



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 05:58 AM GMT

PDB ID : 2VHS  
Title : CATHSILICATEIN, A CHIMERA  
Authors : Fairhead, M.; Kowatz, T.; McMahon, S.A.; Carter, L.G.; Oke, M.; Johnson, K.A.; Liu, H.; Naismith, J.H.; Wal, C.F.V.D.  
Deposited on : 2007-11-24  
Resolution : 1.50 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](mailto:validation@mail.wwpdb.org)  
A user guide is available at  
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467  
Mogul : 1.7 (RC4), CSD as536be (2015)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20026688  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk26865

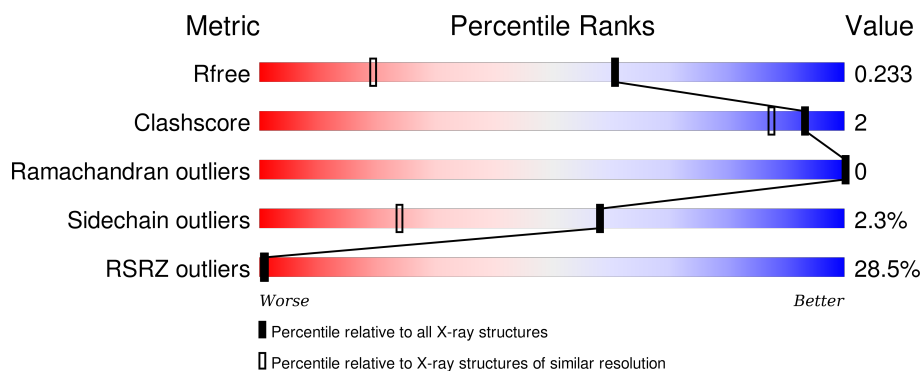
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 1.50 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))
$R_{free}$	91344	2072 (1.50-1.50)
Clashscore	102246	2274 (1.50-1.50)
Ramachandran outliers	100387	2218 (1.50-1.50)
Sidechain outliers	100360	2216 (1.50-1.50)
RSRZ outliers	91569	2075 (1.50-1.50)

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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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	217	<div> <div>26%</div> <div>90%</div> <div>9%</div> </div>
1	B	217	<div> <div>36%</div> <div>94%</div> <div>5%</div> </div>
1	C	217	<div> <div>24%</div> <div>94%</div> <div>5%</div> </div>
1	D	217	<div> <div>27%</div> <div>90%</div> <div>9%</div> </div>

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 crite-

ria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	SO4	C	1222	-	-	-	X

## 2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 7848 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 CATHSILICATEIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	215	Total	C	N	O	S	0	3	0
			1661	1047	275	326	13			
1	B	215	Total	C	N	O	S	0	2	0
			1657	1043	275	326	13			
1	C	215	Total	C	N	O	S	0	3	0
			1661	1047	275	326	13			
1	D	215	Total	C	N	O	S	0	2	0
			1657	1043	275	326	13			

There are 48 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	110	VAL	THR	CONFLICT	UNP P07711
B	110	VAL	THR	CONFLICT	UNP P07711
C	110	VAL	THR	CONFLICT	UNP P07711
D	110	VAL	THR	CONFLICT	UNP P07711
A	24	ALA	SER	ENGINEERED MUTATION	UNP P07711
A	25	SER	CYS	ENGINEERED MUTATION	UNP P07711
A	26	TYR	TRP	ENGINEERED MUTATION	UNP P07711
A	153	SER	GLU	ENGINEERED MUTATION	UNP P07711
A	154	SER	PRO	ENGINEERED MUTATION	UNP P07711
A	159	SER	GLU	ENGINEERED MUTATION	UNP P07711
A	160	SER	ASP	ENGINEERED MUTATION	UNP P07711
A	161	LEU	MET	ENGINEERED MUTATION	UNP P07711
A	162	ASN	ASP	ENGINEERED MUTATION	UNP P07711
A	164	ALA	GLY	ENGINEERED MUTATION	UNP P07711
A	165	MET	VAL	ENGINEERED MUTATION	UNP P07711
B	24	ALA	SER	ENGINEERED MUTATION	UNP P07711
B	25	SER	CYS	ENGINEERED MUTATION	UNP P07711
B	26	TYR	TRP	ENGINEERED MUTATION	UNP P07711
B	153	SER	GLU	ENGINEERED MUTATION	UNP P07711
B	154	SER	PRO	ENGINEERED MUTATION	UNP P07711
B	159	SER	GLU	ENGINEERED MUTATION	UNP P07711

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Chain	Residue	Modelled	Actual	Comment	Reference
B	160	SER	ASP	ENGINEERED MUTATION	UNP P07711
B	161	LEU	MET	ENGINEERED MUTATION	UNP P07711
B	162	ASN	ASP	ENGINEERED MUTATION	UNP P07711
B	164	ALA	GLY	ENGINEERED MUTATION	UNP P07711
B	165	MET	VAL	ENGINEERED MUTATION	UNP P07711
C	24	ALA	SER	ENGINEERED MUTATION	UNP P07711
C	25	SER	CYS	ENGINEERED MUTATION	UNP P07711
C	26	TYR	TRP	ENGINEERED MUTATION	UNP P07711
C	153	SER	GLU	ENGINEERED MUTATION	UNP P07711
C	154	SER	PRO	ENGINEERED MUTATION	UNP P07711
C	159	SER	GLU	ENGINEERED MUTATION	UNP P07711
C	160	SER	ASP	ENGINEERED MUTATION	UNP P07711
C	161	LEU	MET	ENGINEERED MUTATION	UNP P07711
C	162	ASN	ASP	ENGINEERED MUTATION	UNP P07711
C	164	ALA	GLY	ENGINEERED MUTATION	UNP P07711
C	165	MET	VAL	ENGINEERED MUTATION	UNP P07711
D	24	ALA	SER	ENGINEERED MUTATION	UNP P07711
D	25	SER	CYS	ENGINEERED MUTATION	UNP P07711
D	26	TYR	TRP	ENGINEERED MUTATION	UNP P07711
D	153	SER	GLU	ENGINEERED MUTATION	UNP P07711
D	154	SER	PRO	ENGINEERED MUTATION	UNP P07711
D	159	SER	GLU	ENGINEERED MUTATION	UNP P07711
D	160	SER	ASP	ENGINEERED MUTATION	UNP P07711
D	161	LEU	MET	ENGINEERED MUTATION	UNP P07711
D	162	ASN	ASP	ENGINEERED MUTATION	UNP P07711
D	164	ALA	GLY	ENGINEERED MUTATION	UNP P07711
D	165	MET	VAL	ENGINEERED MUTATION	UNP P07711

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S).



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

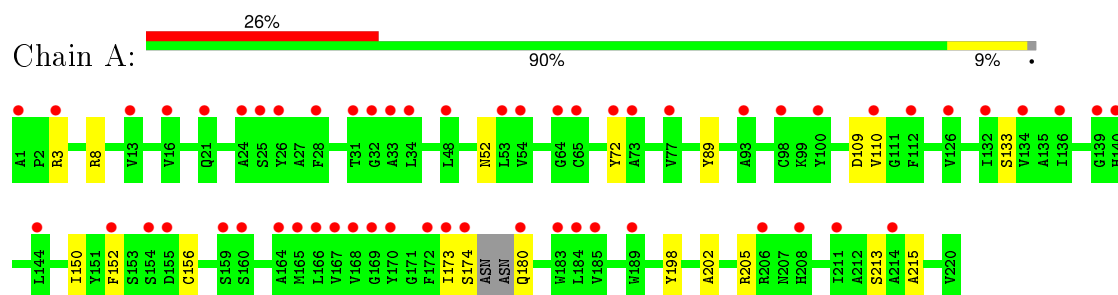
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	303	Total	O	0	0
			303	303		
3	B	264	Total	O	0	0
			264	264		
3	C	307	Total	O	0	0
			307	307		
3	D	298	Total	O	0	0
			298	298		

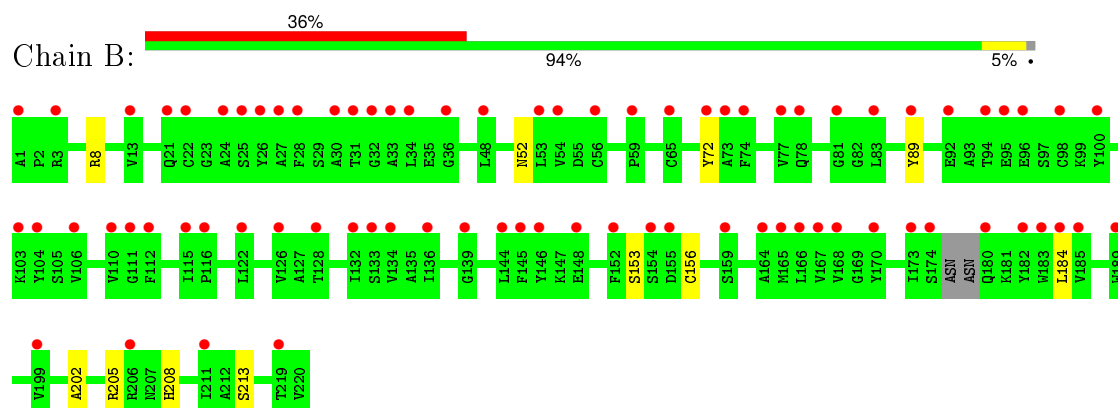
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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.

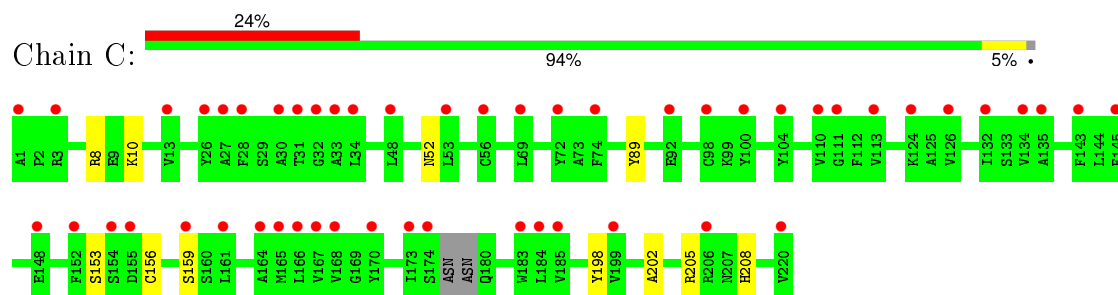
#### • Molecule 1: CATHSILICATEIN



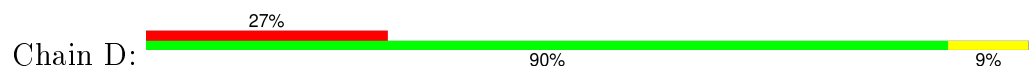
#### • Molecule 1: CATHSILICATEIN

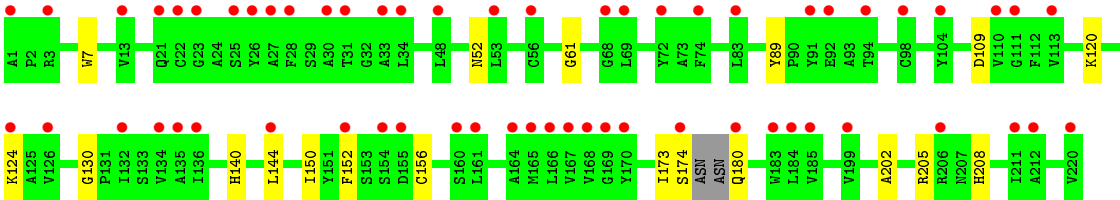


#### • Molecule 1: CATHSILICATEIN



#### • Molecule 1: CATHSILICATEIN







## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	56.83Å 58.10Å 70.21Å 105.67° 104.97° 105.05°	Depositor
Resolution (Å)	63.25 – 1.50 27.40 – 1.50	Depositor EDS
% Data completeness (in resolution range)	91.7 (63.25-1.50) 72.6 (27.40-1.50)	Depositor EDS
$R_{merge}$	0.04	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.23 (at 1.50Å)	Xtriage
Refinement program	REFMAC 5.2.0019	Depositor
R, $R_{free}$	0.188 , 0.220 0.196 , 0.233	Depositor DCC
$R_{free}$ test set	5042 reflections (5.31%)	DCC
Wilson B-factor (Å <sup>2</sup> )	16.5	Xtriage
Anisotropy	0.097	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.40 , 45.0	EDS
Estimated twinning fraction	0.036 for -k,-h,-l	Xtriage
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.51$ , $\langle L^2 \rangle = 0.34$	Xtriage
Outliers	0 of 99955 reflections	Xtriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	7848	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	26.0	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 85.58 % 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 1.2083e-07. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<sup>1</sup> Intensities estimated from amplitudes.

<sup>2</sup> Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 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: 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	0.33	0/1709	0.50	0/2306
1	B	0.32	0/1702	0.49	0/2296
1	C	0.34	0/1709	0.51	0/2306
1	D	0.34	0/1702	0.50	0/2296
All	All	0.33	0/6822	0.50	0/9204

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [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	1661	0	1576	9	0
1	B	1657	0	1567	5	0
1	C	1661	0	1576	5	0
1	D	1657	0	1567	9	0
2	A	10	0	0	0	0
2	B	10	0	0	0	0
2	C	10	0	0	0	0
2	D	10	0	0	0	0
3	A	303	0	0	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	264	0	0	0	0
3	C	307	0	0	1	0
3	D	298	0	0	1	0
All	All	7848	0	6286	25	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 2.

All (25) 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:202:ALA:HB1	1:A:205:ARG:HD3	1.78	0.66
1:A:72:TYR:OH	1:B:213:SER:OG	2.10	0.62
1:C:202:ALA:HB1	1:C:205:ARG:HD3	1.85	0.57
1:D:180:GLN:N	3:D:2254:HOH:O	2.40	0.54
1:A:213:SER:OG	1:B:72:TYR:OH	2.13	0.52
1:B:202:ALA:HB1	1:B:205:ARG:HD3	1.91	0.52
1:D:152:PHE:HA	1:D:208:HIS:CE1	2.46	0.51
1:C:153:SER:O	1:C:208:HIS:HE1	1.94	0.51
1:A:180:GLN:N	3:A:2250:HOH:O	2.46	0.48
1:B:153:SER:O	1:B:208:HIS:HE1	1.96	0.48
1:D:173:ILE:HG22	1:D:174:SER:N	2.31	0.45
1:A:152:PHE:CD1	1:A:205:ARG:CZ	3.00	0.44
1:D:140:HIS:O	1:D:144:LEU:HD13	2.17	0.44
1:A:150:ILE:HD11	1:A:173:ILE:HG12	2.00	0.43
1:C:10:LYS:NZ	3:C:2039:HOH:O	2.51	0.43
1:D:202:ALA:HB1	1:D:205:ARG:HD3	2.00	0.43
1:B:8:ARG:NH2	1:B:184:LEU:HD21	2.33	0.43
1:C:159[A]:SER:OG	1:D:61:GLY:O	2.32	0.42
1:D:150:ILE:HD11	1:D:173:ILE:HG12	2.00	0.42
1:D:7:TRP:CE2	1:D:130:GLY:HA2	2.55	0.41
1:A:8:ARG:HD3	1:A:198:TYR:CZ	2.55	0.41
1:A:133:SER:O	1:A:215:ALA:HA	2.20	0.41
1:C:8:ARG:HD3	1:C:198:TYR:CZ	2.56	0.41
1:D:120:LYS:HG2	1:D:124:LYS:HZ3	1.85	0.41
1:A:110[A]:VAL:HG21	3:A:2299: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	214/217 (99%)	211 (99%)	3 (1%)	0	100	100
1	B	213/217 (98%)	209 (98%)	4 (2%)	0	100	100
1	C	214/217 (99%)	211 (99%)	3 (1%)	0	100	100
1	D	213/217 (98%)	209 (98%)	4 (2%)	0	100	100
All	All	854/868 (98%)	840 (98%)	14 (2%)	0	100	100

There are no Ramachandran outliers to report.

### 5.3.2 Protein sidechains

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	176/175 (101%)	170 (97%)	6 (3%)	44	11
1	B	175/175 (100%)	172 (98%)	3 (2%)	68	37
1	C	176/175 (101%)	173 (98%)	3 (2%)	68	37
1	D	175/175 (100%)	171 (98%)	4 (2%)	58	24
All	All	702/700 (100%)	686 (98%)	16 (2%)	58	24

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	ARG
1	A	52	ASN

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Mol	Chain	Res	Type
1	A	89	TYR
1	A	109	ASP
1	A	156	CYS
1	A	174	SER
1	B	52	ASN
1	B	89	TYR
1	B	156	CYS
1	C	52	ASN
1	C	89	TYR
1	C	156	CYS
1	D	52	ASN
1	D	89	TYR
1	D	109	ASP
1	D	156	CYS

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	180	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 carbohydrates in this entry.

### 5.6 Ligand geometry [i](#)

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	$\# Z  > 2$
2	SO4	A	1221	-	4,4,4	0.43	0	6,6,6	0.24	0
2	SO4	A	1222	-	4,4,4	0.24	0	6,6,6	0.14	0
2	SO4	B	1221	-	4,4,4	0.37	0	6,6,6	0.21	0
2	SO4	B	1222	-	4,4,4	0.23	0	6,6,6	0.09	0
2	SO4	C	1221	-	4,4,4	0.40	0	6,6,6	0.36	0
2	SO4	C	1222	-	4,4,4	0.27	0	6,6,6	0.19	0
2	SO4	D	1221	-	4,4,4	0.39	0	6,6,6	0.30	0
2	SO4	D	1222	-	4,4,4	0.27	0	6,6,6	0.10	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	SO4	A	1221	-	-	0/0/0/0	0/0/0/0
2	SO4	A	1222	-	-	0/0/0/0	0/0/0/0
2	SO4	B	1221	-	-	0/0/0/0	0/0/0/0
2	SO4	B	1222	-	-	0/0/0/0	0/0/0/0
2	SO4	C	1221	-	-	0/0/0/0	0/0/0/0
2	SO4	C	1222	-	-	0/0/0/0	0/0/0/0
2	SO4	D	1221	-	-	0/0/0/0	0/0/0/0
2	SO4	D	1222	-	-	0/0/0/0	0/0/0/0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers ⓘ

There are no such residues in this entry.

## 5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	215/217 (99%)	1.61	57 (26%) <b>1</b> <b>1</b>	21, 24, 29, 31	0
1	B	215/217 (99%)	1.67	78 (36%) <b>0</b> <b>1</b>	21, 24, 29, 31	0
1	C	215/217 (99%)	1.52	51 (23%) <b>1</b> <b>1</b>	21, 24, 29, 31	0
1	D	215/217 (99%)	1.65	59 (27%) <b>1</b> <b>1</b>	21, 24, 29, 31	0
All	All	860/868 (99%)	1.61	245 (28%) <b>1</b> <b>1</b>	21, 24, 29, 31	0

All (245) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	174	SER	7.9
1	D	174	SER	7.6
1	B	174	SER	6.4
1	A	174	SER	6.1
1	A	139	GLY	5.5
1	D	154	SER	4.9
1	B	1	ALA	4.7
1	B	166	LEU	4.7
1	D	132	ILE	4.6
1	C	132	ILE	4.6
1	A	155	ASP	4.6
1	A	166	LEU	4.6
1	D	53	LEU	4.6
1	A	144	LEU	4.5
1	D	166	LEU	4.4
1	A	167	VAL	4.4
1	A	185	VAL	4.4
1	A	1	ALA	4.4
1	D	161	LEU	4.3
1	A	134	VAL	4.1
1	D	167	VAL	4.1

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Mol	Chain	Res	Type	RSRZ
1	C	53	LEU	4.1
1	C	173	ILE	4.1
1	C	1	ALA	4.1
1	C	166	LEU	4.1
1	A	33	ALA	4.0
1	B	167	VAL	4.0
1	D	33	ALA	4.0
1	B	144	LEU	4.0
1	D	48	LEU	4.0
1	D	160	SER	3.9
1	A	152	PHE	3.9
1	B	139	GLY	3.9
1	B	104	TYR	3.8
1	D	152	PHE	3.8
1	C	167	VAL	3.7
1	B	72	TYR	3.7
1	C	26	TYR	3.7
1	A	159[A]	SER	3.7
1	D	155	ASP	3.6
1	D	164	ALA	3.6
1	D	185	VAL	3.6
1	A	26	TYR	3.5
1	B	74	PHE	3.5
1	B	111	GLY	3.5
1	B	185	VAL	3.5
1	C	134	VAL	3.5
1	C	185	VAL	3.5
1	A	54	VAL	3.5
1	A	132	ILE	3.5
1	A	173	ILE	3.4
1	B	173	ILE	3.4
1	A	154	SER	3.4
1	D	26	TYR	3.4
1	A	48	LEU	3.4
1	B	134	VAL	3.4
1	D	1	ALA	3.4
1	D	134	VAL	3.3
1	A	28	PHE	3.3
1	B	34	LEU	3.3
1	B	96	GLU	3.3
1	B	132	ILE	3.3
1	C	48	LEU	3.3

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Mol	Chain	Res	Type	RSRZ
1	B	106	VAL	3.3
1	B	136	ILE	3.2
1	D	136	ILE	3.2
1	A	34	LEU	3.2
1	A	208	HIS	3.2
1	D	206	ARG	3.2
1	A	206	ARG	3.2
1	B	21	GLN	3.2
1	B	73	ALA	3.1
1	B	48	LEU	3.1
1	D	34	LEU	3.1
1	A	64	GLY	3.1
1	B	31	THR	3.1
1	B	32	GLY	3.1
1	C	74	PHE	3.1
1	C	110[A]	VAL	3.0
1	D	170	TYR	3.0
1	B	28	PHE	3.0
1	D	104	TYR	3.0
1	C	124	LYS	3.0
1	B	110	VAL	3.0
1	D	168	VAL	3.0
1	B	154	SER	3.0
1	C	206	ARG	3.0
1	D	28	PHE	3.0
1	B	164	ALA	3.0
1	C	164	ALA	3.0
1	D	110	VAL	2.9
1	D	113	VAL	2.9
1	A	31	THR	2.9
1	C	56	CYS	2.9
1	D	180	GLN	2.9
1	D	184	LEU	2.9
1	A	13	VAL	2.9
1	D	92	GLU	2.9
1	D	74	PHE	2.9
1	A	72	TYR	2.9
1	B	26	TYR	2.9
1	A	73	ALA	2.9
1	C	184	LEU	2.9
1	B	54	VAL	2.9
1	D	31	THR	2.8

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Mol	Chain	Res	Type	RSRZ
1	D	111	GLY	2.8
1	D	165	MET	2.8
1	B	59	PRO	2.8
1	A	170	TYR	2.8
1	C	199	VAL	2.8
1	A	136	ILE	2.8
1	C	33	ALA	2.8
1	A	65	CYS	2.8
1	B	95	GLU	2.8
1	A	112	PHE	2.8
1	A	164	ALA	2.8
1	D	144	LEU	2.7
1	C	135	ALA	2.7
1	B	13	VAL	2.7
1	B	65	CYS	2.7
1	C	111	GLY	2.7
1	B	182	TYR	2.7
1	B	155	ASP	2.7
1	C	155	ASP	2.7
1	A	53	LEU	2.7
1	D	220	VAL	2.7
1	B	152	PHE	2.6
1	A	3	ARG	2.6
1	B	206	ARG	2.6
1	A	25	SER	2.6
1	B	199	VAL	2.6
1	C	30	ALA	2.6
1	B	100	TYR	2.6
1	B	165	MET	2.6
1	C	13	VAL	2.6
1	B	33	ALA	2.6
1	C	3	ARG	2.6
1	B	183	TRP	2.5
1	C	220	VAL	2.5
1	A	100	TYR	2.5
1	C	170	TYR	2.5
1	D	91	TYR	2.5
1	D	3	ARG	2.5
1	B	168	VAL	2.5
1	C	113	VAL	2.5
1	D	13	VAL	2.5
1	B	53	LEU	2.5

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Mol	Chain	Res	Type	RSRZ
1	D	69	LEU	2.5
1	D	83	LEU	2.5
1	B	116	PRO	2.5
1	C	154	SER	2.5
1	C	152	PHE	2.5
1	C	31	THR	2.5
1	D	124	LYS	2.5
1	A	169	GLY	2.5
1	D	135	ALA	2.5
1	B	170	TYR	2.5
1	B	3	ARG	2.5
1	A	168	VAL	2.4
1	D	126	VAL	2.4
1	A	32	GLY	2.4
1	C	165	MET	2.4
1	D	21	GLN	2.4
1	D	22	CYS	2.4
1	D	98	CYS	2.4
1	C	148	GLU	2.4
1	B	25	SER	2.4
1	B	77	VAL	2.4
1	C	27	ALA	2.4
1	B	112	PHE	2.4
1	B	159[A]	SER	2.4
1	B	128	THR	2.4
1	A	98	CYS	2.4
1	C	32	GLY	2.4
1	B	115	ILE	2.4
1	A	172	PHE	2.4
1	C	100	TYR	2.3
1	C	98	CYS	2.3
1	A	77	VAL	2.3
1	C	168	VAL	2.3
1	D	199	VAL	2.3
1	A	140	HIS	2.3
1	B	78	GLN	2.3
1	B	184	LEU	2.3
1	C	34	LEU	2.3
1	C	69	LEU	2.3
1	D	169	GLY	2.3
1	A	93	ALA	2.3
1	A	21	GLN	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	89	TYR	2.3
1	B	103	LYS	2.3
1	C	104	TYR	2.3
1	A	189	TRP	2.3
1	B	126	VAL	2.3
1	C	126	VAL	2.3
1	A	211	ILE	2.3
1	B	145	PHE	2.3
1	D	72	TYR	2.3
1	A	180	GLN	2.3
1	A	184	LEU	2.3
1	A	165	MET	2.2
1	A	24	ALA	2.2
1	A	110[A]	VAL	2.2
1	B	189	TRP	2.2
1	B	211	ILE	2.2
1	C	159[A]	SER	2.2
1	B	180	GLN	2.2
1	B	94	THR	2.2
1	A	126	VAL	2.2
1	B	22	CYS	2.2
1	D	27	ALA	2.2
1	B	83	LEU	2.2
1	D	56	CYS	2.2
1	C	183	TRP	2.2
1	C	28	PHE	2.2
1	C	143	PHE	2.2
1	D	30	ALA	2.1
1	B	56	CYS	2.1
1	B	133	SER	2.1
1	A	214	ALA	2.1
1	B	122	LEU	2.1
1	C	161	LEU	2.1
1	D	211	ILE	2.1
1	D	212	ALA	2.1
1	A	16	VAL	2.1
1	B	92	GLU	2.1
1	B	36	GLY	2.1
1	D	25	SER	2.1
1	C	92	GLU	2.1
1	C	145	PHE	2.1
1	D	23	GLY	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	183	TRP	2.1
1	C	72	TYR	2.1
1	D	94	THR	2.0
1	B	27	ALA	2.0
1	A	160	SER	2.0
1	D	68	GLY	2.0
1	B	146	TYR	2.0
1	D	183	TRP	2.0
1	B	219	THR	2.0
1	B	148	GLU	2.0
1	B	24	ALA	2.0
1	B	30	ALA	2.0
1	B	81	GLY	2.0
1	B	98	CYS	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 carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95<sup>th</sup> 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	LLDF	B-factors(Å <sup>2</sup> )	Q<0.9
2	SO4	C	1222	5/5	0.94	0.26	2.10	38,38,39,39	0
2	SO4	D	1222	5/5	0.91	0.29	1.90	41,41,42,43	0
2	SO4	B	1222	5/5	0.91	0.22	0.31	52,52,52,52	0
2	SO4	B	1221	5/5	0.96	0.12	-1.24	26,27,29,31	0
2	SO4	A	1221	5/5	0.97	0.11	-1.53	25,28,28,30	0
2	SO4	C	1221	5/5	0.96	0.10	-1.62	25,28,29,31	0
2	SO4	D	1221	5/5	0.96	0.12	-2.01	26,27,30,31	0
2	SO4	A	1222	5/5	0.86	0.24	-	45,45,46,46	0

## 6.5 Other polymers

There are no such residues in this entry.