



Full wwPDB X-ray Structure Validation Report ⓘ

May 29, 2020 – 02:09 am BST

PDB ID : 2ZAI
Title : Crystal structure of the soluble domain of STT3 from *P. furiosus*
Authors : Maita, N.
Deposited on : 2007-10-05
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 following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

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

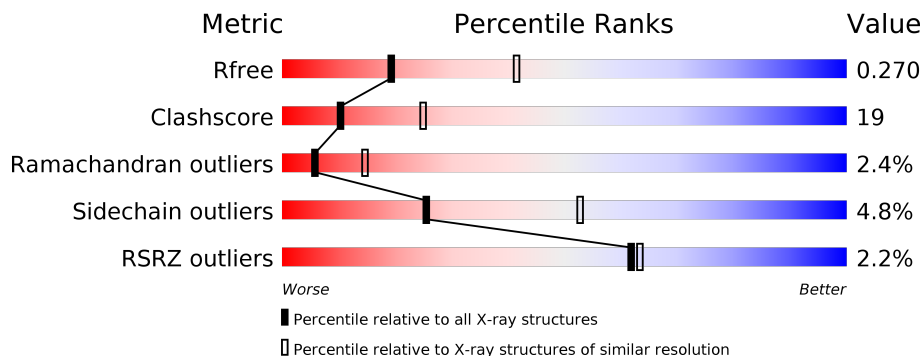
1 Overall quality at a glance

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}	130704	2808 (2.70-2.70)
Clashscore	141614	3122 (2.70-2.70)
Ramachandran outliers	138981	3069 (2.70-2.70)
Sidechain outliers	138945	3069 (2.70-2.70)
RSRZ outliers	127900	2737 (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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	497	<p>2% 62% 29% • 5%</p>
1	B	497	<p>2% 58% 33% • 6%</p>
1	C	497	<p>3% 59% 32% • 5%</p>
1	D	497	<p>2% 60% 32% • 5%</p>

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 15005 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 Oligosaccharyl transferase stt3 subunit related protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	472	3756	2427	607	716	6	0	0	0
1	B	468	3724	2407	602	709	6	0	0	0
1	C	470	3737	2416	604	711	6	0	0	0
1	D	471	3746	2421	608	711	6	0	0	0

- Molecule 2 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	B	1	Total	Ca	0	0
			1	1		
2	A	1	Total	Ca	0	0
			1	1		
2	D	1	Total	Ca	0	0
			1	1		
2	C	1	Total	Ca	0	0
			1	1		

- Molecule 3 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	1	Total	Cl	0	0
			1	1		
3	A	1	Total	Cl	0	0
			1	1		
3	D	1	Total	Cl	0	0
			1	1		
3	C	1	Total	Cl	0	0
			1	1		

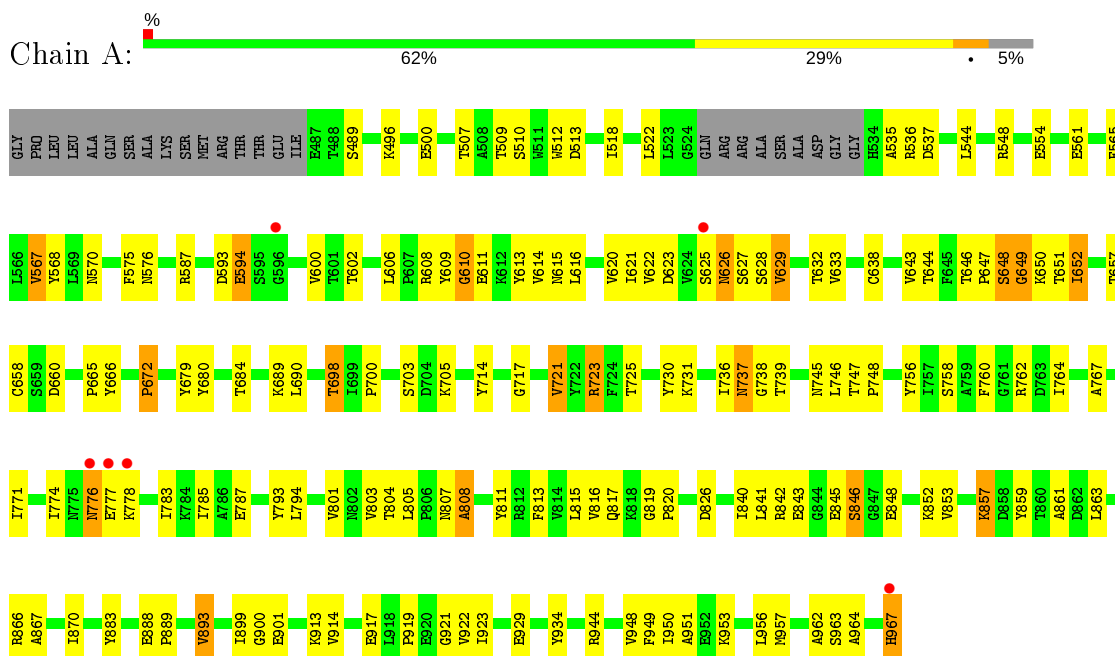
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	12	Total 12	O 12	0	0
4	B	11	Total 11	O 11	0	0
4	D	11	Total 11	O 11	0	0

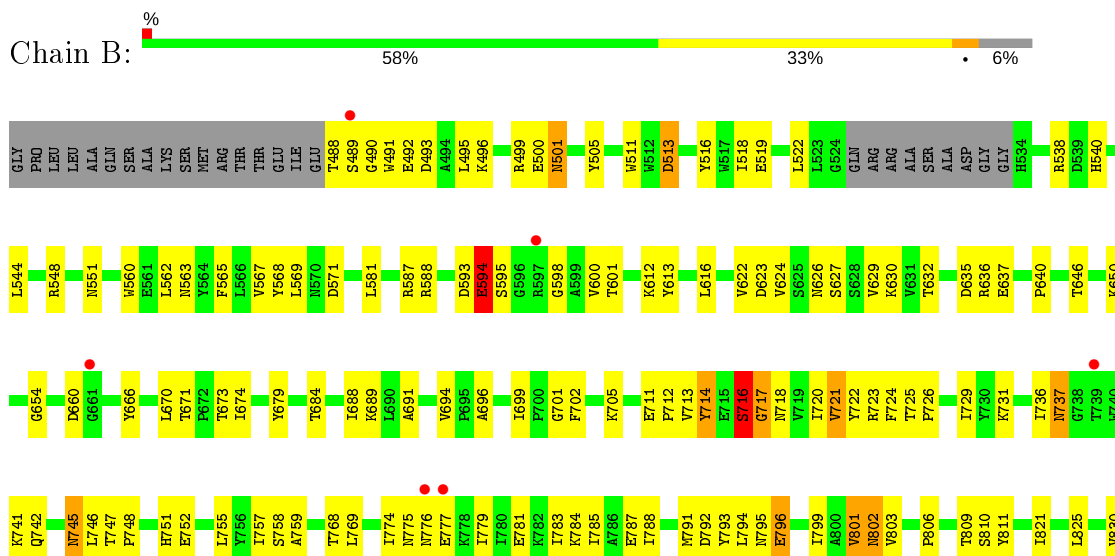
3 Residue-property plots

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

- Molecule 1: Oligosaccharyl transferase stt3 subunit related protein



- Molecule 1: Oligosaccharyl transferase stt3 subunit related protein





4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α , β , γ	136.94Å 265.30Å 74.14Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	20.00 – 2.70 29.85 – 2.70	Depositor EDS
% Data completeness (in resolution range)	99.9 (20.00-2.70) 99.9 (29.85-2.70)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.32 (at 2.68Å)	Xtrriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.227 , 0.273 0.225 , 0.270	Depositor DCC
R_{free} test set	3805 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å ²)	44.2	Xtrriage
Anisotropy	0.625	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 49.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	15005	wwPDB-VP
Average B, all atoms (Å ²)	43.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.31% of the height of the origin peak. No significant pseudotranslation is detected.*

¹ Intensities estimated from amplitudes.

² Theoretical 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 [i](#)

5.1 Standard geometry [i](#)

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

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	0.43	0/3847	0.68	0/5228
1	B	0.40	0/3812	0.65	0/5180
1	C	0.37	1/3826 (0.0%)	0.62	1/5200 (0.0%)
1	D	0.42	0/3837	0.67	0/5216
All	All	0.41	1/15322 (0.0%)	0.65	1/20824 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	487	GLU	CB-CG	-5.22	1.42	1.52

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	847	GLY	N-CA-C	5.13	125.92	113.10

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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	3756	0	3688	118	0
1	B	3724	0	3670	152	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	3737	0	3681	158	0
1	D	3746	0	3677	140	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
4	A	12	0	0	3	0
4	B	11	0	0	1	0
4	D	11	0	0	1	0
All	All	15005	0	14716	556	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 19.

All (556) 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:650:LYS:HD3	1:A:651:THR:H	1.13	1.13
1:B:560:TRP:HE1	1:B:891:MET:HE1	1.19	1.02
1:A:650:LYS:HD3	1:A:651:THR:N	1.76	0.99
1:C:841:LEU:HD11	1:C:916:ALA:HB1	1.41	0.98
1:C:861:ALA:HB2	1:C:951:ALA:HB2	1.45	0.98
1:C:626:ASN:HD22	1:C:628:SER:H	1.13	0.96
1:D:495:LEU:HD13	1:D:519:GLU:HG3	1.48	0.92
1:C:487:GLU:CG	1:C:488:THR:H	1.83	0.91
1:C:828:PRO:HB2	1:C:840:ILE:HD11	1.51	0.91
1:B:867:ALA:HB2	1:B:896:ILE:HD11	1.57	0.86
1:C:747:THR:HG22	1:C:963:SER:O	1.76	0.86
1:D:714:TYR:HB3	1:D:721:VAL:HG13	1.59	0.85
1:B:899:ILE:O	1:B:914:VAL:HG11	1.77	0.84
1:A:764:ILE:HA	1:A:817:GLN:HE22	1.43	0.83
1:C:593:ASP:HA	1:C:883:TYR:CE2	2.14	0.82
1:C:764:ILE:HA	1:C:817:GLN:HE22	1.43	0.82
1:D:805:LEU:HB3	1:D:811:TYR:HE2	1.48	0.78
1:D:791:MET:O	1:D:792:ASP:HB3	1.84	0.77
1:A:861:ALA:HB2	1:A:951:ALA:HB2	1.65	0.76
1:C:671:THR:HB	1:C:674:ILE:O	1.85	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:791:MET:SD	1:B:796:GLU:HA	2.26	0.75
1:C:853:VAL:HG21	1:C:949:PHE:CE2	2.21	0.75
1:C:671:THR:HG22	1:C:673:THR:H	1.52	0.75
1:B:565:PHE:HE1	1:B:567:VAL:HG12	1.51	0.74
1:C:918:LEU:HD12	1:C:919:PRO:HD2	1.69	0.74
1:D:853:VAL:HG21	1:D:949:PHE:CE1	2.23	0.74
1:D:514:TYR:OH	1:D:574:LYS:HE2	1.87	0.74
1:B:569:LEU:HB2	1:B:718:ASN:HB3	1.70	0.73
1:C:576:ASN:HD21	1:C:602:THR:H	1.36	0.73
1:D:671:THR:HG22	1:D:673:THR:H	1.53	0.73
1:D:560:TRP:HE1	1:D:891:MET:HE1	1.54	0.73
1:C:487:GLU:CG	1:C:488:THR:N	2.51	0.73
1:C:505:TYR:CE2	1:C:825:LEU:HD21	2.24	0.72
1:D:569:LEU:HB2	1:D:718:ASN:HB3	1.72	0.72
1:A:593:ASP:HA	1:A:883:TYR:CE2	2.25	0.72
1:D:714:TYR:HB3	1:D:721:VAL:CG1	2.19	0.72
1:B:560:TRP:NE1	1:B:891:MET:HE1	2.01	0.71
1:C:746:LEU:O	1:C:962:ALA:HA	1.89	0.71
1:A:616:LEU:HD11	1:B:518:ILE:HD11	1.71	0.71
1:B:671:THR:HG22	1:B:673:THR:H	1.56	0.71
1:C:723:ARG:NH2	1:C:956:LEU:O	2.24	0.71
1:C:938:LEU:C	1:C:939:ILE:HD12	2.11	0.71
1:A:544:LEU:HD13	1:A:889:PRO:HG2	1.71	0.70
1:D:785:ILE:HB	1:D:801:VAL:HG21	1.73	0.70
1:D:560:TRP:HE1	1:D:891:MET:CE	2.05	0.70
1:A:747:THR:HG22	1:A:963:SER:O	1.92	0.70
1:C:498:LEU:HD11	1:C:566:LEU:HD11	1.74	0.70
1:C:841:LEU:CD1	1:C:916:ALA:HB1	2.21	0.70
1:C:922:VAL:HG23	1:C:923:ILE:H	1.55	0.69
1:B:671:THR:HB	1:B:674:ILE:O	1.91	0.69
1:D:779:ILE:O	1:D:779:ILE:HD12	1.93	0.69
1:D:805:LEU:HB3	1:D:811:TYR:CE2	2.27	0.69
1:C:846:SER:HA	1:C:917:GLU:HA	1.75	0.69
1:B:714:TYR:HB3	1:B:721:VAL:CG1	2.23	0.69
1:C:560:TRP:HE1	1:C:891:MET:HE1	1.56	0.69
1:D:496:LYS:O	1:D:499:ARG:HG2	1.93	0.68
1:B:785:ILE:HB	1:B:801:VAL:HG21	1.76	0.68
1:C:671:THR:HG23	1:C:672:PRO:HD2	1.73	0.68
1:C:868:THR:HG22	1:C:893:VAL:HG12	1.75	0.68
1:C:540:HIS:CD2	1:C:872:LEU:HD21	2.29	0.68
1:D:600:VAL:HG21	1:D:679:TYR:CD1	2.28	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:896:ILE:HG22	1:C:897:THR:HG23	1.75	0.68
1:D:538:ARG:HD2	1:D:560:TRP:CZ2	2.28	0.67
1:D:576:ASN:HD21	1:D:602:THR:H	1.43	0.67
1:D:538:ARG:HD2	1:D:560:TRP:CE2	2.30	0.67
1:D:780:ILE:O	1:D:781:GLU:HB3	1.95	0.67
1:D:765:GLU:H	1:D:817:GLN:NE2	1.92	0.67
1:C:669:HIS:HB2	1:C:676:VAL:HG13	1.76	0.67
1:C:785:ILE:HB	1:C:801:VAL:HG21	1.77	0.67
1:B:711:GLU:OE2	1:B:723:ARG:NH1	2.28	0.66
1:C:855:VAL:HG23	1:C:907:GLU:HA	1.76	0.66
1:D:626:ASN:HD22	1:D:626:ASN:N	1.91	0.66
1:D:496:LYS:HA	1:D:499:ARG:NE	2.11	0.66
1:A:512:TRP:N	4:A:16:HOH:O	2.29	0.65
1:C:560:TRP:HE1	1:C:891:MET:CE	2.09	0.65
1:C:714:TYR:HB3	1:C:721:VAL:HG13	1.77	0.65
1:D:896:ILE:HG22	1:D:897:THR:HG23	1.77	0.65
1:D:636:ARG:HD2	1:D:660:ASP:HB3	1.80	0.64
1:A:964:ALA:HB3	1:A:967:HIS:CD2	2.32	0.64
1:A:610:GLY:O	1:A:611:GLU:HB2	1.97	0.64
1:A:643:VAL:HB	1:A:652:ILE:HG23	1.80	0.64
1:C:745:ASN:ND2	1:C:963:SER:HB2	2.13	0.64
1:A:934:TYR:CE2	1:D:897:THR:HG22	2.34	0.63
1:B:613:TYR:HB2	1:B:622:VAL:HB	1.80	0.63
1:B:600:VAL:HG11	1:B:679:TYR:CD1	2.34	0.63
1:B:776:ASN:H	1:B:809:THR:HG21	1.63	0.63
1:C:541:ILE:CG2	1:C:555:VAL:HG11	2.29	0.63
1:A:771:ILE:HG13	1:A:785:ILE:HD13	1.80	0.63
1:B:505:TYR:HE2	1:B:825:LEU:HD21	1.64	0.63
1:B:612:LYS:HE2	1:B:623:ASP:OD2	1.99	0.62
1:C:849:ILE:HG12	1:C:916:ALA:HB2	1.81	0.62
1:D:548:ARG:NH2	1:D:875:LYS:NZ	2.47	0.62
1:B:688:ILE:HG22	1:B:694:VAL:HB	1.82	0.62
1:A:737:ASN:C	1:A:739:THR:H	2.03	0.62
1:D:769:LEU:N	1:D:769:LEU:HD23	2.14	0.62
1:A:783:ILE:O	1:A:785:ILE:HG23	2.00	0.61
1:C:869:PHE:CE1	1:C:943:ILE:HG23	2.36	0.61
1:D:610:GLY:O	1:D:611:GLU:HB2	1.99	0.61
1:D:765:GLU:H	1:D:817:GLN:HE22	1.45	0.61
1:C:603:LEU:HD21	1:C:688:ILE:HD11	1.81	0.61
1:C:624:VAL:HG12	1:C:629:VAL:HG22	1.81	0.61
1:C:846:SER:O	1:C:847:GLY:O	2.18	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:849:ILE:CG1	1:C:916:ALA:HB2	2.30	0.61
1:D:608:ARG:HH21	1:D:611:GLU:HA	1.66	0.61
1:A:815:LEU:HD23	1:A:816:VAL:N	2.15	0.61
1:D:921:GLY:O	1:D:925:SER:HB2	2.00	0.61
1:A:565:PHE:CE2	1:A:567:VAL:HG12	2.36	0.60
1:A:801:VAL:HG13	1:A:803:VAL:HG23	1.83	0.60
1:C:841:LEU:HD11	1:C:916:ALA:CB	2.24	0.60
1:B:565:PHE:CE1	1:B:567:VAL:HG12	2.34	0.60
1:C:558:GLU:HB2	1:C:726:PRO:HG3	1.83	0.60
1:C:840:ILE:CG2	1:C:841:LEU:HG	2.31	0.60
1:D:671:THR:HB	1:D:674:ILE:O	2.01	0.60
1:B:906:LYS:HD3	1:B:906:LYS:H	1.66	0.60
1:B:784:LYS:HE2	1:B:787:GLU:OE2	2.01	0.60
1:B:505:TYR:CE2	1:B:825:LEU:HD21	2.36	0.60
1:C:894:PHE:O	1:C:894:PHE:HD2	1.85	0.60
1:A:819:GLY:HA3	1:A:953:LYS:HD3	1.83	0.59
1:B:752:GLU:HG3	1:B:802:ASN:HD21	1.67	0.59
1:D:736:ILE:HD11	1:D:741:LYS:HE2	1.83	0.59
1:B:544:LEU:HD12	1:B:548:ARG:HG3	1.84	0.59
1:B:714:TYR:HB3	1:B:721:VAL:HG13	1.84	0.59
1:C:853:VAL:HG21	1:C:949:PHE:HE2	1.66	0.59
1:D:825:LEU:CD1	1:D:909:GLU:HG2	2.32	0.59
1:B:861:ALA:HB2	1:B:951:ALA:HB2	1.85	0.59
1:B:825:LEU:CD1	1:B:909:GLU:HG2	2.33	0.59
1:B:843:GLU:O	1:B:918:LEU:HB3	2.03	0.59
1:C:771:ILE:HD12	1:C:785:ILE:HG21	1.84	0.59
1:A:613:TYR:HB2	1:A:622:VAL:HB	1.85	0.59
1:D:781:GLU:OE1	1:D:806:PRO:HG3	2.03	0.59
1:A:813:PHE:HB3	1:A:957:MET:HE3	1.85	0.58
1:B:511:TRP:HB3	4:B:975:HOH:O	2.03	0.58
1:B:513:ASP:OD2	1:B:516:TYR:HB3	2.03	0.58
1:C:863:LEU:H	1:C:900:GLY:HA3	1.69	0.58
1:A:863:LEU:HB3	1:A:900:GLY:HA3	1.85	0.58
1:C:791:MET:O	1:C:792:ASP:HB3	2.03	0.58
1:C:815:LEU:HD23	1:C:816:VAL:N	2.18	0.58
1:D:541:ILE:HG22	1:D:555:VAL:HG11	1.86	0.58
1:B:613:TYR:CE1	1:B:670:LEU:HD22	2.39	0.58
1:C:568:TYR:CE2	1:C:570:ASN:HB2	2.39	0.58
1:C:938:LEU:HD12	1:C:939:ILE:H	1.68	0.58
1:A:648:SER:O	1:A:650:LYS:N	2.36	0.57
1:C:771:ILE:HG13	1:C:785:ILE:HD13	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:779:ILE:O	1:C:780:ILE:HD13	2.04	0.57
1:C:576:ASN:ND2	1:C:602:THR:HG23	2.19	0.57
1:A:861:ALA:HB1	1:A:950:ILE:O	2.03	0.57
1:B:784:LYS:NZ	1:B:787:GLU:HG2	2.19	0.57
1:C:840:ILE:HG22	1:C:841:LEU:HG	1.86	0.57
1:C:861:ALA:HB2	1:C:951:ALA:CB	2.29	0.57
1:A:714:TYR:HB3	1:A:721:VAL:HG13	1.87	0.57
1:C:626:ASN:HD22	1:C:628:SER:N	1.92	0.57
1:A:565:PHE:HE2	1:A:567:VAL:HG12	1.70	0.57
1:B:736:ILE:HD12	1:B:741:LYS:HD3	1.87	0.57
1:D:774:ILE:HB	1:D:810:SER:OG	2.04	0.57
1:D:867:ALA:HB2	1:D:896:ILE:HD11	1.87	0.57
1:C:712:PRO:HG3	1:C:722:TYR:CE2	2.40	0.57
1:B:569:LEU:HD13	1:B:691:ALA:HB1	1.87	0.56
1:B:795:ASN:O	1:B:796:GLU:O	2.23	0.56
1:C:669:HIS:HB2	1:C:676:VAL:CG1	2.34	0.56
1:C:771:ILE:HD11	1:C:785:ILE:HD13	1.87	0.56
1:C:938:LEU:HD12	1:C:939:ILE:N	2.19	0.56
1:A:646:THR:HG23	4:A:10:HOH:O	2.06	0.56
1:C:874:ARG:HB2	1:C:887:PHE:CE1	2.40	0.56
1:D:556:ASP:OD2	1:D:559:SER:HB2	2.05	0.56
1:D:623:ASP:HB3	1:D:630:LYS:HB3	1.87	0.56
1:B:725:THR:O	1:B:725:THR:HG23	2.04	0.56
1:D:763:ASP:OD2	1:D:792:ASP:HA	2.06	0.56
1:D:749:GLY:O	1:D:805:LEU:N	2.39	0.56
1:A:736:ILE:O	1:A:737:ASN:HB2	2.05	0.56
1:C:914:VAL:HG12	1:C:915:ARG:N	2.21	0.56
1:A:576:ASN:HD21	1:A:602:THR:H	1.54	0.56
1:D:688:ILE:HG22	1:D:694:VAL:HB	1.86	0.56
1:A:554:GLU:HG2	1:A:760:PHE:CE1	2.41	0.55
1:C:626:ASN:HD22	1:C:627:SER:H	1.54	0.55
1:C:938:LEU:HD11	1:C:940:ILE:HD12	1.87	0.55
1:C:964:ALA:C	1:C:966:HIS:H	2.09	0.55
1:C:541:ILE:HG22	1:C:555:VAL:HG11	1.88	0.55
1:B:915:ARG:HG3	1:B:916:ALA:N	2.21	0.55
1:D:750:LYS:HA	1:D:803:VAL:O	2.06	0.55
1:B:898:LYS:HE2	1:B:901:GLU:HG2	1.88	0.55
1:D:616:LEU:HD22	1:D:616:LEU:O	2.06	0.55
1:D:671:THR:HG23	1:D:672:PRO:HD2	1.89	0.55
1:D:791:MET:O	1:D:792:ASP:CB	2.55	0.55
1:D:568:TYR:HB3	1:D:571:ASP:OD2	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:776:ASN:O	1:A:778:LYS:HG3	2.06	0.55
1:A:853:VAL:HG21	1:A:949:PHE:CE1	2.42	0.55
1:B:496:LYS:HA	1:B:499:ARG:CZ	2.36	0.55
1:B:593:ASP:HB2	1:B:594:GLU:OE2	2.07	0.55
1:B:626:ASN:O	1:B:627:SER:HB3	2.06	0.55
1:D:626:ASN:ND2	1:D:626:ASN:N	2.55	0.55
1:B:488:THR:HG21	1:B:492:GLU:HB2	1.89	0.55
1:B:768:THR:HG23	1:B:787:GLU:OE2	2.06	0.55
1:B:746:LEU:O	1:B:962:ALA:HA	2.05	0.55
1:B:768:THR:HG23	1:B:784:LYS:HE2	1.88	0.55
1:C:780:ILE:O	1:C:781:GLU:CB	2.54	0.55
1:A:723:ARG:NH2	1:A:956:LEU:O	2.40	0.54
1:B:640:PRO:O	1:B:654:GLY:HA3	2.07	0.54
1:C:711:GLU:OE2	1:C:723:ARG:NH1	2.38	0.54
1:C:771:ILE:CD1	1:C:785:ILE:HD13	2.37	0.54
1:C:899:ILE:O	1:C:914:VAL:HG11	2.05	0.54
1:C:518:ILE:HD11	1:D:616:LEU:HD21	1.88	0.54
1:A:621:ILE:HB	1:A:632:THR:OG1	2.08	0.54
1:B:560:TRP:HE1	1:B:891:MET:CE	2.07	0.54
1:C:857:LYS:HG3	1:C:859:TYR:CE1	2.41	0.54
1:C:774:ILE:HB	1:C:810:SER:OG	2.07	0.54
1:B:701:GLY:O	1:B:705:LYS:HG3	2.08	0.54
1:D:569:LEU:HD23	1:D:691:ALA:HB1	1.89	0.54
1:B:593:ASP:HA	1:B:883:TYR:CE2	2.43	0.54
1:C:774:ILE:O	1:C:808:ALA:HB1	2.07	0.54
1:A:857:LYS:NZ	1:A:857:LYS:HB3	2.23	0.53
1:A:518:ILE:HD11	1:B:616:LEU:HD21	1.89	0.53
1:C:764:ILE:O	1:C:790:HIS:HA	2.07	0.53
1:B:851:LEU:O	1:B:851:LEU:HD12	2.08	0.53
1:D:488:THR:O	1:D:488:THR:HG23	2.08	0.53
1:B:825:LEU:HD13	1:B:909:GLU:HG2	1.90	0.53
1:C:626:ASN:ND2	1:C:628:SER:H	1.95	0.53
1:C:771:ILE:CG1	1:C:785:ILE:HD13	2.38	0.53
1:D:773:ALA:HB3	1:D:780:ILE:O	2.07	0.53
1:B:922:VAL:O	1:B:923:ILE:HB	2.08	0.53
1:A:606:LEU:HD23	1:A:615:ASN:HB2	1.90	0.53
1:C:712:PRO:HG3	1:C:722:TYR:HE2	1.71	0.53
1:B:757:ILE:HG23	1:B:957:MET:CE	2.39	0.53
1:C:830:VAL:O	1:C:833:GLU:HG2	2.09	0.53
1:A:626:ASN:HD21	1:A:629:VAL:H	1.55	0.53
1:A:714:TYR:HB3	1:A:721:VAL:CG1	2.38	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:684:THR:HG21	1:A:698:THR:HG22	1.91	0.52
1:A:745:ASN:ND2	1:A:963:SER:HB3	2.24	0.52
1:C:815:LEU:HB2	1:C:957:MET:SD	2.49	0.52
1:A:647:PRO:O	1:A:649:GLY:N	2.42	0.52
1:B:548:ARG:NH2	1:B:888:GLU:OE2	2.42	0.52
1:B:540:HIS:CE1	1:B:581:LEU:HD22	2.44	0.52
1:D:747:THR:HG21	1:D:965:PRO:HB3	1.90	0.52
1:A:846:SER:OG	1:A:917:GLU:HG2	2.10	0.52
1:D:772:TYR:HB2	1:D:812:ARG:HB2	1.90	0.52
1:A:919:PRO:HB2	1:A:922:VAL:HG13	1.91	0.52
1:B:699:ILE:HB	1:B:702:PHE:HB2	1.92	0.52
1:D:723:ARG:NH2	1:D:956:LEU:O	2.42	0.52
1:C:840:ILE:HG22	1:C:841:LEU:N	2.24	0.52
1:C:846:SER:O	1:C:916:ALA:HB3	2.10	0.52
1:C:922:VAL:HG23	1:C:923:ILE:N	2.23	0.52
1:B:600:VAL:HG12	1:B:601:THR:N	2.25	0.52
1:C:868:THR:OG1	1:C:944:ARG:HB2	2.10	0.52
1:D:857:LYS:HA	1:D:907:GLU:HG2	1.91	0.52
1:C:671:THR:HG23	1:C:672:PRO:CD	2.39	0.51
1:C:953:LYS:HD3	1:C:955:TYR:CZ	2.45	0.51
1:A:964:ALA:HB3	1:A:967:HIS:NE2	2.26	0.51
1:B:842:ARG:O	1:B:918:LEU:HD23	2.10	0.51
1:C:608:ARG:HH11	1:C:608:ARG:HG2	1.73	0.51
1:D:496:LYS:HA	1:D:499:ARG:HE	1.73	0.51
1:A:774:ILE:O	1:A:808:ALA:HB1	2.09	0.51
1:C:701:GLY:O	1:C:705:LYS:HG3	2.09	0.51
1:A:620:VAL:HG22	1:A:633:VAL:HG22	1.93	0.51
1:B:490:GLY:HA3	1:B:716:SER:HB3	1.92	0.51
1:B:600:VAL:HG13	1:B:666:TYR:OH	2.11	0.51
1:D:636:ARG:CD	1:D:660:ASP:HB3	2.41	0.51
1:D:769:LEU:HD22	1:D:815:LEU:CD2	2.41	0.51
1:D:626:ASN:O	1:D:627:SER:HB3	2.10	0.51
1:C:594:GLU:HG2	1:C:595:SER:N	2.24	0.51
1:A:764:ILE:CA	1:A:817:GLN:HE22	2.20	0.51
1:C:763:ASP:OD2	1:C:792:ASP:HA	2.10	0.51
1:D:815:LEU:HD13	1:D:816:VAL:N	2.25	0.51
1:D:769:LEU:HD21	1:D:788:ILE:HG13	1.92	0.51
1:A:731:LYS:HD2	1:A:756:TYR:CD1	2.45	0.50
1:B:562:LEU:HD23	1:B:563:ASN:N	2.26	0.50
1:B:757:ILE:HD12	1:B:957:MET:CE	2.41	0.50
1:C:906:LYS:O	1:C:907:GLU:C	2.50	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:746:LEU:O	1:A:962:ALA:HA	2.12	0.50
1:B:493:ASP:HB2	1:B:716:SER:OG	2.11	0.50
1:B:793:TYR:CE1	1:B:794:LEU:HG	2.47	0.50
1:A:866:ARG:HD2	1:A:893:VAL:CG2	2.41	0.50
1:B:737:ASN:O	1:B:737:ASN:OD1	2.30	0.50
1:B:751:HIS:N	1:B:803:VAL:O	2.44	0.50
1:D:870:ILE:HD11	1:D:891:MET:CE	2.42	0.50
1:B:731:LYS:HG3	1:B:742:GLN:NE2	2.27	0.50
1:A:913:LYS:O	1:A:914:VAL:HG23	2.11	0.50
1:B:775:ASN:HA	1:B:809:THR:HG23	1.92	0.50
1:C:505:TYR:HE2	1:C:825:LEU:HD21	1.76	0.50
1:C:853:VAL:CG2	1:C:949:PHE:HE2	2.24	0.50
1:D:805:LEU:HD13	1:D:811:TYR:CE2	2.46	0.50
1:A:509:THR:HG22	1:A:510:SER:N	2.27	0.50
1:C:828:PRO:CD	1:C:837:PRO:HG3	2.41	0.50
1:C:896:ILE:HG21	1:C:918:LEU:CD1	2.42	0.49
1:A:496:LYS:O	1:A:500:GLU:HG3	2.12	0.49
1:B:713:VAL:O	1:B:714:TYR:HB2	2.12	0.49
1:C:769:LEU:HG	1:C:785:ILE:HD11	1.94	0.49
1:B:568:TYR:HB3	1:B:571:ASP:OD2	2.11	0.49
1:B:801:VAL:HG13	1:B:803:VAL:HG13	1.94	0.49
1:C:853:VAL:HG21	1:C:949:PHE:CZ	2.47	0.49
1:D:830:VAL:HA	1:D:848:GLU:O	2.12	0.49
1:A:616:LEU:HD21	1:B:491:TRP:CD1	2.48	0.49
1:D:659:SER:C	1:D:661:GLY:H	2.15	0.49
1:D:815:LEU:HB2	1:D:957:MET:CE	2.43	0.49
1:A:815:LEU:C	1:A:815:LEU:HD23	2.31	0.49
1:A:848:GLU:OE1	1:A:913:LYS:HD3	2.12	0.49
1:B:870:ILE:HD11	1:B:891:MET:CE	2.43	0.49
1:D:771:ILE:CD1	1:D:785:ILE:HG21	2.42	0.49
1:A:680:TYR:O	1:D:932:ARG:HD2	2.13	0.49
1:A:803:VAL:HG12	1:A:804:THR:N	2.26	0.49
1:A:600:VAL:HG11	1:A:679:TYR:CD1	2.48	0.49
1:B:875:LYS:HD3	1:B:888:GLU:HB2	1.95	0.49
1:C:780:ILE:O	1:C:781:GLU:HB3	2.12	0.49
1:C:870:ILE:HD11	1:C:891:MET:CE	2.43	0.49
1:D:646:THR:HG23	1:D:647:PRO:HA	1.94	0.49
1:A:820:PRO:HA	1:A:950:ILE:HD13	1.95	0.48
1:B:636:ARG:HG2	1:B:660:ASP:OD2	2.13	0.48
1:C:746:LEU:O	1:C:811:TYR:HE1	1.96	0.48
1:D:736:ILE:O	1:D:737:ASN:HB2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:665:PRO:HB2	1:A:680:TYR:CD2	2.48	0.48
1:B:684:THR:O	1:B:689:LYS:NZ	2.46	0.48
1:B:752:GLU:HG3	1:B:802:ASN:ND2	2.29	0.48
1:A:628:SER:O	1:A:629:VAL:HB	2.12	0.48
1:D:568:TYR:CZ	1:D:570:ASN:HB2	2.48	0.48
1:B:688:ILE:CG2	1:B:694:VAL:HB	2.42	0.48
1:B:755:LEU:CD1	1:B:769:LEU:HD21	2.44	0.48
1:B:821:ILE:C	1:B:821:ILE:HD12	2.34	0.48
1:C:830:VAL:O	1:C:831:ASN:HB2	2.14	0.48
1:D:636:ARG:HE	1:D:660:ASP:HB3	1.78	0.48
1:A:609:TYR:HB2	1:A:614:VAL:HG12	1.95	0.48
1:B:843:GLU:O	1:B:845:GLU:N	2.45	0.48
1:C:608:ARG:NH1	1:C:608:ARG:HG2	2.29	0.48
1:C:771:ILE:CD1	1:C:785:ILE:HG21	2.43	0.48
1:D:828:PRO:HB3	1:D:851:LEU:CD2	2.43	0.48
1:C:624:VAL:CG1	1:C:629:VAL:HG22	2.43	0.48
1:C:726:PRO:HB2	1:C:727:PHE:CE1	2.48	0.48
1:A:610:GLY:O	1:A:611:GLU:CB	2.61	0.48
1:A:600:VAL:HG11	1:A:679:TYR:CG	2.49	0.48
1:A:748:PRO:CG	1:A:807:ASN:HA	2.44	0.48
1:C:745:ASN:HD22	1:C:963:SER:HB2	1.77	0.48
1:A:600:VAL:HG13	1:A:666:TYR:OH	2.14	0.48
1:B:736:ILE:HG22	1:B:736:ILE:O	2.13	0.48
1:A:861:ALA:CB	1:A:951:ALA:HB2	2.41	0.47
1:C:554:GLU:HG2	1:C:760:PHE:CE1	2.49	0.47
1:C:491:TRP:CZ3	1:C:566:LEU:HD23	2.49	0.47
1:D:589:GLU:O	1:D:600:VAL:HG12	2.14	0.47
1:A:737:ASN:C	1:A:739:THR:N	2.67	0.47
1:B:919:PRO:O	1:B:922:VAL:HG22	2.14	0.47
1:B:716:SER:HB3	1:B:717:GLY:H	1.56	0.47
1:B:562:LEU:C	1:B:562:LEU:HD23	2.35	0.47
1:D:746:LEU:HD12	1:D:960:VAL:HG21	1.96	0.47
1:A:626:ASN:O	1:A:627:SER:HB3	2.14	0.47
1:A:922:VAL:HG23	1:A:923:ILE:N	2.29	0.47
1:A:745:ASN:ND2	1:A:963:SER:CB	2.78	0.47
1:C:815:LEU:C	1:C:815:LEU:HD23	2.35	0.47
1:C:841:LEU:HD21	1:C:849:ILE:HD11	1.95	0.47
1:D:745:ASN:O	1:D:746:LEU:HB2	2.14	0.47
1:B:867:ALA:HA	1:B:944:ARG:O	2.15	0.47
1:A:568:TYR:CZ	1:A:570:ASN:HB2	2.50	0.47
1:A:866:ARG:HD2	1:A:893:VAL:HG21	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:901:GLU:OE1	1:A:901:GLU:HA	2.14	0.47
1:A:853:VAL:HG21	1:A:949:PHE:CZ	2.50	0.47
1:C:928:ASP:O	1:C:932:ARG:HG2	2.14	0.47
1:D:541:ILE:CG2	1:D:555:VAL:HG11	2.44	0.47
1:C:750:LYS:HA	1:C:803:VAL:O	2.15	0.47
1:C:874:ARG:HB2	1:C:887:PHE:HE1	1.77	0.47
1:D:736:ILE:HB	1:D:739:THR:HB	1.97	0.47
1:A:616:LEU:HD11	1:B:518:ILE:CD1	2.43	0.46
1:C:574:LYS:HG3	1:D:617:TYR:OH	2.15	0.46
1:B:489:SER:O	1:B:717:GLY:HA3	2.15	0.46
1:B:784:LYS:HZ3	1:B:787:GLU:HG2	1.79	0.46
1:B:569:LEU:HD23	1:B:718:ASN:O	2.15	0.46
1:D:688:ILE:CG2	1:D:694:VAL:HB	2.45	0.46
1:D:736:ILE:O	1:D:736:ILE:HG22	2.14	0.46
1:C:768:THR:HB	1:C:770:TYR:HE1	1.79	0.46
1:D:852:LYS:HA	1:D:910:ASN:O	2.15	0.46
1:B:593:ASP:O	1:B:595:SER:N	2.48	0.46
1:A:594:GLU:O	1:B:587:ARG:NH2	2.49	0.46
1:C:903:ILE:HD12	1:C:903:ILE:N	2.30	0.46
1:C:915:ARG:HH11	1:C:915:ARG:HG2	1.81	0.46
1:A:665:PRO:HB2	1:A:680:TYR:HD2	1.80	0.46
1:B:852:LYS:N	1:B:852:LYS:HE3	2.30	0.46
1:C:703:SER:O	1:C:707:PHE:HD1	1.99	0.46
1:B:845:GLU:HG2	1:B:846:SER:N	2.31	0.46
1:D:626:ASN:C	1:D:628:SER:H	2.18	0.46
1:A:843:GLU:OE2	1:A:921:GLY:HA2	2.15	0.46
1:B:887:PHE:O	1:B:889:PRO:HD3	2.15	0.46
1:D:636:ARG:NE	1:D:660:ASP:HB3	2.31	0.46
1:D:853:VAL:HG21	1:D:949:PHE:HE1	1.79	0.46
1:B:781:GLU:OE1	1:B:806:PRO:HG3	2.16	0.45
1:D:600:VAL:HG21	1:D:679:TYR:CE1	2.51	0.45
1:A:867:ALA:HA	1:A:944:ARG:O	2.16	0.45
1:D:888:GLU:HA	1:D:889:PRO:HD3	1.83	0.45
1:A:725:THR:O	1:A:725:THR:HG23	2.16	0.45
1:B:588:ARG:HG3	1:B:598:GLY:HA3	1.98	0.45
1:C:914:VAL:CG1	1:C:915:ARG:N	2.80	0.45
1:A:626:ASN:C	1:A:626:ASN:HD22	2.19	0.45
1:B:917:GLU:O	1:B:919:PRO:HD3	2.17	0.45
1:D:669:HIS:HB2	1:D:676:VAL:HG13	1.98	0.45
1:A:919:PRO:HB2	1:A:922:VAL:CG1	2.46	0.45
1:B:882:ASP:OD2	1:B:884:ASP:HB2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:771:ILE:HG13	1:D:785:ILE:HD13	1.99	0.45
1:D:870:ILE:HD11	1:D:891:MET:HE2	1.99	0.45
1:B:594:GLU:HG3	1:B:883:TYR:CE1	2.52	0.45
1:B:788:ILE:CG1	1:B:799:ILE:HD11	2.46	0.45
1:B:914:VAL:HG12	1:B:915:ARG:N	2.31	0.45
1:C:767:ALA:HB2	1:C:817:GLN:HB3	1.99	0.45
1:A:660:ASP:O	1:A:660:ASP:OD1	2.35	0.45
1:D:569:LEU:CD2	1:D:691:ALA:HB1	2.47	0.45
1:D:767:ALA:HB2	1:D:817:GLN:HE21	1.82	0.45
1:D:828:PRO:HB3	1:D:851:LEU:HD23	1.99	0.45
1:D:919:PRO:HB2	1:D:922:VAL:CG2	2.47	0.45
1:A:626:ASN:ND2	1:A:629:VAL:H	2.14	0.45
1:A:805:LEU:HB3	1:A:811:TYR:CE2	2.52	0.45
1:B:627:SER:OG	1:B:650:LYS:NZ	2.50	0.45
1:B:792:ASP:OD2	1:B:795:ASN:ND2	2.50	0.45
1:B:810:SER:HB2	1:B:960:VAL:O	2.17	0.45
1:A:626:ASN:HD21	1:A:629:VAL:N	2.14	0.45
1:B:500:GLU:O	1:B:501:ASN:ND2	2.50	0.45
1:B:843:GLU:C	1:B:845:GLU:H	2.21	0.45
1:C:863:LEU:HD13	1:C:949:PHE:CE1	2.52	0.45
1:C:964:ALA:O	1:C:966:HIS:N	2.49	0.45
1:D:600:VAL:HG23	1:D:666:TYR:OH	2.17	0.45
1:A:518:ILE:O	1:A:522:LEU:HB3	2.16	0.44
1:B:560:TRP:HZ2	1:B:891:MET:HE3	1.82	0.44
1:B:600:VAL:HG11	1:B:679:TYR:CG	2.51	0.44
1:C:606:LEU:HD23	1:C:615:ASN:HB2	1.99	0.44
1:C:867:ALA:HB3	1:C:894:PHE:CE2	2.52	0.44
1:B:593:ASP:C	1:B:595:SER:H	2.20	0.44
1:C:688:ILE:HG22	1:C:694:VAL:HB	1.98	0.44
1:B:624:VAL:HG13	1:B:629:VAL:HG12	1.99	0.44
1:C:764:ILE:HG23	1:C:817:GLN:NE2	2.32	0.44
1:D:771:ILE:HG13	1:D:785:ILE:HG21	2.00	0.44
1:A:646:THR:O	1:A:672:PRO:HD3	2.18	0.44
1:C:512:TRP:CH2	1:D:619:LYS:HD2	2.53	0.44
1:D:635:ASP:HB2	1:D:636:ARG:NH1	2.33	0.44
1:D:674:ILE:HG12	1:D:675:GLY:N	2.32	0.44
1:A:705:LYS:HB3	1:A:758:SER:OG	2.17	0.44
1:A:899:ILE:O	1:A:914:VAL:HG11	2.17	0.44
1:B:495:LEU:HD13	1:B:519:GLU:HG3	1.98	0.44
1:B:870:ILE:HD11	1:B:891:MET:HE3	2.00	0.44
1:B:922:VAL:HG23	1:B:923:ILE:HG12	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:793:TYR:CD1	1:C:794:LEU:HG	2.52	0.44
1:D:755:LEU:HB2	1:D:799:ILE:HG22	1.98	0.44
1:D:812:ARG:HG3	1:D:959:GLU:HG3	1.99	0.44
1:B:759:ALA:HB3	1:B:793:TYR:HA	2.00	0.44
1:B:863:LEU:HD12	1:B:948:VAL:O	2.17	0.44
1:B:630:LYS:HD2	1:B:637:GLU:OE2	2.17	0.44
1:B:724:PHE:CE2	1:B:726:PRO:HD3	2.52	0.44
1:B:857:LYS:HG2	1:B:859:TYR:CE1	2.53	0.44
1:D:587:ARG:HD3	4:D:34:HOH:O	2.16	0.44
1:B:830:VAL:CG2	1:B:835:ARG:HG3	2.48	0.44
1:B:882:ASP:CG	1:B:884:ASP:HB2	2.38	0.44
1:D:640:PRO:O	1:D:654:GLY:HA3	2.18	0.43
1:D:731:LYS:HG3	1:D:742:GLN:OE1	2.18	0.43
1:A:568:TYR:CE2	1:A:570:ASN:HB2	2.53	0.43
1:A:762:ARG:O	1:A:793:TYR:HB3	2.18	0.43
1:C:714:TYR:HB3	1:C:721:VAL:CG1	2.47	0.43
1:C:705:LYS:HB3	1:C:758:SER:OG	2.18	0.43
1:B:723:ARG:HB3	1:B:723:ARG:NH1	2.34	0.43
1:C:791:MET:HE2	1:C:797:TYR:H	1.83	0.43
1:A:537:ASP:O	1:A:870:ILE:HG21	2.18	0.43
1:B:632:THR:HG22	1:B:637:GLU:HG3	2.00	0.43
1:D:568:TYR:CE2	1:D:570:ASN:HB2	2.53	0.43
1:B:755:LEU:HD12	1:B:769:LEU:HD21	2.01	0.43
1:C:791:MET:O	1:C:792:ASP:CB	2.67	0.43
1:C:793:TYR:CE1	1:C:794:LEU:HG	2.54	0.43
1:A:857:LYS:HG2	1:A:859:TYR:CE1	2.54	0.43
1:B:802:ASN:HA	1:B:802:ASN:HD22	1.67	0.43
1:C:872:LEU:HB2	1:C:939:ILE:HB	2.00	0.43
1:A:700:PRO:HA	4:A:20:HOH:O	2.19	0.43
1:A:840:ILE:O	1:A:841:LEU:HD12	2.18	0.43
1:B:747:THR:O	1:B:751:HIS:NE2	2.48	0.43
1:B:788:ILE:HD12	1:B:788:ILE:N	2.34	0.43
1:C:594:GLU:C	1:C:596:GLY:N	2.71	0.43
1:D:600:VAL:HG22	1:D:601:THR:H	1.84	0.43
1:D:779:ILE:O	1:D:780:ILE:HD13	2.19	0.43
1:A:489:SER:HB3	1:A:568:TYR:HE1	1.83	0.43
1:A:648:SER:C	1:A:650:LYS:H	2.22	0.43
1:B:757:ILE:HD12	1:B:957:MET:HE2	2.01	0.43
1:C:861:ALA:HB1	1:C:950:ILE:C	2.39	0.43
1:A:611:GLU:HA	1:A:611:GLU:OE1	2.19	0.42
1:C:770:TYR:N	1:C:770:TYR:CD1	2.87	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:799:ILE:O	1:D:799:ILE:HG23	2.19	0.42
1:A:866:ARG:CZ	1:A:948:VAL:HG21	2.49	0.42
1:B:788:ILE:HD12	1:B:788:ILE:H	1.85	0.42
1:A:731:LYS:HD2	1:A:756:TYR:CE1	2.53	0.42
1:B:788:ILE:HG13	1:B:799:ILE:HD11	2.00	0.42
1:B:588:ARG:HB2	1:B:883:TYR:HB3	2.02	0.42
1:C:576:ASN:ND2	1:C:602:THR:H	2.12	0.42
1:C:828:PRO:HD2	1:C:837:PRO:HG3	2.01	0.42
1:A:548:ARG:HH21	1:A:888:GLU:CD	2.23	0.42
1:A:737:ASN:O	1:A:739:THR:N	2.52	0.42
1:B:865:LEU:HD13	1:B:918:LEU:HD13	2.00	0.42
1:C:773:ALA:HB3	1:C:780:ILE:O	2.19	0.42
1:A:638:CYS:HA	1:A:658:CYS:HA	2.01	0.42
1:B:490:GLY:CA	1:B:716:SER:HB3	2.50	0.42
1:B:774:ILE:HD13	1:B:779:ILE:HA	2.01	0.42
1:C:823:VAL:O	1:C:825:LEU:HD23	2.19	0.42
1:D:602:THR:O	1:D:678:ALA:HA	2.19	0.42
1:D:735:ASN:HB3	1:D:752:GLU:HB2	2.02	0.42
1:D:779:ILE:HG13	1:D:779:ILE:H	1.69	0.42
1:A:826:ASP:OD1	1:A:852:LYS:HD2	2.19	0.42
1:C:870:ILE:HD11	1:C:891:MET:HE2	2.01	0.42
1:D:699:ILE:HA	1:D:700:PRO:HD2	1.91	0.42
1:B:712:PRO:HB3	1:B:722:TYR:CE2	2.55	0.42
1:B:729:ILE:HG12	1:B:757:ILE:HD13	2.01	0.42
1:B:748:PRO:HG3	1:B:811:TYR:OH	2.20	0.42
1:B:745:ASN:OD1	1:B:963:SER:HB2	2.20	0.42
1:C:849:ILE:HD11	1:C:916:ALA:HB2	2.01	0.42
1:B:861:ALA:HB1	1:B:950:ILE:O	2.20	0.42
1:C:705:LYS:HG2	1:C:730:TYR:CE2	2.55	0.42
1:A:537:ASP:OD1	1:A:537:ASP:N	2.51	0.42
1:B:551:ASN:CG	1:B:794:LEU:HD22	2.40	0.42
1:C:735:ASN:HB3	1:C:752:GLU:HB3	2.02	0.42
1:D:498:LEU:HD11	1:D:566:LEU:HD11	2.02	0.42
1:C:939:ILE:N	1:C:939:ILE:HD12	2.34	0.41
1:D:497:TRP:O	1:D:501:ASN:ND2	2.53	0.41
1:C:587:ARG:NH2	1:D:594:GLU:O	2.54	0.41
1:A:684:THR:O	1:A:689:LYS:NZ	2.53	0.41
1:B:725:THR:CG2	1:B:725:THR:O	2.68	0.41
1:D:616:LEU:HD13	1:D:616:LEU:C	2.40	0.41
1:A:489:SER:HB3	1:A:568:TYR:CE1	2.56	0.41
1:C:642:MET:SD	1:C:651:THR:HG23	2.60	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:803:VAL:CG1	1:A:804:THR:N	2.83	0.41
1:D:544:LEU:HD12	1:D:548:ARG:HG3	2.02	0.41
1:D:882:ASP:OD2	1:D:884:ASP:HB2	2.20	0.41
1:A:842:ARG:HB2	1:A:845:GLU:OE2	2.20	0.41
1:B:906:LYS:HD3	1:B:906:LYS:N	2.33	0.41
1:D:572:TRP:CE2	1:D:605:PRO:HG3	2.56	0.41
1:D:600:VAL:HG22	1:D:601:THR:N	2.35	0.41
1:D:725:THR:HG23	1:D:725:THR:O	2.21	0.41
1:A:614:VAL:HG22	1:A:615:ASN:N	2.36	0.41
1:B:811:TYR:CE1	1:B:962:ALA:HB2	2.56	0.41
1:C:849:ILE:CD1	1:C:916:ALA:HB2	2.51	0.41
1:C:930:LEU:HB3	1:C:938:LEU:HD22	2.02	0.41
1:D:899:ILE:O	1:D:914:VAL:HG21	2.21	0.41
1:A:767:ALA:HA	1:A:816:VAL:O	2.20	0.41
1:B:569:LEU:HD23	1:B:718:ASN:C	2.41	0.41
1:D:502:THR:HA	1:D:503:PRO:HD3	1.91	0.41
1:D:548:ARG:NH2	1:D:875:LYS:HZ1	2.19	0.41
1:B:857:LYS:HB3	1:B:857:LYS:NZ	2.36	0.41
1:C:851:LEU:HD12	1:C:912:VAL:HB	2.03	0.41
1:C:887:PHE:O	1:C:889:PRO:HD3	2.21	0.41
1:D:534:HIS:O	1:D:535:ALA:HB2	2.21	0.41
1:D:569:LEU:O	1:D:572:TRP:HD1	2.04	0.41
1:D:769:LEU:HD21	1:D:788:ILE:CD1	2.50	0.41
1:A:730:TYR:CZ	1:A:756:TYR:HB3	2.55	0.40
1:D:643:VAL:O	1:D:651:THR:HA	2.21	0.40
1:D:698:THR:C	1:D:699:ILE:HD12	2.41	0.40
1:A:794:LEU:HD11	1:D:920:GLU:HB3	2.03	0.40
1:C:496:LYS:HA	1:C:499:ARG:NH2	2.36	0.40
1:D:608:ARG:HD2	1:D:672:PRO:O	2.21	0.40
1:D:874:ARG:CZ	1:D:879:ASP:HA	2.51	0.40
1:D:964:ALA:HB1	1:D:966:HIS:ND1	2.36	0.40
1:B:567:VAL:HG22	1:B:720:ILE:HB	2.04	0.40
1:C:509:THR:HG22	1:C:510:SER:N	2.36	0.40
1:D:548:ARG:HD3	1:D:584:ALA:HB2	2.02	0.40
1:B:490:GLY:HA3	1:B:717:GLY:H	1.86	0.40
1:B:705:LYS:HB3	1:B:758:SER:OG	2.21	0.40
1:B:725:THR:HA	1:B:726:PRO:HD2	1.90	0.40
1:B:757:ILE:HD12	1:B:957:MET:HE1	2.04	0.40
1:C:612:LYS:HB2	1:C:622:VAL:O	2.22	0.40
1:D:811:TYR:O	1:D:959:GLU:HA	2.21	0.40
1:D:812:ARG:CG	1:D:959:GLU:HG3	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:964:ALA:HB1	1:D:966:HIS:CE1	2.56	0.40
1:C:558:GLU:HB2	1:C:726:PRO:CG	2.51	0.40
1:C:772:TYR:HB2	1:C:812:ARG:HB2	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	468/497 (94%)	430 (92%)	26 (6%)	12 (3%)	5	13
1	B	464/497 (93%)	419 (90%)	31 (7%)	14 (3%)	4	10
1	C	466/497 (94%)	404 (87%)	50 (11%)	12 (3%)	5	13
1	D	467/497 (94%)	425 (91%)	35 (8%)	7 (2%)	10	26
All	All	1865/1988 (94%)	1678 (90%)	142 (8%)	45 (2%)	6	15

All (45) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	536	ARG
1	B	796	GLU
1	B	843	GLU
1	C	847	GLY
1	A	610	GLY
1	A	648	SER
1	A	649	GLY
1	A	776	ASN
1	A	808	ALA
1	B	594	GLU
1	B	844	GLY
1	C	901	GLU

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Mol	Chain	Res	Type
1	C	935	GLY
1	A	717	GLY
1	A	737	ASN
1	B	716	SER
1	B	737	ASN
1	C	626	ASN
1	C	781	GLU
1	C	907	GLU
1	D	523	LEU
1	D	746	LEU
1	A	625	SER
1	A	629	VAL
1	B	522	LEU
1	B	696	ALA
1	B	777	GLU
1	C	916	ALA
1	C	925	SER
1	D	648	SER
1	A	535	ALA
1	B	501	ASN
1	B	923	ILE
1	C	899	ILE
1	C	965	PRO
1	D	792	ASP
1	B	714	TYR
1	D	781	GLU
1	B	919	PRO
1	C	592	GLY
1	D	610	GLY
1	A	738	GLY
1	B	717	GLY
1	C	896	ILE
1	D	717	GLY

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	402/424 (95%)	376 (94%)	26 (6%)	17	38
1	B	399/424 (94%)	383 (96%)	16 (4%)	31	60
1	C	400/424 (94%)	384 (96%)	16 (4%)	31	60
1	D	400/424 (94%)	381 (95%)	19 (5%)	25	53
All	All	1601/1696 (94%)	1524 (95%)	77 (5%)	25	53

All (77) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	507	THR
1	A	513	ASP
1	A	561	GLU
1	A	567	VAL
1	A	575	PHE
1	A	587	ARG
1	A	594	GLU
1	A	608	ARG
1	A	623	ASP
1	A	626	ASN
1	A	644	THR
1	A	652	ILE
1	A	657	THR
1	A	672	PRO
1	A	690	LEU
1	A	698	THR
1	A	703	SER
1	A	721	VAL
1	A	723	ARG
1	A	777	GLU
1	A	787	GLU
1	A	846	SER
1	A	857	LYS
1	A	893	VAL
1	A	929	GLU
1	A	967	HIS
1	B	513	ASP
1	B	538	ARG
1	B	594	GLU
1	B	635	ASP
1	B	646	THR
1	B	716	SER
1	B	721	VAL

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Mol	Chain	Res	Type
1	B	745	ASN
1	B	783	ILE
1	B	801	VAL
1	B	802	ASN
1	B	852	LYS
1	B	857	LYS
1	B	897	THR
1	B	906	LYS
1	B	915	ARG
1	C	542	LEU
1	C	575	PHE
1	C	576	ASN
1	C	594	GLU
1	C	616	LEU
1	C	626	ASN
1	C	690	LEU
1	C	721	VAL
1	C	727	PHE
1	C	752	GLU
1	C	753	LEU
1	C	770	TYR
1	C	840	ILE
1	C	851	LEU
1	C	894	PHE
1	C	946	GLU
1	D	513	ASP
1	D	561	GLU
1	D	575	PHE
1	D	576	ASN
1	D	587	ARG
1	D	601	THR
1	D	604	LEU
1	D	614	VAL
1	D	626	ASN
1	D	632	THR
1	D	676	VAL
1	D	721	VAL
1	D	769	LEU
1	D	777	GLU
1	D	890	GLN
1	D	893	VAL
1	D	915	ARG

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Mol	Chain	Res	Type
1	D	925	SER
1	D	965	PRO

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (38) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	576	ASN
1	A	626	ASN
1	A	662	ASN
1	A	709	ASN
1	A	718	ASN
1	A	742	GLN
1	A	745	ASN
1	A	802	ASN
1	A	817	GLN
1	A	904	GLN
1	B	501	ASN
1	B	718	ASN
1	B	737	ASN
1	B	742	GLN
1	B	795	ASN
1	B	802	ASN
1	B	890	GLN
1	C	540	HIS
1	C	576	ASN
1	C	626	ASN
1	C	709	ASN
1	C	718	ASN
1	C	737	ASN
1	C	742	GLN
1	C	745	ASN
1	C	776	ASN
1	C	817	GLN
1	C	910	ASN
1	D	501	ASN
1	D	576	ASN
1	D	626	ASN
1	D	709	ASN
1	D	718	ASN
1	D	751	HIS
1	D	790	HIS
1	D	802	ASN

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Mol	Chain	Res	Type
1	D	817	GLN
1	D	931	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](#)

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](#)

Of 8 ligands modelled in this entry, 8 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](#)

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	472/497 (94%)	-0.16	6 (1%) 77 78	10, 37, 59, 89	0
1	B	468/497 (94%)	-0.04	7 (1%) 73 76	17, 46, 64, 81	0
1	C	470/497 (94%)	0.17	16 (3%) 45 45	25, 57, 81, 95	0
1	D	471/497 (94%)	-0.19	12 (2%) 57 59	13, 36, 75, 97	0
All	All	1881/1988 (94%)	-0.05	41 (2%) 62 63	10, 43, 75, 97	0

All (41) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	738	GLY	4.9
1	A	967	HIS	4.8
1	C	964	ALA	4.7
1	C	736	ILE	3.9
1	C	595	SER	3.8
1	C	597	ARG	3.4
1	B	776	ASN	3.3
1	B	597	ARG	3.0
1	A	776	ASN	2.9
1	C	775	ASN	2.9
1	D	776	ASN	2.9
1	D	737	ASN	2.8
1	C	932	ARG	2.8
1	D	597	ARG	2.8
1	B	661	GLY	2.7
1	C	965	PRO	2.7
1	C	776	ASN	2.7
1	C	609	TYR	2.7
1	A	625	SER	2.6
1	C	625	SER	2.6
1	C	737	ASN	2.6

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Mol	Chain	Res	Type	RSRZ
1	D	595	SER	2.5
1	A	596	GLY	2.5
1	C	777	GLU	2.5
1	D	965	PRO	2.4
1	A	777	GLU	2.4
1	B	489	SER	2.4
1	D	775	ASN	2.3
1	D	736	ILE	2.3
1	B	777	GLU	2.2
1	D	735	ASN	2.2
1	C	781	GLU	2.2
1	B	739	THR	2.2
1	D	596	GLY	2.2
1	C	801	VAL	2.2
1	C	916	ALA	2.1
1	A	778	LYS	2.1
1	C	647	PRO	2.1
1	B	964	ALA	2.1
1	D	777	GLU	2.0
1	D	739	THR	2.0

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

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

6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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(Å ²)	Q<0.9
2	CA	C	3	1/1	0.74	0.21	53,53,53,53	0
3	CL	C	7	1/1	0.89	0.11	55,55,55,55	0
2	CA	B	2	1/1	0.90	0.21	37,37,37,37	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
2	CA	D	4	1/1	0.93	0.23	38,38,38,38	0
3	CL	B	6	1/1	0.94	0.09	44,44,44,44	0
3	CL	A	5	1/1	0.96	0.08	31,31,31,31	0
2	CA	A	1	1/1	0.96	0.19	26,26,26,26	0
3	CL	D	8	1/1	0.98	0.12	30,30,30,30	0

6.5 Other polymers [i](#)

There are no such residues in this entry.