Full wwPDB X-ray Structure Validation Report ⓘ

May 14, 2020 – 07:05 pm BST

PDB ID	:	1QXS
Title	:	CRYSTAL STRUCTURE OF Trypanosoma cruzi GLYCERALDEHYDE-3-PHOSPHATE DEHYDROGENASE COMPLEXED WITH AN ANALOGUE OF 1,3- BisPHOSPHO-D-GLYCERIC ACID
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Deposited on	:	2003-09-08
Resolution	:	2.75 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

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

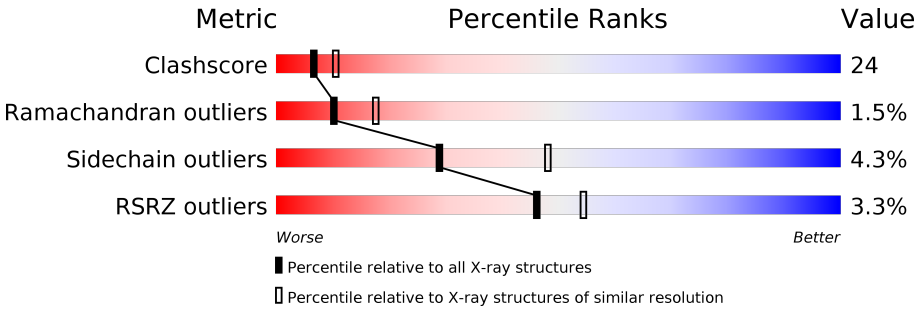
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.11
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.11

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.75 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))
Clashscore	141614	1277 (2.78-2.74)
Ramachandran outliers	138981	1257 (2.78-2.74)
Sidechain outliers	138945	1257 (2.78-2.74)
RSRZ outliers	127900	1207 (2.78-2.74)

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 respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% 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	359	2% 61% 36%
1	B	359	4% 57% 40%
1	C	359	5% 55% 43%
1	D	359	% 63% 35%

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
3	S70	A	804	-	-	-	X

2 Entry composition

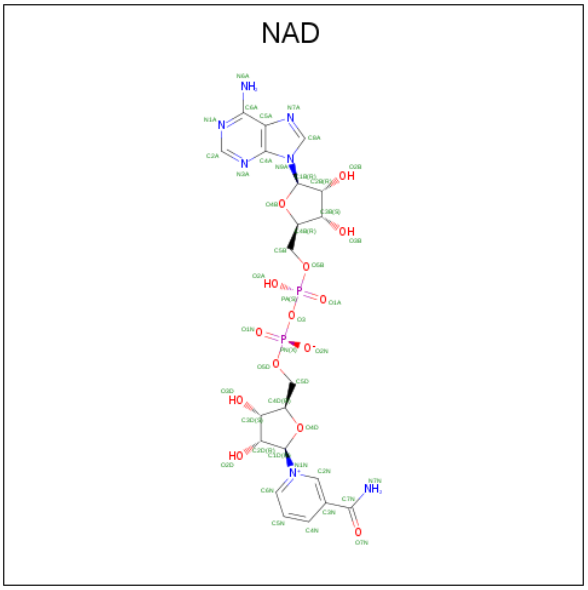
There are 4 unique types of molecules in this entry. The entry contains 11576 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Glyceraldehyde 3-phosphate dehydrogenase, glycosomal.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	C	359	Total	C	N	O	S	0	0	0
			2733	1717	483	520	13			
1	D	359	Total	C	N	O	S	0	0	0
			2733	1717	483	520	13			
1	A	359	Total	C	N	O	S	0	0	0
			2733	1717	483	520	13			
1	B	359	Total	C	N	O	S	0	0	0
			2733	1717	483	520	13			

- Molecule 2 is NICOTINAMIDE-ADENINE-DINUCLEOTIDE (three-letter code: NAD) (formula: $C_{21}H_{27}N_7O_{14}P_2$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	C	1	Total	C	N	O	P	0	0
			44	21	7	14	2		
2	D	1	Total	C	N	O	P	0	0
			44	21	7	14	2		

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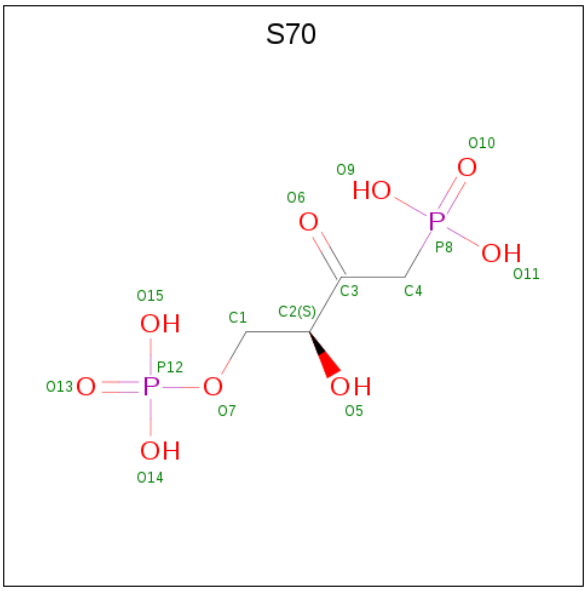
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			44	21	7	14	2		
2	B	1	Total	C	N	O	P	0	0
			44	21	7	14	2		

- Molecule 3 is 3-HYDROXY-2-OXO-4-PHOPHONOXY- BUTYL)-PHOSPHONIC ACID (three-letter code: S70) (formula: $C_4H_{10}O_9P_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	O	P	0	0
			15	4	9	2		

- Molecule 4 is water.

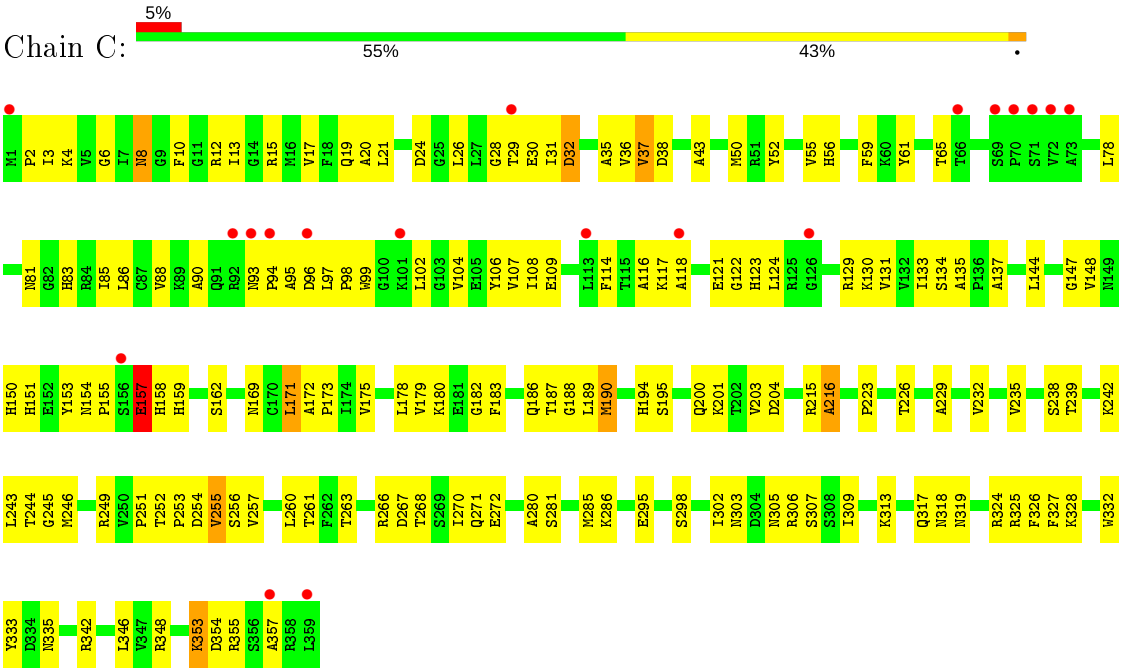
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	C	76	Total	O	0	0
			76	76		
4	D	127	Total	O	0	0
			127	127		
4	A	122	Total	O	0	0
			122	122		
4	B	128	Total	O	0	0
			128	128		

3 Residue-property plots (i)

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

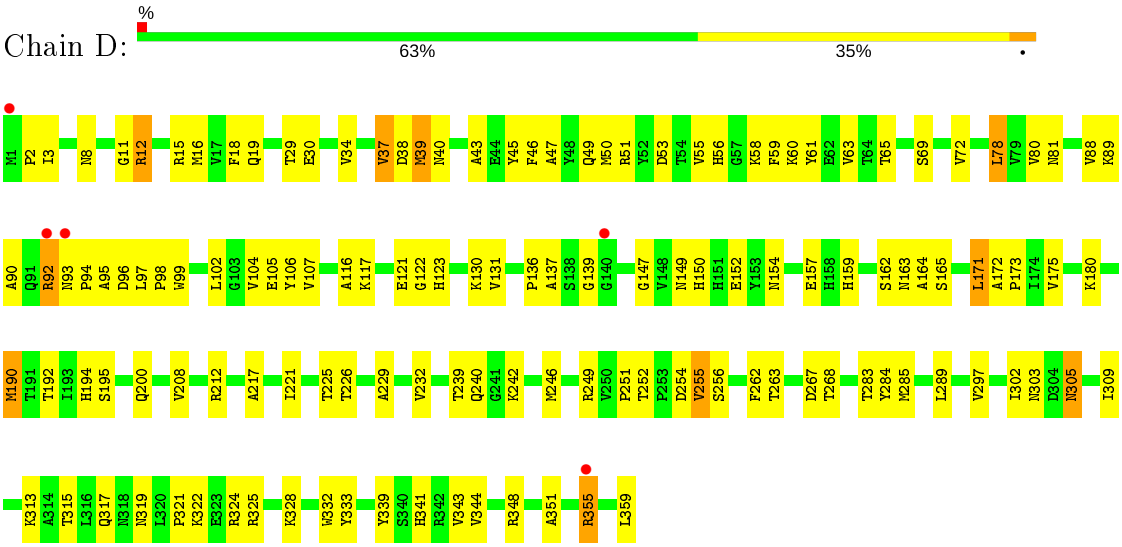
- Molecule 1: Glyceraldehyde 3-phosphate dehydrogenase, glycosomal

Chain C:



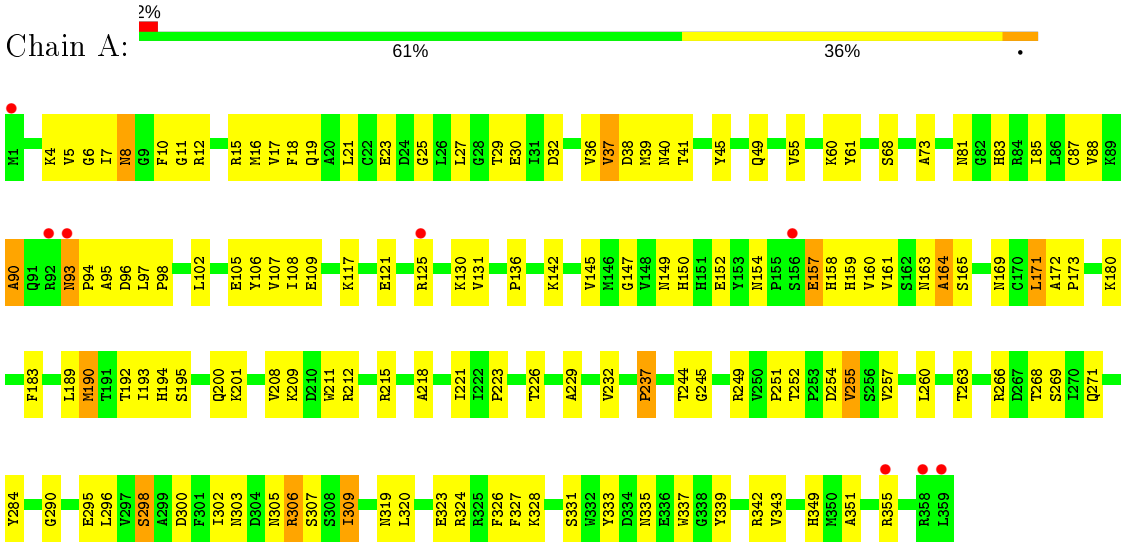
- Molecule 1: Glyceraldehyde 3-phosphate dehydrogenase, glycosomal

Chain D:



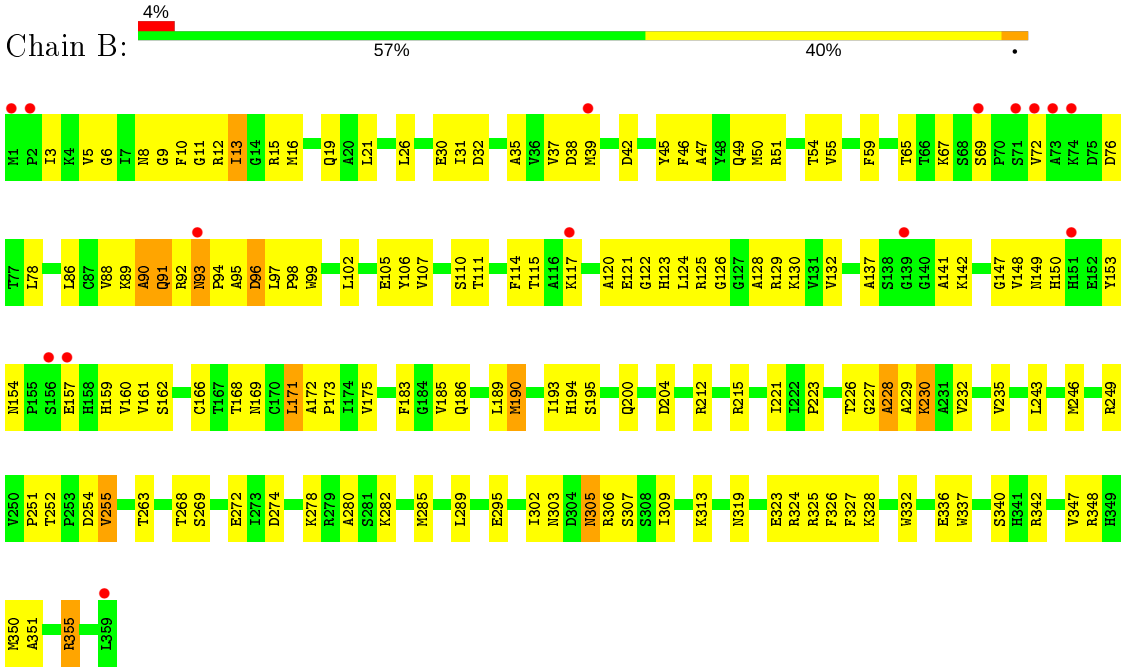
• Molecule 1: Glyceraldehyde 3-phosphate dehydrogenase, glycosomal

Chain A:



• Molecule 1: Glyceraldehyde 3-phosphate dehydrogenase, glycosomal

Chain B:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	81.76Å 85.19Å 106.42Å 90.00° 96.74° 90.00°	Depositor
Resolution (Å)	8.00 – 2.75 7.99 – 2.75	Depositor EDS
% Data completeness (in resolution range)	92.4 (8.00-2.75) 86.4 (7.99-2.75)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.53 (at 2.74Å)	Xtriage
Refinement program	REFMAC 5.1.24, CNS 1.0	Depositor
R, R_{free}	0.198 , 0.276 0.189 , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å^2)	34.6	Xtriage
Anisotropy	0.640	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.40 , 81.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	11576	wwPDB-VP
Average B, all atoms (Å^2)	56.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.79% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: S70, NAD

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	0.37	0/2786	0.62	0/3778
1	B	0.35	0/2786	0.61	0/3778
1	C	0.34	0/2786	0.59	0/3778
1	D	0.34	0/2786	0.61	0/3778
All	All	0.35	0/11144	0.61	0/15112

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	2733	0	2722	131	0
1	B	2733	0	2722	150	0
1	C	2733	0	2722	157	0
1	D	2733	0	2722	109	0
2	A	44	0	26	2	0
2	B	44	0	26	6	0
2	C	44	0	26	0	0
2	D	44	0	26	0	0
3	A	15	0	6	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	A	122	0	0	13	0
4	B	128	0	0	9	0
4	C	76	0	0	7	0
4	D	127	0	0	12	0
All	All	11576	0	10998	520	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 24.

All (520) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:154:ASN:HD22	1:A:157:GLU:HB2	1.21	1.05
1:C:319:ASN:HD21	1:C:328:LYS:H	1.07	0.97
1:C:147:GLY:H	1:C:150:HIS:HD2	1.12	0.96
1:D:195:SER:HB2	1:D:252:THR:O	1.70	0.92
1:A:125:ARG:HH11	1:A:125:ARG:HG2	1.38	0.89
1:A:195:SER:HB2	1:A:252:THR:O	1.72	0.88
1:A:15:ARG:O	1:A:19:GLN:HG3	1.72	0.87
1:B:195:SER:HB3	1:B:252:THR:OG1	1.75	0.85
1:D:319:ASN:HD21	1:D:328:LYS:H	1.22	0.85
1:D:37:VAL:HB	1:D:88:VAL:HG22	1.58	0.85
1:D:8:ASN:HA	1:D:37:VAL:HG13	1.56	0.85
1:A:154:ASN:ND2	1:A:157:GLU:HB2	1.91	0.85
1:D:190:MET:HG2	1:D:229:ALA:HB2	1.59	0.85
1:C:147:GLY:H	1:C:150:HIS:CD2	1.96	0.83
1:D:19:GLN:HG3	1:D:59:PHE:HE1	1.41	0.83
1:D:117:LYS:O	1:D:121:GLU:HG3	1.80	0.82
1:B:117:LYS:O	1:B:121:GLU:HG3	1.79	0.81
1:D:37:VAL:HB	1:D:88:VAL:CG2	2.12	0.80
1:D:63:VAL:HG22	1:D:80:VAL:HG22	1.63	0.80
1:D:171:LEU:HD13	1:D:232:VAL:HG21	1.64	0.80
1:B:183:PHE:HD1	1:B:268:THR:HG21	1.44	0.79
1:C:21:LEU:HD22	1:C:31:ILE:HD12	1.65	0.79
1:C:61:TYR:HB3	1:C:81:ASN:ND2	1.98	0.79
1:A:94:PRO:HA	1:A:97:LEU:HD23	1.65	0.78
1:B:285:MET:HB3	1:B:289:LEU:HB3	1.66	0.78
1:B:3:ILE:HD11	1:B:31:ILE:HG12	1.66	0.78
1:B:12:ARG:O	1:B:16:MET:HG2	1.84	0.77
1:B:8:ASN:HA	1:B:37:VAL:HG13	1.65	0.77
1:C:93:ASN:HB3	1:C:96:ASP:OD2	1.86	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:38:ASP:O	1:A:90:ALA:HB2	1.86	0.76
3:A:804:S70:H42	4:A:973:HOH:O	1.86	0.75
1:D:19:GLN:HG3	1:D:59:PHE:CE1	2.21	0.75
1:C:26:LEU:HD13	1:C:348:ARG:HD3	1.67	0.75
1:B:183:PHE:CD1	1:B:268:THR:HG21	2.21	0.75
1:C:195:SER:HB2	1:C:252:THR:O	1.86	0.75
1:A:194:HIS:HB3	1:A:249:ARG:HD3	1.68	0.75
1:B:8:ASN:HA	1:B:37:VAL:CG1	2.17	0.74
1:B:130:LYS:CD	1:B:159:HIS:HA	2.18	0.74
1:C:38:ASP:O	1:C:90:ALA:HB2	1.86	0.74
1:B:11:GLY:HA3	2:B:863:NAD:H4B	1.69	0.74
1:C:8:ASN:HA	1:C:37:VAL:HG13	1.68	0.73
1:B:195:SER:HB2	1:B:252:THR:O	1.87	0.73
1:A:18:PHE:HA	1:A:21:LEU:HD12	1.71	0.73
1:B:91:GLN:HG3	1:B:96:ASP:HB2	1.71	0.73
1:B:129:ARG:HG2	1:B:130:LYS:HG2	1.70	0.72
1:D:117:LYS:HB3	1:D:139:GLY:HA3	1.70	0.72
1:A:183:PHE:CD1	1:A:268:THR:HG21	2.25	0.71
1:C:109:GLU:HG2	1:C:123:HIS:NE2	2.06	0.71
1:A:11:GLY:HA3	2:A:862:NAD:H4B	1.72	0.71
1:D:242:LYS:HE2	4:D:957:HOH:O	1.89	0.71
1:D:263:THR:HA	1:D:325:ARG:O	1.91	0.71
1:B:38:ASP:HA	2:B:863:NAD:H2A	1.73	0.70
1:B:45:TYR:O	1:B:49:GLN:HG3	1.90	0.70
1:D:147:GLY:H	1:D:150:HIS:HD2	1.38	0.70
1:A:61:TYR:HD2	1:A:81:ASN:ND2	1.90	0.70
1:A:200:GLN:OE1	1:A:249:ARG:NH1	2.25	0.69
1:A:41:THR:O	1:A:41:THR:HG22	1.90	0.69
1:C:83:HIS:HB2	4:C:881:HOH:O	1.92	0.69
1:B:38:ASP:C	1:B:90:ALA:HB2	2.13	0.69
1:C:194:HIS:HB3	1:C:249:ARG:HD3	1.75	0.68
1:A:183:PHE:HD1	1:A:268:THR:HG21	1.59	0.68
1:A:298:SER:HB2	4:A:955:HOH:O	1.94	0.68
1:C:107:VAL:CG1	1:C:131:VAL:HG22	2.24	0.68
1:A:147:GLY:H	1:A:150:HIS:CD2	2.12	0.67
1:A:125:ARG:HG2	1:A:125:ARG:NH1	2.07	0.67
1:D:147:GLY:H	1:D:150:HIS:CD2	2.12	0.67
1:D:172:ALA:HB3	1:D:173:PRO:HD3	1.77	0.67
1:B:98:PRO:O	1:B:102:LEU:HD23	1.96	0.66
1:B:185:VAL:HG11	1:B:243:LEU:HD21	1.75	0.66
1:D:239:THR:HA	1:D:242:LYS:HD2	1.75	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:39:MET:HA	4:A:900:HOH:O	1.95	0.66
1:C:109:GLU:HG2	1:C:123:HIS:HE2	1.61	0.66
1:B:124:LEU:HA	1:B:128:ALA:O	1.96	0.65
1:B:67:LYS:HD2	1:B:72:VAL:HB	1.77	0.65
1:D:351:ALA:O	1:D:355:ARG:HD2	1.96	0.65
1:A:10:PHE:CE2	1:A:15:ARG:HG2	2.31	0.65
1:C:93:ASN:ND2	1:C:95:ALA:H	1.94	0.65
1:C:35:ALA:HB2	1:C:86:LEU:HB3	1.79	0.65
1:D:93:ASN:HD22	1:D:94:PRO:HD2	1.62	0.64
1:A:172:ALA:HB3	1:A:173:PRO:HD3	1.77	0.64
1:D:359:LEU:HA	4:D:969:HOH:O	1.97	0.64
1:B:93:ASN:HB3	1:B:96:ASP:OD2	1.98	0.64
1:A:105:GLU:HG3	1:A:106:TYR:CD1	2.33	0.64
1:A:257:VAL:HG23	1:A:331:SER:O	1.98	0.64
1:C:130:LYS:CD	1:C:159:HIS:HA	2.28	0.64
1:B:147:GLY:H	1:B:150:HIS:CD2	2.16	0.63
1:A:8:ASN:HA	1:A:37:VAL:HG13	1.81	0.63
1:B:130:LYS:HD2	1:B:159:HIS:HA	1.80	0.63
1:A:145:VAL:HG13	1:A:169:ASN:OD1	1.97	0.63
1:B:226:THR:HG22	1:B:246:MET:HA	1.80	0.63
1:D:47:ALA:HB1	1:D:51:ARG:NH1	2.13	0.63
1:A:212:ARG:HG2	1:B:295:GLU:HB3	1.81	0.63
1:B:47:ALA:HB1	1:B:51:ARG:NH1	2.14	0.62
1:A:142:LYS:HB3	1:A:161:VAL:HG12	1.81	0.62
1:C:171:LEU:HD22	1:C:175:VAL:HG23	1.82	0.62
1:D:254:ASP:O	1:D:255:VAL:HB	2.00	0.62
1:B:37:VAL:HG23	1:B:90:ALA:HA	1.80	0.62
1:C:215:ARG:NH1	1:D:297:VAL:HG22	2.15	0.62
1:C:24:ASP:HB2	1:C:26:LEU:HG	1.81	0.62
1:C:319:ASN:HD21	1:C:328:LYS:N	1.88	0.62
1:C:8:ASN:HA	1:C:37:VAL:CG1	2.29	0.62
1:B:172:ALA:HB3	1:B:173:PRO:HD3	1.82	0.62
1:D:194:HIS:HB3	1:D:249:ARG:HD3	1.80	0.62
1:C:21:LEU:CD2	1:C:31:ILE:HD12	2.30	0.61
1:C:190:MET:O	1:C:245:GLY:HA3	1.99	0.61
1:D:11:GLY:HA2	1:D:15:ARG:NH1	2.15	0.61
1:B:69:SER:O	1:B:72:VAL:HG23	1.99	0.61
1:B:95:ALA:HA	4:B:939:HOH:O	2.00	0.61
1:B:37:VAL:CG2	1:B:90:ALA:HA	2.30	0.61
1:C:251:PRO:HB2	1:D:251:PRO:HB2	1.82	0.61
1:D:285:MET:HB3	1:D:289:LEU:HB3	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:341:HIS:HB3	4:D:939:HOH:O	2.02	0.60
1:A:25:GLY:HA2	4:A:889:HOH:O	2.00	0.60
1:A:251:PRO:HB2	1:B:251:PRO:HB2	1.84	0.60
1:A:37:VAL:HB	1:A:88:VAL:HG22	1.82	0.60
1:B:50:MET:O	1:B:59:PHE:HB2	2.01	0.60
1:C:37:VAL:HB	1:C:88:VAL:CG2	2.32	0.60
1:D:93:ASN:HB3	1:D:96:ASP:OD2	2.01	0.60
1:B:263:THR:HA	1:B:325:ARG:O	2.02	0.60
1:D:94:PRO:HA	1:D:97:LEU:HD23	1.84	0.60
1:B:115:THR:HG23	4:B:913:HOH:O	2.02	0.59
1:D:107:VAL:HG22	1:D:131:VAL:HG22	1.82	0.59
1:A:93:ASN:ND2	1:A:95:ALA:H	2.01	0.59
1:B:3:ILE:CD1	1:B:31:ILE:HG12	2.32	0.59
1:A:98:PRO:O	1:A:102:LEU:HD23	2.02	0.59
1:A:351:ALA:O	1:A:355:ARG:HG2	2.03	0.59
1:C:239:THR:HA	1:C:242:LYS:HD3	1.85	0.59
1:A:4:LYS:HE2	1:A:4:LYS:HA	1.84	0.59
1:B:13:ILE:HD11	2:B:863:NAD:H71N	1.67	0.59
1:A:260:LEU:O	1:A:328:LYS:HA	2.02	0.59
1:A:29:THR:HG22	1:A:30:GLU:HG2	1.85	0.59
1:C:254:ASP:O	1:C:255:VAL:HB	2.02	0.59
1:D:136:PRO:CG	1:D:165:SER:HB3	2.33	0.58
1:A:4:LYS:HZ3	1:A:32:ASP:CG	2.07	0.58
1:B:302:ILE:O	1:B:303:ASN:HB2	2.03	0.58
1:B:324:ARG:HD3	4:B:927:HOH:O	2.03	0.58
1:B:30:GLU:HG3	1:B:348:ARG:NH1	2.18	0.58
1:D:171:LEU:HD22	1:D:175:VAL:HG23	1.84	0.58
1:D:8:ASN:HD22	1:D:37:VAL:HG13	1.67	0.58
1:B:204:ASP:OD1	1:B:215:ARG:HA	2.03	0.58
1:A:107:VAL:HG22	1:A:131:VAL:HG22	1.85	0.58
1:A:105:GLU:HG3	1:A:106:TYR:HD1	1.68	0.58
1:C:267:ASP:OD1	1:C:325:ARG:NE	2.36	0.58
1:A:254:ASP:O	1:A:255:VAL:HB	2.04	0.58
1:C:200:GLN:HB3	4:C:864:HOH:O	2.02	0.58
1:D:319:ASN:HD21	1:D:328:LYS:N	1.98	0.58
1:B:37:VAL:HB	1:B:88:VAL:CG2	2.33	0.58
1:C:190:MET:HG2	1:C:229:ALA:HB2	1.85	0.58
1:C:268:THR:HG22	1:C:272:GLU:OE2	2.04	0.58
1:D:226:THR:HG22	1:D:246:MET:HA	1.86	0.57
1:B:319:ASN:HD21	1:B:328:LYS:H	1.51	0.57
1:C:130:LYS:HD3	1:C:159:HIS:HA	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:270:ILE:HG22	1:C:271:GLN:NE2	2.19	0.57
1:B:268:THR:HG22	1:B:272:GLU:OE1	2.03	0.57
1:A:226:THR:HG22	1:A:245:GLY:O	2.05	0.57
1:B:8:ASN:HD22	1:B:37:VAL:HG13	1.69	0.57
1:D:98:PRO:O	1:D:102:LEU:HD23	2.05	0.57
1:A:223:PRO:HG2	1:B:332:TRP:HZ2	1.70	0.57
1:C:13:ILE:O	1:C:17:VAL:HG23	2.04	0.57
1:B:229:ALA:HB3	4:B:868:HOH:O	2.04	0.57
1:C:172:ALA:HB3	1:C:173:PRO:HD3	1.85	0.56
1:B:21:LEU:HD23	1:B:21:LEU:O	2.05	0.56
1:C:201:LYS:HE2	4:C:904:HOH:O	2.04	0.56
1:B:31:ILE:HG22	1:B:32:ASP:N	2.20	0.56
1:D:61:TYR:OH	4:D:902:HOH:O	2.18	0.56
1:D:256:SER:HB2	1:D:333:TYR:CZ	2.41	0.56
1:C:95:ALA:HA	1:C:122:GLY:O	2.06	0.56
1:A:319:ASN:HD21	1:A:328:LYS:H	1.53	0.55
1:C:124:LEU:HD21	1:C:131:VAL:HG23	1.88	0.55
1:C:144:LEU:HD11	1:C:153:TYR:HB2	1.87	0.55
1:C:302:ILE:O	1:C:303:ASN:HB2	2.06	0.55
1:C:35:ALA:HA	1:C:85:ILE:HG23	1.88	0.55
1:A:147:GLY:H	1:A:150:HIS:HD2	1.54	0.55
1:D:123:HIS:HB2	1:D:131:VAL:HG21	1.86	0.55
1:D:3:ILE:HG13	1:D:3:ILE:O	2.06	0.55
1:A:68:SER:HA	4:A:976:HOH:O	2.05	0.55
1:C:302:ILE:HD13	4:C:867:HOH:O	2.06	0.55
1:C:6:GLY:HA3	1:C:104:VAL:HG11	1.88	0.55
1:D:45:TYR:O	1:D:49:GLN:HG3	2.06	0.55
1:A:295:GLU:HB3	1:B:212:ARG:HG3	1.89	0.55
1:C:190:MET:CG	1:C:229:ALA:HB2	2.37	0.55
1:B:154:ASN:HB3	1:B:157:GLU:HB3	1.88	0.55
1:C:215:ARG:HH12	1:D:297:VAL:HG22	1.72	0.54
1:D:46:PHE:O	1:D:50:MET:HG3	2.07	0.54
1:C:180:LYS:C	1:C:182:GLY:H	2.10	0.54
1:B:38:ASP:O	1:B:90:ALA:HB2	2.08	0.54
1:A:81:ASN:ND2	4:A:876:HOH:O	2.40	0.54
1:C:32:ASP:OD1	1:C:83:HIS:NE2	2.40	0.54
1:C:93:ASN:OD1	1:C:95:ALA:HB3	2.08	0.54
1:D:94:PRO:HA	1:D:97:LEU:CD2	2.37	0.54
1:B:5:VAL:HG22	1:B:106:TYR:HB2	1.89	0.54
1:D:339:TYR:O	1:D:343:VAL:HG23	2.07	0.54
1:C:306:ARG:HB2	1:C:309:ILE:CD1	2.37	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:VAL:HG22	1:A:37:VAL:O	2.08	0.54
1:C:10:PHE:CE2	1:C:15:ARG:HG2	2.43	0.54
1:D:95:ALA:HA	1:D:122:GLY:O	2.07	0.54
1:A:190:MET:HG2	1:A:229:ALA:HB2	1.90	0.53
1:C:98:PRO:O	1:C:102:LEU:HD23	2.08	0.53
1:C:318:ASN:OD1	1:D:225:THR:HG22	2.08	0.53
1:B:67:LYS:HA	1:B:76:ASP:OD1	2.09	0.53
1:C:109:GLU:OE1	1:C:114:PHE:HD2	1.91	0.53
1:C:17:VAL:O	1:C:20:ALA:HB3	2.08	0.53
1:A:192:THR:O	1:A:192:THR:HG23	2.08	0.53
1:C:183:PHE:CD1	1:C:268:THR:HG21	2.44	0.53
1:D:12:ARG:HH22	1:D:53:ASP:CG	2.12	0.53
1:D:65:THR:HG22	1:D:78:LEU:HD12	1.89	0.53
1:A:93:ASN:HB3	1:A:96:ASP:OD2	2.09	0.53
1:B:230:LYS:NZ	1:B:230:LYS:HB2	2.24	0.53
1:A:324:ARG:HH11	1:A:324:ARG:HG3	1.73	0.53
1:C:50:MET:O	1:C:59:PHE:HB2	2.09	0.53
1:A:125:ARG:CG	1:A:125:ARG:NH1	2.71	0.52
4:D:947:HOH:O	1:A:201:LYS:HG2	2.08	0.52
1:D:38:ASP:O	1:D:90:ALA:HB2	2.09	0.52
1:C:3:ILE:HG13	1:C:30:GLU:O	2.09	0.52
1:C:263:THR:HA	1:C:325:ARG:O	2.09	0.52
1:A:215:ARG:HD2	4:A:896:HOH:O	2.10	0.52
1:B:6:GLY:O	1:B:107:VAL:HA	2.09	0.52
1:D:8:ASN:HA	1:D:37:VAL:CG1	2.35	0.52
1:C:6:GLY:O	1:C:107:VAL:HG23	2.10	0.52
1:D:69:SER:O	1:D:72:VAL:HG23	2.09	0.52
1:A:130:LYS:HD3	1:A:159:HIS:HA	1.92	0.52
1:C:313:LYS:HB3	1:C:317:GLN:NE2	2.24	0.52
1:D:302:ILE:O	1:D:303:ASN:HB2	2.10	0.52
1:B:190:MET:HG2	1:B:229:ALA:HB2	1.93	0.51
1:B:195:SER:CB	1:B:252:THR:OG1	2.54	0.51
1:C:61:TYR:HB3	1:C:81:ASN:HD22	1.75	0.51
1:D:136:PRO:HG3	1:D:165:SER:HB3	1.92	0.51
1:D:305:ASN:C	1:D:305:ASN:HD22	2.13	0.51
1:C:36:VAL:HG13	1:C:85:ILE:HG21	1.92	0.51
1:B:194:HIS:HB3	1:B:249:ARG:HD3	1.92	0.51
1:C:266:ARG:HD3	4:C:900:HOH:O	2.11	0.51
1:C:270:ILE:HG22	1:C:271:GLN:HE22	1.76	0.51
1:C:93:ASN:HD22	1:C:94:PRO:HD2	1.76	0.51
1:A:221:ILE:HD13	1:B:193:ILE:HG22	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:123:HIS:HB2	1:C:131:VAL:HG21	1.92	0.51
1:D:163:ASN:O	1:D:164:ALA:HB3	2.11	0.51
1:A:295:GLU:HB3	1:B:212:ARG:CG	2.41	0.51
1:A:307:SER:HG	1:A:342:ARG:HD2	1.75	0.51
1:D:208:VAL:HG11	1:A:40:ASN:HD22	1.76	0.51
1:B:37:VAL:HB	1:B:88:VAL:HG23	1.93	0.51
1:A:255:VAL:HB	4:A:955:HOH:O	2.12	0.50
1:D:46:PHE:HB3	1:D:78:LEU:HD21	1.94	0.50
1:B:142:LYS:HB3	1:B:161:VAL:HG12	1.94	0.50
1:B:130:LYS:HD3	1:B:159:HIS:HA	1.94	0.50
1:D:256:SER:HB2	1:D:333:TYR:CE1	2.46	0.50
1:B:274:ASP:O	1:B:278:LYS:HG3	2.11	0.50
1:D:93:ASN:HD22	1:D:94:PRO:CD	2.24	0.50
1:B:9:GLY:HA3	1:B:111:THR:HG22	1.93	0.50
1:A:121:GLU:HG2	1:A:160:VAL:HG21	1.93	0.50
1:B:8:ASN:O	1:B:111:THR:HG23	2.11	0.50
1:B:117:LYS:HB2	1:B:141:ALA:HB2	1.93	0.50
1:B:21:LEU:C	1:B:21:LEU:HD23	2.32	0.50
1:C:144:LEU:CD1	1:C:153:TYR:HB2	2.41	0.50
1:B:278:LYS:O	1:B:282:LYS:HG3	2.11	0.50
1:D:194:HIS:O	1:D:249:ARG:HA	2.12	0.50
1:C:295:GLU:HB3	1:D:212:ARG:HG2	1.93	0.50
1:B:16:MET:HE2	1:B:337:TRP:HZ3	1.77	0.49
1:C:298:SER:CB	1:D:221:ILE:H	2.24	0.49
1:C:354:ASP:O	1:C:357:ALA:HB3	2.11	0.49
1:D:39:MET:CE	1:D:39:MET:HA	2.42	0.49
4:D:863:HOH:O	1:A:218:ALA:HB3	2.12	0.49
1:B:149:ASN:OD1	1:B:235:VAL:HG13	2.12	0.49
1:A:193:ILE:HG22	1:B:221:ILE:HD13	1.94	0.49
1:C:117:LYS:O	1:C:121:GLU:HG3	2.11	0.49
1:D:180:LYS:HD2	4:D:973:HOH:O	2.12	0.49
1:A:266:ARG:NH1	1:A:268:THR:HG22	2.28	0.49
1:A:349:HIS:HA	4:A:890:HOH:O	2.11	0.49
1:A:94:PRO:HA	1:A:97:LEU:CD2	2.40	0.49
1:A:8:ASN:HD22	1:A:37:VAL:HG13	1.76	0.49
1:C:298:SER:HB2	1:D:221:ILE:H	1.77	0.49
1:D:149:ASN:O	1:D:152:GLU:HG3	2.12	0.49
1:B:3:ILE:HG12	1:B:30:GLU:O	2.13	0.49
1:C:99:TRP:NE1	1:C:123:HIS:ND1	2.59	0.49
1:C:30:GLU:OE1	1:C:348:ARG:HD2	2.13	0.49
1:A:319:ASN:HD21	1:A:327:PHE:HA	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:106:TYR:CD2	1:B:130:LYS:HB2	2.47	0.49
1:A:271:GLN:H	1:A:271:GLN:CD	2.16	0.49
1:A:307:SER:OG	1:A:342:ARG:HD2	2.13	0.48
1:C:124:LEU:HD22	1:C:129:ARG:O	2.13	0.48
1:D:105:GLU:HG3	1:D:106:TYR:CD1	2.47	0.48
1:D:154:ASN:HB3	1:D:157:GLU:HB3	1.93	0.48
1:A:249:ARG:HG3	1:A:249:ARG:HH11	1.78	0.48
1:B:16:MET:HA	1:B:16:MET:HE2	1.94	0.48
1:B:95:ALA:C	1:B:97:LEU:H	2.16	0.48
1:C:226:THR:HG22	1:C:246:MET:HA	1.96	0.48
1:A:326:PHE:CE1	1:B:326:PHE:CE1	3.01	0.48
1:A:95:ALA:CB	1:A:125:ARG:HD2	2.43	0.48
1:C:254:ASP:O	1:C:255:VAL:CB	2.60	0.48
1:B:124:LEU:HD11	1:B:160:VAL:HG23	1.94	0.48
1:C:253:PRO:HD2	4:D:929:HOH:O	2.13	0.48
1:A:85:ILE:N	1:A:85:ILE:HD12	2.29	0.48
1:B:194:HIS:O	1:B:249:ARG:HA	2.14	0.48
1:B:35:ALA:HB2	1:B:86:LEU:HB3	1.96	0.48
1:C:171:LEU:HD13	1:C:232:VAL:HG21	1.93	0.48
1:D:47:ALA:HB1	1:D:51:ARG:HH11	1.77	0.48
1:A:263:THR:HG23	1:B:326:PHE:CE1	2.49	0.48
1:C:52:TYR:HB3	1:A:300:ASP:OD1	2.14	0.48
1:C:12:ARG:NH2	1:C:55:VAL:HG12	2.29	0.48
1:C:154:ASN:HB3	1:C:157:GLU:HB3	1.95	0.48
1:D:200:GLN:HG2	4:D:862:HOH:O	2.14	0.48
1:C:133:ILE:C	1:C:135:ALA:H	2.16	0.48
1:D:55:VAL:HG13	1:D:56:HIS:CD2	2.49	0.48
1:B:107:VAL:HG21	1:B:123:HIS:CG	2.48	0.47
1:C:261:THR:HA	1:C:327:PHE:O	2.13	0.47
1:C:61:TYR:HD2	1:C:81:ASN:HD21	1.61	0.47
1:D:254:ASP:O	1:D:255:VAL:CB	2.62	0.47
1:B:147:GLY:H	1:B:150:HIS:HD2	1.60	0.47
1:A:81:ASN:CB	4:A:876:HOH:O	2.63	0.47
1:C:270:ILE:CG2	1:C:271:GLN:NE2	2.77	0.47
1:B:305:ASN:ND2	1:B:305:ASN:H	2.11	0.47
1:C:319:ASN:ND2	1:C:328:LYS:H	1.92	0.47
1:D:43:ALA:HB1	1:D:78:LEU:HD13	1.97	0.47
1:B:274:ASP:OD2	1:B:278:LYS:HE3	2.13	0.47
1:C:106:TYR:CD2	1:C:130:LYS:HB2	2.48	0.47
1:C:85:ILE:HD12	1:C:85:ILE:N	2.29	0.47
1:B:200:GLN:HG2	4:B:865:HOH:O	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:55:VAL:HG21	1:C:254:ASP:HB3	1.97	0.47
1:B:186:GLN:NE2	4:B:925:HOH:O	2.47	0.47
1:B:254:ASP:O	1:B:255:VAL:HB	2.14	0.47
1:D:8:ASN:HD22	1:D:37:VAL:CG1	2.28	0.47
1:C:15:ARG:O	1:C:19:GLN:HG3	2.14	0.47
1:C:188:GLY:O	1:C:243:LEU:HA	2.14	0.47
1:B:15:ARG:O	1:B:19:GLN:HG3	2.15	0.47
1:C:98:PRO:HB2	1:C:102:LEU:HD23	1.97	0.47
1:A:171:LEU:HD13	1:A:232:VAL:HG21	1.97	0.46
1:A:8:ASN:HA	1:A:37:VAL:CG1	2.45	0.46
1:B:26:LEU:HD13	1:B:348:ARG:HD3	1.96	0.46
1:B:171:LEU:HD13	1:B:232:VAL:HG21	1.98	0.46
1:A:208:VAL:HB	4:A:929:HOH:O	2.15	0.46
1:A:41:THR:O	1:A:41:THR:CG2	2.62	0.46
1:A:93:ASN:HD22	1:A:93:ASN:C	2.17	0.46
1:B:65:THR:HG22	1:B:78:LEU:HD12	1.97	0.46
1:D:107:VAL:HG23	1:D:107:VAL:O	2.14	0.46
1:A:130:LYS:CD	1:A:159:HIS:HA	2.46	0.46
1:B:148:VAL:CG1	1:B:235:VAL:HG12	2.46	0.46
1:C:216:ALA:HB3	1:B:54:THR:HG21	1.96	0.46
1:B:99:TRP:HB2	1:B:126:GLY:O	2.15	0.46
1:C:280:ALA:O	1:C:285:MET:HB2	2.15	0.46
1:A:319:ASN:HD21	1:A:328:LYS:N	2.13	0.46
1:B:226:THR:HG22	1:B:246:MET:CA	2.44	0.46
1:A:339:TYR:O	1:A:343:VAL:HG23	2.16	0.46
1:B:212:ARG:NH1	1:B:223:PRO:HG2	2.31	0.46
1:C:35:ALA:CB	1:C:86:LEU:HB3	2.45	0.46
1:D:283:THR:OG1	1:D:284:TYR:N	2.48	0.46
1:A:93:ASN:ND2	1:A:93:ASN:C	2.69	0.46
1:B:3:ILE:HG13	1:B:31:ILE:HA	1.98	0.46
1:C:353:LYS:O	1:C:357:ALA:HB2	2.16	0.46
1:B:123:HIS:O	1:B:128:ALA:HB3	2.16	0.46
1:C:307:SER:OG	1:C:342:ARG:HD2	2.15	0.46
1:A:81:ASN:HB2	4:A:876:HOH:O	2.16	0.46
1:B:193:ILE:HD12	1:B:193:ILE:N	2.31	0.46
1:B:94:PRO:HD3	1:B:114:PHE:CE1	2.51	0.46
1:B:319:ASN:HD22	1:B:327:PHE:HD1	1.64	0.45
1:C:194:HIS:O	1:C:249:ARG:HA	2.15	0.45
1:C:94:PRO:O	1:C:97:LEU:HD23	2.15	0.45
1:D:194:HIS:HB3	1:D:249:ARG:CD	2.44	0.45
1:A:7:ILE:O	1:A:37:VAL:HG12	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:122:GLY:HA2	1:B:125:ARG:HH21	1.81	0.45
1:B:168:THR:OG1	1:B:228:ALA:HA	2.16	0.45
1:C:268:THR:O	1:C:324:ARG:HA	2.16	0.45
1:C:37:VAL:HB	1:C:88:VAL:HG23	1.98	0.45
1:B:342:ARG:HA	1:B:342:ARG:NE	2.30	0.45
1:C:153:TYR:CE1	1:C:158:HIS:HB2	2.51	0.45
1:B:166:CYS:HB3	2:B:863:NAD:H4N	1.99	0.45
1:D:11:GLY:HA2	1:D:15:ARG:HH12	1.79	0.45
1:D:34:VAL:CG1	1:D:102:LEU:HD12	2.47	0.45
1:D:92:ARG:HH11	1:D:92:ARG:HG3	1.82	0.45
1:A:163:ASN:O	1:A:164:ALA:HB3	2.16	0.45
1:B:227:GLY:O	1:B:228:ALA:C	2.54	0.45
1:C:109:GLU:CG	1:C:123:HIS:HE2	2.29	0.45
1:D:12:ARG:HA	1:D:12:ARG:HD2	1.73	0.45
1:D:268:THR:O	1:D:324:ARG:HA	2.16	0.45
1:B:99:TRP:NE1	1:B:123:HIS:ND1	2.61	0.45
1:B:313:LYS:HE3	4:B:886:HOH:O	2.17	0.45
1:A:194:HIS:O	1:A:249:ARG:HA	2.17	0.45
1:C:137:ALA:HB2	1:C:162:SER:HB2	1.98	0.45
1:C:93:ASN:HD22	1:C:94:PRO:CD	2.30	0.45
1:D:190:MET:CG	1:D:229:ALA:HB2	2.39	0.45
1:B:212:ARG:HH11	1:B:223:PRO:HG2	1.81	0.45
1:B:336:GLU:HG2	2:B:863:NAD:H72N	1.82	0.45
1:C:133:ILE:O	1:C:135:ALA:N	2.41	0.45
1:A:302:ILE:O	1:A:303:ASN:HB2	2.17	0.45
1:A:306:ARG:HB2	1:A:309:ILE:CD1	2.46	0.45
1:A:324:ARG:NH1	1:A:324:ARG:HG3	2.32	0.45
1:A:4:LYS:NZ	1:A:32:ASP:CG	2.70	0.45
1:A:158:HIS:HB3	1:A:161:VAL:CG1	2.47	0.44
1:A:319:ASN:ND2	1:A:327:PHE:HA	2.31	0.44
1:D:116:ALA:O	1:D:117:LYS:C	2.54	0.44
1:A:136:PRO:HG3	4:A:885:HOH:O	2.18	0.44
1:B:47:ALA:O	1:B:51:ARG:HB2	2.17	0.44
1:C:183:PHE:CE1	1:C:268:THR:HG21	2.52	0.44
1:D:315:THR:HG23	1:D:328:LYS:O	2.17	0.44
1:D:50:MET:O	1:D:59:PHE:HB2	2.16	0.44
1:A:12:ARG:HB2	2:A:862:NAD:O2A	2.18	0.44
1:B:171:LEU:HD22	1:B:175:VAL:HG23	2.00	0.44
1:C:148:VAL:HG12	1:C:235:VAL:HG12	1.99	0.44
1:A:106:TYR:OH	1:A:351:ALA:HA	2.18	0.44
1:C:201:LYS:N	1:C:201:LYS:HD2	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:5:VAL:HA	1:B:106:TYR:O	2.18	0.44
1:C:65:THR:HG22	1:C:78:LEU:HD12	1.99	0.44
1:C:257:VAL:HB	1:C:332:TRP:CE3	2.52	0.44
1:C:118:ALA:O	1:C:121:GLU:HB2	2.18	0.44
1:C:37:VAL:HB	1:C:88:VAL:HG22	1.98	0.44
1:C:43:ALA:HB1	1:C:65:THR:CG2	2.47	0.44
1:A:117:LYS:O	1:A:121:GLU:HG3	2.18	0.44
1:A:23:GLU:OE1	1:A:337:TRP:HZ2	2.01	0.43
1:A:45:TYR:O	1:A:49:GLN:HG3	2.18	0.43
1:C:31:ILE:HG22	1:C:32:ASP:N	2.33	0.43
1:D:180:LYS:NZ	4:D:979:HOH:O	2.49	0.43
1:A:41:THR:HG23	1:A:87:CYS:O	2.17	0.43
1:B:16:MET:HB3	1:B:340:SER:OG	2.19	0.43
1:B:89:LYS:HD3	1:B:90:ALA:N	2.33	0.43
1:C:169:ASN:O	1:C:307:SER:HB3	2.18	0.43
1:A:136:PRO:CG	1:A:165:SER:HB3	2.48	0.43
1:B:51:ARG:HG3	4:B:882:HOH:O	2.19	0.43
1:C:107:VAL:HG13	1:C:131:VAL:HG22	2.00	0.43
1:D:2:PRO:HG3	1:D:29:THR:O	2.19	0.43
1:B:9:GLY:CA	1:B:111:THR:HG22	2.48	0.43
1:C:215:ARG:HH11	1:C:215:ARG:HG3	1.82	0.43
1:A:5:VAL:HG12	1:A:6:GLY:N	2.34	0.43
1:B:280:ALA:HB1	1:B:285:MET:HG2	2.01	0.43
1:D:89:LYS:HE2	4:D:875:HOH:O	2.19	0.43
1:A:328:LYS:HB2	1:B:189:LEU:HD13	2.00	0.43
1:B:268:THR:HB	1:B:269:SER:H	1.54	0.43
1:B:105:GLU:HB2	1:B:129:ARG:HB3	2.01	0.43
1:C:189:LEU:HA	1:C:244:THR:O	2.18	0.43
1:A:268:THR:HB	1:A:269:SER:H	1.69	0.42
1:A:23:GLU:OE1	1:A:337:TRP:CZ2	2.72	0.42
1:B:91:GLN:CD	1:B:92:ARG:H	2.23	0.42
1:C:175:VAL:O	1:C:179:VAL:HG23	2.19	0.42
1:C:281:SER:O	1:C:286:LYS:HA	2.18	0.42
1:C:324:ARG:HG3	1:C:324:ARG:HH11	1.84	0.42
1:A:189:LEU:HD23	1:A:244:THR:HG22	2.02	0.42
1:B:13:ILE:HG22	1:B:110:SER:HB2	2.01	0.42
1:B:31:ILE:CG2	1:B:32:ASP:N	2.82	0.42
1:B:38:ASP:HA	2:B:863:NAD:C2A	2.45	0.42
1:B:38:ASP:HB3	1:B:46:PHE:HZ	1.83	0.42
1:B:114:PHE:O	1:B:120:ALA:HB2	2.19	0.42
1:B:285:MET:CB	1:B:289:LEU:HB3	2.44	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:124:LEU:CD2	1:C:131:VAL:HG23	2.49	0.42
1:D:107:VAL:HG23	1:D:131:VAL:HG13	2.01	0.42
1:A:5:VAL:CG1	1:A:6:GLY:N	2.81	0.42
1:B:12:ARG:O	1:B:16:MET:CG	2.62	0.42
1:B:93:ASN:HD22	1:B:94:PRO:CD	2.32	0.42
1:D:18:PHE:CE1	1:D:50:MET:HE1	2.54	0.42
1:A:180:LYS:HD3	1:A:284:TYR:CE2	2.54	0.42
1:C:55:VAL:HG13	1:C:56:HIS:CD2	2.54	0.42
1:A:95:ALA:HB2	1:A:125:ARG:HD2	2.01	0.42
1:A:320:LEU:HB2	1:A:323:GLU:HB2	2.02	0.42
1:C:93:ASN:C	1:C:93:ASN:ND2	2.73	0.42
1:D:344:VAL:O	1:D:348:ARG:HG3	2.20	0.42
1:C:151:HIS:HB2	4:C:884:HOH:O	2.19	0.42
1:C:186:GLN:O	1:C:242:LYS:HE2	2.20	0.42
1:C:260:LEU:O	1:C:328:LYS:HA	2.20	0.42
1:C:178:LEU:O	1:C:183:PHE:HB2	2.20	0.42
1:C:17:VAL:HG11	1:C:108:ILE:HD13	2.02	0.42
1:C:180:LYS:C	1:C:182:GLY:N	2.73	0.42
1:B:124:LEU:HD22	1:B:129:ARG:O	2.19	0.42
1:B:153:TYR:CE2	1:B:350:MET:HA	2.55	0.42
1:B:129:ARG:NH1	1:B:355:ARG:NH2	2.68	0.42
1:C:107:VAL:HG21	1:C:123:HIS:ND1	2.35	0.42
1:D:321:PRO:O	1:D:322:LYS:HB2	2.20	0.42
1:A:107:VAL:CG2	1:A:131:VAL:HG22	2.47	0.41
1:A:29:THR:HG22	1:A:30:GLU:N	2.35	0.41
1:C:144:LEU:HD12	1:C:346:LEU:HD11	2.02	0.41
1:C:342:ARG:NE	1:C:342:ARG:HA	2.35	0.41
1:D:34:VAL:HB	1:D:104:VAL:HG22	2.02	0.41
1:D:45:TYR:CD1	1:A:211:TRP:CE2	3.08	0.41
1:B:38:ASP:OD1	1:B:39:MET:N	2.54	0.41
1:B:93:ASN:HD22	1:B:94:PRO:HD2	1.85	0.41
1:C:256:SER:HB2	1:C:333:TYR:CE1	2.55	0.41
1:D:130:LYS:CD	1:D:159:HIS:HA	2.49	0.41
1:A:17:VAL:HG11	1:A:108:ILE:HD13	2.02	0.41
1:C:133:ILE:HD12	1:C:137:ALA:HB2	2.03	0.41
1:C:256:SER:HB2	1:C:333:TYR:CZ	2.55	0.41
1:C:332:TRP:O	1:C:333:TYR:HB3	2.20	0.41
1:C:36:VAL:O	1:C:88:VAL:HG22	2.21	0.41
1:A:296:LEU:O	1:B:212:ARG:HD3	2.20	0.41
1:B:306:ARG:HB2	1:B:309:ILE:CD1	2.50	0.41
1:C:153:TYR:O	1:C:155:PRO:HD3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:61:TYR:CD1	1:C:61:TYR:N	2.88	0.41
1:D:40:ASN:ND2	1:A:208:VAL:HG11	2.35	0.41
1:B:30:GLU:HG3	1:B:348:ARG:HH11	1.85	0.41
1:C:2:PRO:HB3	1:C:32:ASP:HB2	2.02	0.41
1:A:193:ILE:CG2	1:B:221:ILE:HD13	2.50	0.41
1:B:132:VAL:HG21	1:B:347:VAL:HG22	2.03	0.41
1:C:114:PHE:C	1:C:116:ALA:H	2.23	0.41
1:D:137:ALA:CB	1:D:162:SER:HB2	2.50	0.41
1:D:208:VAL:HG11	1:A:40:ASN:ND2	2.35	0.41
1:A:209:LYS:HA	1:A:209:LYS:HD3	1.86	0.41
1:C:28:GLY:N	1:C:31:ILE:O	2.54	0.41
1:B:30:GLU:HG2	4:B:872:HOH:O	2.20	0.41
1:C:137:ALA:CB	1:C:162:SER:HB2	2.51	0.41
1:C:215:ARG:O	1:C:216:ALA:C	2.58	0.41
1:A:149:ASN:O	1:A:152:GLU:HG3	2.21	0.41
1:B:137:ALA:HB3	1:B:162:SER:HB2	2.03	0.41
1:C:223:PRO:CG	1:D:332:TRP:HZ2	2.33	0.41
1:D:200:GLN:HB3	1:D:217:ALA:HB2	2.02	0.41
1:D:313:LYS:O	1:D:317:GLN:HG3	2.20	0.41
1:C:186:GLN:HG2	4:C:903:HOH:O	2.20	0.41
1:D:58:LYS:HB3	4:D:887:HOH:O	2.20	0.41
1:D:99:TRP:CE3	1:D:99:TRP:HA	2.56	0.41
1:B:122:GLY:HA2	1:B:125:ARG:HE	1.86	0.40
1:B:169:ASN:O	1:B:307:SER:HB3	2.22	0.40
1:C:324:ARG:C	1:C:325:ARG:HG2	2.42	0.40
1:A:27:LEU:HD11	1:A:83:HIS:ND1	2.37	0.40
1:B:13:ILE:HA	1:B:13:ILE:HD13	1.93	0.40
1:C:107:VAL:HG11	1:C:123:HIS:HB3	2.02	0.40
1:A:305:ASN:OD1	1:A:337:TRP:NE1	2.54	0.40
1:A:36:VAL:HG13	1:A:85:ILE:HG21	2.02	0.40
1:A:290:GLY:HA3	1:A:306:ARG:NH1	2.37	0.40
1:A:16:MET:SD	1:A:337:TRP:CZ3	3.15	0.40
1:B:323:GLU:HG2	1:B:326:PHE:O	2.21	0.40
1:C:203:VAL:O	1:C:204:ASP:C	2.60	0.40
1:A:221:ILE:HD13	1:B:193:ILE:CG2	2.52	0.40
1:A:4:LYS:CE	1:A:32:ASP:HB3	2.52	0.40
1:C:130:LYS:HZ3	1:C:153:TYR:HH	1.61	0.40
1:C:188:GLY:CA	1:C:243:LEU:HD23	2.52	0.40
1:D:12:ARG:O	1:D:16:MET:HG2	2.21	0.40
1:C:326:PHE:CZ	1:D:262:PHE:HA	2.56	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	357/359 (99%)	317 (89%)	33 (9%)	7 (2%)	7	13
1	B	357/359 (99%)	320 (90%)	31 (9%)	6 (2%)	9	16
1	C	357/359 (99%)	310 (87%)	40 (11%)	7 (2%)	7	13
1	D	357/359 (99%)	317 (89%)	39 (11%)	1 (0%)	41	60
All	All	1428/1436 (99%)	1264 (88%)	143 (10%)	21 (2%)	10	18

All (21) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	90	ALA
1	C	29	THR
1	C	157	GLU
1	C	255	VAL
1	D	255	VAL
1	A	37	VAL
1	A	255	VAL
1	A	298	SER
1	B	96	ASP
1	B	255	VAL
1	C	134	SER
1	A	90	ALA
1	C	335	ASN
1	A	164	ALA
1	B	42	ASP
1	B	228	ALA
1	C	216	ALA
1	A	73	ALA
1	B	351	ALA
1	A	237	PRO
1	C	37	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	293/296 (99%)	280 (96%)	13 (4%)	28	47
1	B	293/296 (99%)	283 (97%)	10 (3%)	37	58
1	C	293/296 (99%)	282 (96%)	11 (4%)	33	53
1	D	293/296 (99%)	277 (94%)	16 (6%)	21	37
All	All	1172/1184 (99%)	1122 (96%)	50 (4%)	29	48

All (50) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	4	LYS
1	C	8	ASN
1	C	32	ASP
1	C	157	GLU
1	C	171	LEU
1	C	187	THR
1	C	190	MET
1	C	238	SER
1	C	305	ASN
1	C	353	LYS
1	C	355	ARG
1	D	12	ARG
1	D	30	GLU
1	D	37	VAL
1	D	39	MET
1	D	60	LYS
1	D	78	LEU
1	D	81	ASN
1	D	92	ARG
1	D	171	LEU
1	D	190	MET
1	D	192	THR
1	D	240	GLN
1	D	267	ASP

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Mol	Chain	Res	Type
1	D	305	ASN
1	D	309	ILE
1	D	355	ARG
1	A	8	ASN
1	A	55	VAL
1	A	60	LYS
1	A	93	ASN
1	A	109	GLU
1	A	157	GLU
1	A	171	LEU
1	A	190	MET
1	A	237	PRO
1	A	306	ARG
1	A	309	ILE
1	A	333	TYR
1	A	335	ASN
1	B	10	PHE
1	B	13	ILE
1	B	55	VAL
1	B	91	GLN
1	B	93	ASN
1	B	171	LEU
1	B	190	MET
1	B	230	LYS
1	B	305	ASN
1	B	355	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (35) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	19	GLN
1	C	81	ASN
1	C	93	ASN
1	C	150	HIS
1	C	151	HIS
1	C	271	GLN
1	C	317	GLN
1	C	319	ASN
1	C	349	HIS
1	D	8	ASN
1	D	81	ASN
1	D	93	ASN

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Mol	Chain	Res	Type
1	D	150	HIS
1	D	151	HIS
1	D	176	HIS
1	D	303	ASN
1	D	305	ASN
1	D	319	ASN
1	A	19	GLN
1	A	49	GLN
1	A	81	ASN
1	A	93	ASN
1	A	150	HIS
1	A	151	HIS
1	A	154	ASN
1	A	159	HIS
1	A	319	ASN
1	B	8	ASN
1	B	19	GLN
1	B	81	ASN
1	B	93	ASN
1	B	150	HIS
1	B	151	HIS
1	B	305	ASN
1	B	319	ASN

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

5 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	NAD	C	860	-	42,48,48	1.61	6 (14%)	50,73,73	1.83	10 (20%)
2	NAD	A	862	-	42,48,48	1.59	7 (16%)	50,73,73	1.86	10 (20%)
2	NAD	B	863	-	42,48,48	1.65	7 (16%)	50,73,73	1.83	10 (20%)
2	NAD	D	861	-	42,48,48	1.62	6 (14%)	50,73,73	1.83	11 (22%)
3	S70	A	804	-	12,14,14	2.91	8 (66%)	14,21,21	1.47	3 (21%)

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	NAD	C	860	-	-	9/26/62/62	0/5/5/5
2	NAD	A	862	-	-	9/26/62/62	0/5/5/5
2	NAD	B	863	-	-	10/26/62/62	0/5/5/5
2	NAD	D	861	-	-	11/26/62/62	0/5/5/5
3	S70	A	804	-	-	3/14/15/15	-

All (34) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	804	S70	P8-C4	-5.32	1.71	1.79
3	A	804	S70	P8-O10	5.29	1.61	1.50
2	C	860	NAD	C3N-C7N	5.13	1.58	1.50
2	B	863	NAD	C3N-C7N	5.07	1.58	1.50
2	D	861	NAD	C3N-C7N	5.02	1.58	1.50
2	A	862	NAD	C3N-C7N	5.02	1.58	1.50
2	C	860	NAD	C2N-N1N	4.52	1.40	1.35
2	D	861	NAD	C2N-N1N	4.52	1.40	1.35
2	B	863	NAD	C2N-N1N	4.48	1.40	1.35
2	A	862	NAD	C2N-N1N	4.10	1.40	1.35
2	B	863	NAD	O4B-C1B	3.94	1.46	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	861	NAD	C6N-N1N	3.82	1.44	1.35
2	B	863	NAD	C6N-N1N	3.64	1.44	1.35
2	C	860	NAD	C6N-N1N	3.63	1.44	1.35
2	C	860	NAD	O4B-C1B	3.54	1.46	1.41
2	A	862	NAD	C6N-N1N	3.50	1.43	1.35
2	A	862	NAD	O4B-C1B	3.46	1.45	1.41
2	D	861	NAD	O4B-C1B	3.43	1.45	1.41
2	D	861	NAD	C4N-C3N	3.34	1.45	1.39
3	A	804	S70	P12-O15	3.10	1.66	1.54
2	C	860	NAD	C4N-C3N	3.04	1.44	1.39
2	A	862	NAD	C4N-C3N	2.98	1.44	1.39
3	A	804	S70	P12-O13	2.91	1.59	1.50
2	B	863	NAD	C4N-C3N	2.85	1.44	1.39
2	A	862	NAD	C2A-N1A	2.57	1.38	1.33
3	A	804	S70	P8-O9	2.52	1.60	1.54
2	B	863	NAD	C2A-N1A	2.46	1.38	1.33
2	C	860	NAD	C2A-N1A	2.40	1.38	1.33
2	D	861	NAD	C2A-N1A	2.29	1.38	1.33
3	A	804	S70	C4-C3	2.10	1.53	1.51
3	A	804	S70	P12-O14	2.09	1.62	1.54
3	A	804	S70	P8-O11	2.06	1.59	1.54
2	A	862	NAD	PA-O2A	-2.01	1.45	1.55
2	B	863	NAD	C2B-C1B	2.01	1.56	1.53

All (44) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	862	NAD	C6N-C5N-C4N	5.45	127.35	119.44
2	C	860	NAD	C6N-C5N-C4N	5.41	127.30	119.44
2	B	863	NAD	C6N-C5N-C4N	5.32	127.17	119.44
2	D	861	NAD	C6N-C5N-C4N	5.30	127.14	119.44
2	A	862	NAD	C5N-C4N-C3N	-5.18	114.22	120.34
2	D	861	NAD	C5N-C4N-C3N	-5.08	114.33	120.34
2	C	860	NAD	C5N-C4N-C3N	-4.96	114.47	120.34
2	B	863	NAD	C5N-C4N-C3N	-4.89	114.56	120.34
2	A	862	NAD	C5N-C6N-N1N	-4.51	113.93	120.40
2	B	863	NAD	C5N-C6N-N1N	-4.44	114.04	120.40
2	C	860	NAD	C5N-C6N-N1N	-4.43	114.05	120.40
2	D	861	NAD	C5N-C6N-N1N	-4.08	114.55	120.40
2	B	863	NAD	C4N-C3N-C7N	-3.99	110.36	121.04
2	D	861	NAD	C4N-C3N-C7N	-3.97	110.42	121.04
2	C	860	NAD	C4N-C3N-C7N	-3.81	110.83	121.04

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	862	NAD	C4N-C3N-C7N	-3.74	111.03	121.04
2	B	863	NAD	C3B-C2B-C1B	3.59	106.38	100.98
2	D	861	NAD	C2N-C3N-C4N	3.58	122.32	118.26
2	A	862	NAD	O4B-C1B-C2B	-3.55	101.74	106.93
2	D	861	NAD	O4B-C1B-C2B	-3.44	101.90	106.93
3	A	804	S70	P12-O7-C1	3.38	127.60	118.30
2	C	860	NAD	C3B-C2B-C1B	3.33	105.99	100.98
2	A	862	NAD	C2N-C3N-C4N	3.30	122.00	118.26
2	C	860	NAD	O4B-C1B-C2B	-3.29	102.12	106.93
2	B	863	NAD	C2N-C3N-C4N	3.28	121.98	118.26
2	C	860	NAD	C2N-C3N-C4N	3.22	121.91	118.26
2	A	862	NAD	C3B-C2B-C1B	3.15	105.73	100.98
2	B	863	NAD	C2N-C3N-C7N	2.82	127.66	119.46
2	D	861	NAD	C2N-C3N-C7N	2.69	127.26	119.46
2	C	860	NAD	C2N-C3N-C7N	2.69	127.26	119.46
2	B	863	NAD	O4B-C1B-C2B	-2.62	103.09	106.93
2	D	861	NAD	C3B-C2B-C1B	2.59	104.88	100.98
2	A	862	NAD	C2N-C3N-C7N	2.59	126.97	119.46
2	A	862	NAD	C5A-C6A-N6A	2.21	123.72	120.35
3	A	804	S70	O14-P12-O7	2.20	112.58	106.73
2	D	861	NAD	O4D-C1D-C2D	-2.19	103.72	106.93
2	C	860	NAD	C5A-C6A-N6A	2.18	123.67	120.35
2	D	861	NAD	C4A-C5A-N7A	2.13	111.62	109.40
3	A	804	S70	O11-P8-C4	2.13	111.31	106.84
2	B	863	NAD	C4A-C5A-N7A	2.12	111.61	109.40
2	D	861	NAD	C5A-C6A-N6A	2.10	123.55	120.35
2	C	860	NAD	C4A-C5A-N7A	2.09	111.58	109.40
2	B	863	NAD	C5A-C6A-N6A	2.05	123.47	120.35
2	A	862	NAD	C4A-C5A-N7A	2.01	111.49	109.40

There are no chirality outliers.

All (42) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	C	860	NAD	O4D-C1D-N1N-C2N
2	C	860	NAD	O4D-C1D-N1N-C6N
2	C	860	NAD	C2D-C1D-N1N-C2N
2	C	860	NAD	C2D-C1D-N1N-C6N
2	A	862	NAD	O4D-C1D-N1N-C2N
2	A	862	NAD	O4D-C1D-N1N-C6N
2	A	862	NAD	C2D-C1D-N1N-C2N
2	A	862	NAD	C2D-C1D-N1N-C6N

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Mol	Chain	Res	Type	Atoms
2	A	862	NAD	C2N-C3N-C7N-O7N
2	A	862	NAD	C2N-C3N-C7N-N7N
2	B	863	NAD	O4D-C1D-N1N-C2N
2	B	863	NAD	O4D-C1D-N1N-C6N
2	B	863	NAD	C2D-C1D-N1N-C2N
2	B	863	NAD	C2D-C1D-N1N-C6N
2	B	863	NAD	C2N-C3N-C7N-O7N
2	B	863	NAD	C2N-C3N-C7N-N7N
2	D	861	NAD	C5B-O5B-PA-O1A
2	D	861	NAD	O4D-C1D-N1N-C2N
2	D	861	NAD	O4D-C1D-N1N-C6N
2	D	861	NAD	C2D-C1D-N1N-C2N
2	D	861	NAD	C2D-C1D-N1N-C6N
3	A	804	S70	O7-C1-C2-C3
3	A	804	S70	O7-C1-C2-O5
2	B	863	NAD	C4N-C3N-C7N-O7N
2	B	863	NAD	C4N-C3N-C7N-N7N
2	B	863	NAD	O4B-C4B-C5B-O5B
2	C	860	NAD	C2N-C3N-C7N-O7N
2	A	862	NAD	C4N-C3N-C7N-N7N
2	A	862	NAD	C4N-C3N-C7N-O7N
2	C	860	NAD	C2N-C3N-C7N-N7N
2	C	860	NAD	C4N-C3N-C7N-N7N
2	C	860	NAD	C4N-C3N-C7N-O7N
2	B	863	NAD	C3B-C4B-C5B-O5B
3	A	804	S70	O6-C3-C4-P8
2	D	861	NAD	O4B-C4B-C5B-O5B
2	D	861	NAD	C5B-O5B-PA-O3
2	D	861	NAD	C5B-O5B-PA-O2A
2	D	861	NAD	C3B-C4B-C5B-O5B
2	D	861	NAD	C4N-C3N-C7N-N7N
2	D	861	NAD	C4N-C3N-C7N-O7N
2	C	860	NAD	O4B-C4B-C5B-O5B
2	A	862	NAD	O4B-C4B-C5B-O5B

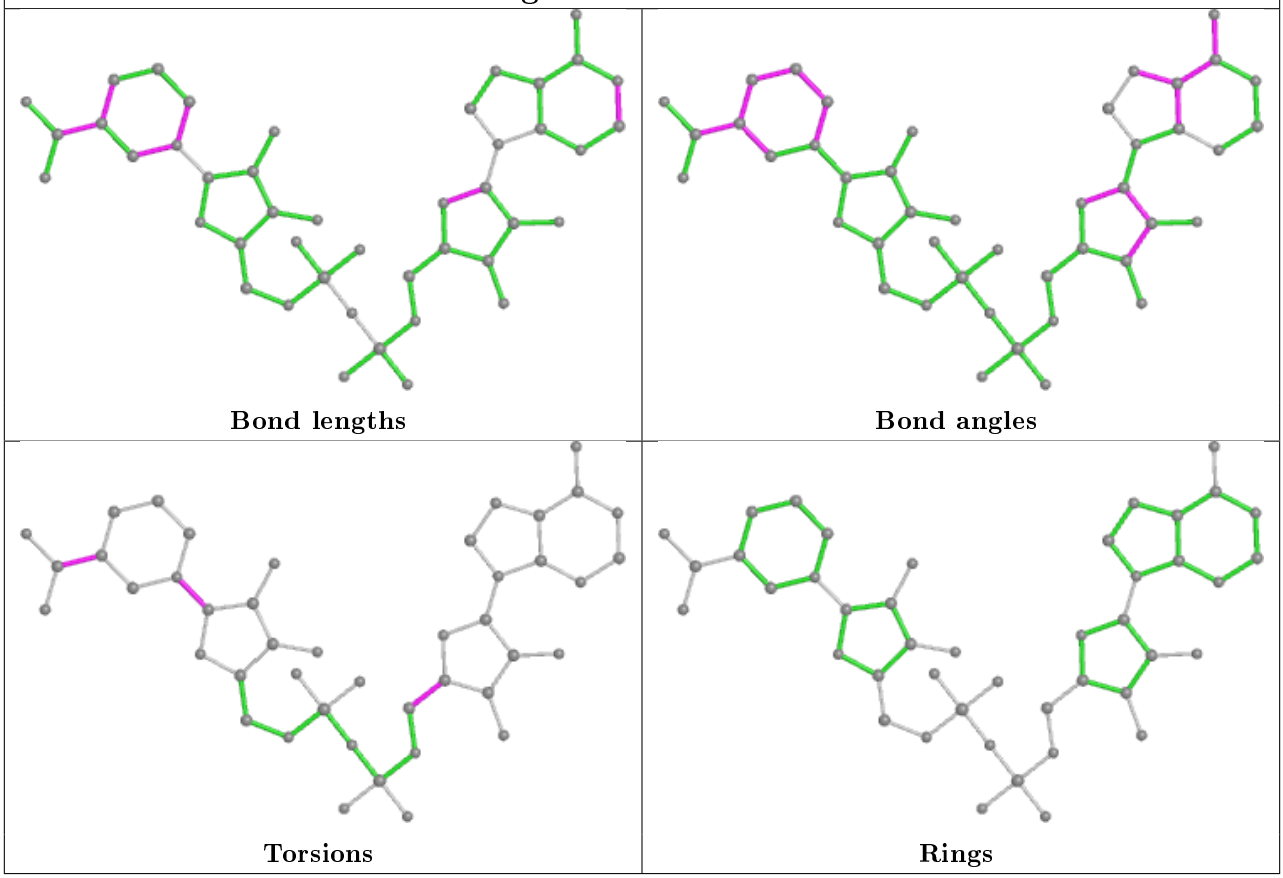
There are no ring outliers.

3 monomers are involved in 9 short contacts:

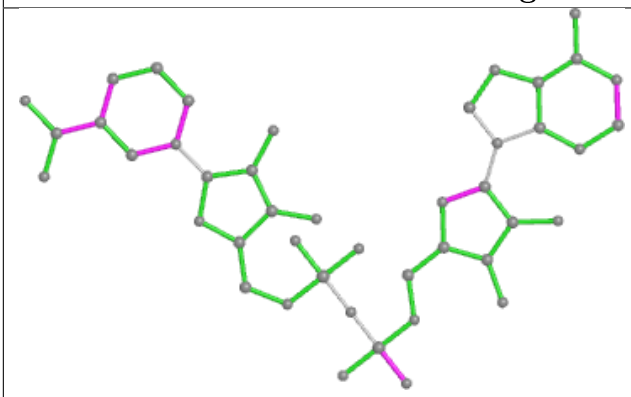
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	862	NAD	2	0
2	B	863	NAD	6	0
3	A	804	S70	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

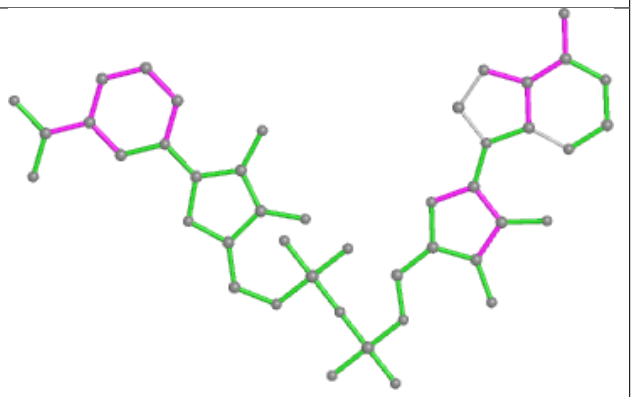
Ligand NAD C 860



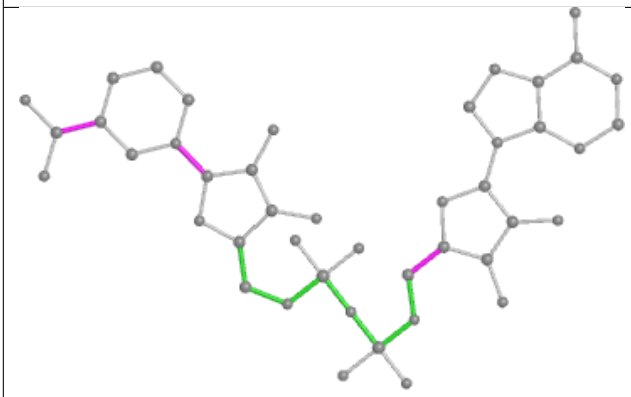
Ligand NAD A 862



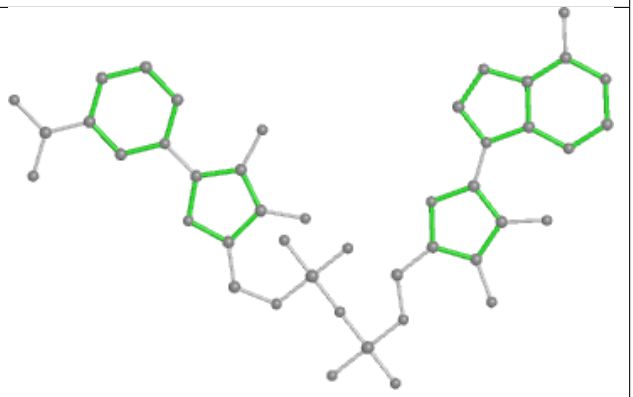
Bond lengths



Bond angles

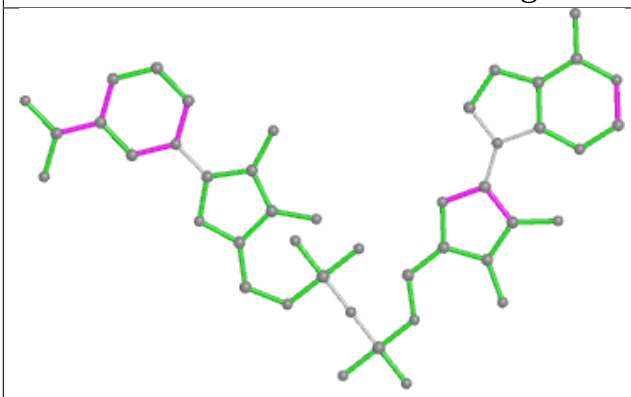


Torsions

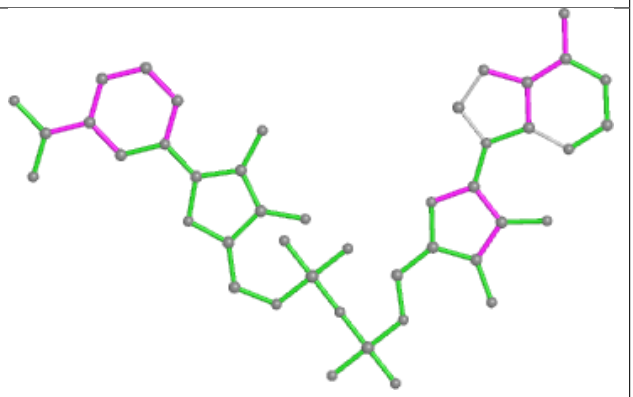


Rings

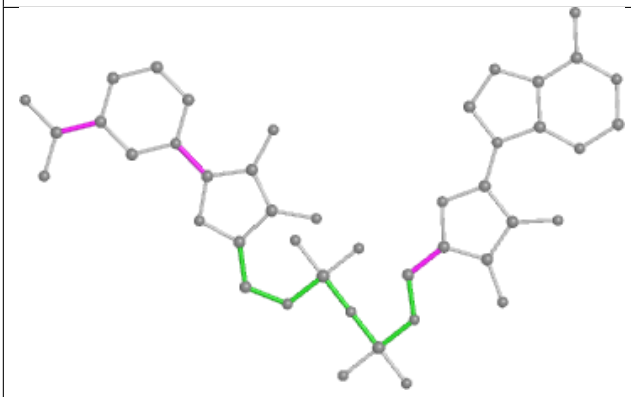
Ligand NAD B 863



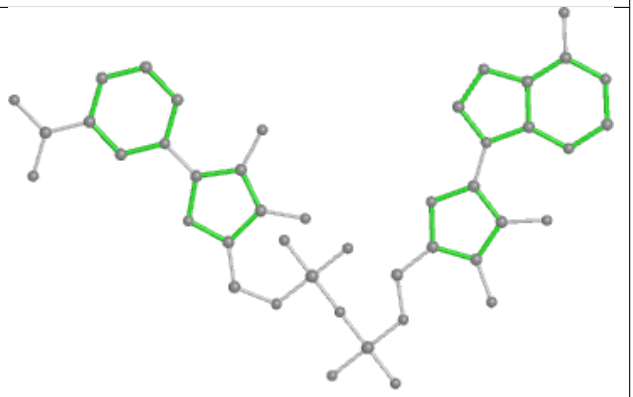
Bond lengths



Bond angles

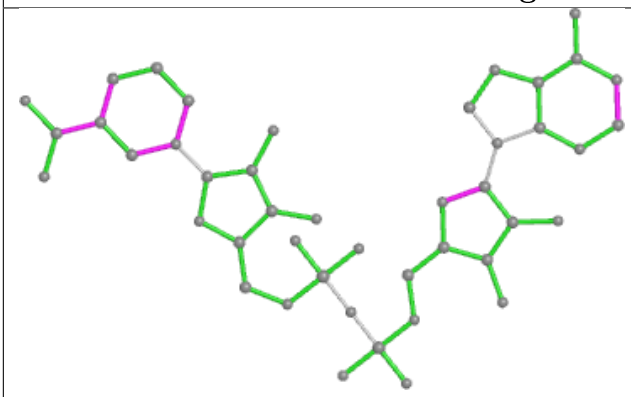


Torsions

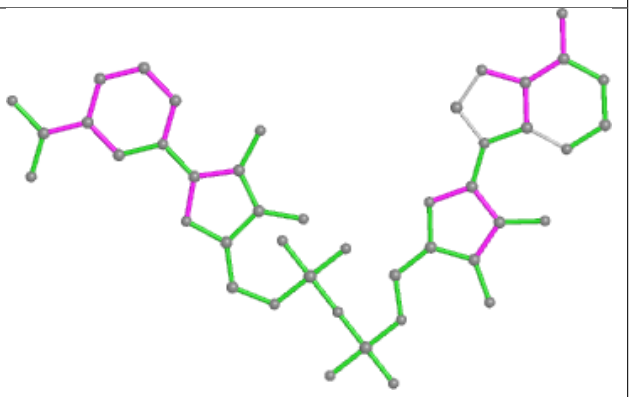


Rings

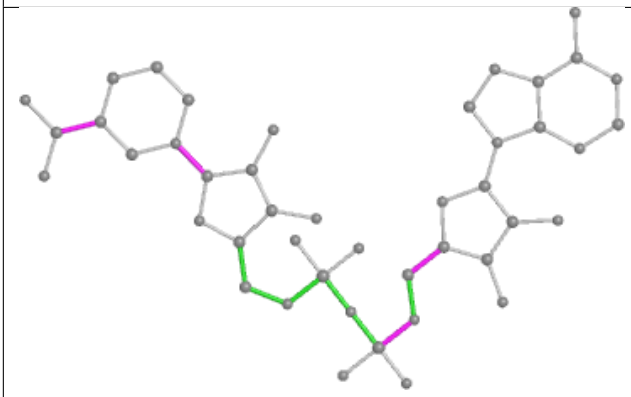
Ligand NAD D 861



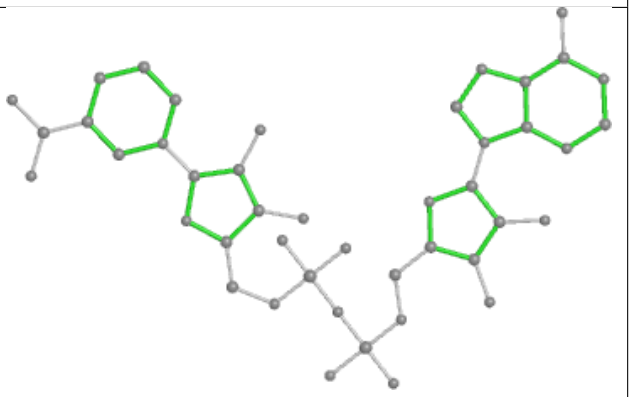
Bond lengths



Bond angles

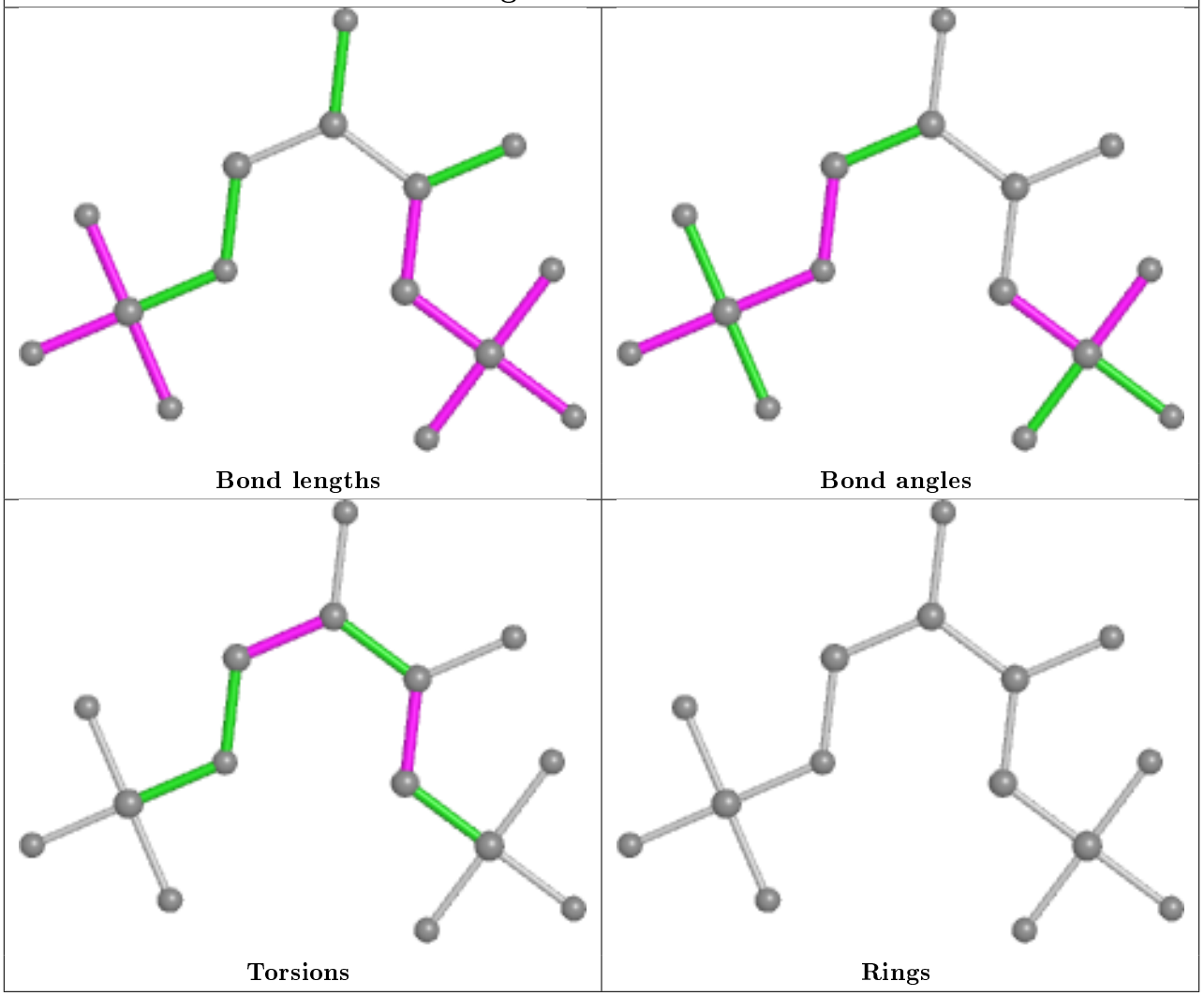


Torsions



Rings

Ligand S70 A 804



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} 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	359/359 (100%)	-0.38	8 (2%)	62	70	30, 51, 86, 102	0
1	B	359/359 (100%)	-0.24	15 (4%)	36	43	29, 52, 95, 106	0
1	C	359/359 (100%)	-0.03	19 (5%)	26	31	33, 59, 97, 108	0
1	D	359/359 (100%)	-0.46	5 (1%)	75	82	32, 51, 79, 95	0
All	All	1436/1436 (100%)	-0.28	47 (3%)	46	54	29, 53, 90, 108	0

All (47) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	1	MET	7.5
1	D	1	MET	6.5
1	C	70	PRO	5.5
1	C	71	SER	5.4
1	A	359	LEU	5.2
1	C	359	LEU	4.6
1	C	72	VAL	4.2
1	A	355	ARG	3.4
1	C	118	ALA	3.4
1	C	126	GLY	3.3
1	A	1	MET	3.2
1	A	92	ARG	3.0
1	C	93	ASN	2.9
1	C	73	ALA	2.8
1	D	92	ARG	2.8
1	B	73	ALA	2.7
1	B	39	MET	2.7
1	C	92	ARG	2.7
1	B	93	ASN	2.6
1	C	113	LEU	2.6
1	C	69	SER	2.5

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Mol	Chain	Res	Type	RSRZ
1	C	156	SER	2.4
1	C	96	ASP	2.4
1	C	29	THR	2.4
1	B	359	LEU	2.4
1	B	117	LYS	2.4
1	B	156	SER	2.3
1	B	139	GLY	2.3
1	A	358	ARG	2.3
1	C	357	ALA	2.3
1	B	71	SER	2.2
1	C	101	LYS	2.2
1	A	93	ASN	2.2
1	B	157	GLU	2.2
1	C	94	PRO	2.2
1	B	2	PRO	2.1
1	D	140	GLY	2.1
1	B	151	HIS	2.1
1	C	1	MET	2.1
1	B	74	LYS	2.1
1	D	355	ARG	2.1
1	A	156	SER	2.1
1	C	66	THR	2.1
1	B	72	VAL	2.0
1	A	125	ARG	2.0
1	D	93	ASN	2.0
1	B	69	SER	2.0

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)

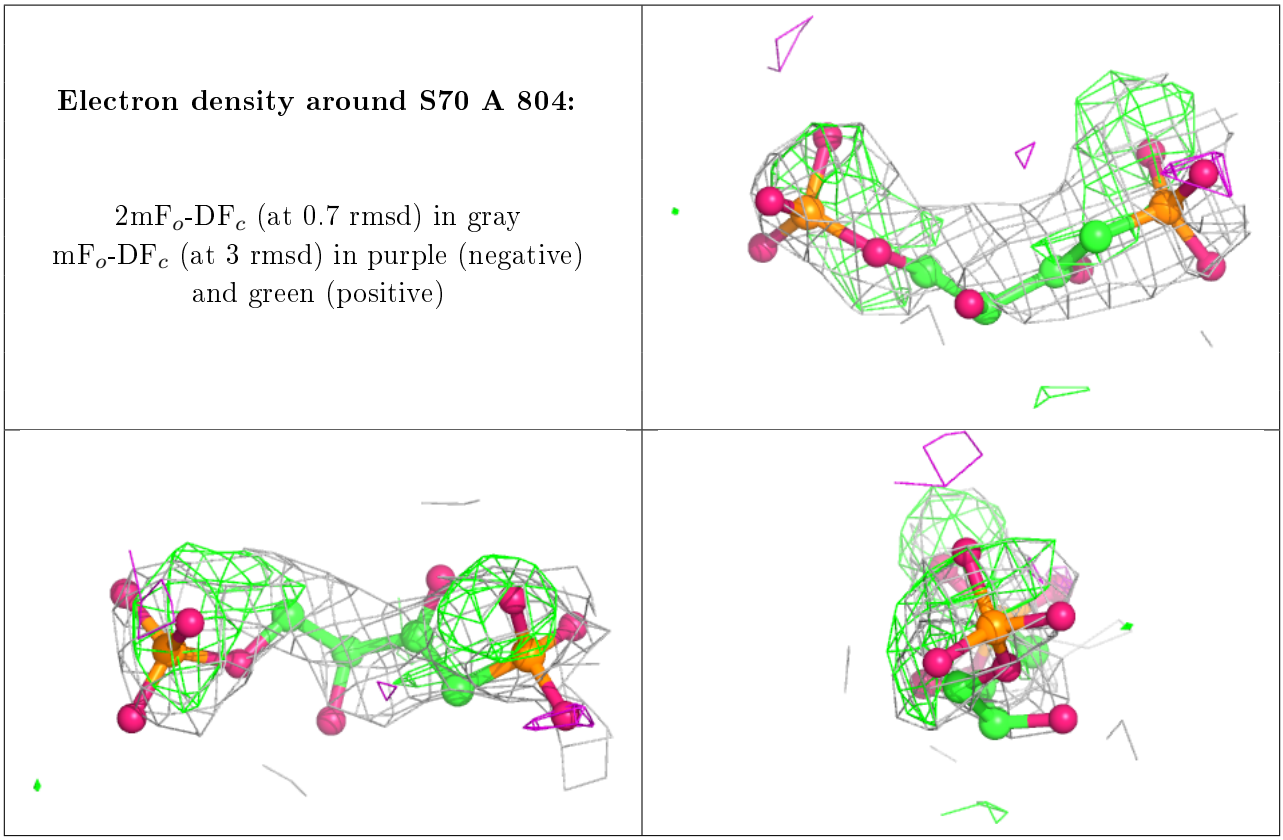
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	S70	A	804	15/15	0.75	0.45	84,86,86,86	15
2	NAD	B	863	44/44	0.77	0.33	82,88,91,92	44
2	NAD	A	862	44/44	0.88	0.24	66,71,74,74	0
2	NAD	C	860	44/44	0.90	0.24	66,77,81,82	0
2	NAD	D	861	44/44	0.95	0.14	51,53,55,55	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

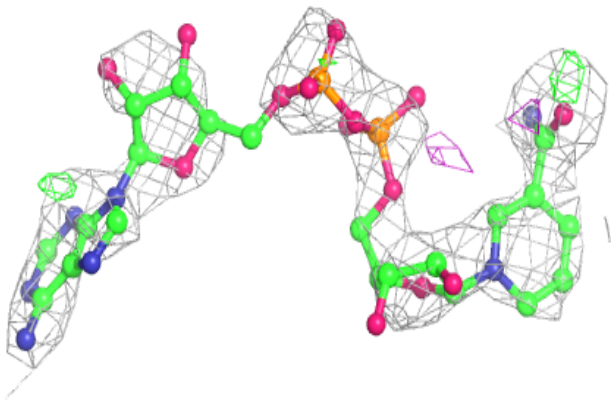
Electron density around S70 A 804:

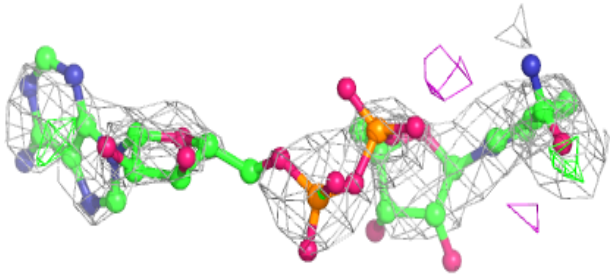
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

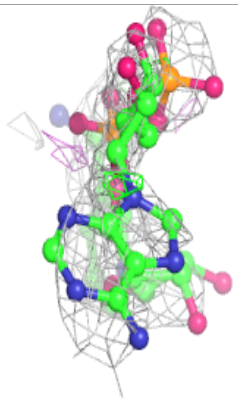


Electron density around NAD B 863:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

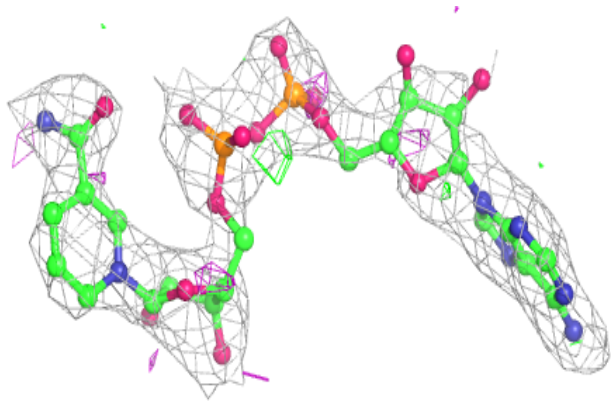


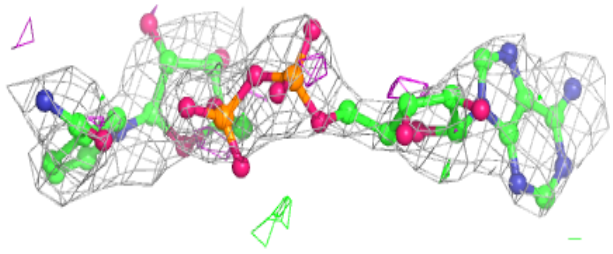


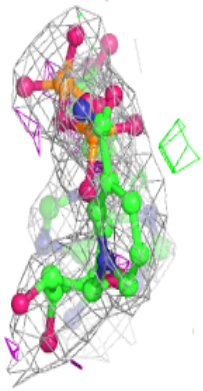


Electron density around NAD A 862:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

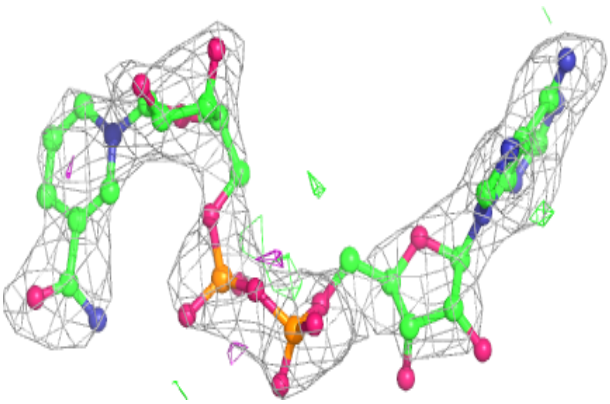


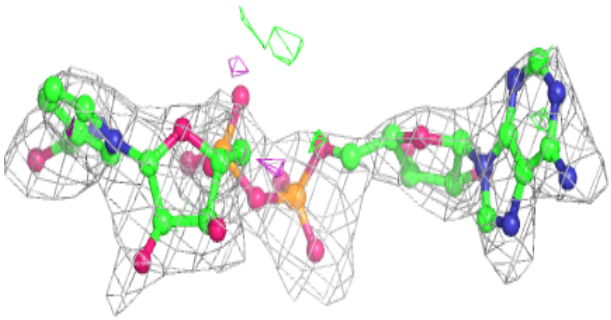


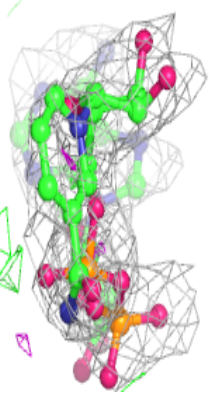


Electron density around NAD C 860:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

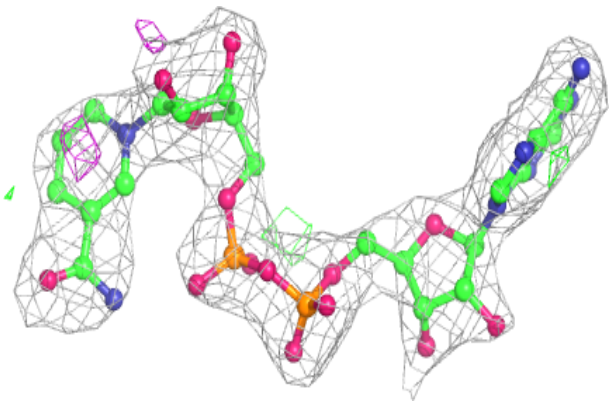


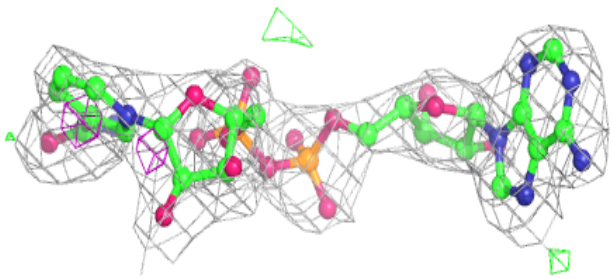


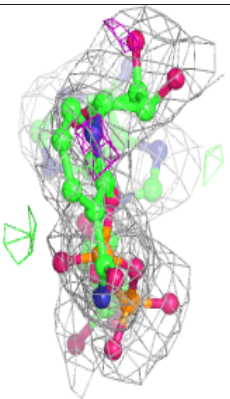


Electron density around NAD D 861:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)







6.5 Other polymers (i)

There are no such residues in this entry.