



Full wwPDB X-ray Structure Validation Report ⓘ

Apr 25, 2026 – 09:49 PM EDT

PDB ID : 5X6E / pdb_00005x6e
Title : Crystal structure of PrfA-DNA binary complex
Authors : Wang, Y.; Feng, H.; Zhu, Y.L.; Gao, P.
Deposited on : 2017-02-21
Resolution : 2.99 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

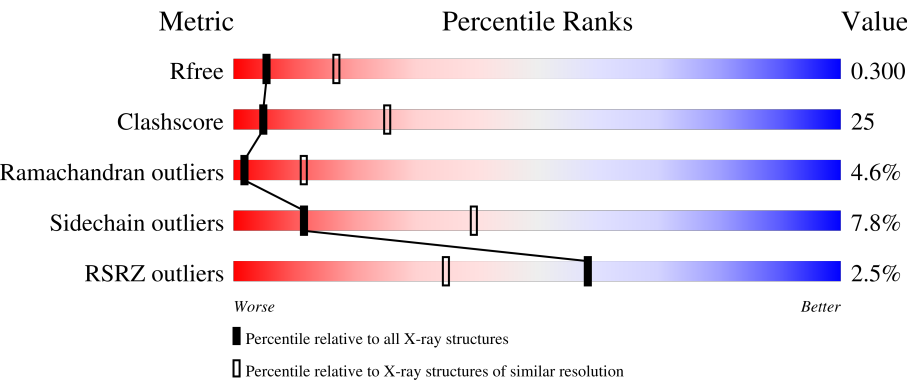
MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance i

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

The reported resolution of this entry is 2.99 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R _{free}	180053	2672 (3.00-3.00)
Clashscore	190562	2977 (3.00-3.00)
Ramachandran outliers	187476	2877 (3.00-3.00)
Sidechain outliers	187428	2880 (3.00-3.00)
RSRZ outliers	180081	2671 (3.00-3.00)

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 $\leq 5\%$. 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	237	3% 50% 38% 9% .
1	B	237	2% 51% 38% 9% .
1	E	237	2% 57% 34% 7% .
1	F	237	3% 54% 35% 5% 5%
1	M	237	3% 57% 34% 6% .

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Mol	Chain	Length	Quality of chain
1	N	237	5% 57% 29% 12%
2	C	29	62% 38%
2	G	29	79% 17%
2	O	29	62% 38%
3	D	29	62% 38%
3	H	29	52% 48%
3	P	29	62% 34%

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 15154 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 Listeriolysin positive regulatory factor A.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	M	236	Total	C	N	O	S	0	0	0
			1920	1253	301	359	7			
1	N	236	Total	C	N	O	S	0	0	0
			1920	1253	301	359	7			
1	A	236	Total	C	N	O	S	0	0	0
			1920	1253	301	359	7			
1	B	236	Total	C	N	O	S	0	0	0
			1920	1253	301	359	7			
1	E	236	Total	C	N	O	S	0	0	0
			1920	1253	301	359	7			
1	F	236	Total	C	N	O	S	0	0	0
			1920	1253	301	359	7			

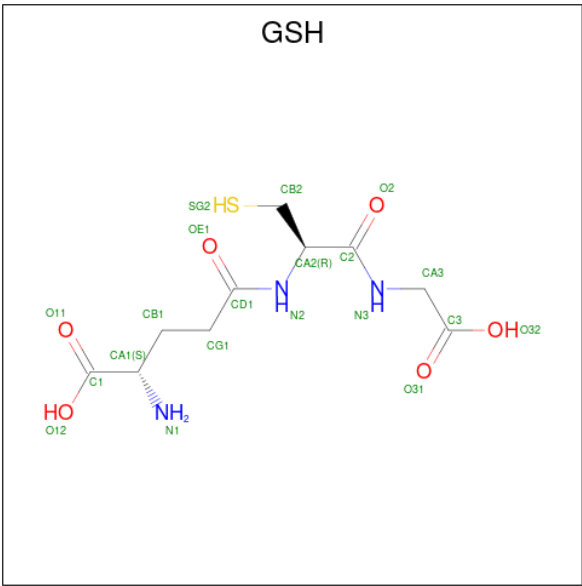
- Molecule 2 is a DNA chain called DNA (29-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	O	29	Total	C	N	O	P	0	0	0
			587	283	104	172	28			
2	C	29	Total	C	N	O	P	0	0	0
			587	283	104	172	28			
2	G	28	Total	C	N	O	P	0	0	0
			571	274	101	168	28			

- Molecule 3 is a DNA chain called DNA (28-MER).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	P	28	Total	C	N	O	P	0	0	0
			577	276	105	168	28			
3	D	29	Total	C	N	O	P	0	0	0
			596	286	110	172	28			
3	H	29	Total	C	N	O	P	0	0	0
			596	286	110	172	28			

- Molecule 4 is GLUTATHIONE (CCD ID: GSH) (formula: C₁₀H₁₇N₃O₆S).

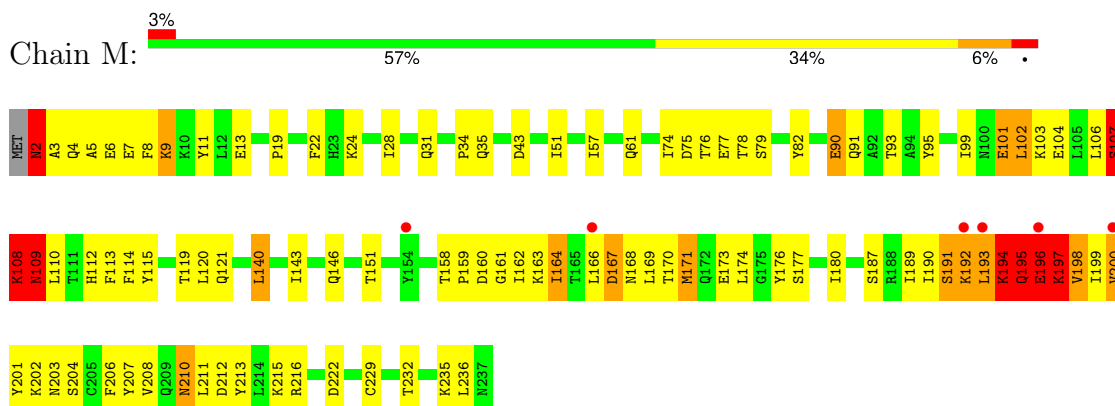


Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	M	1	Total	C	N	O	S	0	0
			20	10	3	6	1		
4	N	1	Total	C	N	O	S	0	0
			20	10	3	6	1		
4	A	1	Total	C	N	O	S	0	0
			20	10	3	6	1		
4	B	1	Total	C	N	O	S	0	0
			20	10	3	6	1		
4	E	1	Total	C	N	O	S	0	0
			20	10	3	6	1		
4	F	1	Total	C	N	O	S	0	0
			20	10	3	6	1		

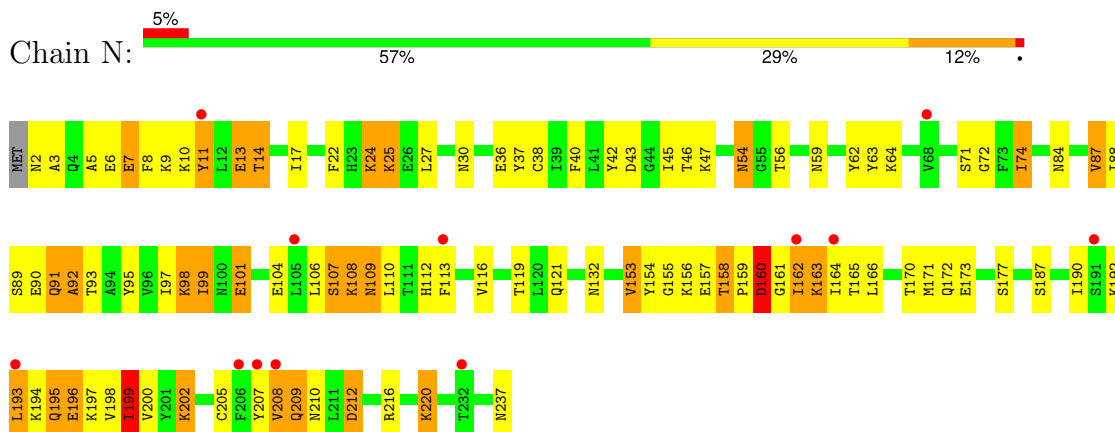
3 Residue-property plots [i](#)

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.

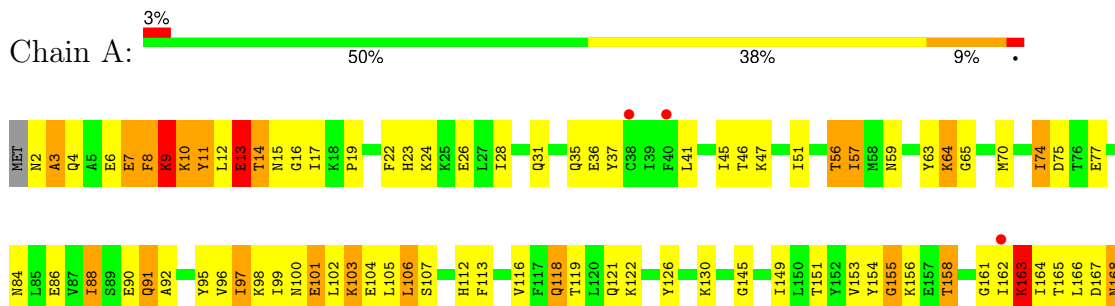
- Molecule 1: Listeriolysin positive regulatory factor A



- Molecule 1: Listeriolysin positive regulatory factor A

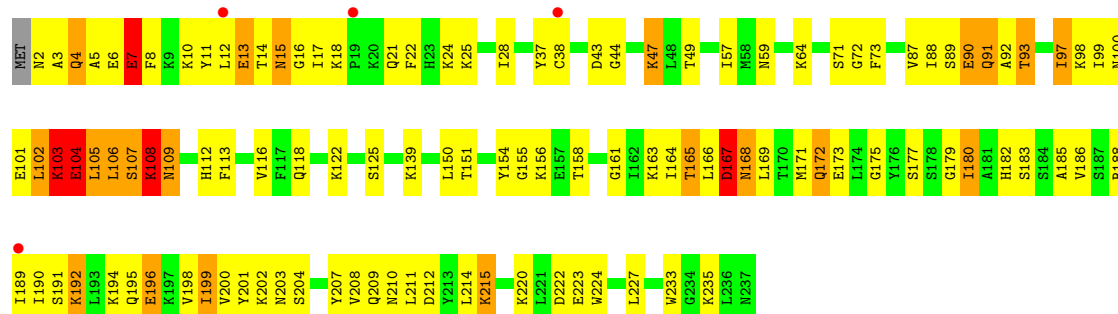


- Molecule 1: Listeriolysin positive regulatory factor A

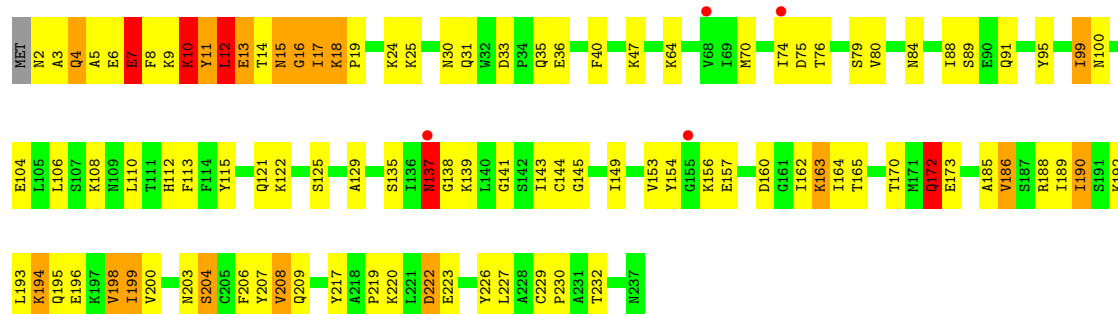




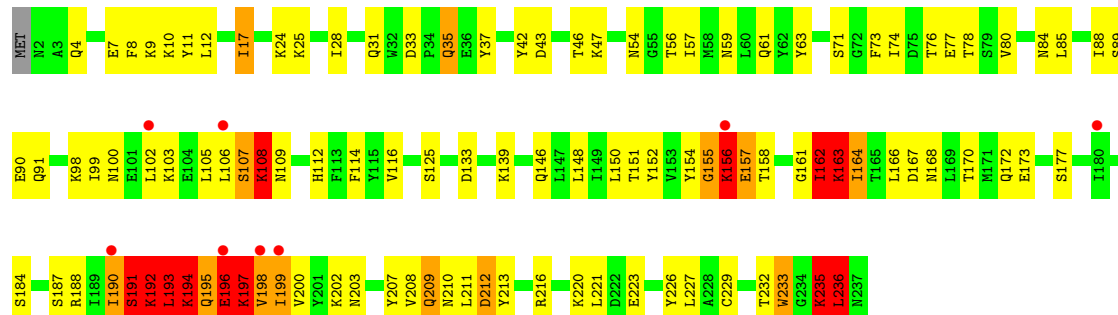
- Molecule 1: Listeriolysin positive regulatory factor A



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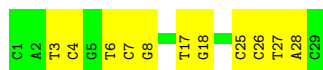


- Molecule 2: DNA (29-MER)

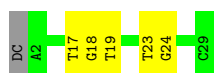
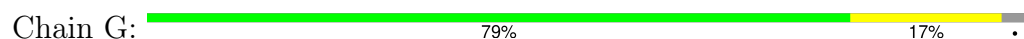




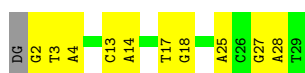
- Molecule 2: DNA (29-MER)



- Molecule 2: DNA (29-MER)



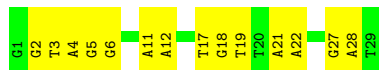
- Molecule 3: DNA (28-MER)



- Molecule 3: DNA (28-MER)



- Molecule 3: DNA (28-MER)



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	65.02Å 96.59Å 370.53Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	93.47 – 2.99 93.47 – 2.99	Depositor EDS
% Data completeness (in resolution range)	96.0 (93.47-2.99) 96.6 (93.47-2.99)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.49 (at 3.01Å)	Xtriage
Refinement program	PHENIX 1.8.4_1496	Depositor
R, R_{free}	0.249 , 0.300 0.254 , 0.300	Depositor DCC
R_{free} test set	2358 reflections (4.86%)	wwPDB-VP
Wilson B-factor (Å ²)	92.7	Xtriage
Anisotropy	0.711	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 75.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	15154	wwPDB-VP
Average B, all atoms (Å ²)	114.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.64% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z > 5$	RMSZ	# $ Z > 5$
1	A	0.46	0/1964	1.00	10/2652 (0.4%)
1	B	0.45	0/1964	1.02	6/2652 (0.2%)
1	E	0.48	0/1964	0.96	7/2652 (0.3%)
1	F	0.56	0/1964	1.21	24/2652 (0.9%)
1	M	0.51	0/1964	0.99	11/2652 (0.4%)
1	N	0.48	1/1964 (0.1%)	1.02	8/2652 (0.3%)
2	C	0.27	0/657	0.46	0/1011
2	G	0.25	0/639	0.42	0/983
2	O	0.27	0/657	0.46	0/1011
3	D	0.28	0/669	0.43	0/1032
3	H	0.27	0/669	0.46	0/1032
3	P	0.27	0/647	0.44	0/997
All	All	0.45	1/15722 (0.0%)	0.91	66/21978 (0.3%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	6
1	B	0	8
1	E	0	4
1	F	0	10
1	M	0	7
1	N	0	4
All	All	0	39

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	N	199	ILE	CA-CB	5.38	1.61	1.54

All (66) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	194	LYS	N-CA-C	14.32	131.76	108.41
1	F	198	VAL	N-CA-C	13.90	124.54	111.48
1	M	195	GLN	N-CA-C	13.22	138.96	110.80
1	A	11	TYR	N-CA-C	-11.23	99.57	113.38
1	N	195	GLN	N-CA-C	-10.70	100.22	113.38
1	E	198	VAL	N-CA-C	9.98	119.80	110.42
1	B	7	GLU	N-CA-C	-9.29	101.24	111.36
1	E	195	GLN	N-CA-C	-9.26	100.56	112.23
1	M	192	LYS	N-CA-C	-8.92	102.41	113.20
1	F	193	LEU	CA-C-N	-8.89	110.46	123.00
1	F	193	LEU	C-N-CA	-8.89	110.46	123.00
1	F	194	LYS	CB-CG-CD	-8.88	90.87	111.30
1	A	163	LYS	N-CA-C	8.25	128.37	110.80
1	F	155	GLY	N-CA-C	8.15	132.49	113.18
1	A	7	GLU	N-CA-C	-8.14	102.59	114.39
1	F	198	VAL	CB-CA-C	-8.10	104.83	111.71
1	N	14	THR	N-CA-C	-7.79	98.95	110.48
1	A	208	VAL	N-CA-C	7.65	119.34	108.17
1	F	195	GLN	N-CA-C	-7.59	103.82	113.23
1	B	104	GLU	N-CA-C	7.55	126.89	110.80
1	F	162	ILE	N-CA-C	7.40	119.28	109.21
1	B	196	GLU	N-CA-C	-7.34	101.52	111.87
1	F	156	LYS	N-CA-C	7.30	126.35	110.80
1	M	198	VAL	N-CA-C	7.19	124.29	109.34
1	F	108	LYS	N-CA-C	6.99	125.70	110.80
1	E	172	GLN	N-CA-C	-6.93	102.94	111.40
1	M	195	GLN	CB-CA-C	-6.76	96.96	110.42
1	E	7	GLU	N-CA-C	-6.58	104.03	111.07
1	F	199	ILE	N-CA-C	6.58	118.06	108.58
1	E	11	TYR	N-CA-C	-6.52	104.09	111.07
1	F	196	GLU	CB-CA-C	-6.37	97.75	110.42
1	F	196	GLU	N-CA-C	6.36	124.35	110.80
1	F	196	GLU	CA-CB-CG	6.22	126.53	114.10
1	F	163	LYS	CA-C-N	-6.13	114.71	122.37
1	F	163	LYS	C-N-CA	-6.13	114.71	122.37
1	M	2	ASN	CA-C-N	6.10	132.69	121.70
1	M	2	ASN	C-N-CA	6.10	132.69	121.70
1	F	166	LEU	N-CA-C	6.03	118.12	108.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	N	196	GLU	N-CA-C	-6.00	105.93	113.20
1	N	11	TYR	N-CA-C	-5.99	105.47	112.89
1	A	158	THR	CA-C-N	-5.97	114.74	120.83
1	A	158	THR	C-N-CA	-5.97	114.74	120.83
1	A	201	TYR	CA-CB-CG	5.87	124.47	113.90
1	M	197	LYS	N-CA-C	5.86	123.28	110.80
1	F	194	LYS	CA-C-O	5.79	126.50	120.30
1	F	191	SER	CA-C-N	-5.72	114.14	122.44
1	F	191	SER	C-N-CA	-5.72	114.14	122.44
1	N	155	GLY	N-CA-C	5.68	120.32	112.37
1	F	164	ILE	N-CA-CB	5.48	117.24	111.00
1	M	194	LYS	N-CA-C	5.46	119.15	108.18
1	F	194	LYS	CB-CA-C	-5.41	101.18	110.16
1	A	163	LYS	CB-CA-C	-5.34	99.79	110.42
1	A	155	GLY	N-CA-C	5.31	125.75	113.18
1	B	104	GLU	CB-CA-C	-5.29	99.89	110.42
1	M	195	GLN	CA-C-N	5.22	131.50	121.54
1	M	195	GLN	C-N-CA	5.22	131.50	121.54
1	M	195	GLN	CA-C-O	5.20	127.94	120.51
1	B	192	LYS	N-CA-C	-5.20	102.85	111.37
1	N	7	GLU	N-CA-C	-5.17	106.81	113.23
1	E	10	LYS	CB-CG-CD	-5.17	99.40	111.30
1	E	10	LYS	N-CA-C	5.17	121.81	110.80
1	B	106	LEU	N-CA-C	-5.16	107.64	114.04
1	N	99	ILE	N-CA-C	5.15	116.61	111.00
1	A	8	PHE	N-CA-C	-5.11	106.90	113.23
1	F	193	LEU	N-CA-C	-5.06	100.02	110.80
1	N	30	ASN	N-CA-C	5.05	115.99	108.86

There are no chirality outliers.

All (39) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	10	LYS	Peptide
1	A	101	GLU	Peptide
1	A	163	LYS	Peptide
1	A	201	TYR	Peptide
1	A	9	LYS	Peptide
1	A	90	GLU	Peptide
1	B	102	LEU	Peptide
1	B	103	LYS	Peptide
1	B	107	SER	Peptide

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Mol	Chain	Res	Type	Group
1	B	108	LYS	Peptide
1	B	13	GLU	Peptide
1	B	168	ASN	Peptide
1	B	195	GLN	Peptide
1	B	90	GLU	Peptide
1	E	10	LYS	Peptide
1	E	13	GLU	Peptide
1	E	194	LYS	Peptide
1	E	196	GLU	Peptide
1	F	107	SER	Peptide
1	F	108	LYS	Peptide
1	F	154	TYR	Peptide
1	F	155	GLY	Peptide
1	F	156	LYS	Peptide
1	F	191	SER	Peptide
1	F	192	LYS	Peptide
1	F	194	LYS	Peptide
1	F	235	LYS	Peptide
1	F	236	LEU	Peptide
1	M	107	SER	Peptide
1	M	108	LYS	Peptide
1	M	191	SER	Peptide
1	M	193	LEU	Peptide
1	M	194	LYS	Peptide
1	M	195	GLN	Peptide
1	M	197	LYS	Peptide
1	N	107	SER	Peptide
1	N	13	GLU	Peptide
1	N	160	ASP	Peptide
1	N	209	GLN	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	1920	0	1920	112	0
1	B	1920	0	1920	124	0
1	E	1920	0	1920	99	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	F	1920	0	1920	136	0
1	M	1920	0	1920	93	0
1	N	1920	0	1920	109	0
2	C	587	0	330	8	0
2	G	571	0	318	6	0
2	O	587	0	330	10	0
3	D	596	0	330	7	0
3	H	596	0	330	11	0
3	P	577	0	318	9	0
4	A	20	0	15	2	0
4	B	20	0	15	0	0
4	E	20	0	15	1	0
4	F	20	0	15	1	0
4	M	20	0	15	0	0
4	N	20	0	15	1	0
All	All	15154	0	13566	699	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 25.

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:108:LYS:HG2	1:B:109:ASN:HB3	1.43	1.00
1:M:194:LYS:HG3	1:M:195:GLN:HB2	1.41	0.98
1:F:151:THR:HA	1:F:156:LYS:HE2	1.47	0.95
1:F:162:ILE:HG12	1:F:208:VAL:HB	1.57	0.87
1:F:198:VAL:O	1:F:209:GLN:N	2.06	0.87
1:B:91:GLN:HG3	1:B:92:ALA:H	1.39	0.86
1:N:162:ILE:HG12	1:N:208:VAL:HB	1.57	0.86
1:F:156:LYS:HD3	1:F:162:ILE:HD13	1.58	0.85
1:A:9:LYS:HE2	1:A:10:LYS:H	1.40	0.85
1:N:196:GLU:HB2	1:N:198:VAL:HG23	1.58	0.85
1:M:194:LYS:HA	1:M:195:GLN:HG2	1.59	0.84
1:A:75:ASP:HA	1:A:103:LYS:HE3	1.59	0.84
1:B:21:GLN:NE2	1:B:22:PHE:O	2.11	0.83
1:F:233:TRP:HB2	1:F:235:LYS:HD3	1.59	0.83
1:F:43:ASP:OD1	1:F:91:GLN:NE2	2.11	0.83
1:F:194:LYS:HZ2	1:F:199:ILE:H	1.26	0.83
1:E:17:ILE:HG22	1:E:18:LYS:H	1.45	0.82
1:M:108:LYS:HG3	1:M:109:ASN:N	1.94	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:7:GLU:HG2	1:N:112:HIS:HE2	1.43	0.81
1:N:54:ASN:HD22	1:N:56:THR:H	1.26	0.81
1:N:194:LYS:HE2	1:N:199:ILE:HG23	1.64	0.80
1:E:162:ILE:HB	1:E:208:VAL:HG22	1.62	0.80
1:B:47:LYS:NZ	1:B:173:GLU:OE2	2.14	0.79
1:M:108:LYS:HZ1	1:M:112:HIS:HB2	1.48	0.79
1:F:196:GLU:O	1:F:198:VAL:N	2.16	0.79
1:M:166:LEU:HD23	1:M:169:LEU:HD13	1.65	0.78
1:A:10:LYS:HB2	1:A:13:GLU:HB3	1.65	0.78
1:E:10:LYS:HB2	1:E:13:GLU:H	1.49	0.78
1:A:12:LEU:O	1:A:14:THR:N	2.17	0.77
1:A:6:GLU:C	1:A:9:LYS:HG2	2.09	0.77
1:F:200:VAL:HG13	1:F:209:GLN:HE22	1.48	0.77
1:N:163:LYS:HG3	1:N:164:ILE:N	2.00	0.77
1:E:10:LYS:HD3	1:E:13:GLU:HB2	1.65	0.77
1:M:192:LYS:NZ	1:M:196:GLU:OE2	2.14	0.77
1:E:188:ARG:NH1	2:G:18:DG:N7	2.32	0.77
1:B:212:ASP:HA	1:B:215:LYS:HG3	1.68	0.76
1:B:202:LYS:O	1:B:204:SER:N	2.19	0.76
1:F:73:PHE:HB2	1:F:76:THR:HG22	1.66	0.76
1:F:190:ILE:HA	1:F:193:LEU:H	1.50	0.76
1:N:163:LYS:NZ	1:N:164:ILE:O	2.19	0.75
1:A:10:LYS:HG3	1:A:13:GLU:HG2	1.68	0.75
1:A:7:GLU:O	1:A:112:HIS:NE2	2.18	0.75
1:E:199:ILE:HA	1:E:208:VAL:HA	1.68	0.75
1:M:162:ILE:HB	1:M:208:VAL:HB	1.69	0.74
1:F:157:GLU:H	1:F:163:LYS:H	1.35	0.74
1:A:59:ASN:HB2	1:A:177:SER:HA	1.70	0.72
1:E:5:ALA:O	1:E:9:LYS:N	2.21	0.72
1:F:151:THR:HG23	1:F:156:LYS:HD2	1.71	0.72
1:F:200:VAL:HG23	1:F:207:TYR:HB2	1.71	0.72
1:B:101:GLU:O	1:B:102:LEU:HD23	1.88	0.72
1:F:194:LYS:HB3	1:F:196:GLU:HB2	1.71	0.72
1:B:98:LYS:HD2	1:B:99:ILE:H	1.54	0.71
1:N:208:VAL:HG12	1:N:209:GLN:H	1.54	0.71
1:F:47:LYS:HB3	1:F:88:ILE:HD11	1.72	0.71
1:M:199:ILE:HD12	1:M:208:VAL:HA	1.72	0.71
1:N:64:LYS:NZ	1:N:153:VAL:O	2.23	0.71
1:F:188:ARG:NH2	3:H:18:DG:N7	2.39	0.71
1:A:104:GLU:HA	1:A:107:SER:HB3	1.72	0.70
1:B:158:THR:HG21	1:B:163:LYS:HE2	1.73	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:11:TYR:CE1	1:N:108:LYS:HE3	2.26	0.70
1:B:97:ILE:HG21	1:B:102:LEU:HD21	1.73	0.70
1:B:167:ASP:OD1	1:B:167:ASP:N	2.25	0.70
1:E:160:ASP:O	1:E:209:GLN:NE2	2.24	0.70
1:F:76:THR:HG23	1:F:78:THR:H	1.55	0.70
1:M:194:LYS:HA	1:M:195:GLN:CG	2.21	0.69
1:A:47:LYS:HB2	1:A:88:ILE:HD11	1.75	0.69
1:B:108:LYS:HG2	1:B:109:ASN:CB	2.21	0.69
1:E:163:LYS:HB2	1:E:207:TYR:CD1	2.29	0.68
1:F:105:LEU:HD12	1:F:108:LYS:HZ3	1.58	0.68
1:N:199:ILE:HG22	1:N:208:VAL:HG22	1.76	0.68
1:N:90:GLU:HG2	1:N:91:GLN:HG2	1.75	0.68
1:N:98:LYS:HB3	1:N:101:GLU:CD	2.17	0.68
1:B:196:GLU:N	1:B:196:GLU:OE1	2.26	0.68
1:F:151:THR:HA	1:F:156:LYS:CE	2.24	0.68
1:A:202:LYS:HG3	1:A:203:ASN:HB2	1.75	0.68
1:E:186:VAL:HG12	1:E:190:ILE:HD11	1.76	0.68
1:F:24:LYS:HG2	1:F:25:LYS:HG3	1.75	0.68
1:F:151:THR:O	1:F:156:LYS:HG3	1.94	0.67
1:F:199:ILE:HD13	1:F:208:VAL:HG22	1.76	0.67
1:E:200:VAL:N	1:E:207:TYR:O	2.27	0.67
1:N:158:THR:H	1:N:160:ASP:CG	2.02	0.67
1:B:98:LYS:HD2	1:B:99:ILE:N	2.09	0.67
1:F:233:TRP:HA	1:F:235:LYS:HG2	1.77	0.67
1:A:164:ILE:CG1	1:A:206:PHE:HB2	2.25	0.67
1:A:163:LYS:HB3	1:A:164:ILE:HA	1.76	0.67
1:E:229:CYS:SG	1:E:232:THR:OG1	2.53	0.67
1:N:13:GLU:HA	1:N:17:ILE:H	1.59	0.66
1:E:194:LYS:CD	1:E:199:ILE:HD12	2.25	0.66
1:A:130:LYS:HA	1:A:221:LEU:HD11	1.76	0.66
1:B:103:LYS:C	1:B:104:GLU:HG3	2.19	0.66
1:F:35:GLN:NE2	1:F:37:TYR:OH	2.29	0.66
1:N:2:ASN:O	1:N:5:ALA:N	2.25	0.66
1:F:194:LYS:HZ2	1:F:198:VAL:HB	1.61	0.66
1:B:166:LEU:HD11	1:B:168:ASN:ND2	2.10	0.65
1:N:27:LEU:HD23	1:N:84:ASN:HB3	1.76	0.65
1:B:13:GLU:OE1	1:B:16:GLY:N	2.28	0.65
1:F:37:TYR:H	1:F:71:SER:HG	1.43	0.65
1:B:44:GLY:HA3	1:B:92:ALA:HB2	1.79	0.65
1:N:197:LYS:O	1:N:209:GLN:HG3	1.97	0.65
1:F:194:LYS:NZ	1:F:199:ILE:H	1.95	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:220:LYS:NZ	1:B:223:GLU:OE2	2.30	0.65
1:B:163:LYS:HD3	1:B:207:TYR:CE1	2.33	0.64
1:B:104:GLU:C	1:B:106:LEU:H	2.05	0.64
1:F:193:LEU:O	1:F:196:GLU:HG3	1.97	0.64
1:F:190:ILE:HD12	1:F:193:LEU:HD12	1.78	0.64
1:B:24:LYS:HG2	1:B:25:LYS:HG3	1.78	0.64
1:E:163:LYS:HB2	1:E:207:TYR:CE1	2.33	0.64
1:F:47:LYS:NZ	1:F:173:GLU:OE2	2.23	0.64
1:N:54:ASN:ND2	1:N:56:THR:H	1.94	0.64
1:B:191:SER:HA	1:B:194:LYS:HB2	1.80	0.63
1:E:157:GLU:HG2	1:E:162:ILE:HG13	1.81	0.63
1:A:15:ASN:OD1	1:A:16:GLY:N	2.32	0.63
1:F:156:LYS:HA	1:F:163:LYS:N	2.13	0.63
1:N:106:LEU:HB3	1:N:113:PHE:HD2	1.63	0.63
1:A:171:MET:HE1	1:A:190:ILE:HG21	1.80	0.63
1:B:15:ASN:OD1	1:B:16:GLY:N	2.32	0.63
1:F:167:ASP:OD1	1:F:168:ASN:N	2.31	0.63
1:E:4:GLN:HA	1:E:7:GLU:HG2	1.81	0.63
1:F:192:LYS:NZ	1:F:194:LYS:O	2.27	0.63
1:A:11:TYR:HB2	1:A:112:HIS:ND1	2.14	0.63
1:E:188:ARG:HH11	2:G:17:DT:H2''	1.63	0.63
2:O:5:DG:O6	3:P:25:DA:N6	2.32	0.62
1:F:161:GLY:HA3	1:F:207:TYR:HB3	1.81	0.62
1:A:118:GLN:O	1:A:122:LYS:N	2.32	0.62
1:E:199:ILE:HG22	1:E:208:VAL:HG12	1.81	0.62
1:F:156:LYS:CD	1:F:162:ILE:HD13	2.29	0.62
1:N:158:THR:HB	1:N:160:ASP:HB3	1.80	0.62
1:A:7:GLU:OE1	1:A:112:HIS:NE2	2.32	0.62
1:M:108:LYS:NZ	1:M:112:HIS:HB2	2.15	0.62
1:E:13:GLU:OE1	1:E:16:GLY:N	2.24	0.62
1:F:102:LEU:HA	1:F:105:LEU:HB3	1.82	0.62
1:E:15:ASN:N	1:E:15:ASN:HD22	1.96	0.62
1:F:194:LYS:HZ2	1:F:199:ILE:N	1.97	0.62
1:F:109:ASN:OD1	1:F:112:HIS:ND1	2.31	0.62
1:E:14:THR:C	1:E:15:ASN:HD22	2.07	0.61
1:E:200:VAL:HG22	1:E:207:TYR:HB2	1.80	0.61
1:N:43:ASP:OD1	1:N:93:THR:OG1	2.17	0.61
1:B:108:LYS:CG	1:B:109:ASN:HB3	2.26	0.61
1:N:47:LYS:HD3	1:N:88:ILE:HD11	1.83	0.61
1:A:164:ILE:HG13	1:A:206:PHE:HB2	1.83	0.61
1:E:222:ASP:OD2	1:E:222:ASP:N	2.30	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:P:3:DT:H2'	3:P:4:DA:C8	2.36	0.61
1:B:199:ILE:HG22	1:B:208:VAL:HA	1.83	0.60
1:F:194:LYS:NZ	1:F:198:VAL:HB	2.17	0.60
1:M:75:ASP:OD1	1:M:76:THR:N	2.34	0.60
1:N:199:ILE:HA	1:N:208:VAL:HA	1.83	0.60
1:F:98:LYS:HD2	1:F:99:ILE:N	2.16	0.60
1:A:126:TYR:OH	4:A:301:GSH:O31	2.17	0.60
1:B:172:GLN:HE21	1:B:183:SER:HB3	1.67	0.60
1:M:121:GLN:NE2	1:N:72:GLY:O	2.34	0.60
1:M:191:SER:HA	1:M:194:LYS:H	1.67	0.60
1:E:156:LYS:O	1:E:163:LYS:N	2.30	0.60
1:M:35:GLN:N	1:M:35:GLN:OE1	2.35	0.60
1:E:24:LYS:HG2	1:E:25:LYS:HG2	1.83	0.60
1:B:91:GLN:HG3	1:B:92:ALA:N	2.15	0.59
1:E:17:ILE:CG2	1:E:18:LYS:H	2.12	0.59
1:A:201:TYR:HB2	1:A:205:CYS:O	2.02	0.59
1:B:8:PHE:CD1	1:B:112:HIS:HB3	2.37	0.59
1:N:154:TYR:HB3	1:N:165:THR:HG22	1.83	0.59
1:E:194:LYS:HD2	1:E:200:VAL:HA	1.83	0.59
1:M:101:GLU:O	1:M:103:LYS:N	2.34	0.59
1:N:160:ASP:OD1	1:N:161:GLY:N	2.36	0.59
1:N:194:LYS:HE2	1:N:199:ILE:CG2	2.32	0.59
1:B:4:GLN:HA	1:B:7:GLU:HG2	1.85	0.59
1:M:171:MET:HE1	1:M:187:SER:HB2	1.85	0.59
1:B:8:PHE:CE1	1:B:12:LEU:HD11	2.38	0.59
1:N:194:LYS:HG3	1:N:199:ILE:H	1.67	0.59
1:B:113:PHE:O	1:B:116:VAL:N	2.32	0.59
1:N:47:LYS:NZ	1:N:173:GLU:OE2	2.27	0.58
1:A:9:LYS:HG3	1:A:10:LYS:N	2.19	0.58
1:E:194:LYS:HG3	1:E:199:ILE:HD12	1.85	0.58
1:F:194:LYS:HD2	1:F:199:ILE:N	2.18	0.58
1:A:10:LYS:HA	1:A:12:LEU:H	1.69	0.58
1:A:122:LYS:NZ	4:A:301:GSH:O11	2.34	0.58
1:A:151:THR:HG23	1:A:162:ILE:HD13	1.84	0.58
1:A:167:ASP:O	1:A:168:ASN:HB3	2.02	0.58
1:E:17:ILE:HG22	1:E:18:LYS:N	2.17	0.58
1:N:45:ILE:H	1:N:89:SER:CB	2.17	0.58
1:M:2:ASN:CG	1:M:3:ALA:HB3	2.29	0.58
1:N:45:ILE:H	1:N:89:SER:HB2	1.69	0.58
1:B:102:LEU:HA	1:B:104:GLU:CD	2.28	0.58
1:M:90:GLU:CD	1:M:90:GLU:H	2.11	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:11:TYR:OH	1:B:108:LYS:HG3	2.04	0.57
1:B:105:LEU:O	1:B:108:LYS:HD2	2.04	0.57
1:E:122:LYS:NZ	4:E:301:GSH:O11	2.37	0.57
1:M:193:LEU:HA	1:M:195:GLN:OE1	2.04	0.57
1:N:36:GLU:O	1:N:99:ILE:HG12	2.04	0.57
1:B:164:ILE:O	1:B:166:LEU:N	2.35	0.57
1:M:7:GLU:HG2	1:M:112:HIS:NE2	2.19	0.57
1:N:10:LYS:HZ2	1:N:14:THR:HG23	1.69	0.57
1:B:47:LYS:HE3	1:B:88:ILE:HD11	1.85	0.57
1:B:188:ARG:HA	1:B:192:LYS:HZ3	1.69	0.57
1:B:21:GLN:HE22	1:B:91:GLN:HG2	1.70	0.57
1:B:22:PHE:CZ	1:B:28:ILE:HG23	2.39	0.57
1:B:11:TYR:CE1	1:B:12:LEU:HG	2.39	0.57
1:E:194:LYS:HD2	1:E:199:ILE:C	2.30	0.57
1:M:146:GLN:OE1	1:M:177:SER:OG	2.20	0.57
1:A:22:PHE:HB2	1:A:91:GLN:NE2	2.20	0.57
1:N:200:VAL:HG12	1:N:202:LYS:H	1.69	0.56
1:F:156:LYS:HZ1	1:F:164:ILE:HG22	1.70	0.56
1:F:192:LYS:HD2	1:F:194:LYS:N	2.19	0.56
1:M:57:ILE:HD11	1:M:176:TYR:CG	2.40	0.56
1:A:199:ILE:HA	1:A:208:VAL:HG22	1.86	0.56
1:B:156:LYS:O	1:B:163:LYS:N	2.35	0.56
1:F:156:LYS:HB3	1:F:162:ILE:HB	1.87	0.56
1:F:194:LYS:HE3	1:F:199:ILE:HB	1.87	0.56
1:N:156:LYS:N	1:N:163:LYS:O	2.39	0.56
1:A:9:LYS:CG	1:A:10:LYS:H	2.19	0.56
1:B:158:THR:OG1	1:B:161:GLY:O	2.15	0.56
1:M:212:ASP:HA	1:M:215:LYS:HB2	1.86	0.56
1:B:91:GLN:CG	1:B:92:ALA:H	2.16	0.56
1:M:106:LEU:HB3	1:M:113:PHE:CD1	2.41	0.56
1:A:162:ILE:HG13	1:A:208:VAL:O	2.06	0.56
1:A:164:ILE:O	1:A:164:ILE:HD12	2.06	0.56
1:B:37:TYR:H	1:B:71:SER:HG	1.53	0.56
1:B:108:LYS:HG2	1:B:109:ASN:N	2.20	0.56
1:F:212:ASP:OD1	1:F:213:TYR:N	2.39	0.56
1:M:195:GLN:HG3	1:M:198:VAL:HG12	1.88	0.56
1:N:156:LYS:HD2	1:N:157:GLU:H	1.71	0.56
1:F:152:TYR:HE1	1:F:211:LEU:HD21	1.70	0.56
1:F:200:VAL:CG2	1:F:207:TYR:HB2	2.35	0.56
1:M:195:GLN:HB3	1:M:196:GLU:C	2.31	0.56
1:A:77:GLU:HG2	1:A:99:ILE:HG22	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:222:ASP:OD1	1:A:233:TRP:NE1	2.36	0.56
1:M:51:ILE:HG12	1:M:57:ILE:HG22	1.88	0.55
1:E:193:LEU:HD12	1:E:198:VAL:HG11	1.87	0.55
1:M:107:SER:HA	1:N:110:LEU:HD13	1.87	0.55
1:N:104:GLU:HB2	1:N:107:SER:HB3	1.88	0.55
1:F:107:SER:N	1:F:108:LYS:HG2	2.21	0.55
1:A:156:LYS:HB3	1:A:163:LYS:CG	2.36	0.55
1:F:188:ARG:HA	1:F:191:SER:HB3	1.88	0.55
1:A:201:TYR:HB3	1:A:206:PHE:HA	1.89	0.55
1:N:194:LYS:HG2	1:N:199:ILE:HG12	1.88	0.55
1:B:21:GLN:HB2	1:B:93:THR:HG22	1.87	0.55
1:N:37:TYR:N	1:N:71:SER:OG	2.31	0.55
1:F:152:TYR:CE1	1:F:211:LEU:HD21	2.41	0.55
1:F:157:GLU:H	1:F:163:LYS:HD3	1.71	0.55
1:B:108:LYS:NZ	1:B:112:HIS:HB2	2.22	0.55
1:E:13:GLU:OE2	1:E:17:ILE:N	2.39	0.55
1:F:4:GLN:H	1:F:4:GLN:CD	2.15	0.55
1:B:125:SER:HB2	1:B:224:TRP:HE1	1.72	0.54
1:F:202:LYS:HE2	1:F:207:TYR:CE2	2.42	0.54
1:N:194:LYS:CG	1:N:199:ILE:H	2.21	0.54
1:A:74:ILE:C	1:A:103:LYS:HZ1	2.15	0.54
1:F:164:ILE:O	1:F:164:ILE:HG13	2.07	0.54
1:M:24:LYS:HB2	1:M:90:GLU:HA	1.90	0.54
1:A:46:THR:HG22	1:A:63:TYR:HB2	1.88	0.54
2:C:7:DC:H2'	2:C:8:DG:C8	2.41	0.54
1:E:223:GLU:O	1:E:227:LEU:N	2.34	0.54
1:N:36:GLU:O	1:N:98:LYS:HD2	2.07	0.54
1:B:171:MET:HE1	1:B:190:ILE:HG21	1.88	0.54
1:B:194:LYS:HA	1:B:199:ILE:O	2.06	0.54
1:F:11:TYR:OH	1:F:108:LYS:NZ	2.36	0.54
1:M:199:ILE:HG13	1:M:200:VAL:H	1.71	0.54
1:E:35:GLN:NE2	1:E:36:GLU:O	2.41	0.54
1:A:121:GLN:NE2	1:B:72:GLY:O	2.40	0.54
1:E:141:GLY:HA2	1:E:144:CYS:HB2	1.89	0.54
1:M:110:LEU:O	1:M:114:PHE:HD1	1.91	0.54
1:N:198:VAL:O	1:N:208:VAL:HG13	2.07	0.54
1:N:132:ASN:HD22	1:N:220:LYS:HB2	1.71	0.54
1:E:10:LYS:HB2	1:E:13:GLU:N	2.21	0.54
3:H:4:DA:H2''	3:H:5:DG:C8	2.43	0.54
3:H:17:DT:H2''	3:H:18:DG:H8	1.72	0.54
1:F:31:GLN:N	1:F:84:ASN:OD1	2.38	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:120:LEU:HD21	1:N:121:GLN:HG2	1.89	0.53
1:E:194:LYS:CG	1:E:199:ILE:HD12	2.38	0.53
1:F:194:LYS:CE	1:F:199:ILE:H	2.22	0.53
2:G:23:DT:H2''	2:G:24:DG:C8	2.42	0.53
1:B:163:LYS:HD3	1:B:207:TYR:HE1	1.73	0.53
1:M:193:LEU:O	1:M:199:ILE:HG22	2.08	0.53
1:A:201:TYR:CB	1:A:206:PHE:HA	2.38	0.53
1:B:192:LYS:HD2	1:B:192:LYS:N	2.22	0.53
1:F:76:THR:HG23	1:F:78:THR:N	2.23	0.53
1:B:101:GLU:O	1:B:104:GLU:HG2	2.09	0.53
1:B:180:ILE:HG22	1:B:182:HIS:H	1.73	0.53
1:B:24:LYS:NZ	1:B:89:SER:O	2.41	0.53
1:M:110:LEU:HA	1:M:113:PHE:HB3	1.89	0.53
1:A:211:LEU:HD12	1:A:214:LEU:HB2	1.91	0.53
1:E:4:GLN:HG2	1:E:115:TYR:HD2	1.72	0.53
1:A:162:ILE:O	1:A:207:TYR:HA	2.09	0.52
1:B:21:GLN:NE2	1:B:91:GLN:HG2	2.24	0.52
1:B:106:LEU:HG	1:B:113:PHE:CD2	2.44	0.52
1:M:102:LEU:O	1:M:106:LEU:N	2.42	0.52
1:B:211:LEU:HA	1:B:214:LEU:HD23	1.90	0.52
1:F:105:LEU:C	1:F:108:LYS:HD3	2.35	0.52
3:H:5:DG:H2''	3:H:6:DG:C8	2.45	0.52
1:A:9:LYS:HE2	1:A:10:LYS:N	2.18	0.52
1:B:185:ALA:O	1:B:189:ILE:HG13	2.09	0.52
1:B:194:LYS:HE3	1:B:201:TYR:H	1.74	0.52
1:E:220:LYS:HD3	1:E:223:GLU:OE2	2.09	0.52
1:F:170:THR:OG1	1:F:173:GLU:N	2.41	0.52
1:N:9:LYS:HE2	1:N:95:TYR:OH	2.10	0.52
1:N:11:TYR:CD1	1:N:108:LYS:HE3	2.44	0.52
1:B:2:ASN:CG	1:B:3:ALA:N	2.68	0.52
1:B:7:GLU:CD	1:B:7:GLU:H	2.17	0.52
1:B:194:LYS:HE3	1:B:201:TYR:N	2.24	0.52
1:M:189:ILE:HA	1:M:192:LYS:HB3	1.92	0.52
1:F:24:LYS:HB2	1:F:90:GLU:HA	1.92	0.52
1:N:193:LEU:HD13	1:N:194:LYS:HZ1	1.76	0.51
1:F:187:SER:O	1:F:191:SER:N	2.43	0.51
3:D:27:DG:H2''	3:D:28:DA:C8	2.46	0.51
1:F:157:GLU:HA	1:F:162:ILE:HA	1.92	0.51
1:F:223:GLU:HG2	1:F:226:TYR:HB2	1.92	0.51
1:N:194:LYS:HD2	1:N:194:LYS:N	2.26	0.51
1:B:200:VAL:HG23	1:B:207:TYR:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:75:ASP:OD1	1:E:76:THR:OG1	2.25	0.51
1:N:106:LEU:HB3	1:N:113:PHE:CD2	2.45	0.51
1:N:193:LEU:HB3	1:N:194:LYS:CE	2.40	0.51
1:E:10:LYS:HA	1:E:12:LEU:HB2	1.93	0.51
1:F:89:SER:OG	1:F:91:GLN:O	2.26	0.51
1:E:4:GLN:HG2	1:E:115:TYR:CD2	2.46	0.51
1:E:80:VAL:O	1:F:125:SER:OG	2.25	0.51
1:N:38:CYS:N	1:N:97:ILE:O	2.31	0.51
1:E:31:GLN:HB2	1:E:84:ASN:ND2	2.26	0.51
1:M:197:LYS:HB3	1:M:210:ASN:ND2	2.26	0.51
1:N:200:VAL:N	1:N:207:TYR:O	2.37	0.51
1:N:212:ASP:OD1	1:N:212:ASP:N	2.44	0.51
1:E:198:VAL:O	1:E:209:GLN:N	2.23	0.51
1:F:194:LYS:CD	1:F:199:ILE:H	2.23	0.51
1:B:15:ASN:HD21	1:B:17:ILE:HG23	1.76	0.51
1:B:186:VAL:O	1:B:190:ILE:HG12	2.11	0.50
1:E:3:ALA:O	1:E:5:ALA:N	2.39	0.50
1:E:200:VAL:CG2	1:E:207:TYR:HB2	2.41	0.50
1:M:9:LYS:HE3	1:M:13:GLU:OE2	2.11	0.50
1:A:167:ASP:N	1:A:167:ASP:OD1	2.44	0.50
1:M:11:TYR:CZ	1:M:108:LYS:HD3	2.47	0.50
1:M:11:TYR:OH	1:M:108:LYS:HD3	2.12	0.50
1:M:108:LYS:CD	1:M:109:ASN:HB3	2.41	0.50
1:A:116:VAL:O	1:A:119:THR:OG1	2.23	0.50
2:O:4:DC:H42	3:P:27:DG:H1	1.60	0.50
1:B:8:PHE:HD1	1:B:112:HIS:HB3	1.75	0.50
1:E:10:LYS:HA	1:E:12:LEU:N	2.26	0.50
1:F:8:PHE:HA	1:F:112:HIS:CD2	2.47	0.50
1:N:8:PHE:HD1	1:N:112:HIS:HB3	1.77	0.50
1:A:10:LYS:HG3	1:A:13:GLU:CG	2.41	0.50
1:A:36:GLU:O	1:A:99:ILE:HG12	2.12	0.50
1:B:14:THR:O	1:B:15:ASN:HB3	2.11	0.50
1:B:192:LYS:HD2	1:B:192:LYS:H	1.74	0.50
1:E:137:ASN:HD21	1:E:141:GLY:H	1.60	0.50
1:B:11:TYR:CZ	1:B:108:LYS:HG3	2.47	0.50
1:B:90:GLU:O	1:B:91:GLN:HB2	2.10	0.50
1:B:180:ILE:HG21	1:B:185:ALA:HB3	1.94	0.50
1:N:22:PHE:O	1:N:92:ALA:HB3	2.11	0.50
1:E:70:MET:HE1	1:E:74:ILE:HG13	1.94	0.50
1:E:135:SER:O	1:F:139:LYS:NZ	2.45	0.50
1:F:194:LYS:HD2	1:F:199:ILE:H	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:163:LYS:HD3	1:N:207:TYR:CE1	2.47	0.49
1:E:137:ASN:CG	1:E:138:GLY:N	2.68	0.49
1:M:163:LYS:HB2	1:M:207:TYR:CE2	2.47	0.49
1:N:156:LYS:NZ	1:N:158:THR:OG1	2.46	0.49
1:A:11:TYR:HB2	1:A:112:HIS:CE1	2.47	0.49
1:F:235:LYS:O	1:F:236:LEU:HG	2.12	0.49
1:M:106:LEU:HD22	1:M:113:PHE:HA	1.93	0.49
1:M:108:LYS:HD2	1:M:109:ASN:HB3	1.94	0.49
1:A:13:GLU:HG2	1:A:14:THR:N	2.27	0.49
1:N:162:ILE:HD12	1:N:163:LYS:N	2.27	0.49
1:N:162:ILE:HD12	1:N:163:LYS:CA	2.42	0.49
1:M:151:THR:HG21	1:M:211:LEU:HD13	1.95	0.49
1:N:194:LYS:HG3	1:N:199:ILE:N	2.28	0.49
1:B:43:ASP:O	1:B:92:ALA:HB1	2.12	0.49
1:E:99:ILE:HD12	1:E:100:ASN:H	1.78	0.49
1:N:208:VAL:HG12	1:N:209:GLN:N	2.27	0.49
1:A:57:ILE:HD11	1:A:176:TYR:CE2	2.47	0.49
1:F:194:LYS:NZ	1:F:199:ILE:HG12	2.28	0.49
1:N:162:ILE:CG1	1:N:208:VAL:HB	2.37	0.49
1:B:104:GLU:O	1:B:106:LEU:N	2.44	0.49
1:F:200:VAL:HG13	1:F:209:GLN:NE2	2.23	0.49
2:O:17:DT:H1'	2:O:18:DG:C8	2.48	0.48
3:P:17:DT:H2''	3:P:18:DG:O5'	2.13	0.48
1:F:197:LYS:HD3	1:F:197:LYS:N	2.27	0.48
3:H:2:DG:H4'	3:H:3:DT:OP1	2.12	0.48
1:A:9:LYS:CG	1:A:10:LYS:N	2.75	0.48
1:E:7:GLU:HB2	1:E:112:HIS:NE2	2.27	0.48
1:A:9:LYS:HG3	1:A:10:LYS:H	1.77	0.48
1:B:104:GLU:C	1:B:106:LEU:N	2.70	0.48
2:O:27:DT:H2''	2:O:28:DA:C8	2.48	0.48
3:P:27:DG:H2''	3:P:28:DA:C8	2.48	0.48
2:O:7:DC:H2''	2:O:8:DG:C8	2.49	0.48
1:A:35:GLN:HG3	1:A:37:TYR:CZ	2.48	0.48
1:A:209:GLN:H	1:A:209:GLN:HG2	1.17	0.48
1:F:194:LYS:HD2	1:F:199:ILE:O	2.12	0.48
1:F:197:LYS:HB2	1:F:198:VAL:HG23	1.95	0.48
1:A:77:GLU:OE1	1:A:100:ASN:HA	2.13	0.48
2:G:17:DT:H1'	2:G:18:DG:C8	2.49	0.48
1:N:172:GLN:OE1	1:N:172:GLN:N	2.31	0.48
1:A:45:ILE:HG13	1:A:64:LYS:HB2	1.94	0.48
1:B:15:ASN:CB	1:B:105:LEU:HD21	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:198:VAL:HG13	1:M:199:ILE:H	1.77	0.48
1:N:171:MET:HE1	1:N:187:SER:HB2	1.95	0.48
1:F:156:LYS:CE	1:F:162:ILE:HD13	2.44	0.48
1:A:22:PHE:CZ	1:A:28:ILE:HG23	2.49	0.48
1:A:106:LEU:O	1:A:113:PHE:HD1	1.95	0.48
1:F:73:PHE:HD2	1:F:76:THR:HG21	1.79	0.48
1:A:51:ILE:HA	1:A:56:THR:O	2.13	0.48
1:B:191:SER:CA	1:B:194:LYS:HB2	2.44	0.48
1:F:223:GLU:HG2	1:F:226:TYR:CB	2.43	0.48
1:M:189:ILE:HG22	1:M:193:LEU:HD12	1.96	0.47
1:B:194:LYS:HE3	1:B:201:TYR:HB3	1.96	0.47
1:F:54:ASN:HB2	1:F:56:THR:HG22	1.96	0.47
1:M:106:LEU:HB3	1:M:113:PHE:HD1	1.79	0.47
1:B:202:LYS:C	1:B:204:SER:H	2.22	0.47
1:F:194:LYS:HD3	1:F:196:GLU:O	2.15	0.47
1:A:57:ILE:HD11	1:A:176:TYR:CD2	2.49	0.47
1:B:104:GLU:O	1:B:107:SER:N	2.46	0.47
1:F:233:TRP:CE3	1:F:235:LYS:HE2	2.49	0.47
1:A:2:ASN:O	1:A:4:GLN:N	2.41	0.47
1:A:10:LYS:HA	1:A:12:LEU:N	2.29	0.47
1:A:153:VAL:HA	1:A:232:THR:HG21	1.97	0.47
1:A:162:ILE:O	1:A:162:ILE:HD12	2.14	0.47
1:B:2:ASN:CG	1:B:3:ALA:H	2.22	0.47
1:F:193:LEU:HD22	1:F:196:GLU:OE1	2.15	0.47
1:M:195:GLN:HB3	1:M:197:LYS:N	2.29	0.47
1:N:162:ILE:HD11	1:N:208:VAL:HG23	1.96	0.47
1:N:193:LEU:C	1:N:194:LYS:HD2	2.39	0.47
1:A:163:LYS:HE2	1:A:164:ILE:HA	1.95	0.47
1:E:121:GLN:OE1	1:F:73:PHE:HA	2.15	0.47
3:H:17:DT:H4'	3:H:18:DG:OP1	2.14	0.47
1:M:162:ILE:N	1:M:208:VAL:O	2.47	0.47
1:N:158:THR:HB	1:N:160:ASP:CB	2.43	0.47
3:P:3:DT:H2''	3:P:4:DA:H5'	1.97	0.47
3:P:17:DT:H4'	3:P:18:DG:OP1	2.15	0.47
1:M:196:GLU:O	1:M:197:LYS:HB2	2.14	0.47
1:N:90:GLU:HG2	1:N:91:GLN:N	2.29	0.47
1:N:104:GLU:HB2	1:N:107:SER:CB	2.44	0.47
1:A:228:ALA:HB2	1:B:73:PHE:CE2	2.49	0.47
1:B:15:ASN:CG	1:B:16:GLY:N	2.73	0.47
1:E:217:TYR:O	1:E:219:PRO:HD3	2.14	0.47
1:F:156:LYS:CB	1:F:162:ILE:HB	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:162:ILE:HD13	1:M:236:LEU:HD13	1.97	0.47
1:N:9:LYS:HE2	1:N:95:TYR:CZ	2.49	0.47
1:N:199:ILE:HG13	1:N:200:VAL:N	2.30	0.47
1:A:7:GLU:C	1:A:112:HIS:HE2	2.23	0.47
1:A:96:VAL:C	1:A:97:ILE:HG13	2.38	0.47
1:E:31:GLN:HB2	1:E:84:ASN:HD21	1.79	0.47
1:E:156:LYS:HE3	1:E:165:THR:HG21	1.96	0.47
1:F:188:ARG:HH21	3:H:17:DT:H2'	1.79	0.47
1:A:11:TYR:OH	1:A:105:LEU:O	2.33	0.47
1:B:172:GLN:O	1:B:175:GLY:N	2.48	0.47
1:M:194:LYS:HD3	1:M:199:ILE:O	2.15	0.46
1:E:30:ASN:OD1	1:E:33:ASP:N	2.48	0.46
1:E:106:LEU:HB3	1:E:113:PHE:CD1	2.50	0.46
1:M:140:LEU:HD11	2:O:16:DA:H3'	1.97	0.46
1:M:191:SER:C	1:M:193:LEU:N	2.74	0.46
1:M:215:LYS:NZ	1:M:222:ASP:OD2	2.48	0.46
1:N:116:VAL:O	1:N:119:THR:OG1	2.32	0.46
1:A:156:LYS:O	1:A:163:LYS:HG3	2.16	0.46
1:F:200:VAL:O	1:F:207:TYR:N	2.42	0.46
2:G:17:DT:H4'	2:G:18:DG:OP1	2.15	0.46
1:A:172:GLN:HG3	1:A:176:TYR:CE2	2.50	0.46
1:M:2:ASN:N	1:M:5:ALA:H	2.13	0.46
2:O:3:DT:H2''	2:O:4:DC:C5	2.51	0.46
1:A:22:PHE:O	1:A:23:HIS:ND1	2.48	0.46
1:E:194:LYS:HD3	1:E:199:ILE:HD12	1.98	0.46
1:B:167:ASP:O	1:B:169:LEU:N	2.44	0.46
1:B:198:VAL:HG23	1:B:210:ASN:O	2.16	0.46
1:N:90:GLU:OE1	1:N:90:GLU:N	2.36	0.46
1:N:170:THR:OG1	1:N:172:GLN:NE2	2.49	0.46
1:A:45:ILE:HD11	1:A:64:LYS:HD2	1.97	0.46
1:M:2:ASN:N	1:M:2:ASN:OD1	2.47	0.46
1:F:12:LEU:HD22	1:F:17:ILE:HG21	1.98	0.46
1:M:8:PHE:CD1	1:M:112:HIS:HB3	2.51	0.45
1:M:19:PRO:HB3	1:M:95:TYR:CZ	2.52	0.45
1:A:15:ASN:ND2	1:A:17:ILE:HB	2.31	0.45
1:B:227:LEU:O	1:F:10:LYS:NZ	2.45	0.45
1:E:3:ALA:C	1:E:5:ALA:H	2.24	0.45
1:A:75:ASP:OD1	1:A:75:ASP:N	2.37	0.45
2:C:17:DT:H1'	2:C:18:DG:C8	2.51	0.45
1:E:19:PRO:HB3	1:E:95:TYR:CE1	2.51	0.45
1:M:210:ASN:OD1	1:M:210:ASN:C	2.58	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:229:CYS:HB3	1:M:232:THR:OG1	2.16	0.45
1:F:98:LYS:HE3	1:F:100:ASN:CG	2.40	0.45
1:N:162:ILE:HD12	1:N:163:LYS:HA	1.99	0.45
1:F:61:GLN:HE21	4:F:301:GSH:HB22	1.81	0.45
1:F:188:ARG:NH1	3:H:19:DT:O4	2.47	0.45
1:M:3:ALA:O	1:M:6:GLU:N	2.50	0.45
1:A:113:PHE:CE2	1:B:113:PHE:CZ	3.04	0.45
1:A:158:THR:HB	1:A:161:GLY:O	2.16	0.45
1:E:36:GLU:HG3	1:E:79:SER:HA	1.97	0.45
1:M:22:PHE:CZ	1:M:28:ILE:HG23	2.51	0.45
1:N:101:GLU:CD	1:N:101:GLU:H	2.21	0.45
1:B:5:ALA:O	1:B:8:PHE:HB3	2.16	0.45
1:E:223:GLU:HA	1:E:226:TYR:HB3	1.99	0.45
1:M:198:VAL:HG13	1:M:199:ILE:N	2.32	0.45
1:N:160:ASP:CG	1:N:161:GLY:N	2.75	0.45
1:B:103:LYS:HB3	1:B:104:GLU:H	1.32	0.45
1:N:198:VAL:O	1:N:198:VAL:HG12	2.17	0.45
1:B:38:CYS:HB3	1:B:102:LEU:HD12	1.99	0.45
1:E:125:SER:HB3	1:F:80:VAL:HB	1.98	0.45
1:F:198:VAL:HG13	1:F:210:ASN:O	2.17	0.45
1:M:160:ASP:OD1	1:M:160:ASP:C	2.59	0.45
1:M:195:GLN:CG	1:M:198:VAL:HG12	2.47	0.45
1:N:37:TYR:H	1:N:71:SER:HG	1.56	0.45
1:N:199:ILE:CG2	1:N:208:VAL:HG22	2.44	0.45
1:E:13:GLU:OE1	1:E:15:ASN:HB2	2.17	0.45
3:H:11:DA:H2''	3:H:12:DA:C8	2.51	0.45
3:H:27:DG:H2'	3:H:28:DA:C8	2.52	0.45
1:B:88:ILE:CG2	1:B:168:ASN:ND2	2.80	0.44
1:E:47:LYS:HD3	1:E:88:ILE:HD11	1.99	0.44
1:M:199:ILE:HG23	1:M:200:VAL:N	2.32	0.44
1:F:229:CYS:HB2	1:F:232:THR:HG23	1.98	0.44
1:N:163:LYS:HE3	1:N:205:CYS:HB2	1.98	0.44
1:A:31:GLN:N	1:A:84:ASN:OD1	2.50	0.44
1:A:41:LEU:HD11	1:A:92:ALA:HB1	1.99	0.44
1:B:38:CYS:N	1:B:97:ILE:O	2.27	0.44
1:E:64:LYS:HD3	1:E:153:VAL:HG22	1.98	0.44
1:F:162:ILE:HG13	1:F:208:VAL:H	1.83	0.44
1:F:198:VAL:HG13	1:F:208:VAL:HG13	1.99	0.44
1:F:233:TRP:CA	1:F:235:LYS:HG2	2.45	0.44
1:A:113:PHE:HE2	1:B:113:PHE:CZ	2.36	0.44
1:F:106:LEU:HD23	1:F:106:LEU:HA	1.84	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:163:LYS:HB3	1:A:164:ILE:CA	2.40	0.44
2:C:6:DT:H2''	2:C:7:DC:O4'	2.17	0.44
2:C:25:DC:H2'	2:C:26:DC:C6	2.52	0.44
1:F:157:GLU:N	1:F:163:LYS:H	2.11	0.44
1:F:235:LYS:HG3	1:F:236:LEU:N	2.33	0.44
1:A:213:TYR:O	1:A:216:ARG:HB3	2.18	0.44
1:F:7:GLU:HG2	1:F:112:HIS:NE2	2.32	0.44
1:F:198:VAL:HG22	1:F:210:ASN:OD1	2.17	0.44
3:P:13:DC:H2''	3:P:14:DA:C8	2.53	0.44
1:A:64:LYS:HG3	1:A:65:GLY:N	2.32	0.44
1:A:145:GLY:O	1:A:149:ILE:HG13	2.17	0.44
1:E:89:SER:OG	1:E:91:GLN:O	2.33	0.44
1:E:164:ILE:HG12	1:E:206:PHE:HB2	2.00	0.44
1:E:217:TYR:C	1:E:219:PRO:HD3	2.42	0.44
1:N:11:TYR:OH	1:N:108:LYS:HG3	2.18	0.44
1:A:19:PRO:HB3	1:A:95:TYR:CZ	2.53	0.44
1:A:102:LEU:O	1:A:103:LYS:C	2.61	0.44
1:N:194:LYS:HE2	1:N:199:ILE:HG12	1.99	0.44
1:F:74:ILE:HD11	1:F:102:LEU:HD23	2.00	0.44
1:E:170:THR:HG22	1:E:172:GLN:H	1.83	0.43
1:N:46:THR:HA	1:N:87:VAL:HA	1.99	0.43
3:P:2:DG:H2''	3:P:3:DT:O4'	2.17	0.43
1:A:15:ASN:ND2	1:A:17:ILE:HD12	2.33	0.43
1:A:113:PHE:C	1:A:113:PHE:CD2	2.96	0.43
1:B:100:ASN:OD1	1:B:101:GLU:OE1	2.36	0.43
1:B:139:LYS:NZ	1:B:179:GLY:HA3	2.32	0.43
1:F:148:LEU:O	1:F:151:THR:HB	2.18	0.43
1:F:158:THR:N	1:F:161:GLY:O	2.44	0.43
1:N:101:GLU:OE1	1:N:101:GLU:N	2.32	0.43
1:B:151:THR:O	1:B:155:GLY:HA3	2.18	0.43
1:E:149:ILE:O	1:E:153:VAL:HG12	2.17	0.43
1:M:43:ASP:H	1:M:93:THR:HG23	1.84	0.43
2:O:2:DA:H2''	2:O:3:DT:OP1	2.18	0.43
1:A:47:LYS:N	1:A:86:GLU:O	2.52	0.43
1:B:201:TYR:CE1	1:B:204:SER:HA	2.53	0.43
1:F:195:GLN:H	1:F:195:GLN:CD	2.25	0.43
1:M:167:ASP:HA	1:M:168:ASN:HA	1.70	0.43
1:A:163:LYS:HD2	1:A:165:THR:HG23	2.00	0.43
1:E:193:LEU:O	1:E:198:VAL:HG12	2.18	0.43
1:F:146:GLN:O	1:F:150:LEU:HG	2.19	0.43
1:M:31:GLN:HB2	1:M:82:TYR:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:160:ASP:OD1	1:M:161:GLY:N	2.52	0.43
1:A:8:PHE:O	1:A:9:LYS:C	2.61	0.43
1:A:46:THR:OG1	1:A:86:GLU:O	2.30	0.43
1:B:38:CYS:CB	1:B:102:LEU:HD12	2.49	0.43
1:B:107:SER:O	1:B:109:ASN:N	2.48	0.43
1:N:74:ILE:H	1:N:74:ILE:HG13	1.55	0.43
1:A:23:HIS:N	1:A:26:GLU:OE2	2.52	0.43
1:A:74:ILE:HG23	1:A:103:LYS:HZ2	1.83	0.43
3:D:2:DG:H2''	3:D:3:DT:O4'	2.19	0.43
3:D:13:DC:H2''	3:D:14:DA:C8	2.53	0.43
1:F:198:VAL:CG1	1:F:208:VAL:HG13	2.48	0.43
1:N:195:GLN:C	1:N:197:LYS:H	2.26	0.43
1:A:46:THR:CG2	1:A:63:TYR:HB2	2.48	0.43
1:A:209:GLN:HB2	1:A:210:ASN:H	1.59	0.43
1:E:8:PHE:O	1:E:9:LYS:C	2.61	0.43
1:E:139:LYS:O	1:E:143:ILE:HG12	2.19	0.43
1:F:46:THR:O	1:F:63:TYR:N	2.48	0.43
1:F:162:ILE:O	1:F:207:TYR:CD1	2.72	0.43
1:F:162:ILE:N	1:F:207:TYR:HD1	2.16	0.43
1:N:59:ASN:HB2	1:N:177:SER:HA	2.01	0.43
1:B:106:LEU:HD11	1:B:113:PHE:HA	1.99	0.43
1:E:64:LYS:HD2	1:E:154:TYR:CE1	2.54	0.43
1:N:6:GLU:O	1:N:9:LYS:HB3	2.19	0.42
1:A:70:MET:HE1	1:A:74:ILE:HG12	2.01	0.42
1:B:7:GLU:CD	1:B:7:GLU:N	2.76	0.42
1:E:203:ASN:CG	1:E:204:SER:N	2.77	0.42
1:E:223:GLU:C	1:E:226:TYR:H	2.27	0.42
1:F:156:LYS:NZ	1:F:163:LYS:O	2.52	0.42
1:F:162:ILE:CD1	1:F:207:TYR:HA	2.49	0.42
1:N:192:LYS:O	1:N:196:GLU:HG2	2.19	0.42
1:N:193:LEU:HB3	1:N:194:LYS:HE3	2.01	0.42
1:A:6:GLU:HA	1:A:9:LYS:HB3	2.02	0.42
1:B:215:LYS:HE2	1:B:215:LYS:HB3	1.90	0.42
1:E:110:LEU:HA	1:E:113:PHE:HB2	1.99	0.42
1:F:220:LYS:HA	1:F:220:LYS:HD3	1.70	0.42
1:N:108:LYS:HD3	1:N:109:ASN:HB3	2.01	0.42
1:B:59:ASN:HB2	1:B:177:SER:HA	2.01	0.42
1:B:97:ILE:CG2	1:B:102:LEU:HD21	2.47	0.42
1:B:106:LEU:HD12	1:B:106:LEU:HA	1.77	0.42
1:F:28:ILE:HD12	1:F:85:LEU:HD23	2.00	0.42
1:A:3:ALA:N	1:A:6:GLU:OE1	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:3:DT:H2''	2:C:4:DC:C5	2.54	0.42
1:E:223:GLU:OE1	1:E:223:GLU:N	2.37	0.42
1:F:9:LYS:HD2	1:F:42:TYR:CE1	2.55	0.42
1:N:158:THR:HG22	1:N:159:PRO:N	2.33	0.42
1:B:73:PHE:O	1:B:99:ILE:HG21	2.20	0.42
1:B:154:TYR:O	1:B:165:THR:HG22	2.19	0.42
1:E:31:GLN:N	1:E:84:ASN:OD1	2.52	0.42
1:F:98:LYS:HG3	1:F:100:ASN:HB2	2.02	0.42
2:O:27:DT:H2''	2:O:28:DA:H8	1.85	0.42
1:A:201:TYR:HB2	1:A:205:CYS:C	2.45	0.42
1:B:118:GLN:HE22	1:B:122:LYS:HE3	1.85	0.42
1:F:184:SER:O	1:F:188:ARG:N	2.41	0.42
1:M:34:PRO:HG2	1:M:35:GLN:OE1	2.20	0.42
1:M:78:THR:OG1	1:M:79:SER:N	2.52	0.42
1:M:115:TYR:O	1:M:119:THR:HG23	2.20	0.42
1:M:166:LEU:O	1:M:167:ASP:C	2.63	0.42
1:N:24:LYS:O	1:N:25:LYS:HB3	2.18	0.42
1:F:33:ASP:C	1:F:35:GLN:H	2.28	0.42
1:M:213:TYR:HA	1:M:216:ARG:HH21	1.85	0.42
1:N:194:LYS:CD	1:N:199:ILE:HG12	2.50	0.42
1:E:137:ASN:HD21	1:E:141:GLY:N	2.17	0.42
1:F:106:LEU:C	1:F:108:LYS:HG2	2.45	0.42
1:M:143:ILE:HD11	1:M:180:ILE:HD12	2.02	0.42
1:M:202:LYS:O	1:M:204:SER:N	2.53	0.42
1:A:154:TYR:C	1:A:163:LYS:HE3	2.45	0.42
1:B:235:LYS:HB2	1:B:235:LYS:HE2	1.74	0.42
1:E:129:ALA:HB1	1:E:220:LYS:O	2.20	0.42
1:M:170:THR:O	1:M:173:GLU:HB3	2.20	0.41
1:N:200:VAL:HG12	1:N:202:LYS:HB3	2.01	0.41
1:A:149:ILE:O	1:A:153:VAL:HG12	2.20	0.41
1:E:194:LYS:NZ	1:E:194:LYS:HB3	2.34	0.41
1:F:162:ILE:O	1:F:162:ILE:HD12	2.20	0.41
1:M:164:ILE:HG12	1:M:206:PHE:HB2	2.03	0.41
1:M:235:LYS:C	1:M:236:LEU:HD23	2.45	0.41
2:O:4:DC:H2''	2:O:5:DG:H8	1.86	0.41
1:A:156:LYS:HB3	1:A:163:LYS:HG3	2.00	0.41
1:A:203:ASN:O	1:A:205:CYS:N	2.47	0.41
1:E:185:ALA:HB2	2:G:19:DT:C7	2.50	0.41
1:N:11:TYR:O	1:N:11:TYR:CG	2.73	0.41
1:B:99:ILE:C	1:B:101:GLU:H	2.28	0.41
1:B:108:LYS:HE2	1:B:109:ASN:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:150:LEU:HA	1:B:154:TYR:HD2	1.86	0.41
1:B:189:ILE:O	1:B:189:ILE:HG22	2.20	0.41
1:F:162:ILE:CG1	1:F:208:VAL:N	2.84	0.41
1:M:8:PHE:HD1	1:M:112:HIS:HB3	1.85	0.41
1:M:201:TYR:CZ	1:M:204:SER:HA	2.55	0.41
1:A:171:MET:HG2	3:D:8:DA:P	2.60	0.41
2:C:27:DT:H2''	2:C:28:DA:C8	2.55	0.41
1:N:36:GLU:N	1:N:36:GLU:OE1	2.52	0.41
1:B:222:ASP:OD1	1:B:233:TRP:NE1	2.48	0.41
1:B:223:GLU:O	1:B:227:LEU:HG	2.20	0.41
1:F:74:ILE:HG23	1:F:103:LYS:HG2	2.01	0.41
1:M:77:GLU:HG2	1:M:99:ILE:HG22	2.03	0.41
2:C:27:DT:H2''	2:C:28:DA:N7	2.36	0.41
1:E:10:LYS:CD	1:E:13:GLU:HB2	2.43	0.41
1:E:113:PHE:HZ	1:F:114:PHE:CE1	2.39	0.41
1:E:203:ASN:CG	1:E:204:SER:H	2.27	0.41
1:F:192:LYS:HA	1:F:192:LYS:HD3	1.59	0.41
1:M:171:MET:HE2	1:M:171:MET:HB3	1.80	0.41
1:M:194:LYS:O	1:M:194:LYS:HG2	2.19	0.41
1:M:194:LYS:HE2	1:M:200:VAL:HB	2.01	0.41
1:B:192:LYS:O	1:B:196:GLU:OE1	2.39	0.41
1:F:133:ASP:OD2	1:F:221:LEU:N	2.51	0.41
1:F:192:LYS:HZ2	1:F:194:LYS:C	2.21	0.41
1:F:210:ASN:ND2	1:F:212:ASP:OD2	2.54	0.41
3:H:21:DA:H2''	3:H:22:DA:C8	2.56	0.41
1:M:3:ALA:O	1:M:5:ALA:N	2.54	0.41
1:A:23:HIS:O	1:A:26:GLU:HG2	2.21	0.41
1:E:79:SER:O	1:F:227:LEU:HB3	2.20	0.41
1:F:59:ASN:O	1:F:177:SER:HA	2.20	0.41
1:M:158:THR:OG1	1:M:159:PRO:HD2	2.20	0.41
1:M:194:LYS:HA	1:M:195:GLN:CB	2.50	0.41
1:A:101:GLU:CD	1:A:102:LEU:N	2.79	0.41
1:A:188:ARG:O	1:A:192:LYS:HG3	2.20	0.41
1:B:171:MET:HB2	2:C:8:DG:OP2	2.21	0.41
1:B:222:ASP:CG	1:B:233:TRP:HE1	2.28	0.41
3:D:4:DA:H2''	3:D:5:DG:C8	2.56	0.41
1:E:229:CYS:N	1:E:230:PRO:HD3	2.36	0.41
1:F:156:LYS:HA	1:F:163:LYS:H	1.85	0.41
1:M:166:LEU:HD12	1:M:166:LEU:HA	1.85	0.41
1:N:62:TYR:HB2	4:N:301:GSH:O31	2.21	0.41
1:N:157:GLU:HA	1:N:160:ASP:OD2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:198:VAL:C	1:N:209:GLN:HG2	2.46	0.41
3:D:24:DG:H2''	3:D:25:DA:C8	2.56	0.41
1:E:40:PHE:HD2	1:E:95:TYR:CD2	2.39	0.41
1:E:104:GLU:O	1:E:108:LYS:HG3	2.21	0.41
1:M:2:ASN:N	1:M:3:ALA:C	2.80	0.40
1:N:40:PHE:CE2	1:N:42:TYR:HB2	2.56	0.40
1:N:190:ILE:O	1:N:194:LYS:HD2	2.21	0.40
1:A:126:TYR:HB2	1:A:224:TRP:CE2	2.56	0.40
3:D:2:DG:H2''	3:D:3:DT:O5'	2.20	0.40
1:E:137:ASN:ND2	1:E:141:GLY:H	2.19	0.40
1:N:46:THR:O	1:N:63:TYR:N	2.53	0.40
1:N:160:ASP:OD1	1:N:160:ASP:N	2.52	0.40
1:A:6:GLU:OE1	1:A:6:GLU:N	2.45	0.40
1:B:211:LEU:O	1:B:214:LEU:N	2.53	0.40
1:E:141:GLY:O	1:E:145:GLY:N	2.47	0.40
1:E:190:ILE:O	1:E:193:LEU:HB2	2.21	0.40
1:N:108:LYS:CD	1:N:109:ASN:HB3	2.51	0.40
1:N:194:LYS:HE2	1:N:199:ILE:CG1	2.51	0.40
1:A:225:PHE:O	1:A:233:TRP:HB2	2.22	0.40
1:B:106:LEU:HG	1:B:113:PHE:HD2	1.84	0.40
1:F:77:GLU:OE2	1:F:100:ASN:ND2	2.55	0.40
1:F:235:LYS:HG2	1:F:235:LYS:H	1.67	0.40
1:A:171:MET:O	1:A:186:VAL:HG11	2.22	0.40
1:B:15:ASN:HB3	1:B:105:LEU:HD21	2.02	0.40
1:E:6:GLU:HA	1:E:9:LYS:HB2	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	234/237 (99%)	195 (83%)	27 (12%)	12 (5%)	1 10

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	234/237 (99%)	197 (84%)	26 (11%)	11 (5%)	2	11
1	E	234/237 (99%)	204 (87%)	24 (10%)	6 (3%)	4	23
1	F	234/237 (99%)	202 (86%)	20 (8%)	12 (5%)	1	10
1	M	234/237 (99%)	207 (88%)	16 (7%)	11 (5%)	2	11
1	N	234/237 (99%)	206 (88%)	16 (7%)	12 (5%)	1	10
All	All	1404/1422 (99%)	1211 (86%)	129 (9%)	64 (5%)	2	11

All (64) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	M	4	GLN
1	M	102	LEU
1	M	107	SER
1	M	203	ASN
1	N	98	LYS
1	N	108	LYS
1	A	9	LYS
1	A	13	GLU
1	A	56	THR
1	A	155	GLY
1	A	163	LYS
1	A	209	GLN
1	B	4	GLN
1	B	103	LYS
1	B	105	LEU
1	B	108	LYS
1	B	109	ASN
1	B	167	ASP
1	B	203	ASN
1	E	12	LEU
1	F	157	GLU
1	F	196	GLU
1	F	197	LYS
1	F	235	LYS
1	F	236	LEU
1	M	101	GLU
1	M	109	ASN
1	M	167	ASP
1	M	197	LYS
1	N	202	LYS

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Mol	Chain	Res	Type
1	A	98	LYS
1	B	15	ASN
1	B	91	GLN
1	B	165	THR
1	E	4	GLN
1	F	17	ILE
1	F	156	LYS
1	F	163	LYS
1	F	193	LEU
1	F	203	ASN
1	N	193	LEU
1	A	91	GLN
1	A	103	LYS
1	A	166	LEU
1	E	16	GLY
1	F	212	ASP
1	M	108	LYS
1	M	195	GLN
1	N	3	ALA
1	N	24	LYS
1	N	92	ALA
1	N	101	GLU
1	N	160	ASP
1	B	172	GLN
1	E	137	ASN
1	E	204	SER
1	F	172	GLN
1	M	196	GLU
1	A	204	SER
1	N	158	THR
1	N	208	VAL
1	A	3	ALA
1	E	17	ILE
1	N	199	ILE

5.3.2 Protein sidechains ⓘ

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	211/212 (100%)	193 (92%)	18 (8%)	10	36
1	B	211/212 (100%)	192 (91%)	19 (9%)	9	34
1	E	211/212 (100%)	193 (92%)	18 (8%)	10	36
1	F	211/212 (100%)	200 (95%)	11 (5%)	21	55
1	M	211/212 (100%)	193 (92%)	18 (8%)	10	36
1	N	211/212 (100%)	196 (93%)	15 (7%)	13	43
All	All	1266/1272 (100%)	1167 (92%)	99 (8%)	11	39

All (99) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	M	2	ASN
1	M	9	LYS
1	M	61	GLN
1	M	74	ILE
1	M	90	GLU
1	M	91	GLN
1	M	104	GLU
1	M	108	LYS
1	M	109	ASN
1	M	140	LEU
1	M	164	ILE
1	M	171	MET
1	M	174	LEU
1	M	190	ILE
1	M	195	GLN
1	M	196	GLU
1	M	200	VAL
1	M	210	ASN
1	N	25	LYS
1	N	54	ASN
1	N	74	ILE
1	N	87	VAL
1	N	91	GLN
1	N	109	ASN
1	N	153	VAL
1	N	162	ILE
1	N	163	LYS
1	N	166	LEU
1	N	210	ASN
1	N	212	ASP

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Mol	Chain	Res	Type
1	N	216	ARG
1	N	220	LYS
1	N	237	ASN
1	A	9	LYS
1	A	13	GLU
1	A	14	THR
1	A	24	LYS
1	A	57	ILE
1	A	64	LYS
1	A	74	ILE
1	A	88	ILE
1	A	97	ILE
1	A	106	LEU
1	A	118	GLN
1	A	163	LYS
1	A	168	ASN
1	A	189	ILE
1	A	190	ILE
1	A	194	LYS
1	A	209	GLN
1	A	215	LYS
1	B	6	GLU
1	B	7	GLU
1	B	10	LYS
1	B	18	LYS
1	B	47	LYS
1	B	49	THR
1	B	57	ILE
1	B	64	LYS
1	B	87	VAL
1	B	93	THR
1	B	97	ILE
1	B	103	LYS
1	B	104	GLU
1	B	108	LYS
1	B	167	ASP
1	B	180	ILE
1	B	199	ILE
1	B	209	GLN
1	B	215	LYS
1	E	2	ASN
1	E	7	GLU

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Mol	Chain	Res	Type
1	E	11	TYR
1	E	12	LEU
1	E	15	ASN
1	E	18	LYS
1	E	99	ILE
1	E	137	ASN
1	E	163	LYS
1	E	172	GLN
1	E	173	GLU
1	E	186	VAL
1	E	189	ILE
1	E	190	ILE
1	E	192	LYS
1	E	199	ILE
1	E	208	VAL
1	E	222	ASP
1	F	35	GLN
1	F	57	ILE
1	F	116	VAL
1	F	156	LYS
1	F	162	ILE
1	F	190	ILE
1	F	192	LYS
1	F	197	LYS
1	F	209	GLN
1	F	216	ARG
1	F	233	TRP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (21) such sidechains are listed below:

Mol	Chain	Res	Type
1	M	2	ASN
1	M	123	GLN
1	N	15	ASN
1	N	54	ASN
1	N	61	GLN
1	N	123	GLN
1	A	61	GLN
1	B	21	GLN
1	B	23	HIS
1	B	54	ASN
1	B	137	ASN

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Mol	Chain	Res	Type
1	B	168	ASN
1	B	182	HIS
1	E	15	ASN
1	E	137	ASN
1	E	182	HIS
1	F	31	GLN
1	F	35	GLN
1	F	100	ASN
1	F	146	GLN
1	F	209	GLN

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 ⓘ

6 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
4	GSH	N	301	-	18,19,19	1.85	2 (11%)	21,24,24	1.40	3 (14%)
4	GSH	M	301	-	18,19,19	1.82	2 (11%)	21,24,24	1.38	2 (9%)
4	GSH	A	301	-	18,19,19	1.83	2 (11%)	21,24,24	1.40	3 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	GSH	F	301	-	18,19,19	1.83	2 (11%)	21,24,24	1.39	2 (9%)
4	GSH	B	301	-	18,19,19	1.83	2 (11%)	21,24,24	1.61	4 (19%)
4	GSH	E	301	-	18,19,19	1.83	2 (11%)	21,24,24	1.48	2 (9%)

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
4	GSH	N	301	-	-	2/24/24/24	-
4	GSH	M	301	-	-	0/24/24/24	-
4	GSH	A	301	-	-	1/24/24/24	-
4	GSH	F	301	-	-	4/24/24/24	-
4	GSH	B	301	-	-	6/24/24/24	-
4	GSH	E	301	-	-	6/24/24/24	-

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	N	301	GSH	CD1-N2	4.85	1.44	1.34
4	A	301	GSH	CD1-N2	4.80	1.44	1.34
4	E	301	GSH	CD1-N2	4.76	1.44	1.34
4	M	301	GSH	CD1-N2	4.74	1.44	1.34
4	F	301	GSH	CD1-N2	4.70	1.44	1.34
4	B	301	GSH	CD1-N2	4.69	1.44	1.34
4	N	301	GSH	C2-N3	4.52	1.44	1.33
4	F	301	GSH	C2-N3	4.50	1.44	1.33
4	E	301	GSH	C2-N3	4.49	1.44	1.33
4	A	301	GSH	C2-N3	4.45	1.44	1.33
4	B	301	GSH	C2-N3	4.43	1.44	1.33
4	M	301	GSH	C2-N3	4.39	1.43	1.33

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	B	301	GSH	CA2-CB2-SG2	-3.58	110.12	114.16
4	E	301	GSH	CA2-CB2-SG2	-3.13	110.63	114.16
4	M	301	GSH	CA2-CB2-SG2	-3.10	110.66	114.16
4	F	301	GSH	CA2-CB2-SG2	-3.06	110.71	114.16

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	301	GSH	CA2-CB2-SG2	-2.62	111.21	114.16
4	B	301	GSH	CG1-CD1-N2	2.52	120.31	115.86
4	A	301	GSH	CG1-CD1-N2	2.52	120.31	115.86
4	N	301	GSH	CG1-CD1-N2	2.45	120.18	115.86
4	M	301	GSH	CG1-CD1-N2	2.43	120.14	115.86
4	F	301	GSH	CG1-CD1-N2	2.42	120.13	115.86
4	E	301	GSH	CG1-CD1-N2	2.32	119.95	115.86
4	N	301	GSH	CA2-CB2-SG2	-2.32	111.55	114.16
4	N	301	GSH	CB1-CG1-CD1	-2.24	108.06	113.06
4	B	301	GSH	CA2-C2-N3	2.20	121.26	116.54
4	A	301	GSH	CB1-CG1-CD1	-2.11	108.36	113.06
4	B	301	GSH	CB1-CG1-CD1	-2.05	108.48	113.06

There are no chirality outliers.

All (19) torsion outliers are listed below:

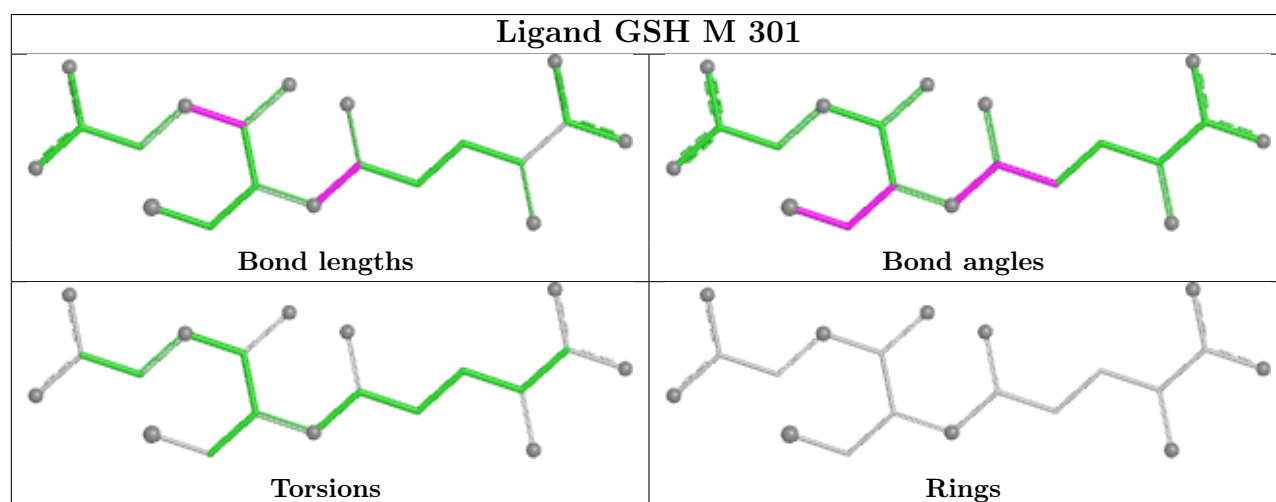
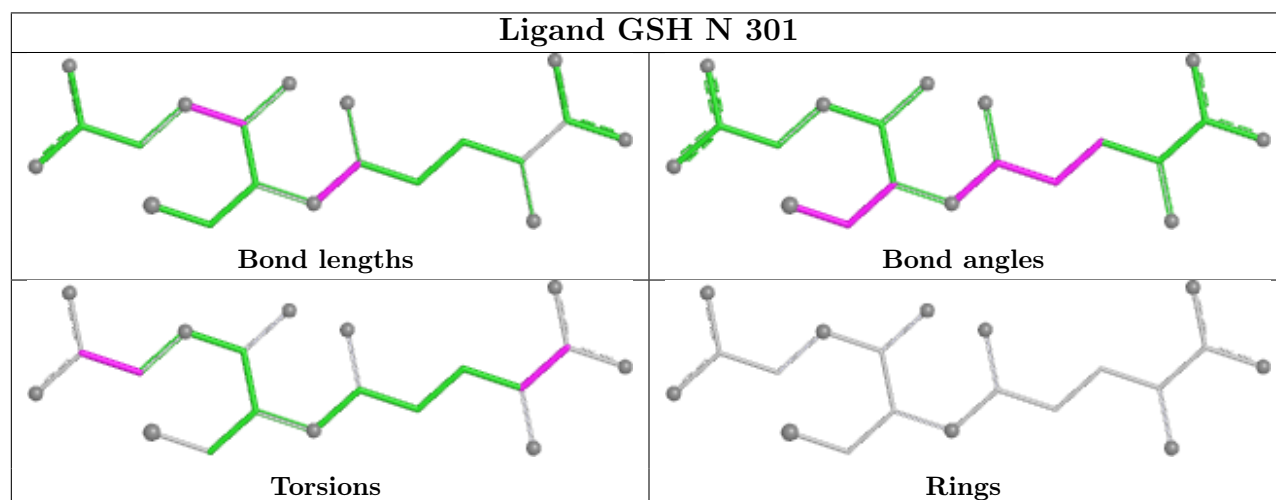
Mol	Chain	Res	Type	Atoms
4	B	301	GSH	N2-CA2-CB2-SG2
4	B	301	GSH	C2-CA2-CB2-SG2
4	F	301	GSH	O31-C3-CA3-N3
4	F	301	GSH	O32-C3-CA3-N3
4	E	301	GSH	N1-CA1-CB1-CG1
4	E	301	GSH	O12-C1-CA1-CB1
4	B	301	GSH	O12-C1-CA1-N1
4	E	301	GSH	O11-C1-CA1-CB1
4	F	301	GSH	O12-C1-CA1-N1
4	A	301	GSH	O11-C1-CA1-N1
4	N	301	GSH	O12-C1-CA1-N1
4	E	301	GSH	C1-CA1-CB1-CG1
4	E	301	GSH	OE1-CD1-CG1-CB1
4	E	301	GSH	N2-CD1-CG1-CB1
4	N	301	GSH	O31-C3-CA3-N3
4	B	301	GSH	OE1-CD1-CG1-CB1
4	B	301	GSH	N1-CA1-CB1-CG1
4	B	301	GSH	O11-C1-CA1-N1
4	F	301	GSH	O11-C1-CA1-N1

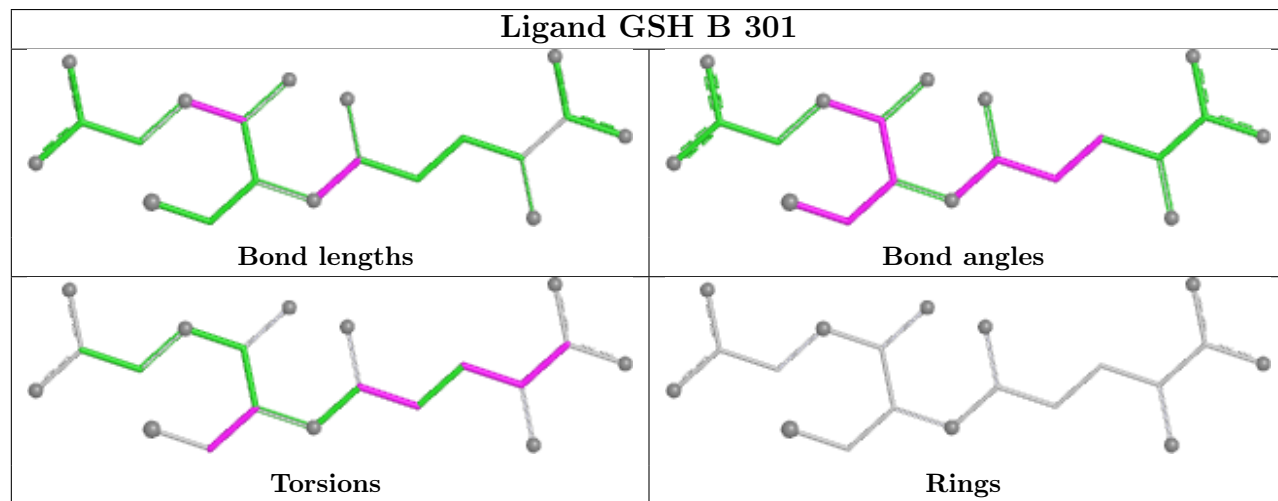
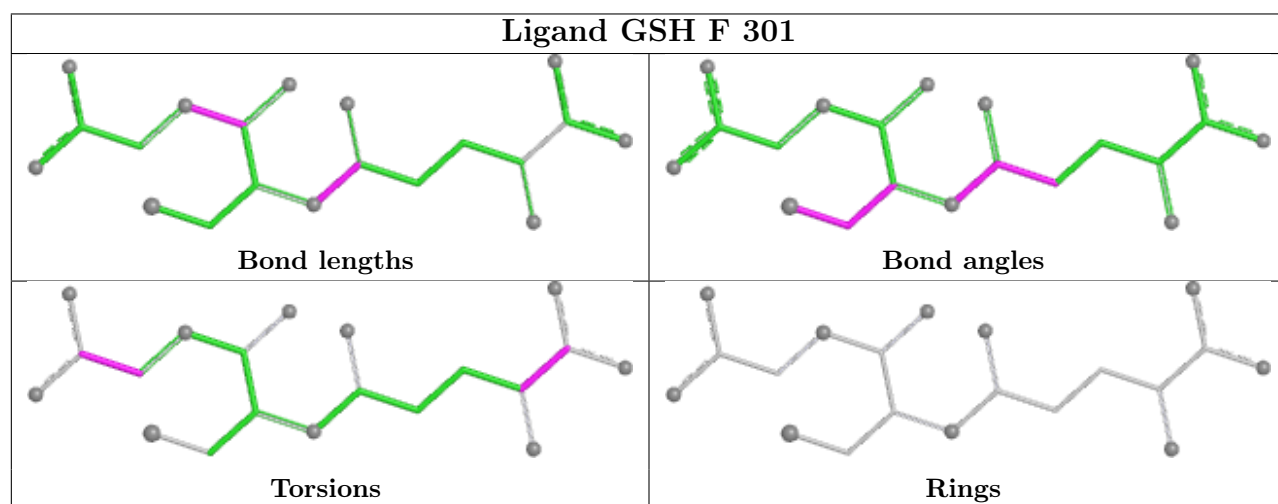
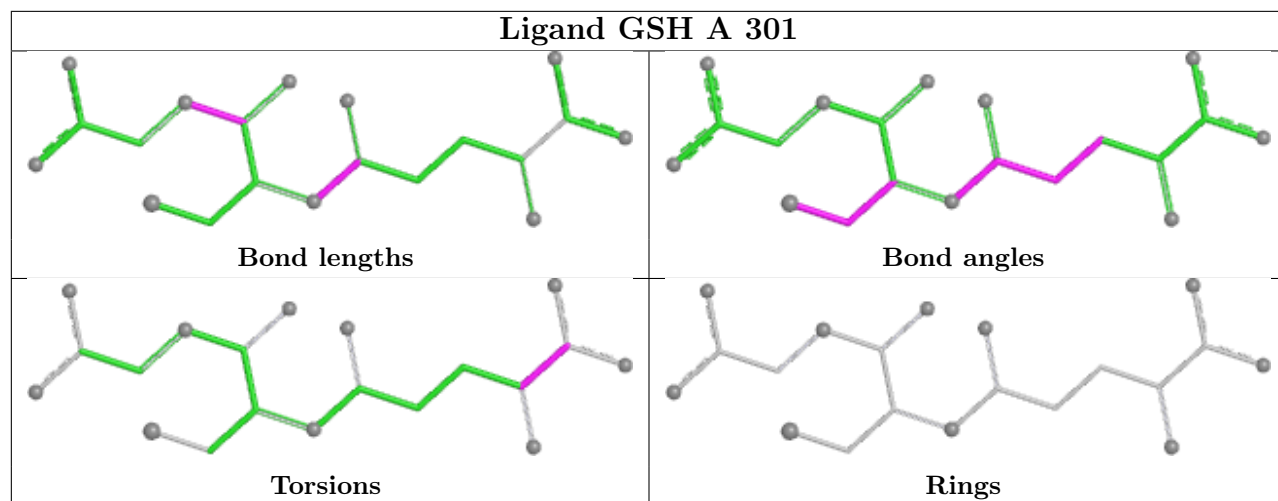
There are no ring outliers.

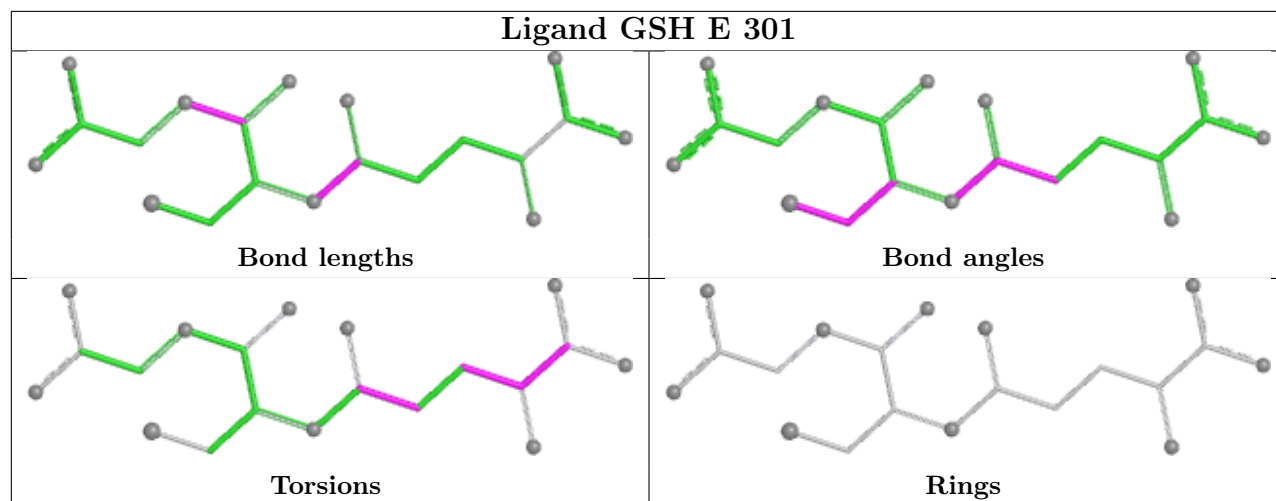
4 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	N	301	GSH	1	0
4	A	301	GSH	2	0
4	F	301	GSH	1	0
4	E	301	GSH	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.







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, 95th 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	236/237 (99%)	0.31	6 (2%)	58	35	63, 103, 162, 217	0
1	B	236/237 (99%)	0.24	4 (1%)	69	45	75, 109, 170, 217	0
1	E	236/237 (99%)	0.26	4 (1%)	69	45	71, 110, 175, 230	0
1	F	236/237 (99%)	0.35	8 (3%)	48	27	72, 111, 195, 268	0
1	M	236/237 (99%)	0.26	6 (2%)	58	35	64, 95, 143, 183	0
1	N	236/237 (99%)	0.29	12 (5%)	33	17	70, 100, 160, 202	0
2	C	29/29 (100%)	-0.42	0	100	100	84, 111, 130, 144	0
2	G	28/29 (96%)	-0.44	0	100	100	100, 135, 150, 157	0
2	O	29/29 (100%)	-0.61	0	100	100	87, 115, 146, 165	0
3	D	29/29 (100%)	-0.58	0	100	100	79, 106, 122, 141	0
3	H	29/29 (100%)	-0.49	0	100	100	105, 126, 149, 176	0
3	P	28/29 (96%)	-0.60	0	100	100	93, 114, 126, 132	0
All	All	1588/1596 (99%)	0.20	40 (2%)	58	35	63, 107, 168, 268	0

All (40) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	156	LYS	4.6
1	F	196	GLU	3.9
1	A	199	ILE	3.6
1	B	189	ILE	3.4
1	A	206	PHE	3.3
1	M	193	LEU	3.2
1	A	40	PHE	3.2
1	N	208	VAL	3.2
1	M	192	LYS	3.0
1	F	106	LEU	3.0
1	N	164	ILE	3.0

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Mol	Chain	Res	Type	RSRZ
1	A	198	VAL	2.8
1	N	206	PHE	2.8
1	F	198	VAL	2.7
1	M	154	TYR	2.6
1	N	11	TYR	2.6
1	N	193	LEU	2.6
1	M	166	LEU	2.5
1	F	199	ILE	2.5
1	N	232	THR	2.5
1	N	105	LEU	2.4
1	A	38	CYS	2.3
1	N	207	TYR	2.3
1	M	196	GLU	2.3
1	N	162	ILE	2.3
1	B	38	CYS	2.2
1	E	155	GLY	2.2
1	F	102	LEU	2.2
1	E	137	ASN	2.2
1	N	191	SER	2.2
1	B	12	LEU	2.2
1	M	200	VAL	2.1
1	B	19	PRO	2.1
1	N	113	PHE	2.1
1	A	162	ILE	2.1
1	E	74	ILE	2.1
1	E	68	VAL	2.0
1	F	180	ILE	2.0
1	F	190	ILE	2.0
1	N	68	VAL	2.0

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

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

6.3 Carbohydrates ⓘ

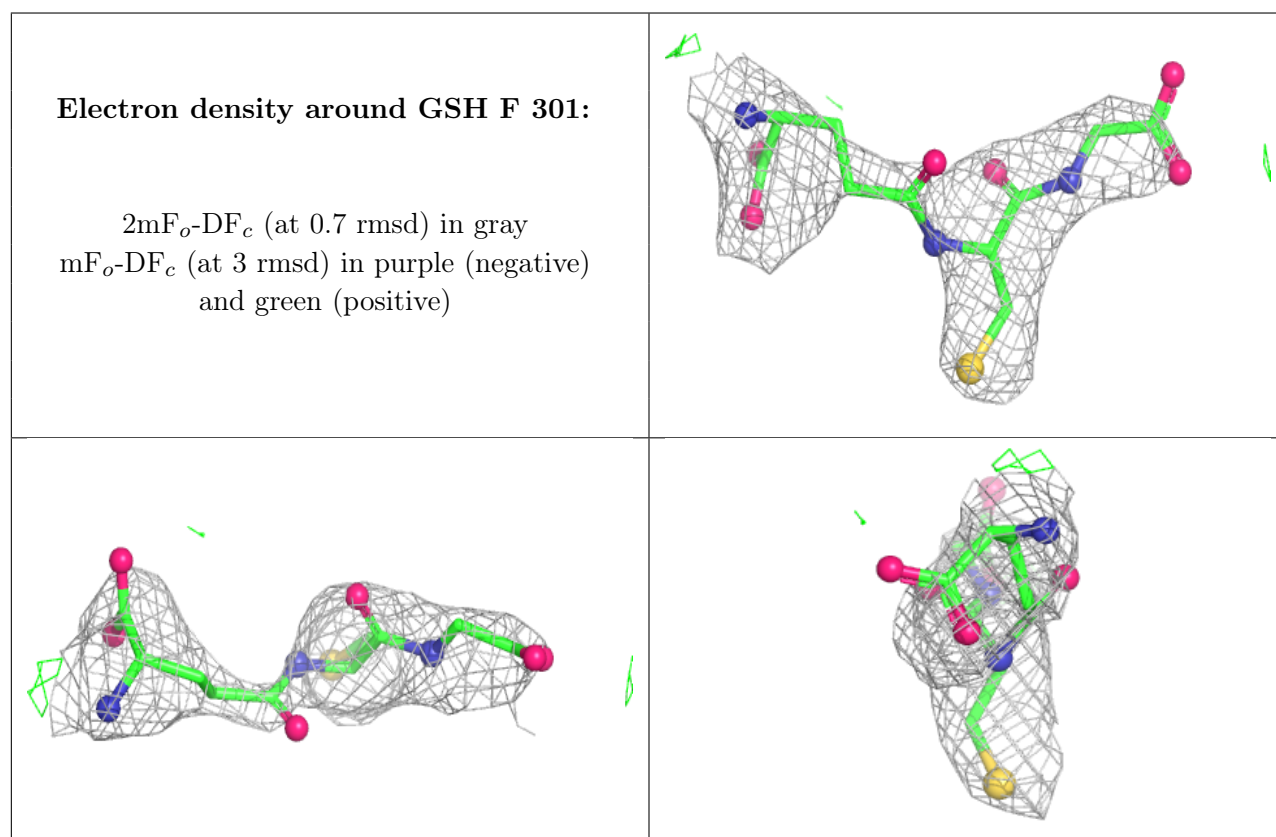
There are no oligosaccharides in this entry.

6.4 Ligands ⓘ

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, 95th 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.

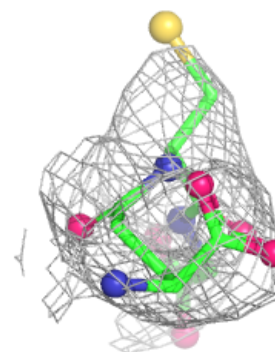
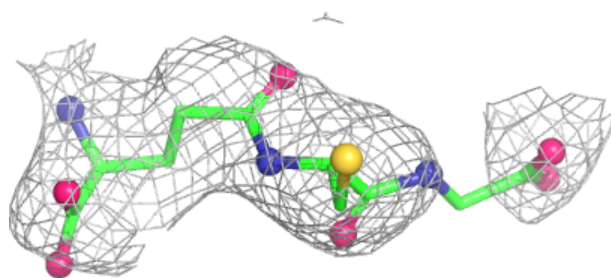
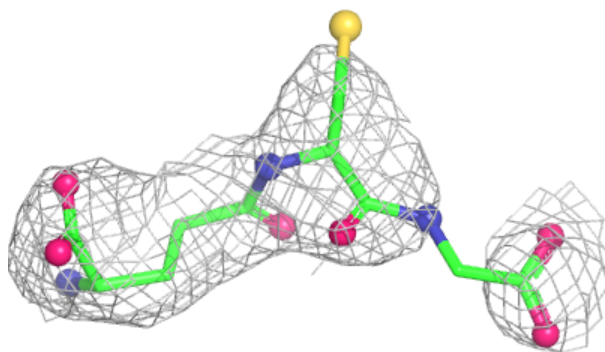
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
4	GSH	F	301	20/20	0.84	0.13	83,110,146,176	0
4	GSH	B	301	20/20	0.85	0.10	95,120,137,176	0
4	GSH	N	301	20/20	0.85	0.13	93,111,142,144	0
4	GSH	A	301	20/20	0.87	0.11	83,101,136,150	0
4	GSH	E	301	20/20	0.88	0.11	98,113,157,230	0
4	GSH	M	301	20/20	0.90	0.11	72,96,124,149	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

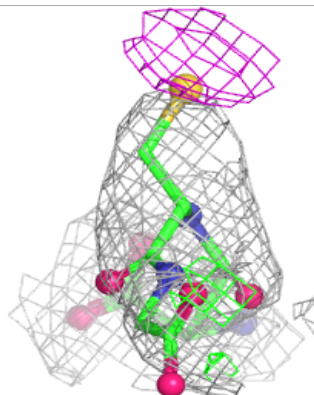
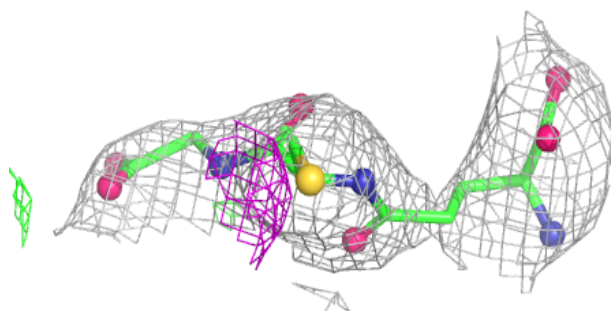
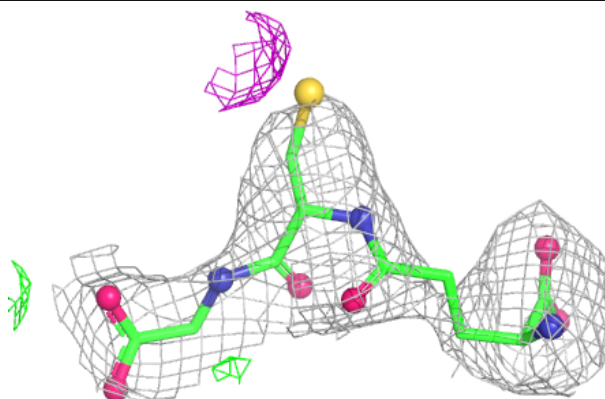


Electron density around GSH B 301:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

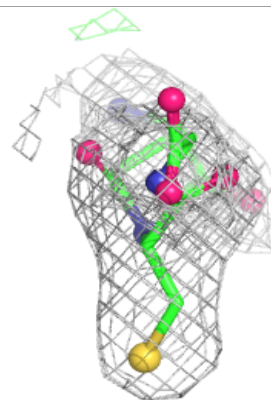
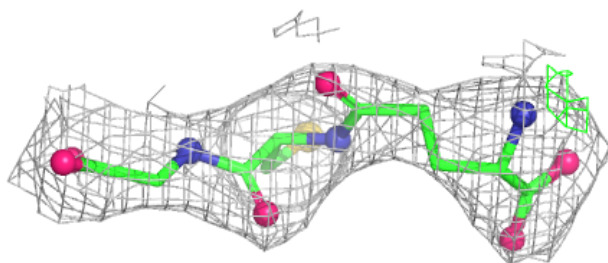
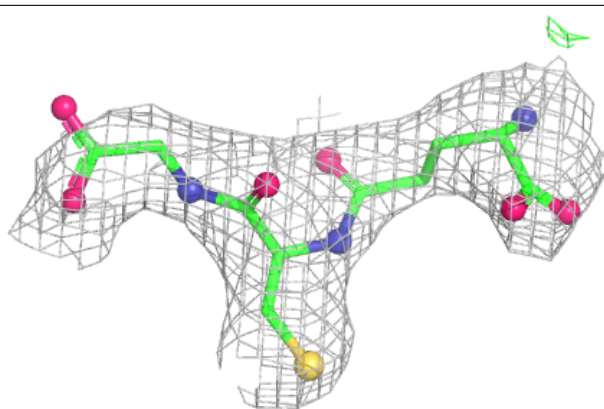
**Electron density around GSH N 301:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

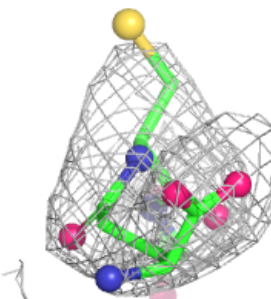
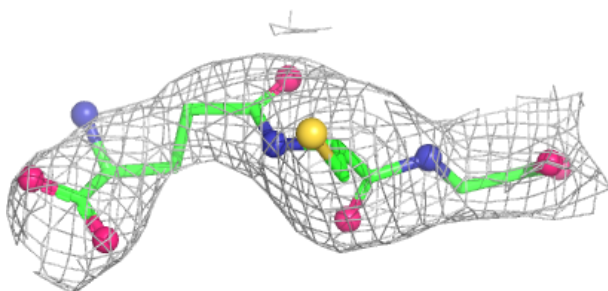
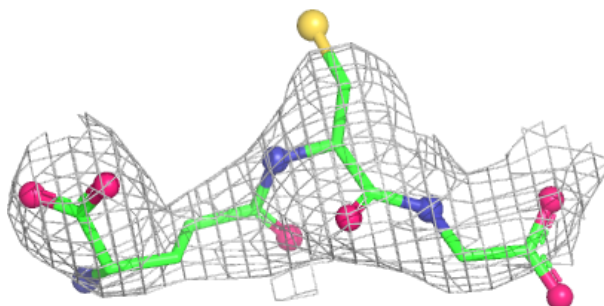


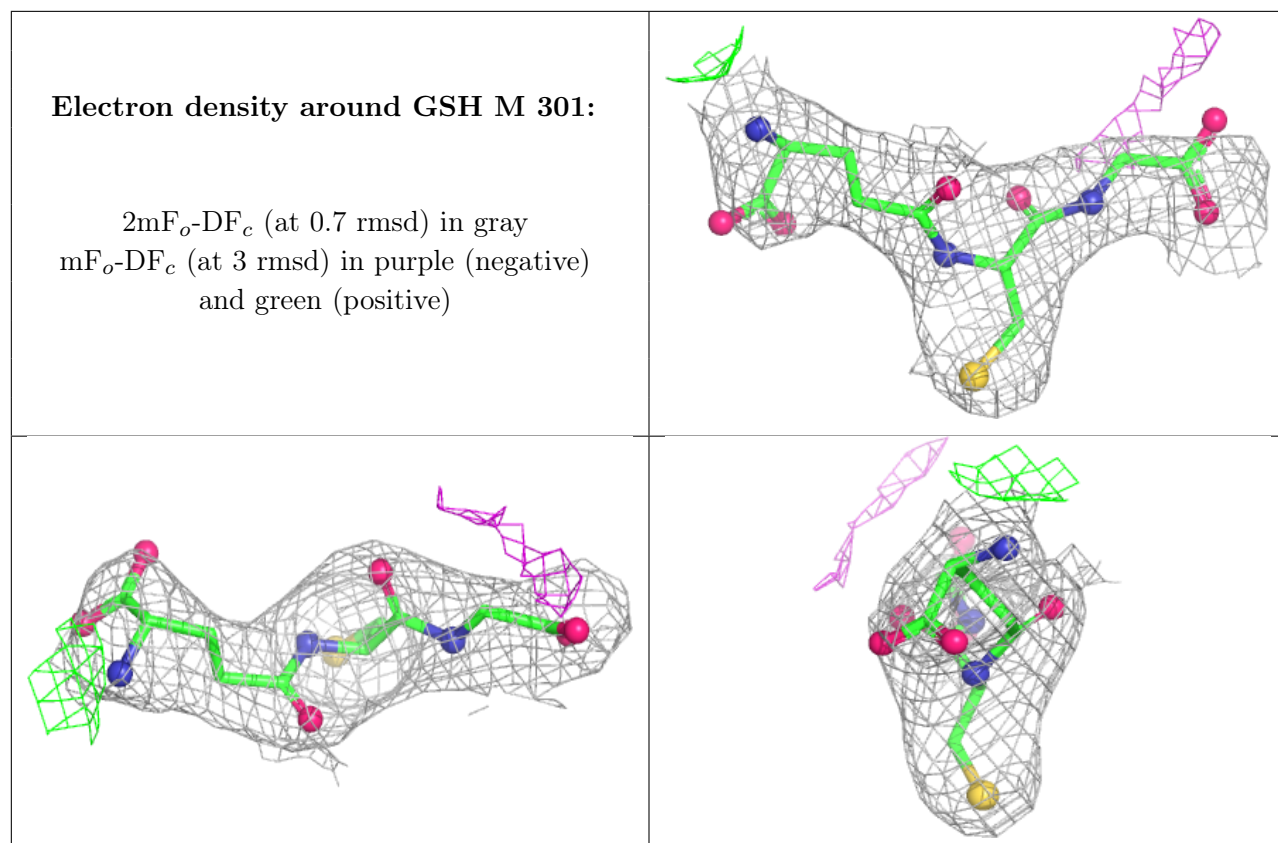
Electron density around GSH A 301:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

**Electron density around GSH E 301:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





6.5 Other polymers [i](#)

There are no such residues in this entry.