



# Full wwPDB X-ray Structure Validation Report ⓘ

Jan 31, 2016 – 08:47 PM GMT

PDB ID : 1M1T  
Title : Biosynthetic thiolase, Q64A mutant  
Authors : Kursula, P.; Ojala, J.; Lambeir, A.-M.; Wierenga, R.K.  
Deposited on : 2002-06-20  
Resolution : 1.94 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

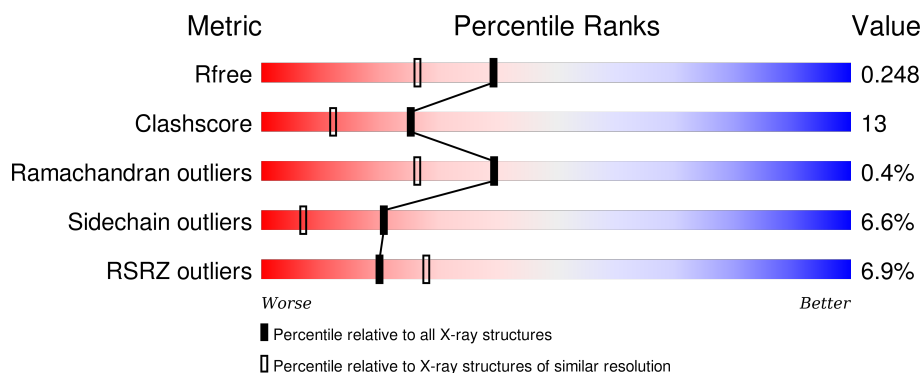
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 1.94 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))
$R_{free}$	91344	2910 (1.96-1.92)
Clashscore	102246	3095 (1.96-1.92)
Ramachandran outliers	100387	3062 (1.96-1.92)
Sidechain outliers	100360	3062 (1.96-1.92)
RSRZ outliers	91569	2915 (1.96-1.92)

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	392	<div> <div>2%</div> <div>79%</div> <div>18%</div> <div>.</div> </div>
1	B	392	<div> <div>2%</div> <div>78%</div> <div>20%</div> <div>.</div> </div>
1	C	392	<div> <div>6%</div> <div>78%</div> <div>20%</div> <div>.</div> </div>
1	D	392	<div> <div>18%</div> <div>74%</div> <div>23%</div> <div>.</div> </div>

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard

residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	GOL	B	7393	-	-	X	-
3	GOL	B	7394	-	-	-	X

## 2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 12545 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.

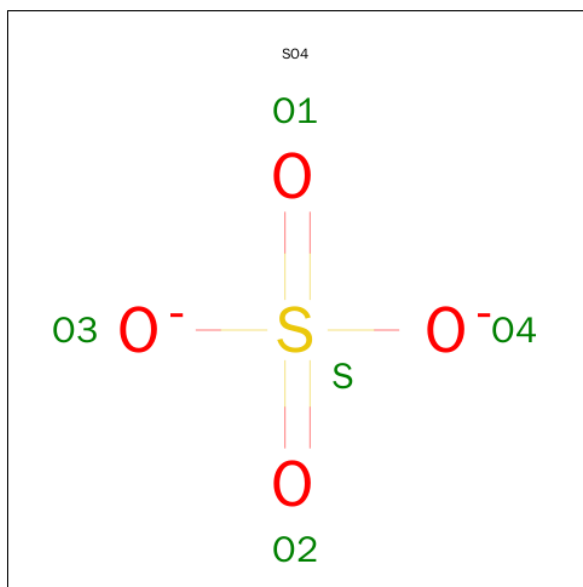
- Molecule 1 is a protein called Acetyl-CoA acetyltransferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	392	Total	C	N	O	S	0	1	0
			2831	1757	511	542	21			
1	B	392	Total	C	N	O	S	0	1	0
			2831	1757	511	542	21			
1	C	392	Total	C	N	O	S	0	1	0
			2831	1757	511	542	21			
1	D	392	Total	C	N	O	S	0	1	0
			2831	1757	511	542	21			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	10	ALA	-	INSERTION	UNP P07097
A	64	ALA	GLN	ENGINEERED	UNP P07097
A	129	ARG	ALA	CONFLICT	UNP P07097
B	10	ALA	-	INSERTION	UNP P07097
B	64	ALA	GLN	ENGINEERED	UNP P07097
B	129	ARG	ALA	CONFLICT	UNP P07097
C	10	ALA	-	INSERTION	UNP P07097
C	64	ALA	GLN	ENGINEERED	UNP P07097
C	129	ARG	ALA	CONFLICT	UNP P07097
D	10	ALA	-	INSERTION	UNP P07097
D	64	ALA	GLN	ENGINEERED	UNP P07097
D	129	ARG	ALA	CONFLICT	UNP P07097

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	B	1	Total	O	S	0	0
			5	4	1		
2	A	1	Total	O	S	0	0
			5	4	1		
2	B	1	Total	O	S	0	0
			5	4	1		
2	A	1	Total	O	S	0	0
			5	4	1		

- Molecule 3 is GLYCEROL (three-letter code: GOL) (formula: C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			6	3	3		
3	A	1	Total	C	O	0	0
			6	3	3		
3	B	1	Total	C	O	0	0
			6	3	3		
3	B	1	Total	C	O	0	0
			6	3	3		

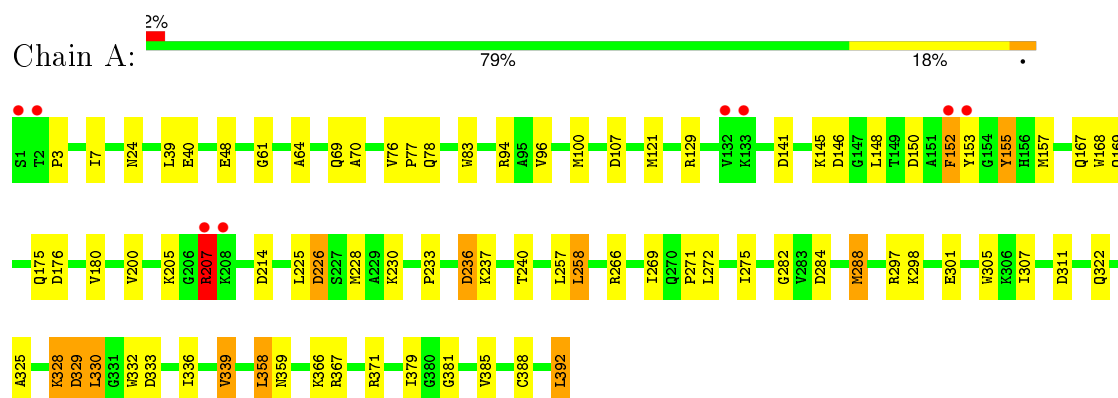
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	424	Total	O	0	0
			424	424		
4	B	440	Total	O	0	0
			440	440		
4	C	151	Total	O	0	0
			151	151		
4	D	162	Total	O	0	0
			162	162		

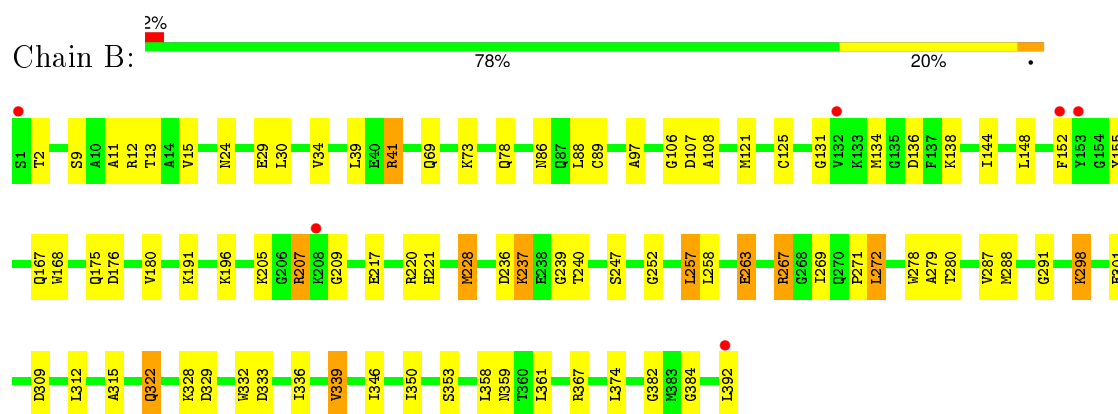
### 3 Residue-property plots [i](#)

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.

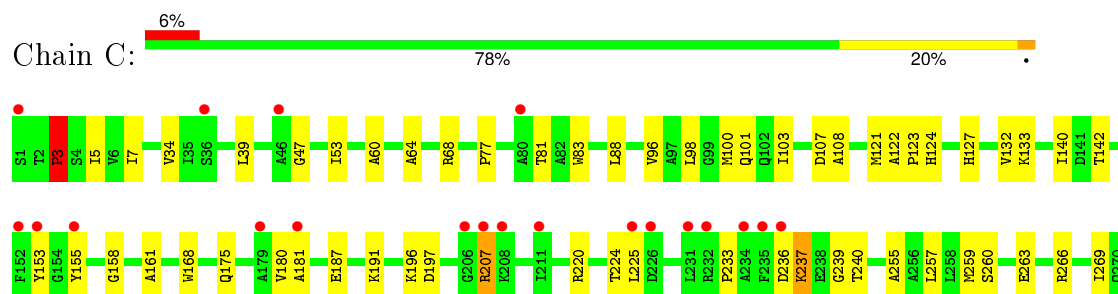
#### • Molecule 1: Acetyl-CoA acetyltransferase

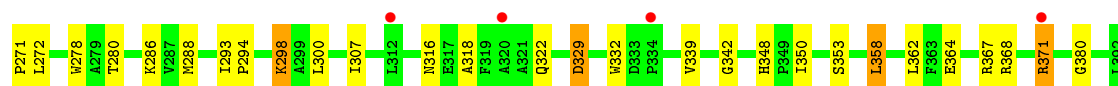


#### • Molecule 1: Acetyl-CoA acetyltransferase

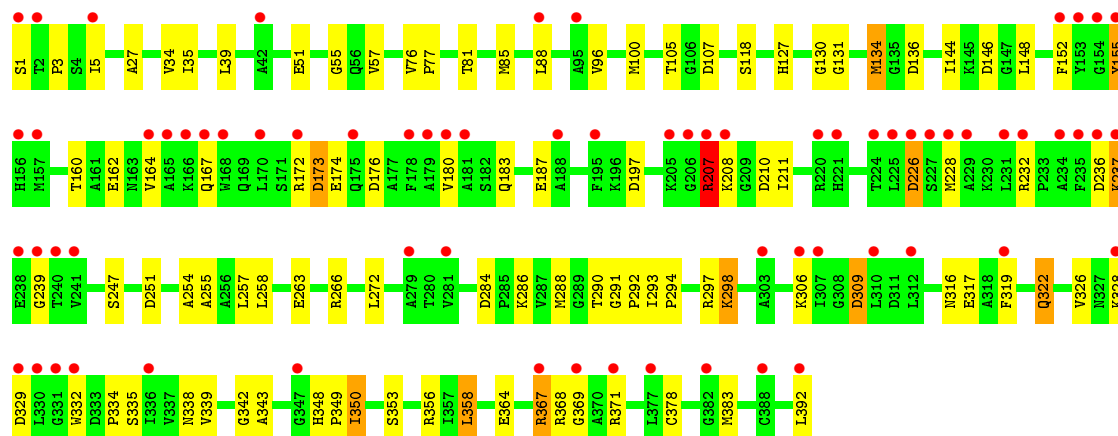
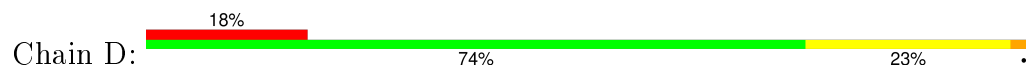


#### • Molecule 1: Acetyl-CoA acetyltransferase





• Molecule 1: Acetyl-CoA acetyltransferase





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	84.47Å 78.95Å 148.29Å 90.00° 92.55° 90.00°	Depositor
Resolution (Å)	20.00 – 1.94 39.48 – 1.94	Depositor EDS
% Data completeness (in resolution range)	97.5 (20.00-1.94) 85.4 (39.48-1.94)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	0.10	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.20 (at 1.94Å)	Xtriage
Refinement program	REFMAC 5.1.19	Depositor
R, $R_{free}$	0.199 , 0.245 0.208 , 0.248	Depositor DCC
$R_{free}$ test set	6355 reflections (4.73%)	DCC
Wilson B-factor (Å <sup>2</sup> )	16.4	Xtriage
Anisotropy	0.828	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.35 , 49.1	EDS
Estimated twinning fraction	0.137 for h,-k,-l	Xtriage
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.38$ , $\langle L^2 \rangle = 0.21$	Xtriage
Outliers	0 of 140702 reflections	Xtriage
$F_o, F_c$ correlation	0.92	EDS
Total number of atoms	12545	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	13.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.04% 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 ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: GOL, SO4

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	1.11	5/2877 (0.2%)	1.11	17/3886 (0.4%)
1	B	1.14	7/2877 (0.2%)	1.10	10/3886 (0.3%)
1	C	0.62	0/2877	0.87	4/3886 (0.1%)
1	D	0.59	0/2877	0.85	11/3886 (0.3%)
All	All	0.90	12/11508 (0.1%)	0.99	42/15544 (0.3%)

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	152	PHE	CE1-CZ	7.91	1.52	1.37
1	B	278	TRP	CB-CG	-7.43	1.36	1.50
1	B	34	VAL	CB-CG1	-6.48	1.39	1.52
1	B	11	ALA	CA-CB	6.40	1.65	1.52
1	A	40	GLU	CD-OE2	6.14	1.32	1.25
1	A	339	VAL	CB-CG1	-5.90	1.40	1.52
1	B	108	ALA	CA-CB	5.81	1.64	1.52
1	B	97	ALA	CA-CB	5.50	1.64	1.52
1	B	382	GLY	C-O	5.40	1.32	1.23
1	B	315	ALA	CA-CB	5.32	1.63	1.52
1	A	83	TRP	CB-CG	-5.21	1.40	1.50
1	A	70	ALA	CA-CB	5.04	1.63	1.52

All (42) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	266	ARG	NE-CZ-NH2	-10.68	114.96	120.30
1	A	141	ASP	CB-CG-OD2	7.98	125.48	118.30
1	A	207	ARG	NE-CZ-NH1	7.72	124.16	120.30
1	A	266	ARG	NE-CZ-NH1	7.71	124.15	120.30
1	A	107	ASP	CB-CG-OD2	7.55	125.09	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	339	VAL	CG1-CB-CG2	7.25	122.50	110.90
1	A	94	ARG	NE-CZ-NH2	-6.94	116.83	120.30
1	B	2	THR	N-CA-C	-6.82	92.58	111.00
1	B	339	VAL	CG1-CB-CG2	6.81	121.80	110.90
1	B	309	ASP	CB-CG-OD2	6.72	124.35	118.30
1	B	41	ARG	NE-CZ-NH1	6.69	123.65	120.30
1	A	284	ASP	CB-CG-OD2	6.68	124.31	118.30
1	B	136	ASP	CB-CG-OD2	6.64	124.28	118.30
1	B	41	ARG	NE-CZ-NH2	-6.23	117.19	120.30
1	D	329	ASP	CB-CG-OD2	6.16	123.84	118.30
1	A	94	ARG	NE-CZ-NH1	6.15	123.38	120.30
1	D	251	ASP	CB-CG-OD2	6.13	123.82	118.30
1	A	146	ASP	CB-CG-OD2	6.05	123.74	118.30
1	D	197	ASP	CB-CG-OD2	6.00	123.70	118.30
1	A	330	LEU	CA-CB-CG	-5.95	101.61	115.30
1	C	197	ASP	CB-CG-OD2	5.92	123.63	118.30
1	A	311	ASP	CB-CG-OD2	5.82	123.54	118.30
1	D	146	ASP	CB-CG-OD2	5.79	123.51	118.30
1	B	267	ARG	NE-CZ-NH2	-5.69	117.46	120.30
1	B	367	ARG	NE-CZ-NH2	-5.58	117.51	120.30
1	D	207	ARG	NE-CZ-NH1	5.51	123.06	120.30
1	D	176	ASP	CB-CG-OD2	5.48	123.23	118.30
1	A	226	ASP	CB-CG-OD2	5.42	123.18	118.30
1	A	214	ASP	CB-CG-OD2	5.38	123.14	118.30
1	B	107	ASP	CB-CG-OD2	5.36	123.12	118.30
1	A	329	ASP	CB-CG-OD2	5.34	123.11	118.30
1	D	226	ASP	CB-CG-OD2	5.27	123.04	118.30
1	D	173	ASP	CB-CG-OD2	5.24	123.02	118.30
1	C	329	ASP	CB-CG-OD2	5.21	122.99	118.30
1	A	392	LEU	CA-CB-CG	5.20	127.25	115.30
1	D	136	ASP	CB-CG-OD2	5.14	122.92	118.30
1	A	236	ASP	CB-CG-OD1	5.12	122.91	118.30
1	D	309	ASP	CB-CG-OD2	5.10	122.89	118.30
1	B	12	ARG	NE-CZ-NH1	-5.10	117.75	120.30
1	C	3	PRO	N-CA-C	5.09	125.33	112.10
1	D	210	ASP	CB-CG-OD2	5.08	122.88	118.30
1	C	107	ASP	CB-CG-OD2	5.04	122.83	118.30

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	2831	0	2839	70	0
1	B	2831	0	2839	72	0
1	C	2831	0	2839	67	0
1	D	2831	0	2839	89	0
2	A	10	0	0	0	0
2	B	10	0	0	0	0
3	A	12	0	16	3	0
3	B	12	0	16	7	0
4	A	424	0	0	48	1
4	B	440	0	0	39	2
4	C	151	0	0	23	0
4	D	162	0	0	49	0
All	All	12545	0	11388	287	2

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 13.

All (287) 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:C:60:ALA:HB3	4:C:492:HOH:O	1.60	0.98
1:A:258:LEU:HG	4:A:6756:HOH:O	1.65	0.96
1:D:76:VAL:HG23	4:D:534:HOH:O	1.63	0.95
1:D:27:ALA:HB2	4:D:443:HOH:O	1.67	0.95
1:A:100:MET:HG3	4:A:6747:HOH:O	1.67	0.93
1:B:252:GLY:HA3	4:B:7826:HOH:O	1.67	0.92
1:C:207:ARG:HA	4:C:539:HOH:O	1.69	0.92
1:C:133:LYS:HB2	4:C:528:HOH:O	1.71	0.90
1:A:152:PHE:C	4:A:6720:HOH:O	2.10	0.89
1:A:157:MET:HG3	4:A:6719:HOH:O	1.72	0.89
1:A:61:GLY:HA2	4:A:6758:HOH:O	1.72	0.88
1:D:356:ARG:HA	4:D:542:HOH:O	1.73	0.87
1:D:392:LEU:HD21	4:D:448:HOH:O	1.75	0.87
1:B:247[A]:SER:OG	3:B:7393:GOL:H31	1.77	0.85
1:D:338:ASN:ND2	4:D:500:HOH:O	2.12	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:208:LYS:HD3	4:D:540:HOH:O	1.78	0.82
1:D:290:THR:HA	4:D:511:HOH:O	1.82	0.79
1:C:181:ALA:HB3	4:C:543:HOH:O	1.84	0.78
1:B:88:LEU:HD13	4:B:7746:HOH:O	1.83	0.77
1:C:187:GLU:HG2	4:C:533:HOH:O	1.85	0.77
1:A:48:GLU:CD	4:A:6767:HOH:O	2.25	0.75
1:C:5:ILE:HG12	4:C:523:HOH:O	1.86	0.74
1:B:346:ILE:HG12	4:B:7776:HOH:O	1.86	0.74
1:D:254:ALA:HB1	4:D:542:HOH:O	1.87	0.74
1:B:9:SER:HB2	4:B:7545:HOH:O	1.86	0.74
1:B:207:ARG:HD2	4:B:7813:HOH:O	1.88	0.74
4:A:6817:HOH:O	1:C:133:LYS:CD	2.35	0.74
1:B:138:LYS:NZ	4:B:7705:HOH:O	2.19	0.74
1:A:61:GLY:CA	4:A:6758:HOH:O	2.32	0.73
4:A:6758:HOH:O	1:B:125:CYS:SG	2.47	0.73
1:A:258:LEU:HG	4:A:6436:HOH:O	1.88	0.72
1:A:207:ARG:HG2	1:A:207:ARG:HH11	1.55	0.71
1:B:152:PHE:CE2	4:B:7757:HOH:O	2.43	0.71
1:B:13:THR:HB	4:B:7701:HOH:O	1.93	0.69
1:D:167:GLN:HG2	4:D:397:HOH:O	1.92	0.69
1:D:207:ARG:CZ	4:D:464:HOH:O	2.39	0.69
1:A:288:MET:SD	4:A:6710:HOH:O	2.50	0.69
1:B:15:VAL:HA	4:B:7826:HOH:O	1.92	0.69
3:B:7393:GOL:H32	4:B:7817:HOH:O	1.92	0.69
1:C:3:PRO:HG2	4:C:508:HOH:O	1.93	0.69
1:A:48:GLU:OE2	4:A:6767:HOH:O	2.10	0.68
1:D:369:GLY:HA3	4:D:515:HOH:O	1.92	0.68
1:B:257:LEU:HD23	1:B:258:LEU:N	2.09	0.68
1:B:374:LEU:HD23	1:B:374:LEU:C	2.13	0.68
1:D:152:PHE:CE2	4:D:503:HOH:O	2.47	0.68
1:B:152:PHE:CD2	4:B:7750:HOH:O	2.46	0.68
1:B:175:GLN:HE22	1:B:240:THR:CG2	2.07	0.68
1:A:200:VAL:HG23	3:A:6394:GOL:H2	1.76	0.67
1:D:127:HIS:CG	4:D:539:HOH:O	2.47	0.66
1:A:152:PHE:HD2	4:A:6743:HOH:O	1.77	0.66
1:C:175:GLN:HE22	1:C:240:THR:CG2	2.09	0.66
1:A:329:ASP:HA	4:A:6784:HOH:O	1.94	0.66
1:A:175:GLN:HE22	1:A:240:THR:CG2	2.08	0.66
1:A:330:LEU:HD22	4:A:6815:HOH:O	1.95	0.66
1:D:35:ILE:HG22	4:D:534:HOH:O	1.95	0.65
1:B:13:THR:CB	4:B:7701:HOH:O	2.45	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:334:PRO:O	4:D:480:HOH:O	2.14	0.65
1:C:367:ARG:HD3	4:C:531:HOH:O	1.95	0.65
4:A:6817:HOH:O	1:C:133:LYS:HD2	1.96	0.65
1:B:13:THR:CG2	4:B:7701:HOH:O	2.45	0.65
1:A:225:LEU:HD21	4:A:6722:HOH:O	1.95	0.65
1:D:284:ASP:HB2	4:D:547:HOH:O	1.97	0.65
1:B:30:LEU:HD22	4:B:7701:HOH:O	1.97	0.64
1:D:319:PHE:HB2	4:D:502:HOH:O	1.97	0.64
1:A:301:GLU:HG2	4:A:6790:HOH:O	1.96	0.64
1:B:29:GLU:OE1	4:B:7670:HOH:O	2.15	0.64
1:D:297:ARG:NE	4:D:486:HOH:O	2.31	0.63
1:C:101:GLN:HG2	1:D:105:THR:HG21	1.80	0.63
1:A:100:MET:HE2	4:A:6747:HOH:O	1.98	0.63
1:C:263:GLU:OE1	1:C:266:ARG:NH1	2.31	0.63
1:B:168:TRP:CH2	1:B:329:ASP:HB2	2.34	0.63
1:D:207:ARG:HD3	1:D:207:ARG:N	2.14	0.62
1:C:207:ARG:HH11	1:C:207:ARG:HG2	1.64	0.62
1:D:118:SER:HB3	4:D:443:HOH:O	1.98	0.62
3:B:7394:GOL:H31	4:B:7796:HOH:O	2.00	0.62
1:A:307:ILE:HD11	4:A:6815:HOH:O	1.99	0.62
1:B:209:GLY:HA2	4:B:7829:HOH:O	1.99	0.62
1:A:169:GLN:HG3	4:A:6537:HOH:O	1.99	0.62
1:C:133:LYS:CB	4:C:528:HOH:O	2.38	0.61
1:D:236:ASP:HB2	4:D:538:HOH:O	2.00	0.61
1:B:301:GLU:HG2	4:B:7735:HOH:O	1.99	0.61
1:B:175:GLN:HE22	1:B:240:THR:HG23	1.65	0.61
1:A:152:PHE:CE1	1:B:69:GLN:HA	2.34	0.61
1:A:366:LYS:HE2	4:A:6818:HOH:O	2.00	0.61
1:C:196:LYS:NZ	4:C:426:HOH:O	2.27	0.61
1:A:275:ILE:HG13	4:A:6809:HOH:O	2.00	0.60
1:B:207:ARG:CD	4:B:7813:HOH:O	2.46	0.60
1:B:392:LEU:HD21	4:B:7665:HOH:O	2.01	0.60
1:B:191:LYS:NZ	4:B:7649:HOH:O	2.33	0.60
1:C:207:ARG:HD3	1:C:207:ARG:H	1.66	0.60
4:A:6817:HOH:O	1:C:133:LYS:HD3	1.98	0.60
1:B:205:LYS:HE2	4:B:7821:HOH:O	2.01	0.60
1:D:183:GLN:HG3	4:D:545:HOH:O	2.02	0.59
1:B:167:GLN:HA	4:B:7791:HOH:O	2.02	0.59
4:A:6741:HOH:O	1:D:134:MET:CE	2.50	0.59
1:C:53:ILE:HG12	1:C:83:TRP:CE2	2.38	0.59
1:C:98:LEU:CD2	4:D:465:HOH:O	2.50	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:13:THR:HG21	4:B:7701:HOH:O	2.01	0.58
1:D:263:GLU:OE1	1:D:266:ARG:NH1	2.36	0.58
1:C:142:THR:HG21	4:C:492:HOH:O	2.03	0.58
1:C:298:LYS:NZ	4:C:473:HOH:O	2.34	0.58
1:B:279:ALA:HB1	1:B:298:LYS:HG3	1.85	0.58
1:C:371:ARG:HD2	4:C:444:HOH:O	2.03	0.58
1:D:77:PRO:HD2	4:D:541:HOH:O	2.04	0.58
1:D:335:SER:HA	4:D:482:HOH:O	2.03	0.58
1:B:247[A]:SER:OG	3:B:7393:GOL:C3	2.50	0.58
1:D:180:VAL:HA	4:D:545:HOH:O	2.04	0.58
1:A:150:ASP:OD1	4:A:6743:HOH:O	2.18	0.57
1:C:5:ILE:HG13	1:C:100:MET:HG2	1.85	0.57
1:A:152:PHE:CE2	4:A:6667:HOH:O	2.52	0.57
1:A:175:GLN:HE22	1:A:240:THR:HG23	1.68	0.57
1:B:346:ILE:HG23	4:B:7776:HOH:O	2.03	0.57
1:D:130:GLY:N	4:D:452:HOH:O	2.38	0.57
1:C:207:ARG:HD3	1:C:207:ARG:N	2.20	0.56
1:B:228:MET:SD	4:B:7658:HOH:O	2.58	0.56
1:A:258:LEU:CG	4:A:6756:HOH:O	2.38	0.56
1:B:207:ARG:N	1:B:207:ARG:HD3	2.20	0.56
1:A:152:PHE:HE1	1:B:69:GLN:HA	1.71	0.56
1:D:35:ILE:CG2	4:D:534:HOH:O	2.52	0.56
1:D:55:GLY:HA2	1:D:85:MET:O	2.06	0.56
1:B:205:LYS:CE	4:B:7821:HOH:O	2.54	0.55
1:D:328:LYS:HE2	4:D:491:HOH:O	2.05	0.55
1:D:232:ARG:CZ	4:D:523:HOH:O	2.54	0.55
1:D:207:ARG:HG2	1:D:207:ARG:HH11	1.71	0.55
1:C:60:ALA:CB	4:C:492:HOH:O	2.33	0.55
1:D:162:GLU:HG3	4:D:538:HOH:O	2.05	0.55
1:D:297:ARG:CZ	4:D:486:HOH:O	2.55	0.55
1:A:153:TYR:HD1	4:A:6682:HOH:O	1.91	0.54
1:C:237:LYS:HD3	4:C:522:HOH:O	2.08	0.54
1:C:121:MET:CE	4:D:539:HOH:O	2.56	0.54
1:C:339:VAL:HG11	1:C:368:ARG:NH2	2.22	0.53
1:A:297:ARG:HD3	4:A:6623:HOH:O	2.09	0.53
1:C:269:ILE:O	1:C:271:PRO:HD3	2.08	0.53
1:B:322:GLN:HB3	4:B:7814:HOH:O	2.09	0.53
1:C:175:GLN:HE22	1:C:240:THR:HG21	1.73	0.53
1:A:78:GLN:NE2	4:A:6744:HOH:O	2.42	0.53
1:A:3:PRO:HD3	4:A:6804:HOH:O	2.09	0.52
1:D:316:ASN:HA	4:D:529:HOH:O	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:257:LEU:HD23	1:D:258:LEU:N	2.24	0.52
1:D:172:ARG:HB2	4:D:492:HOH:O	2.09	0.52
1:D:211:ILE:HB	4:D:554:HOH:O	2.10	0.52
1:D:237:LYS:HA	4:D:444:HOH:O	2.09	0.52
1:A:333:ASP:O	1:A:336:ILE:HG12	2.10	0.52
1:A:168:TRP:CH2	1:A:329:ASP:HB2	2.45	0.52
1:B:168:TRP:HH2	1:B:329:ASP:HB2	1.75	0.52
1:A:258:LEU:HB2	4:A:6756:HOH:O	2.10	0.51
1:C:280:THR:HG23	1:D:81:THR:HG21	1.92	0.51
1:A:258:LEU:CB	4:A:6756:HOH:O	2.57	0.51
1:A:157:MET:CG	4:A:6719:HOH:O	2.45	0.51
1:C:122:ALA:HA	4:C:434:HOH:O	2.09	0.51
1:A:257:LEU:C	1:A:258:LEU:HD22	2.30	0.51
1:B:237:LYS:HD2	1:B:237:LYS:N	2.26	0.51
1:A:258:LEU:HD22	1:A:258:LEU:N	2.24	0.51
1:D:236:ASP:HB3	1:D:239:GLY:HA3	1.92	0.51
1:D:339:VAL:HG11	1:D:368:ARG:NH2	2.26	0.51
1:D:364:GLU:OE1	1:D:367:ARG:NH1	2.40	0.51
1:C:123:PRO:HG2	4:C:492:HOH:O	2.11	0.50
1:A:207:ARG:CG	1:A:207:ARG:HH11	2.21	0.50
1:A:176:ASP:O	1:A:180:VAL:HG23	2.11	0.50
1:A:371:ARG:HD2	4:A:6788:HOH:O	2.11	0.50
1:C:34:VAL:HG12	1:C:255:ALA:HB3	1.93	0.50
1:D:27:ALA:CB	4:D:443:HOH:O	2.39	0.50
1:B:228:MET:CE	4:B:7658:HOH:O	2.59	0.50
1:B:328:LYS:NZ	4:B:7745:HOH:O	2.05	0.50
1:B:312:LEU:HD23	1:B:361:LEU:HD12	1.94	0.50
1:B:217:GLU:HB3	4:B:7508:HOH:O	2.12	0.50
1:B:15:VAL:HG22	4:B:7826:HOH:O	2.11	0.49
1:A:69:GLN:HA	1:B:152:PHE:CE1	2.48	0.49
1:B:207:ARG:HB2	4:B:7783:HOH:O	2.12	0.49
1:D:57:VAL:HG21	1:D:350:ILE:HG22	1.95	0.49
1:A:175:GLN:HE22	1:A:240:THR:HG21	1.77	0.49
1:A:297:ARG:HH11	1:A:297:ARG:HG2	1.78	0.49
1:D:164:VAL:HG21	4:D:469:HOH:O	2.12	0.49
1:C:278:TRP:NE1	1:D:107:ASP:OD2	2.43	0.49
1:B:196:LYS:NZ	4:B:7555:HOH:O	2.46	0.49
1:B:175:GLN:HE22	1:B:240:THR:HG21	1.76	0.49
1:A:305:TRP:CZ3	1:A:388:CYS:HB3	2.48	0.49
1:B:333:ASP:O	1:B:336:ILE:HG12	2.12	0.48
1:D:127:HIS:CB	4:D:539:HOH:O	2.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:236:ASP:HB3	1:C:239:GLY:HA3	1.96	0.48
1:D:257:LEU:C	1:D:257:LEU:HD23	2.33	0.48
1:D:291:GLY:N	1:D:292:PRO:CD	2.76	0.48
1:C:364:GLU:O	1:C:368:ARG:HG2	2.13	0.48
1:B:269:ILE:O	1:B:271:PRO:HD3	2.12	0.48
1:D:144:ILE:HD13	1:D:148:LEU:HD12	1.94	0.48
1:D:51:GLU:HA	1:D:81:THR:O	2.13	0.48
1:B:176:ASP:O	1:B:180:VAL:HG23	2.13	0.48
1:C:168:TRP:CH2	1:C:329:ASP:HB2	2.49	0.48
1:C:124:HIS:HA	1:C:140:ILE:O	2.14	0.48
1:A:145:LYS:NZ	4:A:6664:HOH:O	2.41	0.48
1:C:318:ALA:CB	4:C:458:HOH:O	2.61	0.47
1:C:318:ALA:HB1	4:C:458:HOH:O	2.13	0.47
1:C:257:LEU:CD2	1:C:259:MET:HE2	2.45	0.47
1:C:257:LEU:HD22	1:C:259:MET:HE2	1.95	0.47
1:C:68:ARG:HG3	1:D:152:PHE:HZ	1.80	0.47
1:C:88:LEU:HD12	1:C:380:GLY:O	2.14	0.47
1:A:233:PRO:HB2	1:A:236:ASP:O	2.14	0.47
1:A:153:TYR:HB3	1:A:155:TYR:CE2	2.49	0.47
1:B:41:ARG:HE	3:B:7394:GOL:H12	1.79	0.47
1:A:325:ALA:HB1	4:A:6771:HOH:O	2.14	0.47
1:A:282:GLY:HA3	1:B:78:GLN:O	2.15	0.47
1:A:152:PHE:CD2	4:A:6743:HOH:O	2.55	0.46
1:D:174:GLU:OE2	1:D:328:LYS:NZ	2.45	0.46
1:D:228:MET:CE	4:D:536:HOH:O	2.63	0.46
1:B:152:PHE:CG	4:B:7750:HOH:O	2.68	0.46
1:A:7:ILE:HA	1:A:258:LEU:HD13	1.96	0.46
1:D:292:PRO:HD3	1:D:378:CYS:HB3	1.97	0.46
1:C:81:THR:HG22	1:D:383:MET:HG2	1.97	0.46
1:A:381:GLY:HA2	4:A:6743:HOH:O	2.15	0.45
1:D:228:MET:HE2	4:D:536:HOH:O	2.16	0.45
1:A:328:LYS:NZ	4:A:6733:HOH:O	2.49	0.45
1:D:5:ILE:HG13	1:D:100:MET:HG2	1.97	0.45
1:A:48:GLU:CG	4:A:6767:HOH:O	2.64	0.45
1:B:24:ASN:HA	1:B:121:MET:SD	2.57	0.45
1:D:34:VAL:CG1	1:D:255:ALA:HB3	2.45	0.45
1:D:160:THR:HB	1:D:286:LYS:O	2.17	0.45
1:C:7:ILE:HD13	1:C:362:LEU:HD11	1.99	0.44
1:A:76:VAL:HG13	1:A:77:PRO:HD2	1.98	0.44
1:C:121:MET:HE3	4:D:539:HOH:O	2.15	0.44
1:A:168:TRP:HZ3	4:A:6784:HOH:O	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:339:VAL:CG1	1:D:339:VAL:O	2.66	0.44
1:A:269:ILE:O	1:A:271:PRO:HD3	2.17	0.44
1:A:148:LEU:O	1:A:157:MET:HG2	2.17	0.44
1:C:127:HIS:CE1	4:C:416:HOH:O	2.70	0.44
1:D:326:VAL:HG23	4:D:511:HOH:O	2.16	0.44
1:B:86:ASN:OD1	1:B:86:ASN:C	2.55	0.44
1:D:57:VAL:HG21	1:D:350:ILE:CG2	2.47	0.44
1:B:144:ILE:HD13	1:B:148:LEU:HD12	1.98	0.44
1:B:106:GLY:HA2	4:B:7578:HOH:O	2.17	0.44
3:A:6394:GOL:O3	4:A:6529:HOH:O	2.21	0.43
1:C:293:ILE:HB	1:C:294:PRO:CD	2.48	0.43
1:D:322:GLN:O	1:D:326:VAL:HG23	2.18	0.43
1:A:379:ILE:HD11	1:A:385:VAL:HG12	2.00	0.43
1:A:24:ASN:HA	1:A:121:MET:SD	2.57	0.43
1:D:207:ARG:H	1:D:207:ARG:HD3	1.83	0.43
1:C:233:PRO:HB2	1:C:236:ASP:O	2.17	0.43
1:D:306:LYS:O	1:D:309:ASP:HB2	2.19	0.43
1:C:64:ALA:HB1	1:D:88:LEU:HD11	2.01	0.43
1:D:173:ASP:HB3	4:D:528:HOH:O	2.18	0.43
1:B:263:GLU:CD	1:B:267:ARG:HE	2.21	0.43
1:D:293:ILE:HB	1:D:294:PRO:CD	2.49	0.43
1:B:131:GLY:HA2	1:D:131:GLY:HA2	2.01	0.43
1:B:41:ARG:HE	3:B:7394:GOL:C1	2.31	0.43
1:D:247[B]:SER:OG	1:D:348:HIS:HB2	2.19	0.43
1:B:287:VAL:HG21	4:B:7742:HOH:O	2.18	0.43
1:D:254:ALA:CB	4:D:542:HOH:O	2.56	0.42
1:D:232:ARG:NH1	4:D:523:HOH:O	2.52	0.42
1:C:342:GLY:HA2	4:C:504:HOH:O	2.19	0.42
1:C:207:ARG:NH1	1:C:207:ARG:HG2	2.32	0.42
1:B:280:THR:HA	1:B:384:GLY:O	2.19	0.42
1:C:158:GLY:O	1:C:161:ALA:HB3	2.19	0.42
1:C:180:VAL:HG21	1:C:225:LEU:HA	2.01	0.42
1:B:236:ASP:HB3	1:B:239:GLY:HA3	2.01	0.42
3:A:6394:GOL:H12	4:A:6734:HOH:O	2.18	0.42
1:A:330:LEU:HA	1:A:330:LEU:HD23	1.79	0.42
1:D:349:PRO:O	1:D:350:ILE:C	2.57	0.42
1:D:364:GLU:O	1:D:368:ARG:HG2	2.19	0.42
1:B:73:LYS:CE	4:B:7806:HOH:O	2.67	0.42
1:C:316:ASN:HB3	4:C:517:HOH:O	2.19	0.42
1:C:121:MET:HA	1:D:127:HIS:CD2	2.55	0.42
1:A:64:ALA:HB1	1:B:88:LEU:HD11	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:155:TYR:HE1	1:D:160:THR:HG22	1.85	0.42
1:B:41:ARG:HB2	4:B:7545:HOH:O	2.20	0.41
1:D:152:PHE:CZ	4:D:503:HOH:O	2.72	0.41
1:B:207:ARG:HH11	1:B:207:ARG:HG2	1.85	0.41
1:C:298:LYS:HG3	4:C:521:HOH:O	2.20	0.41
1:D:96:VAL:HG21	1:D:358:LEU:HD12	2.02	0.41
1:C:348:HIS:CE1	1:C:353:SER:HG	2.35	0.41
1:D:317:GLU:CD	1:D:342:GLY:HA3	2.40	0.41
1:B:9:SER:HA	1:B:272:LEU:HD22	2.02	0.41
1:B:247[A]:SER:HG	3:B:7393:GOL:H31	1.80	0.41
1:A:7:ILE:HD12	4:A:6809:HOH:O	2.20	0.41
1:D:317:GLU:O	1:D:343:ALA:HB3	2.21	0.41
1:A:275:ILE:CG2	4:A:6747:HOH:O	2.69	0.41
1:D:207:ARG:HG2	1:D:207:ARG:NH1	2.35	0.41
1:C:153:TYR:CE2	1:C:286:LYS:HD3	2.56	0.41
1:C:96:VAL:HG21	1:C:358:LEU:HD12	2.02	0.41
1:D:284:ASP:N	4:D:547:HOH:O	2.52	0.41
1:A:96:VAL:HG21	1:A:358:LEU:HD12	2.02	0.41
1:C:47:GLY:HA2	1:C:77:PRO:HG3	2.03	0.41
1:A:129:ARG:HA	1:C:132:VAL:O	2.21	0.40
1:A:69:GLN:HA	1:B:152:PHE:HE1	1.85	0.40
4:A:6741:HOH:O	1:D:134:MET:HE1	2.20	0.40
1:D:294:PRO:O	1:D:298:LYS:HB2	2.21	0.40
1:C:103:ILE:HA	1:C:108:ALA:O	2.21	0.40
1:D:164:VAL:CG2	4:D:469:HOH:O	2.69	0.40
1:C:300:LEU:HD13	1:C:307:ILE:HG12	2.02	0.40

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:7662:HOH:O	4:B:7691:HOH:O[2_555]	2.10	0.10
4:A:6430:HOH:O	4:B:7600:HOH:O[2_545]	2.18	0.02

## 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	391/392 (100%)	371 (95%)	20 (5%)	0	100	100
1	B	391/392 (100%)	373 (95%)	16 (4%)	2 (0%)	34	20
1	C	391/392 (100%)	372 (95%)	17 (4%)	2 (0%)	34	20
1	D	391/392 (100%)	375 (96%)	14 (4%)	2 (0%)	34	20
All	All	1564/1568 (100%)	1491 (95%)	67 (4%)	6 (0%)	39	26

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	350	ILE
1	C	3	PRO
1	B	291	GLY
1	D	3	PRO
1	C	350	ILE
1	B	350	ILE

### 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	279/278 (100%)	258 (92%)	21 (8%)	17	5
1	B	279/278 (100%)	259 (93%)	20 (7%)	18	5
1	C	279/278 (100%)	264 (95%)	15 (5%)	27	12
1	D	279/278 (100%)	262 (94%)	17 (6%)	23	9
All	All	1116/1112 (100%)	1043 (94%)	73 (6%)	21	7

All (73) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	39	LEU
1	A	155	TYR
1	A	167	GLN
1	A	205	LYS
1	A	207	ARG
1	A	226	ASP
1	A	228	MET
1	A	230	LYS
1	A	237	LYS
1	A	258	LEU
1	A	272	LEU
1	A	288	MET
1	A	298	LYS
1	A	322	GLN
1	A	328	LYS
1	A	332	TRP
1	A	339	VAL
1	A	358	LEU
1	A	359	ASN
1	A	367	ARG
1	A	392	LEU
1	B	39	LEU
1	B	89	CYS
1	B	134	MET
1	B	155	TYR
1	B	207	ARG
1	B	220	ARG
1	B	221	HIS
1	B	228	MET
1	B	237	LYS
1	B	257	LEU
1	B	263	GLU
1	B	272	LEU
1	B	288	MET
1	B	298	LYS
1	B	322	GLN
1	B	332	TRP
1	B	339	VAL
1	B	353	SER
1	B	358	LEU
1	B	359	ASN
1	C	39	LEU
1	C	155	TYR

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Mol	Chain	Res	Type
1	C	191	LYS
1	C	207	ARG
1	C	220	ARG
1	C	224	THR
1	C	237	LYS
1	C	260	SER
1	C	272	LEU
1	C	288	MET
1	C	298	LYS
1	C	322	GLN
1	C	332	TRP
1	C	358	LEU
1	C	371	ARG
1	D	1	SER
1	D	39	LEU
1	D	134	MET
1	D	155	TYR
1	D	187	GLU
1	D	207	ARG
1	D	226	ASP
1	D	237	LYS
1	D	272	LEU
1	D	288	MET
1	D	298	LYS
1	D	322	GLN
1	D	332	TRP
1	D	353	SER
1	D	358	LEU
1	D	367	ARG
1	D	371	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	78	GLN
1	A	175	GLN
1	A	184	ASN
1	B	78	GLN
1	B	175	GLN
1	B	184	ASN
1	B	221	HIS
1	C	78	GLN

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Mol	Chain	Res	Type
1	C	175	GLN
1	C	184	ASN
1	C	316	ASN
1	D	78	GLN
1	D	184	ASN

### 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](#)

8 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
2	SO4	A	5720	-	4,4,4	0.45	0	6,6,6	0.27	0
2	SO4	A	5722	-	4,4,4	0.18	0	6,6,6	0.25	0
3	GOL	A	6393	-	5,5,5	0.57	0	5,5,5	0.88	0
3	GOL	A	6394	-	5,5,5	0.51	0	5,5,5	1.19	0
2	SO4	B	5719	-	4,4,4	0.19	0	6,6,6	0.61	0
2	SO4	B	5721	-	4,4,4	0.66	0	6,6,6	0.65	0
3	GOL	B	7393	-	5,5,5	0.70	0	5,5,5	1.22	0
3	GOL	B	7394	-	5,5,5	0.89	0	5,5,5	1.21	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	SO4	A	5720	-	-	0/0/0/0	0/0/0/0
2	SO4	A	5722	-	-	0/0/0/0	0/0/0/0
3	GOL	A	6393	-	-	0/4/4/4	0/0/0/0
3	GOL	A	6394	-	-	0/4/4/4	0/0/0/0
2	SO4	B	5719	-	-	0/0/0/0	0/0/0/0
2	SO4	B	5721	-	-	0/0/0/0	0/0/0/0
3	GOL	B	7393	-	-	0/4/4/4	0/0/0/0
3	GOL	B	7394	-	-	0/4/4/4	0/0/0/0

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.

3 monomers are involved in 10 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	6394	GOL	3	0
3	B	7393	GOL	4	0
3	B	7394	GOL	3	0

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.



## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	392/392 (100%)	-0.25	8 (2%) 68 75	3, 9, 26, 50	0
1	B	392/392 (100%)	-0.29	6 (1%) 76 82	3, 9, 26, 47	0
1	C	392/392 (100%)	0.51	24 (6%) 25 32	2, 7, 24, 45	0
1	D	392/392 (100%)	1.05	70 (17%) 2 2	2, 8, 28, 42	0
All	All	1568/1568 (100%)	0.26	108 (6%) 20 28	2, 8, 26, 50	0

All (108) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	1	SER	6.7
1	D	236	ASP	6.6
1	D	153	TYR	6.2
1	C	1	SER	6.1
1	D	235	PHE	6.0
1	D	231	LEU	5.9
1	A	208	LYS	5.5
1	D	2	THR	5.5
1	D	152	PHE	5.4
1	D	392	LEU	5.3
1	A	132	VAL	5.2
1	C	232	ARG	4.8
1	D	170	LEU	4.8
1	C	153	TYR	4.7
1	D	237	LYS	4.7
1	C	208	LYS	4.6
1	D	232	ARG	4.5
1	D	239	GLY	4.5
1	D	208	LYS	4.3
1	C	234	ALA	4.1
1	D	179	ALA	4.1

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Mol	Chain	Res	Type	RSRZ
1	D	154	GLY	4.0
1	D	188	ALA	3.9
1	D	336	ILE	3.8
1	A	1	SER	3.7
1	C	179	ALA	3.7
1	C	235	PHE	3.6
1	D	226	ASP	3.5
1	D	310	LEU	3.5
1	D	155	TYR	3.4
1	B	153	TYR	3.4
1	D	329	ASP	3.4
1	D	382	GLY	3.3
1	C	236	ASP	3.3
1	C	225	LEU	3.3
1	D	330	LEU	3.2
1	D	225	LEU	3.2
1	A	152	PHE	3.2
1	D	371	ARG	3.1
1	D	166	LYS	3.1
1	D	328	LYS	3.1
1	D	228	MET	3.0
1	C	181	ALA	3.0
1	D	369	GLY	3.0
1	D	331	GLY	3.0
1	C	226	ASP	2.9
1	C	231	LEU	2.9
1	D	306	LYS	2.9
1	B	1	SER	2.9
1	D	88	LEU	2.9
1	D	205	LYS	2.8
1	D	332	TRP	2.8
1	D	165	ALA	2.7
1	D	224	THR	2.7
1	D	206	GLY	2.7
1	C	211	ILE	2.7
1	C	320	ALA	2.7
1	C	207	ARG	2.7
1	A	133	LYS	2.7
1	D	157	MET	2.6
1	D	221	HIS	2.6
1	B	208	LYS	2.6
1	D	241	VAL	2.6

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Mol	Chain	Res	Type	RSRZ
1	C	334	PRO	2.6
1	C	155	TYR	2.6
1	C	206	GLY	2.6
1	B	132	VAL	2.6
1	D	156	HIS	2.6
1	A	2	THR	2.5
1	B	152	PHE	2.5
1	D	164	VAL	2.5
1	D	281	VAL	2.5
1	D	195	PHE	2.5
1	D	220	ARG	2.5
1	D	367	ARG	2.4
1	D	312	LEU	2.4
1	D	180	VAL	2.4
1	C	371	ARG	2.4
1	D	229	ALA	2.4
1	D	238	GLU	2.4
1	D	207	ARG	2.4
1	D	95	ALA	2.4
1	A	153	TYR	2.4
1	D	181	ALA	2.4
1	D	388	CYS	2.3
1	D	303	ALA	2.3
1	D	319	PHE	2.3
1	A	207	ARG	2.3
1	B	392	LEU	2.3
1	D	234	ALA	2.3
1	C	312	LEU	2.2
1	D	178	PHE	2.2
1	C	80	ALA	2.2
1	D	240	THR	2.2
1	D	172	ARG	2.2
1	D	307	ILE	2.2
1	C	36	SER	2.2
1	D	167	GLN	2.2
1	D	42	ALA	2.1
1	D	168	TRP	2.1
1	D	227	SER	2.1
1	D	377	LEU	2.1
1	D	279	ALA	2.1
1	C	152	PHE	2.1
1	D	175	GLN	2.1

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Mol	Chain	Res	Type	RSRZ
1	C	46	ALA	2.0
1	D	347	GLY	2.0
1	D	5	ILE	2.0

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

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

## 6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(Å <sup>2</sup> )	Q<0.9
3	GOL	B	7394	6/6	0.92	0.15	4.63	14,24,30,33	0
3	GOL	A	6394	6/6	0.90	0.16	1.70	20,26,31,32	0
3	GOL	A	6393	6/6	0.93	0.12	0.37	19,26,28,31	0
2	SO4	A	5722	5/5	0.92	0.12	0.25	74,75,77,77	0
3	GOL	B	7393	6/6	0.97	0.09	-0.79	13,20,22,23	0
2	SO4	B	5721	5/5	0.97	0.10	-	45,45,47,47	0
2	SO4	B	5719	5/5	0.96	0.10	-	71,72,72,74	0
2	SO4	A	5720	5/5	0.98	0.12	-	57,58,60,62	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.