



Full wwPDB X-ray Structure Validation Report

Feb 28, 2014 – 05:56 AM GMT

PDB ID : 1E5Q
Title : TERNARY COMPLEX OF SACCHAROPINE REDUCTASE FROM MAGNAPORTHE GRISEA, NADPH AND SACCHAROPINE
Authors : Johansson, E.; Steffens, J.J.; Lindqvist, Y.; Schneider, G.
Deposited on : 2000-07-28
Resolution : 2.10 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>

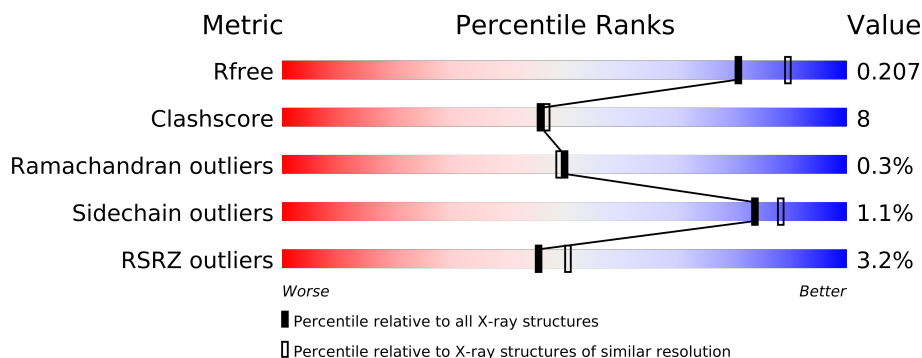
The following versions of software and data (see [references](#)) were used in the production of this report:

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 2.10 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	3012 (2.10-2.10)
Clashscore	79885	3649 (2.10-2.10)
Ramachandran outliers	78287	3610 (2.10-2.10)
Sidechain outliers	78261	3611 (2.10-2.10)
RSRZ outliers	66119	3013 (2.10-2.10)

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	450	
1	B	450	
1	C	450	
1	D	450	
1	E	450	
1	F	450	
1	G	450	
1	H	450	

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

Mol	Type	Chain	Res	Geometry	Electron density
3	SHR	D	501	-	X

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Mol	Type	Chain	Res	Geometry	Electron density
3	SHR	E	501	-	X
3	SHR	F	501	-	X
3	SHR	H	501	-	X

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 30573 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 SACCHAROPINE REDUCTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	449	Total	C	N	O	S	0	0	0
			3441	2191	572	662	16			
1	B	449	Total	C	N	O	S	0	0	0
			3441	2191	572	662	16			
1	C	449	Total	C	N	O	S	0	0	0
			3441	2191	572	662	16			
1	D	449	Total	C	N	O	S	0	0	0
			3441	2191	572	662	16			
1	E	449	Total	C	N	O	S	0	0	0
			3441	2191	572	662	16			
1	F	449	Total	C	N	O	S	0	0	0
			3441	2191	572	662	16			
1	G	449	Total	C	N	O	S	0	0	0
			3441	2191	572	662	16			
1	H	449	Total	C	N	O	S	0	0	0
			3441	2191	572	662	16			

There are 16 discrepancies between the modelled and reference sequences:

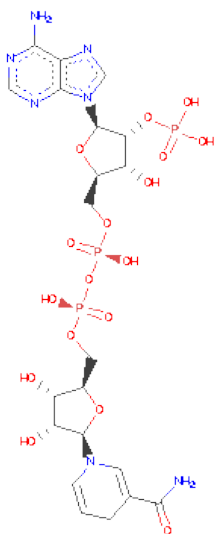
Chain	Residue	Modelled	Actual	Comment	Reference
A	140	GLU	GLY	CONFLICT	UNP AAF91081
A	398	LEU	PHE	CONFLICT	UNP AAF91081
B	140	GLU	GLY	CONFLICT	UNP AAF91081
B	398	LEU	PHE	CONFLICT	UNP AAF91081
C	140	GLU	GLY	CONFLICT	UNP AAF91081
C	398	LEU	PHE	CONFLICT	UNP AAF91081
D	140	GLU	GLY	CONFLICT	UNP AAF91081
D	398	LEU	PHE	CONFLICT	UNP AAF91081
E	140	GLU	GLY	CONFLICT	UNP AAF91081
E	398	LEU	PHE	CONFLICT	UNP AAF91081
F	140	GLU	GLY	CONFLICT	UNP AAF91081
F	398	LEU	PHE	CONFLICT	UNP AAF91081
G	140	GLU	GLY	CONFLICT	UNP AAF91081

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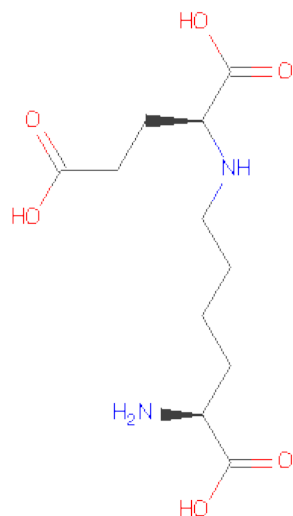
Chain	Residue	Modelled	Actual	Comment	Reference
G	398	LEU	PHE	CONFLICT	UNP AAF91081
H	140	GLU	GLY	CONFLICT	UNP AAF91081
H	398	LEU	PHE	CONFLICT	UNP AAF91081

- Molecule 2 is NADPH DIHYDRO-NICOTINAMIDE-ADENINE-DINUCLEOTIDEPHOSPHATE (three-letter code: NDP) (formula: $C_{21}H_{30}N_7O_{17}P_3$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			48	21	7	17	3		
2	B	1	Total	C	N	O	P	0	0
			48	21	7	17	3		
2	C	1	Total	C	N	O	P	0	0
			48	21	7	17	3		
2	D	1	Total	C	N	O	P	0	0
			48	21	7	17	3		
2	E	1	Total	C	N	O	P	0	0
			48	21	7	17	3		
2	F	1	Total	C	N	O	P	0	0
			48	21	7	17	3		
2	G	1	Total	C	N	O	P	0	0
			48	21	7	17	3		
2	H	1	Total	C	N	O	P	0	0
			48	21	7	17	3		

- Molecule 3 is N-(5-AMINO-5-CARBOXYPENTYL)GLUTAMICACID (three-letter code: SHR) (formula: $C_{11}H_{20}N_2O_6$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	N	O	0	0
			19	11	2	6		
3	B	1	Total	C	N	O	0	0
			19	11	2	6		
3	C	1	Total	C	N	O	0	0
			19	11	2	6		
3	D	1	Total	C	N	O	0	0
			19	11	2	6		
3	E	1	Total	C	N	O	0	0
			19	11	2	6		
3	F	1	Total	C	N	O	0	0
			19	11	2	6		
3	G	1	Total	C	N	O	0	0
			19	11	2	6		
3	H	1	Total	C	N	O	0	0
			19	11	2	6		

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	303	Total	O	0	0
			303	303		
4	B	298	Total	O	0	0
			298	298		
4	C	349	Total	O	0	0
			349	349		
4	D	318	Total	O	0	0
			318	318		

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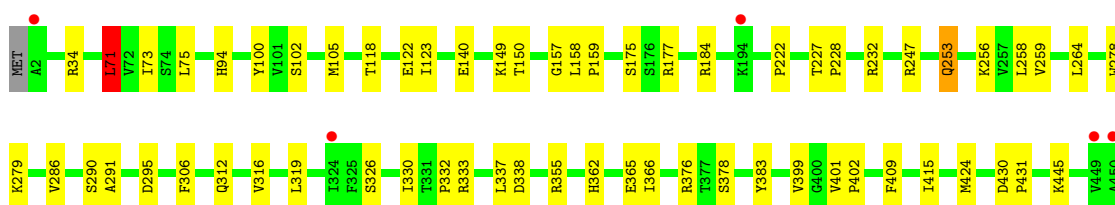
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	E	296	Total 296	O 296	0	0
4	F	341	Total 341	O 341	0	0
4	G	335	Total 335	O 335	0	0
4	H	269	Total 269	O 269	0	0

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.

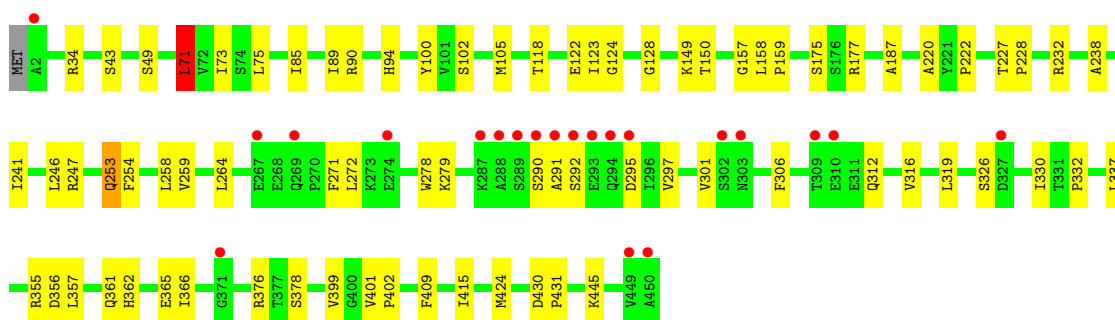
• Molecule 1: SACCHAROPINE REDUCTASE

Chain A: 



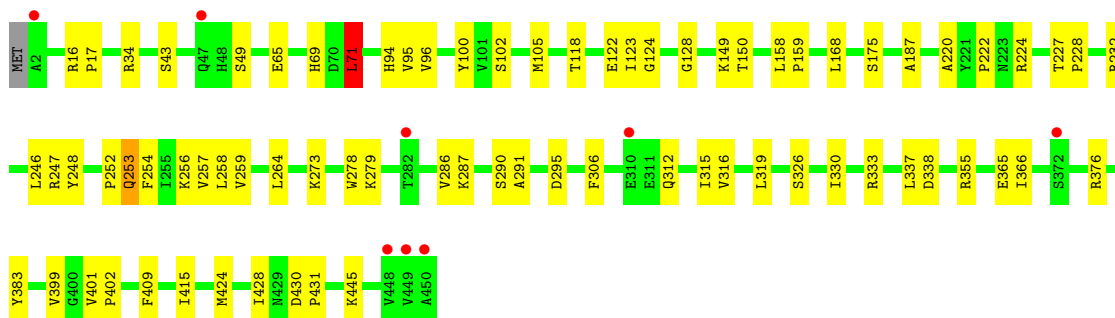
• Molecule 1: SACCHAROPINE REDUCTASE

Chain B: 



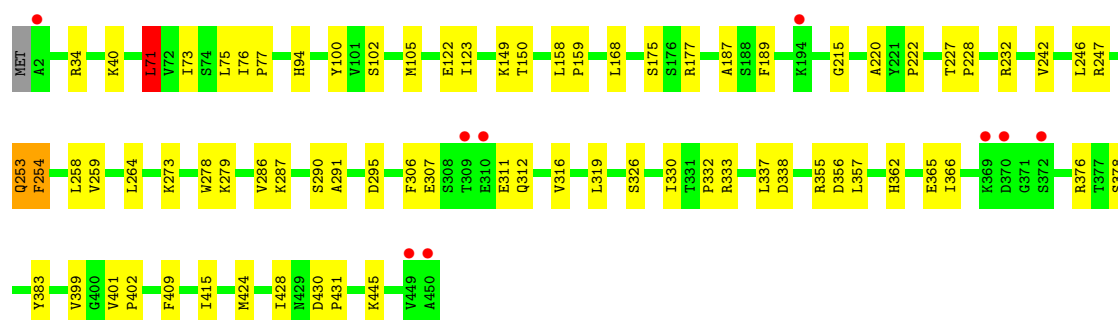
• Molecule 1: SACCHAROPINE REDUCTASE

Chain C: 



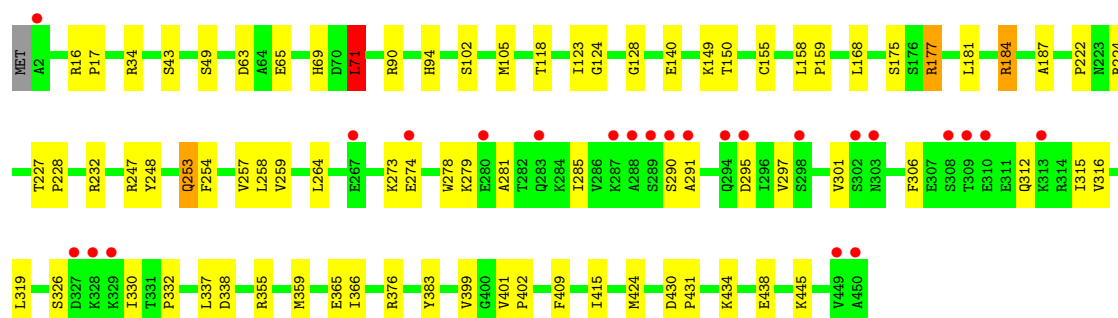
• Molecule 1: SACCHAROPINE REDUCTASE

Chain D: 



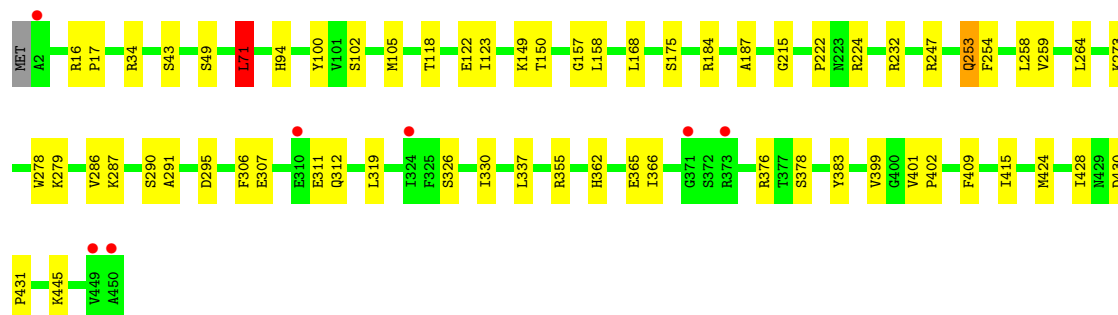
• Molecule 1: SACCHAROPINE REDUCTASE

Chain E:



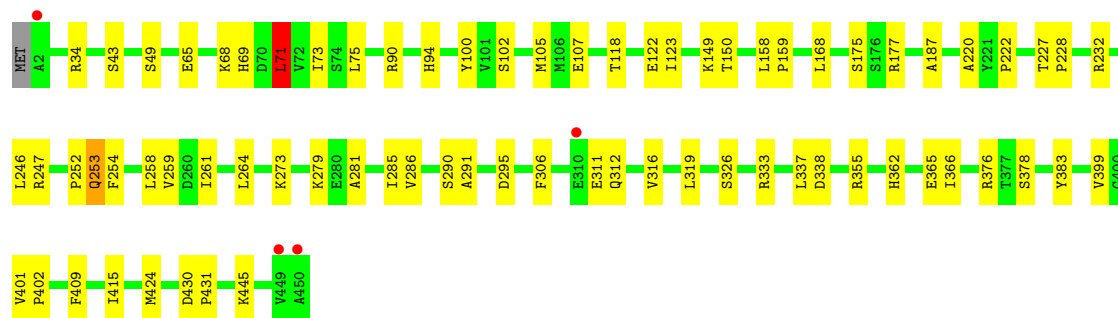
• Molecule 1: SACCHAROPINE REDUCTASE

Chain F:



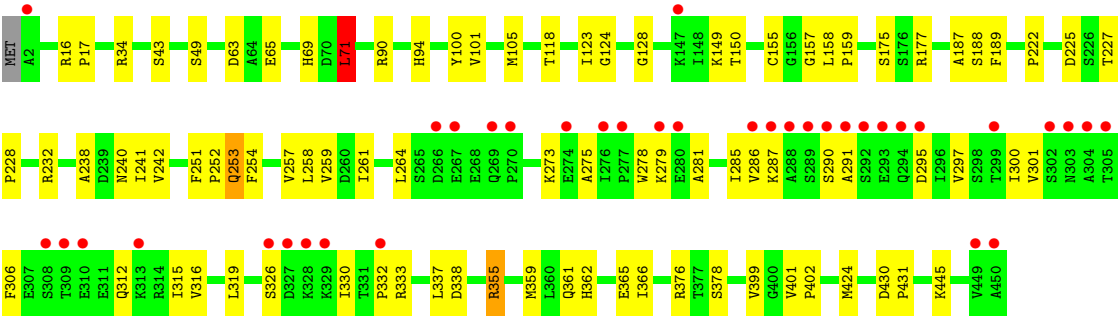
• Molecule 1: SACCHAROPINE REDUCTASE

Chain G:



• Molecule 1: SACCHAROPINE REDUCTASE

Chain H: 



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	86.64Å 205.81Å 125.60Å 90.00° 100.05° 90.00°	Depositor
Resolution (Å)	19.96 – 2.10 19.96 – 2.10	Depositor EDS
% Data completeness (in resolution range)	99.6 (19.96-2.10) 99.7 (19.96-2.10)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.80 (at 2.09Å)	Xtriage
Refinement program	CNS 1.0	Depositor
R, R_{free}	0.207 , 0.228 0.208 , 0.207	Depositor DCC
R_{free} test set	12570 reflections (5.02%)	DCC
Wilson B-factor (Å ²)	27.6	Xtriage
Anisotropy	0.445	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 38.5	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning	$\langle L \rangle = 0.52$, $\langle L^2 \rangle = 0.35$	Xtriage
Outliers	0 of 250247 reflections	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	30573	wwPDB-VP
Average B, all atoms (Å ²)	32.0	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 42.71 % 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 1.9595e-04. 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: NDP, SHR

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	0.33	0/3507	0.63	2/4747 (0.0%)
1	B	0.33	0/3507	0.62	2/4747 (0.0%)
1	C	0.33	0/3507	0.62	1/4747 (0.0%)
1	D	0.34	0/3507	0.63	1/4747 (0.0%)
1	E	0.33	0/3507	0.62	1/4747 (0.0%)
1	F	0.34	0/3507	0.63	2/4747 (0.0%)
1	G	0.34	0/3507	0.63	1/4747 (0.0%)
1	H	0.33	0/3507	0.62	2/4747 (0.0%)
All	All	0.33	0/28056	0.63	12/37976 (0.0%)

There are no bond length outliers.

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	71	LEU	CA-CB-CG	7.12	131.67	115.30
1	D	71	LEU	CA-CB-CG	6.96	131.30	115.30
1	E	71	LEU	CA-CB-CG	6.92	131.22	115.30
1	F	71	LEU	CA-CB-CG	6.77	130.88	115.30
1	C	71	LEU	CA-CB-CG	6.72	130.75	115.30
1	G	71	LEU	CA-CB-CG	6.61	130.51	115.30
1	A	71	LEU	CA-CB-CG	6.53	130.32	115.30
1	H	71	LEU	CA-CB-CG	6.33	129.87	115.30
1	F	157	GLY	N-CA-C	-5.19	100.12	113.10
1	B	157	GLY	N-CA-C	-5.14	100.25	113.10
1	H	157	GLY	N-CA-C	-5.11	100.32	113.10
1	A	157	GLY	N-CA-C	-5.11	100.34	113.10

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	3441	0	3483	53	0
1	B	3441	0	3483	60	0
1	C	3441	0	3483	65	0
1	D	3441	0	3483	58	0
1	E	3441	0	3483	63	0
1	F	3441	0	3483	56	0
1	G	3441	0	3483	60	0
1	H	3441	0	3483	59	0
2	A	48	0	26	3	0
2	B	48	0	26	3	0
2	C	48	0	26	3	0
2	D	48	0	26	3	0
2	E	48	0	26	3	0
2	F	48	0	26	3	0
2	G	48	0	26	3	0
2	H	48	0	26	3	0
3	A	19	0	17	0	0
3	B	19	0	17	0	0
3	C	19	0	17	0	0
3	D	19	0	17	0	0
3	E	19	0	17	0	0
3	F	19	0	17	0	0
3	G	19	0	17	0	0
3	H	19	0	17	0	0
4	A	303	0	0	7	0
4	B	298	0	0	3	0
4	C	349	0	0	9	0
4	D	318	0	0	4	0
4	E	296	0	0	6	0
4	F	341	0	0	8	0
4	G	335	0	0	8	0
4	H	269	0	0	3	0
All	All	30573	0	28208	469	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 (469) close contacts within the same asymmetric unit are listed below.

Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:102:SER:H	1:A:105:MET:HE3	1.07	1.16
1:D:102:SER:H	1:D:105:MET:HE3	1.04	1.12
1:C:102:SER:H	1:C:105:MET:HE3	1.14	1.10
1:F:102:SER:H	1:F:105:MET:HE3	1.17	1.09
1:G:102:SER:H	1:G:105:MET:HE3	1.10	1.09
1:E:102:SER:H	1:E:105:MET:HE3	1.20	1.01
1:B:253:GLN:HE21	1:B:253:GLN:H	1.01	1.00
1:G:253:GLN:HE21	1:G:253:GLN:H	1.07	0.99
1:G:94:HIS:HD2	1:G:118:THR:H	1.10	0.99
1:F:94:HIS:HD2	1:F:118:THR:H	1.07	0.97
1:E:253:GLN:H	1:E:253:GLN:HE21	1.01	0.97
1:C:253:GLN:HE21	1:C:253:GLN:H	0.99	0.97
1:H:253:GLN:HE21	1:H:253:GLN:H	1.13	0.97
1:A:253:GLN:H	1:A:253:GLN:HE21	1.13	0.96
1:F:253:GLN:HE21	1:F:253:GLN:H	1.16	0.93
1:D:253:GLN:H	1:D:253:GLN:HE21	1.06	0.92
1:B:94:HIS:HD2	1:B:118:THR:H	1.15	0.91
1:D:102:SER:N	1:D:105:MET:HE3	1.86	0.90
1:H:94:HIS:HD2	1:H:118:THR:H	1.18	0.89
1:B:102:SER:H	1:B:105:MET:HE3	1.35	0.88
1:A:94:HIS:HD2	1:A:118:THR:H	1.20	0.87
1:E:105:MET:HE1	4:E:2113:HOH:O	1.72	0.87
1:B:253:GLN:NE2	1:B:253:GLN:H	1.71	0.87
1:C:94:HIS:HD2	1:C:118:THR:H	1.20	0.87
1:A:102:SER:N	1:A:105:MET:HE3	1.89	0.85
1:E:253:GLN:H	1:E:253:GLN:NE2	1.75	0.85
1:C:105:MET:HE2	4:C:2125:HOH:O	1.78	0.83
1:B:105:MET:HE1	4:B:2102:HOH:O	1.80	0.81
1:B:399:VAL:HG21	2:B:500:NDP:H41N	1.61	0.81
1:D:399:VAL:HG21	2:D:500:NDP:H41N	1.62	0.81
1:G:311:GLU:HG2	4:G:2235:HOH:O	1.81	0.81
1:G:102:SER:N	1:G:105:MET:HE3	1.93	0.81
1:F:102:SER:N	1:F:105:MET:HE3	1.96	0.80
1:A:399:VAL:HG21	2:A:500:NDP:H41N	1.63	0.80
1:C:102:SER:N	1:C:105:MET:HE3	1.95	0.79
1:E:94:HIS:HD2	1:E:118:THR:H	1.29	0.79
1:G:399:VAL:HG21	2:G:500:NDP:H41N	1.65	0.79
1:C:253:GLN:NE2	1:C:253:GLN:H	1.78	0.79
1:A:105:MET:HE2	4:A:2086:HOH:O	1.83	0.78
1:F:105:MET:HE1	4:F:2092:HOH:O	1.82	0.78

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:D:259:VAL:HG22	1:D:264:LEU:HD12	1.66	0.77
1:C:399:VAL:HG21	2:C:500:NDP:H41N	1.67	0.77
1:C:105:MET:HE1	4:C:2124:HOH:O	1.86	0.76
1:A:259:VAL:HG22	1:A:264:LEU:HD12	1.67	0.76
1:C:253:GLN:HE21	1:C:253:GLN:N	1.81	0.76
1:H:253:GLN:NE2	1:H:253:GLN:H	1.83	0.75
1:G:259:VAL:HG22	1:G:264:LEU:HD12	1.69	0.75
1:E:102:SER:N	1:E:105:MET:HE3	2.00	0.75
1:D:253:GLN:H	1:D:253:GLN:NE2	1.84	0.75
1:B:259:VAL:HG22	1:B:264:LEU:HD12	1.68	0.75
1:F:94:HIS:CD2	1:F:118:THR:H	1.99	0.74
1:B:34:ARG:HB2	2:B:500:NDP:O3X	1.88	0.74
1:G:105:MET:HE2	4:G:2094:HOH:O	1.87	0.74
1:H:259:VAL:HG22	1:H:264:LEU:HD12	1.70	0.73
1:G:253:GLN:NE2	1:G:253:GLN:H	1.84	0.73
1:F:399:VAL:HG21	2:F:500:NDP:H41N	1.69	0.73
1:B:253:GLN:N	1:B:253:GLN:HE21	1.81	0.73
1:G:150:THR:HB	1:G:365:GLU:HB2	1.71	0.73
1:H:34:ARG:HB2	2:H:500:NDP:O3X	1.89	0.72
1:E:34:ARG:HB2	2:E:500:NDP:O3X	1.87	0.72
1:A:94:HIS:CD2	1:A:118:THR:H	2.07	0.72
1:D:149:LYS:HE2	1:D:149:LYS:HA	1.72	0.72
1:C:34:ARG:HB2	2:C:500:NDP:O3X	1.90	0.72
1:D:105:MET:HE2	4:D:2089:HOH:O	1.88	0.72
1:H:399:VAL:HG21	2:H:500:NDP:H41N	1.71	0.72
1:E:259:VAL:HG22	1:E:264:LEU:HD12	1.72	0.71
1:E:399:VAL:HG21	2:E:500:NDP:H41N	1.71	0.71
1:G:94:HIS:CD2	1:G:118:THR:H	2.02	0.71
1:E:253:GLN:HE21	1:E:253:GLN:N	1.82	0.70
1:A:105:MET:HE1	4:A:2084:HOH:O	1.89	0.70
1:G:34:ARG:HB2	2:G:500:NDP:O3X	1.91	0.70
1:E:149:LYS:HE2	1:E:149:LYS:HA	1.74	0.70
1:F:149:LYS:HE2	1:F:149:LYS:HA	1.71	0.69
1:B:94:HIS:CD2	1:B:118:THR:H	2.06	0.69
1:C:149:LYS:HA	1:C:149:LYS:HE2	1.72	0.69
1:D:150:THR:HB	1:D:365:GLU:HB2	1.73	0.69
1:F:259:VAL:HG22	1:F:264:LEU:HD12	1.75	0.69
1:A:253:GLN:H	1:A:253:GLN:NE2	1.88	0.69
1:B:149:LYS:HA	1:B:149:LYS:HE2	1.75	0.69
1:E:94:HIS:CD2	1:E:118:THR:H	2.11	0.68
1:H:279:LYS:HG3	1:H:326:SER:O	1.93	0.68
1:D:34:ARG:HB2	2:D:500:NDP:O3X	1.92	0.68

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:F:105:MET:HE2	4:F:2094:HOH:O	1.94	0.68
1:H:94:HIS:CD2	1:H:118:THR:H	2.08	0.68
1:E:279:LYS:HG3	1:E:326:SER:O	1.93	0.68
1:A:150:THR:HB	1:A:365:GLU:HB2	1.76	0.68
1:F:253:GLN:NE2	1:F:253:GLN:H	1.89	0.68
1:B:102:SER:OG	1:B:105:MET:HE2	1.94	0.67
1:H:101:VAL:HA	1:H:105:MET:HE2	1.76	0.67
1:B:102:SER:N	1:B:105:MET:HE3	2.09	0.67
1:D:279:LYS:HG3	1:D:326:SER:O	1.94	0.67
1:A:355:ARG:HH12	1:B:355:ARG:HH12	1.43	0.66
1:D:253:GLN:N	1:D:253:GLN:HE21	1.89	0.66
1:C:150:THR:HB	1:C:365:GLU:HB2	1.78	0.66
1:B:290:SER:HB3	1:B:295:ASP:OD2	1.95	0.66
1:G:100:TYR:O	1:G:105:MET:HE1	1.96	0.66
1:D:105:MET:HE1	4:D:2086:HOH:O	1.95	0.65
1:C:259:VAL:HG22	1:C:264:LEU:HD12	1.77	0.65
1:C:94:HIS:CD2	1:C:118:THR:H	2.08	0.65
1:G:105:MET:HE1	4:G:2092:HOH:O	1.97	0.65
1:B:279:LYS:HG3	1:B:326:SER:O	1.96	0.65
1:E:258:LEU:HD11	1:E:319:LEU:HD21	1.77	0.65
1:H:149:LYS:HA	1:H:149:LYS:HE2	1.78	0.65
1:C:256:LYS:HD2	4:C:2205:HOH:O	1.97	0.65
1:C:279:LYS:HG3	1:C:326:SER:O	1.96	0.65
1:A:149:LYS:HA	1:A:149:LYS:HE2	1.78	0.65
1:F:34:ARG:HB2	2:F:500:NDP:O3X	1.97	0.64
1:E:150:THR:HB	1:E:365:GLU:HB2	1.78	0.64
1:F:279:LYS:HG3	1:F:326:SER:O	1.97	0.63
1:A:256:LYS:HD2	4:A:2145:HOH:O	1.98	0.63
1:F:150:THR:HB	1:F:365:GLU:HB2	1.81	0.63
1:F:366:ILE:HD12	1:F:376:ARG:HG3	1.81	0.63
1:A:34:ARG:HB2	2:A:500:NDP:O3X	1.98	0.62
1:H:150:THR:HB	1:H:365:GLU:HB2	1.80	0.62
1:G:149:LYS:HA	1:G:149:LYS:HE2	1.80	0.61
1:F:445:LYS:HB2	1:F:445:LYS:NZ	2.16	0.61
1:E:434:LYS:NZ	1:E:438:GLU:OE1	2.32	0.61
1:F:312:GLN:NE2	1:G:107:GLU:OE1	2.34	0.61
1:G:258:LEU:HD11	1:G:319:LEU:HD21	1.82	0.60
1:F:94:HIS:HE1	4:F:2088:HOH:O	1.84	0.60
1:A:445:LYS:NZ	1:A:445:LYS:HB2	2.17	0.60
1:B:102:SER:H	1:B:105:MET:CE	2.13	0.60
1:D:258:LEU:HD11	1:D:319:LEU:HD21	1.83	0.60
1:H:290:SER:HB3	1:H:295:ASP:OD2	2.01	0.60

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:G:445:LYS:HB2	1:G:445:LYS:NZ	2.16	0.60
1:C:399:VAL:CG2	2:C:500:NDP:H41N	2.31	0.60
1:D:100:TYR:O	1:D:105:MET:HE1	2.02	0.60
1:G:306:PHE:CD2	1:G:312:GLN:HA	2.36	0.60
1:A:184:ARG:HD3	4:A:2137:HOH:O	2.01	0.59
1:H:445:LYS:HE3	4:H:2255:HOH:O	2.02	0.59
1:A:258:LEU:HD11	1:A:319:LEU:HD21	1.85	0.59
1:D:445:LYS:NZ	1:D:445:LYS:HB2	2.17	0.59
1:G:253:GLN:HE21	1:G:253:GLN:N	1.89	0.59
1:B:150:THR:HB	1:B:365:GLU:HB2	1.83	0.59
1:H:253:GLN:HE21	1:H:253:GLN:N	1.93	0.58
1:D:399:VAL:CG2	2:D:500:NDP:H41N	2.33	0.58
1:H:258:LEU:HD11	1:H:319:LEU:HD21	1.85	0.58
1:B:366:ILE:HD12	1:B:376:ARG:HG3	1.85	0.58
1:C:290:SER:HB3	1:C:295:ASP:OD2	2.04	0.58
1:G:94:HIS:HD2	1:G:118:THR:N	1.92	0.57
1:A:100:TYR:O	1:A:105:MET:HE1	2.04	0.57
1:G:102:SER:H	1:G:105:MET:CE	2.00	0.57
1:F:94:HIS:HD2	1:F:118:THR:N	1.90	0.57
1:H:330:ILE:O	1:H:332:PRO:HD3	2.04	0.57
1:A:286:VAL:HG13	4:A:2205:HOH:O	2.05	0.57
1:B:445:LYS:NZ	1:B:445:LYS:HB2	2.18	0.57
1:B:306:PHE:CD2	1:B:312:GLN:HA	2.39	0.57
1:B:399:VAL:CG2	2:B:500:NDP:H41N	2.32	0.57
1:C:445:LYS:NZ	1:C:445:LYS:HB2	2.18	0.57
1:H:297:VAL:O	1:H:301:VAL:HG23	2.04	0.57
1:G:94:HIS:HE1	4:G:2089:HOH:O	1.88	0.57
1:A:430:ASP:HB2	1:A:431:PRO:HD3	1.86	0.57
1:D:306:PHE:CD2	1:D:312:GLN:HA	2.40	0.56
1:H:306:PHE:CD2	1:H:312:GLN:HA	2.40	0.56
1:E:94:HIS:HE1	4:E:2109:HOH:O	1.87	0.56
1:G:279:LYS:HG3	1:G:326:SER:O	2.05	0.56
1:F:399:VAL:CG2	2:F:500:NDP:H41N	2.36	0.56
1:G:290:SER:HB3	1:G:295:ASP:OD2	2.06	0.56
1:B:430:ASP:HB2	1:B:431:PRO:HD3	1.87	0.56
1:G:366:ILE:HD12	1:G:376:ARG:HG3	1.88	0.56
1:A:366:ILE:HD12	1:A:376:ARG:HG3	1.88	0.56
1:E:140:GLU:HB3	4:E:2240:HOH:O	2.06	0.56
1:H:333:ARG:HD2	1:H:338:ASP:O	2.06	0.55
1:H:445:LYS:HB2	1:H:445:LYS:NZ	2.21	0.55
1:B:292:SER:HB2	1:E:274:GLU:OE2	2.06	0.55
1:E:430:ASP:HB2	1:E:431:PRO:HD3	1.88	0.55

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:C:100:TYR:O	1:C:105:MET:HE1	2.07	0.55
1:H:399:VAL:CG2	2:H:500:NDP:H41N	2.37	0.55
1:H:430:ASP:HB2	1:H:431:PRO:HD3	1.88	0.55
1:G:430:ASP:HB2	1:G:431:PRO:HD3	1.88	0.55
1:E:290:SER:HB3	1:E:295:ASP:OD2	2.06	0.55
1:C:94:HIS:HE1	4:C:2003:HOH:O	1.90	0.54
1:E:445:LYS:HB2	1:E:445:LYS:NZ	2.21	0.54
1:A:279:LYS:HG3	1:A:326:SER:O	2.06	0.54
1:D:222:PRO:HG3	4:D:2048:HOH:O	2.07	0.54
1:H:227:THR:OG1	1:H:228:PRO:HD3	2.08	0.54
1:F:222:PRO:HG3	4:F:2051:HOH:O	2.07	0.54
1:E:105:MET:HE2	4:E:2114:HOH:O	2.07	0.54
1:E:399:VAL:CG2	2:E:500:NDP:H41N	2.38	0.54
1:F:290:SER:HB3	1:F:295:ASP:OD2	2.08	0.54
1:D:71:LEU:HB2	1:D:94:HIS:HB2	1.89	0.53
1:F:355:ARG:NH1	4:F:2265:HOH:O	2.40	0.53
1:E:312:GLN:O	1:E:316:VAL:HG23	2.07	0.53
1:A:399:VAL:CG2	2:A:500:NDP:H41N	2.35	0.53
1:F:306:PHE:CD2	1:F:312:GLN:HA	2.43	0.53
1:A:306:PHE:CD2	1:A:312:GLN:HA	2.43	0.53
1:C:430:ASP:HB2	1:C:431:PRO:HD3	1.90	0.53
1:A:409:PHE:HB3	1:A:415:ILE:HG13	1.89	0.53
1:F:258:LEU:HD11	1:F:319:LEU:HD21	1.91	0.53
1:D:259:VAL:CG2	1:D:264:LEU:HD12	2.37	0.53
1:H:257:VAL:HG21	1:H:315:ILE:HG21	1.90	0.53
1:E:366:ILE:HD12	1:E:376:ARG:HG3	1.90	0.53
1:F:362:HIS:HB2	1:F:378:SER:HB3	1.91	0.53
1:C:366:ILE:HD12	1:C:376:ARG:HG3	1.91	0.53
1:C:43:SER:HB2	1:C:49:SER:OG	2.09	0.53
1:F:184:ARG:HD3	4:F:2161:HOH:O	2.10	0.53
1:C:279:LYS:HB3	1:C:291:ALA:HB1	1.89	0.52
1:A:253:GLN:N	1:A:253:GLN:HE21	1.95	0.52
1:E:306:PHE:CD2	1:E:312:GLN:HA	2.43	0.52
1:D:366:ILE:HD12	1:D:376:ARG:HG3	1.90	0.52
1:G:399:VAL:CG2	2:G:500:NDP:H41N	2.37	0.52
1:F:43:SER:HB2	1:F:49:SER:OG	2.10	0.52
1:H:63:ASP:OD2	1:H:90:ARG:HD2	2.09	0.52
1:E:71:LEU:HB2	1:E:94:HIS:HB2	1.92	0.52
1:D:279:LYS:HB3	1:D:291:ALA:HB1	1.91	0.52
1:B:259:VAL:CG2	1:B:264:LEU:HD12	2.39	0.52
1:G:355:ARG:HD3	1:G:383:TYR:HB3	1.92	0.52
1:G:90:ARG:NH2	4:G:2081:HOH:O	2.40	0.52

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:E:63:ASP:OD2	1:E:90:ARG:HD2	2.09	0.52
1:C:222:PRO:HG3	4:C:2074:HOH:O	2.10	0.52
1:E:330:ILE:O	1:E:332:PRO:HD3	2.09	0.52
1:C:258:LEU:HD11	1:C:319:LEU:HD21	1.92	0.52
1:D:227:THR:OG1	1:D:228:PRO:HD3	2.11	0.51
1:F:401:VAL:HB	1:F:402:PRO:HD3	1.91	0.51
1:H:71:LEU:HB2	1:H:94:HIS:HB2	1.92	0.51
1:C:401:VAL:HB	1:C:402:PRO:HD3	1.92	0.51
1:F:253:GLN:HE21	1:F:253:GLN:N	1.97	0.51
1:H:312:GLN:O	1:H:316:VAL:HG23	2.10	0.51
1:F:430:ASP:HB2	1:F:431:PRO:HD3	1.93	0.51
1:D:290:SER:HB3	1:D:295:ASP:OD2	2.09	0.51
1:C:337:LEU:HD23	1:C:337:LEU:C	2.31	0.51
1:E:257:VAL:HG21	1:E:315:ILE:HG21	1.92	0.51
1:E:43:SER:HB2	1:E:49:SER:OG	2.11	0.50
1:A:290:SER:HB3	1:A:295:ASP:OD2	2.11	0.50
1:E:181:LEU:O	1:E:184:ARG:HG2	2.11	0.50
1:F:286:VAL:HG13	4:F:2222:HOH:O	2.12	0.50
1:G:337:LEU:C	1:G:337:LEU:HD23	2.32	0.50
1:H:71:LEU:C	1:H:71:LEU:HD12	2.31	0.50
1:H:279:LYS:HB3	1:H:291:ALA:HB1	1.94	0.50
1:A:355:ARG:HD3	1:A:383:TYR:HB3	1.94	0.50
1:H:362:HIS:HB2	1:H:378:SER:HB3	1.94	0.50
1:B:312:GLN:O	1:B:316:VAL:HG23	2.11	0.49
1:G:227:THR:OG1	1:G:228:PRO:HD3	2.11	0.49
1:D:123:ILE:O	1:D:123:ILE:HG13	2.12	0.49
1:F:71:LEU:HB2	1:F:94:HIS:HB2	1.95	0.49
1:H:261:ILE:HG21	1:H:300:ILE:HG23	1.93	0.49
1:B:94:HIS:HE1	4:B:2100:HOH:O	1.95	0.49
1:C:306:PHE:CD2	1:C:312:GLN:HA	2.47	0.49
1:G:150:THR:HB	1:G:365:GLU:CB	2.41	0.49
1:D:430:ASP:HB2	1:D:431:PRO:HD3	1.93	0.49
1:F:337:LEU:HD23	1:F:337:LEU:C	2.33	0.49
1:G:409:PHE:HB3	1:G:415:ILE:HG13	1.94	0.49
1:C:124:GLY:O	1:C:128:GLY:HA3	2.13	0.49
1:C:187:ALA:CB	1:C:222:PRO:HB2	2.43	0.49
1:H:366:ILE:HD12	1:H:376:ARG:HG3	1.94	0.49
1:G:123:ILE:O	1:G:123:ILE:HG13	2.12	0.49
1:A:71:LEU:HD12	1:A:71:LEU:C	2.33	0.48
1:E:434:LYS:HZ2	1:E:438:GLU:CD	2.17	0.48
1:E:297:VAL:O	1:E:301:VAL:HG23	2.13	0.48
1:E:279:LYS:HB3	1:E:291:ALA:HB1	1.95	0.48

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:D:150:THR:HB	1:D:365:GLU:CB	2.43	0.48
1:B:258:LEU:HD11	1:B:319:LEU:HD21	1.94	0.48
1:B:297:VAL:O	1:B:301:VAL:HG23	2.13	0.48
1:B:337:LEU:C	1:B:337:LEU:HD23	2.33	0.48
1:A:123:ILE:HG13	1:A:123:ILE:O	2.12	0.48
1:D:40:LYS:HB3	4:D:2032:HOH:O	2.13	0.48
1:B:227:THR:OG1	1:B:228:PRO:HD3	2.14	0.48
1:G:71:LEU:HB2	1:G:94:HIS:HB2	1.95	0.48
1:D:355:ARG:HD3	1:D:383:TYR:HB3	1.95	0.48
1:G:168:LEU:HD21	1:G:254:PHE:CD2	2.49	0.48
1:C:355:ARG:HD3	1:C:383:TYR:HB3	1.95	0.48
1:C:71:LEU:HD12	1:C:71:LEU:C	2.34	0.48
1:E:259:VAL:CG2	1:E:264:LEU:HD12	2.43	0.48
1:A:227:THR:OG1	1:A:228:PRO:HD3	2.13	0.48
1:G:100:TYR:HA	1:G:122:GLU:HG2	1.96	0.48
1:B:279:LYS:HB3	1:B:291:ALA:HB1	1.96	0.48
1:F:428:ILE:C	1:F:431:PRO:HD2	2.35	0.48
1:E:16:ARG:HB3	1:E:17:PRO:HD3	1.96	0.47
1:A:100:TYR:HA	1:A:122:GLU:HG2	1.96	0.47
1:A:71:LEU:HB2	1:A:94:HIS:HB2	1.96	0.47
1:E:409:PHE:HB3	1:E:415:ILE:HG13	1.97	0.47
1:B:71:LEU:HD12	1:B:71:LEU:C	2.35	0.47
1:G:279:LYS:HB3	1:G:291:ALA:HB1	1.96	0.47
1:H:238:ALA:HB3	1:H:241:ILE:HD11	1.96	0.47
1:G:261:ILE:HB	1:G:286:VAL:HG22	1.95	0.47
1:H:123:ILE:HG13	1:H:123:ILE:O	2.14	0.47
1:B:94:HIS:HD2	1:B:118:THR:N	1.98	0.47
1:G:71:LEU:C	1:G:71:LEU:HD12	2.35	0.47
1:D:71:LEU:C	1:D:71:LEU:HD12	2.35	0.47
1:F:355:ARG:HD3	1:F:383:TYR:HB3	1.97	0.47
1:E:224:ARG:HB3	4:E:2207:HOH:O	2.14	0.47
1:E:337:LEU:C	1:E:337:LEU:HD23	2.35	0.47
1:F:279:LYS:HB3	1:F:291:ALA:HB1	1.97	0.47
1:H:278:TRP:CD2	1:H:330:ILE:HG22	2.50	0.47
1:B:158:LEU:O	1:B:357:LEU:N	2.44	0.47
1:G:232:ARG:HG2	1:G:424:MET:CE	2.45	0.47
1:F:71:LEU:C	1:F:71:LEU:HD12	2.35	0.47
1:B:100:TYR:HA	1:B:122:GLU:HG2	1.96	0.47
1:D:401:VAL:HB	1:D:402:PRO:HD3	1.95	0.47
1:F:100:TYR:HA	1:F:122:GLU:HG2	1.97	0.47
1:C:312:GLN:O	1:C:316:VAL:HG23	2.15	0.46
1:G:220:ALA:HB2	1:G:246:LEU:HD23	1.98	0.46

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:G:68:LYS:HD3	4:G:2059:HOH:O	2.15	0.46
1:A:401:VAL:HB	1:A:402:PRO:HD3	1.96	0.46
1:C:227:THR:OG1	1:C:228:PRO:HD3	2.15	0.46
1:E:71:LEU:HD12	1:E:71:LEU:C	2.35	0.46
1:A:259:VAL:CG2	1:A:264:LEU:HD12	2.42	0.46
1:H:361:GLN:HA	1:H:378:SER:O	2.16	0.46
1:F:123:ILE:HG13	1:F:123:ILE:O	2.15	0.46
1:C:158:LEU:HB3	1:C:159:PRO:HD2	1.98	0.46
1:B:401:VAL:HB	1:B:402:PRO:HD3	1.98	0.46
1:B:90:ARG:NH2	4:B:2092:HOH:O	2.47	0.46
1:C:71:LEU:HB2	1:C:94:HIS:HB2	1.98	0.46
1:H:43:SER:HB2	1:H:49:SER:OG	2.15	0.46
1:D:168:LEU:HD21	1:D:254:PHE:CD2	2.50	0.46
1:H:94:HIS:HD2	1:H:118:THR:N	2.00	0.46
1:H:355:ARG:NH2	4:H:2210:HOH:O	2.49	0.46
1:E:401:VAL:HB	1:E:402:PRO:HD3	1.98	0.46
1:E:187:ALA:HB1	1:E:222:PRO:HB2	1.98	0.46
1:D:330:ILE:O	1:D:332:PRO:HD3	2.15	0.46
1:C:65:GLU:OE1	1:C:69:HIS:HE1	1.99	0.46
1:G:187:ALA:CB	1:G:222:PRO:HB2	2.46	0.46
1:F:307:GLU:HB2	1:F:311:GLU:HG3	1.98	0.46
1:A:279:LYS:HB3	1:A:291:ALA:HB1	1.98	0.45
1:F:187:ALA:CB	1:F:222:PRO:HB2	2.46	0.45
1:C:409:PHE:HB3	1:C:415:ILE:HG13	1.97	0.45
1:C:16:ARG:HB3	1:C:17:PRO:HD3	1.98	0.45
1:D:158:LEU:HB3	1:D:159:PRO:HD2	1.96	0.45
1:H:281:ALA:O	1:H:285:ILE:HG13	2.17	0.45
1:E:177:ARG:HH21	1:E:338:ASP:CG	2.20	0.45
1:B:238:ALA:HB3	1:B:241:ILE:HD11	1.98	0.45
1:C:252:PRO:HG2	4:C:2241:HOH:O	2.16	0.45
1:A:278:TRP:CD2	1:A:330:ILE:HG22	2.51	0.45
1:B:43:SER:HB2	1:B:49:SER:OG	2.16	0.45
1:G:401:VAL:HB	1:G:402:PRO:HD3	1.98	0.45
1:G:73:ILE:HG22	1:G:75:LEU:HG	1.98	0.45
1:B:158:LEU:HB3	1:B:159:PRO:HD2	1.98	0.45
1:B:123:ILE:O	1:B:123:ILE:HG13	2.16	0.45
1:A:333:ARG:HD2	1:A:338:ASP:O	2.17	0.45
1:E:65:GLU:OE1	1:E:69:HIS:HE1	1.99	0.45
1:H:187:ALA:CB	1:H:222:PRO:HB2	2.46	0.45
1:D:312:GLN:O	1:D:316:VAL:HG23	2.17	0.45
1:E:187:ALA:CB	1:E:222:PRO:HB2	2.47	0.45
1:D:158:LEU:O	1:D:357:LEU:N	2.46	0.45

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:D:307:GLU:HB2	1:D:311:GLU:HG3	1.98	0.45
1:B:362:HIS:HB2	1:B:378:SER:HB3	1.99	0.45
1:B:232:ARG:HG2	1:B:424:MET:CE	2.48	0.44
1:F:409:PHE:HB3	1:F:415:ILE:HG13	1.98	0.44
1:D:100:TYR:HA	1:D:122:GLU:HG2	1.98	0.44
1:G:258:LEU:CD1	1:G:319:LEU:HD21	2.47	0.44
1:D:337:LEU:C	1:D:337:LEU:HD23	2.38	0.44
1:F:158:LEU:HD21	1:F:247:ARG:HA	1.98	0.44
1:H:100:TYR:O	1:H:105:MET:HE1	2.17	0.44
1:E:222:PRO:HG3	4:E:2065:HOH:O	2.16	0.44
1:C:168:LEU:HD21	1:C:254:PHE:CD2	2.53	0.44
1:A:150:THR:HB	1:A:365:GLU:CB	2.45	0.44
1:A:258:LEU:CD1	1:A:319:LEU:HD21	2.47	0.44
1:H:16:ARG:HB3	1:H:17:PRO:HD3	2.00	0.44
1:C:123:ILE:HG13	1:C:123:ILE:O	2.17	0.44
1:E:355:ARG:HD3	1:E:383:TYR:HB3	1.99	0.44
1:B:278:TRP:CD2	1:B:330:ILE:HG22	2.53	0.44
1:C:248:TYR:CD2	1:D:215:GLY:HA2	2.52	0.44
1:C:278:TRP:CD2	1:C:330:ILE:HG22	2.52	0.44
1:F:168:LEU:HD21	1:F:254:PHE:CD2	2.53	0.44
1:E:278:TRP:CD2	1:E:330:ILE:HG22	2.53	0.44
1:C:158:LEU:HD21	1:C:247:ARG:HA	1.99	0.44
1:D:76:ILE:HB	1:D:77:PRO:HD2	1.99	0.44
1:E:124:GLY:O	1:E:128:GLY:HA3	2.18	0.44
1:H:65:GLU:OE1	1:H:69:HIS:HE1	2.00	0.43
1:D:409:PHE:HB3	1:D:415:ILE:HG13	2.00	0.43
1:G:65:GLU:OE1	1:G:69:HIS:HE1	2.01	0.43
1:A:312:GLN:O	1:A:316:VAL:HG23	2.18	0.43
1:G:43:SER:HB2	1:G:49:SER:OG	2.18	0.43
1:D:362:HIS:HB2	1:D:378:SER:HB3	2.00	0.43
1:C:100:TYR:HA	1:C:122:GLU:HG2	2.00	0.43
1:A:73:ILE:HG22	1:A:75:LEU:HG	2.00	0.43
1:C:187:ALA:HB1	1:C:222:PRO:HB2	2.00	0.43
1:C:333:ARG:HD2	1:C:338:ASP:O	2.18	0.43
1:E:248:TYR:CD2	1:F:215:GLY:HA2	2.53	0.43
1:A:362:HIS:HB2	1:A:378:SER:HB3	2.00	0.43
1:B:220:ALA:HB2	1:B:246:LEU:HD23	2.01	0.43
1:B:409:PHE:HB3	1:B:415:ILE:HG13	2.01	0.43
1:A:94:HIS:HD2	1:A:118:THR:N	2.01	0.43
1:H:150:THR:HB	1:H:365:GLU:CB	2.48	0.43
1:H:158:LEU:HB3	1:H:159:PRO:HD2	2.00	0.43
1:E:281:ALA:O	1:E:285:ILE:HG13	2.18	0.43

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:330:ILE:O	1:A:332:PRO:HD3	2.18	0.43
1:B:330:ILE:O	1:B:332:PRO:HD3	2.18	0.43
1:A:222:PRO:HG3	4:A:2051:HOH:O	2.19	0.43
1:G:158:LEU:HB3	1:G:159:PRO:HD2	2.01	0.43
1:A:158:LEU:HB3	1:A:159:PRO:HD2	2.01	0.43
1:E:168:LEU:HD21	1:E:254:PHE:CD2	2.54	0.43
1:E:123:ILE:HG13	1:E:123:ILE:O	2.18	0.43
1:C:428:ILE:C	1:C:431:PRO:HD2	2.39	0.43
1:E:158:LEU:HD21	1:E:247:ARG:HA	2.01	0.43
1:H:401:VAL:HB	1:H:402:PRO:HD3	2.01	0.43
1:H:232:ARG:HG2	1:H:424:MET:CE	2.49	0.43
1:C:102:SER:OG	1:C:105:MET:CE	2.67	0.43
1:D:159:PRO:HA	1:D:356:ASP:HA	2.00	0.43
1:D:158:LEU:HD21	1:D:247:ARG:HA	2.00	0.43
1:D:232:ARG:HG2	1:D:424:MET:CE	2.49	0.43
1:H:355:ARG:NH2	4:H:2209:HOH:O	2.43	0.42
1:F:232:ARG:HG2	1:F:424:MET:CE	2.49	0.42
1:B:85:ILE:O	1:B:89:ILE:HG13	2.19	0.42
1:C:150:THR:HB	1:C:365:GLU:CB	2.46	0.42
1:D:428:ILE:C	1:D:431:PRO:HD2	2.39	0.42
1:F:100:TYR:HA	1:F:122:GLU:CG	2.49	0.42
1:D:333:ARG:HD2	1:D:338:ASP:O	2.19	0.42
1:C:286:VAL:O	1:C:287:LYS:HB2	2.18	0.42
1:E:102:SER:OG	1:E:105:MET:HE2	2.18	0.42
1:E:445:LYS:HB2	1:E:445:LYS:HZ3	1.85	0.42
1:G:252:PRO:HG2	4:G:2211:HOH:O	2.18	0.42
1:F:445:LYS:HZ3	1:F:445:LYS:HB2	1.85	0.42
1:B:158:LEU:HD21	1:B:247:ARG:HA	2.02	0.42
1:G:158:LEU:HD21	1:G:247:ARG:HA	2.01	0.42
1:E:158:LEU:HB3	1:E:159:PRO:HD2	2.02	0.42
1:C:257:VAL:HG21	1:C:315:ILE:HG21	2.02	0.42
1:D:258:LEU:CD1	1:D:319:LEU:HD21	2.49	0.42
1:B:100:TYR:HA	1:B:122:GLU:CG	2.50	0.42
1:A:337:LEU:C	1:A:337:LEU:HD23	2.40	0.42
1:D:189:PHE:HB2	1:D:242:VAL:HG22	2.02	0.42
1:A:232:ARG:HG2	1:A:424:MET:CE	2.50	0.42
1:B:71:LEU:HB2	1:B:94:HIS:HB2	2.02	0.42
1:E:227:THR:OG1	1:E:228:PRO:HD3	2.20	0.42
1:F:102:SER:OG	1:F:105:MET:HE2	2.20	0.42
1:H:337:LEU:HD23	1:H:337:LEU:C	2.40	0.42
1:B:254:PHE:O	1:B:258:LEU:HD13	2.20	0.41
1:E:232:ARG:HG2	1:E:424:MET:CE	2.50	0.41

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:F:278:TRP:CD2	1:F:330:ILE:HG22	2.55	0.41
1:G:222:PRO:HG3	4:G:2049:HOH:O	2.18	0.41
1:H:286:VAL:O	1:H:287:LYS:HB2	2.20	0.41
1:F:224:ARG:HB3	4:F:2192:HOH:O	2.20	0.41
1:F:16:ARG:HB3	1:F:17:PRO:HD3	2.01	0.41
1:H:150:THR:HG23	1:H:240:ASN:HB2	2.02	0.41
1:H:232:ARG:HG2	1:H:424:MET:HE2	2.02	0.41
1:D:100:TYR:O	1:D:105:MET:CE	2.69	0.41
1:G:312:GLN:O	1:G:316:VAL:HG23	2.20	0.41
1:A:286:VAL:O	1:A:286:VAL:HG12	2.19	0.41
1:C:355:ARG:NH2	4:C:2286:HOH:O	2.49	0.41
1:G:333:ARG:HD2	1:G:338:ASP:O	2.20	0.41
1:B:187:ALA:CB	1:B:222:PRO:HB2	2.50	0.41
1:C:100:TYR:HA	1:C:122:GLU:CG	2.50	0.41
1:C:232:ARG:HG2	1:C:424:MET:CE	2.50	0.41
1:B:124:GLY:O	1:B:128:GLY:HA3	2.20	0.41
1:C:102:SER:OG	1:C:105:MET:HE3	2.20	0.41
1:G:150:THR:HB	1:G:365:GLU:CG	2.50	0.41
1:D:278:TRP:CD2	1:D:330:ILE:HG22	2.55	0.41
1:G:362:HIS:HB2	1:G:378:SER:HB3	2.03	0.41
1:C:150:THR:HB	1:C:365:GLU:CG	2.51	0.41
1:C:220:ALA:HB2	1:C:246:LEU:HD23	2.02	0.41
1:D:220:ALA:HB2	1:D:246:LEU:HD23	2.02	0.41
1:E:258:LEU:CD1	1:E:319:LEU:HD21	2.46	0.41
1:H:445:LYS:HZ3	1:H:445:LYS:HB2	1.86	0.41
1:G:232:ARG:HG2	1:G:424:MET:HE2	2.03	0.41
1:H:251:PHE:HB3	1:H:252:PRO:CD	2.51	0.41
1:G:281:ALA:O	1:G:285:ILE:HG13	2.21	0.41
1:H:124:GLY:O	1:H:128:GLY:HA3	2.21	0.41
1:F:259:VAL:CG2	1:F:264:LEU:HD12	2.46	0.41
1:D:76:ILE:HB	1:D:77:PRO:CD	2.51	0.41
1:H:155:CYS:HA	1:H:359:MET:O	2.21	0.41
1:A:140:GLU:HG3	4:A:2106:HOH:O	2.20	0.41
1:F:150:THR:HB	1:F:365:GLU:CB	2.49	0.40
1:B:361:GLN:HA	1:B:378:SER:O	2.21	0.40
1:E:155:CYS:HA	1:E:359:MET:O	2.21	0.40
1:C:355:ARG:NH1	4:C:2285:HOH:O	2.53	0.40
1:H:189:PHE:HB2	1:H:242:VAL:HG22	2.04	0.40
1:C:224:ARG:HB3	4:C:2223:HOH:O	2.21	0.40
1:D:187:ALA:CB	1:D:222:PRO:HB2	2.52	0.40
1:B:232:ARG:HG2	1:B:424:MET:HE2	2.02	0.40
1:D:286:VAL:O	1:D:287:LYS:HB2	2.21	0.40

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:C:94:HIS:HD2	1:C:118:THR:N	2.01	0.40
1:D:73:ILE:HG22	1:D:75:LEU:HG	2.03	0.40
1:B:271:PHE:CE1	1:B:272:LEU:HG	2.56	0.40
1:H:188:SER:HB3	1:H:225:ASP:OD1	2.20	0.40
1:F:286:VAL:O	1:F:287:LYS:HB2	2.22	0.40
1:B:159:PRO:HA	1:B:356:ASP:HA	2.03	0.40
1:A:158:LEU:HD21	1:A:247:ARG:HA	2.03	0.40
1:C:95:VAL:HG12	1:C:96:VAL:N	2.36	0.40
1:B:73:ILE:HG22	1:B:75:LEU:HG	2.03	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	447/450 (99%)	434 (97%)	12 (3%)	1 (0%)	56	57
1	B	447/450 (99%)	432 (97%)	14 (3%)	1 (0%)	56	57
1	C	447/450 (99%)	432 (97%)	14 (3%)	1 (0%)	56	57
1	D	447/450 (99%)	436 (98%)	10 (2%)	1 (0%)	56	57
1	E	447/450 (99%)	434 (97%)	12 (3%)	1 (0%)	56	57
1	F	447/450 (99%)	433 (97%)	13 (3%)	1 (0%)	56	57
1	G	447/450 (99%)	435 (97%)	11 (2%)	1 (0%)	56	57
1	H	447/450 (99%)	432 (97%)	13 (3%)	2 (0%)	43	39
All	All	3576/3600 (99%)	3468 (97%)	99 (3%)	9 (0%)	50	49

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	175	SER
1	A	175	SER
1	B	175	SER

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Mol	Chain	Res	Type
1	C	175	SER
1	E	175	SER
1	F	175	SER
1	G	175	SER
1	H	175	SER
1	H	275	ALA

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	375/376 (100%)	372 (99%)	3 (1%)	89	93
1	B	375/376 (100%)	372 (99%)	3 (1%)	89	93
1	C	375/376 (100%)	372 (99%)	3 (1%)	89	93
1	D	375/376 (100%)	370 (99%)	5 (1%)	80	85
1	E	375/376 (100%)	370 (99%)	5 (1%)	80	85
1	F	375/376 (100%)	372 (99%)	3 (1%)	89	93
1	G	375/376 (100%)	371 (99%)	4 (1%)	84	88
1	H	375/376 (100%)	369 (98%)	6 (2%)	75	79
All	All	3000/3008 (100%)	2968 (99%)	32 (1%)	84	88

All (32) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	71	LEU
1	A	177	ARG
1	A	253	GLN
1	B	71	LEU
1	B	177	ARG
1	B	253	GLN
1	C	71	LEU
1	C	253	GLN
1	C	273	LYS
1	D	71	LEU
1	D	177	ARG

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Mol	Chain	Res	Type
1	D	253	GLN
1	D	254	PHE
1	D	273	LYS
1	E	71	LEU
1	E	177	ARG
1	E	184	ARG
1	E	253	GLN
1	E	273	LYS
1	F	71	LEU
1	F	253	GLN
1	F	273	LYS
1	G	71	LEU
1	G	177	ARG
1	G	253	GLN
1	G	273	LYS
1	H	71	LEU
1	H	177	ARG
1	H	253	GLN
1	H	254	PHE
1	H	273	LYS
1	H	355	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (61) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	47	GLN
1	A	57	ASN
1	A	94	HIS
1	A	185	ASN
1	A	197	ASN
1	A	253	GLN
1	A	303	ASN
1	A	362	HIS
1	B	47	GLN
1	B	57	ASN
1	B	94	HIS
1	B	185	ASN
1	B	197	ASN
1	B	253	GLN
1	B	303	ASN
1	B	362	HIS
1	B	429	ASN

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Mol	Chain	Res	Type
1	C	47	GLN
1	C	94	HIS
1	C	185	ASN
1	C	197	ASN
1	C	253	GLN
1	C	303	ASN
1	C	362	HIS
1	D	47	GLN
1	D	197	ASN
1	D	253	GLN
1	D	303	ASN
1	D	362	HIS
1	E	47	GLN
1	E	94	HIS
1	E	185	ASN
1	E	197	ASN
1	E	253	GLN
1	E	303	ASN
1	E	362	HIS
1	F	47	GLN
1	F	94	HIS
1	F	110	GLN
1	F	185	ASN
1	F	197	ASN
1	F	253	GLN
1	F	303	ASN
1	F	362	HIS
1	G	47	GLN
1	G	57	ASN
1	G	94	HIS
1	G	185	ASN
1	G	197	ASN
1	G	253	GLN
1	G	303	ASN
1	G	362	HIS
1	G	368	ASN
1	H	47	GLN
1	H	57	ASN
1	H	94	HIS
1	H	185	ASN
1	H	197	ASN
1	H	253	GLN

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Mol	Chain	Res	Type
1	H	303	ASN
1	H	362	HIS

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 ⓘ

16 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	NDP	A	500	-	52,52,52	1.91	9 (17%)	80,80,80	2.10	15 (18%)
3	SHR	A	501	-	18,18,18	0.79	0	22,22,22	1.04	0
2	NDP	B	500	-	52,52,52	1.95	9 (17%)	80,80,80	2.11	15 (18%)
3	SHR	B	501	-	18,18,18	0.78	0	22,22,22	1.07	0
2	NDP	C	500	-	52,52,52	1.95	9 (17%)	80,80,80	2.11	15 (18%)
3	SHR	C	501	-	18,18,18	0.84	0	22,22,22	1.09	0
2	NDP	D	500	-	52,52,52	1.82	8 (15%)	80,80,80	2.08	14 (17%)
3	SHR	D	501	-	18,18,18	0.78	0	22,22,22	1.07	0
2	NDP	E	500	-	52,52,52	1.95	9 (17%)	80,80,80	2.10	15 (18%)
3	SHR	E	501	-	18,18,18	0.83	0	22,22,22	1.03	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	NDP	F	500	-	52,52,52	1.92	9 (17%)	80,80,80	2.11	14 (17%)
3	SHR	F	501	-	18,18,18	0.75	0	22,22,22	1.09	0
2	NDP	G	500	-	52,52,52	1.89	8 (15%)	80,80,80	2.08	14 (17%)
3	SHR	G	501	-	18,18,18	0.78	0	22,22,22	1.08	0
2	NDP	H	500	-	52,52,52	1.93	9 (17%)	80,80,80	2.11	14 (17%)
3	SHR	H	501	-	18,18,18	0.79	0	22,22,22	1.08	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NDP	A	500	-	-	0/35/77/77	0/3/5/5
3	SHR	A	501	-	-	0/21/21/21	0/0/0/0
2	NDP	B	500	-	-	0/35/77/77	0/3/5/5
3	SHR	B	501	-	-	0/21/21/21	0/0/0/0
2	NDP	C	500	-	-	0/35/77/77	0/3/5/5
3	SHR	C	501	-	-	0/21/21/21	0/0/0/0
2	NDP	D	500	-	-	0/35/77/77	0/3/5/5
3	SHR	D	501	-	-	0/21/21/21	0/0/0/0
2	NDP	E	500	-	-	0/35/77/77	0/3/5/5
3	SHR	E	501	-	-	0/21/21/21	0/0/0/0
2	NDP	F	500	-	-	0/35/77/77	0/3/5/5
3	SHR	F	501	-	-	0/21/21/21	0/0/0/0
2	NDP	G	500	-	-	0/35/77/77	0/3/5/5
3	SHR	G	501	-	-	0/21/21/21	0/0/0/0
2	NDP	H	500	-	-	0/35/77/77	0/3/5/5
3	SHR	H	501	-	-	0/21/21/21	0/0/0/0

All (70) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	500	NDP	C2B-C1B	-5.96	1.42	1.52
2	C	500	NDP	C2B-C1B	-5.95	1.42	1.52
2	E	500	NDP	C2B-C1B	-5.95	1.42	1.52
2	H	500	NDP	C2B-C1B	-5.93	1.42	1.52
2	B	500	NDP	C2B-C1B	-5.85	1.42	1.52
2	G	500	NDP	C2B-C1B	-5.83	1.42	1.52
2	F	500	NDP	C4N-C5N	-5.78	1.36	1.49
2	B	500	NDP	C2N-C3N	5.51	1.45	1.34
2	H	500	NDP	C2N-C3N	5.50	1.45	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	500	NDP	C2B-C1B	-5.49	1.43	1.52
2	E	500	NDP	C4N-C5N	-5.49	1.37	1.49
2	D	500	NDP	C2B-C1B	-5.47	1.43	1.52
2	H	500	NDP	C4N-C5N	-5.39	1.37	1.49
2	C	500	NDP	C4N-C5N	-5.38	1.37	1.49
2	A	500	NDP	C4N-C5N	-5.31	1.37	1.49
2	E	500	NDP	C2N-C3N	5.30	1.45	1.34
2	D	500	NDP	C4N-C5N	-5.27	1.37	1.49
2	G	500	NDP	C4N-C5N	-5.25	1.37	1.49
2	C	500	NDP	C2N-C3N	5.21	1.45	1.34
2	B	500	NDP	C4N-C5N	-5.20	1.37	1.49
2	A	500	NDP	C2N-C3N	5.18	1.44	1.34
2	D	500	NDP	C4N-C3N	-4.96	1.40	1.50
2	G	500	NDP	C2N-C3N	4.95	1.44	1.34
2	F	500	NDP	C4N-C3N	-4.90	1.40	1.50
2	G	500	NDP	C4N-C3N	-4.83	1.40	1.50
2	B	500	NDP	C4N-C3N	-4.80	1.40	1.50
2	C	500	NDP	C4N-C3N	-4.68	1.41	1.50
2	A	500	NDP	C4N-C3N	-4.68	1.41	1.50
2	H	500	NDP	C4N-C3N	-4.68	1.41	1.50
2	F	500	NDP	C2N-C3N	4.64	1.43	1.34
2	E	500	NDP	C4N-C3N	-4.60	1.41	1.50
2	D	500	NDP	C2N-C3N	4.50	1.43	1.34
2	C	500	NDP	C8A-N9A	4.12	1.42	1.36
2	E	500	NDP	C8A-N9A	3.95	1.42	1.36
2	A	500	NDP	C8A-N9A	3.80	1.42	1.36
2	G	500	NDP	C8A-N9A	3.79	1.42	1.36
2	B	500	NDP	C8A-N9A	3.78	1.42	1.36
2	F	500	NDP	C8A-N9A	3.55	1.41	1.36
2	D	500	NDP	C8A-N9A	3.44	1.41	1.36
2	H	500	NDP	C8A-N9A	3.37	1.41	1.36
2	G	500	NDP	P2B-O2B	-3.21	1.50	1.59
2	C	500	NDP	P2B-O2B	-3.17	1.50	1.59
2	E	500	NDP	P2B-O2B	-3.13	1.50	1.59
2	B	500	NDP	P2B-O2B	-3.09	1.50	1.59
2	A	500	NDP	P2B-O2B	-3.09	1.50	1.59
2	H	500	NDP	P2B-O2B	-3.02	1.50	1.59
2	F	500	NDP	P2B-O2B	-3.01	1.50	1.59
2	C	500	NDP	C6N-C5N	2.70	1.39	1.33
2	D	500	NDP	P2B-O2B	-2.61	1.51	1.59
2	B	500	NDP	C6N-C5N	2.59	1.38	1.33
2	A	500	NDP	C2N-N1N	2.58	1.41	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	500	NDP	C6N-C5N	2.57	1.38	1.33
2	E	500	NDP	C6N-C5N	2.49	1.38	1.33
2	A	500	NDP	C6N-C5N	2.45	1.38	1.33
2	E	500	NDP	C4A-N3A	2.45	1.39	1.35
2	C	500	NDP	C2N-N1N	2.40	1.41	1.36
2	E	500	NDP	C2N-N1N	2.40	1.41	1.36
2	G	500	NDP	C6N-C5N	2.38	1.38	1.33
2	B	500	NDP	C4A-N3A	2.38	1.39	1.35
2	B	500	NDP	C2N-N1N	2.34	1.40	1.36
2	H	500	NDP	C2N-N1N	2.33	1.40	1.36
2	C	500	NDP	C4A-N3A	2.33	1.39	1.35
2	D	500	NDP	C6N-C5N	2.31	1.38	1.33
2	F	500	NDP	C4A-N3A	2.27	1.39	1.35
2	D	500	NDP	C2N-N1N	2.20	1.40	1.36
2	H	500	NDP	C4A-N3A	2.18	1.38	1.35
2	A	500	NDP	C4A-N3A	2.17	1.38	1.35
2	G	500	NDP	C2N-N1N	2.14	1.40	1.36
2	F	500	NDP	C2N-N1N	2.07	1.40	1.36
2	F	500	NDP	C6N-C5N	2.05	1.37	1.33

All (116) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	500	NDP	O4B-C1B-N9A	10.19	117.92	108.44
2	A	500	NDP	O4B-C1B-N9A	10.04	117.78	108.44
2	G	500	NDP	O4B-C1B-N9A	9.92	117.66	108.44
2	H	500	NDP	O4B-C1B-N9A	9.85	117.60	108.44
2	B	500	NDP	O4B-C1B-N9A	9.50	117.28	108.44
2	D	500	NDP	O4B-C1B-N9A	9.45	117.23	108.44
2	C	500	NDP	O4B-C1B-N9A	9.40	117.19	108.44
2	E	500	NDP	O4B-C1B-N9A	9.38	117.16	108.44
2	C	500	NDP	P2B-O2B-C2B	7.42	137.57	121.96
2	E	500	NDP	P2B-O2B-C2B	7.08	136.87	121.96
2	B	500	NDP	P2B-O2B-C2B	7.08	136.86	121.96
2	H	500	NDP	P2B-O2B-C2B	7.00	136.70	121.96
2	D	500	NDP	P2B-O2B-C2B	6.61	135.87	121.96
2	F	500	NDP	P2B-O2B-C2B	6.51	135.66	121.96
2	A	500	NDP	P2B-O2B-C2B	6.47	135.59	121.96
2	G	500	NDP	P2B-O2B-C2B	6.00	134.59	121.96
2	C	500	NDP	O2B-C2B-C3B	5.10	131.51	111.54
2	B	500	NDP	O4B-C1B-C2B	5.05	111.67	106.95
2	B	500	NDP	O2B-C2B-C3B	4.97	131.00	111.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	500	NDP	O4B-C1B-C2B	4.97	111.59	106.95
2	E	500	NDP	O2B-C2B-C3B	4.96	130.96	111.54
2	A	500	NDP	O4B-C1B-C2B	4.96	111.58	106.95
2	E	500	NDP	O4B-C1B-C2B	4.92	111.55	106.95
2	G	500	NDP	O4B-C1B-C2B	4.92	111.54	106.95
2	F	500	NDP	C3N-C2N-N1N	-4.88	116.12	123.05
2	F	500	NDP	O4B-C1B-C2B	4.88	111.51	106.95
2	H	500	NDP	O2B-C2B-C3B	4.86	130.55	111.54
2	D	500	NDP	O2B-C2B-C3B	4.80	130.32	111.54
2	H	500	NDP	C3N-C2N-N1N	-4.75	116.31	123.05
2	E	500	NDP	C3N-C2N-N1N	-4.75	116.32	123.05
2	G	500	NDP	C3N-C2N-N1N	-4.72	116.36	123.05
2	A	500	NDP	O2B-C2B-C3B	4.69	129.87	111.54
2	D	500	NDP	O4B-C1B-C2B	4.66	111.30	106.95
2	C	500	NDP	O4B-C1B-C2B	4.65	111.29	106.95
2	G	500	NDP	O2B-C2B-C3B	4.64	129.68	111.54
2	A	500	NDP	C3N-C2N-N1N	-4.62	116.49	123.05
2	F	500	NDP	O2B-C2B-C3B	4.62	129.60	111.54
2	D	500	NDP	C3N-C2N-N1N	-4.60	116.52	123.05
2	B	500	NDP	C3N-C2N-N1N	-4.58	116.55	123.05
2	C	500	NDP	C3N-C2N-N1N	-4.52	116.64	123.05
2	F	500	NDP	N3A-C2A-N1A	-4.34	125.08	128.71
2	D	500	NDP	C5N-C4N-C3N	4.14	123.83	112.60
2	D	500	NDP	N3A-C2A-N1A	-4.14	125.24	128.71
2	B	500	NDP	N3A-C2A-N1A	-4.13	125.25	128.71
2	G	500	NDP	C5N-C4N-C3N	4.10	123.71	112.60
2	E	500	NDP	C5N-C4N-C3N	4.10	123.71	112.60
2	A	500	NDP	C5N-C4N-C3N	4.10	123.70	112.60
2	F	500	NDP	C5N-C4N-C3N	4.10	123.70	112.60
2	C	500	NDP	C5N-C4N-C3N	4.09	123.67	112.60
2	B	500	NDP	C5N-C4N-C3N	4.04	123.54	112.60
2	A	500	NDP	N3A-C2A-N1A	-4.03	125.33	128.71
2	H	500	NDP	C5N-C4N-C3N	4.01	123.45	112.60
2	H	500	NDP	N3A-C2A-N1A	-3.95	125.40	128.71
2	D	500	NDP	C1D-N1N-C2N	-3.95	114.29	121.02
2	E	500	NDP	C4B-O4B-C1B	-3.90	105.52	109.75
2	C	500	NDP	N3A-C2A-N1A	-3.90	125.45	128.71
2	G	500	NDP	N3A-C2A-N1A	-3.88	125.47	128.71
2	E	500	NDP	N3A-C2A-N1A	-3.84	125.50	128.71
2	F	500	NDP	C4B-O4B-C1B	-3.79	105.63	109.75
2	B	500	NDP	C4B-O4B-C1B	-3.76	105.67	109.75
2	G	500	NDP	C1D-N1N-C2N	-3.72	114.69	121.02

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	500	NDP	C4B-O4B-C1B	-3.69	105.74	109.75
2	F	500	NDP	C1D-N1N-C2N	-3.67	114.77	121.02
2	D	500	NDP	C4B-O4B-C1B	-3.66	105.77	109.75
2	G	500	NDP	C4B-O4B-C1B	-3.66	105.77	109.75
2	H	500	NDP	C4B-O4B-C1B	-3.65	105.78	109.75
2	A	500	NDP	C1D-N1N-C2N	-3.62	114.86	121.02
2	A	500	NDP	C4B-O4B-C1B	-3.56	105.88	109.75
2	B	500	NDP	C1D-N1N-C2N	-3.55	114.97	121.02
2	C	500	NDP	C1D-N1N-C2N	-3.51	115.03	121.02
2	E	500	NDP	C1D-N1N-C2N	-3.47	115.11	121.02
2	H	500	NDP	C1D-N1N-C2N	-3.45	115.14	121.02
2	G	500	NDP	C8A-N9A-C4A	-2.71	104.83	106.90
2	C	500	NDP	C8A-N9A-C4A	-2.62	104.90	106.90
2	B	500	NDP	O7N-C7N-N7N	-2.61	116.33	122.93
2	C	500	NDP	O7N-C7N-N7N	-2.59	116.38	122.93
2	E	500	NDP	O7N-C7N-N7N	-2.57	116.43	122.93
2	A	500	NDP	O7N-C7N-N7N	-2.52	116.58	122.93
2	D	500	NDP	O7N-C7N-N7N	-2.51	116.58	122.93
2	G	500	NDP	O7N-C7N-N7N	-2.50	116.62	122.93
2	B	500	NDP	C8A-N9A-C4A	-2.48	105.00	106.90
2	H	500	NDP	O7N-C7N-N7N	-2.48	116.67	122.93
2	E	500	NDP	C8A-N9A-C4A	-2.47	105.01	106.90
2	A	500	NDP	C4N-C3N-C2N	-2.47	118.67	121.68
2	F	500	NDP	C8A-N9A-C4A	-2.46	105.02	106.90
2	A	500	NDP	C8A-N9A-C4A	-2.46	105.03	106.90
2	D	500	NDP	C6N-N1N-C2N	2.41	122.60	119.44
2	C	500	NDP	C4N-C3N-C2N	-2.41	118.74	121.68
2	F	500	NDP	C4N-C5N-C6N	-2.41	118.18	122.61
2	G	500	NDP	C4N-C5N-C6N	-2.41	118.19	122.61
2	H	500	NDP	C8A-N9A-C4A	-2.40	105.06	106.90
2	G	500	NDP	C6N-N1N-C2N	2.38	122.56	119.44
2	D	500	NDP	C4N-C3N-C2N	-2.36	118.80	121.68
2	D	500	NDP	C4N-C5N-C6N	-2.35	118.29	122.61
2	B	500	NDP	C4N-C3N-C2N	-2.35	118.81	121.68
2	F	500	NDP	O7N-C7N-N7N	-2.34	117.01	122.93
2	D	500	NDP	C8A-N9A-C4A	-2.32	105.12	106.90
2	E	500	NDP	C4N-C5N-C6N	-2.32	118.35	122.61
2	G	500	NDP	C4N-C3N-C2N	-2.32	118.85	121.68
2	E	500	NDP	C4N-C3N-C2N	-2.31	118.87	121.68
2	C	500	NDP	C4N-C5N-C6N	-2.28	118.42	122.61
2	H	500	NDP	C4N-C5N-C6N	-2.27	118.44	122.61
2	H	500	NDP	C4N-C3N-C2N	-2.25	118.94	121.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	500	NDP	C6N-N1N-C2N	2.22	122.34	119.44
2	A	500	NDP	C4N-C5N-C6N	-2.22	118.54	122.61
2	B	500	NDP	C4N-C5N-C6N	-2.20	118.56	122.61
2	F	500	NDP	C4N-C3N-C2N	-2.17	119.04	121.68
2	A	500	NDP	C6N-N1N-C2N	2.14	122.25	119.44
2	H	500	NDP	C6N-N1N-C2N	2.10	122.19	119.44
2	B	500	NDP	C2B-C1B-N9A	-2.10	105.79	113.74
2	E	500	NDP	C6N-N1N-C2N	2.09	122.17	119.44
2	B	500	NDP	C6N-N1N-C2N	2.07	122.16	119.44
2	A	500	NDP	C2B-C1B-N9A	-2.07	105.91	113.74
2	C	500	NDP	C6N-N1N-C2N	2.06	122.14	119.44
2	E	500	NDP	C2B-C1B-N9A	-2.05	105.98	113.74
2	C	500	NDP	C2B-C1B-N9A	-2.04	105.99	113.74

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	449/450 (99%)	-0.11	5 (1%) 77 81	20, 30, 50, 67	0
1	B	449/450 (99%)	0.07	21 (4%) 30 33	19, 30, 54, 67	0
1	C	449/450 (99%)	-0.06	8 (1%) 65 69	18, 29, 51, 67	0
1	D	449/450 (99%)	-0.08	9 (2%) 62 67	18, 29, 49, 66	0
1	E	449/450 (99%)	0.09	24 (5%) 25 28	19, 30, 53, 66	0
1	F	449/450 (99%)	-0.09	7 (1%) 68 72	18, 29, 50, 67	0
1	G	449/450 (99%)	-0.07	4 (0%) 81 85	19, 30, 50, 66	0
1	H	449/450 (99%)	0.22	37 (8%) 12 13	20, 31, 54, 66	0
All	All	3592/3600 (99%)	-0.01	115 (3%) 45 50	18, 30, 52, 67	0

All (115) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	449	VAL	7.7
1	H	2	ALA	6.3
1	E	2	ALA	6.3
1	A	2	ALA	5.5
1	B	2	ALA	5.3
1	C	2	ALA	5.2
1	G	449	VAL	5.2
1	F	2	ALA	5.1
1	H	289	SER	5.0
1	H	303	ASN	4.9
1	H	294	GLN	4.7
1	H	274	GLU	4.6
1	C	449	VAL	4.4
1	C	450	ALA	4.3
1	F	371	GLY	4.3
1	G	2	ALA	4.2

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Mol	Chain	Res	Type	RSRZ
1	H	287	LYS	4.1
1	B	291	ALA	4.1
1	B	327	ASP	4.0
1	H	279	LYS	4.0
1	H	329	LYS	4.0
1	H	292	SER	3.9
1	H	267	GLU	3.9
1	B	294	GLN	3.8
1	B	310	GLU	3.8
1	E	289	SER	3.8
1	H	327	ASP	3.7
1	E	288	ALA	3.7
1	H	288	ALA	3.7
1	A	449	VAL	3.6
1	D	449	VAL	3.6
1	E	290	SER	3.6
1	H	290	SER	3.6
1	H	310	GLU	3.6
1	C	448	VAL	3.5
1	H	450	ALA	3.5
1	H	270	PRO	3.5
1	H	269	GLN	3.4
1	B	289	SER	3.4
1	H	302	SER	3.4
1	B	292	SER	3.4
1	E	274	GLU	3.4
1	D	2	ALA	3.4
1	H	309	THR	3.3
1	B	290	SER	3.3
1	B	295	ASP	3.3
1	D	450	ALA	3.2
1	E	294	GLN	3.2
1	E	309	THR	3.2
1	H	277	PRO	3.1
1	E	449	VAL	3.1
1	H	293	GLU	3.1
1	E	450	ALA	3.1
1	B	449	VAL	3.0
1	H	328	LYS	3.0
1	B	274	GLU	3.0
1	B	309	THR	3.0
1	B	288	ALA	2.9

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Mol	Chain	Res	Type	RSRZ
1	E	327	ASP	2.9
1	H	305	THR	2.9
1	A	450	ALA	2.8
1	G	450	ALA	2.8
1	E	310	GLU	2.8
1	H	299	THR	2.8
1	F	373	ARG	2.8
1	G	310	GLU	2.7
1	H	291	ALA	2.7
1	B	269	GLN	2.7
1	B	287	LYS	2.7
1	E	280	GLU	2.7
1	H	308	SER	2.6
1	H	332	PRO	2.6
1	F	450	ALA	2.5
1	E	302	SER	2.5
1	E	283	GLN	2.5
1	F	310	GLU	2.5
1	B	303	ASN	2.4
1	E	308	SER	2.4
1	D	310	GLU	2.4
1	H	280	GLU	2.4
1	D	194	LYS	2.3
1	H	266	ASP	2.3
1	E	303	ASN	2.3
1	H	295	ASP	2.3
1	H	276	ILE	2.3
1	E	328	LYS	2.3
1	E	295	ASP	2.3
1	C	47	GLN	2.3
1	E	267	GLU	2.3
1	H	286	VAL	2.3
1	F	324	ILE	2.3
1	E	313	LYS	2.2
1	H	313	LYS	2.2
1	B	450	ALA	2.2
1	H	449	VAL	2.2
1	A	194	LYS	2.2
1	A	324	ILE	2.2
1	C	372	SER	2.2
1	E	298	SER	2.2
1	B	302	SER	2.2

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Mol	Chain	Res	Type	RSRZ
1	H	326	SER	2.2
1	E	291	ALA	2.1
1	B	267	GLU	2.1
1	E	329	LYS	2.1
1	B	293	GLU	2.1
1	E	287	LYS	2.1
1	H	304	ALA	2.1
1	C	282	THR	2.1
1	H	147	LYS	2.1
1	D	370	ASP	2.0
1	D	309	THR	2.0
1	D	369	LYS	2.0
1	C	310	GLU	2.0
1	B	371	GLY	2.0
1	D	372	SER	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(Å ²)	Q<0.9
3	SHR	E	501	19/19	0.13	2.93	23,28,31,33	0
3	SHR	D	501	19/19	0.14	2.39	20,27,31,32	0
3	SHR	H	501	19/19	0.12	2.17	26,29,34,34	0
3	SHR	F	501	19/19	0.12	2.09	22,27,31,31	0
3	SHR	G	501	19/19	0.13	1.95	21,27,32,34	0
3	SHR	B	501	19/19	0.11	1.53	24,29,32,33	0

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Mol	Type	Chain	Res	Atoms	RSR	LLDF	B-factors(\AA^2)	Q<0.9
3	SHR	A	501	19/19	0.11	1.51	23,28,32,32	0
3	SHR	C	501	19/19	0.11	1.30	21,27,31,32	0
2	NDP	E	500	48/48	0.10	0.62	19,25,40,45	0
2	NDP	B	500	48/48	0.10	0.46	19,23,36,43	0
2	NDP	C	500	48/48	0.10	0.34	16,22,38,42	0
2	NDP	H	500	48/48	0.10	0.25	21,26,38,45	0
2	NDP	D	500	48/48	0.10	0.19	18,24,40,46	0
2	NDP	F	500	48/48	0.10	0.19	19,23,41,46	0
2	NDP	G	500	48/48	0.10	0.00	20,24,40,46	0
2	NDP	A	500	48/48	0.09	-0.05	21,25,40,45	0

6.5 Other polymers ⓘ

There are no such residues in this entry.