



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 04:44 AM GMT

PDB ID : 2O2S
Title : The structure of *T. gondii* enoyl acyl carrier protein reductase in complex with NAD and triclosan
Authors : Muench, S.P.; Prigge, S.T.; McLeod, R.; Rafferty, J.B.; Kirisits, M.J.; Roberts, C.W.; Mui, E.J.; Rice, D.W.
Deposited on : 2006-11-30
Resolution : 2.60 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
<http://wwpdb.org/validation/2016/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 : 1.7 (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

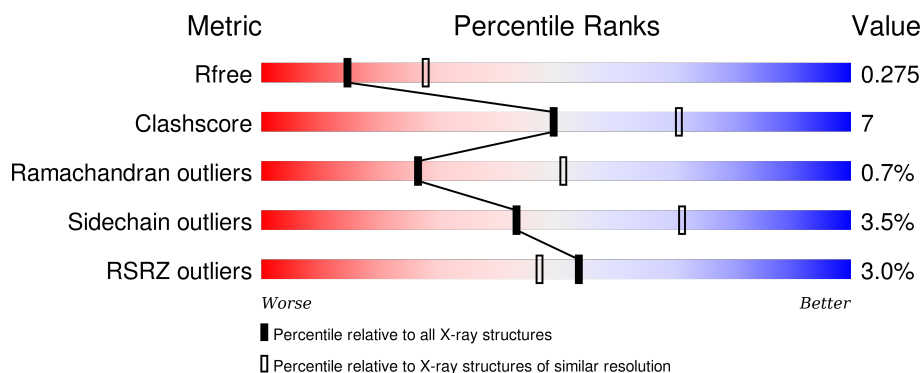
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.60 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	2328 (2.60-2.60)
Clashscore	102246	2679 (2.60-2.60)
Ramachandran outliers	100387	2635 (2.60-2.60)
Sidechain outliers	100360	2635 (2.60-2.60)
RSRZ outliers	91569	2334 (2.60-2.60)

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. 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	315	<div> <div>3%</div> <div> <div></div> <div>80%</div> <div>16%</div> <div>• •</div> </div> </div>
1	B	315	<div> <div>3%</div> <div> <div></div> <div>81%</div> <div>13%</div> <div>• •</div> </div> </div>

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 4672 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 Enoyl-acyl carrier reductase.

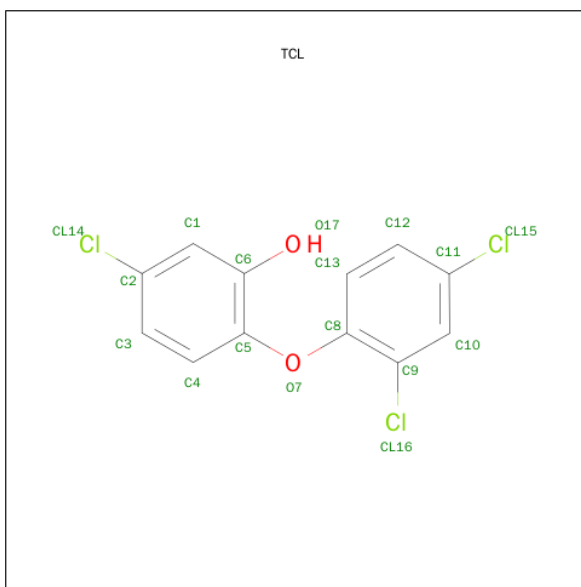
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	303	Total	C	N	O	S	0	0	0
			2255	1426	391	434	4			
1	B	302	Total	C	N	O	S	0	0	0
			2259	1431	392	432	4			

- 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	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 TRICLOSAN (three-letter code: TCL) (formula: $C_{12}H_7Cl_3O_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	Cl	O	0	0
			17	12	3	2		
3	B	1	Total	C	Cl	O	0	0
			17	12	3	2		

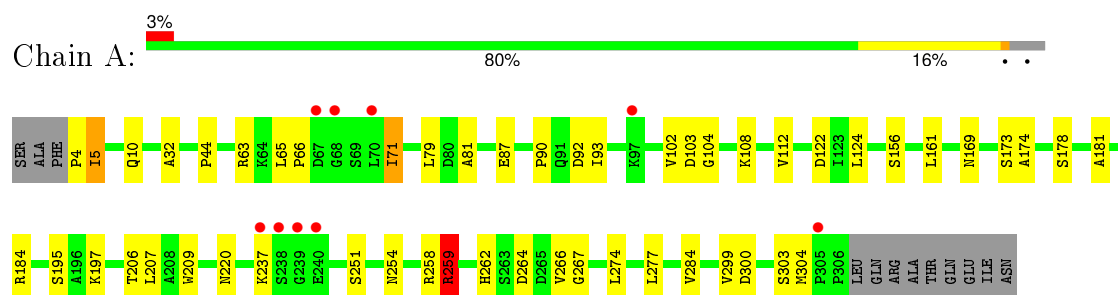
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	16	Total	O	0	0
			16	16		
4	B	20	Total	O	0	0
			20	20		

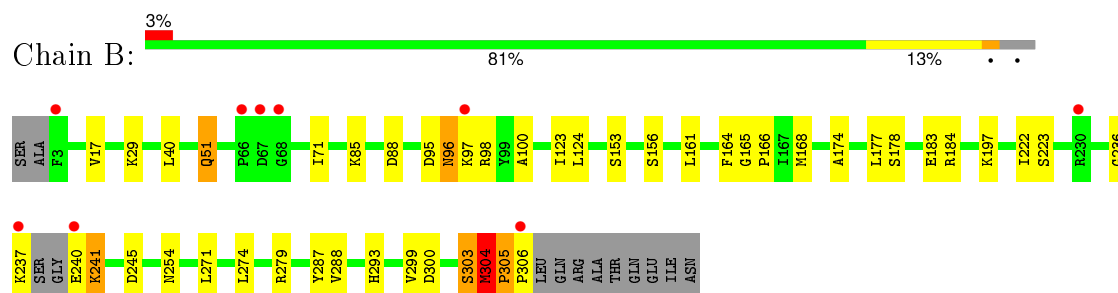
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of 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 ($\text{RSRZ} > 2$). 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: Enoyl-acyl carrier reductase



- Molecule 1: Enoyl-acyl carrier reductase



4 Data and refinement statistics

Property	Value	Source
Space group	P 32 2 1	Depositor
Cell constants a, b, c, α , β , γ	78.08 Å 78.08 Å 187.96 Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	20.00 – 2.60 19.80 – 2.60	Depositor EDS
% Data completeness (in resolution range)	99.7 (20.00-2.60) 99.8 (19.80-2.60)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.77 (at 2.59 Å)	Xtriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.205 , 0.267 0.213 , 0.275	Depositor DCC
R_{free} test set	1077 reflections (5.40%)	DCC
Wilson B-factor (Å ²)	49.6	Xtriage
Anisotropy	0.033	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 43.2	EDS
Estimated twinning fraction	0.036 for -h,-k,l	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtriage
Outliers	0 of 21070 reflections	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	4672	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 4.76% 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, 0.375 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: TCL, 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	0.67	1/2303 (0.0%)	0.76	3/3126 (0.1%)
1	B	0.65	0/2307	0.72	1/3130 (0.0%)
All	All	0.66	1/4610 (0.0%)	0.74	4/6256 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	2
1	B	0	1
All	All	0	3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	303	SER	C-N	-8.69	1.14	1.34

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	304	MET	O-C-N	-7.53	106.79	121.10
1	A	259	ARG	NE-CZ-NH2	-6.00	117.30	120.30
1	B	184	ARG	NE-CZ-NH1	5.51	123.05	120.30
1	A	304	MET	CA-C-N	5.38	132.17	117.10

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	237	LYS	Peptide
1	A	4	PRO	Peptide
1	B	241	LYS	Peptide

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	2255	0	2228	35	0
1	B	2259	0	2240	32	1
2	A	44	0	26	3	0
2	B	44	0	26	0	0
3	A	17	0	6	1	0
3	B	17	0	6	0	0
4	A	16	0	0	1	0
4	B	20	0	0	1	0
All	All	4672	0	4532	65	1

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 7.

All (65) 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:304:MET:HB2	1:B:305:PRO:CD	1.52	1.37
1:B:304:MET:CB	1:B:305:PRO:HD3	1.65	1.12
1:B:304:MET:HB2	1:B:305:PRO:HD3	1.14	1.01
1:B:304:MET:CB	1:B:305:PRO:CD	2.31	1.00
1:B:304:MET:HB2	1:B:305:PRO:HD2	1.57	0.83
1:A:254:ASN:HD22	1:A:299:VAL:H	1.30	0.79
1:B:236:GLY:O	1:B:237:LYS:C	2.30	0.69
1:B:51:GLN:HE21	1:B:51:GLN:HA	1.63	0.63
1:B:124:LEU:HD22	1:B:168:MET:CE	2.29	0.63
1:A:5:ILE:CG2	1:A:277:LEU:HD13	2.30	0.62
1:B:183:GLU:OE2	1:B:287:TYR:OH	2.16	0.61
1:A:254:ASN:ND2	1:A:299:VAL:H	1.96	0.61
1:A:5:ILE:HG23	1:A:277:LEU:HD13	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:254:ASN:HD22	1:B:299:VAL:H	1.49	0.60
1:A:65:LEU:HD21	1:A:71:ILE:HB	1.83	0.58
1:A:259:ARG:NH2	1:B:279:ARG:HD3	2.18	0.58
1:A:259:ARG:HH21	1:B:279:ARG:HD3	1.68	0.58
1:A:161:LEU:HD23	1:A:207:LEU:HD22	1.86	0.57
1:B:29:LYS:HG2	1:B:71:ILE:HD11	1.88	0.55
1:B:164:PHE:O	1:B:168:MET:HG3	2.07	0.55
1:A:178:SER:HA	1:A:197:LYS:HD2	1.89	0.55
1:A:181:ALA:HA	1:A:184:ARG:O	2.08	0.53
1:A:44:PRO:HB3	1:A:102:VAL:HG21	1.90	0.53
1:A:254:ASN:ND2	1:A:299:VAL:N	2.56	0.53
1:A:10:GLN:HA	1:A:122:ASP:OD2	2.09	0.53
1:A:254:ASN:HD21	1:A:300:ASP:H	1.57	0.52
1:A:197:LYS:NZ	2:A:500:NAD:O2D	2.29	0.52
1:A:262:HIS:HB2	4:A:707:HOH:O	2.10	0.52
1:A:81:ALA:HB1	1:A:156:SER:HB2	1.93	0.50
1:B:306:PRO:HA	4:B:716:HOH:O	2.11	0.50
2:A:500:NAD:H2N	2:A:500:NAD:O1N	2.12	0.50
1:B:97:LYS:O	1:B:100:ALA:HB3	2.12	0.49
1:A:63:ARG:O	1:A:71:ILE:HG22	2.14	0.48
1:B:178:SER:HA	1:B:197:LYS:HD2	1.94	0.48
1:B:17:VAL:HG21	1:B:40:LEU:HD22	1.95	0.47
1:A:32:ALA:CB	1:A:71:ILE:HD13	2.45	0.47
1:B:305:PRO:HA	1:B:306:PRO:HD3	1.27	0.47
1:A:262:HIS:HD2	1:A:264:ASP:H	1.63	0.47
1:B:96:ASN:HD21	1:B:98:ARG:HD3	1.80	0.47
1:A:262:HIS:CD2	1:A:264:ASP:H	2.33	0.47
1:A:32:ALA:HB2	1:A:71:ILE:HD13	1.97	0.45
1:B:95:ASP:O	1:B:96:ASN:C	2.55	0.45
1:A:173:SER:HB3	1:A:274:LEU:HD23	1.99	0.45
1:A:103:ASP:OD1	1:A:104:GLY:N	2.50	0.45
1:A:220:ASN:OD1	1:A:284:VAL:HG22	2.17	0.44
1:B:177:LEU:HD23	1:B:222:ILE:HB	2.00	0.44
1:A:209:TRP:CH2	1:B:299:VAL:HG11	2.53	0.44
1:B:223:SER:HB3	1:B:287:TYR:CD2	2.53	0.44
1:B:85:LYS:HG2	1:B:88:ASP:OD2	2.18	0.43
1:A:108:LYS:O	1:A:112:VAL:HG23	2.17	0.43
2:A:500:NAD:H3D	3:A:705:TCL:CL16	2.55	0.43
1:A:206:THR:O	1:A:209:TRP:HB3	2.19	0.43
1:B:222:ILE:HG23	1:B:288:VAL:HG23	2.01	0.42
1:A:124:LEU:O	1:A:174:ALA:HA	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:87:GLU:OE1	1:A:87:GLU:N	2.43	0.42
1:B:124:LEU:O	1:B:174:ALA:HA	2.20	0.42
1:B:165:GLY:N	1:B:166:PRO:CD	2.83	0.42
1:B:304:MET:HE2	1:B:304:MET:HB3	1.70	0.41
1:B:241:LYS:HE3	1:B:245:ASP:HB3	2.02	0.41
1:A:266:VAL:O	1:A:267:GLY:C	2.59	0.41
1:A:65:LEU:HB3	1:A:66:PRO:CD	2.51	0.41
1:A:90:PRO:HG2	1:A:93:ILE:HD13	2.03	0.41
1:A:122:ASP:OD1	1:A:169:ASN:ND2	2.46	0.40
1:A:209:TRP:CZ2	1:B:299:VAL:HG11	2.57	0.40
1:B:123:ILE:HG23	1:B:274:LEU:HD22	2.02	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:300:ASP:OD2	1:B:303:SER:OG[5_675]	1.65	0.55

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	301/315 (96%)	282 (94%)	19 (6%)	0	100	100
1	B	298/315 (95%)	277 (93%)	17 (6%)	4 (1%)	15	30
All	All	599/630 (95%)	559 (93%)	36 (6%)	4 (1%)	26	51

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	304	MET
1	B	305	PRO

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Mol	Chain	Res	Type
1	B	96	ASN
1	B	156	SER

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	230 / 242 (95%)	222 (96%)	8 (4%)	43	71
1	B	232 / 242 (96%)	224 (97%)	8 (3%)	44	72
All	All	462 / 484 (96%)	446 (96%)	16 (4%)	43	71

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	ILE
1	A	71	ILE
1	A	79	LEU
1	A	92	ASP
1	A	195	SER
1	A	251	SER
1	A	258	ARG
1	A	259	ARG
1	B	51	GLN
1	B	153	SER
1	B	161	LEU
1	B	240	GLU
1	B	271	LEU
1	B	293	HIS
1	B	303	SER
1	B	304	MET

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	130	ASN
1	A	254	ASN
1	A	262	HIS
1	B	51	GLN
1	B	96	ASN
1	B	254	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

4 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	A	500	-	38,48,48	1.39	2 (5%)	47,73,73	2.43	9 (19%)
3	TCL	A	705	-	18,18,18	1.86	4 (22%)	25,25,25	1.34	5 (20%)
2	NAD	B	501	-	38,48,48	1.51	1 (2%)	47,73,73	2.78	14 (29%)
3	TCL	B	706	-	18,18,18	1.73	2 (11%)	25,25,25	1.33	4 (16%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means

no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NAD	A	500	-	-	0/22/62/62	0/5/5/5
3	TCL	A	705	-	-	0/4/4/4	0/2/2/2
2	NAD	B	501	-	-	0/22/62/62	0/5/5/5
3	TCL	B	706	-	-	0/4/4/4	0/2/2/2

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	705	TCL	C11-CL15	2.31	1.79	1.74
2	A	500	NAD	O4B-C1B	2.38	1.44	1.41
3	A	705	TCL	C9-CL16	2.42	1.79	1.73
3	B	706	TCL	C8-C9	3.93	1.46	1.39
3	A	705	TCL	C6-C5	4.24	1.47	1.40
3	A	705	TCL	C8-C9	4.57	1.47	1.39
3	B	706	TCL	C6-C5	4.79	1.48	1.40
2	A	500	NAD	C4A-N3A	6.52	1.45	1.35
2	B	501	NAD	C4A-N3A	7.33	1.46	1.35

All (32) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	501	NAD	N3A-C2A-N1A	-12.26	119.51	128.89
2	A	500	NAD	N3A-C2A-N1A	-11.10	120.39	128.89
2	A	500	NAD	C4A-C5A-N7A	-4.34	105.48	109.48
2	B	501	NAD	O3-PN-O5D	-3.96	92.44	102.94
2	B	501	NAD	O7N-C7N-C3N	-3.29	116.00	119.59
2	B	501	NAD	C1B-N9A-C4A	-3.24	122.06	126.94
2	B	501	NAD	C4A-C5A-N7A	-3.22	106.51	109.48
2	B	501	NAD	O5B-C5B-C4B	-3.09	97.71	109.12
3	B	706	TCL	C3-C2-CL14	-2.92	114.56	119.35
2	A	500	NAD	PN-O3-PA	-2.70	125.14	132.73
2	B	501	NAD	O3D-C3D-C2D	-2.66	103.17	111.83
3	B	706	TCL	C1-C6-C5	-2.56	116.96	119.79
2	B	501	NAD	PN-O3-PA	-2.40	125.99	132.73
3	A	705	TCL	C1-C6-C5	-2.25	117.31	119.79
3	A	705	TCL	C3-C2-CL14	-2.23	115.69	119.35
3	A	705	TCL	C13-C12-C11	2.05	121.50	119.23
3	A	705	TCL	O17-C6-C1	2.10	125.07	119.42
3	B	706	TCL	C1-C2-CL14	2.28	121.97	119.14
3	A	705	TCL	C8-C9-CL16	2.31	122.26	119.42
2	A	500	NAD	C4D-O4D-C1D	2.38	112.33	109.72

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	706	TCL	O7-C5-C6	2.43	120.88	116.12
2	B	501	NAD	C3N-C7N-N7N	2.51	120.57	117.82
2	B	501	NAD	C2B-C3B-C4B	2.67	108.09	102.61
2	A	500	NAD	C3N-C7N-N7N	2.77	120.84	117.82
2	A	500	NAD	C2D-C3D-C4D	2.77	108.30	102.61
2	A	500	NAD	C2B-C3B-C4B	2.93	108.63	102.61
2	B	501	NAD	C2D-C3D-C4D	3.10	108.99	102.61
2	B	501	NAD	O4B-C1B-N9A	3.20	114.79	108.10
2	A	500	NAD	O4B-C1B-N9A	3.74	115.93	108.10
2	B	501	NAD	C2B-C1B-N9A	4.83	121.67	114.29
2	A	500	NAD	O4D-C1D-N1N	6.03	114.75	108.13
2	B	501	NAD	O4D-C1D-N1N	6.97	115.79	108.13

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	500	NAD	3	0
3	A	705	TCL	1	0

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 [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, 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	303/315 (96%)	-0.19	9 (2%) 54 47	42, 54, 75, 80	0
1	B	302/315 (95%)	-0.16	9 (2%) 54 47	40, 54, 75, 83	0
All	All	605/630 (96%)	-0.18	18 (2%) 54 47	40, 54, 75, 83	0

All (18) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	239	GLY	5.1
1	B	66	PRO	3.8
1	B	3	PHE	3.8
1	A	238	SER	3.4
1	B	240	GLU	3.1
1	B	68	GLY	3.0
1	A	237	LYS	2.7
1	B	67	ASP	2.7
1	B	97	LYS	2.5
1	A	67	ASP	2.5
1	B	237	LYS	2.4
1	B	230	ARG	2.4
1	A	70	LEU	2.3
1	A	97	LYS	2.3
1	A	240	GLU	2.3
1	A	68	GLY	2.2
1	A	305	PRO	2.1
1	B	306	PRO	2.1

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, 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	LLDF	B-factors(\AA^2)	Q<0.9
3	TCL	A	705	17/17	0.91	0.14	0.27	52,52,53,54	0
3	TCL	B	706	17/17	0.93	0.14	0.03	51,54,58,59	0
2	NAD	A	500	44/44	0.94	0.14	-0.00	41,55,70,71	0
2	NAD	B	501	44/44	0.96	0.12	-0.63	44,51,59,63	0

6.5 Other polymers [i](#)

There are no such residues in this entry.