



# Full wwPDB X-ray Structure Validation Report ⓘ

Jan 31, 2016 – 08:05 PM GMT

PDB ID : 1IPJ  
Title : CRYSTAL STRUCTURES OF RECOMBINANT AND NATIVE SOYBEAN BETA-CONGLYCININ BETA HOMOTRIMERS COMPLEXES WITH N-A CETYL-D-GLUCOSAMINE  
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Deposited on : 2001-05-16  
Resolution : 2.70 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.  
We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)  
A user guide is available at  
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467  
Mogul : 1.7 (RC4), CSD as536be (2015)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20026688  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk26865

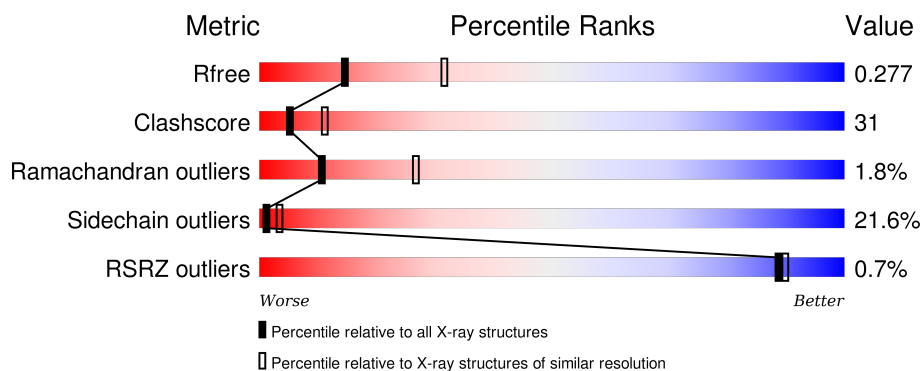
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 2.70 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))
$R_{free}$	91344	2103 (2.70-2.70)
Clashscore	102246	2422 (2.70-2.70)
Ramachandran outliers	100387	2382 (2.70-2.70)
Sidechain outliers	100360	2382 (2.70-2.70)
RSRZ outliers	91569	2107 (2.70-2.70)

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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	416	
1	B	416	
1	C	416	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	NAG	A	902	-	-	-	X
2	NAG	B	903	-	-	-	X
2	NAG	C	904	-	-	-	X

## 2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 8881 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called BETA-CONGLYCININ, BETA CHAIN.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
1	A	357	Total	C	N	O	0	0	0
			2892	1832	511	549			
1	B	363	Total	C	N	O	0	0	0
			2952	1869	527	556			
1	C	368	Total	C	N	O	0	0	0
			2995	1890	537	568			

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	14	LEU	PHE	CONFLICT	UNP P25974
A	29	GLY	VAL	CONFLICT	UNP P25974
A	175	LEU	PHE	CONFLICT	UNP P25974
B	14	LEU	PHE	CONFLICT	UNP P25974
B	29	GLY	VAL	CONFLICT	UNP P25974
B	175	LEU	PHE	CONFLICT	UNP P25974
C	14	LEU	PHE	CONFLICT	UNP P25974
C	29	GLY	VAL	CONFLICT	UNP P25974
C	175	LEU	PHE	CONFLICT	UNP P25974

- Molecule 2 is SUGAR (N-ACETYL-D-GLUCOSAMINE) (three-letter code: NAG) (formula:  $C_8H_{15}NO_6$ ).

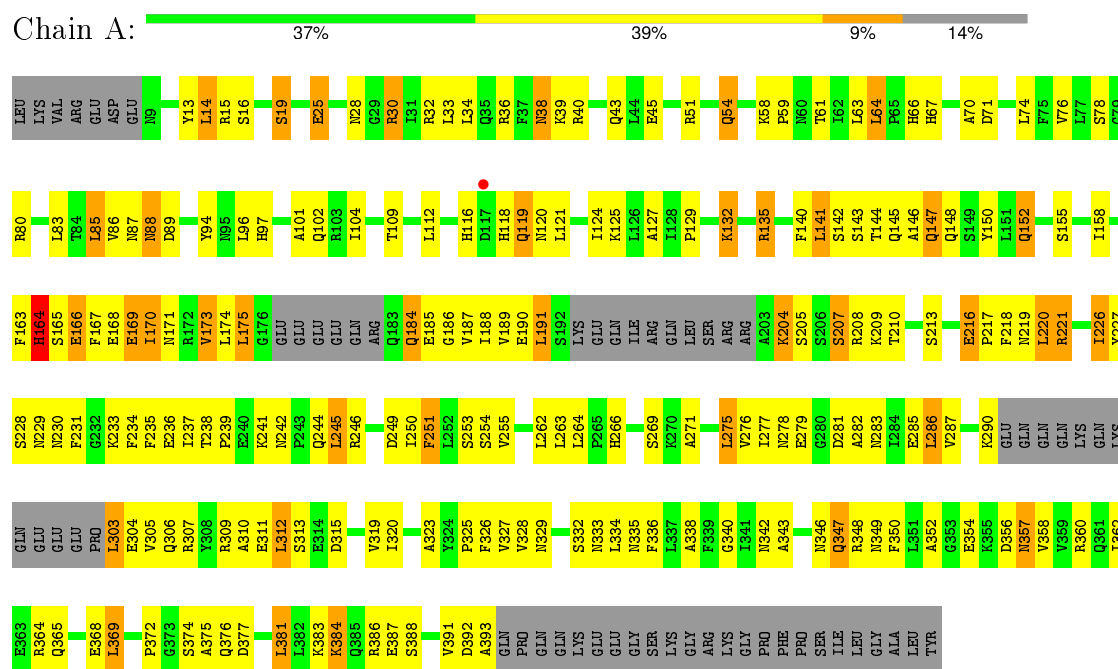


Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			14	8	1	5		
2	B	1	Total	C	N	O	0	0
			14	8	1	5		
2	C	1	Total	C	N	O	0	0
			14	8	1	5		

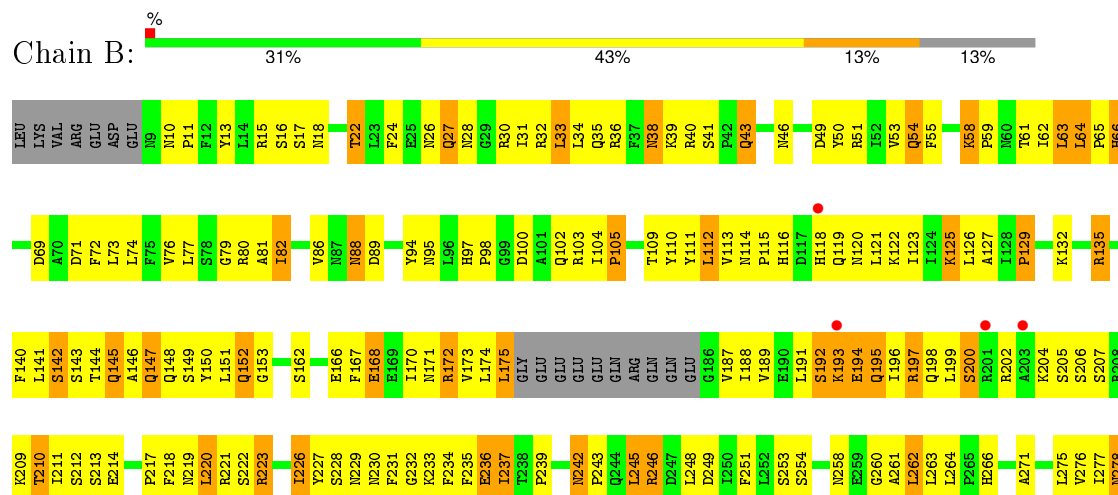
### 3 Residue-property plots

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: BETA-CONGLYCININ, BETA CHAIN



#### • Molecule 1: BETA-CONGLYCININ, BETA CHAIN





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	82.78 Å 69.47 Å 125.33 Å 90.00° 97.22° 90.00°	Depositor
Resolution (Å)	7.00 – 2.70 7.00 – 2.80	Depositor EDS
% Data completeness (in resolution range)	(Not available) (7.00-2.70) 77.5 (7.00-2.80)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	0.06	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	3.50 (at 2.81 Å)	Xtriage
Refinement program	X-PLOR 3.851	Depositor
R, $R_{free}$	0.202 , 0.284 0.215 , 0.277	Depositor DCC
$R_{free}$ test set	2577 reflections (10.14%)	DCC
Wilson B-factor (Å <sup>2</sup> )	48.9	Xtriage
Anisotropy	0.347	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.34 , 88.1	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtriage
Outliers	1 of 25403 reflections (0.004%)	Xtriage
$F_o, F_c$ correlation	0.91	EDS
Total number of atoms	8881	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	25.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.67% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 0.2 for perfectly twinned datasets.



## 5 Model quality

### 5.1 Standard geometry

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

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	0.34	0/2949	0.60	0/3991
1	B	0.33	0/3010	0.59	0/4072
1	C	0.32	0/3053	0.57	0/4129
All	All	0.33	0/9012	0.59	0/12192

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2892	0	2835	182	0
1	B	2952	0	2911	211	0
1	C	2995	0	2939	189	0
2	A	14	0	13	2	0
2	B	14	0	13	2	0
2	C	14	0	13	3	0
All	All	8881	0	8724	538	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 31.

All (538) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:95:ASN:HB3	1:B:205:SER:HB3	1.21	1.09
1:A:144:THR:HG22	1:A:146:ALA:H	1.17	1.04
1:C:25:GLU:HB2	1:C:30:ARG:HB2	1.44	1.00
1:A:25:GLU:HB2	1:A:30:ARG:HB2	1.45	0.94
1:C:364:ARG:HG2	1:C:375:ALA:HB1	1.50	0.94
1:A:242:ASN:HD21	1:A:244:GLN:HB2	1.34	0.93
1:B:220:LEU:HD22	1:B:237:ILE:HD11	1.52	0.92
1:C:329:ASN:OD1	2:C:904:NAG:H62	1.70	0.90
1:B:170:ILE:HA	1:C:381:LEU:HD11	1.54	0.89
1:A:365:GLN:HB3	1:C:195:GLN:HE21	1.38	0.88
1:C:144:THR:HG22	1:C:146:ALA:H	1.39	0.87
1:A:286:LEU:HD21	1:A:320:ILE:HG23	1.55	0.87
1:C:14:LEU:HD21	1:C:40:ARG:HD2	1.60	0.83
1:B:219:ASN:HD22	1:B:222:SER:H	1.26	0.83
1:C:220:LEU:HD21	1:C:252:LEU:HB3	1.62	0.82
1:B:102:GLN:HB2	1:B:217:PRO:HB3	1.64	0.80
1:A:305:VAL:HG21	1:C:150:TYR:HA	1.63	0.80
1:C:38:ASN:ND2	1:C:48:ARG:HA	1.97	0.80
1:A:15:ARG:O	1:A:19:SER:HB2	1.80	0.80
1:A:368:GLU:HB2	1:A:375:ALA:HB2	1.62	0.79
1:C:194:GLU:HG2	1:C:198:GLN:HE21	1.47	0.79
1:A:271:ALA:H	1:A:346:ASN:ND2	1.82	0.78
1:A:387:GLU:HB3	1:A:391:VAL:HG12	1.65	0.78
1:A:76:VAL:HG21	1:A:96:LEU:HB3	1.67	0.77
1:C:103:ARG:HB3	1:C:244:GLN:HE21	1.49	0.76
1:B:144:THR:HG22	1:B:146:ALA:H	1.50	0.76
1:B:58:LYS:HB3	1:B:59:PRO:HD2	1.66	0.76
1:B:357:ASN:HD21	1:B:359:VAL:HG13	1.49	0.76
1:B:170:ILE:HG13	1:B:171:ASN:N	2.01	0.76
1:A:283:ASN:OD1	1:A:311:GLU:HG2	1.87	0.75
1:A:38:ASN:H	1:A:38:ASN:HD22	1.32	0.75
1:B:58:LYS:HB3	1:B:59:PRO:CD	2.17	0.75
1:C:32:ARG:HH21	1:C:54:GLN:NE2	1.84	0.75
1:A:88:ASN:HD22	1:A:88:ASN:C	1.91	0.75
1:B:147:GLN:NE2	1:B:187:VAL:HG12	2.02	0.75
1:B:211:ILE:HG21	1:B:223:ARG:NH1	2.02	0.74
1:A:251:PHE:HD1	1:A:343:ALA:HB2	1.51	0.74
1:C:283:ASN:OD1	1:C:311:GLU:HG2	1.88	0.74
1:A:290:LYS:HG3	1:A:306:GLN:HB2	1.69	0.74
1:C:219:ASN:HB3	1:C:222:SER:HB3	1.68	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:144:THR:HG22	1:B:145:GLN:N	2.03	0.73
1:A:169:GLU:O	1:A:173:VAL:HG23	1.89	0.73
1:C:239:PRO:HB3	1:C:246:ARG:HA	1.70	0.73
1:C:97:HIS:O	1:C:100:ASP:HB2	1.89	0.72
1:B:153:GLY:O	1:C:307:ARG:HD3	1.88	0.72
1:B:173:VAL:HB	1:C:381:LEU:HD12	1.72	0.72
1:B:381:LEU:HD23	1:B:384:LYS:HG3	1.71	0.71
1:B:174:LEU:O	1:C:371:PHE:HB3	1.90	0.71
1:A:116:HIS:CD2	1:A:119:GLN:HB2	2.26	0.70
1:B:150:TYR:HA	1:C:305:VAL:HG21	1.72	0.70
1:A:204:LYS:HD3	1:A:205:SER:H	1.56	0.70
1:A:365:GLN:HB3	1:C:195:GLN:NE2	2.06	0.70
1:A:251:PHE:HD1	1:A:343:ALA:CB	2.05	0.70
1:C:38:ASN:HD22	1:C:48:ARG:HA	1.57	0.70
1:A:307:ARG:HD3	1:C:153:GLY:O	1.92	0.70
1:A:167:PHE:CE2	1:A:171:ASN:HB2	2.26	0.70
1:C:144:THR:CG2	1:C:146:ALA:H	2.03	0.69
1:B:144:THR:CG2	1:B:145:GLN:N	2.54	0.69
1:C:53:VAL:HB	1:C:125:LYS:HG3	1.73	0.69
1:A:251:PHE:CE1	1:A:340:GLY:HA3	2.28	0.69
1:B:383:LYS:HZ3	1:B:386:ARG:HH21	1.39	0.69
1:B:38:ASN:H	1:B:38:ASN:HD22	1.41	0.69
1:C:74:LEU:HD23	1:C:104:ILE:HD11	1.75	0.69
1:B:277:ILE:HD12	1:B:334:LEU:HD11	1.75	0.69
1:B:51:ARG:O	1:B:126:LEU:HD12	1.93	0.68
1:C:266:HIS:HB3	1:C:350:PHE:CD1	2.29	0.68
1:C:144:THR:HG22	1:C:146:ALA:N	2.09	0.68
1:B:147:GLN:HE21	1:B:187:VAL:HG12	1.59	0.68
1:A:278:ASN:HB3	1:A:335:ASN:ND2	2.09	0.68
1:C:116:HIS:CD2	1:C:119:GLN:HB2	2.29	0.67
1:B:210:THR:HG23	1:B:210:THR:O	1.94	0.67
1:A:220:LEU:HD13	1:A:254:SER:HB3	1.76	0.67
1:A:184:GLN:NE2	1:A:189:VAL:HG11	2.09	0.67
1:A:88:ASN:HD22	1:A:89:ASP:N	1.92	0.67
1:B:231:PHE:CE1	1:B:392:ASP:HB2	2.29	0.67
1:B:116:HIS:HD2	1:B:118:HIS:H	1.44	0.66
1:B:285:GLU:HB2	1:B:327:VAL:HG12	1.76	0.66
1:C:231:PHE:CZ	1:C:392:ASP:HB2	2.31	0.66
1:B:22:THR:HG23	1:B:32:ARG:HG2	1.76	0.66
1:A:303:LEU:HB2	1:C:147:GLN:HB2	1.78	0.65
1:B:167:PHE:CD2	1:B:170:ILE:HD11	2.31	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:50:TYR:O	1:B:51:ARG:HG2	1.96	0.65
1:B:357:ASN:ND2	1:B:359:VAL:HG13	2.10	0.65
1:A:287:VAL:CG2	1:C:153:GLY:HA3	2.25	0.65
1:B:116:HIS:CD2	1:B:119:GLN:H	2.15	0.65
1:A:85:LEU:HD12	1:A:94:TYR:HE2	1.61	0.65
1:C:275:LEU:HD11	1:C:318:PHE:HB3	1.79	0.65
1:B:220:LEU:CD2	1:B:237:ILE:HD11	2.27	0.64
1:B:357:ASN:O	1:B:360:ARG:HB2	1.97	0.64
1:A:83:LEU:HA	1:A:112:LEU:HD12	1.80	0.64
1:C:192:SER:HB2	1:C:195:GLN:HG3	1.78	0.64
1:B:53:VAL:HB	1:B:125:LYS:HG3	1.78	0.64
1:B:221:ARG:C	1:B:223:ARG:H	2.01	0.64
1:C:112:LEU:HD21	1:C:123:ILE:HD12	1.80	0.64
1:C:144:THR:HB	1:C:147:GLN:OE1	1.96	0.64
1:B:350:PHE:O	1:B:357:ASN:HA	1.97	0.64
1:C:196:ILE:O	1:C:200:SER:HB2	1.97	0.64
1:A:327:VAL:HG11	1:C:158:ILE:HG12	1.80	0.63
1:C:36:ARG:NH1	1:C:39:LYS:HE2	2.12	0.63
1:A:278:ASN:HB3	1:A:335:ASN:HD22	1.64	0.63
1:C:10:ASN:HD22	1:C:12:PHE:H	1.45	0.63
1:B:144:THR:CG2	1:B:145:GLN:H	2.11	0.63
1:C:82:ILE:HD11	1:C:200:SER:OG	1.99	0.63
1:C:14:LEU:CD2	1:C:40:ARG:HD2	2.28	0.63
1:C:341:ILE:HG22	1:C:342:ASN:ND2	2.14	0.63
1:B:62:ILE:HA	1:B:112:LEU:O	1.99	0.63
1:A:226:ILE:HG13	1:A:234:PHE:O	1.98	0.63
1:C:32:ARG:HH21	1:C:54:GLN:HE22	1.46	0.63
1:A:242:ASN:ND2	1:A:244:GLN:HB2	2.09	0.63
1:B:231:PHE:CZ	1:B:392:ASP:HB2	2.34	0.63
1:A:242:ASN:HD22	1:A:245:LEU:H	1.46	0.62
2:C:904:NAG:H3	2:C:904:NAG:O7	1.98	0.62
1:C:60:ASN:OD1	1:C:196:ILE:HD12	1.99	0.62
1:C:85:LEU:HD12	1:C:94:TYR:HE2	1.65	0.62
1:A:263:LEU:HB3	1:A:328:VAL:HB	1.80	0.62
1:B:36:ARG:NH1	1:B:135:ARG:HD3	2.14	0.62
1:C:342:ASN:HD22	1:C:342:ASN:N	1.97	0.62
1:B:194:GLU:HG2	1:B:197:ARG:NH2	2.14	0.62
1:A:85:LEU:CD2	1:A:104:ILE:HG23	2.29	0.62
1:A:287:VAL:HG21	1:C:153:GLY:HA3	1.81	0.62
1:B:88:ASN:HD22	1:B:89:ASP:N	1.97	0.62
1:C:219:ASN:HD22	1:C:222:SER:H	1.47	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:285:GLU:HB2	1:C:327:VAL:HG12	1.81	0.61
1:B:264:LEU:HD13	1:B:352:ALA:O	1.98	0.61
1:B:368:GLU:HB2	1:B:375:ALA:HB2	1.81	0.61
1:C:77:LEU:HD13	1:C:278:ASN:ND2	2.15	0.61
1:A:266:HIS:HB2	1:A:349:ASN:O	2.01	0.61
1:A:80:ARG:O	1:A:121:LEU:HD13	2.00	0.61
1:B:31:ILE:HG12	1:B:55:PHE:HD1	1.65	0.61
1:A:286:LEU:CD2	1:A:320:ILE:HG23	2.31	0.61
1:A:207:SER:OG	1:A:208:ARG:N	2.34	0.61
1:B:170:ILE:HA	1:C:381:LEU:CD1	2.30	0.61
1:B:73:LEU:HD22	1:B:248:LEU:HD12	1.83	0.60
1:B:13:TYR:OH	1:B:15:ARG:HG3	2.01	0.60
1:A:213:SER:OG	1:A:216:GLU:HG3	2.01	0.60
1:C:36:ARG:HB2	1:C:39:LYS:HG3	1.81	0.60
1:A:144:THR:HG22	1:A:146:ALA:N	2.03	0.60
1:B:193:LYS:HE2	1:B:194:GLU:N	2.16	0.60
1:B:28:ASN:OD1	1:B:61:THR:HG21	2.01	0.60
1:A:184:GLN:HE21	1:A:189:VAL:HG11	1.66	0.60
1:C:25:GLU:CB	1:C:30:ARG:HB2	2.25	0.60
1:C:147:GLN:NE2	1:C:187:VAL:HG12	2.17	0.59
1:A:220:LEU:HD13	1:A:254:SER:CB	2.33	0.59
1:B:263:LEU:O	1:B:327:VAL:HG23	2.01	0.59
1:A:285:GLU:HB2	1:A:327:VAL:HG12	1.85	0.59
1:A:28:ASN:HB3	1:A:61:THR:HG21	1.84	0.59
1:A:383:LYS:NZ	1:A:386:ARG:HH22	2.01	0.59
1:C:364:ARG:CG	1:C:375:ALA:HB1	2.30	0.59
1:B:242:ASN:HD22	1:B:242:ASN:C	2.05	0.59
1:B:66:HIS:HB3	1:B:140:PHE:CD2	2.36	0.59
1:B:148:GLN:OE1	1:C:304:GLU:HA	2.03	0.59
1:A:34:LEU:O	1:A:51:ARG:NH2	2.36	0.59
1:C:194:GLU:HG2	1:C:198:GLN:NE2	2.17	0.58
1:C:220:LEU:CD2	1:C:252:LEU:HB3	2.33	0.58
1:A:266:HIS:O	1:A:325:PRO:HA	2.02	0.58
1:B:36:ARG:HB2	1:B:39:LYS:HG3	1.86	0.58
1:B:219:ASN:HD22	1:B:222:SER:N	1.99	0.58
1:B:196:ILE:O	1:B:200:SER:OG	2.21	0.58
1:B:239:PRO:O	1:B:246:ARG:HD2	2.04	0.58
1:B:278:ASN:HB3	1:B:335:ASN:HD22	1.68	0.58
1:A:155:SER:HG	1:A:158:ILE:HD12	1.69	0.57
1:B:275:LEU:HD23	1:B:320:ILE:HD11	1.86	0.57
1:B:94:TYR:CD1	1:B:217:PRO:HD3	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:173:VAL:HG12	1:B:173:VAL:O	2.03	0.57
1:A:147:GLN:NE2	1:A:187:VAL:HG12	2.19	0.57
1:C:387:GLU:HG3	1:C:388:SER:H	1.69	0.57
1:B:195:GLN:O	1:B:199:LEU:HG	2.04	0.57
1:C:237:ILE:HG22	1:C:245:LEU:HD23	1.86	0.57
1:A:165:SER:HB3	1:A:169:GLU:OE2	2.05	0.57
1:C:361:GLN:HA	1:C:361:GLN:HE21	1.70	0.57
1:A:185:GLU:HG3	1:A:185:GLU:O	2.04	0.57
1:A:144:THR:CG2	1:A:145:GLN:N	2.68	0.56
1:A:58:LYS:HB3	1:A:59:PRO:HD2	1.87	0.56
1:B:34:LEU:HG	1:B:35:GLN:H	1.70	0.56
1:C:284:ILE:O	1:C:309:ARG:HA	2.05	0.56
1:B:95:ASN:HB3	1:B:205:SER:CB	2.14	0.56
1:C:305:VAL:HG12	1:C:306:GLN:N	2.21	0.56
1:B:278:ASN:HB3	1:B:335:ASN:ND2	2.20	0.56
1:C:201:ARG:O	1:C:202:ARG:HB2	2.04	0.56
1:B:251:PHE:CE1	1:B:340:GLY:HA3	2.41	0.56
1:C:10:ASN:HD21	1:C:12:PHE:HD2	1.54	0.55
1:B:167:PHE:CE2	1:B:170:ILE:HD11	2.41	0.55
1:B:211:ILE:HG21	1:B:223:ARG:HH12	1.70	0.55
1:A:38:ASN:H	1:A:38:ASN:ND2	2.02	0.55
1:A:303:LEU:CB	1:C:147:GLN:HB2	2.35	0.55
1:C:286:LEU:HB3	1:C:308:TYR:HB2	1.89	0.55
1:C:193:LYS:O	1:C:197:ARG:HB2	2.07	0.55
1:B:383:LYS:NZ	1:B:386:ARG:NH2	2.55	0.55
1:B:245:LEU:O	1:B:249:ASP:N	2.39	0.55
1:A:381:LEU:HD11	1:C:170:ILE:HG22	1.89	0.55
1:C:113:VAL:HG12	1:C:115:PRO:HD3	1.89	0.55
1:C:34:LEU:O	1:C:51:ARG:NH2	2.39	0.55
1:A:148:GLN:NE2	1:A:152:GLN:HE22	2.04	0.55
1:A:333:ASN:HD22	1:A:333:ASN:H	1.55	0.55
1:B:24:PHE:CD2	1:B:187:VAL:HG22	2.42	0.54
1:A:25:GLU:HB2	1:A:30:ARG:CB	2.28	0.54
1:C:219:ASN:HD22	1:C:222:SER:N	2.05	0.54
1:B:383:LYS:HZ3	1:B:386:ARG:NH2	2.06	0.54
1:C:33:LEU:HD21	1:C:51:ARG:NH2	2.22	0.54
1:A:290:LYS:HB2	1:A:304:GLU:O	2.06	0.54
1:C:231:PHE:CE1	1:C:392:ASP:HB2	2.43	0.54
1:C:10:ASN:HD22	1:C:10:ASN:C	2.11	0.54
1:B:387:GLU:HB2	1:B:391:VAL:HG12	1.90	0.54
1:B:210:THR:CG2	1:B:210:THR:O	2.56	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:26:ASN:C	1:B:28:ASN:H	2.11	0.54
1:C:191:LEU:HD23	1:C:196:ILE:HG12	1.90	0.54
1:C:263:LEU:HD13	1:C:390:PHE:CE1	2.43	0.54
1:C:112:LEU:HD21	1:C:123:ILE:CD1	2.37	0.54
1:C:145:GLN:HB2	1:C:185:GLU:O	2.08	0.54
1:A:88:ASN:HB3	1:B:349:ASN:HD22	1.73	0.54
1:C:359:VAL:O	1:C:359:VAL:HG12	2.08	0.54
1:A:144:THR:HG23	1:A:184:GLN:O	2.08	0.54
1:B:266:HIS:HB3	1:B:350:PHE:CD1	2.43	0.54
1:A:220:LEU:HD22	1:A:235:PHE:HB3	1.89	0.54
1:A:357:ASN:HD22	1:A:360:ARG:H	1.56	0.54
1:B:236:GLU:HG3	1:B:236:GLU:O	2.08	0.54
1:C:55:PHE:CE2	1:C:112:LEU:HD23	2.43	0.53
1:B:192:SER:HB2	1:B:195:GLN:HG3	1.90	0.53
1:A:102:GLN:HB2	1:A:217:PRO:HB3	1.90	0.53
1:B:86:VAL:HG23	1:B:109:THR:HB	1.90	0.53
1:B:289:ILE:HG21	1:B:303:LEU:HD13	1.90	0.53
1:B:167:PHE:O	1:B:170:ILE:HG12	2.08	0.53
1:A:173:VAL:CG1	1:B:377:ASP:HB3	2.37	0.53
1:A:369:LEU:HD23	1:C:184:GLN:OE1	2.07	0.53
1:A:263:LEU:HD23	1:A:328:VAL:HG21	1.90	0.53
1:B:275:LEU:HD23	1:B:320:ILE:CD1	2.38	0.53
1:C:144:THR:CG2	1:C:145:GLN:N	2.71	0.53
1:B:271:ALA:H	1:B:346:ASN:ND2	2.07	0.53
1:C:226:ILE:HD11	1:C:236:GLU:HB3	1.91	0.53
1:A:33:LEU:HD21	1:A:51:ARG:NH1	2.23	0.53
1:B:111:TYR:CE1	1:C:362:ILE:HG23	2.44	0.53
2:C:904:NAG:C3	2:C:904:NAG:O7	2.56	0.53
1:A:372:PRO:HG3	1:C:175:LEU:O	2.08	0.53
1:C:287:VAL:CG2	1:C:325:PRO:HD2	2.38	0.53
1:A:287:VAL:HG12	1:A:325:PRO:O	2.09	0.53
1:C:116:HIS:HD2	1:C:119:GLN:H	1.56	0.53
1:C:10:ASN:ND2	1:C:12:PHE:H	2.05	0.53
1:B:266:HIS:O	1:B:325:PRO:HA	2.09	0.53
1:B:103:ARG:O	1:B:105:PRO:HD3	2.09	0.53
1:B:227:TYR:HB2	1:B:234:PHE:CB	2.39	0.52
1:A:346:ASN:O	1:A:347:GLN:HG2	2.09	0.52
1:C:33:LEU:CD2	1:C:51:ARG:NH2	2.72	0.52
1:B:235:PHE:HB2	1:B:254:SER:O	2.10	0.52
1:A:58:LYS:HA	1:A:120:ASN:OD1	2.10	0.52
1:A:279:GLU:HG2	1:A:335:ASN:HB3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:270:LYS:H	1:C:346:ASN:HD22	1.57	0.52
1:A:170:ILE:HD13	1:A:171:ASN:N	2.24	0.52
1:B:334:LEU:HG	1:B:335:ASN:N	2.25	0.52
1:B:229:ASN:C	1:B:231:PHE:H	2.13	0.52
1:A:86:VAL:HG22	1:A:109:THR:HB	1.90	0.52
1:A:173:VAL:HG11	1:B:377:ASP:HB3	1.91	0.52
1:B:194:GLU:HG2	1:B:197:ARG:HH21	1.72	0.52
1:B:88:ASN:HD22	1:B:89:ASP:H	1.57	0.52
1:C:33:LEU:CD2	1:C:51:ARG:HH22	2.23	0.52
1:B:262:LEU:HB2	1:B:329:ASN:HA	1.92	0.52
1:B:212:SER:HA	1:B:243:PRO:HD2	1.91	0.52
1:B:162:SER:HB3	1:C:264:LEU:HD22	1.92	0.51
1:A:144:THR:CG2	1:A:186:GLY:H	2.22	0.51
1:A:271:ALA:N	1:A:346:ASN:ND2	2.56	0.51
1:C:237:ILE:CG2	1:C:245:LEU:HD23	2.40	0.51
1:A:287:VAL:CG1	1:A:325:PRO:HD2	2.41	0.51
1:A:271:ALA:H	1:A:346:ASN:HD22	1.57	0.51
1:A:360:ARG:HH21	1:A:383:LYS:HD3	1.74	0.51
1:A:210:THR:HG23	1:A:218:PHE:HA	1.91	0.51
1:A:155:SER:OG	1:A:158:ILE:HD12	2.10	0.51
1:C:30:ARG:NH2	1:C:32:ARG:CZ	2.73	0.51
1:A:204:LYS:HD3	1:A:205:SER:N	2.24	0.51
1:B:229:ASN:O	1:B:231:PHE:N	2.44	0.51
1:C:242:ASN:HD22	1:C:244:GLN:H	1.59	0.51
1:B:97:HIS:O	1:B:100:ASP:HB2	2.11	0.51
1:C:236:GLU:OE1	1:C:348:ARG:NH2	2.39	0.51
1:A:309:ARG:CG	1:A:310:ALA:N	2.74	0.51
1:A:235:PHE:O	1:A:253:SER:HA	2.11	0.51
1:A:227:TYR:OH	1:A:348:ARG:HD2	2.10	0.51
1:C:94:TYR:HA	1:C:204:LYS:O	2.12	0.50
1:B:383:LYS:NZ	1:B:386:ARG:HH21	2.09	0.50
1:B:228:SER:HB2	1:B:233:LYS:HG2	1.92	0.50
1:A:88:ASN:C	1:A:88:ASN:ND2	2.63	0.50
1:A:190:GLU:C	1:A:191:LEU:HD23	2.31	0.50
1:C:281:ASP:HB2	1:C:331:THR:OG1	2.11	0.50
1:C:24:PHE:HZ	1:C:186:GLY:HA3	1.77	0.50
1:C:189:VAL:CG2	1:C:190:GLU:N	2.75	0.50
1:C:103:ARG:H	1:C:244:GLN:HE22	1.60	0.50
1:C:342:ASN:N	1:C:342:ASN:ND2	2.59	0.50
1:B:113:VAL:HG12	1:B:115:PRO:HD3	1.94	0.50
1:A:237:ILE:HG22	1:A:245:LEU:HD23	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:63:LEU:HD23	1:B:187:VAL:O	2.11	0.49
1:A:219:ASN:ND2	1:A:221:ARG:H	2.10	0.49
1:C:275:LEU:CD1	1:C:318:PHE:HB3	2.42	0.49
1:C:226:ILE:HG13	1:C:234:PHE:O	2.12	0.49
1:B:312:LEU:HD21	1:B:318:PHE:CD2	2.47	0.49
1:A:70:ALA:HB2	1:A:129:PRO:HA	1.92	0.49
1:C:144:THR:HG23	1:C:145:GLN:N	2.28	0.49
1:A:238:THR:HB	1:A:239:PRO:HD2	1.93	0.49
1:A:245:LEU:O	1:A:249:ASP:N	2.44	0.49
1:B:260:GLY:O	1:B:393:ALA:HB2	2.12	0.49
1:C:10:ASN:HD22	1:C:12:PHE:N	2.09	0.49
1:A:80:ARG:HD3	1:A:97:HIS:CE1	2.48	0.49
1:A:87:ASN:O	1:B:361:GLN:HG3	2.12	0.49
1:B:151:LEU:CD2	1:C:351:LEU:HD13	2.42	0.49
1:B:82:ILE:HG22	1:B:82:ILE:O	2.11	0.49
1:C:357:ASN:HD22	1:C:357:ASN:C	2.15	0.49
1:A:74:LEU:HD23	1:A:104:ILE:HD11	1.93	0.49
1:C:227:TYR:OH	1:C:348:ARG:HD2	2.12	0.49
1:A:309:ARG:HG3	1:A:310:ALA:N	2.28	0.49
1:A:271:ALA:N	1:A:346:ASN:HD22	2.10	0.49
1:C:242:ASN:HB3	1:C:245:LEU:HB2	1.94	0.49
1:A:245:LEU:HG	1:A:250:ILE:O	2.13	0.49
1:B:175:LEU:N	1:B:175:LEU:CD1	2.75	0.49
1:A:383:LYS:HZ1	1:A:386:ARG:HH22	1.61	0.49
1:C:309:ARG:HG2	1:C:310:ALA:N	2.28	0.49
1:B:276:VAL:HG22	1:B:317:VAL:HG22	1.94	0.49
1:B:102:GLN:OE1	1:B:217:PRO:HB3	2.13	0.48
1:A:287:VAL:HG23	1:C:153:GLY:HA3	1.93	0.48
1:A:132:LYS:CD	1:A:135:ARG:HD3	2.43	0.48
1:A:66:HIS:HB3	1:A:140:PHE:CD2	2.47	0.48
1:C:24:PHE:CE2	1:C:188:ILE:HG13	2.48	0.48
1:C:305:VAL:HG12	1:C:306:GLN:H	1.77	0.48
1:C:88:ASN:HD22	1:C:89:ASP:N	2.11	0.48
1:C:74:LEU:O	1:C:74:LEU:HD12	2.13	0.48
1:B:77:LEU:HD12	1:B:122:LYS:HE3	1.95	0.48
1:A:251:PHE:CD1	1:A:343:ALA:HB2	2.40	0.48
1:C:288:GLY:O	1:C:306:GLN:N	2.44	0.48
1:C:216:GLU:HB3	1:C:217:PRO:HD2	1.96	0.48
1:B:32:ARG:HH21	1:B:54:GLN:CD	2.17	0.48
1:A:264:LEU:HD22	1:A:352:ALA:HB3	1.96	0.48
1:B:16:SER:HB2	1:B:315:ASP:O	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:32:ARG:NH2	1:C:54:GLN:HE22	2.10	0.48
1:B:149:SER:O	1:B:152:GLN:HB2	2.14	0.48
1:B:283:ASN:OD1	1:B:311:GLU:HG2	2.14	0.48
1:C:62:ILE:HA	1:C:112:LEU:O	2.14	0.48
1:C:85:LEU:CD2	1:C:104:ILE:HG23	2.43	0.48
1:A:242:ASN:ND2	1:A:244:GLN:H	2.12	0.48
1:C:62:ILE:HG23	1:C:62:ILE:O	2.14	0.48
1:C:15:ARG:HD3	1:C:17:SER:OG	2.13	0.48
1:C:10:ASN:OD1	1:C:308:TYR:HB3	2.13	0.47
1:C:279:GLU:HG2	1:C:279:GLU:O	2.14	0.47
1:B:51:ARG:O	1:B:126:LEU:HA	2.14	0.47
1:B:28:ASN:OD1	1:B:61:THR:CG2	2.63	0.47
1:B:95:ASN:CB	1:B:205:SER:HB3	2.16	0.47
1:A:220:LEU:HD22	1:A:235:PHE:CB	2.45	0.47
1:B:260:GLY:HA2	2:B:903:NAG:H83	1.95	0.47
1:C:33:LEU:HD23	1:C:51:ARG:HH22	1.78	0.47
1:A:374:SER:HB3	1:A:377:ASP:CG	2.35	0.47
1:C:36:ARG:HH21	1:C:135:ARG:HG3	1.79	0.47
1:B:226:ILE:HD11	1:B:234:PHE:CD1	2.49	0.47
1:A:231:PHE:CE1	1:A:392:ASP:HB2	2.49	0.47
1:A:16:SER:HB3	1:A:315:ASP:O	2.15	0.47
1:A:144:THR:HG22	1:A:145:GLN:N	2.29	0.47
1:A:239:PRO:O	1:A:246:ARG:HB2	2.14	0.47
1:A:132:LYS:NZ	1:A:135:ARG:HD3	2.29	0.47
1:A:253:SER:OG	1:A:338:ALA:HB3	2.15	0.47
1:B:227:TYR:HB2	1:B:234:PHE:HB3	1.97	0.47
1:B:76:VAL:HG22	1:B:123:ILE:HD11	1.97	0.47
1:B:49:ASP:O	1:B:129:PRO:HD2	2.15	0.47
1:B:144:THR:HG23	1:B:145:GLN:H	1.78	0.46
1:B:58:LYS:O	1:B:114:ASN:ND2	2.48	0.46
1:A:286:LEU:HD23	1:A:326:PHE:HB3	1.97	0.46
1:A:277:ILE:HD11	1:A:312:LEU:CD1	2.46	0.46
1:C:88:ASN:ND2	1:C:88:ASN:H	2.13	0.46
1:C:66:HIS:HB3	1:C:140:PHE:CD2	2.50	0.46
1:C:103:ARG:H	1:C:244:GLN:NE2	2.14	0.46
1:C:194:GLU:O	1:C:198:GLN:HG3	2.15	0.46
1:B:251:PHE:HD1	1:B:343:ALA:CB	2.28	0.46
1:C:210:THR:HG21	1:C:217:PRO:O	2.16	0.46
1:A:32:ARG:HH21	1:A:54:GLN:NE2	2.13	0.46
1:B:251:PHE:CD2	1:B:251:PHE:C	2.88	0.46
1:A:231:PHE:CZ	1:A:392:ASP:HB2	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:79:GLY:O	1:B:98:PRO:HG3	2.15	0.46
1:A:163:PHE:O	1:A:164:HIS:CB	2.64	0.46
1:C:171:ASN:OD1	1:C:177:GLU:HG3	2.16	0.46
1:C:124:ILE:HD12	1:C:276:VAL:HG11	1.98	0.46
1:C:103:ARG:CB	1:C:244:GLN:HE21	2.24	0.46
1:A:13:TYR:CE1	1:A:15:ARG:HB2	2.50	0.46
1:A:116:HIS:HD2	1:A:119:GLN:H	1.63	0.46
1:A:287:VAL:HG13	1:A:325:PRO:HD2	1.98	0.46
1:A:334:LEU:HG	1:A:335:ASN:N	2.30	0.46
1:C:286:LEU:HD11	1:C:321:PRO:HD2	1.97	0.46
1:B:41:SER:OG	1:B:43:GLN:HB2	2.16	0.46
1:B:218:PHE:CD1	1:B:218:PHE:N	2.84	0.46
1:B:38:ASN:ND2	1:B:38:ASN:H	2.11	0.45
1:C:34:LEU:HB2	1:C:52:ILE:HB	1.98	0.45
1:B:227:TYR:HB2	1:B:234:PHE:HB2	1.98	0.45
1:C:252:LEU:HD23	1:C:252:LEU:HA	1.82	0.45
1:B:350:PHE:HB2	1:B:356:ASP:O	2.17	0.45
1:B:86:VAL:CG2	1:B:109:THR:HB	2.47	0.45
1:C:251:PHE:CD2	1:C:251:PHE:C	2.89	0.45
1:A:28:ASN:HB2	1:A:188:ILE:HG22	1.99	0.45
1:B:80:ARG:HD2	1:B:97:HIS:CE1	2.52	0.45
1:B:229:ASN:ND2	1:B:390:PHE:O	2.48	0.45
1:A:70:ALA:CB	1:A:129:PRO:HA	2.46	0.45
1:A:88:ASN:HB3	1:B:349:ASN:ND2	2.31	0.45
1:A:332:SER:O	1:A:333:ASN:C	2.54	0.45
1:A:281:ASP:O	1:A:282:ALA:HB2	2.17	0.45
1:A:271:ALA:H	1:A:346:ASN:HD21	1.58	0.45
1:B:228:SER:HA	1:B:232:GLY:O	2.17	0.45
1:A:323:ALA:HB3	1:C:69:ASP:HB3	1.99	0.45
1:A:158:ILE:HD12	1:B:285:GLU:OE1	2.17	0.45
1:B:226:ILE:HD11	1:B:234:PHE:HD1	1.80	0.45
1:B:226:ILE:CD1	1:B:236:GLU:HG2	2.47	0.45
1:C:207:SER:OG	1:C:208:ARG:N	2.49	0.45
1:A:393:ALA:HB1	2:A:902:NAG:H83	1.98	0.45
1:B:282:ALA:HB2	1:B:334:LEU:HD22	1.99	0.45
1:C:24:PHE:CZ	1:C:186:GLY:HA3	2.52	0.44
1:C:80:ARG:HD2	1:C:97:HIS:CE1	2.53	0.44
1:C:89:ASP:C	1:C:89:ASP:OD1	2.56	0.44
1:B:88:ASN:ND2	1:B:88:ASN:H	2.14	0.44
1:A:309:ARG:HG3	1:A:310:ALA:H	1.80	0.44
2:A:902:NAG:C8	1:C:161:THR:OG1	2.65	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:69:ASP:HB3	1:C:323:ALA:HB3	1.97	0.44
1:C:38:ASN:ND2	1:C:48:ARG:CA	2.77	0.44
1:A:269:SER:OG	1:A:347:GLN:N	2.46	0.44
1:B:221:ARG:C	1:B:223:ARG:N	2.69	0.44
1:A:383:LYS:NZ	1:A:386:ARG:NH2	2.65	0.44
1:C:33:LEU:HD21	1:C:51:ARG:CZ	2.48	0.44
1:C:235:PHE:HB2	1:C:254:SER:O	2.17	0.44
1:B:286:LEU:HB3	1:B:308:TYR:HB2	1.99	0.44
1:A:175:LEU:N	1:A:175:LEU:CD1	2.80	0.44
1:B:72:PHE:HE2	1:B:127:ALA:HB2	1.82	0.44
1:A:226:ILE:HD11	1:A:236:GLU:HB3	1.98	0.44
1:B:86:VAL:HG23	1:B:86:VAL:O	2.18	0.44
1:B:74:LEU:HB3	1:B:125:LYS:HB3	1.99	0.44
1:C:145:GLN:HG3	1:C:184:GLN:O	2.17	0.44
1:C:116:HIS:CD2	1:C:119:GLN:CB	3.00	0.44
1:B:88:ASN:ND2	1:B:88:ASN:N	2.65	0.44
1:A:51:ARG:HB2	1:A:127:ALA:HB3	2.00	0.44
1:A:36:ARG:HD2	1:A:39:LYS:HD3	2.00	0.44
1:C:287:VAL:HA	1:C:306:GLN:O	2.18	0.44
1:A:158:ILE:HG13	2:B:903:NAG:H61	1.99	0.44
1:C:236:GLU:CD	1:C:348:ARG:HH12	2.19	0.44
1:B:175:LEU:N	1:B:175:LEU:HD12	2.33	0.44
1:A:45:GLU:OE2	1:C:133:PRO:HG3	2.18	0.44
1:B:381:LEU:C	1:B:383:LYS:H	2.21	0.43
1:C:262:LEU:HB2	1:C:328:VAL:O	2.18	0.43
1:B:343:ALA:O	1:B:344:GLU:C	2.56	0.43
1:C:260:GLY:O	1:C:393:ALA:HB3	2.19	0.43
1:A:64:LEU:HB3	1:A:142:SER:HB3	1.99	0.43
1:C:145:GLN:HB2	1:C:185:GLU:HA	2.01	0.43
1:B:66:HIS:NE2	1:B:110:TYR:CE1	2.86	0.43
1:C:332:SER:O	1:C:333:ASN:C	2.56	0.43
1:A:173:VAL:CG1	1:B:373:GLY:HA3	2.48	0.43
1:C:226:ILE:HD11	1:C:236:GLU:CB	2.47	0.43
1:B:229:ASN:C	1:B:231:PHE:N	2.72	0.43
1:B:235:PHE:O	1:B:253:SER:HA	2.18	0.43
1:A:13:TYR:CE2	1:A:312:LEU:HD23	2.53	0.43
1:C:275:LEU:HD12	1:C:275:LEU:O	2.19	0.43
1:B:76:VAL:HA	1:B:123:ILE:HG12	2.00	0.43
1:C:259:GLU:HB2	1:C:332:SER:HA	2.01	0.43
1:A:350:PHE:O	1:A:357:ASN:HA	2.19	0.43
1:B:226:ILE:HD11	1:B:236:GLU:HG2	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:358:VAL:C	1:C:360:ARG:H	2.22	0.43
1:B:381:LEU:HD23	1:B:384:LYS:CG	2.44	0.43
1:A:357:ASN:ND2	1:A:360:ARG:H	2.17	0.43
1:C:93:SER:O	1:C:203:ALA:HA	2.19	0.43
1:C:83:LEU:O	1:C:93:SER:HA	2.19	0.43
1:B:10:ASN:HA	1:B:11:PRO:HD2	1.83	0.43
1:C:147:GLN:HG2	1:C:148:GLN:O	2.19	0.42
1:B:219:ASN:ND2	1:B:222:SER:N	2.66	0.42
1:A:14:LEU:HD13	1:A:40:ARG:HD3	2.01	0.42
1:A:14:LEU:CD1	1:A:40:ARG:HD3	2.48	0.42
1:B:94:TYR:HA	1:B:204:LYS:O	2.19	0.42
1:C:12:PHE:HB3	1:C:319:VAL:O	2.19	0.42
1:C:250:ILE:HG22	1:C:251:PHE:N	2.33	0.42
1:B:170:ILE:CA	1:C:381:LEU:HD11	2.37	0.42
1:A:384:LYS:HD2	1:C:165:SER:HG	1.83	0.42
1:B:81:ALA:HB2	1:B:121:LEU:HD11	2.00	0.42
1:B:170:ILE:HG22	1:C:381:LEU:HD21	2.01	0.42
1:A:356:ASP:HA	1:C:88:ASN:HB2	2.01	0.42
1:A:221:ARG:NH1	1:A:235:PHE:CE1	2.87	0.42
1:B:74:LEU:HD21	1:B:104:ILE:HD11	2.00	0.42
1:C:286:LEU:CB	1:C:308:TYR:HB2	2.48	0.42
1:B:191:LEU:HA	1:B:191:LEU:HD12	1.91	0.42
1:A:150:TYR:HA	1:B:305:VAL:HG21	2.01	0.42
1:A:239:PRO:CB	1:A:246:ARG:HA	2.49	0.42
1:B:168:GLU:O	1:B:172:ARG:HB2	2.20	0.42
1:A:67:HIS:CD2	1:B:323:ALA:HB1	2.55	0.42
1:A:67:HIS:NE2	1:B:323:ALA:HB1	2.34	0.42
1:B:74:LEU:O	1:B:74:LEU:HD12	2.20	0.42
1:C:287:VAL:HG22	1:C:325:PRO:HD2	2.01	0.42
1:B:62:ILE:HG13	1:B:112:LEU:O	2.19	0.42
1:B:170:ILE:CG1	1:B:171:ASN:N	2.76	0.42
1:A:286:LEU:HD21	1:A:320:ILE:CG2	2.39	0.42
1:B:220:LEU:HD13	1:B:237:ILE:CG1	2.50	0.41
1:A:173:VAL:HG12	1:B:373:GLY:HA3	2.02	0.41
1:B:33:LEU:HD21	1:B:51:ARG:NH2	2.34	0.41
1:C:229:ASN:O	1:C:231:PHE:N	2.53	0.41
1:B:236:GLU:OE2	1:B:348:ARG:NH1	2.53	0.41
1:A:218:PHE:CD1	1:A:218:PHE:N	2.87	0.41
1:B:151:LEU:HD21	1:C:351:LEU:HD13	2.02	0.41
1:C:24:PHE:CD2	1:C:187:VAL:HG22	2.55	0.41
1:A:251:PHE:CD1	1:A:343:ALA:CB	2.95	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:392:ASP:OD2	1:B:393:ALA:N	2.53	0.41
1:B:374:SER:O	1:B:378:VAL:HG23	2.21	0.41
1:A:32:ARG:HH21	1:A:54:GLN:CD	2.23	0.41
1:B:50:TYR:C	1:B:51:ARG:HG2	2.40	0.41
1:B:89:ASP:C	1:C:361:GLN:OE1	2.58	0.41
1:A:147:GLN:HE21	1:A:187:VAL:HG12	1.86	0.41
1:C:10:ASN:ND2	1:C:12:PHE:HD2	2.17	0.41
1:B:239:PRO:HB3	1:B:246:ARG:HA	2.02	0.41
1:A:276:VAL:O	1:A:336:PHE:HB2	2.21	0.41
1:B:167:PHE:CE1	1:B:171:ASN:HB2	2.56	0.41
1:B:170:ILE:HG13	1:B:171:ASN:H	1.80	0.41
1:B:28:ASN:HB3	1:B:188:ILE:O	2.20	0.41
1:B:192:SER:CB	1:B:195:GLN:HG3	2.50	0.41
1:A:166:GLU:H	1:A:166:GLU:HG3	1.63	0.41
1:C:36:ARG:HH11	1:C:39:LYS:HE2	1.84	0.41
1:A:275:LEU:HD23	1:A:320:ILE:HD11	2.03	0.41
1:C:74:LEU:C	1:C:74:LEU:HD12	2.41	0.41
1:B:278:ASN:HB3	1:B:335:ASN:O	2.20	0.41
1:B:26:ASN:O	1:B:28:ASN:N	2.54	0.41
1:B:251:PHE:CD1	1:B:340:GLY:HA3	2.56	0.41
1:C:34:LEU:CB	1:C:52:ILE:HB	2.51	0.41
1:A:229:ASN:O	1:A:231:PHE:N	2.53	0.41
1:B:81:ALA:HB2	1:B:121:LEU:CD1	2.50	0.41
1:B:220:LEU:HD13	1:B:237:ILE:HD11	2.03	0.41
1:C:11:PRO:HA	1:C:40:ARG:HH21	1.85	0.41
1:A:88:ASN:O	1:B:356:ASP:HA	2.21	0.41
1:A:141:LEU:HD11	1:B:359:VAL:HB	2.02	0.41
1:B:147:GLN:HE21	1:B:187:VAL:CG1	2.28	0.41
1:B:381:LEU:C	1:B:383:LYS:N	2.74	0.41
1:B:251:PHE:HD1	1:B:343:ALA:HB1	1.85	0.41
1:B:380:ARG:HE	1:B:380:ARG:HB3	1.64	0.41
1:C:379:GLU:O	1:C:379:GLU:HG2	2.18	0.41
1:B:331:THR:O	1:B:332:SER:CB	2.69	0.41
1:C:368:GLU:OE1	1:C:375:ALA:N	2.50	0.41
1:A:271:ALA:CB	1:A:346:ASN:ND2	2.84	0.41
1:A:251:PHE:CD1	1:A:340:GLY:HA3	2.56	0.41
1:B:346:ASN:C	1:B:347:GLN:HG2	2.42	0.41
1:B:65:PRO:HG3	1:B:111:TYR:CD1	2.56	0.41
1:A:132:LYS:HG3	1:A:132:LYS:H	1.60	0.41
1:B:64:LEU:HD23	1:B:142:SER:OG	2.21	0.40
1:A:174:LEU:HD22	1:B:371:PHE:CE2	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:74:LEU:O	1:A:101:ALA:HA	2.21	0.40
1:A:190:GLU:O	1:A:191:LEU:HD23	2.20	0.40
1:B:276:VAL:O	1:B:336:PHE:HB2	2.22	0.40
1:A:163:PHE:O	1:A:164:HIS:HB2	2.20	0.40
1:C:124:ILE:HD11	1:C:276:VAL:HG21	2.03	0.40
1:C:56:GLN:HA	1:C:121:LEU:O	2.21	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	349/416 (84%)	316 (90%)	30 (9%)	3 (1%)	21	49
1	B	357/416 (86%)	301 (84%)	45 (13%)	11 (3%)	5	12
1	C	362/416 (87%)	309 (85%)	48 (13%)	5 (1%)	14	35
All	All	1068/1248 (86%)	926 (87%)	123 (12%)	19 (2%)	11	27

All (19) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	332	SER
1	B	344	GLU
1	C	202	ARG
1	A	164	HIS
1	A	230	ASN
1	B	27	GLN
1	B	46	ASN
1	B	206	SER
1	B	230	ASN
1	B	321	PRO
1	C	230	ASN

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Mol	Chain	Res	Type
1	A	168	GLU
1	B	129	PRO
1	C	184	GLN
1	B	58	LYS
1	B	261	ALA
1	C	389	TYR
1	B	105	PRO
1	C	216	GLU

### 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	321/375 (86%)	257 (80%)	64 (20%)	1	4
1	B	328/375 (88%)	254 (77%)	74 (23%)	1	3
1	C	332/375 (88%)	258 (78%)	74 (22%)	1	3
All	All	981/1125 (87%)	769 (78%)	212 (22%)	1	3

All (212) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	14	LEU
1	A	19	SER
1	A	25	GLU
1	A	30	ARG
1	A	38	ASN
1	A	43	GLN
1	A	54	GLN
1	A	63	LEU
1	A	64	LEU
1	A	71	ASP
1	A	78	SER
1	A	85	LEU
1	A	88	ASN
1	A	118	HIS

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Mol	Chain	Res	Type
1	A	119	GLN
1	A	124	ILE
1	A	125	LYS
1	A	132	LYS
1	A	135	ARG
1	A	141	LEU
1	A	143	SER
1	A	147	GLN
1	A	152	GLN
1	A	164	HIS
1	A	166	GLU
1	A	169	GLU
1	A	170	ILE
1	A	173	VAL
1	A	175	LEU
1	A	184	GLN
1	A	191	LEU
1	A	204	LYS
1	A	207	SER
1	A	209	LYS
1	A	216	GLU
1	A	220	LEU
1	A	221	ARG
1	A	226	ILE
1	A	228	SER
1	A	233	LYS
1	A	241	LYS
1	A	245	LEU
1	A	251	PHE
1	A	255	VAL
1	A	262	LEU
1	A	275	LEU
1	A	286	LEU
1	A	303	LEU
1	A	312	LEU
1	A	313	SER
1	A	319	VAL
1	A	329	ASN
1	A	342	ASN
1	A	347	GLN
1	A	354	GLU
1	A	357	ASN

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Mol	Chain	Res	Type
1	A	358	VAL
1	A	362	ILE
1	A	364	ARG
1	A	369	LEU
1	A	376	GLN
1	A	381	LEU
1	A	384	LYS
1	A	388	SER
1	B	17	SER
1	B	18	ASN
1	B	22	THR
1	B	27	GLN
1	B	30	ARG
1	B	33	LEU
1	B	38	ASN
1	B	40	ARG
1	B	43	GLN
1	B	54	GLN
1	B	63	LEU
1	B	64	LEU
1	B	66	HIS
1	B	71	ASP
1	B	82	ILE
1	B	88	ASN
1	B	112	LEU
1	B	120	ASN
1	B	125	LYS
1	B	132	LYS
1	B	135	ARG
1	B	141	LEU
1	B	142	SER
1	B	143	SER
1	B	145	GLN
1	B	147	GLN
1	B	152	GLN
1	B	166	GLU
1	B	168	GLU
1	B	172	ARG
1	B	175	LEU
1	B	189	VAL
1	B	192	SER
1	B	193	LYS

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Mol	Chain	Res	Type
1	B	194	GLU
1	B	195	GLN
1	B	197	ARG
1	B	198	GLN
1	B	200	SER
1	B	202	ARG
1	B	207	SER
1	B	209	LYS
1	B	210	THR
1	B	213	SER
1	B	214	GLU
1	B	220	LEU
1	B	223	ARG
1	B	226	ILE
1	B	236	GLU
1	B	237	ILE
1	B	242	ASN
1	B	245	LEU
1	B	246	ARG
1	B	258	ASN
1	B	262	LEU
1	B	278	ASN
1	B	286	LEU
1	B	289	ILE
1	B	303	LEU
1	B	306	GLN
1	B	307	ARG
1	B	313	SER
1	B	319	VAL
1	B	329	ASN
1	B	348	ARG
1	B	357	ASN
1	B	358	VAL
1	B	359	VAL
1	B	362	ILE
1	B	376	GLN
1	B	377	ASP
1	B	380	ARG
1	B	381	LEU
1	B	386	ARG
1	C	9	ASN
1	C	10	ASN

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Mol	Chain	Res	Type
1	C	16	SER
1	C	21	GLN
1	C	27	GLN
1	C	30	ARG
1	C	33	LEU
1	C	40	ARG
1	C	46	ASN
1	C	54	GLN
1	C	63	LEU
1	C	64	LEU
1	C	71	ASP
1	C	80	ARG
1	C	85	LEU
1	C	88	ASN
1	C	118	HIS
1	C	119	GLN
1	C	124	ILE
1	C	125	LYS
1	C	128	ILE
1	C	132	LYS
1	C	135	ARG
1	C	141	LEU
1	C	144	THR
1	C	147	GLN
1	C	149	SER
1	C	152	GLN
1	C	157	ASN
1	C	169	GLU
1	C	172	ARG
1	C	175	LEU
1	C	184	GLN
1	C	189	VAL
1	C	192	SER
1	C	193	LYS
1	C	197	ARG
1	C	199	LEU
1	C	200	SER
1	C	201	ARG
1	C	202	ARG
1	C	206	SER
1	C	208	ARG
1	C	211	ILE

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Mol	Chain	Res	Type
1	C	213	SER
1	C	220	LEU
1	C	221	ARG
1	C	222	SER
1	C	226	ILE
1	C	227	TYR
1	C	237	ILE
1	C	242	ASN
1	C	245	LEU
1	C	259	GLU
1	C	262	LEU
1	C	279	GLU
1	C	281	ASP
1	C	286	LEU
1	C	312	LEU
1	C	313	SER
1	C	332	SER
1	C	342	ASN
1	C	347	GLN
1	C	354	GLU
1	C	357	ASN
1	C	360	ARG
1	C	361	GLN
1	C	365	GLN
1	C	371	PHE
1	C	374	SER
1	C	381	LEU
1	C	386	ARG
1	C	387	GLU
1	C	388	SER

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (70) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	18	ASN
1	A	38	ASN
1	A	43	GLN
1	A	88	ASN
1	A	116	HIS
1	A	119	GLN
1	A	152	GLN
1	A	157	ASN

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Mol	Chain	Res	Type
1	A	171	ASN
1	A	183	GLN
1	A	184	GLN
1	A	219	ASN
1	A	242	ASN
1	A	244	GLN
1	A	258	ASN
1	A	278	ASN
1	A	333	ASN
1	A	335	ASN
1	A	345	ASN
1	A	346	ASN
1	A	349	ASN
1	A	357	ASN
1	A	361	GLN
1	B	35	GLN
1	B	38	ASN
1	B	43	GLN
1	B	67	HIS
1	B	88	ASN
1	B	95	ASN
1	B	116	HIS
1	B	119	GLN
1	B	145	GLN
1	B	147	GLN
1	B	171	ASN
1	B	195	GLN
1	B	219	ASN
1	B	242	ASN
1	B	244	GLN
1	B	278	ASN
1	B	306	GLN
1	B	335	ASN
1	B	346	ASN
1	B	349	ASN
1	B	357	ASN
1	B	361	GLN
1	B	365	GLN
1	C	10	ASN
1	C	21	GLN
1	C	38	ASN
1	C	54	GLN

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Mol	Chain	Res	Type
1	C	88	ASN
1	C	116	HIS
1	C	119	GLN
1	C	120	ASN
1	C	145	GLN
1	C	183	GLN
1	C	195	GLN
1	C	198	GLN
1	C	219	ASN
1	C	242	ASN
1	C	244	GLN
1	C	258	ASN
1	C	278	ASN
1	C	335	ASN
1	C	342	ASN
1	C	346	ASN
1	C	347	GLN
1	C	349	ASN
1	C	357	ASN
1	C	365	GLN

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

## 5.6 Ligand geometry ⓘ

3 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	NAG	A	902	1	14,14,15	0.55	0	15,19,21	0.81	1 (6%)
2	NAG	B	903	1	14,14,15	0.51	0	15,19,21	0.59	0
2	NAG	C	904	1	14,14,15	0.81	0	15,19,21	1.48	2 (13%)

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	NAG	A	902	1	-	0/6/23/26	0/1/1/1
2	NAG	B	903	1	-	0/6/23/26	0/1/1/1
2	NAG	C	904	1	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	904	NAG	C4-C3-C2	-2.86	106.78	111.23
2	A	902	NAG	C2-N2-C7	-2.48	119.85	123.04
2	C	904	NAG	C1-O5-C5	4.58	118.06	112.25

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

3 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	902	NAG	2	0
2	B	903	NAG	2	0
2	C	904	NAG	3	0

## 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 [i](#)

### 6.1 Protein, DNA and RNA chains [i](#)

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	357/416 (85%)	-0.52	1 (0%) 94 95	3, 20, 36, 50	0
1	B	363/416 (87%)	-0.08	4 (1%) 82 83	6, 30, 48, 64	0
1	C	368/416 (88%)	-0.42	3 (0%) 87 88	3, 23, 42, 53	0
All	All	1088/1248 (87%)	-0.34	8 (0%) 89 90	3, 24, 44, 64	0

All (8) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	203	ALA	3.9
1	B	201	ARG	3.6
1	B	118	HIS	2.8
1	C	9	ASN	2.7
1	B	193	LYS	2.4
1	A	117	ASP	2.3
1	C	365	GLN	2.3
1	C	376	GLN	2.2

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

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

### 6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

### 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. 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, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(Å <sup>2</sup> )	Q<0.9
2	NAG	B	903	14/15	0.75	0.38	5.33	56,60,64,66	0
2	NAG	C	904	14/15	0.73	0.37	5.26	45,51,55,55	0
2	NAG	A	902	14/15	0.83	0.30	3.79	41,45,48,49	0

## 6.5 Other polymers

There are no such residues in this entry.