



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 06:12 AM GMT

PDB ID : 2WAS  
Title : STRUCTURE OF THE FUNGAL TYPE I FAS PPT DOMAIN  
Authors : Johansson, P.; Mulincacci, B.; Koestler, C.; Grininger, M.  
Deposited on : 2009-02-15  
Resolution : 1.90 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](mailto:validation@mail.wwpdb.org)  
A user guide is available at  
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

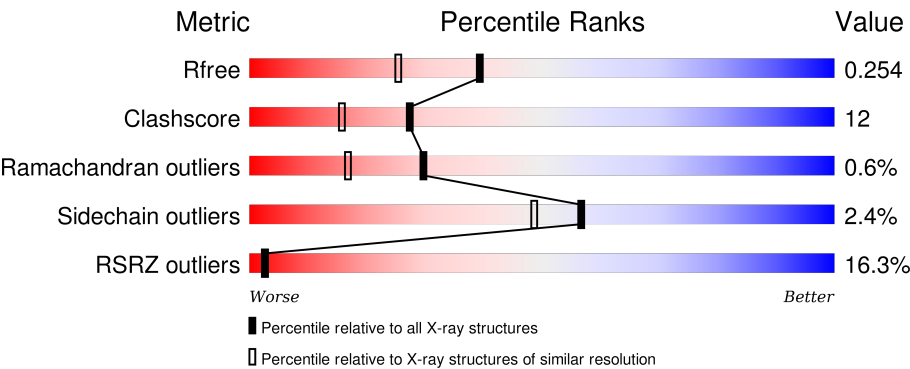
MolProbity : 4.02b-467  
Mogul : 1.7 (RC4), CSD as536be (2015)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20026688  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk26865

# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:  
*X-RAY DIFFRACTION*

The reported resolution of this entry is 1.90 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 <sub>free</sub>	91344	4755 (1.90-1.90)
Clashscore	102246	5398 (1.90-1.90)
Ramachandran outliers	100387	5338 (1.90-1.90)
Sidechain outliers	100360	5339 (1.90-1.90)
RSRZ outliers	91569	4766 (1.90-1.90)

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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	122	<div><div>14%</div><div><div></div><div>75%</div><div>17%</div><div>7%</div></div></div>
1	D	122	<div><div>15%</div><div><div></div><div>70%</div><div>16%</div><div>•</div><div>12%</div></div></div>
1	E	122	<div><div>17%</div><div><div></div><div>61%</div><div>24%</div><div>•</div><div>13%</div></div></div>
2	B	122	<div><div>17%</div><div><div></div><div>75%</div><div>20%</div><div>•</div><div>•</div></div></div>
2	C	122	<div><div>11%</div><div><div></div><div>75%</div><div>16%</div><div>9%</div></div></div>

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Mol	Chain	Length	Quality of chain
2	F	122	<div><div></div><div></div><div></div><div></div></div>

## 2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 5154 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 3-OXOACYL-[ACYL-CARRIER-PROTEIN] SYNTHASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	113	Total	C	N	O	S	0	1	0
			846	530	143	172	1			
1	D	107	Total	C	N	O	S	0	1	0
			801	502	133	165	1			
1	E	106	Total	C	N	O	S	0	1	0
			800	502	133	164	1			

- Molecule 2 is a protein called 3-OXOACYL-[ACYL-CARRIER-PROTEIN] SYNTHASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	118	Total	C	N	O	S	0	1	0
			871	544	147	179	1			
2	C	111	Total	C	N	O	S	0	1	0
			839	525	141	172	1			
2	F	106	Total	C	N	O	S	0	1	0
			803	504	133	165	1			

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	1842	THR	VAL	CONFLICT	UNP P19097
C	1842	THR	VAL	CONFLICT	UNP P19097
F	1842	THR	VAL	CONFLICT	UNP P19097

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	31	Total	O	0	0
			31	31		
3	B	46	Total	O	0	0
			46	46		

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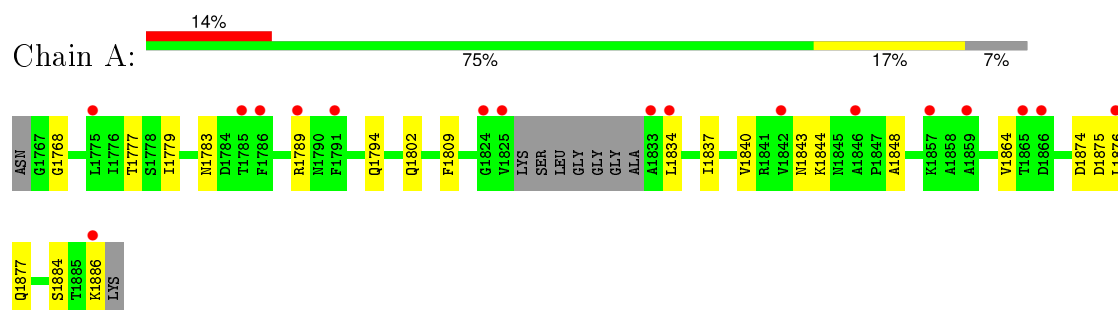
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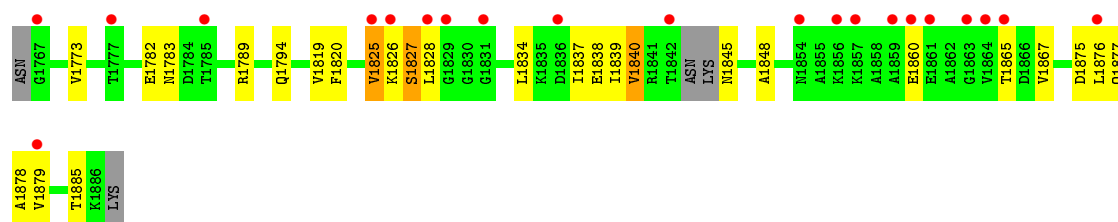
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	C	36	Total 36	O 36	0	0
3	D	22	Total 22	O 22	0	0
3	E	31	Total 31	O 31	0	0
3	F	28	Total 28	O 28	0	0

### 3 Residue-property plots [i](#)

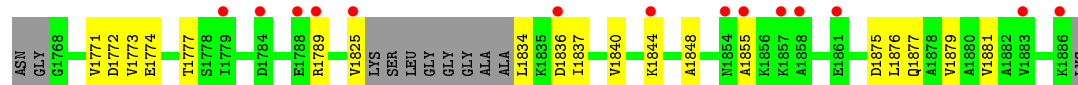
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). 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: 3-OXOACYL-[ACYL-CARRIER-PROTEIN] SYNTHASE

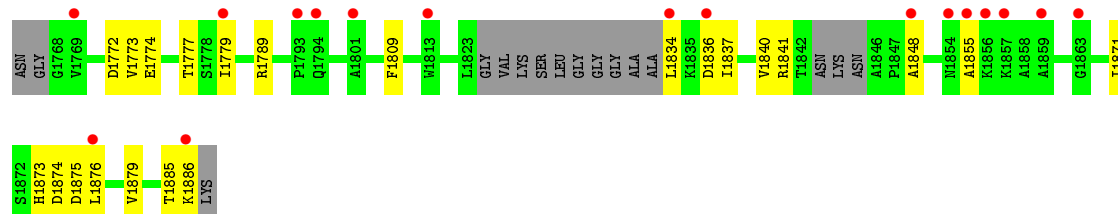




● Molecule 2: 3-OXOACYL-[ACYL-CARRIER-PROTEIN] SYNTHASE



● Molecule 2: 3-OXOACYL-[ACYL-CARRIER-PROTEIN] SYNTHASE



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	81.12Å 55.76Å 81.00Å 90.00° 111.43° 90.00°	Depositor
Resolution (Å)	31.26 – 1.90 31.26 – 1.90	Depositor EDS
% Data completeness (in resolution range)	98.7 (31.26-1.90) 98.3 (31.26-1.90)	Depositor EDS
$R_{merge}$	0.07	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.65 (at 1.91Å)	Xtriage
Refinement program	PHENIX (PHENIX.REFINE)	Depositor
R, $R_{free}$	0.218 , 0.254 0.211 , 0.254	Depositor DCC
$R_{free}$ test set	1987 reflections (3.77%)	DCC
Wilson B-factor (Å <sup>2</sup> )	30.9	Xtriage
Anisotropy	0.198	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.34 , 48.4	EDS
Estimated twinning fraction	0.303 for L,-K,H 0.256 for l,-k,h	Xtriage
Reported twinning fraction	0.303 for L,-K,H	Depositor
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.40$ , $\langle L^2 \rangle = 0.23$	Xtriage
Outliers	0 of 52729 reflections	Xtriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	5154	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	42.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.35% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 0.2 for perfectly twinned datasets.



## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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	0.48	0/856	0.56	0/1161
1	D	0.46	0/810	0.62	0/1099
1	E	0.45	0/809	0.54	0/1096
2	B	0.48	0/881	0.62	0/1194
2	C	0.48	0/849	0.56	0/1152
2	F	0.47	0/812	0.54	0/1101
All	All	0.47	0/5017	0.57	0/6803

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	846	0	837	18	0
1	D	801	0	787	22	0
1	E	800	0	790	28	0
2	B	871	0	864	25	0
2	C	839	0	832	22	0
2	F	803	0	794	22	0
3	A	31	0	0	1	0
3	B	46	0	0	4	0
3	C	36	0	0	0	0
3	D	22	0	0	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	E	31	0	0	4	0
3	F	28	0	0	2	0
All	All	5154	0	4904	117	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 12.

All (117) 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)
2:B:1840:VAL:HG22	2:B:1848:ALA:HB3	1.36	1.07
1:A:1843:ASN:O	1:A:1844:LYS:HG2	1.59	1.02
2:C:1875:ASP:OD2	1:D:1875:ASP:OD2	1.84	0.94
1:D:1836:ASP:HB3	1:D:1855:ALA:HB2	1.63	0.80
2:B:1875:ASP:OD2	1:E:1875:ASP:OD2	2.00	0.79
1:A:1875:ASP:OD2	2:F:1875:ASP:OD2	2.01	0.78
2:B:1794:GLN:NE2	2:B:1840:VAL:HA	1.99	0.77
1:A:1876:LEU:HD21	2:F:1876:LEU:HD11	1.67	0.75
1:A:1840:VAL:CG2	1:A:1848:ALA:HB3	2.18	0.74
2:B:1789:ARG:NH1	3:B:2008:HOH:O	2.20	0.73
2:C:1876:LEU:HD11	1:D:1876:LEU:HD21	1.70	0.73
1:A:1876:LEU:HD11	2:F:1876:LEU:HD21	1.69	0.73
1:E:1836:ASP:HB3	1:E:1855:ALA:HB2	1.75	0.68
2:B:1876:LEU:HD21	1:E:1876:LEU:HD11	1.75	0.67
1:E:1775:LEU:HG	3:E:2025:HOH:O	1.94	0.67
2:C:1876:LEU:HD21	1:D:1876:LEU:HD11	1.76	0.67
2:C:1773:VAL:HG23	2:C:1879[A]:VAL:HG12	1.76	0.67
2:B:1819:VAL:HG13	2:B:1867:VAL:HG11	1.77	0.67
2:B:1876:LEU:HD11	1:E:1876:LEU:HD21	1.77	0.66
2:C:1773:VAL:HG23	2:C:1879[B]:VAL:HG22	1.77	0.66
1:E:1840:VAL:HG22	1:E:1848:ALA:HB3	1.78	0.66
1:D:1836:ASP:HB3	1:D:1855:ALA:CB	2.26	0.65
2:C:1840:VAL:CG2	2:C:1848:ALA:HB3	2.28	0.64
2:B:1845:ASN:HB2	3:B:2031:HOH:O	1.99	0.63
1:E:1864:VAL:HA	1:E:1886:LYS:HG2	1.81	0.63
2:B:1820:PHE:CZ	2:B:1828:LEU:HG	2.34	0.62
2:F:1840:VAL:HG22	2:F:1848:ALA:HB3	1.81	0.62
1:D:1782:GLU:N	1:D:1782:GLU:OE2	2.34	0.61
2:B:1789:ARG:HD3	3:B:2012:HOH:O	2.01	0.61
2:B:1782:GLU:HG3	1:D:1782:GLU:OE1	2.01	0.60
1:E:1864:VAL:CG2	1:E:1886:LYS:HE2	2.31	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1840:VAL:CG2	1:E:1848:ALA:HB3	2.32	0.60
1:A:1840:VAL:HG22	1:A:1848:ALA:HB3	1.83	0.60
1:A:1794:GLN:HE22	1:A:1840:VAL:HA	1.67	0.59
1:E:1789:ARG:HG2	1:E:1789:ARG:O	2.01	0.59
1:A:1874:ASP:HB2	3:A:2029:HOH:O	2.02	0.59
1:E:1773:VAL:HG23	1:E:1879[A]:VAL:HG12	1.85	0.59
1:E:1864:VAL:HG22	1:E:1886:LYS:HE2	1.85	0.59
1:A:1864:VAL:HG22	1:A:1886:LYS:HE2	1.86	0.58
1:E:1780:ASN:HB2	3:E:2010:HOH:O	2.04	0.58
2:B:1860:GLU:HG3	3:B:2035:HOH:O	2.04	0.57
2:C:1840:VAL:HG22	2:C:1848:ALA:HB3	1.87	0.57
1:D:1773:VAL:HG23	1:D:1879[A]:VAL:HG12	1.86	0.57
1:D:1773:VAL:HG23	1:D:1879[B]:VAL:HG22	1.87	0.56
1:E:1836:ASP:HB3	1:E:1855:ALA:CB	2.35	0.56
2:B:1773:VAL:HG23	2:B:1879[A]:VAL:HG12	1.86	0.56
1:E:1773:VAL:HG23	1:E:1879[B]:VAL:HG22	1.86	0.56
1:D:1840:VAL:HG23	1:D:1848:ALA:HB3	1.87	0.56
2:B:1834:LEU:HD22	2:B:1837:ILE:HD12	1.88	0.55
1:D:1789:ARG:HG2	1:D:1789:ARG:O	2.07	0.55
2:B:1773:VAL:HG23	2:B:1879[B]:VAL:HG22	1.89	0.54
1:D:1840:VAL:CG2	1:D:1848:ALA:HB3	2.38	0.54
2:F:1773:VAL:HG23	2:F:1879[B]:VAL:HG22	1.91	0.53
2:B:1794:GLN:HE22	2:B:1840:VAL:HA	1.70	0.53
2:B:1782:GLU:CG	1:D:1782:GLU:OE1	2.57	0.53
2:C:1834:LEU:HD22	2:C:1837:ILE:HD12	1.91	0.53
1:A:1834:LEU:HD22	1:A:1837:ILE:HD12	1.90	0.53
1:D:1773:VAL:HG21	1:D:1877:GLN:NE2	2.23	0.52
1:D:1773:VAL:CG2	1:D:1877:GLN:NE2	2.72	0.52
1:E:1834:LEU:HD22	1:E:1837:ILE:HD12	1.91	0.52
1:E:1767:GLY:N	3:E:2004:HOH:O	2.43	0.52
1:A:1840:VAL:O	1:A:1840:VAL:HG23	2.10	0.51
1:E:1817:GLU:O	1:E:1821:LYS:HG3	2.09	0.51
1:E:1834:LEU:N	3:E:2014:HOH:O	2.44	0.51
2:B:1794:GLN:NE2	2:B:1839:ILE:O	2.44	0.50
2:B:1825:VAL:O	2:B:1826:LYS:C	2.51	0.50
1:D:1774:GLU:O	1:D:1877:GLN:HB2	2.12	0.49
1:A:1802:GLN:HE22	1:A:1843:ASN:HD21	1.60	0.49
2:F:1834:LEU:HD22	2:F:1837:ILE:HD12	1.93	0.49
2:F:1885:THR:CG2	2:F:1886:LYS:N	2.76	0.49
2:F:1873:HIS:HE1	3:F:2023:HOH:O	1.95	0.49
1:D:1782:GLU:O	1:D:1784:ASP:N	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:1773:VAL:HG23	2:F:1879[A]:VAL:HG12	1.94	0.48
1:A:1843:ASN:O	1:A:1844:LYS:CG	2.47	0.48
2:B:1876:LEU:CD2	1:D:1876:LEU:CD2	2.92	0.48
2:C:1774:GLU:O	2:C:1877:GLN:HB2	2.13	0.47
2:C:1777:THR:CG2	2:F:1777:THR:CG2	2.92	0.47
2:C:1840:VAL:HG23	2:C:1840:VAL:O	2.14	0.47
1:A:1877:GLN:NE2	2:C:1877:GLN:HE22	2.13	0.46
2:C:1836:ASP:HB3	2:C:1855:ALA:HB2	1.97	0.46
1:E:1773:VAL:HG21	1:E:1877:GLN:NE2	2.31	0.46
2:F:1779:ILE:HG21	2:F:1809:PHE:CB	2.46	0.46
2:B:1773:VAL:HA	2:B:1878:ALA:O	2.16	0.46
2:F:1874:ASP:HB2	3:F:2025:HOH:O	2.15	0.46
1:D:1817:GLU:O	1:D:1821:LYS:HG3	2.17	0.46
2:B:1877:GLN:HE22	2:C:1877:GLN:NE2	2.15	0.45
2:C:1844:LYS:HB3	2:C:1844:LYS:HE2	1.69	0.45
2:C:1777:THR:HG22	2:F:1777:THR:HG22	1.99	0.44
2:F:1836:ASP:HB3	2:F:1855:ALA:HB2	2.00	0.44
1:A:1779:ILE:HG21	1:A:1809:PHE:CB	2.47	0.43
2:B:1840:VAL:O	2:B:1840:VAL:CG2	2.65	0.43
1:A:1768:GLY:HA3	1:A:1884:SER:OG	2.18	0.43
2:B:1794:GLN:HG3	2:B:1838:GLU:OE2	2.18	0.43
2:F:1840:VAL:O	2:F:1840:VAL:CG2	2.67	0.43
1:E:1821:LYS:NZ	2:F:1871:ILE:O	2.52	0.43
2:F:1836:ASP:HB3	2:F:1855:ALA:CB	2.49	0.43
2:C:1772:ASP:OD2	2:C:1774:GLU:OE2	2.37	0.42
2:C:1773:VAL:HG21	2:C:1877:GLN:NE2	2.34	0.42
2:C:1777:THR:HG23	2:F:1777:THR:CG2	2.49	0.42
2:C:1777:THR:CG2	2:F:1777:THR:HG23	2.49	0.42
1:E:1838:GLU:OE1	1:E:1852:HIS:HE1	2.03	0.42
2:F:1885:THR:HG22	2:F:1886:LYS:N	2.35	0.42
1:E:1768:GLY:HA3	1:E:1884:SER:OG	2.19	0.42
1:A:1777:THR:CG2	1:E:1777:THR:CG2	2.98	0.42
1:D:1798:TYR:OH	3:D:2006:HOH:O	2.20	0.42
1:E:1865:THR:HG23	1:E:1886:LYS:HA	2.01	0.41
1:D:1768:GLY:HA2	3:D:2002:HOH:O	2.20	0.41
1:A:1789:ARG:HG2	1:A:1789:ARG:O	2.20	0.41
2:B:1865:THR:OG1	2:B:1885:THR:HG22	2.21	0.41
2:F:1772:ASP:OD2	2:F:1774:GLU:OE2	2.38	0.41
1:E:1780:ASN:OD1	1:E:1782:GLU:HB2	2.21	0.41
1:E:1772:ASP:OD2	1:E:1774:GLU:OE2	2.39	0.41
2:C:1836:ASP:HB3	2:C:1855:ALA:CB	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1846:ALA:HA	1:E:1847:PRO:HD3	1.96	0.40
1:D:1772:ASP:OD2	1:D:1774:GLU:OE2	2.39	0.40
2:F:1840:VAL:HG22	2:F:1840:VAL:O	2.21	0.40
2:C:1771:VAL:HG23	2:C:1881:VAL:HG22	2.03	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	110/122 (90%)	104 (94%)	5 (4%)	1 (1%)	21	9
1	D	102/122 (84%)	100 (98%)	1 (1%)	1 (1%)	19	7
1	E	101/122 (83%)	97 (96%)	4 (4%)	0	100	100
2	B	115/122 (94%)	108 (94%)	5 (4%)	2 (2%)	11	2
2	C	108/122 (88%)	106 (98%)	2 (2%)	0	100	100
2	F	101/122 (83%)	98 (97%)	3 (3%)	0	100	100
All	All	637/732 (87%)	613 (96%)	20 (3%)	4 (1%)	30	17

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	1783	ASN
2	B	1827	SER
1	D	1783	ASN
1	A	1783	ASN

### 5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	92/97 (95%)	92 (100%)	0	100	100
1	D	87/97 (90%)	84 (97%)	3 (3%)	44	33
1	E	88/97 (91%)	85 (97%)	3 (3%)	44	33
2	B	94/97 (97%)	91 (97%)	3 (3%)	46	35
2	C	93/97 (96%)	91 (98%)	2 (2%)	60	53
2	F	89/97 (92%)	87 (98%)	2 (2%)	60	53
All	All	543/582 (93%)	530 (98%)	13 (2%)	57	49

All (13) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	1825	VAL
2	B	1827	SER
2	B	1840	VAL
2	C	1789	ARG
2	C	1825	VAL
1	D	1789	ARG
1	D	1834	LEU
1	D	1841	ARG
1	E	1789	ARG
1	E	1794	GLN
1	E	1865	THR
2	F	1789	ARG
2	F	1841	ARG

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

Mol	Chain	Res	Type
1	A	1794	GLN
1	A	1802	GLN
1	A	1852	HIS
1	A	1873	HIS

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Mol	Chain	Res	Type
1	A	1877	GLN
2	B	1794	GLN
2	B	1852	HIS
2	B	1877	GLN
2	C	1852	HIS
2	C	1877	GLN
1	D	1852	HIS
1	D	1877	GLN
1	E	1802	GLN
1	E	1852	HIS
1	E	1877	GLN
2	F	1852	HIS
2	F	1877	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](#)

There are no ligands in this entry.

### 5.7 Other polymers [i](#)

There are no such residues in this entry.

### 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data ⓘ

### 6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	113/122 (92%)	1.00	17 (15%) 3 3	21, 40, 71, 86	0
1	D	107/122 (87%)	0.97	18 (16%) 2 2	23, 41, 70, 77	0
1	E	106/122 (86%)	1.14	21 (19%) 1 1	23, 41, 73, 83	0
2	B	118/122 (96%)	1.13	21 (17%) 2 2	22, 40, 64, 78	0
2	C	111/122 (90%)	0.87	14 (12%) 5 5	21, 38, 66, 79	0
2	F	106/122 (86%)	1.05	17 (16%) 3 3	23, 41, 63, 79	0
All	All	661/732 (90%)	1.03	108 (16%) 2 3	21, 40, 70, 86	0

All (108) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	1858	ALA	8.4
1	E	1834	LEU	7.0
1	E	1801	ALA	6.6
1	A	1842	VAL	6.3
2	F	1857	LYS	6.2
2	B	1876	LEU	5.9
1	A	1824	GLY	5.9
1	D	1767	GLY	5.8
2	F	1854	ASN	5.7
2	B	1829	GLY	5.2
2	B	1857	LYS	5.0
1	E	1858	ALA	4.9
1	E	1786	PHE	4.8
1	E	1785	THR	4.8
1	D	1857	LYS	4.4
1	D	1854	ASN	4.4
1	E	1857	LYS	4.2
1	D	1862	ALA	4.2
1	D	1833	ALA	4.2

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Mol	Chain	Res	Type	RSRZ
1	A	1876	LEU	4.1
2	F	1863	GLY	4.1
1	A	1786	PHE	4.0
1	A	1857	LYS	4.0
2	F	1848	ALA	4.0
2	C	1784	ASP	3.9
1	D	1846	ALA	3.9
1	A	1866	ASP	3.8
1	A	1833	ALA	3.8
2	F	1793	PRO	3.8
1	A	1825	VAL	3.7
2	F	1859	ALA	3.6
2	F	1801	ALA	3.6
2	B	1826	LYS	3.5
1	A	1789	ARG	3.5
1	E	1863	GLY	3.4
2	C	1836	ASP	3.3
1	E	1787	ILE	3.3
2	C	1854	ASN	3.3
2	C	1857	LYS	3.2
2	F	1794	GLN	3.2
2	B	1842	THR	3.2
1	A	1886	LYS	3.2
1	A	1859	ALA	3.1
2	C	1789	ARG	3.1
2	B	1828	LEU	3.0
1	E	1855	ALA	3.0
1	E	1784	ASP	3.0
2	F	1813	TRP	3.0
1	E	1876	LEU	3.0
1	E	1790	ASN	3.0
2	B	1854	ASN	2.9
2	B	1767	GLY	2.9
2	C	1788	GLU	2.9
1	D	1784	ASP	2.9
2	B	1831	GLY	2.8
1	D	1786	PHE	2.8
1	E	1788	GLU	2.8
1	D	1781	VAL	2.7
1	A	1846	ALA	2.7
2	C	1861	GLU	2.7
1	E	1767	GLY	2.7

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	D	1789	ARG	2.7
2	B	1836	ASP	2.6
1	D	1876	LEU	2.6
2	C	1844	LYS	2.6
2	F	1856	LYS	2.6
1	A	1865	THR	2.6
1	E	1862	ALA	2.5
2	B	1861	GLU	2.5
1	E	1768	GLY	2.5
1	E	1771	VAL	2.5
1	E	1794	GLN	2.5
1	A	1785	THR	2.5
2	B	1865	THR	2.5
2	F	1779	ILE	2.4
2	B	1777	THR	2.4
1	D	1794	GLN	2.4
2	F	1855	ALA	2.3
1	D	1861	GLU	2.3
1	A	1834	LEU	2.3
2	B	1863	GLY	2.3
2	F	1769	VAL	2.3
1	A	1775	LEU	2.3
2	B	1859	ALA	2.3
1	E	1856	LYS	2.3
2	F	1886	LYS	2.3
2	F	1836	ASP	2.3
2	F	1876	LEU	2.2
2	B	1860	GLU	2.2
2	C	1886	LYS	2.2
2	B	1856	LYS	2.2
1	D	1775	LEU	2.2
1	E	1791	PHE	2.2
1	E	1854	ASN	2.1
1	A	1791	PHE	2.1
2	C	1858	ALA	2.1
2	B	1864	VAL	2.1
2	B	1785	THR	2.1
2	C	1825	VAL	2.1
2	C	1779	ILE	2.1
2	B	1825	VAL	2.1
2	C	1855	ALA	2.0
1	D	1885	THR	2.0

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Mol	Chain	Res	Type	RSRZ
2	B	1879[A]	VAL	2.0
2	C	1883	VAL	2.0
1	D	1820	PHE	2.0
2	F	1834	LEU	2.0
1	D	1777	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](#)

There are no ligands in this entry.

## 6.5 Other polymers [i](#)

There are no such residues in this entry.