



# Full wwPDB X-ray Structure Validation Report ⓘ

Jan 23, 2023 – 06:58 PM EST

PDB ID : 3CPX  
Title : Crystal structure of putative M42 glutamyl aminopeptidase (YP\_676701.1) from *Cytophaga hutchinsonii* ATCC 33406 at 2.39 Å resolution  
Authors : Joint Center for Structural Genomics (JCSG)  
Deposited on : 2008-04-01  
Resolution : 2.39 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 : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.31.2  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.31.2

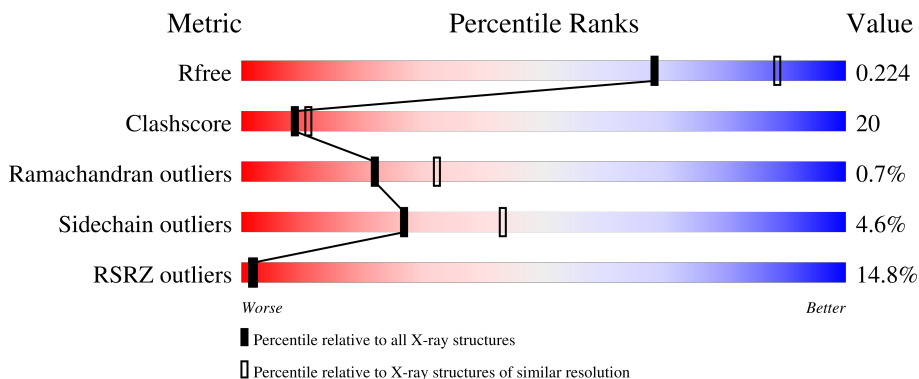
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.39 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	3907 (2.40-2.40)
Clashscore	141614	4398 (2.40-2.40)
Ramachandran outliers	138981	4318 (2.40-2.40)
Sidechain outliers	138945	4319 (2.40-2.40)
RSRZ outliers	127900	3811 (2.40-2.40)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments 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	321	 16% 69% 24% . .
1	B	321	 11% 73% 23% . .
1	C	321	 14% 66% 26% . .

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
3	EDO	A	407	-	-	-	X

## 2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 7728 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 Aminopeptidase, M42 family.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	S	Se			
1	A	309	2438	1561	403	461	6	7	0	1	0
1	B	311	2473	1582	409	469	6	7	0	0	0
1	C	309	2439	1560	406	460	6	7	0	2	0

There are 57 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-18	MSE	-	expression tag	UNP Q11Z05
A	-17	GLY	-	expression tag	UNP Q11Z05
A	-16	SER	-	expression tag	UNP Q11Z05
A	-15	ASP	-	expression tag	UNP Q11Z05
A	-14	LYS	-	expression tag	UNP Q11Z05
A	-13	ILE	-	expression tag	UNP Q11Z05
A	-12	HIS	-	expression tag	UNP Q11Z05
A	-11	HIS	-	expression tag	UNP Q11Z05
A	-10	HIS	-	expression tag	UNP Q11Z05
A	-9	HIS	-	expression tag	UNP Q11Z05
A	-8	HIS	-	expression tag	UNP Q11Z05
A	-7	HIS	-	expression tag	UNP Q11Z05
A	-6	GLU	-	expression tag	UNP Q11Z05
A	-5	ASN	-	expression tag	UNP Q11Z05
A	-4	LEU	-	expression tag	UNP Q11Z05
A	-3	TYR	-	expression tag	UNP Q11Z05
A	-2	PHE	-	expression tag	UNP Q11Z05
A	-1	GLN	-	expression tag	UNP Q11Z05
A	0	GLY	-	expression tag	UNP Q11Z05
B	-18	MSE	-	expression tag	UNP Q11Z05
B	-17	GLY	-	expression tag	UNP Q11Z05
B	-16	SER	-	expression tag	UNP Q11Z05
B	-15	ASP	-	expression tag	UNP Q11Z05

*Continued on next page...*

*Continued from previous page...*

Chain	Residue	Modelled	Actual	Comment	Reference
B	-14	LYS	-	expression tag	UNP Q11Z05
B	-13	ILE	-	expression tag	UNP Q11Z05
B	-12	HIS	-	expression tag	UNP Q11Z05
B	-11	HIS	-	expression tag	UNP Q11Z05
B	-10	HIS	-	expression tag	UNP Q11Z05
B	-9	HIS	-	expression tag	UNP Q11Z05
B	-8	HIS	-	expression tag	UNP Q11Z05
B	-7	HIS	-	expression tag	UNP Q11Z05
B	-6	GLU	-	expression tag	UNP Q11Z05
B	-5	ASN	-	expression tag	UNP Q11Z05
B	-4	LEU	-	expression tag	UNP Q11Z05
B	-3	TYR	-	expression tag	UNP Q11Z05
B	-2	PHE	-	expression tag	UNP Q11Z05
B	-1	GLN	-	expression tag	UNP Q11Z05
B	0	GLY	-	expression tag	UNP Q11Z05
C	-18	MSE	-	expression tag	UNP Q11Z05
C	-17	GLY	-	expression tag	UNP Q11Z05
C	-16	SER	-	expression tag	UNP Q11Z05
C	-15	ASP	-	expression tag	UNP Q11Z05
C	-14	LYS	-	expression tag	UNP Q11Z05
C	-13	ILE	-	expression tag	UNP Q11Z05
C	-12	HIS	-	expression tag	UNP Q11Z05
C	-11	HIS	-	expression tag	UNP Q11Z05
C	-10	HIS	-	expression tag	UNP Q11Z05
C	-9	HIS	-	expression tag	UNP Q11Z05
C	-8	HIS	-	expression tag	UNP Q11Z05
C	-7	HIS	-	expression tag	UNP Q11Z05
C	-6	GLU	-	expression tag	UNP Q11Z05
C	-5	ASN	-	expression tag	UNP Q11Z05
C	-4	LEU	-	expression tag	UNP Q11Z05
C	-3	TYR	-	expression tag	UNP Q11Z05
C	-2	PHE	-	expression tag	UNP Q11Z05
C	-1	GLN	-	expression tag	UNP Q11Z05
C	0	GLY	-	expression tag	UNP Q11Z05

- Molecule 2 is FE (III) ION (three-letter code: FE) (formula: Fe).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	2	Total Fe 2 2	0	0
2	B	2	Total Fe 2 2	0	0

*Continued on next page...*

Continued from previous page...

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	C	2	Total	Fe	0	0
			2	2		

- Molecule 3 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			4	2	2		
3	A	1	Total	C	O	0	0
			4	2	2		
3	A	1	Total	C	O	0	0
			4	2	2		
3	A	1	Total	C	O	0	0
			4	2	2		
3	A	1	Total	C	O	0	0
			4	2	2		
3	B	1	Total	C	O	0	0
			4	2	2		
3	C	1	Total	C	O	0	0
			4	2	2		
3	C	1	Total	C	O	0	0
			4	2	2		
3	C	1	Total	C	O	0	0
			4	2	2		

Continued on next page...

*Continued from previous page...*

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	C	1	Total	C	O	0	0
			4	2	2		
3	C	1	Total	C	O	0	0
			4	2	2		

- Molecule 4 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	B	1	Total	Cl	0	0
			1	1		

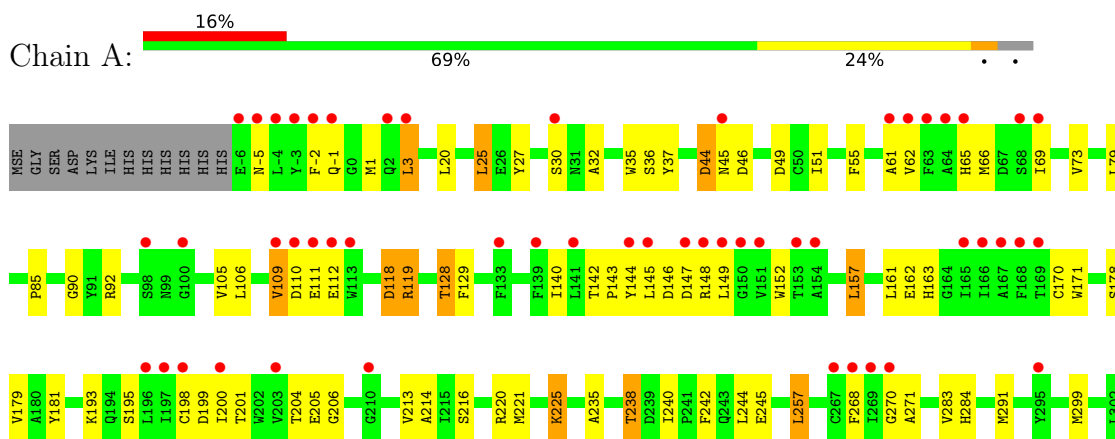
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	105	Total	O	0	0
			105	105		
5	B	119	Total	O	0	1
			120	120		
5	C	98	Total	O	0	1
			98	98		

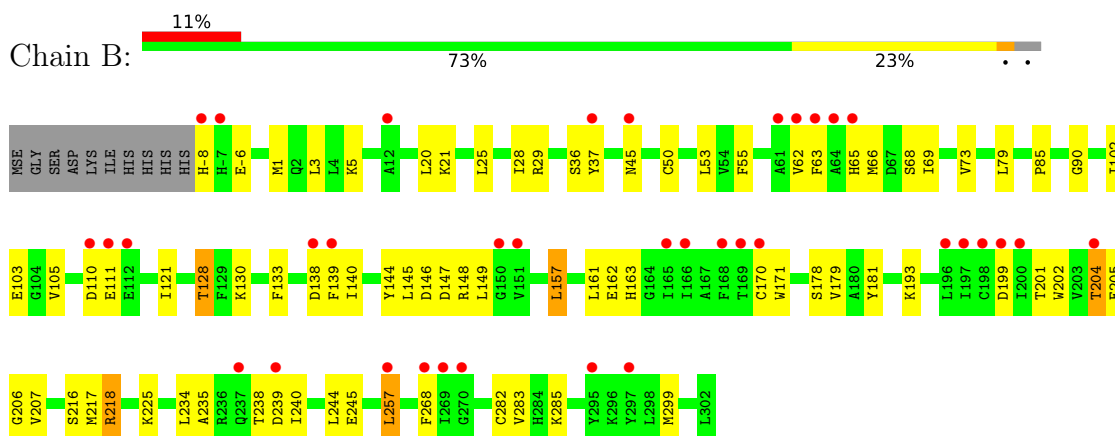
### 3 Residue-property plots [i](#)

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.

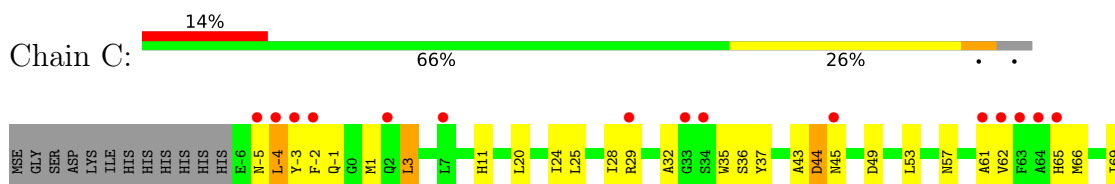
- Molecule 1: Aminopeptidase, M42 family



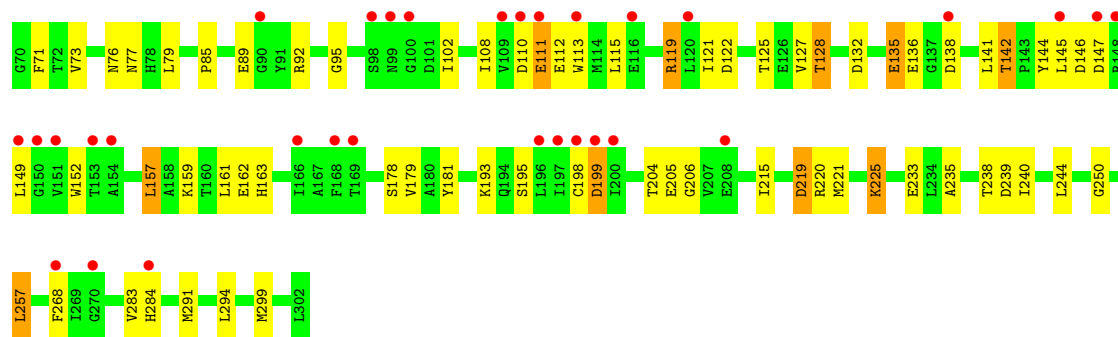
- Molecule 1: Aminopeptidase, M42 family



- Molecule 1: Aminopeptidase, M42 family







## 4 Data and refinement statistics

Property	Value	Source
Space group	P 61 2 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	83.84Å 83.84Å 682.31Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	29.66 – 2.39 29.66 – 2.39	Depositor EDS
% Data completeness (in resolution range)	89.3 (29.66-2.39) 89.3 (29.66-2.39)	Depositor EDS
$R_{merge}$	0.06	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.34 (at 2.39Å)	Xtrriage
Refinement program	REFMAC 5.4.0067, PHENIX	Depositor
R, $R_{free}$	0.187 , 0.223 0.188 , 0.224	Depositor DCC
$R_{free}$ test set	2650 reflections (5.10%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	50.4	Xtrriage
Anisotropy	0.570	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.31 , 36.4	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.47$ , $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	7728	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	43.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.88% 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: FE, CL, 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	0.73	0/2497	0.91	1/3383 (0.0%)
1	B	0.73	0/2531	0.89	0/3427
1	C	0.85	2/2502 (0.1%)	0.99	5/3394 (0.1%)
All	All	0.77	2/7530 (0.0%)	0.93	6/10204 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	136	GLU	CD-OE2	-6.94	1.18	1.25
1	C	132	ASP	N-CA	6.00	1.58	1.46

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	199	ASP	CB-CG-OD1	8.91	126.32	118.30
1	A	44	ASP	CB-CA-C	-8.18	94.04	110.40
1	C	135	GLU	OE1-CD-OE2	-7.92	113.79	123.30
1	C	199	ASP	CB-CG-OD2	-7.92	111.18	118.30
1	C	89	GLU	O-C-N	6.07	133.52	123.20
1	C	219	ASP	CB-CG-OD1	5.10	122.89	118.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	135	GLU	Sidechain

## 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	2438	0	2310	108	0
1	B	2473	0	2347	90	0
1	C	2439	0	2307	105	0
2	A	2	0	0	0	0
2	B	2	0	0	0	0
2	C	2	0	0	0	0
3	A	24	0	36	4	0
3	B	4	0	6	0	0
3	C	20	0	30	1	0
4	B	1	0	0	0	0
5	A	105	0	0	1	1
5	B	120	0	0	0	0
5	C	98	0	0	1	1
All	All	7728	0	7036	294	1

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 20.

All (294) 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:238:THR:CG2	1:A:240:ILE:H	1.51	1.23
1:B:238:THR:CG2	1:B:240:ILE:H	1.60	1.13
1:C:220:ARG:HG2	1:C:221:MSE:CE	1.77	1.13
1:A:220:ARG:HG2	1:A:221:MSE:CE	1.78	1.13
1:B:238:THR:HG22	1:B:240:ILE:N	1.66	1.11
1:C:204:THR:HG22	1:C:206:GLY:N	1.66	1.10
1:C:238:THR:HG22	1:C:240:ILE:H	1.05	1.09
1:B:204:THR:HG22	1:B:206:GLY:H	1.11	1.09

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:204:THR:HG22	1:A:206:GLY:H	0.93	1.08
1:B:204:THR:CG2	1:B:206:GLY:H	1.67	1.07
1:A:220:ARG:CD	1:A:221:MSE:HE3	1.87	1.05
1:C:1:MSE:HE2	1:C:1:MSE:HA	1.37	1.03
1:A:204:THR:HG22	1:A:206:GLY:N	1.76	1.01
1:C:220:ARG:CG	1:C:221:MSE:HE3	1.91	1.00
1:B:204:THR:HG22	1:B:206:GLY:N	1.74	1.00
1:A:238:THR:HG23	1:A:240:ILE:H	1.25	0.99
1:A:238:THR:HG21	1:A:240:ILE:HB	1.42	0.98
1:A:238:THR:HG22	1:A:240:ILE:H	1.29	0.97
1:C:204:THR:HG22	1:C:206:GLY:H	0.82	0.96
1:A:220:ARG:HD3	1:A:221:MSE:HE3	1.46	0.96
1:A:220:ARG:CG	1:A:221:MSE:HE3	1.96	0.96
1:A:221:MSE:HE1	3:A:403:EDO:H11	1.48	0.94
1:B:238:THR:HG22	1:B:240:ILE:H	0.80	0.94
1:A:220:ARG:CG	1:A:221:MSE:CE	2.46	0.93
1:C:238:THR:CG2	1:C:240:ILE:H	1.80	0.93
1:C:220:ARG:CD	1:C:221:MSE:HE3	1.97	0.93
1:B:1:MSE:SE	1:B:140:ILE:CD1	2.68	0.92
1:A:204:THR:CG2	1:A:206:GLY:H	1.83	0.92
1:A:1:MSE:SE	1:A:140:ILE:HD11	2.20	0.91
1:A:238:THR:CG2	1:A:240:ILE:N	2.33	0.90
1:B:238:THR:HG21	1:B:240:ILE:HB	1.50	0.90
1:A:119:ARG:CG	1:A:119:ARG:HH11	1.86	0.88
1:C:204:THR:CG2	1:C:206:GLY:H	1.79	0.88
1:C:43:ALA:O	1:C:44:ASP:HB3	1.70	0.88
1:C:238:THR:HG22	1:C:240:ILE:N	1.88	0.87
1:A:220:ARG:HG2	1:A:221:MSE:HE2	1.60	0.84
1:A:220:ARG:C	1:A:221:MSE:HE2	1.99	0.82
1:C:1:MSE:HA	1:C:1:MSE:CE	2.10	0.82
1:A:235:ALA:O	1:A:238:THR:HB	1.79	0.82
1:B:193:LYS:NZ	1:C:45:ASN:HB3	1.94	0.81
1:C:235:ALA:O	1:C:238:THR:HB	1.81	0.81
1:B:1:MSE:SE	1:B:140:ILE:HD13	2.31	0.80
1:C:-5:ASN:OD1	1:C:-4:LEU:HD12	1.81	0.80
1:C:220:ARG:HG2	1:C:221:MSE:HE2	1.65	0.79
1:A:238:THR:HG22	1:A:240:ILE:N	1.96	0.79
1:B:238:THR:HG21	1:B:240:ILE:CB	2.13	0.78
1:B:103:GLU:OE2	1:B:130:LYS:HE2	1.83	0.78
1:C:199:ASP:HB3	1:C:268:PHE:CE2	2.20	0.76
1:B:1:MSE:SE	1:B:140:ILE:HD11	2.33	0.76

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:-8:HIS:O	1:B:-6:GLU:OE1	2.03	0.76
1:B:138:ASP:O	1:B:285:LYS:HG3	1.86	0.75
1:A:162:GLU:HG2	1:A:163:HIS:CD2	2.23	0.73
1:A:238:THR:HG21	1:A:240:ILE:CB	2.18	0.73
1:A:193:LYS:NZ	1:B:45:ASN:HB3	2.04	0.73
1:B:193:LYS:HZ1	1:C:45:ASN:HB3	1.53	0.73
1:A:119:ARG:HH11	1:A:119:ARG:HG3	1.52	0.73
1:A:110:ASP:C	1:A:112:GLU:H	1.92	0.73
1:C:220:ARG:CG	1:C:221:MSE:CE	2.54	0.72
1:B:235:ALA:O	1:B:238:THR:HB	1.90	0.72
1:A:1:MSE:HE2	1:A:1:MSE:HA	1.73	0.71
1:C:-5:ASN:HA	1:C:-2:PHE:CE1	2.26	0.71
1:A:238:THR:CG2	1:A:240:ILE:HB	2.20	0.71
1:C:220:ARG:HD3	1:C:221:MSE:HE3	1.73	0.70
1:B:204:THR:HG22	1:B:207:VAL:H	1.56	0.70
1:A:1:MSE:SE	1:A:140:ILE:CD1	2.90	0.69
1:B:37:TYR:CE2	1:B:162:GLU:HG3	2.28	0.69
1:C:1:MSE:HE2	1:C:1:MSE:CA	2.17	0.69
1:B:162:GLU:HG2	1:B:163:HIS:CD2	2.28	0.69
1:A:73:VAL:HA	1:A:79:LEU:HD23	1.75	0.68
1:A:220:ARG:CD	1:A:221:MSE:CE	2.68	0.68
1:B:238:THR:CG2	1:B:239:ASP:N	2.57	0.68
1:A:193:LYS:HZ2	1:B:45:ASN:HB3	1.58	0.68
1:C:-5:ASN:C	1:C:-3:TYR:H	1.96	0.67
1:B:36:SER:HB2	1:B:37:TYR:HD1	1.58	0.67
1:B:179:VAL:CG1	1:B:257:LEU:HD13	2.25	0.67
1:A:220:ARG:O	1:A:221:MSE:HE2	1.94	0.66
1:B:238:THR:HG22	1:B:239:ASP:N	2.09	0.66
1:C:238:THR:HG21	1:C:240:ILE:HD12	1.78	0.66
1:C:65:HIS:NE2	1:C:147:ASP:HB2	2.11	0.65
1:B:238:THR:HG21	1:B:240:ILE:CG1	2.26	0.65
1:C:204:THR:CG2	1:C:205:GLU:N	2.59	0.65
1:C:110:ASP:C	1:C:111:GLU:OE1	2.35	0.64
1:B:157:LEU:HD22	1:B:161:LEU:HB2	1.80	0.64
1:C:220:ARG:C	1:C:221:MSE:HE2	2.18	0.64
1:B:238:THR:CG2	1:B:240:ILE:N	2.42	0.64
1:B:204:THR:HG22	1:B:206:GLY:CA	2.28	0.63
1:B:238:THR:CG2	1:B:240:ILE:HB	2.24	0.63
1:A:221:MSE:HE1	3:A:403:EDO:C1	2.26	0.62
1:A:238:THR:CG2	1:A:240:ILE:CB	2.78	0.62
1:A:238:THR:HG23	1:A:240:ILE:N	2.05	0.62

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:238:THR:CG2	1:B:240:ILE:CB	2.77	0.62
1:A:145:LEU:CD1	1:A:283:VAL:HG12	2.30	0.61
1:C:110:ASP:C	1:C:112:GLU:H	2.02	0.61
1:A:69:ILE:HD12	1:A:85:PRO:HB3	1.83	0.61
1:B:-8:HIS:C	1:B:-6:GLU:OE1	2.39	0.60
1:B:204:THR:HG22	1:B:207:VAL:N	2.15	0.60
1:A:204:THR:CG2	1:A:205:GLU:N	2.64	0.60
1:C:37:TYR:CE2	1:C:162:GLU:HG3	2.36	0.60
1:C:-5:ASN:HA	1:C:-2:PHE:CD1	2.36	0.60
1:C:-5:ASN:OD1	1:C:-4:LEU:N	2.35	0.60
1:C:119:ARG:CG	1:C:119:ARG:HH11	2.15	0.60
1:A:179:VAL:CG1	1:A:257:LEU:HD13	2.32	0.59
1:A:119:ARG:HH11	1:A:119:ARG:HG2	1.66	0.59
1:A:65:HIS:NE2	1:A:147:ASP:HB2	2.19	0.58
1:A:110:ASP:C	1:A:112:GLU:N	2.56	0.58
1:B:193:LYS:HZ2	1:C:45:ASN:HB3	1.69	0.58
1:C:238:THR:HG21	1:C:240:ILE:HB	1.85	0.57
1:B:36:SER:HB2	1:B:37:TYR:CD1	2.40	0.57
1:B:204:THR:HG23	1:B:206:GLY:H	1.62	0.57
1:C:283:VAL:HG22	1:C:284:HIS:N	2.20	0.56
1:C:3:LEU:HD22	1:C:3:LEU:O	2.05	0.56
1:B:238:THR:CG2	1:B:240:ILE:CG1	2.83	0.56
1:A:145:LEU:HD13	1:A:283:VAL:HG12	1.86	0.56
1:A:110:ASP:O	1:A:112:GLU:N	2.38	0.55
1:C:73:VAL:HA	1:C:79:LEU:HD23	1.87	0.55
1:A:90:GLY:C	1:A:105:VAL:HG13	2.27	0.55
1:C:157:LEU:HD22	1:C:161:LEU:HB2	1.89	0.55
1:C:110:ASP:O	1:C:112:GLU:N	2.40	0.54
1:A:157:LEU:HD22	1:A:161:LEU:HB2	1.89	0.54
1:A:142:THR:OG1	1:A:143:PRO:HD2	2.07	0.54
1:C:3:LEU:HD13	1:C:152:TRP:CD1	2.43	0.54
1:B:238:THR:CG2	1:B:240:ILE:HG13	2.38	0.54
1:A:157:LEU:HD11	1:A:299:MSE:HG3	1.90	0.54
1:B:193:LYS:HZ2	1:C:45:ASN:C	2.12	0.54
1:A:128:THR:HG23	1:A:144:TYR:HE2	1.73	0.53
1:C:61:ALA:O	1:C:195:SER:HA	2.07	0.53
1:C:179:VAL:CG1	1:C:257:LEU:HD13	2.38	0.53
1:A:128:THR:HG22	1:A:129:PHE:O	2.08	0.53
1:A:37:TYR:CE2	1:A:162:GLU:HG3	2.43	0.53
1:C:204:THR:HG22	1:C:205:GLU:N	2.18	0.53
1:C:138:ASP:HB3	1:C:284:HIS:CD2	2.44	0.53

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:25:LEU:HD13	1:A:51:ILE:HD13	1.91	0.53
1:A:216:SER:HA	1:A:245:GLU:HB3	1.91	0.52
1:C:-5:ASN:HA	1:C:-2:PHE:CZ	2.43	0.52
1:C:119:ARG:HH11	1:C:119:ARG:HG2	1.74	0.52
1:B:145:LEU:HD13	1:B:283:VAL:HG12	1.90	0.52
1:B:178:SER:HA	1:B:181:TYR:CE2	2.44	0.52
1:B:69:ILE:HD12	1:B:85:PRO:HA	1.92	0.52
1:C:108:ILE:CB	1:C:113:TRP:CZ3	2.92	0.52
1:C:220:ARG:O	1:C:221:MSE:HE2	2.10	0.52
1:A:90:GLY:HA2	1:A:105:VAL:CG1	2.40	0.51
1:A:193:LYS:NZ	1:B:45:ASN:CB	2.72	0.51
1:A:44:ASP:HB3	1:A:46:ASP:H	1.76	0.51
3:A:406:EDO:H22	5:A:468:HOH:O	2.10	0.51
1:A:145:LEU:HD13	1:A:283:VAL:CG1	2.40	0.51
1:B:216:SER:HA	1:B:245:GLU:HB3	1.93	0.51
1:B:217:MSE:O	1:B:218:ARG:HB3	2.10	0.51
1:A:199:ASP:O	1:A:270:GLY:HA3	2.11	0.51
1:A:-5:ASN:HA	1:A:-2:PHE:CZ	2.46	0.50
1:C:3:LEU:HD13	1:C:152:TRP:HD1	1.76	0.50
1:C:178:SER:HA	1:C:181:TYR:CE2	2.47	0.50
1:A:49:ASP:O	1:A:66:MSE:HE1	2.11	0.50
1:C:25:LEU:O	1:C:29:ARG:HG3	2.10	0.50
1:C:65:HIS:CE1	1:C:147:ASP:HB2	2.47	0.50
1:C:238:THR:CG2	1:C:239:ASP:N	2.75	0.50
1:B:238:THR:HG21	1:B:240:ILE:HD12	1.95	0.49
1:A:118:ASP:HB2	1:A:119:ARG:HD2	1.94	0.49
1:A:283:VAL:HG22	1:A:284:HIS:N	2.27	0.49
1:B:199:ASP:HB3	1:B:268:PHE:CZ	2.47	0.49
1:A:238:THR:HG23	1:A:240:ILE:HG13	1.94	0.49
1:B:145:LEU:HD13	1:B:283:VAL:CG1	2.43	0.49
1:C:110:ASP:C	1:C:112:GLU:N	2.65	0.49
1:B:21:LYS:O	1:B:25:LEU:HB2	2.13	0.49
1:B:199:ASP:HB3	1:B:268:PHE:CE2	2.48	0.49
1:A:20:LEU:HD23	1:A:66:MSE:HB3	1.95	0.49
1:C:102:ILE:CD1	1:C:125:THR:HG21	2.43	0.48
1:B:170:CYS:O	1:B:171:TRP:HB2	2.13	0.48
1:C:-5:ASN:C	1:C:-3:TYR:N	2.62	0.48
1:C:36:SER:HB2	1:C:37:TYR:HD1	1.77	0.48
1:C:199:ASP:HB3	1:C:268:PHE:CZ	2.49	0.48
1:A:109:VAL:O	1:A:112:GLU:O	2.31	0.48
1:C:71:PHE:HB2	1:C:127:VAL:HG23	1.95	0.48

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:69:ILE:HD12	1:C:85:PRO:HB3	1.96	0.48
1:C:1:MSE:CE	1:C:1:MSE:CA	2.85	0.48
1:C:238:THR:CG2	1:C:240:ILE:HB	2.44	0.48
1:B:128:THR:HG23	1:B:144:TYR:HE2	1.79	0.47
1:A:1:MSE:HA	1:A:1:MSE:CE	2.43	0.47
1:A:69:ILE:HD12	1:A:85:PRO:CB	2.43	0.47
1:A:146:ASP:HA	1:A:147:ASP:HA	1.72	0.47
1:C:238:THR:CG2	1:C:240:ILE:N	2.62	0.47
1:B:36:SER:C	1:B:37:TYR:CD1	2.88	0.47
1:B:102:ILE:HD13	1:B:121:ILE:HD12	1.97	0.47
1:A:36:SER:C	1:A:37:TYR:CD1	2.88	0.47
1:A:118:ASP:HB2	1:A:119:ARG:CD	2.45	0.47
1:C:24:ILE:O	1:C:28:ILE:HG13	2.14	0.47
1:B:-6:GLU:CD	1:B:-6:GLU:H	2.18	0.47
1:B:1:MSE:HA	1:B:1:MSE:HE2	1.96	0.47
1:B:5:LYS:HD2	1:B:133:PHE:HB3	1.97	0.47
1:B:216:SER:HB3	1:B:268:PHE:HB3	1.97	0.47
1:C:49:ASP:O	1:C:66:MSE:HE1	2.15	0.47
1:A:3:LEU:HD13	1:A:152:TRP:CD1	2.51	0.46
1:C:95:GLY:O	1:C:102:ILE:N	2.48	0.46
1:A:145:LEU:HD11	1:A:283:VAL:HG12	1.98	0.46
1:A:198:CYS:SG	1:A:291:MSE:HE2	2.54	0.46
1:B:65:HIS:NE2	1:B:147:ASP:HB2	2.31	0.46
1:B:145:LEU:CD1	1:B:283:VAL:HG12	2.45	0.46
1:C:28:ILE:HD13	1:C:53:LEU:HD11	1.97	0.46
1:C:44:ASP:HA	5:C:460:HOH:O	2.15	0.46
1:A:119:ARG:HG3	1:A:119:ARG:NH1	2.23	0.46
1:B:204:THR:CG2	1:B:205:GLU:N	2.78	0.46
1:A:90:GLY:HA2	1:A:105:VAL:HG11	1.97	0.45
1:A:105:VAL:HG12	1:A:106:LEU:N	2.31	0.45
1:B:179:VAL:HG11	1:B:257:LEU:HD13	1.99	0.45
1:A:45:ASN:HB3	1:C:193:LYS:HZ1	1.82	0.45
1:C:238:THR:CG2	1:C:240:ILE:CG1	2.94	0.45
1:A:200:ILE:HG23	1:A:271:ALA:O	2.17	0.45
1:B:50:CYS:SG	1:B:178:SER:HB2	2.57	0.45
1:B:90:GLY:HA2	1:B:105:VAL:CG1	2.47	0.45
1:C:128:THR:HG23	1:C:144:TYR:HE2	1.82	0.45
1:A:61:ALA:O	1:A:195:SER:HA	2.16	0.45
1:A:73:VAL:HG22	1:A:79:LEU:HD21	1.99	0.44
1:A:-5:ASN:HA	1:A:-2:PHE:CE2	2.52	0.44
1:A:225:LYS:HA	1:A:225:LYS:HD3	1.85	0.44

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:20:LEU:HD23	1:B:66:MSE:HB3	1.99	0.44
1:A:-5:ASN:HA	1:A:-2:PHE:CE1	2.52	0.44
1:A:199:ASP:HB3	1:A:268:PHE:CE2	2.52	0.44
1:B:103:GLU:OE2	1:B:130:LYS:CE	2.59	0.44
1:C:157:LEU:HD11	1:C:299:MSE:HG3	2.00	0.44
1:A:119:ARG:H	1:A:119:ARG:HD3	1.82	0.44
1:B:146:ASP:HA	1:B:147:ASP:HA	1.80	0.44
1:B:148:ARG:HA	1:B:148:ARG:HD3	1.82	0.44
1:A:-1:GLN:NE2	1:A:27:TYR:OH	2.50	0.44
1:B:238:THR:HG23	1:B:240:ILE:HG13	1.98	0.44
1:C:128:THR:HG23	1:C:144:TYR:CE2	2.53	0.44
1:C:146:ASP:HA	1:C:147:ASP:HA	1.79	0.44
1:C:238:THR:HG21	1:C:240:ILE:CD1	2.46	0.44
1:A:204:THR:HG22	1:A:205:GLU:N	2.33	0.43
1:C:36:SER:HB2	1:C:37:TYR:CD1	2.53	0.43
1:C:220:ARG:CD	1:C:221:MSE:CE	2.85	0.43
1:C:238:THR:HG21	1:C:240:ILE:CB	2.48	0.43
1:B:68:SER:HB2	1:B:144:TYR:CD1	2.53	0.43
1:B:201:THR:HG23	1:B:202:TRP:N	2.32	0.43
1:C:44:ASP:OD1	1:C:44:ASP:C	2.56	0.43
1:C:198:CYS:SG	1:C:291:MSE:HE2	2.58	0.43
1:A:270:GLY:HA2	1:A:291:MSE:HE3	2.00	0.43
1:C:238:THR:CG2	1:C:240:ILE:CB	2.95	0.43
1:C:11:HIS:ND1	1:C:128:THR:HB	2.32	0.43
1:C:141:LEU:N	1:C:141:LEU:HD12	2.34	0.43
1:A:55:PHE:CD1	1:A:161:LEU:HD23	2.54	0.43
1:B:25:LEU:HD12	1:B:25:LEU:HA	1.88	0.43
1:C:238:THR:HG21	1:C:240:ILE:CG1	2.47	0.43
1:B:55:PHE:CD1	1:B:161:LEU:HD23	2.54	0.43
1:B:63:PHE:CE1	1:B:257:LEU:HD21	2.54	0.43
1:A:45:ASN:CB	1:C:193:LYS:HZ1	2.32	0.43
1:C:57[A]:ASN:HB3	1:C:163:HIS:CE1	2.54	0.43
1:C:121:ILE:HG22	1:C:122:ASP:O	2.19	0.43
1:B:73:VAL:HA	1:B:79:LEU:HD23	2.00	0.42
1:B:139:PHE:CD2	1:B:282:CYS:SG	3.13	0.42
1:C:32:ALA:HA	1:C:35:TRP:CD2	2.54	0.42
1:A:268:PHE:CD1	1:A:268:PHE:C	2.92	0.42
1:C:36:SER:C	1:C:37:TYR:CD1	2.92	0.42
1:A:178:SER:HA	1:A:181:TYR:CE2	2.54	0.42
1:C:221:MSE:HE1	3:C:404:EDO:O1	2.20	0.42
1:A:193:LYS:HZ2	1:B:45:ASN:C	2.22	0.42

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:-5:ASN:O	1:C:-3:TYR:N	2.53	0.42
1:B:28:ILE:HD13	1:B:53:LEU:HD11	2.02	0.42
1:A:213:VAL:O	1:A:242:PHE:HA	2.19	0.42
1:B:238:THR:HG21	1:B:240:ILE:CD1	2.49	0.42
1:C:79:LEU:HD11	1:C:115:LEU:HB2	2.02	0.42
1:A:3:LEU:HD22	1:A:3:LEU:O	2.20	0.42
1:A:213:VAL:HG22	1:A:214:ALA:N	2.35	0.42
1:C:-1:GLN:OE1	1:C:159:LYS:NZ	2.31	0.42
1:A:216:SER:HB3	1:A:268:PHE:HB3	2.01	0.41
1:C:20:LEU:HD23	1:C:66:MSE:HB3	2.01	0.41
1:C:215:ILE:HD11	1:C:294:LEU:HD21	2.01	0.41
1:C:225:LYS:HD3	1:C:225:LYS:HA	1.66	0.41
1:B:37:TYR:CD2	1:B:162:GLU:HG3	2.54	0.41
1:B:204:THR:HG23	1:B:205:GLU:N	2.34	0.41
1:C:76:ASN:O	1:C:77:ASN:HB2	2.20	0.41
1:C:238:THR:CG2	1:C:240:ILE:HG13	2.49	0.41
1:A:105:VAL:CG1	1:A:106:LEU:N	2.83	0.41
3:A:405:EDO:O1	3:A:406:EDO:H11	2.19	0.41
1:B:69:ILE:HD12	1:B:85:PRO:HB3	2.01	0.41
1:C:219:ASP:HB2	1:C:250:GLY:O	2.21	0.41
1:B:25:LEU:O	1:B:29:ARG:HG3	2.20	0.41
1:B:110:ASP:O	1:B:111:GLU:HB2	2.20	0.41
1:C:142:THR:CG2	1:C:145:LEU:HD21	2.51	0.41
1:B:204:THR:CG2	1:B:206:GLY:N	2.48	0.41
1:C:-5:ASN:OD1	1:C:-4:LEU:CD1	2.62	0.41
1:C:102:ILE:HD12	1:C:125:THR:HG21	2.03	0.41
1:A:170:CYS:O	1:A:171:TRP:HB2	2.20	0.41
1:A:201:THR:OG1	1:A:245:GLU:OE1	2.24	0.41
1:A:283:VAL:CG2	1:A:284:HIS:N	2.84	0.41
1:B:157:LEU:HD11	1:B:299:MSE:HG3	2.03	0.41
1:C:283:VAL:CG2	1:C:284:HIS:N	2.84	0.41
1:A:145:LEU:HD23	1:A:145:LEU:HA	1.83	0.41
1:A:148:ARG:HA	1:A:148:ARG:HD3	1.92	0.41
1:B:36:SER:CB	1:B:37:TYR:CD1	3.04	0.41
1:A:25:LEU:HD13	1:A:51:ILE:CD1	2.50	0.40
1:B:234:LEU:HD23	1:B:234:LEU:HA	1.91	0.40
1:A:32:ALA:HA	1:A:35:TRP:CD2	2.56	0.40
1:A:193:LYS:HZ2	1:B:45:ASN:CB	2.31	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:A:409:HOH:O	5:C:431:HOH:O[10_665]	2.04	0.16

### 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	308/321 (96%)	288 (94%)	18 (6%)	2 (1%)	25	36
1	B	309/321 (96%)	291 (94%)	17 (6%)	1 (0%)	41	55
1	C	309/321 (96%)	288 (93%)	18 (6%)	3 (1%)	15	23
All	All	926/963 (96%)	867 (94%)	53 (6%)	6 (1%)	22	36

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	44	ASP
1	A	111	GLU
1	C	-4	LEU
1	C	111	GLU
1	B	218	ARG
1	A	109	VAL

#### 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	252/269 (94%)	238 (94%)	14 (6%)	21	34

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	258/269 (96%)	249 (96%)	9 (4%)	36	55
1	C	253/269 (94%)	241 (95%)	12 (5%)	26	42
All	All	763/807 (94%)	728 (95%)	35 (5%)	27	43

All (35) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	LEU
1	A	25	LEU
1	A	30	SER
1	A	62	VAL
1	A	92	ARG
1	A	118	ASP
1	A	119	ARG
1	A	128	THR
1	A	149	LEU
1	A	157	LEU
1	A	225	LYS
1	A	238	THR
1	A	244	LEU
1	A	257	LEU
1	B	3	LEU
1	B	62	VAL
1	B	128	THR
1	B	149	LEU
1	B	157	LEU
1	B	204	THR
1	B	225	LYS
1	B	244	LEU
1	B	257	LEU
1	C	3	LEU
1	C	62	VAL
1	C	92	ARG
1	C	119	ARG
1	C	128	THR
1	C	142	THR
1	C	149	LEU
1	C	157	LEU
1	C	225	LYS
1	C	233	GLU
1	C	244	LEU

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
1	C	257	LEU

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](#)

Of 19 ligands modelled in this entry, 7 are monoatomic - leaving 12 for Mogul analysis.

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	$\# Z  > 2$
3	EDO	C	406	-	3,3,3	0.51	0	2,2,2	0.16	0
3	EDO	A	405	-	3,3,3	0.57	0	2,2,2	0.05	0
3	EDO	A	407	-	3,3,3	0.49	0	2,2,2	0.48	0
3	EDO	A	406	-	3,3,3	0.73	0	2,2,2	0.31	0
3	EDO	A	403	-	3,3,3	1.17	0	2,2,2	1.06	0
3	EDO	B	403	-	3,3,3	0.68	0	2,2,2	0.17	0
3	EDO	C	405	-	3,3,3	0.44	0	2,2,2	0.52	0
3	EDO	C	404	-	3,3,3	0.47	0	2,2,2	0.20	0
3	EDO	C	402	-	3,3,3	0.38	0	2,2,2	0.92	0
3	EDO	A	404	-	3,3,3	0.41	0	2,2,2	1.25	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	EDO	A	402	-	3,3,3	0.49	0	2,2,2	0.75	0
3	EDO	C	403	-	3,3,3	0.45	0	2,2,2	0.16	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
3	EDO	C	406	-	-	1/1/1/1	-
3	EDO	A	405	-	-	1/1/1/1	-
3	EDO	A	407	-	-	1/1/1/1	-
3	EDO	A	406	-	-	1/1/1/1	-
3	EDO	A	403	-	-	0/1/1/1	-
3	EDO	B	403	-	-	1/1/1/1	-
3	EDO	C	405	-	-	0/1/1/1	-
3	EDO	C	404	-	-	1/1/1/1	-
3	EDO	C	402	-	-	1/1/1/1	-
3	EDO	A	404	-	-	1/1/1/1	-
3	EDO	A	402	-	-	0/1/1/1	-
3	EDO	C	403	-	-	1/1/1/1	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (9) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	405	EDO	O1-C1-C2-O2
3	A	407	EDO	O1-C1-C2-O2
3	C	406	EDO	O1-C1-C2-O2
3	C	403	EDO	O1-C1-C2-O2
3	B	403	EDO	O1-C1-C2-O2
3	C	402	EDO	O1-C1-C2-O2
3	A	404	EDO	O1-C1-C2-O2
3	A	406	EDO	O1-C1-C2-O2
3	C	404	EDO	O1-C1-C2-O2

There are no ring outliers.

4 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	405	EDO	1	0
3	A	406	EDO	2	0
3	A	403	EDO	2	0
3	C	404	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, 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	302/321 (94%)	0.81	52 (17%) <b>1</b> <b>1</b>	37, 43, 49, 66	0
1	B	304/321 (94%)	0.55	36 (11%) <b>4</b> <b>4</b>	37, 43, 51, 86	0
1	C	302/321 (94%)	0.79	46 (15%) <b>2</b> <b>1</b>	38, 43, 49, 63	0
All	All	908/963 (94%)	0.72	134 (14%) <b>2</b> <b>2</b>	37, 43, 50, 86	0

All (134) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	-2	PHE	9.2
1	A	-3	TYR	7.4
1	C	-3	TYR	6.4
1	A	-5	ASN	5.5
1	A	198	CYS	5.5
1	C	200	ILE	5.4
1	C	198	CYS	5.4
1	A	-4	LEU	5.3
1	B	-8	HIS	5.2
1	C	150	GLY	5.1
1	C	64	ALA	5.0
1	A	197	ILE	5.0
1	C	-2	PHE	5.0
1	A	62	VAL	4.8
1	B	62	VAL	4.8
1	C	147	ASP	4.6
1	B	196	LEU	4.6
1	B	198	CYS	4.6
1	C	-4	LEU	4.6
1	C	197	ILE	4.5
1	A	63	PHE	4.5
1	B	197	ILE	4.5
1	C	45	ASN	4.3

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	64	ALA	4.1
1	B	139	PHE	4.0
1	B	268	PHE	4.0
1	C	268	PHE	4.0
1	A	2	GLN	3.9
1	A	109	VAL	3.9
1	A	-6	GLU	3.8
1	A	139	PHE	3.8
1	C	168	PHE	3.8
1	C	151	VAL	3.7
1	C	99	ASN	3.7
1	B	64	ALA	3.7
1	A	196	LEU	3.6
1	C	110	ASP	3.6
1	C	62	VAL	3.5
1	C	149	LEU	3.5
1	A	150	GLY	3.4
1	B	200	ILE	3.4
1	B	169	THR	3.4
1	A	61	ALA	3.4
1	B	237	GLN	3.3
1	B	63	PHE	3.3
1	C	63	PHE	3.3
1	A	113	TRP	3.3
1	A	166	ILE	3.3
1	C	196	LEU	3.3
1	A	3	LEU	3.2
1	A	168	PHE	3.2
1	C	154	ALA	3.2
1	C	270	GLY	3.2
1	C	169	THR	3.2
1	C	111	GLU	3.2
1	B	239	ASP	3.2
1	A	151	VAL	3.1
1	A	147	ASP	3.1
1	A	167	ALA	3.1
1	A	144	TYR	3.1
1	B	166	ILE	3.1
1	B	138	ASP	3.0
1	A	149	LEU	3.0
1	B	168	PHE	3.0
1	C	-5	ASN	3.0

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	C	7	LEU	2.9
1	C	153	THR	2.9
1	C	34	SER	2.9
1	A	-1	GLN	2.9
1	B	45	ASN	2.8
1	B	269	ILE	2.8
1	B	61	ALA	2.8
1	A	165	ILE	2.8
1	A	69	ILE	2.8
1	A	148	ARG	2.8
1	A	169	THR	2.7
1	C	109	VAL	2.7
1	B	151	VAL	2.7
1	A	111	GLU	2.7
1	C	98	SER	2.6
1	C	148	ARG	2.6
1	B	-7	HIS	2.6
1	A	112	GLU	2.6
1	C	29	ARG	2.6
1	C	33	GLY	2.6
1	A	267	CYS	2.6
1	B	110	ASP	2.5
1	C	100	GLY	2.5
1	A	145	LEU	2.5
1	C	145	LEU	2.5
1	A	100	GLY	2.5
1	A	270	GLY	2.5
1	A	110	ASP	2.5
1	C	138	ASP	2.5
1	C	199	ASP	2.5
1	C	61	ALA	2.4
1	B	37	TYR	2.4
1	A	133	PHE	2.4
1	A	65	HIS	2.4
1	C	166	ILE	2.4
1	B	270	GLY	2.4
1	C	65	HIS	2.4
1	A	68	SER	2.3
1	B	150	GLY	2.3
1	A	45	ASN	2.3
1	C	2	GLN	2.3
1	A	295	TYR	2.3

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	RSRZ
1	A	200	ILE	2.3
1	A	98	SER	2.3
1	B	295	TYR	2.3
1	C	208	GLU	2.3
1	B	257	LEU	2.2
1	C	113	TRP	2.2
1	A	269	ILE	2.2
1	A	203	VAL	2.2
1	A	268	PHE	2.2
1	C	116	GLU	2.2
1	A	153	THR	2.2
1	B	111	GLU	2.2
1	A	30	SER	2.1
1	C	284	HIS	2.1
1	B	204	THR	2.1
1	B	297	TYR	2.1
1	B	112	GLU	2.1
1	C	90	GLY	2.1
1	A	154	ALA	2.1
1	A	210	GLY	2.0
1	A	141	LEU	2.0
1	B	65	HIS	2.0
1	B	170	CYS	2.0
1	B	165	ILE	2.0
1	C	120	LEU	2.0
1	B	199	ASP	2.0
1	B	12	ALA	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(Å <sup>2</sup> )	Q<0.9
3	EDO	A	407	4/4	0.75	0.43	74,74,74,74	0
3	EDO	A	403	4/4	0.78	0.27	39,39,41,41	0
3	EDO	A	406	4/4	0.80	0.33	52,53,53,53	0
3	EDO	A	402	4/4	0.80	0.17	51,51,51,52	0
3	EDO	C	405	4/4	0.88	0.26	67,67,68,68	0
3	EDO	C	406	4/4	0.89	0.52	64,64,65,65	0
3	EDO	A	405	4/4	0.90	0.34	62,62,63,63	0
3	EDO	C	403	4/4	0.90	0.17	47,48,48,50	0
3	EDO	C	404	4/4	0.92	0.28	64,65,66,66	0
3	EDO	C	402	4/4	0.92	0.18	55,55,55,55	0
3	EDO	A	404	4/4	0.92	0.15	42,42,43,43	0
3	EDO	B	403	4/4	0.95	0.12	33,34,34,36	0
4	CL	B	402	1/1	0.96	0.20	62,62,62,62	0
2	FE	B	400	1/1	0.97	0.06	44,44,44,44	0
2	FE	C	400	1/1	0.98	0.05	54,54,54,54	0
2	FE	C	401	1/1	0.98	0.04	38,38,38,38	0
2	FE	A	401	1/1	0.98	0.03	50,50,50,50	0
2	FE	B	401	1/1	0.99	0.03	35,35,35,35	0
2	FE	A	400	1/1	0.99	0.04	36,36,36,36	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.