



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 08:21 AM UTC

PDB ID : 6TXR / pdb_00006txr
Title : Structural insights into cubane-modified aptamer recognition of a malaria biomarker
Authors : Cheung, Y.; Roethlisberger, P.; Mechaly, A.; Weber, P.; Wong, A.; Lo, Y.; Haouz, A.; Savage, P.; Hollenstein, M.; Tanner, J.
Deposited on : 2020-01-14
Resolution : 2.50 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:

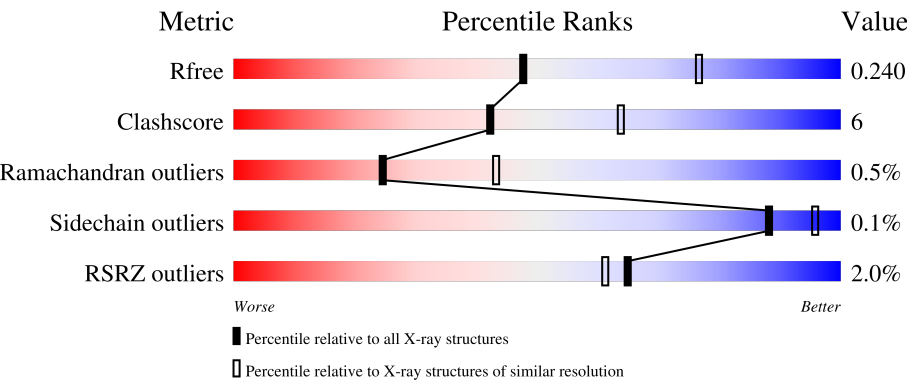
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal 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 2.50 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	5829 (2.50-2.50)
Clashscore	190562	6492 (2.50-2.50)
Ramachandran outliers	187476	6378 (2.50-2.50)
Sidechain outliers	187428	6380 (2.50-2.50)
RSRZ outliers	180081	5833 (2.50-2.50)

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	316	2% 84% 12% .
1	B	316	% 87% 8% ..
1	C	316	3% 82% 13% ..
1	D	316	% 88% 9% .

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Mol	Chain	Length	Quality of chain
2	E	34	3% 47% 44% 9%
2	F	34	9% 62% 35%

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 10870 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.

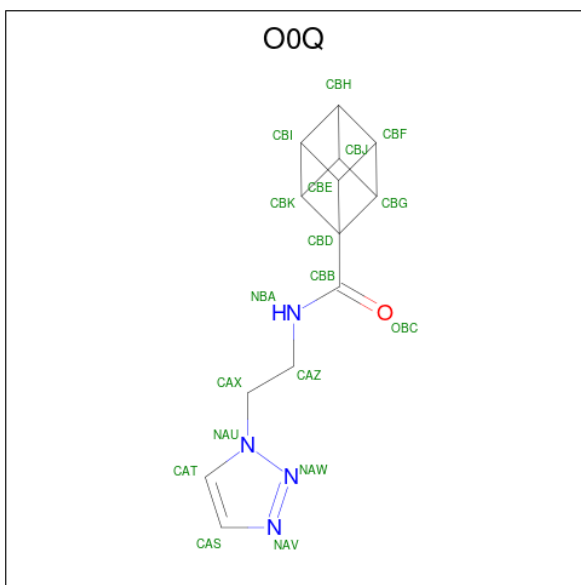
- Molecule 1 is a protein called L-lactate dehydrogenase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	306	Total	C	N	O	S	4	3	0
			2321	1483	389	435	14			
1	B	305	Total	C	N	O	S	8	3	0
			2313	1479	387	433	14			
1	C	305	Total	C	N	O	S	4	3	0
			2313	1479	387	433	14			
1	D	306	Total	C	N	O	S	7	3	0
			2321	1483	389	435	14			

- Molecule 2 is a DNA chain called Cubane-modified aptamer.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	E	34	Total	C	N	O	P	0	0	0
			677	316	127	200	34			
2	F	34	Total	C	N	O	P	0	0	0
			677	316	127	200	34			

- Molecule 3 is {N}-[2-(1,2,3-triazol-1-yl)ethyl]cubane-1-carboxamide (CCD ID: O0Q) (formula: C₁₃H₁₄N₄O) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	E	1	Total	C	N	O	0	0
			18	13	4	1		
3	E	1	Total	C	N	O	0	0
			18	13	4	1		
3	E	1	Total	C	N	O	0	0
			18	13	4	1		
3	E	1	Total	C	N	O	0	0
			18	13	4	1		
3	F	1	Total	C	N	O	0	0
			18	13	4	1		
3	F	1	Total	C	N	O	0	0
			18	13	4	1		
3	F	1	Total	C	N	O	0	0
			18	13	4	1		

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	25	Total	O	0	0
			25	25		
4	B	28	Total	O	0	0
			28	28		
4	C	18	Total	O	0	0
			18	18		
4	D	28	Total	O	0	0
			28	28		

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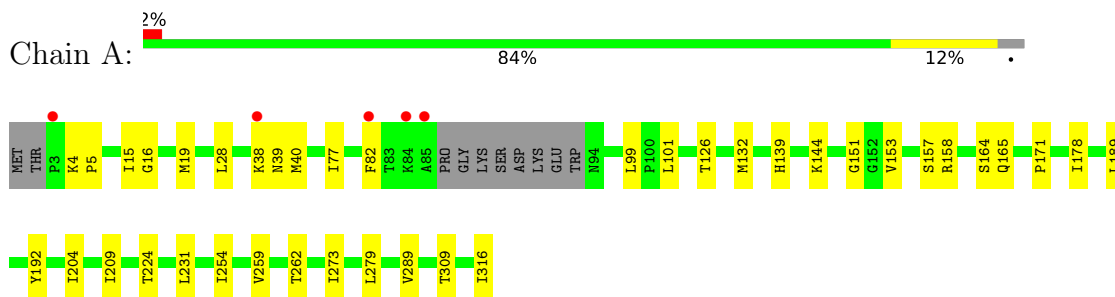
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	F	5	Total	O	0	0
			5	5		

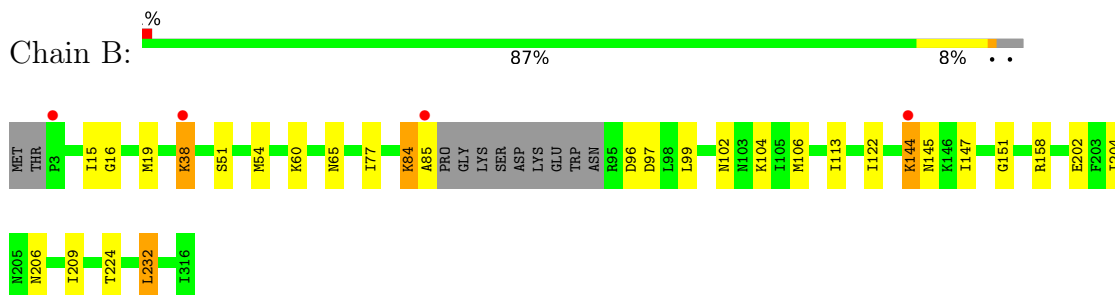
3 Residue-property plots [i](#)

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.

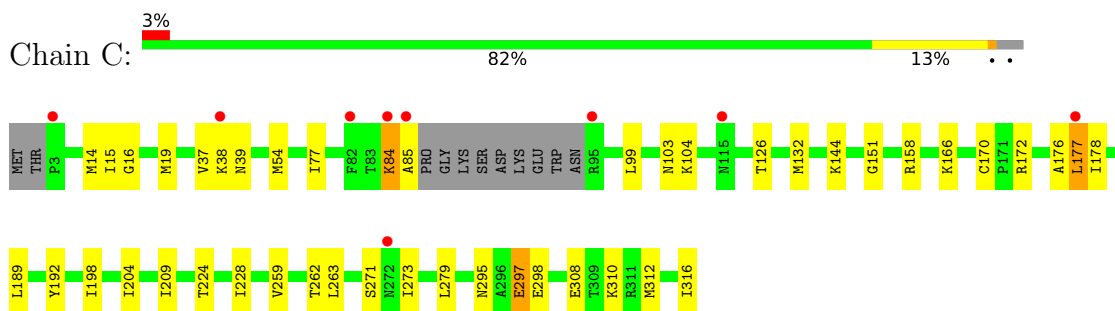
- Molecule 1: L-lactate dehydrogenase



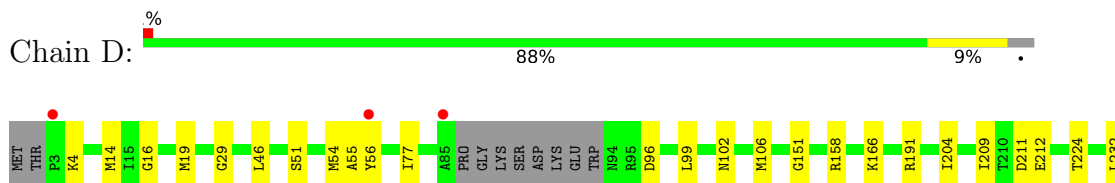
- Molecule 1: L-lactate dehydrogenase



- Molecule 1: L-lactate dehydrogenase



- Molecule 1: L-lactate dehydrogenase

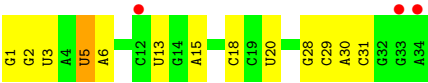




● Molecule 2: Cubane-modified aptamer



● Molecule 2: Cubane-modified aptamer



4 Data and refinement statistics

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α , β , γ	80.72Å 80.72Å 504.77Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	40.23 – 2.50 40.23 – 2.50	Depositor EDS
% Data completeness (in resolution range)	99.7 (40.23-2.50) 99.9 (40.23-2.50)	Depositor EDS
R_{merge}	0.17	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	0.92 (at 2.48Å)	Xtriage
Refinement program	PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.203 , 0.243 0.203 , 0.240	Depositor DCC
R_{free} test set	2992 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	61.4	Xtriage
Anisotropy	0.050	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 52.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.52$, $\langle L^2 \rangle = 0.35$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	10870	wwPDB-VP
Average B, all atoms (Å ²)	66.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 51.63 % 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 5.4588e-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: O0Q

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	0.41	0/2355	0.60	0/3186
1	B	0.44	0/2347	0.75	7/3175 (0.2%)
1	C	0.46	1/2347 (0.0%)	0.85	15/3175 (0.5%)
1	D	0.40	0/2355	0.77	7/3186 (0.2%)
2	E	0.80	4/760 (0.5%)	0.73	3/1168 (0.3%)
2	F	0.73	3/760 (0.4%)	0.73	3/1168 (0.3%)
All	All	0.49	8/10924 (0.1%)	0.74	35/15058 (0.2%)

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	12	DC	O3'-P	6.16	1.62	1.56
1	C	198	ILE	CA-C	-5.82	1.48	1.52
2	F	5	DU	O3'-P	5.75	1.62	1.56
2	E	13	DU	O3'-P	5.64	1.61	1.56
2	E	5	DU	O3'-P	5.40	1.61	1.56
2	E	20	DU	O3'-P	5.20	1.61	1.56
2	F	20	DU	O3'-P	5.17	1.61	1.56
2	F	13	DU	O3'-P	5.16	1.61	1.56

All (35) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	212	GLU	CA-CB-CG	14.48	143.05	114.10
1	C	104	LYS	CB-CG-CD	-10.77	86.53	111.30
1	D	212	GLU	N-CA-CB	-10.39	94.94	110.01
1	B	144	LYS	CB-CG-CD	10.39	135.20	111.30
1	C	104	LYS	CB-CA-C	-9.48	95.04	110.79
1	C	84	LYS	CB-CG-CD	9.41	132.94	111.30
1	D	212	GLU	CB-CG-CD	-9.29	96.81	112.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	144	LYS	CG-CD-CE	8.82	131.59	111.30
1	C	104	LYS	N-CA-CB	8.38	122.43	110.12
1	D	211	ASP	CA-C-N	8.30	131.23	120.44
1	D	211	ASP	C-N-CA	8.30	131.23	120.44
1	D	166	LYS	CB-CG-CD	8.27	130.32	111.30
1	B	38	LYS	CD-CE-NZ	-8.03	86.21	111.90
1	C	84	LYS	CA-CB-CG	-7.57	98.97	114.10
1	B	84	LYS	CB-CG-CD	7.31	128.11	111.30
1	B	38	LYS	CG-CD-CE	7.23	127.92	111.30
1	C	104	LYS	CG-CD-CE	7.14	127.73	111.30
1	C	38	LYS	CB-CG-CD	6.53	126.32	111.30
2	E	13	DU	C5-C4-O4	-6.35	122.09	125.90
2	F	13	DU	C5-C4-O4	-5.73	122.46	125.90
1	D	212	GLU	CB-CA-C	5.67	119.78	110.88
1	C	177	LEU	CD1-CG-CD2	-5.64	98.39	110.80
1	C	271	SER	CA-C-N	-5.62	111.55	122.62
1	C	271	SER	C-N-CA	-5.62	111.55	122.62
1	B	38	LYS	CB-CG-CD	5.58	124.14	111.30
1	C	103	ASN	CA-C-N	-5.56	112.83	120.28
1	C	103	ASN	C-N-CA	-5.56	112.83	120.28
1	B	144	LYS	CD-CE-NZ	5.54	129.62	111.90
1	C	297	GLU	CB-CA-C	-5.53	101.45	110.85
2	F	5	DU	C5-C4-O4	-5.44	122.64	125.90
1	C	84	LYS	CG-CD-CE	-5.24	99.25	111.30
2	E	13	DU	N3-C4-O4	5.24	123.07	119.40
2	E	20	DU	C5-C4-O4	-5.23	122.76	125.90
1	C	177	LEU	CB-CG-CD2	-5.10	95.39	110.70
2	F	20	DU	C5-C4-O4	-5.10	122.84	125.90

There are no chirality outliers.

There are no planarity outliers.

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	2321	0	2423	26	1

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	2313	0	2417	29	1
1	C	2313	0	2417	31	0
1	D	2321	0	2423	16	0
2	E	677	0	356	20	0
2	F	677	0	356	11	0
3	E	72	0	0	14	0
3	F	72	0	0	11	0
4	A	25	0	0	2	0
4	B	28	0	0	3	0
4	C	18	0	0	0	0
4	D	28	0	0	1	0
4	F	5	0	0	3	0
All	All	10870	0	10392	133	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 6.

All (133) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:5:DU:H2''	3:E:504:O0Q:OBC	1.17	1.25
1:B:144:LYS:HG2	1:B:145:ASN:N	1.56	1.12
2:E:5:DU:C2'	3:E:504:O0Q:OBC	2.13	0.94
3:F:502:O0Q:NBA	4:F:601:HOH:O	2.00	0.93
2:E:18:DC:H2''	3:E:501:O0Q:CBB	2.01	0.90
1:A:144:LYS:HD3	4:A:505:HOH:O	1.87	0.74
2:F:18:DC:H2''	3:F:501:O0Q:CBB	2.21	0.70
2:E:15:DA:H5'	2:E:15:DA:H8	1.57	0.69
1:C:158:ARG:HG2	1:C:224:THR:HG21	1.74	0.69
1:B:144:LYS:HG2	1:B:145:ASN:CA	2.23	0.69
1:A:39:ASN:HB2	3:E:503:O0Q:OBC	1.94	0.67
1:D:191:ARG:O	4:D:501:HOH:O	2.12	0.67
3:F:502:O0Q:CBB	4:F:601:HOH:O	2.38	0.66
1:B:84:LYS:CG	1:B:85:ALA:N	2.61	0.63
1:C:262:THR:HG21	1:C:279:LEU:HD21	1.79	0.63
1:B:84:LYS:HG3	1:B:85:ALA:N	2.13	0.62
2:F:3:DU:O4	3:F:502:O0Q:CAT	2.47	0.61
2:E:5:DU:O4	3:E:503:O0Q:CAT	2.39	0.61
1:C:308:GLU:HG3	1:C:312:MET:HE3	1.82	0.60
1:B:144:LYS:CG	1:B:145:ASN:N	2.45	0.60
2:E:15:DA:H5'	2:E:15:DA:C8	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:309:THR:OG1	4:A:501:HOH:O	2.16	0.59
1:B:202:GLU:OE1	4:B:501:HOH:O	2.16	0.59
2:F:1:DG:H2'	2:F:2:DG:C8	2.38	0.59
2:E:1:DG:H2'	2:E:2:DG:C8	2.38	0.59
2:E:18:DC:H2''	3:E:501:O0Q:NBA	2.17	0.58
1:C:297:GLU:HG2	1:C:298:GLU:HG3	1.84	0.58
1:B:84:LYS:HG3	1:B:85:ALA:H	1.67	0.58
2:F:15:DA:H8	2:F:15:DA:H5'	1.69	0.57
1:B:16:GLY:HA2	1:B:19:MET:HE3	1.88	0.56
1:C:84:LYS:CG	1:C:85:ALA:H	2.19	0.55
1:B:206:ASN:ND2	4:B:502:HOH:O	2.36	0.55
2:F:30:DA:H1'	2:F:31:DC:H5'	1.88	0.54
1:D:96:ASP:HA	1:D:99:LEU:HD12	1.90	0.54
3:F:502:O0Q:CBG	3:F:502:O0Q:CAZ	2.86	0.54
1:B:19:MET:SD	1:B:77:ILE:HG21	2.48	0.54
3:E:501:O0Q:CAZ	3:E:501:O0Q:CBE	2.86	0.53
2:E:18:DC:C6	3:E:501:O0Q:CBE	2.92	0.53
1:C:297:GLU:HG2	1:C:298:GLU:N	2.24	0.52
1:D:158:ARG:HG2	1:D:224:THR:HG21	1.90	0.52
1:C:228:ILE:HG13	1:D:46:LEU:HD23	1.92	0.52
1:A:16:GLY:HA2	1:A:19:MET:HE3	1.91	0.52
2:E:29:DC:H2''	2:E:30:DA:C8	2.45	0.51
3:F:501:O0Q:CBE	3:F:501:O0Q:CAZ	2.88	0.51
1:A:279:LEU:HD22	1:A:289:VAL:HG22	1.93	0.51
1:D:4:LYS:HE3	1:D:29:GLY:HA2	1.92	0.51
3:E:503:O0Q:CAZ	3:E:503:O0Q:CBG	2.88	0.51
1:B:15:ILE:HG22	1:B:19:MET:HE2	1.93	0.50
1:A:19:MET:SD	1:A:77:ILE:HG21	2.50	0.50
1:D:55:ALA:O	1:D:56:TYR:HB2	2.11	0.50
1:A:99:LEU:HB3	1:A:316:ILE:HG22	1.94	0.50
1:A:165:GLN:OE1	1:B:60:LYS:HE3	2.12	0.49
2:E:25:DA:H2''	2:E:26:DG:H5'	1.94	0.49
1:A:38:LYS:HD2	1:A:38:LYS:H	1.77	0.49
1:A:262:THR:HG21	1:A:279:LEU:HD21	1.94	0.49
1:B:144:LYS:CD	1:B:145:ASN:HB3	2.43	0.49
1:C:84:LYS:HG2	1:C:85:ALA:H	1.78	0.49
2:F:15:DA:H5'	2:F:15:DA:C8	2.46	0.49
2:F:18:DC:H2'	2:F:18:DC:O2	2.12	0.48
1:B:158:ARG:HG2	1:B:224:THR:HG21	1.96	0.48
1:B:102:ASN:O	1:B:106:MET:HG2	2.13	0.48
1:D:204:ILE:HA	1:D:209:ILE:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:39:ASN:HB2	3:F:504:O0Q:OBC	2.14	0.48
2:F:18:DC:C6	3:F:501:O0Q:CBE	2.97	0.48
1:C:54[A]:MET:HG3	1:D:245:GLU:OE1	2.13	0.47
1:C:178:ILE:O	1:C:259:VAL:HG11	2.14	0.47
1:C:204:ILE:HA	1:C:209:ILE:O	2.15	0.47
1:B:51:SER:HA	1:B:54[A]:MET:HE2	1.95	0.47
2:E:5:DU:H4'	2:E:6:DA:O5'	2.15	0.47
1:A:126:THR:HG22	1:A:132:MET:HG3	1.96	0.47
2:F:29:DC:H2''	2:F:30:DA:C8	2.49	0.47
1:C:14:MET:HE1	1:D:14:MET:HE3	1.96	0.46
1:D:51:SER:HA	1:D:54[A]:MET:HE2	1.97	0.46
1:A:204:ILE:HA	1:A:209:ILE:O	2.15	0.46
1:A:254:ILE:O	1:C:170:CYS:HB2	2.15	0.46
2:E:18:DC:H2'	2:E:18:DC:O2	2.16	0.46
1:B:113:ILE:HD13	1:B:122:ILE:HD12	1.98	0.46
3:E:504:O0Q:CBK	3:E:504:O0Q:CAZ	2.93	0.46
2:E:4:DA:H1'	2:E:6:DA:N1	2.31	0.45
1:B:38:LYS:O	1:B:65:ASN:ND2	2.42	0.45
1:D:102:ASN:O	1:D:106:MET:HG2	2.16	0.45
1:C:126:THR:HG22	1:C:132:MET:HG3	1.97	0.45
1:C:19:MET:SD	1:C:77:ILE:HG21	2.57	0.45
2:E:20:DU:H2'	2:E:21:DA:H5'	1.98	0.44
1:B:38:LYS:HE2	2:E:13:DU:O4'	2.17	0.44
1:C:16:GLY:HA2	1:C:19:MET:HE3	1.98	0.44
1:C:144:LYS:HG3	1:C:263:LEU:HD23	1.99	0.44
1:C:176:ALA:C	1:C:177:LEU:HD23	2.42	0.44
1:B:204:ILE:HA	1:B:209:ILE:O	2.17	0.44
1:A:40:MET:HA	1:B:232:LEU:HD23	2.00	0.44
3:F:501:O0Q:CAZ	3:F:501:O0Q:CBG	2.96	0.44
2:F:5:DU:H4'	2:F:6:DA:O5'	2.17	0.44
1:B:122:ILE:O	1:B:147:ILE:HA	2.17	0.43
2:E:30:DA:H1'	2:E:31:DC:H5'	1.98	0.43
3:E:503:O0Q:CAZ	3:E:503:O0Q:CBE	2.95	0.43
1:C:295:ASN:OD1	1:C:295:ASN:N	2.43	0.43
1:B:96:ASP:HA	1:B:99:LEU:HD12	2.00	0.43
1:D:16:GLY:HA2	1:D:19:MET:HE3	2.01	0.43
1:D:19:MET:SD	1:D:77:ILE:HG21	2.59	0.43
1:D:246:MET:HE3	1:D:260:CYS:SG	2.58	0.43
1:A:82:PHE:CE2	1:A:101:LEU:HD23	2.53	0.43
1:C:84:LYS:CG	1:C:85:ALA:N	2.80	0.43
1:C:172:ARG:NE	1:D:56:TYR:HE1	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:84:LYS:HG2	1:B:85:ALA:N	2.34	0.42
1:C:166:LYS:HA	1:C:166:LYS:HD2	1.91	0.42
3:E:501:O0Q:CAZ	3:E:501:O0Q:CBG	2.97	0.42
3:F:502:O0Q:OBC	4:F:601:HOH:O	2.21	0.42
1:B:38:LYS:NZ	2:E:11:DC:OP1	2.53	0.42
1:A:4:LYS:HG3	1:A:5:PRO:HD2	2.02	0.42
1:A:144:LYS:HD2	1:A:144:LYS:C	2.45	0.41
1:A:164:SER:CB	1:A:171:PRO:HA	2.49	0.41
1:A:153:VAL:O	1:A:157:SER:HB3	2.20	0.41
1:A:189:LEU:HB3	1:A:192:TYR:HD2	1.85	0.41
2:E:19:DC:H3'	3:E:501:O0Q:NAV	2.35	0.41
1:A:178:ILE:O	1:A:259:VAL:HG11	2.21	0.41
1:C:15:ILE:HG22	1:C:19:MET:HE2	2.01	0.41
1:A:273:ILE:HD12	1:A:273:ILE:HA	1.96	0.41
1:C:273:ILE:HD13	1:C:310:LYS:HG2	2.02	0.41
1:B:232:LEU:HA	3:E:503:O0Q:CBG	2.51	0.41
1:A:15:ILE:HG22	1:A:19:MET:HE2	2.03	0.41
1:A:158:ARG:HG2	1:A:224:THR:HG21	2.01	0.41
1:C:37:VAL:HG22	3:F:502:O0Q:OBC	2.21	0.41
1:A:28:LEU:HD23	1:A:28:LEU:HA	1.83	0.41
1:C:172:ARG:NE	1:D:56:TYR:CE1	2.89	0.41
1:C:297:GLU:HG2	1:C:298:GLU:H	1.85	0.41
1:C:189:LEU:HB3	1:C:192:TYR:HD2	1.86	0.41
1:B:206:ASN:CG	4:B:502:HOH:O	2.64	0.40
1:C:84:LYS:HG3	1:C:85:ALA:H	1.85	0.40
1:A:231:LEU:HD23	1:A:231:LEU:HA	1.89	0.40
1:B:38:LYS:NZ	2:E:11:DC:H5'	2.37	0.40
1:B:144:LYS:HD2	1:B:145:ASN:HB3	2.03	0.40
2:F:28:DG:H2''	2:F:29:DC:C6	2.57	0.40
1:C:99:LEU:HB3	1:C:316:ILE:HG22	2.04	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:139:HIS:ND1	1:B:97:ASP:OD1[7_565]	2.15	0.05

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	303/316 (96%)	294 (97%)	8 (3%)	1 (0%)	36	55
1	B	302/316 (96%)	295 (98%)	5 (2%)	2 (1%)	18	34
1	C	302/316 (96%)	291 (96%)	10 (3%)	1 (0%)	36	55
1	D	303/316 (96%)	293 (97%)	8 (3%)	2 (1%)	18	34
All	All	1210/1264 (96%)	1173 (97%)	31 (3%)	6 (0%)	24	43

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	232	LEU
1	D	232	LEU
1	A	151	GLY
1	C	151	GLY
1	D	151	GLY
1	B	151	GLY

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	260/268 (97%)	260 (100%)	0	100	100
1	B	259/268 (97%)	258 (100%)	1 (0%)	84	93
1	C	259/268 (97%)	259 (100%)	0	100	100
1	D	260/268 (97%)	260 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	1038/1072 (97%)	1037 (100%)	1 (0%)	88 96

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	104	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	112	HIS
1	A	115	ASN
1	B	293	GLN
1	D	115	ASN
1	D	127	ASN
1	D	201	GLN
1	D	205	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

8 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$
3	O0Q	F	502	2	23,23,23	2.35	3 (13%)	36,40,40	2.35	10 (27%)
3	O0Q	F	504	2	23,23,23	1.94	4 (17%)	36,40,40	3.16	14 (38%)
3	O0Q	E	501	2	23,23,23	2.35	3 (13%)	36,40,40	2.35	10 (27%)
3	O0Q	F	503	2	23,23,23	2.35	3 (13%)	36,40,40	2.38	10 (27%)
3	O0Q	E	502	2	23,23,23	2.02	4 (17%)	36,40,40	2.74	13 (36%)
3	O0Q	F	501	2	23,23,23	2.35	4 (17%)	36,40,40	2.36	10 (27%)
3	O0Q	E	503	2	23,23,23	2.35	4 (17%)	36,40,40	2.37	10 (27%)
3	O0Q	E	504	2	23,23,23	2.34	3 (13%)	36,40,40	2.39	10 (27%)

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	O0Q	F	502	2	-	9/12/66/66	0/7/6/6
3	O0Q	F	504	2	-	7/12/66/66	0/7/6/6
3	O0Q	E	501	2	-	11/12/66/66	0/7/6/6
3	O0Q	F	503	2	-	3/12/66/66	0/7/6/6
3	O0Q	E	502	2	-	9/12/66/66	0/7/6/6
3	O0Q	F	501	2	-	10/12/66/66	0/7/6/6
3	O0Q	E	503	2	-	10/12/66/66	0/7/6/6
3	O0Q	E	504	2	-	9/12/66/66	0/7/6/6

All (28) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	F	502	O0Q	NAU-NAW	-8.01	1.21	1.34
3	E	501	O0Q	NAU-NAW	-8.01	1.21	1.34
3	F	501	O0Q	NAU-NAW	-8.01	1.21	1.34
3	F	503	O0Q	NAU-NAW	-8.01	1.21	1.34
3	E	503	O0Q	NAU-NAW	-8.00	1.22	1.34
3	E	504	O0Q	NAU-NAW	-7.94	1.22	1.34
3	F	504	O0Q	NAU-NAW	-7.04	1.23	1.34
3	E	502	O0Q	NAU-NAW	-6.32	1.24	1.34
3	E	504	O0Q	NAV-NAW	-5.71	1.22	1.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	F	503	O0Q	NAV-NAW	-5.68	1.22	1.31
3	E	503	O0Q	NAV-NAW	-5.67	1.22	1.31
3	F	501	O0Q	NAV-NAW	-5.66	1.22	1.31
3	F	502	O0Q	NAV-NAW	-5.65	1.22	1.31
3	E	501	O0Q	NAV-NAW	-5.64	1.22	1.31
3	E	502	O0Q	NAV-NAW	-4.37	1.24	1.31
3	E	502	O0Q	CBD-CBB	3.44	1.58	1.50
3	F	501	O0Q	CBD-CBK	-2.88	1.49	1.57
3	E	503	O0Q	CBD-CBK	-2.88	1.49	1.57
3	E	504	O0Q	CBD-CBK	-2.86	1.49	1.57
3	F	503	O0Q	CBD-CBK	-2.86	1.49	1.57
3	F	502	O0Q	CBD-CBK	-2.85	1.49	1.57
3	E	501	O0Q	CBD-CBK	-2.85	1.49	1.57
3	F	504	O0Q	CBD-CBB	2.77	1.56	1.50
3	E	502	O0Q	CBD-CBK	-2.66	1.49	1.57
3	F	504	O0Q	NAV-NAW	-2.41	1.27	1.31
3	F	504	O0Q	CBD-CBK	-2.33	1.50	1.57
3	E	503	O0Q	CBD-CBB	2.02	1.55	1.50
3	F	501	O0Q	CBD-CBB	2.01	1.55	1.50

All (87) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	F	504	O0Q	CBD-CBG-CBJ	-9.98	85.62	89.92
3	F	504	O0Q	CBD-CBK-CBJ	-8.75	86.15	89.92
3	E	502	O0Q	CBD-CBG-CBJ	-8.07	86.45	89.92
3	E	504	O0Q	CBD-CBG-CBJ	-7.18	86.83	89.92
3	E	504	O0Q	CBD-CBE-CBI	-7.16	86.84	89.92
3	F	503	O0Q	CBD-CBG-CBJ	-7.15	86.84	89.92
3	F	501	O0Q	CBD-CBG-CBJ	-7.13	86.85	89.92
3	E	503	O0Q	CBD-CBE-CBI	-7.13	86.85	89.92
3	F	501	O0Q	CBD-CBE-CBI	-7.13	86.85	89.92
3	E	501	O0Q	CBD-CBG-CBJ	-7.11	86.86	89.92
3	E	503	O0Q	CBD-CBG-CBJ	-7.10	86.87	89.92
3	F	502	O0Q	CBD-CBE-CBI	-7.05	86.89	89.92
3	F	502	O0Q	CBD-CBG-CBJ	-7.04	86.89	89.92
3	F	503	O0Q	CBD-CBE-CBI	-7.01	86.90	89.92
3	E	501	O0Q	CBD-CBE-CBI	-6.95	86.93	89.92
3	E	502	O0Q	CBD-CBK-CBJ	-6.21	87.25	89.92
3	E	502	O0Q	CBD-CBE-CBI	-5.91	87.38	89.92
3	F	504	O0Q	CBD-CBE-CBI	-5.85	87.40	89.92
3	F	504	O0Q	CAX-CAZ-NBA	-5.36	101.20	111.56

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	F	503	O0Q	CBD-CBK-CBI	-5.09	87.73	89.92
3	E	504	O0Q	CBD-CBK-CBJ	-5.05	87.75	89.92
3	F	503	O0Q	CBD-CBK-CBJ	-4.98	87.77	89.92
3	E	501	O0Q	CBD-CBK-CBI	-4.95	87.79	89.92
3	E	504	O0Q	CBD-CBK-CBI	-4.95	87.79	89.92
3	F	502	O0Q	CBD-CBK-CBI	-4.94	87.79	89.92
3	E	503	O0Q	CBD-CBK-CBJ	-4.93	87.80	89.92
3	E	501	O0Q	CBD-CBK-CBJ	-4.92	87.80	89.92
3	E	503	O0Q	CBD-CBK-CBI	-4.91	87.80	89.92
3	F	501	O0Q	CBD-CBK-CBI	-4.89	87.81	89.92
3	F	501	O0Q	CBD-CBK-CBJ	-4.89	87.81	89.92
3	F	502	O0Q	CBD-CBK-CBJ	-4.89	87.81	89.92
3	E	502	O0Q	CAX-CAZ-NBA	-4.69	102.51	111.56
3	F	504	O0Q	CBD-CBK-CBI	-4.53	87.97	89.92
3	E	502	O0Q	CAZ-NBA-CBB	4.38	131.96	121.97
3	F	504	O0Q	CBD-CBE-CBF	-3.65	88.35	89.92
3	F	504	O0Q	CBE-CBD-CBB	-3.62	113.62	125.60
3	E	502	O0Q	CBE-CBD-CBB	-3.57	113.81	125.60
3	E	502	O0Q	CAZ-CAX-NAU	-3.54	105.83	111.61
3	E	502	O0Q	CBD-CBK-CBI	-3.37	88.47	89.92
3	F	504	O0Q	CBD-CBG-CBF	-3.24	88.52	89.92
3	F	504	O0Q	CAZ-NBA-CBB	3.16	129.18	121.97
3	F	504	O0Q	CBK-CBD-CBG	3.05	95.97	89.56
3	F	504	O0Q	CAX-NAU-NAW	2.97	126.74	120.78
3	E	502	O0Q	CAX-NAU-NAW	2.72	126.24	120.78
3	E	502	O0Q	CBK-CBD-CBG	2.51	94.84	89.56
3	E	504	O0Q	CBD-CBG-CBF	-2.41	88.88	89.92
3	E	503	O0Q	CBD-CBG-CBF	-2.41	88.88	89.92
3	E	504	O0Q	CBD-CBE-CBF	-2.40	88.88	89.92
3	F	503	O0Q	CBD-CBG-CBF	-2.40	88.88	89.92
3	F	503	O0Q	CAT-CAS-NAV	-2.39	104.99	109.02
3	E	503	O0Q	CAT-CAS-NAV	-2.38	105.01	109.02
3	E	503	O0Q	CBD-CBE-CBF	-2.38	88.89	89.92
3	E	504	O0Q	CAT-CAS-NAV	-2.38	105.01	109.02
3	F	501	O0Q	CAT-CAS-NAV	-2.38	105.01	109.02
3	F	502	O0Q	CAT-CAS-NAV	-2.38	105.02	109.02
3	E	501	O0Q	CBD-CBG-CBF	-2.37	88.90	89.92
3	E	501	O0Q	CAT-CAS-NAV	-2.37	105.04	109.02
3	F	502	O0Q	CBD-CBG-CBF	-2.33	88.91	89.92
3	F	501	O0Q	CAX-NAU-NAW	2.32	125.43	120.78
3	F	504	O0Q	CAT-CAS-NAV	-2.31	105.14	109.02
3	F	503	O0Q	CBD-CBE-CBF	-2.30	88.93	89.92

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	E	503	O0Q	CAX-NAU-NAW	2.30	125.39	120.78
3	F	502	O0Q	CBD-CBE-CBF	-2.29	88.93	89.92
3	E	501	O0Q	CAX-NAU-NAW	2.29	125.37	120.78
3	F	501	O0Q	CBD-CBE-CBF	-2.26	88.94	89.92
3	F	502	O0Q	CAX-NAU-NAW	2.26	125.31	120.78
3	E	501	O0Q	CBD-CBE-CBF	-2.25	88.95	89.92
3	F	501	O0Q	CBD-CBG-CBF	-2.25	88.95	89.92
3	F	503	O0Q	CAX-NAU-NAW	2.24	125.28	120.78
3	E	502	O0Q	OBC-CBB-NBA	-2.24	117.86	122.64
3	E	504	O0Q	CAX-NAU-NAW	2.24	125.27	120.78
3	F	503	O0Q	CBK-CBD-CBG	2.18	94.15	89.56
3	E	504	O0Q	CBK-CBD-CBG	2.18	94.14	89.56
3	E	504	O0Q	CBK-CBD-CBE	2.18	94.14	89.56
3	F	501	O0Q	CBK-CBD-CBG	2.18	94.13	89.56
3	E	503	O0Q	CBK-CBD-CBG	2.18	94.13	89.56
3	F	503	O0Q	CBK-CBD-CBE	2.18	94.13	89.56
3	E	503	O0Q	CBK-CBD-CBE	2.17	94.12	89.56
3	E	502	O0Q	CAX-NAU-CAT	-2.17	123.56	128.66
3	F	501	O0Q	CBK-CBD-CBE	2.17	94.11	89.56
3	F	502	O0Q	CBK-CBD-CBE	2.16	94.10	89.56
3	E	501	O0Q	CBK-CBD-CBG	2.16	94.09	89.56
3	F	502	O0Q	CBK-CBD-CBG	2.16	94.09	89.56
3	E	501	O0Q	CBK-CBD-CBE	2.15	94.08	89.56
3	F	504	O0Q	CAX-NAU-CAT	-2.07	123.79	128.66
3	F	504	O0Q	CBK-CBJ-CBG	2.03	92.24	90.07
3	E	502	O0Q	CAT-CAS-NAV	-2.00	105.65	109.02

There are no chirality outliers.

All (68) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	E	501	O0Q	OBC-CBB-CBD-CBG
3	E	501	O0Q	OBC-CBB-CBD-CBK
3	E	501	O0Q	CBD-CBB-NBA-CAZ
3	E	501	O0Q	OBC-CBB-NBA-CAZ
3	E	502	O0Q	CBD-CBB-NBA-CAZ
3	E	502	O0Q	OBC-CBB-NBA-CAZ
3	E	503	O0Q	NBA-CBB-CBD-CBE
3	E	503	O0Q	NBA-CBB-CBD-CBK
3	E	503	O0Q	OBC-CBB-CBD-CBE
3	E	503	O0Q	OBC-CBB-CBD-CBG
3	E	503	O0Q	OBC-CBB-CBD-CBK

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Mol	Chain	Res	Type	Atoms
3	E	503	O0Q	CBD-CBB-NBA-CAZ
3	E	503	O0Q	OBC-CBB-NBA-CAZ
3	E	504	O0Q	CBD-CBB-NBA-CAZ
3	E	504	O0Q	OBC-CBB-NBA-CAZ
3	F	501	O0Q	NAU-CAX-CAZ-NBA
3	F	501	O0Q	NBA-CBB-CBD-CBG
3	F	501	O0Q	NBA-CBB-CBD-CBK
3	F	501	O0Q	OBC-CBB-CBD-CBE
3	F	501	O0Q	OBC-CBB-CBD-CBG
3	F	501	O0Q	OBC-CBB-CBD-CBK
3	F	501	O0Q	CBD-CBB-NBA-CAZ
3	F	501	O0Q	OBC-CBB-NBA-CAZ
3	F	502	O0Q	CBD-CBB-NBA-CAZ
3	F	502	O0Q	OBC-CBB-NBA-CAZ
3	F	504	O0Q	CBD-CBB-NBA-CAZ
3	F	504	O0Q	OBC-CBB-NBA-CAZ
3	E	501	O0Q	NAU-CAX-CAZ-NBA
3	E	502	O0Q	NAU-CAX-CAZ-NBA
3	F	504	O0Q	NAU-CAX-CAZ-NBA
3	E	504	O0Q	NAU-CAX-CAZ-NBA
3	E	503	O0Q	NAU-CAX-CAZ-NBA
3	E	503	O0Q	CAZ-CAX-NAU-CAT
3	F	502	O0Q	CAZ-CAX-NAU-CAT
3	F	501	O0Q	CAZ-CAX-NAU-CAT
3	E	501	O0Q	NBA-CBB-CBD-CBE
3	E	501	O0Q	NBA-CBB-CBD-CBG
3	E	501	O0Q	NBA-CBB-CBD-CBK
3	E	501	O0Q	OBC-CBB-CBD-CBE
3	E	502	O0Q	OBC-CBB-CBD-CBG
3	E	503	O0Q	NBA-CBB-CBD-CBG
3	E	504	O0Q	NBA-CBB-CBD-CBE
3	E	504	O0Q	NBA-CBB-CBD-CBK
3	E	504	O0Q	OBC-CBB-CBD-CBE
3	E	504	O0Q	OBC-CBB-CBD-CBK
3	F	501	O0Q	NBA-CBB-CBD-CBE
3	F	502	O0Q	NBA-CBB-CBD-CBG
3	F	502	O0Q	OBC-CBB-CBD-CBG
3	F	504	O0Q	NBA-CBB-CBD-CBK
3	F	504	O0Q	OBC-CBB-CBD-CBK
3	E	501	O0Q	CAZ-CAX-NAU-CAT
3	E	501	O0Q	CAZ-CAX-NAU-NAW
3	F	502	O0Q	CAZ-CAX-NAU-NAW

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Mol	Chain	Res	Type	Atoms
3	E	502	O0Q	NBA-CBB-CBD-CBE
3	E	502	O0Q	NBA-CBB-CBD-CBG
3	E	502	O0Q	NBA-CBB-CBD-CBK
3	E	502	O0Q	OBC-CBB-CBD-CBE
3	E	502	O0Q	OBC-CBB-CBD-CBK
3	E	504	O0Q	NBA-CBB-CBD-CBG
3	E	504	O0Q	OBC-CBB-CBD-CBG
3	F	502	O0Q	NBA-CBB-CBD-CBK
3	F	502	O0Q	OBC-CBB-CBD-CBE
3	F	502	O0Q	OBC-CBB-CBD-CBK
3	F	503	O0Q	NBA-CBB-CBD-CBE
3	F	503	O0Q	OBC-CBB-CBD-CBE
3	F	503	O0Q	OBC-CBB-CBD-CBG
3	F	504	O0Q	NBA-CBB-CBD-CBG
3	F	504	O0Q	OBC-CBB-CBD-CBG

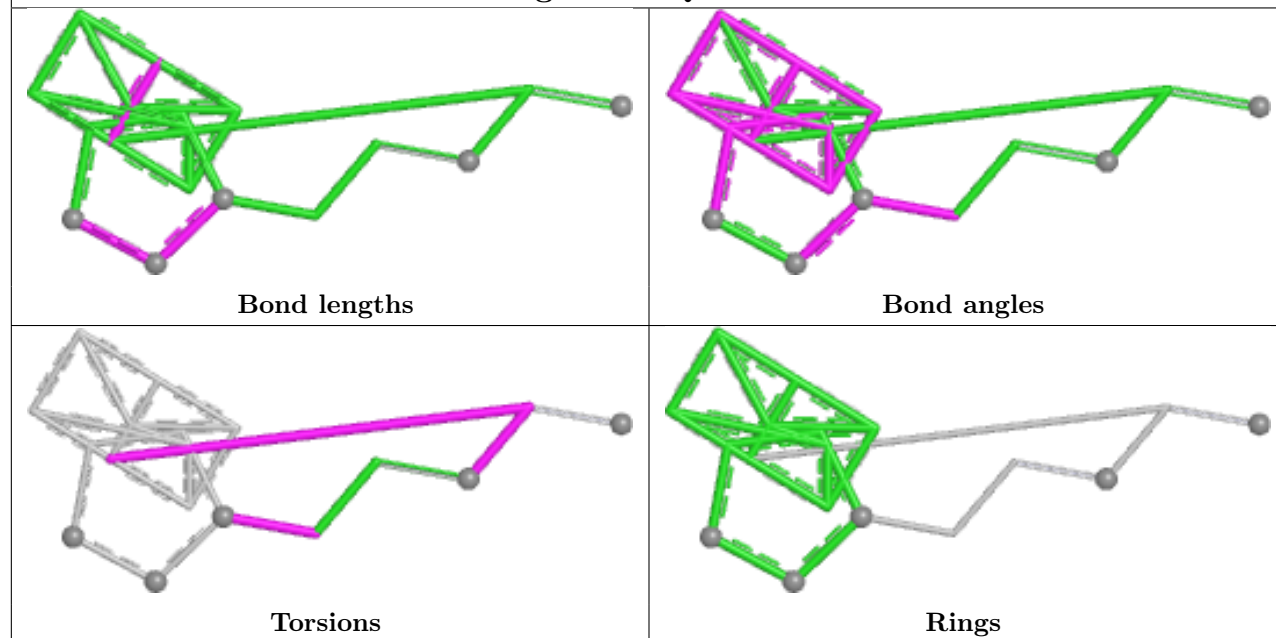
There are no ring outliers.

6 monomers are involved in 25 short contacts:

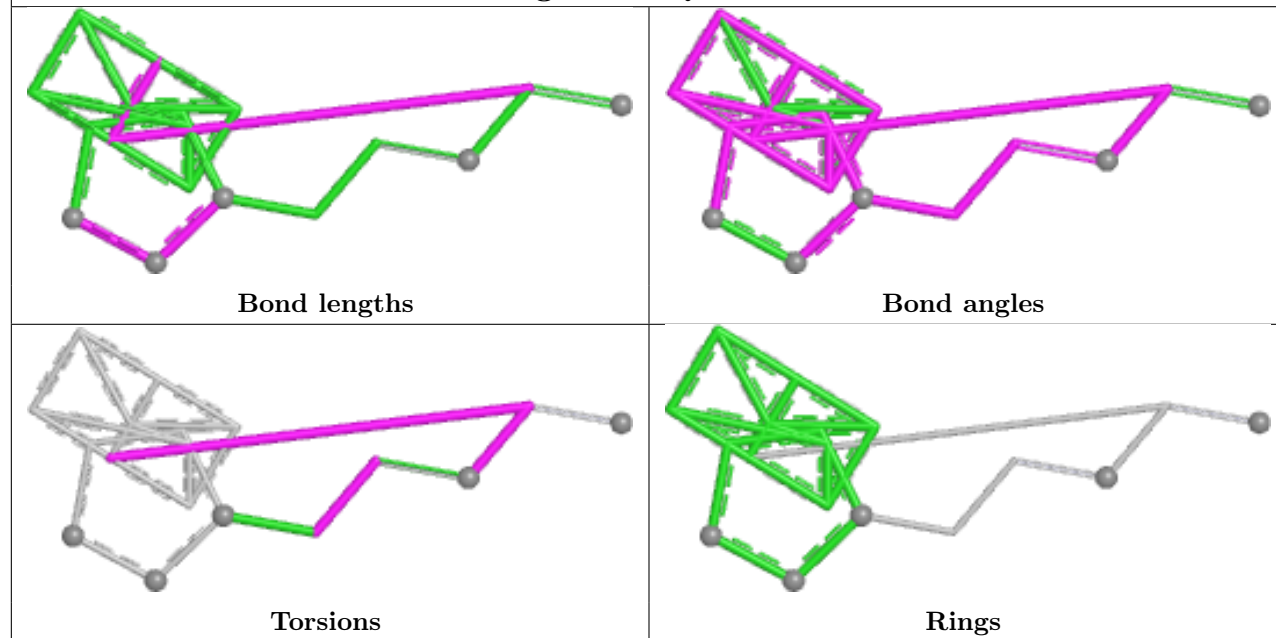
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	F	502	O0Q	6	0
3	F	504	O0Q	1	0
3	E	501	O0Q	6	0
3	F	501	O0Q	4	0
3	E	503	O0Q	5	0
3	E	504	O0Q	3	0

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.

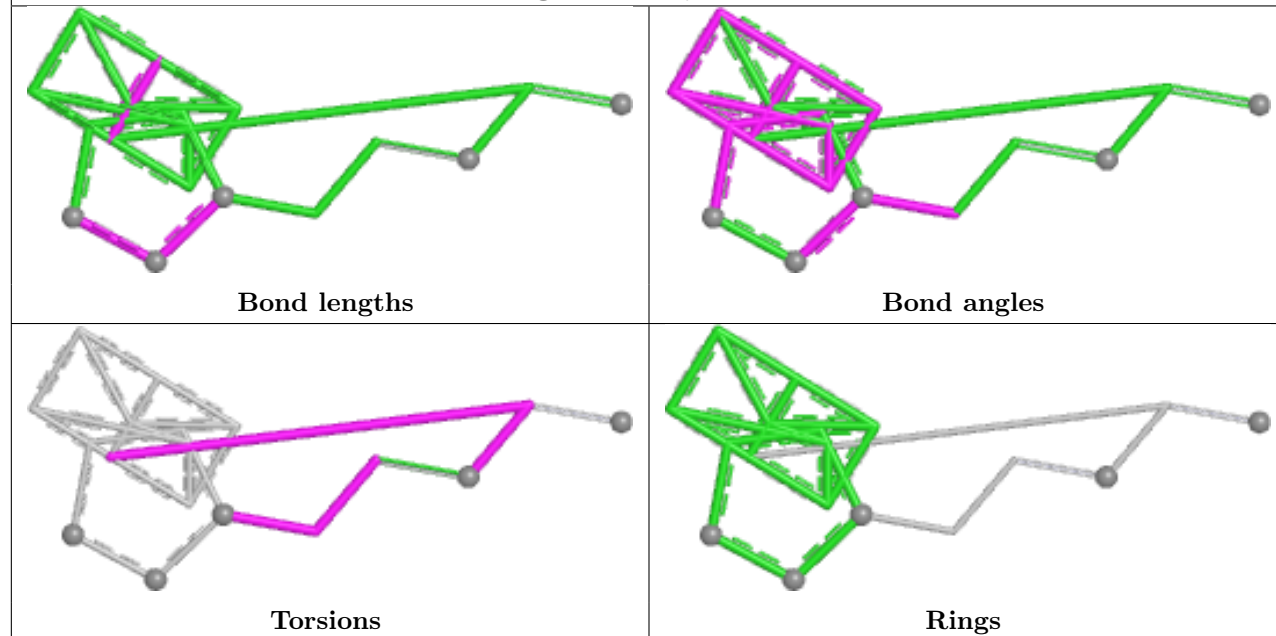
Ligand O0Q F 502



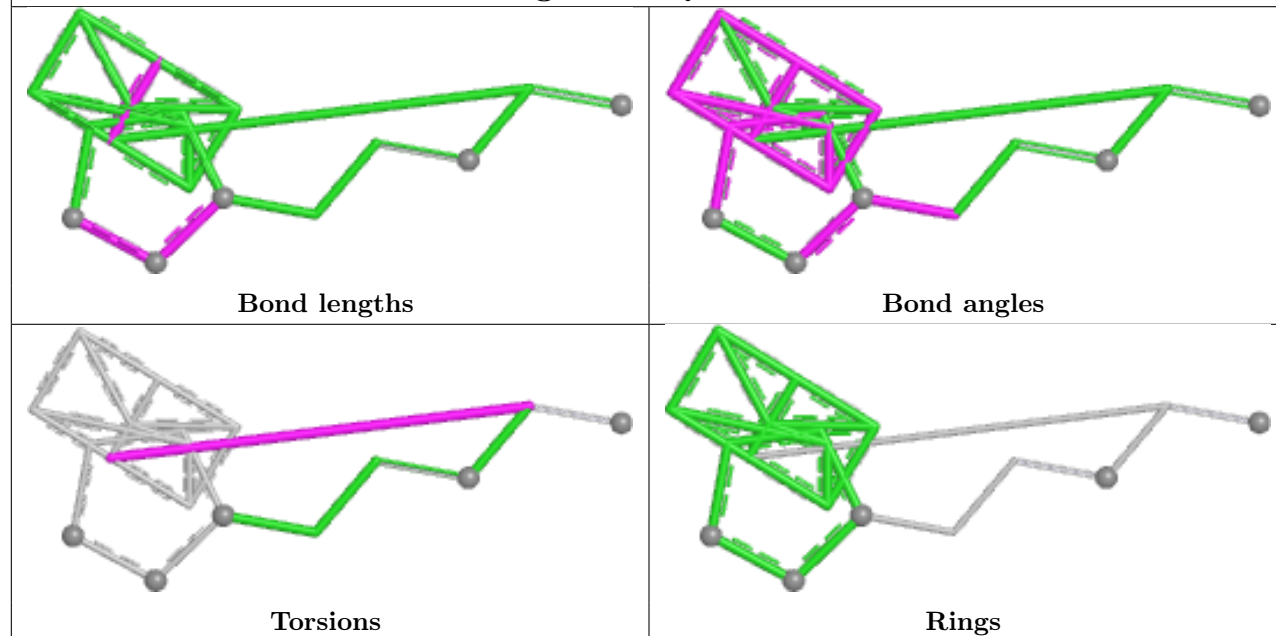
Ligand O0Q F 504



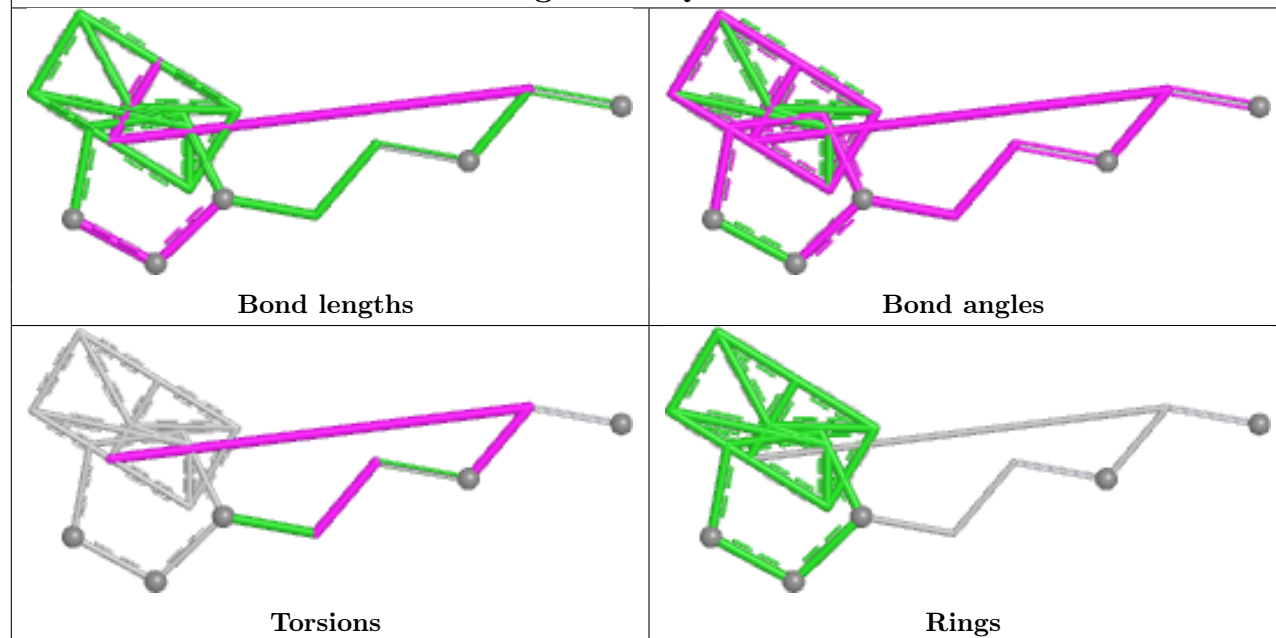
Ligand O0Q E 501



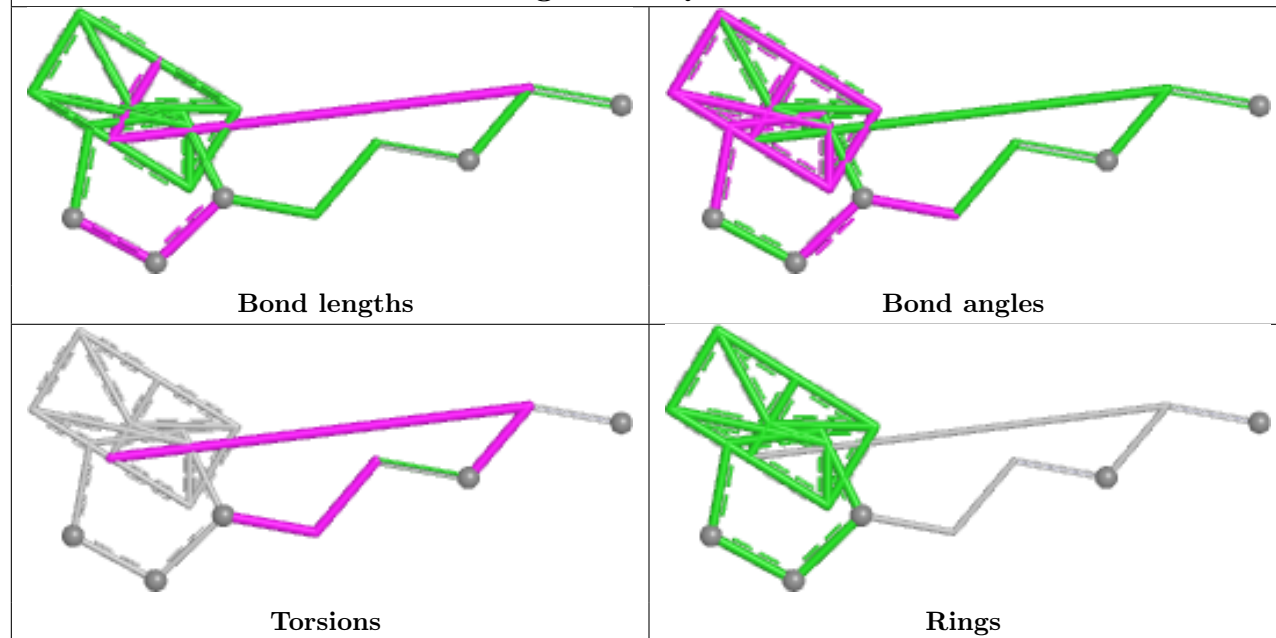
Ligand O0Q F 503

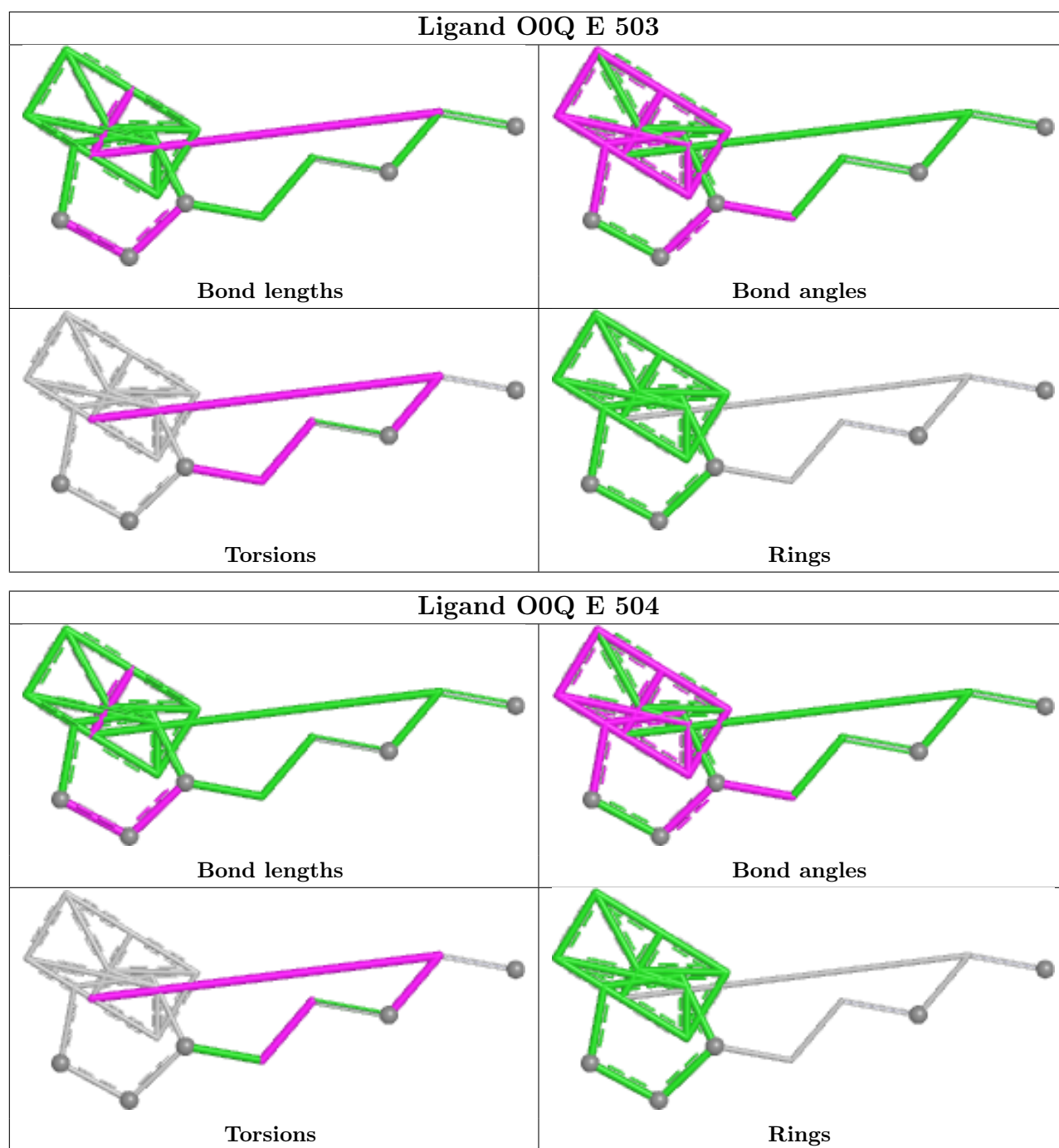


Ligand O0Q E 502



Ligand O0Q F 501





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	306/316 (96%)	-0.28	5 (1%) 70 67	38, 55, 73, 93	5 (1%)
1	B	305/316 (96%)	-0.27	4 (1%) 75 71	32, 58, 80, 97	8 (2%)
1	C	305/316 (96%)	-0.15	9 (2%) 52 48	35, 63, 84, 104	5 (1%)
1	D	306/316 (96%)	-0.13	4 (1%) 75 71	36, 61, 82, 103	7 (2%)
2	E	29/34 (85%)	0.10	1 (3%) 48 43	57, 79, 117, 126	0
2	F	29/34 (85%)	0.38	3 (10%) 12 10	61, 100, 152, 158	0
All	All	1280/1332 (96%)	-0.19	26 (2%) 65 61	32, 60, 86, 158	25 (1%)

All (26) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	85	ALA	5.1
1	D	85	ALA	3.5
1	D	56	TYR	3.4
2	E	34	DA	3.4
2	F	34	DA	3.2
1	A	85	ALA	2.8
1	C	84	LYS	2.7
1	C	3	PRO	2.7
1	D	3	PRO	2.7
1	B	144	LYS	2.6
1	A	84	LYS	2.5
1	D	316	ILE	2.5
1	B	3	PRO	2.4
1	C	177	LEU	2.3
1	C	272	ASN	2.3
1	B	85	ALA	2.3
1	A	38	LYS	2.2
1	A	3	PRO	2.2
1	B	38	LYS	2.2

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Mol	Chain	Res	Type	RSRZ
1	C	95	ARG	2.1
2	F	12	DC	2.1
1	C	82	PHE	2.1
1	C	115	ASN	2.1
2	F	33	DG	2.1
1	A	82	PHE	2.0
1	C	38	LYS	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 oligosaccharides in this entry.

6.4 Ligands [i](#)

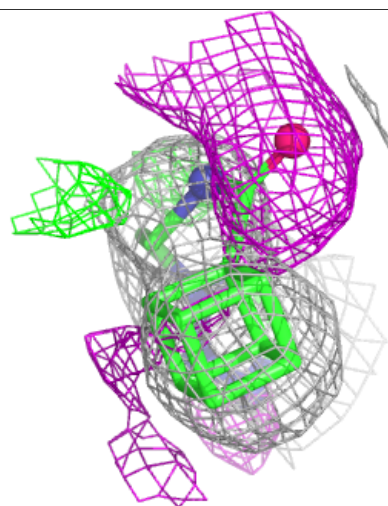
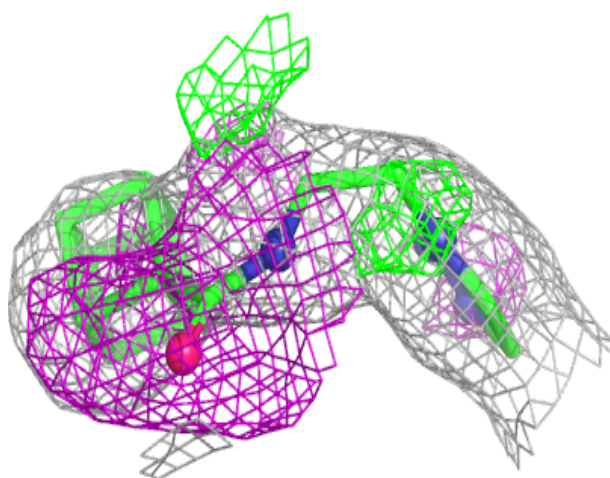
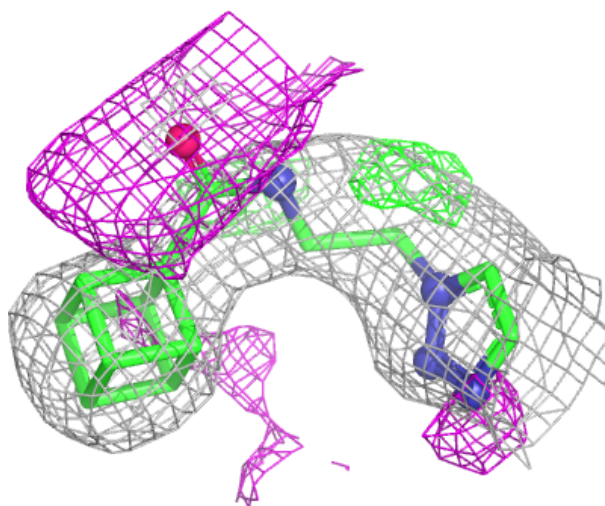
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	O0Q	E	504	18/18	0.75	0.22	62,76,86,96	0
3	O0Q	E	501	18/18	0.76	0.23	59,78,83,89	0
3	O0Q	F	502	18/18	0.77	0.19	85,89,119,120	0
3	O0Q	F	501	18/18	0.80	0.20	68,89,96,103	0
3	O0Q	E	503	18/18	0.84	0.15	50,73,79,97	0
3	O0Q	F	503	18/18	0.90	0.13	57,83,86,90	0
3	O0Q	E	502	18/18	0.92	0.11	51,68,75,84	0
3	O0Q	F	504	18/18	0.92	0.11	67,81,90,105	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.

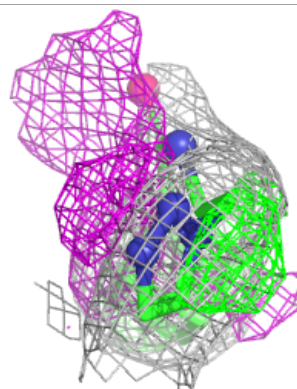
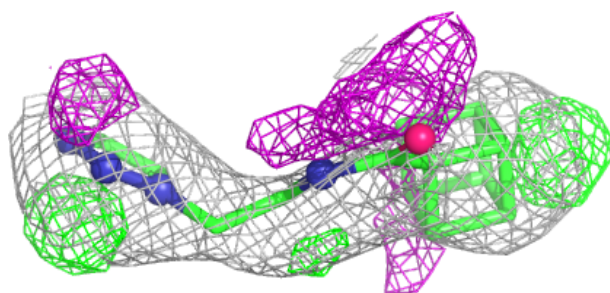
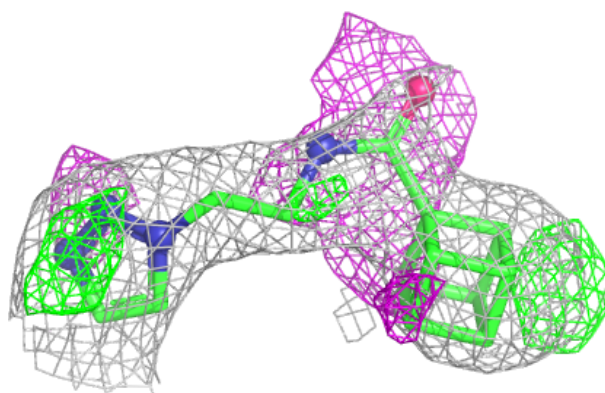
Electron density around O0Q E 504:

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

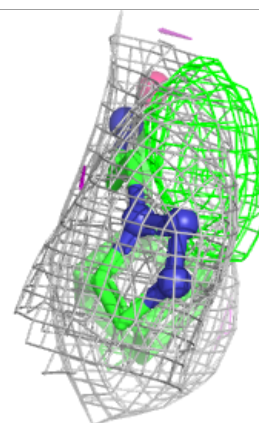
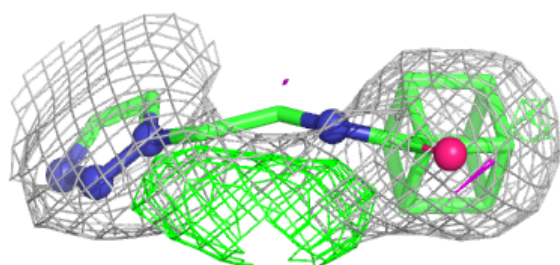
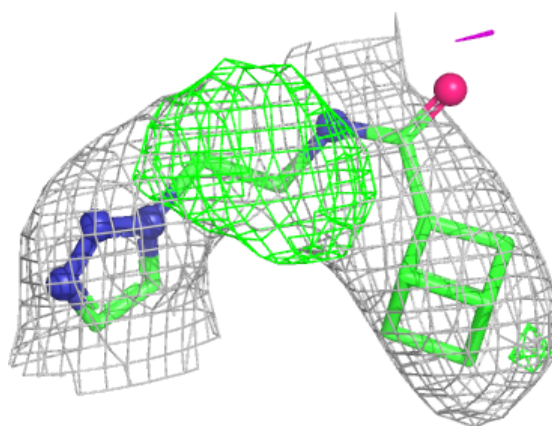


Electron density around O0Q E 501:

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

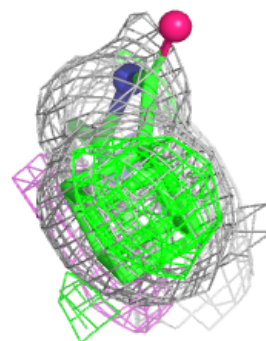
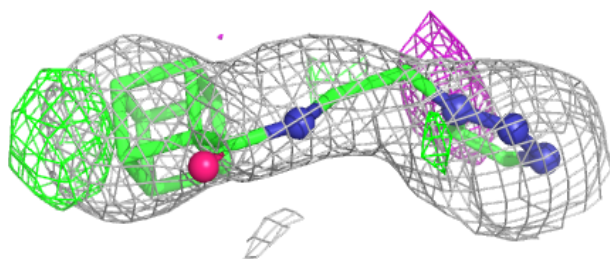
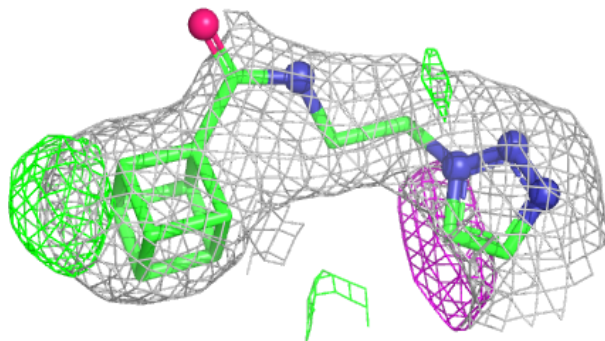
**Electron density around O0Q F 502:**

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



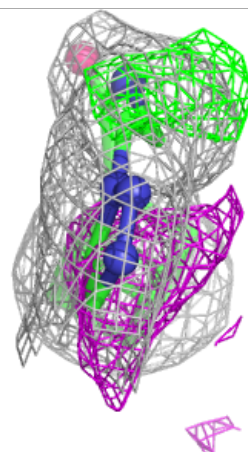
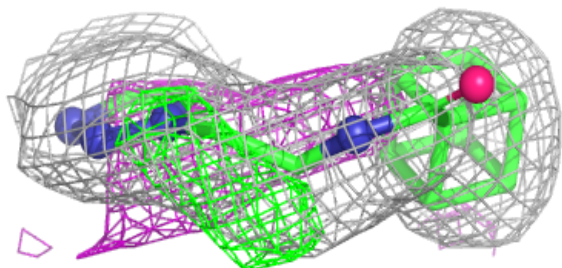
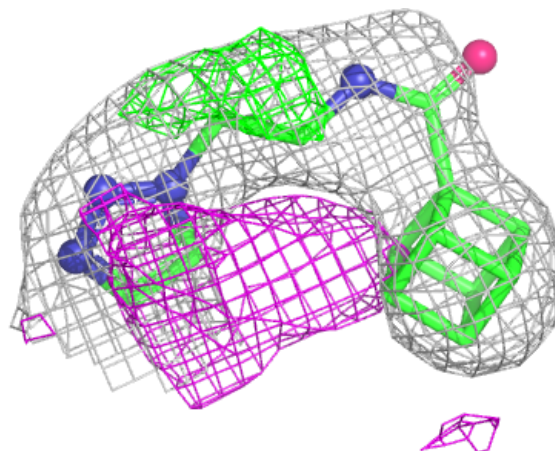
Electron density around O0Q F 501:

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



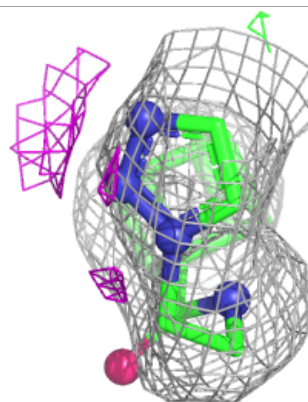
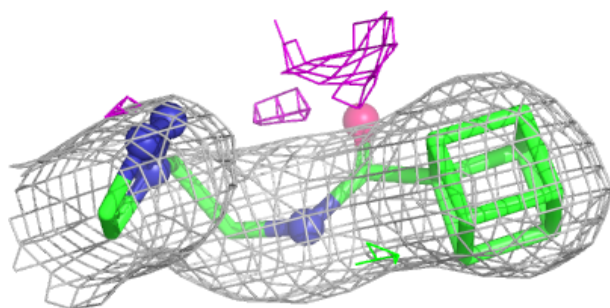
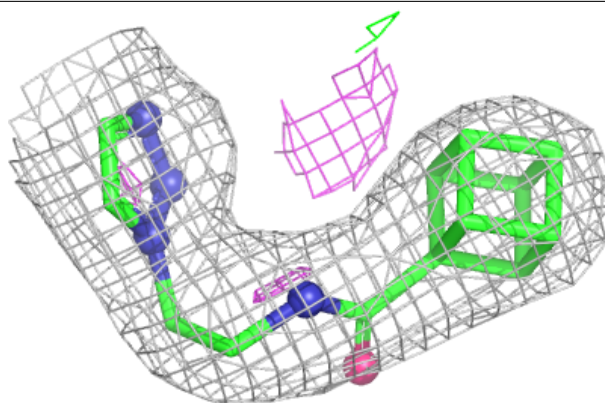
Electron density around O0Q E 503:

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

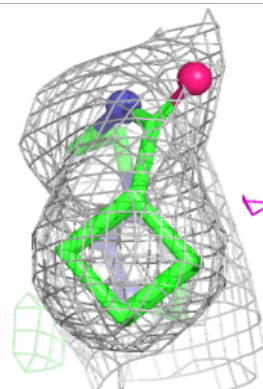
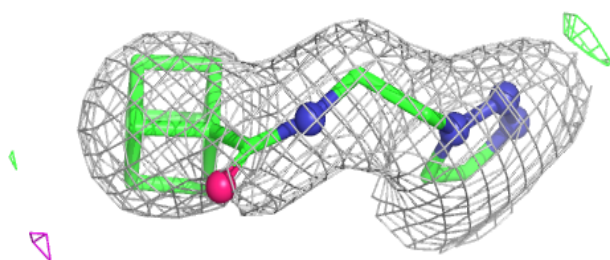
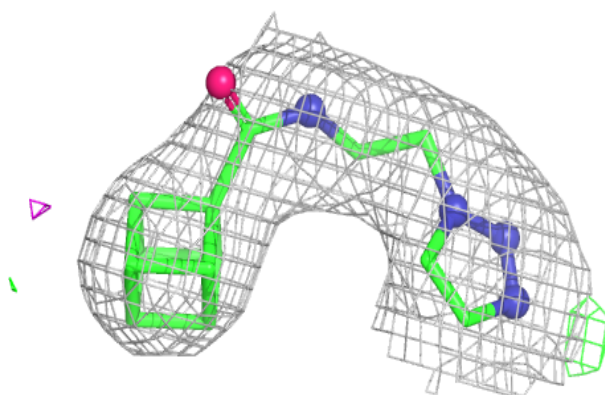


Electron density around O0Q F 503:

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

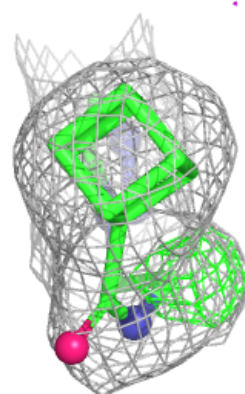
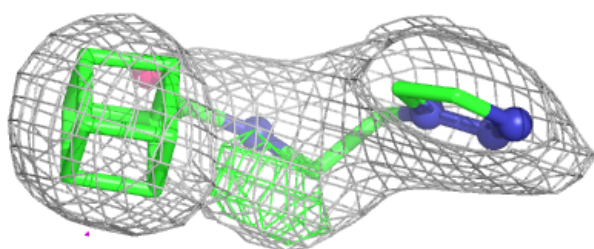
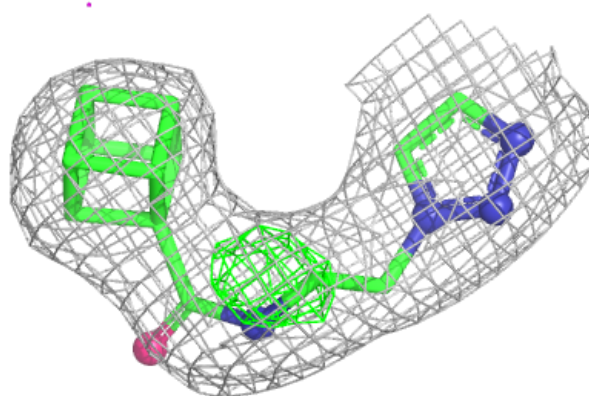
**Electron density around O0Q E 502:**

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



Electron density around O0Q F 504:

$2mF_o-DF_c$ (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.