Full wwPDB X-ray Structure Validation Report ⓘ

Apr 2, 2025 – 02:13 am BST

PDB ID	:	2WO0 / pdb_00002wo0
Title	:	EDTA treated E. coli copper amine oxidase
Authors	:	Smith, M.A.; Pirrat, P.; Pearson, A.R.; Knowles, P.F.; Phillips, S.E.V.; McPherson, M.J.
Deposited on	:	2009-07-21
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
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:

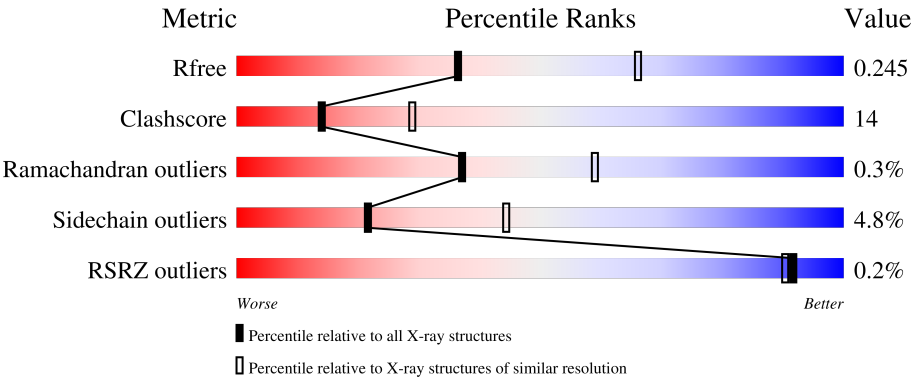
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.42

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 2.60 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}	164625	3775 (2.60-2.60)
Clashscore	180529	4181 (2.60-2.60)
Ramachandran outliers	177936	4129 (2.60-2.60)
Sidechain outliers	177891	4129 (2.60-2.60)
RSRZ outliers	164620	3775 (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 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 <=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	727	73% 23%
1	B	727	72% 25%

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 11792 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 PRIMARY AMINE OXIDASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	719	Total	C	N	O	S	0	1	1
			5676	3610	965	1079	22			
1	B	721	Total	C	N	O	S	0	4	1
			5710	3634	970	1081	25			

- Molecule 2 is COPPER (II) ION (CCD ID: CU) (formula: Cu).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Cu	0	0
			1	1		
2	B	1	Total	Cu	0	0
			1	1		

- Molecule 3 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	2	Total	Na	0	0
			2	2		
3	B	2	Total	Na	0	0
			2	2		

- Molecule 4 is water.

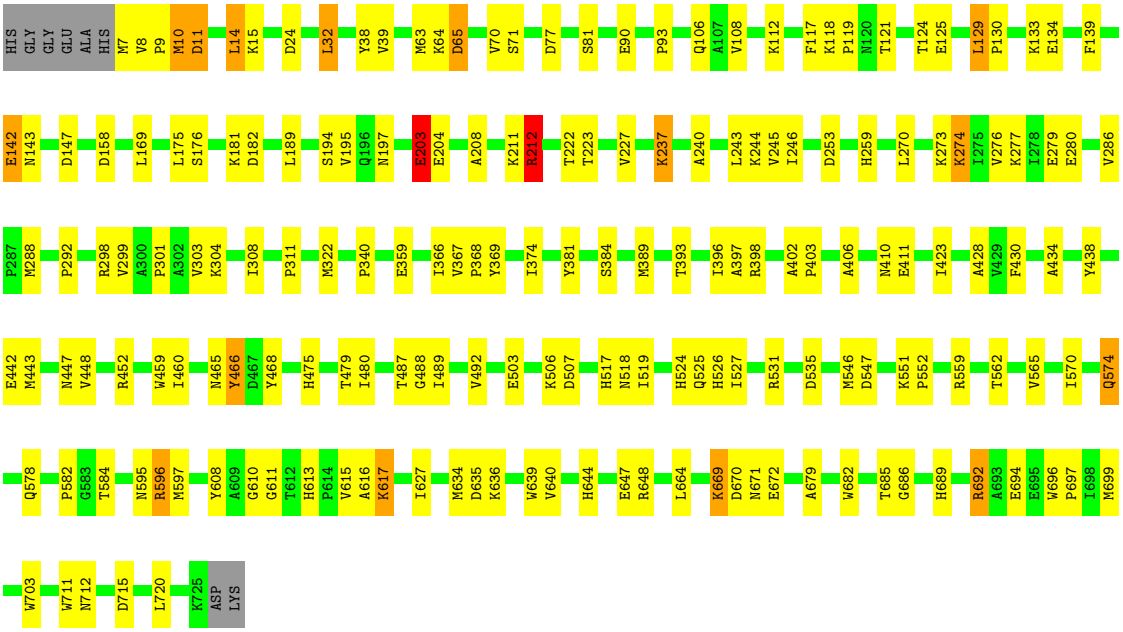
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	239	Total	O	0	0
			239	239		
4	B	161	Total	O	0	0
			161	161		

3 Residue-property plots (i)

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.

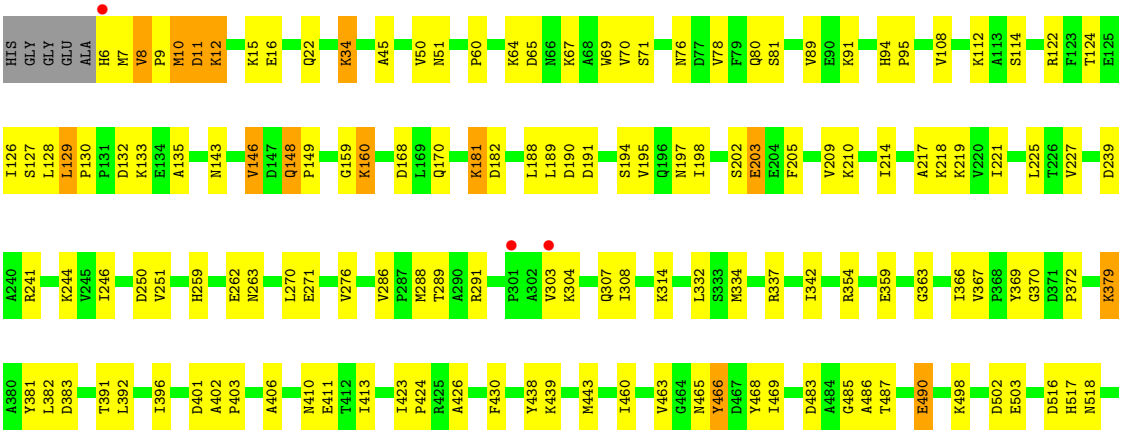
• Molecule 1: PRIMARY AMINE OXIDASE

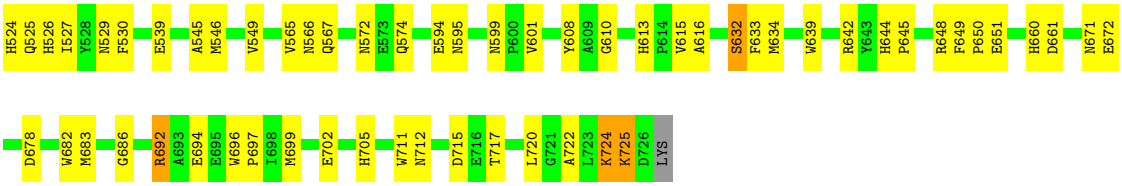
Chain A:



• Molecule 1: PRIMARY AMINE OXIDASE

Chain B:




H524
Q525
H526
I527
Y528
N529
F530
E539
A545
M546
V549
V565
N566
Q567
N572
E573
Q574
E594
N595
N599
P600
V601
Y608
A609
G610
H613
P614
V615
A616
S632
F633
M634
W639
R642
Y643
H644
P645
R648
F649
P650
E651
H660
D661
N671
E672
D678
W682
M683
G686
R692
A693
E694
E695
W696
P697
I698
M699
E702
H705
W711
N712
D715
E716
T717
L720
G721
A722
L723
K724
K725
D726
LYS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	134.68Å 166.62Å 79.83Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	39.52 – 2.60 39.52 – 2.60	Depositor EDS
% Data completeness (in resolution range)	99.8 (39.52-2.60) 99.8 (39.52-2.60)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.33 (at 2.61Å)	Xtriage
Refinement program	REFMAC 5.5.0066	Depositor
R, R_{free}	0.182 , 0.248 0.185 , 0.245	Depositor DCC
R_{free} test set	1920 reflections (3.43%)	wwPDB-VP
Wilson B-factor (Å^2)	35.0	Xtriage
Anisotropy	0.087	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 37.0	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	11792	wwPDB-VP
Average B, all atoms (Å^2)	29.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.93% 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: CU, NA, TPQ

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	1/5794 (0.0%)	0.75	0/7888
1	B	0.64	0/5838	0.75	1/7945 (0.0%)
All	All	0.65	1/11632 (0.0%)	0.75	1/15833 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	203	GLU	CG-CD	5.03	1.59	1.51

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	354	ARG	NE-CZ-NH1	-5.11	117.74	120.30

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	5676	0	5546	160	0
1	B	5710	0	5591	171	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	A	2	0	0	0	0
3	B	2	0	0	0	0
4	A	239	0	0	22	0
4	B	161	0	0	17	0
All	All	11792	0	11137	317	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 14.

All (317) 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:490:GLU:HG2	1:B:699[B]:MET:CE	1.20	1.64
1:B:490:GLU:CG	1:B:699[B]:MET:HE3	1.52	1.39
1:B:443[B]:MET:HE2	4:B:2102:HOH:O	1.30	1.28
1:B:490:GLU:CG	1:B:699[B]:MET:CE	2.06	1.28
1:B:129:LEU:CD1	1:B:130:PRO:HD2	1.70	1.21
1:B:221:ILE:CD1	1:B:250:ASP:HB2	1.81	1.07
1:B:291:ARG:NH1	1:B:516:ASP:OD2	1.87	1.07
1:A:11:ASP:OD1	1:A:15:LYS:HE3	1.55	1.04
1:B:443[B]:MET:CE	4:B:2102:HOH:O	1.92	1.03
1:B:129:LEU:HD13	1:B:130:PRO:HD2	1.39	0.98
1:B:10:MET:HG3	1:B:70:VAL:HG13	1.45	0.98
1:B:129:LEU:HD12	1:B:130:PRO:CD	1.94	0.97
1:B:490:GLU:CG	1:B:699[B]:MET:HE2	1.90	0.97
1:A:279:GLU:OE1	1:A:374:ILE:HD11	1.65	0.97
1:B:490:GLU:HG2	1:B:699[B]:MET:HE2	1.45	0.96
1:B:129:LEU:HD12	1:B:130:PRO:HD2	1.44	0.96
1:A:8:VAL:HG22	1:A:9:PRO:HD2	1.48	0.93
1:B:221:ILE:HD13	1:B:250:ASP:HB2	1.52	0.89
1:B:221:ILE:HD11	1:B:250:ASP:HB2	1.54	0.87
1:B:10:MET:HG3	1:B:70:VAL:CG1	2.05	0.87
1:B:129:LEU:CD1	1:B:130:PRO:CD	2.52	0.86
1:A:124:THR:HB	4:A:2041:HOH:O	1.77	0.85
1:A:552:PRO:HD2	4:A:2192:HOH:O	1.77	0.85
1:B:129:LEU:HD12	1:B:130:PRO:N	1.94	0.83
1:A:227:VAL:HG12	1:A:244:LYS:HG3	1.60	0.82
1:B:227:VAL:HG12	1:B:244:LYS:HG3	1.59	0.81
1:B:304:LYS:O	4:B:2055:HOH:O	1.99	0.81
1:A:616:ALA:HA	4:A:2228:HOH:O	1.81	0.79
1:B:76:ASN:O	1:B:80:GLN:HB2	1.82	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:368:PRO:HG3	1:A:634:MET:HE3	1.64	0.78
1:A:574:GLN:HG3	1:A:671:ASN:CG	2.05	0.77
1:A:465:ASN:C	1:A:466[B]:TPQ:CA	2.53	0.77
1:A:237:LYS:HE3	1:A:240:ALA:HB2	1.67	0.76
1:B:546:MET:CE	4:B:2041:HOH:O	2.34	0.76
1:B:149:PRO:HB3	1:B:170:GLN:OE1	1.86	0.75
1:A:189:LEU:HD13	4:A:2055:HOH:O	1.85	0.75
1:A:129:LEU:HD12	1:A:130:PRO:HD2	1.68	0.75
1:B:8:VAL:HG23	1:B:9:PRO:HD2	1.69	0.75
1:B:546:MET:HE1	4:B:2041:HOH:O	1.88	0.74
1:B:129:LEU:HD12	1:B:129:LEU:C	2.08	0.73
1:B:11:ASP:OD2	1:B:15:LYS:HE3	1.88	0.73
1:B:291:ARG:CD	4:B:2052:HOH:O	2.36	0.72
1:A:547:ASP:HB3	4:A:2188:HOH:O	1.89	0.72
1:B:359:GLU:CD	1:B:648:ARG:HH22	1.92	0.72
1:A:669:LYS:HD2	1:A:670:ASP:OD1	1.90	0.72
1:B:45:ALA:O	1:B:60:PRO:HB3	1.92	0.70
1:B:225:LEU:HD12	1:B:246:ILE:HG12	1.75	0.69
1:A:134:GLU:CG	4:A:2045:HOH:O	2.39	0.69
1:A:546:MET:HE3	1:A:565:VAL:HG11	1.75	0.68
1:B:465:ASN:HD21	1:B:466[B]:TPQ:C3	2.06	0.68
1:A:7:MET:HE2	1:A:7:MET:HA	1.74	0.68
1:B:574:GLN:HB2	1:B:671:ASN:OD1	1.94	0.67
1:A:584:THR:HG22	4:A:2188:HOH:O	1.94	0.67
1:A:8:VAL:CG2	1:A:9:PRO:HD2	2.22	0.67
1:B:8:VAL:HG23	1:B:9:PRO:CD	2.25	0.66
1:A:77:ASP:O	1:A:81:SER:HB3	1.94	0.66
1:B:402:ALA:HB1	1:B:403:PRO:HD2	1.77	0.66
1:B:369:TYR:CD2	1:B:524:HIS:HB3	2.30	0.66
1:B:12:LYS:O	1:B:16:GLU:HG2	1.96	0.66
1:B:251:VAL:O	1:B:251:VAL:CG1	2.44	0.65
1:A:129:LEU:HD12	1:A:129:LEU:C	2.16	0.65
1:A:181:LYS:O	1:A:182:ASP:HB2	1.95	0.65
1:B:78:VAL:O	1:B:81:SER:HB3	1.96	0.65
1:B:382:LEU:N	1:B:382:LEU:HD12	2.11	0.65
1:B:291:ARG:NH1	1:B:516:ASP:CG	2.50	0.65
1:B:466[B]:TPQ:H	1:B:466[B]:TPQ:C6	2.08	0.64
1:A:672:GLU:HB3	4:A:2226:HOH:O	1.97	0.64
1:B:644:HIS:ND1	1:B:645:PRO:HD2	2.13	0.64
1:A:129:LEU:CD1	1:A:130:PRO:HD2	2.28	0.63
1:A:203:GLU:OE1	1:A:204:GLU:HB2	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:134:GLU:HG2	4:A:2045:HOH:O	1.95	0.63
1:B:549:VAL:HA	4:B:2124:HOH:O	1.98	0.63
1:A:292:PRO:HD2	4:A:2101:HOH:O	1.99	0.62
1:A:299:VAL:HG23	1:B:724:LYS:HD2	1.83	0.61
1:B:251:VAL:O	1:B:251:VAL:HG12	2.00	0.61
1:A:11:ASP:OD1	1:A:15:LYS:CE	2.42	0.61
1:A:129:LEU:HD12	1:A:130:PRO:CD	2.30	0.61
1:B:108:VAL:O	1:B:112:LYS:HG3	2.00	0.61
1:A:517:HIS:O	1:A:518:ASN:HB2	2.00	0.60
1:A:142:GLU:O	1:A:143:ASN:HB2	2.02	0.60
1:A:466[B]:TPQ:H6	1:A:487:THR:O	2.02	0.60
1:A:608:TYR:HE2	1:B:608:TYR:HE2	1.48	0.60
1:A:574:GLN:HG3	1:A:671:ASN:ND2	2.16	0.60
1:B:262:GLU:O	1:B:263:ASN:HB2	2.01	0.59
1:B:366:ILE:HD12	1:B:382:LEU:CD1	2.32	0.59
1:A:7:MET:N	4:A:2001:HOH:O	2.33	0.59
1:B:209:VAL:HG13	1:B:214:ILE:HB	1.83	0.59
1:B:366:ILE:HD12	1:B:382:LEU:HD11	1.85	0.59
1:B:595:ASN:HB2	1:B:715:ASP:OD1	2.02	0.58
1:A:527:ILE:HD12	1:A:634:MET:HE2	1.84	0.58
1:A:635:ASP:O	1:A:636:LYS:HD3	2.03	0.58
1:B:642:ARG:HD2	1:B:672:GLU:HB3	1.84	0.58
1:A:203:GLU:CD	1:A:204:GLU:H	2.06	0.58
1:A:368:PRO:HG3	1:A:634:MET:CE	2.33	0.58
1:B:490:GLU:HG2	1:B:699[B]:MET:HE3	0.58	0.58
1:B:490:GLU:CD	1:B:699[B]:MET:CE	2.72	0.58
1:A:367:VAL:HG21	1:A:468:TYR:OH	2.04	0.57
1:B:6:HIS:C	1:B:7:MET:HG2	2.23	0.57
1:B:517:HIS:O	1:B:518:ASN:HB2	2.05	0.57
1:A:574:GLN:CG	1:A:671:ASN:CG	2.72	0.57
1:B:632:SER:OG	1:B:661:ASP:OD2	2.23	0.57
1:B:396:ILE:HG23	1:B:401:ASP:HB2	1.87	0.57
1:A:212:ARG:HH21	1:A:280:GLU:HB3	1.71	0.56
1:A:369:TYR:CD2	1:A:524:HIS:HB3	2.41	0.56
1:A:64:LYS:O	1:A:65:ASP:HB3	2.06	0.56
1:B:135:ALA:HB1	1:B:146:VAL:CG2	2.35	0.56
1:B:574:GLN:CB	1:B:671:ASN:OD1	2.54	0.56
1:A:10:MET:HG2	1:A:14:LEU:CD2	2.36	0.56
1:A:492:VAL:HB	1:A:519:ILE:HG23	1.88	0.55
1:A:7:MET:HA	1:A:7:MET:CE	2.37	0.55
1:A:527:ILE:HD12	1:A:634:MET:CE	2.36	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:366:ILE:HG13	1:B:367:VAL:N	2.22	0.55
1:A:565:VAL:N	4:A:2197:HOH:O	2.28	0.54
1:A:597:MET:SD	1:B:516:ASP:HA	2.48	0.54
1:A:608:TYR:CZ	1:A:615:VAL:HG21	2.43	0.54
1:B:539:GLU:O	1:B:678:ASP:HA	2.07	0.54
1:B:490:GLU:CD	1:B:699[B]:MET:HE2	2.27	0.54
1:A:366:ILE:HD11	1:A:627:ILE:HD11	1.90	0.54
1:A:596:ARG:NH2	1:B:516:ASP:OD1	2.41	0.54
1:A:299:VAL:CG2	1:B:724:LYS:HD2	2.38	0.54
1:A:610:GLY:HA3	1:B:610:GLY:HA3	1.90	0.53
1:B:221:ILE:CD1	1:B:250:ASP:CB	2.72	0.53
1:A:124:THR:CB	4:A:2041:HOH:O	2.45	0.53
1:A:466[A]:TPQ:HB3	1:A:468:TYR:CE2	2.43	0.53
1:B:168:ASP:OD1	1:B:168:ASP:C	2.47	0.53
1:A:223:THR:HG22	1:A:246:ILE:HB	1.91	0.53
1:B:194:SER:O	1:B:198:ILE:HG13	2.09	0.53
1:A:212:ARG:NH2	1:A:280:GLU:HB3	2.24	0.53
1:B:203:GLU:H	1:B:203:GLU:CD	2.12	0.53
1:B:483:ASP:CG	1:B:705:HIS:HD1	2.12	0.53
1:A:384:SER:HA	1:A:389:MET:HG3	1.91	0.52
1:A:639:TRP:HB2	1:A:682:TRP:HB2	1.90	0.52
1:A:286:VAL:HG12	1:A:288:MET:CE	2.39	0.52
1:A:403:PRO:HG3	1:A:430:PHE:CD2	2.45	0.52
1:B:486:ALA:O	1:B:699[A]:MET:HE3	2.10	0.52
1:A:286:VAL:CG1	1:A:288:MET:CE	2.88	0.52
1:B:381:TYR:CE1	1:B:466[B]:TPQ:O4	2.63	0.52
1:A:465:ASN:O	1:A:466[B]:TPQ:HA	2.10	0.52
1:B:332:LEU:HD13	1:B:342:ILE:CD1	2.40	0.52
1:A:194:SER:O	1:A:195:VAL:C	2.49	0.52
1:B:225:LEU:CD1	1:B:246:ILE:HG12	2.39	0.52
1:B:202:SER:HB3	1:B:205:PHE:HB3	1.90	0.52
1:B:466[A]:TPQ:H6	1:B:487:THR:O	2.09	0.52
1:A:692:ARG:HG3	1:A:694:GLU:OE1	2.10	0.51
1:A:664:LEU:HD21	1:A:682:TRP:CD2	2.46	0.51
1:B:122:ARG:NH1	1:B:190:ASP:OD1	2.40	0.51
1:B:291:ARG:HH12	1:B:516:ASP:CG	2.09	0.51
1:A:527:ILE:CD1	1:A:634:MET:HE2	2.40	0.51
1:A:10:MET:HG3	1:A:70:VAL:CG1	2.40	0.51
1:A:273:LYS:O	1:A:274:LYS:HB3	2.10	0.51
1:B:135:ALA:HB1	1:B:146:VAL:HG22	1.91	0.51
1:A:562:THR:HG21	1:B:372:PRO:HG3	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:724:LYS:O	1:B:725:LYS:HG2	2.11	0.50
1:B:460:ILE:HG12	1:B:469:ILE:HG12	1.94	0.50
1:B:8:VAL:HG23	1:B:9:PRO:N	2.26	0.50
1:A:227:VAL:CG1	1:A:244:LYS:HG3	2.38	0.50
1:A:7:MET:CE	1:A:7:MET:CA	2.89	0.50
1:B:64:LYS:O	1:B:65:ASP:HB2	2.12	0.50
1:B:369:TYR:OH	1:B:466[B]:TPQ:H3	2.12	0.50
1:B:146:VAL:HG12	1:B:146:VAL:O	2.11	0.49
1:B:160:LYS:HE2	1:B:239:ASP:O	2.12	0.49
1:A:465:ASN:HB2	1:A:489:ILE:O	2.12	0.49
1:A:32:LEU:HB2	1:A:39:VAL:HB	1.92	0.49
1:B:410:ASN:OD1	1:B:424:PRO:HA	2.13	0.49
1:A:10:MET:HG2	1:A:14:LEU:HD23	1.93	0.49
1:B:203:GLU:CD	1:B:203:GLU:N	2.66	0.49
1:B:337:ARG:HD3	1:B:649:PHE:CE1	2.47	0.49
1:A:531:ARG:HD2	1:A:682:TRP:CH2	2.48	0.49
1:B:639:TRP:HB2	1:B:682:TRP:HB2	1.94	0.49
1:A:582:PRO:HB2	1:B:615:VAL:HG12	1.94	0.49
1:B:717:THR:HB	1:B:720:LEU:HG	1.95	0.49
1:A:301:PRO:HA	4:A:2103:HOH:O	2.13	0.48
1:B:10:MET:HG3	1:B:70:VAL:HG11	1.93	0.48
1:A:208:ALA:O	1:A:211:LYS:HB2	2.13	0.48
1:A:595:ASN:HB2	1:A:715:ASP:OD1	2.14	0.48
1:B:529:ASN:HA	1:B:683:MET:O	2.13	0.48
1:B:221:ILE:HD11	1:B:250:ASP:CB	2.34	0.48
1:B:711:TRP:O	1:B:712:ASN:HB2	2.13	0.48
1:B:209:VAL:CG1	1:B:214:ILE:HB	2.44	0.48
1:A:134:GLU:HG3	4:A:2045:HOH:O	2.07	0.47
1:A:203:GLU:CG	1:A:204:GLU:N	2.77	0.47
1:B:94:HIS:CG	1:B:95:PRO:HD2	2.49	0.47
1:A:117:PHE:CZ	1:A:121:THR:HB	2.49	0.47
1:A:158:ASP:OD1	1:A:158:ASP:C	2.50	0.47
1:B:490:GLU:CA	1:B:699[B]:MET:HE3	2.44	0.47
1:B:546:MET:HB3	1:B:565:VAL:HG11	1.95	0.47
1:A:507:ASP:HB2	4:A:2181:HOH:O	2.14	0.47
1:A:10:MET:HG3	1:A:70:VAL:HG13	1.95	0.47
1:A:465:ASN:O	1:A:466[B]:TPQ:CA	2.63	0.47
1:A:617:LYS:HD3	4:B:2134:HOH:O	2.14	0.47
1:B:67:LYS:HE2	1:B:67:LYS:HB3	1.75	0.47
1:B:286:VAL:O	1:B:288:MET:HG2	2.13	0.47
1:B:660:HIS:ND1	1:B:660:HIS:N	2.62	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:566:ASN:HB3	4:B:2129:HOH:O	2.14	0.46
1:A:487:THR:OG1	1:A:488:GLY:N	2.48	0.46
1:A:223:THR:CG2	1:A:246:ILE:HB	2.45	0.46
1:B:644:HIS:ND1	1:B:645:PRO:CD	2.77	0.46
1:B:545:ALA:O	1:B:567:GLN:HA	2.15	0.46
1:A:129:LEU:HD12	1:A:130:PRO:N	2.30	0.46
1:B:7:MET:C	1:B:8:VAL:HG12	2.35	0.46
1:B:574:GLN:N	1:B:671:ASN:OD1	2.39	0.46
1:A:443:MET:CE	1:B:392:LEU:CD2	2.94	0.46
1:B:7:MET:HE3	1:B:7:MET:HB3	1.65	0.46
1:B:259:HIS:HE1	1:B:289:THR:O	1.99	0.46
1:B:696:TRP:CD2	1:B:697:PRO:HA	2.50	0.46
1:A:7:MET:HE2	1:A:71:SER:HA	1.97	0.46
1:A:381:TYR:CG	1:A:466[A]:TPQ:O5	2.69	0.45
1:A:396:ILE:HD13	1:A:428:ALA:HB2	1.98	0.45
1:A:393:THR:HB	1:A:423:ILE:HD13	1.97	0.45
1:B:181:LYS:O	1:B:182:ASP:HB2	2.15	0.45
1:A:562:THR:CG2	1:B:372:PRO:HG3	2.46	0.45
1:B:406:ALA:HA	1:B:430:PHE:HB3	1.98	0.45
1:A:611:GLY:HA2	1:A:703:TRP:O	2.17	0.45
1:B:382:LEU:HD23	1:B:651:GLU:HG3	1.98	0.45
1:B:307:GLN:HG2	4:B:2056:HOH:O	2.16	0.45
1:B:67:LYS:HE2	1:B:69:TRP:HE1	1.82	0.45
1:B:615:VAL:HG22	1:B:616:ALA:N	2.31	0.45
1:A:38:TYR:CG	1:A:311:PRO:HA	2.52	0.45
1:A:125:GLU:HA	4:A:2118:HOH:O	2.16	0.45
1:B:7:MET:HE3	1:B:70:VAL:C	2.38	0.44
1:B:124:THR:HB	4:B:2024:HOH:O	2.17	0.44
1:B:391:THR:HA	1:B:413:ILE:HD11	2.00	0.44
1:B:549:VAL:CA	4:B:2124:HOH:O	2.61	0.44
1:A:276:VAL:O	1:A:277:LYS:HB2	2.16	0.44
1:B:363:GLY:O	1:B:650:PRO:HD2	2.17	0.44
1:A:525:GLN:HE21	1:A:616:ALA:HB2	1.82	0.44
1:B:127:SER:O	1:B:128:LEU:C	2.56	0.44
1:A:298:ARG:HA	1:B:722:ALA:O	2.18	0.44
1:A:398:ARG:HD3	4:A:2137:HOH:O	2.18	0.44
1:B:94:HIS:ND1	1:B:95:PRO:HD2	2.33	0.44
1:B:465:ASN:ND2	1:B:466[B]:TPQ:C3	2.78	0.44
1:B:498:LYS:N	1:B:502:ASP:OD2	2.47	0.44
1:A:410:ASN:C	1:A:411:GLU:HG2	2.37	0.44
1:B:574:GLN:HB2	1:B:671:ASN:CG	2.38	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:106:GLN:NE2	1:A:169:LEU:O	2.38	0.43
1:A:442:GLU:HG3	4:A:2162:HOH:O	2.18	0.43
1:B:148:GLN:HE21	1:B:148:GLN:HB3	1.56	0.43
1:A:689:HIS:HE1	1:A:699:MET:SD	2.40	0.43
1:A:696:TRP:CD2	1:A:697:PRO:HA	2.53	0.43
1:B:410:ASN:C	1:B:411:GLU:HG2	2.39	0.43
1:A:222:THR:HG22	1:A:245:VAL:HG11	2.00	0.43
1:A:479:THR:HG22	1:A:480:ILE:N	2.33	0.43
1:A:559:ARG:HH22	1:B:370:GLY:HA2	1.83	0.43
1:A:570:ILE:HD13	1:A:578:GLN:HE22	1.84	0.43
1:A:359:GLU:CD	1:A:648:ARG:HH22	2.22	0.43
1:B:124:THR:CB	4:B:2024:HOH:O	2.67	0.43
1:B:291:ARG:HD3	4:B:2052:HOH:O	2.10	0.43
1:B:367:VAL:HG21	1:B:468:TYR:OH	2.18	0.43
1:B:210:LYS:HA	1:B:214:ILE:O	2.19	0.43
1:B:423:ILE:HG22	1:B:426:ALA:HB2	2.01	0.43
1:B:642:ARG:CD	1:B:672:GLU:HB3	2.47	0.43
1:A:447:ASN:HB3	4:A:2165:HOH:O	2.18	0.42
1:B:382:LEU:N	1:B:382:LEU:CD1	2.81	0.42
1:A:203:GLU:CG	1:A:204:GLU:H	2.32	0.42
1:B:633:PHE:HA	1:B:639:TRP:CZ2	2.55	0.42
1:A:118:LYS:HA	1:A:119:PRO:HD3	1.89	0.42
1:A:286:VAL:O	1:A:288:MET:HE2	2.20	0.42
1:B:526:HIS:O	1:B:686:GLY:HA2	2.19	0.42
1:A:644:HIS:HB3	1:A:647:GLU:HG3	2.02	0.42
1:A:133:LYS:CE	1:A:535:ASP:OD2	2.68	0.42
1:A:133:LYS:HE2	1:A:535:ASP:OD2	2.20	0.42
1:A:139:PHE:O	1:A:143:ASN:HA	2.20	0.42
1:A:303:VAL:HG12	1:A:304:LYS:O	2.19	0.42
1:A:243:LEU:HD12	1:A:270:LEU:HD11	2.01	0.42
1:A:253:ASP:OD2	1:A:259:HIS:NE2	2.38	0.42
1:A:397:ALA:O	1:A:398:ARG:C	2.58	0.42
1:A:402:ALA:HB1	1:A:403:PRO:HD2	2.02	0.42
1:A:525:GLN:NE2	1:A:616:ALA:CB	2.83	0.42
1:B:214:ILE:HD11	1:B:286:VAL:HG21	2.02	0.42
1:B:485:GLY:HA2	1:B:702:GLU:O	2.20	0.42
1:B:530:PHE:O	1:B:682:TRP:HA	2.19	0.42
1:B:594:GLU:HA	1:B:599:ASN:O	2.19	0.42
1:A:286:VAL:HB	1:A:288:MET:HE3	2.02	0.42
1:A:434:ALA:HB3	1:A:452:ARG:HG2	2.00	0.42
1:B:246:ILE:HA	1:B:246:ILE:HD13	1.76	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:664:LEU:HD21	1:A:682:TRP:CG	2.56	0.41
1:A:460:ILE:HG21	1:B:439:LYS:HE2	2.02	0.41
1:A:475:HIS:CD2	1:A:475:HIS:N	2.88	0.41
1:B:8:VAL:CG2	1:B:9:PRO:N	2.81	0.41
1:B:159:GLY:C	1:B:271:GLU:OE2	2.59	0.41
1:B:725:LYS:N	4:B:2161:HOH:O	2.52	0.41
1:A:438:TYR:OH	1:A:720:LEU:HD23	2.19	0.41
1:A:466[B]:TPQ:O5	1:A:699:MET:SD	2.79	0.41
1:A:90:GLU:CD	1:A:93:PRO:HA	2.40	0.41
1:A:403:PRO:HG3	1:A:430:PHE:CE2	2.55	0.41
1:B:241:ARG:HG2	1:B:270:LEU:HD12	2.03	0.41
1:A:24:ASP:OD1	1:A:24:ASP:C	2.59	0.41
1:A:689:HIS:CE1	1:A:699:MET:SD	3.14	0.41
1:B:367:VAL:HG13	1:B:525:GLN:O	2.21	0.41
1:A:448:VAL:HA	4:A:2167:HOH:O	2.21	0.41
1:A:466[A]:TPQ:C6	1:A:466[A]:TPQ:H	2.33	0.41
1:A:640:VAL:CG1	1:A:679:ALA:HB1	2.51	0.41
1:A:212:ARG:HD3	4:A:2094:HOH:O	2.19	0.41
1:B:34:LYS:HA	4:B:2006:HOH:O	2.21	0.41
1:A:108:VAL:O	1:A:112:LYS:HB2	2.21	0.41
1:A:720:LEU:HD23	1:A:720:LEU:HA	1.82	0.41
1:B:188:LEU:O	1:B:191:ASP:HB2	2.20	0.41
1:B:438:TYR:CD1	1:B:438:TYR:C	2.95	0.41
1:B:527:ILE:HD12	1:B:634:MET:CG	2.51	0.41
1:A:308:ILE:HG12	1:B:308:ILE:HG12	2.02	0.41
1:B:217:ALA:C	1:B:219:LYS:N	2.75	0.41
1:B:239:ASP:OD1	1:B:239:ASP:C	2.58	0.41
1:A:367:VAL:HG13	1:A:525:GLN:O	2.20	0.40
1:A:406:ALA:HA	1:A:430:PHE:HB3	2.02	0.40
1:A:526:HIS:O	1:A:686:GLY:HA2	2.20	0.40
1:A:466[A]:TPQ:CB	1:A:468:TYR:CZ	3.04	0.40
1:A:711:TRP:O	1:A:712:ASN:HB2	2.22	0.40
1:B:50:VAL:O	1:B:51:ASN:C	2.59	0.40
1:B:692:ARG:HG3	1:B:694:GLU:OE1	2.21	0.40
1:A:340:PRO:HD3	1:A:459:TRP:CD2	2.55	0.40
1:B:601:VAL:O	1:B:601:VAL:HG23	2.21	0.40
1:A:65:ASP:O	1:A:65:ASP:CG	2.60	0.40
1:A:175:LEU:O	1:A:176:SER:HB3	2.21	0.40
1:A:670:ASP:O	1:A:671:ASN:C	2.60	0.40
1:A:374:ILE:HD12	1:A:374:ILE:HA	1.83	0.40
1:B:314:LYS:HE2	4:B:2058:HOH:O	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:383:ASP:HB3	1:B:463:VAL:HG21	2.03	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	716/727 (98%)	674 (94%)	39 (5%)	3 (0%)	30	52
1	B	721/727 (99%)	690 (96%)	29 (4%)	2 (0%)	37	59
All	All	1437/1454 (99%)	1364 (95%)	68 (5%)	5 (0%)	37	59

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	65	ASP
1	A	596	ARG
1	A	212	ARG
1	B	133	LYS
1	B	379	LYS

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.

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	609/615 (99%)	586 (96%)	23 (4%)	28	54
1	B	614/615 (100%)	579 (94%)	35 (6%)	17	37
All	All	1223/1230 (99%)	1165 (95%)	58 (5%)	21	45

All (58) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	10	MET
1	A	11	ASP
1	A	14	LEU
1	A	32	LEU
1	A	63	MET
1	A	129	LEU
1	A	142	GLU
1	A	147	ASP
1	A	197	ASN
1	A	203	GLU
1	A	212	ARG
1	A	237	LYS
1	A	274	LYS
1	A	322	MET
1	A	503	GLU
1	A	506	LYS
1	A	551	LYS
1	A	574	GLN
1	A	613	HIS
1	A	617	LYS
1	A	669	LYS
1	A	685	THR
1	A	692	ARG
1	B	8	VAL
1	B	10	MET
1	B	11	ASP
1	B	12	LYS
1	B	22	GLN
1	B	34	LYS
1	B	71	SER
1	B	89	VAL
1	B	91	LYS

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Mol	Chain	Res	Type
1	B	114	SER
1	B	126	ILE
1	B	129	LEU
1	B	132	ASP
1	B	143	ASN
1	B	146	VAL
1	B	148	GLN
1	B	160	LYS
1	B	181	LYS
1	B	189	LEU
1	B	195	VAL
1	B	197	ASN
1	B	203	GLU
1	B	218	LYS
1	B	276	VAL
1	B	303	VAL
1	B	334	MET
1	B	379	LYS
1	B	490	GLU
1	B	503	GLU
1	B	572	ASN
1	B	613	HIS
1	B	632	SER
1	B	692	ARG
1	B	724	LYS
1	B	725	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	197	ASN
1	A	574	GLN
1	B	307	GLN
1	B	475	HIS
1	B	501	HIS
1	B	564	GLN
1	B	567	GLN
1	B	604	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

4 non-standard protein/DNA/RNA residues 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	$\#\|Z\|>2$
1	TPQ	A	466[A]	-	13,14,15	2.23	3 (23%)	15,19,21	2.04	5 (33%)
1	TPQ	B	466[A]	2	13,14,15	2.16	3 (23%)	15,19,21	0.80	0
1	TPQ	A	466[B]	-	13,14,15	2.50	5 (38%)	15,19,21	1.63	2 (13%)
1	TPQ	B	466[B]	-	13,14,15	2.13	4 (30%)	15,19,21	1.66	3 (20%)

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
1	TPQ	A	466[A]	-	-	2/5/22/24	0/1/1/1
1	TPQ	B	466[A]	2	-	4/5/22/24	0/1/1/1
1	TPQ	A	466[B]	-	-	2/5/22/24	0/1/1/1
1	TPQ	B	466[B]	-	-	2/5/22/24	0/1/1/1

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	466[B]	TPQ	O5-C5	5.16	1.38	1.24
1	A	466[A]	TPQ	O2-C2	5.04	1.38	1.24
1	A	466[B]	TPQ	O2-C2	4.81	1.37	1.24
1	B	466[A]	TPQ	O5-C5	4.74	1.37	1.24
1	B	466[B]	TPQ	O2-C2	4.71	1.37	1.24
1	B	466[A]	TPQ	O2-C2	4.30	1.36	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	466[A]	TPQ	O5-C5	4.27	1.35	1.24
1	B	466[B]	TPQ	O5-C5	4.13	1.35	1.24
1	A	466[B]	TPQ	C3-C4	2.80	1.40	1.35
1	A	466[B]	TPQ	C6-C1	2.68	1.41	1.34
1	A	466[A]	TPQ	C6-C5	-2.52	1.37	1.44
1	A	466[B]	TPQ	CB-C1	2.52	1.55	1.50
1	B	466[B]	TPQ	C6-C5	-2.42	1.38	1.44
1	B	466[A]	TPQ	C3-C4	2.22	1.39	1.35
1	B	466[B]	TPQ	C3-C2	-2.13	1.39	1.44

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	466[B]	TPQ	CA-CB-C1	4.73	122.54	113.51
1	A	466[A]	TPQ	C6-C1-C2	4.51	122.11	118.64
1	A	466[A]	TPQ	CA-CB-C1	-3.69	106.46	113.51
1	B	466[B]	TPQ	C6-C1-C2	3.20	121.10	118.64
1	A	466[A]	TPQ	CB-CA-C	-2.80	106.22	111.47
1	B	466[B]	TPQ	C6-C5-C4	2.51	121.28	117.03
1	A	466[A]	TPQ	C1-C6-C5	-2.25	118.28	122.52
1	B	466[B]	TPQ	C1-C6-C5	-2.11	118.56	122.52
1	A	466[B]	TPQ	C6-C1-C2	-2.10	117.02	118.64
1	A	466[A]	TPQ	C6-C5-C4	2.05	120.51	117.03

There are no chirality outliers.

All (10) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	466[A]	TPQ	N-CA-CB-C1
1	A	466[A]	TPQ	C-CA-CB-C1
1	B	466[A]	TPQ	C-CA-CB-C1
1	B	466[A]	TPQ	C2-C1-CB-CA
1	B	466[B]	TPQ	N-CA-CB-C1
1	B	466[B]	TPQ	C-CA-CB-C1
1	A	466[B]	TPQ	N-CA-CB-C1
1	B	466[A]	TPQ	N-CA-CB-C1
1	B	466[A]	TPQ	C6-C1-CB-CA
1	A	466[B]	TPQ	C-CA-CB-C1

There are no ring outliers.

4 monomers are involved in 15 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	466[A]	TPQ	4	0
1	B	466[A]	TPQ	1	0
1	A	466[B]	TPQ	5	0
1	B	466[B]	TPQ	5	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 6 ligands modelled in this entry, 6 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	1
1	B	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	465:ASN	C	466:TPQ	N	1.71
1	B	466:TPQ	C	467:ASP	N	1.11

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	718/727 (98%)	-0.77	0	100	100	13, 27, 45, 57	0
1	B	720/727 (99%)	-0.64	3 (0%)	89	86	14, 30, 50, 69	3 (0%)
All	All	1438/1454 (98%)	-0.70	3 (0%)	92	90	13, 28, 49, 69	3 (0%)

All (3) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	301	PRO	2.6
1	B	6	HIS	2.4
1	B	303	VAL	2.1

6.2 Non-standard residues in protein, DNA, RNA chains

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
1	TPQ	A	466[A]	14/15	0.92	0.12	19,22,23,25	11
1	TPQ	A	466[B]	14/15	0.92	0.12	22,25,27,27	11
1	TPQ	B	466[A]	14/15	0.94	0.12	33,34,34,36	11
1	TPQ	B	466[B]	14/15	0.94	0.12	33,35,38,39	11

6.3 Carbohydrates

There are no monosaccharides 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	NA	A	1727	1/1	0.72	0.22	35,35,35,35	0
3	NA	B	1728	1/1	0.80	0.15	40,40,40,40	0
3	NA	B	1727	1/1	0.97	0.04	25,25,25,25	0
3	NA	A	1726	1/1	0.97	0.03	26,26,26,26	0
2	CU	A	1725	1/1	0.99	0.02	36,36,36,36	0
2	CU	B	1726	1/1	0.99	0.03	37,37,37,37	0

6.5 Other polymers (i)

There are no such residues in this entry.