



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 14, 2017 – 06:47 pm GMT

PDB ID : 2XW0
Title : HUMAN SERUM ALBUMIN COMPLEXED WITH DANSYL-L-PHENYLA
LANINE
Authors : Ryan, A.J.; Curry, S.
Deposited on : 2010-10-28
Resolution : 2.40 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	:	1.7.2 (RC1), CSD as538be (2017)
Xtriage (Phenix)	:	1.9-1692
EDS	:	trunk28620
Percentile statistics	:	20161228.v01 (using entries in the PDB archive December 28th 2016)
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)	:	recalc28949

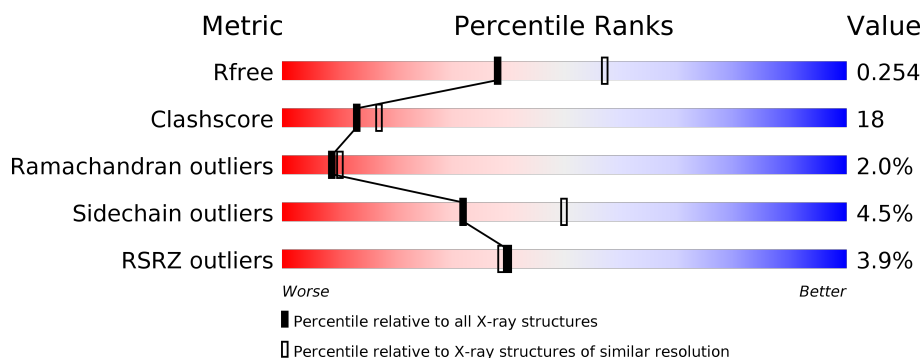
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.40 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}	100719	3166 (2.40-2.40)
Clashscore	112137	3674 (2.40-2.40)
Ramachandran outliers	110173	3616 (2.40-2.40)
Sidechain outliers	110143	3617 (2.40-2.40)
RSRZ outliers	101464	3195 (2.40-2.40)

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	585	<div> <div>4%</div> <div> <div></div> <div>69%</div> <div>26%</div> <div>• •</div> </div> </div>
1	B	585	<div> <div>4%</div> <div> <div></div> <div>67%</div> <div>28%</div> <div>• •</div> </div> </div>

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	9NF	A	2001	-	-	-	X
2	9NF	A	2002	-	-	X	X
2	9NF	B	2002	-	-	X	X

2 Entry composition [i](#)

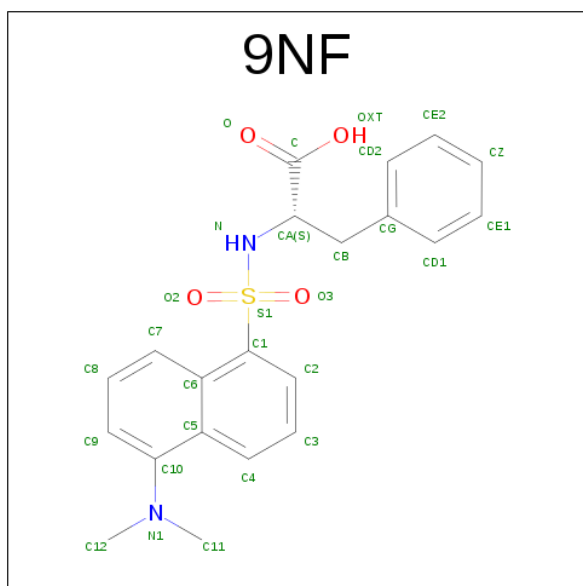
There are 3 unique types of molecules in this entry. The entry contains 8451 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 SERUM ALBUMIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	569	Total	C	N	O	S	0	0	0
			4215	2659	706	810	40			
1	B	566	Total	C	N	O	S	0	0	0
			4114	2599	684	792	39			

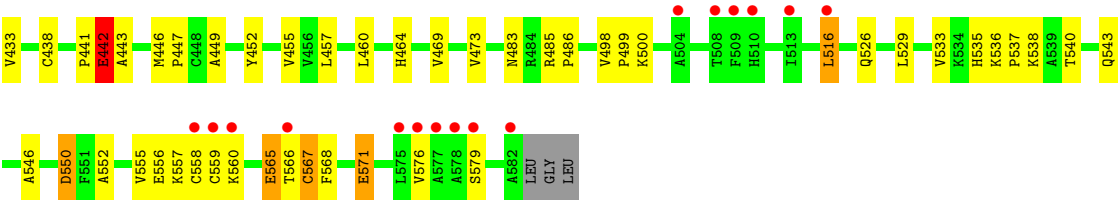
- Molecule 2 is DANSYL-L-PHENYLALANINE (three-letter code: 9NF) (formula: $C_{21}H_{22}N_2O_4S$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	S	0	0
			26	21	2	2	1		
2	A	1	Total	C	N	O	S	0	0
			26	21	2	2	1		
2	B	1	Total	C	N	O	S	0	0
			26	21	2	2	1		
2	B	1	Total	C	N	O	S	0	0
			26	21	2	2	1		

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	12	Total 12	O 12	0	0
3	B	6	Total 6	O 6	0	0



4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	55.17Å 55.43Å 119.94Å 81.12° 91.04° 64.78°	Depositor
Resolution (Å)	28.91 – 2.40 49.33 – 2.35	Depositor EDS
% Data completeness (in resolution range)	89.4 (28.91-2.40) 83.1 (49.33-2.35)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.74 (at 2.34Å)	Xtriage
Refinement program	CNS 1.2	Depositor
R, R_{free}	0.225 , 0.254 0.225 , 0.254	Depositor DCC
R_{free} test set	2119 reflections (4.80%)	DCC
Wilson B-factor (Å ²)	54.0	Xtriage
Anisotropy	0.232	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.27 , 53.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	8451	wwPDB-VP
Average B, all atoms (Å ²)	69.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.22% 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: 9NF

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	0.41	0/4296	0.58	0/5848
1	B	0.39	0/4189	0.59	0/5715
All	All	0.40	0/8485	0.59	0/11563

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	B	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	411	TYR	Sidechain

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	4215	0	3827	141	0
1	B	4114	0	3673	150	0
2	A	52	0	42	17	0
2	B	52	0	42	14	0
3	A	12	0	0	1	0
3	B	6	0	0	0	0
All	All	8451	0	7584	291	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 18.

All (291) 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:199:LYS:CG	2:A:2002:9NF:H113	1.58	1.30
1:A:199:LYS:HG2	2:A:2002:9NF:C11	1.75	1.17
1:B:536:LYS:CD	1:B:536:LYS:CB	2.45	0.95
1:A:199:LYS:HA	2:A:2002:9NF:H111	1.49	0.95
1:B:42:LEU:O	1:B:46:VAL:HG23	1.71	0.89
1:A:557:LYS:HE2	1:A:558:CYS:HB2	1.56	0.88
1:A:274:LYS:HE3	1:A:296:ASP:HA	1.56	0.88
1:A:383:GLU:HB3	1:A:384:PRO:HD3	1.56	0.87
1:B:571:GLU:CD	1:B:571:GLU:H	1.77	0.87
1:B:345:LEU:HD22	1:B:446:MET:HE1	1.58	0.86
1:A:557:LYS:HD3	1:A:558:CYS:H	1.40	0.85
1:B:567:CYS:SG	1:B:571:GLU:OE2	2.35	0.84
1:B:433:VAL:HG22	1:B:452:TYR:HD2	1.41	0.84
1:B:500:LYS:O	1:B:535:HIS:HD2	1.61	0.84
1:B:151:ALA:HB3	1:B:152:PRO:HD3	1.58	0.84
1:A:66:LEU:O	1:A:70:PHE:HD1	1.61	0.84
1:A:61:ASN:HB3	1:A:64:LYS:HD2	1.59	0.82
1:A:199:LYS:CG	2:A:2002:9NF:C11	2.46	0.80
1:B:571:GLU:N	1:B:571:GLU:OE1	2.14	0.80
1:B:120:VAL:HG21	1:B:175:ALA:HA	1.63	0.78
1:B:95:GLU:OE1	1:B:99:ASN:HB2	1.84	0.78
1:A:199:LYS:HA	2:A:2002:9NF:C11	2.14	0.77
1:A:35:PRO:HG2	1:A:38:ASP:OD2	1.85	0.76
1:A:557:LYS:CD	1:A:558:CYS:H	1.99	0.76
1:B:424:VAL:O	1:B:428:ARG:HG3	1.85	0.76
1:B:66:LEU:O	1:B:70:PHE:HD1	1.68	0.76
1:B:433:VAL:HG22	1:B:452:TYR:CD2	2.21	0.75
1:A:199:LYS:HG2	2:A:2002:9NF:H113	0.80	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:46:VAL:HG22	1:B:73:LYS:CD	2.17	0.75
1:B:199:LYS:HA	2:B:2002:9NF:H111	1.69	0.74
1:A:540:THR:H	1:A:543:GLN:NE2	1.86	0.74
1:B:442:GLU:H	1:B:442:GLU:CD	1.91	0.74
1:B:39:HIS:O	1:B:43:VAL:HG23	1.87	0.73
1:B:516:LEU:HD12	1:B:516:LEU:H	1.53	0.73
1:A:557:LYS:CE	1:A:558:CYS:HB2	2.18	0.73
1:B:240:LYS:O	1:B:244:GLU:HG3	1.89	0.72
1:A:156:PHE:CZ	1:A:160:ARG:HD3	2.24	0.72
1:B:400:GLU:O	1:B:404:GLN:HG3	1.90	0.71
1:B:378:LYS:HB2	1:B:379:PRO:HD3	1.72	0.71
1:B:199:LYS:HA	2:B:2002:9NF:C11	2.21	0.71
1:B:110:PRO:HB2	1:B:112:LEU:CD2	2.21	0.70
1:B:152:PRO:HB2	1:B:257:ARG:HH11	1.55	0.70
1:A:161:TYR:CD1	1:A:185:LEU:HD13	2.27	0.70
1:A:214:TRP:CD2	2:A:2002:9NF:H122	2.26	0.69
1:A:424:VAL:O	1:A:428:ARG:HG3	1.93	0.69
1:B:183:ASP:OD1	1:B:186:ARG:NH2	2.26	0.69
1:A:557:LYS:HE3	1:A:571:GLU:CB	2.22	0.69
1:B:483:ASN:O	1:B:486:PRO:HD2	1.93	0.68
1:B:483:ASN:C	1:B:486:PRO:HD2	2.14	0.68
1:A:117:ARG:CD	1:A:117:ARG:H	2.07	0.68
1:A:386:ASN:O	1:A:390:GLN:HG3	1.93	0.68
1:A:218:ARG:NH2	1:A:222:ARG:HH21	1.92	0.67
1:B:199:LYS:HG2	2:B:2002:9NF:H113	1.76	0.66
1:B:265:CYS:O	1:B:268:GLN:HG3	1.96	0.66
1:B:186:ARG:O	1:B:190:LYS:HG3	1.95	0.66
1:B:567:CYS:HA	1:B:571:GLU:OE2	1.96	0.65
1:A:151:ALA:HB3	1:A:152:PRO:HD3	1.78	0.65
1:B:110:PRO:HB2	1:B:112:LEU:HD22	1.79	0.65
1:A:120:VAL:HG11	1:A:174:LYS:HB2	1.80	0.63
1:A:540:THR:H	1:A:543:GLN:HE21	1.47	0.63
1:A:199:LYS:CA	2:A:2002:9NF:C11	2.77	0.63
1:A:240:LYS:O	1:A:244:GLU:HG3	1.99	0.62
1:A:169:CYS:HA	1:A:174:LYS:HD3	1.82	0.62
1:A:222:ARG:NH1	2:A:2002:9NF:HD2	2.14	0.62
1:B:25:ILE:O	1:B:29:GLN:HG3	2.00	0.62
1:A:510:HIS:HA	1:A:568:PHE:CB	2.30	0.61
1:B:345:LEU:HD22	1:B:446:MET:CE	2.30	0.61
1:B:283:LEU:O	1:B:286:LYS:HB3	2.01	0.61
1:B:364:ALA:O	1:B:366:PRO:HD3	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:106:LYS:HD3	1:B:147:PRO:HB2	1.84	0.60
1:B:567:CYS:CA	1:B:571:GLU:OE2	2.49	0.60
1:A:274:LYS:CE	1:A:296:ASP:HA	2.32	0.60
1:A:36:PHE:O	1:A:40:VAL:HG23	2.02	0.60
1:B:66:LEU:O	1:B:70:PHE:CD1	2.54	0.60
1:A:378:LYS:HB3	1:A:379:PRO:HD3	1.84	0.59
1:B:540:THR:HG23	1:B:543:GLN:H	1.67	0.59
1:B:373:VAL:HG13	1:B:374:PHE:HD1	1.68	0.59
1:B:59:ALA:HB3	1:B:62:CYS:SG	2.42	0.59
1:B:127:PHE:O	1:B:131:GLU:HB3	2.02	0.59
1:B:398:LEU:HB3	1:B:402:LYS:HB2	1.84	0.59
1:B:557:LYS:HG3	1:B:558:CYS:N	2.17	0.58
1:A:156:PHE:CE2	1:A:160:ARG:HD3	2.38	0.58
1:A:29:GLN:HG2	1:A:147:PRO:HA	1.84	0.58
1:B:384:PRO:O	1:B:388:ILE:HG12	2.03	0.58
1:A:117:ARG:H	1:A:117:ARG:HD2	1.69	0.58
1:A:557:LYS:HE2	1:A:558:CYS:CB	2.31	0.58
1:A:218:ARG:CZ	1:A:222:ARG:HH21	2.16	0.57
1:A:557:LYS:CG	1:A:558:CYS:N	2.67	0.57
1:B:107:ASP:OD2	1:B:110:PRO:N	2.37	0.57
1:B:222:ARG:HA	1:B:295:ASN:OD1	2.04	0.57
1:B:116:VAL:O	1:B:118:PRO:HD3	2.04	0.57
1:B:438:CYS:SG	2:B:2001:9NF:H121	2.44	0.57
1:B:558:CYS:SG	1:B:571:GLU:OE2	2.63	0.57
1:A:483:ASN:C	1:A:486:PRO:HD2	2.25	0.57
1:A:5:SER:HA	1:A:62:CYS:O	2.04	0.57
1:A:199:LYS:CB	2:A:2002:9NF:H113	2.33	0.57
1:A:557:LYS:CD	1:A:558:CYS:N	2.67	0.57
1:B:214:TRP:CG	2:B:2002:9NF:H122	2.39	0.57
1:B:135:LEU:HD11	1:B:162:LYS:CG	2.35	0.57
1:B:211:PHE:CZ	2:B:2002:9NF:H3	2.40	0.56
1:A:224:PRO:HD2	1:A:296:ASP:HB3	1.87	0.56
1:B:552:ALA:O	1:B:555:VAL:HG12	2.06	0.56
1:A:222:ARG:HH12	2:A:2002:9NF:HD2	1.70	0.56
1:B:98:ARG:O	1:B:101:CYS:HB3	2.05	0.56
1:A:222:ARG:O	1:A:224:PRO:HD3	2.07	0.55
1:A:498:VAL:HG23	1:A:498:VAL:O	2.05	0.55
1:B:247:HIS:ND1	1:B:247:HIS:O	2.39	0.55
1:A:222:ARG:C	1:A:224:PRO:HD3	2.28	0.55
1:A:384:PRO:O	1:A:388:ILE:HG12	2.07	0.55
1:A:107:ASP:O	1:A:110:PRO:HD3	2.06	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:460:LEU:HD12	1:B:460:LEU:O	2.06	0.54
1:A:120:VAL:HG21	1:A:175:ALA:HA	1.90	0.54
1:B:262:LYS:O	1:B:266:GLU:HG3	2.07	0.54
1:B:499:PRO:HB3	1:B:535:HIS:O	2.07	0.54
1:A:61:ASN:HB3	1:A:64:LYS:CD	2.37	0.54
1:A:186:ARG:O	1:A:190:LYS:HG3	2.08	0.53
1:A:414:LYS:O	1:A:472:ARG:NH1	2.42	0.53
1:B:516:LEU:N	1:B:516:LEU:HD12	2.23	0.53
1:B:430:LEU:O	1:B:433:VAL:HG23	2.09	0.53
1:B:218:ARG:NH2	1:B:222:ARG:HH21	2.07	0.53
1:A:139:LEU:HD21	1:A:158:ALA:HB2	1.91	0.53
1:A:27:PHE:CE1	1:A:70:PHE:HD2	2.27	0.53
1:B:186:ARG:HG2	1:B:187:ASP:N	2.23	0.53
1:A:209:ARG:HD2	1:A:209:ARG:O	2.08	0.52
1:B:199:LYS:CG	2:B:2002:9NF:H113	2.39	0.52
1:B:260:LEU:O	1:B:264:ILE:HG13	2.10	0.52
1:A:179:LEU:HB2	1:A:180:PRO:HD3	1.90	0.52
1:B:110:PRO:HB2	1:B:112:LEU:HD21	1.91	0.52
1:B:540:THR:CG2	1:B:543:GLN:HG2	2.40	0.52
1:A:63:ASP:OD1	1:A:64:LYS:HE3	2.09	0.52
1:A:199:LYS:CA	2:A:2002:9NF:H111	2.30	0.52
1:A:66:LEU:O	1:A:70:PHE:CD1	2.51	0.52
1:A:557:LYS:HG2	1:A:558:CYS:N	2.24	0.52
1:A:503:ASN:ND2	1:A:506:THR:OG1	2.43	0.51
1:A:512:ASP:O	1:A:515:THR:HG22	2.10	0.51
1:B:557:LYS:HG3	1:B:558:CYS:H	1.76	0.51
1:A:96:PRO:HG2	1:A:97:GLU:H	1.75	0.51
1:A:23:VAL:HG13	1:A:70:PHE:HE2	1.76	0.51
1:A:290:ILE:O	1:A:293:VAL:HG22	2.10	0.51
1:A:194:ALA:HB1	1:A:455:VAL:CG1	2.41	0.50
1:B:120:VAL:HG21	1:B:175:ALA:CA	2.36	0.50
1:A:388:ILE:HD12	1:A:449:ALA:CB	2.41	0.50
1:A:383:GLU:HB3	1:A:384:PRO:CD	2.37	0.50
1:B:558:CYS:SG	1:B:571:GLU:HG3	2.51	0.50
1:B:168:CYS:SG	1:B:177:CYS:C	2.90	0.49
1:B:485:ARG:O	1:B:485:ARG:HD2	2.12	0.49
1:A:160:ARG:HH21	1:A:185:LEU:CD2	2.25	0.49
1:B:107:ASP:OD2	1:B:110:PRO:CA	2.60	0.49
1:A:281:LYS:HB2	1:A:282:PRO:CD	2.43	0.49
1:A:5:SER:HB3	1:A:57:GLU:HG3	1.95	0.49
1:B:152:PRO:HB2	1:B:257:ARG:NH1	2.26	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:72:ASP:O	1:A:76:THR:HG23	2.12	0.49
1:A:325:VAL:O	1:A:329:MET:HG3	2.13	0.48
1:A:345:LEU:O	1:A:349:LEU:HG	2.13	0.48
1:B:540:THR:HG22	1:B:543:GLN:OE1	2.13	0.48
1:B:57:GLU:O	1:B:58:SER:C	2.51	0.48
1:A:281:LYS:HB2	1:A:282:PRO:HD2	1.95	0.48
1:A:414:LYS:HE2	1:A:491:LEU:O	2.12	0.48
1:B:442:GLU:N	1:B:442:GLU:CD	2.64	0.48
1:B:558:CYS:C	1:B:560:LYS:H	2.16	0.48
1:B:558:CYS:O	1:B:560:LYS:N	2.46	0.48
1:B:151:ALA:CB	1:B:152:PRO:HD3	2.39	0.48
1:A:26:ALA:HB2	1:A:250:LEU:HD12	1.94	0.48
1:B:151:ALA:HB3	1:B:152:PRO:CD	2.39	0.48
1:B:529:LEU:O	1:B:533:VAL:HG23	2.14	0.48
1:B:9:HIS:CD2	1:B:13:ASP:OD2	2.66	0.48
1:B:498:VAL:O	1:B:498:VAL:HG23	2.14	0.48
1:A:145:ARG:HG3	1:A:145:ARG:HH11	1.79	0.48
1:B:179:LEU:CB	1:B:180:PRO:HD3	2.44	0.47
1:B:225:LYS:HG2	1:B:299:PRO:HG3	1.96	0.47
1:B:20:LYS:HE2	1:B:47:THR:HG21	1.95	0.47
1:B:558:CYS:C	1:B:560:LYS:N	2.66	0.47
1:A:286:LYS:O	1:A:290:ILE:HG13	2.13	0.47
1:A:95:GLU:CB	1:A:96:PRO:CD	2.91	0.47
1:A:540:THR:N	1:A:543:GLN:NE2	2.59	0.47
1:B:187:ASP:HA	1:B:190:LYS:HE3	1.96	0.47
1:A:61:ASN:HD22	1:A:64:LYS:NZ	2.13	0.47
1:A:156:PHE:O	1:A:160:ARG:HG3	2.14	0.47
1:A:39:HIS:O	1:A:43:VAL:HG23	2.15	0.47
1:A:557:LYS:CE	1:A:571:GLU:CB	2.92	0.47
1:B:557:LYS:CG	1:B:558:CYS:N	2.78	0.47
1:A:117:ARG:H	1:A:117:ARG:HD3	1.79	0.47
1:A:506:THR:CG2	1:A:531:GLU:HG3	2.45	0.47
1:B:367:HIS:O	1:B:371:ALA:HB2	2.15	0.47
1:A:464:HIS:HE1	1:A:470:SER:H	1.61	0.46
1:B:238:LEU:CD2	2:B:2002:9NF:H2	2.46	0.46
1:B:139:LEU:HD21	1:B:158:ALA:HB2	1.96	0.46
1:B:442:GLU:N	1:B:442:GLU:OE1	2.36	0.46
1:A:27:PHE:HE1	1:A:70:PHE:HD2	1.62	0.46
1:A:406:ALA:O	1:A:410:ARG:HG2	2.15	0.46
1:A:564:LYS:HB3	1:A:567:CYS:SG	2.55	0.46
1:B:230:GLU:O	1:B:233:LYS:HB3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:36:PHE:O	1:B:40:VAL:HG23	2.16	0.46
1:A:262:LYS:O	1:A:266:GLU:HG3	2.15	0.46
1:B:388:ILE:HA	2:B:2001:9NF:H9	1.98	0.45
1:B:557:LYS:CD	1:B:571:GLU:HB2	2.45	0.45
1:B:30:TYR:HE1	1:B:103:LEU:HD23	1.81	0.45
1:A:359:LYS:CG	1:A:360:CYS:N	2.80	0.45
1:A:416:PRO:O	1:A:534:LYS:HE2	2.17	0.45
1:B:20:LYS:CE	1:B:47:THR:HG21	2.46	0.45
1:B:565:GLU:O	1:B:566:THR:C	2.53	0.45
1:A:199:LYS:HE2	2:A:2002:9NF:C	2.46	0.45
1:B:161:TYR:CZ	1:B:165:PHE:HE1	2.34	0.45
1:B:464:HIS:CE1	1:B:469:VAL:H	2.33	0.45
1:A:247:HIS:O	1:A:247:HIS:ND1	2.49	0.45
1:B:26:ALA:HB2	1:B:250:LEU:HD12	1.99	0.45
1:A:540:THR:OG1	1:A:543:GLN:HG3	2.16	0.45
1:A:211:PHE:CZ	2:A:2002:9NF:H3	2.51	0.45
1:A:433:VAL:HG12	2:A:2001:9NF:H113	1.99	0.45
1:A:483:ASN:O	1:A:486:PRO:HD2	2.16	0.45
1:A:387:LEU:HD22	1:A:485:ARG:NH1	2.31	0.45
1:A:305:LEU:HD13	1:A:334:TYR:CD2	2.53	0.44
1:A:265:CYS:SG	1:A:286:LYS:HD2	2.57	0.44
1:A:540:THR:N	1:A:543:GLN:HE21	2.12	0.44
1:B:556:GLU:HG2	1:B:556:GLU:O	2.17	0.44
1:A:296:ASP:OD1	1:A:297:GLU:N	2.50	0.44
1:A:42:LEU:O	1:A:46:VAL:HG23	2.17	0.44
1:A:563:ASP:O	1:A:564:LYS:HD3	2.18	0.44
1:B:222:ARG:HH11	2:B:2002:9NF:HE1	1.83	0.44
1:B:540:THR:HG23	1:B:543:GLN:HG2	1.99	0.44
1:A:35:PRO:CG	1:A:38:ASP:OD2	2.62	0.44
1:A:373:VAL:HG13	1:A:374:PHE:HD1	1.83	0.44
1:B:9:HIS:HD2	1:B:13:ASP:OD2	2.01	0.44
1:A:61:ASN:HD22	1:A:64:LYS:HZ3	1.65	0.44
1:A:464:HIS:CE1	1:A:470:SER:H	2.36	0.44
1:A:522:GLN:O	1:A:526:GLN:HG3	2.18	0.44
1:B:500:LYS:O	1:B:535:HIS:CD2	2.53	0.44
1:B:557:LYS:CG	1:B:558:CYS:H	2.31	0.44
1:A:277:GLU:H	1:A:277:GLU:HG2	1.42	0.43
1:A:303:PRO:O	1:A:337:ARG:NH1	2.50	0.43
1:A:56:ASP:C	1:A:58:SER:H	2.21	0.43
1:B:219:LEU:HD21	2:B:2002:9NF:O3	2.17	0.43
1:A:388:ILE:HD13	2:A:2001:9NF:H9	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:123:MET:HE1	1:B:182:LEU:HD21	2.00	0.43
1:A:231:VAL:O	1:A:235:VAL:HG23	2.18	0.43
1:A:21:ALA:HB1	1:A:155:LEU:HD21	2.00	0.43
1:A:21:ALA:CB	1:A:155:LEU:HD21	2.48	0.43
1:B:305:LEU:HD13	1:B:334:TYR:CD2	2.54	0.43
1:B:543:GLN:O	1:B:546:ALA:HB3	2.18	0.43
1:B:237:ASP:CB	1:B:260:LEU:HD12	2.49	0.43
1:B:388:ILE:HD12	1:B:449:ALA:CB	2.49	0.43
1:A:276:LYS:HG3	3:A:2003:HOH:O	2.19	0.43
1:A:160:ARG:HH21	1:A:185:LEU:HD23	1.84	0.42
1:B:280:GLU:HA	1:B:280:GLU:OE1	2.18	0.42
1:B:446:MET:HB3	1:B:447:PRO:HD3	2.00	0.42
1:B:99:ASN:HA	1:B:102:PHE:HD2	1.84	0.42
1:B:327:LEU:HD11	1:B:354:GLU:HG3	2.00	0.42
1:B:441:PRO:O	1:B:443:ALA:N	2.52	0.42
1:A:66:LEU:HD12	1:A:252:GLU:OE2	2.19	0.42
1:B:408:LEU:HD11	1:B:526:GLN:HB3	2.02	0.42
1:A:117:ARG:N	1:A:117:ARG:CD	2.76	0.42
1:A:218:ARG:CG	2:A:2002:9NF:O2	2.68	0.42
1:A:25:ILE:HD13	1:A:154:LEU:HD23	2.02	0.42
1:B:566:THR:O	1:B:567:CYS:C	2.58	0.42
1:A:249:ASP:HB3	1:A:252:GLU:CG	2.50	0.42
1:A:464:HIS:CE1	1:A:469:VAL:H	2.37	0.42
1:B:383:GLU:HB3	1:B:384:PRO:CD	2.50	0.42
1:A:485:ARG:HB3	1:A:486:PRO:HD3	2.02	0.41
1:A:14:LEU:HD13	1:A:22:LEU:HD12	2.02	0.41
1:B:186:ARG:HB3	1:B:186:ARG:HE	1.69	0.41
1:B:296:ASP:OD1	1:B:297:GLU:N	2.53	0.41
1:B:302:LEU:HA	1:B:303:PRO:HD3	1.90	0.41
1:B:10:ARG:O	1:B:14:LEU:HD23	2.21	0.41
1:B:161:TYR:CE2	1:B:165:PHE:CE1	3.09	0.41
1:B:281:LYS:HG2	1:B:281:LYS:H	1.65	0.41
1:B:388:ILE:HD13	2:B:2001:9NF:H9	2.02	0.41
1:A:373:VAL:O	1:A:376:GLU:HB2	2.21	0.41
1:B:115:LEU:HD21	1:B:145:ARG:CZ	2.50	0.41
1:B:457:LEU:HD23	1:B:457:LEU:HA	1.87	0.41
1:A:145:ARG:NH1	1:A:145:ARG:HG3	2.35	0.41
1:B:194:ALA:HB1	1:B:455:VAL:CG1	2.50	0.41
1:B:485:ARG:C	1:B:485:ARG:HD2	2.41	0.41
1:B:107:ASP:OD2	1:B:110:PRO:HA	2.21	0.41
1:B:546:ALA:O	1:B:550:ASP:OD1	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:540:THR:HG22	1:B:543:GLN:CG	2.51	0.41
1:B:567:CYS:C	1:B:571:GLU:OE2	2.60	0.41
1:A:305:LEU:HD21	1:A:333:GLU:HB3	2.03	0.41
1:B:127:PHE:HD1	1:B:134:PHE:CD2	2.39	0.41
1:B:576:VAL:HA	1:B:579:SER:HB2	2.03	0.41
1:A:498:VAL:CG2	1:A:498:VAL:O	2.67	0.41
1:B:464:HIS:CG	1:B:473:VAL:HG11	2.56	0.41
1:B:537:PRO:HG2	1:B:538:LYS:H	1.86	0.41
1:A:373:VAL:HG13	1:A:374:PHE:CD1	2.56	0.40
1:A:557:LYS:NZ	1:A:558:CYS:HB2	2.35	0.40
1:A:543:GLN:O	1:A:547:VAL:HG23	2.22	0.40
1:B:100:GLU:HG2	1:B:103:LEU:HD12	2.04	0.40
1:A:466:LYS:HE2	1:A:466:LYS:HB3	1.93	0.40
1:B:199:LYS:HA	2:B:2002:9NF:H113	1.98	0.40
1:B:27:PHE:N	1:B:27:PHE:CD1	2.89	0.40
1:B:161:TYR:CE2	1:B:165:PHE:HE1	2.39	0.40
1:B:238:LEU:HD11	2:B:2002:9NF:HB1C	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	565/585 (97%)	520 (92%)	36 (6%)	9 (2%)	11	15
1	B	562/585 (96%)	506 (90%)	42 (8%)	14 (2%)	6	6
All	All	1127/1170 (96%)	1026 (91%)	78 (7%)	23 (2%)	9	10

All (23) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	59	ALA

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Mol	Chain	Res	Type
1	A	95	GLU
1	B	54	VAL
1	B	57	GLU
1	B	58	SER
1	B	300	ALA
1	B	565	GLU
1	A	60	GLU
1	A	300	ALA
1	B	283	LEU
1	B	442	GLU
1	B	567	CYS
1	B	568	PHE
1	A	562	ASP
1	A	57	GLU
1	A	58	SER
1	A	315	VAL
1	B	60	GLU
1	B	118	PRO
1	B	559	CYS
1	B	151	ALA
1	A	96	PRO
1	B	366	PRO

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	412/511 (81%)	388 (94%)	24 (6%)	23	37
1	B	390/511 (76%)	378 (97%)	12 (3%)	45	66
All	All	802/1022 (78%)	766 (96%)	36 (4%)	32	50

All (36) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	16	GLU

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Mol	Chain	Res	Type
1	A	49	PHE
1	A	64	LYS
1	A	109	ASN
1	A	117	ARG
1	A	144	ARG
1	A	161	TYR
1	A	230	GLU
1	A	245	CYS
1	A	252	GLU
1	A	277	GLU
1	A	314	ASP
1	A	376	GLU
1	A	450	GLU
1	A	452	TYR
1	A	466	LYS
1	A	467	THR
1	A	489	SER
1	A	493	VAL
1	A	501	GLU
1	A	532	LEU
1	A	548	MET
1	A	550	ASP
1	A	557	LYS
1	B	6	GLU
1	B	45	GLU
1	B	112	LEU
1	B	132	GLU
1	B	186	ARG
1	B	245	CYS
1	B	281	LYS
1	B	375	ASP
1	B	442	GLU
1	B	516	LEU
1	B	550	ASP
1	B	571	GLU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	29	GLN
1	A	39	HIS
1	A	61	ASN

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Mol	Chain	Res	Type
1	A	109	ASN
1	A	318	ASN
1	A	464	HIS
1	A	483	ASN
1	A	503	ASN
1	A	543	GLN
1	B	9	HIS
1	B	318	ASN
1	B	464	HIS
1	B	483	ASN
1	B	535	HIS

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	9NF	A	2001	-	27,28,30	2.55	16 (59%)	36,40,43	1.28	3 (8%)
2	9NF	A	2002	-	27,28,30	3.31	12 (44%)	36,40,43	1.56	8 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	9NF	B	2001	-	27,28,30	2.78	13 (48%)	36,40,43	1.18	4 (11%)
2	9NF	B	2002	-	27,28,30	3.19	13 (48%)	36,40,43	1.57	8 (22%)

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	9NF	A	2001	-	-	0/19/19/23	0/3/3/3
2	9NF	A	2002	-	-	0/19/19/23	0/3/3/3
2	9NF	B	2001	-	-	0/19/19/23	0/3/3/3
2	9NF	B	2002	-	-	0/19/19/23	0/3/3/3

All (54) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	2002	9NF	CE2-CD2	2.01	1.42	1.38
2	A	2001	9NF	C1-S1	2.03	1.80	1.78
2	A	2001	9NF	C11-N1	2.05	1.50	1.45
2	B	2001	9NF	C8-C7	2.10	1.41	1.36
2	A	2001	9NF	CD1-CG	2.12	1.43	1.38
2	A	2002	9NF	CE2-CD2	2.14	1.43	1.38
2	A	2001	9NF	C3-C2	2.15	1.43	1.38
2	B	2002	9NF	O3-S1	2.22	1.45	1.43
2	B	2001	9NF	S1-N	2.26	1.65	1.61
2	B	2001	9NF	C4-C5	2.28	1.47	1.42
2	A	2001	9NF	C4-C5	2.38	1.47	1.42
2	B	2001	9NF	CZ-CE1	2.39	1.43	1.38
2	A	2001	9NF	CE2-CD2	2.44	1.43	1.38
2	A	2002	9NF	C10-C5	2.60	1.48	1.42
2	A	2001	9NF	C10-C5	2.64	1.49	1.42
2	B	2002	9NF	C10-C5	2.66	1.49	1.42
2	B	2001	9NF	C10-C5	2.73	1.49	1.42
2	A	2001	9NF	C8-C7	2.75	1.43	1.36
2	A	2001	9NF	S1-N	2.76	1.66	1.61
2	B	2001	9NF	C2-C1	2.76	1.40	1.37
2	B	2001	9NF	CD2-CG	2.81	1.44	1.38
2	A	2001	9NF	C7-C6	2.91	1.48	1.42
2	A	2002	9NF	O3-S1	2.93	1.46	1.43
2	A	2001	9NF	O3-S1	2.99	1.46	1.43
2	A	2002	9NF	C2-C1	3.01	1.41	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	2002	9NF	CD2-CG	3.02	1.45	1.38
2	A	2002	9NF	C8-C7	3.05	1.43	1.36
2	B	2002	9NF	C2-C1	3.05	1.41	1.37
2	B	2002	9NF	C8-C7	3.09	1.43	1.36
2	B	2002	9NF	S1-N	3.14	1.66	1.61
2	A	2002	9NF	S1-N	3.24	1.67	1.61
2	B	2002	9NF	C3-C2	3.33	1.45	1.38
2	A	2001	9NF	CD2-CG	3.33	1.45	1.38
2	A	2001	9NF	C6-C5	3.54	1.50	1.43
2	B	2001	9NF	C3-C2	3.57	1.45	1.38
2	A	2002	9NF	C9-C10	3.76	1.46	1.38
2	A	2002	9NF	C3-C2	3.87	1.46	1.38
2	B	2002	9NF	C9-C10	3.99	1.46	1.38
2	A	2001	9NF	C9-C10	4.19	1.47	1.38
2	A	2001	9NF	C8-C9	4.40	1.47	1.38
2	B	2001	9NF	C8-C9	4.43	1.47	1.38
2	B	2001	9NF	C9-C10	4.45	1.47	1.38
2	B	2001	9NF	C1-C6	4.51	1.50	1.43
2	B	2002	9NF	C8-C9	4.78	1.48	1.38
2	A	2001	9NF	C1-C6	4.89	1.50	1.43
2	A	2002	9NF	C8-C9	4.95	1.48	1.38
2	B	2001	9NF	C6-C5	5.08	1.52	1.43
2	B	2002	9NF	C6-C5	5.16	1.53	1.43
2	A	2002	9NF	C6-C5	5.32	1.53	1.43
2	B	2001	9NF	C1-S1	6.50	1.84	1.78
2	B	2002	9NF	C1-C6	7.10	1.53	1.43
2	A	2002	9NF	C1-C6	7.26	1.54	1.43
2	B	2002	9NF	C1-S1	8.60	1.86	1.78
2	A	2002	9NF	C1-S1	9.03	1.87	1.78

All (23) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	2002	9NF	C12-N1-C11	-3.89	103.43	116.03
2	B	2002	9NF	C-CA-CB	-3.61	103.92	111.90
2	A	2002	9NF	C12-N1-C11	-3.48	104.76	116.03
2	A	2001	9NF	C12-N1-C11	-3.44	104.89	116.03
2	A	2002	9NF	C-CA-CB	-3.35	104.50	111.90
2	B	2001	9NF	C12-N1-C11	-3.12	105.93	116.03
2	B	2001	9NF	C-CA-CB	-2.75	105.81	111.90
2	A	2002	9NF	O3-S1-O2	-2.72	116.07	119.55
2	B	2002	9NF	O3-S1-O2	-2.52	116.33	119.55

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	2002	9NF	C4-C5-C10	-2.45	118.45	122.57
2	B	2002	9NF	C4-C5-C10	-2.08	119.08	122.57
2	B	2001	9NF	CG-CB-CA	2.03	117.21	113.42
2	B	2002	9NF	C6-C1-S1	2.17	124.23	121.56
2	A	2002	9NF	C7-C6-C1	2.34	126.63	123.63
2	A	2002	9NF	CG-CB-CA	2.36	117.81	113.42
2	B	2001	9NF	C9-C10-N1	2.38	125.36	121.70
2	A	2002	9NF	C6-C1-S1	2.48	124.61	121.56
2	B	2002	9NF	C10-C5-C6	2.48	122.01	119.40
2	A	2001	9NF	O2-S1-C1	2.51	112.49	108.05
2	B	2002	9NF	C7-C6-C1	2.56	126.91	123.63
2	A	2002	9NF	C10-C5-C6	2.93	122.48	119.40
2	B	2002	9NF	CG-CB-CA	3.16	119.31	113.42
2	A	2001	9NF	CG-CB-CA	3.65	120.22	113.42

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

4 monomers are involved in 31 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	2001	9NF	2	0
2	A	2002	9NF	15	0
2	B	2001	9NF	3	0
2	B	2002	9NF	11	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 ⓘ

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	569/585 (97%)	-0.06	21 (3%)	42 41	30, 64, 140, 153	0
1	B	566/585 (96%)	-0.04	23 (4%)	38 36	30, 68, 134, 156	0
All	All	1135/1170 (97%)	-0.05	44 (3%)	40 39	30, 65, 138, 156	0

All (44) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	569	ALA	7.2
1	A	509	PHE	5.5
1	A	568	PHE	5.4
1	B	54	VAL	5.4
1	B	566	THR	5.1
1	B	504	ALA	4.7
1	B	509	PHE	4.5
1	A	506	THR	4.3
1	B	578	ALA	4.3
1	A	558	CYS	4.2
1	B	577	ALA	4.1
1	A	508	THR	3.9
1	B	560	LYS	3.9
1	A	559	CYS	3.9
1	A	582	ALA	3.8
1	A	507	PHE	3.7
1	A	504	ALA	3.6
1	B	510	HIS	3.6
1	B	513	ILE	3.5
1	B	575	LEU	3.3
1	A	578	ALA	3.3
1	B	559	CYS	3.3
1	A	161	TYR	3.2
1	B	558	CYS	3.2

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Mol	Chain	Res	Type	RSRZ
1	A	91	CYS	3.0
1	B	579	SER	3.0
1	A	513	ILE	2.8
1	A	505	GLU	2.8
1	A	560	LYS	2.6
1	B	161	TYR	2.6
1	B	582	ALA	2.6
1	B	508	THR	2.4
1	B	45	GLU	2.4
1	B	516	LEU	2.3
1	A	566	THR	2.3
1	A	555	VAL	2.3
1	B	176	ALA	2.3
1	B	46	VAL	2.2
1	A	577	ALA	2.2
1	A	557	LYS	2.1
1	A	561	ALA	2.1
1	B	171	ALA	2.1
1	B	576	VAL	2.1
1	B	55	ALA	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. 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(Å ²)	Q<0.9
2	9NF	B	2002	26/28	0.93	0.25	5.97	66,70,75,79	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(\AA^2)	Q<0.9
2	9NF	A	2002	26/28	0.89	0.24	4.02	68,72,75,77	0
2	9NF	A	2001	26/28	0.96	0.19	2.72	41,46,60,61	0
2	9NF	B	2001	26/28	0.94	0.19	1.42	46,49,58,59	0

6.5 Other polymers [i](#)

There are no such residues in this entry.