WORLDWIDE PDB
PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Nov 4, 2020 – 02:50 AM GMT

PDB ID	:	7AL5
Title	:	Crystal structure of the selenomethionine substituted hypothetical protein PA1622 from Pseudomonas aeruginosa PAO1
Authors	:	Feiler, C.G.; Blankenfeldt, W.
Deposited on	:	2020-10-05
Resolution	:	2.42 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 (i) symbol.
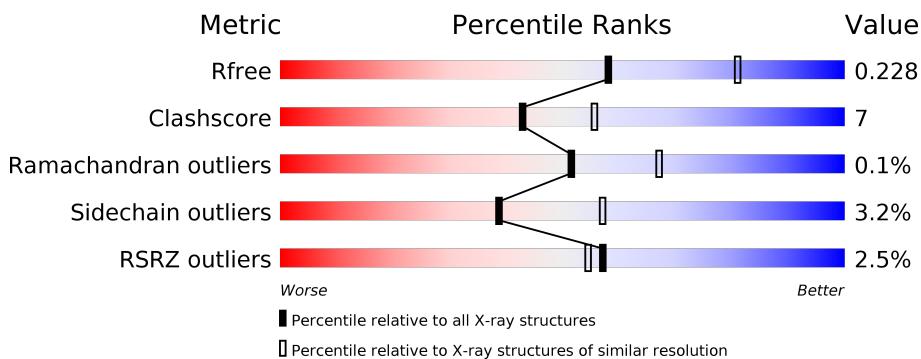
1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION
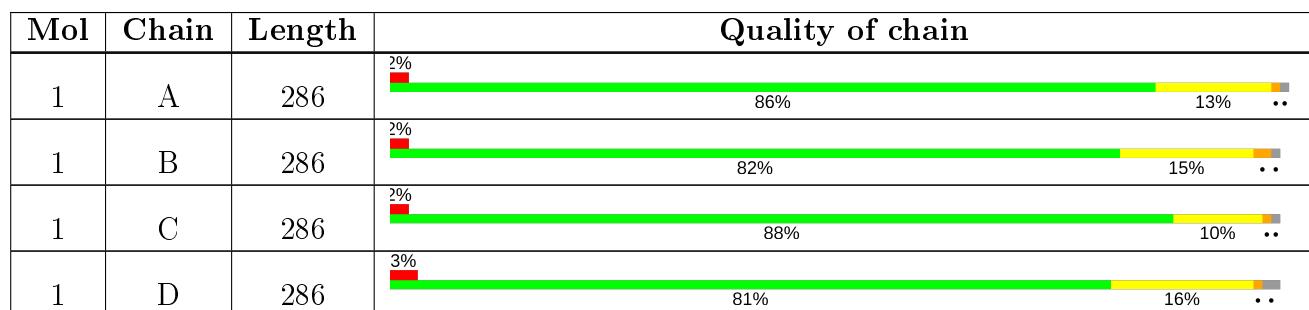
The reported resolution of this entry is 2.42 Å.

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		0.228
Clashscore		7
Ramachandran outliers		0.1%
Sidechain outliers		3.2%
RSRZ outliers		2.5%

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}	130704	4647 (2.44-2.40)
Clashscore	141614	5161 (2.44-2.40)
Ramachandran outliers	138981	5073 (2.44-2.40)
Sidechain outliers	138945	5074 (2.44-2.40)
RSRZ outliers	127900	4543 (2.44-2.40)

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 on 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	286	2% / 86% / 13% / ••
1	B	286	2% / 82% / 15% / ••
1	C	286	2% / 88% / 10% / ••
1	D	286	3% / 81% / 16% / ••

2 Entry composition (i)
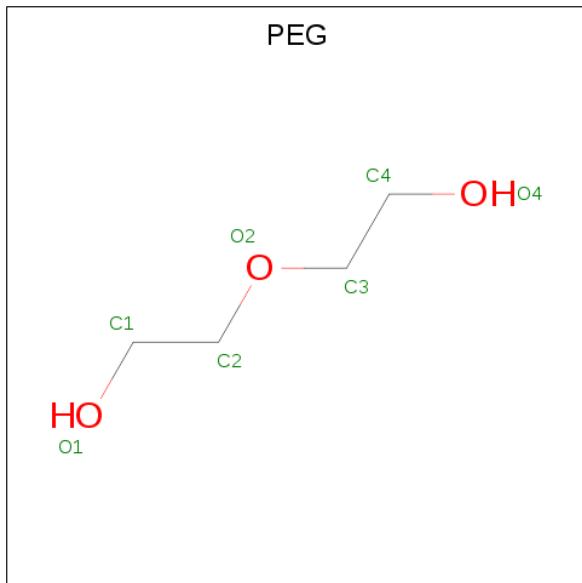
There are 6 unique types of molecules in this entry. The entry contains 18187 atoms, of which 8834 are hydrogens and 0 are deuteriums.

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 Probable hydrolase.
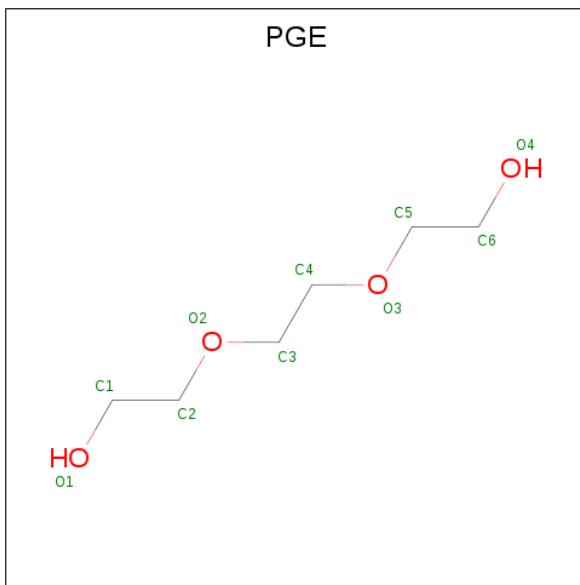
Mol	Chain	Residues	Atoms							ZeroOcc	AltConf	Trace
1	A	284	Total 4431	C 1408	H 2229	N 400	O 385	S 1	Se 8	0	1	0
1	B	283	Total 4392	C 1399	H 2204	N 399	O 383	S 1	Se 6	0	0	0
1	C	284	Total 4361	C 1404	H 2165	N 400	O 385	S 1	Se 6	0	0	0
1	D	280	Total 4354	C 1385	H 2188	N 395	O 379	S 1	Se 6	0	0	0

- Molecule 2 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: $C_4H_{10}O_3$).
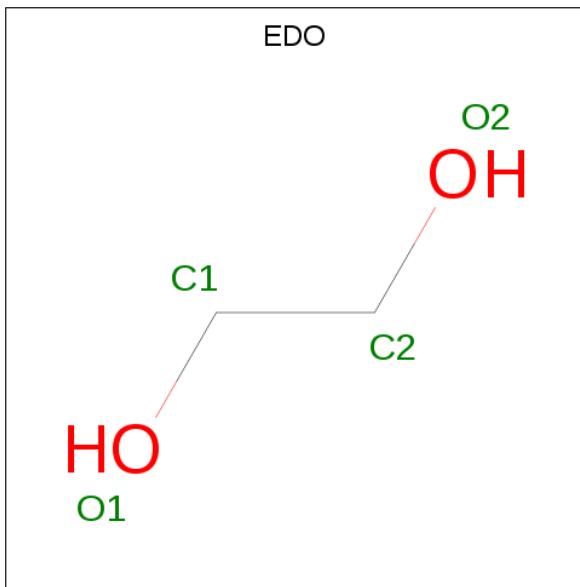
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total 17	C 4	H 10	O 3	0	0
2	C	1	Total 17	C 4	H 10	O 3	0	0

- Molecule 3 is TRIETHYLENE GLYCOL (three-letter code: PGE) (formula: $C_6H_{14}O_4$).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	B	1	Total 24	C 6	H 14	O 4	0	0

- Molecule 4 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: $C_2H_6O_2$).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	C	1	Total 10	C 2	H 6	O 2	0	0

- Molecule 5 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).

GOL
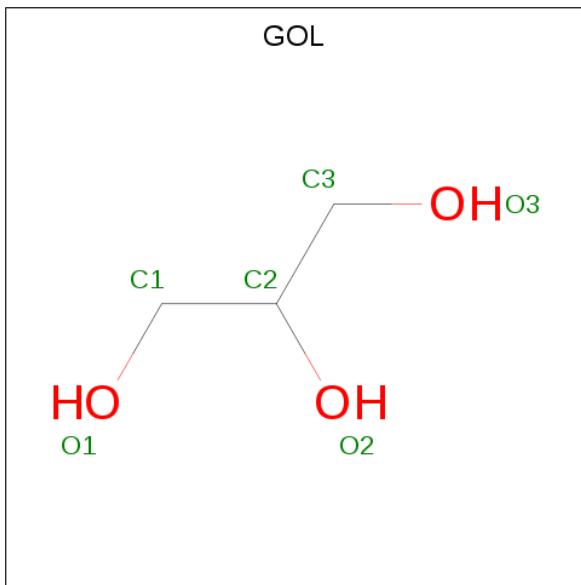
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	H	O		
5	D	1	14	3	8	3	0	0
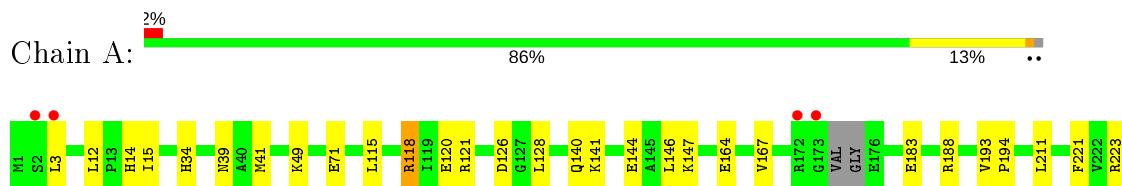
• Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	165	Total 165	O 165	0	0
6	B	112	Total 112	O 112	0	0
6	C	158	Total 158	O 158	0	0
6	D	132	Total 132	O 132	0	0
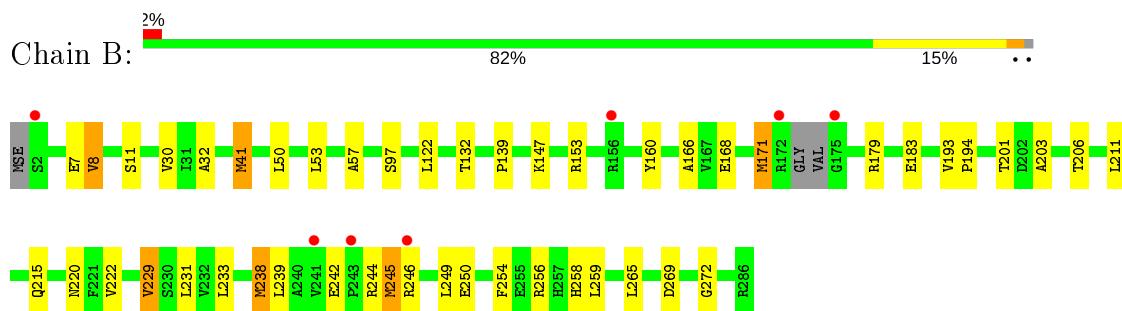
3 Residue-property plots ⓘ

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.
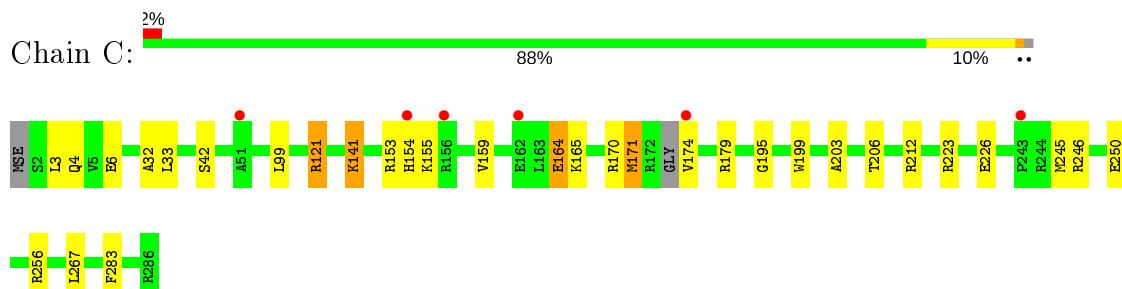
- Molecule 1: Probable hydrolase
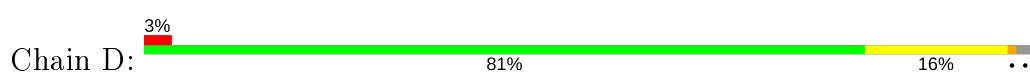
- Molecule 1: Probable hydrolase
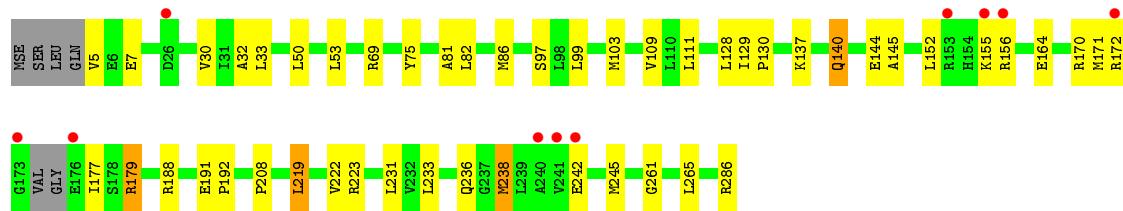
- Molecule 1: Probable hydrolase

- Molecule 1: Probable hydrolase

4 Data and refinement statistics (i)

| Property	Value	Source
Space group	P 61	Depositor
Cell constants a, b, c, α, β, γ	136.31Å 136.31Å 148.21Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	19.93 – 2.42 19.93 – 2.42	Depositor EDS
% Data completeness (in resolution range)	99.7 (19.93-2.42) 99.7 (19.93-2.42)	Depositor EDS
R_{merge}	0.43	Depositor
R_{sym}	(Not available)	Depositor
$<I/\sigma(I)>$ [1]	1.08 (at 2.41Å)	Xtriage
Refinement program	PHENIX (1.18.2_3874: ???)	Depositor
R, R_{free}	0.164 , 0.230 0.170 , 0.228	Depositor DCC
R_{free} test set	2946 reflections (4.95%)	wwPDB-VP
Wilson B-factor (Å²)	27.2	Xtriage
Anisotropy	0.121	Xtriage
Bulk solvent k_{sol}(e/Å³), B_{sol}(Å²)	0.38 , 46.4	EDS
L-test for twinning[2]	$<|L|> = 0.50, <L^2> = 0.33$	Xtriage
Estimated twinning fraction	0.038 for h,-h-k,-l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	18187	wwPDB-VP
Average B, all atoms (Å²)	35.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.13% of the height of the origin peak. No significant pseudotranslation is detected.*

---

[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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: GOL, PEG, PGE, EDO

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	1/2250 (0.0%)	0.79	1/3039 (0.0%)
1	B	0.58	0/2233	0.76	3/3019 (0.1%)
1	C	0.62	0/2241	0.82	1/3029 (0.0%)
1	D	0.59	0/2211	0.77	0/2988
All	All	0.61	1/8935 (0.0%)	0.79	5/12075 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	255	GLU	CD-OE2	-6.98	1.18	1.25

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	171	MSE	CG-SE-CE	10.38	121.73	98.90
1	B	41	MSE	CG-SE-CE	5.90	111.87	98.90
1	B	238	MSE	CG-SE-CE	5.65	111.33	98.90
1	B	245	MSE	CG-SE-CE	5.43	110.84	98.90
1	A	126	ASP	CB-CG-OD2	5.10	122.89	118.30

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	2202	2229	2239	26	0
1	B	2188	2204	2218	33	0
1	C	2196	2165	2227	39	0
1	D	2166	2188	2194	33	0
2	A	7	10	10	0	0
2	C	7	10	10	0	0
3	B	10	14	14	1	0
4	C	4	6	6	1	0
5	D	6	8	8	1	0
6	A	165	0	0	3	0
6	B	112	0	0	3	0
6	C	158	0	0	1	0
6	D	132	0	0	1	0
All	All	9353	8834	8926	121	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 7.

All (121) 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:A:255:GLU:OE1	6:A:401:HOH:O	1.62	1.17
1:C:171:MSE:HE3	1:C:179:ARG:HA	1.16	1.08
1:D:171:MSE:HE3	1:D:179:ARG:HA	1.45	0.99
1:C:171:MSE:HE3	1:C:179:ARG:CA	1.93	0.98
1:B:239:LEU:HD12	1:B:245:MSE:HG2	1.50	0.92
1:B:8:VAL:HG21	1:D:192:PRO:HD3	1.57	0.86
1:B:193:VAL:HG13	1:B:194:PRO:HD2	1.58	0.86
1:C:171:MSE:CE	1:C:179:ARG:HA	2.06	0.84
1:D:82:LEU:HD11	1:D:86:MSE:HE3	1.57	0.84
1:D:171:MSE:HE3	1:D:179:ARG:CA	2.06	0.84
1:C:164:GLU:HG3	1:C:179:ARG:HH12	1.41	0.82
1:C:159:VAL:HG11	1:C:195:GLY:HA3	1.67	0.76
1:C:171:MSE:CE	1:C:179:ARG:HB2	2.17	0.74
1:C:171:MSE:HE1	1:C:179:ARG:CD	2.19	0.72
1:C:171:MSE:CE	1:C:179:ARG:HD2	2.20	0.71
1:C:171:MSE:CE	1:C:179:ARG:CA	2.67	0.70
1:C:171:MSE:CE	1:C:179:ARG:CB	2.70	0.70
1:C:164:GLU:CG	1:C:179:ARG:HH12	2.05	0.70
1:B:8:VAL:CG2	1:D:192:PRO:HD3	2.21	0.69
1:B:220:ASN:OD1	6:B:401:HOH:O	2.10	0.68
1:C:171:MSE:HE3	1:C:179:ARG:HD2	1.75	0.68

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:171:MSE:HE2	1:C:179:ARG:HB2	1.76	0.66
1:C:171:MSE:HE1	1:C:179:ARG:HD3	1.77	0.66
1:B:168:GLU:HA	1:B:171:MSE:HE2	1.77	0.66
1:C:171:MSE:CE	1:C:179:ARG:CD	2.74	0.66
1:B:203:ALA:O	1:B:206:THR:HG22	1.96	0.66
1:C:174:VAL:HG12	1:C:174:VAL:O	2.00	0.61
1:C:153:ARG:HG3	1:C:154:HIS:ND1	2.14	0.61
1:A:144:GLU:OE2	6:A:402:HOH:O	2.16	0.61
1:B:179:ARG:NE	1:B:183:GLU:OE2	2.29	0.60
1:C:164:GLU:HG3	1:C:179:ARG:NH1	2.16	0.59
1:C:171:MSE:HE3	1:C:179:ARG:CB	2.32	0.58
1:A:238:MSE:HE2	1:A:245:MSE:SE	2.54	0.57
1:A:128:LEU:HD11	1:A:254:PHE:HE2	1.69	0.57
1:D:30:VAL:HG22	1:D:97:SER:HB2	1.85	0.57
1:D:236:GLN:HB2	1:D:261:GLY:O	2.07	0.55
1:D:7:GLU:OE2	1:D:188:ARG:NH2	2.40	0.55
1:A:246:ARG:O	1:A:250:GLU:HG3	2.07	0.54
1:A:183:GLU:HG2	1:C:3:LEU:HD13	1.90	0.54
1:C:155:LYS:HE2	1:C:206:THR:HG21	1.91	0.52
1:D:219:LEU:HD11	1:D:223:ARG:CZ	2.39	0.52
1:D:103:MSE:HB2	5:D:301:GOL:H32	1.92	0.52
1:C:121:ARG:HG2	1:C:283:PHE:CE2	2.45	0.51
1:B:193:VAL:CG1	1:B:194:PRO:HD2	2.37	0.51
1:D:242:GLU:O	1:D:245:MSE:HB2	2.11	0.51
1:D:170:ARG:HG3	1:D:177:ILE:HD11	1.93	0.50
1:A:118:ARG:HD3	6:A:442:HOH:O	2.11	0.50
1:D:69:ARG:HG3	1:D:75:TYR:CZ	2.47	0.49
1:A:183:GLU:CG	1:C:3:LEU:HD13	2.42	0.49
1:A:167:VAL:HG21	1:C:3:LEU:HD22	1.94	0.49
1:B:160:TYR:HB2	1:B:166:ALA:HB2	1.94	0.49
1:D:233:LEU:HD22	1:D:238:MSE:HE2	1.94	0.48
1:C:32:ALA:HA	1:C:99:LEU:O	2.14	0.48
1:D:129:ILE:HB	1:D:130:PRO:HD2	1.96	0.48
1:D:140:GLN:NE2	1:D:144:GLU:OE2	2.47	0.48
1:B:122:LEU:HB2	1:B:229:VAL:HB	1.95	0.47
1:B:168:GLU:HA	1:B:171:MSE:CE	2.45	0.47
1:A:120:GLU:C	1:A:121:ARG:HG2	2.34	0.47
1:B:269:ASP:OD1	1:B:272:GLY:N	2.39	0.47
1:D:233:LEU:CD2	1:D:238:MSE:HE2	2.44	0.47
1:B:50:LEU:HB3	1:B:53:LEU:HD12	1.97	0.46
1:A:237:GLY:O	1:A:241:VAL:HG23	2.15	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:246:ARG:O	1:B:250:GLU:HG2	2.16	0.46
1:C:226:GLU:HG2	4:C:302:EDO:H12	1.98	0.46
1:D:171:MSE:CE	1:D:179:ARG:CA	2.86	0.46
1:D:32:ALA:HA	1:D:99:LEU:O	2.16	0.46
1:D:231:LEU:HD21	1:D:233:LEU:HD21	1.98	0.46
1:C:170:ARG:HB2	1:C:199:TRP:CZ2	2.51	0.46
1:A:140:GLN:O	1:A:144:GLU:HG3	2.16	0.45
1:B:215:GLN:HG3	6:B:480:HOH:O	2.15	0.45
1:B:249:LEU:HB3	1:B:256:ARG:HD3	1.99	0.45
1:D:5:VAL:O	1:D:5:VAL:HG12	2.15	0.45
1:A:41[B]:MSE:HG3	1:A:188:ARG:HB2	1.99	0.45
1:B:229:VAL:HG22	1:B:254:PHE:HB3	1.99	0.45
1:D:171:MSE:CE	1:D:179:ARG:CB	2.95	0.45
1:B:242:GLU:OE1	1:B:244:ARG:HB2	2.16	0.44
1:C:153:ARG:CG	1:C:154:HIS:ND1	2.80	0.44
1:D:219:LEU:HD21	1:D:223:ARG:NH1	2.32	0.44
1:A:193:VAL:HB	1:A:194:PRO:CD	2.47	0.44
1:B:132:THR:OG1	3:B:301:PGE:H5	2.18	0.44
1:D:50:LEU:HB3	1:D:53:LEU:HD12	1.99	0.44
1:C:4:GLN:HG3	1:C:6:GLU:HG3	2.00	0.44
1:C:33:LEU:HA	6:C:472:HOH:O	2.18	0.44
1:B:11:SER:OG	1:D:191:GLU:OE2	2.29	0.43
1:A:211:LEU:HD23	1:B:211:LEU:HD23	2.00	0.43
1:A:115:LEU:HD21	1:B:147:LYS:HG3	2.00	0.43
1:B:265:LEU:HD23	1:B:265:LEU:H	1.83	0.43
1:B:30:VAL:HG22	1:B:97:SER:HB2	2.00	0.43
1:D:219:LEU:O	1:D:222:VAL:HG12	2.18	0.43
1:B:41:MSE:HE2	1:B:41:MSE:HA	1.99	0.43
1:C:153:ARG:CG	1:C:154:HIS:CE1	3.02	0.43
1:A:128:LEU:HD11	1:A:254:PHE:CE2	2.52	0.43
1:B:256:ARG:NH1	1:B:256:ARG:HG3	2.34	0.43
1:C:165:LYS:HA	1:C:165:LYS:HD2	1.81	0.43
1:D:145:ALA:HA	1:D:208:PRO:HG2	2.00	0.43
1:A:141:LYS:HD3	1:A:141:LYS:HA	1.79	0.42
1:B:193:VAL:HG13	1:B:194:PRO:CD	2.39	0.42
1:B:231:LEU:HD21	1:B:233:LEU:HD21	2.01	0.42
1:C:223:ARG:HH11	1:C:223:ARG:HG2	1.84	0.42
1:A:14:HIS:CD2	1:A:15:ILE:HG22	2.53	0.42
1:C:203:ALA:O	1:C:206:THR:HB	2.20	0.42
1:A:221:PHE:CE1	1:B:139:PRO:HA	2.54	0.42
1:C:141:LYS:HA	1:C:141:LYS:HD2	1.72	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:246:ARG:HA	1:C:246:ARG:HD2	1.82	0.42
1:C:42:SER:HA	1:C:267:LEU:HD22	2.02	0.42
1:D:33:LEU:HA	6:D:447:HOH:O	2.20	0.42
1:A:183:GLU:HB3	1:C:3:LEU:HD13	2.01	0.42
1:D:81:ALA:HB1	1:D:111:LEU:HG	2.02	0.42
1:A:164:GLU:O	1:A:164:GLU:HG2	2.19	0.41
1:A:12:LEU:HB2	1:A:15:ILE:O	2.21	0.41
1:B:32:ALA:HB3	1:B:57:ALA:HA	2.03	0.41
1:D:171:MSE:HE1	1:D:179:ARG:HB2	2.03	0.41
1:D:152:LEU:HA	1:D:155:LYS:HE2	2.03	0.41
1:B:258:HIS:C	1:B:259:LEU:HD12	2.41	0.41
1:C:245:MSE:HE2	1:C:245:MSE:HA	2.02	0.41
1:A:118:ARG:HE	1:A:118:ARG:HB3	1.76	0.40
1:A:49:LYS:NZ	1:A:270:GLU:OE2	2.34	0.40
1:A:34:HIS:CD2	1:A:39:ASN:HA	2.56	0.40
1:D:109:VAL:HG21	1:D:128:LEU:HD12	2.03	0.40
1:D:265:LEU:H	1:D:265:LEU:HD23	1.86	0.40
1:B:206:THR:HG23	6:B:483:HOH:O	2.22	0.40

There are no symmetry-related clashes.

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	281/286 (98%)	273 (97%)	8 (3%)	0	100	100
1	B	279/286 (98%)	269 (96%)	9 (3%)	1 (0%)	34	47
1	C	280/286 (98%)	267 (95%)	13 (5%)	0	100	100
1	D	276/286 (96%)	266 (96%)	10 (4%)	0	100	100
All	All	1116/1144 (98%)	1075 (96%)	40 (4%)	1 (0%)	51	67

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	153	ARG

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	222/215 (103%)	216 (97%)	6 (3%)	44	63
1	B	220/215 (102%)	213 (97%)	7 (3%)	39	57
1	C	221/215 (103%)	215 (97%)	6 (3%)	44	63
1	D	217/215 (101%)	208 (96%)	9 (4%)	30	47
All	All	880/860 (102%)	852 (97%)	28 (3%)	39	57

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	LEU
1	A	71	GLU
1	A	118	ARG
1	A	146	LEU
1	A	147	LYS
1	A	223	ARG
1	B	7	GLU
1	B	8	VAL
1	B	171	MSE
1	B	201	THR
1	B	222	VAL
1	B	229	VAL
1	B	238	MSE
1	C	121	ARG
1	C	141	LYS
1	C	164	GLU
1	C	212	ARG
1	C	250	GLU
1	C	256	ARG
1	D	137	LYS
1	D	140	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	D	156	ARG
1	D	164	GLU
1	D	172	ARG
1	D	179	ARG
1	D	219	LEU
1	D	238	MSE
1	D	286	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	220	ASN
1	D	140	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

5 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	PEG	C	301	-	6,6,6	0.20	0	5,5,5	0.08	0
3	PGE	B	301	-	9,9,9	0.21	0	8,8,8	0.14	0
2	PEG	A	301	-	6,6,6	0.19	0	5,5,5	0.15	0
5	GOL	D	301	-	5,5,5	0.08	0	5,5,5	0.37	0
4	EDO	C	302	-	3,3,3	0.23	0	2,2,2	0.27	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	PEG	C	301	-	-	4/4/4/4	-
3	PGE	B	301	-	-	6/7/7/7	-
2	PEG	A	301	-	-	0/4/4/4	-
5	GOL	D	301	-	-	2/4/4/4	-
4	EDO	C	302	-	-	1/1/1/1	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (13) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	C	301	PEG	O2-C3-C4-O4
3	B	301	PGE	O1-C1-C2-O2
2	C	301	PEG	O1-C1-C2-O2
5	D	301	GOL	C1-C2-C3-O3
3	B	301	PGE	O3-C5-C6-O4
5	D	301	GOL	O2-C2-C3-O3
3	B	301	PGE	O2-C3-C4-O3
4	C	302	EDO	O1-C1-C2-O2
3	B	301	PGE	C1-C2-O2-C3
3	B	301	PGE	C4-C3-O2-C2
2	C	301	PEG	C4-C3-O2-C2
2	C	301	PEG	C1-C2-O2-C3
3	B	301	PGE	C6-C5-O3-C4

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	301	PGE	1	0
5	D	301	GOL	1	0
4	C	302	EDO	1	0

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 (i)

6.1 Protein, DNA and RNA chains (i)

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	277/286 (96%)	-0.55	5 (1%)	68	65	14, 24, 49, 78	0
1	B	277/286 (96%)	-0.31	7 (2%)	57	54	17, 33, 60, 81	0
1	C	278/286 (97%)	-0.54	6 (2%)	62	59	13, 23, 64, 98	0
1	D	274/286 (95%)	-0.33	10 (3%)	42	41	17, 31, 63, 83	0
All	All	1106/1144 (96%)	-0.43	28 (2%)	57	54	13, 28, 60, 98	0

All (28) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	172	ARG	6.2
1	D	240	ALA	4.9
1	B	2	SER	4.2
1	D	156	ARG	4.1
1	C	174	VAL	4.0
1	B	156	ARG	4.0
1	D	241	VAL	3.9
1	A	244	ARG	3.8
1	D	155	LYS	3.4
1	D	172	ARG	3.0
1	B	175	GLY	2.9
1	D	153	ARG	2.8
1	D	242	GLU	2.7
1	C	243	PRO	2.6
1	A	173	GLY	2.6
1	B	241	VAL	2.5
1	A	172	ARG	2.5
1	B	243	PRO	2.5
1	C	51	ALA	2.5
1	B	246	ARG	2.3
1	A	3	LEU	2.3

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	C	154	HIS	2.2
1	A	2	SER	2.2
1	C	156	ARG	2.1
1	D	173	GLY	2.1
1	D	176	GLU	2.0
1	C	162	GLU	2.0
1	D	26	ASP	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($Å^2$)	Q<0.9
5	GOL	D	301	6/6	0.74	0.19	62,80,102,104	0
4	EDO	C	302	4/4	0.80	0.30	39,47,57,58	0
3	PGE	B	301	10/10	0.87	0.24	36,55,81,85	0
2	PEG	A	301	7/7	0.89	0.21	31,49,59,59	0
2	PEG	C	301	7/7	0.93	0.12	34,42,51,55	0

6.5 Other polymers (i)

There are no such residues in this entry.