
1	A	444	THR
1	A	531	THR
1	A	552	ILE
1	A	556	THR
1	A	557	SER
1	A	566	GLU
1	A	570	ARG
1	A	574	THR
1	A	579	ASP
1	A	592	GLN
1	A	596	PHE

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Mol	Chain	Res	Type
1	A	597	THR
1	A	619	ASP
1	A	635	ASP
1	A	660	LYS
1	A	676	SER
2	B	17	THR
2	B	33	ASP
2	B	40	VAL
2	B	46	LEU
2	B	71	TYR
2	B	102	LYS
2	B	124	ARG
2	B	125	SER
2	B	141	GLU
2	B	216	ASN
2	B	235	VAL
2	B	246	VAL
2	B	249	HIS
2	B	251	VAL
2	B	260	GLU
2	B	261	ASP
2	B	309	MET
2	B	330	THR
2	B	347	LEU
2	B	353	LEU
2	B	370	SER
2	B	377	CYS
2	B	396	VAL
2	B	413	ASP
2	B	438	ASP
2	B	439	LEU
2	B	440	THR
2	B	475	ARG
2	B	505	LEU
2	B	572	GLU
2	B	589	THR
2	B	591	LYS
2	B	625	GLU
2	B	643	ASP
2	B	646	THR
1	C	66	SER
1	C	94	ASP

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Mol	Chain	Res	Type
1	C	97	SER
1	C	120	ASN
1	C	123	LYS
1	C	124	ASN
1	C	148	LYS
1	C	155	ILE
1	C	166	HIS
1	C	172	ARG
1	C	220	SER
1	C	222	GLU
1	C	227	ASN
1	C	253	LEU
1	C	264	LEU
1	C	267	ASN
1	C	302	GLU
1	C	303	THR
1	C	316	SER
1	C	337	LYS
1	C	338	VAL
1	C	345	LYS
1	C	375	ASN
1	C	391	ASP
1	C	419	ASP
1	C	444	THR
1	C	531	THR
1	C	552	ILE
1	C	556	THR
1	C	557	SER
1	C	566	GLU
1	C	570	ARG
1	C	574	THR
1	C	579	ASP
1	C	592	GLN
1	C	596	PHE
1	C	597	THR
1	C	619	ASP
1	C	627	ARG
1	C	635	ASP
1	C	676	SER
2	D	17	THR
2	D	33	ASP
2	D	40	VAL

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Mol	Chain	Res	Type
2	D	46	LEU
2	D	71	TYR
2	D	75	ASN
2	D	102	LYS
2	D	124	ARG
2	D	125	SER
2	D	141	GLU
2	D	219	ASP
2	D	246	VAL
2	D	249	HIS
2	D	251	VAL
2	D	260	GLU
2	D	309	MET
2	D	330	THR
2	D	336	THR
2	D	347	LEU
2	D	353	LEU
2	D	370	SER
2	D	377	CYS
2	D	396	VAL
2	D	413	ASP
2	D	438	ASP
2	D	439	LEU
2	D	440	THR
2	D	475	ARG
2	D	505	LEU
2	D	572	GLU
2	D	589	THR
2	D	591	LYS
2	D	625	GLU
2	D	643	ASP
2	D	646	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	124	ASN
1	A	227	ASN
1	A	265	ASN
1	A	592	GLN
2	B	75	ASN
2	B	289	HIS

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Mol	Chain	Res	Type
1	C	124	ASN
1	C	227	ASN
1	C	592	GLN
2	D	289	HIS

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 oligosaccharides in this entry.

5.6 Ligand geometry

Of 17 ligands modelled in this entry, 2 are monoatomic - leaving 15 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
3	GOL	C	701	-	5,5,5	0.42	0	5,5,5	0.48	0
3	GOL	B	707	-	5,5,5	0.43	0	5,5,5	0.84	0
3	GOL	D	704	-	5,5,5	0.37	0	5,5,5	0.45	0
3	GOL	D	703	-	5,5,5	0.43	0	5,5,5	0.58	0
3	GOL	B	704	-	5,5,5	0.56	0	5,5,5	0.74	0
3	GOL	D	706	-	5,5,5	0.47	0	5,5,5	0.73	0
4	CO3	D	701	5	3,3,3	0.98	0	2,3,3	0.47	0
3	GOL	D	705	-	5,5,5	0.26	0	5,5,5	0.80	0
3	GOL	B	708	-	5,5,5	0.35	0	5,5,5	0.53	0
4	CO3	B	701	5	3,3,3	0.82	0	2,3,3	0.55	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
3	GOL	B	705	-	5,5,5	0.30	0	5,5,5	0.72	0
3	GOL	A	702	-	5,5,5	0.36	0	5,5,5	0.63	0
3	GOL	A	701	-	5,5,5	0.39	0	5,5,5	0.25	0
3	GOL	B	706	-	5,5,5	0.54	0	5,5,5	0.71	0
3	GOL	B	703	-	5,5,5	0.40	0	5,5,5	0.39	0

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
3	GOL	C	701	-	-	4/4/4/4	-
3	GOL	B	707	-	-	2/4/4/4	-
3	GOL	D	704	-	-	0/4/4/4	-
3	GOL	D	703	-	-	2/4/4/4	-
3	GOL	B	704	-	-	2/4/4/4	-
3	GOL	D	706	-	-	4/4/4/4	-
3	GOL	D	705	-	-	4/4/4/4	-
3	GOL	B	708	-	-	4/4/4/4	-
3	GOL	B	705	-	-	4/4/4/4	-
3	GOL	A	702	-	-	4/4/4/4	-
3	GOL	A	701	-	-	2/4/4/4	-
3	GOL	B	706	-	-	2/4/4/4	-
3	GOL	B	703	-	-	2/4/4/4	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (36) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	701	GOL	O1-C1-C2-C3
3	A	702	GOL	O1-C1-C2-O2
3	A	702	GOL	O1-C1-C2-C3
3	B	703	GOL	O1-C1-C2-C3
3	B	705	GOL	C1-C2-C3-O3
3	B	708	GOL	O1-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
3	B	708	GOL	C1-C2-C3-O3
3	B	708	GOL	O2-C2-C3-O3
3	C	701	GOL	O1-C1-C2-C3
3	C	701	GOL	C1-C2-C3-O3
3	D	705	GOL	O1-C1-C2-O2
3	D	705	GOL	O1-C1-C2-C3
3	D	705	GOL	C1-C2-C3-O3
3	D	706	GOL	O1-C1-C2-O2
3	D	706	GOL	O1-C1-C2-C3
3	B	708	GOL	O1-C1-C2-O2
3	A	702	GOL	C1-C2-C3-O3
3	B	704	GOL	O1-C1-C2-C3
3	B	705	GOL	O1-C1-C2-C3
3	B	706	GOL	O1-C1-C2-C3
3	B	707	GOL	O1-C1-C2-C3
3	D	703	GOL	O1-C1-C2-C3
3	D	706	GOL	C1-C2-C3-O3
3	A	701	GOL	O1-C1-C2-O2
3	A	702	GOL	O2-C2-C3-O3
3	B	703	GOL	O1-C1-C2-O2
3	B	704	GOL	O1-C1-C2-O2
3	B	706	GOL	O1-C1-C2-O2
3	C	701	GOL	O1-C1-C2-O2
3	C	701	GOL	O2-C2-C3-O3
3	D	703	GOL	O1-C1-C2-O2
3	D	706	GOL	O2-C2-C3-O3
3	B	705	GOL	O1-C1-C2-O2
3	B	705	GOL	O2-C2-C3-O3
3	B	707	GOL	O1-C1-C2-O2
3	D	705	GOL	O2-C2-C3-O3

There are no ring outliers.

8 monomers are involved in 18 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	701	GOL	3	0
3	B	707	GOL	1	0
3	D	703	GOL	4	0
3	B	704	GOL	5	0
3	D	705	GOL	1	0
3	A	702	GOL	2	0
3	B	706	GOL	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	703	GOL	1	0

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	537/658 (81%)	0.14	26 (4%)	36	33	34, 66, 136, 216	14 (2%)
1	C	536/658 (81%)	0.03	21 (3%)	44	41	37, 65, 143, 191	6 (1%)
2	B	675/679 (99%)	0.11	15 (2%)	62	60	28, 59, 105, 205	9 (1%)
2	D	677/679 (99%)	0.04	5 (0%)	84	82	21, 58, 101, 179	12 (1%)
All	All	2425/2674 (90%)	0.08	67 (2%)	55	52	21, 62, 124, 216	41 (1%)

All (67) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	349[A]	HIS	7.0
1	A	268	THR	6.4
1	A	267	ASN	5.6
1	A	350	LEU	4.2
2	B	221	ASP	4.0
1	A	266	ASN	3.9
1	A	298	LYS	3.7
2	D	221	ASP	3.6
1	C	447	SER	3.5
1	C	264	LEU	3.5
1	A	270	ASN	3.5
2	D	349[A]	HIS	3.3
1	A	110	HIS	3.3
1	C	658	GLY	3.0
1	A	264	LEU	3.0
1	A	635	ASP	2.9
1	A	660	LYS	2.9
1	C	554	ASN	2.9
1	C	691	GLN	2.8
1	C	629	PRO	2.8
1	C	619	ASP	2.8

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Mol	Chain	Res	Type	RSRZ
2	D	289	HIS	2.8
1	A	269	ASN	2.7
1	A	689	PRO	2.7
1	C	635	ASP	2.7
1	A	303	THR	2.7
1	C	628	THR	2.7
1	C	687	GLN	2.6
2	D	496	LYS	2.6
1	A	271	ASP	2.5
2	B	615	CYS	2.5
2	B	417[A]	ASN	2.5
1	A	119	VAL	2.5
2	D	332	PRO	2.5
1	A	618	PHE	2.5
2	B	86	GLY	2.4
1	A	596	PHE	2.4
1	A	675	ALA	2.4
2	B	192	PHE	2.4
1	C	120	ASN	2.4
2	B	211	PHE	2.4
1	A	301	ASN	2.3
1	A	39	GLY	2.3
1	C	108	SER	2.3
1	A	38	GLN	2.2
2	B	178	GLY	2.2
2	B	551	ALA	2.2
2	B	439	LEU	2.2
1	C	616	SER	2.2
2	B	539	PRO	2.2
1	C	556	THR	2.2
2	B	333	GLU	2.2
1	A	297	ASP	2.2
1	C	551	HIS	2.1
2	B	222	GLN	2.1
1	C	266	ASN	2.1
1	C	350	LEU	2.1
2	B	220	ARG	2.1
1	A	108	SER	2.1
1	A	633	ILE	2.1
1	C	305	LEU	2.0
2	B	189	SER	2.0
1	A	201	ILE	2.0

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Mol	Chain	Res	Type	RSRZ
1	C	109	ASN	2.0
1	A	627	ARG	2.0
1	C	119	VAL	2.0
1	C	552	ILE	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
3	GOL	B	705	6/6	0.70	0.21	76,76,76,76	0
3	GOL	A	702	6/6	0.84	0.15	38,38,38,38	6
3	GOL	D	705	6/6	0.84	0.19	43,43,43,43	6
3	GOL	B	706	6/6	0.86	0.14	53,53,53,53	0
3	GOL	B	708	6/6	0.86	0.21	127,127,127,127	0
3	GOL	A	701	6/6	0.86	0.14	50,50,50,50	6
3	GOL	D	706	6/6	0.86	0.15	44,44,44,44	6
3	GOL	B	703	6/6	0.89	0.15	48,48,48,48	6
3	GOL	B	707	6/6	0.90	0.14	57,57,57,57	0
3	GOL	B	704	6/6	0.90	0.11	52,52,52,52	0
3	GOL	D	703	6/6	0.91	0.11	51,51,51,51	0
3	GOL	C	701	6/6	0.94	0.14	60,60,60,60	0
3	GOL	D	704	6/6	0.95	0.10	65,65,65,65	0
4	CO3	D	701	4/4	0.97	0.07	48,48,48,48	0
4	CO3	B	701	4/4	0.99	0.05	36,36,36,36	0
5	FE	B	702	1/1	0.99	0.02	43,43,43,43	0
5	FE	D	702	1/1	1.00	0.01	44,44,44,44	0

6.5 Other polymers (i)

There are no such residues in this entry.