



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 02:15 PM UTC

PDB ID : 2Y1L / pdb_00002y1l
Title : Caspase-8 in Complex with DARPin-8.4
Authors : Barandun, J.; Schroeder, T.; Mittl, P.R.E.; Grutter, M.G.
Deposited on : 2010-12-08
Resolution : 1.80 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

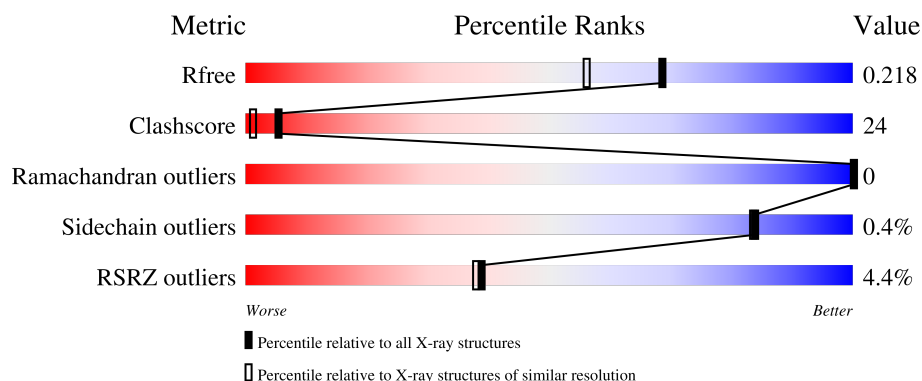
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.80 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



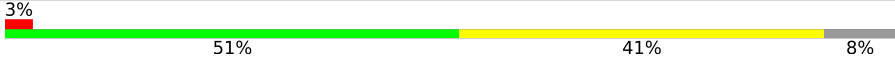
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	7662 (1.80-1.80)
Clashscore	190562	8479 (1.80-1.80)
Ramachandran outliers	187476	8391 (1.80-1.80)
Sidechain outliers	187428	8390 (1.80-1.80)
RSRZ outliers	180081	7663 (1.80-1.80)

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

Mol	Chain	Length	Quality of chain
1	A	159	0% 59% 35% 6%
1	C	159	3% 52% 42% 7%
2	B	104	2% 46% 38% 16%
2	D	104	8% 56% 30% 13%
3	E	169	7% 51% 41% 8%

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Mol	Chain	Length	Quality of chain
3	F	169	
4	H	4	
5	I	5	

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
5	ASJ	I	5	-	-	X	-
7	EDO	B	501	-	-	X	-

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 6964 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 Caspase-8 subunit p18.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	150	Total	C	N	O	S	0	2	0
			1206	769	206	221	10			
1	C	148	Total	C	N	O	S	0	0	0
			1178	748	201	219	10			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	216	MET	-	initiating methionine	UNP Q14790
A	217	GLY	SER	conflict	UNP Q14790
C	216	MET	-	initiating methionine	UNP Q14790
C	217	GLY	SER	conflict	UNP Q14790

- Molecule 2 is a protein called Caspase-8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	87	Total	C	N	O	S	0	2	0
			707	445	120	136	6			
2	D	90	Total	C	N	O	S	0	0	0
			725	454	125	140	6			

- Molecule 3 is a protein called DARPIN-8.4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	E	156	Total	C	N	O	S	0	1	0
			1179	740	206	229	4			
3	F	156	Total	C	N	O	S	0	2	0
			1185	745	207	229	4			

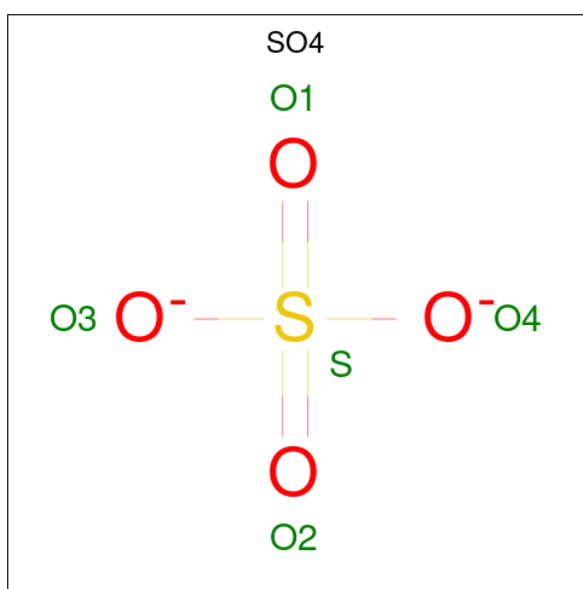
- Molecule 4 is a protein called AC-IETD-CHO.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
4	H	4	Total	C	N	O	0	0	0
			32	19	4	9			

- Molecule 5 is a protein called N-(2-oxoethyl)-L-isoleucyl-L-alpha-glutamyl-N-[(1R)-2-carboxy-1-formylethyl]-L-threoninamide.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
5	I	4	Total	C	N	O	0	0	0
			32	19	4	9			

- Molecule 6 is SULFATE ION (CCD ID: SO4) (formula: O₄S).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total	O	S	0	0
			5	4	1		
6	B	1	Total	O	S	0	0
			5	4	1		
6	C	1	Total	O	S	0	0
			5	4	1		

- Molecule 7 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: C₂H₆O₂).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	B	1	Total C O 4 2 2	0	0
7	C	1	Total C O 4 2 2	0	0
7	E	1	Total C O 4 2 2	0	0
7	F	1	Total C O 4 2 2	0	0
7	F	1	Total C O 4 2 2	0	0

- Molecule 8 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	162	Total O 162 162	0	0
8	B	58	Total O 58 58	0	0
8	C	125	Total O 125 125	0	0
8	D	65	Total O 65 65	0	0
8	E	128	Total O 128 128	0	0
8	F	135	Total O 135 135	0	0
8	H	8	Total O 8 8	0	0

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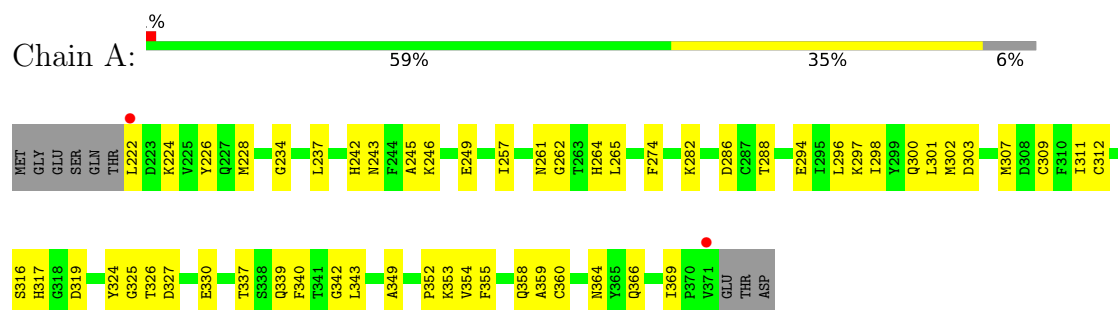
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	I	4	Total	O	0	0
			4	4		

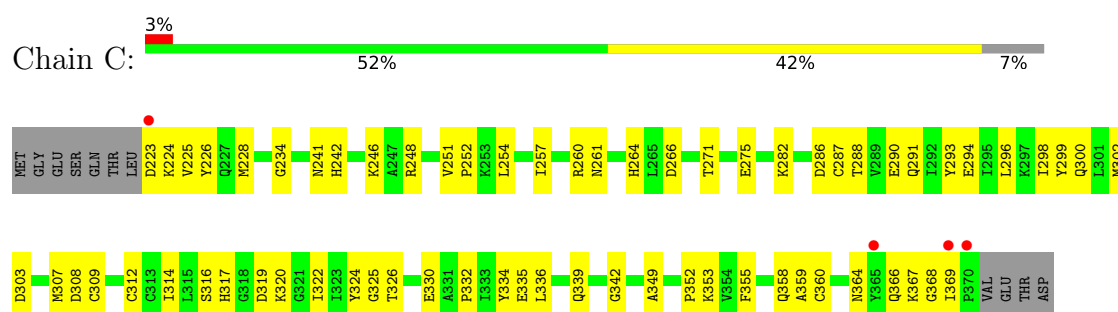
3 Residue-property plots

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.

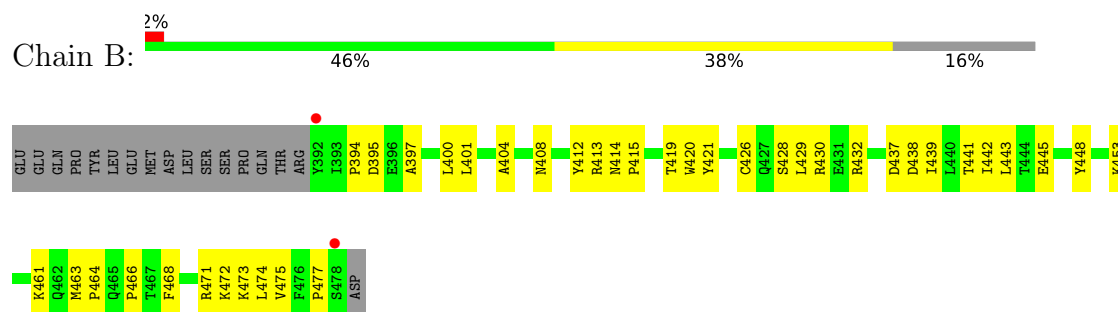
• Molecule 1: Caspase-8 subunit p18



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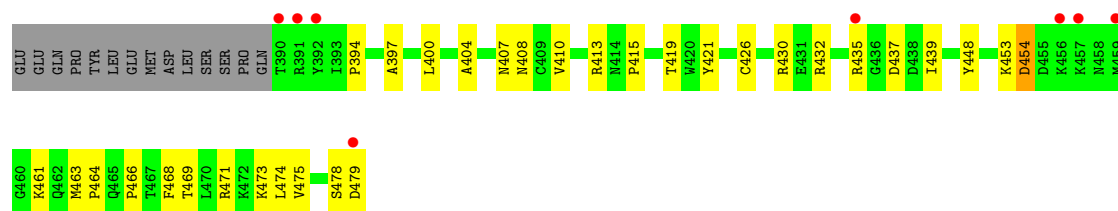


• Molecule 2: Caspase-8

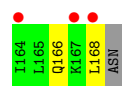
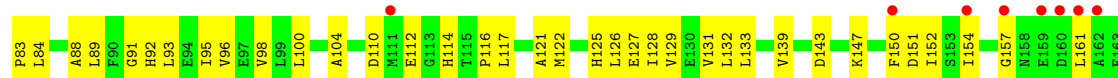


• Molecule 2: Caspase-8





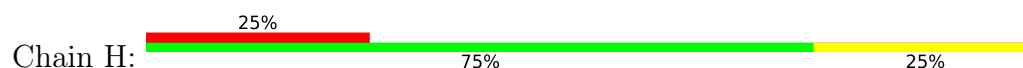
• Molecule 3: DARPIN-8.4



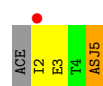
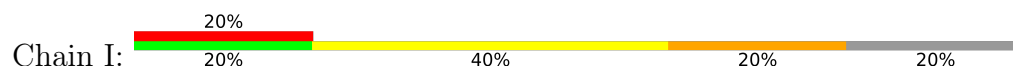
• Molecule 3: DARPIN-8.4



• Molecule 4: AC-IETD-CHO



• Molecule 5: N-(2-oxoethyl)-L-isoleucyl-L-alpha-glutamyl-N-[(1R)-2-carboxy-1-formylethyl]-L-threoninamide



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	61.00Å 81.60Å 163.20Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	48.86 – 1.80 48.86 – 1.80	Depositor EDS
% Data completeness (in resolution range)	99.4 (48.86-1.80) 99.4 (48.86-1.80)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.56 (at 1.79Å)	Xtriage
Refinement program	PHENIX (PHENIX.REFINE)	Depositor
R, R_{free}	0.180 , 0.218 0.182 , 0.218	Depositor DCC
R_{free} test set	3813 reflections (5.03%)	wwPDB-VP
Wilson B-factor (Å ²)	17.4	Xtriage
Anisotropy	0.154	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 38.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.46$, $\langle L^2 \rangle = 0.29$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	6964	wwPDB-VP
Average B, all atoms (Å ²)	23.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.47% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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	0.75	0/1240	0.87	3/1671 (0.2%)
1	C	0.75	0/1205	0.87	1/1624 (0.1%)
2	B	0.73	0/727	0.92	0/984
2	D	0.66	0/739	0.88	1/1000 (0.1%)
3	E	0.50	0/1195	0.75	0/1619
3	F	0.54	0/1204	0.78	0/1630
4	H	0.49	0/31	0.71	0/41
5	I	0.32	0/23	0.50	0/30
All	All	0.66	0/6364	0.84	5/8599 (0.1%)

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	325	GLY	N-CA-C	-6.26	104.53	112.54
1	C	325	GLY	N-CA-C	-5.99	103.34	112.51
1	A	288	THR	N-CA-C	-5.79	103.28	110.41
1	A	319	ASP	N-CA-C	-5.28	101.80	108.45
2	D	469	THR	N-CA-C	-5.00	105.91	112.41

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	1206	0	1199	62	0
1	C	1178	0	1159	83	0
2	B	707	0	703	46	0
2	D	725	0	716	47	0
3	E	1179	0	1168	58	0
3	F	1185	0	1181	64	0
4	H	32	0	30	5	0
5	I	32	0	28	14	0
6	A	5	0	0	0	0
6	B	5	0	0	0	0
6	C	5	0	0	1	0
7	B	4	0	6	5	0
7	C	4	0	6	1	0
7	E	4	0	6	1	0
7	F	8	0	12	1	0
8	A	162	0	0	1	0
8	B	58	0	0	0	0
8	C	125	0	0	3	0
8	D	65	0	0	2	0
8	E	128	0	0	2	0
8	F	135	0	0	4	0
8	H	8	0	0	0	0
8	I	4	0	0	0	0
All	All	6964	0	6214	298	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 24.

All (298) 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:C:360:CYS:SG	5:I:5:ASJ:H	1.82	1.20
3:F:126:LEU:HD11	3:F:164:ILE:HD12	1.35	1.05
1:A:360:CYS:SG	4:H:4:ASP:C	2.44	1.01
1:C:317:HIS:ND1	5:I:5:ASJ:HA	1.78	0.97
1:A:246[B]:LYS:HD3	3:F:157:GLY:HA3	1.46	0.95
1:C:360:CYS:SG	5:I:5:ASJ:C	2.56	0.93
3:E:34:MET:HE1	3:E:65:VAL:HG12	1.53	0.91
3:E:23:ARG:HD3	7:E:201:EDO:H22	1.57	0.86
3:F:34:MET:HE1	3:F:65[A]:VAL:HG12	1.58	0.84
3:F:20:GLU:HG3	3:F:26:ARG:HH22	1.45	0.81
1:C:294:GLU:HG3	3:E:122:MET:SD	2.20	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:395:ASP:HA	1:C:369:ILE:HD13	1.63	0.80
1:A:343:LEU:HG	1:C:369:ILE:HD11	1.64	0.79
3:F:126:LEU:HD11	3:F:164:ILE:CD1	2.15	0.77
3:F:147:LYS:HE2	3:F:155:ASP:OD2	1.85	0.77
3:F:20:GLU:HG3	3:F:26:ARG:NH2	1.99	0.77
1:A:242:HIS:HE1	1:A:261:ASN:OD1	1.68	0.76
1:A:369:ILE:HD13	1:C:349:ALA:HB1	1.69	0.74
2:B:414:ASN:HD22	7:B:501:EDO:H12	1.54	0.72
1:A:294:GLU:HG3	3:F:122:MET:SD	2.30	0.71
3:E:150:PHE:CZ	3:E:154:ILE:HD11	2.25	0.71
3:F:61:GLU:O	3:F:65[A]:VAL:HG23	1.92	0.69
1:A:246[B]:LYS:CD	3:F:157:GLY:HA3	2.23	0.69
1:A:286:ASP:HA	1:A:326:THR:HG21	1.74	0.69
3:F:25:GLY:HA2	3:F:62:ILE:HD12	1.73	0.68
3:E:34:MET:CE	3:E:65:VAL:HG12	2.24	0.68
1:C:286:ASP:HA	1:C:326:THR:HG21	1.76	0.68
1:C:228:MET:HE1	1:C:309:CYS:HB2	1.76	0.68
3:F:121:ALA:HA	3:F:161:LEU:HD21	1.75	0.67
3:E:129:VAL:HG21	3:E:161:LEU:HD21	1.75	0.67
2:D:413:ARG:HA	2:D:419:THR:HA	1.79	0.65
3:E:61:GLU:O	3:E:65:VAL:HG23	1.96	0.65
5:I:2:ILE:HG23	5:I:3:GLU:HG3	1.79	0.64
1:C:242:HIS:HE1	1:C:261:ASN:OD1	1.82	0.63
1:C:225:VAL:HG22	2:D:473:LYS:HB2	1.80	0.63
3:F:126:LEU:HD13	3:F:161:LEU:HD13	1.81	0.63
3:F:110:ASP:OD2	3:F:114:HIS:HB2	1.98	0.63
3:E:139[B]:VAL:HG11	3:E:168:LEU:HB3	1.82	0.62
3:F:129:VAL:HG11	3:F:161:LEU:HD11	1.81	0.62
3:F:110:ASP:HB2	8:F:313:HOH:O	1.99	0.62
3:F:76:VAL:CG1	3:F:80:GLY:HA2	2.30	0.61
3:E:133:LEU:CD2	3:E:139[A]:VAL:HG12	2.30	0.61
2:B:441:THR:HG23	2:D:473:LYS:HE3	1.83	0.61
2:D:400:LEU:HD22	2:D:439:ILE:HG21	1.81	0.61
3:F:94:GLU:HG3	8:F:386:HOH:O	1.99	0.61
2:D:478:SER:O	2:D:479:ASP:HB2	1.99	0.61
1:C:320:LYS:HE2	2:D:408:ASN:HD22	1.66	0.60
3:E:121:ALA:HA	3:E:161:LEU:HD21	1.83	0.60
1:A:224:LYS:HE2	2:D:448:TYR:OH	2.01	0.60
2:B:463:MET:HE3	2:B:464:PRO:HD2	1.84	0.60
1:A:364:ASN:HB2	2:B:408:ASN:O	2.03	0.59
3:F:138:ASP:HB3	3:F:141:ALA:HB2	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:302:MET:HE1	3:F:56:PHE:CZ	2.37	0.59
3:F:23:ARG:HG3	3:F:53:LEU:HD22	1.84	0.59
3:F:145:PHE:HB3	3:F:147:LYS:HG3	1.84	0.59
1:C:234:GLY:HA2	1:C:307:MET:SD	2.43	0.59
1:C:368:GLY:HA2	2:D:461:LYS:HG3	1.83	0.59
3:F:126:LEU:CD1	3:F:164:ILE:HD12	2.22	0.58
2:D:413:ARG:HB2	2:D:419:THR:HG22	1.85	0.58
3:F:62:ILE:HA	3:F:65[B]:VAL:HG22	1.85	0.58
3:E:76:VAL:CG1	3:E:80:GLY:HA2	2.33	0.58
3:F:34:MET:HE1	3:F:65[A]:VAL:CG1	2.33	0.58
3:F:30:VAL:HG12	3:F:34:MET:HE2	1.86	0.57
2:B:432:ARG:HH12	1:C:223:ASP:CG	2.12	0.57
3:F:147:LYS:HE3	3:F:151:ASP:HB3	1.86	0.57
1:A:226:TYR:CD1	1:A:352:PRO:HD3	2.39	0.57
2:B:426:CYS:O	2:B:430:ARG:HG3	2.04	0.57
3:F:60:LEU:HD11	3:F:98:VAL:HG21	1.87	0.57
1:C:288:THR:H	1:C:291:GLN:NE2	2.02	0.57
2:D:463:MET:HE3	2:D:464:PRO:HD2	1.86	0.56
3:E:23:ARG:HG3	3:E:53:LEU:HD22	1.85	0.56
1:A:257:ILE:HD11	1:A:317:HIS:CG	2.39	0.56
3:F:92:HIS:HD2	8:F:423:HOH:O	1.88	0.56
3:F:121:ALA:HA	3:F:161:LEU:CD2	2.36	0.56
3:E:121:ALA:HA	3:E:161:LEU:CD2	2.35	0.56
3:E:110:ASP:OD2	3:E:114:HIS:HB2	2.05	0.55
2:D:415:PRO:CD	5:I:2:ILE:HG22	2.36	0.55
1:A:300:GLN:HG3	1:A:339:GLN:O	2.07	0.55
1:A:342:GLY:HA3	1:C:369:ILE:HG12	1.89	0.55
1:C:317:HIS:ND1	5:I:5:ASJ:C	2.61	0.54
1:C:364:ASN:HB2	2:D:408:ASN:O	2.07	0.54
3:E:150:PHE:CE1	3:E:166:GLN:HB2	2.41	0.54
1:C:302:MET:HE1	3:E:56:PHE:CZ	2.41	0.54
2:B:468:PHE:CE1	2:D:466:PRO:HB2	2.43	0.54
1:C:287:CYS:HA	1:C:291:GLN:HE21	1.72	0.54
2:B:397:ALA:HA	2:D:463:MET:SD	2.48	0.54
1:C:287:CYS:HA	1:C:291:GLN:NE2	2.22	0.54
3:F:129:VAL:HG21	3:F:161:LEU:HD11	1.90	0.54
1:A:343:LEU:HD11	1:C:367:LYS:HD2	1.89	0.54
2:B:429:LEU:HD23	2:B:442:ILE:HD13	1.89	0.53
1:A:349:ALA:HB1	1:C:369:ILE:HG21	1.88	0.53
2:D:415:PRO:HD2	5:I:2:ILE:HG22	1.90	0.53
3:E:112:GLU:O	3:E:143:ASP:HB2	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:312:CYS:O	1:C:355:PHE:HA	2.09	0.53
1:C:300:GLN:HG3	1:C:339:GLN:O	2.09	0.53
1:C:360:CYS:SG	5:I:5:ASJ:N	2.81	0.53
1:C:368:GLY:CA	2:D:461:LYS:HG3	2.39	0.53
2:B:468:PHE:O	2:D:466:PRO:HD2	2.09	0.53
3:E:58:GLY:HA2	3:E:95:ILE:HD12	1.91	0.53
2:D:426:CYS:O	2:D:430:ARG:HG3	2.09	0.52
3:E:84:LEU:HD11	3:E:96:VAL:HG13	1.90	0.52
3:E:117:LEU:HD11	3:E:129:VAL:HG13	1.91	0.52
1:A:337:THR:HG22	1:A:355:PHE:CG	2.44	0.52
2:B:443:LEU:HD13	2:B:466:PRO:HB3	1.90	0.52
2:B:404:ALA:HA	2:B:421:TYR:CG	2.45	0.52
3:E:25:GLY:HA2	3:E:62:ILE:HD12	1.91	0.52
3:F:129:VAL:HG21	3:F:161:LEU:HD21	1.92	0.52
1:A:224:LYS:HB2	2:B:472:LYS:HG2	1.92	0.52
1:A:298:ILE:HG22	1:A:302:MET:HE3	1.91	0.52
1:A:369:ILE:HG12	1:C:342:GLY:HA3	1.91	0.52
1:A:234:GLY:HA2	1:A:307:MET:SD	2.50	0.52
3:E:91:GLY:HA2	3:E:128:ILE:HD12	1.91	0.52
3:F:145:PHE:CB	3:F:147:LYS:HG3	2.39	0.52
1:A:360:CYS:SG	4:H:4:ASP:CA	2.99	0.51
1:A:228:MET:HE1	1:A:309:CYS:HB2	1.92	0.51
1:C:332:PRO:HB2	1:C:335:GLU:HG3	1.91	0.51
3:F:58:GLY:HA2	3:F:95:ILE:HD12	1.93	0.51
2:B:420:TRP:HE1	7:B:501:EDO:H11	1.76	0.51
2:B:466:PRO:HD2	2:D:468:PHE:O	2.11	0.50
3:F:91:GLY:HA2	3:F:128:ILE:HD12	1.93	0.50
1:C:234:GLY:HA3	1:C:309:CYS:O	2.12	0.50
2:D:454:ASP:HB3	2:D:461:LYS:HD2	1.94	0.50
3:E:126:LEU:HA	3:E:161:LEU:HD13	1.94	0.50
1:C:226:TYR:CD1	1:C:352:PRO:HD3	2.46	0.50
3:E:24:ALA:HB3	3:E:26:ARG:HG3	1.94	0.50
3:E:25:GLY:HA2	3:E:62:ILE:CD1	2.41	0.50
1:A:246[B]:LYS:HD3	3:F:157:GLY:CA	2.29	0.50
1:A:343:LEU:CD1	1:C:367:LYS:HD2	2.41	0.50
3:F:117:LEU:HD11	3:F:129:VAL:HG13	1.94	0.50
2:B:432:ARG:HD2	2:B:445:GLU:OE1	2.12	0.49
1:C:322:ILE:HD13	1:C:330:GLU:HG2	1.94	0.49
3:F:139:VAL:HG21	3:F:168:LEU:HB2	1.94	0.49
2:B:400:LEU:HD22	2:B:439:ILE:HG21	1.93	0.49
1:A:301:LEU:HD13	3:F:79:ALA:CB	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:368:GLY:C	1:C:369:ILE:HD12	2.38	0.49
2:D:478:SER:O	2:D:479:ASP:CB	2.61	0.49
3:E:91:GLY:HA2	3:E:128:ILE:CD1	2.43	0.49
1:A:360:CYS:SG	4:H:4:ASP:N	2.85	0.48
2:B:394:PRO:HB3	1:C:366:GLN:HG2	1.95	0.48
2:B:413:ARG:HA	2:B:419:THR:HA	1.95	0.48
2:B:471:ARG:O	2:D:448:TYR:HB2	2.13	0.48
1:A:222:LEU:N	2:D:435:ARG:HH22	2.10	0.48
1:A:340:PHE:O	1:A:353:LYS:CD	2.62	0.48
3:E:42:ALA:O	3:E:49:THR:HA	2.13	0.48
1:C:303:ASP:OD2	3:E:44:ASP:HB2	2.14	0.48
3:F:118:HIS:CD2	3:F:152:ILE:HD12	2.49	0.48
1:A:243:ASN:O	1:A:326:THR:HB	2.14	0.48
1:A:317:HIS:ND1	4:H:4:ASP:C	2.72	0.48
1:C:266:ASP:OD2	2:D:419:THR:HG23	2.14	0.48
3:F:51:LEU:HD11	3:F:63:VAL:HG13	1.96	0.48
2:B:463:MET:SD	2:D:397:ALA:HA	2.54	0.47
3:F:150:PHE:CE1	3:F:166:GLN:HB2	2.48	0.47
8:C:556:HOH:O	2:D:478:SER:HA	2.14	0.47
3:F:100:LEU:HD11	3:F:132:LEU:HD23	1.96	0.47
1:A:312:CYS:O	1:A:355:PHE:HA	2.14	0.47
3:E:139[A]:VAL:HG11	3:E:168:LEU:HD23	1.97	0.47
2:B:428:SER:HB3	2:B:442:ILE:HG23	1.97	0.47
3:F:99:LEU:HB3	3:F:104:ALA:HB2	1.97	0.47
1:A:274:PHE:CE1	1:A:311:ILE:HD13	2.50	0.47
2:B:466:PRO:HG2	2:D:468:PHE:CZ	2.50	0.47
3:E:133:LEU:HD22	3:E:139[A]:VAL:HG12	1.97	0.47
3:E:147:LYS:HD2	3:E:151:ASP:HB3	1.97	0.47
1:C:282:LYS:HZ1	3:E:57:ASN:ND2	2.13	0.46
1:A:349:ALA:CB	1:C:369:ILE:HG21	2.45	0.46
1:A:366:GLN:HG2	2:D:394:PRO:HB3	1.97	0.46
1:C:312:CYS:SG	1:C:314:ILE:HD11	2.54	0.46
2:D:407:ASN:O	2:D:408:ASN:HB2	2.16	0.46
2:B:414:ASN:ND2	7:B:501:EDO:H12	2.28	0.46
1:A:369:ILE:HD13	1:C:349:ALA:CB	2.44	0.46
1:C:282:LYS:NZ	3:E:57:ASN:ND2	2.64	0.46
3:F:114:HIS:HB3	3:F:119:LEU:CD2	2.45	0.46
1:A:358:GLN:CG	2:B:419:THR:HG21	2.45	0.46
1:C:223:ASP:CG	1:C:224:LYS:H	2.22	0.46
2:D:404:ALA:HA	2:D:421:TYR:CG	2.50	0.46
1:A:242:HIS:CE1	1:A:261:ASN:OD1	2.59	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:298:ILE:HG22	1:A:302:MET:CE	2.46	0.46
2:B:413:ARG:CZ	2:B:413:ARG:HB3	2.45	0.46
2:B:439:ILE:HG22	2:B:474:LEU:HB3	1.98	0.45
1:C:298:ILE:HG22	1:C:302:MET:CE	2.46	0.45
1:C:360:CYS:SG	5:I:5:ASJ:CA	3.04	0.45
2:B:420:TRP:NE1	7:B:501:EDO:H11	2.31	0.45
1:C:286:ASP:CA	1:C:326:THR:HG21	2.45	0.45
2:D:432:ARG:HB3	2:D:437:ASP:HB2	1.96	0.45
3:E:44:ASP:OD2	3:E:48:TRP:HB2	2.16	0.45
3:F:91:GLY:HA2	3:F:128:ILE:CD1	2.46	0.45
1:C:334:TYR:HE1	7:C:402:EDO:H12	1.82	0.45
3:E:100:LEU:HD11	3:E:132:LEU:HD23	1.98	0.45
3:F:22:ALA:HA	3:F:62:ILE:HD13	1.98	0.45
3:F:42:ALA:O	3:F:50:PRO:HD3	2.17	0.45
1:C:316:SER:O	1:C:359:ALA:HA	2.17	0.45
3:F:44:ASP:OD2	3:F:48:TRP:HB2	2.17	0.45
1:A:324:TYR:CE1	1:A:330:GLU:HG2	2.52	0.45
3:E:34:MET:SD	3:E:66:LEU:HD23	2.57	0.45
2:D:415:PRO:HD2	5:I:2:ILE:CG2	2.47	0.45
1:A:312:CYS:HB3	1:A:355:PHE:CD2	2.52	0.45
1:A:366:GLN:HB3	2:B:461:LYS:O	2.17	0.45
1:C:225:VAL:CG1	2:D:475:VAL:HG22	2.47	0.45
1:A:246[A]:LYS:HB2	1:A:327:ASP:HA	1.98	0.44
2:B:420:TRP:CD1	2:B:453:LYS:HE2	2.52	0.44
2:B:468:PHE:CZ	2:D:466:PRO:HG2	2.51	0.44
1:C:308:ASP:O	1:C:352:PRO:HD2	2.17	0.44
1:C:358:GLN:OE1	2:D:421:TYR:HB3	2.17	0.44
2:D:413:ARG:CB	2:D:419:THR:HG22	2.46	0.44
1:A:297:LYS:HD3	8:F:341:HOH:O	2.18	0.44
1:C:358:GLN:HA	2:D:404:ALA:HB2	1.99	0.44
1:C:324:TYR:HE1	8:C:503:HOH:O	1.99	0.44
3:F:42:ALA:O	3:F:49:THR:HA	2.16	0.44
3:F:89:LEU:C	3:F:89:LEU:HD23	2.43	0.44
1:C:290:GLU:HG3	8:C:562:HOH:O	2.18	0.44
1:C:299:TYR:HA	1:C:302:MET:HE3	2.00	0.44
3:E:89:LEU:HD23	3:E:89:LEU:C	2.43	0.44
3:F:25:GLY:HA2	3:F:62:ILE:CD1	2.43	0.44
1:C:254:LEU:O	1:C:257:ILE:HG22	2.18	0.44
1:C:312:CYS:HB3	1:C:355:PHE:CD2	2.53	0.44
1:A:237:LEU:HD12	1:A:282:LYS:O	2.17	0.44
2:B:414:ASN:HB2	7:B:501:EDO:H12	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:271:THR:O	1:C:275:GLU:HB2	2.18	0.44
2:D:453:LYS:HE3	8:D:536:HOH:O	2.17	0.44
3:F:112:GLU:HA	3:F:144:LYS:HD2	1.99	0.43
1:A:311:ILE:HG12	1:A:354:VAL:HB	2.00	0.43
2:B:438:ASP:OD1	2:B:473:LYS:HE3	2.18	0.43
1:C:260:ARG:HE	5:I:5:ASJ:CG	2.31	0.43
2:D:439:ILE:HG22	2:D:474:LEU:HB3	1.99	0.43
3:F:108:ALA:O	3:F:116:PRO:HD3	2.18	0.43
1:C:335:GLU:O	1:C:339:GLN:HG2	2.17	0.43
1:A:234:GLY:HA3	1:A:309:CYS:O	2.19	0.43
1:C:358:GLN:NE2	5:I:5:ASJ:OD2	2.45	0.43
3:E:93:LEU:HD11	3:E:131:VAL:HG21	2.01	0.43
3:F:167:LYS:HD3	3:F:167:LYS:N	2.34	0.43
3:E:46:SER:O	3:E:77:ASP:HB2	2.17	0.43
3:E:88:ALA:O	3:E:125:HIS:HD2	2.00	0.43
1:C:312:CYS:SG	1:C:314:ILE:CD1	3.07	0.43
2:D:415:PRO:HD3	5:I:2:ILE:HG22	2.00	0.43
1:C:358:GLN:CG	2:D:419:THR:HG21	2.49	0.43
3:E:18:LEU:HA	3:E:33:LEU:HD13	2.01	0.43
3:E:127:GLU:HG3	8:E:388:HOH:O	2.18	0.43
1:A:316:SER:O	1:A:359:ALA:HA	2.19	0.43
2:B:400:LEU:CD2	2:B:439:ILE:HG12	2.49	0.43
1:C:317:HIS:HA	5:I:5:ASJ:O	2.19	0.42
1:C:293:TYR:HE1	1:C:336:LEU:HD23	1.84	0.42
3:F:51:LEU:CD2	3:F:73:VAL:HA	2.49	0.42
1:C:248:ARG:HD3	1:C:257:ILE:O	2.19	0.42
3:E:59:HIS:HB3	8:E:353:HOH:O	2.19	0.42
1:A:262:GLY:HA3	2:B:415:PRO:HA	2.01	0.42
2:B:448:TYR:CZ	1:C:224:LYS:HE2	2.54	0.42
1:C:251:VAL:HA	1:C:252:PRO:HD2	1.85	0.42
1:C:296:LEU:HD12	1:C:336:LEU:HD22	2.01	0.42
2:B:401:LEU:O	2:B:466:PRO:HA	2.19	0.42
1:C:360:CYS:SG	2:D:410:VAL:HA	2.60	0.42
3:E:122:MET:HA	3:E:152:ILE:HG22	2.00	0.42
1:C:286:ASP:HA	1:C:326:THR:CG2	2.46	0.42
3:E:27:ASP:HB3	3:E:31:ARG:HH12	1.85	0.42
3:E:67:LEU:HD12	3:E:98:VAL:HG12	2.02	0.42
1:A:303:ASP:OD2	3:F:44:ASP:HB2	2.20	0.42
2:B:428:SER:O	2:B:432:ARG:HG3	2.20	0.42
1:A:340:PHE:O	1:A:353:LYS:HD2	2.20	0.42
1:A:369:ILE:CD1	1:C:349:ALA:HB1	2.45	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:241:ASN:O	1:C:260:ARG:HD3	2.19	0.42
3:E:51:LEU:HD23	3:E:83:PRO:HG2	2.01	0.42
1:C:366:GLN:HB3	2:D:461:LYS:O	2.19	0.41
3:E:84:LEU:HD23	3:E:116:PRO:HG2	2.03	0.41
2:B:475:VAL:O	2:B:477:PRO:HD3	2.21	0.41
3:F:147:LYS:CE	3:F:155:ASP:OD2	2.63	0.41
1:A:286:ASP:CA	1:A:326:THR:HG21	2.46	0.41
2:B:441:THR:OG1	2:D:473:LYS:HE2	2.20	0.41
1:C:264:HIS:ND1	6:C:401:SO4:O2	2.36	0.41
1:C:353:LYS:HE3	8:D:522:HOH:O	2.21	0.41
3:F:110:ASP:CG	3:F:114:HIS:HB2	2.45	0.41
1:A:317:HIS:HA	4:H:4:ASP:O	2.21	0.41
1:C:296:LEU:CD1	1:C:336:LEU:HD22	2.50	0.41
3:E:73:VAL:HG22	3:E:104:ALA:HB2	2.03	0.41
3:F:122:MET:HA	3:F:152:ILE:HG22	2.03	0.41
1:A:245:ALA:O	1:A:249:GLU:HG3	2.20	0.41
1:A:264[A]:HIS:CE1	1:A:265:LEU:HG	2.55	0.41
1:C:320:LYS:CE	2:D:408:ASN:HD22	2.33	0.41
3:F:127:GLU:H	7:F:202:EDO:HO2	1.69	0.41
3:E:100:LEU:CD1	3:E:131:VAL:HG12	2.51	0.41
3:E:129:VAL:CB	3:E:161:LEU:HD11	2.51	0.41
1:A:257:ILE:HD11	1:A:317:HIS:CB	2.51	0.41
1:C:319:ASP:O	1:C:320:LYS:C	2.62	0.41
3:F:126:LEU:HD12	3:F:126:LEU:O	2.20	0.41
1:C:320:LYS:HA	2:D:407:ASN:OD1	2.22	0.40
3:E:58:GLY:HA2	3:E:95:ILE:CD1	2.51	0.40
3:E:60:LEU:HD11	3:E:98:VAL:HG21	2.03	0.40
1:A:352:PRO:HG3	2:B:474:LEU:HD13	2.03	0.40
2:B:432:ARG:HB3	2:B:437:ASP:OD2	2.21	0.40
3:E:57:ASN:HB3	3:E:59:HIS:NE2	2.35	0.40
3:F:28:ASP:O	3:F:32:ILE:HG13	2.21	0.40
1:A:237:LEU:CD2	1:A:296:LEU:HD23	2.52	0.40
1:A:242:HIS:HD2	8:A:501:HOH:O	2.05	0.40
1:A:358:GLN:HG2	2:B:419:THR:HG21	2.04	0.40
2:B:448:TYR:HB2	2:D:471:ARG:O	2.21	0.40
2:B:412:TYR:HB2	2:B:420:TRP:CD2	2.57	0.40
1:C:246:LYS:HE2	3:E:157:GLY:O	2.21	0.40
1:C:282:LYS:NZ	3:E:57:ASN:HD21	2.19	0.40
3:E:55:ALA:O	3:E:92:HIS:HD2	2.03	0.40
3:E:122:MET:HB2	3:E:152:ILE:HG21	2.03	0.40
3:F:34:MET:HB2	3:F:34:MET:HE3	1.75	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	150/159 (94%)	146 (97%)	4 (3%)	0	100	100
1	C	146/159 (92%)	142 (97%)	4 (3%)	0	100	100
2	B	87/104 (84%)	82 (94%)	5 (6%)	0	100	100
2	D	88/104 (85%)	85 (97%)	3 (3%)	0	100	100
3	E	155/169 (92%)	153 (99%)	2 (1%)	0	100	100
3	F	156/169 (92%)	154 (99%)	2 (1%)	0	100	100
4	H	2/4 (50%)	2 (100%)	0	0	100	100
5	I	2/5 (40%)	2 (100%)	0	0	100	100
All	All	786/873 (90%)	766 (98%)	20 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	134/140 (96%)	134 (100%)	0	100	100
1	C	130/140 (93%)	130 (100%)	0	100	100
2	B	82/97 (84%)	82 (100%)	0	100	100
2	D	83/97 (86%)	82 (99%)	1 (1%)	63	57

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	E	121/131 (92%)	121 (100%)	0	100	100
3	F	122/131 (93%)	120 (98%)	2 (2%)	55	47
4	H	4/4 (100%)	4 (100%)	0	100	100
5	I	3/3 (100%)	3 (100%)	0	100	100
All	All	679/743 (91%)	676 (100%)	3 (0%)	84	83

All (3) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	D	454	ASP
3	F	17	LYS
3	F	27	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	242	HIS
1	A	255	HIS
1	A	300	GLN
1	C	227	GLN
1	C	242	HIS
1	C	291	GLN
2	D	408	ASN
3	E	57	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is 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	ASJ	I	5	5	7,7,7	1.93	1 (14%)	5,8,8	1.28	1 (20%)

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	ASJ	I	5	5	-	4/6/6/6	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	I	5	ASJ	O-C	-4.60	1.23	1.42

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	I	5	ASJ	O-C-CA	2.49	121.09	111.52

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	I	5	ASJ	O-C-CA-N
5	I	5	ASJ	O-C-CA-CB
5	I	5	ASJ	C-CA-CB-CG
5	I	5	ASJ	N-CA-CB-CG

There are no ring outliers.

1 monomer is involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	I	5	ASJ	9	0

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

8 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
7	EDO	F	201	-	3,3,3	0.39	0	2,2,2	0.53	0
6	SO4	C	401	-	4,4,4	0.23	0	6,6,6	0.13	0
7	EDO	E	201	-	3,3,3	0.36	0	2,2,2	0.65	0
7	EDO	B	501	-	3,3,3	0.42	0	2,2,2	0.38	0
7	EDO	F	202	-	3,3,3	0.42	0	2,2,2	0.49	0
6	SO4	B	502	-	4,4,4	0.23	0	6,6,6	0.13	0
6	SO4	A	401	-	4,4,4	0.24	0	6,6,6	0.10	0
7	EDO	C	402	-	3,3,3	0.41	0	2,2,2	0.41	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
7	EDO	F	201	-	-	0/1/1/1	-
7	EDO	E	201	-	-	1/1/1/1	-
7	EDO	B	501	-	-	0/1/1/1	-
7	EDO	F	202	-	-	0/1/1/1	-
7	EDO	C	402	-	-	1/1/1/1	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	E	201	EDO	O1-C1-C2-O2
7	C	402	EDO	O1-C1-C2-O2

There are no ring outliers.

5 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	C	401	SO4	1	0
7	E	201	EDO	1	0
7	B	501	EDO	5	0
7	F	202	EDO	1	0
7	C	402	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 ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	150/159 (94%)	-0.19	2 (1%) 75 75	8, 15, 31, 54	2 (1%)
1	C	148/159 (93%)	-0.05	4 (2%) 56 56	11, 18, 41, 57	0
2	B	87/104 (83%)	-0.01	2 (2%) 61 61	8, 17, 42, 49	2 (2%)
2	D	90/104 (86%)	0.21	8 (8%) 15 13	11, 19, 55, 68	0
3	E	156/169 (92%)	0.33	12 (7%) 19 17	14, 24, 51, 89	1 (0%)
3	F	156/169 (92%)	0.19	5 (3%) 50 50	12, 20, 45, 60	2 (1%)
4	H	4/4 (100%)	0.61	1 (25%) 2 1	18, 18, 22, 32	0
5	I	3/5 (60%)	1.35	1 (33%) 1 1	25, 25, 30, 43	0
All	All	794/873 (90%)	0.09	35 (4%) 39 38	8, 19, 44, 89	7 (0%)

All (35) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	222	LEU	5.4
1	C	223	ASP	3.8
5	I	2	ILE	3.8
3	E	161	LEU	3.8
2	D	479	ASP	3.6
1	C	370	PRO	3.4
2	D	459	MET	3.3
3	F	164	ILE	3.2
3	E	34	MET	3.2
3	E	168	LEU	3.2
2	B	478	SER	3.0
1	A	371	VAL	3.0
2	D	390	THR	2.9
3	E	160	ASP	2.9
3	E	164	ILE	2.9
3	F	144	LYS	2.8

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Mol	Chain	Res	Type	RSRZ
2	D	456	LYS	2.8
3	E	157	GLY	2.8
4	H	1	ILE	2.8
3	F	145	PHE	2.7
3	E	159	GLU	2.6
3	F	167	LYS	2.5
2	D	392	TYR	2.4
3	E	154	ILE	2.4
2	B	392	TYR	2.4
2	D	391	ARG	2.3
3	E	167	LYS	2.2
1	C	365	TYR	2.2
2	D	457	LYS	2.2
3	E	162	ALA	2.2
3	E	111	MET	2.1
3	E	150	PHE	2.1
1	C	369	ILE	2.1
2	D	435	ARG	2.0
3	F	24	ALA	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [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	ASJ	I	5	8/8	0.92	0.09	23,25,27,29	0

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
7	EDO	F	202	4/4	0.79	0.17	37,39,46,46	0
7	EDO	C	402	4/4	0.81	0.17	37,40,40,47	0
7	EDO	B	501	4/4	0.84	0.15	37,38,38,46	0
7	EDO	E	201	4/4	0.87	0.16	27,37,38,40	0
6	SO4	C	401	5/5	0.91	0.11	38,39,46,50	0
6	SO4	B	502	5/5	0.92	0.10	36,47,50,58	0
7	EDO	F	201	4/4	0.95	0.08	23,26,29,31	0
6	SO4	A	401	5/5	0.98	0.07	30,30,33,34	0

6.5 Other polymers [i](#)

There are no such residues in this entry.