



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 09:28 AM UTC

PDB ID : 2ISC / pdb_00002isc
Title : Crystal structure of Purine Nucleoside Phosphorylase from *Trichomonas vaginalis* with DADMe-Imm-A
Authors : Rinaldo-Matthis, A.; Almo, S.C.; Schramm, V.L.
Deposited on : 2006-10-17
Resolution : 2.70 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

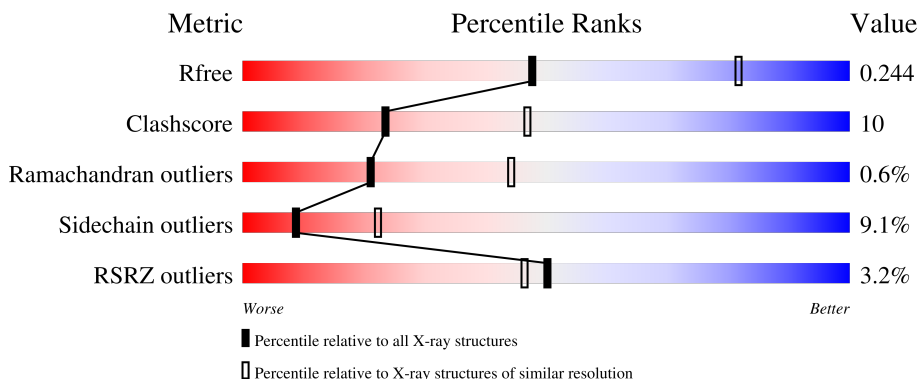
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.70 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	3538 (2.70-2.70)
Clashscore	190562	3843 (2.70-2.70)
Ramachandran outliers	187476	3778 (2.70-2.70)
Sidechain outliers	187428	3778 (2.70-2.70)
RSRZ outliers	180081	3538 (2.70-2.70)

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	239	 71% 21% 5%
1	B	239	 72% 23%
1	C	239	 69% 26%
1	D	239	 77% 18%
1	E	239	 74% 21%

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Mol	Chain	Length	Quality of chain
1	F	239	 <p>A horizontal bar chart representing the quality of chain. The bar is divided into segments: a small red segment at the beginning labeled '3%', a large green segment labeled '77%', and a yellow segment at the end labeled '17%'. There are two small black dots at the far right end of the bar.</p>

2 Entry composition [i](#)

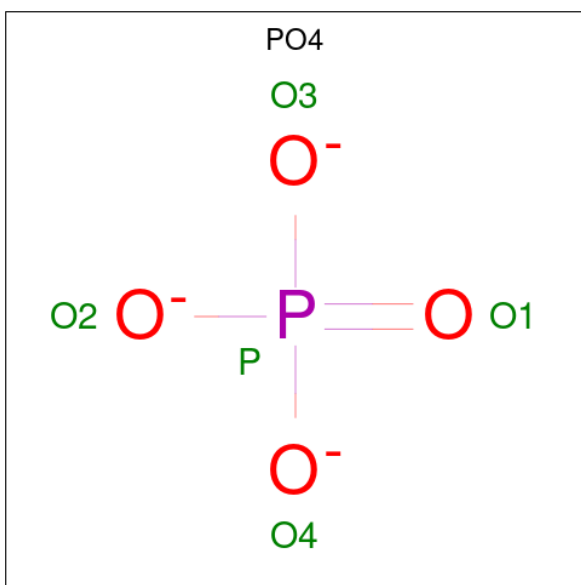
There are 4 unique types of molecules in this entry. The entry contains 11035 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 purine nucleoside phosphorylase.

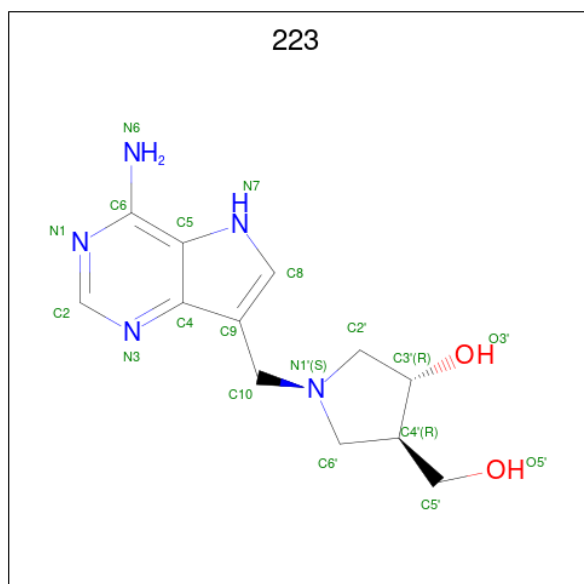
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	227	Total 1739	C 1107	N 294	O 323	S 15	0	0	0
1	B	236	Total 1815	C 1150	N 308	O 342	S 15	0	0	0
1	C	231	Total 1780	C 1131	N 307	O 327	S 15	0	0	0
1	D	238	Total 1835	C 1162	N 314	O 344	S 15	0	0	0
1	E	229	Total 1759	C 1118	N 299	O 327	S 15	0	0	0
1	F	233	Total 1793	C 1138	N 307	O 333	S 15	0	0	0

- Molecule 2 is PHOSPHATE ION (CCD ID: PO4) (formula: O₄P).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total O P 5 4 1	0	0
2	A	1	Total O P 5 4 1	0	0
2	B	1	Total O P 5 4 1	0	0
2	B	1	Total O P 5 4 1	0	0
2	C	1	Total O P 5 4 1	0	0
2	D	1	Total O P 5 4 1	0	0
2	E	1	Total O P 5 4 1	0	0
2	F	1	Total O P 5 4 1	0	0

- Molecule 3 is (3R,4R)-1-[(4-AMINO-5H-PYRROLO[3,2-D]PYRIMIDIN-7-YL)METHYL]-4-(HYDROXYMETHYL)PYRROLIDIN-3-OL (CCD ID: 223) (formula: C₁₂H₁₇N₅O₂).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C N O 19 12 5 2	0	0
3	B	1	Total C N O 19 12 5 2	0	0
3	C	1	Total C N O 19 12 5 2	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	D	1	Total	C	N	O	0	0
			19	12	5	2		
3	E	1	Total	C	N	O	0	0
			19	12	5	2		
3	F	1	Total	C	N	O	0	0
			19	12	5	2		

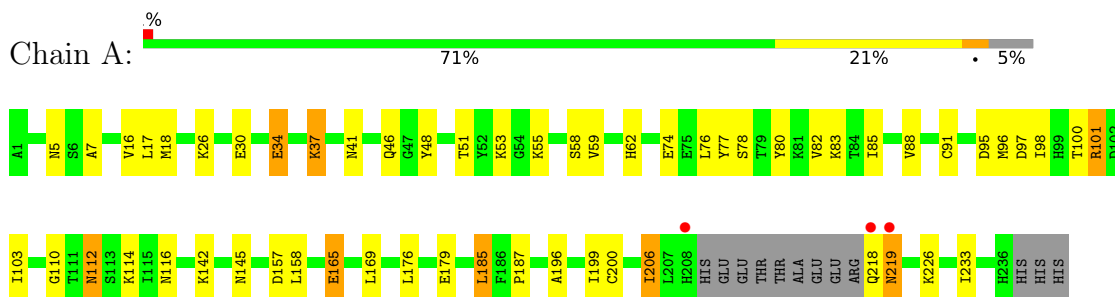
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	27	Total	O	0	0
			27	27		
4	B	26	Total	O	0	0
			26	26		
4	C	30	Total	O	0	0
			30	30		
4	D	31	Total	O	0	0
			31	31		
4	E	20	Total	O	0	0
			20	20		
4	F	26	Total	O	0	0
			26	26		

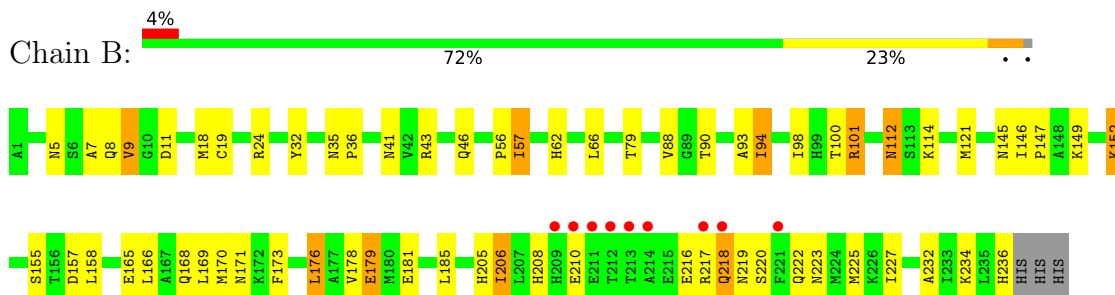
3 Residue-property plots [i](#)

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.

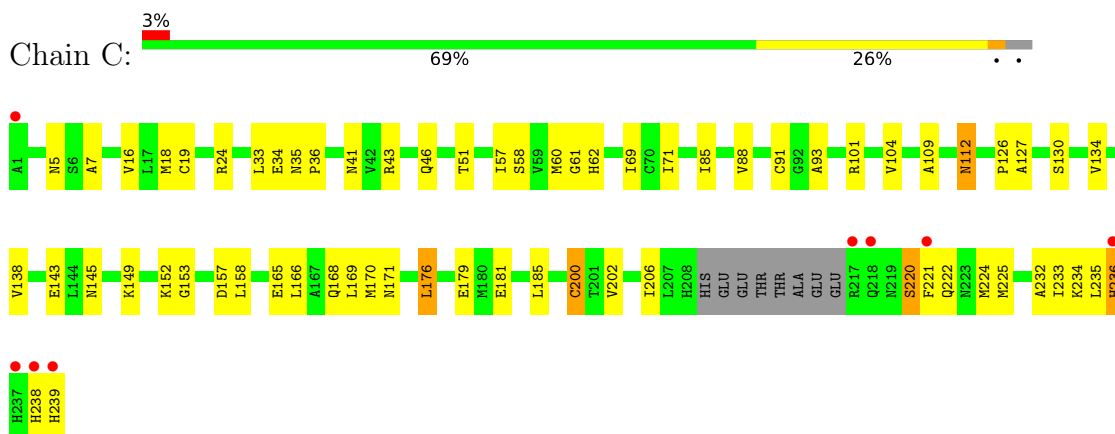
- Molecule 1: purine nucleoside phosphorylase



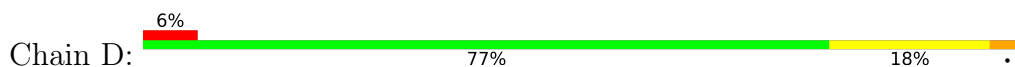
- Molecule 1: purine nucleoside phosphorylase

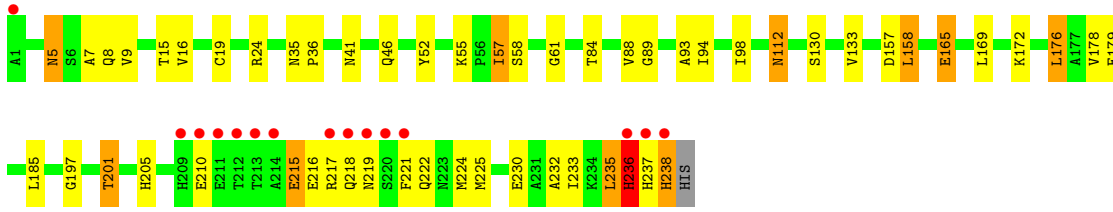


- Molecule 1: purine nucleoside phosphorylase

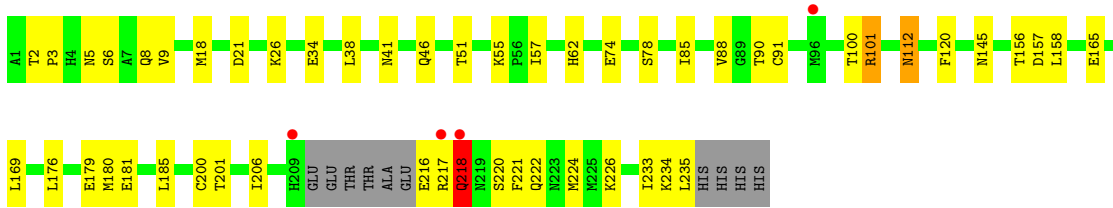
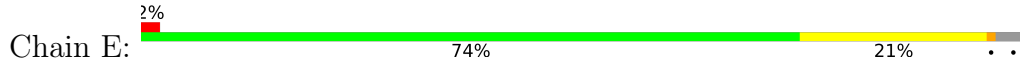


- Molecule 1: purine nucleoside phosphorylase

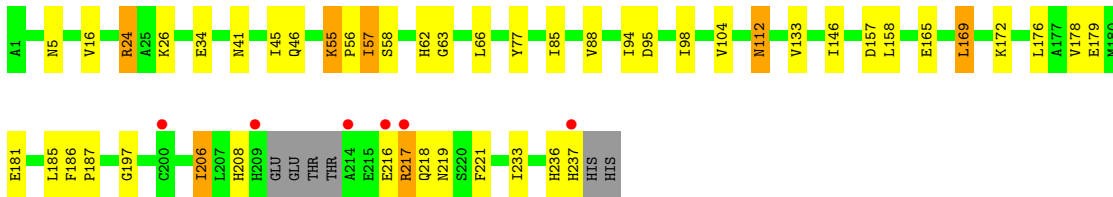
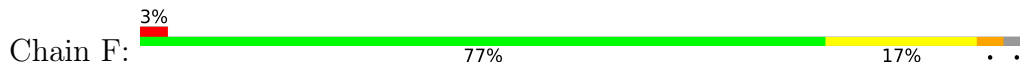




- Molecule 1: purine nucleoside phosphorylase



- Molecule 1: purine nucleoside phosphorylase



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	82.40Å 113.82Å 195.15Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.99 – 2.70 29.99 – 2.70	Depositor EDS
% Data completeness (in resolution range)	98.0 (29.99-2.70) 97.8 (29.99-2.70)	Depositor EDS
R_{merge}	0.13	Depositor
R_{sym}	0.12	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.69 (at 2.68Å)	Xtrriage
Refinement program	REFMAC	Depositor
R, R_{free}	0.199 , 0.252 0.194 , 0.244	Depositor DCC
R_{free} test set	2549 reflections (4.98%)	wwPDB-VP
Wilson B-factor (Å ²)	41.1	Xtrriage
Anisotropy	0.150	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 25.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.34$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	11035	wwPDB-VP
Average B, all atoms (Å ²)	37.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.05% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: PO4, 223

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	0.65	0/1773	0.89	0/2399
1	B	0.65	0/1851	0.89	0/2506
1	C	0.65	0/1817	0.86	0/2458
1	D	0.66	0/1873	0.88	1/2536 (0.0%)
1	E	0.59	0/1793	0.86	0/2425
1	F	0.65	1/1829 (0.1%)	0.86	1/2474 (0.0%)
All	All	0.65	1/10936 (0.0%)	0.88	2/14798 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	206	ILE	CA-CB	5.05	1.60	1.54

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	208	HIS	N-CA-C	5.51	114.83	108.49
1	D	210	GLU	N-CA-C	5.42	117.00	109.31

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	1739	0	1743	37	0
1	B	1815	0	1807	49	0
1	C	1780	0	1777	41	0
1	D	1835	0	1821	40	0
1	E	1759	0	1762	32	0
1	F	1793	0	1787	27	0
2	A	10	0	0	0	0
2	B	10	0	0	0	0
2	C	5	0	0	1	0
2	D	5	0	0	1	0
2	E	5	0	0	0	0
2	F	5	0	0	0	0
3	A	19	0	17	0	0
3	B	19	0	17	0	0
3	C	19	0	17	1	0
3	D	19	0	17	0	0
3	E	19	0	17	0	0
3	F	19	0	17	0	0
4	A	27	0	0	1	0
4	B	26	0	0	0	0
4	C	30	0	0	0	0
4	D	31	0	0	1	0
4	E	20	0	0	0	0
4	F	26	0	0	0	0
All	All	11035	0	10799	221	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 10.

All (221) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:94:ILE:HD11	1:B:178:VAL:HG23	1.34	1.09
1:D:235:LEU:O	1:D:236:HIS:HB2	1.62	0.96
1:C:112:ASN:HD21	1:C:157:ASP:H	1.14	0.92
1:E:112:ASN:HD21	1:E:157:ASP:H	1.05	0.92
1:E:18:MET:HE2	1:E:62:HIS:HB3	1.62	0.82
1:E:112:ASN:HD21	1:E:157:ASP:N	1.78	0.81
1:D:55:LYS:NZ	1:D:236:HIS:HD2	1.78	0.81
1:F:112:ASN:HD21	1:F:157:ASP:H	1.27	0.80
1:A:112:ASN:HD21	1:A:157:ASP:H	1.28	0.80
1:D:218:GLN:O	1:D:222:GLN:HG2	1.82	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:91:CYS:SG	1:C:200:CYS:HB3	2.22	0.80
1:B:112:ASN:HD21	1:B:157:ASP:H	1.28	0.78
1:A:100:THR:O	1:A:101:ARG:HB2	1.85	0.77
1:B:216:GLU:HB3	1:B:219:ASN:HB2	1.65	0.77
1:C:112:ASN:HD21	1:C:157:ASP:N	1.83	0.76
1:D:94:ILE:HD11	1:D:178:VAL:HG23	1.68	0.75
1:D:201:THR:HG22	1:D:224:MET:SD	2.27	0.75
1:B:168:GLN:HE22	1:B:171:ASN:HD22	1.35	0.74
1:B:94:ILE:CD1	1:B:178:VAL:HG23	2.16	0.73
1:A:91:CYS:SG	1:A:200:CYS:HB3	2.29	0.72
1:D:55:LYS:NZ	1:D:236:HIS:CD2	2.57	0.72
1:E:216:GLU:HA	1:E:218:GLN:N	2.06	0.71
1:B:62:HIS:CE1	1:B:181:GLU:HG2	2.27	0.69
1:F:26:LYS:HB2	1:F:46:GLN:HE21	1.59	0.68
1:B:225:MET:HA	1:B:225:MET:HE3	1.74	0.68
1:F:55:LYS:HG3	1:F:233:ILE:HD12	1.76	0.67
1:A:95:ASP:OD2	1:A:97:ASP:HB2	1.94	0.67
1:D:112:ASN:HD21	1:D:157:ASP:H	1.43	0.66
1:D:133:VAL:HG11	1:D:197:GLY:HA3	1.75	0.66
1:E:218:GLN:O	1:E:221:PHE:N	2.29	0.66
1:D:130:SER:HB3	4:D:9012:HOH:O	1.94	0.65
1:F:94:ILE:HD11	1:F:178:VAL:HG23	1.80	0.64
1:A:16:VAL:HG22	1:A:58:SER:HB2	1.79	0.63
1:C:235:LEU:O	1:C:236:HIS:HB3	1.97	0.63
1:B:98:ILE:CD1	1:B:176:LEU:HG	2.28	0.63
1:D:94:ILE:HD11	1:D:178:VAL:CG2	2.28	0.63
1:E:112:ASN:ND2	1:E:157:ASP:H	1.88	0.63
1:D:55:LYS:HZ1	1:D:236:HIS:HD2	1.47	0.62
1:C:104:VAL:HG13	1:C:176:LEU:HD23	1.81	0.62
1:F:133:VAL:HG11	1:F:197:GLY:HA3	1.81	0.62
1:C:235:LEU:O	1:C:236:HIS:CB	2.48	0.62
1:B:112:ASN:H	1:B:112:ASN:HD22	1.47	0.61
1:C:41:ASN:HD22	1:C:46:GLN:H	1.48	0.61
1:D:55:LYS:HZ3	1:D:236:HIS:CD2	2.19	0.60
1:B:19:CYS:HB3	1:B:88:VAL:O	2.01	0.60
1:E:62:HIS:CE1	1:E:181:GLU:HG2	2.37	0.60
1:B:57:ILE:HD11	1:B:232:ALA:HB1	1.82	0.59
1:D:112:ASN:H	1:D:112:ASN:HD22	1.50	0.59
1:F:16:VAL:HG22	1:F:58:SER:HB2	1.83	0.59
1:B:41:ASN:HD22	1:B:46:GLN:H	1.51	0.59
1:A:26:LYS:HB3	1:A:46:GLN:HE21	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:41:ASN:HD22	1:E:46:GLN:H	1.51	0.58
1:C:101:ARG:O	1:C:220:SER:OG	2.21	0.58
1:E:216:GLU:HA	1:E:218:GLN:H	1.69	0.58
1:B:100:THR:C	1:B:101:ARG:HG3	2.29	0.58
1:D:57:ILE:HD11	1:D:232:ALA:HB1	1.86	0.58
1:A:95:ASP:HB3	1:A:98:ILE:HG13	1.84	0.57
1:A:91:CYS:SG	1:A:200:CYS:CB	2.93	0.56
1:C:168:GLN:HE22	1:C:171:ASN:HD22	1.51	0.56
1:C:35:ASN:N	1:C:36:PRO:HD3	2.21	0.56
1:A:112:ASN:HD21	1:A:157:ASP:N	2.00	0.56
1:A:98:ILE:HD11	1:A:176:LEU:HG	1.87	0.56
1:F:186:PHE:HB2	1:F:187:PRO:HD3	1.88	0.56
1:B:5:ASN:HD22	1:B:7:ALA:H	1.55	0.55
1:B:223:ASN:O	1:B:227:ILE:HG13	2.07	0.55
1:A:41:ASN:HD22	1:A:46:GLN:H	1.53	0.55
1:B:56:PRO:HD2	1:B:236:HIS:CE1	2.42	0.55
1:F:41:ASN:HD22	1:F:46:GLN:H	1.54	0.55
1:B:112:ASN:HD21	1:B:157:ASP:N	2.02	0.54
1:C:43:ARG:HA	1:E:21:ASP:OD1	2.08	0.54
1:F:216:GLU:HA	1:F:217:ARG:C	2.33	0.54
1:B:94:ILE:HD11	1:B:178:VAL:CG2	2.23	0.53
1:A:34:GLU:HG3	1:A:51:THR:OG1	2.08	0.53
1:D:112:ASN:H	1:D:112:ASN:ND2	2.05	0.53
1:F:62:HIS:CE1	1:F:181:GLU:HG2	2.43	0.53
1:B:19:CYS:HB2	1:B:24:ARG:NH1	2.23	0.53
1:C:16:VAL:HG22	1:C:58:SER:HB2	1.91	0.53
1:A:88:VAL:HG23	1:A:88:VAL:O	2.09	0.53
1:B:98:ILE:HD11	1:B:176:LEU:HG	1.90	0.52
1:E:217:ARG:O	1:E:218:GLN:C	2.51	0.52
1:A:85:ILE:O	1:A:196:ALA:HA	2.08	0.52
1:B:217:ARG:HG3	1:B:218:GLN:H	1.74	0.52
1:C:88:VAL:HG23	1:C:88:VAL:O	2.08	0.52
1:F:95:ASP:HB3	1:F:98:ILE:HG12	1.90	0.52
1:C:41:ASN:ND2	1:C:46:GLN:H	2.08	0.52
1:D:24:ARG:HH12	1:D:89:GLY:HA2	1.75	0.52
1:C:112:ASN:ND2	1:C:157:ASP:H	1.94	0.52
1:B:88:VAL:O	1:B:88:VAL:HG23	2.10	0.51
1:D:221:PHE:HB3	1:D:225:MET:HE3	1.92	0.51
1:E:120:PHE:HD2	1:F:169:LEU:CD1	2.23	0.51
1:D:215:GLU:C	1:D:217:ARG:HB3	2.35	0.51
1:B:94:ILE:HG13	1:B:206:ILE:CD1	2.42	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:24:ARG:HH21	1:B:90:THR:HG23	1.76	0.50
1:B:93:ALA:HB3	1:B:205:HIS:CD2	2.47	0.50
1:D:93:ALA:HB3	1:D:205:HIS:CD2	2.46	0.50
1:E:18:MET:HG3	1:E:85:ILE:HG23	1.93	0.50
1:E:217:ARG:O	1:E:218:GLN:O	2.30	0.50
1:A:185:LEU:HD13	1:A:196:ALA:HB1	1.94	0.50
1:C:166:LEU:HG	1:C:170:MET:HE2	1.94	0.50
1:E:101:ARG:HB3	1:E:220:SER:HB2	1.94	0.50
1:D:19:CYS:O	1:D:61:GLY:HA2	2.12	0.50
1:A:218:GLN:O	1:A:219:ASN:C	2.55	0.49
1:D:41:ASN:HD22	1:D:46:GLN:H	1.60	0.49
1:E:51:THR:HA	1:E:55:LYS:O	2.12	0.49
1:F:217:ARG:HH11	1:F:217:ARG:HB2	1.77	0.49
1:B:18:MET:HE2	1:B:62:HIS:HB3	1.95	0.49
1:A:100:THR:O	1:A:101:ARG:CB	2.59	0.49
1:E:216:GLU:HA	1:E:217:ARG:C	2.37	0.49
1:A:17:LEU:O	1:A:59:VAL:HA	2.13	0.48
1:E:156:THR:O	1:E:180:MET:HG2	2.13	0.48
1:F:88:VAL:HG23	1:F:88:VAL:O	2.13	0.48
1:A:114:LYS:HB2	1:B:114:LYS:HB2	1.94	0.48
1:A:165:GLU:CD	1:A:165:GLU:H	2.21	0.48
1:D:112:ASN:HD21	1:D:157:ASP:N	2.07	0.48
1:E:233:ILE:C	1:E:235:LEU:H	2.22	0.48
1:B:101:ARG:O	1:B:220:SER:OG	2.30	0.48
1:B:225:MET:HE3	1:B:225:MET:CA	2.43	0.48
1:E:91:CYS:SG	1:E:200:CYS:HB3	2.54	0.48
1:D:19:CYS:HB3	1:D:88:VAL:O	2.14	0.48
1:C:71:ILE:HD11	1:E:180:MET:HE1	1.96	0.47
1:B:152:LYS:NZ	1:B:173:PHE:O	2.48	0.47
1:C:34:GLU:CG	1:C:51:THR:OG1	2.62	0.47
1:D:165:GLU:CD	1:D:165:GLU:H	2.21	0.47
1:B:112:ASN:H	1:B:112:ASN:ND2	2.13	0.47
1:E:38:LEU:HD21	1:E:41:ASN:HB2	1.96	0.47
1:A:112:ASN:H	1:A:112:ASN:ND2	2.13	0.47
1:F:77:TYR:CZ	1:F:85:ILE:HD12	2.49	0.47
4:A:9016:HOH:O	1:B:43:ARG:HD3	2.14	0.47
1:F:24:ARG:HH11	1:F:24:ARG:HB2	1.79	0.47
1:A:55:LYS:HG3	1:A:233:ILE:HD12	1.97	0.46
1:C:62:HIS:CE1	1:C:181:GLU:HG2	2.50	0.46
1:C:69:ILE:HD13	1:C:181:GLU:HB3	1.97	0.46
1:D:35:ASN:N	1:D:36:PRO:HD3	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:5:ASN:C	1:F:5:ASN:HD22	2.23	0.46
1:D:16:VAL:HG22	1:D:58:SER:HB2	1.97	0.46
1:E:74:GLU:O	1:E:78:SER:HB2	2.16	0.46
1:F:104:VAL:HG13	1:F:176:LEU:HD23	1.98	0.46
1:B:32:TYR:OH	1:B:222:GLN:HG2	2.15	0.46
1:C:109:ALA:HA	1:C:153:GLY:O	2.15	0.46
1:C:33:LEU:HB2	1:C:36:PRO:HG3	1.98	0.46
1:A:76:LEU:HB3	1:A:82:VAL:HG21	1.98	0.46
1:A:206:ILE:O	1:A:206:ILE:HG12	2.16	0.45
1:C:238:HIS:HA	1:C:239:HIS:HB2	1.98	0.45
1:B:100:THR:O	1:B:101:ARG:HG3	2.16	0.45
1:C:143:GLU:OE1	1:C:234:LYS:NZ	2.47	0.45
1:F:217:ARG:O	1:F:219:ASN:N	2.49	0.45
1:D:55:LYS:HE2	1:D:236:HIS:CD2	2.50	0.45
1:D:133:VAL:CG1	1:D:197:GLY:HA3	2.45	0.45
1:C:134:VAL:O	1:C:138:VAL:HG23	2.17	0.45
1:C:238:HIS:HA	1:C:239:HIS:CB	2.47	0.45
1:D:98:ILE:HD11	1:D:176:LEU:HG	1.98	0.45
1:B:5:ASN:ND2	1:B:7:ALA:H	2.15	0.45
1:E:5:ASN:HD22	1:E:6:SER:N	2.14	0.44
1:E:26:LYS:HB2	1:E:46:GLN:HE21	1.81	0.44
1:D:5:ASN:HD22	1:D:7:ALA:H	1.63	0.44
1:F:216:GLU:O	1:F:216:GLU:HG2	2.18	0.44
1:A:46:GLN:NE2	1:A:48:TYR:OH	2.51	0.44
1:D:52:TYR:OH	1:D:230:GLU:OE1	2.30	0.44
1:C:18:MET:HE3	1:C:60:MET:HB3	1.98	0.44
1:C:34:GLU:HG3	1:C:51:THR:OG1	2.18	0.44
1:D:55:LYS:CE	1:D:236:HIS:CD2	3.01	0.44
1:B:101:ARG:HD3	1:B:216:GLU:OE1	2.18	0.44
1:B:208:HIS:HE1	1:B:210:GLU:HG3	1.83	0.44
1:D:15:THR:HG23	1:D:84:THR:HB	1.98	0.44
1:F:217:ARG:O	1:F:221:PHE:HB3	2.18	0.44
1:A:112:ASN:ND2	1:A:157:ASP:H	2.07	0.43
1:F:217:ARG:HB2	1:F:217:ARG:NH1	2.33	0.43
1:C:232:ALA:O	1:C:235:LEU:O	2.36	0.43
1:E:222:GLN:O	1:E:226:LYS:HG3	2.18	0.43
1:E:112:ASN:HD22	1:E:112:ASN:C	2.25	0.43
1:A:110:GLY:N	1:C:126:PRO:HG3	2.34	0.43
1:C:19:CYS:HB2	1:C:24:ARG:NH2	2.34	0.43
1:A:226:LYS:HD2	1:A:226:LYS:HA	1.81	0.43
1:C:5:ASN:C	1:C:5:ASN:HD22	2.27	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:5:ASN:HD22	1:C:7:ALA:H	1.65	0.43
1:E:90:THR:HA	1:E:201:THR:O	2.19	0.43
1:B:5:ASN:HD22	1:B:5:ASN:C	2.26	0.43
1:D:235:LEU:O	1:D:236:HIS:CB	2.45	0.43
1:A:5:ASN:HD22	1:A:7:ALA:H	1.65	0.43
2:C:9006:PO4:O4	3:C:405:223:N1'	2.52	0.43
1:B:101:ARG:HG2	1:B:216:GLU:O	2.18	0.42
1:E:218:GLN:O	1:E:220:SER:N	2.52	0.42
1:A:34:GLU:H	1:A:34:GLU:HG2	1.72	0.42
1:E:5:ASN:HD22	1:E:5:ASN:C	2.26	0.42
1:C:88:VAL:HB	1:C:224:MET:HE3	2.01	0.42
1:A:76:LEU:HA	1:A:80:TYR:HB2	2.02	0.42
1:B:121:MET:HE2	1:B:121:MET:HB3	1.93	0.42
1:F:62:HIS:ND1	1:F:63:GLY:O	2.48	0.42
1:A:74:GLU:O	1:A:78:SER:HB2	2.20	0.42
1:C:152:LYS:HB2	1:C:152:LYS:HE2	1.84	0.42
1:B:166:LEU:HG	1:B:170:MET:HE2	2.02	0.42
1:F:56:PRO:O	1:F:57:ILE:HD12	2.19	0.42
1:B:225:MET:HA	1:B:225:MET:CE	2.38	0.41
1:A:5:ASN:ND2	1:A:7:ALA:H	2.18	0.41
1:A:116:ASN:HD21	1:A:187:PRO:HG2	1.84	0.41
1:C:19:CYS:O	1:C:61:GLY:HA2	2.20	0.41
1:F:236:HIS:CG	1:F:236:HIS:O	2.72	0.41
1:C:19:CYS:HB2	1:C:24:ARG:HH21	1.86	0.41
1:B:168:GLN:NE2	1:B:171:ASN:HD22	2.11	0.41
1:C:18:MET:HG3	1:C:85:ILE:HG23	2.03	0.41
1:C:130:SER:O	1:C:134:VAL:HG23	2.20	0.41
1:C:221:PHE:O	1:C:225:MET:HG2	2.21	0.41
1:A:18:MET:HE2	1:A:62:HIS:HB3	2.02	0.41
1:D:24:ARG:NH2	2:D:9001:PO4:O3	2.50	0.41
1:B:7:ALA:HB1	1:B:11:ASP:HB2	2.03	0.41
1:B:146:ILE:HA	1:B:147:PRO:HD2	1.96	0.41
1:E:2:THR:HB	1:E:3:PRO:CD	2.51	0.41
1:F:112:ASN:H	1:F:112:ASN:ND2	2.19	0.41
1:A:37:LYS:O	1:A:48:TYR:HA	2.20	0.40
1:B:155:SER:HA	1:B:179:GLU:O	2.20	0.40
1:D:232:ALA:O	1:D:235:LEU:O	2.40	0.40
1:D:237:HIS:N	1:D:238:HIS:HA	2.36	0.40
1:E:120:PHE:CD2	1:F:169:LEU:CD1	3.04	0.40
1:B:9:VAL:HG13	1:B:79:THR:O	2.21	0.40
1:C:93:ALA:HB2	1:C:202:VAL:HG11	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:158:LEU:HD12	1:D:158:LEU:HA	1.82	0.40
1:D:216:GLU:HA	1:D:217:ARG:C	2.47	0.40
1:A:77:TYR:CZ	1:A:85:ILE:HD12	2.57	0.40
1:B:35:ASN:N	1:B:36:PRO:CD	2.85	0.40
1:B:41:ASN:ND2	1:B:46:GLN:H	2.17	0.40
1:D:88:VAL:O	1:D:88:VAL:HG23	2.22	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	223/239 (93%)	209 (94%)	12 (5%)	2 (1%)	14	35
1	B	234/239 (98%)	218 (93%)	16 (7%)	0	100	100
1	C	227/239 (95%)	213 (94%)	12 (5%)	2 (1%)	14	35
1	D	236/239 (99%)	217 (92%)	18 (8%)	1 (0%)	30	54
1	E	225/239 (94%)	208 (92%)	15 (7%)	2 (1%)	14	35
1	F	229/239 (96%)	211 (92%)	17 (7%)	1 (0%)	30	54
All	All	1374/1434 (96%)	1276 (93%)	90 (7%)	8 (1%)	21	44

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	219	ASN
1	C	236	HIS
1	D	236	HIS
1	E	218	GLN
1	F	218	GLN
1	C	127	ALA

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Mol	Chain	Res	Type
1	A	101	ARG
1	E	234	LYS

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	187/198 (94%)	170 (91%)	17 (9%)	9 22
1	B	195/198 (98%)	176 (90%)	19 (10%)	8 20
1	C	191/198 (96%)	176 (92%)	15 (8%)	11 28
1	D	197/198 (100%)	178 (90%)	19 (10%)	8 20
1	E	189/198 (96%)	171 (90%)	18 (10%)	8 20
1	F	192/198 (97%)	175 (91%)	17 (9%)	9 23
All	All	1151/1188 (97%)	1046 (91%)	105 (9%)	9 22

All (105) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	30	GLU
1	A	34	GLU
1	A	37	LYS
1	A	53	LYS
1	A	83	LYS
1	A	96	MET
1	A	103	ILE
1	A	112	ASN
1	A	142	LYS
1	A	145	ASN
1	A	158	LEU
1	A	165	GLU
1	A	169	LEU
1	A	179	GLU
1	A	185	LEU
1	A	199	ILE

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Mol	Chain	Res	Type
1	A	206	ILE
1	B	8	GLN
1	B	9	VAL
1	B	57	ILE
1	B	66	LEU
1	B	94	ILE
1	B	101	ARG
1	B	112	ASN
1	B	145	ASN
1	B	149	LYS
1	B	152	LYS
1	B	158	LEU
1	B	165	GLU
1	B	169	LEU
1	B	176	LEU
1	B	179	GLU
1	B	185	LEU
1	B	206	ILE
1	B	218	GLN
1	B	234	LYS
1	C	57	ILE
1	C	112	ASN
1	C	145	ASN
1	C	149	LYS
1	C	158	LEU
1	C	165	GLU
1	C	169	LEU
1	C	176	LEU
1	C	179	GLU
1	C	185	LEU
1	C	200	CYS
1	C	206	ILE
1	C	220	SER
1	C	222	GLN
1	C	233	ILE
1	D	5	ASN
1	D	8	GLN
1	D	9	VAL
1	D	57	ILE
1	D	112	ASN
1	D	158	LEU
1	D	165	GLU

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Mol	Chain	Res	Type
1	D	169	LEU
1	D	172	LYS
1	D	176	LEU
1	D	179	GLU
1	D	185	LEU
1	D	201	THR
1	D	215	GLU
1	D	219	ASN
1	D	233	ILE
1	D	235	LEU
1	D	236	HIS
1	D	238	HIS
1	E	8	GLN
1	E	9	VAL
1	E	34	GLU
1	E	57	ILE
1	E	88	VAL
1	E	100	THR
1	E	101	ARG
1	E	112	ASN
1	E	145	ASN
1	E	158	LEU
1	E	165	GLU
1	E	169	LEU
1	E	176	LEU
1	E	179	GLU
1	E	185	LEU
1	E	206	ILE
1	E	218	GLN
1	E	224	MET
1	F	24	ARG
1	F	34	GLU
1	F	45	ILE
1	F	55	LYS
1	F	57	ILE
1	F	66	LEU
1	F	112	ASN
1	F	146	ILE
1	F	158	LEU
1	F	165	GLU
1	F	169	LEU
1	F	172	LYS

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Mol	Chain	Res	Type
1	F	179	GLU
1	F	185	LEU
1	F	206	ILE
1	F	217	ARG
1	F	237	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (56) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	5	ASN
1	A	41	ASN
1	A	46	GLN
1	A	99	HIS
1	A	112	ASN
1	A	116	ASN
1	A	168	GLN
1	A	171	ASN
1	A	222	GLN
1	A	223	ASN
1	A	236	HIS
1	B	5	ASN
1	B	41	ASN
1	B	46	GLN
1	B	112	ASN
1	B	171	ASN
1	B	208	HIS
1	B	219	ASN
1	B	222	GLN
1	B	223	ASN
1	B	236	HIS
1	C	5	ASN
1	C	41	ASN
1	C	46	GLN
1	C	99	HIS
1	C	112	ASN
1	C	116	ASN
1	C	168	GLN
1	C	174	HIS
1	C	219	ASN
1	C	223	ASN
1	D	5	ASN
1	D	41	ASN

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Mol	Chain	Res	Type
1	D	46	GLN
1	D	112	ASN
1	D	116	ASN
1	D	174	HIS
1	D	219	ASN
1	D	223	ASN
1	D	236	HIS
1	E	5	ASN
1	E	41	ASN
1	E	46	GLN
1	E	112	ASN
1	E	116	ASN
1	E	174	HIS
1	E	208	HIS
1	E	223	ASN
1	F	5	ASN
1	F	41	ASN
1	F	46	GLN
1	F	112	ASN
1	F	116	ASN
1	F	174	HIS
1	F	223	ASN
1	F	237	HIS

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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

14 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
2	PO4	A	9007	-	4,4,4	0.78	0	6,6,6	0.52	0
2	PO4	B	9009	-	4,4,4	0.96	0	6,6,6	0.47	0
2	PO4	E	9002	-	4,4,4	0.89	0	6,6,6	0.61	0
3	223	A	401	-	19,21,21	2.78	4 (21%)	21,30,30	2.56	6 (28%)
3	223	D	403	-	19,21,21	2.74	4 (21%)	21,30,30	2.47	5 (23%)
2	PO4	C	9006	-	4,4,4	0.82	0	6,6,6	0.95	0
2	PO4	F	9003	-	4,4,4	0.83	0	6,6,6	0.55	0
3	223	B	402	-	19,21,21	2.64	5 (26%)	21,30,30	2.58	6 (28%)
2	PO4	A	9005	-	4,4,4	0.62	0	6,6,6	0.96	0
3	223	E	400	-	19,21,21	2.73	4 (21%)	21,30,30	2.78	6 (28%)
3	223	C	405	-	19,21,21	2.69	4 (21%)	21,30,30	2.60	5 (23%)
3	223	F	404	-	19,21,21	2.52	4 (21%)	21,30,30	2.81	5 (23%)
2	PO4	B	9004	-	4,4,4	0.87	0	6,6,6	0.78	0
2	PO4	D	9001	-	4,4,4	0.95	0	6,6,6	0.52	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	223	A	401	-	-	4/6/18/18	0/3/3/3
3	223	D	403	-	-	3/6/18/18	0/3/3/3
3	223	B	402	-	-	2/6/18/18	0/3/3/3
3	223	E	400	-	-	1/6/18/18	0/3/3/3
3	223	C	405	-	-	2/6/18/18	0/3/3/3
3	223	F	404	-	-	2/6/18/18	0/3/3/3

All (25) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	401	223	C2-N1	8.08	1.48	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	403	223	C2-N1	8.00	1.48	1.33
3	C	405	223	C2-N1	7.96	1.48	1.33
3	E	400	223	C2-N1	7.65	1.47	1.33
3	E	400	223	C2-N3	7.60	1.47	1.33
3	D	403	223	C2-N3	7.57	1.47	1.33
3	B	402	223	C2-N3	7.57	1.47	1.33
3	A	401	223	C2-N3	7.51	1.47	1.33
3	B	402	223	C2-N1	7.24	1.46	1.33
3	F	404	223	C2-N1	7.23	1.46	1.33
3	C	405	223	C2-N3	7.16	1.46	1.33
3	F	404	223	C2-N3	6.74	1.45	1.33
3	A	401	223	C6-N6	-3.40	1.25	1.34
3	F	404	223	C6-N6	-3.24	1.25	1.34
3	E	400	223	C6-N6	-3.24	1.25	1.34
3	C	405	223	C6-N6	-3.17	1.26	1.34
3	B	402	223	C6-N6	-3.03	1.26	1.34
3	D	403	223	C6-N6	-3.01	1.26	1.34
3	D	403	223	C5-C6	2.47	1.49	1.40
3	C	405	223	C5-C6	2.46	1.49	1.40
3	A	401	223	C5-C6	2.35	1.49	1.40
3	E	400	223	C5-C6	2.33	1.49	1.40
3	F	404	223	C5-C6	2.33	1.49	1.40
3	B	402	223	C5-C6	2.30	1.48	1.40
3	B	402	223	C8-C9	2.03	1.39	1.36

All (33) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	F	404	223	N3-C2-N1	-10.11	113.27	128.58
3	E	400	223	N3-C2-N1	-9.66	113.96	128.58
3	C	405	223	N3-C2-N1	-9.41	114.34	128.58
3	B	402	223	N3-C2-N1	-9.27	114.55	128.58
3	A	401	223	N3-C2-N1	-9.05	114.89	128.58
3	D	403	223	N3-C2-N1	-8.68	115.44	128.58
3	F	404	223	C2'-N1'-C6'	4.31	110.38	104.12
3	E	400	223	C6'-C4'-C5'	-4.13	107.04	112.71
3	A	401	223	C2'-N1'-C6'	3.74	109.56	104.12
3	F	404	223	C6'-C4'-C5'	-3.71	107.61	112.71
3	C	405	223	C2'-N1'-C6'	3.67	109.46	104.12
3	F	404	223	C2-N1-C6	3.57	124.59	118.73
3	C	405	223	C2-N1-C6	3.51	124.50	118.73
3	E	400	223	C2'-N1'-C6'	3.42	109.09	104.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	403	223	C2'-N1'-C6'	3.22	108.80	104.12
3	B	402	223	C2-N1-C6	3.21	124.01	118.73
3	E	400	223	C2-N1-C6	3.21	124.00	118.73
3	C	405	223	C6'-C4'-C5'	-3.14	108.39	112.71
3	A	401	223	C10-N1'-C2'	-3.08	107.50	113.39
3	D	403	223	C10-N1'-C2'	-3.00	107.64	113.39
3	A	401	223	C4-C5-N7	2.99	108.11	105.81
3	D	403	223	C2-N1-C6	2.86	123.42	118.73
3	B	402	223	C2'-N1'-C6'	2.85	108.27	104.12
3	F	404	223	C2-N3-C4	2.76	122.25	116.72
3	E	400	223	C2-N3-C4	2.57	121.87	116.72
3	B	402	223	C4-C5-N7	2.54	107.76	105.81
3	A	401	223	C2-N1-C6	2.53	122.88	118.73
3	E	400	223	C4-C5-N7	2.29	107.57	105.81
3	A	401	223	C2-N3-C4	2.16	121.06	116.72
3	B	402	223	C2-N3-C4	2.13	120.99	116.72
3	C	405	223	C2-N3-C4	2.11	120.95	116.72
3	B	402	223	C10-N1'-C6'	2.08	117.38	113.39
3	D	403	223	O3'-C3'-C2'	-2.03	106.17	110.94

There are no chirality outliers.

All (14) torsion outliers are listed below:

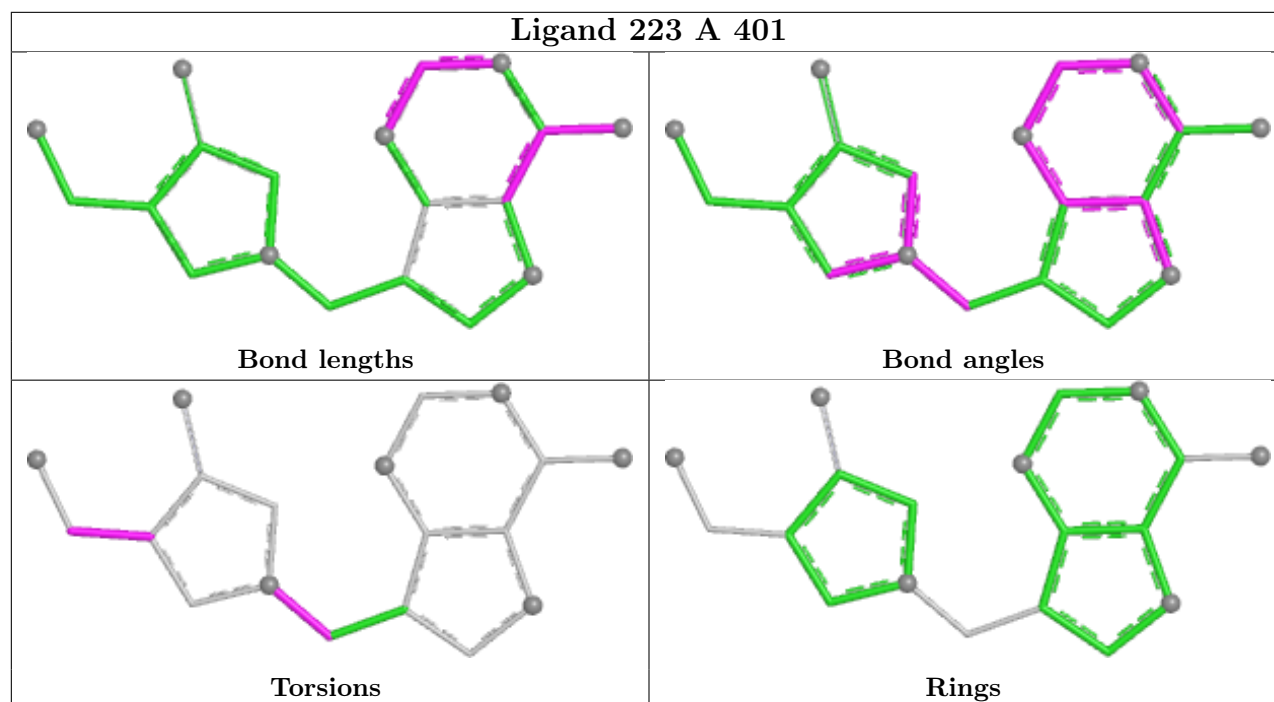
Mol	Chain	Res	Type	Atoms
3	A	401	223	C9-C10-N1'-C6'
3	A	401	223	C6'-C4'-C5'-O5'
3	A	401	223	C3'-C4'-C5'-O5'
3	B	402	223	C9-C10-N1'-C6'
3	C	405	223	C9-C10-N1'-C6'
3	C	405	223	C9-C10-N1'-C2'
3	D	403	223	C9-C10-N1'-C6'
3	D	403	223	C9-C10-N1'-C2'
3	E	400	223	C9-C10-N1'-C6'
3	F	404	223	C9-C10-N1'-C6'
3	A	401	223	C9-C10-N1'-C2'
3	F	404	223	C9-C10-N1'-C2'
3	B	402	223	C3'-C4'-C5'-O5'
3	D	403	223	C3'-C4'-C5'-O5'

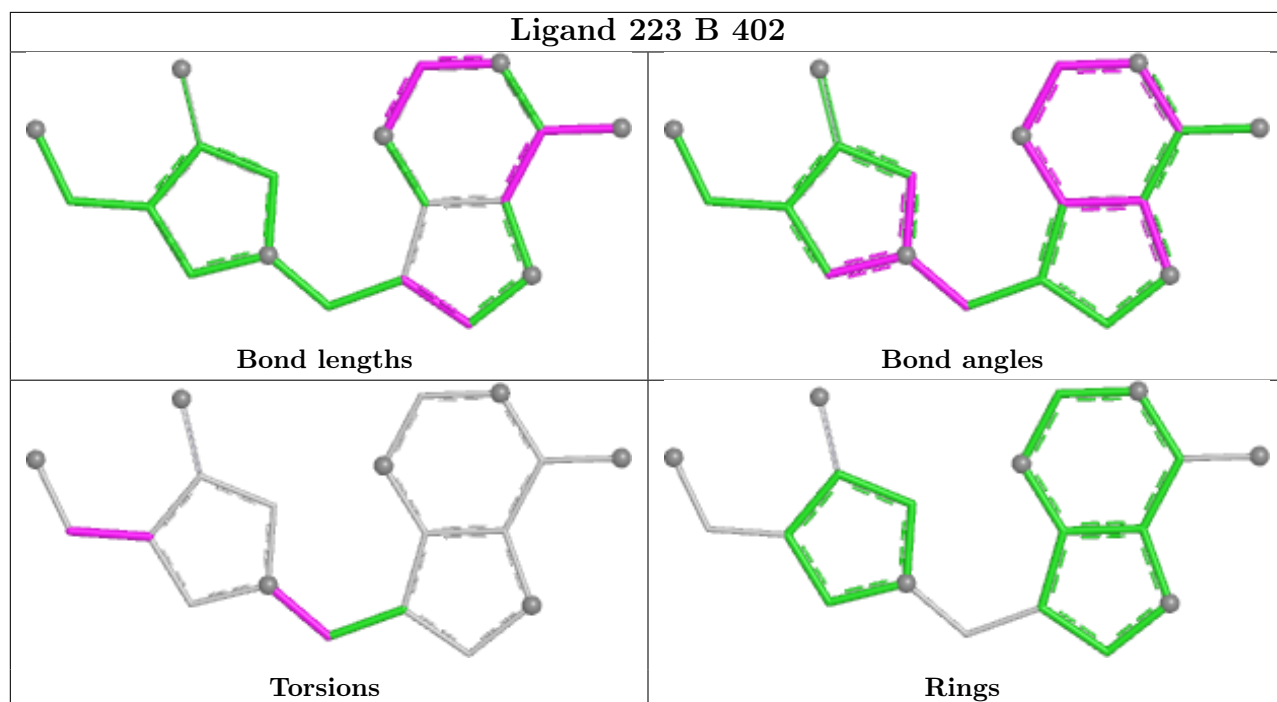
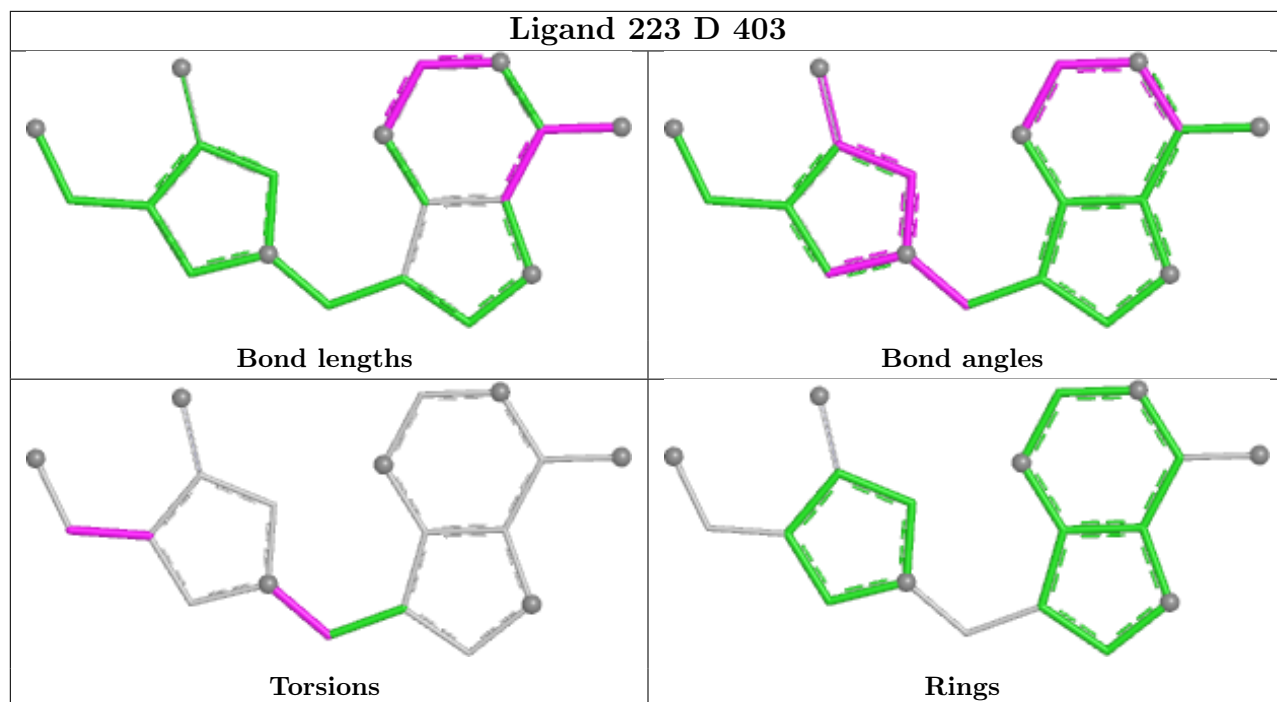
There are no ring outliers.

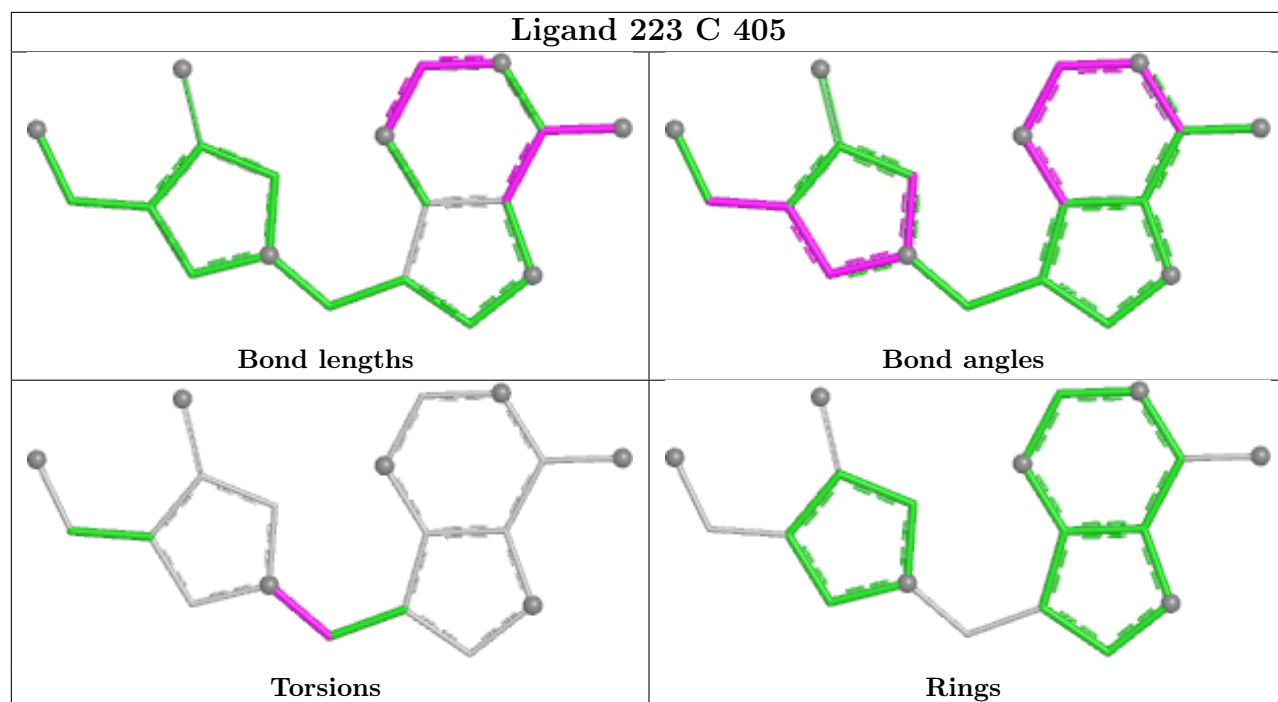
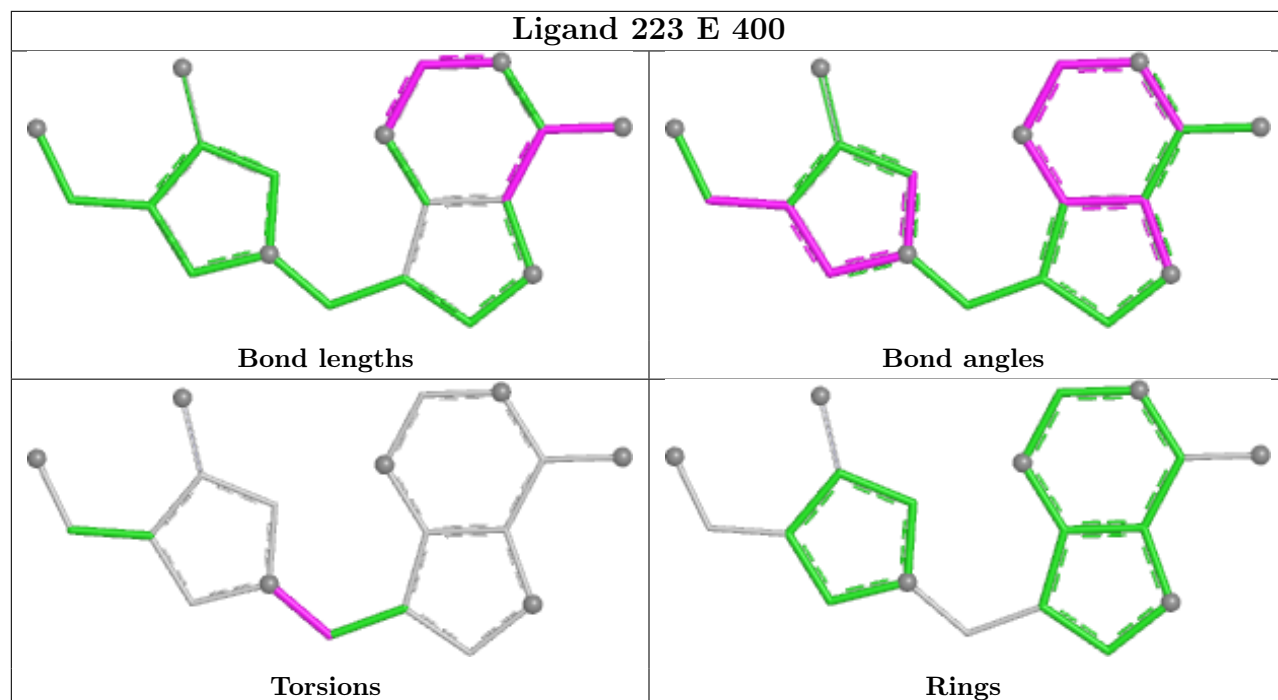
3 monomers are involved in 2 short contacts:

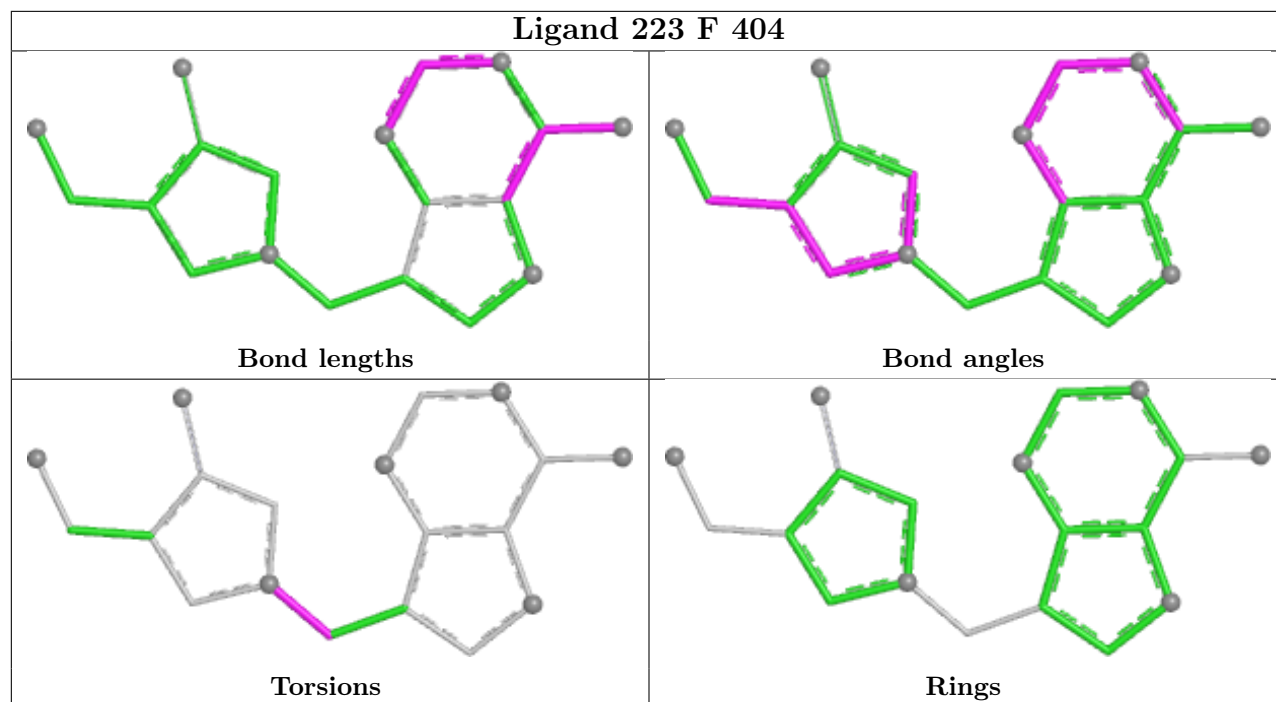
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	C	9006	PO4	1	0
3	C	405	223	1	0
2	D	9001	PO4	1	0

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	227/239 (94%)	-0.39	3 (1%) 75 73	19, 31, 49, 66	0
1	B	236/239 (98%)	-0.28	9 (3%) 44 40	19, 30, 72, 93	0
1	C	231/239 (96%)	-0.20	8 (3%) 47 43	24, 34, 56, 77	0
1	D	238/239 (99%)	-0.19	15 (6%) 26 23	21, 33, 76, 93	0
1	E	229/239 (95%)	-0.09	4 (1%) 69 67	25, 38, 66, 91	0
1	F	233/239 (97%)	-0.18	6 (2%) 57 54	24, 37, 69, 99	0
All	All	1394/1434 (97%)	-0.22	45 (3%) 50 46	19, 34, 65, 99	0

All (45) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	212	THR	5.1
1	B	214	ALA	4.7
1	C	218	GLN	4.6
1	C	217	ARG	4.6
1	D	214	ALA	4.5
1	B	213	THR	4.3
1	D	213	THR	3.8
1	A	218	GLN	3.8
1	D	212	THR	3.6
1	F	214	ALA	3.3
1	D	219	ASN	3.2
1	B	211	GLU	3.1
1	D	211	GLU	3.1
1	C	238	HIS	3.1
1	A	208	HIS	3.0
1	B	221	PHE	2.9
1	D	209	HIS	2.9
1	D	220	SER	2.8
1	D	238	HIS	2.8

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Mol	Chain	Res	Type	RSRZ
1	B	209	HIS	2.7
1	E	217	ARG	2.7
1	E	209	HIS	2.6
1	D	217	ARG	2.5
1	C	221	PHE	2.5
1	C	237	HIS	2.5
1	D	221	PHE	2.5
1	E	218	GLN	2.5
1	F	216	GLU	2.5
1	F	237	HIS	2.4
1	F	200	CYS	2.4
1	C	239	HIS	2.3
1	C	1	ALA	2.2
1	B	218	GLN	2.2
1	C	236	HIS	2.2
1	F	209	HIS	2.2
1	D	236	HIS	2.2
1	A	219	ASN	2.2
1	B	217	ARG	2.2
1	D	218	GLN	2.2
1	F	217	ARG	2.1
1	E	96	MET	2.1
1	D	237	HIS	2.1
1	D	1	ALA	2.1
1	D	210	GLU	2.1
1	B	210	GLU	2.1

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 [\(i\)](#)

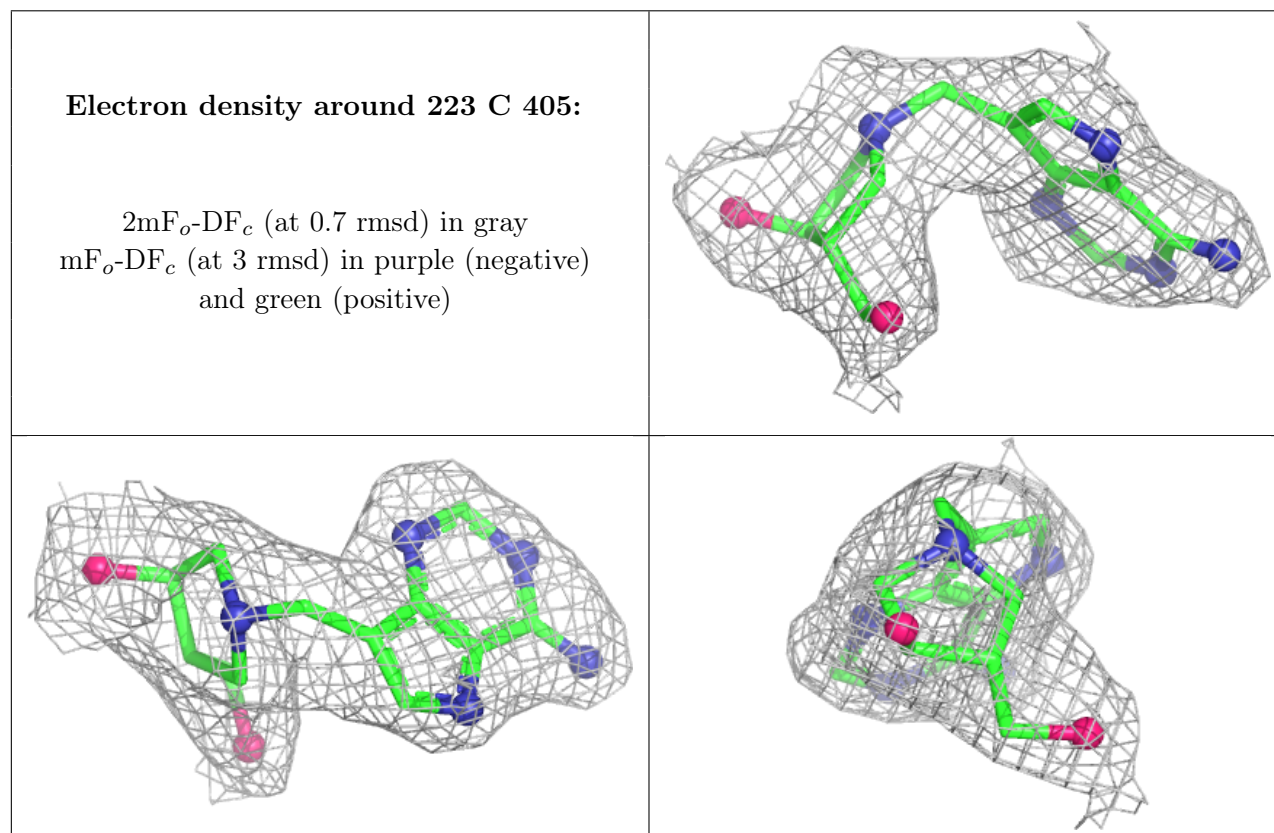
There are no oligosaccharides in this entry.

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.

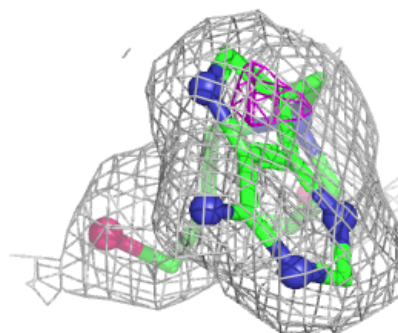
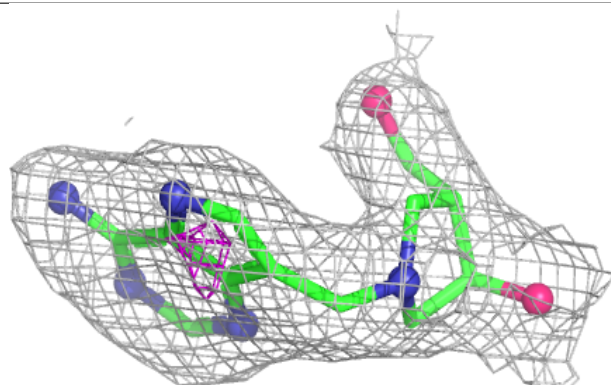
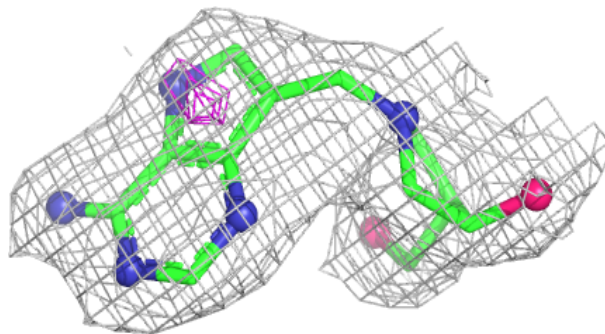
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
2	PO4	A	9007	5/5	0.64	0.24	86,87,87,87	0
2	PO4	B	9009	5/5	0.74	0.11	95,96,96,96	0
3	223	C	405	19/19	0.94	0.08	31,32,33,33	0
3	223	B	402	19/19	0.95	0.07	22,25,26,28	0
2	PO4	E	9002	5/5	0.95	0.09	49,50,51,52	0
3	223	D	403	19/19	0.95	0.08	26,27,31,32	0
3	223	E	400	19/19	0.95	0.08	29,35,36,36	0
2	PO4	F	9003	5/5	0.96	0.07	49,49,50,51	0
3	223	F	404	19/19	0.96	0.07	30,31,36,37	0
2	PO4	B	9004	5/5	0.97	0.07	35,36,38,38	0
2	PO4	A	9005	5/5	0.97	0.06	33,33,33,35	0
3	223	A	401	19/19	0.97	0.05	22,23,27,28	0
2	PO4	C	9006	5/5	0.97	0.07	45,45,46,46	0
2	PO4	D	9001	5/5	0.98	0.08	39,39,40,40	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.

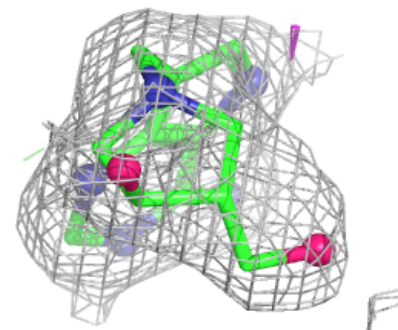
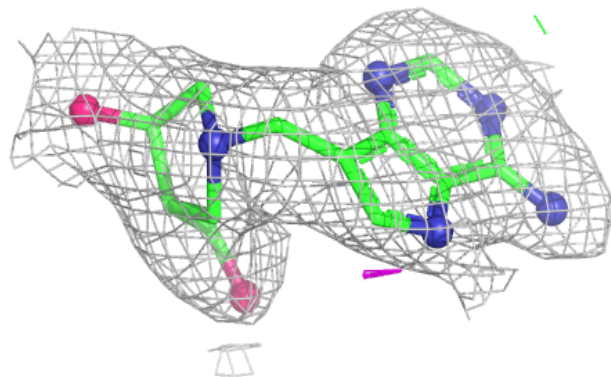
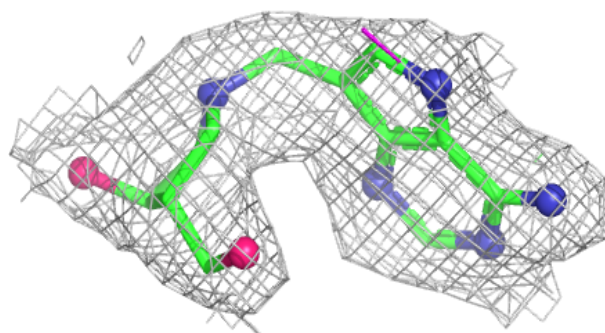


Electron density around 223 B 402:

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

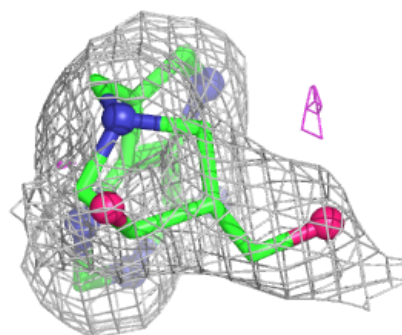
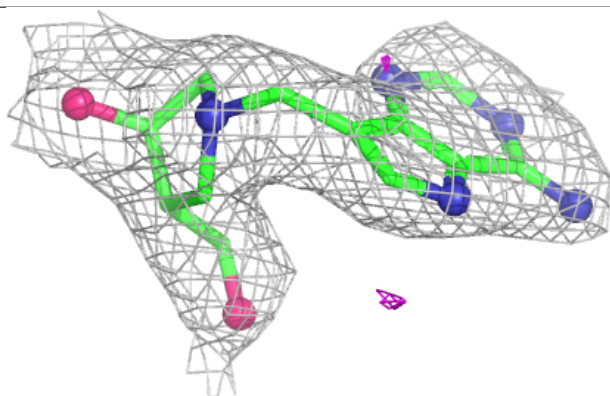
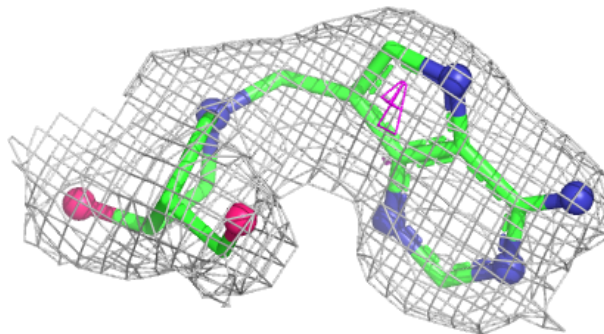
**Electron density around 223 D 403:**

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

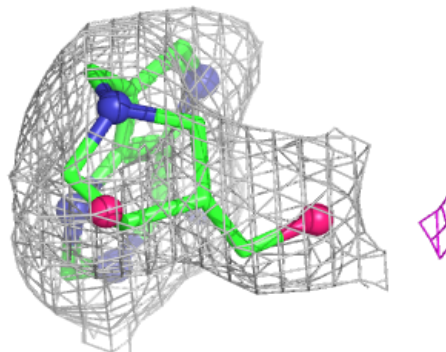
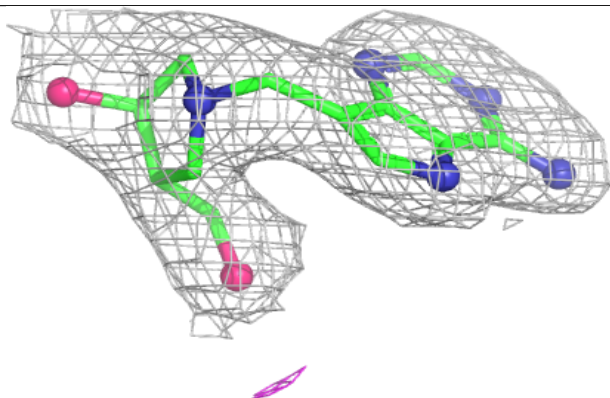
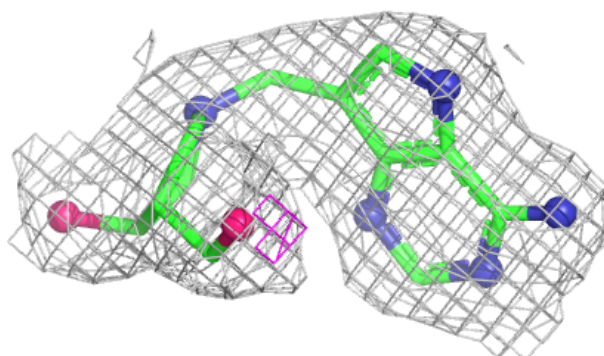


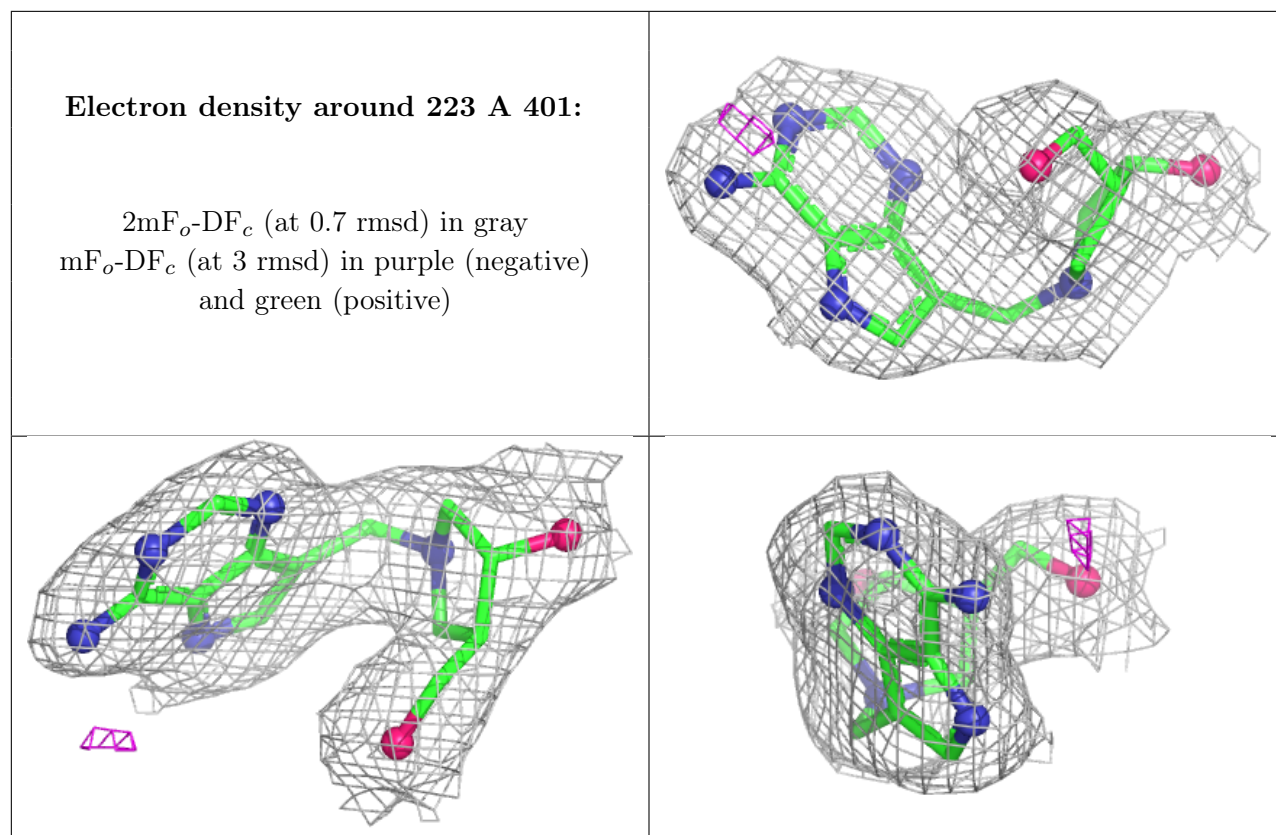
Electron density around 223 E 400:

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

**Electron density around 223 F 404:**

$2mF_o-DF_c$ (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.