



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 1, 2014 – 02:38 AM GMT

PDB ID : 3I3O
Title : 2.06 Angstrom resolution crystal structure of a short chain dehydrogenase from Bacillus anthracis str. 'Ames Ancestor' in complex with NAD-acetone
Authors : Halavaty, A.S.; Minasov, G.; Skarina, T.; Onopriyenko, O.; Peterson, S.; Savchenko, A.; Anderson, W.F.; Center for Structural Genomics of Infectious Diseases (CSGID)
Deposited on : 2009-06-30
Resolution : 2.06 Å(reported)

This is a full wwPDB validation report for a publicly released PDB entry.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at <http://wwpdb.org/ValidationPDFNotes.html>

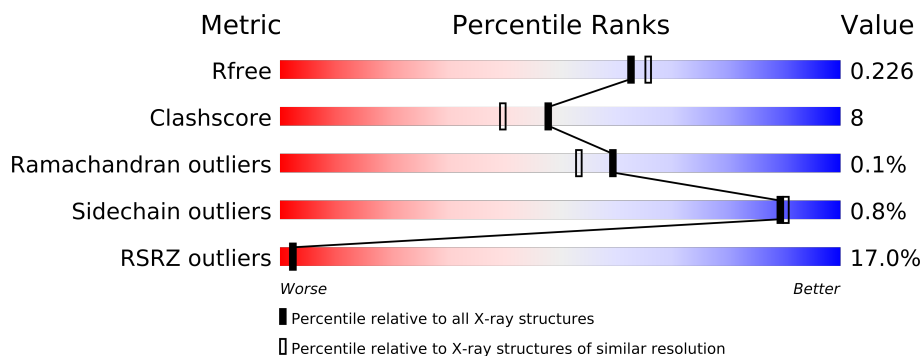
The following versions of software and data (see [references](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.15 2013
Xtriage (Phenix) : dev-1323
EDS : stable22639
Percentile statistics : 21963
Refmac : 5.8.0049
CCP4 : 6.3.0 (Settle)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : stable22683

1 Overall quality at a glance

The reported resolution of this entry is 2.06 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}	66092	1224 (2.08-2.04)
Clashscore	79885	1390 (2.08-2.04)
Ramachandran outliers	78287	1381 (2.08-2.04)
Sidechain outliers	78261	1381 (2.08-2.04)
RSRZ outliers	66119	1225 (2.08-2.04)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density.

Mol	Chain	Length	Quality of chain
1	A	291	
1	B	291	
1	C	291	
1	D	291	
1	E	291	
1	F	291	
1	G	291	
1	H	291	

The following table lists non-polymeric compounds that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Geometry	Electron density
4	CAC	A	327	X	X

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Mol	Type	Chain	Res	Geometry	Electron density
4	CAC	B	321	X	X
4	CAC	B	328	X	X
4	CAC	C	322	X	X
4	CAC	D	324	X	X
4	CAC	E	325	X	X
4	CAC	F	329	X	-
4	CAC	G	326	X	X
4	CAC	H	323	X	X

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 18804 atoms, of which 0 are hydrogen and 0 are deuterium.

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 Short chain dehydrogenase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	282	Total	C	N	O	S	0	3	0
			2181	1378	367	430	6			
1	B	283	Total	C	N	O	S	0	11	0
			2256	1421	380	449	6			
1	C	281	Total	C	N	O	S	0	5	0
			2190	1383	369	432	6			
1	D	283	Total	C	N	O	S	0	9	0
			2246	1417	381	442	6			
1	E	279	Total	C	N	O	S	0	9	0
			2208	1393	372	437	6			
1	F	270	Total	C	N	O	S	0	6	0
			2112	1337	354	416	5			
1	G	245	Total	C	N	O	S	0	4	0
			1893	1191	320	378	4			
1	H	270	Total	C	N	O	S	0	6	0
			2113	1335	357	416	5			

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	SER	-	EXPRESSION TAG	UNP Q81UV8
A	-1	ASN	-	EXPRESSION TAG	UNP Q81UV8
A	0	ALA	-	EXPRESSION TAG	UNP Q81UV8
B	-2	SER	-	EXPRESSION TAG	UNP Q81UV8
B	-1	ASN	-	EXPRESSION TAG	UNP Q81UV8
B	0	ALA	-	EXPRESSION TAG	UNP Q81UV8
C	-2	SER	-	EXPRESSION TAG	UNP Q81UV8
C	-1	ASN	-	EXPRESSION TAG	UNP Q81UV8
C	0	ALA	-	EXPRESSION TAG	UNP Q81UV8
D	-2	SER	-	EXPRESSION TAG	UNP Q81UV8
D	-1	ASN	-	EXPRESSION TAG	UNP Q81UV8
D	0	ALA	-	EXPRESSION TAG	UNP Q81UV8
E	-2	SER	-	EXPRESSION TAG	UNP Q81UV8

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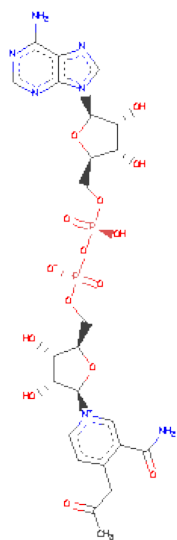
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Chain	Residue	Modelled	Actual	Comment	Reference
E	-1	ASN	-	EXPRESSION TAG	UNP Q81UV8
E	0	ALA	-	EXPRESSION TAG	UNP Q81UV8
F	-2	SER	-	EXPRESSION TAG	UNP Q81UV8
F	-1	ASN	-	EXPRESSION TAG	UNP Q81UV8
F	0	ALA	-	EXPRESSION TAG	UNP Q81UV8
G	-2	SER	-	EXPRESSION TAG	UNP Q81UV8
G	-1	ASN	-	EXPRESSION TAG	UNP Q81UV8
G	0	ALA	-	EXPRESSION TAG	UNP Q81UV8
H	-2	SER	-	EXPRESSION TAG	UNP Q81UV8
H	-1	ASN	-	EXPRESSION TAG	UNP Q81UV8
H	0	ALA	-	EXPRESSION TAG	UNP Q81UV8

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

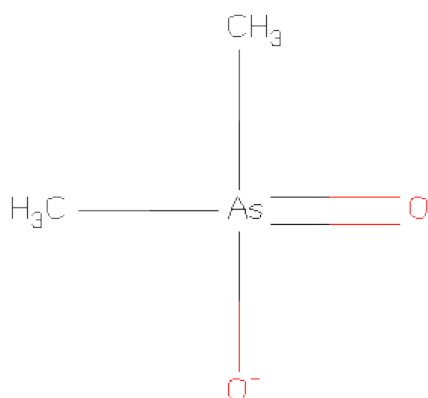
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	D	1	Total Mg 1 1	0	0
2	E	1	Total Mg 1 1	0	0
2	H	1	Total Mg 1 1	0	0
2	B	1	Total Mg 1 1	0	0
2	C	1	Total Mg 1 1	0	0
2	A	1	Total Mg 1 1	0	0
2	F	1	Total Mg 1 1	0	0

- Molecule 3 is NICOTINAMIDE ADENINE DINUCLEOTIDE ACETONE ADDUCT (three-letter code: NAE) (formula: C₂₄H₃₁N₇O₁₅P₂).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			48	24	7	15	2		
3	B	1	Total	C	N	O	P	0	0
			48	24	7	15	2		
3	C	1	Total	C	N	O	P	0	0
			48	24	7	15	2		
3	D	1	Total	C	N	O	P	0	0
			48	24	7	15	2		
3	E	1	Total	C	N	O	P	0	0
			48	24	7	15	2		
3	F	1	Total	C	N	O	P	0	0
			48	24	7	15	2		
3	H	1	Total	C	N	O	P	0	0
			48	24	7	15	2		

- Molecule 4 is CACODYLATE ION (three-letter code: CAC) (formula: C₂H₆AsO₂).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	As	C	O	0	0
			5	1	2	2		
4	B	1	Total	As	C	O	0	0
			5	1	2	2		
4	B	1	Total	As	C	O	0	0
			5	1	2	2		
4	C	1	Total	As	C	O	0	0
			5	1	2	2		
4	D	1	Total	As	C	O	0	0
			5	1	2	2		
4	E	1	Total	As	C	O	0	0
			5	1	2	2		
4	F	1	Total	As	C	O	0	0
			5	1	2	2		
4	G	1	Total	As	C	O	0	0
			5	1	2	2		
4	H	1	Total	As	C	O	0	0
			5	1	2	2		

- Molecule 5 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	D	1	Total	Cl	0	0
			1	1		

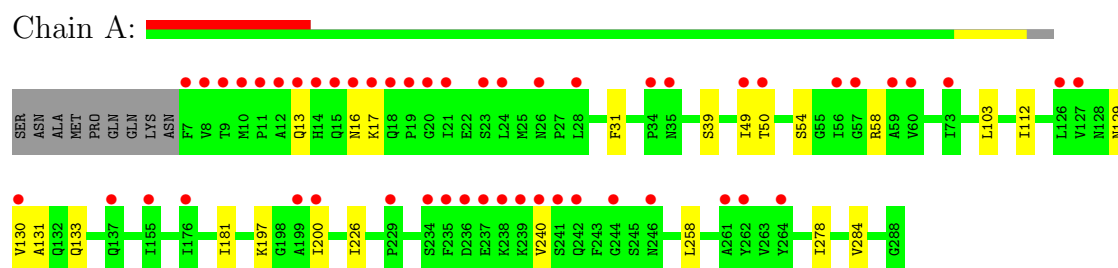
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	178	Total 179	O 179	0	3
6	B	221	Total 221	O 221	0	5
6	C	190	Total 191	O 191	0	5
6	D	169	Total 169	O 169	0	5
6	E	171	Total 174	O 174	0	6
6	F	100	Total 100	O 100	0	0
6	G	66	Total 66	O 66	0	1
6	H	115	Total 116	O 116	0	3

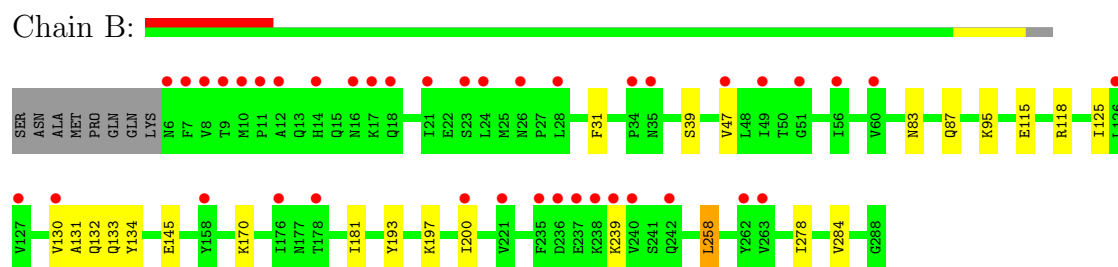
3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

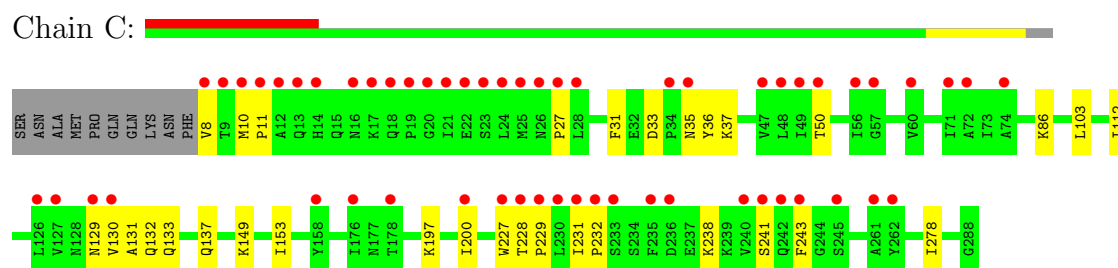
- Molecule 1: Short chain dehydrogenase



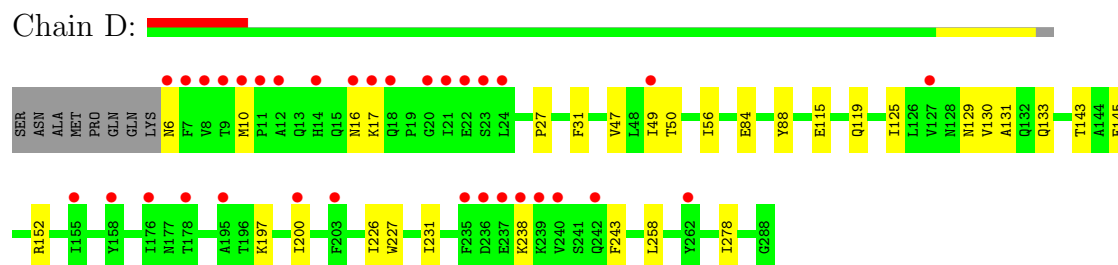
- Molecule 1: Short chain dehydrogenase



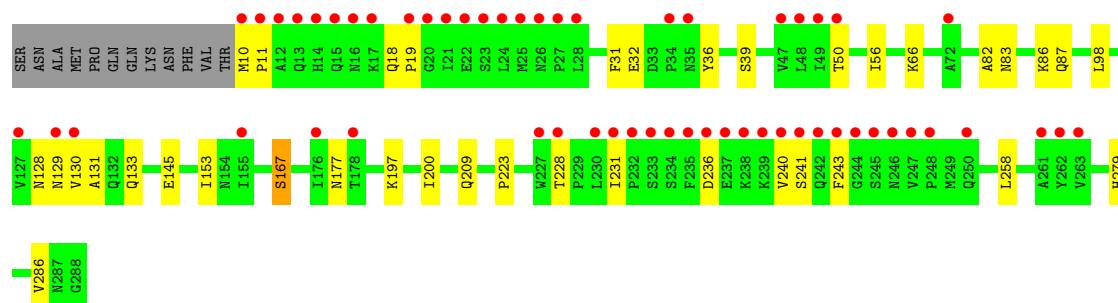
- Molecule 1: Short chain dehydrogenase



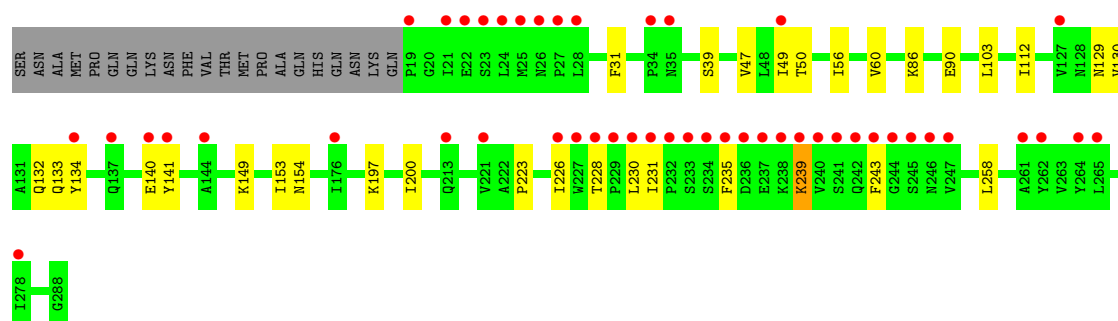
- Molecule 1: Short chain dehydrogenase



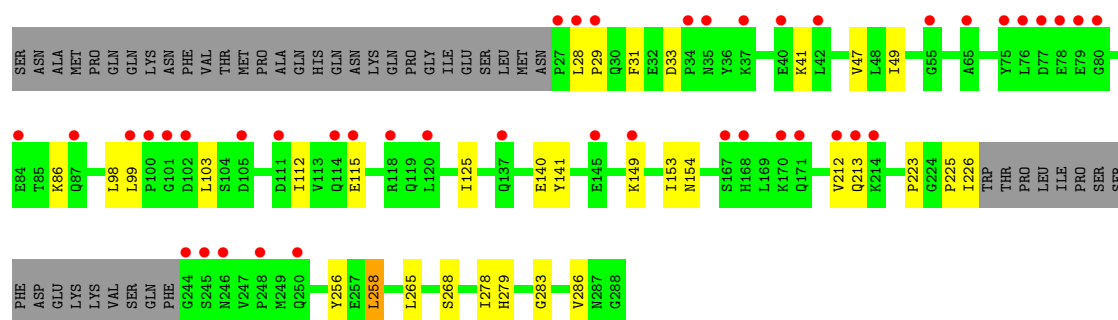
- Molecule 1: Short chain dehydrogenase

Chain E: 

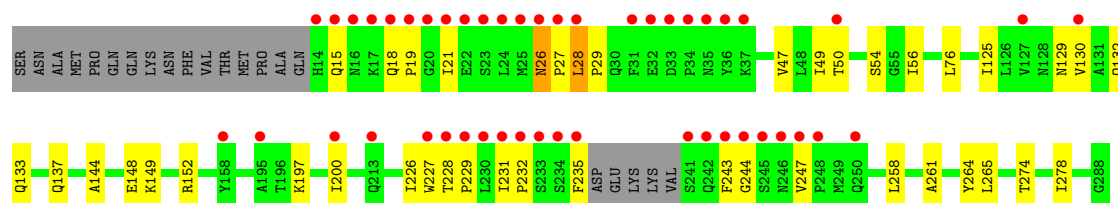
- Molecule 1: Short chain dehydrogenase

Chain F: 

- Molecule 1: Short chain dehydrogenase

Chain G: 

- Molecule 1: Short chain dehydrogenase

Chain H: 

4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α , β , γ	131.76Å 168.16Å 107.19Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.95 – 2.06 29.56 – 2.06	Depositor EDS
% Data completeness (in resolution range)	100.0 (29.95-2.06) 100.0 (29.56-2.06)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	4.80 (at 2.06Å)	Xtriage
Refinement program	REFMAC 5.5.0051	Depositor
R, R_{free}	0.161 , 0.205 0.187 , 0.226	Depositor DCC
R_{free} test set	7380 reflections (5.02%)	DCC
Wilson B-factor (Å ²)	22.1	Xtriage
Anisotropy	0.947	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.38 , 34.8	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Outliers	0 of 147192 reflections	Xtriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	18804	wwPDB-VP
Average B, all atoms (Å ²)	18.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 24.65 % 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 3.6785e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: CAC, MG, NAE, CL

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	0/2223	0.74	1/3015 (0.0%)
1	B	0.75	0/2298	0.75	1/3117 (0.0%)
1	C	0.78	0/2231	0.74	0/3025
1	D	0.70	0/2288	0.74	0/3102
1	E	0.70	0/2249	0.74	1/3050 (0.0%)
1	F	0.62	0/2151	0.70	0/2916
1	G	0.66	0/1924	0.71	0/2606
1	H	0.63	0/2152	0.73	0/2918
All	All	0.70	0/17516	0.73	3/23749 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	258	LEU	CA-CB-CG	-7.23	98.67	115.30
1	E	167	SER	CB-CA-C	-5.14	100.33	110.10
1	A	58	ARG	NE-CZ-NH2	-5.08	117.76	120.30

There are no chirality outliers.

There are no planarity outliers.

5.2 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 hydrogens added by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, and the number in parentheses is this value normalized per 1000 atoms of the molecule in the chain. The Symm-Clashes column gives symmetry related clashes, in the same way as for the Clashes column.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2181	0	2157	22	0
1	B	2256	0	2214	24	0
1	C	2190	0	2172	30	0
1	D	2246	0	2218	37	0
1	E	2208	0	2178	46	0
1	F	2112	0	2099	42	0
1	G	1893	0	1871	22	0
1	H	2113	0	2087	45	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	F	1	0	0	0	0
2	H	1	0	0	0	0
3	A	48	0	30	13	0
3	B	48	0	29	14	0
3	C	48	0	30	7	0
3	D	48	0	29	8	0
3	E	48	0	29	15	0
3	F	48	0	29	9	0
3	H	48	0	30	7	0
4	A	5	0	0	0	0
4	B	10	0	0	0	0
4	C	5	0	0	1	0
4	D	5	0	0	0	0
4	E	5	0	0	0	0
4	F	5	0	0	0	0
4	G	5	0	0	0	0
4	H	5	0	0	0	0
5	D	1	0	0	0	0
6	A	179	0	0	1	0
6	B	221	0	0	3	0
6	C	191	0	0	4	0
6	D	169	0	0	4	0
6	E	174	0	0	1	0
6	F	100	0	0	2	0
6	G	66	0	0	2	0
6	H	116	0	0	2	0
All	All	18804	0	17202	274	0

Clashscore is defined as the number of clashes calculated for the entry per 1000 atoms (including hydrogens) of the entry. The overall clashscore for this entry is 8.

All (274) close contacts within the same asymmetric unit are listed below.

Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:C:10:MET:HE3	1:C:27:PRO:HD2	1.48	0.94
1:C:132:GLN:HE22	1:C:149:LYS:HE2	1.34	0.91
1:A:130:VAL:HG23	3:A:311:NAE:C1'	2.01	0.91
1:D:56:ILE:HG12	1:D:258[B]:LEU:HD22	1.55	0.89
1:F:226:ILE:O	1:F:231:ILE:HD11	1.72	0.89
1:F:226:ILE:HG13	1:F:258[B]:LEU:HD11	1.53	0.88
3:D:311:NAE:H2P3	6:D:560:HOH:O	1.72	0.88
1:B:130[A]:VAL:HG23	3:B:311:NAE:C1'	2.04	0.86
1:E:130[A]:VAL:HG23	3:E:311:NAE:C1'	2.07	0.85
1:H:231:ILE:CD1	1:H:243:PHE:CE2	2.62	0.82
1:H:231:ILE:HD11	1:H:243:PHE:CE2	2.15	0.81
1:H:132:GLN:HE22	1:H:149:LYS:HE2	1.45	0.79
1:E:56:ILE:HG12	1:E:258[B]:LEU:HD12	1.62	0.79
1:F:231:ILE:HD13	1:F:243:PHE:CE2	2.18	0.79
1:F:56:ILE:HD13	1:F:258[A]:LEU:CD2	2.12	0.79
1:D:226:ILE:HG13	1:D:258[A]:LEU:HD11	1.65	0.78
3:D:311:NAE:H4P1	6:D:524:HOH:O	1.84	0.77
1:D:10:MET:HE3	1:D:27:PRO:HD2	1.65	0.76
1:B:131:ALA:HB3	3:B:311:NAE:H3B	1.67	0.76
1:D:56:ILE:HD13	1:D:258[B]:LEU:CD2	2.16	0.75
1:C:10:MET:CE	1:C:27:PRO:HD2	2.15	0.75
1:B:130[A]:VAL:HG23	3:B:311:NAE:H1'	1.71	0.72
1:D:10:MET:CE	1:D:27:PRO:HD2	2.19	0.72
1:F:130:VAL:HG23	3:F:311:NAE:C1'	2.20	0.71
1:C:10:MET:HE2	1:C:227:TRP:CZ2	2.25	0.70
1:D:56:ILE:CG1	1:D:258[B]:LEU:HD22	2.21	0.69
1:F:56:ILE:HG12	1:F:258[A]:LEU:HD22	1.73	0.69
1:F:56:ILE:CD1	1:F:258[A]:LEU:CD2	2.69	0.69
1:H:231:ILE:HD13	1:H:243:PHE:CE2	2.28	0.69
1:E:209:GLN:HG3	6:H:449:HOH:O	1.92	0.69
1:E:130[A]:VAL:HG23	3:E:311:NAE:H1'	1.74	0.69
1:D:143:THR:HB	1:D:145[A]:GLU:OE1	1.92	0.68
1:C:130:VAL:HG23	3:C:311:NAE:N9A	2.08	0.68
1:C:133:GLN:OE1	3:C:311:NAE:H2P1	1.94	0.67
1:D:56:ILE:CD1	1:D:258[B]:LEU:CD2	2.72	0.67
1:D:197:LYS:HE3	3:D:311:NAE:O2B	1.94	0.67
1:E:130[B]:VAL:HG11	1:E:153:ILE:HD11	1.75	0.67
1:A:133:GLN:OE1	3:A:311:NAE:H2P1	1.95	0.66
1:H:130:VAL:HG23	3:H:311:NAE:H1'	1.76	0.66
1:H:231:ILE:HD13	1:H:243:PHE:CD2	2.31	0.66
1:E:130[A]:VAL:HG23	3:E:311:NAE:N9A	2.10	0.66
1:C:130:VAL:HG23	3:C:311:NAE:C1'	2.26	0.66

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:130:VAL:HG23	3:A:311:NAE:H1'	1.78	0.65
1:F:56:ILE:CD1	1:F:258[A]:LEU:HD22	2.26	0.65
1:E:10:MET:N	1:E:241:SER:O	2.29	0.65
1:B:131:ALA:CB	3:B:311:NAE:H3B	2.27	0.65
1:H:130:VAL:HG23	3:H:311:NAE:C1'	2.27	0.65
1:D:197:LYS:HD3	1:D:200:ILE:HD12	1.77	0.64
1:E:131:ALA:HB3	3:E:311:NAE:H3B	1.80	0.64
1:C:238:LYS:HD3	1:C:241:SER:OG	1.99	0.63
1:F:231:ILE:HD13	1:F:243:PHE:CZ	2.34	0.62
1:F:226:ILE:O	1:F:231:ILE:CD1	2.48	0.62
1:E:223:PRO:HB3	1:E:258[A]:LEU:HD21	1.80	0.61
1:A:131:ALA:HB3	3:A:311:NAE:H3B	1.82	0.61
1:E:10:MET:HB2	1:E:11:PRO:CD	2.30	0.61
1:C:10:MET:HE2	1:C:227:TRP:CE2	2.35	0.61
1:H:265[B]:LEU:HD11	1:H:278:ILE:HG13	1.83	0.61
1:A:130:VAL:HG23	3:A:311:NAE:N9A	2.14	0.61
1:F:56:ILE:CG1	1:F:258[A]:LEU:HD22	2.31	0.60
1:G:86:LYS:HD2	1:G:98:LEU:HG	1.84	0.60
1:D:145[A]:GLU:CD	1:D:145[A]:GLU:H	2.04	0.60
1:E:130[B]:VAL:HG22	3:E:311:NAE:H1'	1.84	0.60
1:D:10:MET:HE3	1:D:27:PRO:CD	2.31	0.60
1:H:244:GLY:O	1:H:247:VAL:HG22	2.02	0.60
1:E:236:ASP:O	1:E:240:VAL:HG23	2.01	0.60
1:F:129:ASN:ND2	3:F:311:NAE:H4B	2.17	0.60
1:H:261:ALA:O	1:H:265[B]:LEU:HD13	2.02	0.60
1:E:130[B]:VAL:HG13	3:E:311:NAE:N9A	2.17	0.59
1:F:231:ILE:CD1	1:F:243:PHE:CZ	2.86	0.59
1:B:193:TYR:CZ	3:B:311:NAE:H2P1	2.38	0.59
1:C:10:MET:CE	1:C:227:TRP:CE2	2.86	0.59
1:B:130[A]:VAL:HG23	3:B:311:NAE:N9A	2.17	0.58
3:B:311:NAE:H5A1	3:B:311:NAE:H5'2	1.85	0.58
1:C:129:ASN:ND2	3:C:311:NAE:H4B	2.18	0.58
1:F:132:GLN:NE2	1:F:134:TYR:OH	2.36	0.58
1:C:10:MET:HE3	1:C:11:PRO:HD2	1.84	0.58
1:H:231:ILE:HB	1:H:232:PRO:CD	2.33	0.58
1:B:130[A]:VAL:CG2	3:B:311:NAE:N9A	2.67	0.58
1:C:130:VAL:HG21	1:C:153:ILE:HD11	1.86	0.58
1:G:213:GLN:N	6:G:452:HOH:O	2.30	0.58
1:D:56:ILE:HG12	1:D:258[A]:LEU:HD13	1.84	0.57
1:A:31:PHE:HB3	6:A:562:HOH:O	2.03	0.57
1:H:56:ILE:HD11	1:H:226:ILE:HG13	1.86	0.57
1:D:231:ILE:HG12	1:D:243:PHE:CZ	2.38	0.57

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:H:228:THR:HB	1:H:229:PRO:HD2	1.86	0.57
1:F:56:ILE:HG12	1:F:258[B]:LEU:HD13	1.85	0.57
1:E:223:PRO:HB3	1:E:258[A]:LEU:CD2	2.35	0.57
1:E:131:ALA:CB	3:E:311:NAE:H3B	2.35	0.57
1:H:27:PRO:O	1:H:28:LEU:C	2.43	0.57
1:F:226:ILE:CG1	1:F:258[B]:LEU:HD11	2.31	0.56
1:H:264:TYR:HD2	1:H:265[B]:LEU:HD12	1.71	0.56
1:G:103:LEU:HD21	1:G:112:ILE:HD13	1.87	0.56
1:D:56:ILE:CD1	1:D:258[B]:LEU:HD22	2.36	0.56
1:E:56:ILE:HG12	1:E:258[B]:LEU:CD1	2.35	0.55
3:A:311:NAE:H4P1	3:A:311:NAE:O7N	2.05	0.55
1:B:145[A]:GLU:OE2	1:B:145[A]:GLU:N	2.35	0.55
1:G:47:VAL:HG22	1:G:125:ILE:HB	1.88	0.55
1:D:10:MET:HE2	1:D:227:TRP:CZ2	2.42	0.54
1:H:265[B]:LEU:HD11	1:H:278:ILE:CG1	2.38	0.54
1:H:18:GLN:HE22	1:H:132:GLN:HB3	1.71	0.54
1:E:10:MET:HB2	1:E:11:PRO:HD3	1.89	0.54
1:G:28:LEU:HD12	1:G:29:PRO:HD2	1.90	0.54
1:B:130[B]:VAL:HG12	3:B:311:NAE:H1'	1.90	0.53
1:E:56:ILE:CD1	1:E:258[B]:LEU:CD1	2.85	0.53
1:E:56:ILE:HD13	1:E:258[B]:LEU:HD13	1.90	0.53
1:F:231:ILE:CD1	1:F:243:PHE:CE2	2.90	0.53
1:F:56:ILE:CD1	1:F:258[B]:LEU:HD13	2.38	0.53
1:H:226:ILE:O	1:H:231:ILE:HD11	2.08	0.53
3:E:311:NAE:C5N	3:E:311:NAE:OP	2.57	0.53
1:E:197:LYS:HD3	1:E:200:ILE:HD12	1.90	0.53
1:E:83[B]:ASN:O	1:E:87[B]:GLN:HG2	2.08	0.53
1:A:130:VAL:CG2	3:A:311:NAE:C4A	2.87	0.53
1:E:130[A]:VAL:CG2	3:E:311:NAE:N9A	2.72	0.53
1:E:130[A]:VAL:CG2	3:E:311:NAE:C4A	2.87	0.52
1:H:26:ASN:HB3	1:H:27:PRO:CD	2.39	0.52
1:A:130:VAL:CG2	3:A:311:NAE:N9A	2.71	0.52
1:E:228:THR:H	1:E:231:ILE:HD13	1.73	0.52
1:D:197:LYS:CE	3:D:311:NAE:O2B	2.57	0.52
1:D:84:GLU:HG2	1:D:88:TYR:CE2	2.45	0.52
1:D:133:GLN:OE1	3:D:311:NAE:H2P1	2.09	0.52
1:A:50:THR:O	1:A:129:ASN:HB3	2.09	0.52
1:H:226:ILE:HD12	1:H:258:LEU:HD21	1.92	0.52
1:F:130:VAL:HG23	3:F:311:NAE:H1'	1.92	0.52
1:F:153:ILE:HG23	1:F:154:ASN:OD1	2.10	0.52
1:H:133:GLN:OE1	3:H:311:NAE:H2P1	2.10	0.51
1:B:197:LYS:HD3	1:B:200:ILE:HD12	1.91	0.51

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:G:99:LEU:HD22	1:G:115:GLU:HG2	1.91	0.51
1:B:130[A]:VAL:CG2	3:B:311:NAE:C4A	2.89	0.51
1:G:212:VAL:HG13	1:G:213:GLN:N	2.25	0.51
1:D:50:THR:O	1:D:129:ASN:HB3	2.11	0.51
1:H:129:ASN:ND2	3:H:311:NAE:H4B	2.26	0.50
1:G:278:ILE:HD12	1:H:278:ILE:HD12	1.93	0.50
1:E:50:THR:O	1:E:129:ASN:HB3	2.10	0.50
1:F:103:LEU:HD21	1:F:112:ILE:HD13	1.92	0.50
1:H:49[B]:ILE:HG23	1:H:49[B]:ILE:O	2.12	0.50
1:E:145[A]:GLU:N	1:E:145[A]:GLU:OE2	2.37	0.50
1:D:152:ARG:NH2	6:D:493:HOH:O	2.25	0.50
1:D:226:ILE:CG1	1:D:258[A]:LEU:HD11	2.41	0.50
1:D:56:ILE:CD1	1:D:258[A]:LEU:HD13	2.41	0.50
1:H:26:ASN:HB3	1:H:27:PRO:HD3	1.93	0.50
1:A:49:ILE:HG23	1:A:49:ILE:O	2.10	0.50
1:D:226:ILE:HD12	1:D:258[B]:LEU:HD11	1.93	0.50
1:C:278:ILE:HD12	1:D:278:ILE:HD12	1.93	0.50
1:F:226:ILE:HG13	1:F:258[B]:LEU:CD1	2.34	0.49
1:E:231:ILE:N	1:E:231:ILE:HD12	2.27	0.49
1:H:50:THR:O	1:H:129:ASN:HB3	2.12	0.49
1:F:86[A]:LYS:NZ	1:F:90:GLU:OE2	2.42	0.49
1:D:226:ILE:CD1	1:D:258[B]:LEU:HD11	2.42	0.49
1:D:226:ILE:HG13	1:D:258[A]:LEU:CD1	2.39	0.49
1:E:86:LYS:HD2	1:E:98:LEU:HD11	1.94	0.49
1:H:152:ARG:NH1	6:H:448:HOH:O	2.39	0.49
1:H:231:ILE:HB	1:H:232:PRO:HD3	1.94	0.49
1:C:35:ASN:O	1:C:37:LYS:HG3	2.13	0.48
1:A:54:SER:OG	3:A:311:NAE:O2A	2.31	0.48
1:E:133:GLN:OE1	3:E:311:NAE:C2P	2.61	0.48
1:G:33:ASP:HB2	1:G:256:TYR:CD1	2.47	0.48
1:F:133:GLN:OE1	3:F:311:NAE:C2P	2.61	0.48
1:D:56:ILE:HD13	1:D:258[B]:LEU:HD23	1.95	0.48
1:C:197:LYS:HD3	1:C:200:ILE:HD12	1.95	0.48
1:F:140:GLU:HG2	1:F:141:TYR:CD1	2.49	0.48
1:F:223:PRO:HB3	1:F:258[A]:LEU:HD21	1.96	0.48
1:D:47:VAL:HG12	1:D:49[A]:ILE:HG13	1.96	0.48
1:E:31:PHE:HB3	6:E:424:HOH:O	2.13	0.48
1:A:130:VAL:HG21	3:A:311:NAE:C4A	2.44	0.47
1:H:144:ALA:O	1:H:148:GLU:HG3	2.14	0.47
1:D:47:VAL:HG22	1:D:125:ILE:HB	1.96	0.47
1:F:133:GLN:OE1	3:F:311:NAE:H2P2	2.14	0.47
1:A:103:LEU:HD21	1:A:112:ILE:HD13	1.96	0.47

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:C:103:LEU:HD21	1:C:112:ILE:HD13	1.96	0.47
1:H:231:ILE:HG23	1:H:235:PHE:HD2	1.80	0.47
1:A:16:ASN:C	1:A:16:ASN:OD1	2.53	0.47
4:C:322:CAC:O2	6:C:547:HOH:O	2.20	0.47
1:F:226:ILE:CD1	1:F:258[A]:LEU:HD11	2.45	0.46
1:E:223:PRO:HB3	1:E:258[B]:LEU:HD11	1.96	0.46
1:H:197:LYS:HD3	1:H:200:ILE:HD12	1.97	0.46
1:H:226:ILE:CD1	1:H:258:LEU:HD21	2.46	0.46
1:E:56:ILE:HD13	1:E:258[B]:LEU:CD1	2.45	0.46
1:E:231:ILE:HG12	1:E:243:PHE:CZ	2.50	0.46
1:H:21:ILE:HD12	1:H:21:ILE:N	2.31	0.46
1:E:128:ASN:HB2	1:E:177:ASN:HD22	1.81	0.46
1:B:132:GLN:NE2	1:B:134:TYR:OH	2.49	0.46
1:E:36:TYR:CE1	6:F:445:HOH:O	2.56	0.46
1:E:10:MET:CB	1:E:11:PRO:CD	2.93	0.46
3:B:311:NAE:O7N	3:B:311:NAE:H4P1	2.16	0.46
1:A:197:LYS:HD3	1:A:200:ILE:HD12	1.98	0.46
1:B:181:ILE:HD11	1:B:284:VAL:HG11	1.96	0.46
1:A:130:VAL:HG23	3:A:311:NAE:O4'	2.16	0.46
1:D:131:ALA:HB3	3:D:311:NAE:H3B	1.98	0.45
1:G:29:PRO:HG2	1:G:31:PHE:CZ	2.51	0.45
1:C:131:ALA:HB3	3:C:311:NAE:H3B	1.97	0.45
1:F:130:VAL:HG23	3:F:311:NAE:N9A	2.31	0.45
1:F:49[B]:ILE:HG23	1:F:49[B]:ILE:O	2.16	0.45
1:C:228:THR:HB	1:C:229:PRO:HD2	1.99	0.45
1:C:50:THR:O	1:C:129:ASN:HB3	2.17	0.45
1:C:130:VAL:CG2	3:C:311:NAE:C4A	2.95	0.45
1:G:212:VAL:CG1	1:G:213:GLN:N	2.79	0.45
1:E:82:ALA:HB1	1:E:98:LEU:HD22	1.98	0.45
1:H:15:GLN:N	1:H:232:PRO:O	2.47	0.45
1:B:83[A]:ASN:O	1:B:87:GLN:HG2	2.17	0.45
1:H:130:VAL:CG2	3:H:311:NAE:C4A	2.94	0.44
1:C:31:PHE:HB3	6:C:570:HOH:O	2.16	0.44
3:E:311:NAE:O7N	3:E:311:NAE:H4P1	2.16	0.44
1:B:83[A]:ASN:ND2	6:B:605[A]:HOH:O	2.49	0.44
1:E:279:HIS:CE1	1:E:286:VAL:HG21	2.52	0.44
1:G:41:LYS:HG2	6:G:436:HOH:O	2.18	0.44
1:B:31:PHE:HB3	6:B:401:HOH:O	2.17	0.44
1:F:130:VAL:CG2	3:F:311:NAE:C4A	2.96	0.44
1:F:50:THR:O	1:F:129:ASN:HB3	2.17	0.44
1:C:130:VAL:HG23	3:C:311:NAE:C4A	2.47	0.44
1:G:283:GLY:HA2	1:H:274:THR:O	2.18	0.44

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:C:10:MET:HE1	1:C:227:TRP:CE2	2.52	0.44
1:A:226:ILE:CD1	1:A:258:LEU:HD21	2.47	0.44
1:F:56:ILE:CG1	1:F:258[B]:LEU:HD13	2.47	0.44
1:F:132:GLN:HE22	1:F:149:LYS:HE2	1.82	0.44
1:H:26:ASN:O	1:H:28:LEU:N	2.46	0.44
1:H:231:ILE:CD1	1:H:243:PHE:CZ	3.01	0.44
1:C:231:ILE:HD12	1:C:243:PHE:CE1	2.53	0.44
1:A:181:ILE:HD11	1:A:284:VAL:HG11	1.99	0.44
1:E:133:GLN:OE1	3:E:311:NAE:H2P1	2.18	0.43
1:D:50:THR:HB	1:D:130:VAL:HG13	2.00	0.43
1:E:18:GLN:HG3	1:E:19:PRO:HA	1.99	0.43
1:D:56:ILE:CG1	1:D:258[A]:LEU:HD13	2.47	0.43
1:C:231:ILE:HB	1:C:232:PRO:HD3	2.01	0.43
1:A:13:GLN:HG2	1:A:240:VAL:HG11	2.00	0.43
1:H:15:GLN:HB2	1:H:15:GLN:HE21	1.64	0.43
1:F:133:GLN:HG2	1:F:230:LEU:HD11	2.01	0.43
1:G:225:PRO:C	1:G:226:ILE:HD13	2.39	0.43
1:A:131:ALA:CB	3:A:311:NAE:H3B	2.47	0.43
1:D:131:ALA:CB	3:D:311:NAE:H3B	2.48	0.43
3:D:311:NAE:H4P1	3:D:311:NAE:O7N	2.18	0.43
1:B:193:TYR:OH	3:B:311:NAE:C2P	2.67	0.43
1:D:10:MET:HE2	1:D:227:TRP:CE2	2.53	0.43
3:F:311:NAE:N7N	3:F:311:NAE:O1N	2.47	0.43
1:D:31:PHE:HB3	6:D:550:HOH:O	2.18	0.43
1:G:47:VAL:HG12	1:G:49:ILE:HG13	2.01	0.43
1:E:32:GLU:HG3	1:E:66:LYS:HZ2	1.83	0.43
1:B:115:GLU:OE1	1:B:118:ARG:NH1	2.52	0.43
1:H:47:VAL:HG22	1:H:125:ILE:HB	2.00	0.43
1:G:140[A]:GLU:HG2	1:G:141:TYR:CD1	2.54	0.43
1:C:86:LYS:NZ	6:C:541:HOH:O	2.51	0.43
1:G:226:ILE:CD1	1:G:258:LEU:HD11	2.49	0.42
1:H:19:PRO:CD	1:H:76:LEU:HD23	2.49	0.42
1:B:133:GLN:OE1	3:B:311:NAE:C2P	2.67	0.42
1:G:149:LYS:O	1:G:153:ILE:HG22	2.19	0.42
1:F:31:PHE:HB3	6:F:422:HOH:O	2.19	0.42
1:D:115:GLU:HG3	1:D:119:GLN:HE21	1.84	0.42
1:G:279:HIS:CE1	1:G:286:VAL:HG21	2.55	0.42
1:B:170:LYS:HE2	6:B:492:HOH:O	2.18	0.42
1:E:39:SER:HB3	1:F:39:SER:HB3	2.02	0.42
1:F:228:THR:H	1:F:231:ILE:HD12	1.85	0.42
1:H:29:PRO:HB3	1:H:227:TRP:O	2.20	0.42
1:F:235:PHE:HB3	1:F:239:LYS:HB3	2.01	0.42

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:F:56:ILE:O	1:F:60:VAL:HG23	2.19	0.41
1:E:130[A]:VAL:HG23	3:E:311:NAE:C4A	2.50	0.41
1:G:265:LEU:HD11	1:G:278:ILE:HG12	2.02	0.41
1:F:197:LYS:HD3	1:F:200:ILE:HD12	2.02	0.41
3:F:311:NAE:C5N	3:F:311:NAE:OP	2.68	0.41
1:B:47:VAL:HG22	1:B:125:ILE:HB	2.02	0.41
1:H:129:ASN:HD21	3:H:311:NAE:H4B	1.84	0.41
3:A:311:NAE:O1N	3:A:311:NAE:H2N	2.21	0.41
1:H:18:GLN:HE22	1:H:132:GLN:CB	2.33	0.41
1:A:39:SER:HB3	1:B:39:SER:HB3	2.03	0.41
1:A:278:ILE:HD12	1:B:278:ILE:HD12	2.02	0.41
1:B:193:TYR:CE2	3:B:311:NAE:H2P1	2.56	0.41
1:C:33:ASP:HB3	1:C:36:TYR:HB2	2.03	0.41
1:E:130[A]:VAL:HG21	3:E:311:NAE:C4A	2.51	0.40
1:H:54:SER:OG	3:H:311:NAE:O2A	2.39	0.40
1:F:47:VAL:HG12	1:F:49[A]:ILE:HG13	2.03	0.40
1:G:223:PRO:HB3	1:G:258:LEU:HD21	2.04	0.40
1:E:56:ILE:CG1	1:E:258[B]:LEU:CD1	2.99	0.40
1:C:197:LYS:HA	1:C:197:LYS:HD3	1.92	0.40
1:G:153:ILE:HG23	1:G:154:ASN:OD1	2.22	0.40
1:C:8:VAL:N	6:C:511:HOH:O	2.54	0.40
1:E:32:GLU:HG3	1:E:66:LYS:NZ	2.36	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution. The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	283/291 (97%)	274 (97%)	9 (3%)	0	100	100
1	B	292/291 (100%)	280 (96%)	12 (4%)	0	100	100
1	C	284/291 (98%)	272 (96%)	12 (4%)	0	100	100
1	D	290/291 (100%)	281 (97%)	9 (3%)	0	100	100
1	E	286/291 (98%)	273 (96%)	13 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	F	274/291 (94%)	263 (96%)	11 (4%)	0	100	100
1	G	245/291 (84%)	235 (96%)	10 (4%)	0	100	100
1	H	272/291 (94%)	260 (96%)	10 (4%)	2 (1%)	30	16
All	All	2226/2328 (96%)	2138 (96%)	86 (4%)	2 (0%)	59	53

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	H	26	ASN
1	H	28	LEU

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution. The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	239/244 (98%)	238 (100%)	1 (0%)	95	95
1	B	248/244 (102%)	245 (99%)	3 (1%)	82	81
1	C	240/244 (98%)	239 (100%)	1 (0%)	95	95
1	D	246/244 (101%)	242 (98%)	4 (2%)	75	73
1	E	242/244 (99%)	241 (100%)	1 (0%)	95	95
1	F	231/244 (95%)	230 (100%)	1 (0%)	95	95
1	G	205/244 (84%)	203 (99%)	2 (1%)	85	86
1	H	231/244 (95%)	229 (99%)	2 (1%)	87	88
All	All	1882/1952 (96%)	1867 (99%)	15 (1%)	89	90

All (15) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	17	LYS
1	B	95	LYS
1	B	239	LYS
1	B	258	LEU
1	C	137	GLN

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Mol	Chain	Res	Type
1	D	6	ASN
1	D	16	ASN
1	D	17	LYS
1	D	238	LYS
1	E	167	SER
1	F	239	LYS
1	G	258	LEU
1	G	268	SER
1	H	137[A]	GLN
1	H	137[B]	GLN

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	129	ASN
1	B	132	GLN
1	C	129	ASN
1	C	132	GLN
1	D	6	ASN
1	D	119	GLN
1	E	128	ASN
1	E	129	ASN
1	E	177	ASN
1	F	129	ASN
1	F	132	GLN
1	H	18	GLN
1	H	129	ASN
1	H	132	GLN

5.3.3 RNA ⓘ

There are no RNA chains 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 carbohydrates in this entry.

5.6 Ligand geometry

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$
3	NAE	A	311	2	52,52,52	2.22	8 (15%)	79,79,79	2.76	24 (30%)
4	CAC	A	327	-	4,4,4	4.16	4 (100%)	6,6,6	7.17	1 (16%)
3	NAE	B	311	2	52,52,52	2.02	6 (11%)	79,79,79	2.57	22 (27%)
4	CAC	B	321	-	4,4,4	4.04	4 (100%)	6,6,6	6.19	2 (33%)
4	CAC	B	328	-	4,4,4	3.99	4 (100%)	6,6,6	4.54	1 (16%)
3	NAE	C	311	2	52,52,52	2.09	7 (13%)	79,79,79	2.43	23 (29%)
4	CAC	C	322	-	4,4,4	4.08	4 (100%)	6,6,6	1.73	2 (33%)
3	NAE	D	311	2	52,52,52	2.11	9 (17%)	79,79,79	2.55	20 (25%)
4	CAC	D	324	-	4,4,4	4.37	4 (100%)	6,6,6	2.80	1 (16%)
3	NAE	E	311	2	52,52,52	1.98	8 (15%)	79,79,79	2.79	22 (27%)
4	CAC	E	325	-	4,4,4	4.01	4 (100%)	6,6,6	8.94	1 (16%)
3	NAE	F	311	2	52,52,52	1.99	10 (19%)	79,79,79	2.63	18 (22%)
4	CAC	F	329	-	4,4,4	4.10	4 (100%)	6,6,6	10.64	1 (16%)
4	CAC	G	326	-	4,4,4	4.01	4 (100%)	6,6,6	8.71	2 (33%)
3	NAE	H	311	2	52,52,52	1.98	8 (15%)	79,79,79	2.58	21 (26%)
4	CAC	H	323	-	4,4,4	4.15	4 (100%)	6,6,6	2.22	1 (16%)

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	NAE	A	311	2	-	0/34/66/66	0/3/5/5
4	CAC	A	327	-	-	0/0/0/0	0/0/0/0
3	NAE	B	311	2	-	0/34/66/66	0/3/5/5
4	CAC	B	321	-	-	0/0/0/0	0/0/0/0
4	CAC	B	328	-	-	0/0/0/0	0/0/0/0

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAE	C	311	2	-	0/34/66/66	0/3/5/5
4	CAC	C	322	-	-	0/0/0/0	0/0/0/0
3	NAE	D	311	2	-	0/34/66/66	0/3/5/5
4	CAC	D	324	-	-	0/0/0/0	0/0/0/0
3	NAE	E	311	2	-	0/34/66/66	0/3/5/5
4	CAC	E	325	-	-	0/0/0/0	0/0/0/0
3	NAE	F	311	2	-	0/34/66/66	0/3/5/5
4	CAC	F	329	-	-	0/0/0/0	0/0/0/0
4	CAC	G	326	-	-	0/0/0/0	0/0/0/0
3	NAE	H	311	2	-	0/34/66/66	0/3/5/5
4	CAC	H	323	-	-	0/0/0/0	0/0/0/0

All (92) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	311	NAE	C2N-N1N	8.97	1.46	1.35
3	C	311	NAE	C3N-C4N	8.40	1.52	1.40
3	H	311	NAE	C3N-C4N	8.15	1.52	1.40
3	B	311	NAE	C5N-C4N	8.09	1.54	1.39
3	D	311	NAE	C2N-N1N	7.92	1.45	1.35
3	D	311	NAE	C3N-C4N	7.63	1.51	1.40
3	C	311	NAE	C5N-C4N	7.60	1.53	1.39
3	A	311	NAE	C5N-C4N	7.54	1.53	1.39
3	A	311	NAE	C3N-C4N	7.51	1.51	1.40
3	F	311	NAE	C5N-C4N	7.20	1.52	1.39
3	E	311	NAE	C2N-N1N	7.15	1.44	1.35
3	E	311	NAE	C5N-C4N	6.98	1.52	1.39
3	E	311	NAE	C3N-C4N	6.88	1.50	1.40
3	D	311	NAE	C5N-C4N	6.86	1.52	1.39
3	H	311	NAE	C5N-C4N	6.86	1.52	1.39
3	C	311	NAE	C2N-N1N	6.74	1.44	1.35
3	B	311	NAE	C3N-C4N	6.70	1.50	1.40
3	B	311	NAE	C2N-N1N	6.44	1.43	1.35
3	F	311	NAE	C3N-C4N	6.36	1.49	1.40
4	D	324	CAC	O2-AS	6.28	1.75	1.68
4	F	329	CAC	O2-AS	6.01	1.75	1.68
4	A	327	CAC	O2-AS	5.80	1.74	1.68
4	E	325	CAC	O2-AS	5.77	1.74	1.68
3	H	311	NAE	C2N-N1N	5.61	1.42	1.35
4	B	321	CAC	O2-AS	5.55	1.74	1.68
4	H	323	CAC	O2-AS	5.44	1.74	1.68
3	F	311	NAE	C2N-N1N	5.40	1.42	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	328	CAC	O2-AS	5.38	1.74	1.68
4	G	326	CAC	O2-AS	5.17	1.74	1.68
4	C	322	CAC	O2-AS	4.85	1.73	1.68
4	C	322	CAC	AS-C1	4.31	1.97	1.90
3	F	311	NAE	C3N-C7N	-4.16	1.45	1.50
4	H	323	CAC	AS-C1	4.11	1.97	1.90
4	G	326	CAC	AS-C2	4.06	1.97	1.90
4	D	324	CAC	AS-C2	3.99	1.97	1.90
4	H	323	CAC	AS-C2	3.99	1.97	1.90
4	A	327	CAC	AS-C2	3.96	1.97	1.90
4	C	322	CAC	AS-C2	3.95	1.97	1.90
4	B	321	CAC	AS-C1	3.88	1.97	1.90
4	G	326	CAC	AS-C1	3.87	1.97	1.90
4	B	328	CAC	AS-C1	3.86	1.97	1.90
4	D	324	CAC	AS-C1	3.85	1.97	1.90
4	B	328	CAC	AS-C2	3.84	1.97	1.90
4	A	327	CAC	AS-C1	3.79	1.97	1.90
4	E	325	CAC	AS-C1	3.79	1.97	1.90
4	B	321	CAC	AS-C2	3.77	1.97	1.90
4	F	329	CAC	AS-C2	3.57	1.96	1.90
4	F	329	CAC	AS-C1	3.53	1.96	1.90
4	E	325	CAC	AS-C2	3.52	1.96	1.90
3	C	311	NAE	O4'-C1'	3.20	1.46	1.41
3	F	311	NAE	C4A-N9A	-3.02	1.33	1.37
3	A	311	NAE	O4'-C1'	3.01	1.46	1.41
4	C	322	CAC	O1-AS	2.99	1.76	1.66
3	H	311	NAE	O4'-C1'	2.83	1.45	1.41
3	D	311	NAE	O4'-C1'	2.71	1.45	1.41
3	B	311	NAE	C6N-N1N	2.63	1.42	1.35
3	F	311	NAE	O4'-C1'	2.60	1.45	1.41
3	E	311	NAE	C4A-N9A	-2.56	1.34	1.37
3	B	311	NAE	C2N-C3N	-2.56	1.35	1.39
3	F	311	NAE	C6N-N1N	2.55	1.42	1.35
4	H	323	CAC	O1-AS	2.55	1.75	1.66
3	F	311	NAE	PA-OPP	2.53	1.64	1.59
3	F	311	NAE	C2N-C3N	-2.52	1.35	1.39
4	D	324	CAC	O1-AS	2.50	1.74	1.66
4	G	326	CAC	O1-AS	2.49	1.74	1.66
3	A	311	NAE	C6N-N1N	2.47	1.42	1.35
3	A	311	NAE	O4B-C1B	2.47	1.45	1.41
4	F	329	CAC	O1-AS	2.46	1.74	1.66
3	E	311	NAE	O4B-C1B	2.43	1.45	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	311	NAE	C6N-N1N	2.39	1.42	1.35
3	H	311	NAE	C2N-C3N	-2.38	1.35	1.39
4	A	327	CAC	O1-AS	2.37	1.74	1.66
3	C	311	NAE	C6N-N1N	2.30	1.42	1.35
3	E	311	NAE	O4'-C1'	2.30	1.44	1.41
4	B	328	CAC	O1-AS	2.28	1.74	1.66
3	D	311	NAE	C6N-C5N	-2.27	1.32	1.38
4	B	321	CAC	O1-AS	2.26	1.74	1.66
3	C	311	NAE	C4A-N9A	-2.22	1.34	1.37
3	D	311	NAE	C3N-C7N	-2.22	1.47	1.50
3	D	311	NAE	PA-OPP	2.18	1.63	1.59
3	H	311	NAE	C6N-N1N	2.17	1.41	1.35
3	A	311	NAE	C2A-N3A	2.16	1.36	1.32
3	A	311	NAE	C2N-C3N	-2.13	1.35	1.39
4	E	325	CAC	O1-AS	2.10	1.73	1.66
3	H	311	NAE	PN-OPP	2.10	1.64	1.60
3	F	311	NAE	C8A-N9A	-2.10	1.33	1.36
3	C	311	NAE	C2'-C1'	-2.08	1.50	1.53
3	E	311	NAE	C3N-C7N	-2.08	1.48	1.50
3	E	311	NAE	O5B-C5B	-2.07	1.36	1.44
3	H	311	NAE	C6N-C5N	-2.05	1.33	1.38
3	D	311	NAE	C2A-N3A	2.01	1.36	1.32
3	B	311	NAE	O4'-C1'	2.01	1.44	1.41

All (162) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	F	329	CAC	O2-AS-O1	-25.94	106.94	112.54
4	E	325	CAC	O2-AS-O1	-21.82	107.83	112.54
4	G	326	CAC	O2-AS-O1	-21.19	107.97	112.54
4	A	327	CAC	O2-AS-O1	-17.47	108.77	112.54
4	B	321	CAC	O2-AS-O1	-14.89	109.32	112.54
3	A	311	NAE	O4B-C1B-N1N	11.98	120.21	107.95
3	F	311	NAE	O4B-C1B-N1N	11.48	119.69	107.95
4	B	328	CAC	O2-AS-O1	-10.86	110.19	112.54
3	H	311	NAE	N3A-C2A-N1A	-10.84	119.65	128.71
3	B	311	NAE	O4B-C1B-N1N	10.44	118.63	107.95
3	E	311	NAE	N3A-C2A-N1A	-10.33	120.08	128.71
3	C	311	NAE	N3A-C2A-N1A	-10.17	120.21	128.71
3	F	311	NAE	N3A-C2A-N1A	-10.08	120.28	128.71
3	E	311	NAE	O4B-C1B-N1N	9.78	117.96	107.95
3	A	311	NAE	N3A-C2A-N1A	-9.68	120.61	128.71

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	311	NAE	N3A-C2A-N1A	-9.42	120.84	128.71
3	D	311	NAE	O4B-C1B-N1N	9.01	117.17	107.95
3	D	311	NAE	N3A-C2A-N1A	-8.74	121.40	128.71
3	C	311	NAE	O4B-C1B-N1N	8.58	116.73	107.95
3	H	311	NAE	O4B-C1B-N1N	8.56	116.71	107.95
3	H	311	NAE	O4'-C1'-N9A	8.35	116.21	108.44
3	E	311	NAE	O4'-C1'-N9A	8.17	116.03	108.44
3	D	311	NAE	O4'-C1'-N9A	7.76	115.66	108.44
3	B	311	NAE	C4P-C4N-C3N	-7.68	108.88	123.43
4	D	324	CAC	O2-AS-O1	-6.73	111.08	112.54
3	E	311	NAE	C4P-C4N-C3N	-6.61	110.91	123.43
3	F	311	NAE	C4P-C4N-C3N	-6.37	111.36	123.43
3	E	311	NAE	C2B-C1B-N1N	-6.17	103.41	113.86
3	F	311	NAE	C5N-C4N-C3N	-5.93	110.94	118.48
3	H	311	NAE	C4P-C4N-C5N	-5.92	110.13	120.23
3	D	311	NAE	C4P-C4N-C5N	-5.90	110.16	120.23
3	H	311	NAE	C4'-O4'-C1'	-5.89	103.35	109.75
3	C	311	NAE	C4P-C4N-C5N	-5.78	110.37	120.23
3	A	311	NAE	C2B-C1B-N1N	-5.77	104.09	113.86
3	A	311	NAE	C4'-O4'-C1'	-5.66	103.60	109.75
3	C	311	NAE	O4'-C1'-N9A	5.65	113.70	108.44
3	F	311	NAE	O4'-C1'-N9A	5.60	113.65	108.44
3	A	311	NAE	C4P-C4N-C5N	-5.51	110.83	120.23
3	D	311	NAE	C4P-C4N-C3N	-5.48	113.04	123.43
3	E	311	NAE	C4'-O4'-C1'	-5.41	103.87	109.75
3	F	311	NAE	C2B-C1B-N1N	-5.32	104.86	113.86
3	A	311	NAE	O4'-C1'-N9A	5.25	113.33	108.44
3	A	311	NAE	C4P-C4N-C3N	-5.16	113.64	123.43
3	F	311	NAE	C6N-N1N-C2N	-5.02	116.37	122.04
3	D	311	NAE	C2B-C1B-N1N	-4.97	105.45	113.86
4	H	323	CAC	O2-AS-O1	-4.95	111.47	112.54
3	C	311	NAE	C4'-O4'-C1'	-4.87	104.46	109.75
3	H	311	NAE	N3A-C4A-N9A	4.86	134.20	125.43
3	E	311	NAE	C4P-C4N-C5N	-4.72	112.18	120.23
3	B	311	NAE	O2N-PN-O5B	-4.54	89.45	108.19
3	E	311	NAE	C5B-C4B-C3B	-4.39	97.64	115.21
3	F	311	NAE	C2N-C3N-C4N	4.36	122.27	116.80
3	A	311	NAE	O2N-PN-O5B	-4.36	90.18	108.19
3	E	311	NAE	N3A-C4A-N9A	4.33	133.25	125.43
3	B	311	NAE	C2B-C1B-N1N	-4.32	106.54	113.86
3	F	311	NAE	C4'-O4'-C1'	-4.31	105.06	109.75
3	C	311	NAE	N3A-C4A-N9A	4.27	133.14	125.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	311	NAE	C4'-O4'-C1'	-4.25	105.13	109.75
3	E	311	NAE	C5N-C4N-C3N	-4.21	113.12	118.48
3	D	311	NAE	C5B-C4B-C3B	-4.16	98.55	115.21
3	B	311	NAE	C5N-C4N-C3N	-4.12	113.23	118.48
3	A	311	NAE	N3A-C4A-N9A	4.12	132.86	125.43
3	B	311	NAE	C4'-O4'-C1'	-4.09	105.31	109.75
3	C	311	NAE	C4P-C4N-C3N	-4.09	115.69	123.43
3	H	311	NAE	C4P-C4N-C3N	-4.06	115.73	123.43
3	A	311	NAE	OPP-PN-O5B	4.02	117.48	101.36
3	B	311	NAE	C5B-C4B-C3B	-3.98	99.26	115.21
3	D	311	NAE	N3A-C4A-N9A	3.94	132.55	125.43
3	B	311	NAE	PN-O5B-C5B	3.91	133.75	120.24
3	H	311	NAE	C2B-C1B-N1N	-3.86	107.31	113.86
3	D	311	NAE	O2N-PN-O5B	-3.78	92.58	108.19
3	H	311	NAE	C5N-C4N-C3N	-3.78	113.67	118.48
3	D	311	NAE	C6N-N1N-C2N	-3.75	117.81	122.04
3	D	311	NAE	C6N-N1N-C1B	-3.70	110.15	119.33
3	C	311	NAE	O7N-C7N-N7N	-3.68	117.28	122.59
3	B	311	NAE	N3A-C4A-N9A	3.66	132.04	125.43
3	D	311	NAE	C5N-C4N-C3N	-3.65	113.83	118.48
3	B	311	NAE	C4A-C5A-N7A	-3.63	106.42	109.52
3	F	311	NAE	N3A-C4A-N9A	3.62	131.97	125.43
3	A	311	NAE	C4B-O4B-C1B	-3.54	105.90	109.75
3	C	311	NAE	C2B-C1B-N1N	-3.40	108.10	113.86
3	C	311	NAE	O7N-C7N-C3N	3.35	124.44	120.33
3	C	311	NAE	C8A-N9A-C4A	3.34	109.45	106.90
3	A	311	NAE	C2'-C1'-N9A	-3.32	104.74	113.27
3	C	311	NAE	C4B-O4B-C1B	-3.31	106.15	109.75
3	D	311	NAE	C4B-O4B-C1B	-3.29	106.18	109.75
3	H	311	NAE	C4B-O4B-C1B	-3.28	106.19	109.75
3	A	311	NAE	C4A-C5A-N7A	-3.20	106.78	109.52
3	A	311	NAE	C5B-C4B-C3B	-3.16	102.56	115.21
3	H	311	NAE	C5A-C4A-N3A	-3.16	118.82	125.70
3	E	311	NAE	C2'-C1'-N9A	-3.16	105.16	113.27
3	E	311	NAE	C8A-N9A-C4A	3.15	109.30	106.90
3	A	311	NAE	C5N-C4N-C3N	-3.14	114.48	118.48
3	C	311	NAE	C6N-N1N-C1B	-3.10	111.65	119.33
3	B	311	NAE	C4P-C4N-C5N	-3.08	114.97	120.23
3	E	311	NAE	O2N-PN-O5B	-3.08	95.48	108.19
3	A	311	NAE	C8A-N9A-C4A	3.05	109.23	106.90
3	A	311	NAE	PN-O5B-C5B	3.04	130.74	120.24
3	E	311	NAE	C6N-N1N-C2N	-3.01	118.64	122.04

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	311	NAE	C4B-O4B-C1B	-2.99	106.50	109.75
3	B	311	NAE	O4'-C1'-N9A	2.97	111.20	108.44
3	C	311	NAE	C5N-C4N-C3N	-2.95	114.73	118.48
3	H	311	NAE	C6N-N1N-C1B	-2.93	112.07	119.33
3	D	311	NAE	O2N-PN-OPP	2.92	116.67	108.79
3	B	311	NAE	C6N-N1N-C2N	-2.91	118.75	122.04
3	F	311	NAE	C8A-N9A-C4A	2.88	109.10	106.90
3	A	311	NAE	C6N-N1N-C1B	-2.79	112.41	119.33
3	F	311	NAE	C4N-C3N-C7N	-2.79	117.21	121.97
3	B	311	NAE	OPP-PN-O5B	2.76	112.43	101.36
3	F	311	NAE	C4P-C4N-C5N	-2.76	115.53	120.23
4	C	322	CAC	O2-AS-C1	-2.75	106.90	109.15
3	E	311	NAE	C4B-O4B-C1B	-2.74	106.77	109.75
3	F	311	NAE	C1'-N9A-C4A	-2.70	121.97	126.64
3	B	311	NAE	C2N-C3N-C4N	2.69	120.17	116.80
3	B	311	NAE	C5A-C4A-N3A	-2.66	119.91	125.70
3	B	311	NAE	O4B-C1B-C2B	-2.65	102.71	106.77
3	H	311	NAE	C2A-N3A-C4A	2.62	121.48	114.01
3	H	311	NAE	OPP-PN-O1N	-2.62	102.56	108.83
3	H	311	NAE	C8A-N9A-C4A	2.61	108.89	106.90
3	A	311	NAE	C6N-N1N-C2N	-2.60	119.11	122.04
3	H	311	NAE	C2N-C3N-C4N	2.59	120.04	116.80
3	A	311	NAE	C5A-C4A-N3A	-2.56	120.13	125.70
3	C	311	NAE	C6N-N1N-C2N	-2.54	119.17	122.04
3	E	311	NAE	C2N-C3N-C4N	2.51	119.94	116.80
3	C	311	NAE	C5A-C4A-N3A	-2.47	120.31	125.70
4	B	321	CAC	O2-AS-C1	2.44	111.15	109.15
3	A	311	NAE	N7A-C8A-N9A	-2.43	107.49	114.36
3	H	311	NAE	C6N-N1N-C2N	-2.41	119.31	122.04
3	E	311	NAE	C2B-C3B-C4B	-2.41	97.85	102.65
3	E	311	NAE	C4N-C3N-C7N	-2.37	117.92	121.97
3	D	311	NAE	C4N-C3N-C7N	-2.36	117.94	121.97
3	D	311	NAE	C5A-C4A-N3A	-2.36	120.57	125.70
3	E	311	NAE	C5A-C4A-N3A	-2.35	120.57	125.70
3	E	311	NAE	O2B-C2B-C1B	2.36	118.35	111.23
3	C	311	NAE	C2'-C1'-N9A	-2.34	107.27	113.27
3	H	311	NAE	O2N-PN-OPP	2.30	114.99	108.79
3	B	311	NAE	C2'-C1'-N9A	-2.28	107.40	113.27
3	C	311	NAE	N7A-C8A-N9A	-2.27	107.94	114.36
3	E	311	NAE	C6N-N1N-C1B	-2.24	113.78	119.33
3	H	311	NAE	N7A-C8A-N9A	-2.24	108.03	114.36
3	C	311	NAE	C4A-C5A-N7A	-2.21	107.63	109.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	311	NAE	C3'-C2'-C1'	2.20	104.36	100.91
3	B	311	NAE	C4N-C3N-C7N	-2.19	118.22	121.97
3	F	311	NAE	C6N-N1N-C1B	-2.18	113.94	119.33
4	G	326	CAC	O2-AS-C2	2.16	110.92	109.15
3	F	311	NAE	C5A-C4A-N3A	-2.16	121.00	125.70
3	A	311	NAE	C2N-C3N-C4N	2.15	119.50	116.80
3	H	311	NAE	C2N-C3N-C7N	-2.14	118.92	122.14
3	A	311	NAE	C4N-C3N-C7N	-2.13	118.33	121.97
3	C	311	NAE	OPP-PN-O1N	-2.12	103.76	108.83
3	C	311	NAE	O2N-PN-OPP	2.12	114.50	108.79
3	D	311	NAE	C2N-C3N-C4N	2.11	119.45	116.80
3	E	311	NAE	N7A-C8A-N9A	-2.09	108.44	114.36
3	D	311	NAE	O5B-PN-O1N	2.09	117.49	108.61
3	F	311	NAE	C4A-C5A-N7A	-2.08	107.74	109.52
3	D	311	NAE	O4B-C4B-C3B	2.07	109.38	105.17
3	F	311	NAE	N7A-C8A-N9A	-2.07	108.50	114.36
3	H	311	NAE	C2'-C1'-N9A	-2.06	107.97	113.27
4	C	322	CAC	O2-AS-C2	2.06	110.84	109.15
3	B	311	NAE	C2A-N3A-C4A	2.03	119.80	114.01
3	C	311	NAE	C2A-N3A-C4A	2.03	119.79	114.01
3	A	311	NAE	C3'-C2'-C1'	2.03	104.08	100.91

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th 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 ²)	Q<0.9
1	A	282/291 (96%)	0.78	51 (18%) 2 2	7, 16, 26, 38	0
1	B	283/291 (97%)	0.71	40 (14%) 3 3	7, 13, 23, 32	0
1	C	281/291 (96%)	0.92	56 (19%) 2 1	8, 14, 24, 31	0
1	D	283/291 (97%)	0.62	33 (11%) 5 5	11, 16, 27, 33	0
1	E	279/291 (95%)	1.00	56 (20%) 2 1	2, 15, 25, 36	0
1	F	270/291 (92%)	0.88	48 (17%) 2 2	12, 18, 27, 31	0
1	G	245/291 (84%)	1.02	43 (17%) 2 2	10, 20, 28, 37	0
1	H	270/291 (92%)	1.04	47 (17%) 2 2	10, 18, 31, 40	0
All	All	2193/2328 (94%)	0.87	374 (17%) 2 2	2, 16, 27, 40	0

All (374) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	H	26	ASN	9.0
1	E	12	ALA	8.9
1	D	16	ASN	8.9
1	H	16	ASN	8.2
1	A	7	PHE	7.9
1	D	7	PHE	7.8
1	B	7	PHE	7.3
1	C	26	ASN	7.2
1	C	16	ASN	7.2
1	H	235	PHE	7.1
1	E	240	VAL	6.8
1	B	16	ASN	6.7
1	F	238	LYS	6.5
1	B	6	ASN	6.4
1	D	6	ASN	6.4
1	E	243	PHE	6.1

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Mol	Chain	Res	Type	RSRZ
1	H	232	PRO	6.0
1	F	233	SER	6.0
1	F	240	VAL	6.0
1	G	27	PRO	5.9
1	F	21	ILE	5.9
1	E	16	ASN	5.9
1	C	21	ILE	5.7
1	E	24	LEU	5.7
1	H	229	PRO	5.7
1	A	8	VAL	5.6
1	F	26	ASN	5.6
1	C	12	ALA	5.6
1	E	26	ASN	5.5
1	A	12	ALA	5.5
1	C	8	VAL	5.5
1	F	24	LEU	5.5
1	B	8	VAL	5.5
1	H	244	GLY	5.5
1	H	245	SER	5.5
1	H	21	ILE	5.4
1	H	14	HIS	5.4
1	H	17	LYS	5.4
1	E	235	PHE	5.3
1	F	235	PHE	5.2
1	H	27	PRO	5.2
1	H	231	ILE	5.2
1	G	76	LEU	5.2
1	F	236	ASP	5.2
1	F	19	PRO	5.1
1	F	231	ILE	5.1
1	G	245	SER	5.1
1	E	246	ASN	5.0
1	C	10	MET	5.0
1	H	228	THR	5.0
1	E	23	SER	5.0
1	F	229	PRO	5.0
1	H	15	GLN	5.0
1	H	243	PHE	5.0
1	F	25	MET	4.9
1	E	237	GLU	4.9
1	A	24	LEU	4.9
1	B	17	LYS	4.8

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Mol	Chain	Res	Type	RSRZ
1	H	23	SER	4.8
1	C	14	HIS	4.7
1	A	21	ILE	4.7
1	G	79	GLU	4.7
1	F	242	GLN	4.6
1	C	20	GLY	4.6
1	E	241	SER	4.6
1	H	246	ASN	4.6
1	E	231	ILE	4.5
1	H	28	LEU	4.5
1	D	12	ALA	4.5
1	G	246	ASN	4.5
1	H	34	PRO	4.5
1	C	231	ILE	4.4
1	E	233	SER	4.4
1	C	127	VAL	4.4
1	H	242	GLN	4.4
1	B	24	LEU	4.4
1	E	244	GLY	4.4
1	E	236	ASP	4.4
1	F	228	THR	4.4
1	E	238	LYS	4.4
1	G	28	LEU	4.3
1	B	12	ALA	4.3
1	B	9	THR	4.3
1	A	16	ASN	4.3
1	E	245	SER	4.3
1	E	13	GLN	4.2
1	D	8	VAL	4.2
1	D	238	LYS	4.2
1	F	227	TRP	4.1
1	B	238	LYS	4.1
1	D	9	THR	4.1
1	H	25	MET	4.1
1	E	34	PRO	4.1
1	A	241	SER	4.1
1	F	23	SER	4.1
1	C	49[A]	ILE	4.0
1	C	23	SER	4.0
1	F	232	PRO	4.0
1	C	24	LEU	4.0
1	H	233	SER	4.0

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Mol	Chain	Res	Type	RSRZ
1	H	230	LEU	4.0
1	E	11	PRO	3.9
1	H	248	PRO	3.9
1	B	237	GLU	3.9
1	H	22	GLU	3.9
1	C	19	PRO	3.8
1	F	28	LEU	3.8
1	F	237	GLU	3.8
1	G	250	GLN	3.8
1	D	14	HIS	3.8
1	H	18	GLN	3.8
1	E	28	LEU	3.8
1	A	235	PHE	3.8
1	G	114	GLN	3.8
1	F	234	SER	3.8
1	E	25	MET	3.8
1	F	230	LEU	3.7
1	G	101	GLY	3.7
1	E	239	LYS	3.7
1	E	14	HIS	3.7
1	E	17	LYS	3.7
1	H	241	SER	3.6
1	H	227	TRP	3.6
1	E	242	GLN	3.6
1	H	24	LEU	3.6
1	C	9	THR	3.6
1	A	60	VAL	3.6
1	F	239	LYS	3.6
1	G	244	GLY	3.6
1	H	247	VAL	3.6
1	E	27	PRO	3.5
1	C	243	PHE	3.5
1	C	11	PRO	3.5
1	C	27	PRO	3.5
1	F	243	PHE	3.4
1	G	170	LYS	3.4
1	F	241	SER	3.4
1	B	11	PRO	3.4
1	H	31	PHE	3.4
1	B	49[A]	ILE	3.4
1	C	17	LYS	3.4
1	B	14	HIS	3.4

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Mol	Chain	Res	Type	RSRZ
1	C	242	GLN	3.4
1	A	246	ASN	3.3
1	F	246	ASN	3.3
1	C	240	VAL	3.3
1	A	238	LYS	3.3
1	B	26	ASN	3.3
1	C	245	SER	3.3
1	E	127	VAL	3.3
1	D	18	GLN	3.3
1	B	239	LYS	3.3
1	D	239	LYS	3.3
1	A	242	GLN	3.3
1	B	235	PHE	3.3
1	E	49[A]	ILE	3.2
1	B	242	GLN	3.2
1	D	236	ASP	3.2
1	C	18	GLN	3.2
1	G	37	LYS	3.2
1	G	78	GLU	3.2
1	E	21	ILE	3.2
1	A	10	MET	3.2
1	G	214	LYS	3.2
1	F	244	GLY	3.2
1	E	176	ILE	3.2
1	A	14	HIS	3.2
1	E	234	SER	3.2
1	D	49[A]	ILE	3.2
1	H	20	GLY	3.2
1	D	235	PHE	3.2
1	A	9	THR	3.2
1	H	19	PRO	3.1
1	D	237	GLU	3.1
1	G	168	HIS	3.1
1	E	19	PRO	3.1
1	A	13	GLN	3.1
1	E	20	GLY	3.1
1	E	227	TRP	3.1
1	G	77	ASP	3.1
1	F	27	PRO	3.1
1	A	26	ASN	3.1
1	B	28	LEU	3.0
1	G	145[A]	GLU	3.0

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Mol	Chain	Res	Type	RSRZ
1	E	35	ASN	3.0
1	E	22	GLU	3.0
1	G	80	GLY	3.0
1	A	127	VAL	3.0
1	C	13	GLN	3.0
1	G	212	VAL	3.0
1	D	10	MET	3.0
1	C	232	PRO	3.0
1	D	200	ILE	3.0
1	B	262	TYR	3.0
1	F	245	SER	3.0
1	B	10	MET	3.0
1	A	73	ILE	3.0
1	C	126	LEU	3.0
1	A	240	VAL	2.9
1	A	23	SER	2.9
1	B	176	ILE	2.9
1	D	24	LEU	2.9
1	E	232	PRO	2.9
1	F	34	PRO	2.9
1	C	229	PRO	2.9
1	G	213	GLN	2.9
1	E	262	TYR	2.9
1	H	35	ASN	2.9
1	H	234	SER	2.9
1	A	19	PRO	2.9
1	C	241	SER	2.8
1	C	50	THR	2.8
1	E	250	GLN	2.8
1	A	200	ILE	2.8
1	C	200	ILE	2.8
1	G	111	ASP	2.8
1	A	11	PRO	2.8
1	G	120	LEU	2.8
1	B	60	VAL	2.8
1	H	213	GLN	2.8
1	A	17	LYS	2.8
1	H	36	TYR	2.8
1	B	236	ASP	2.7
1	C	28	LEU	2.7
1	C	176	ILE	2.7
1	B	47	VAL	2.7

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Mol	Chain	Res	Type	RSRZ
1	B	127	VAL	2.7
1	C	34	PRO	2.7
1	C	228	THR	2.7
1	F	176	ILE	2.7
1	A	49	ILE	2.7
1	D	242	GLN	2.7
1	C	35	ASN	2.7
1	C	227	TRP	2.7
1	D	17	LYS	2.7
1	G	87	GLN	2.7
1	F	49[A]	ILE	2.6
1	C	25	MET	2.6
1	C	233	SER	2.6
1	D	23	SER	2.6
1	D	127	VAL	2.6
1	G	115	GLU	2.6
1	F	213	GLN	2.6
1	H	250	GLN	2.6
1	F	141	TYR	2.6
1	A	130	VAL	2.6
1	B	178	THR	2.6
1	E	228	THR	2.6
1	C	56	ILE	2.6
1	A	15	GLN	2.6
1	D	158	TYR	2.6
1	G	75	TYR	2.6
1	D	240	VAL	2.6
1	B	35	ASN	2.6
1	G	167	SER	2.5
1	E	10	MET	2.5
1	G	149	LYS	2.5
1	C	158	TYR	2.5
1	F	144	ALA	2.5
1	H	130	VAL	2.5
1	G	100	PRO	2.5
1	G	102	ASP	2.5
1	G	137	GLN	2.5
1	B	56	ILE	2.5
1	F	140	GLU	2.5
1	A	20	GLY	2.5
1	A	57	GLY	2.5
1	B	200	ILE	2.5

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Mol	Chain	Res	Type	RSRZ
1	C	178	THR	2.5
1	G	248	PRO	2.5
1	E	230	LEU	2.5
1	E	247	VAL	2.5
1	H	158	TYR	2.5
1	C	261	ALA	2.4
1	G	40	GLU	2.4
1	G	84	GLU	2.4
1	F	261	ALA	2.4
1	G	105	ASP	2.4
1	E	47	VAL	2.4
1	E	15	GLN	2.4
1	E	48	LEU	2.4
1	B	221	VAL	2.4
1	F	264	TYR	2.4
1	A	50	THR	2.4
1	G	29	PRO	2.4
1	C	57	GLY	2.4
1	A	264	TYR	2.4
1	C	130	VAL	2.4
1	A	176	ILE	2.4
1	E	130[A]	VAL	2.4
1	A	239	LYS	2.4
1	G	65	ALA	2.4
1	C	47	VAL	2.3
1	D	195	ALA	2.3
1	G	55	GLY	2.3
1	A	18	GLN	2.3
1	D	21	ILE	2.3
1	D	176	ILE	2.3
1	A	126	LEU	2.3
1	D	178	THR	2.3
1	C	236	ASP	2.3
1	E	248	PRO	2.3
1	F	262	TYR	2.3
1	C	235	PHE	2.3
1	G	118	ARG	2.3
1	D	155	ILE	2.3
1	E	155	ILE	2.3
1	C	48	LEU	2.3
1	B	130[A]	VAL	2.3
1	C	71	ILE	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	28	LEU	2.3
1	B	34	PRO	2.3
1	G	34	PRO	2.3
1	F	127	VAL	2.3
1	C	72	ALA	2.3
1	B	23	SER	2.3
1	A	237	GLU	2.3
1	F	265	LEU	2.3
1	C	74	ALA	2.3
1	D	11	PRO	2.3
1	D	20	GLY	2.3
1	G	99	LEU	2.3
1	H	127	VAL	2.2
1	A	34	PRO	2.2
1	A	35	ASN	2.2
1	C	129	ASN	2.2
1	G	35[A]	ASN	2.2
1	F	226	ILE	2.2
1	G	171	GLN	2.2
1	H	32	GLU	2.2
1	A	199	ALA	2.2
1	B	263	VAL	2.2
1	F	221	VAL	2.2
1	H	200	ILE	2.2
1	A	59	ALA	2.2
1	D	22	GLU	2.2
1	A	262	TYR	2.2
1	E	50	THR	2.2
1	B	21	ILE	2.2
1	H	33	ASP	2.2
1	A	244	GLY	2.2
1	E	178	THR	2.2
1	H	50	THR	2.2
1	C	262	TYR	2.1
1	D	203	PHE	2.1
1	A	56	ILE	2.1
1	F	278	ILE	2.1
1	E	261	ALA	2.1
1	C	22	GLU	2.1
1	F	247	VAL	2.1
1	B	158	TYR	2.1
1	F	35	ASN	2.1

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Mol	Chain	Res	Type	RSRZ
1	G	42	LEU	2.1
1	A	229	PRO	2.1
1	E	72	ALA	2.1
1	F	22	GLU	2.1
1	C	60	VAL	2.1
1	E	263	VAL	2.1
1	B	51	GLY	2.1
1	H	195	ALA	2.1
1	B	240	VAL	2.1
1	D	262	TYR	2.1
1	C	230	LEU	2.1
1	E	129	ASN	2.1
1	A	234	SER	2.1
1	A	236	ASP	2.1
1	B	18	GLN	2.0
1	F	137	GLN	2.0
1	A	137	GLN	2.0
1	B	126	LEU	2.0
1	A	261	ALA	2.0
1	F	134	TYR	2.0
1	H	37	LYS	2.0
1	A	155	ILE	2.0

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

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

6.3 Carbohydrates ⓘ

There are no carbohydrates in this entry.

6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95th 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	RSR	LLDF	B-factors(\AA^2)	Q<0.9
4	CAC	A	327	5/5	0.35	12.90	51,53,54,56	5
4	CAC	B	328	5/5	0.36	7.42	61,61,62,62	5
4	CAC	B	321	5/5	0.30	5.82	54,58,59,61	5
4	CAC	C	322	5/5	0.25	4.87	37,41,46,54	5
4	CAC	E	325	5/5	0.26	4.69	46,50,52,53	5
4	CAC	D	324	5/5	0.32	3.51	44,46,48,53	5
4	CAC	G	326	5/5	0.25	2.34	46,47,49,50	5
4	CAC	H	323	5/5	0.25	2.26	48,51,51,58	5
4	CAC	F	329	5/5	0.21	1.13	52,53,54,56	5
3	NAE	H	311	48/48	0.29	0.89	30,40,46,49	48
3	NAE	D	311	48/48	0.20	0.59	25,30,37,45	48
3	NAE	F	311	48/48	0.23	0.54	25,36,40,43	48
3	NAE	B	311	48/48	0.19	0.49	18,26,35,44	0
3	NAE	A	311	48/48	0.20	0.37	23,31,38,44	0
3	NAE	E	311	48/48	0.20	0.18	21,33,37,42	48
3	NAE	C	311	48/48	0.21	0.17	22,32,39,42	48
2	MG	H	307	1/1	0.20	-0.20	40,40,40,40	0
5	CL	D	308	1/1	0.11	-0.22	51,51,51,51	0
2	MG	E	305	1/1	0.17	-0.37	45,45,45,45	0
2	MG	B	301	1/1	0.12	-0.55	34,34,34,34	0
2	MG	D	302	1/1	0.14	-0.57	39,39,39,39	0
2	MG	F	303	1/1	0.12	-0.89	40,40,40,40	0
2	MG	A	306	1/1	0.11	-1.11	35,35,35,35	0
2	MG	C	304	1/1	0.08	-1.29	38,38,38,38	0

6.5 Other polymers ⓘ

There are no such residues in this entry.