



Full wwPDB X-ray Structure Validation Report ⓘ

Dec 3, 2023 – 06:15 am GMT

PDB ID : 1E6Y
Title : Methyl-coenzyme M reductase from Methanosarcina barkeri
Authors : Grabarse, W.; Ermler, U.
Deposited on : 2000-08-23
Resolution : 1.60 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 : 4.02b-467
Mogul : 1.8.4, CSD as541be (2020)
Xtrriage (Phenix) : 1.13
EDS : **FAILED**
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

PERCENTILES INFOmissingINFO

1 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 21340 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 METHYL-COENZYME M REDUCTASE SUBUNIT ALPHA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	568	Total	C	N	O	S	0	4	0
			4346	2735	737	846	28			
1	D	568	Total	C	N	O	S	0	3	0
			4348	2738	740	842	28			

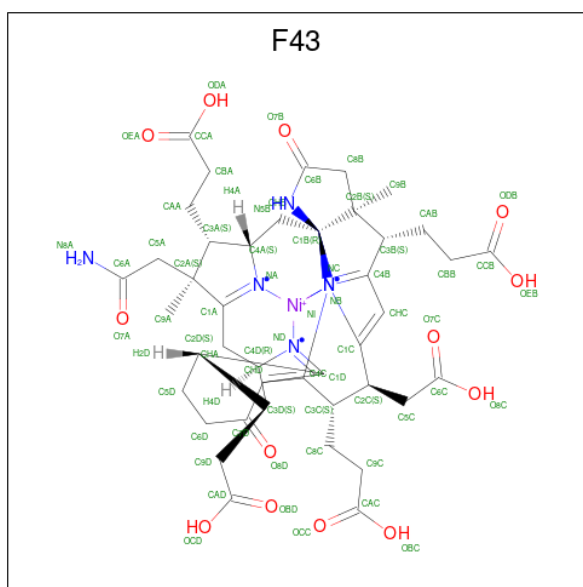
- Molecule 2 is a protein called METHYL-COENZYME M REDUCTASE I BETA SUBUNIT.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	432	Total	C	N	O	S	0	4	0
			3176	1987	549	621	19			
2	E	433	Total	C	N	O	S	0	1	0
			3178	1990	550	620	18			

- Molecule 3 is a protein called METHYL-COENZYME M REDUCTASE SUBUNIT GAMMA.

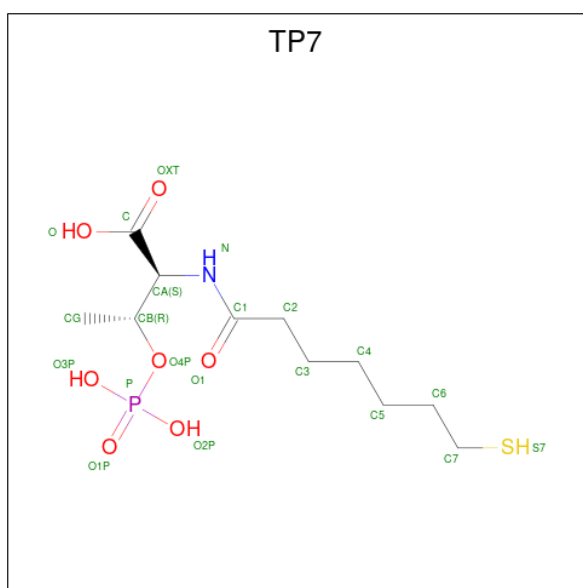
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	C	247	Total	C	N	O	S	0	0	0
			1947	1202	359	375	11			
3	F	247	Total	C	N	O	S	0	1	0
			1950	1205	359	375	11			

- Molecule 4 is FACTOR 430 (three-letter code: F43) (formula: C₄₂H₅₁N₆NiO₁₃).



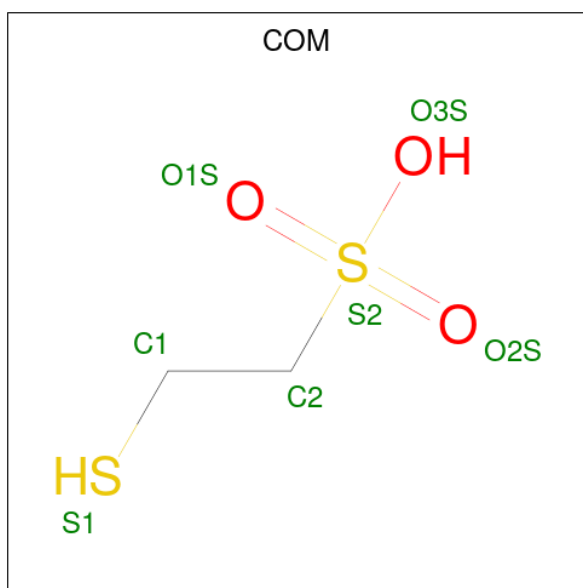
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
4	A	1	Total	C	N	Ni	O	0	0
			62	42	6	1	13		
4	D	1	Total	C	N	Ni	O	0	0
			62	42	6	1	13		

- Molecule 5 is Coenzyme B (three-letter code: TP7) (formula: $C_{11}H_{22}NO_7PS$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
5	A	1	Total	C	N	O	P	S	0	0
			21	11	1	7	1	1		
5	D	1	Total	C	N	O	P	S	0	0
			21	11	1	7	1	1		

- Molecule 6 is 1-THIOETHANESULFONIC ACID (three-letter code: COM) (formula: $C_2H_6O_3S_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	A	1	Total	C	O	S	0	0
			7	2	3	2		
6	D	1	Total	C	O	S	0	0
			7	2	3	2		

- Molecule 7 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	A	1	Total	C	O	0	0
			6	3	3		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	A	1	Total	C	O	0	0
			6	3	3		
7	D	1	Total	C	O	0	0
			6	3	3		

- Molecule 8 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	A	489	Total	O	0	0
			489	489		
8	B	340	Total	O	0	2
			342	342		
8	C	241	Total	O	0	0
			241	241		
8	D	522	Total	O	0	0
			522	522		
8	E	339	Total	O	0	0
			339	339		
8	F	264	Total	O	0	0
			264	264		

SEQUENCE-PLOTS INFOmissingINFO

2 Data and refinement statistics i

EDS failed to run properly - this section is therefore incomplete.

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	113.68Å 153.10Å 153.29Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	30.00 – 1.60	Depositor
% Data completeness (in resolution range)	89.0 (30.00-1.60)	Depositor
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.98 (at 1.60Å)	Xtriage
Refinement program	CNS 0.3	Depositor
R, R_{free}	0.160 , 0.179	Depositor
Wilson B-factor (Å ²)	11.0	Xtriage
Anisotropy	0.817	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	0.011 for -h,l,k	Xtriage
Total number of atoms	21340	wwPDB-VP
Average B, all atoms (Å ²)	14.0	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 33.28 % 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 8.2047e-04. 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.

3 Model quality

3.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: COM, AGM, F43, TP7, MHS, GOL, OCS, GL3, SMC

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	0.31	0/4423	0.68	9/5988 (0.2%)
1	D	0.64	6/4418 (0.1%)	1.95	26/5979 (0.4%)
2	B	0.29	0/3244	0.61	8/4390 (0.2%)
2	E	0.30	0/3231	0.65	8/4372 (0.2%)
3	C	0.31	0/1976	0.85	17/2666 (0.6%)
3	F	0.32	0/1983	1.85	15/2676 (0.6%)
All	All	0.41	6/19275 (0.0%)	1.24	83/26071 (0.3%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	2
1	D	0	2
2	B	0	2
2	E	0	3
3	C	0	1
3	F	0	1
All	All	0	11

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	4551[A]	ARG	CZ-NH2	22.62	1.62	1.33
1	D	4551[B]	ARG	CZ-NH2	22.62	1.62	1.33
1	D	4551[A]	ARG	NE-CZ	10.05	1.46	1.33
1	D	4551[B]	ARG	NE-CZ	10.05	1.46	1.33
1	D	4551[A]	ARG	CG-CD	-8.02	1.31	1.51
1	D	4551[B]	ARG	CG-CD	-8.02	1.31	1.51

All (83) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	4551[A]	ARG	NH1-CZ-NH2	-85.30	25.57	119.40
1	D	4551[B]	ARG	NH1-CZ-NH2	-85.30	25.57	119.40
3	F	6040[A]	VAL	CG1-CB-CG2	-59.08	16.37	110.90
3	F	6040[B]	VAL	CG1-CB-CG2	-59.08	16.37	110.90
1	D	4551[A]	ARG	NE-CZ-NH2	-44.85	97.87	120.30
1	D	4551[B]	ARG	NE-CZ-NH2	-44.85	97.87	120.30
1	A	1396[A]	GLU	OE1-CD-OE2	-20.42	98.79	123.30
1	A	1396[B]	GLU	OE1-CD-OE2	-20.42	98.79	123.30
1	D	4551[A]	ARG	NE-CZ-NH1	-20.09	110.25	120.30
1	D	4551[B]	ARG	NE-CZ-NH1	-20.09	110.25	120.30
3	F	6235	ARG	NE-CZ-NH1	19.09	129.84	120.30
1	D	4551[A]	ARG	CG-CD-NE	19.04	151.78	111.80
1	D	4551[B]	ARG	CG-CD-NE	19.04	151.78	111.80
3	F	6235	ARG	NE-CZ-NH2	-14.99	112.80	120.30
1	D	4421	ARG	NE-CZ-NH2	14.53	127.57	120.30
2	E	5384	ARG	NE-CZ-NH1	-11.98	114.31	120.30
2	E	5384	ARG	NE-CZ-NH2	11.51	126.05	120.30
1	D	4551[A]	ARG	CB-CG-CD	10.96	140.11	111.60
1	D	4551[B]	ARG	CB-CG-CD	10.96	140.11	111.60
2	E	5190	ARG	NE-CZ-NH1	-10.65	114.97	120.30
3	C	3121	ARG	NE-CZ-NH1	10.58	125.59	120.30
3	C	3121	ARG	NE-CZ-NH2	-10.38	115.11	120.30
1	A	1547	ARG	CD-NE-CZ	10.23	137.93	123.60
3	F	6235	ARG	CD-NE-CZ	10.13	137.78	123.60
2	B	2384	ARG	NE-CZ-NH1	-9.99	115.31	120.30
2	B	2190	ARG	NE-CZ-NH1	-9.62	115.49	120.30
1	D	4460	ARG	NE-CZ-NH2	9.11	124.86	120.30
2	B	2064	ARG	NE-CZ-NH2	-8.51	116.05	120.30
3	C	3102	ARG	NE-CZ-NH2	-8.01	116.30	120.30
3	C	3152	ARG	NE-CZ-NH2	7.79	124.19	120.30
2	E	5011	ARG	NE-CZ-NH1	-7.59	116.50	120.30
1	D	4491	ARG	NE-CZ-NH1	-7.41	116.60	120.30
3	C	3175	ARG	NE-CZ-NH2	7.39	124.00	120.30
2	B	2384	ARG	NE-CZ-NH2	7.39	123.99	120.30
2	E	5028	ARG	NE-CZ-NH2	-7.25	116.68	120.30
1	D	4421	ARG	NH1-CZ-NH2	-7.13	111.55	119.40
3	C	3068	ARG	CD-NE-CZ	7.09	133.52	123.60
2	B	2117	ARG	NE-CZ-NH2	-7.02	116.79	120.30
3	F	6121	ARG	NE-CZ-NH1	7.00	123.80	120.30
1	A	1284	ARG	NE-CZ-NH2	6.96	123.78	120.30
3	F	6152	ARG	NE-CZ-NH2	6.96	123.78	120.30
3	F	6121	ARG	NE-CZ-NH2	-6.86	116.87	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	4063	ARG	NE-CZ-NH2	-6.81	116.89	120.30
3	C	3175	ARG	NE-CZ-NH1	-6.80	116.90	120.30
1	A	1563	ARG	NE-CZ-NH2	6.79	123.69	120.30
1	D	4116	ARG	CD-NE-CZ	6.78	133.10	123.60
3	C	3235	ARG	NE-CZ-NH1	6.78	123.69	120.30
2	E	5117	ARG	NE-CZ-NH1	-6.70	116.95	120.30
3	C	3235	ARG	NE-CZ-NH2	-6.70	116.95	120.30
3	F	6152	ARG	NE-CZ-NH1	-6.65	116.97	120.30
3	C	3068	ARG	NE-CZ-NH1	6.64	123.62	120.30
3	F	6068	ARG	CD-NE-CZ	6.62	132.86	123.60
2	B	2069	ARG	NE-CZ-NH2	-6.61	116.99	120.30
3	C	3152	ARG	NE-CZ-NH1	-6.57	117.01	120.30
1	D	4284	ARG	NE-CZ-NH2	6.42	123.51	120.30
1	D	4491	ARG	NE-CZ-NH2	6.32	123.46	120.30
3	C	3018	ARG	NE-CZ-NH1	-6.20	117.20	120.30
3	F	6212	ARG	CD-NE-CZ	6.17	132.23	123.60
1	A	1081	ARG	CD-NE-CZ	6.13	132.19	123.60
3	C	3019	ARG	NE-CZ-NH2	6.05	123.33	120.30
1	D	4551[A]	ARG	CD-NE-CZ	5.69	131.56	123.60
1	D	4551[B]	ARG	CD-NE-CZ	5.69	131.56	123.60
3	C	3240	ARG	NE-CZ-NH2	-5.64	117.48	120.30
2	E	5117	ARG	NE-CZ-NH2	5.57	123.09	120.30
3	C	3121	ARG	CD-NE-CZ	5.57	131.40	123.60
1	A	1063	ARG	NE-CZ-NH2	-5.55	117.53	120.30
3	C	3127	ARG	NE-CZ-NH2	-5.53	117.54	120.30
1	A	1491	ARG	NE-CZ-NH1	-5.46	117.57	120.30
3	C	3111	ARG	NE-CZ-NH1	-5.43	117.59	120.30
2	B	2069	ARG	NE-CZ-NH1	5.42	123.01	120.30
3	F	6212	ARG	CG-CD-NE	5.40	123.14	111.80
3	F	6102	ARG	NE-CZ-NH2	-5.38	117.61	120.30
3	F	6084	ARG	NE-CZ-NH1	5.38	122.99	120.30
1	D	4519	ARG	CD-NE-CZ	5.30	131.01	123.60
2	B	2011	ARG	NE-CZ-NH1	-5.29	117.66	120.30
3	F	6068	ARG	NE-CZ-NH1	-5.19	117.70	120.30
1	A	1547	ARG	NE-CZ-NH2	-5.17	117.72	120.30
1	D	4460	ARG	NE-CZ-NH1	-5.16	117.72	120.30
1	D	4063	ARG	NE-CZ-NH1	5.14	122.87	120.30
1	D	4460	ARG	CG-CD-NE	5.13	122.57	111.80
1	D	4081	ARG	CD-NE-CZ	5.07	130.69	123.60
2	E	5272	ARG	NE-CZ-NH1	5.05	122.83	120.30
1	D	4287	ARG	NE-CZ-NH1	5.05	122.82	120.30

There are no chirality outliers.

All (11) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1396[A]	GLU	Sidechain
1	A	1396[B]	GLU	Sidechain
2	B	2331	TYR	Sidechain
2	B	2347	TYR	Sidechain
3	C	3093	TYR	Sidechain
1	D	4551[A]	ARG	Sidechain
1	D	4551[B]	ARG	Sidechain
2	E	5148	TYR	Sidechain
2	E	5331	TYR	Sidechain
2	E	5347	TYR	Sidechain
3	F	6093	TYR	Sidechain

3.2 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	4346	0	4191	39	0
1	D	4348	0	4205	50	0
2	B	3176	0	3161	17	0
2	E	3178	0	3170	22	0
3	C	1947	0	1888	9	0
3	F	1950	0	1894	13	0
4	A	62	0	43	6	0
4	D	62	0	43	5	0
5	A	21	0	19	2	0
5	D	21	0	19	1	0
6	A	7	0	5	1	0
6	D	7	0	5	0	0
7	A	12	0	16	0	0
7	D	6	0	8	0	0
8	A	489	0	0	5	0
8	B	342	0	0	1	0
8	C	241	0	0	1	0
8	D	522	0	0	4	0
8	E	339	0	0	4	0
8	F	264	0	0	2	0
All	All	21340	0	18667	131	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 3.

All (131) 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:4551[B]:ARG:NH2	1:D:4551[B]:ARG:CZ	1.69	1.56
1:D:4551[B]:ARG:CD	1:D:4551[B]:ARG:CG	1.76	1.55
1:D:4551[B]:ARG:CG	1:D:4551[B]:ARG:NE	1.87	1.38
1:D:4551[B]:ARG:CD	1:D:4551[B]:ARG:CB	2.38	1.01
1:D:4551[B]:ARG:HE	1:D:4551[B]:ARG:HG2	1.24	1.01
1:D:4551[B]:ARG:NE	1:D:4551[B]:ARG:HG2	1.76	0.92
1:D:4551[B]:ARG:CG	1:D:4551[B]:ARG:HE	1.73	0.90
1:D:4551[B]:ARG:NH2	1:D:4551[B]:ARG:NE	2.31	0.74
1:D:4551[A]:ARG:NH2	1:D:4557:PHE:HA	2.02	0.72
1:D:4551[B]:ARG:CD	1:D:4551[B]:ARG:HB2	2.18	0.72
2:B:2048:ALA:HB2	2:B:2107:LYS:HD2	1.74	0.70
4:A:2570:F43:H9A1	1:D:4341:VAL:HB	1.74	0.68
1:A:1341:VAL:HB	4:D:5570:F43:H9A1	1.78	0.66
1:D:4551[B]:ARG:HH11	1:D:4551[B]:ARG:HH21	0.66	0.66
1:D:4369:ASP:HB3	8:D:2386:HOH:O	1.96	0.65
2:B:2403[B]:MET:SD	1:D:4132:LYS:HD3	2.38	0.64
1:D:4551[B]:ARG:NH2	1:D:4551[B]:ARG:HH12	1.15	0.63
2:E:5037:MET:HG2	2:E:5115:LYS:HE2	1.82	0.62
2:E:5099:ASN:HD21	2:E:5101:ILE:HD11	1.66	0.61
1:A:1053:ILE:HG12	1:A:1070:PRO:HG2	1.84	0.60
1:D:4020:GLU:HB3	8:D:2030:HOH:O	2.03	0.59
1:D:4551[B]:ARG:NH2	1:D:4551[B]:ARG:NH1	0.58	0.58
1:A:1465:GL3:HA2	2:B:2355:VAL:HG12	1.86	0.57
1:D:4125:MET:HE1	1:D:4272:ALA:HB3	1.86	0.57
3:C:3085:TYR:CE2	1:D:4256:CYS:HB2	2.41	0.55
2:B:2241:GLN:HE22	2:B:2386:PHE:HA	1.71	0.55
1:A:1145:HIS:HD2	8:A:2146:HOH:O	1.90	0.54
1:D:4551[B]:ARG:HH12	1:D:4551[B]:ARG:HH22	0.75	0.53
1:D:4551[B]:ARG:HH21	1:D:4551[B]:ARG:NH1	1.36	0.53
3:F:6037:LEU:O	3:F:6040[B]:VAL:HG12	2.09	0.53
1:D:4551[B]:ARG:NH2	1:D:4551[B]:ARG:HH11	0.58	0.52
1:A:1256:CYS:HB2	3:F:6085:TYR:CE2	2.45	0.52
2:B:2297:VAL:HB	2:B:2298:PRO:HD3	1.90	0.52
3:F:6096:PRO:HA	3:F:6213:THR:HA	1.91	0.52
2:E:5297:VAL:HB	2:E:5298:PRO:HD3	1.92	0.51
1:A:1239:ARG:O	1:A:1243:MET:HG2	2.10	0.51
1:A:1057:LYS:HE2	8:A:2073:HOH:O	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:5254:LYS:HD3	8:E:2249:HOH:O	2.10	0.51
1:A:1257:ALA:HB1	4:A:2570:F43:H9B1	1.92	0.50
1:D:4465:GL3:HA2	2:E:5355:VAL:HG12	1.94	0.50
1:D:4551[B]:ARG:NH1	1:D:4551[B]:ARG:HH22	1.01	0.50
1:A:1345:GLN:HA	1:A:1348:THR:OG1	2.11	0.50
1:A:1197:ASP:HB3	1:A:1200:LYS:HB3	1.94	0.50
1:D:4297:PHE:HB3	1:D:4509:ALA:HA	1.94	0.49
1:D:4257:ALA:HB1	4:D:5570:F43:H9B1	1.93	0.49
1:D:4053:ILE:HG12	1:D:4070:PRO:HG2	1.95	0.49
2:B:2126:SER:HB3	2:E:5222:GLU:HG3	1.94	0.49
2:B:2188:SER:HB2	2:E:5122:ALA:HB3	1.96	0.48
1:A:1516:HIS:HB3	1:A:1521:ASP:HB2	1.96	0.47
1:D:4239:ARG:O	1:D:4243:MET:HG2	2.14	0.47
2:E:5199:ALA:HB2	2:E:5406:ILE:HG23	1.95	0.47
2:B:2180:GLN:HA	2:E:5180:GLN:HA	1.96	0.47
3:C:3096:PRO:HA	3:C:3213:THR:HA	1.97	0.47
3:F:6147:ALA:HB2	3:F:6203:PRO:HB3	1.96	0.47
1:A:1125:MET:HE1	8:E:2147:HOH:O	2.15	0.47
1:D:4197:ASP:HB3	1:D:4200:LYS:HB3	1.97	0.47
1:D:4551[B]:ARG:CB	1:D:4551[B]:ARG:HD3	2.41	0.46
1:D:4257:ALA:HB1	4:D:5570:F43:HAB1	1.98	0.46
1:A:1132:LYS:HD3	2:E:5403:MET:SD	2.55	0.46
2:E:5009:ASP:HB3	2:E:5015:LEU:HD11	1.97	0.46
3:F:6118:LEU:HD22	3:F:6121:ARG:HD3	1.98	0.46
1:A:1297:PHE:HB3	1:A:1509:ALA:HA	1.97	0.46
1:A:1467:ASP:HB2	1:A:1470:ASP:HB2	1.98	0.46
2:B:2199:ALA:HB2	2:B:2406:ILE:HG23	1.97	0.46
1:D:4125:MET:HE1	1:D:4272:ALA:CB	2.47	0.45
1:A:1369:ASP:HB3	8:A:2300:HOH:O	2.17	0.45
4:A:2570:F43:O8D	1:D:4417:GLY:HA3	2.16	0.45
2:E:5202:ASN:HB3	8:E:2218:HOH:O	2.16	0.45
1:A:1257:ALA:HB1	4:A:2570:F43:HAB1	1.99	0.45
3:F:6133:GLN:NE2	8:F:2158:HOH:O	2.49	0.45
1:A:1165:VAL:O	1:D:4341:VAL:HG13	2.17	0.45
1:D:4516:HIS:HB3	1:D:4521:ASP:HB2	1.99	0.45
2:B:2342:LEU:HD23	3:C:3239:GLN:HE22	1.83	0.44
2:E:5240:TYR:HB3	2:E:5306:VAL:CG2	2.48	0.44
2:E:5419:ALA:HB3	8:E:2333:HOH:O	2.17	0.44
1:A:1125:MET:HB2	8:A:2117:HOH:O	2.16	0.44
1:A:1268:ALA:HA	1:A:1272:ALA:HB3	2.00	0.44
2:B:2253:VAL:HG21	2:B:2313:LEU:HD12	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:4467:ASP:HB2	1:D:4470:ASP:HB2	1.99	0.44
3:C:3147:ALA:HB2	3:C:3203:PRO:HB3	1.99	0.44
1:D:4473:GLY:O	1:D:4477:VAL:HG23	2.17	0.44
3:C:3004:GLU:HG3	8:C:2002:HOH:O	2.18	0.44
3:F:6097:ALA:HB2	3:F:6143:ILE:O	2.18	0.44
2:B:2122:ALA:HB3	2:E:5188:SER:HB2	1.99	0.43
2:B:2222:GLU:HG3	2:E:5126:SER:HB3	1.99	0.43
2:E:5312:THR:HA	2:E:5328:THR:HG21	2.00	0.43
1:A:1140:PRO:HB3	1:A:1189:GLU:HB3	2.00	0.43
2:B:2422:GLU:HG2	8:B:3035:HOH:O	2.19	0.43
3:C:3118:LEU:N	3:C:3118:LEU:HD12	2.34	0.43
1:A:1526:ASN:HA	1:A:1527:PRO:HD2	1.86	0.43
1:D:4345:GLN:HA	1:D:4348:THR:OG1	2.18	0.43
2:E:5037:MET:SD	2:E:5115:LYS:HG2	2.59	0.43
1:A:1312:ASP:HB3	1:A:1315:LYS:HB3	2.01	0.42
2:B:2346:ASP:HB3	2:B:2349:LYS:HB2	2.01	0.42
1:A:1568:PRO:HG2	1:D:4558:VAL:HG22	2.01	0.42
1:A:1231:THR:HG23	8:D:2117:HOH:O	2.20	0.42
1:A:1325:CYS:O	1:A:1329:ASP:HB2	2.19	0.42
5:A:2571:TP7:O3P	1:D:4271:MHS:NE2	2.52	0.42
1:A:1136:LYS:HE2	1:A:1253:TYR:O	2.20	0.42
3:C:3100:TYR:CD2	3:C:3117:THR:HG21	2.54	0.42
1:A:1293:GLY:HA2	1:A:1493:PRO:HB2	2.01	0.42
1:A:1341:VAL:HG13	1:D:4165:VAL:O	2.19	0.42
1:A:1472:SMC:SG	2:B:2349:LYS:HA	2.60	0.42
3:C:3127:ARG:HB2	3:C:3130:ASP:OD1	2.20	0.42
4:A:2570:F43:H5D2	1:D:4346:TYR:CZ	2.54	0.42
1:D:4233:ASP:O	1:D:4236:GLN:HB3	2.20	0.42
4:A:2570:F43:H5D2	1:D:4346:TYR:CE2	2.56	0.41
3:F:6055:PRO:HB2	3:F:6060:MET:HG3	2.02	0.41
1:A:1326:MET:O	1:A:1330:GLN:HB2	2.20	0.41
3:F:6213:THR:OG1	3:F:6215:ILE:HG22	2.20	0.41
1:A:1493:PRO:O	1:A:1499:ALA:HA	2.21	0.41
1:A:1525:VAL:O	2:E:5064:ARG:HA	2.20	0.41
1:A:1463:PHE:HB2	6:A:2572:COM:O1S	2.21	0.41
1:D:4346:TYR:HE1	1:D:4419:SER:HB2	1.85	0.41
1:D:4472:SMC:SG	2:E:5349:LYS:HA	2.61	0.41
3:F:6100:TYR:CD2	3:F:6117:THR:HG21	2.55	0.41
1:A:1463:PHE:CZ	5:A:2571:TP7:S7	3.14	0.41
3:C:3097:ALA:HB2	3:C:3143:ILE:O	2.20	0.41
2:E:5337:GLU:HG2	2:E:5342:LEU:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1486:LEU:HD22	2:E:5162:PRO:HD2	2.03	0.41
2:B:2240:TYR:HB3	2:B:2306:VAL:CG2	2.50	0.41
1:D:4551[B]:ARG:HB2	1:D:4551[B]:ARG:HD3	1.99	0.41
1:A:1417:GLY:HA3	4:D:5570:F43:O8D	2.21	0.40
1:A:1057:LYS:HE3	8:A:2072:HOH:O	2.21	0.40
1:D:4002:ALA:HB1	8:D:2175:HOH:O	2.22	0.40
4:D:5570:F43:HBB1	4:D:5570:F43:CHC	2.50	0.40
1:D:4035:THR:HA	3:F:6163:LEU:O	2.21	0.40
1:D:4334:GLY:HA2	1:D:4343:PHE:CD2	2.57	0.40
3:F:6136:LYS:HE2	8:F:2081:HOH:O	2.20	0.40
1:A:1271:MHS:NE2	5:D:5571:TP7:O3P	2.55	0.40
3:F:6036:ASP:O	3:F:6040[A]:VAL:HG23	2.22	0.40

There are no symmetry-related clashes.

3.3 Torsion angles [i](#)

3.3.1 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	566/569 (100%)	546 (96%)	19 (3%)	1 (0%)	47	26
1	D	565/569 (99%)	546 (97%)	18 (3%)	1 (0%)	47	26
2	B	434/433 (100%)	428 (99%)	6 (1%)	0	100	100
2	E	432/433 (100%)	426 (99%)	6 (1%)	0	100	100
3	C	244/247 (99%)	239 (98%)	5 (2%)	0	100	100
3	F	245/247 (99%)	237 (97%)	8 (3%)	0	100	100
All	All	2486/2498 (100%)	2422 (97%)	62 (2%)	2 (0%)	51	29

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1525	VAL

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Mol	Chain	Res	Type
1	D	4525	VAL

3.3.2 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	446/443 (101%)	436 (98%)	10 (2%)	52	27
1	D	445/443 (100%)	436 (98%)	9 (2%)	55	31
2	B	335/332 (101%)	333 (99%)	2 (1%)	86	77
2	E	333/332 (100%)	331 (99%)	2 (1%)	86	77
3	C	201/201 (100%)	197 (98%)	4 (2%)	55	31
3	F	202/201 (100%)	198 (98%)	4 (2%)	55	31
All	All	1962/1952 (100%)	1931 (98%)	31 (2%)	65	41

All (31) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1008	LYS
1	A	1061	GLU
1	A	1102	TYR
1	A	1141	GLU
1	A	1204	GLU
1	A	1335	SER
1	A	1359	ASN
1	A	1369	ASP
1	A	1384	LYS
1	A	1464	PHE
2	B	2093[A]	ASP
2	B	2093[B]	ASP
3	C	3122	GLN
3	C	3176	ARG
3	C	3178	LEU
3	C	3196	ARG
1	D	4102	TYR

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Mol	Chain	Res	Type
1	D	4131	GLU
1	D	4335	SER
1	D	4359	ASN
1	D	4369	ASP
1	D	4464	PHE
1	D	4525	VAL
1	D	4551[A]	ARG
1	D	4551[B]	ARG
2	E	5062	LYS
2	E	5103	VAL
3	F	6176	ARG
3	F	6178	LEU
3	F	6195	ASP
3	F	6196	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1145	HIS
1	A	1358	ASN
2	B	2202	ASN
2	B	2241	GLN
2	B	2402	GLN
3	C	3070	ASN
3	C	3122	GLN
3	C	3239	GLN
1	D	4019	GLN
2	E	5402	GLN
3	F	6070	ASN
3	F	6133	GLN

3.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

10 non-standard protein/DNA/RNA residues 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
1	MHS	D	4271	1	7,11,12	1.81	1 (14%)	6,14,16	1.29	1 (16%)
3	OCS	F	6065	3	7,8,9	1.24	2 (28%)	6,11,13	1.68	3 (50%)
3	OCS	C	3065	3	7,8,9	1.34	2 (28%)	6,11,13	1.70	2 (33%)
1	MHS	A	1271	1	7,11,12	1.82	1 (14%)	6,14,16	1.35	1 (16%)
1	SMC	A	1472	1	5,6,7	0.61	0	2,6,8	0.53	0
1	AGM	A	1285	1	10,11,12	0.49	0	6,13,15	0.33	0
1	AGM	D	4285	1	10,11,12	0.46	0	6,13,15	0.25	0
1	SMC	D	4472	1	5,6,7	0.60	0	2,6,8	0.52	0
1	GL3	A	1465	1	2,3,4	3.52	1 (50%)	1,2,4	0.12	0
1	GL3	D	4465	1	2,3,4	3.47	1 (50%)	1,2,4	0.03	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
1	MHS	D	4271	1	-	0/5/6/8	0/1/1/1
3	OCS	F	6065	3	-	0/4/7/9	-
3	OCS	C	3065	3	-	0/4/7/9	-
1	MHS	A	1271	1	-	0/5/6/8	0/1/1/1
1	SMC	A	1472	1	-	1/3/5/7	-
1	AGM	A	1285	1	-	0/10/11/13	-
1	AGM	D	4285	1	-	0/10/11/13	-
1	SMC	D	4472	1	-	1/3/5/7	-
1	GL3	A	1465	1	-	1/1/1/2	-
1	GL3	D	4465	1	-	1/1/1/2	-

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1465	GL3	C-S	-4.97	1.63	1.80
1	D	4465	GL3	C-S	-4.91	1.63	1.80
1	D	4271	MHS	CM-ND1	4.57	1.58	1.47
1	A	1271	MHS	CM-ND1	4.49	1.57	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	3065	OCS	OD1-SG	2.29	1.51	1.45
3	F	6065	OCS	OD1-SG	2.16	1.51	1.45
3	C	3065	OCS	OD3-SG	2.12	1.51	1.45
3	F	6065	OCS	OD3-SG	2.01	1.51	1.45

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	3065	OCS	OD3-SG-CB	2.55	109.97	106.94
3	F	6065	OCS	OD2-SG-CB	2.43	109.61	105.74
3	C	3065	OCS	OD2-SG-CB	2.20	109.25	105.74
1	D	4271	MHS	NE2-CE1-ND1	-2.10	109.14	112.26
1	A	1271	MHS	NE2-CE1-ND1	-2.10	109.14	112.26
3	F	6065	OCS	OD3-SG-CB	2.05	109.37	106.94
3	F	6065	OCS	OD1-SG-CB	2.02	109.34	106.94

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1472	SMC	CA-CB-SG-CS
1	D	4472	SMC	CA-CB-SG-CS
1	A	1465	GL3	S-C-CA-N
1	D	4465	GL3	S-C-CA-N

There are no ring outliers.

6 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	D	4271	MHS	1	0
1	A	1271	MHS	1	0
1	A	1472	SMC	1	0
1	D	4472	SMC	1	0
1	A	1465	GL3	1	0
1	D	4465	GL3	1	0

3.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

3.6 Ligand geometry

9 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
5	TP7	D	5571	-	19,20,20	2.05	4 (21%)	24,26,26	1.23	2 (8%)
4	F43	A	2570	6,1	61,71,71	3.85	20 (32%)	64,118,118	2.11	15 (23%)
6	COM	D	5572	4	6,6,6	1.56	1 (16%)	7,8,8	1.39	1 (14%)
7	GOL	A	2573	-	5,5,5	1.02	0	5,5,5	0.49	0
7	GOL	A	2574	-	5,5,5	0.89	0	5,5,5	0.48	0
5	TP7	A	2571	-	19,20,20	2.03	5 (26%)	24,26,26	1.23	2 (8%)
6	COM	A	2572	4	6,6,6	1.66	2 (33%)	7,8,8	1.35	1 (14%)
7	GOL	D	5573	-	5,5,5	1.05	0	5,5,5	0.55	0
4	F43	D	5570	6,1	61,71,71	3.87	21 (34%)	64,118,118	2.10	16 (25%)

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
5	TP7	D	5571	-	-	2/24/24/24	-
4	F43	A	2570	6,1	-	10/28/185/185	-
6	COM	D	5572	4	-	2/4/4/4	-
7	GOL	A	2573	-	-	1/4/4/4	-
7	GOL	A	2574	-	-	0/4/4/4	-
5	TP7	A	2571	-	-	2/24/24/24	-
6	COM	A	2572	4	-	0/4/4/4	-
7	GOL	D	5573	-	-	0/4/4/4	-
4	F43	D	5570	6,1	-	10/28/185/185	-

All (53) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	D	5570	F43	CHB-C1B	-18.14	1.41	1.53
4	A	2570	F43	CHB-C1B	-17.79	1.41	1.53
4	D	5570	F43	NI-NA	12.09	2.15	1.89
4	A	2570	F43	NI-NA	12.02	2.15	1.89
4	D	5570	F43	CHD-C1D	10.48	1.57	1.43
4	A	2570	F43	CHD-C1D	10.14	1.57	1.43
4	A	2570	F43	NI-NB	8.99	2.08	1.89
4	D	5570	F43	NI-NB	8.86	2.08	1.89
5	A	2571	TP7	C2-C1	-6.21	1.39	1.51
5	D	5571	TP7	C2-C1	-6.16	1.39	1.51
4	A	2570	F43	CHC-C4B	5.70	1.55	1.39
4	D	5570	F43	CHC-C4B	5.39	1.54	1.39
4	A	2570	F43	CAA-C3A	5.22	1.63	1.53
4	A	2570	F43	NI-ND	5.16	2.00	1.89
4	D	5570	F43	CAA-C3A	5.14	1.63	1.53
4	A	2570	F43	C4D-ND	4.87	1.56	1.49
4	D	5570	F43	NI-ND	4.64	1.99	1.89
4	D	5570	F43	C4D-ND	4.48	1.56	1.49
4	A	2570	F43	CAB-C3B	3.76	1.63	1.54
4	A	2570	F43	CHD-C7D	3.67	1.54	1.46
4	D	5570	F43	CAB-C3B	3.59	1.62	1.54
4	D	5570	F43	C3D-C4D	-3.58	1.47	1.53
4	D	5570	F43	CHD-C7D	3.57	1.54	1.46
4	A	2570	F43	C3D-C4D	-3.39	1.47	1.53
5	D	5571	TP7	C1-N	3.27	1.41	1.34
5	D	5571	TP7	P-O4P	3.23	1.65	1.59
4	D	5570	F43	C5D-C2D	-3.04	1.48	1.53
5	A	2571	TP7	P-O4P	3.01	1.65	1.59
5	A	2571	TP7	C1-N	3.00	1.40	1.34
4	D	5570	F43	C4A-NA	-2.99	1.44	1.49
4	A	2570	F43	C4A-NA	-2.94	1.44	1.49
4	A	2570	F43	C5D-C2D	-2.92	1.48	1.53
4	D	5570	F43	CHD-C4C	-2.87	1.32	1.40
4	A	2570	F43	CHD-C4C	-2.79	1.32	1.40
4	D	5570	F43	C6B-N5B	-2.78	1.30	1.34
4	A	2570	F43	CHA-C4D	2.70	1.55	1.53
4	A	2570	F43	C6B-N5B	-2.69	1.30	1.34
4	D	5570	F43	CHA-C4D	2.62	1.55	1.53
6	A	2572	COM	O2S-S2	2.59	1.52	1.45
6	D	5572	COM	O2S-S2	2.54	1.52	1.45
4	A	2570	F43	C9A-C2A	-2.48	1.50	1.54
4	D	5570	F43	C9D-C3D	-2.47	1.48	1.53
4	D	5570	F43	C9A-C2A	-2.39	1.50	1.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	2570	F43	C9D-C3D	-2.28	1.49	1.53
5	D	5571	TP7	CA-C	2.25	1.56	1.52
4	D	5570	F43	C8B-C2B	-2.20	1.51	1.54
6	A	2572	COM	C2-S2	2.20	1.80	1.77
5	A	2571	TP7	CA-C	2.18	1.55	1.52
4	A	2570	F43	C8B-C2B	-2.18	1.51	1.54
4	D	5570	F43	C2A-C3A	2.16	1.58	1.54
5	A	2571	TP7	O1-C1	2.03	1.27	1.23
4	A	2570	F43	C2A-C3A	2.03	1.58	1.54
4	D	5570	F43	C3C-C4C	-2.01	1.47	1.50

All (37) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	2570	F43	C4D-ND-C1D	-5.83	100.85	108.51
4	D	5570	F43	C4D-ND-C1D	-5.71	101.00	108.51
4	A	2570	F43	CAB-C3B-C2B	-5.62	107.20	119.09
4	D	5570	F43	CAB-C3B-C2B	-5.60	107.24	119.09
4	A	2570	F43	C3B-C4B-CHC	-5.60	111.24	123.32
4	D	5570	F43	C3B-C4B-CHC	-5.56	111.31	123.32
4	D	5570	F43	C3D-C4D-ND	5.46	110.83	102.34
4	A	2570	F43	C3D-C4D-ND	5.38	110.70	102.34
4	D	5570	F43	O8D-C7D-C6D	-4.60	113.32	120.86
4	A	2570	F43	O8D-C7D-C6D	-4.56	113.39	120.86
4	A	2570	F43	C6D-C7D-CHD	3.74	123.99	116.95
4	D	5570	F43	C6D-C7D-CHD	3.70	123.91	116.95
5	D	5571	TP7	O1-C1-N	-3.32	117.35	122.95
5	A	2571	TP7	O1-C1-N	-3.27	117.43	122.95
4	A	2570	F43	C3A-C4A-NA	2.88	106.68	102.30
4	A	2570	F43	C5C-C2C-C3C	-2.87	107.59	114.94
4	D	5570	F43	C2B-C1B-NB	2.86	106.11	101.84
4	D	5570	F43	C3A-C4A-NA	2.81	106.57	102.30
4	A	2570	F43	C2B-C1B-NB	2.74	105.94	101.84
4	A	2570	F43	OEB-CCB-CBB	2.72	122.75	114.03
4	D	5570	F43	C5C-C2C-C3C	-2.70	108.02	114.94
4	A	2570	F43	ODB-CCB-CBB	-2.66	114.52	123.08
4	D	5570	F43	OEB-CCB-CBB	2.65	122.54	114.03
4	D	5570	F43	ODB-CCB-CBB	-2.65	114.58	123.08
4	A	2570	F43	C2D-C1D-CHD	-2.64	118.47	121.85
4	D	5570	F43	C2D-C1D-CHD	-2.58	118.55	121.85
6	D	5572	COM	O3S-S2-C2	2.44	109.72	105.77
5	D	5571	TP7	C4-C3-C2	2.42	121.89	113.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	2570	F43	C5D-C2D-C1D	2.41	113.69	110.45
5	A	2571	TP7	C4-C3-C2	2.34	121.59	113.19
4	D	5570	F43	C5D-C2D-C1D	2.30	113.54	110.45
4	A	2570	F43	OBC-CAC-C9C	2.29	121.38	114.03
4	D	5570	F43	OBC-CAC-C9C	2.28	121.36	114.03
6	A	2572	COM	O3S-S2-C2	2.27	109.44	105.77
4	D	5570	F43	C7D-CHD-C4C	2.05	125.94	121.61
4	A	2570	F43	C1B-CHB-C4A	2.05	114.26	109.54
4	D	5570	F43	OCC-CAC-C9C	-2.03	116.56	123.08

There are no chirality outliers.

All (27) torsion outliers are listed below:

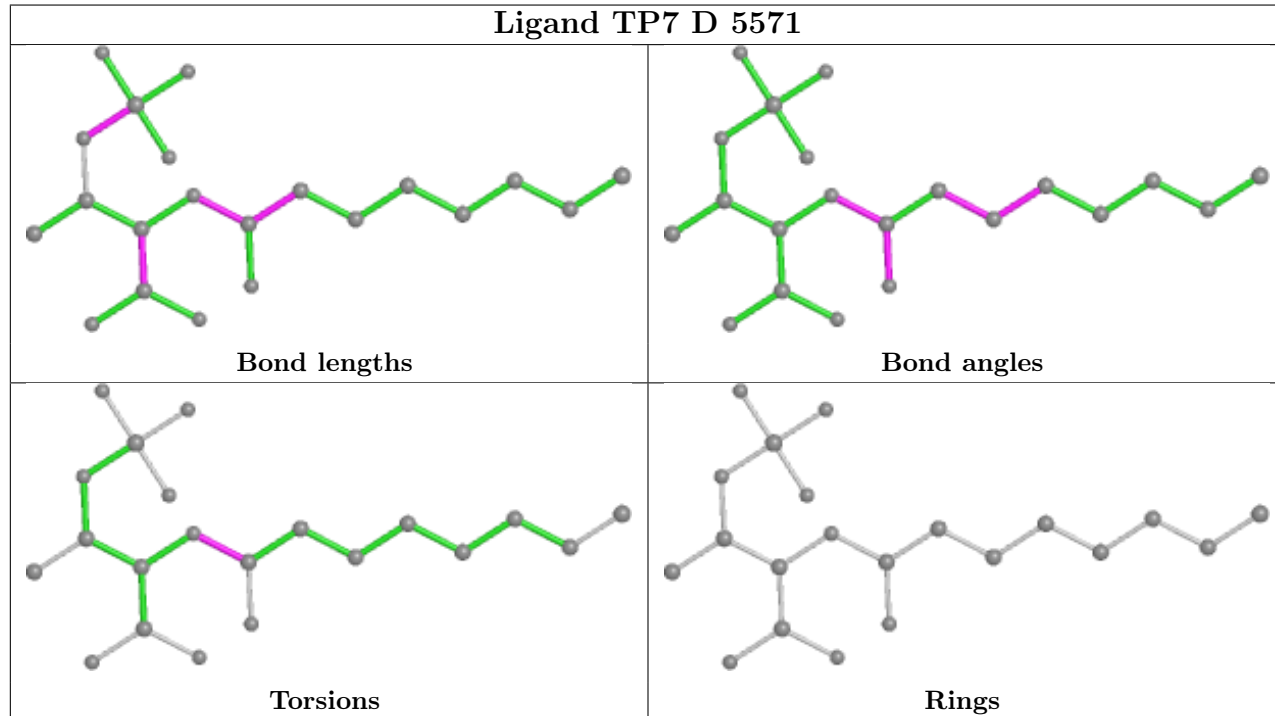
Mol	Chain	Res	Type	Atoms
4	A	2570	F43	C3A-CAA-CBA-CCA
4	D	5570	F43	C3A-CAA-CBA-CCA
5	D	5571	TP7	O1-C1-N-CA
5	A	2571	TP7	O1-C1-N-CA
5	D	5571	TP7	C2-C1-N-CA
7	A	2573	GOL	O2-C2-C3-O3
5	A	2571	TP7	C2-C1-N-CA
4	D	5570	F43	CAA-CBA-CCA-ODA
4	A	2570	F43	CAA-CBA-CCA-OEA
4	D	5570	F43	CAA-CBA-CCA-OEA
4	D	5570	F43	C8C-C9C-CAC-OBC
4	A	2570	F43	C8C-C9C-CAC-OBC
4	A	2570	F43	C8C-C9C-CAC-OCC
4	D	5570	F43	CAB-CBB-CCB-OEB
4	D	5570	F43	C8C-C9C-CAC-OCC
4	A	2570	F43	CAB-CBB-CCB-OEB
4	D	5570	F43	CAB-CBB-CCB-ODB
4	A	2570	F43	CAA-CBA-CCA-ODA
4	D	5570	F43	C2C-C5C-C6C-O7C
4	D	5570	F43	C2C-C5C-C6C-O8C
4	A	2570	F43	CAB-CBB-CCB-ODB
4	D	5570	F43	C3D-C9D-CAD-OCD
6	D	5572	COM	C1-C2-S2-O2S
4	A	2570	F43	C2C-C5C-C6C-O8C
6	D	5572	COM	C1-C2-S2-O3S
4	A	2570	F43	C2C-C5C-C6C-O7C
4	A	2570	F43	C3D-C9D-CAD-OCD

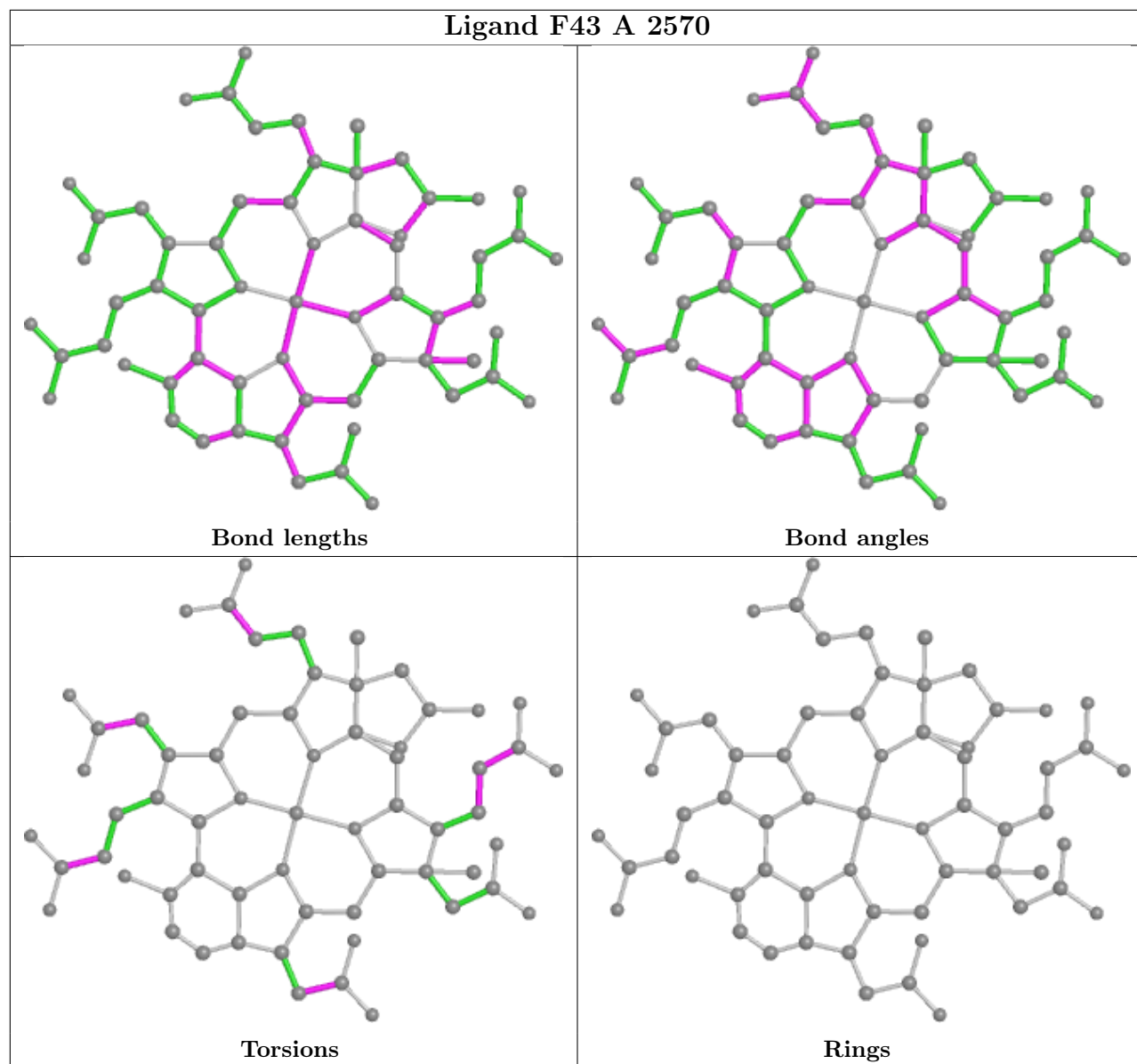
There are no ring outliers.

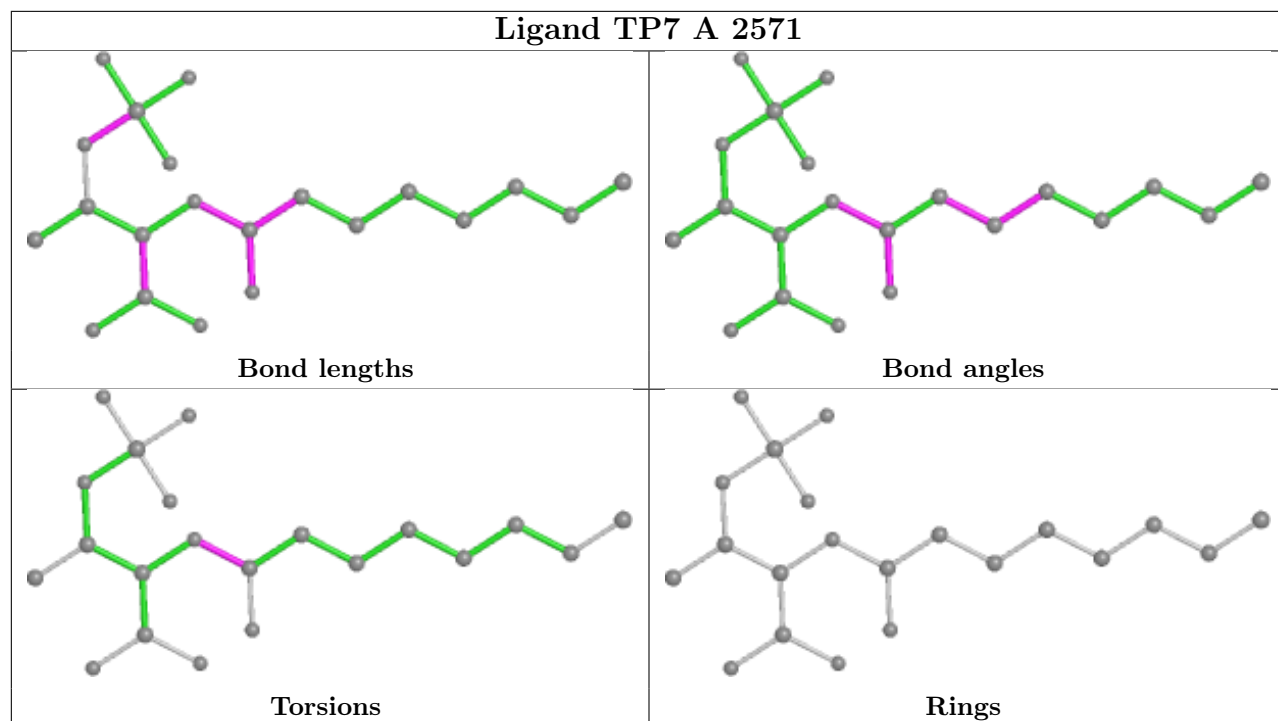
5 monomers are involved in 15 short contacts:

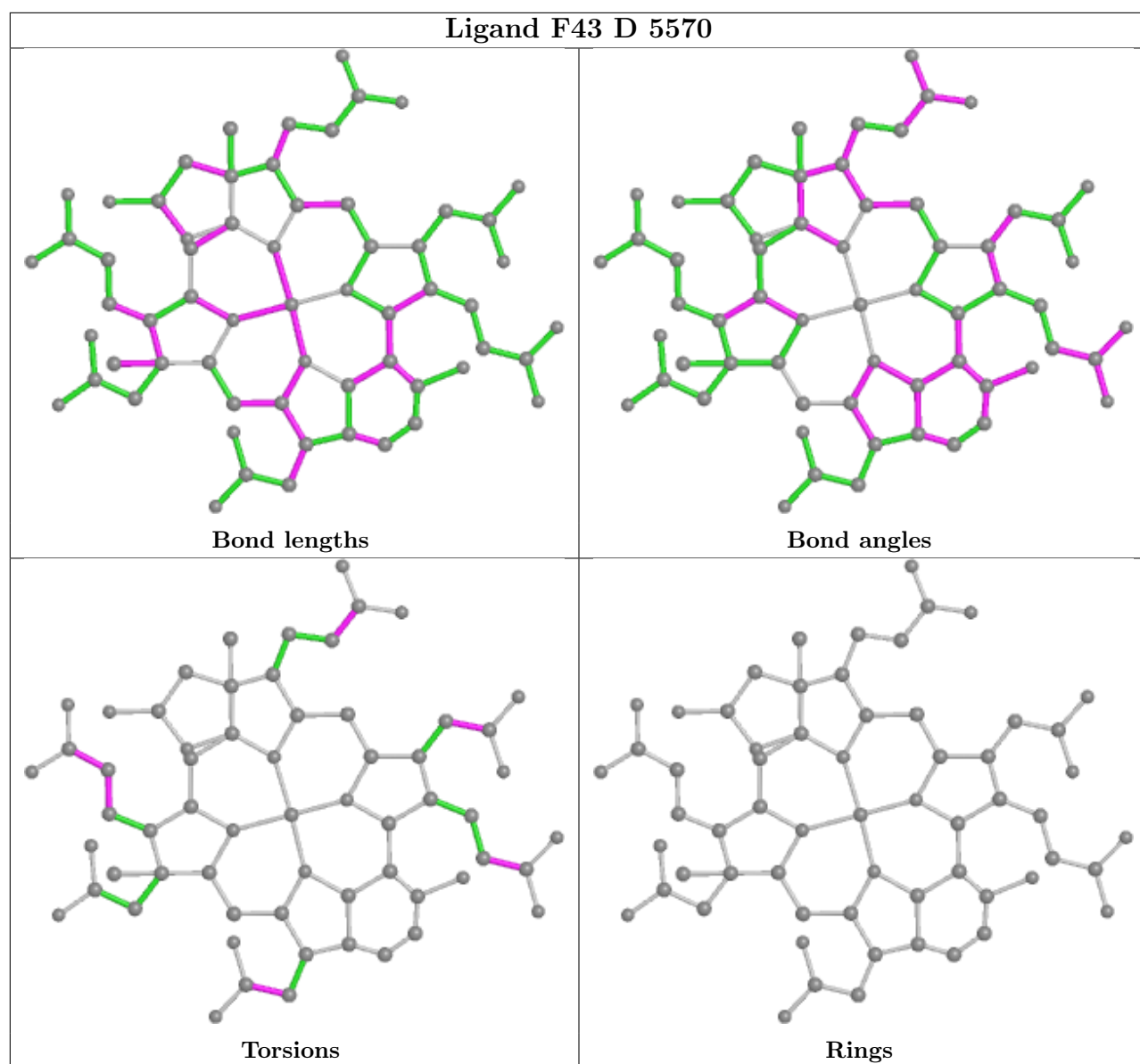
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	D	5571	TP7	1	0
4	A	2570	F43	6	0
5	A	2571	TP7	2	0
6	A	2572	COM	1	0
4	D	5570	F43	5	0

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.









3.7 Other polymers [i](#)

There are no such residues in this entry.

3.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

4 Fit of model and data

4.1 Protein, DNA and RNA chains

EDS failed to run properly - this section is therefore empty.

4.2 Non-standard residues in protein, DNA, RNA chains

EDS failed to run properly - this section is therefore empty.

4.3 Carbohydrates

EDS failed to run properly - this section is therefore empty.

4.4 Ligands

EDS failed to run properly - this section is therefore empty.

4.5 Other polymers

EDS failed to run properly - this section is therefore empty.