Full wwPDB X-ray Structure Validation Report (i)

May 27, 2024 – 09:32 PM EDT

PDB ID	:	6MFZ
Title	:	Crystal structure of dimodular LgrA in a condensation state
Authors	:	Reimer, J.M.; Eivaskhani, M.; Harb, I.; Schmeing, T.M.
Deposited on	:	2018-09-12
Resolution	:	6.00 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) 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 (1)) were used in the production of this report:

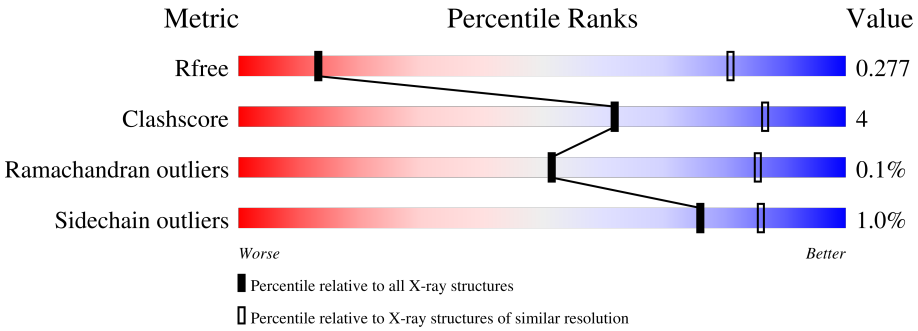
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36.2
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 6.00 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	1000 (8.00-3.88)
Clashscore	141614	1049 (8.00-3.90)
Ramachandran outliers	138981	1016 (8.00-3.86)
Sidechain outliers	138945	1017 (8.00-3.82)

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 <=5%

Mol	Chain	Length	Quality of chain
1	A	1814	88% 11% .
1	B	1814	29% . 68%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 18882 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 Linear gramicidin synthase subunit A.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1789	Total	C	N	O	S	0	0	0
			14226	9089	2430	2649	58			
1	B	585	Total	C	N	O	S	0	0	0
			4648	2958	797	871	22			

There are 26 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	GLY	-	expression tag	UNP Q70LM7
A	0	ALA	-	expression tag	UNP Q70LM7
A	1	MET	-	expression tag	UNP Q70LM7
A	2	GLY	-	expression tag	UNP Q70LM7
A	1804	ALA	-	expression tag	UNP Q70LM7
A	1805	ALA	-	expression tag	UNP Q70LM7
A	1806	ALA	-	expression tag	UNP Q70LM7
A	1807	GLU	-	expression tag	UNP Q70LM7
A	1808	ASN	-	expression tag	UNP Q70LM7
A	1809	LEU	-	expression tag	UNP Q70LM7
A	1810	TYR	-	expression tag	UNP Q70LM7
A	1811	PHE	-	expression tag	UNP Q70LM7
A	1812	GLN	-	expression tag	UNP Q70LM7
B	-1	GLY	-	expression tag	UNP Q70LM7
B	0	ALA	-	expression tag	UNP Q70LM7
B	1	MET	-	expression tag	UNP Q70LM7
B	2	GLY	-	expression tag	UNP Q70LM7
B	1804	ALA	-	expression tag	UNP Q70LM7
B	1805	ALA	-	expression tag	UNP Q70LM7
B	1806	ALA	-	expression tag	UNP Q70LM7
B	1807	GLU	-	expression tag	UNP Q70LM7
B	1808	ASN	-	expression tag	UNP Q70LM7
B	1809	LEU	-	expression tag	UNP Q70LM7
B	1810	TYR	-	expression tag	UNP Q70LM7
B	1811	PHE	-	expression tag	UNP Q70LM7

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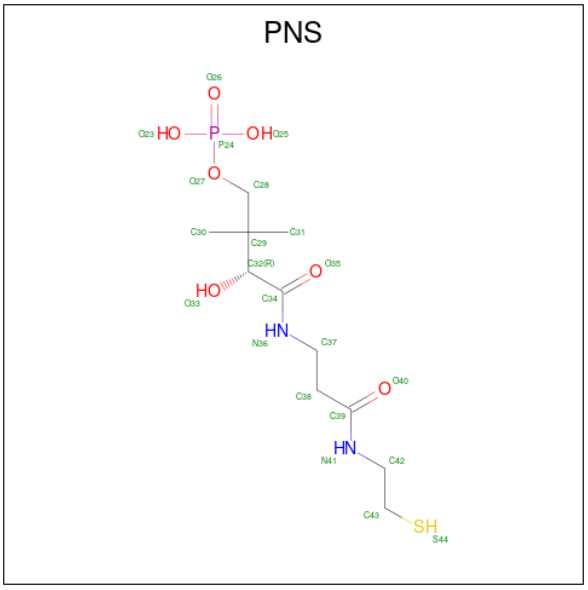
Chain	Residue	Modelled	Actual	Comment	Reference
B	1812	GLN	-	expression tag	UNP Q70LM7

- Molecule 2 is 4'-PHOSPHOPANTETHEINE (three-letter code: PNS) (formula: $C_{11}H_{23}N_2O_7PS$).



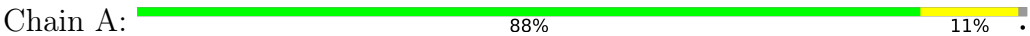
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total O P 4 3 1	0	0
2	A	1	Total O P 4 3 1	0	0

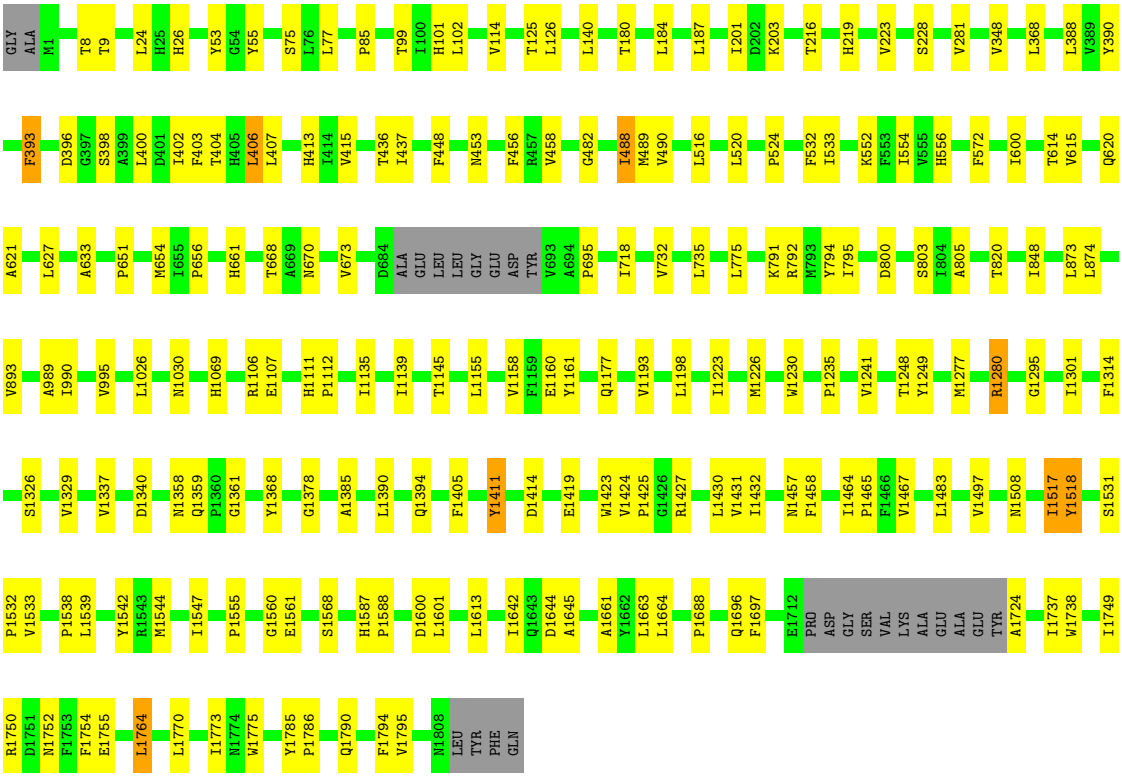
3 Residue-property plots (i)

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. 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. 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: Linear gramicidin synthase subunit A

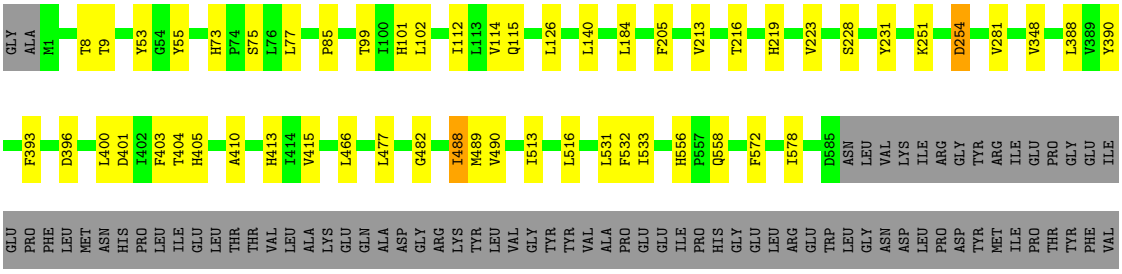
Chain A:

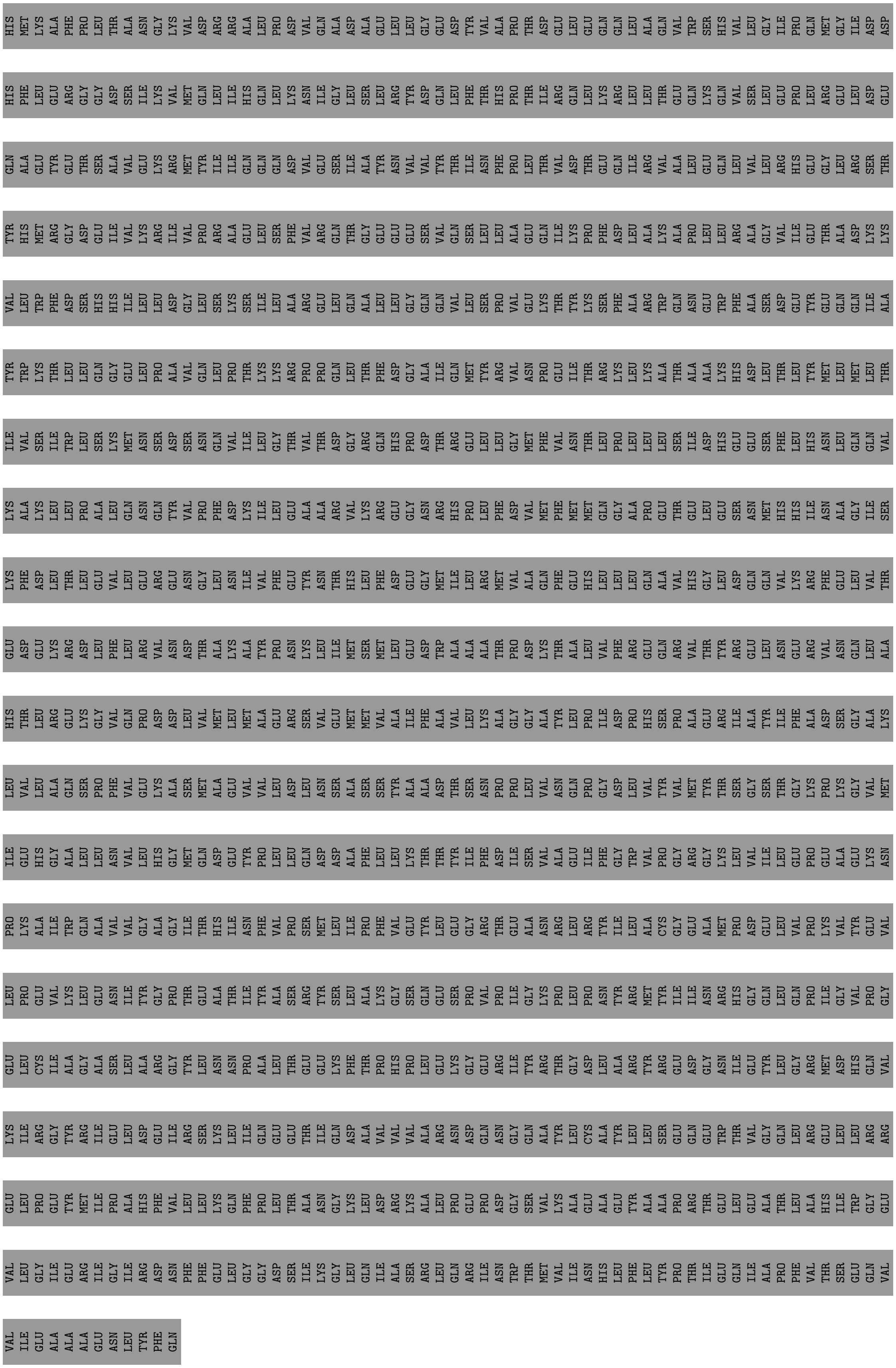




• Molecule 1: Linear gramicidin synthase subunit A

Chain B:




HIS MET LYS ALA PHE PRO LEU THR ALA ASN GLY LYS VAL ASP ARG ARG ALA LEU PRO ASP VAL GLN ALA ASP ALA GLU LEU LEU GLY GLU ASP TYR VAL ALA PRO THR ASP GLU LEU GLU GLN GLN LEU ALA GLN VAL TRP SER HIS VAL LEU GLY ILE PRO GLN MET GLY ILE ASP ASP
HIS PHE LEU GLU ARG GLY GLY ASP SER ILE LYS VAL MET GLN LEU ILE HIS GLN LEU LYS ASN ILE GLY LEU SER LEU ARG TYR ASP GLN LEU PHE THR HIS PRO THR ILE ARG GLN LEU LYS ARG LEU LEU THR GLU GLN LYS GLN VAL SER LEU GLU PRO LEU ARG GLU LEU ASP GLU
GLN ALA GLU TYR GLU THR SER ALA VAL GLU LYS ARG MET TYR ILE ILE GLN GLN GLN ASP VAL GLU SER ILE ALA TYR ASN VAL VAL TYR THR ILE ASN PHE PRO LEU THR VAL ASP THR GLU GLN ILE ARG VAL ALA LEU GLU GLN LEU VAL LEU ARG HIS GLU GLY LEU ARG SER THR
TYR HIS MET ARG GLY ASP GLU ILE VAL LYS ARG ILE VAL PRO ARG ALA GLU LEU SER PHE VAL ARG GLN THR GLY GLU GLU SER VAL GLN SER LEU LEU ALA GLU GLN ILE LYS PRO PHE ASP LEU ALA LYS ALA PRO LEU LEU ARG ALA GLY VAL ILE GLU THR ALA ASP LYS LYS
VAL LEU TRP PHE ASP SER HIS HIS ILE LEU LEU ASP GLY LEU SER LYS SER ILE LEU ALA ARG GLU LEU GLN ALA LEU LEU GLY GLN GLU VAL LEU SER PRO VAL GLU LYS THR TYR LYS SER PHE ALA ARG TRP GLN ASN GLU TRP PHE ALA SER ASP GLU TYR GLU GLN GLN ILE ALA
TYR TRP LYS THR LEU LEU GLN GLY GLU LEU PRO ALA VAL GLN LEU PRO THR LYS LYS ARG PRO PRO GLN LEU THR PHE ASP GLY ALA ILE GLN MET TYR ARG VAL ASN PRO GLU ILE THR ARG LYS LEU LYS ALA THR ALA ALA LYS HIS ASP LEU THR LEU TYR MET LEU MET LEU THR
ILE VAL SER ILE TRP LEU SER LYS MET ASN SER ASP SER ASN GLN VAL ILE LEU GLY THR VAL THR ASP GLY ARG GLN HIS PRO ASP THR ARG GLU LEU LEU GLY MET PHE VAL ASN THR LEU PRO LEU LEU LEU SER ILE ASP HIS GLU GLU SER PHE LEU HIS ASN LEU GLN GLN VAL
LYS ALA LYS LEU LEU PRO ALA LEU GLN ASN GLN TYR VAL PRO PHE ASP LYS ILE LEU GLU ALA ALA ARG VAL LYS ARG GLU GLY ASN ARG HIS PRO LEU PHE ASP VAL MET PHE MET MET GLN GLY ALA PRO GLU THR GLU LEU GLU SER ASN MET HIS HIS ILE ASN ALA GLY ILE SER
LYS PHE ASP LEU THR LEU GLU VAL LEU GLU ARG GLU ASN GLY LEU ASN ILE VAL PHE GLU TYR ASN THR HIS LEU PHE ASP GLU GLY MET ILE LEU ARG MET VAL ALA GLN PHE GLU HIS LEU LEU LEU GLN ALA VAL HIS GLY LEU ASP GLN GLN VAL LYS ARG PHE GLU LEU VAL THR
GLU ASP GLU LYS ARG ASP LEU PHE LEU ARG VAL ASN ASP THR ALA LYS ALA TYR PRO ASN LYS LEU ILE MET SER MET LEU GLU ASP TRP ALA ALA ALA THR PRO ASP LYS THR ALA LEU VAL PHE ARG GLU GLN ARG VAL THR TYR ARG GLU LEU ASN GLU ARG VAL ASN GLN LEU ALA
HIS THR LEU ARG GLU LYS GLY VAL GLN PRO ASP ASP LEU VAL MET LEU MET ALA GLU ARG SER VAL GLU MET MET VAL ALA ILE PHE ALA VAL LEU LYS ALA GLY GLY ALA TYR LEU PRO ILE ASP PRO HIS SER PRO ALA GLU ARG ILE ALA TYR ILE PHE ALA ASP SER GLY ALA LYS
LEU VAL LEU ALA GLN SER PRO PHE VAL GLU LYS ALA SER MET ALA GLU VAL VAL LEU ASP LEU ASN SER ALA SER SER TYR ALA ALA ASP THR SER ASN PRO PRO LEU VAL ASN GLN PRO GLY ASP LEU VAL TYR VAL MET TYR THR SER GLY SER THR GLY LYS PRO LYS GLY VAL MET
ILE GLU HIS GLY ALA LEU LEU ASN VAL LEU HIS GLY MET GLN ASP GLU TYR PRO LEU LEU GLN ASP ASP ALA PHE LEU LEU LYS THR THR TYR ILE PHE ASP ILE SER VAL ALA GLU ILE PHE GLY TRP VAL PRO GLY ARG GLY LYS LEU VAL ILE LEU GLU PRO GLU ALA GLU LYS ASN
PRO LYS ALA ILE TRP GLN ALA VAL VAL GLY ALA GLY ILE THR HIS ILE ASN PHE VAL PRO SER MET LEU ILE PRO PHE VAL GLU TYR LEU GLU GLY ARG THR GLU ALA ASN ARG LEU ARG TYR ILE LEU ALA CYS GLY GLU ALA MET PRO ASP GLU LEU VAL PRO LYS VAL TYR GLU VAL
LEU PRO GLU VAL LYS LEU GLU ASN ILE TYR GLY PRO THR GLU ALA THR ILE TYR ALA SER ARG TYR SER LEU ALA LYS GLY SER GLN GLU SER PRO VAL PRO ILE GLY LYS PRO LEU PRO ASN TYR ARG MET TYR ILE ILE ASN ARG HIS GLY GLN LEU GLN PRO ILE GLY VAL PRO GLY
GLU LEU CYS ILE ALA GLY ALA SER LEU ALA ARG GLY TYR LEU ASN ASN PRO ALA LEU THR GLU GLU LYS PHE THR PRO HIS PRO LEU GLU LYS GLY GLU ARG ILE TYR ARG THR GLY ASP LEU ALA ARG TYR ARG GLU ASP GLY ASN ILE GLU TYR LEU GLY ARG MET ASP HIS GLN VAL
LYS ILE ARG GLY TYR ARG ILE GLU LEU ASP GLU ILE ARG SER LYS LEU ILE GLN GLU GLU THR ILE GLN ASP ALA VAL VAL VAL ALA ARG ASN ASP GLN ASN GLY GLN ALA TYR LEU CYS ALA TYR LEU LEU SER GLU GLN GLU TRP THR VAL GLY GLN LEU ARG GLU LEU LEU ARG ARG
GLU LEU PRO GLU TYR MET ILE PRO ALA HIS PHE VAL LEU LEU LYS GLN PHE PRO LEU THR ALA ASN GLY LYS LEU ASP ARG LYS ALA LEU PRO GLU PRO ASP GLY SER VAL LYS ALA GLU ALA GLU TYR ALA ALA PRO ARG THR GLU LEU GLU ALA THR LEU ALA HIS ILE TRP GLY GLU
VAL LEU GLY ILE GLU ARG ILE GLY ILE ARG ASP ASN PHE PHE GLU LEU GLY GLY ASP SER ILE LYS GLY LEU GLN ILE ALA SER ARG LEU GLN ARG ILE ASN TRP THR MET VAL ILE ASN HIS LEU PHE LEU TYR PRO THR ILE GLU GLN ILE ALA PRO PHE VAL THR SER GLU GLN VAL
VAL ILE GLU ALA ALA ALA GLU ASN LEU TYR PHE GLN

4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α, β, γ	213.60Å 262.75Å 249.10Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	78.63 – 6.00 78.63 – 6.00	Depositor EDS
% Data completeness (in resolution range)	99.9 (78.63-6.00) 99.8 (78.63-6.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.02 (at 6.18Å)	Xtriage
Refinement program	PHENIX (dev_3494: ???)	Depositor
R, R_{free}	0.255 , 0.279 0.256 , 0.277	Depositor DCC
R_{free} test set	894 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	216.9	Xtriage
Anisotropy	0.457	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 455.4	EDS
L-test for twinning[2]	$< \|L\| > = 0.36$, $< L^2 > = 0.19$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.82	EDS
Total number of atoms	18882	wwPDB-VP
Average B, all atoms (Å^2)	343.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.39% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: PNS

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	0.29	0/14537	0.43	0/19739
1	B	0.25	0/4754	0.40	0/6451
All	All	0.28	0/19291	0.42	0/26190

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

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	14226	0	14159	136	0
1	B	4648	0	4573	30	0
2	A	8	0	0	0	0
All	All	18882	0	18732	166	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 4.

All (166) 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:1531:SER:HB2	1:A:1532:PRO:HD3	1.35	1.07
1:A:1601:LEU:O	1:A:1613:LEU:HB3	1.55	1.05
1:A:407:LEU:HD23	1:A:407:LEU:O	1.61	1.00
1:A:437:ILE:HG23	1:A:458:VAL:HG12	1.42	0.99
1:A:437:ILE:HG12	1:A:458:VAL:HB	1.44	0.96
1:A:368:LEU:HD21	1:A:403:PHE:CD2	2.07	0.89
1:A:1223:ILE:HG23	1:A:1424:VAL:HG11	1.53	0.88
1:A:1295:GLY:HA2	1:A:1358:ASN:OD1	1.75	0.85
1:A:1752:ASN:HB3	1:A:1755:GLU:HB2	1.58	0.85
1:A:1642:ILE:HD13	1:A:1663:LEU:HD22	1.58	0.84
1:A:24:LEU:O	1:A:26:HIS:HD2	1.61	0.83
1:A:1424:VAL:HB	1:A:1425:PRO:HD3	1.64	0.79
1:A:990:ILE:HG12	1:A:1160:GLU:HG2	1.64	0.79
1:A:448:PHE:CZ	1:A:456:PHE:HE2	2.03	0.77
1:A:437:ILE:HG23	1:A:458:VAL:CG1	2.15	0.77
1:A:800:ASP:HB3	1:A:803:SER:HB2	1.68	0.76
1:A:24:LEU:O	1:A:26:HIS:CD2	2.39	0.75
1:A:1664:LEU:HD13	1:A:1696:GLN:HA	1.70	0.74
1:A:1026:LEU:O	1:A:1030:ASN:ND2	2.20	0.70
1:A:995:VAL:HB	1:A:1155:LEU:HB2	1.74	0.68
1:B:126:LEU:HD21	1:B:184:LEU:HD22	1.76	0.68
1:A:1424:VAL:HB	1:A:1425:PRO:CD	2.25	0.67
1:A:402:ILE:O	1:A:406:LEU:HB2	1.95	0.67
1:A:368:LEU:HD21	1:A:403:PHE:CE2	2.31	0.66
1:A:1785:TYR:HB3	1:A:1790:GLN:CB	2.26	0.66
1:A:695:PRO:HB3	1:A:718:ILE:HD11	1.80	0.64
1:A:126:LEU:HD21	1:A:184:LEU:HD22	1.80	0.63
1:A:1111:HIS:HB3	1:A:1112:PRO:HD2	1.81	0.63
1:A:448:PHE:CZ	1:A:456:PHE:CE2	2.86	0.63
1:A:1531:SER:CB	1:A:1532:PRO:HD3	2.18	0.62
1:A:396:ASP:HB3	1:A:488:ILE:HG12	1.80	0.62
1:A:1368:TYR:HA	1:A:1378:GLY:HA2	1.81	0.62
1:A:990:ILE:CG1	1:A:1160:GLU:HG2	2.30	0.60
1:B:513:ILE:CD1	1:B:533:ILE:HG12	2.31	0.60
1:A:1785:TYR:HB3	1:A:1790:GLN:HB3	1.83	0.60
1:A:201:ILE:HG22	1:A:203:LYS:H	1.67	0.60
1:A:552:LYS:O	1:A:554:ILE:HG23	2.02	0.60
1:A:795:ILE:HG12	1:A:1764:LEU:HD22	1.84	0.60
1:B:400:LEU:O	1:B:404:THR:OG1	2.18	0.59
1:A:1337:VAL:O	1:A:1337:VAL:HG12	2.03	0.59
1:A:437:ILE:CG1	1:A:458:VAL:HB	2.25	0.58
1:B:396:ASP:HB2	1:B:488:ILE:HG12	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1773:ILE:O	1:A:1773:ILE:HG22	2.05	0.57
1:B:513:ILE:HD12	1:B:531:LEU:HD21	1.87	0.57
1:A:1069:HIS:HA	1:A:1193:VAL:HB	1.86	0.57
1:A:1464:ILE:HB	1:A:1465:PRO:HD3	1.87	0.57
1:A:1645:ALA:HA	1:A:1663:LEU:HA	1.86	0.56
1:A:1644:ASP:O	1:A:1664:LEU:N	2.36	0.56
1:A:1223:ILE:CG2	1:A:1424:VAL:HG11	2.32	0.56
1:A:1508:ASN:HD22	1:A:1533:VAL:HG12	1.70	0.56
1:A:223:VAL:HG13	1:A:228:SER:HB3	1.87	0.56
1:A:1531:SER:HB2	1:A:1532:PRO:CD	2.23	0.56
1:A:407:LEU:O	1:A:407:LEU:CD2	2.47	0.56
1:A:1664:LEU:HD11	1:A:1697:PHE:H	1.70	0.56
1:A:436:THR:OG1	1:A:437:ILE:HD12	2.07	0.55
1:B:223:VAL:HG13	1:B:228:SER:HB3	1.89	0.55
1:A:458:VAL:HG12	1:A:458:VAL:O	2.06	0.54
1:A:732:VAL:O	1:A:735:LEU:HB3	2.07	0.54
1:A:1329:VAL:HG21	1:A:1340:ASP:OD1	2.07	0.54
1:A:633:ALA:O	1:A:661:HIS:NE2	2.38	0.54
1:A:8:THR:OG1	1:A:9:THR:N	2.41	0.54
1:B:75:SER:HB3	1:B:85:PRO:HB2	1.90	0.54
1:A:1775:TRP:CZ3	1:A:1795:VAL:O	2.62	0.53
1:A:393:PHE:HA	1:A:398:SER:OG	2.08	0.53
1:A:482:GLY:HA3	1:A:489:MET:HA	1.89	0.53
1:A:1664:LEU:CD1	1:A:1696:GLN:HA	2.37	0.53
1:A:1419:GLU:OE2	1:A:1457:ASN:HB2	2.09	0.53
1:A:1295:GLY:HA2	1:A:1358:ASN:CG	2.28	0.52
1:A:281:VAL:HG22	1:A:348:VAL:HB	1.91	0.52
1:A:1145:THR:HB	1:A:1160:GLU:HB2	1.91	0.52
1:A:75:SER:HB3	1:A:85:PRO:HB2	1.90	0.52
1:A:1423:TRP:CD1	1:A:1430:LEU:HB2	2.44	0.52
1:A:668:THR:OG1	1:A:670:ASN:OD1	2.28	0.51
1:B:281:VAL:HG22	1:B:348:VAL:HB	1.93	0.51
1:A:1248:THR:OG1	1:A:1249:TYR:N	2.44	0.51
1:A:1280:ARG:HG2	1:A:1432:ILE:HG23	1.92	0.51
1:A:600:ILE:HD12	1:A:615:VAL:HG11	1.93	0.50
1:B:251:LYS:O	1:B:254:ASP:HB2	2.11	0.50
1:B:482:GLY:HA3	1:B:489:MET:HA	1.94	0.50
1:B:101:HIS:ND1	1:B:102:LEU:O	2.42	0.50
1:B:488:ILE:HG22	1:B:489:MET:HG3	1.94	0.50
1:A:448:PHE:CE2	1:A:456:PHE:CE2	3.00	0.49
1:A:1359:GLN:HG3	1:A:1361:GLY:H	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:990:ILE:HG23	1:A:1158:VAL:HG13	1.94	0.49
1:A:1177:GLN:HE22	1:A:1555:PRO:HB3	1.77	0.49
1:B:8:THR:OG1	1:B:9:THR:N	2.46	0.49
1:B:466:LEU:HD21	1:B:477:LEU:HD21	1.94	0.49
1:A:488:ILE:HG22	1:A:489:MET:HG3	1.95	0.49
1:A:1457:ASN:OD1	1:A:1483:LEU:HD12	2.13	0.49
1:B:405:HIS:HB3	1:B:410:ALA:HB3	1.94	0.49
1:A:600:ILE:HB	1:A:615:VAL:HG21	1.94	0.48
1:A:1158:VAL:HG12	1:A:1160:GLU:HG3	1.95	0.48
1:A:400:LEU:O	1:A:404:THR:CB	2.61	0.48
1:A:388:LEU:HD23	1:A:413:HIS:HB2	1.95	0.48
1:A:125:THR:HA	1:A:180:THR:HA	1.95	0.48
1:A:1295:GLY:HA2	1:A:1358:ASN:ND2	2.28	0.48
1:A:1764:LEU:HG	1:A:1764:LEU:O	2.14	0.48
1:A:1785:TYR:HB3	1:A:1790:GLN:HB2	1.95	0.48
1:A:1538:PRO:HB3	1:A:1544:MET:HG3	1.94	0.48
1:A:1642:ILE:CD1	1:A:1663:LEU:HD22	2.38	0.48
1:B:114:VAL:HG11	1:B:140:LEU:HD11	1.96	0.48
1:A:1414:ASP:O	1:A:1517:ILE:HG12	2.13	0.47
1:A:805:ALA:HA	1:A:1139:ILE:HG21	1.96	0.47
1:A:1560:GLY:O	1:A:1601:LEU:HD12	2.14	0.47
1:A:490:VAL:HG11	1:A:533:ILE:HD13	1.97	0.47
1:B:388:LEU:HD23	1:B:413:HIS:HB2	1.96	0.47
1:B:390:TYR:HA	1:B:415:VAL:HG11	1.96	0.47
1:B:556:HIS:CE1	1:B:558:GLN:HB2	2.50	0.47
1:A:1663:LEU:O	1:A:1663:LEU:HD12	2.14	0.47
1:A:990:ILE:CD1	1:A:1160:GLU:HG2	2.45	0.46
1:A:1277:MET:HB3	1:A:1301:ILE:HB	1.98	0.46
1:A:1561:GLU:HA	1:A:1600:ASP:O	2.15	0.46
1:A:516:LEU:HB2	1:A:532:PHE:CE1	2.51	0.46
1:A:989:ALA:HB3	1:A:1161:TYR:CZ	2.51	0.46
1:A:1301:ILE:O	1:A:1411:TYR:OH	2.22	0.46
1:A:1737:ILE:HD13	1:A:1770:LEU:HD23	1.97	0.45
1:A:390:TYR:HA	1:A:415:VAL:HG11	1.98	0.45
1:A:453:ASN:CG	1:A:456:PHE:CD2	2.90	0.45
1:A:448:PHE:HZ	1:A:456:PHE:HE2	1.60	0.45
1:A:794:TYR:HB3	1:A:848:ILE:HD13	1.97	0.45
1:A:1295:GLY:HA2	1:A:1358:ASN:HD21	1.81	0.45
1:A:101:HIS:ND1	1:A:102:LEU:O	2.41	0.45
1:A:620:GLN:HG3	1:A:621:ALA:H	1.81	0.45
1:B:490:VAL:HG11	1:B:533:ILE:HD13	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:791:LYS:O	1:A:795:ILE:HG13	2.17	0.44
1:A:627:LEU:HB2	1:A:656:PRO:HA	1.99	0.44
1:B:513:ILE:HG21	1:B:578:ILE:HD13	1.99	0.44
1:A:1226:MET:HB3	1:A:1230:TRP:CZ3	2.52	0.44
1:A:820:THR:HG23	1:A:893:VAL:HG21	1.98	0.44
1:A:1738:TRP:HH2	1:A:1786:PRO:O	2.00	0.44
1:A:1560:GLY:C	1:A:1601:LEU:HD12	2.38	0.43
1:A:1661:ALA:HB2	1:A:1688:PRO:HG2	2.00	0.43
1:B:516:LEU:HB2	1:B:532:PHE:CE1	2.53	0.43
1:A:453:ASN:CG	1:A:456:PHE:HD2	2.21	0.43
1:B:77:LEU:HD12	1:B:99:THR:HG21	2.00	0.43
1:A:1107:GLU:CB	1:A:1754:PHE:CG	3.01	0.43
1:A:406:LEU:HD23	1:A:406:LEU:HA	1.78	0.43
1:A:874:LEU:HD23	1:A:1135:ILE:HG21	2.01	0.43
1:A:1241:VAL:HB	1:A:1431:VAL:HG22	2.00	0.43
1:A:520:LEU:HB3	1:A:556:HIS:HE2	1.84	0.43
1:B:205:PHE:CE1	1:B:403:PHE:HB3	2.54	0.43
1:A:614:THR:HG21	1:A:673:VAL:HG11	2.01	0.42
1:B:53:TYR:CE2	1:B:55:TYR:HB2	2.54	0.42
1:B:401:ASP:O	1:B:405:HIS:ND1	2.52	0.42
1:A:216:THR:HB	1:A:219:HIS:CG	2.55	0.42
1:A:1457:ASN:ND2	1:A:1518:TYR:OH	2.52	0.42
1:A:1587:HIS:CG	1:A:1588:PRO:HD2	2.54	0.42
1:B:73:HIS:HD2	1:B:77:LEU:HD21	1.84	0.42
1:A:77:LEU:HD12	1:A:99:THR:HG21	2.01	0.42
1:A:1235:PRO:O	1:A:1248:THR:OG1	2.25	0.42
1:A:1390:LEU:O	1:A:1394:GLN:HG2	2.20	0.42
1:A:53:TYR:CE2	1:A:55:TYR:HB2	2.54	0.41
1:A:1177:GLN:HB3	1:A:1198:LEU:HB3	2.02	0.41
1:A:1749:ILE:HG23	1:A:1750:ARG:HG3	2.02	0.41
1:B:216:THR:HB	1:B:219:HIS:CG	2.55	0.41
1:A:114:VAL:HG11	1:A:140:LEU:HD11	2.02	0.41
1:A:1467:VAL:HG21	1:A:1497:VAL:HG22	2.03	0.41
1:A:1539:LEU:HB2	1:A:1542:TYR:CD1	2.55	0.41
1:B:213:VAL:HG22	1:B:231:TYR:HB3	2.02	0.41
1:A:437:ILE:HA	1:A:458:VAL:O	2.20	0.41
1:A:1737:ILE:CD1	1:A:1770:LEU:HD23	2.50	0.41
1:A:1385:ALA:HA	1:A:1568:SER:HA	2.02	0.41
1:A:187:LEU:HD22	1:A:524:PRO:HA	2.02	0.41
1:A:651:PRO:HD2	1:A:654:MET:HB2	2.03	0.40
1:A:1724:ALA:HB3	1:A:1749:ILE:HG22	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:112:ILE:HG21	1:B:115:GLN:HB2	2.03	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	1783/1814 (98%)	1641 (92%)	140 (8%)	2 (0%)	51 85
1	B	583/1814 (32%)	547 (94%)	35 (6%)	1 (0%)	47 81
All	All	2366/3628 (65%)	2188 (92%)	175 (7%)	3 (0%)	51 85

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	488	ILE
1	B	488	ILE
1	A	1517	ILE

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	1527/1562 (98%)	1509 (99%)	18 (1%)	71 84
1	B	499/1562 (32%)	496 (99%)	3 (1%)	86 92

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	2026/3124 (65%)	2005 (99%)	21 (1%)	76 86

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	393	PHE
1	A	406	LEU
1	A	572	PHE
1	A	775	LEU
1	A	792	ARG
1	A	873	LEU
1	A	1106	ARG
1	A	1280	ARG
1	A	1314	PHE
1	A	1326	SER
1	A	1405	PHE
1	A	1411	TYR
1	A	1427	ARG
1	A	1458	PHE
1	A	1518	TYR
1	A	1547	ILE
1	A	1764	LEU
1	A	1794	PHE
1	B	254	ASP
1	B	393	PHE
1	B	572	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (17) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	73	HIS
1	A	150	HIS
1	A	177	ASN
1	A	211	GLN
1	A	957	GLN
1	A	1089	GLN
1	A	1177	GLN
1	A	1184	GLN
1	A	1325	GLN
1	A	1359	GLN
1	A	1508	ASN

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Mol	Chain	Res	Type
1	A	1609	ASN
1	A	1618	HIS
1	B	26	HIS
1	B	73	HIS
1	B	150	HIS
1	B	211	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

2 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	PNS	A	1902	1	0,3,21	-	-	0,3,29	-	-
2	PNS	A	1901	1	0,3,21	-	-	0,3,29	-	-

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 (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

Unable to reproduce the depositors R factor - this section is therefore empty.

6.2 Non-standard residues in protein, DNA, RNA chains

Unable to reproduce the depositors R factor - this section is therefore empty.

6.3 Carbohydrates

Unable to reproduce the depositors R factor - this section is therefore empty.

6.4 Ligands

Unable to reproduce the depositors R factor - this section is therefore empty.

6.5 Other polymers

Unable to reproduce the depositors R factor - this section is therefore empty.