



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 6, 2024 – 11:45 AM EDT

PDB ID : 2OX8
Title : Human Scavenger Receptor C-type Lectin carbohydrate-recognition domain.
Authors : Weis, W.I.; Feinberg, H.; Drickamer, K.; Taylor, M.E.
Deposited on : 2007-02-20
Resolution : 2.50 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
Xtriage (Phenix) : 1.20.1
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) : 2.39

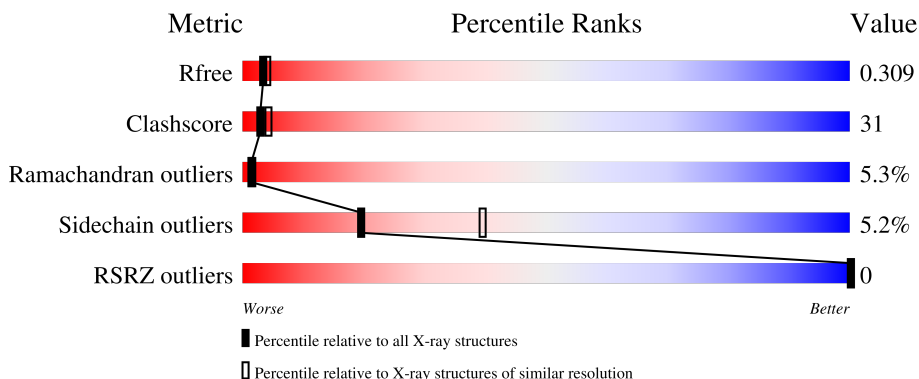
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.50 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	5504 (2.50-2.50)
Clashscore	180529	6282 (2.50-2.50)
Ramachandran outliers	177936	6191 (2.50-2.50)
Sidechain outliers	177891	6193 (2.50-2.50)
RSRZ outliers	164620	5504 (2.50-2.50)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	140	
1	B	140	
1	C	140	
1	D	140	

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 4379 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 Scavenger receptor with C-type lectin type I.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	129	1078	681	184	206	7	0	0	0
1	B	129	1078	681	184	206	7	0	0	0
1	C	129	1078	681	184	206	7	0	0	0
1	D	129	1078	681	184	206	7	0	0	0

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	5	Total	Zn	0	0
			5	5		
2	B	5	Total	Zn	0	0
			5	5		
2	C	3	Total	Zn	0	0
			3	3		
2	D	3	Total	Zn	0	0
			3	3		

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

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

- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	C	3	Total 3	Ca 3	0	0
4	D	3	Total 3	Ca 3	0	0

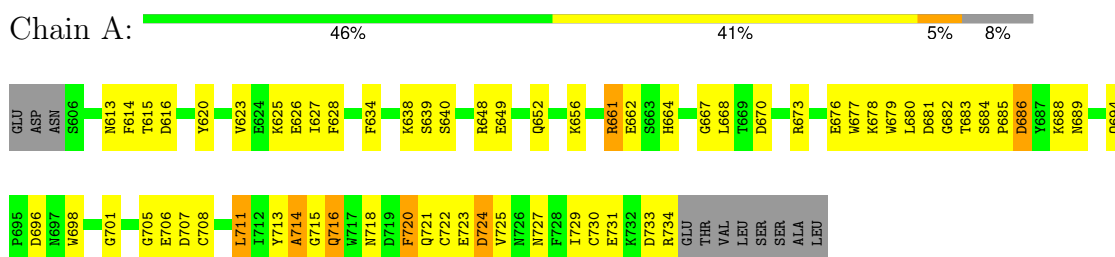
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	21	Total 21	O 21	0	0
5	B	10	Total 10	O 10	0	0
5	C	1	Total 1	O 1	0	0
5	D	1	Total 1	O 1	0	0

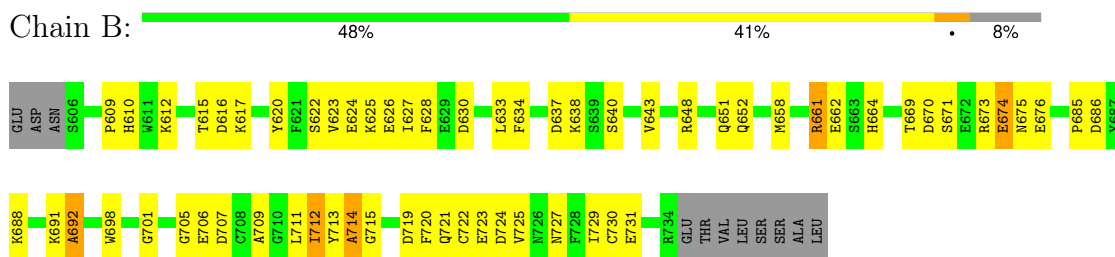
3 Residue-property plots [i](#)

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.

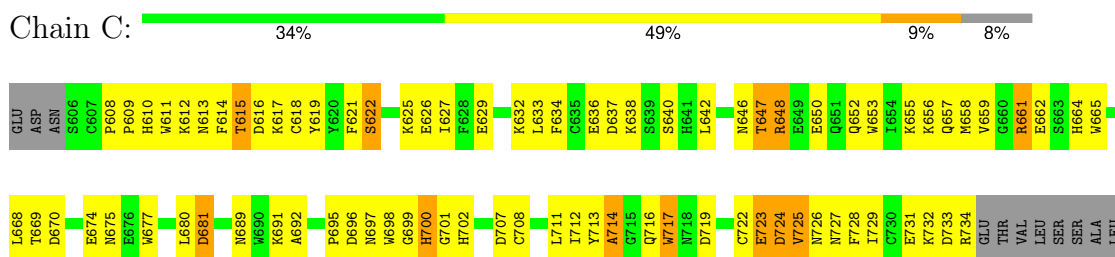
- Molecule 1: Scavenger receptor with C-type lectin type I



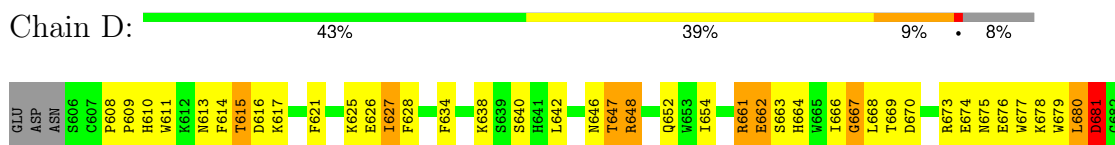
- Molecule 1: Scavenger receptor with C-type lectin type I



- Molecule 1: Scavenger receptor with C-type lectin type I



- Molecule 1: Scavenger receptor with C-type lectin type I



T683	S684	P685	N689	W690	K691	P695	D696	N697	H700	G701	H702	D707	L711	I712	Y713	A714	G715	G716	D719	C722	E723	D724	V725	M726	M727	F728	I729	C730	E731	K732	D733	R734	GLU	THR	VAL	LEU	SER	SER	ALA	LEU
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-----	-----	-----	-----	-----	-----	-----	-----

4 Data and refinement statistics i

Property	Value	Source
Space group	P 32	Depositor
Cell constants a, b, c, α , β , γ	80.42Å 80.42Å 67.16Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	30.92 – 2.50 30.92 – 2.50	Depositor EDS
% Data completeness (in resolution range)	(Not available) (30.92-2.50) 98.4 (30.92-2.50)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.07	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.09 (at 2.51Å)	Xtrriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.233 , 0.308 0.235 , 0.309	Depositor DCC
R_{free} test set	840 reflections (5.13%)	wwPDB-VP
Wilson B-factor (Å ²)	32.3	Xtrriage
Anisotropy	0.225	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 39.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.41$, $\langle L^2 \rangle = 0.24$	Xtrriage
Estimated twinning fraction	0.470 for -h,-k,l 0.107 for h,-h-k,-l 0.107 for -k,-h,-l	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	4379	wwPDB-VP
Average B, all atoms (Å ²)	31.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.66% 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 [i](#)

5.1 Standard geometry [i](#)

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

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	0.46	0/1114	0.71	0/1507
1	B	0.45	0/1114	0.68	0/1507
1	C	0.31	0/1114	0.51	0/1507
1	D	0.30	0/1114	0.51	0/1507
All	All	0.39	0/4456	0.61	0/6028

There are no bond length outliers.

There are no bond angle outliers.

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	1078	0	964	57	0
1	B	1078	0	964	70	0
1	C	1078	0	964	81	0
1	D	1078	0	964	59	0
2	A	5	0	0	0	0
2	B	5	0	0	0	0
2	C	3	0	0	0	0
2	D	3	0	0	0	0
3	A	3	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	3	0	0	0	0
3	C	3	0	0	0	0
3	D	3	0	0	0	0
4	C	3	0	0	0	0
4	D	3	0	0	0	0
5	A	21	0	0	0	0
5	B	10	0	0	1	0
5	C	1	0	0	0	0
5	D	1	0	0	0	0
All	All	4379	0	3856	258	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 31.

All (258) 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:615:THR:HG22	1:A:616:ASP:H	1.11	1.15
1:C:615:THR:HG22	1:C:616:ASP:H	1.25	1.01
1:B:669:THR:HG22	1:B:671:SER:H	1.28	0.98
1:C:668:LEU:HD11	1:C:677:TRP:HB3	1.47	0.97
1:A:615:THR:HG22	1:A:616:ASP:N	1.78	0.96
1:B:615:THR:HG22	1:B:616:ASP:H	1.32	0.94
1:A:623:VAL:HG21	1:C:702:HIS:ND1	1.86	0.90
1:B:625:LYS:HB3	1:B:725:VAL:HG12	1.50	0.90
1:A:706:GLU:HA	1:A:721:GLN:HA	1.52	0.89
1:C:627:ILE:HG23	1:C:723:GLU:HA	1.54	0.87
1:B:615:THR:HG22	1:B:616:ASP:N	1.88	0.87
1:C:613:ASN:HD22	1:C:734:ARG:HH12	1.24	0.83
1:D:691:LYS:HB2	1:D:716:GLN:HG3	1.63	0.81
1:C:677:TRP:HE1	1:C:695:PRO:HG3	1.46	0.79
1:C:691:LYS:HG2	1:C:692:ALA:H	1.48	0.79
1:B:623:VAL:HG21	1:D:702:HIS:ND1	1.98	0.78
1:B:661:ARG:HG2	1:B:661:ARG:HH11	1.48	0.78
1:D:668:LEU:HD11	1:D:677:TRP:HB3	1.65	0.77
1:A:625:LYS:HB3	1:A:725:VAL:HG12	1.66	0.77
1:A:661:ARG:HG2	1:A:661:ARG:HH11	1.49	0.76
1:C:615:THR:HG22	1:C:616:ASP:N	2.00	0.75
1:D:625:LYS:O	1:D:626:GLU:HG3	1.87	0.74
1:B:661:ARG:HA	1:B:713:TYR:CD1	2.23	0.74
1:C:661:ARG:HG3	1:C:713:TYR:HD2	1.52	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:640:SER:HB2	1:A:731:GLU:O	1.88	0.73
1:C:648:ARG:O	1:C:652:GLN:HG3	1.88	0.73
1:C:625:LYS:HG2	1:C:727:ASN:OD1	1.88	0.72
1:C:627:ILE:CG2	1:C:723:GLU:HA	2.20	0.71
1:B:624:GLU:HG2	1:B:625:LYS:N	2.06	0.71
1:A:615:THR:CG2	1:A:616:ASP:N	2.53	0.70
1:A:721:GLN:O	1:A:724:ASP:HB2	1.90	0.70
1:C:613:ASN:HD22	1:C:734:ARG:NH1	1.90	0.69
1:C:677:TRP:NE1	1:C:695:PRO:HG3	2.07	0.69
1:D:648:ARG:O	1:D:652:GLN:HG3	1.93	0.69
1:A:652:GLN:O	1:A:656:LYS:HG2	1.94	0.68
1:B:648:ARG:O	1:B:652:GLN:HG3	1.94	0.68
1:A:686:ASP:O	1:A:688:LYS:HG3	1.94	0.67
1:A:678:LYS:HD3	1:A:682:GLY:O	1.94	0.67
1:C:613:ASN:HD21	1:C:734:ARG:HH22	1.43	0.67
1:B:721:GLN:HB3	1:B:724:ASP:OD2	1.94	0.67
1:B:706:GLU:HA	1:B:721:GLN:HA	1.77	0.67
1:C:664:HIS:HA	1:C:727:ASN:O	1.94	0.66
1:C:613:ASN:ND2	1:C:734:ARG:HH12	1.93	0.66
1:A:613:ASN:HD22	1:A:734:ARG:HH12	1.44	0.66
1:D:625:LYS:HB3	1:D:725:VAL:HG12	1.78	0.66
1:A:627:ILE:HG12	1:A:723:GLU:HA	1.77	0.66
1:B:686:ASP:O	1:B:688:LYS:HD2	1.95	0.65
1:A:713:TYR:O	1:A:714:ALA:CB	2.44	0.65
1:B:692:ALA:HB1	1:B:698:TRP:CH2	2.32	0.64
1:C:691:LYS:HG2	1:C:692:ALA:N	2.12	0.64
1:B:713:TYR:O	1:B:714:ALA:CB	2.45	0.64
1:B:669:THR:HG23	1:B:707:ASP:O	1.96	0.64
1:B:624:GLU:HG2	1:B:625:LYS:H	1.63	0.63
1:B:669:THR:HG22	1:B:670:ASP:N	2.13	0.63
1:D:634:PHE:O	1:D:638:LYS:HG2	1.98	0.63
1:A:648:ARG:HG3	1:A:649:GLU:OE1	1.98	0.63
1:C:716:GLN:CD	1:C:716:GLN:H	2.03	0.62
1:C:722:CYS:O	1:C:723:GLU:HB2	1.99	0.62
1:B:664:HIS:HA	1:B:727:ASN:O	1.99	0.61
1:A:634:PHE:O	1:A:638:LYS:HG2	2.01	0.61
1:A:625:LYS:CB	1:A:725:VAL:HG12	2.31	0.60
1:A:689:ASN:ND2	1:A:716:GLN:HA	2.17	0.60
1:C:669:THR:HB	1:C:707:ASP:O	2.00	0.60
1:A:670:ASP:HB3	1:A:677:TRP:CE2	2.36	0.59
1:A:711:LEU:HD21	1:A:715:GLY:HA2	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:625:LYS:HB2	1:C:725:VAL:CG1	2.31	0.59
1:D:689:ASN:ND2	1:D:716:GLN:HA	2.17	0.59
1:A:623:VAL:HG21	1:C:702:HIS:CE1	2.36	0.59
1:D:609:PRO:O	1:D:610:HIS:HB2	2.01	0.58
1:D:617:LYS:HG2	1:D:733:ASP:HA	1.84	0.58
1:B:722:CYS:O	1:B:723:GLU:HB2	2.03	0.58
1:D:613:ASN:HD21	1:D:734:ARG:CZ	2.16	0.58
1:B:626:GLU:HB3	1:B:630:ASP:CB	2.33	0.58
1:A:694:GLN:NE2	1:A:718:ASN:OD1	2.37	0.58
1:C:646:ASN:O	1:C:647:THR:HG23	2.03	0.58
1:D:673:ARG:HB2	1:D:676:GLU:OE2	2.04	0.58
1:B:640:SER:HB2	1:B:731:GLU:O	2.03	0.57
1:C:664:HIS:HB3	1:C:729:ILE:HG13	1.85	0.57
1:B:609:PRO:O	1:B:610:HIS:HB2	2.03	0.57
1:C:613:ASN:ND2	1:C:734:ARG:NH1	2.52	0.57
1:B:661:ARG:HG2	1:B:661:ARG:NH1	2.16	0.57
1:A:722:CYS:C	1:A:724:ASP:H	2.08	0.57
1:D:615:THR:HG22	1:D:616:ASP:H	1.68	0.57
1:D:697:ASN:ND2	1:D:700:HIS:HB3	2.19	0.57
1:D:627:ILE:HA	1:D:724:ASP:O	2.05	0.56
1:C:713:TYR:O	1:C:714:ALA:HB2	2.05	0.56
1:D:615:THR:HG22	1:D:616:ASP:N	2.21	0.56
1:D:669:THR:HB	1:D:707:ASP:O	2.05	0.56
1:C:609:PRO:O	1:C:610:HIS:HB2	2.06	0.56
1:D:627:ILE:HG22	1:D:628:PHE:N	2.21	0.56
1:D:679:TRP:HE1	1:D:685:PRO:HA	1.71	0.56
1:D:722:CYS:O	1:D:723:GLU:HB2	2.06	0.56
1:B:658:MET:SD	1:B:711:LEU:HD12	2.46	0.56
1:C:661:ARG:HD2	1:C:661:ARG:N	2.21	0.55
1:A:698:TRP:CE3	1:B:615:THR:HG23	2.40	0.55
1:D:608:PRO:O	1:D:611:TRP:HB2	2.06	0.55
1:C:634:PHE:CZ	1:C:638:LYS:HE2	2.41	0.55
1:A:620:TYR:HB3	1:A:730:CYS:HB2	1.89	0.54
1:C:608:PRO:O	1:C:611:TRP:HB2	2.07	0.54
1:D:713:TYR:O	1:D:714:ALA:HB2	2.07	0.54
1:D:666:ILE:O	1:D:668:LEU:N	2.39	0.54
1:A:625:LYS:HE2	1:C:698:TRP:CE2	2.43	0.54
1:C:661:ARG:HG2	1:C:661:ARG:HH11	1.72	0.54
1:B:722:CYS:C	1:B:724:ASP:H	2.11	0.54
1:A:661:ARG:HG2	1:A:661:ARG:NH1	2.21	0.54
1:B:615:THR:CG2	1:B:616:ASP:N	2.62	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:640:SER:CB	1:C:732:LYS:HB3	2.37	0.54
1:D:722:CYS:C	1:D:724:ASP:H	2.10	0.54
1:B:673:ARG:HD2	1:B:676:GLU:CD	2.28	0.54
1:A:670:ASP:OD1	1:A:707:ASP:HB3	2.08	0.53
1:B:633:LEU:O	1:B:637:ASP:OD2	2.26	0.53
1:D:664:HIS:HB3	1:D:728:PHE:HA	1.89	0.53
1:D:664:HIS:ND1	1:D:729:ILE:HG13	2.23	0.53
1:A:628:PHE:CD1	1:A:708:CYS:HB3	2.44	0.53
1:D:670:ASP:OD1	1:D:707:ASP:HA	2.09	0.53
1:A:613:ASN:ND2	1:A:734:ARG:HH12	2.04	0.53
1:A:625:LYS:O	1:A:626:GLU:CG	2.56	0.53
1:C:622:SER:HB3	1:C:728:PHE:CE1	2.44	0.53
1:B:626:GLU:HB3	1:B:630:ASP:HB3	1.89	0.53
1:D:642:LEU:HD12	1:D:680:LEU:HD11	1.91	0.53
1:C:615:THR:HG22	1:C:616:ASP:OD1	2.10	0.52
1:B:661:ARG:HG3	1:B:713:TYR:CG	2.44	0.52
1:A:613:ASN:HD21	1:A:734:ARG:HH22	1.56	0.52
1:A:713:TYR:O	1:A:714:ALA:HB3	2.10	0.52
1:A:705:GLY:C	1:A:721:GLN:HG3	2.30	0.52
1:B:625:LYS:CB	1:B:725:VAL:HG12	2.33	0.52
1:D:661:ARG:HD2	1:D:661:ARG:N	2.25	0.51
1:D:674:GLU:O	1:D:675:ASN:HB2	2.09	0.51
1:D:691:LYS:CB	1:D:716:GLN:HG3	2.38	0.51
1:A:720:PHE:CD1	1:A:720:PHE:N	2.78	0.51
1:B:669:THR:CG2	1:B:670:ASP:N	2.73	0.51
1:C:661:ARG:HG3	1:C:713:TYR:CD2	2.39	0.51
1:B:634:PHE:O	1:B:638:LYS:HE2	2.09	0.51
1:B:709:ALA:HA	1:B:719:ASP:HA	1.91	0.51
1:C:722:CYS:O	1:C:723:GLU:CB	2.57	0.51
1:D:615:THR:HG22	1:D:616:ASP:OD1	2.11	0.51
1:C:711:LEU:HD23	1:C:712:ILE:O	2.10	0.51
1:B:623:VAL:HG21	1:D:702:HIS:CE1	2.45	0.50
1:D:663:SER:HB3	1:D:712:ILE:HG22	1.93	0.50
1:C:640:SER:HB2	1:C:731:GLU:O	2.12	0.50
1:B:720:PHE:N	1:B:720:PHE:CD1	2.80	0.50
1:C:724:ASP:O	1:C:725:VAL:C	2.50	0.50
1:B:670:ASP:O	1:B:674:GLU:HA	2.12	0.50
1:C:689:ASN:ND2	1:C:716:GLN:HA	2.26	0.49
1:B:692:ALA:HB1	1:B:698:TRP:CZ2	2.47	0.49
1:D:613:ASN:ND2	1:D:734:ARG:CZ	2.75	0.49
1:A:698:TRP:CD2	1:B:615:THR:HG23	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:691:LYS:HG2	1:B:692:ALA:H	1.78	0.49
1:D:676:GLU:OE1	1:D:678:LYS:HE3	2.13	0.49
1:B:705:GLY:O	1:B:721:GLN:HA	2.13	0.49
1:C:632:LYS:O	1:C:636:GLU:HG3	2.13	0.48
1:B:617:LYS:HD3	1:B:731:GLU:OE1	2.14	0.48
1:B:721:GLN:HG2	1:B:722:CYS:O	2.14	0.48
1:A:698:TRP:CD1	1:B:616:ASP:HB3	2.48	0.48
1:C:640:SER:HB3	1:C:732:LYS:HD3	1.96	0.48
1:D:663:SER:HA	1:D:711:LEU:O	2.14	0.48
1:C:664:HIS:CE1	1:C:727:ASN:HB3	2.49	0.48
1:B:620:TYR:HB3	1:B:730:CYS:HB2	1.96	0.48
1:B:627:ILE:HG23	1:B:723:GLU:H	1.78	0.48
1:C:653:TRP:O	1:C:657:GLN:HG2	2.14	0.47
1:C:717:TRP:CD1	1:C:717:TRP:N	2.82	0.47
1:D:680:LEU:O	1:D:681:ASP:HB3	2.14	0.47
1:C:711:LEU:HD23	1:C:711:LEU:C	2.35	0.47
1:D:695:PRO:HA	1:D:719:ASP:OD1	2.13	0.47
1:A:733:ASP:OD1	1:A:734:ARG:O	2.33	0.47
1:B:721:GLN:HE21	1:B:723:GLU:HB2	1.79	0.47
1:D:646:ASN:O	1:D:647:THR:HG23	2.14	0.47
1:A:683:THR:HG22	1:A:684:SER:N	2.29	0.47
1:D:683:THR:HG22	1:D:684:SER:N	2.29	0.47
1:B:627:ILE:O	1:B:628:PHE:C	2.52	0.47
1:C:689:ASN:O	1:C:716:GLN:HA	2.14	0.47
1:C:699:GLY:C	1:C:701:GLY:H	2.17	0.47
1:C:619:TYR:N	1:C:619:TYR:CD1	2.83	0.47
1:C:712:ILE:HG12	1:C:716:GLN:O	2.14	0.47
1:C:626:GLU:HB2	1:C:728:PHE:HE2	1.79	0.47
1:C:634:PHE:O	1:C:638:LYS:HG2	2.14	0.47
1:C:697:ASN:ND2	1:C:700:HIS:HB3	2.29	0.47
1:B:713:TYR:O	1:B:714:ALA:HB3	2.14	0.46
1:C:677:TRP:CH2	1:C:719:ASP:HB3	2.51	0.46
1:C:622:SER:HB3	1:C:728:PHE:CD1	2.51	0.46
1:D:662:GLU:OE2	1:D:664:HIS:NE2	2.44	0.46
1:C:655:LYS:HD3	1:C:656:LYS:NZ	2.31	0.46
1:B:721:GLN:C	1:B:722:CYS:O	2.52	0.46
1:B:626:GLU:HB3	1:B:630:ASP:HB2	1.96	0.46
1:B:711:LEU:HD11	1:B:715:GLY:HA2	1.98	0.46
1:D:616:ASP:OD2	1:D:733:ASP:OD2	2.34	0.46
1:B:674:GLU:O	1:B:675:ASN:CB	2.64	0.46
1:B:691:LYS:HG2	1:B:692:ALA:N	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:712:ILE:CD1	1:B:720:PHE:HZ	2.28	0.46
1:B:722:CYS:O	1:B:723:GLU:CB	2.64	0.46
1:C:617:LYS:HD3	1:C:731:GLU:OE2	2.15	0.46
1:C:647:THR:O	1:C:650:GLU:HB3	2.15	0.46
1:C:629:GLU:O	1:C:633:LEU:HG	2.16	0.45
1:A:673:ARG:HD2	1:A:676:GLU:OE2	2.16	0.45
1:A:625:LYS:O	1:A:626:GLU:HG3	2.17	0.45
1:A:648:ARG:O	1:A:652:GLN:HG3	2.16	0.45
1:B:651:GLN:HE22	1:B:711:LEU:HD21	1.82	0.45
1:B:685:PRO:O	1:B:688:LYS:HE3	2.16	0.45
1:A:664:HIS:HA	1:A:727:ASN:O	2.16	0.45
1:B:673:ARG:NH1	1:B:676:GLU:OE1	2.49	0.45
1:D:664:HIS:HA	1:D:727:ASN:O	2.16	0.45
1:A:614:PHE:O	1:A:615:THR:HB	2.17	0.45
1:B:705:GLY:HA3	1:B:721:GLN:HG3	1.98	0.45
1:C:648:ARG:HG2	1:C:648:ARG:HH11	1.82	0.45
1:D:640:SER:HB2	1:D:731:GLU:O	2.17	0.44
1:D:697:ASN:HD21	1:D:700:HIS:HB3	1.81	0.44
1:B:721:GLN:O	1:B:724:ASP:HB2	2.18	0.44
1:C:716:GLN:CD	1:C:716:GLN:N	2.70	0.44
1:D:667:GLY:O	1:D:679:TRP:HA	2.17	0.44
1:C:674:GLU:O	1:C:675:ASN:HB2	2.17	0.44
1:C:725:VAL:O	1:C:726:ASN:OD1	2.36	0.44
1:B:712:ILE:HD13	1:B:720:PHE:HZ	1.82	0.43
1:C:680:LEU:O	1:C:681:ASP:HB3	2.18	0.43
1:A:681:ASP:OD1	1:A:681:ASP:C	2.56	0.43
1:A:623:VAL:HG11	1:C:702:HIS:HB2	2.01	0.43
1:B:643:VAL:HB	1:B:729:ILE:HG22	2.01	0.43
1:A:667:GLY:O	1:A:679:TRP:HA	2.19	0.43
1:C:658:MET:SD	1:C:711:LEU:HD22	2.59	0.43
1:A:679:TRP:NE1	1:A:685:PRO:HB3	2.34	0.43
1:C:613:ASN:ND2	1:C:734:ARG:HH22	2.14	0.43
1:A:661:ARG:NH1	1:A:661:ARG:CG	2.82	0.43
1:A:720:PHE:H	1:A:720:PHE:HD1	1.67	0.43
1:D:613:ASN:ND2	1:D:734:ARG:NH1	2.68	0.42
1:B:674:GLU:O	1:B:675:ASN:HB3	2.18	0.42
1:C:612:LYS:O	1:C:618:CYS:HA	2.18	0.42
1:C:614:PHE:O	1:C:615:THR:HB	2.20	0.42
1:A:722:CYS:C	1:A:724:ASP:N	2.72	0.42
1:D:646:ASN:OD1	1:D:679:TRP:NE1	2.52	0.42
1:D:673:ARG:O	1:D:676:GLU:HB3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:620:TYR:CE2	1:B:622:SER:HA	2.54	0.42
1:D:668:LEU:HG	1:D:677:TRP:HE3	1.84	0.42
1:C:713:TYR:O	1:C:714:ALA:CB	2.68	0.42
1:D:670:ASP:HA	1:D:676:GLU:O	2.20	0.42
1:C:616:ASP:OD2	1:C:733:ASP:OD2	2.38	0.42
1:D:614:PHE:O	1:D:615:THR:HB	2.20	0.42
1:D:674:GLU:OE2	1:D:707:ASP:OD1	2.38	0.42
1:C:613:ASN:HD21	1:C:734:ARG:NH2	2.11	0.42
1:C:696:ASP:OD2	1:C:698:TRP:HB2	2.20	0.42
1:A:683:THR:CG2	1:A:684:SER:N	2.83	0.41
1:B:661:ARG:HG3	1:B:713:TYR:CD2	2.55	0.41
1:A:722:CYS:O	1:A:723:GLU:HB2	2.19	0.41
1:C:670:ASP:OD1	1:C:707:ASP:HA	2.21	0.41
1:D:731:GLU:HG2	1:D:732:LYS:N	2.35	0.41
1:C:613:ASN:ND2	1:C:734:ARG:NH2	2.68	0.41
1:A:667:GLY:O	1:A:679:TRP:HE3	2.04	0.41
1:C:642:LEU:HD12	1:C:680:LEU:HD11	2.01	0.41
1:B:712:ILE:HG23	1:B:713:TYR:O	2.21	0.41
1:A:620:TYR:O	1:A:729:ILE:HA	2.21	0.41
1:C:655:LYS:HD3	1:C:656:LYS:HZ2	1.86	0.41
1:C:665:TRP:HZ3	1:C:708:CYS:O	2.04	0.41
1:B:612:LYS:HE2	5:B:746:HOH:O	2.22	0.40
1:D:627:ILE:CG2	1:D:628:PHE:N	2.85	0.40
1:D:661:ARG:N	1:D:661:ARG:CD	2.84	0.40
1:A:668:LEU:HG	1:A:677:TRP:HE3	1.86	0.40
1:D:677:TRP:CH2	1:D:719:ASP:HB3	2.56	0.40
1:B:673:ARG:CZ	1:B:676:GLU:OE1	2.70	0.40
1:C:612:LYS:HE2	1:C:621:PHE:CD1	2.57	0.40
1:D:621:PHE:CZ	1:D:654:ILE:HG23	2.57	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	127/140 (91%)	114 (90%)	9 (7%)	4 (3%)	3	5
1	B	127/140 (91%)	111 (87%)	12 (9%)	4 (3%)	3	5
1	C	127/140 (91%)	98 (77%)	21 (16%)	8 (6%)	1	1
1	D	127/140 (91%)	102 (80%)	14 (11%)	11 (9%)	0	0
All	All	508/560 (91%)	425 (84%)	56 (11%)	27 (5%)	1	1

All (27) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	692	ALA
1	C	622	SER
1	C	681	ASP
1	C	714	ALA
1	C	723	GLU
1	D	627	ILE
1	D	681	ASP
1	D	714	ALA
1	A	714	ALA
1	B	714	ALA
1	C	725	VAL
1	D	667	GLY
1	D	683	THR
1	D	716	GLN
1	A	686	ASP
1	D	615	THR
1	B	674	GLU
1	C	615	THR
1	D	722	CYS
1	A	680	LEU
1	D	680	LEU
1	A	701	GLY
1	C	700	HIS
1	D	701	GLY
1	B	701	GLY
1	C	659	VAL
1	D	685	PRO

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	115/125 (92%)	107 (93%)	8 (7%)	12	26
1	B	115/125 (92%)	112 (97%)	3 (3%)	41	68
1	C	115/125 (92%)	108 (94%)	7 (6%)	15	32
1	D	115/125 (92%)	109 (95%)	6 (5%)	19	39
All	All	460/500 (92%)	436 (95%)	24 (5%)	19	39

All (24) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	639	SER
1	A	661	ARG
1	A	662	GLU
1	A	696	ASP
1	A	711	LEU
1	A	716	GLN
1	A	720	PHE
1	A	724	ASP
1	B	661	ARG
1	B	662	GLU
1	B	712	ILE
1	C	637	ASP
1	C	647	THR
1	C	648	ARG
1	C	661	ARG
1	C	662	GLU
1	C	717	TRP
1	C	724	ASP
1	D	647	THR
1	D	648	ARG
1	D	661	ARG
1	D	662	GLU
1	D	681	ASP
1	D	716	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (17) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	613	ASN
1	A	689	ASN
1	A	716	GLN
1	B	675	ASN
1	B	721	GLN
1	C	613	ASN
1	C	646	ASN
1	C	689	ASN
1	C	694	GLN
1	C	716	GLN
1	C	726	ASN
1	D	613	ASN
1	D	646	ASN
1	D	689	ASN
1	D	694	GLN
1	D	697	ASN
1	D	716	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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 34 ligands modelled in this entry, 34 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	129/140 (92%)	-1.47	0 100 100	9, 29, 47, 58	0
1	B	129/140 (92%)	-1.50	0 100 100	12, 30, 49, 56	0
1	C	129/140 (92%)	-0.91	0 100 100	9, 16, 22, 24	129 (100%)
1	D	129/140 (92%)	-0.86	0 100 100	10, 17, 22, 24	129 (100%)
All	All	516/560 (92%)	-1.18	0 100 100	9, 20, 45, 58	258 (50%)

There are no RSRZ outliers to report.

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 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, 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	ZN	D	9	1/1	0.99	0.03	42,42,42,42	1
3	CL	C	3	1/1	0.99	0.03	43,43,43,43	1
3	CL	D	3	1/1	0.99	0.04	62,62,62,62	1
4	CA	C	7	1/1	0.99	0.04	48,48,48,48	1

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
4	CA	C	8	1/1	0.99	0.10	37,37,37,37	1
4	CA	D	6	1/1	0.99	0.04	33,33,33,33	1
4	CA	D	7	1/1	0.99	0.04	28,28,28,28	1
4	CA	D	8	1/1	0.99	0.07	30,30,30,30	1
2	ZN	B	4	1/1	1.00	0.03	35,35,35,35	0
2	ZN	B	5	1/1	1.00	0.01	44,44,44,44	0
2	ZN	C	1	1/1	1.00	0.01	39,39,39,39	1
2	ZN	C	2	1/1	1.00	0.02	36,36,36,36	1
2	ZN	C	9	1/1	1.00	0.03	35,35,35,35	1
2	ZN	D	1	1/1	1.00	0.01	31,31,31,31	1
2	ZN	D	2	1/1	1.00	0.01	35,35,35,35	1
2	ZN	A	1	1/1	1.00	0.01	19,19,19,19	0
3	CL	A	6	1/1	1.00	0.04	39,39,39,39	0
3	CL	A	7	1/1	1.00	0.02	18,18,18,18	0
3	CL	A	8	1/1	1.00	0.02	37,37,37,37	0
3	CL	B	6	1/1	1.00	0.06	22,22,22,22	0
3	CL	B	7	1/1	1.00	0.02	14,14,14,14	0
3	CL	B	8	1/1	1.00	0.01	34,34,34,34	0
2	ZN	A	2	1/1	1.00	0.01	22,22,22,22	0
3	CL	C	4	1/1	1.00	0.02	47,47,47,47	1
3	CL	C	5	1/1	1.00	0.01	25,25,25,25	1
2	ZN	A	3	1/1	1.00	0.01	32,32,32,32	0
3	CL	D	4	1/1	1.00	0.03	44,44,44,44	1
3	CL	D	5	1/1	1.00	0.01	23,23,23,23	1
4	CA	C	6	1/1	1.00	0.02	26,26,26,26	1
2	ZN	A	4	1/1	1.00	0.03	34,34,34,34	0
2	ZN	A	5	1/1	1.00	0.01	34,34,34,34	0
2	ZN	B	1	1/1	1.00	0.01	15,15,15,15	0
2	ZN	B	2	1/1	1.00	0.02	25,25,25,25	0
2	ZN	B	3	1/1	1.00	0.01	27,27,27,27	0

6.5 Other polymers [\(i\)](#)

There are no such residues in this entry.