



Full wwPDB X-ray Structure Validation Report ⓘ

Jul 1, 2024 – 04:10 PM JST

PDB ID : 8KA0
Title : Crystal structure of *Vibrio vulnificus* RID-dependent transforming NADase domain (RDTND)/calmodulin-binding domain of Rho inactivation domain (RID-CBD) complexed with Ca²⁺-bound calmodulin and a nicotinamide adenine dinucleotide (NAD⁺)
Authors : Lee, Y.; Choi, S.; Hwang, J.; Kim, M.H.
Deposited on : 2023-08-02
Resolution : 2.35 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](#) ①) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtrriage (Phenix) : 1.13
EDS : 2.37.1
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

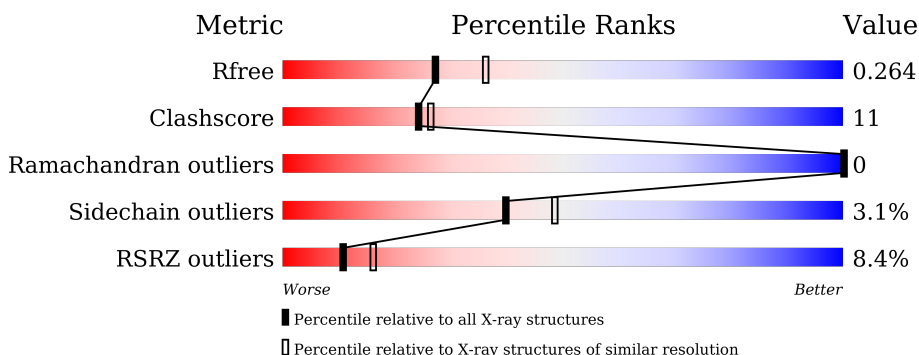
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.35 Å.

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



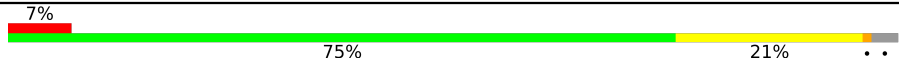

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1164 (2.36-2.36)
Clashscore	141614	1232 (2.36-2.36)
Ramachandran outliers	138981	1211 (2.36-2.36)
Sidechain outliers	138945	1212 (2.36-2.36)
RSRZ outliers	127900	1150 (2.36-2.36)

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	416	
1	C	416	
1	E	416	
1	G	416	
2	B	151	
2	D	151	

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Mol	Chain	Length	Quality of chain
2	F	151	
2	H	151	

2 Entry composition [i](#)

There are 6 unique types of molecules in this entry. The entry contains 18350 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 RDTND-RID CBD.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	405	Total 3243	C 2047	N 553	O 638	S 5	0	0	0
1	C	405	Total 3243	C 2047	N 553	O 638	S 5	0	0	0
1	E	404	Total 3234	C 2042	N 552	O 635	S 5	0	0	0
1	G	404	Total 3234	C 2042	N 552	O 635	S 5	0	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	2186	GLN	GLU	engineered mutation	UNP A0A2S3R7M0
C	2186	GLN	GLU	engineered mutation	UNP A0A2S3R7M0
E	2186	GLN	GLU	engineered mutation	UNP A0A2S3R7M0
G	2186	GLN	GLU	engineered mutation	UNP A0A2S3R7M0

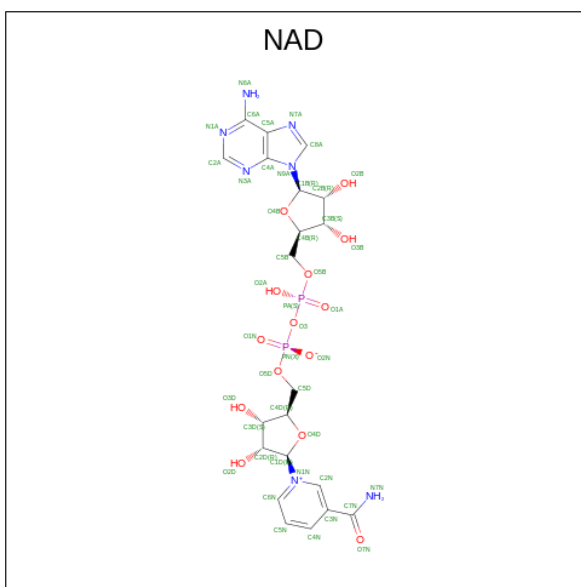
- Molecule 2 is a protein called Calmodulin-2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	145	Total 1143	C 701	N 185	O 248	S 9	0	0	0
2	D	144	Total 1134	C 696	N 183	O 246	S 9	0	0	0
2	F	146	Total 1152	C 707	N 187	O 249	S 9	0	0	0
2	H	145	Total 1143	C 701	N 185	O 248	S 9	0	0	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-1	GLY	-	cloning artifact	UNP P0DP24
B	0	ALA	-	cloning artifact	UNP P0DP24
B	124	GLN	GLU	conflict	UNP P0DP24
D	-1	GLY	-	cloning artifact	UNP P0DP24
D	0	ALA	-	cloning artifact	UNP P0DP24
D	124	GLN	GLU	conflict	UNP P0DP24
F	-1	GLY	-	cloning artifact	UNP P0DP24
F	0	ALA	-	cloning artifact	UNP P0DP24
F	124	GLN	GLU	conflict	UNP P0DP24
H	-1	GLY	-	cloning artifact	UNP P0DP24
H	0	ALA	-	cloning artifact	UNP P0DP24
H	124	GLN	GLU	conflict	UNP P0DP24

- Molecule 3 is NICOTINAMIDE-ADENINE-DINUCLEOTIDE (three-letter code: NAD) (formula: C₂₁H₂₇N₇O₁₄P₂) (labeled as "Ligand of Interest" by depositor).

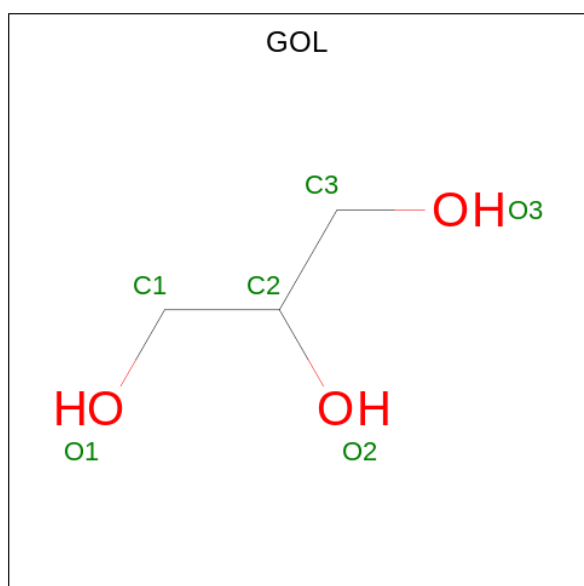


Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
			Total	C	N	O			P
3	A	1	Total	C	N	O	P	0	0
			44	21	7	14	2		
3	C	1	Total	C	N	O	P	0	0
			44	21	7	14	2		
3	E	1	Total	C	N	O	P	0	0
			44	21	7	14	2		
3	G	1	Total	C	N	O	P	0	0
			44	21	7	14	2		

- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	B	2	Total Ca 2 2	0	0
4	D	2	Total Ca 2 2	0	0
4	F	2	Total Ca 2 2	0	0
4	H	2	Total Ca 2 2	0	0

- Molecule 5 is GLYCEROL (three-letter code: GOL) (formula: C₃H₈O₃).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	C	1	Total C O 6 3 3	0	0
5	D	1	Total C O 6 3 3	0	0
5	F	1	Total C O 6 3 3	0	0
5	F	1	Total C O 6 3 3	0	0

- Molecule 6 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	122	Total O 122 122	0	0
6	B	51	Total O 51 51	0	0

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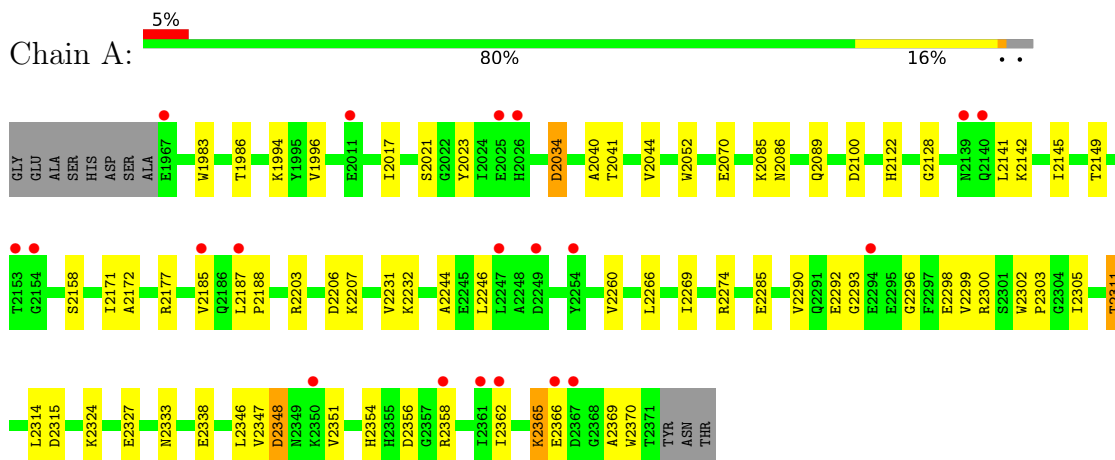
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	C	139	Total 139	O 139	0	0
6	D	43	Total 43	O 43	0	0
6	E	97	Total 97	O 97	0	0
6	F	37	Total 37	O 37	0	0
6	G	87	Total 87	O 87	0	0
6	H	40	Total 40	O 40	0	0

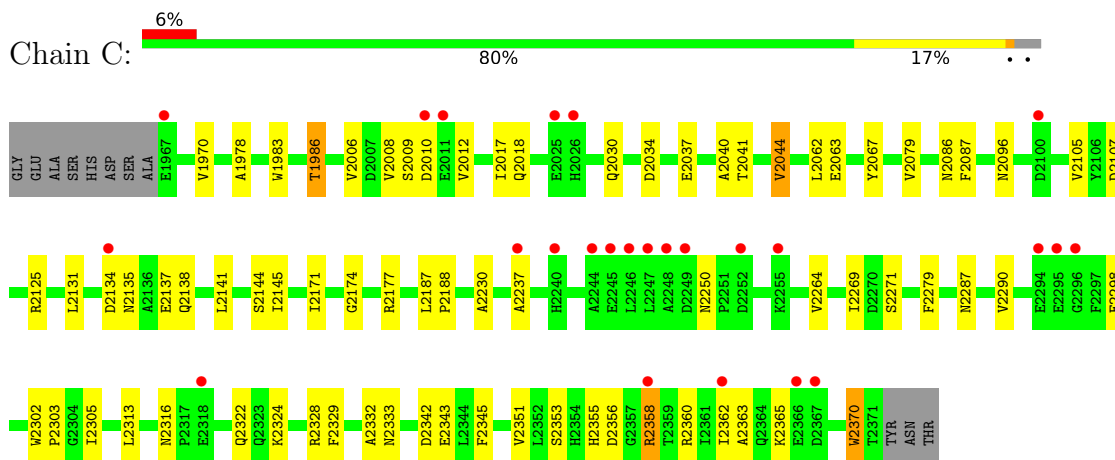
3 Residue-property plots [i](#)

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.

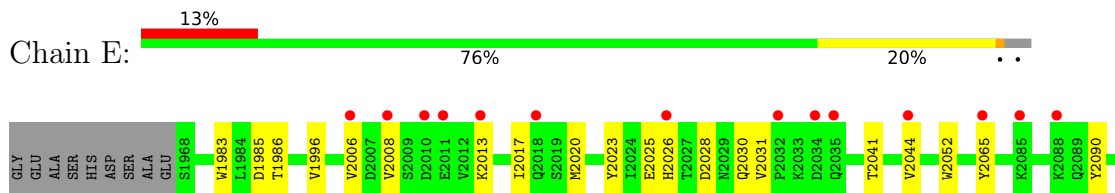
- Molecule 1: RDTND-RID CBD

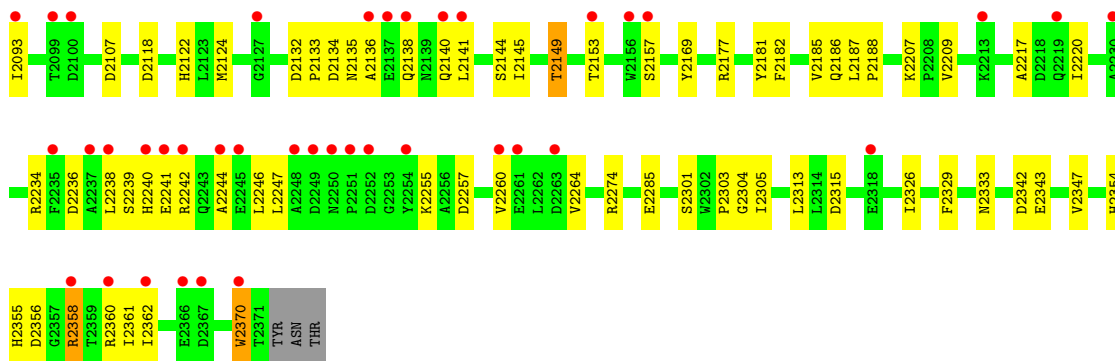


- Molecule 1: RDTND-RID CBD

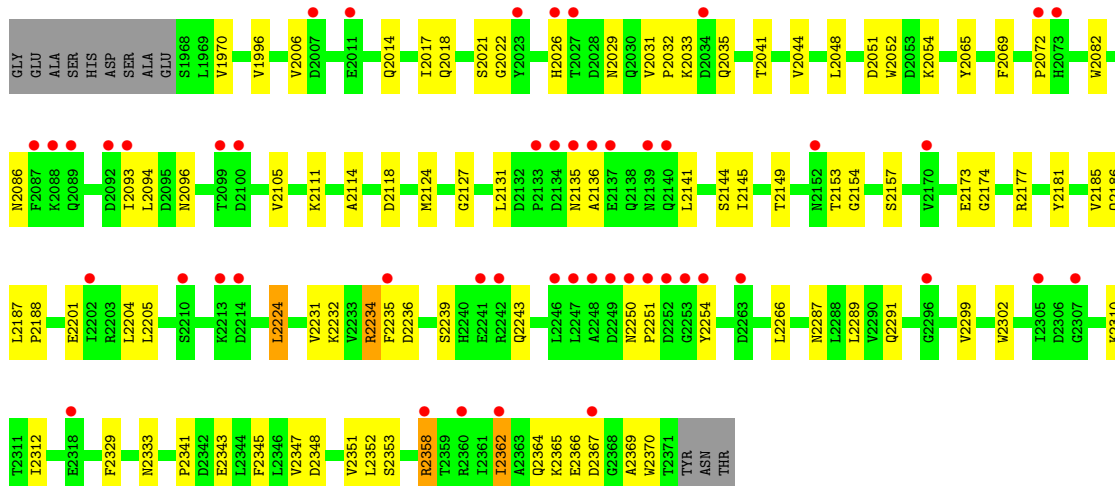
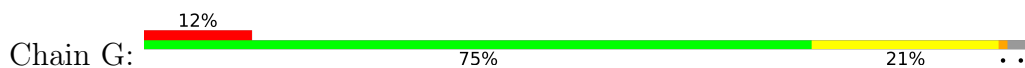


- Molecule 1: RDTND-RID CBD

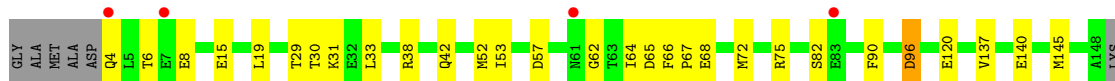
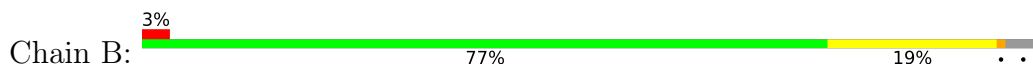




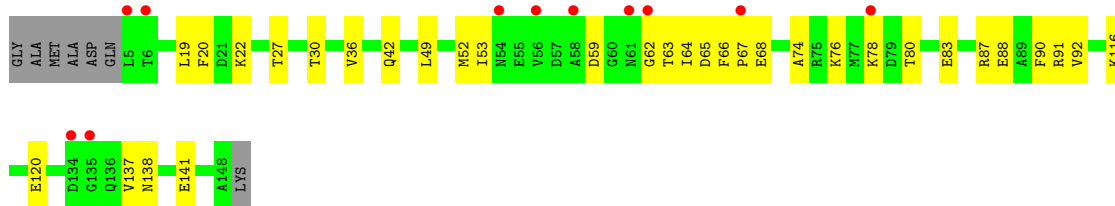
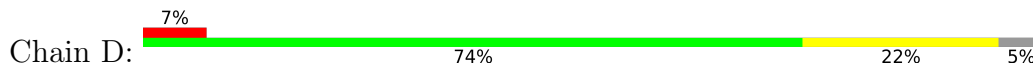
• Molecule 1: RDTND-RID CBD




• Molecule 2: Calmodulin-2

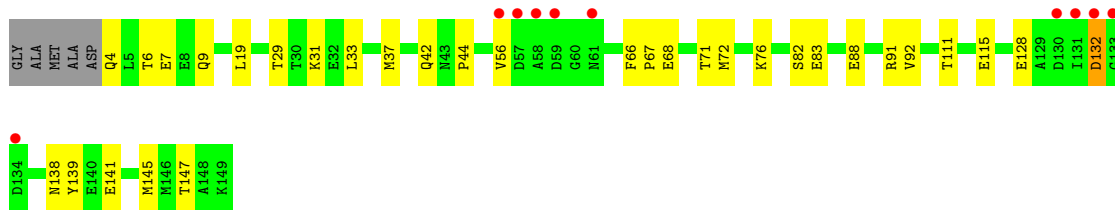


• Molecule 2: Calmodulin-2




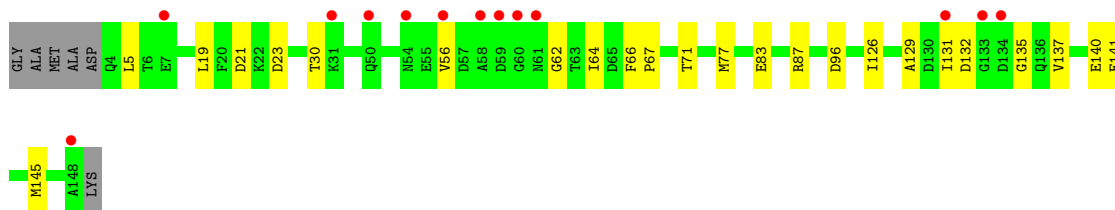
• Molecule 2: Calmodulin-2

Chain F:  7% 75% 21%



- Molecule 2: Calmodulin-2

Chain H:  9% 80% 16%



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	136.22Å 48.93Å 178.60Å 90.00° 95.70° 90.00°	Depositor
Resolution (Å)	29.62 – 2.35 29.62 – 2.35	Depositor EDS
% Data completeness (in resolution range)	99.7 (29.62-2.35) 99.8 (29.62-2.35)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.18 (at 2.36Å)	Xtrriage
Refinement program	REFMAC 5.8.0415	Depositor
R, R_{free}	0.217 , 0.263 0.223 , 0.264	Depositor DCC
R_{free} test set	4996 reflections (5.06%)	wwPDB-VP
Wilson B-factor (Å ²)	43.6	Xtrriage
Anisotropy	0.067	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 40.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	18350	wwPDB-VP
Average B, all atoms (Å ²)	58.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 60.51 % 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 1.5060e-05. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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: GOL, NAD, CA

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.48	0/3309	0.59	0/4484
1	C	0.50	0/3309	0.58	0/4484
1	E	0.45	0/3300	0.55	0/4472
1	G	0.44	0/3300	0.55	0/4472
2	B	0.59	0/1155	0.56	0/1551
2	D	0.55	0/1146	0.56	0/1539
2	F	0.55	0/1164	0.57	0/1562
2	H	0.55	0/1155	0.57	0/1551
All	All	0.49	0/17838	0.57	0/24115

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3243	0	3138	53	0
1	C	3243	0	3138	71	0
1	E	3234	0	3132	95	0
1	G	3234	0	3132	81	0
2	B	1143	0	1073	23	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	1134	0	1065	29	0
2	F	1152	0	1086	32	0
2	H	1143	0	1073	27	0
3	A	44	0	26	0	0
3	C	44	0	26	1	0
3	E	44	0	26	3	0
3	G	44	0	26	7	0
4	B	2	0	0	0	0
4	D	2	0	0	0	0
4	F	2	0	0	0	0
4	H	2	0	0	0	0
5	C	6	0	8	1	0
5	D	6	0	8	0	0
5	F	12	0	16	1	0
6	A	122	0	0	7	0
6	B	51	0	0	3	0
6	C	139	0	0	6	0
6	D	43	0	0	3	0
6	E	97	0	0	2	0
6	F	37	0	0	4	0
6	G	87	0	0	2	0
6	H	40	0	0	2	0
All	All	18350	0	16973	382	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 11.

All (382) 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:E:2124:MET:HG2	1:E:2149:THR:HG21	1.30	1.07
1:E:2124:MET:CG	1:E:2149:THR:HG21	1.93	0.97
1:E:2157:SER:HB3	1:E:2186:GLN:HE21	1.28	0.96
2:D:30:THR:HG21	2:D:53:ILE:HG23	1.45	0.96
1:G:2157:SER:HB3	1:G:2186:GLN:HE21	1.29	0.94
1:G:2351:VAL:HB	1:G:2362:ILE:CG2	1.97	0.94
1:C:2135:ASN:ND2	1:C:2138:GLN:H	1.65	0.93
1:C:2006:VAL:HG22	1:C:2144:SER:HB3	1.46	0.93
1:A:2333:ASN:HD21	1:A:2370:TRP:HH2	1.17	0.91
2:D:30:THR:CG2	2:D:53:ILE:HG23	2.01	0.91
1:E:2017:ILE:HG21	1:E:2041:THR:HG22	1.51	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:2240:HIS:O	1:E:2244:ALA:HB2	1.71	0.89
2:H:5:LEU:CD1	2:H:77:MET:CE	2.52	0.87
1:C:2333:ASN:HD21	1:C:2370:TRP:HZ2	1.19	0.87
1:A:2366:GLU:HG2	1:E:2242:ARG:HE	1.38	0.86
1:E:2238:LEU:HD22	1:E:2260:VAL:HG11	1.57	0.86
1:G:2333:ASN:HD21	1:G:2370:TRP:HH2	1.23	0.86
2:F:147:THR:HG23	6:F:2627:HOH:O	1.78	0.84
2:H:5:LEU:HD11	2:H:77:MET:CE	2.08	0.81
1:C:2135:ASN:HD22	1:C:2138:GLN:H	1.28	0.80
1:G:2351:VAL:HB	1:G:2362:ILE:HG23	1.62	0.80
2:H:5:LEU:CD1	2:H:77:MET:HE1	2.12	0.79
2:H:5:LEU:CD1	2:H:77:MET:HE2	2.13	0.78
1:E:2238:LEU:CD2	1:E:2260:VAL:HG11	2.15	0.77
1:C:2332:ALA:O	2:D:22:LYS:HE2	1.86	0.76
2:H:5:LEU:HD11	2:H:77:MET:HE1	1.70	0.74
1:C:2017:ILE:HG21	1:C:2041:THR:HG22	1.70	0.73
1:E:2264:VAL:HG11	2:F:92:VAL:CG2	2.19	0.72
2:H:141:GLU:O	2:H:145:MET:HG2	1.89	0.72
1:A:2366:GLU:HG2	1:E:2242:ARG:NE	2.04	0.72
1:E:2241:GLU:HA	1:E:2244:ALA:HB3	1.72	0.72
1:E:2240:HIS:O	1:E:2244:ALA:CB	2.37	0.71
1:C:2141:LEU:O	1:C:2145:ILE:HG12	1.90	0.71
1:E:2238:LEU:HD22	1:E:2260:VAL:CG1	2.20	0.71
2:F:128:GLU:O	2:F:145:MET:SD	2.50	0.70
1:G:2006:VAL:HG11	1:G:2048:LEU:HD22	1.74	0.70
6:E:2718:HOH:O	2:F:115:GLU:HG2	1.91	0.70
1:G:2082:TRP:HZ2	3:G:2501:NAD:H71N	1.38	0.70
1:A:2017:ILE:HD13	1:A:2041:THR:HG22	1.73	0.69
1:G:1970:VAL:HG21	1:G:2069:PHE:CD1	2.27	0.69
2:B:72:MET:CE	2:B:75:ARG:HH21	2.05	0.69
1:G:2006:VAL:HG22	1:G:2144:SER:HB3	1.75	0.69
1:E:2333:ASN:HD21	1:E:2370:TRP:HZ2	1.40	0.68
1:E:2238:LEU:O	1:E:2238:LEU:HG	1.94	0.68
1:E:2239:SER:OG	1:E:2242:ARG:HB2	1.94	0.68
1:C:2006:VAL:CG2	1:C:2144:SER:HB3	2.23	0.67
1:E:2141:LEU:O	1:E:2145:ILE:HG12	1.95	0.67
1:E:2370:TRP:CH2	2:F:19:LEU:O	2.48	0.67
1:C:2008:VAL:HG13	1:C:2012:VAL:HB	1.77	0.67
1:A:2086:ASN:O	1:A:2089:GLN:HG2	1.95	0.67
1:E:2008:VAL:HG23	1:E:2013:LYS:CE	2.25	0.67
1:G:2157:SER:CB	1:G:2186:GLN:HE21	2.06	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:62:GLY:O	2:D:63:THR:HG23	1.96	0.66
2:B:6:THR:HG22	2:B:8:GLU:H	1.60	0.65
1:G:2235:PHE:CD1	1:G:2254:TYR:HB3	2.30	0.65
1:G:2072:PRO:HD2	1:G:2105:VAL:HG11	1.77	0.65
1:E:2006:VAL:HG22	1:E:2144:SER:OG	1.96	0.65
1:E:2186:GLN:HE22	3:E:2601:NAD:C1D	2.09	0.65
1:G:2287:ASN:OD1	1:G:2302:TRP:HB3	1.96	0.65
2:F:6:THR:HG21	6:F:2634:HOH:O	1.97	0.65
1:C:2370:TRP:CH2	2:D:19:LEU:O	2.51	0.64
1:G:2351:VAL:HB	1:G:2362:ILE:HG22	1.80	0.64
1:C:2329:PHE:CD2	1:C:2362:ILE:HD13	2.34	0.63
1:G:2082:TRP:HZ2	3:G:2501:NAD:N7N	1.96	0.63
1:C:2329:PHE:CD2	1:C:2362:ILE:CD1	2.82	0.63
1:A:2370:TRP:HZ2	2:B:19:LEU:O	1.81	0.62
1:G:2014:GLN:O	1:G:2018:GLN:HG2	2.00	0.62
2:B:72:MET:CE	2:B:75:ARG:NH2	2.63	0.62
1:G:2157:SER:HB3	1:G:2186:GLN:NE2	2.10	0.62
1:A:2354:HIS:HE1	1:G:2343:GLU:OE1	1.82	0.61
1:E:2017:ILE:CG2	1:E:2041:THR:HG22	2.29	0.61
1:G:2051:ASP:OD1	1:G:2054:LYS:HG3	2.01	0.61
1:E:2187:LEU:HB3	1:E:2188:PRO:HD3	1.82	0.61
1:G:2239:SER:O	1:G:2243:GLN:HG3	2.01	0.61
2:B:52:MET:HG2	2:B:72:MET:SD	2.41	0.60
1:C:2329:PHE:HD2	1:C:2362:ILE:HD13	1.66	0.60
2:B:72:MET:HE1	2:B:75:ARG:HH21	1.66	0.60
1:E:2008:VAL:HG23	1:E:2013:LYS:HE2	1.81	0.60
2:B:68:GLU:O	2:B:72:MET:HG2	2.01	0.60
1:A:2366:GLU:CG	1:E:2242:ARG:HD2	2.31	0.60
2:B:72:MET:HE1	2:B:75:ARG:NH2	2.16	0.60
2:D:49:LEU:O	2:D:52:MET:HB2	2.02	0.59
2:F:42:GLN:HE21	2:F:76:LYS:HG3	1.67	0.59
2:B:65:ASP:HB3	2:B:67:PRO:HD2	1.84	0.59
1:E:2023:TYR:CD1	1:E:2122:HIS:ND1	2.71	0.59
2:D:66:PHE:N	2:D:67:PRO:HD2	2.19	0.58
1:E:2008:VAL:CG2	1:E:2013:LYS:NZ	2.66	0.58
1:G:2358:ARG:H	1:G:2358:ARG:NE	2.02	0.58
1:C:2135:ASN:ND2	1:C:2138:GLN:N	2.46	0.58
2:H:66:PHE:N	2:H:67:PRO:HD2	2.19	0.58
1:G:2032:PRO:HB2	1:G:2035:GLN:HB2	1.86	0.58
1:C:2040:ALA:O	1:C:2044:VAL:HG13	2.04	0.58
1:C:2037:GLU:O	1:C:2041:THR:HG23	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:5:LEU:HD12	2:H:77:MET:HE1	1.84	0.58
1:E:2239:SER:HB2	1:E:2242:ARG:CZ	2.34	0.57
1:G:2094:LEU:HD21	1:G:2205:LEU:HD21	1.85	0.57
1:G:2370:TRP:HZ2	2:H:19:LEU:O	1.86	0.57
1:A:2354:HIS:CE1	1:G:2343:GLU:OE1	2.57	0.57
1:C:2313:LEU:HD12	1:C:2345:PHE:CE1	2.39	0.57
1:E:2017:ILE:HG12	1:E:2044:VAL:HG21	1.87	0.56
2:H:129:ALA:O	2:H:131:ILE:HG13	2.05	0.56
1:C:2086:ASN:HB2	6:C:2573:HOH:O	2.06	0.56
2:D:138:ASN:HD22	2:D:141:GLU:H	1.52	0.56
1:E:2186:GLN:HE22	3:E:2601:NAD:H1D	1.70	0.56
1:E:2240:HIS:O	1:E:2244:ALA:N	2.39	0.56
1:C:2303:PRO:HG2	1:C:2305:ILE:HG23	1.88	0.56
1:A:2370:TRP:HD1	6:A:2573:HOH:O	1.87	0.56
1:E:2234:ARG:HD2	1:E:2236:ASP:OD2	2.07	0.55
1:G:2370:TRP:HD1	6:G:2656:HOH:O	1.88	0.55
1:A:2177:ARG:HA	1:A:2232:LYS:O	2.06	0.55
2:B:30:THR:OG1	2:B:53:ILE:HD12	2.07	0.55
1:C:2362:ILE:HG22	1:C:2370:TRP:HA	1.88	0.55
1:A:2070:GLU:HG2	6:A:2513:HOH:O	2.05	0.55
1:A:1983:TRP:HA	1:A:1986:THR:HG23	1.88	0.55
1:C:2290:VAL:HA	1:C:2298:GLU:O	2.07	0.55
1:C:2010:ASP:HB3	6:C:2551:HOH:O	2.07	0.55
2:H:30:THR:CG2	2:H:62:GLY:HA2	2.37	0.55
1:G:2231:VAL:CG2	1:G:2266:LEU:HD13	2.37	0.55
1:C:1970:VAL:HG23	1:C:2063:GLU:CD	2.27	0.54
1:C:2006:VAL:HG22	1:C:2144:SER:CB	2.31	0.54
2:F:67:PRO:HB3	2:H:145:MET:CE	2.38	0.54
1:G:2124:MET:HG3	1:G:2149:THR:HG21	1.90	0.54
2:F:6:THR:HG23	2:F:9:GLN:H	1.72	0.54
2:H:5:LEU:HD12	2:H:77:MET:CE	2.36	0.54
1:A:2366:GLU:HG3	1:E:2242:ARG:HD2	1.90	0.54
1:E:2132:ASP:HB2	1:E:2134:ASP:OD1	2.07	0.54
1:G:2250:ASN:N	1:G:2251:PRO:HD2	2.23	0.53
1:C:2279:PHE:CD2	1:C:2290:VAL:CG2	2.91	0.53
2:F:29:THR:HG22	2:F:31:LYS:H	1.72	0.53
1:C:2329:PHE:HD2	1:C:2362:ILE:CD1	2.21	0.53
1:E:2264:VAL:HG21	2:F:92:VAL:HG21	1.90	0.53
1:E:2239:SER:OG	1:E:2242:ARG:CB	2.56	0.53
1:E:2358:ARG:O	1:E:2358:ARG:NE	2.33	0.53
2:B:29:THR:CG2	2:B:31:LYS:HB2	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:2031:VAL:HG22	1:G:2065:TYR:CD2	2.43	0.53
1:G:2329:PHE:CE2	1:G:2362:ILE:HG21	2.44	0.53
1:A:2274:ARG:NH2	1:A:2285:GLU:OE1	2.41	0.53
1:A:2347:VAL:HG21	1:G:2347:VAL:CG2	2.40	0.52
1:C:2135:ASN:ND2	1:C:2138:GLN:HG3	2.24	0.52
1:E:2182:PHE:HA	1:E:2186:GLN:HB2	1.92	0.52
1:E:2274:ARG:NH2	1:E:2285:GLU:OE1	2.42	0.52
1:A:2315:ASP:HB2	6:A:2514:HOH:O	2.10	0.52
1:E:2355:HIS:O	1:E:2356:ASP:OD2	2.27	0.52
1:C:1970:VAL:HG23	1:C:2063:GLU:OE2	2.10	0.51
1:E:2008:VAL:HG23	1:E:2013:LYS:NZ	2.25	0.51
2:H:30:THR:HG23	2:H:62:GLY:C	2.30	0.51
2:H:56:VAL:HG21	2:H:64:ILE:HG13	1.92	0.51
1:E:2017:ILE:CG1	1:E:2044:VAL:HG21	2.40	0.51
1:A:2362:ILE:HG13	1:A:2369:ALA:O	2.10	0.51
1:E:2255:LYS:HE3	1:E:2257:ASP:OD1	2.10	0.51
2:B:57:ASP:OD1	2:B:62:GLY:N	2.42	0.51
1:E:2362:ILE:CG2	1:E:2370:TRP:CE2	2.93	0.51
2:F:147:THR:CG2	6:F:2627:HOH:O	2.46	0.51
1:G:2201:GLU:HG3	6:G:2632:HOH:O	2.11	0.51
1:A:2351:VAL:HB	1:A:2362:ILE:CG2	2.41	0.51
1:G:1970:VAL:CG2	1:G:2069:PHE:CD1	2.93	0.51
1:G:2032:PRO:HB2	1:G:2035:GLN:CB	2.40	0.51
2:B:96:ASP:OD1	2:B:96:ASP:N	2.44	0.51
1:C:2125:ARG:HD3	6:C:2507:HOH:O	2.10	0.51
1:E:2342:ASP:OD2	1:E:2355:HIS:ND1	2.43	0.51
2:D:88:GLU:O	2:D:92:VAL:HG23	2.11	0.50
2:F:138:ASN:HD22	2:F:141:GLU:H	1.58	0.50
1:G:2365:LYS:O	1:G:2366:GLU:HG2	2.10	0.50
1:A:2348:ASP:OD1	1:G:2348:ASP:HB3	2.11	0.50
1:C:2062:LEU:O	1:C:2067:TYR:HB2	2.11	0.50
1:E:1996:VAL:HB	1:E:2052:TRP:CE3	2.46	0.50
2:H:83:GLU:O	2:H:87:ARG:HG2	2.11	0.50
1:C:2342:ASP:C	1:C:2343:GLU:HG3	2.32	0.50
2:D:42:GLN:HE21	2:D:76:LYS:HG3	1.75	0.50
1:G:2353:SER:O	1:G:2358:ARG:HA	2.11	0.50
1:E:2220:ILE:HG23	1:E:2220:ILE:O	2.12	0.50
2:F:66:PHE:N	2:F:67:PRO:HD2	2.26	0.50
2:F:88:GLU:O	2:F:92:VAL:HG23	2.10	0.50
1:A:2040:ALA:O	1:A:2044:VAL:HG13	2.11	0.50
2:F:67:PRO:HB3	2:H:145:MET:HE2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:29:THR:HG22	2:F:31:LYS:N	2.27	0.50
1:A:2141:LEU:O	1:A:2145:ILE:HG12	2.11	0.50
1:E:2370:TRP:HH2	2:F:19:LEU:O	1.94	0.50
2:B:66:PHE:N	2:B:67:PRO:HD2	2.27	0.50
1:G:2086:ASN:ND2	1:G:2173:GLU:OE1	2.44	0.50
1:C:2008:VAL:HG12	1:C:2009:SER:O	2.12	0.49
2:H:140:GLU:HG2	6:H:1129:HOH:O	2.11	0.49
1:E:2315:ASP:HB3	1:E:2347:VAL:HG12	1.93	0.49
2:H:126:ILE:HG22	2:H:131:ILE:HD11	1.95	0.49
2:F:4:GLN:HB3	5:F:2504:GOL:O2	2.12	0.49
2:F:132:ASP:OD2	2:F:132:ASP:N	2.46	0.49
2:F:91:ARG:NH1	2:F:139:TYR:OH	2.45	0.49
1:G:2111:LYS:HA	1:G:2114:ALA:HB3	1.95	0.49
2:B:29:THR:HG23	6:B:340:HOH:O	2.12	0.49
1:C:2333:ASN:ND2	1:C:2370:TRP:HZ2	1.99	0.49
1:E:2093:ILE:HG21	1:E:2209:VAL:HG23	1.94	0.49
1:E:2153:THR:OG1	1:E:2181:TYR:CZ	2.65	0.49
2:D:65:ASP:HB3	2:D:67:PRO:HD2	1.95	0.49
1:E:2362:ILE:HG21	1:E:2370:TRP:CE2	2.48	0.49
1:G:2187:LEU:HB3	1:G:2188:PRO:HD3	1.93	0.49
1:E:2301:SER:O	1:E:2304:GLY:N	2.46	0.49
1:C:2362:ILE:CG2	1:C:2370:TRP:CD2	2.96	0.49
1:A:2034:ASP:OD1	1:A:2034:ASP:N	2.41	0.48
1:G:2364:GLN:HA	1:G:2367:ASP:O	2.13	0.48
1:C:2351:VAL:HB	1:C:2362:ILE:HG12	1.93	0.48
2:D:83:GLU:O	2:D:87:ARG:HG2	2.13	0.48
2:D:27:THR:HA	2:D:64:ILE:O	2.13	0.48
1:G:1970:VAL:HG22	1:G:2069:PHE:HB2	1.95	0.48
1:C:2355:HIS:O	1:C:2356:ASP:OD2	2.31	0.48
1:A:2347:VAL:HG21	1:G:2347:VAL:HG21	1.96	0.48
1:G:2362:ILE:HG13	1:G:2369:ALA:O	2.13	0.48
1:E:2247:LEU:HD13	1:E:2247:LEU:C	2.34	0.48
1:G:2347:VAL:HG23	1:G:2347:VAL:O	2.13	0.48
1:C:2362:ILE:HG21	1:C:2370:TRP:CE2	2.48	0.48
1:E:2031:VAL:HG13	1:E:2065:TYR:CE2	2.49	0.48
1:C:2135:ASN:HD21	1:C:2137:GLU:HB2	1.79	0.47
1:A:2207:LYS:HE3	6:A:2526:HOH:O	2.14	0.47
2:B:120:GLU:HB3	6:B:333:HOH:O	2.14	0.47
1:G:2289:LEU:HD21	1:G:2291:GLN:OE1	2.13	0.47
1:C:2303:PRO:HG2	1:C:2305:ILE:CG2	2.45	0.47
1:C:2329:PHE:CD2	1:C:2362:ILE:HD11	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2316:ASN:H	1:C:2322:GLN:HE22	1.62	0.47
2:D:62:GLY:O	2:D:63:THR:CG2	2.62	0.47
1:G:2181:TYR:CG	3:G:2501:NAD:H6N	2.50	0.47
1:A:2172:ALA:O	1:A:2206:ASP:HA	2.13	0.47
1:A:2302:TRP:CG	1:A:2303:PRO:HA	2.50	0.47
1:C:2362:ILE:CG2	1:C:2370:TRP:CE2	2.96	0.47
1:E:2181:TYR:O	1:E:2185:VAL:HG22	2.14	0.47
1:E:2238:LEU:O	1:E:2239:SER:HB3	2.14	0.47
1:A:2244:ALA:HA	6:A:2597:HOH:O	2.15	0.47
1:C:2008:VAL:HG22	1:C:2141:LEU:HD11	1.97	0.47
1:G:2093:ILE:HA	1:G:2096:ASN:HD22	1.80	0.47
1:A:2246:LEU:HD11	1:A:2260:VAL:HG11	1.97	0.47
1:C:2363:ALA:HB2	6:C:2603:HOH:O	2.15	0.47
2:F:33:LEU:O	2:F:37:MET:HG3	2.14	0.47
1:E:2020:MET:HE1	1:E:2122:HIS:HB3	1.96	0.47
1:E:2247:LEU:HD13	1:E:2247:LEU:O	2.15	0.47
1:G:2358:ARG:HD2	1:G:2358:ARG:O	2.15	0.47
1:E:2169:TYR:HE1	1:E:2220:ILE:HG23	1.80	0.46
2:H:21:ASP:O	6:H:1101:HOH:O	2.21	0.46
2:B:6:THR:HG22	2:B:8:GLU:N	2.28	0.46
1:C:2250:ASN:OD1	1:C:2250:ASN:N	2.49	0.46
1:G:2235:PHE:CE1	1:G:2254:TYR:HB3	2.50	0.46
1:A:2100:ASP:OD1	1:A:2100:ASP:N	2.38	0.46
2:B:33:LEU:HD22	2:B:64:ILE:CD1	2.46	0.46
1:E:2264:VAL:HG11	2:F:92:VAL:HG21	1.97	0.46
2:F:6:THR:HG22	2:F:9:GLN:OE1	2.15	0.46
1:G:2174:GLY:O	1:G:2232:LYS:HE2	2.15	0.46
1:E:2343:GLU:HB2	1:E:2354:HIS:HB3	1.98	0.46
1:G:2153:THR:OG1	1:G:2181:TYR:CZ	2.68	0.46
2:F:7:GLU:HG2	6:F:2626:HOH:O	2.15	0.46
2:H:30:THR:HG23	2:H:62:GLY:HA2	1.97	0.46
1:C:1978:ALA:HB1	5:C:2402:GOL:H2	1.99	0.45
1:C:2131:LEU:HD13	1:C:2138:GLN:O	2.16	0.45
1:G:2017:ILE:HD13	1:G:2041:THR:HG22	1.98	0.45
2:H:131:ILE:O	2:H:131:ILE:HG22	2.15	0.45
1:A:2314:LEU:HD23	1:A:2346:LEU:HB3	1.98	0.45
1:E:2239:SER:HB2	1:E:2242:ARG:NH2	2.30	0.45
1:E:2333:ASN:ND2	1:E:2370:TRP:HZ2	2.12	0.45
1:C:2302:TRP:CG	1:C:2303:PRO:HA	2.51	0.45
1:C:2008:VAL:CG1	1:C:2012:VAL:HB	2.46	0.45
1:E:2329:PHE:CZ	1:E:2361:ILE:HG21	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2293:GLY:N	1:A:2296:GLY:O	2.48	0.45
1:C:2018:GLN:NE2	1:C:2037:GLU:OE1	2.49	0.45
1:E:2090:TYR:OH	1:E:2207:LYS:O	2.34	0.45
1:G:2345:PHE:HB2	1:G:2352:LEU:HB2	1.98	0.45
1:E:2124:MET:CG	1:E:2149:THR:CG2	2.80	0.45
1:C:2174:GLY:O	1:C:2230:ALA:HB3	2.17	0.45
1:E:2107:ASP:OD2	3:E:2601:NAD:H2N	2.16	0.45
1:G:2022:GLY:O	1:G:2026:HIS:HB2	2.16	0.45
1:C:2370:TRP:HH2	2:D:19:LEU:O	1.99	0.45
1:A:2351:VAL:HB	1:A:2362:ILE:HG23	1.99	0.44
1:C:2358:ARG:O	1:C:2358:ARG:NE	2.50	0.44
1:E:2023:TYR:CD1	1:E:2122:HIS:CE1	3.05	0.44
1:E:2031:VAL:HG22	1:E:2065:TYR:HD2	1.81	0.44
1:C:2269:ILE:CD1	2:D:90:PHE:CE2	3.01	0.44
2:H:30:THR:HG21	2:H:62:GLY:HA2	1.99	0.44
2:D:76:LYS:HE3	2:D:80:THR:HG21	2.00	0.44
1:E:2008:VAL:CG2	1:E:2013:LYS:HZ3	2.31	0.44
2:F:31:LYS:O	2:F:31:LYS:HD3	2.18	0.44
2:F:83:GLU:OE1	2:F:83:GLU:HA	2.18	0.44
1:G:1996:VAL:HB	1:G:2052:TRP:CE3	2.53	0.44
1:G:2234:ARG:NH1	1:G:2236:ASP:OD2	2.51	0.44
1:A:2303:PRO:HG2	1:A:2305:ILE:HG12	1.99	0.44
2:B:38:ARG:HA	2:B:42:GLN:O	2.18	0.44
1:A:2324:LYS:O	1:A:2327:GLU:HB3	2.18	0.44
1:E:2025:GLU:HB3	1:E:2026:HIS:HD2	1.82	0.44
1:G:2154:GLY:HA2	1:G:2185:VAL:HG21	1.99	0.44
1:A:2207:LYS:CE	6:A:2526:HOH:O	2.65	0.44
2:D:27:THR:HB	2:D:63:THR:HB	2.00	0.44
1:A:2370:TRP:CZ2	2:B:19:LEU:O	2.67	0.43
1:G:2127:GLY:O	1:G:2131:LEU:HB2	2.18	0.43
1:C:2358:ARG:HD3	1:C:2358:ARG:N	2.33	0.43
1:E:2153:THR:OG1	1:E:2181:TYR:CE2	2.71	0.43
1:E:2008:VAL:HG23	1:E:2013:LYS:CG	2.49	0.43
1:G:2082:TRP:CZ2	3:G:2501:NAD:H2N	2.53	0.43
1:A:2365:LYS:O	1:A:2366:GLU:OE1	2.36	0.43
1:C:2353:SER:O	1:C:2358:ARG:HA	2.17	0.43
1:G:2082:TRP:CZ2	3:G:2501:NAD:N7N	2.83	0.43
1:E:2023:TYR:HB2	1:E:2122:HIS:CE1	2.54	0.43
1:E:2303:PRO:HG2	1:E:2305:ILE:HG12	2.00	0.43
1:G:2157:SER:CB	1:G:2186:GLN:NE2	2.78	0.43
1:G:2370:TRP:CZ2	2:H:19:LEU:O	2.70	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:126:ILE:CG2	2:H:131:ILE:HD11	2.49	0.43
1:C:2087:PHE:HA	1:C:2171:ILE:HG21	2.01	0.43
1:C:2287:ASN:ND2	2:D:116:LYS:NZ	2.65	0.43
2:D:22:LYS:HE3	6:D:1128:HOH:O	2.19	0.43
2:D:65:ASP:HB2	2:D:68:GLU:HB2	2.01	0.43
1:E:2355:HIS:O	1:E:2356:ASP:CG	2.57	0.43
1:G:2029:ASN:OD1	1:G:2031:VAL:HB	2.19	0.43
1:G:2310:LYS:HD3	1:G:2341:PRO:O	2.18	0.43
2:D:120:GLU:HB3	6:D:1124:HOH:O	2.19	0.43
1:G:2224:LEU:HD13	1:G:2224:LEU:HA	1.88	0.43
1:A:2187:LEU:HB3	1:A:2188:PRO:HD3	2.01	0.42
1:C:2006:VAL:CG1	1:C:2008:VAL:HG23	2.49	0.42
1:E:2358:ARG:NE	1:E:2358:ARG:H	2.17	0.42
1:C:2287:ASN:HD22	2:D:116:LYS:NZ	2.17	0.42
1:E:2326:ILE:HD12	1:E:2326:ILE:HA	1.89	0.42
1:G:2032:PRO:O	1:G:2035:GLN:HB3	2.19	0.42
1:A:2311:THR:HG21	1:G:2358:ARG:NE	2.35	0.42
1:E:2017:ILE:HG12	1:E:2044:VAL:CG2	2.49	0.42
1:G:2031:VAL:HG22	1:G:2065:TYR:CE2	2.54	0.42
1:A:2128:GLY:HA2	1:A:2142:LYS:HE2	2.01	0.42
1:C:2079:VAL:HA	1:C:2105:VAL:CG2	2.49	0.42
1:C:1983:TRP:HA	1:C:1986:THR:HG23	2.00	0.42
1:E:1983:TRP:HA	1:E:1986:THR:HG23	2.00	0.42
1:G:2017:ILE:CG1	1:G:2044:VAL:HG21	2.49	0.42
2:D:74:ALA:O	2:D:78:LYS:HG2	2.20	0.42
1:E:2025:GLU:HB3	1:E:2026:HIS:CD2	2.54	0.42
1:E:2031:VAL:HG22	1:E:2065:TYR:CD2	2.54	0.42
2:H:30:THR:HG23	2:H:62:GLY:CA	2.50	0.42
1:C:2131:LEU:HD22	1:C:2138:GLN:HB3	2.01	0.42
1:A:2365:LYS:O	1:A:2366:GLU:HB2	2.19	0.42
1:E:2342:ASP:CG	1:E:2355:HIS:CE1	2.93	0.42
2:F:68:GLU:O	2:F:72:MET:HE2	2.19	0.42
1:C:2264:VAL:HG21	2:D:92:VAL:HG21	2.02	0.42
1:A:2290:VAL:HG22	1:A:2299:VAL:HG22	2.02	0.42
1:A:2365:LYS:C	1:A:2366:GLU:OE1	2.58	0.42
1:C:2187:LEU:N	1:C:2188:PRO:CD	2.82	0.42
1:E:2239:SER:CB	1:E:2242:ARG:HB2	2.50	0.42
1:G:2135:ASN:OD1	1:G:2136:ALA:N	2.53	0.42
1:C:2324:LYS:O	1:C:2328:ARG:HG3	2.20	0.41
1:E:2217:ALA:O	1:E:2220:ILE:HG22	2.20	0.41
1:A:2203:ARG:NH1	6:A:2509:HOH:O	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1985:ASP:O	1:E:1985:ASP:CG	2.57	0.41
1:A:2298:GLU:OE1	1:A:2300:ARG:NH2	2.53	0.41
1:C:2237:ALA:HA	6:C:2546:HOH:O	2.20	0.41
1:E:2370:TRP:CZ3	2:F:19:LEU:O	2.72	0.41
2:F:44:PRO:HA	2:F:76:LYS:HE2	2.01	0.41
2:F:68:GLU:O	2:F:71:THR:HB	2.19	0.41
1:G:2186:GLN:HE22	3:G:2501:NAD:H1D	1.85	0.41
2:B:72:MET:HE2	2:B:75:ARG:NH2	2.34	0.41
2:B:140:GLU:HB2	6:B:302:HOH:O	2.20	0.41
6:C:2507:HOH:O	1:E:2133:PRO:HD2	2.20	0.41
2:D:20:PHE:CD2	2:D:36:VAL:HG22	2.55	0.41
1:E:2135:ASN:OD1	1:E:2136:ALA:N	2.51	0.41
1:G:2299:VAL:HG21	1:G:2312:ILE:HD11	2.02	0.41
2:D:59:ASP:OD2	2:D:59:ASP:N	2.53	0.41
1:E:2342:ASP:OD2	1:E:2355:HIS:CE1	2.74	0.41
1:A:2158:SER:OG	1:A:2185:VAL:HB	2.20	0.41
1:E:2238:LEU:C	1:E:2240:HIS:H	2.24	0.41
2:F:56:VAL:HG12	2:F:56:VAL:O	2.21	0.41
2:D:49:LEU:O	2:D:53:ILE:HG12	2.21	0.41
2:D:91:ARG:HD2	6:D:1119:HOH:O	2.19	0.41
1:G:2174:GLY:HA2	1:G:2232:LYS:HE3	2.02	0.41
1:G:2234:ARG:NH1	1:G:2236:ASP:OD1	2.53	0.41
1:A:1996:VAL:HB	1:A:2052:TRP:CE3	2.55	0.41
1:G:2204:LEU:HD13	1:G:2224:LEU:HD11	2.03	0.41
1:A:2023:TYR:HB2	1:A:2122:HIS:CE1	2.56	0.41
1:C:2107:ASP:OD2	3:C:2401:NAD:H2N	2.20	0.41
1:C:2135:ASN:HD22	1:C:2138:GLN:CB	2.34	0.41
2:H:131:ILE:HA	2:H:135:GLY:HA2	2.03	0.41
1:A:2171:ILE:HD12	1:A:2171:ILE:N	2.36	0.41
1:E:2132:ASP:OD1	1:E:2138:GLN:OE1	2.39	0.41
1:E:2239:SER:OG	1:E:2242:ARG:HG3	2.21	0.40
1:E:2246:LEU:HD13	6:E:2741:HOH:O	2.21	0.40
1:G:2141:LEU:O	1:G:2144:SER:HB2	2.21	0.40
1:A:2231:VAL:HG21	1:A:2266:LEU:HG	2.03	0.40
1:G:2329:PHE:HE2	1:G:2362:ILE:HG21	1.86	0.40
3:G:2501:NAD:H2N	3:G:2501:NAD:H2D	1.87	0.40
1:C:2187:LEU:HB3	1:C:2188:PRO:HD3	2.03	0.40
1:G:2204:LEU:HD13	1:G:2224:LEU:CD1	2.51	0.40
1:A:2305:ILE:HD13	1:A:2305:ILE:HA	1.89	0.40
1:G:2187:LEU:N	1:G:2188:PRO:CD	2.85	0.40
1:G:2333:ASN:ND2	1:G:2370:TRP:CH2	2.79	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2269:ILE:CD1	2:B:90:PHE:CE2	3.04	0.40
1:C:2362:ILE:HG22	1:C:2370:TRP:CD2	2.57	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	403/416 (97%)	383 (95%)	20 (5%)	0	100	100
1	C	403/416 (97%)	386 (96%)	17 (4%)	0	100	100
1	E	402/416 (97%)	371 (92%)	31 (8%)	0	100	100
1	G	402/416 (97%)	379 (94%)	23 (6%)	0	100	100
2	B	143/151 (95%)	139 (97%)	4 (3%)	0	100	100
2	D	142/151 (94%)	136 (96%)	6 (4%)	0	100	100
2	F	144/151 (95%)	139 (96%)	5 (4%)	0	100	100
2	H	143/151 (95%)	136 (95%)	7 (5%)	0	100	100
All	All	2182/2268 (96%)	2069 (95%)	113 (5%)	0	100	100

There are no Ramachandran outliers to report.

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	348/356 (98%)	336 (97%)	12 (3%)	37	46
1	C	348/356 (98%)	336 (97%)	12 (3%)	37	46
1	E	347/356 (98%)	337 (97%)	10 (3%)	42	52
1	G	347/356 (98%)	338 (97%)	9 (3%)	46	56
2	B	124/127 (98%)	118 (95%)	6 (5%)	25	30
2	D	123/127 (97%)	122 (99%)	1 (1%)	81	89
2	F	125/127 (98%)	122 (98%)	3 (2%)	49	59
2	H	124/127 (98%)	119 (96%)	5 (4%)	31	39
All	All	1886/1932 (98%)	1828 (97%)	58 (3%)	40	48

All (58) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1994	LYS
1	A	2021	SER
1	A	2034	ASP
1	A	2085	LYS
1	A	2149	THR
1	A	2292	GLU
1	A	2311	THR
1	A	2338	GLU
1	A	2348	ASP
1	A	2356	ASP
1	A	2358	ARG
1	A	2365	LYS
2	B	4	GLN
2	B	15	GLU
2	B	82	SER
2	B	96	ASP
2	B	137	VAL
2	B	145	MET
1	C	1986	THR
1	C	2030	GLN
1	C	2034	ASP
1	C	2044	VAL
1	C	2096	ASN
1	C	2134	ASP
1	C	2177	ARG
1	C	2271	SER
1	C	2358	ARG

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Mol	Chain	Res	Type
1	C	2360	ARG
1	C	2365	LYS
1	C	2370	TRP
2	D	137	VAL
1	E	2028	ASP
1	E	2030	GLN
1	E	2118	ASP
1	E	2140	GLN
1	E	2149	THR
1	E	2177	ARG
1	E	2313	LEU
1	E	2358	ARG
1	E	2360	ARG
1	E	2370	TRP
2	F	82	SER
2	F	111	THR
2	F	132	ASP
1	G	2021	SER
1	G	2033	LYS
1	G	2118	ASP
1	G	2145	ILE
1	G	2177	ARG
1	G	2224	LEU
1	G	2234	ARG
1	G	2358	ARG
1	G	2362	ILE
2	H	23	ASP
2	H	71	THR
2	H	96	ASP
2	H	132	ASP
2	H	137	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (28) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	2030	GLN
1	A	2287	ASN
1	A	2291	GLN
1	A	2354	HIS
1	C	2135	ASN
1	C	2192	GLN
1	C	2287	ASN

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Mol	Chain	Res	Type
1	C	2291	GLN
1	C	2322	GLN
2	D	42	GLN
2	D	138	ASN
1	E	2026	HIS
1	E	2138	GLN
1	E	2186	GLN
1	E	2192	GLN
1	E	2243	GLN
1	E	2287	ASN
1	E	2354	HIS
2	F	42	GLN
2	F	124	GLN
2	F	138	ASN
2	F	144	GLN
1	G	2096	ASN
1	G	2186	GLN
1	G	2192	GLN
1	G	2219	GLN
1	G	2333	ASN
2	H	9	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 16 ligands modelled in this entry, 8 are monoatomic - leaving 8 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	NAD	E	2601	-	42,48,48	0.80	1 (2%)	50,73,73	0.92	2 (4%)
3	NAD	C	2401	-	42,48,48	0.91	1 (2%)	50,73,73	0.88	2 (4%)
5	GOL	F	2504	-	5,5,5	0.26	0	5,5,5	0.44	0
5	GOL	D	1003	-	5,5,5	0.21	0	5,5,5	0.35	0
3	NAD	A	2401	-	42,48,48	0.84	2 (4%)	50,73,73	0.88	2 (4%)
3	NAD	G	2501	-	42,48,48	0.79	1 (2%)	50,73,73	0.89	2 (4%)
5	GOL	F	2501	-	5,5,5	0.21	0	5,5,5	0.45	0
5	GOL	C	2402	-	5,5,5	0.17	0	5,5,5	0.36	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	NAD	E	2601	-	-	7/26/62/62	0/5/5/5
3	NAD	C	2401	-	-	4/26/62/62	0/5/5/5
5	GOL	F	2504	-	-	3/4/4/4	-
5	GOL	D	1003	-	-	0/4/4/4	-
3	NAD	A	2401	-	-	4/26/62/62	0/5/5/5
3	NAD	G	2501	-	-	5/26/62/62	0/5/5/5
5	GOL	F	2501	-	-	2/4/4/4	-
5	GOL	C	2402	-	-	2/4/4/4	-

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	2401	NAD	C2N-N1N	3.61	1.39	1.35
3	A	2401	NAD	C2N-N1N	3.21	1.38	1.35
3	G	2501	NAD	C2N-N1N	3.13	1.38	1.35
3	E	2601	NAD	C2N-N1N	2.81	1.38	1.35
3	A	2401	NAD	C8A-N7A	-2.43	1.30	1.34

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	E	2601	NAD	C6N-N1N-C2N	-3.32	118.95	121.97
3	G	2501	NAD	C6N-N1N-C2N	-3.22	119.04	121.97
3	A	2401	NAD	C6N-N1N-C2N	-2.99	119.24	121.97
3	C	2401	NAD	C6N-N1N-C2N	-2.67	119.54	121.97
3	E	2601	NAD	C3D-C2D-C1D	2.53	104.79	100.98
3	G	2501	NAD	C3D-C2D-C1D	2.44	104.65	100.98
3	A	2401	NAD	C3D-C2D-C1D	2.37	104.54	100.98
3	C	2401	NAD	C3D-C2D-C1D	2.28	104.41	100.98

There are no chirality outliers.

All (27) torsion outliers are listed below:

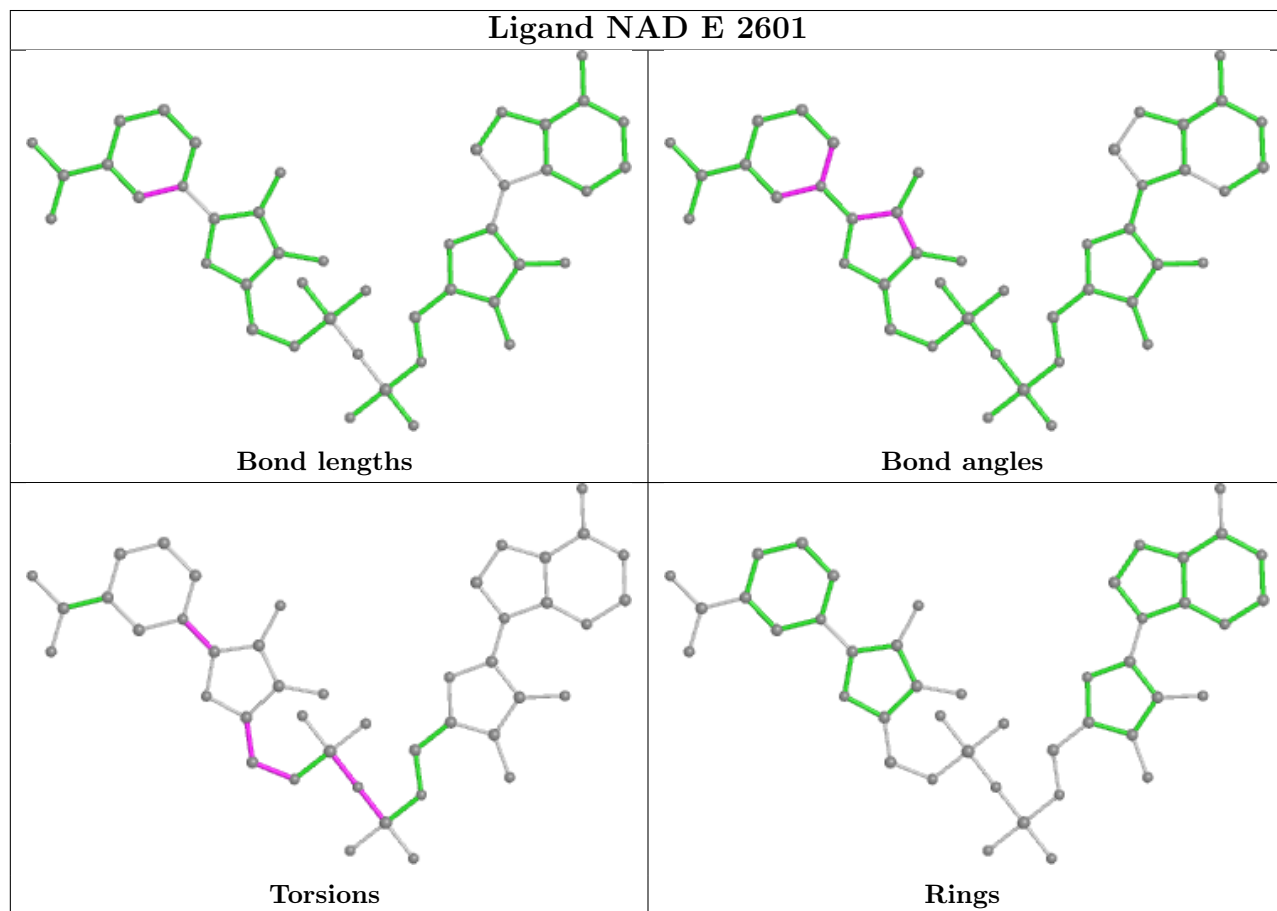
Mol	Chain	Res	Type	Atoms
3	A	2401	NAD	C2D-C1D-N1N-C2N
3	A	2401	NAD	C2D-C1D-N1N-C6N
3	C	2401	NAD	C2D-C1D-N1N-C2N
3	C	2401	NAD	C2D-C1D-N1N-C6N
3	E	2601	NAD	C2D-C1D-N1N-C2N
3	E	2601	NAD	C2D-C1D-N1N-C6N
3	G	2501	NAD	PN-O3-PA-O5B
3	G	2501	NAD	C2D-C1D-N1N-C6N
5	C	2402	GOL	O1-C1-C2-C3
5	F	2501	GOL	O1-C1-C2-C3
5	F	2504	GOL	O1-C1-C2-C3
5	F	2504	GOL	C1-C2-C3-O3
5	C	2402	GOL	O1-C1-C2-O2
5	F	2501	GOL	O1-C1-C2-O2
3	C	2401	NAD	C4D-C5D-O5D-PN
3	E	2601	NAD	C4D-C5D-O5D-PN
3	G	2501	NAD	C4D-C5D-O5D-PN
5	F	2504	GOL	O1-C1-C2-O2
3	A	2401	NAD	C4D-C5D-O5D-PN
3	A	2401	NAD	PN-O3-PA-O5B
3	C	2401	NAD	PN-O3-PA-O5B
3	E	2601	NAD	PN-O3-PA-O5B
3	E	2601	NAD	C3D-C4D-C5D-O5D
3	E	2601	NAD	O4D-C4D-C5D-O5D
3	G	2501	NAD	C3D-C4D-C5D-O5D
3	G	2501	NAD	C2D-C1D-N1N-C2N
3	E	2601	NAD	PA-O3-PN-O1N

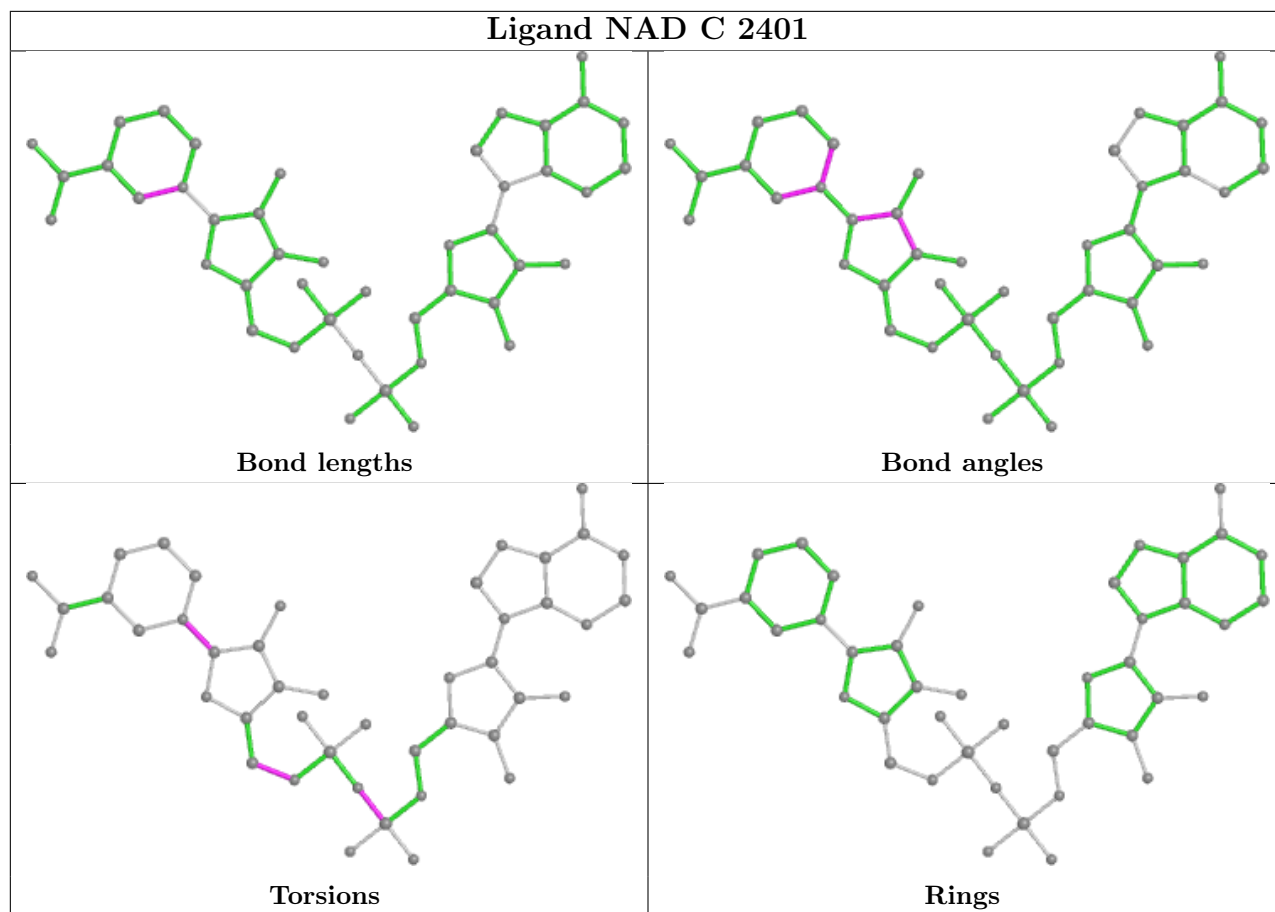
There are no ring outliers.

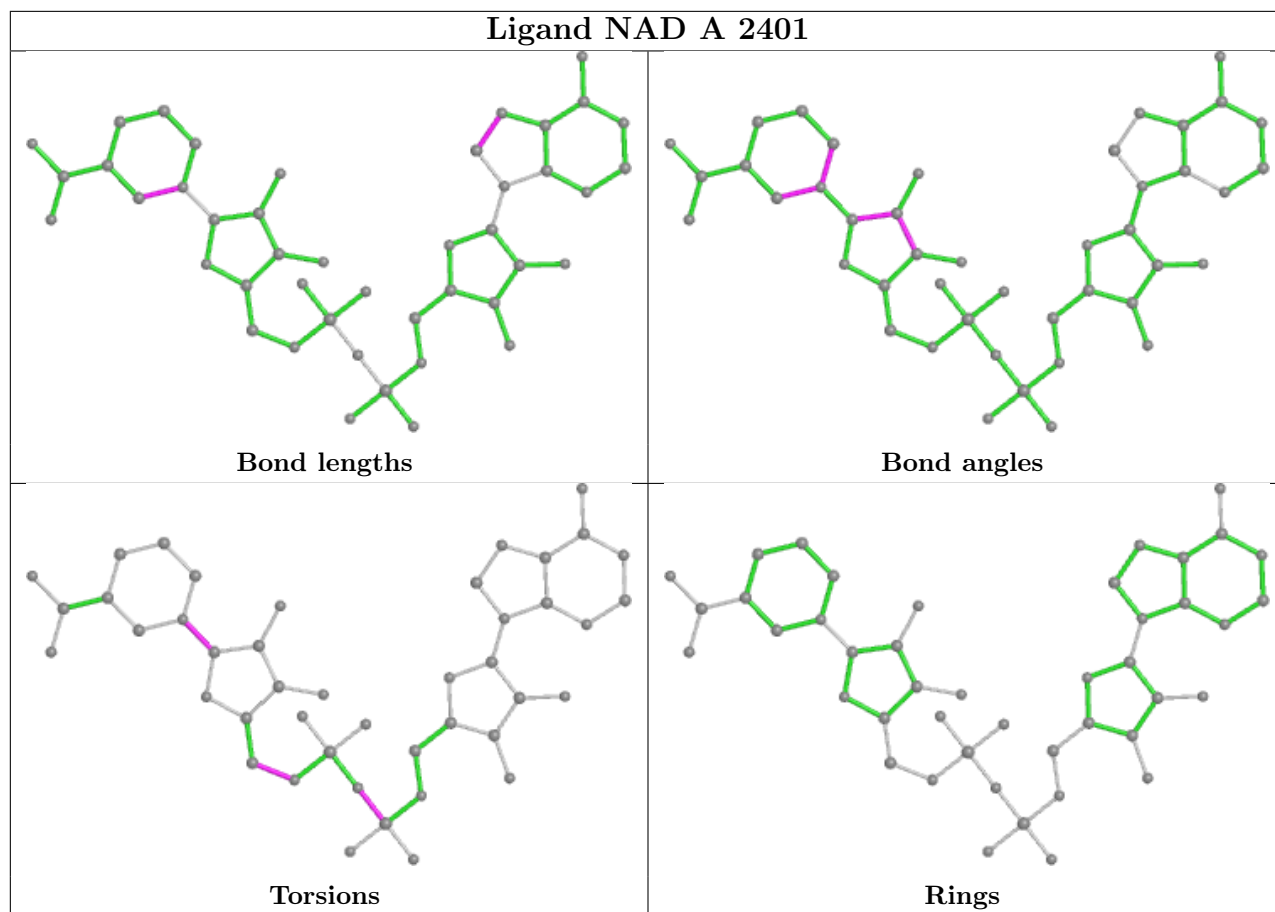
5 monomers are involved in 13 short contacts:

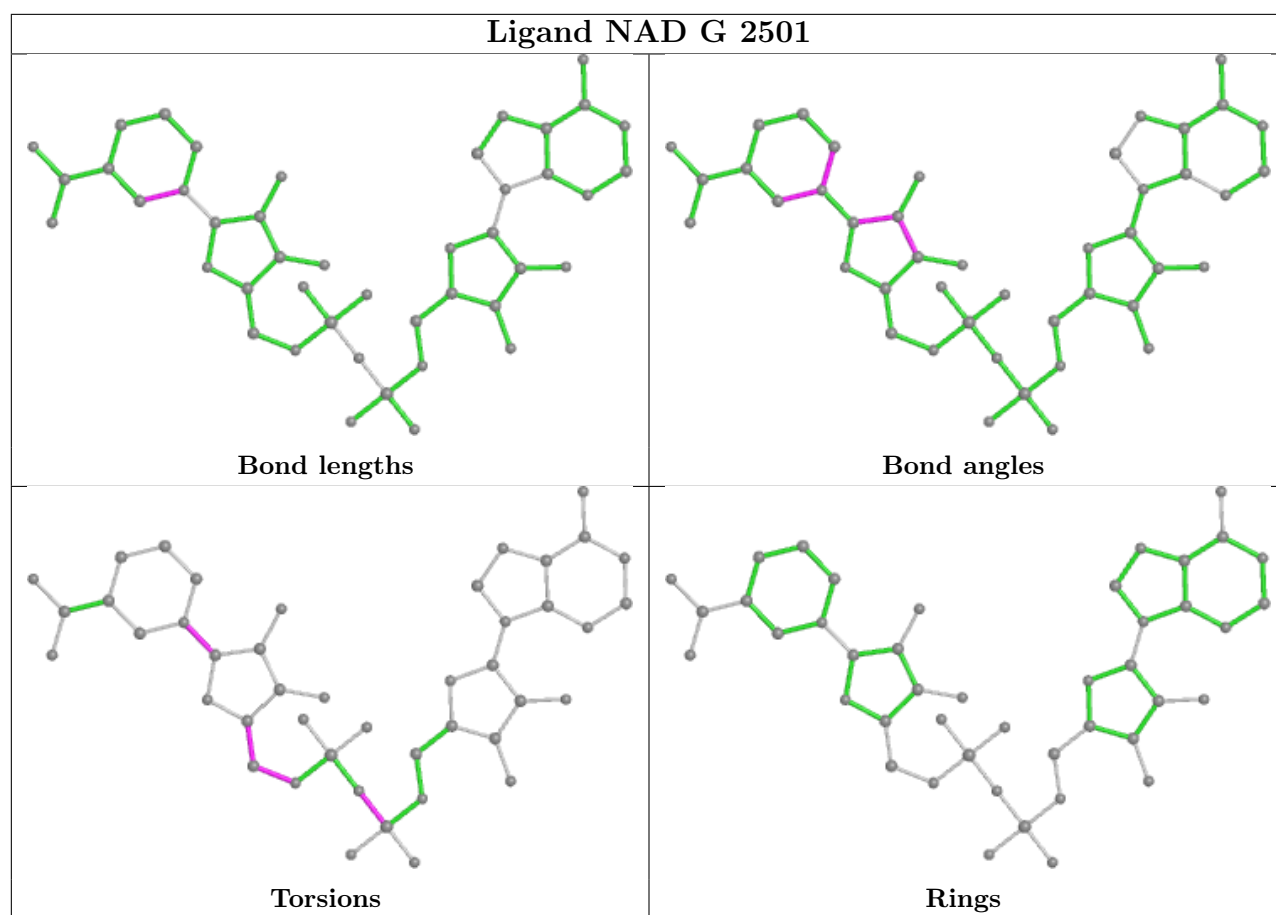
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	E	2601	NAD	3	0
3	C	2401	NAD	1	0
5	F	2504	GOL	1	0
3	G	2501	NAD	7	0
5	C	2402	GOL	1	0

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	405/416 (97%)	0.25	20 (4%) 29 42	22, 46, 87, 121	0
1	C	405/416 (97%)	0.27	25 (6%) 20 29	21, 44, 97, 147	0
1	E	404/416 (97%)	0.66	53 (13%) 3 5	31, 57, 112, 159	0
1	G	404/416 (97%)	0.74	49 (12%) 4 7	34, 64, 118, 156	0
2	B	145/151 (96%)	0.15	4 (2%) 53 64	24, 51, 80, 109	0
2	D	144/151 (95%)	0.42	11 (7%) 13 21	25, 57, 88, 122	0
2	F	146/151 (96%)	0.30	10 (6%) 17 25	35, 55, 90, 128	0
2	H	145/151 (96%)	0.41	13 (8%) 9 14	34, 55, 96, 127	0
All	All	2198/2268 (96%)	0.44	185 (8%) 11 16	21, 53, 104, 159	0

All (185) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	G	2248	ALA	8.9
1	G	2250	ASN	8.3
2	H	133	GLY	8.1
1	G	2214	ASP	7.6
2	F	130	ASP	7.3
1	E	2248	ALA	7.1
2	H	134	ASP	7.1
1	E	2240	HIS	6.8
1	G	2099	THR	6.2
1	E	2249	ASP	6.2
1	C	2244	ALA	6.1
1	G	2140	GLN	6.1
2	D	61	ASN	6.1
1	E	2238	LEU	6.0
1	G	2252	ASP	6.0
1	E	2250	ASN	5.3

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Mol	Chain	Res	Type	RSRZ
1	C	2246	LEU	5.1
1	G	2247	LEU	4.6
1	E	2242	ARG	4.5
1	E	2254	TYR	4.4
1	G	2210	SER	4.3
1	E	2245	GLU	4.2
1	C	2240	HIS	4.2
2	H	54	ASN	4.2
1	G	2136	ALA	4.2
1	C	2252	ASP	4.1
2	F	57	ASP	4.1
1	E	2213	LYS	4.0
2	H	60	GLY	4.0
1	E	2136	ALA	4.0
1	C	2247	LEU	4.0
1	A	2026	HIS	3.9
2	H	131	ILE	3.8
1	G	2251	PRO	3.8
1	G	2242	ARG	3.8
1	E	2244	ALA	3.7
2	D	58	ALA	3.7
1	G	2213	LYS	3.7
1	C	2248	ALA	3.6
2	F	131	ILE	3.6
2	H	61	ASN	3.6
1	C	2295	GLU	3.5
1	G	2137	GLU	3.5
1	G	2360	ARG	3.5
2	D	5	LEU	3.5
1	C	2367	ASP	3.5
1	E	2251	PRO	3.4
1	C	2134	ASP	3.4
1	G	2253	GLY	3.4
2	H	58	ALA	3.4
1	E	2034	ASP	3.3
2	H	148	ALA	3.3
1	G	2093	ILE	3.3
1	G	2249	ASP	3.3
1	E	2367	ASP	3.3
1	G	2246	LEU	3.3
1	E	2026	HIS	3.2
1	E	2237	ALA	3.2

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Mol	Chain	Res	Type	RSRZ
1	C	2362	ILE	3.2
2	F	56	VAL	3.2
1	E	2085	LYS	3.2
1	C	2255	LYS	3.2
1	E	2219	GLN	3.1
2	D	54	ASN	3.1
1	E	2008	VAL	3.0
1	G	2367	ASP	3.0
2	F	134	ASP	3.0
1	E	2093	ILE	3.0
1	E	2140	GLN	3.0
1	C	2294	GLU	2.9
2	D	78	LYS	2.9
1	E	2018	GLN	2.9
1	C	2366	GLU	2.9
1	A	2361	ILE	2.9
1	A	2362	ILE	2.9
1	C	2011	GLU	2.9
1	A	2294	GLU	2.9
1	G	2134	ASP	2.9
1	G	2202	ILE	2.8
1	E	2006	VAL	2.8
1	G	2072	PRO	2.8
1	G	2362	ILE	2.8
1	G	2135	ASN	2.8
1	E	2360	ARG	2.8
2	F	59	ASP	2.7
1	A	2011	GLU	2.7
1	G	2011	GLU	2.7
1	E	2252	ASP	2.7
1	G	2100	ASP	2.7
1	G	2305	ILE	2.7
1	E	2370	TRP	2.7
1	A	2367	ASP	2.7
1	A	1967	GLU	2.7
1	E	2137	GLU	2.7
1	C	2358	ARG	2.7
1	E	2235	PHE	2.7
1	G	2235	PHE	2.7
1	G	2139	ASN	2.7
1	E	2035	GLN	2.7
2	H	59	ASP	2.6

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Mol	Chain	Res	Type	RSRZ
2	B	61	ASN	2.6
2	F	132	ASP	2.6
1	G	2089	GLN	2.6
1	G	2023	TYR	2.6
2	B	4	GLN	2.6
1	G	2026	HIS	2.6
1	E	2261	GLU	2.6
2	B	7	GLU	2.6
2	D	6	THR	2.6
1	A	2358	ARG	2.6
1	G	2027	THR	2.6
1	G	2092	ASP	2.6
1	C	2245	GLU	2.6
1	E	2011	GLU	2.6
2	D	56	VAL	2.6
2	D	62	GLY	2.6
1	A	2153	THR	2.5
1	E	2013	LYS	2.5
1	A	2249	ASP	2.5
1	G	2034	ASP	2.5
1	G	2073	HIS	2.5
2	F	61	ASN	2.5
1	E	2263	ASP	2.4
1	G	2152	ASN	2.4
1	E	2010	ASP	2.4
1	E	2260	VAL	2.4
1	E	2230	ALA	2.3
1	G	2241	GLU	2.3
1	C	2296	GLY	2.3
2	B	83	GLU	2.3
1	E	2100	ASP	2.3
1	G	2296	GLY	2.3
1	E	2141	LEU	2.3
1	C	2318	GLU	2.3
1	E	2153	THR	2.3
1	A	2140	GLN	2.3
1	C	2026	HIS	2.3
1	G	2087	PHE	2.3
2	H	56	VAL	2.3
1	G	2358	ARG	2.2
1	E	2138	GLN	2.2
1	E	2362	ILE	2.2

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Mol	Chain	Res	Type	RSRZ
2	H	31	LYS	2.2
1	E	2032	PRO	2.2
1	E	2241	GLU	2.2
1	E	2366	GLU	2.2
1	A	2350	LYS	2.2
1	G	2307	GLY	2.2
1	G	2318	GLU	2.2
2	H	7	GLU	2.2
1	G	2133	PRO	2.2
1	G	2254	TYR	2.2
1	A	2025	GLU	2.2
1	A	2139	ASN	2.2
1	E	2088	LYS	2.2
1	G	2088	LYS	2.2
1	E	2099	THR	2.2
1	E	2156	TRP	2.2
2	H	50	GLN	2.2
1	A	2254	TYR	2.1
1	E	2358	ARG	2.1
1	G	2170	VAL	2.1
2	F	58	ALA	2.1
1	E	2318	GLU	2.1
1	A	2187	LEU	2.1
1	E	2065	TYR	2.1
1	A	2185	VAL	2.1
1	E	2044	VAL	2.1
1	C	2010	ASP	2.1
1	E	2127	GLY	2.1
2	D	135	GLY	2.1
1	C	1967	GLU	2.1
1	C	2237	ALA	2.1
1	C	2249	ASP	2.1
2	F	133	GLY	2.1
1	A	2366	GLU	2.1
2	D	134	ASP	2.1
1	A	2247	LEU	2.1
1	A	2154	GLY	2.1
1	G	2263	ASP	2.0
1	C	2025	GLU	2.0
1	C	2100	ASP	2.0
1	G	2007	ASP	2.0
2	D	67	PRO	2.0

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Mol	Chain	Res	Type	RSRZ
1	E	2157	SER	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [\(i\)](#)

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

6.3 Carbohydrates [\(i\)](#)

There are no monosaccharides in this entry.

6.4 Ligands [\(i\)](#)

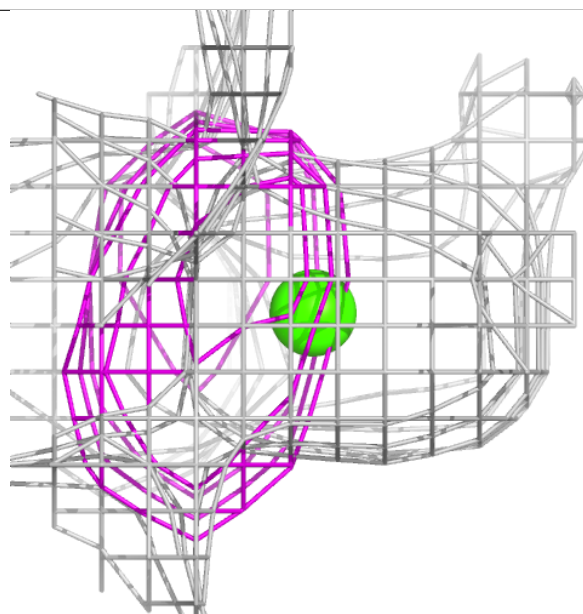
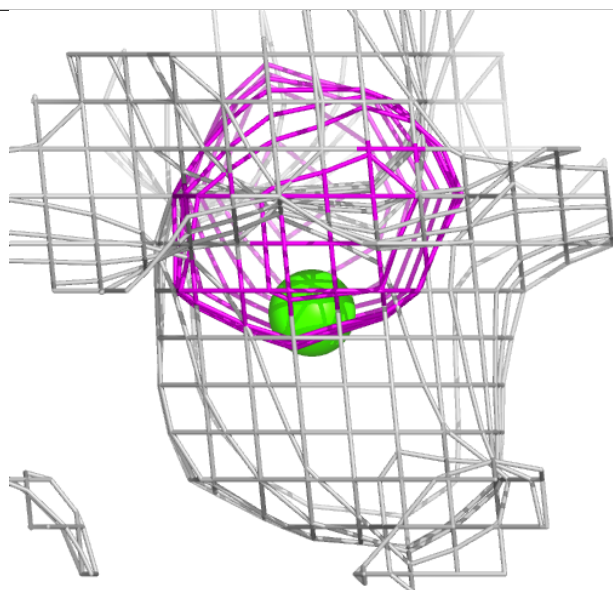
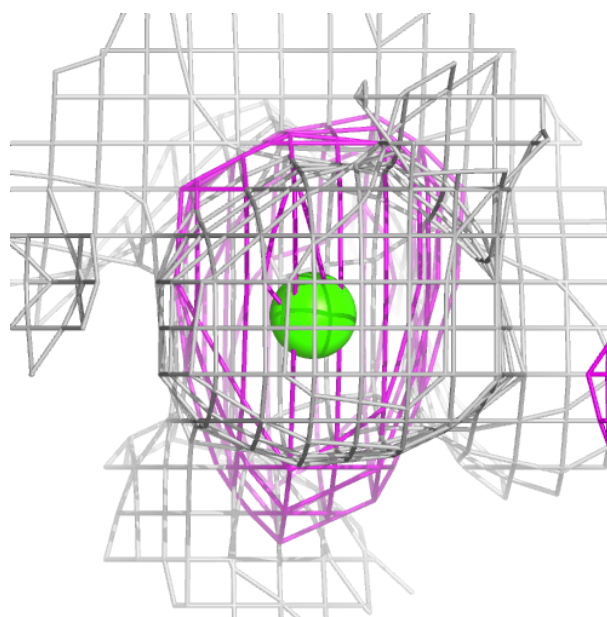
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
5	GOL	D	1003	6/6	0.62	0.32	74,77,81,81	0
4	CA	H	1001	1/1	0.64	0.33	62,62,62,62	0
4	CA	F	2502	1/1	0.73	0.24	81,81,81,81	0
4	CA	B	201	1/1	0.78	0.18	73,73,73,73	0
4	CA	D	1002	1/1	0.85	0.33	70,70,70,70	0
4	CA	F	2503	1/1	0.86	0.45	49,49,49,49	0
5	GOL	F	2504	6/6	0.88	0.21	60,69,71,74	0
4	CA	H	1002	1/1	0.90	0.24	78,78,78,78	0
3	NAD	E	2601	44/44	0.92	0.18	49,61,103,118	0
5	GOL	C	2402	6/6	0.92	0.42	57,60,61,61	0
4	CA	D	1001	1/1	0.93	0.39	52,52,52,52	0
3	NAD	G	2501	44/44	0.94	0.18	48,59,129,133	0
5	GOL	F	2501	6/6	0.95	0.11	47,51,55,55	0
4	CA	B	202	1/1	0.95	0.44	34,34,34,34	0
3	NAD	A	2401	44/44	0.96	0.15	28,38,58,68	0
3	NAD	C	2401	44/44	0.96	0.15	28,37,57,73	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.

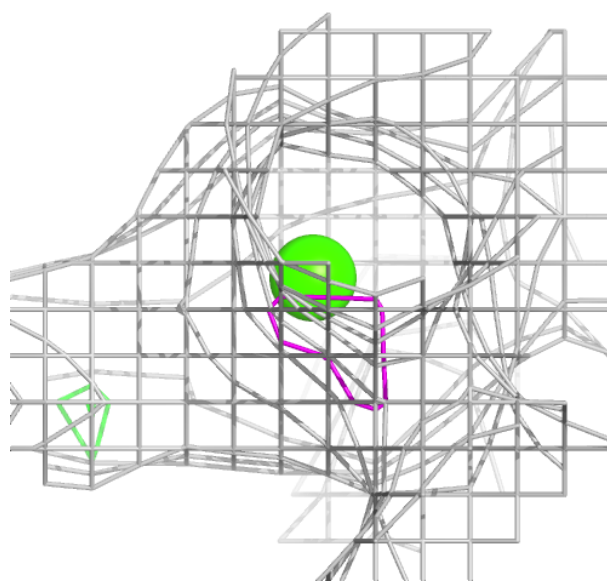
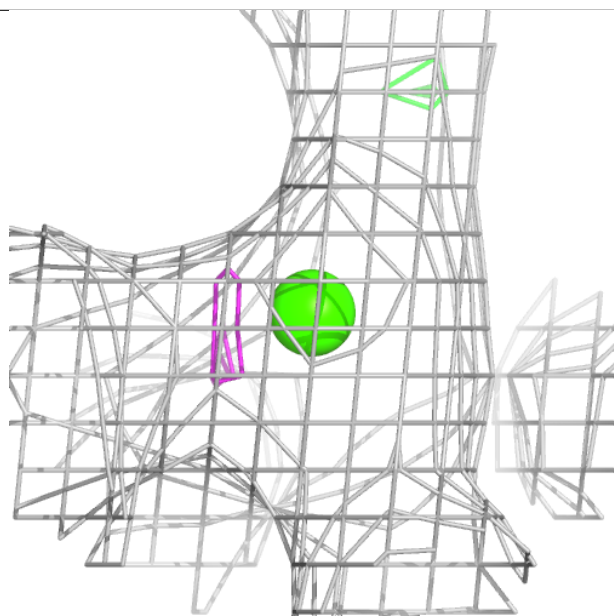
Electron density around CA H 1001:

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



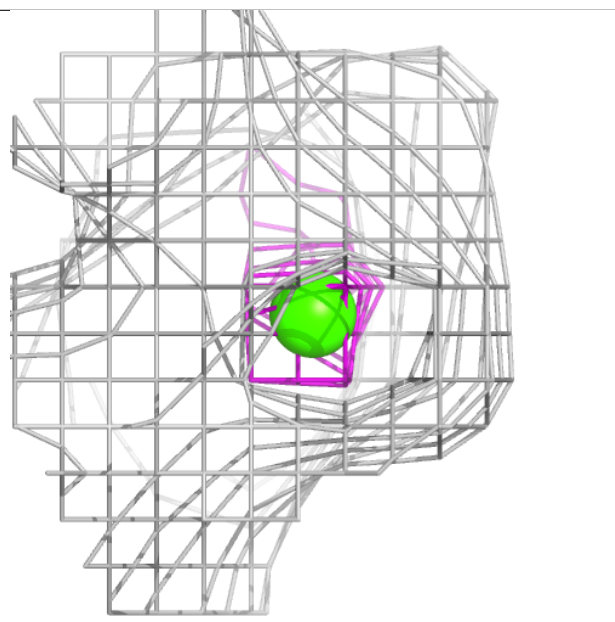
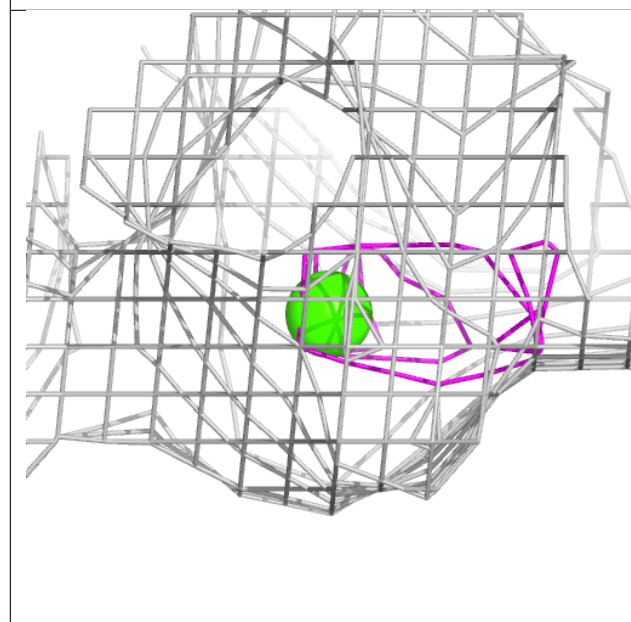
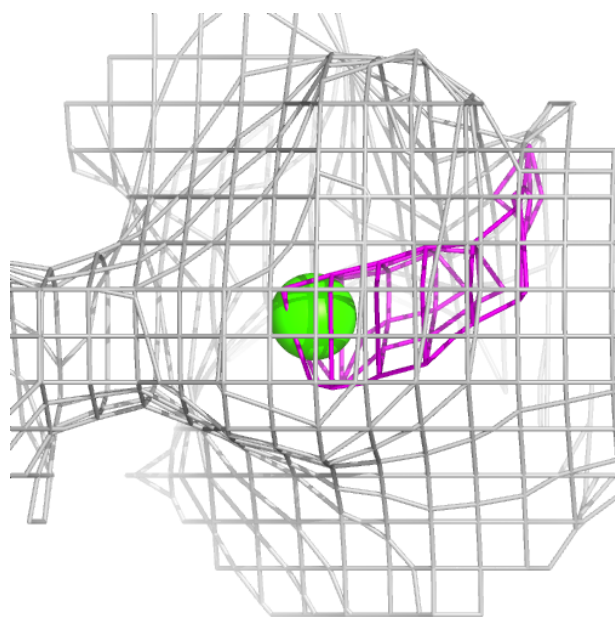
Electron density around CA F 2502:

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



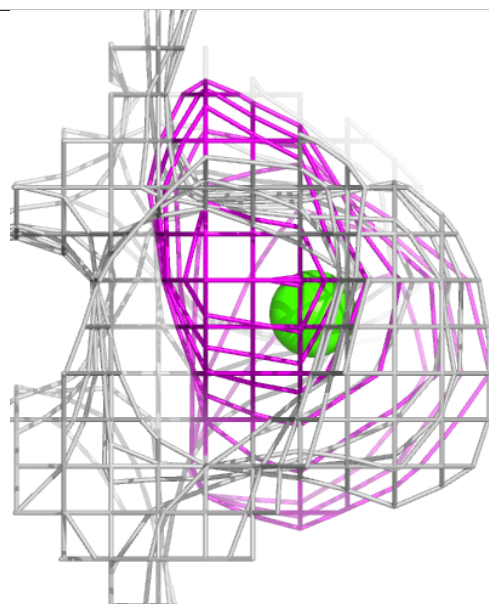
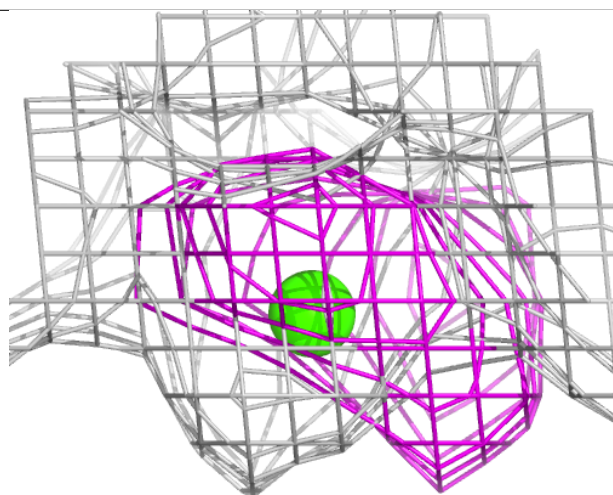
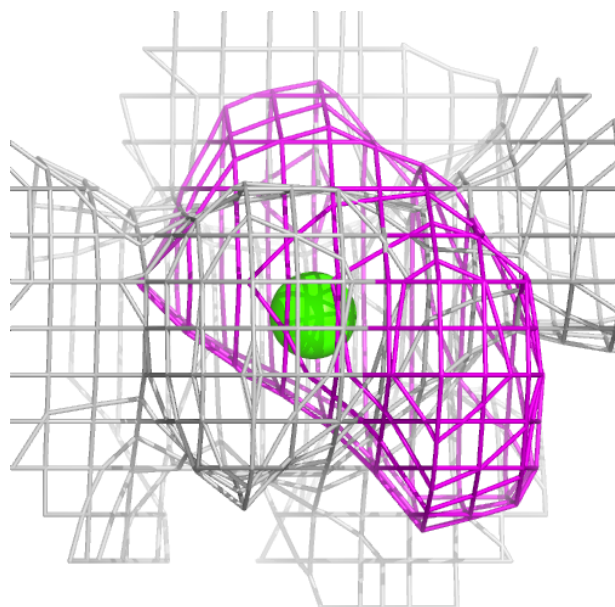
Electron density around CA B 201:

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



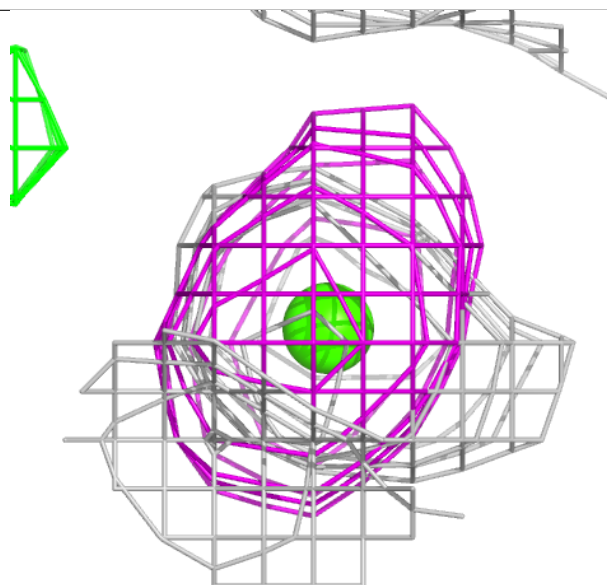
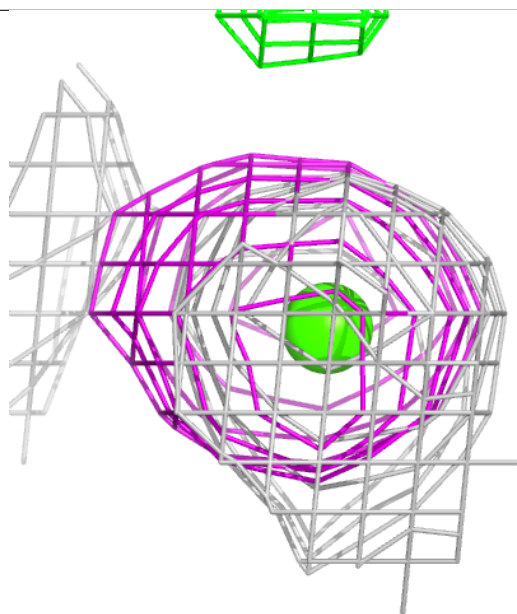
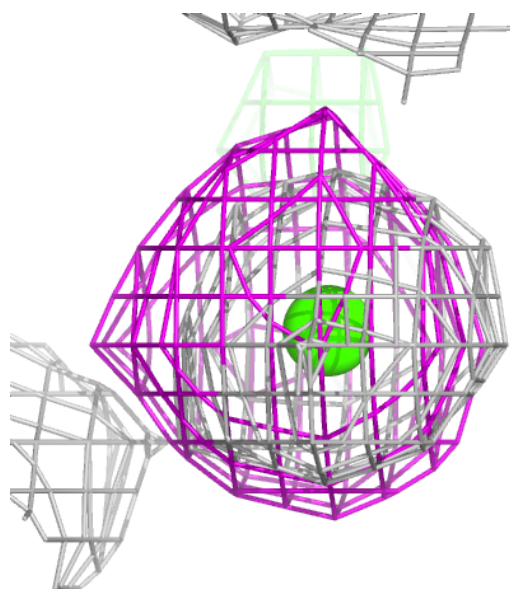
Electron density around CA D 1002:

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



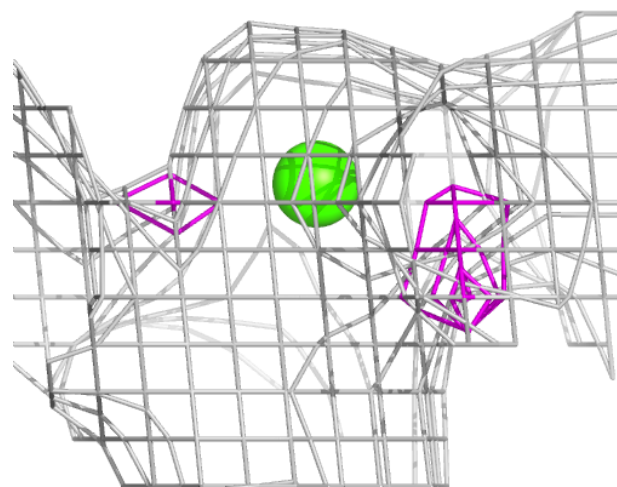
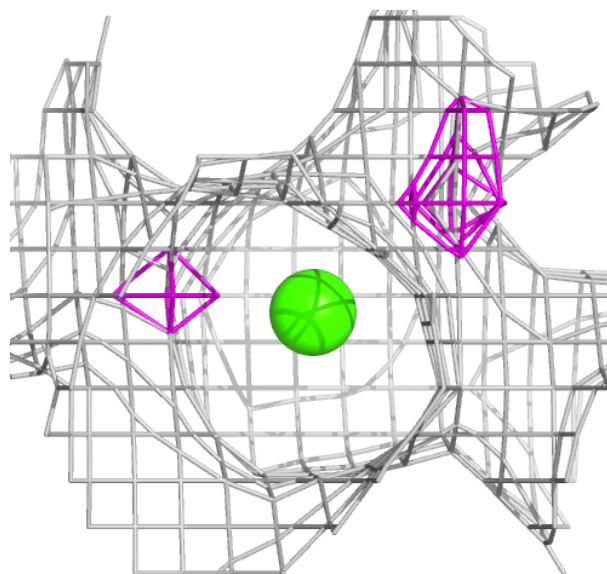
Electron density around CA F 2503:

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



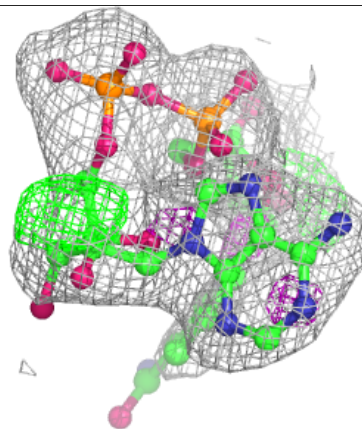
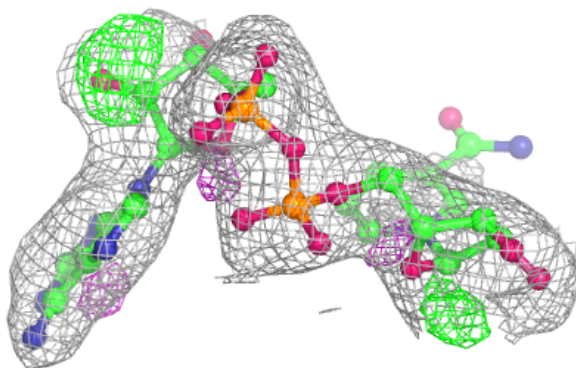
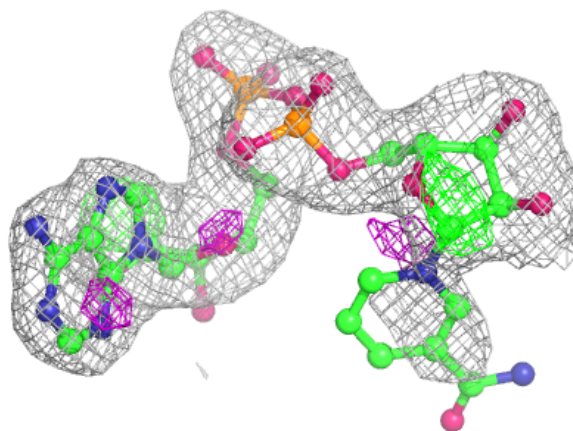
Electron density around CA H 1002:

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



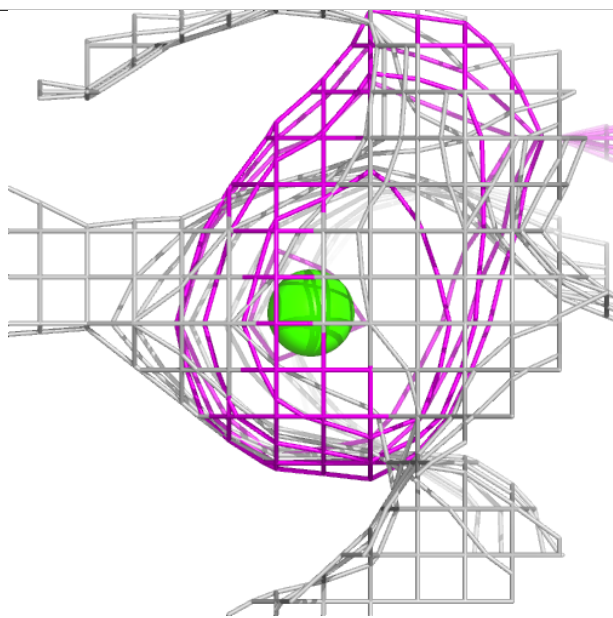
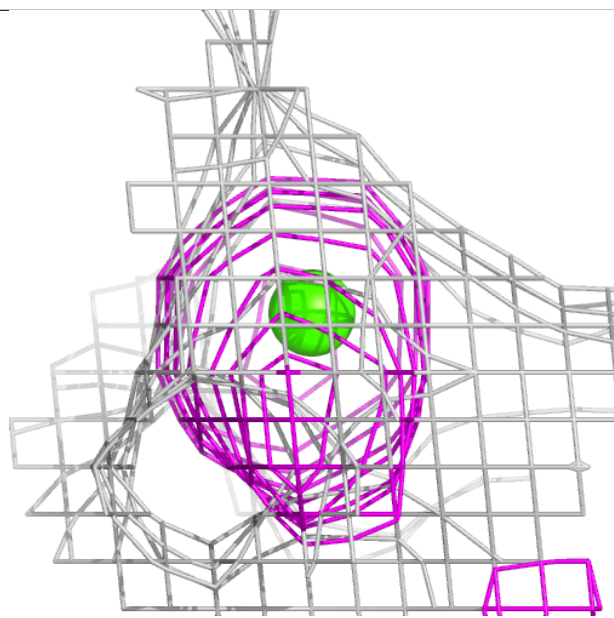
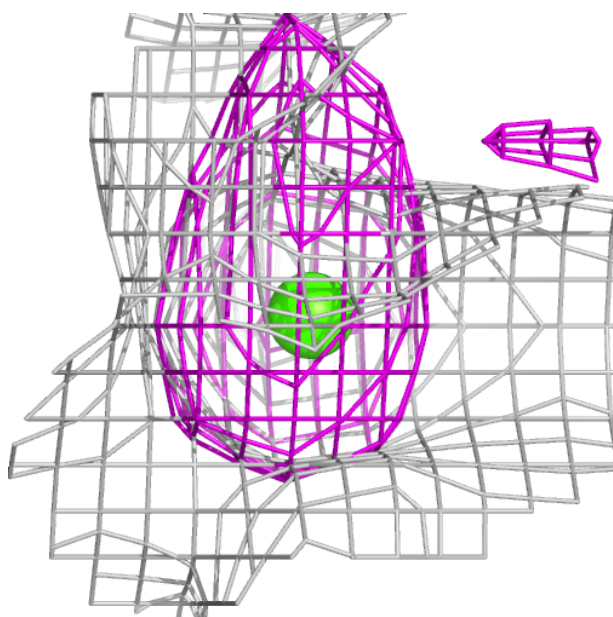
Electron density around NAD E 2601:

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



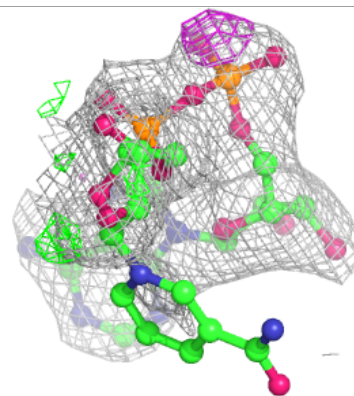
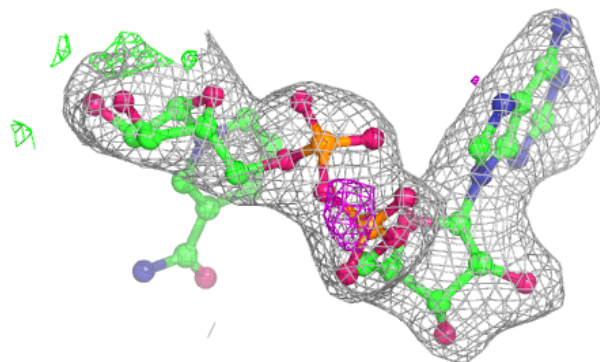
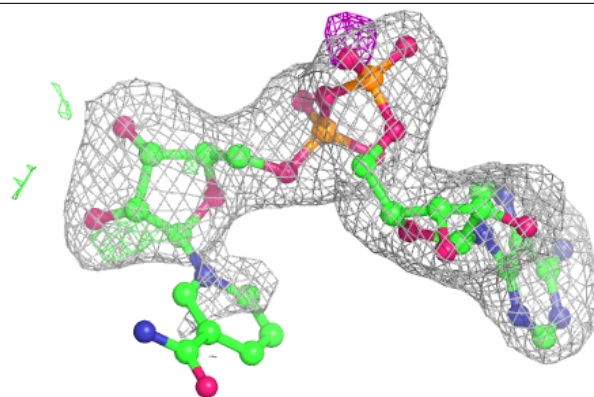
Electron density around CA D 1001:

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



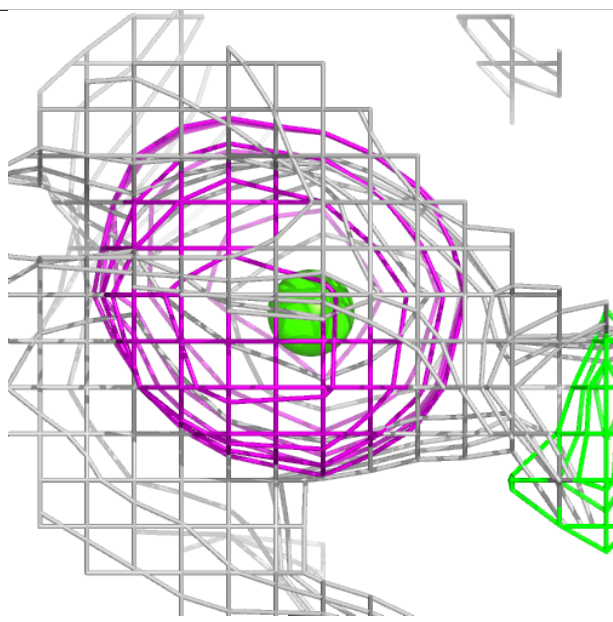
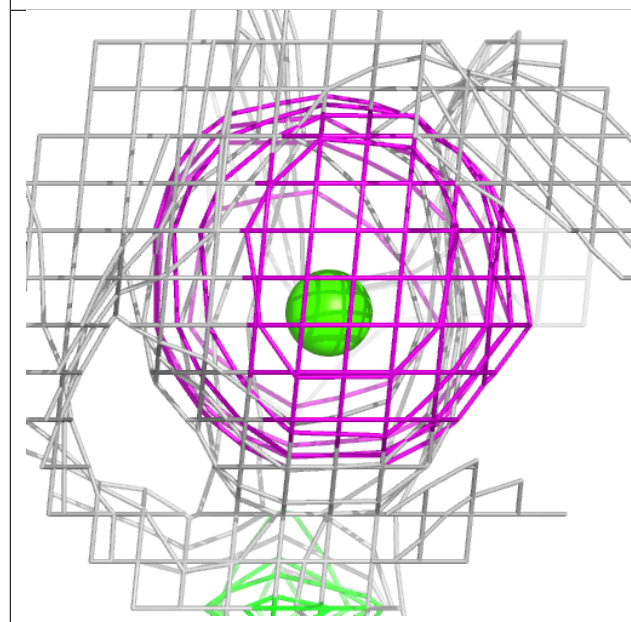
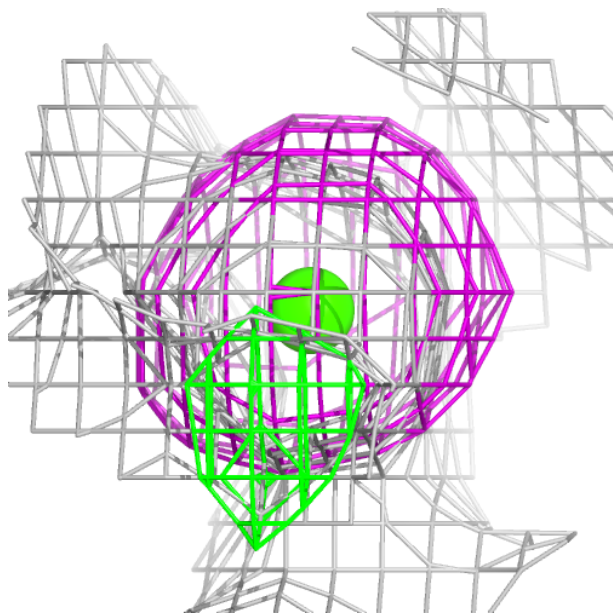
Electron density around NAD G 2501:

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



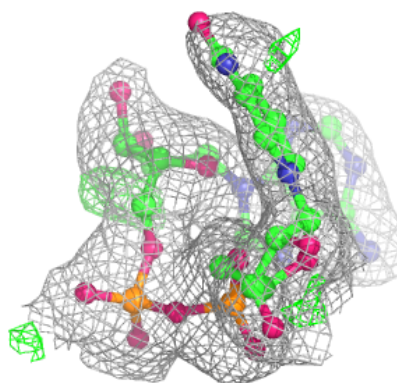
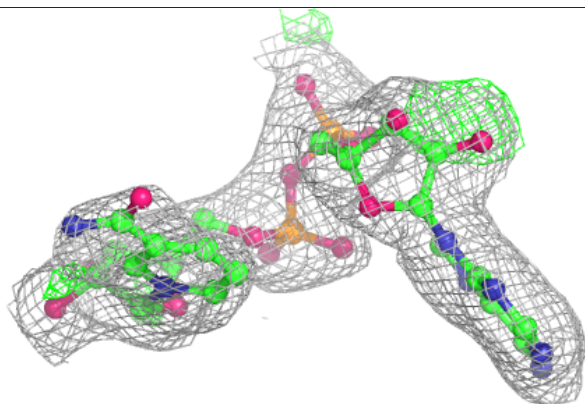
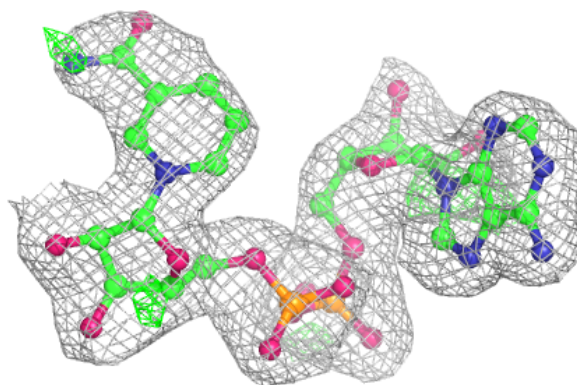
Electron density around CA B 202:

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

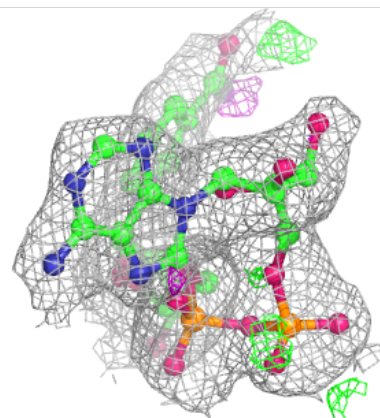
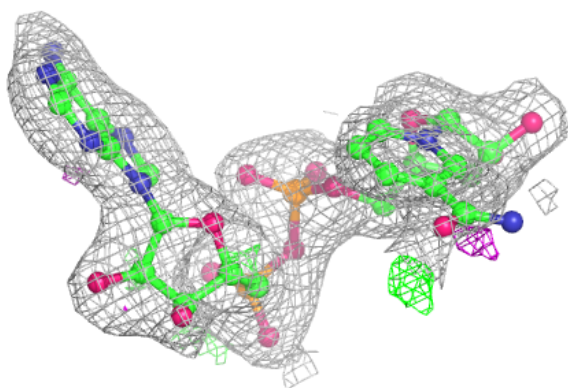
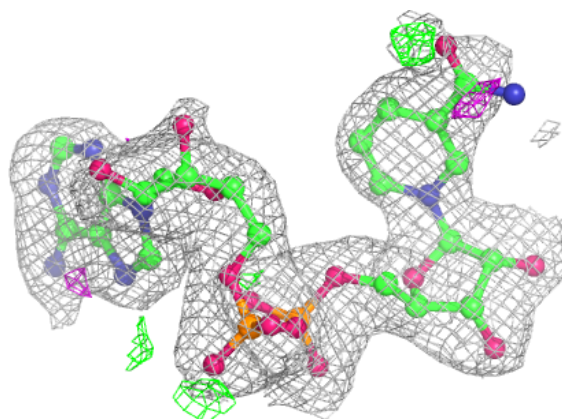


Electron density around NAD A 2401:

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

**Electron density around NAD C 2401:**

$2mF_o-DF_c$ (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.