



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 17, 2026 – 09:55 PM UTC

PDB ID : 6OAZ / pdb\_00006oaz  
Title : Apo Structure of WT Lipoprotein Lipase in Complex with GPIHBP1 Mutant N78D N82D produced in HEK293-F cells  
Authors : Arora, R.; Horton, P.A.; Benson, T.E.; Romanowski, M.J.  
Deposited on : 2019-03-19  
Resolution : 3.04 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>.

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

MolProbity : 4-5-2 with Phenix2.0  
Mogul : 2022.3.0, CSD as543be (2022)  
Xtriage (Phenix) : 2.0  
EDS : 3.0  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
CCP4 : 9.0.010 (Gargrove)  
Density-Fitness : 1.0.12  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

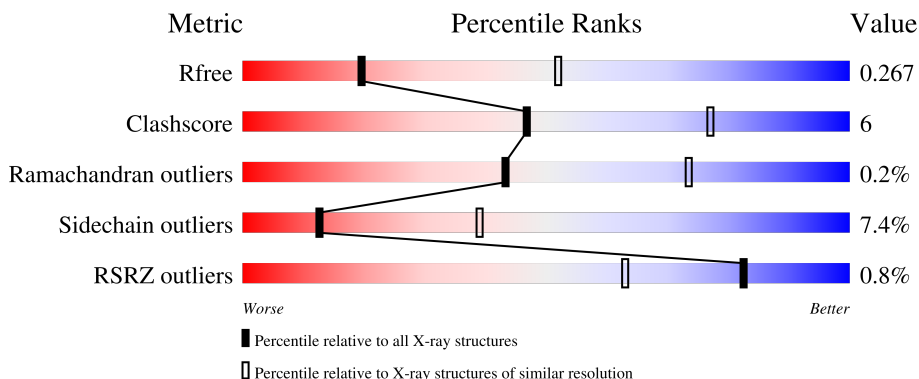
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.04 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



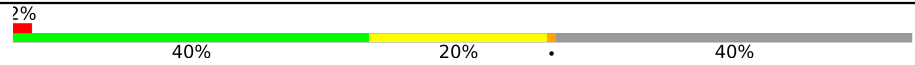
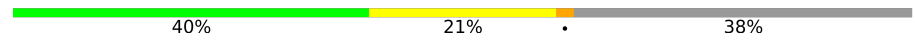
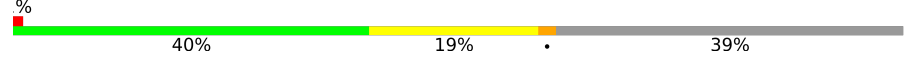
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	180053	3685 (3.08-3.00)
Clashscore	190562	4007 (3.08-3.00)
Ramachandran outliers	187476	3834 (3.08-3.00)
Sidechain outliers	187428	3836 (3.08-3.00)
RSRZ outliers	180081	3684 (3.08-3.00)

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	448	 73% 19% • 7%
1	B	448	 75% 17% • 7%
1	C	448	 76% 15% • 7%
1	D	448	 75% 17% • 7%
2	E	131	 44% 18% • 37%

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Mol	Chain	Length	Quality of chain
2	F	131	
2	G	131	
2	H	131	

## 2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 15843 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 Lipoprotein lipase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	416	3307	2104	575	612	16	0	0	0
1	B	416	3307	2104	575	612	16	0	0	0
1	C	416	3307	2104	575	612	16	0	0	0
1	D	416	3307	2104	575	612	16	0	0	0

- Molecule 2 is a protein called Glycosylphosphatidylinositol-anchored high density lipoprotein-binding protein 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	E	83	628	378	110	129	11	0	0	0
2	F	79	594	355	103	125	11	0	0	0
2	G	81	613	367	108	127	11	0	0	0
2	H	80	607	364	107	125	11	0	0	0

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	78	ASP	ASN	engineered mutation	UNP Q8IV16
E	82	ASP	ASN	engineered mutation	UNP Q8IV16
F	78	ASP	ASN	engineered mutation	UNP Q8IV16
F	82	ASP	ASN	engineered mutation	UNP Q8IV16
G	78	ASP	ASN	engineered mutation	UNP Q8IV16
G	82	ASP	ASN	engineered mutation	UNP Q8IV16
H	78	ASP	ASN	engineered mutation	UNP Q8IV16
H	82	ASP	ASN	engineered mutation	UNP Q8IV16

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula:  $C_8H_{15}NO_6$ ).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
3	A	1	Total 14	C 8	N 1	O 5	0	0
3	A	1	Total 14	C 8	N 1	O 5	0	0
3	B	1	Total 14	C 8	N 1	O 5	0	0
3	B	1	Total 14	C 8	N 1	O 5	0	0
3	C	1	Total 14	C 8	N 1	O 5	0	0
3	C	1	Total 14	C 8	N 1	O 5	0	0
3	D	1	Total 14	C 8	N 1	O 5	0	0
3	D	1	Total 14	C 8	N 1	O 5	0	0

- Molecule 4 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula:  $C_2H_6O_2$ ).



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

- Molecule 5 is CALCIUM ION (CCD ID: CA) (formula: Ca).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	2	Total Ca 2 2	0	0
5	B	2	Total Ca 2 2	0	0
5	C	2	Total Ca 2 2	0	0
5	D	2	Total Ca 2 2	0	0

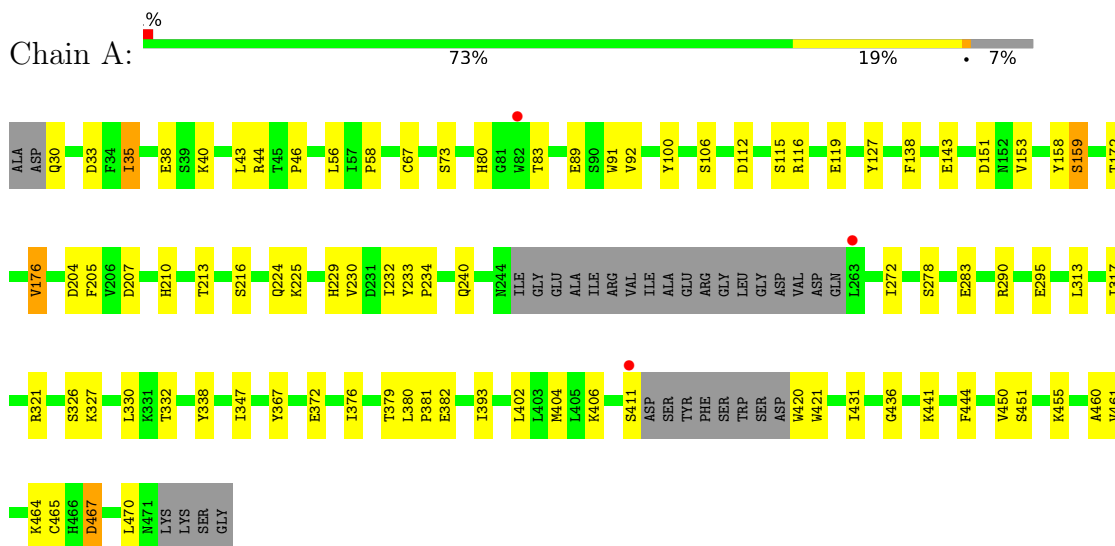
- Molecule 6 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	6	Total O 6 6	0	0
6	B	4	Total O 4 4	0	0
6	C	5	Total O 5 5	0	0
6	D	6	Total O 6 6	0	0

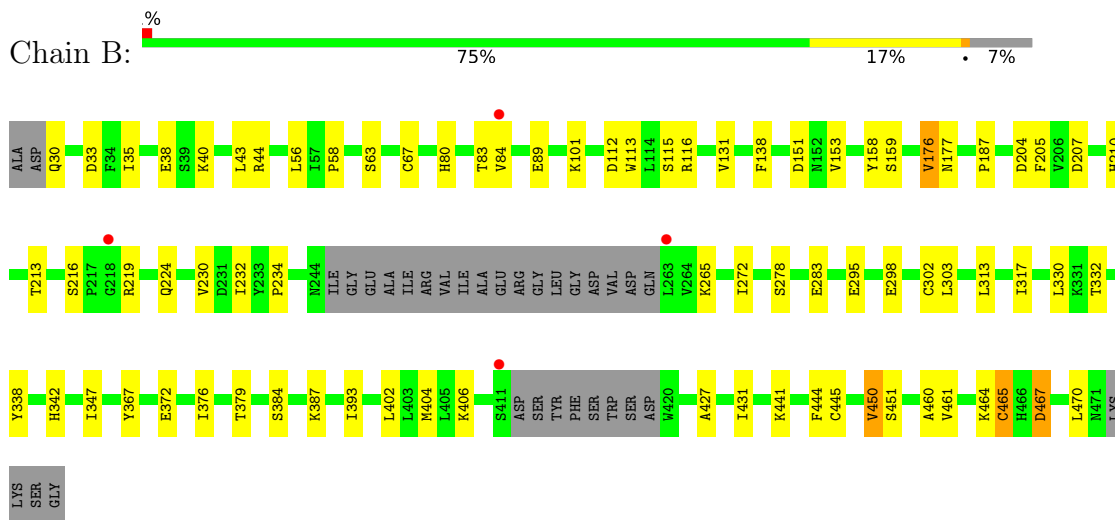
### 3 Residue-property plots

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.

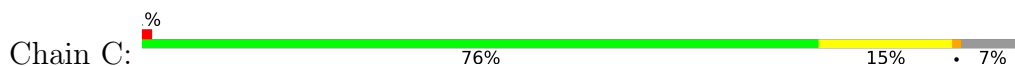
- Molecule 1: Lipoprotein lipase



- Molecule 1: Lipoprotein lipase

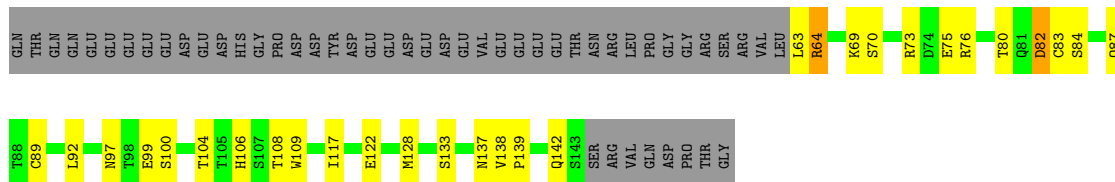


- Molecule 1: Lipoprotein lipase

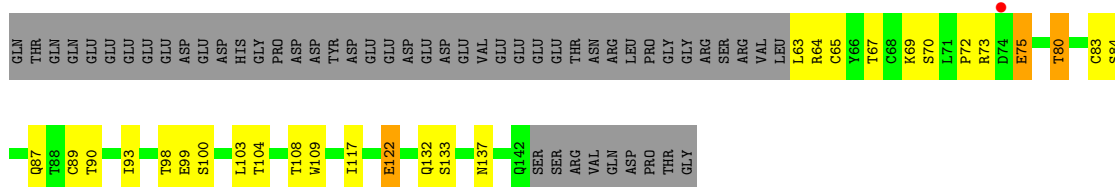




- Molecule 2: Glycosylphosphatidylinositol-anchored high density lipoprotein-binding protein 1



- Molecule 2: Glycosylphosphatidylinositol-anchored high density lipoprotein-binding protein 1



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	157.00Å 191.94Å 96.06Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	121.52 – 3.04 121.52 – 3.04	Depositor EDS
% Data completeness (in resolution range)	97.0 (121.52-3.04) 97.1 (121.52-3.04)	Depositor EDS
$R_{merge}$	0.10	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.49 (at 3.01Å)	Xtrriage
Refinement program	BUSTER 2.11.7	Depositor
R, $R_{free}$	0.203 , 0.245 0.223 , 0.267	Depositor DCC
$R_{free}$ test set	2738 reflections (4.83%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	78.9	Xtrriage
Anisotropy	0.785	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.35 , 119.5	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.45$ , $\langle L^2 \rangle = 0.28$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	15843	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	113.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 36.86 % 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 4.6810e-04. 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, 0.333 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: NAG, CA, 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	0.88	1/3390 (0.0%)	1.30	12/4586 (0.3%)
1	B	0.88	0/3390	1.29	12/4586 (0.3%)
1	C	0.86	0/3390	1.27	11/4586 (0.2%)
1	D	0.90	0/3390	1.31	12/4586 (0.3%)
2	E	0.89	0/639	1.31	2/873 (0.2%)
2	F	0.97	0/605	1.29	1/827 (0.1%)
2	G	0.92	0/624	1.28	1/852 (0.1%)
2	H	0.92	0/618	1.31	1/844 (0.1%)
All	All	0.89	1/16046 (0.0%)	1.29	52/21740 (0.2%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	159	SER	CA-C	5.18	1.57	1.52

All (52) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	70	SER	N-CA-C	7.86	127.55	110.80
1	D	92	VAL	N-CA-CB	7.62	116.40	110.45
1	A	92	VAL	N-CA-CB	7.54	116.33	110.45
1	A	467	ASP	CA-CB-CG	7.52	120.12	112.60
1	D	467	ASP	CA-CB-CG	7.09	119.69	112.60
2	G	70	SER	N-CA-C	6.91	125.52	110.80
1	C	467	ASP	CA-CB-CG	6.89	119.49	112.60
1	B	467	ASP	CA-CB-CG	6.86	119.46	112.60
1	D	265	LYS	CA-C-N	6.15	128.43	120.44
1	D	265	LYS	C-N-CA	6.15	128.43	120.44
1	B	265	LYS	CA-C-N	5.99	129.12	120.79
1	B	265	LYS	C-N-CA	5.99	129.12	120.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	64	ARG	N-CA-C	-5.75	99.36	108.73
1	C	159	SER	CB-CA-C	-5.57	110.14	116.54
1	A	89	GLU	CA-C-N	5.55	127.98	120.38
1	A	89	GLU	C-N-CA	5.55	127.98	120.38
1	D	151	ASP	N-CA-C	-5.54	106.52	113.28
1	B	302	CYS	CA-C-N	5.45	128.50	119.35
1	B	302	CYS	C-N-CA	5.45	128.50	119.35
1	A	56	LEU	CA-C-N	5.41	126.28	122.60
1	A	56	LEU	C-N-CA	5.41	126.28	122.60
1	C	168	ALA	CA-C-N	5.37	125.94	119.98
1	C	168	ALA	C-N-CA	5.37	125.94	119.98
1	A	229	HIS	N-CA-C	-5.36	105.87	112.90
2	H	70	SER	N-CA-C	5.30	122.09	110.80
1	A	172	THR	CA-C-N	5.30	128.77	120.82
1	A	172	THR	C-N-CA	5.30	128.77	120.82
2	F	137	ASN	CA-CB-CG	5.29	117.89	112.60
1	C	89	GLU	CA-C-N	5.27	127.61	120.38
1	C	89	GLU	C-N-CA	5.27	127.61	120.38
1	B	89	GLU	CA-C-N	5.26	127.59	120.38
1	B	89	GLU	C-N-CA	5.26	127.59	120.38
1	D	302	CYS	CA-C-N	5.18	128.05	119.35
1	D	302	CYS	C-N-CA	5.18	128.05	119.35
1	C	229	HIS	N-CA-C	-5.16	106.14	112.90
1	C	302	CYS	CA-C-N	5.16	128.02	119.35
1	C	302	CYS	C-N-CA	5.16	128.02	119.35
1	D	172	THR	CA-C-N	5.15	128.55	120.82
1	D	172	THR	C-N-CA	5.15	128.55	120.82
1	D	436	GLY	CA-C-N	5.14	127.48	120.54
1	D	436	GLY	C-N-CA	5.14	127.48	120.54
1	A	436	GLY	CA-C-N	5.14	127.12	120.44
1	A	436	GLY	C-N-CA	5.14	127.12	120.44
1	A	240	GLN	N-CA-C	5.10	117.90	110.10
1	B	204	ASP	N-CA-C	-5.08	105.44	111.69
1	C	172	THR	CA-C-N	5.04	128.39	120.82
1	C	172	THR	C-N-CA	5.04	128.39	120.82
1	B	56	LEU	CA-C-N	5.04	126.03	122.60
1	B	56	LEU	C-N-CA	5.04	126.03	122.60
1	B	101	LYS	CA-C-N	5.03	127.28	120.44
1	B	101	LYS	C-N-CA	5.03	127.28	120.44
1	D	229	HIS	N-CA-C	-5.02	106.33	112.90

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	3307	0	3243	38	0
1	B	3307	0	3243	35	0
1	C	3307	0	3243	33	0
1	D	3307	0	3243	37	0
2	E	628	0	593	13	0
2	F	594	0	549	11	0
2	G	613	0	573	13	0
2	H	607	0	568	16	0
3	A	28	0	26	0	0
3	B	28	0	26	0	0
3	C	28	0	26	0	0
3	D	28	0	26	0	0
4	A	8	0	12	2	0
4	B	8	0	12	3	0
4	C	8	0	12	3	0
4	D	8	0	12	6	0
5	A	2	0	0	0	0
5	B	2	0	0	0	0
5	C	2	0	0	0	0
5	D	2	0	0	0	0
6	A	6	0	0	0	0
6	B	4	0	0	0	0
6	C	5	0	0	0	0
6	D	6	0	0	0	0
All	All	15843	0	15407	177	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 6.

All (177) 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:D:404:MET:HE1	2:H:122:GLU:HB2	1.47	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:80:HIS:HB2	4:D:503:EDO:H21	1.52	0.91
1:D:441:LYS:HG3	1:D:470:LEU:HD11	1.56	0.88
1:C:404:MET:HE1	2:G:122:GLU:HB2	1.60	0.82
1:C:441:LYS:HG3	1:C:470:LEU:HD11	1.62	0.81
1:B:80:HIS:HB2	4:B:503:EDO:H12	1.63	0.80
1:C:467:ASP:HB2	2:G:109:TRP:HE1	1.48	0.79
1:B:441:LYS:HG3	1:B:470:LEU:HD11	1.64	0.79
1:D:467:ASP:HB2	2:H:109:TRP:HE1	1.47	0.79
1:C:402:LEU:HB3	1:C:444:PHE:HZ	1.55	0.72
1:A:404:MET:HE1	2:E:122:GLU:HB2	1.71	0.70
1:B:402:LEU:HB3	1:B:444:PHE:HZ	1.56	0.70
1:D:80:HIS:HB2	4:D:503:EDO:C2	2.22	0.70
1:A:467:ASP:HB2	2:E:109:TRP:HE1	1.57	0.69
1:A:402:LEU:HB3	1:A:444:PHE:HZ	1.57	0.69
1:D:402:LEU:HB3	1:D:444:PHE:HZ	1.57	0.68
1:B:115:SER:H	4:B:504:EDO:H12	1.61	0.66
1:B:467:ASP:HB2	2:F:109:TRP:HE1	1.64	0.63
2:E:61:VAL:HA	2:H:80:THR:O	1.99	0.63
1:C:307:LYS:HD2	1:C:309:ARG:NH1	2.14	0.62
1:B:445:CYS:SG	2:F:70:SER:HB2	2.40	0.61
1:A:116:ARG:HD3	1:A:127:TYR:CD1	2.35	0.60
2:E:92:LEU:HD21	2:E:126:VAL:HG13	1.84	0.60
1:C:467:ASP:HB2	2:G:109:TRP:NE1	2.15	0.59
2:G:108:THR:HB	2:G:137:ASN:ND2	2.17	0.59
1:A:153:VAL:HB	1:A:176:VAL:HG12	1.85	0.59
2:G:139:PRO:HG2	2:G:142:GLN:HB2	1.84	0.59
1:B:213:THR:HB	1:B:224:GLN:HG2	1.84	0.58
2:H:63:LEU:HD23	2:H:83:CYS:SG	2.43	0.58
1:C:153:VAL:HB	1:C:176:VAL:HG12	1.86	0.57
1:D:153:VAL:HB	1:D:176:VAL:HG12	1.86	0.57
1:B:153:VAL:HB	1:B:176:VAL:HG12	1.87	0.57
1:C:406:LYS:HG2	1:C:461:VAL:HG22	1.86	0.57
2:F:90:THR:O	2:F:108:THR:HA	2.05	0.56
1:A:213:THR:HB	1:A:224:GLN:HG2	1.88	0.56
1:D:158:TYR:CD1	1:D:272:ILE:HD11	2.41	0.56
1:D:384:SER:HB3	1:D:387:LYS:HD2	1.87	0.55
2:H:89:CYS:HB3	2:H:137:ASN:HB3	1.87	0.55
1:B:465:CYS:HB2	2:F:69:LYS:HG2	1.89	0.55
1:A:441:LYS:HG3	1:A:470:LEU:HD11	1.88	0.55
1:B:406:LYS:HG2	1:B:461:VAL:HG22	1.89	0.54
1:D:115:SER:CB	4:D:504:EDO:H22	2.37	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:347:ILE:HG12	1:B:431:ILE:HG12	1.90	0.54
2:E:65:CYS:SG	2:E:83:CYS:SG	3.06	0.54
1:A:406:LYS:HG2	1:A:461:VAL:HG22	1.90	0.53
2:H:67:THR:HG22	2:H:109:TRP:HA	1.90	0.53
1:D:80:HIS:HB2	4:D:503:EDO:C1	2.39	0.53
2:E:133:SER:HB2	2:E:136:CYS:HB3	1.90	0.53
1:B:80:HIS:HB2	4:B:503:EDO:C1	2.37	0.53
1:A:80:HIS:HB2	4:A:503:EDO:H12	1.91	0.52
1:A:115:SER:HB3	4:A:504:EDO:H21	1.90	0.52
1:A:347:ILE:HG12	1:A:431:ILE:HG12	1.92	0.52
1:B:404:MET:HE1	2:F:122:GLU:HB2	1.91	0.52
1:C:307:LYS:HD2	1:C:309:ARG:HH12	1.75	0.52
1:A:411:SER:HA	1:A:455:LYS:HE3	1.91	0.52
1:A:467:ASP:HB2	2:E:109:TRP:NE1	2.23	0.52
2:G:106:HIS:CE1	2:G:142:GLN:HE22	2.28	0.51
1:A:233:TYR:CE1	1:A:327:LYS:HD2	2.45	0.51
1:C:347:ILE:HG12	1:C:431:ILE:HG12	1.91	0.51
1:D:406:LYS:HG2	1:D:461:VAL:HG22	1.92	0.51
2:F:118:THR:HB	2:F:127:THR:HG23	1.91	0.51
1:D:467:ASP:HB2	2:H:109:TRP:NE1	2.21	0.50
1:D:347:ILE:HG12	1:D:431:ILE:HG12	1.91	0.50
1:C:82:TRP:HB2	1:C:160:LEU:HD12	1.94	0.50
1:D:58:PRO:HG3	1:D:138:PHE:HD1	1.77	0.50
1:A:58:PRO:HG3	1:A:138:PHE:HD1	1.78	0.49
1:A:232:ILE:HG21	1:A:313:LEU:HD12	1.95	0.49
1:A:205:PHE:CE2	1:A:207:ASP:HB3	2.48	0.49
1:B:158:TYR:CD1	1:B:272:ILE:HD11	2.47	0.49
1:A:38:GLU:HB3	1:A:116:ARG:HH21	1.77	0.49
1:C:451:SER:HB3	1:C:460:ALA:HB1	1.95	0.48
1:A:204:ASP:HA	1:A:321:ARG:HH11	1.79	0.48
1:B:40:LYS:HB2	1:B:112:ASP:HB3	1.95	0.48
1:C:213:THR:HB	1:C:224:GLN:HG2	1.94	0.48
1:C:332:THR:HB	1:C:338:TYR:HB3	1.96	0.48
1:D:213:THR:HB	1:D:224:GLN:HG2	1.95	0.48
1:D:232:ILE:HG21	1:D:313:LEU:HD12	1.95	0.48
1:D:205:PHE:CE2	1:D:207:ASP:HB3	2.48	0.48
2:F:98:THR:HG21	2:F:103:LEU:HD23	1.96	0.48
1:C:205:PHE:CE2	1:C:207:ASP:HB3	2.48	0.48
1:C:465:CYS:HB2	2:G:69:LYS:HG2	1.96	0.48
1:D:332:THR:HB	1:D:338:TYR:HB3	1.96	0.48
1:C:38:GLU:HB3	1:C:116:ARG:HH11	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:290:ARG:HG3	1:A:326:SER:HB2	1.95	0.47
1:B:332:THR:HB	1:B:338:TYR:HB3	1.96	0.47
2:F:83:CYS:HB3	2:F:87:GLN:HB2	1.96	0.47
1:D:116:ARG:HD3	1:D:127:TYR:CD1	2.49	0.47
1:B:205:PHE:CE2	1:B:207:ASP:HB3	2.49	0.47
1:B:467:ASP:HB2	2:F:109:TRP:NE1	2.27	0.47
1:C:232:ILE:HG21	1:C:313:LEU:HD12	1.96	0.47
2:F:73:ARG:HB2	2:F:104:THR:HB	1.96	0.47
1:D:91:TRP:CD2	1:D:272:ILE:HD13	2.50	0.47
2:E:133:SER:O	2:E:136:CYS:SG	2.73	0.47
2:H:108:THR:HB	2:H:137:ASN:ND2	2.29	0.47
1:B:376:ILE:HG21	1:B:393:ILE:HG23	1.96	0.46
1:B:43:LEU:HD23	1:B:67:CYS:HB3	1.97	0.46
2:H:98:THR:HG21	2:H:103:LEU:HD23	1.97	0.46
1:C:376:ILE:HG21	1:C:393:ILE:HG23	1.96	0.46
2:H:72:PRO:HG2	2:H:75:GLU:HB2	1.96	0.46
2:H:65:CYS:SG	2:H:83:CYS:SG	3.13	0.46
2:H:73:ARG:HB2	2:H:104:THR:HB	1.97	0.46
1:C:38:GLU:HB3	1:C:116:ARG:NH1	2.30	0.46
1:B:451:SER:HB3	1:B:460:ALA:HB1	1.97	0.46
2:E:94:ALA:O	2:E:104:THR:HA	2.16	0.46
1:C:40:LYS:HB2	1:C:112:ASP:HB3	1.97	0.46
1:C:80:HIS:HB2	4:C:503:EDO:H12	1.97	0.46
1:D:210:HIS:O	1:D:234:PRO:HD2	2.16	0.46
1:C:58:PRO:HG3	1:C:138:PHE:HD1	1.80	0.46
1:D:115:SER:HB3	4:D:504:EDO:H22	1.97	0.46
1:D:158:TYR:O	1:D:159:SER:C	2.59	0.45
1:D:159:SER:HB2	1:D:268:HIS:NE2	2.30	0.45
1:A:332:THR:HB	1:A:338:TYR:HB3	1.98	0.45
1:A:451:SER:HB3	1:A:460:ALA:HB1	1.97	0.45
1:B:230:VAL:HG11	1:B:317:ILE:HD11	1.99	0.45
1:B:232:ILE:HG21	1:B:313:LEU:HD12	1.97	0.45
1:D:376:ILE:HG21	1:D:393:ILE:HG23	1.98	0.45
1:A:91:TRP:CD2	1:A:272:ILE:HD13	2.51	0.45
1:A:376:ILE:HG21	1:A:393:ILE:HG23	1.97	0.45
1:A:40:LYS:HB2	1:A:112:ASP:HB3	1.98	0.45
1:C:210:HIS:O	1:C:234:PRO:HD2	2.17	0.45
2:H:83:CYS:HB3	2:H:87:GLN:HB2	1.98	0.45
1:A:230:VAL:HG11	1:A:317:ILE:HD11	1.99	0.45
1:A:210:HIS:O	1:A:234:PRO:HD2	2.16	0.44
1:B:210:HIS:O	1:B:234:PRO:HD2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:402:LEU:HB3	1:C:444:PHE:CZ	2.45	0.44
1:C:80:HIS:HB2	4:C:503:EDO:H21	1.99	0.44
1:D:367:TYR:HB2	1:D:404:MET:HB3	1.99	0.44
2:G:63:LEU:HD21	2:G:89:CYS:SG	2.58	0.44
1:B:58:PRO:HG3	1:B:138:PHE:HD1	1.82	0.44
2:G:83:CYS:HB3	2:G:87:GLN:HB2	2.00	0.44
1:C:43:LEU:HD23	1:C:67:CYS:HB3	2.00	0.44
1:D:40:LYS:HB2	1:D:112:ASP:HB3	1.99	0.43
1:D:43:LEU:HD23	1:D:67:CYS:HB3	2.00	0.43
1:D:143:GLU:O	1:D:147:ASN:HA	2.18	0.43
1:D:465:CYS:HB2	2:H:69:LYS:HG2	2.00	0.43
2:G:73:ARG:HB2	2:G:104:THR:HB	2.00	0.43
1:D:39:SER:HA	4:D:504:EDO:H12	2.01	0.43
2:E:141:TRP:CD1	2:E:142:GLN:HG3	2.54	0.43
1:B:367:TYR:HB2	1:B:404:MET:HB3	1.99	0.43
1:C:367:TYR:HB2	1:C:404:MET:HB3	2.00	0.43
1:D:230:VAL:HG11	1:D:317:ILE:HD11	2.01	0.43
2:G:108:THR:HB	2:G:137:ASN:HD22	1.82	0.43
2:H:90:THR:O	2:H:108:THR:HA	2.19	0.43
1:A:158:TYR:CD1	1:A:272:ILE:HD11	2.54	0.42
1:C:35:ILE:H	1:C:35:ILE:HG13	1.73	0.42
1:C:73:SER:HB3	1:C:106:SER:HA	2.00	0.42
1:A:38:GLU:HB3	1:A:116:ARG:NH2	2.33	0.42
1:A:43:LEU:HD23	1:A:67:CYS:HB3	2.01	0.42
1:D:73:SER:HB3	1:D:106:SER:HA	2.00	0.42
1:D:151:ASP:O	1:D:177:ASN:HB2	2.20	0.42
1:A:367:TYR:HB2	1:A:404:MET:HB3	2.01	0.42
1:D:303:LEU:HD11	1:D:342:HIS:HB3	2.01	0.42
2:G:64:ARG:HH21	2:G:80:THR:HG23	1.84	0.42
1:A:73:SER:HB3	1:A:106:SER:HA	2.02	0.41
1:B:384:SER:HB2	1:B:387:LYS:HD2	2.02	0.41
1:B:158:TYR:O	1:B:159:SER:C	2.63	0.41
1:B:113:TRP:CE3	1:B:131:VAL:HG21	2.55	0.41
1:B:303:LEU:HD11	1:B:342:HIS:HB3	2.02	0.41
2:E:73:ARG:HB2	2:E:104:THR:HB	2.02	0.41
2:F:67:THR:HA	2:F:108:THR:O	2.21	0.41
1:C:230:VAL:HG11	1:C:317:ILE:HD11	2.03	0.41
1:A:233:TYR:CZ	1:A:327:LYS:HD2	2.56	0.41
1:B:219:ARG:HG2	1:B:219:ARG:HH11	1.86	0.41
2:E:111:THR:HG23	2:E:114:CYS:HB2	2.03	0.41
1:A:380:LEU:HA	1:A:381:PRO:HD2	1.90	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:158:TYR:CD1	1:C:272:ILE:HD11	2.55	0.41
1:D:38:GLU:HB3	1:D:116:ARG:NH2	2.36	0.41
1:A:46:PRO:HG3	1:A:100:TYR:CD1	2.56	0.41
2:E:83:CYS:HB3	2:E:87:GLN:HB2	2.03	0.41
1:A:35:ILE:H	1:A:35:ILE:HG13	1.72	0.40
1:A:421:TRP:CD1	1:B:219:ARG:HH11	2.39	0.40
1:B:38:GLU:HB3	1:B:116:ARG:NH1	2.36	0.40
2:G:64:ARG:HH11	2:G:82:ASP:HB2	1.86	0.40
1:A:420:TRP:HE3	1:B:187:PRO:HG2	1.86	0.40
1:B:427:ALA:HB1	1:B:450:VAL:HG11	2.04	0.40
1:C:83:THR:HB	4:C:503:EDO:H22	2.03	0.40
2:H:90:THR:HG22	2:H:109:TRP:O	2.21	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	410/448 (92%)	390 (95%)	20 (5%)	0	100	100
1	B	410/448 (92%)	392 (96%)	17 (4%)	1 (0%)	43	73
1	C	410/448 (92%)	394 (96%)	15 (4%)	1 (0%)	43	73
1	D	410/448 (92%)	390 (95%)	19 (5%)	1 (0%)	43	73
2	E	81/131 (62%)	76 (94%)	4 (5%)	1 (1%)	10	37
2	F	77/131 (59%)	71 (92%)	6 (8%)	0	100	100
2	G	79/131 (60%)	74 (94%)	5 (6%)	0	100	100
2	H	78/131 (60%)	77 (99%)	1 (1%)	0	100	100
All	All	1955/2316 (84%)	1864 (95%)	87 (4%)	4 (0%)	43	73

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	177	ASN
2	E	70	SER
1	C	177	ASN
1	D	177	ASN

### 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	364/389 (94%)	342 (94%)	22 (6%)	17	47
1	B	364/389 (94%)	344 (94%)	20 (6%)	19	50
1	C	364/389 (94%)	342 (94%)	22 (6%)	17	47
1	D	364/389 (94%)	341 (94%)	23 (6%)	16	45
2	E	78/122 (64%)	70 (90%)	8 (10%)	7	26
2	F	74/122 (61%)	62 (84%)	12 (16%)	2	11
2	G	76/122 (62%)	63 (83%)	13 (17%)	2	9
2	H	75/122 (62%)	64 (85%)	11 (15%)	3	13
All	All	1759/2044 (86%)	1628 (93%)	131 (7%)	13	39

All (131) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	30	GLN
1	A	33	ASP
1	A	35	ILE
1	A	44	ARG
1	A	83	THR
1	A	119	GLU
1	A	143	GLU
1	A	151	ASP
1	A	159	SER
1	A	176	VAL
1	A	216	SER
1	A	225	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	278	SER
1	A	283	GLU
1	A	295	GLU
1	A	330	LEU
1	A	372	GLU
1	A	379	THR
1	A	382	GLU
1	A	450	VAL
1	A	464	LYS
1	A	465	CYS
1	B	30	GLN
1	B	33	ASP
1	B	35	ILE
1	B	44	ARG
1	B	63	SER
1	B	83	THR
1	B	84	VAL
1	B	151	ASP
1	B	176	VAL
1	B	216	SER
1	B	278	SER
1	B	283	GLU
1	B	295	GLU
1	B	298	GLU
1	B	330	LEU
1	B	372	GLU
1	B	379	THR
1	B	450	VAL
1	B	464	LYS
1	B	465	CYS
1	C	30	GLN
1	C	31	ARG
1	C	33	ASP
1	C	35	ILE
1	C	44	ARG
1	C	63	SER
1	C	84	VAL
1	C	143	GLU
1	C	151	ASP
1	C	159	SER
1	C	176	VAL
1	C	216	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	278	SER
1	C	283	GLU
1	C	295	GLU
1	C	298	GLU
1	C	330	LEU
1	C	339	LYS
1	C	372	GLU
1	C	450	VAL
1	C	464	LYS
1	C	465	CYS
1	D	30	GLN
1	D	33	ASP
1	D	35	ILE
1	D	44	ARG
1	D	63	SER
1	D	84	VAL
1	D	119	GLU
1	D	143	GLU
1	D	151	ASP
1	D	176	VAL
1	D	216	SER
1	D	225	LYS
1	D	267	SER
1	D	271	SER
1	D	278	SER
1	D	283	GLU
1	D	295	GLU
1	D	298	GLU
1	D	372	GLU
1	D	440	LYS
1	D	451	SER
1	D	464	LYS
1	D	465	CYS
2	E	84	SER
2	E	88	THR
2	E	97	ASN
2	E	99	GLU
2	E	100	SER
2	E	105	THR
2	E	117	ILE
2	E	133	SER
2	F	70	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	F	75	GLU
2	F	82	ASP
2	F	84	SER
2	F	97	ASN
2	F	99	GLU
2	F	100	SER
2	F	115	GLN
2	F	117	ILE
2	F	128	MET
2	F	133	SER
2	F	138	VAL
2	G	64	ARG
2	G	75	GLU
2	G	76	ARG
2	G	82	ASP
2	G	84	SER
2	G	92	LEU
2	G	97	ASN
2	G	99	GLU
2	G	100	SER
2	G	117	ILE
2	G	128	MET
2	G	133	SER
2	G	138	VAL
2	H	64	ARG
2	H	75	GLU
2	H	80	THR
2	H	84	SER
2	H	93	ILE
2	H	99	GLU
2	H	100	SER
2	H	117	ILE
2	H	122	GLU
2	H	132	GLN
2	H	133	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	344	GLN
1	A	454	GLN
1	C	312	ASN

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Mol	Chain	Res	Type
1	D	312	ASN
1	D	439	GLN
2	E	115	GLN
2	E	142	GLN
2	G	106	HIS
2	G	115	GLN
2	H	106	HIS
2	H	115	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 oligosaccharides in this entry.

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

Of 24 ligands modelled in this entry, 8 are monoatomic - leaving 16 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	$\# Z  > 2$
4	EDO	A	503	-	3,3,3	0.45	0	2,2,2	0.48	0
4	EDO	B	504	-	3,3,3	1.02	0	2,2,2	0.31	0
4	EDO	A	504	-	3,3,3	0.89	0	2,2,2	0.36	0
3	NAG	D	502	1	14,14,15	0.41	0	17,19,21	0.96	1 (5%)
4	EDO	B	503	-	3,3,3	0.51	0	2,2,2	0.64	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	NAG	B	502	1	14,14,15	0.43	0	17,19,21	0.99	1 (5%)
4	EDO	C	503	-	3,3,3	0.43	0	2,2,2	0.69	0
3	NAG	D	501	1	14,14,15	0.32	0	17,19,21	0.81	1 (5%)
3	NAG	B	501	1	14,14,15	0.31	0	17,19,21	0.76	1 (5%)
4	EDO	C	504	-	3,3,3	0.90	0	2,2,2	0.28	0
4	EDO	D	503	-	3,3,3	1.09	0	2,2,2	0.16	0
3	NAG	A	501	1	14,14,15	0.32	0	17,19,21	0.83	1 (5%)
3	NAG	C	501	1	14,14,15	0.33	0	17,19,21	0.80	1 (5%)
3	NAG	A	502	1	14,14,15	0.41	0	17,19,21	1.06	1 (5%)
3	NAG	C	502	1	14,14,15	0.48	0	17,19,21	1.06	1 (5%)
4	EDO	D	504	-	3,3,3	1.11	0	2,2,2	0.39	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
4	EDO	A	503	-	-	1/1/1/1	-
4	EDO	B	504	-	-	1/1/1/1	-
4	EDO	A	504	-	-	0/1/1/1	-
3	NAG	D	502	1	-	0/6/23/26	0/1/1/1
4	EDO	B	503	-	-	1/1/1/1	-
3	NAG	B	502	1	-	1/6/23/26	0/1/1/1
4	EDO	C	503	-	-	1/1/1/1	-
3	NAG	D	501	1	-	0/6/23/26	0/1/1/1
3	NAG	B	501	1	-	0/6/23/26	0/1/1/1
4	EDO	C	504	-	-	0/1/1/1	-
4	EDO	D	503	-	-	1/1/1/1	-
3	NAG	A	501	1	-	0/6/23/26	0/1/1/1
3	NAG	C	501	1	-	0/6/23/26	0/1/1/1
3	NAG	A	502	1	-	0/6/23/26	0/1/1/1
3	NAG	C	502	1	-	0/6/23/26	0/1/1/1
4	EDO	D	504	-	-	0/1/1/1	-

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	502	NAG	C1-O5-C5	3.97	117.51	112.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	502	NAG	C1-O5-C5	3.67	117.11	112.19
3	B	502	NAG	C1-O5-C5	3.66	117.09	112.19
3	D	502	NAG	C1-O5-C5	3.30	116.61	112.19
3	A	501	NAG	C1-O5-C5	3.03	116.25	112.19
3	D	501	NAG	C1-O5-C5	2.68	115.78	112.19
3	C	501	NAG	C1-O5-C5	2.60	115.67	112.19
3	B	501	NAG	C1-O5-C5	2.58	115.65	112.19

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	503	EDO	O1-C1-C2-O2
4	C	503	EDO	O1-C1-C2-O2
4	A	503	EDO	O1-C1-C2-O2
4	B	504	EDO	O1-C1-C2-O2
4	D	503	EDO	O1-C1-C2-O2
3	B	502	NAG	C4-C5-C6-O6

There are no ring outliers.

7 monomers are involved in 14 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	503	EDO	1	0
4	B	504	EDO	1	0
4	A	504	EDO	1	0
4	B	503	EDO	2	0
4	C	503	EDO	3	0
4	D	503	EDO	3	0
4	D	504	EDO	3	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	416/448 (92%)	-0.27	3 (0%) 84 66	74, 102, 140, 166	0
1	B	416/448 (92%)	-0.16	4 (0%) 79 58	73, 110, 157, 181	0
1	C	416/448 (92%)	-0.25	4 (0%) 79 58	74, 103, 143, 174	0
1	D	416/448 (92%)	-0.28	2 (0%) 87 72	73, 99, 135, 159	0
2	E	83/131 (63%)	-0.17	0 100 100	91, 119, 146, 160	0
2	F	79/131 (60%)	0.30	2 (2%) 58 34	132, 165, 184, 199	0
2	G	81/131 (61%)	-0.13	0 100 100	112, 139, 162, 171	0
2	H	80/131 (61%)	-0.14	1 (1%) 75 52	102, 133, 159, 170	0
All	All	1987/2316 (85%)	-0.21	16 (0%) 82 63	73, 108, 158, 199	0

All (16) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	263	LEU	3.9
1	C	420	TRP	3.4
1	B	218	GLY	2.9
1	B	263	LEU	2.9
1	A	263	LEU	2.9
1	D	334	SER	2.9
1	C	263	LEU	2.9
1	C	82	TRP	2.7
1	A	82	TRP	2.6
2	F	143	SER	2.5
1	B	411	SER	2.4
1	C	411	SER	2.2
1	A	411	SER	2.2
2	H	74	ASP	2.2
1	B	84	VAL	2.1
2	F	117	ILE	2.1

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

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

## 6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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	NAG	C	501	14/15	0.45	0.14	161,167,171,172	0
3	NAG	B	501	14/15	0.56	0.11	175,177,178,181	0
3	NAG	C	502	14/15	0.63	0.14	124,132,139,141	0
3	NAG	A	501	14/15	0.65	0.10	146,156,158,158	0
3	NAG	D	501	14/15	0.70	0.12	127,132,134,136	0
3	NAG	B	502	14/15	0.77	0.15	130,139,153,156	0
3	NAG	A	502	14/15	0.77	0.13	113,137,146,147	0
3	NAG	D	502	14/15	0.80	0.13	101,124,136,138	0
4	EDO	D	504	4/4	0.81	0.14	63,71,73,74	0
5	CA	D	506	1/1	0.85	0.14	143,143,143,143	0
5	CA	B	506	1/1	0.88	0.07	143,143,143,143	0
4	EDO	C	504	4/4	0.88	0.14	76,80,81,84	0
4	EDO	B	504	4/4	0.89	0.14	76,76,79,79	0
5	CA	C	506	1/1	0.91	0.11	137,137,137,137	0
4	EDO	A	504	4/4	0.91	0.14	80,81,83,83	0
5	CA	A	506	1/1	0.94	0.12	125,125,125,125	0
4	EDO	B	503	4/4	0.95	0.09	65,67,70,72	0
4	EDO	D	503	4/4	0.96	0.07	41,51,60,61	0
4	EDO	C	503	4/4	0.96	0.07	74,74,75,75	0
4	EDO	A	503	4/4	0.97	0.07	76,77,77,77	0
5	CA	B	505	1/1	0.98	0.05	79,79,79,79	0
5	CA	D	505	1/1	0.98	0.06	70,70,70,70	0
5	CA	A	505	1/1	0.98	0.10	80,80,80,80	0
5	CA	C	505	1/1	0.99	0.03	63,63,63,63	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.