



# Full wwPDB X-ray Structure Validation Report ⓘ

Sep 13, 2022 – 10:56 pm BST

PDB ID : 7PL2  
Title : Crystal structure of choline-binding module of LytB from *Streptococcus pneumoniae*  
Authors : Martinez Caballero, S.; Hermoso, J.A.  
Deposited on : 2021-08-28  
Resolution : 2.98 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

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at <http://www.wwpdb.org/validation/2017/FAQs#types>.

---

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

MolProbity : 4.02b-467  
Mogul : 1.8.4, CSD as541be (2020)  
Xtrriage (Phenix) : 1.13  
EDS : 2.30  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0267  
CCP4 : 7.1.010 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.30

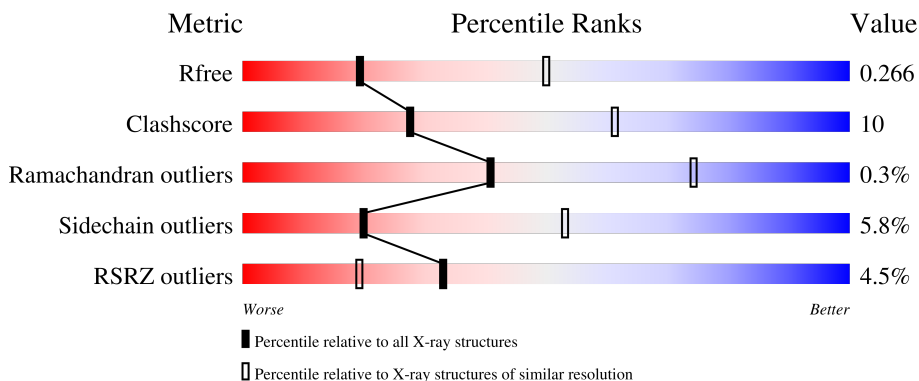
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.98 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))
$R_{free}$	130704	2754 (3.00-2.96)
Clashscore	141614	3103 (3.00-2.96)
Ramachandran outliers	138981	2993 (3.00-2.96)
Sidechain outliers	138945	2996 (3.00-2.96)
RSRZ outliers	127900	2644 (3.00-2.96)

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  $\geq 3$ , 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	405	

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
2	CHT	A	1907	-	-	-	X

*Continued on next page...*

*Continued from previous page...*

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	CHT	A	1914	-	-	X	X
2	CHT	A	1916	-	-	-	X

## 2 Entry composition [i](#)

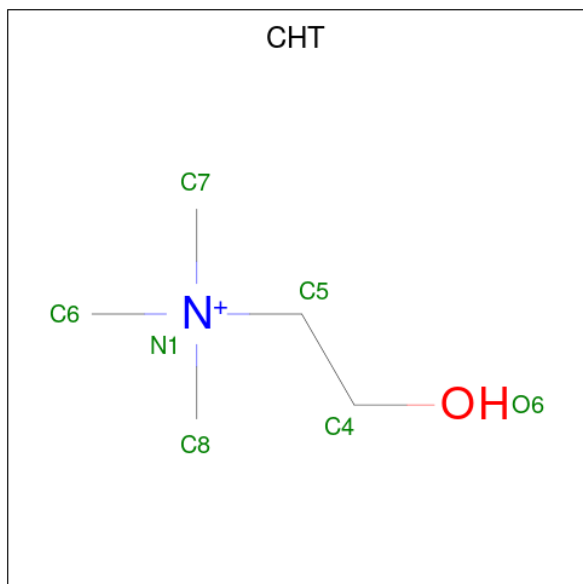
There are 3 unique types of molecules in this entry. The entry contains 6802 atoms, of which 3249 are hydrogens and 0 are deuteriums.

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 Putative endo-beta-N-acetylglucosaminidase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
			Total	C	H	N	O				S
1	A	398	6419	2241	3011	525	633	9	0	0	0

- Molecule 2 is CHOLINE ION (three-letter code: CHT) (formula: C<sub>5</sub>H<sub>14</sub>NO).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	H	N	O		
2	A	1	21	5	14	1	1	0	0
2	A	1	21	5	14	1	1	0	0
2	A	1	21	5	14	1	1	0	0
2	A	1	21	5	14	1	1	0	0
2	A	1	21	5	14	1	1	0	0

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
2	A	1	Total	C	H	N	O	0	0
			21	5	14	1	1		
2	A	1	Total	C	H	N	O	0	0
			21	5	14	1	1		
2	A	1	Total	C	H	N	O	0	0
			21	5	14	1	1		
2	A	1	Total	C	H	N	O	0	0
			21	5	14	1	1		
2	A	1	Total	C	H	N	O	0	0
			21	5	14	1	1		
2	A	1	Total	C	H	N	O	0	0
			21	5	14	1	1		
2	A	1	Total	C	H	N	O	0	0
			21	5	14	1	1		
2	A	1	Total	C	H	N	O	0	0
			21	5	14	1	1		
2	A	1	Total	C	H	N	O	0	0
			21	5	14	1	1		

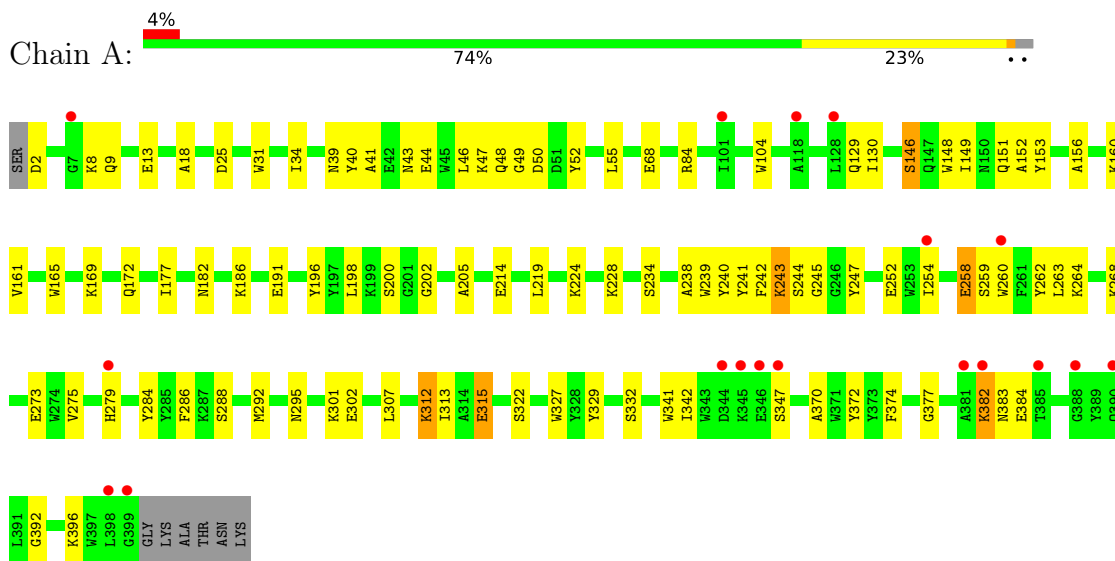
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	26	Total	O	0	0
			26	26		

### 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: Putative endo-beta-N-acetylglucosaminidase



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 6	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	202.10Å 202.10Å 26.47Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	43.76 – 2.98 48.54 – 2.98	Depositor EDS
% Data completeness (in resolution range)	96.3 (43.76-2.98) 96.3 (48.54-2.98)	Depositor EDS
$R_{merge}$	0.15	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.41 (at 2.96Å)	Xtrriage
Refinement program	PHENIX 1.18_3855	Depositor
R, $R_{free}$	0.219 , 0.273 0.227 , 0.266	Depositor DCC
$R_{free}$ test set	644 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	63.6	Xtrriage
Anisotropy	0.191	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	(Not available) , (Not available)	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	0.009 for h,-h-k,-l	Xtrriage
$F_o, F_c$ correlation	0.91	EDS
Total number of atoms	6802	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	67.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.70% of the height of the origin peak. No significant pseudotranslation is detected.*

<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, 0.333 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: CHT

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	0.69	0/3546	0.69	0/4803

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	3408	3011	3044	67	0
2	A	119	238	238	18	0
3	A	26	0	0	0	0
All	All	3553	3249	3282	68	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 10.

All (68) 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:327:TRP:CD2	2:A:1914:CHT:H83	2.17	0.78

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:260:TRP:CE2	2:A:1902:CHT:H61	2.19	0.78
1:A:241:TYR:CD2	1:A:254:ILE:HD13	2.19	0.77
1:A:153:TYR:O	1:A:161:VAL:HG23	1.90	0.71
1:A:196:TYR:CE1	2:A:1904:CHT:H83	2.29	0.68
1:A:260:TRP:CZ2	2:A:1902:CHT:C6	2.78	0.67
1:A:146:SER:OG	1:A:156:ALA:HA	1.95	0.67
1:A:315:GLU:O	1:A:315:GLU:HG3	1.96	0.65
1:A:260:TRP:CZ2	2:A:1902:CHT:H63	2.33	0.63
1:A:243:LYS:NZ	1:A:252:GLU:OE1	2.31	0.63
1:A:327:TRP:CE3	2:A:1914:CHT:H83	2.35	0.61
1:A:198:LEU:HD23	1:A:202:GLY:O	2.03	0.59
1:A:382:LYS:O	1:A:392:GLY:O	2.21	0.58
1:A:327:TRP:CD2	2:A:1914:CHT:C8	2.87	0.56
1:A:295:ASN:N	1:A:307:LEU:O	2.38	0.56
1:A:260:TRP:CE2	2:A:1902:CHT:C6	2.90	0.54
1:A:327:TRP:CE2	2:A:1914:CHT:C8	2.91	0.54
1:A:240:TYR:OH	1:A:268:LYS:HD3	2.10	0.52
1:A:264:LYS:NZ	1:A:273:GLU:OE2	2.40	0.52
1:A:47:LYS:HE3	1:A:49:GLY:O	2.11	0.51
1:A:196:TYR:OH	1:A:224:LYS:NZ	2.44	0.50
1:A:262:TYR:C	1:A:263:LEU:HD12	2.33	0.49
1:A:238:ALA:CB	1:A:268:LYS:HD2	2.43	0.49
1:A:258:GLU:OE1	1:A:258:GLU:N	2.43	0.49
1:A:377:GLY:O	2:A:1914:CHT:H73	2.12	0.48
1:A:239:TRP:CZ3	2:A:1911:CHT:H73	2.48	0.48
1:A:370:ALA:HB3	1:A:372:TYR:CE1	2.48	0.48
1:A:254:ILE:HD12	1:A:263:LEU:HD13	1.95	0.48
1:A:327:TRP:CE2	2:A:1914:CHT:H83	2.50	0.47
1:A:152:ALA:CB	1:A:160:LYS:HE2	2.44	0.47
1:A:284:TYR:HD1	1:A:292:MET:CE	2.27	0.47
1:A:205:ALA:HB3	1:A:219:LEU:HD13	1.96	0.47
1:A:383:ASN:N	1:A:384:GLU:OE1	2.47	0.47
1:A:129:GLN:O	1:A:129:GLN:CG	2.63	0.46
1:A:327:TRP:CE2	2:A:1914:CHT:H81	2.50	0.46
1:A:2:ASP:O	1:A:13:GLU:HG3	2.16	0.46
1:A:151:GLN:O	1:A:182:ASN:HA	2.15	0.46
1:A:329:TYR:CD2	1:A:342:ILE:HD13	2.52	0.46
1:A:196:TYR:CD2	1:A:196:TYR:N	2.84	0.45
1:A:31:TRP:CE2	2:A:1903:CHT:H81	2.52	0.44
1:A:9:GLN:NE2	1:A:39:ASN:OD1	2.49	0.44
1:A:161:VAL:O	1:A:177:ILE:HG21	2.18	0.44

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:370:ALA:HB1	1:A:396:LYS:HG2	2.00	0.44
1:A:41:ALA:HB1	1:A:44:GLU:OE2	2.17	0.43
1:A:148:TRP:CE3	2:A:1912:CHT:H81	2.52	0.43
1:A:165:TRP:CD1	1:A:191:GLU:HG3	2.53	0.43
1:A:301:LYS:O	1:A:301:LYS:HG3	2.17	0.43
1:A:241:TYR:HB3	1:A:263:LEU:HD21	2.00	0.43
1:A:104:TRP:CZ2	1:A:130:ILE:HD13	2.54	0.43
1:A:43:ASN:N	1:A:55:LEU:O	2.51	0.43
1:A:205:ALA:CB	1:A:219:LEU:HD13	2.48	0.43
1:A:370:ALA:CB	1:A:396:LYS:HG2	2.49	0.43
1:A:245:GLY:HA3	1:A:247:TYR:CE2	2.54	0.42
1:A:50:ASP:O	1:A:84:ARG:NH2	2.53	0.42
1:A:341:TRP:CD2	2:A:1915:CHT:H73	2.53	0.42
1:A:8:LYS:HA	1:A:40:TYR:CE2	2.55	0.41
1:A:228:LYS:N	1:A:242:PHE:O	2.53	0.41
1:A:169:LYS:O	1:A:172:GLN:NE2	2.52	0.41
1:A:263:LEU:HD12	1:A:263:LEU:N	2.35	0.41
1:A:275:VAL:CG1	1:A:286:PHE:CE2	3.03	0.41
1:A:46:LEU:HD21	1:A:48:GLN:HG3	2.02	0.41
1:A:47:LYS:HD2	1:A:52:TYR:CE2	2.56	0.41
1:A:186:LYS:HG3	1:A:200:SER:HA	2.03	0.41
1:A:341:TRP:CE3	2:A:1915:CHT:C7	3.03	0.41
1:A:374:PHE:CD2	1:A:374:PHE:N	2.89	0.41
2:A:1915:CHT:H73	2:A:1915:CHT:HC41	1.92	0.41
1:A:18:ALA:O	1:A:34:ILE:HG21	2.21	0.40
1:A:312:LYS:HB2	1:A:312:LYS:HE3	1.87	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	396/405 (98%)	367 (93%)	28 (7%)	1 (0%)	41 74

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	146	SER

### 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	329/334 (98%)	310 (94%)	19 (6%)	20 53

All (19) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	25	ASP
1	A	68	GLU
1	A	149	ILE
1	A	214	GLU
1	A	234	SER
1	A	243	LYS
1	A	244	SER
1	A	258	GLU
1	A	259	SER
1	A	279	HIS
1	A	288	SER
1	A	302	GLU
1	A	312	LYS
1	A	313	ILE
1	A	315	GLU
1	A	322	SER
1	A	332	SER
1	A	347	SER
1	A	382	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

### 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](#)

17 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	CHT	A	1907	-	6,6,6	2.17	3 (50%)	8,8,8	1.10	1 (12%)
2	CHT	A	1915	-	6,6,6	0.90	0	8,8,8	0.50	0
2	CHT	A	1909	-	6,6,6	0.86	0	8,8,8	0.59	0
2	CHT	A	1917	-	6,6,6	0.87	0	8,8,8	0.33	0
2	CHT	A	1901	-	6,6,6	0.93	0	8,8,8	0.45	0
2	CHT	A	1905	-	6,6,6	1.08	0	8,8,8	0.50	0
2	CHT	A	1902	-	6,6,6	1.27	1 (16%)	8,8,8	0.46	0
2	CHT	A	1906	-	6,6,6	0.93	0	8,8,8	0.75	0
2	CHT	A	1908	-	6,6,6	0.96	0	8,8,8	0.35	0
2	CHT	A	1910	-	6,6,6	0.66	0	8,8,8	0.42	0
2	CHT	A	1912	-	6,6,6	0.72	0	8,8,8	0.59	0
2	CHT	A	1904	-	6,6,6	0.97	0	8,8,8	0.61	0
2	CHT	A	1916	-	6,6,6	0.69	0	8,8,8	0.39	0
2	CHT	A	1914	-	6,6,6	0.87	0	8,8,8	0.44	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	CHT	A	1903	-	6,6,6	1.01	0	8,8,8	0.46	0
2	CHT	A	1913	-	6,6,6	0.83	0	8,8,8	0.46	0
2	CHT	A	1911	-	6,6,6	0.86	0	8,8,8	0.43	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	CHT	A	1907	-	-	2/4/4/4	-
2	CHT	A	1915	-	-	0/4/4/4	-
2	CHT	A	1909	-	-	1/4/4/4	-
2	CHT	A	1917	-	-	3/4/4/4	-
2	CHT	A	1901	-	-	1/4/4/4	-
2	CHT	A	1905	-	-	0/4/4/4	-
2	CHT	A	1902	-	-	1/4/4/4	-
2	CHT	A	1906	-	-	0/4/4/4	-
2	CHT	A	1908	-	-	0/4/4/4	-
2	CHT	A	1910	-	-	1/4/4/4	-
2	CHT	A	1912	-	-	0/4/4/4	-
2	CHT	A	1904	-	-	3/4/4/4	-
2	CHT	A	1916	-	-	1/4/4/4	-
2	CHT	A	1914	-	-	3/4/4/4	-
2	CHT	A	1903	-	-	1/4/4/4	-
2	CHT	A	1913	-	-	0/4/4/4	-
2	CHT	A	1911	-	-	1/4/4/4	-

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1907	CHT	C7-N1	-3.13	1.40	1.50
2	A	1907	CHT	C8-N1	-3.01	1.41	1.50
2	A	1902	CHT	C6-N1	-2.32	1.43	1.50
2	A	1907	CHT	C6-N1	-2.21	1.43	1.50

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	1907	CHT	C8-N1-C7	-2.15	103.45	108.97

There are no chirality outliers.

All (18) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1901	CHT	O6-C4-C5-N1
2	A	1903	CHT	O6-C4-C5-N1
2	A	1916	CHT	O6-C4-C5-N1
2	A	1904	CHT	C4-C5-N1-C6
2	A	1914	CHT	C4-C5-N1-C6
2	A	1902	CHT	O6-C4-C5-N1
2	A	1909	CHT	O6-C4-C5-N1
2	A	1904	CHT	C4-C5-N1-C8
2	A	1914	CHT	C4-C5-N1-C7
2	A	1904	CHT	C4-C5-N1-C7
2	A	1914	CHT	C4-C5-N1-C8
2	A	1917	CHT	C4-C5-N1-C7
2	A	1917	CHT	C4-C5-N1-C8
2	A	1917	CHT	C4-C5-N1-C6
2	A	1911	CHT	O6-C4-C5-N1
2	A	1907	CHT	C4-C5-N1-C8
2	A	1907	CHT	C4-C5-N1-C6
2	A	1910	CHT	C4-C5-N1-C6

There are no ring outliers.

7 monomers are involved in 18 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	1915	CHT	3	0
2	A	1902	CHT	4	0
2	A	1912	CHT	1	0
2	A	1904	CHT	1	0
2	A	1914	CHT	7	0
2	A	1903	CHT	1	0
2	A	1911	CHT	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, 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	398/405 (98%)	0.58	18 (4%) 33 19	36, 66, 99, 118	0

All (18) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	381	ALA	3.8
1	A	346	GLU	3.7
1	A	344	ASP	3.4
1	A	388	GLY	2.9
1	A	101	ILE	2.8
1	A	128	LEU	2.7
1	A	260	TRP	2.6
1	A	390	GLN	2.3
1	A	347	SER	2.3
1	A	382	LYS	2.3
1	A	399	GLY	2.2
1	A	118	ALA	2.2
1	A	7	GLY	2.2
1	A	385	THR	2.1
1	A	279	HIS	2.1
1	A	398	LEU	2.1
1	A	254	ILE	2.0
1	A	345	LYS	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, 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	B-factors( $\text{\AA}^2$ )	Q<0.9
2	CHT	A	1907	7/7	0.74	0.41	39,39,52,52	0
2	CHT	A	1914	7/7	0.78	0.67	39,39,85,85	0
2	CHT	A	1917	7/7	0.79	0.39	39,39,72,72	0
2	CHT	A	1916	7/7	0.80	0.53	39,39,81,81	0
2	CHT	A	1915	7/7	0.81	0.58	39,39,86,86	0
2	CHT	A	1902	7/7	0.82	0.63	91,127,150,152	0
2	CHT	A	1913	7/7	0.84	0.46	39,39,75,75	0
2	CHT	A	1906	7/7	0.85	0.51	39,39,68,68	0
2	CHT	A	1911	7/7	0.87	0.36	39,39,68,68	0
2	CHT	A	1912	7/7	0.88	0.47	39,39,68,68	0
2	CHT	A	1909	7/7	0.88	0.40	39,39,74,74	0
2	CHT	A	1903	7/7	0.89	0.39	39,39,61,61	0
2	CHT	A	1901	7/7	0.90	0.41	84,119,137,140	0
2	CHT	A	1908	7/7	0.90	0.33	39,39,73,73	0
2	CHT	A	1905	7/7	0.92	0.30	39,39,48,48	0
2	CHT	A	1904	7/7	0.92	0.38	39,39,53,53	0
2	CHT	A	1910	7/7	0.93	0.19	39,39,75,75	0

### 6.5 Other polymers [i](#)

There are no such residues in this entry.