



wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 5, 2026 – 06:59 PM UTC

PDB ID : 7E72 / pdb_00007e72
Title : Crystal structure of Tie2-agonistic antibody in complex with human Tie2 Fn2-3
Authors : Kim, H.M.; Jo, G.H.; Hong, H.J.; Han, A.
Deposited on : 2021-02-25
Resolution : 2.09 Å(reported)

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

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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

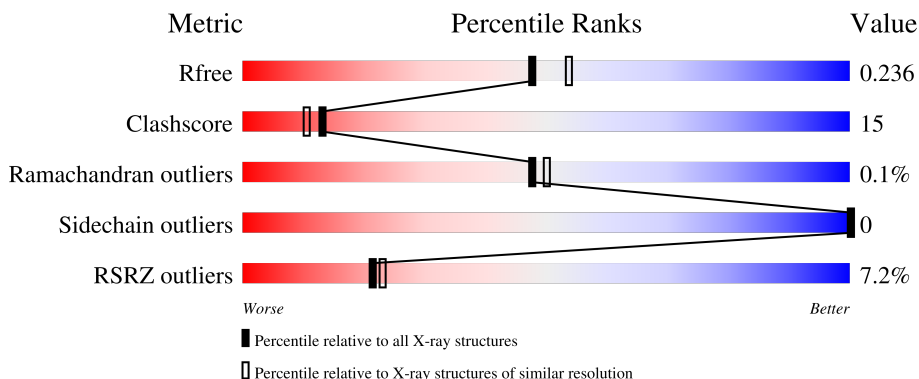
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.09 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	6658 (2.10-2.10)
Clashscore	190562	7164 (2.10-2.10)
Ramachandran outliers	187476	7099 (2.10-2.10)
Sidechain outliers	187428	7100 (2.10-2.10)
RSRZ outliers	180081	6662 (2.10-2.10)

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	227	<div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 83%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 13%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 20px;">2% 83% 13% •</p>
1	C	227	<div style="display: flex; align-items: center;"> <div style="width: 4%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 76%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 20%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 20px;">4% 76% 20% •</p>
2	B	214	<div style="display: flex; align-items: center;"> <div style="width: 85%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 15%; height: 10px; background-color: yellow; margin-right: 5px;"></div> </div> <p style="margin-left: 20px;">85% 15%</p>
2	D	214	<div style="display: flex; align-items: center;"> <div style="width: 0%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 86%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 14%; height: 10px; background-color: yellow; margin-right: 5px;"></div> </div> <p style="margin-left: 20px;">% 86% 14%</p>
3	E	199	<div style="display: flex; align-items: center;"> <div style="width: 21%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 61%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 37%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 20px;">21% 61% 37% ••</p>

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Mol	Chain	Length	Quality of chain
3	F	199	

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
4	EDO	B	307	-	-	X	-
4	EDO	B	308	-	-	X	-
4	EDO	C	306	-	-	X	-

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 10698 atoms, of which 204 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 the chimeric Fab fragment of 3H7 (heavy chain).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	218	Total	C	N	O	S	0	0	0
			1628	1024	273	322	9			
1	C	218	Total	C	N	O	S	0	0	0
			1628	1024	273	322	9			

- Molecule 2 is a protein called the chimeric Fab fragment of 3H7 (light chain).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	214	Total	C	N	O	S	0	0	0
			1643	1021	274	342	6			
2	D	214	Total	C	N	O	S	0	0	0
			1643	1021	274	342	6			

- Molecule 3 is a protein called Angiopoietin-1 receptor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	E	196	Total	C	N	O	S	0	0	0
			1540	972	264	303	1			
3	F	196	Total	C	N	O	S	0	0	0
			1539	975	264	299	1			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	537	GLY	-	expression tag	UNP Q02763
E	538	SER	-	expression tag	UNP Q02763
E	539	HIS	-	expression tag	UNP Q02763
E	540	MET	-	expression tag	UNP Q02763
F	537	GLY	-	expression tag	UNP Q02763
F	538	SER	-	expression tag	UNP Q02763
F	539	HIS	-	expression tag	UNP Q02763
F	540	MET	-	expression tag	UNP Q02763

- Molecule 4 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: C₂H₆O₂).



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

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

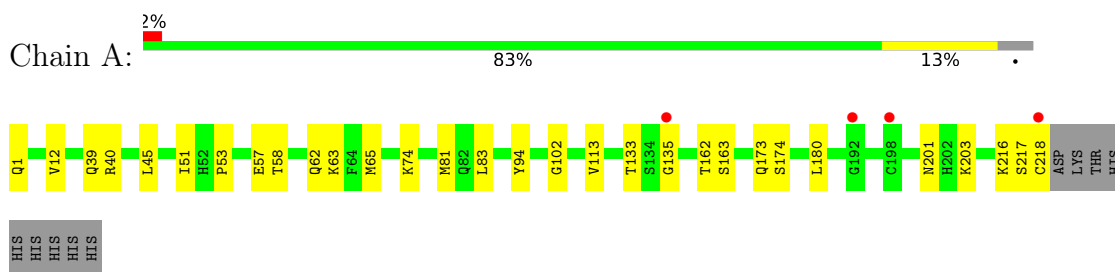
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	163	Total 163	O 163	0	0
5	B	177	Total 177	O 177	0	0
5	C	164	Total 164	O 164	0	0
5	D	174	Total 174	O 174	0	0
5	E	31	Total 31	O 31	0	0
5	F	28	Total 28	O 28	0	0

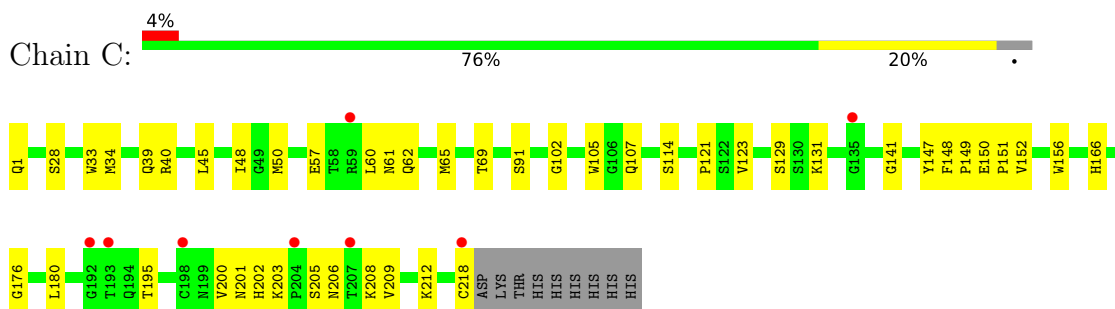
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

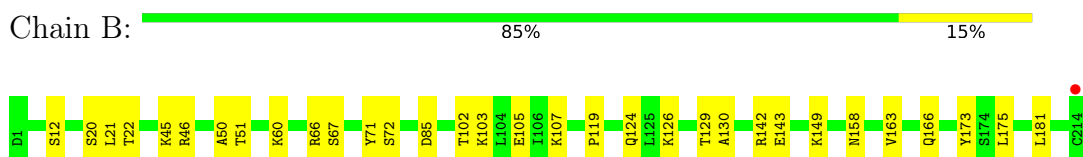
- Molecule 1: the chimeric Fab fragment of 3H7 (heavy chain)



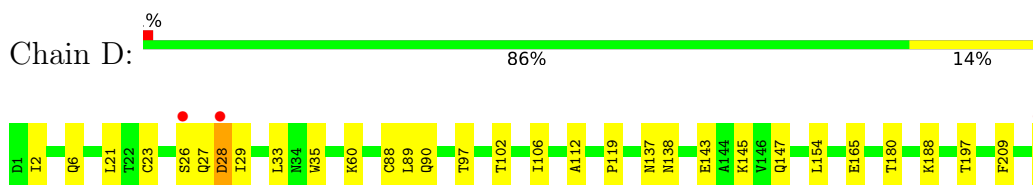
- Molecule 1: the chimeric Fab fragment of 3H7 (heavy chain)



- Molecule 2: the chimeric Fab fragment of 3H7 (light chain)

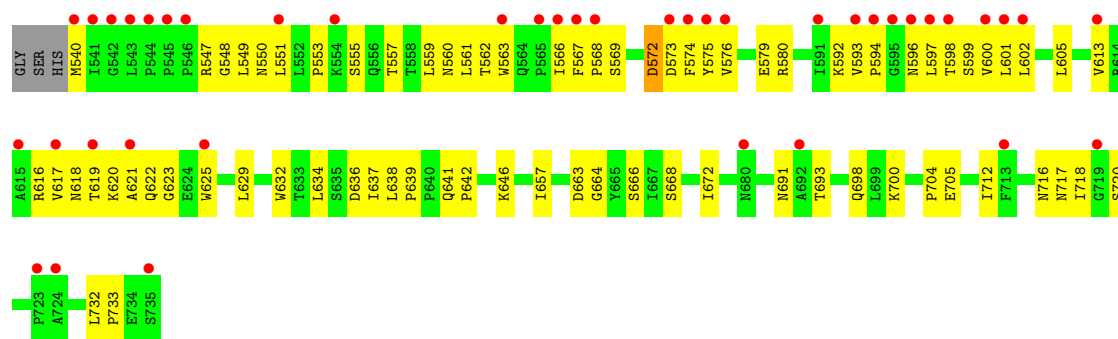


- Molecule 2: the chimeric Fab fragment of 3H7 (light chain)



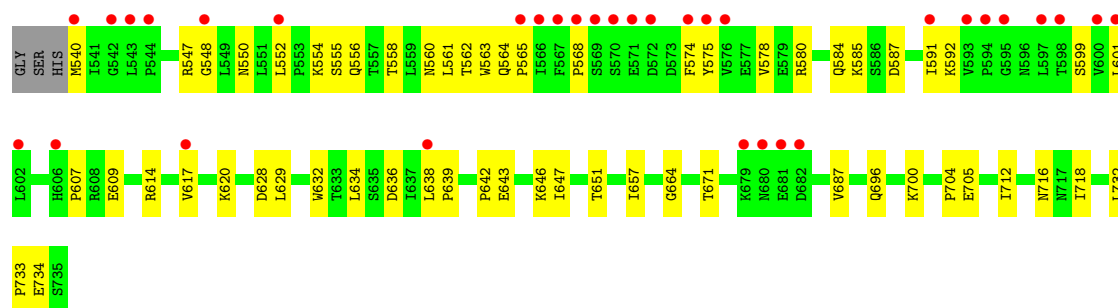
- Molecule 3: Angiotensin-1 receptor

Chain E:  21% 61% 37%



• Molecule 3: Angiopoietin-1 receptor

Chain F:  17% 69% 29%



4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	45.08Å 77.34Å 121.85Å 103.82° 96.89° 90.59°	Depositor
Resolution (Å)	44.72 – 2.09 44.72 – 2.09	Depositor EDS
% Data completeness (in resolution range)	91.0 (44.72-2.09) 91.0 (44.72-2.09)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.40 (at 2.10Å)	Xtrriage
Refinement program	PHENIX 1.16_3549	Depositor
R, R_{free}	0.183 , 0.233 0.184 , 0.236	Depositor DCC
R_{free} test set	2006 reflections (2.15%)	wwPDB-VP
Wilson B-factor (Å ²)	26.0	Xtrriage
Anisotropy	0.231	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 49.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	10698	wwPDB-VP
Average B, all atoms (Å ²)	39.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.33% 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

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	0.33	0/1668	0.51	0/2272
1	C	0.35	0/1668	0.55	0/2272
2	B	0.37	0/1674	0.57	0/2268
2	D	0.39	0/1674	0.58	0/2268
3	E	0.23	0/1575	0.49	2/2153 (0.1%)
3	F	0.22	0/1574	0.42	0/2152
All	All	0.32	0/9833	0.53	2/13385 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	E	572	ASP	CA-C-N	6.42	133.26	121.70
3	E	572	ASP	C-N-CA	6.42	133.26	121.70

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	1628	0	1602	32	0
1	C	1628	0	1602	48	0
2	B	1643	0	1591	34	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	1643	0	1591	27	0
3	E	1540	0	1507	93	0
3	F	1539	0	1519	57	0
4	A	40	60	60	9	0
4	B	44	66	66	18	0
4	C	24	36	36	12	0
4	D	20	30	30	6	0
4	E	4	6	6	0	0
4	F	4	6	6	1	0
5	A	163	0	0	3	0
5	B	177	0	0	3	0
5	C	164	0	0	4	0
5	D	174	0	0	4	0
5	E	31	0	0	2	0
5	F	28	0	0	2	0
All	All	10494	204	9616	287	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 15.

The worst 5 of 287 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)
3:E:657:ILE:HD11	3:E:712:ILE:HD11	1.26	1.12
3:E:618:ASN:HB3	3:E:621:ALA:HB1	1.46	0.96
3:F:556:GLN:HB3	3:F:607:PRO:HB3	1.50	0.94
1:C:218:CYS:SG	2:D:214:CYS:HB3	2.07	0.94
2:D:143:GLU:OE1	5:D:401:HOH:O	1.85	0.94

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	216/227 (95%)	211 (98%)	5 (2%)	0	100	100
1	C	216/227 (95%)	210 (97%)	6 (3%)	0	100	100
2	B	212/214 (99%)	208 (98%)	4 (2%)	0	100	100
2	D	212/214 (99%)	206 (97%)	5 (2%)	1 (0%)	24	22
3	E	194/199 (98%)	181 (93%)	13 (7%)	0	100	100
3	F	194/199 (98%)	177 (91%)	17 (9%)	0	100	100
All	All	1244/1280 (97%)	1193 (96%)	50 (4%)	1 (0%)	48	50

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	D	28	ASP

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	186/195 (95%)	186 (100%)	0	100	100
1	C	186/195 (95%)	186 (100%)	0	100	100
2	B	190/190 (100%)	190 (100%)	0	100	100
2	D	190/190 (100%)	190 (100%)	0	100	100
3	E	175/182 (96%)	175 (100%)	0	100	100
3	F	175/182 (96%)	175 (100%)	0	100	100
All	All	1102/1134 (97%)	1102 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 16 such sidechains are listed below:

Mol	Chain	Res	Type
3	F	560	ASN
3	E	722	ASN

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Mol	Chain	Res	Type
2	D	3	GLN
3	E	644	ASN
1	C	201	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

34 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	$\# Z > 2$
4	EDO	D	303	-	3,3,3	0.58	0	2,2,2	0.27	0
4	EDO	A	304	-	3,3,3	0.53	0	2,2,2	0.33	0
4	EDO	B	304	-	3,3,3	0.48	0	2,2,2	0.33	0
4	EDO	C	304	-	3,3,3	0.47	0	2,2,2	0.23	0
4	EDO	A	310	-	3,3,3	0.46	0	2,2,2	0.38	0
4	EDO	C	303	-	3,3,3	0.48	0	2,2,2	0.21	0
4	EDO	B	305	-	3,3,3	0.47	0	2,2,2	0.30	0
4	EDO	B	306	-	3,3,3	0.42	0	2,2,2	0.38	0
4	EDO	C	301	-	3,3,3	0.32	0	2,2,2	0.31	0
4	EDO	B	303	-	3,3,3	0.46	0	2,2,2	0.41	0
4	EDO	A	303	-	3,3,3	0.47	0	2,2,2	0.44	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	EDO	C	305	-	3,3,3	0.46	0	2,2,2	0.32	0
4	EDO	A	309	-	3,3,3	0.47	0	2,2,2	0.20	0
4	EDO	A	301	-	3,3,3	0.50	0	2,2,2	0.36	0
4	EDO	B	308	-	3,3,3	0.58	0	2,2,2	0.34	0
4	EDO	B	309	-	3,3,3	0.46	0	2,2,2	0.24	0
4	EDO	A	302	-	3,3,3	0.47	0	2,2,2	0.33	0
4	EDO	D	302	-	3,3,3	0.52	0	2,2,2	0.26	0
4	EDO	A	305	-	3,3,3	0.50	0	2,2,2	0.22	0
4	EDO	A	307	-	3,3,3	0.49	0	2,2,2	0.31	0
4	EDO	E	801	-	3,3,3	0.45	0	2,2,2	0.40	0
4	EDO	B	311	-	3,3,3	0.57	0	2,2,2	0.21	0
4	EDO	B	307	-	3,3,3	0.41	0	2,2,2	0.63	0
4	EDO	B	301	-	3,3,3	0.58	0	2,2,2	0.21	0
4	EDO	D	304	-	3,3,3	0.47	0	2,2,2	0.16	0
4	EDO	A	306	-	3,3,3	0.56	0	2,2,2	0.18	0
4	EDO	C	306	-	3,3,3	0.49	0	2,2,2	0.12	0
4	EDO	C	302	-	3,3,3	0.43	0	2,2,2	0.39	0
4	EDO	F	801	-	3,3,3	0.51	0	2,2,2	0.20	0
4	EDO	B	310	-	3,3,3	0.47	0	2,2,2	0.41	0
4	EDO	A	308	-	3,3,3	0.53	0	2,2,2	0.31	0
4	EDO	B	302	-	3,3,3	0.44	0	2,2,2	0.33	0
4	EDO	D	305	-	3,3,3	0.40	0	2,2,2	0.57	0
4	EDO	D	301	-	3,3,3	0.47	0	2,2,2	0.32	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. '2' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	EDO	D	303	-	-	0/1/1/1	-
4	EDO	A	304	-	-	0/1/1/1	-
4	EDO	B	304	-	-	0/1/1/1	-
4	EDO	C	304	-	-	0/1/1/1	-
4	EDO	A	310	-	-	1/1/1/1	-
4	EDO	C	303	-	-	0/1/1/1	-
4	EDO	B	305	-	-	0/1/1/1	-
4	EDO	B	306	-	-	1/1/1/1	-
4	EDO	C	301	-	-	0/1/1/1	-
4	EDO	B	303	-	-	0/1/1/1	-
4	EDO	A	303	-	-	0/1/1/1	-
4	EDO	C	305	-	-	0/1/1/1	-
4	EDO	A	309	-	-	0/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	EDO	A	301	-	-	1/1/1/1	-
4	EDO	B	308	-	-	1/1/1/1	-
4	EDO	B	309	-	-	0/1/1/1	-
4	EDO	A	302	-	-	1/1/1/1	-
4	EDO	D	302	-	-	1/1/1/1	-
4	EDO	A	305	-	-	0/1/1/1	-
4	EDO	A	307	-	-	0/1/1/1	-
4	EDO	E	801	-	-	0/1/1/1	-
4	EDO	B	311	-	-	1/1/1/1	-
4	EDO	B	307	-	-	0/1/1/1	-
4	EDO	B	301	-	-	1/1/1/1	-
4	EDO	D	304	-	-	1/1/1/1	-
4	EDO	A	306	-	-	1/1/1/1	-
4	EDO	C	306	-	-	1/1/1/1	-
4	EDO	C	302	-	-	1/1/1/1	-
4	EDO	F	801	-	-	0/1/1/1	-
4	EDO	B	310	-	-	0/1/1/1	-
4	EDO	A	308	-	-	0/1/1/1	-
4	EDO	B	302	-	-	1/1/1/1	-
4	EDO	D	305	-	-	0/1/1/1	-
4	EDO	D	301	-	-	1/1/1/1	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

5 of 14 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	C	306	EDO	O1-C1-C2-O2
4	D	304	EDO	O1-C1-C2-O2
4	A	302	EDO	O1-C1-C2-O2
4	B	308	EDO	O1-C1-C2-O2
4	D	302	EDO	O1-C1-C2-O2

There are no ring outliers.

21 monomers are involved in 46 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	C	304	EDO	2	0
4	C	303	EDO	1	0
4	B	305	EDO	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	C	301	EDO	3	0
4	A	303	EDO	2	0
4	A	309	EDO	2	0
4	B	308	EDO	5	0
4	A	302	EDO	2	0
4	D	302	EDO	1	0
4	A	307	EDO	2	0
4	B	311	EDO	2	0
4	B	307	EDO	4	0
4	B	301	EDO	1	0
4	D	304	EDO	3	0
4	C	306	EDO	5	0
4	C	302	EDO	1	0
4	F	801	EDO	1	0
4	B	310	EDO	3	0
4	A	308	EDO	1	0
4	B	302	EDO	1	0
4	D	301	EDO	2	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(Å ²)	Q<0.9
1	A	218/227 (96%)	-0.20	4 (1%) 67 70	14, 28, 52, 90	0
1	C	218/227 (96%)	-0.09	8 (3%) 45 47	15, 28, 50, 90	0
2	B	214/214 (100%)	-0.38	1 (0%) 87 88	14, 26, 43, 71	0
2	D	214/214 (100%)	-0.37	3 (1%) 73 75	14, 26, 43, 83	0
3	E	196/199 (98%)	1.18	41 (20%) 2 2	31, 61, 116, 127	0
3	F	196/199 (98%)	1.05	33 (16%) 4 4	26, 56, 90, 113	0
All	All	1256/1280 (98%)	0.17	90 (7%) 21 23	14, 33, 83, 127	0

The worst 5 of 90 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	F	567	PHE	6.0
3	E	567	PHE	4.4
3	F	680	ASN	4.3
3	E	543	LEU	4.1
3	E	574	PHE	4.1

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
4	EDO	A	302	4/4	0.79	0.13	45,55,62,62	0
4	EDO	C	303	4/4	0.80	0.15	31,53,63,68	0
4	EDO	A	306	4/4	0.82	0.17	37,45,50,50	0
4	EDO	B	304	4/4	0.83	0.14	50,60,63,65	0
4	EDO	C	305	4/4	0.84	0.22	46,56,63,72	0
4	EDO	A	301	4/4	0.86	0.12	35,50,58,60	0
4	EDO	B	310	4/4	0.86	0.28	42,53,56,67	0
4	EDO	B	309	4/4	0.87	0.18	43,52,57,61	0
4	EDO	B	311	4/4	0.87	0.17	33,57,65,72	0
4	EDO	B	308	4/4	0.88	0.16	20,38,46,54	0
4	EDO	B	307	4/4	0.88	0.15	29,42,50,50	0
4	EDO	A	310	4/4	0.89	0.20	36,44,56,56	0
4	EDO	C	302	4/4	0.89	0.13	36,43,52,52	0
4	EDO	D	301	4/4	0.89	0.14	36,47,51,59	0
4	EDO	D	302	4/4	0.89	0.12	37,45,52,54	0
4	EDO	B	301	4/4	0.90	0.14	30,42,51,51	0
4	EDO	A	308	4/4	0.91	0.14	39,47,55,56	0
4	EDO	D	305	4/4	0.91	0.14	41,49,55,55	0
4	EDO	C	306	4/4	0.92	0.17	32,39,43,46	0
4	EDO	B	302	4/4	0.92	0.18	39,49,57,64	0
4	EDO	C	304	4/4	0.92	0.13	31,42,54,54	0
4	EDO	A	309	4/4	0.92	0.16	32,55,63,66	0
4	EDO	A	304	4/4	0.93	0.09	37,44,51,51	0
4	EDO	B	305	4/4	0.93	0.09	33,41,49,58	0
4	EDO	D	303	4/4	0.93	0.10	28,38,41,48	0
4	EDO	D	304	4/4	0.93	0.19	14,30,37,45	0
4	EDO	B	303	4/4	0.93	0.11	26,37,46,51	0
4	EDO	F	801	4/4	0.93	0.12	39,47,55,55	0
4	EDO	C	301	4/4	0.94	0.11	30,36,41,41	0
4	EDO	A	307	4/4	0.94	0.11	29,41,49,49	0
4	EDO	E	801	4/4	0.95	0.12	33,39,44,48	0
4	EDO	A	303	4/4	0.95	0.12	30,37,41,44	0
4	EDO	B	306	4/4	0.96	0.13	22,45,63,76	0
4	EDO	A	305	4/4	0.97	0.08	16,35,41,49	0

6.5 Other polymers

There are no such residues in this entry.