Full wwPDB X-ray Structure Validation Report ⓘ

Dec 24, 2024 – 06:09 PM EST

PDB ID	:	8W38
Title	:	TAS-120 covalent structure with FGFR2 molecular brake mutant
Authors	:	Hoffman, I.D.; Nelson, K.J.; Bensen, D.C.; Bailey, J.B.
Deposited on	:	2024-02-22
Resolution	:	2.60 Å(reported)

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

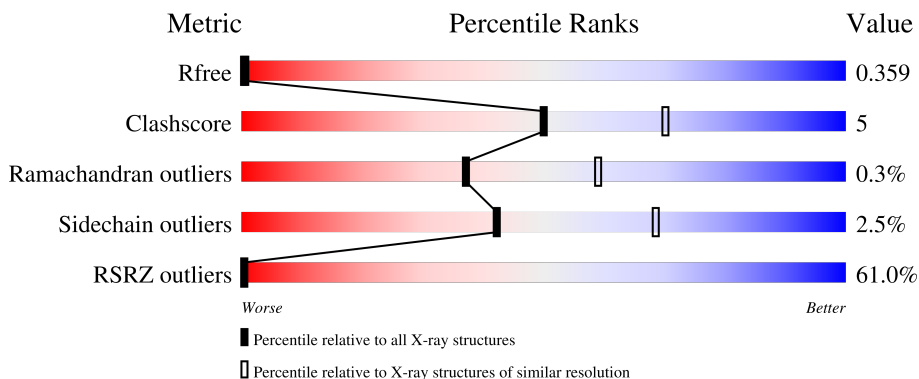|		
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.21
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.004 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.40

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 2.60 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	Percentile Ranks	Value
Rfree		0.359
Clashscore		5
Ramachandran outliers		0.3%
Sidechain outliers		2.5%
RSRZ outliers		61.0%

Worse   *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	3775 (2.60-2.60)
Clashscore	180529	4181 (2.60-2.60)
Ramachandran outliers	177936	4129 (2.60-2.60)
Sidechain outliers	177891	4129 (2.60-2.60)
RSRZ outliers	164620	3775 (2.60-2.60)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	324	17% / 82% / 10% / 8%
1	B	324	81% / 76% / 11% / · / 11%
1	C	324	37% / 77% / 12% / · / 11%
1	D	324	80% / 71% / 12% / · / 16%

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

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	SO4	A	802	-	-	-	X
3	SO4	B	802	-	-	-	X

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 9383 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 Fibroblast growth factor receptor 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	298	Total	C	N	O	S	0	3	0
			2392	1524	403	442	23			
1	B	288	Total	C	N	O	S	0	3	0
			2297	1462	389	424	22			
1	C	289	Total	C	N	O	S	0	3	0
			2314	1476	389	427	22			
1	D	271	Total	C	N	O	S	0	3	0
			2163	1380	368	394	21			

There are 60 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	445	MET	-	initiating methionine	UNP P21802
A	446	GLY	-	expression tag	UNP P21802
A	447	SER	-	expression tag	UNP P21802
A	448	SER	-	expression tag	UNP P21802
A	449	HIS	-	expression tag	UNP P21802
A	450	HIS	-	expression tag	UNP P21802
A	451	HIS	-	expression tag	UNP P21802
A	452	HIS	-	expression tag	UNP P21802
A	453	HIS	-	expression tag	UNP P21802
A	454	HIS	-	expression tag	UNP P21802
A	455	SER	-	expression tag	UNP P21802
A	456	GLN	-	expression tag	UNP P21802
A	457	ASP	-	expression tag	UNP P21802
A	549	ASP	ASN	engineered mutation	UNP P21802
A	650	VAL	ASP	engineered mutation	UNP P21802
B	445	MET	-	initiating methionine	UNP P21802
B	446	GLY	-	expression tag	UNP P21802
B	447	SER	-	expression tag	UNP P21802
B	448	SER	-	expression tag	UNP P21802
B	449	HIS	-	expression tag	UNP P21802
B	450	HIS	-	expression tag	UNP P21802

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Chain	Residue	Modelled	Actual	Comment	Reference
B	451	HIS	-	expression tag	UNP P21802
B	452	HIS	-	expression tag	UNP P21802
B	453	HIS	-	expression tag	UNP P21802
B	454	HIS	-	expression tag	UNP P21802
B	455	SER	-	expression tag	UNP P21802
B	456	GLN	-	expression tag	UNP P21802
B	457	ASP	-	expression tag	UNP P21802
B	549	ASP	ASN	engineered mutation	UNP P21802
B	650	VAL	ASP	engineered mutation	UNP P21802
C	445	MET	-	initiating methionine	UNP P21802
C	446	GLY	-	expression tag	UNP P21802
C	447	SER	-	expression tag	UNP P21802
C	448	SER	-	expression tag	UNP P21802
C	449	HIS	-	expression tag	UNP P21802
C	450	HIS	-	expression tag	UNP P21802
C	451	HIS	-	expression tag	UNP P21802
C	452	HIS	-	expression tag	UNP P21802
C	453	HIS	-	expression tag	UNP P21802
C	454	HIS	-	expression tag	UNP P21802
C	455	SER	-	expression tag	UNP P21802
C	456	GLN	-	expression tag	UNP P21802
C	457	ASP	-	expression tag	UNP P21802
C	549	ASP	ASN	engineered mutation	UNP P21802
C	650	VAL	ASP	engineered mutation	UNP P21802
D	445	MET	-	initiating methionine	UNP P21802
D	446	GLY	-	expression tag	UNP P21802
D	447	SER	-	expression tag	UNP P21802
D	448	SER	-	expression tag	UNP P21802
D	449	HIS	-	expression tag	UNP P21802
D	450	HIS	-	expression tag	UNP P21802
D	451	HIS	-	expression tag	UNP P21802
D	452	HIS	-	expression tag	UNP P21802
D	453	HIS	-	expression tag	UNP P21802
D	454	HIS	-	expression tag	UNP P21802
D	455	SER	-	expression tag	UNP P21802
D	456	GLN	-	expression tag	UNP P21802
D	457	ASP	-	expression tag	UNP P21802
D	549	ASP	ASN	engineered mutation	UNP P21802
D	650	VAL	ASP	engineered mutation	UNP P21802

- Molecule 2 is 1-[(3S)-3-{4-amino-3-[(3,5-dimethoxyphenyl)ethynyl]-1H-pyrazolo[3,4-d]pyrimidin-1-yl}pyrrolidin-1-yl]prop-2-en-1-one (three-letter code: TZ0) (formula: $C_{22}H_{22}N_6O_3$) (labeled as "Ligand of Interest" by depositor).
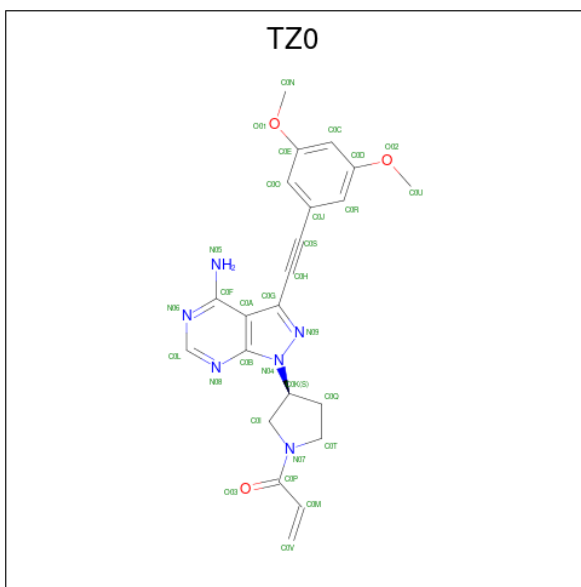
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			31	22	6	3		
2	B	1	Total	C	N	O	0	0
			31	22	6	3		
2	C	1	Total	C	N	O	0	0
			31	22	6	3		
2	D	1	Total	C	N	O	0	0
			31	22	6	3		

- Molecule 3 is SULFATE ION (three-letter code: SO4) (formula: O_4S).
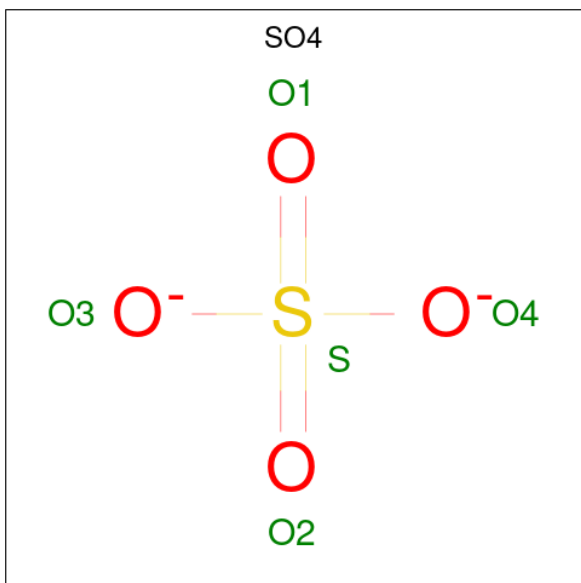
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total 5	O 4	S 1	0	0
3	B	1	Total 5	O 4	S 1	0	0
3	B	1	Total 5	O 4	S 1	0	0
3	B	1	Total 5	O 4	S 1	0	0
3	C	1	Total 5	O 4	S 1	0	0
3	C	1	Total 5	O 4	S 1	0	0
3	C	1	Total 5	O 4	S 1	0	0

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	26	Total 26	O 26	0	0
4	B	7	Total 7	O 7	0	0
4	C	23	Total 23	O 23	0	0
4	D	2	Total 2	O 2	0	0

3 Residue-property plots ⓘ

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: Fibroblast growth factor receptor 2

Chain A:

- Molecule 1: Fibroblast growth factor receptor 2

Chain B:

• Molecule 1: Fibroblast growth factor receptor 2

Chain C:

• Molecule 1: Fibroblast growth factor receptor 2

Chain D:

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	80.25Å 129.87Å 131.42Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	35.00 – 2.60 35.00 – 2.60	Depositor EDS
% Data completeness (in resolution range)	99.7 (35.00-2.60) 99.7 (35.00-2.60)	Depositor EDS
R_{merge}	0.31	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.72 (at 2.61Å)	Xtriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.336 , 0.359 0.335 , 0.359	Depositor DCC
R_{free} test set	2002 reflections (4.66%)	wwPDB-VP
Wilson B-factor (Å^2)	30.8	Xtriage
Anisotropy	0.529	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 68.9	EDS
L-test for twinning[2]	$< |L| > = 0.52, < L^2 > = 0.35$	Xtriage
Estimated twinning fraction	0.000 for -h,l,k	Xtriage
F_o,F_c correlation	0.86	EDS
Total number of atoms	9383	wwPDB-VP
Average B, all atoms (Å^2)	62.0	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 49.00 % 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 7.9360e-05. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: SO4, TZ0

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	0.28	0/2447	0.57	0/3307
1	B	0.27	0/2345	0.56	0/3168
1	C	0.28	0/2364	0.57	0/3193
1	D	0.27	0/2205	0.55	0/2973
All	All	0.27	0/9361	0.56	0/12641

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 ⓘ

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	2392	0	2399	21	0
1	B	2297	0	2300	35	1
1	C	2314	0	2317	23	0
1	D	2163	0	2183	21	4
2	A	31	0	0	1	0
2	B	31	0	0	0	0
2	C	31	0	0	0	0
2	D	31	0	0	0	0
3	A	5	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	15	0	0	1	0
3	C	15	0	0	0	0
4	A	26	0	0	2	0
4	B	7	0	0	4	0
4	C	23	0	0	1	0
4	D	2	0	0	0	0
All	All	9383	0	9199	96	4

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 5.

All (96) 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:D:597:GLN:NE2	1:D:597:GLN:HA	1.83	0.93
1:B:546:ASN:O	1:B:642:ILE:HG22	1.72	0.89
1:A:549:ASP:HB2	4:A:912:HOH:O	1.78	0.83
1:A:577:ARG:HD3	1:A:586:TYR:HB3	1.64	0.79
1:B:577:ARG:HD3	1:B:586:TYR:HB3	1.65	0.79
1:B:704:TYR:OH	4:B:901:HOH:O	2.06	0.72
1:B:617:LEU:HD11	1:B:642:ILE:CD1	2.20	0.71
1:B:617:LEU:HD11	1:B:642:ILE:HD11	1.72	0.70
1:D:597:GLN:HA	1:D:597:GLN:HE21	1.56	0.69
1:A:503:ILE:HG22	1:A:512:VAL:CG1	2.24	0.67
1:B:503:ILE:HG22	1:B:512:VAL:CG1	2.23	0.67
1:C:589:ASP:O	1:C:590:ILE:HB	1.95	0.67
1:D:597:GLN:NE2	1:D:597:GLN:CA	2.58	0.66
1:C:610:LEU:HD13	1:C:692:LEU:HD21	1.78	0.64
1:C:534:GLU:O	1:C:538:MET:HG3	1.99	0.63
1:A:534:GLU:O	1:A:538:MET:HG3	1.99	0.62
1:B:534:GLU:O	1:B:538:MET:HG3	1.99	0.62
1:A:610:LEU:HD13	1:A:692:LEU:HD21	1.80	0.62
1:A:577:ARG:HD3	1:A:586:TYR:CB	2.29	0.61
1:D:534:GLU:O	1:D:538:MET:HG3	2.00	0.61
1:D:610:LEU:HD13	1:D:692:LEU:HD21	1.82	0.61
1:B:610:LEU:HD13	1:B:692:LEU:HD21	1.82	0.60
1:C:667:VAL:HG21	1:C:709:VAL:HG13	1.83	0.60
1:D:667:VAL:HG21	1:D:709:VAL:HG13	1.83	0.60
1:B:546:ASN:O	1:B:642:ILE:CG2	2.48	0.59
1:B:577:ARG:HD3	1:B:586:TYR:CB	2.31	0.59
1:A:506:ASP:HA	1:D:612:ARG:HH12	1.66	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:731:GLU:HA	1:D:734:MET:HE2	1.85	0.58
1:D:543:LYS:N	1:D:543:LYS:HD3	2.20	0.57
1:B:617:LEU:CD1	1:B:642:ILE:CD1	2.83	0.56
1:C:585:GLU:O	1:C:586:TYR:HD1	1.88	0.56
1:A:580:ARG:NH1	1:A:585:GLU:O	2.35	0.56
1:B:580:ARG:NH1	1:B:585:GLU:O	2.37	0.55
1:B:543:LYS:HD2	1:B:543:LYS:N	2.23	0.54
1:C:480:LYS:HD3	1:C:501:VAL:HG23	1.90	0.54
1:B:612:ARG:HH12	1:C:506:ASP:HA	1.72	0.54
1:B:687:TRP:HZ2	4:B:901:HOH:O	1.92	0.53
1:C:468:LEU:HD23	1:C:555:THR:HB	1.90	0.52
1:A:503:ILE:HG22	1:A:512:VAL:HG11	1.93	0.51
1:A:503:ILE:CG2	1:A:512:VAL:HG11	2.41	0.51
1:D:468:LEU:HD23	1:D:555:THR:HB	1.93	0.51
1:C:583:GLY:O	1:C:584:MET:HB2	2.10	0.51
1:B:503:ILE:HG22	1:B:512:VAL:HG11	1.93	0.50
1:B:503:ILE:CG2	1:B:512:VAL:HG11	2.42	0.50
1:B:503:ILE:CG2	1:B:512:VAL:CG1	2.90	0.50
1:A:503:ILE:CG2	1:A:512:VAL:CG1	2.91	0.49
1:C:480:LYS:HD3	1:C:501:VAL:CG2	2.42	0.49
1:B:625:ARG:HH21	1:B:680:TYR:HB3	1.78	0.48
1:B:737:ARG:HB3	3:B:802:SO4:S	2.54	0.48
1:C:623:ILE:HG23	1:C:651:ILE:HD11	1.94	0.48
1:D:547:ILE:HD13	1:D:642:ILE:HB	1.95	0.47
1:C:547:ILE:HD13	1:C:642:ILE:HB	1.96	0.47
1:D:623:ILE:HG23	1:D:651:ILE:HD11	1.95	0.47
1:A:651:ILE:HG21	1:A:656:TYR:HB2	1.97	0.47
1:A:470:GLU:HB2	1:A:556:GLN:OE1	2.15	0.46
1:B:751:LYS:O	1:B:755:GLU:HG2	2.16	0.46
1:B:590:ILE:O	1:B:591:ASN:C	2.54	0.46
1:C:504:ASP:HB3	1:C:512:VAL:HG21	1.98	0.45
1:B:588:TYR:CE2	1:B:590:ILE:HG13	2.52	0.45
1:A:630:ARG:HD3	4:A:923:HOH:O	2.16	0.45
1:A:751:LYS:O	1:A:755:GLU:HG3	2.15	0.45
1:B:470:GLU:HB2	1:B:556:GLN:OE1	2.17	0.45
1:C:751:LYS:O	1:C:755:GLU:HG3	2.16	0.45
1:D:751:LYS:O	1:D:755:GLU:HG3	2.16	0.45
1:B:617:LEU:CD1	1:B:642:ILE:HD11	2.44	0.44
1:C:665:LEU:HD23	1:C:665:LEU:N	2.32	0.44
1:D:537:MET:HE2	1:D:648:ALA:C	2.38	0.44
1:A:571:ASN:HA	1:A:632:VAL:O	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:571:ASN:HA	1:B:632:VAL:O	2.18	0.43
1:D:571:ASN:HA	1:D:632:VAL:O	2.19	0.43
1:B:556:GLN:HB3	1:B:557:ASP:OD1	2.19	0.43
1:B:687:TRP:CZ2	4:B:901:HOH:O	2.57	0.42
1:B:612:ARG:HG3	1:B:612:ARG:HH11	1.84	0.42
1:A:591:ASN:O	1:C:466:TYR:HA	2.20	0.42
1:C:571:ASN:HA	1:C:632:VAL:O	2.19	0.42
1:B:679:VAL:HG12	1:D:485:LYS:HD2	2.02	0.42
1:B:625:ARG:HE	1:B:680:TYR:CB	2.32	0.42
1:D:665:LEU:N	1:D:665:LEU:HD23	2.34	0.42
1:A:556:GLN:HB3	1:A:557:ASP:OD1	2.19	0.42
1:C:578:ALA:HB1	1:C:591:ASN:O	2.20	0.42
1:B:702:SER:HB2	4:B:903:HOH:O	2.19	0.41
1:B:623:ILE:HD12	1:B:625:ARG:NE	2.35	0.41
1:D:476:PHE:HA	1:D:477:PRO:HD3	1.92	0.41
1:A:567:ALA:H	2:A:801:TZ0:C0L	2.33	0.41
1:A:680:TYR:CE1	1:A:684:SER:HB2	2.55	0.41
1:B:593:VAL:O	1:B:595:GLU:OE2	2.39	0.41
1:C:476:PHE:HA	1:C:477:PRO:HD3	1.92	0.41
1:C:585:GLU:O	1:C:586:TYR:CD1	2.71	0.41
1:C:617:LEU:HD23	1:C:617:LEU:HA	1.88	0.41
1:D:612:ARG:HG3	1:D:612:ARG:HH11	1.86	0.41
1:D:617:LEU:HD23	1:D:617:LEU:HA	1.88	0.41
1:A:476:PHE:HA	1:A:477:PRO:HD3	1.93	0.41
1:B:547:ILE:HA	1:B:642:ILE:HG23	2.03	0.41
1:C:612:ARG:HG3	1:C:612:ARG:HH11	1.86	0.40
1:D:597:GLN:CD	1:D:598:MET:H	2.25	0.40
1:C:525:GLU:OE2	4:C:901:HOH:O	2.22	0.40

All (4) 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:D:597:GLN:NE2	1:D:726:ALA:O[2_455]	1.93	0.27
1:D:580:ARG:O	1:D:726:ALA:CB[2_455]	2.16	0.04
1:B:730:ASN:ND2	1:D:741:HIS:CD2[2_455]	2.17	0.03
1:D:594:PRO:O	1:D:728:CYS:O[2_455]	2.17	0.03

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	297/324 (92%)	289 (97%)	8 (3%)	0	100	100
1	B	282/324 (87%)	272 (96%)	8 (3%)	2 (1%)	19	38
1	C	285/324 (88%)	275 (96%)	9 (3%)	1 (0%)	30	52
1	D	263/324 (81%)	257 (98%)	6 (2%)	0	100	100
All	All	1127/1296 (87%)	1093 (97%)	31 (3%)	3 (0%)	37	59

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	591	ASN
1	C	590	ILE
1	B	592	ARG

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	263/285 (92%)	258 (98%)	5 (2%)	52	75
1	B	252/285 (88%)	245 (97%)	7 (3%)	38	65
1	C	253/285 (89%)	248 (98%)	5 (2%)	50	74
1	D	236/285 (83%)	228 (97%)	8 (3%)	32	58
All	All	1004/1140 (88%)	979 (98%)	25 (2%)	42	68

All (25) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	483	LEU
1	A	543	LYS
1	A	557	ASP
1	A	660	THR
1	A	665	LEU
1	B	483	LEU
1	B	557	ASP
1	B	590	ILE
1	B	642	ILE
1	B	660	THR
1	B	665	LEU
1	B	751	LYS
1	C	557	ASP
1	C	586	TYR
1	C	678	ARG
1	C	723	ASP
1	C	737	ARG
1	D	480	LYS
1	D	485	LYS
1	D	525	GLU
1	D	543	LYS
1	D	557	ASP
1	D	641	LYS
1	D	678	ARG
1	D	723	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	597	GLN
1	C	597	GLN
1	D	597	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

11 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	SO4	C	802	-	4,4,4	0.33	0	6,6,6	0.07	0
3	SO4	C	803	-	4,4,4	0.35	0	6,6,6	0.09	0
2	TZ0	C	801	1	32,34,34	2.25	8 (25%)	34,48,48	2.32	10 (29%)
2	TZ0	D	800	1	32,34,34	2.35	9 (28%)	34,48,48	2.25	6 (17%)
3	SO4	A	802	-	4,4,4	0.36	0	6,6,6	0.07	0
3	SO4	B	803	-	4,4,4	0.34	0	6,6,6	0.08	0
3	SO4	B	804	-	4,4,4	0.34	0	6,6,6	0.07	0
2	TZ0	A	801	1	32,34,34	2.26	9 (28%)	34,48,48	2.29	10 (29%)
2	TZ0	B	801	1	32,34,34	1.93	8 (25%)	34,48,48	2.21	8 (23%)
3	SO4	C	804	-	4,4,4	0.35	0	6,6,6	0.07	0
3	SO4	B	802	-	4,4,4	0.35	0	6,6,6	0.07	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
2	TZ0	D	800	1	-	2/12/28/28	0/4/4/4
2	TZ0	B	801	1	-	2/12/28/28	0/4/4/4
2	TZ0	A	801	1	-	0/12/28/28	0/4/4/4
2	TZ0	C	801	1	-	0/12/28/28	0/4/4/4

All (34) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	800	TZ0	C0H-C0S	-6.73	1.03	1.19
2	C	801	TZ0	C0G-C0A	-5.58	1.33	1.41
2	B	801	TZ0	C0L-N08	5.12	1.40	1.32
2	D	800	TZ0	C0G-C0A	-5.07	1.33	1.41
2	C	801	TZ0	C0H-C0S	-5.02	1.07	1.19
2	D	800	TZ0	C0L-N08	4.95	1.39	1.32
2	A	801	TZ0	C0G-C0A	-4.93	1.34	1.41
2	C	801	TZ0	C0V-C0M	4.86	1.53	1.30
2	A	801	TZ0	C0G-C0H	-4.85	1.38	1.43
2	A	801	TZ0	C0V-C0M	4.84	1.53	1.30
2	D	800	TZ0	C0V-C0M	4.83	1.53	1.30
2	B	801	TZ0	C0V-C0M	4.80	1.53	1.30
2	C	801	TZ0	C0L-N08	4.79	1.39	1.32
2	A	801	TZ0	C0H-C0S	-4.70	1.08	1.19
2	B	801	TZ0	C0G-C0A	-4.58	1.34	1.41
2	A	801	TZ0	C0L-N08	4.12	1.38	1.32
2	D	800	TZ0	C0J-C0S	-3.53	1.35	1.44
2	C	801	TZ0	C0A-C0B	-3.50	1.33	1.43
2	D	800	TZ0	C0L-N06	3.49	1.40	1.33
2	A	801	TZ0	C0A-C0B	-3.47	1.33	1.43
2	A	801	TZ0	C0M-C0P	3.28	1.58	1.49
2	B	801	TZ0	C0L-N06	3.27	1.39	1.33
2	D	800	TZ0	C0A-C0B	-3.24	1.34	1.43
2	B	801	TZ0	C0A-C0B	-3.19	1.34	1.43
2	C	801	TZ0	N09-N04	-3.18	1.33	1.37
2	C	801	TZ0	C0I-N07	3.00	1.52	1.46
2	A	801	TZ0	C0L-N06	2.86	1.39	1.33
2	B	801	TZ0	C0H-C0S	-2.85	1.12	1.19
2	A	801	TZ0	N09-N04	-2.85	1.34	1.37
2	C	801	TZ0	C0L-N06	2.84	1.39	1.33
2	B	801	TZ0	N09-N04	-2.39	1.34	1.37
2	D	800	TZ0	C0I-N07	2.34	1.51	1.46
2	D	800	TZ0	N09-N04	-2.30	1.34	1.37
2	B	801	TZ0	C0M-C0P	2.15	1.55	1.49

All (34) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	800	TZ0	N08-C0L-N06	-8.20	117.54	128.67
2	C	801	TZ0	N08-C0L-N06	-8.19	117.56	128.67
2	B	801	TZ0	N08-C0L-N06	-7.85	118.01	128.67
2	A	801	TZ0	N08-C0L-N06	-7.35	118.70	128.67
2	D	800	TZ0	C0V-C0M-C0P	-5.47	110.17	121.27

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	C	801	TZ0	C0V-C0M-C0P	-5.38	110.34	121.27
2	B	801	TZ0	C0V-C0M-C0P	-5.14	110.83	121.27
2	D	800	TZ0	C0K-N04-N09	5.10	129.06	119.35
2	B	801	TZ0	C0T-N07-C0I	-4.42	107.22	112.38
2	A	801	TZ0	C0M-C0P-N07	-4.29	112.93	117.66
2	C	801	TZ0	C0G-N09-N04	4.20	107.33	104.32
2	A	801	TZ0	C0K-N04-N09	4.17	127.30	119.35
2	A	801	TZ0	C0T-N07-C0I	-3.65	108.12	112.38
2	B	801	TZ0	C0K-N04-N09	3.52	126.06	119.35
2	D	800	TZ0	C0G-N09-N04	3.41	106.76	104.32
2	C	801	TZ0	C0K-N04-N09	3.21	125.46	119.35
2	A	801	TZ0	C0V-C0M-C0P	-3.17	114.84	121.27
2	A	801	TZ0	C0Q-C0K-C0I	3.12	107.48	102.22
2	C	801	TZ0	C0A-C0F-N05	-3.09	117.20	122.70
2	C	801	TZ0	C0Q-C0K-N04	-2.94	108.13	112.11
2	A	801	TZ0	C0Q-C0K-N04	-2.83	108.27	112.11
2	D	800	TZ0	C0T-N07-C0I	-2.79	109.12	112.38
2	B	801	TZ0	C0G-N09-N04	2.77	106.30	104.32
2	A	801	TZ0	C0A-C0F-N05	-2.59	118.09	122.70
2	A	801	TZ0	C0G-N09-N04	2.54	106.14	104.32
2	A	801	TZ0	C0N-O01-C0E	-2.51	112.12	117.50
2	D	800	TZ0	C0A-C0F-N05	-2.50	118.26	122.70
2	B	801	TZ0	C0A-C0F-N05	-2.46	118.33	122.70
2	C	801	TZ0	C0R-C0J-C0S	-2.36	115.95	120.22
2	C	801	TZ0	C0O-C0J-C0S	2.30	124.37	120.22
2	C	801	TZ0	C0Q-C0T-N07	2.19	105.75	102.93
2	B	801	TZ0	C0U-O02-C0D	-2.14	112.90	117.50
2	B	801	TZ0	C0Q-C0K-C0I	2.06	105.70	102.22
2	C	801	TZ0	C0T-N07-C0I	-2.00	110.04	112.38

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	801	TZ0	C0V-C0M-C0P-O03
2	B	801	TZ0	C0V-C0M-C0P-N07
2	D	800	TZ0	C0C-C0D-O02-C0U
2	D	800	TZ0	C0R-C0D-O02-C0U

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	801	TZ0	1	0
3	B	802	SO4	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 then 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 TZ0 C 801
Bond lengths — Bond angles — Torsions — Rings

Ligand TZ0 D 800

Bond lengths

Bond angles

Torsions

Rings

Ligand TZ0 A 801

Bond lengths

Bond angles

Torsions

Rings

Ligand TZ0 B 801

Bond lengths

Bond angles

Torsions

Rings
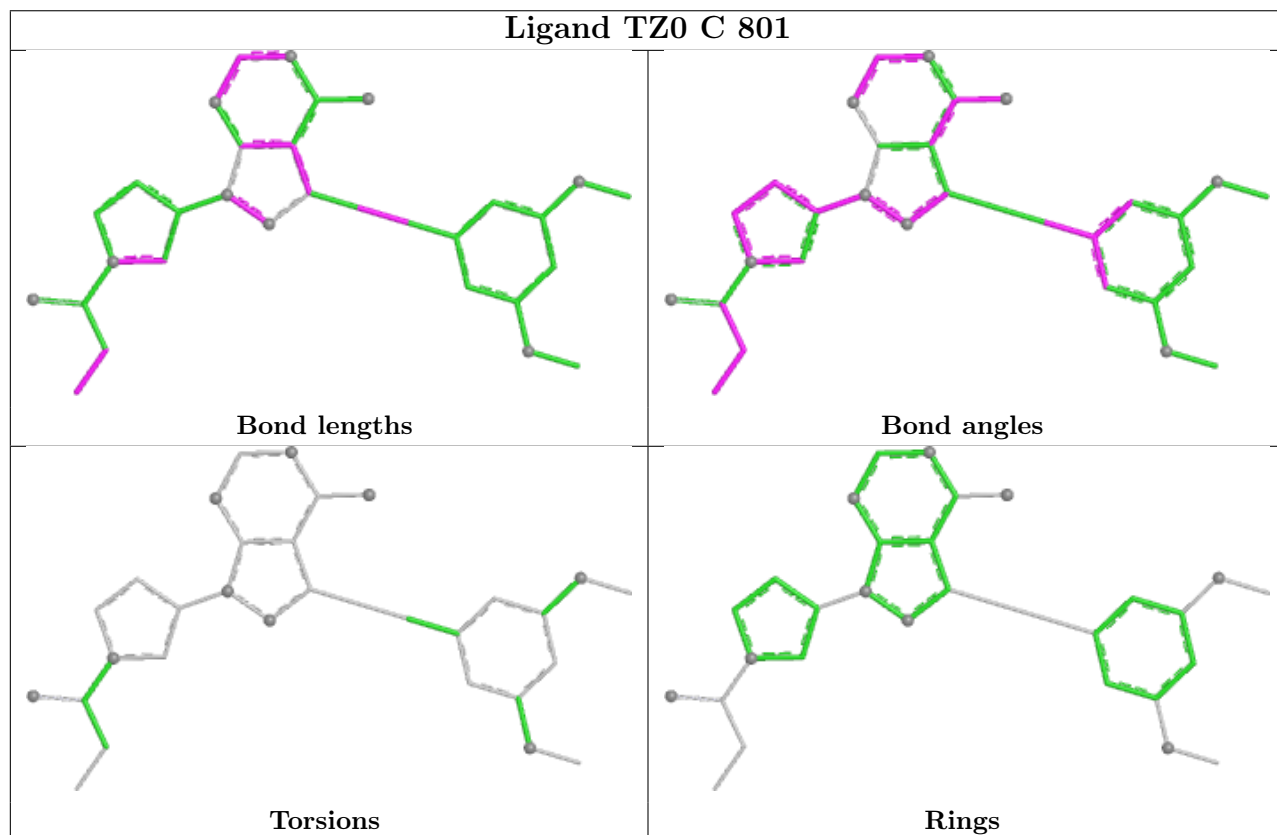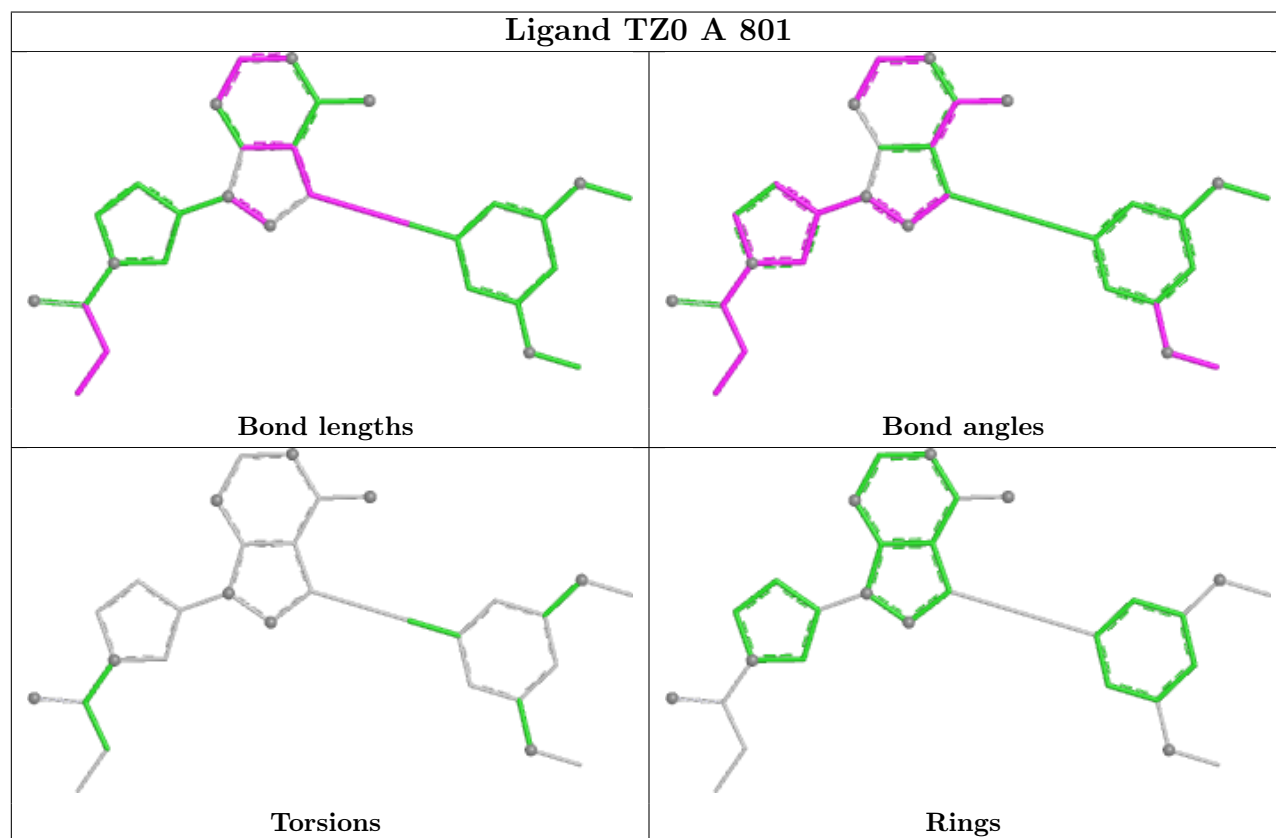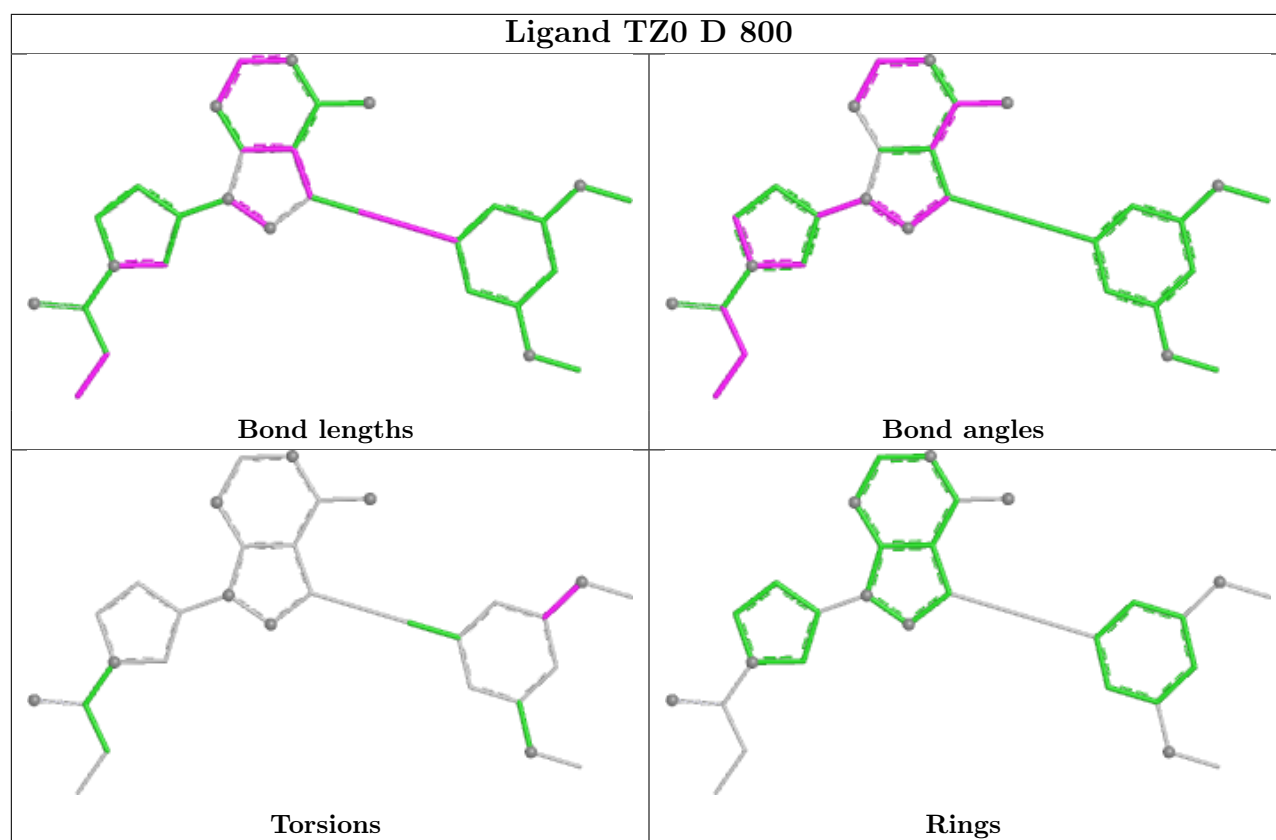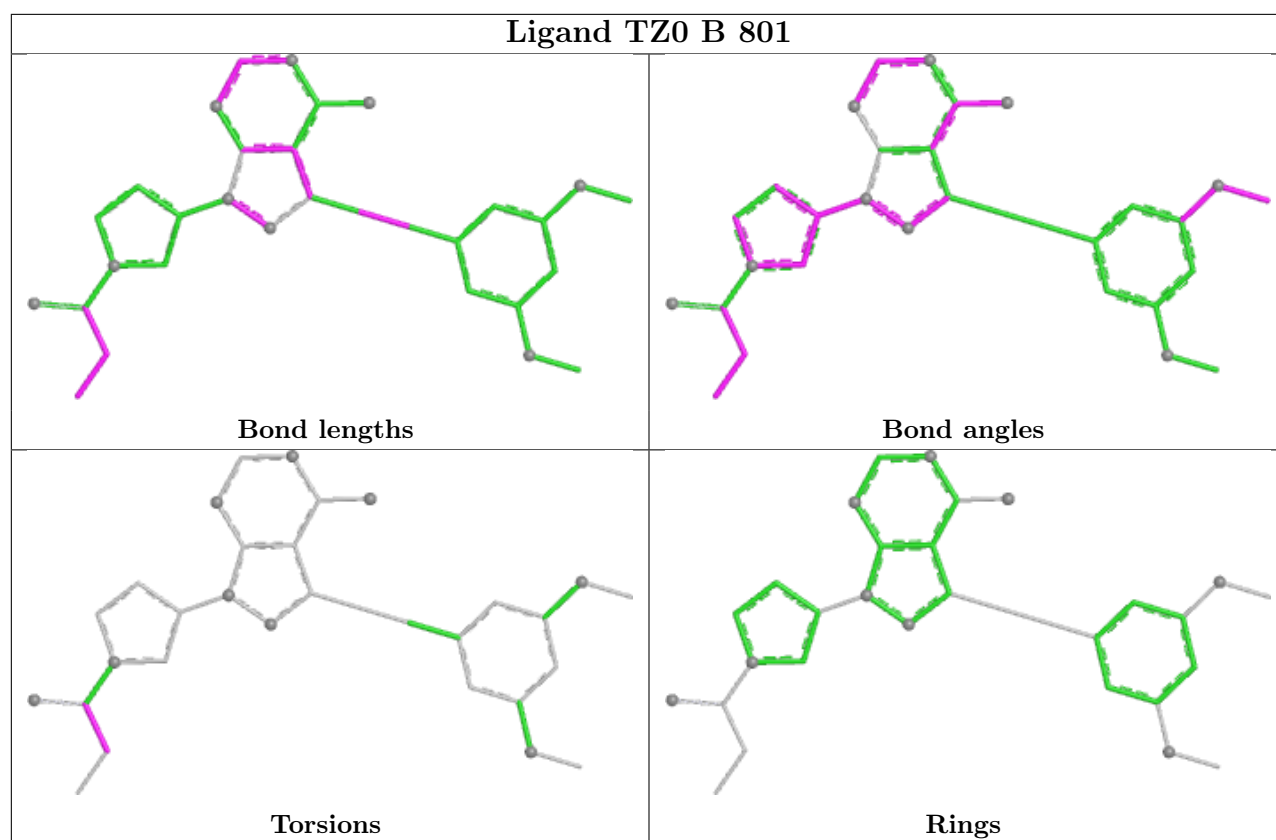
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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(Å²)	Q<0.9
1	A	298/324 (91%)	1.28	56 (18%)	4	3	26, 47, 69, 82	1 (0%)
1	B	288/324 (88%)	3.48	264 (91%)	0	0	61, 72, 94, 107	0
1	C	289/324 (89%)	1.97	120 (41%)	1	1	37, 48, 63, 76	0
1	D	271/324 (83%)	3.89	259 (95%)	0	0	66, 75, 87, 96	0
All	All	1146/1296 (88%)	2.63	699 (60%)	0	0	26, 65, 87, 107	1 (0%)

All (699) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	593	VAL	10.5
1	D	597	GLN	9.4
1	D	553	ALA	9.3
1	B	553	ALA	9.2
1	B	594	PRO	8.8
1	D	593	VAL	8.7
1	C	583	GLY	8.3
1	C	713	PHE	7.8
1	C	586	TYR	7.6
1	D	622[A]	CYS	7.1
1	D	533[A]	SER	7.1
1	B	622[A]	CYS	7.0
1	B	652	ASN	6.8
1	B	745	SER	6.7
1	D	532	VAL	6.6
1	D	474	TRP	6.5
1	D	754	VAL	6.5
1	B	533	SER	6.4
1	B	494	GLN	6.4
1	D	492	PHE	6.3
1	B	501	VAL	6.3

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Mol	Chain	Res	Type	RSRZ
1	B	508	PRO	6.3
1	D	678	ARG	6.3
1	B	589	ASP	6.2
1	C	509	LYS	6.2
1	B	661	THR	6.1
1	D	735	MET	6.1
1	D	667	VAL	6.0
1	D	687	TRP	5.9
1	D	627	LEU	5.9
1	D	484	GLY	5.8
1	D	726	ALA	5.8
1	D	514	VAL	5.8
1	B	671	ALA	5.8
1	D	494	GLN	5.7
1	D	688	SER	5.7
1	D	674	ALA	5.7
1	C	587	SER	5.7
1	B	742	ALA	5.7
1	D	679	VAL	5.6
1	D	671	ALA	5.6
1	B	525	GLU	5.6
1	B	672	PRO	5.6
1	B	493	GLY	5.6
1	D	651	ILE	5.6
1	C	584	MET	5.6
1	B	676	PHE	5.6
1	D	634	VAL	5.6
1	B	653	ASN	5.6
1	D	561	TYR	5.6
1	D	664	ARG	5.5
1	C	589	ASP	5.4
1	D	740	TRP	5.4
1	D	643	ALA	5.4
1	B	555	THR	5.4
1	C	582	PRO	5.4
1	D	704	TYR	5.4
1	D	742	ALA	5.4
1	D	604	VAL	5.3
1	D	681	THR	5.3
1	B	588	TYR	5.3
1	B	536	GLU	5.3
1	B	712	LEU	5.3

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Mol	Chain	Res	Type	RSRZ
1	D	525	GLU	5.3
1	B	754	VAL	5.2
1	D	650	VAL	5.2
1	D	554	CYS	5.2
1	B	667	VAL	5.2
1	D	743	VAL	5.2
1	B	616	TYR	5.2
1	B	592	ARG	5.2
1	B	743	VAL	5.2
1	D	547	ILE	5.2
1	D	536	GLU	5.2
1	B	643	ALA	5.1
1	D	739	CYS	5.1
1	B	618	ALA	5.1
1	D	745	SER	5.1
1	D	579	ARG	5.1
1	D	646	GLY	5.0
1	D	528	LEU	5.0
1	D	665	LEU	5.0
1	D	555	THR	5.0
1	B	687	TRP	5.0
1	B	468	LEU	5.0
1	D	692	LEU	5.0
1	D	563	ILE	5.0
1	D	526	LYS	5.0
1	D	596	GLU	5.0
1	D	686	VAL	5.0
1	D	560	LEU	5.0
1	D	498	ALA	5.0
1	D	675	LEU	5.0
1	D	642	ILE	5.0
1	D	613	GLY	4.9
1	D	747	ARG	4.9
1	B	681	THR	4.9
1	D	599	THR	4.9
1	B	591	ASN	4.9
1	D	516	VAL	4.9
1	D	749	THR	4.9
1	C	506	ASP	4.9
1	B	547	ILE	4.9
1	D	475	GLU	4.9
1	D	647	LEU	4.8

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Mol	Chain	Res	Type	RSRZ
1	D	485	LYS	4.8
1	D	592	ARG	4.8
1	D	715	LEU	4.8
1	B	717	LYS	4.8
1	D	716	LEU	4.8
1	B	686	VAL	4.8
1	D	623	ILE	4.8
1	D	757	LEU	4.8
1	B	590	ILE	4.8
1	D	503	ILE	4.8
1	D	610	LEU	4.8
1	D	725	PRO	4.7
1	B	749	THR	4.7
1	B	625	ARG	4.7
1	B	474	TRP	4.7
1	D	697	PHE	4.7
1	C	507	LYS	4.6
1	C	606[A]	CYS	4.6
1	B	675	LEU	4.6
1	D	732	LEU	4.6
1	D	470	GLU	4.6
1	B	634	VAL	4.6
1	B	481	LEU	4.6
1	B	517	LYS	4.6
1	D	718	GLU	4.6
1	D	625	ARG	4.5
1	B	522	ASP	4.5
1	B	557	ASP	4.5
1	C	727	ASN	4.5
1	D	717	LYS	4.5
1	D	549	ASP	4.5
1	D	670	MET	4.5
1	D	531	LEU	4.5
1	D	611	ALA	4.5
1	D	629	ALA	4.5
1	D	748	PRO	4.5
1	D	562	VAL	4.5
1	D	734	MET	4.5
1	D	713	PHE	4.5
1	B	509	LYS	4.5
1	D	607	THR	4.5
1	D	683	GLN	4.5

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Mol	Chain	Res	Type	RSRZ
1	D	472	PRO	4.4
1	D	541	ILE	4.4
1	B	753	LEU	4.4
1	B	479	ASP	4.4
1	B	747	ARG	4.4
1	D	617	LEU	4.4
1	B	688	SER	4.4
1	D	714	LYS	4.4
1	D	755	GLU	4.4
1	B	561	TYR	4.4
1	D	501	VAL	4.4
1	D	639	VAL	4.4
1	B	663	GLY	4.4
1	C	718	GLU	4.4
1	B	586	TYR	4.4
1	D	685	ASP	4.4
1	D	689	PHE	4.4
1	D	676	PHE	4.3
1	D	575	TYR	4.3
1	B	720	HIS	4.3
1	B	528	LEU	4.3
1	D	550	LEU	4.3
1	B	607	THR	4.3
1	C	549	ASP	4.3
1	B	651	ILE	4.3
1	D	684	SER	4.3
1	B	485	LYS	4.3
1	B	692	LEU	4.3
1	B	763	LEU	4.3
1	B	562	VAL	4.3
1	B	722	MET	4.3
1	D	600	PHE	4.3
1	D	760	ILE	4.2
1	D	606[A]	CYS	4.2
1	D	633	LEU	4.2
1	D	580	ARG	4.2
1	B	748	PRO	4.2
1	B	511	ALA	4.2
1	B	757	LEU	4.2
1	D	481	LEU	4.2
1	D	709	VAL	4.2
1	D	691	VAL	4.2

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Mol	Chain	Res	Type	RSRZ
1	C	488	GLY	4.2
1	B	539	LYS	4.2
1	D	645	PHE	4.2
1	B	560	LEU	4.1
1	B	670	MET	4.1
1	D	738	ASP	4.1
1	D	476	PHE	4.1
1	D	682	HIS	4.1
1	D	690	GLY	4.1
1	B	731	GLU	4.1
1	D	730	ASN	4.1
1	B	738	ASP	4.1
1	B	665	LEU	4.1
1	B	730	ASN	4.1
1	D	565	GLU	4.1
1	D	537	MET	4.1
1	C	745	SER	4.1
1	C	716	LEU	4.1
1	D	468	LEU	4.1
1	D	753	LEU	4.1
1	B	503	ILE	4.1
1	B	535	MET	4.1
1	D	736	MET	4.1
1	D	515	ALA	4.0
1	A	594	PRO	4.0
1	D	741	HIS	4.0
1	D	752	GLN	4.0
1	D	744	PRO	4.0
1	B	685	ASP	4.0
1	B	645	PHE	4.0
1	D	548	ILE	4.0
1	D	648	ALA	4.0
1	D	564	VAL	4.0
1	D	733	TYR	4.0
1	D	710	GLU	3.9
1	D	495	VAL	3.9
1	B	690	GLY	3.9
1	B	642	ILE	3.9
1	C	588	TYR	3.9
1	D	543	LYS	3.9
1	B	467	GLU	3.9
1	B	531	LEU	3.9

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Mol	Chain	Res	Type	RSRZ
1	B	582	PRO	3.9
1	B	597	GLN	3.9
1	B	715	LEU	3.9
1	D	493	GLY	3.9
1	D	666	PRO	3.9
1	D	746	GLN	3.9
1	D	621	LYS	3.9
1	B	521	ASP	3.9
1	B	567	ALA	3.9
1	B	492	PHE	3.9
1	D	751	LYS	3.9
1	A	522	ASP	3.8
1	D	535	MET	3.8
1	D	540	MET	3.8
1	B	662	ASN	3.8
1	D	631	ASN	3.8
1	B	668	LYS	3.8
1	D	707	ILE	3.8
1	A	506	ASP	3.8
1	B	629	ALA	3.8
1	B	708	PRO	3.8
1	B	695	GLU	3.8
1	C	504	ASP	3.8
1	B	710	GLU	3.8
1	D	602	ASP	3.8
1	D	764	THR	3.8
1	B	516	VAL	3.8
1	D	517	LYS	3.8
1	D	572	LEU	3.8
1	B	563	ILE	3.8
1	B	741	HIS	3.8
1	B	711	GLU	3.7
1	D	628	ALA	3.7
1	C	593	VAL	3.7
1	D	698	THR	3.7
1	D	663	GLY	3.7
1	D	480	LYS	3.7
1	B	564	VAL	3.7
1	B	703	PRO	3.7
1	B	620	GLN	3.7
1	B	646	GLY	3.7
1	D	595	GLU	3.7

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Mol	Chain	Res	Type	RSRZ
1	B	674	ALA	3.7
1	B	617	LEU	3.7
1	D	712	LEU	3.7
1	D	529	SER	3.7
1	D	546	ASN	3.7
1	B	621	LYS	3.7
1	B	608	TYR	3.7
1	D	616	TYR	3.7
1	B	603	LEU	3.7
1	D	576	LEU	3.7
1	B	666	PRO	3.7
1	B	613	GLY	3.7
1	C	540	MET	3.7
1	D	693	MET	3.7
1	B	470	GLU	3.6
1	B	520	LYS	3.6
1	C	585	GLU	3.6
1	D	672	PRO	3.6
1	D	669	TRP	3.6
1	A	504	ASP	3.6
1	B	689	PHE	3.6
1	D	571	ASN	3.6
1	D	615	GLU	3.6
1	B	696	ILE	3.6
1	D	620	GLN	3.6
1	D	552	GLY	3.6
1	B	476	PHE	3.6
1	B	565	GLU	3.6
1	B	633	LEU	3.6
1	B	578	ALA	3.6
1	B	524	THR	3.6
1	B	713	PHE	3.6
1	D	509	LYS	3.6
1	D	594	PRO	3.6
1	D	721	ARG	3.6
1	B	502	GLY	3.6
1	A	728	CYS	3.5
1	B	716	LEU	3.5
1	D	763	LEU	3.5
1	B	639	VAL	3.5
1	B	660	THR	3.5
1	D	499	GLU	3.5

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Mol	Chain	Res	Type	RSRZ
1	D	477	PRO	3.5
1	A	549	ASP	3.5
1	B	758	ASP	3.5
1	D	467	GLU	3.5
1	D	722	MET	3.5
1	C	501	VAL	3.5
1	B	482	THR	3.5
1	B	733	TYR	3.5
1	A	521	ASP	3.5
1	D	705	PRO	3.5
1	B	632	VAL	3.5
1	C	533[A]	SER	3.5
1	B	583	GLY	3.5
1	B	678	ARG	3.4
1	D	737	ARG	3.4
1	B	581	PRO	3.4
1	B	744	PRO	3.4
1	C	581	PRO	3.4
1	D	539	LYS	3.4
1	B	697	PHE	3.4
1	B	764	THR	3.4
1	B	627	LEU	3.4
1	D	680	TYR	3.4
1	B	486	PRO	3.4
1	D	567	ALA	3.4
1	C	590	ILE	3.4
1	B	684	SER	3.4
1	B	552	GLY	3.4
1	A	598	MET	3.4
1	B	735	MET	3.4
1	B	762	THR	3.4
1	D	699	LEU	3.4
1	D	469	PRO	3.4
1	D	703	PRO	3.4
1	D	677	ASP	3.4
1	D	758	ASP	3.4
1	B	702	SER	3.4
1	B	554	CYS	3.4
1	B	550	LEU	3.4
1	B	572	LEU	3.4
1	B	714	LYS	3.4
1	B	530	ASP	3.4

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Mol	Chain	Res	Type	RSRZ
1	D	471	ASP	3.4
1	B	650	VAL	3.4
1	B	707	ILE	3.4
1	B	598	MET	3.4
1	B	739	CYS	3.4
1	D	608	TYR	3.3
1	D	618	ALA	3.3
1	B	541	ILE	3.3
1	A	540	MET	3.3
1	B	732	LEU	3.3
1	B	759	ARG	3.3
1	D	489	GLU	3.3
1	B	683	GLN	3.3
1	B	534	GLU	3.3
1	D	578	ALA	3.3
1	D	696	ILE	3.3
1	D	496	VAL	3.3
1	D	530	ASP	3.3
1	C	505	LYS	3.3
1	B	698	THR	3.3
1	B	740	TRP	3.3
1	C	742	ALA	3.3
1	B	682	HIS	3.3
1	A	507	LYS	3.3
1	C	499	GLU	3.2
1	B	611	ALA	3.2
1	B	532	VAL	3.2
1	B	473	LYS	3.2
1	C	675	LEU	3.2
1	D	603	LEU	3.2
1	D	649	ARG	3.2
1	D	574	GLU	3.2
1	B	628	ALA	3.2
1	B	644	ASP	3.2
1	C	493	GLY	3.2
1	C	676	PHE	3.2
1	C	702	SER	3.2
1	B	515	ALA	3.2
1	D	624	HIS	3.2
1	D	644	ASP	3.2
1	A	489	GLU	3.2
1	D	512	VAL	3.2

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Mol	Chain	Res	Type	RSRZ
1	A	655	ASP	3.2
1	B	640	MET	3.2
1	C	703	PRO	3.1
1	B	595	GLU	3.1
1	B	623	ILE	3.1
1	B	570	GLY	3.1
1	D	598	MET	3.1
1	A	470	GLU	3.1
1	B	526	LYS	3.1
1	D	523	ALA	3.1
1	D	632	VAL	3.1
1	D	630	ARG	3.1
1	B	694	TRP	3.1
1	D	497	MET	3.1
1	C	672	PRO	3.1
1	B	626	ASP	3.1
1	A	755	GLU	3.1
1	B	543	LYS	3.1
1	C	756	ASP	3.1
1	D	641	LYS	3.1
1	B	664	ARG	3.1
1	B	700	GLY	3.1
1	B	725	PRO	3.1
1	D	486	PRO	3.1
1	B	499	GLU	3.0
1	D	761	LEU	3.0
1	B	734[A]	MET	3.0
1	B	669	TRP	3.0
1	C	594	PRO	3.0
1	D	626	ASP	3.0
1	C	645	PHE	3.0
1	A	493	GLY	3.0
1	D	694	TRP	3.0
1	B	483	LEU	3.0
1	C	636	GLU	3.0
1	A	656	TYR	3.0
1	B	575	TYR	3.0
1	B	576	LEU	3.0
1	B	699	LEU	3.0
1	B	648	ALA	3.0
1	B	558	GLY	3.0
1	C	481	LEU	2.9

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Mol	Chain	Res	Type	RSRZ
1	B	760	ILE	2.9
1	B	478	ARG	2.9
1	B	500	ALA	2.9
1	B	514	VAL	2.9
1	B	604	VAL	2.9
1	B	624	HIS	2.9
1	D	482	THR	2.9
1	C	743	VAL	2.9
1	D	521	ASP	2.9
1	B	752	GLN	2.9
1	B	728	CYS	2.9
1	B	649	ARG	2.9
1	D	524	THR	2.9
1	B	679	VAL	2.9
1	B	469	PRO	2.9
1	B	559	PRO	2.9
1	D	490	GLY	2.9
1	D	614	MET	2.9
1	D	601	LYS	2.9
1	A	582	PRO	2.9
1	B	610	LEU	2.9
1	B	736	MET	2.8
1	C	670	MET	2.8
1	D	668	LYS	2.8
1	D	673	GLU	2.8
1	B	691	VAL	2.8
1	B	641	LYS	2.8
1	B	709	VAL	2.8
1	B	680	TYR	2.8
1	D	750	PHE	2.8
1	B	721	ARG	2.8
1	B	475	GLU	2.8
1	A	511	ALA	2.8
1	C	681	THR	2.8
1	B	704	TYR	2.8
1	B	518	MET	2.8
1	B	540	MET	2.8
1	D	479	ASP	2.8
1	D	723	ASP	2.8
1	D	731	GLU	2.8
1	B	630	ARG	2.8
1	D	756	ASP	2.8

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Mol	Chain	Res	Type	RSRZ
1	B	496	VAL	2.7
1	C	494	GLN	2.7
1	D	483	LEU	2.7
1	D	573	ARG	2.7
1	A	499	GLU	2.7
1	A	510	GLU	2.7
1	C	524	THR	2.7
1	C	618	ALA	2.7
1	D	702	SER	2.7
1	A	488	GLY	2.7
1	B	580	ARG	2.7
1	C	649	ARG	2.7
1	A	588	TYR	2.7
1	C	651	ILE	2.7
1	C	758	ASP	2.7
1	B	489	GLU	2.7
1	C	470	GLU	2.7
1	B	537	MET	2.7
1	A	660	THR	2.7
1	B	750	PHE	2.7
1	B	612	ARG	2.7
1	B	615	GLU	2.7
1	C	511	ALA	2.7
1	D	612	ARG	2.7
1	B	484	GLY	2.7
1	C	570	GLY	2.7
1	D	720	HIS	2.7
1	D	545	LYS	2.6
1	B	551	LEU	2.6
1	B	548	ILE	2.6
1	B	673	GLU	2.6
1	C	466	TYR	2.6
1	D	695	GLU	2.6
1	A	662	ASN	2.6
1	B	495	VAL	2.6
1	B	477	PRO	2.6
1	C	623	ILE	2.6
1	C	598	MET	2.6
1	D	534	GLU	2.6
1	C	714	LYS	2.6
1	D	473	LYS	2.6
1	B	471	ASP	2.6

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Mol	Chain	Res	Type	RSRZ
1	C	529	SER	2.6
1	C	525	GLU	2.6
1	B	549	ASP	2.6
1	C	521	ASP	2.6
1	C	530	ASP	2.6
1	C	699	LEU	2.6
1	C	515	ALA	2.6
1	B	490	GLY	2.6
1	B	706	GLY	2.6
1	B	529	SER	2.5
1	B	755	GLU	2.5
1	C	561	TYR	2.5
1	A	479	ASP	2.5
1	A	523	ALA	2.5
1	D	500	ALA	2.5
1	D	706	GLY	2.5
1	C	664	ARG	2.5
1	D	636	GLU	2.5
1	C	677	ASP	2.5
1	B	614	MET	2.5
1	B	693	MET	2.5
1	C	717	LYS	2.5
1	C	715	LEU	2.5
1	A	664	ARG	2.5
1	B	472	PRO	2.5
1	C	616	TYR	2.5
1	A	557	ASP	2.5
1	D	557	ASP	2.5
1	D	700	GLY	2.5
1	A	764	THR	2.5
1	C	610	LEU	2.4
1	C	687	TRP	2.4
1	C	737	ARG	2.4
1	C	650	VAL	2.4
1	C	621	LYS	2.4
1	C	741	HIS	2.4
1	D	609	GLN	2.4
1	B	724	LYS	2.4
1	D	566	TYR	2.4
1	D	727	ASN	2.4
1	D	701	GLY	2.4
1	C	596	GLU	2.4

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Mol	Chain	Res	Type	RSRZ
1	B	497	MET	2.4
1	D	544	HIS	2.4
1	C	680	TYR	2.4
1	B	602	ASP	2.4
1	A	467	GLU	2.4
1	B	574	GLU	2.4
1	B	718	GLU	2.4
1	B	751	LYS	2.4
1	C	746	GLN	2.4
1	C	471	ASP	2.4
1	C	482	THR	2.4
1	B	647	LEU	2.4
1	C	483	LEU	2.4
1	C	711	GLU	2.4
1	B	579	ARG	2.4
1	A	670[A]	MET	2.4
1	D	724	LYS	2.4
1	C	709	VAL	2.4
1	D	511	ALA	2.4
1	D	488	GLY	2.4
1	B	761	LEU	2.3
1	C	467	GLU	2.3
1	B	573	ARG	2.3
1	B	556	GLN	2.3
1	C	667	VAL	2.3
1	B	726	ALA	2.3
1	C	674	ALA	2.3
1	A	677	ASP	2.3
1	B	677	ASP	2.3
1	B	756	ASP	2.3
1	C	528	LEU	2.3
1	D	729	THR	2.3
1	A	581	PRO	2.3
1	A	498	ALA	2.3
1	B	587	SER	2.3
1	D	619	SER	2.3
1	C	734	MET	2.3
1	D	728	CYS	2.3
1	A	468	LEU	2.3
1	A	661	THR	2.3
1	B	546	ASN	2.3
1	C	622[A]	CYS	2.3

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Mol	Chain	Res	Type	RSRZ
1	D	708	PRO	2.3
1	B	600	PHE	2.3
1	B	746	GLN	2.3
1	C	726	ALA	2.3
1	A	583	GLY	2.3
1	B	701	GLY	2.3
1	C	468	LEU	2.3
1	C	465	GLU	2.2
1	A	469	PRO	2.2
1	C	522	ASP	2.2
1	C	648	ALA	2.2
1	B	719	GLY	2.2
1	C	537	MET	2.2
1	C	732	LEU	2.2
1	D	558	GLY	2.2
1	D	759	ARG	2.2
1	D	513	THR	2.2
1	C	637	ASN	2.2
1	D	559	PRO	2.2
1	D	491	CYS	2.2
1	D	556	GLN	2.2
1	B	480	LYS	2.2
1	B	619	SER	2.2
1	B	635	THR	2.2
1	C	749	THR	2.2
1	B	637	ASN	2.2
1	B	727	ASN	2.2
1	C	720	HIS	2.2
1	D	527	ASP	2.2
1	A	501	VAL	2.2
1	A	514	VAL	2.2
1	A	491	CYS	2.2
1	B	606[A]	CYS	2.2
1	C	491	CYS	2.2
1	C	707	ILE	2.2
1	B	584	MET	2.2
1	C	592	ARG	2.2
1	C	701	GLY	2.2
1	B	605	SER	2.2
1	C	489	GLU	2.2
1	C	595	GLU	2.2
1	D	637	ASN	2.2

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Mol	Chain	Res	Type	RSRZ
1	C	679	VAL	2.2
1	B	538	MET	2.2
1	A	715	LEU	2.2
1	B	488	GLY	2.2
1	C	646	GLY	2.2
1	A	703	PRO	2.1
1	B	631	ASN	2.1
1	B	609	GLN	2.1
1	C	503	ILE	2.1
1	C	683	GLN	2.1
1	A	726	ALA	2.1
1	D	542	GLY	2.1
1	C	469	PRO	2.1
1	A	717	LYS	2.1
1	A	732	LEU	2.1
1	A	573	ARG	2.1
1	D	502	GLY	2.1
1	B	596	GLU	2.1
1	C	559	PRO	2.1
1	A	741	HIS	2.1
1	B	487	LEU	2.1
1	C	560	LEU	2.1
1	A	553	ALA	2.1
1	D	711	GLU	2.1
1	A	720	HIS	2.1
1	C	724	LYS	2.1
1	C	762	THR	2.1
1	D	762	THR	2.1
1	A	654	ILE	2.1
1	C	605	SER	2.1
1	C	684	SER	2.1
1	C	696	ILE	2.1
1	D	605	SER	2.1
1	A	652	ASN	2.1
1	A	725	PRO	2.0
1	A	711	GLU	2.0
1	A	658	LYS	2.0
1	D	520	LYS	2.0
1	D	538	MET	2.0
1	C	532	VAL	2.0
1	D	478	ARG	2.0
1	C	628	ALA	2.0

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Mol	Chain	Res	Type	RSRZ
1	C	531	LEU	2.0
1	B	737	ARG	2.0
1	D	577	ARG	2.0
1	A	727	ASN	2.0
1	C	591	ASN	2.0
1	D	522	ASP	2.0

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

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	SO4	B	803	5/5	0.47	0.31	146,147,148,149	0
3	SO4	B	802	5/5	0.48	0.44	168,169,172,173	0
3	SO4	B	804	5/5	0.54	0.40	167,169,170,172	0
3	SO4	C	802	5/5	0.54	0.27	131,131,131,132	0
3	SO4	C	804	5/5	0.65	0.33	150,150,151,153	0
3	SO4	C	803	5/5	0.66	0.31	161,162,164,165	0
3	SO4	A	802	5/5	0.72	0.47	210,214,216,217	0
2	TZ0	D	800	31/31	0.82	0.21	66,66,68,68	0
2	TZ0	B	801	31/31	0.85	0.18	66,70,71,72	0
2	TZ0	A	801	31/31	0.90	0.13	39,43,44,45	0
2	TZ0	C	801	31/31	0.90	0.15	36,37,39,39	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.
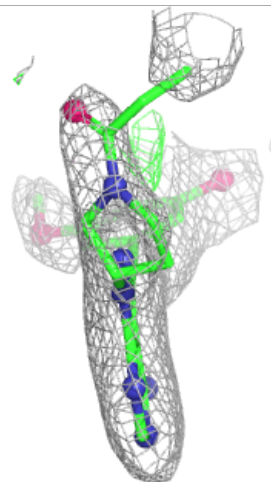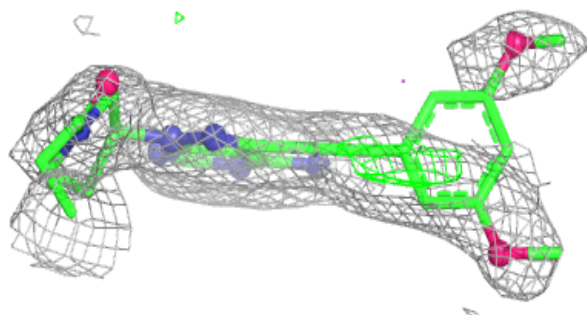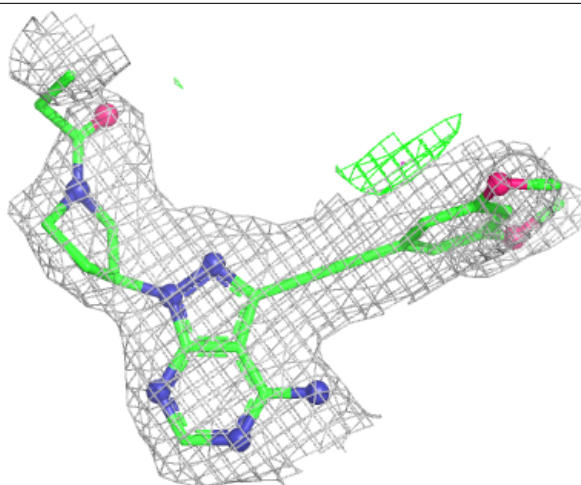
Electron density around TZ0 D 800:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
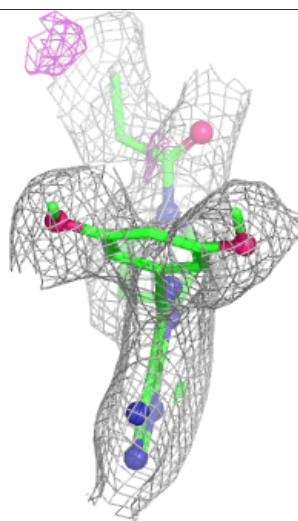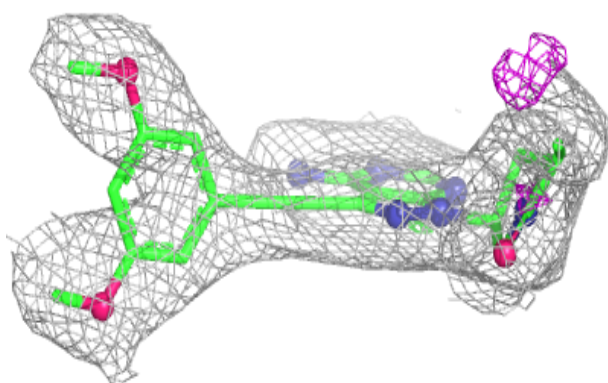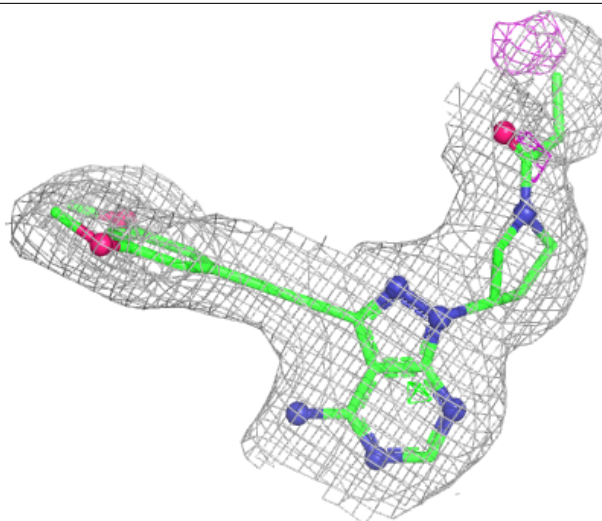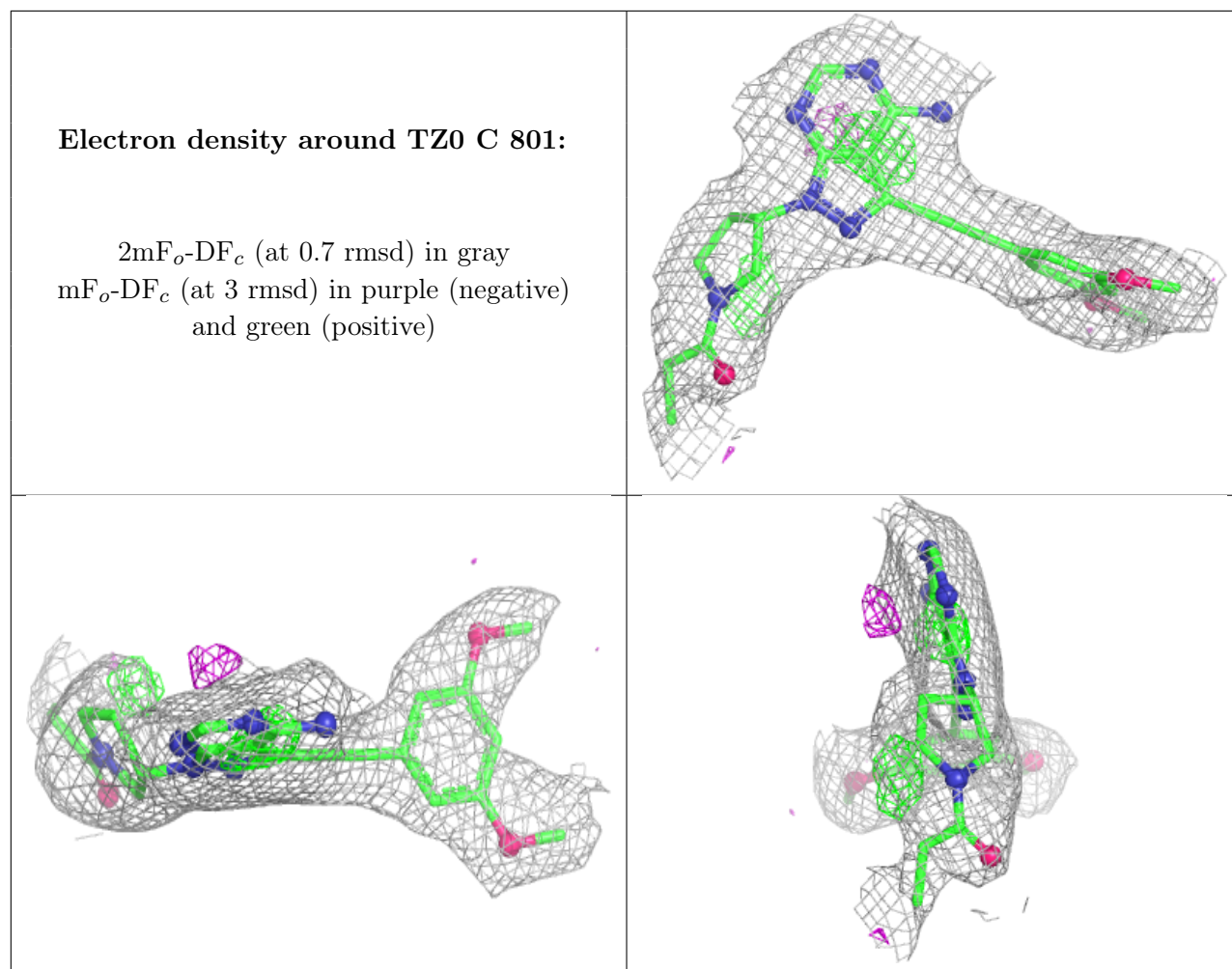and green (positive)
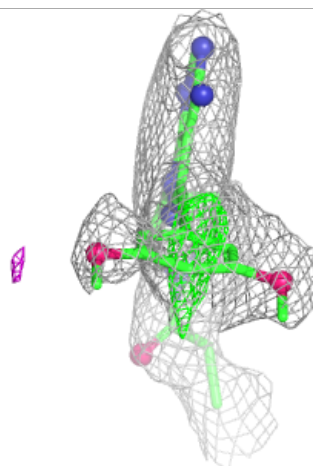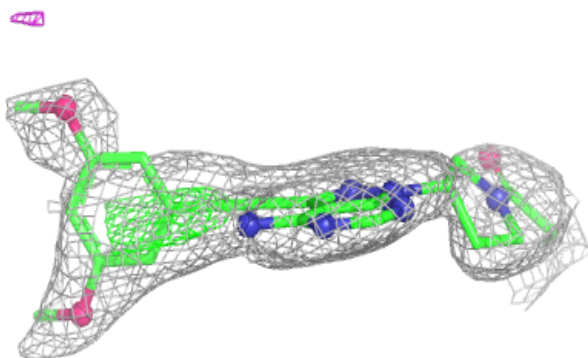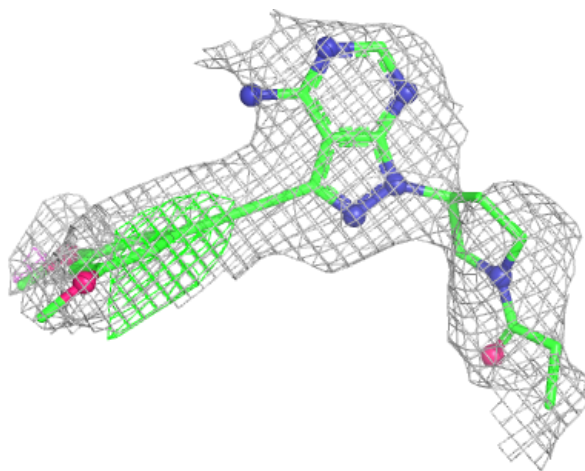
Electron density around TZ0 B 801:

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

Electron density around TZ0 A 801:

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

Electron density around TZ0 C 801:

$2mF_o$-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 ⓘ

There are no such residues in this entry.