



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 01:56 AM UTC

PDB ID : 1T09 / pdb_00001t09
Title : Crystal structure of human cytosolic NADP(+)-dependent isocitrate dehydrogenase in complex NADP
Authors : Xu, X.; Zhao, J.; Peng, B.; Huang, Q.; Arnold, E.; Ding, J.
Deposited on : 2004-04-08
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

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

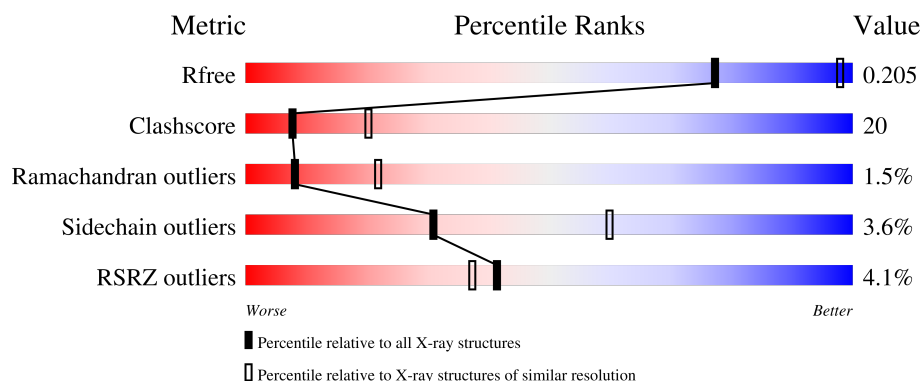
1 Overall quality at a glance

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}	180053	3538 (2.70-2.70)
Clashscore	190562	3843 (2.70-2.70)
Ramachandran outliers	187476	3778 (2.70-2.70)
Sidechain outliers	187428	3778 (2.70-2.70)
RSRZ outliers	180081	3538 (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 of 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 $\leq 5\%$. 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	414	7% 67% 28% 6%
1	B	414	7% 61% 35% .

2 Entry composition [i](#)

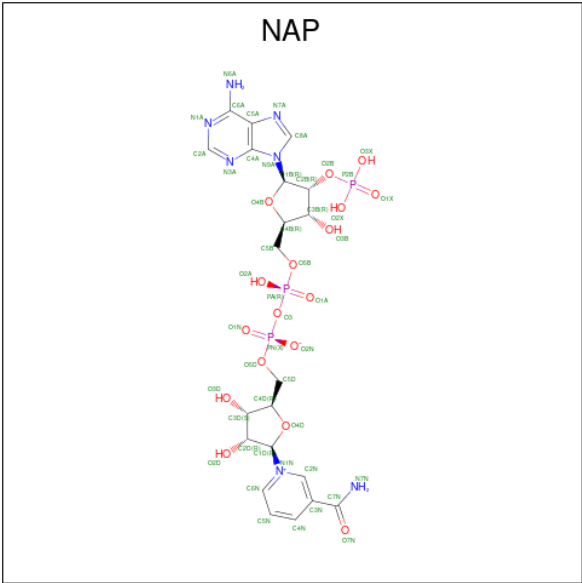
There are 3 unique types of molecules in this entry. The entry contains 6807 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Isocitrate dehydrogenase [NADP] cytoplasmic.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	414	Total	C	N	O	S	0	0	0
			3278	2083	556	621	18			
1	B	414	Total	C	N	O	S	0	0	0
			3278	2083	556	621	18			

- Molecule 2 is NADP NICOTINAMIDE-ADENINE-DINUCLEOTIDE PHOSPHATE (CCD ID: NAP) (formula: C₂₁H₂₈N₇O₁₇P₃).



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

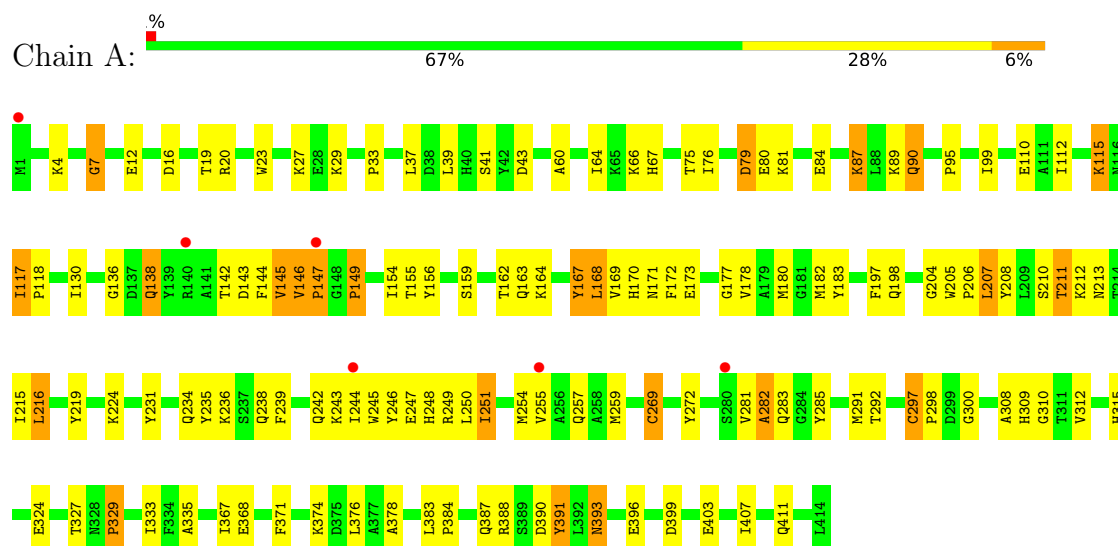
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	88	Total 88	O 88	0	0
3	B	67	Total 67	O 67	0	0

3 Residue-property plots

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

• Molecule 1: Isocitrate dehydrogenase [NADP] cytoplasmic



• Molecule 1: Isocitrate dehydrogenase [NADP] cytoplasmic



4 Data and refinement statistics

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, α , β , γ	82.71Å 82.71Å 308.03Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	39.94 – 2.70 39.94 – 2.70	Depositor EDS
% Data completeness (in resolution range)	99.8 (39.94-2.70) 99.8 (39.94-2.70)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	4.72 (at 2.69Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.210 , 0.270 0.213 , 0.205	Depositor DCC
R_{free} test set	1537 reflections (5.06%)	wwPDB-VP
Wilson B-factor (Å ²)	40.1	Xtriage
Anisotropy	0.257	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 34.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	6807	wwPDB-VP
Average B, all atoms (Å ²)	37.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.06% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

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

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	0.45	0/3346	0.96	12/4510 (0.3%)
1	B	0.43	0/3346	0.98	21/4510 (0.5%)
All	All	0.44	0/6692	0.97	33/9020 (0.4%)

There are no bond length outliers.

All (33) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	145	VAL	N-CA-C	10.47	121.19	111.45
1	B	376	LEU	N-CA-C	-8.89	98.08	110.35
1	B	270	LYS	N-CA-C	-8.60	102.80	113.38
1	B	174	GLU	N-CA-C	-8.02	102.75	112.54
1	B	39	LEU	N-CA-C	7.95	121.28	109.59
1	A	117	ILE	CA-C-N	7.72	127.77	119.90
1	A	117	ILE	C-N-CA	7.72	127.77	119.90
1	B	203	LYS	N-CA-C	-7.63	100.69	110.53
1	B	394	THR	N-CA-C	-7.07	103.57	111.28
1	A	167	TYR	N-CA-C	6.95	122.66	114.04
1	A	297	CYS	CA-C-N	6.83	126.63	119.05
1	A	297	CYS	C-N-CA	6.83	126.63	119.05
1	B	378	ALA	N-CA-C	-6.56	104.21	111.36
1	A	39	LEU	N-CA-C	6.41	119.02	109.59
1	B	77	THR	N-CA-C	-6.28	100.52	109.24
1	B	125	VAL	N-CA-C	-6.08	107.57	113.53
1	B	16	ASP	N-CA-C	5.83	118.73	109.81
1	A	335	ALA	N-CA-C	-5.78	105.06	111.36
1	A	79	ASP	N-CA-C	-5.70	100.65	109.14
1	B	202	SER	N-CA-C	-5.68	104.09	111.02
1	A	391	TYR	N-CA-C	5.53	116.37	108.74
1	B	113	ILE	N-CA-C	5.51	117.25	108.87

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	278	SER	N-CA-C	5.45	117.79	109.62
1	B	157	THR	CA-C-N	5.39	125.39	119.89
1	B	157	THR	C-N-CA	5.39	125.39	119.89
1	B	146	VAL	CA-C-N	5.37	124.56	118.97
1	B	146	VAL	C-N-CA	5.37	124.56	118.97
1	A	16	ASP	N-CA-C	5.25	117.38	109.41
1	A	7	GLY	N-CA-C	5.20	120.46	114.16
1	B	343	ARG	N-CA-C	-5.20	105.51	111.07
1	B	31	ILE	CB-CA-C	-5.18	107.30	111.71
1	B	72	LYS	N-CA-C	5.18	117.90	109.24
1	B	335	ALA	N-CA-C	-5.10	105.72	111.28

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	3278	0	3249	142	0
1	B	3278	0	3249	144	0
2	A	48	0	25	3	0
2	B	48	0	25	3	0
3	A	88	0	0	5	0
3	B	67	0	0	2	0
All	All	6807	0	6548	264	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 20.

All (264) 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:393:ASN:ND2	1:A:396:GLU:H	1.60	0.98
1:A:393:ASN:C	1:A:393:ASN:HD22	1.77	0.92
1:A:393:ASN:HD21	1:A:396:GLU:H	1.15	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:259:MET:HE1	1:B:281:VAL:HG22	1.52	0.88
1:A:138:GLN:H	1:A:138:GLN:NE2	1.74	0.84
1:A:80:GLU:H	1:A:80:GLU:CD	1.85	0.84
1:A:211:THR:HG23	1:A:213:ASN:H	1.45	0.82
1:A:142:THR:HG22	1:B:154:ILE:HD11	1.62	0.82
1:A:155:THR:HG21	1:A:164:LYS:HE3	1.61	0.81
1:B:211:THR:HG23	1:B:213:ASN:H	1.46	0.79
1:A:136:GLY:HA3	1:A:138:GLN:HE22	1.46	0.79
1:A:178:VAL:HG21	1:B:219:TYR:HA	1.63	0.79
1:A:81:LYS:H	1:A:81:LYS:HD2	1.48	0.78
1:A:244:ILE:HG22	1:A:245:TRP:H	1.47	0.78
1:B:96:ASN:O	1:B:100:ARG:HG2	1.86	0.76
1:B:212:LYS:HE3	1:B:251:ILE:HD12	1.69	0.75
1:A:180:MET:HG3	1:B:219:TYR:CD1	2.22	0.74
1:B:121:VAL:HG12	1:B:123:GLY:H	1.53	0.73
1:B:129:ILE:HD13	1:B:205:TRP:HZ3	1.53	0.72
1:A:309:HIS:HD2	1:A:310:GLY:O	1.72	0.72
1:B:109:ARG:HD2	1:B:283:GLN:NE2	2.04	0.72
1:A:215:ILE:HG22	1:A:216:LEU:HD13	1.70	0.72
1:A:182:MET:HE2	1:B:180:MET:HE2	1.71	0.71
1:A:211:THR:HG23	1:A:213:ASN:N	2.05	0.71
1:A:281:VAL:HG21	1:A:308:ALA:HB1	1.71	0.71
1:A:182:MET:HE2	1:B:182:MET:HE2	1.72	0.70
1:B:110:GLU:HB2	1:B:129:ILE:HG13	1.71	0.70
1:A:210:SER:OG	1:A:269:CYS:HB2	1.92	0.70
1:A:75:THR:H	2:A:415:NAP:H71N	1.40	0.69
1:B:376:LEU:O	1:B:377:ALA:HB3	1.93	0.69
1:A:291:MET:HB3	1:A:308:ALA:HB3	1.74	0.69
1:A:244:ILE:HG22	1:A:245:TRP:N	2.08	0.68
1:B:211:THR:HG23	1:B:213:ASN:N	2.08	0.68
1:B:154:ILE:HG13	1:B:167:TYR:HB2	1.74	0.68
1:B:140:ARG:HD2	1:B:140:ARG:O	1.94	0.67
1:B:393:ASN:HB2	1:B:396:GLU:HG3	1.75	0.67
1:A:212:LYS:HE2	1:A:215:ILE:HD12	1.75	0.67
1:B:236:LYS:O	1:B:240:GLU:HG2	1.94	0.67
1:A:81:LYS:HD2	1:A:81:LYS:N	2.09	0.67
1:B:60:ALA:O	1:B:64:ILE:HG13	1.96	0.66
1:A:255:VAL:O	1:A:259:MET:HG2	1.96	0.65
1:A:393:ASN:HD21	1:A:396:GLU:N	1.91	0.65
1:B:149:PRO:HG3	1:B:175:GLY:HA3	1.79	0.65
1:B:284:GLY:HA3	1:B:291:MET:SD	2.36	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:393:ASN:ND2	1:A:393:ASN:C	2.51	0.65
1:B:162:THR:HG22	1:B:163:GLN:N	2.11	0.64
1:A:198:GLN:OE1	1:A:300:GLY:HA2	1.98	0.64
1:A:154:ILE:HD12	1:B:154:ILE:HG23	1.78	0.64
1:B:123:GLY:O	1:B:125:VAL:HG23	1.98	0.63
1:B:149:PRO:CD	1:B:175:GLY:HA3	2.28	0.63
1:B:100:ARG:HD2	1:B:295:LEU:HD22	1.80	0.63
1:B:358:ALA:O	1:B:362:VAL:HG23	1.98	0.63
1:B:162:THR:CG2	1:B:163:GLN:N	2.62	0.63
1:A:112:ILE:HD11	1:A:292:THR:HG23	1.81	0.62
1:A:112:ILE:HD11	1:A:292:THR:CG2	2.30	0.62
1:B:109:ARG:HD2	1:B:283:GLN:HE22	1.64	0.62
1:A:115:LYS:HD3	1:A:368:GLU:OE2	1.99	0.61
1:B:309:HIS:HD2	1:B:310:GLY:O	1.84	0.61
1:A:89:LYS:O	1:A:90:GLN:HB2	2.00	0.60
1:A:138:GLN:H	1:A:138:GLN:HE21	1.48	0.60
1:B:338:ARG:HG2	1:B:338:ARG:HH11	1.65	0.60
1:A:211:THR:HG23	1:A:212:LYS:N	2.16	0.59
1:B:115:LYS:HG2	1:B:368:GLU:OE2	2.01	0.59
1:A:155:THR:O	1:B:152:VAL:HA	2.03	0.59
1:A:211:THR:CG2	1:A:213:ASN:H	2.15	0.59
1:A:249:ARG:HG3	1:A:249:ARG:HH11	1.68	0.58
1:B:244:ILE:HG22	1:B:245:TRP:N	2.18	0.58
1:A:281:VAL:O	1:A:282:ALA:HB2	2.02	0.58
1:A:155:THR:HG21	1:A:164:LYS:CE	2.32	0.58
1:B:211:THR:HG23	1:B:212:LYS:N	2.19	0.57
1:B:393:ASN:HB2	1:B:396:GLU:H	1.69	0.57
1:B:129:ILE:CD1	1:B:205:TRP:HZ3	2.17	0.57
1:B:5:ILE:HB	1:B:35:VAL:HG22	1.87	0.57
1:B:129:ILE:HD13	1:B:205:TRP:CZ3	2.37	0.57
1:B:211:THR:HB	1:B:248:HIS:HE1	1.69	0.57
1:B:156:TYR:CE2	1:B:158:PRO:HG3	2.40	0.56
1:B:129:ILE:HD12	1:B:129:ILE:N	2.19	0.56
1:B:130:ILE:HD12	1:B:283:GLN:HB3	1.88	0.56
1:A:142:THR:CG2	1:B:154:ILE:HD11	2.33	0.56
1:B:149:PRO:CG	1:B:175:GLY:HA3	2.36	0.56
1:A:130:ILE:CD1	1:B:276:VAL:HB	2.36	0.56
1:A:219:TYR:HA	1:B:178:VAL:HG21	1.88	0.56
1:A:170:HIS:HB2	1:B:183:TYR:CD2	2.41	0.55
1:A:383:LEU:HB2	1:A:384:PRO:HD3	1.89	0.55
1:B:12:GLU:HG2	1:B:13:MET:N	2.21	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:24:GLU:O	1:B:28:GLU:HG2	2.06	0.55
1:A:178:VAL:HG13	1:B:219:TYR:CE1	2.42	0.55
1:A:29:LYS:HE3	1:A:399:ASP:OD1	2.07	0.55
1:A:149:PRO:HA	1:A:172:PHE:O	2.07	0.54
1:A:324:GLU:OE1	1:A:388:ARG:NH1	2.38	0.54
1:A:112:ILE:CD1	1:A:292:THR:HG23	2.38	0.54
1:A:211:THR:CG2	1:A:248:HIS:HE1	2.20	0.54
1:A:145:VAL:O	1:A:177:GLY:O	2.25	0.54
1:A:212:LYS:HE3	3:A:462:HOH:O	2.06	0.54
1:B:75:THR:O	2:B:1003:NAP:H2N	2.08	0.54
1:A:207:LEU:HD22	1:A:208:TYR:N	2.23	0.54
1:B:211:THR:CG2	1:B:213:ASN:H	2.16	0.54
1:A:79:ASP:OD1	1:A:79:ASP:C	2.50	0.54
1:A:143:ASP:HB3	1:A:180:MET:HG2	1.89	0.54
1:A:178:VAL:CG2	1:B:219:TYR:HA	2.37	0.53
1:B:298:PRO:HD2	3:B:1043:HOH:O	2.08	0.53
1:A:167:TYR:O	1:A:168:LEU:HB3	2.06	0.53
1:B:270:LYS:HD3	1:B:270:LYS:O	2.08	0.53
1:A:249:ARG:NH1	1:A:257:GLN:OE1	2.42	0.53
1:A:329:PRO:O	1:A:333:ILE:HG13	2.09	0.53
1:A:154:ILE:CD1	1:B:154:ILE:HG23	2.39	0.53
1:A:224:LYS:HG3	3:A:464:HOH:O	2.08	0.53
1:A:219:TYR:CE1	1:B:178:VAL:HG13	2.44	0.52
1:A:155:THR:HG22	3:A:418:HOH:O	2.09	0.52
1:A:75:THR:O	2:A:415:NAP:H2N	2.09	0.52
1:A:407:ILE:O	1:A:411:GLN:HG3	2.10	0.52
1:B:376:LEU:O	1:B:377:ALA:CB	2.57	0.52
1:A:239:PHE:O	1:A:244:ILE:N	2.42	0.51
1:B:315:HIS:HE1	2:B:1003:NAP:O2X	1.92	0.51
1:A:281:VAL:O	1:A:282:ALA:CB	2.59	0.51
1:A:387:GLN:O	1:A:390:ASP:HB2	2.10	0.51
1:A:243:LYS:O	1:A:243:LYS:HG3	2.11	0.51
1:A:172:PHE:HE2	1:A:177:GLY:HA3	1.75	0.51
1:A:324:GLU:CD	1:A:388:ARG:HH12	2.19	0.51
1:B:338:ARG:HG2	1:B:338:ARG:NH1	2.24	0.51
1:A:216:LEU:HB3	1:A:219:TYR:HB3	1.92	0.51
1:A:136:GLY:HA3	1:A:138:GLN:NE2	2.21	0.51
1:B:111:ALA:HB2	1:B:283:GLN:O	2.11	0.51
1:B:149:PRO:HA	1:B:172:PHE:O	2.10	0.51
1:B:383:LEU:HB2	1:B:384:PRO:HD3	1.93	0.50
1:B:376:LEU:C	1:B:378:ALA:H	2.18	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:235:TYR:O	1:A:236:LYS:C	2.55	0.50
1:B:79:ASP:H	1:B:82:ARG:HB2	1.77	0.50
1:A:145:VAL:O	1:A:146:VAL:HB	2.11	0.50
1:B:116:ASN:OD1	1:B:368:GLU:HA	2.12	0.50
1:B:213:ASN:ND2	1:B:248:HIS:NE2	2.59	0.50
1:A:81:LYS:H	1:A:81:LYS:CD	2.23	0.50
1:B:244:ILE:CG2	1:B:245:TRP:N	2.74	0.50
1:B:120:LEU:HB3	1:B:124:TRP:CZ3	2.47	0.49
1:B:383:LEU:CB	1:B:384:PRO:HD3	2.42	0.49
1:A:211:THR:HG22	1:A:248:HIS:HE1	1.77	0.49
1:B:112:ILE:HD11	1:B:334:PHE:CG	2.47	0.49
1:B:186:ASP:O	1:B:190:GLU:HG3	2.13	0.49
1:B:160:ASP:C	1:B:162:THR:H	2.21	0.48
1:A:130:ILE:HD13	1:B:276:VAL:HB	1.95	0.48
1:A:231:TYR:O	1:A:234:GLN:O	2.29	0.48
1:A:162:THR:HG22	1:A:163:GLN:N	2.29	0.48
1:A:211:THR:HG22	1:A:248:HIS:CE1	2.48	0.48
1:A:324:GLU:CD	1:A:388:ARG:NH1	2.72	0.48
1:B:258:ALA:O	1:B:261:SER:HB3	2.13	0.48
1:A:182:MET:HE1	1:A:272:TYR:O	2.14	0.48
1:A:247:GLU:OE2	1:A:249:ARG:NH2	2.46	0.48
1:B:149:PRO:HD3	1:B:175:GLY:HA3	1.96	0.48
1:A:246:TYR:CG	1:A:247:GLU:N	2.82	0.47
1:B:56:VAL:HG13	1:B:57:THR:N	2.29	0.47
1:B:75:THR:H	2:B:1003:NAP:H71N	1.61	0.47
1:A:282:ALA:O	1:A:283:GLN:C	2.57	0.47
1:A:206:PRO:HA	1:A:244:ILE:CG2	2.44	0.47
1:A:248:HIS:O	1:A:249:ARG:HG2	2.14	0.47
1:B:153:GLU:HB3	1:B:167:TYR:O	2.14	0.47
1:B:276:VAL:HG22	1:B:276:VAL:O	2.14	0.47
1:B:374:LYS:O	1:B:376:LEU:O	2.33	0.47
1:A:162:THR:HG22	1:A:163:GLN:H	1.79	0.47
1:B:46:ILE:HG23	1:B:47:GLU:N	2.28	0.47
1:A:210:SER:HB3	1:A:254:MET:HG3	1.96	0.47
1:A:60:ALA:O	1:A:64:ILE:HG13	2.15	0.47
1:A:110:GLU:HB3	1:A:292:THR:OG1	2.15	0.46
1:A:374:LYS:HD2	1:A:391:TYR:CZ	2.49	0.46
1:B:329:PRO:O	1:B:333:ILE:HG13	2.16	0.46
1:B:162:THR:CG2	1:B:163:GLN:H	2.29	0.46
1:B:252:ASP:O	1:B:255:VAL:HG22	2.15	0.46
1:A:76:ILE:HG23	2:A:415:NAP:O3D	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:95:PRO:O	1:A:99:ILE:HG13	2.16	0.46
1:A:198:GLN:OE1	1:A:300:GLY:CA	2.64	0.46
1:B:204:GLY:C	1:B:244:ILE:HD11	2.41	0.46
1:B:140:ARG:HD2	1:B:140:ARG:C	2.40	0.46
1:B:376:LEU:C	1:B:378:ALA:N	2.74	0.46
1:A:66:LYS:HE3	1:A:67:HIS:NE2	2.31	0.46
1:A:182:MET:CE	1:B:182:MET:HE2	2.42	0.46
1:B:276:VAL:C	1:B:277:GLN:HG3	2.40	0.46
1:A:172:PHE:CE2	1:A:177:GLY:HA3	2.50	0.45
1:B:121:VAL:C	1:B:123:GLY:N	2.73	0.45
1:B:135:TYR:O	1:B:136:GLY:C	2.59	0.45
1:B:160:ASP:O	1:B:162:THR:N	2.49	0.45
1:A:197:PHE:CZ	1:A:231:TYR:HB2	2.51	0.45
1:B:276:VAL:O	1:B:276:VAL:HG13	2.17	0.45
1:A:4:LYS:HE2	1:A:33:PRO:O	2.16	0.45
1:A:211:THR:HG21	1:A:213:ASN:HB3	1.97	0.45
1:A:205:TRP:HB3	1:A:206:PRO:HD2	1.98	0.45
1:A:210:SER:HA	1:A:249:ARG:O	2.16	0.45
1:A:244:ILE:CG2	1:A:245:TRP:H	2.24	0.45
1:A:250:LEU:O	1:A:251:ILE:C	2.60	0.45
1:B:251:ILE:O	1:B:255:VAL:HG13	2.16	0.45
1:B:297:CYS:HB3	3:B:1043:HOH:O	2.15	0.45
1:A:117:ILE:HA	1:A:118:PRO:HD3	1.84	0.44
1:A:378:ALA:HB1	1:A:383:LEU:HD22	1.99	0.44
1:B:291:MET:HE3	1:B:291:MET:HA	1.99	0.44
1:B:235:TYR:O	1:B:236:LYS:C	2.60	0.44
1:B:255:VAL:O	1:B:259:MET:HG2	2.17	0.44
1:B:376:LEU:O	1:B:378:ALA:N	2.46	0.44
1:B:206:PRO:HA	1:B:244:ILE:HG23	1.99	0.44
1:B:254:MET:HE2	1:B:267:TRP:CD2	2.53	0.44
1:B:311:THR:C	1:B:312:VAL:HG23	2.43	0.44
1:A:367:ILE:HD13	1:A:376:LEU:CD1	2.48	0.44
1:B:129:ILE:CD1	1:B:129:ILE:N	2.80	0.44
1:B:208:TYR:HH	1:B:245:TRP:HH2	1.65	0.44
1:A:168:LEU:HD13	1:A:168:LEU:O	2.17	0.43
1:A:297:CYS:HA	1:A:298:PRO:HD3	1.82	0.43
1:B:212:LYS:CE	1:B:251:ILE:HD12	2.45	0.43
1:A:154:ILE:CG2	1:A:167:TYR:HB2	2.48	0.43
1:B:291:MET:HG3	1:B:308:ALA:CB	2.48	0.43
1:A:292:THR:HA	3:A:469:HOH:O	2.18	0.43
1:B:132:ARG:HH12	1:B:271:ASN:HB3	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:171:ASN:ND2	1:A:173:GLU:HG3	2.33	0.43
1:A:315:HIS:HD2	1:A:327:THR:OG1	2.02	0.43
1:A:399:ASP:O	1:A:403:GLU:HG3	2.18	0.43
1:A:207:LEU:HD22	1:A:208:TYR:H	1.83	0.43
1:A:285:TYR:HD1	1:B:259:MET:HE1	1.84	0.43
1:B:85:GLU:HG2	1:B:86:PHE:CD1	2.54	0.43
1:B:299:ASP:OD1	1:B:299:ASP:C	2.62	0.43
1:A:367:ILE:HA	1:A:371:PHE:O	2.19	0.42
1:A:144:PHE:HE2	1:B:154:ILE:HD12	1.84	0.42
1:A:156:TYR:HA	1:B:151:LYS:O	2.18	0.42
1:B:364:ILE:O	1:B:368:GLU:HG3	2.18	0.42
1:B:382:GLY:O	1:B:383:LEU:C	2.61	0.42
1:A:12:GLU:OE2	1:A:27:LYS:HD3	2.19	0.42
1:A:19:THR:O	1:A:23:TRP:HB2	2.20	0.42
1:A:204:GLY:HA2	1:A:244:ILE:HD11	2.00	0.42
1:B:278:SER:O	1:B:282:ALA:HB2	2.19	0.42
1:B:250:LEU:O	1:B:251:ILE:C	2.61	0.42
1:A:183:TYR:CD1	1:A:183:TYR:C	2.95	0.42
1:A:248:HIS:CG	1:A:249:ARG:N	2.87	0.42
1:A:242:GLN:O	1:A:243:LYS:HB3	2.20	0.42
1:A:12:GLU:O	1:A:41:SER:HA	2.20	0.42
1:A:246:TYR:O	1:A:247:GLU:HB2	2.18	0.42
1:B:121:VAL:C	1:B:123:GLY:H	2.27	0.42
1:A:138:GLN:NE2	1:A:138:GLN:N	2.55	0.42
1:B:233:LYS:O	1:B:233:LYS:HG2	2.19	0.42
1:A:20:ARG:NH2	1:A:43:ASP:OD1	2.52	0.41
1:A:312:VAL:HG12	1:A:315:HIS:HB2	2.02	0.41
1:B:245:TRP:N	1:B:245:TRP:CD1	2.88	0.41
1:A:7:GLY:HA3	1:A:37:LEU:HD23	2.02	0.41
1:A:138:GLN:HE21	1:A:138:GLN:N	2.16	0.41
1:A:159:SER:OG	1:B:149:PRO:HB2	2.19	0.41
1:A:255:VAL:O	1:A:259:MET:CG	2.66	0.41
1:B:248:HIS:CG	1:B:249:ARG:N	2.87	0.41
1:B:211:THR:CG2	1:B:248:HIS:HE1	2.32	0.41
1:B:347:ASP:O	1:B:348:ASN:C	2.62	0.41
1:B:100:ARG:NH1	1:B:295:LEU:HB2	2.35	0.41
1:B:100:ARG:CD	1:B:295:LEU:HD22	2.48	0.41
1:B:277:GLN:NE2	1:B:279:ASP:OD2	2.48	0.41
1:A:212:LYS:HG3	3:A:462:HOH:O	2.20	0.41
1:B:22:ILE:HD11	1:B:332:SER:OG	2.20	0.41
1:B:56:VAL:CG1	1:B:57:THR:N	2.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:375:ASP:O	1:B:378:ALA:HB3	2.21	0.41
1:B:264:GLY:O	1:B:265:PHE:HB3	2.21	0.41
1:B:272:TYR:CD1	1:B:272:TYR:N	2.89	0.41
1:B:261:SER:OG	1:B:262:GLU:N	2.52	0.40
1:B:328:ASN:OD1	1:B:330:ILE:HG12	2.21	0.40
1:A:231:TYR:CE1	1:A:236:LYS:HA	2.56	0.40
1:B:86:PHE:O	1:B:87:LYS:C	2.64	0.40
1:A:84:GLU:O	1:A:87:LYS:NZ	2.55	0.40
1:B:22:ILE:O	1:B:26:ILE:HG13	2.21	0.40
1:B:52:THR:O	1:B:53:ASN:C	2.63	0.40
1:B:79:ASP:C	1:B:91:MET:HE2	2.46	0.40
1:B:201:LEU:HD21	1:B:239:PHE:CD1	2.56	0.40
1:B:211:THR:HG21	1:B:213:ASN:HB3	2.03	0.40
1:B:255:VAL:HG23	1:B:256:ALA:N	2.37	0.40
1:B:313:THR:O	1:B:317:ARG:HG2	2.22	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	412/414 (100%)	385 (93%)	20 (5%)	7 (2%)	7	19
1	B	412/414 (100%)	365 (89%)	42 (10%)	5 (1%)	10	27
All	All	824/828 (100%)	750 (91%)	62 (8%)	12 (2%)	8	22

All (12) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	282	ALA
1	A	147	PRO
1	A	90	GLN

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Mol	Chain	Res	Type
1	A	149	PRO
1	B	161	GLY
1	B	175	GLY
1	A	146	VAL
1	A	168	LEU
1	B	275	ASP
1	B	299	ASP
1	A	251	ILE
1	B	136	GLY

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	349/350 (100%)	337 (97%)	12 (3%)	32	62
1	B	349/350 (100%)	336 (96%)	13 (4%)	30	59
All	All	698/700 (100%)	673 (96%)	25 (4%)	31	60

All (25) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	87	LYS
1	A	115	LYS
1	A	138	GLN
1	A	147	PRO
1	A	169	VAL
1	A	207	LEU
1	A	211	THR
1	A	216	LEU
1	A	238	GLN
1	A	269	CYS
1	A	329	PRO
1	A	393	ASN
1	B	145	VAL
1	B	153	GLU

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Mol	Chain	Res	Type
1	B	154	ILE
1	B	178	VAL
1	B	207	LEU
1	B	211	THR
1	B	229	GLU
1	B	242	GLN
1	B	272	TYR
1	B	273	ASP
1	B	277	GLN
1	B	312	VAL
1	B	329	PRO

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (27) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	40	HIS
1	A	53	ASN
1	A	68	ASN
1	A	101	ASN
1	A	138	GLN
1	A	171	ASN
1	A	185	GLN
1	A	228	GLN
1	A	238	GLN
1	A	248	HIS
1	A	309	HIS
1	A	315	HIS
1	A	393	ASN
1	A	404	ASN
1	B	40	HIS
1	B	90	GLN
1	B	96	ASN
1	B	184	ASN
1	B	185	GLN
1	B	213	ASN
1	B	234	GLN
1	B	242	GLN
1	B	283	GLN
1	B	309	HIS
1	B	315	HIS
1	B	323	GLN
1	B	404	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 oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

2 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	NAP	A	415	-	50,52,52	2.77	14 (28%)	71,80,80	1.75	12 (16%)
2	NAP	B	1003	-	50,52,52	2.83	16 (32%)	71,80,80	1.86	14 (19%)

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	NAP	A	415	-	-	11/35/67/67	0/5/5/5
2	NAP	B	1003	-	-	11/35/67/67	0/5/5/5

All (30) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	415	NAP	C2N-N1N	10.42	1.46	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1003	NAP	PA-O3	-9.86	1.48	1.59
2	B	1003	NAP	C2N-N1N	9.47	1.45	1.35
2	A	415	NAP	PA-O3	-7.72	1.51	1.59
2	B	1003	NAP	C3N-C7N	6.88	1.60	1.50
2	A	415	NAP	C3N-C7N	6.77	1.60	1.50
2	A	415	NAP	P2B-O2B	6.45	1.70	1.59
2	B	1003	NAP	P2B-O2B	5.38	1.69	1.59
2	A	415	NAP	C5N-C4N	5.35	1.48	1.38
2	B	1003	NAP	C5N-C4N	5.21	1.47	1.38
2	A	415	NAP	C4N-C3N	4.19	1.45	1.39
2	B	1003	NAP	C4N-C3N	3.95	1.45	1.39
2	B	1003	NAP	PN-O3	-3.86	1.55	1.59
2	A	415	NAP	C6N-N1N	3.01	1.42	1.35
2	B	1003	NAP	C3B-C2B	2.95	1.59	1.53
2	B	1003	NAP	C2A-N1A	2.88	1.39	1.33
2	B	1003	NAP	C4A-N3A	2.71	1.39	1.34
2	B	1003	NAP	C6N-N1N	2.59	1.41	1.35
2	A	415	NAP	PN-O3	-2.52	1.56	1.59
2	A	415	NAP	C3B-C2B	2.48	1.58	1.53
2	A	415	NAP	C4A-N3A	2.44	1.39	1.34
2	A	415	NAP	C2A-N1A	2.36	1.38	1.33
2	B	1003	NAP	P2B-O2X	-2.28	1.46	1.54
2	A	415	NAP	P2B-O2X	-2.21	1.46	1.54
2	B	1003	NAP	PA-O2A	-2.17	1.45	1.55
2	B	1003	NAP	C7N-N7N	2.14	1.36	1.33
2	B	1003	NAP	O4D-C4D	2.11	1.49	1.45
2	A	415	NAP	PA-O2A	-2.11	1.45	1.55
2	B	1003	NAP	P2B-O3X	-2.09	1.47	1.54
2	A	415	NAP	P2B-O3X	-2.06	1.47	1.54

All (26) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1003	NAP	C5N-C4N-C3N	-7.65	112.84	120.36
2	A	415	NAP	C5N-C4N-C3N	-7.18	113.31	120.36
2	B	1003	NAP	C2N-C3N-C4N	6.08	125.33	118.26
2	A	415	NAP	C2N-C3N-C4N	6.00	125.24	118.26
2	B	1003	NAP	C6N-N1N-C1D	3.76	127.10	119.73
2	B	1003	NAP	C2N-N1N-C1D	-3.55	111.31	119.13
2	A	415	NAP	C6N-N1N-C1D	3.39	126.37	119.73
2	B	1003	NAP	C6N-C5N-C4N	3.31	124.22	119.45
2	A	415	NAP	C2N-N1N-C1D	-3.29	111.88	119.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1003	NAP	N6A-C6A-N1A	3.28	125.68	118.38
2	A	415	NAP	C6N-C5N-C4N	3.28	124.17	119.45
2	B	1003	NAP	C4A-C5A-N7A	3.16	114.20	110.58
2	B	1003	NAP	O2B-P2B-O1X	-3.11	98.24	109.33
2	A	415	NAP	N6A-C6A-N1A	3.04	125.15	118.38
2	A	415	NAP	O2B-P2B-O1X	-3.01	98.60	109.33
2	A	415	NAP	C4A-C5A-N7A	2.82	113.81	110.58
2	B	1003	NAP	O3B-C3B-C2B	2.56	118.35	111.19
2	B	1003	NAP	C2B-C3B-C4B	-2.39	96.84	101.99
2	B	1003	NAP	O5B-C5B-C4B	-2.34	101.02	108.99
2	A	415	NAP	O3B-C3B-C2B	2.32	117.68	111.19
2	B	1003	NAP	O2N-PN-O3	2.31	113.50	107.27
2	B	1003	NAP	O3X-P2B-O2X	2.27	116.32	107.80
2	A	415	NAP	O2X-P2B-O1X	2.15	119.22	110.83
2	A	415	NAP	O3X-P2B-O2X	2.13	115.81	107.80
2	A	415	NAP	C2B-C3B-C4B	-2.12	97.44	101.99
2	B	1003	NAP	O2X-P2B-O1X	2.11	119.04	110.83

There are no chirality outliers.

All (22) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	1003	NAP	O4D-C1D-N1N-C6N
2	A	415	NAP	O4B-C4B-C5B-O5B
2	B	1003	NAP	O4D-C4D-C5D-O5D
2	B	1003	NAP	C3D-C4D-C5D-O5D
2	A	415	NAP	C3B-C4B-C5B-O5B
2	B	1003	NAP	O4B-C4B-C5B-O5B
2	A	415	NAP	C3D-C4D-C5D-O5D
2	A	415	NAP	PN-O3-PA-O1A
2	A	415	NAP	PA-O3-PN-O1N
2	B	1003	NAP	PN-O3-PA-O1A
2	B	1003	NAP	PA-O3-PN-O1N
2	A	415	NAP	C5B-O5B-PA-O1A
2	A	415	NAP	C5B-O5B-PA-O2A
2	A	415	NAP	C5B-O5B-PA-O3
2	B	1003	NAP	C5B-O5B-PA-O1A
2	B	1003	NAP	C5B-O5B-PA-O2A
2	B	1003	NAP	C5B-O5B-PA-O3
2	A	415	NAP	O4D-C4D-C5D-O5D
2	A	415	NAP	O4D-C1D-N1N-C2N
2	A	415	NAP	O4D-C1D-N1N-C6N

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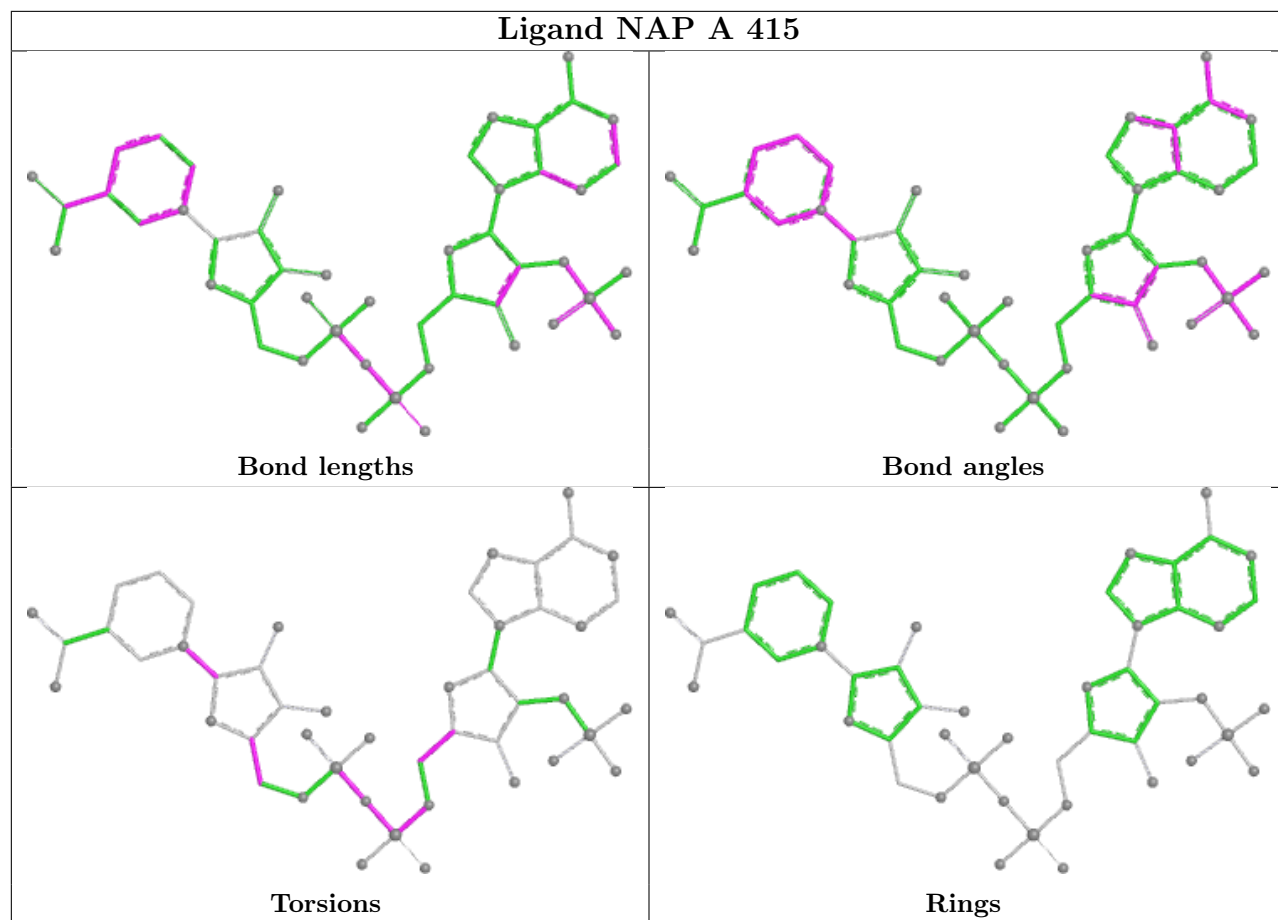
Mol	Chain	Res	Type	Atoms
2	B	1003	NAP	O4D-C1D-N1N-C2N
2	B	1003	NAP	PN-O3-PA-O2A

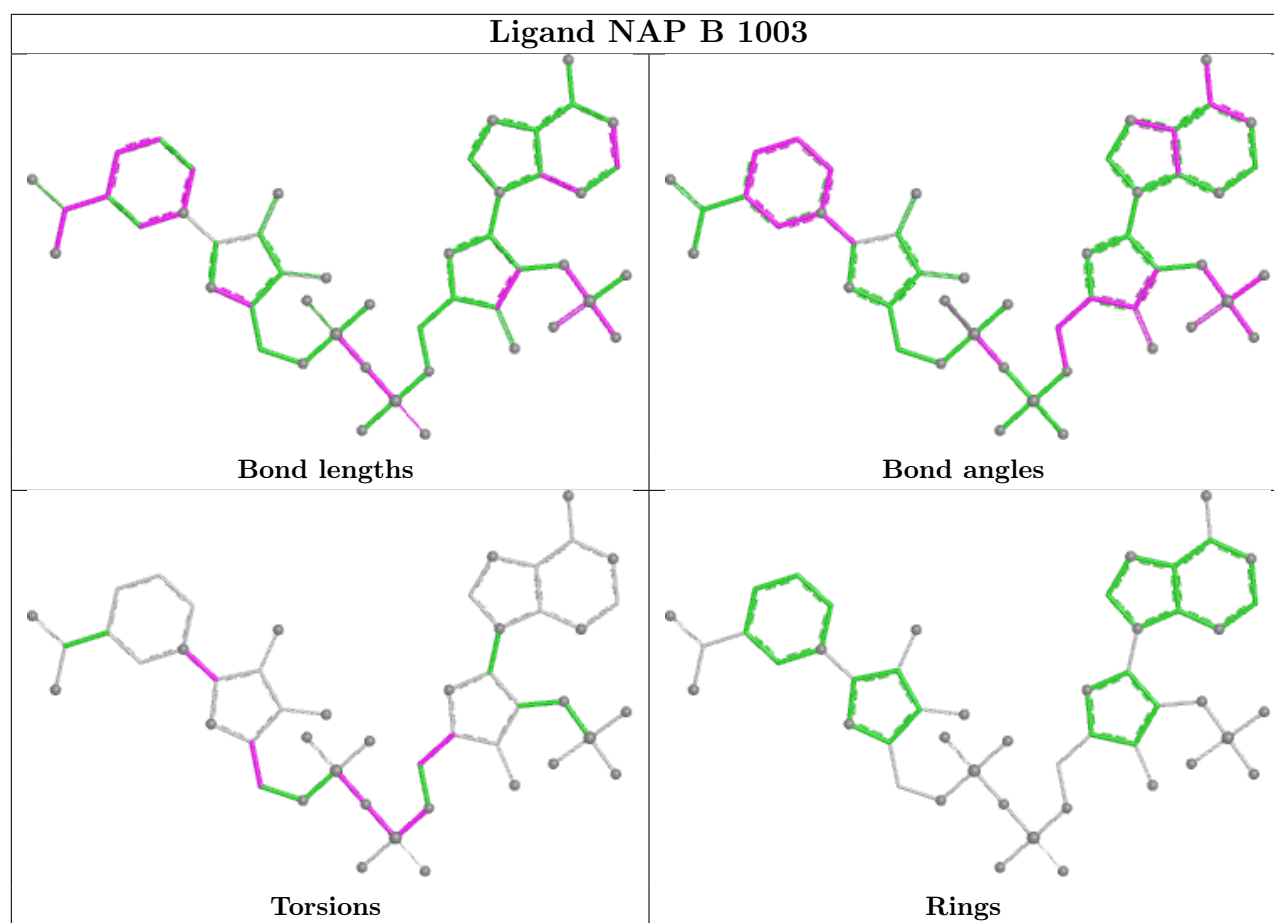
There are no ring outliers.

2 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	415	NAP	3	0
2	B	1003	NAP	3	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 than 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.





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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	414/414 (100%)	-0.16	6 (1%) 73 72	16, 31, 63, 90	0
1	B	414/414 (100%)	0.09	28 (6%) 23 20	16, 34, 84, 120	0
All	All	828/828 (100%)	-0.03	34 (4%) 41 37	16, 32, 68, 120	0

All (34) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	283	GLN	6.2
1	B	276	VAL	5.6
1	B	274	GLY	5.3
1	B	275	ASP	4.5
1	B	135	TYR	4.4
1	B	244	ILE	4.0
1	B	272	TYR	4.0
1	A	1	MET	3.8
1	B	282	ALA	3.8
1	B	1	MET	3.8
1	A	140	ARG	3.7
1	B	134	ALA	3.7
1	B	139	TYR	3.4
1	B	273	ASP	3.4
1	B	278	SER	3.3
1	B	285	TYR	3.2
1	B	277	GLN	3.1
1	B	414	LEU	3.0
1	B	137	ASP	2.9
1	B	280	SER	2.7
1	B	133	HIS	2.6
1	A	147	PRO	2.5
1	B	286	GLY	2.4
1	B	245	TRP	2.4

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Mol	Chain	Res	Type	RSRZ
1	B	413	LYS	2.4
1	B	204	GLY	2.4
1	B	284	GLY	2.3
1	B	138	GLN	2.3
1	A	280	SER	2.2
1	A	244	ILE	2.2
1	B	412	ALA	2.2
1	B	2	SER	2.2
1	A	255	VAL	2.1
1	B	140	ARG	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 oligosaccharides in this entry.

6.4 Ligands [i](#)

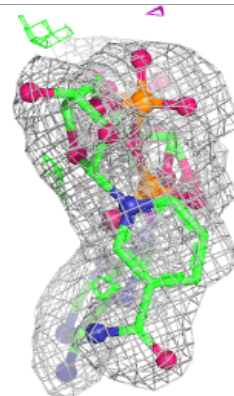
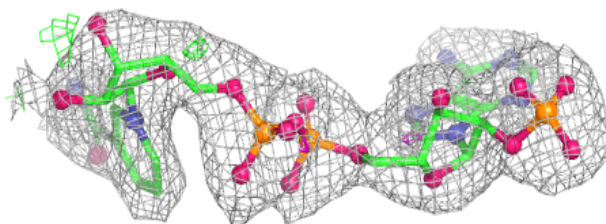
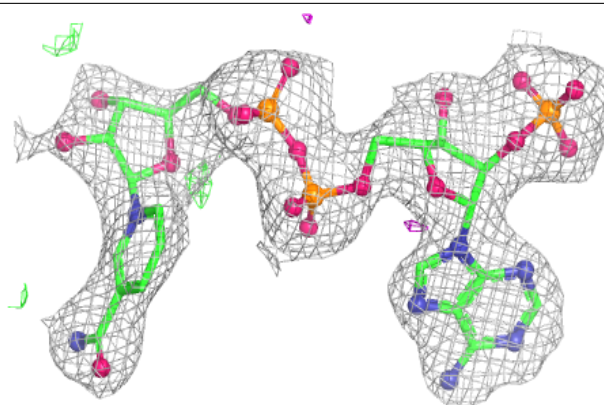
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	NAP	A	415	48/48	0.95	0.08	23,33,41,42	0
2	NAP	B	1003	48/48	0.95	0.08	20,29,34,36	0

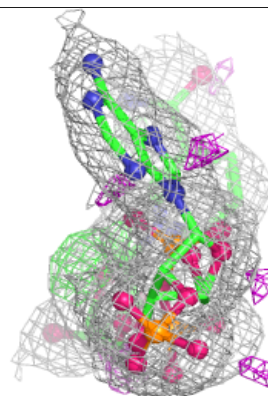
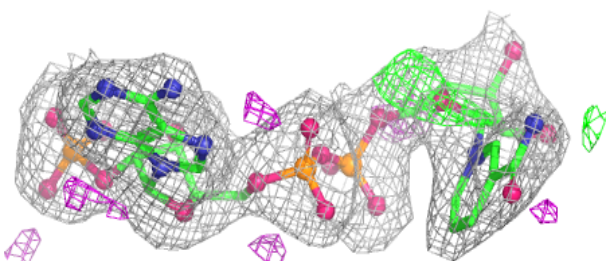
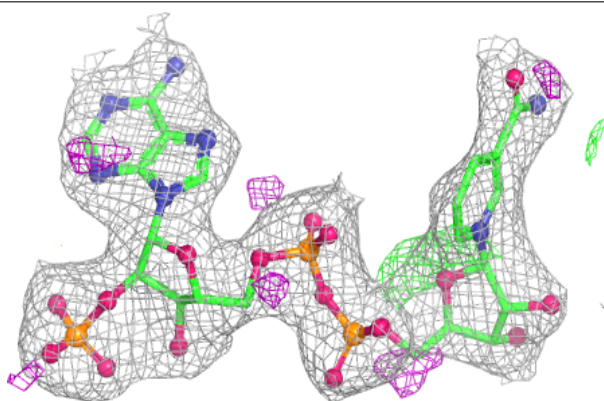
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around NAP A 415:

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

**Electron density around NAP B 1003:**

$2mF_o-DF_c$ (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.