



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 14, 2017 – 08:08 pm GMT

PDB ID : 3OHM  
Title : Crystal structure of activated G alpha Q bound to its effector phospholipase C beta 3  
Authors : Waldo, G.L.; Sondek, J.; Harden, T.K.  
Deposited on : 2010-08-17  
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](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 : 1.7.2 (RC1), CSD as538be (2017)  
Xtriage (Phenix) : 1.9-1692  
EDS : trunk28620  
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)  
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) : recalc28949

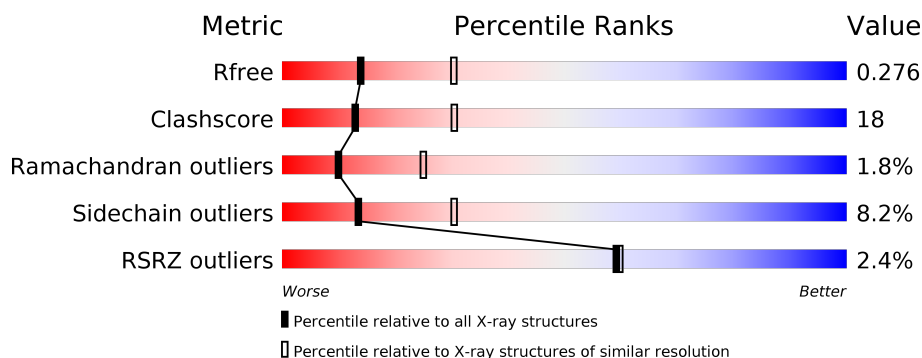
# 1 Overall quality at a glance

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))
$R_{free}$	100719	2259 (2.70-2.70)
Clashscore	112137	2590 (2.70-2.70)
Ramachandran outliers	110173	2550 (2.70-2.70)
Sidechain outliers	110143	2550 (2.70-2.70)
RSRZ outliers	101464	2275 (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  $\geq 3$ , 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	327	<div> <div style="width: 100%; height: 10px; position: relative;"> <div style="position: absolute; top: -10px; left: 0; width: 100%;"></div> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 10px;"> <div style="width: 2%; height: 10px; background-color: red;"></div> <div style="width: 66%; height: 10px; background-color: green;"></div> <div style="width: 28%; height: 10px; background-color: yellow;"></div> <div style="width: 2%; height: 10px; background-color: orange;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> </div> <div> <div style="width: 2%; height: 10px; background-color: red;"></div> <div style="width: 66%; height: 10px; background-color: green;"></div> <div style="width: 28%; height: 10px; background-color: yellow;"></div> <div style="width: 2%; height: 10px; background-color: orange;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> </div>
2	B	885	<div> <div style="width: 100%; height: 10px; position: relative;"> <div style="position: absolute; top: -10px; left: 0; width: 100%;"></div> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 10px;"> <div style="width: 2%; height: 10px; background-color: red;"></div> <div style="width: 54%; height: 10px; background-color: green;"></div> <div style="width: 28%; height: 10px; background-color: yellow;"></div> <div style="width: 1%; height: 10px; background-color: orange;"></div> <div style="width: 14%; height: 10px; background-color: grey;"></div> </div> </div> <div> <div style="width: 2%; height: 10px; background-color: red;"></div> <div style="width: 54%; height: 10px; background-color: green;"></div> <div style="width: 28%; height: 10px; background-color: yellow;"></div> <div style="width: 1%; height: 10px; background-color: orange;"></div> <div style="width: 14%; height: 10px; background-color: grey;"></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
7	ACT	B	1	-	-	X	X
7	ACT	B	888	-	-	X	-

## 2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 8991 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 Guanine nucleotide-binding protein G(q) subunit alpha.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	318	Total	C	N	O	S	0	0	0
			2626	1677	444	493	12			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	33	GLY	-	EXPRESSION TAG	UNP P21279
A	34	ALA	-	EXPRESSION TAG	UNP P21279

- Molecule 2 is a protein called 1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase beta-3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	759	Total	C	N	O	S	0	0	0
			6091	3880	1039	1141	31			

There are 8 discrepancies between the modelled and reference sequences:

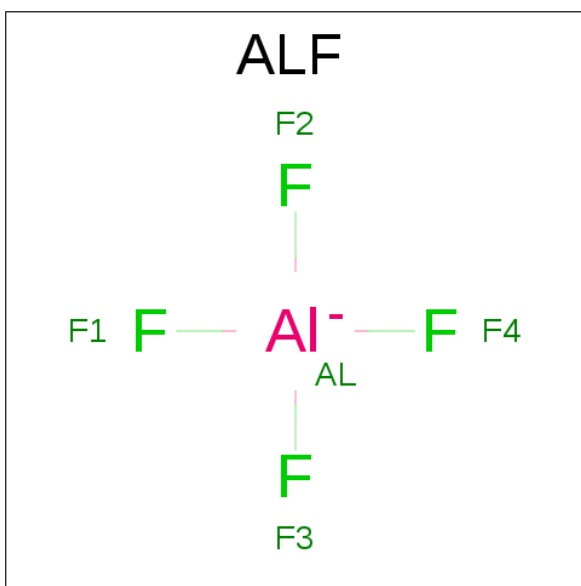
Chain	Residue	Modelled	Actual	Comment	Reference
B	2	GLY	-	EXPRESSION TAG	UNP Q01970
B	3	ALA	-	EXPRESSION TAG	UNP Q01970
B	4	MET	-	EXPRESSION TAG	UNP Q01970
B	5	ASP	-	EXPRESSION TAG	UNP Q01970
B	6	PRO	-	EXPRESSION TAG	UNP Q01970
B	7	GLU	-	EXPRESSION TAG	UNP Q01970
B	8	PHE	-	EXPRESSION TAG	UNP Q01970
B	9	MET	-	EXPRESSION TAG	UNP Q01970

- Molecule 3 is GUANOSINE-5'-DIPHOSPHATE (three-letter code: GDP) (formula: C<sub>10</sub>H<sub>15</sub>N<sub>5</sub>O<sub>11</sub>P<sub>2</sub>).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			28	10	5	11	2		

- Molecule 4 is TETRAFLUOROALUMINATE ION (three-letter code: ALF) (formula:  $\text{AlF}_4$ ).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total 5	Al 1	F 4	0	0

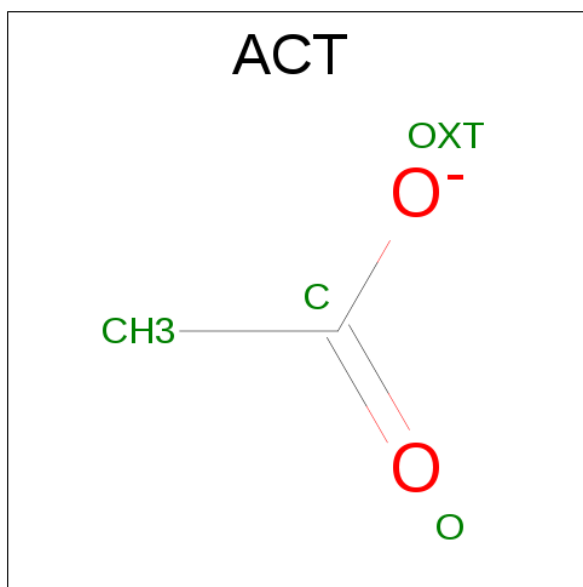
- Molecule 5 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	1	Total	Mg	0	0
			1	1		

- Molecule 6 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	B	1	Total	Ca	0	0
			1	1		

- Molecule 7 is ACETATE ION (three-letter code: ACT) (formula: C<sub>2</sub>H<sub>3</sub>O<sub>2</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	B	1	Total	C	O	0	0
			4	2	2		
7	B	1	Total	C	O	0	0
			4	2	2		
7	B	1	Total	C	O	0	0
			4	2	2		

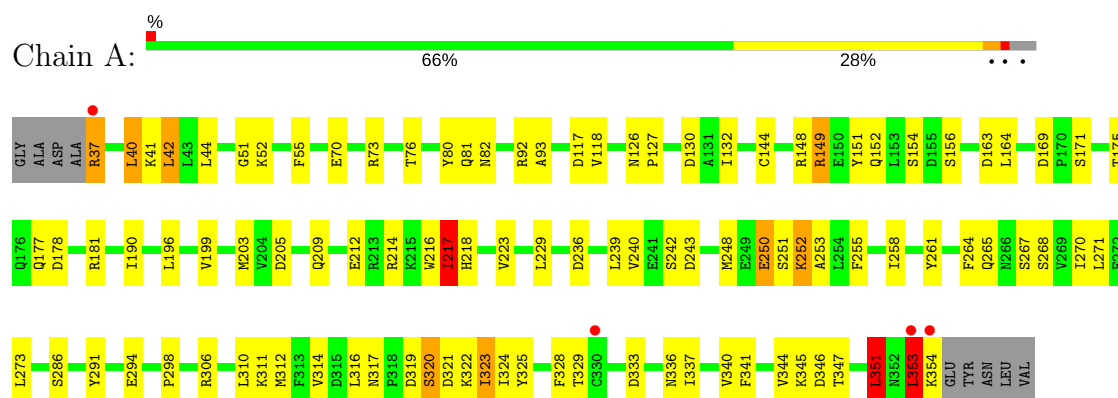
- Molecule 8 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	A	96	Total	O	0	0
			96	96		
8	B	131	Total	O	0	0
			131	131		

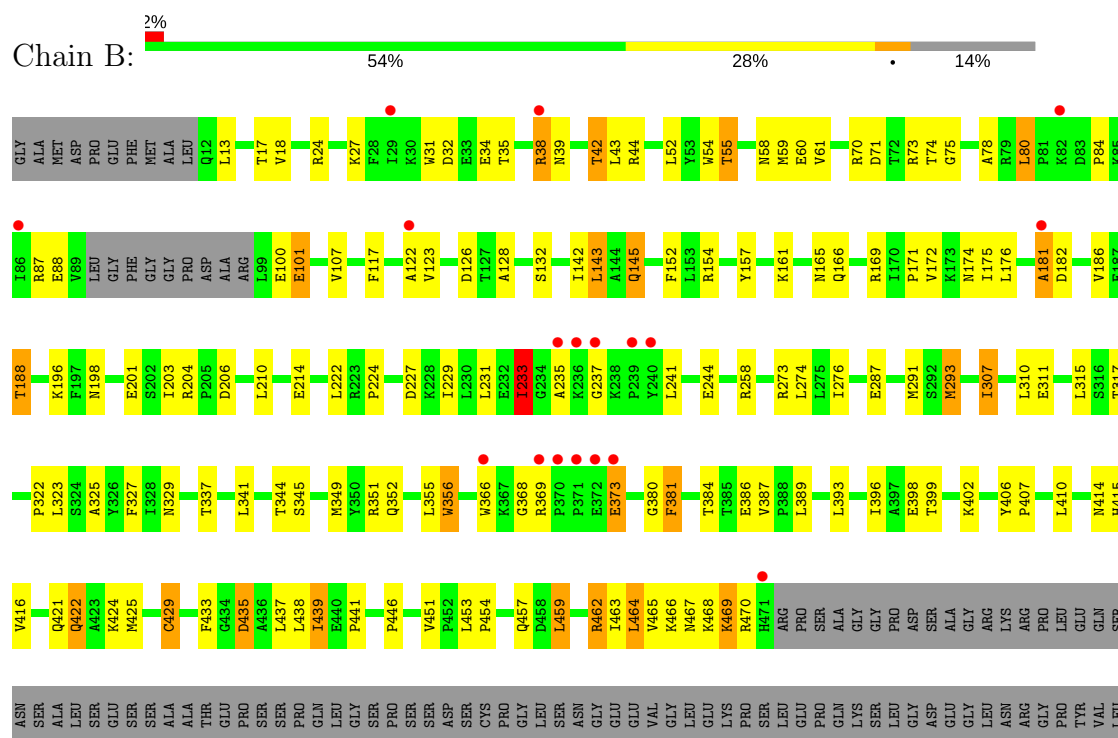
### 3 Residue-property plots

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: Guanine nucleotide-binding protein G(q) subunit alpha



- Molecule 2: 1-phosphatidylinositol-4,5-bisphosphate phosphodiesterase beta-3







## 4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	202.99Å 90.88Å 93.14Å 90.00° 101.16° 90.00°	Depositor
Resolution (Å)	50.00 – 2.70 38.86 – 2.20	Depositor EDS
% Data completeness (in resolution range)	91.8 (50.00-2.70) 65.4 (38.86-2.20)	Depositor EDS
$R_{merge}$	0.07	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.69 (at 2.20Å)	Xtriage
Refinement program	REFMAC 5.2.0019	Depositor
R, $R_{free}$	0.204 , 0.275 0.211 , 0.276	Depositor DCC
$R_{free}$ test set	2152 reflections (5.39%)	DCC
Wilson B-factor (Å <sup>2</sup> )	42.8	Xtriage
Anisotropy	0.569	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.33 , 53.0	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	8991	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	76.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.46% 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, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: GDP, ALF, MG, CA, ACT

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	0.82	0/2682	0.85	1/3624 (0.0%)
2	B	0.71	1/6223 (0.0%)	0.78	1/8425 (0.0%)
All	All	0.75	1/8905 (0.0%)	0.80	2/12049 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
2	B	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	429	CYS	CB-SG	-5.04	1.73	1.81

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	817	ARG	NE-CZ-NH2	-5.18	117.71	120.30
1	A	149	ARG	NE-CZ-NH2	-5.16	117.72	120.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	237	GLY	Peptide

## 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	2626	0	2595	84	0
2	B	6091	0	6087	243	0
3	A	28	0	12	0	0
4	A	5	0	0	1	0
5	A	1	0	0	0	0
6	B	1	0	0	0	0
7	B	12	0	9	11	0
8	A	96	0	0	11	0
8	B	131	0	0	24	0
All	All	8991	0	8703	322	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 18.

All (322) 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:785:LYS:NZ	7:B:1:ACT:H2	1.68	1.08
1:A:152:GLN:HE21	1:A:240:VAL:HG22	1.16	1.06
1:A:152:GLN:NE2	1:A:240:VAL:HG22	1.82	0.93
2:B:730:VAL:HG11	2:B:749:VAL:HG11	1.51	0.93
2:B:840:ILE:C	2:B:840:ILE:HD12	1.90	0.93
2:B:414:ASN:HD22	2:B:467:ASN:HD21	1.21	0.89
2:B:756:VAL:HG22	8:B:1003:HOH:O	1.73	0.88
2:B:876:LEU:O	2:B:880:ILE:HD12	1.75	0.86
2:B:718:VAL:HA	7:B:1:ACT:H1	1.57	0.86
1:A:126:ASN:HA	8:A:416:HOH:O	1.75	0.85
2:B:861:ASN:HB2	8:B:981:HOH:O	1.77	0.84
2:B:172:VAL:HG22	2:B:203:ILE:HD11	1.58	0.84
2:B:172:VAL:CG2	2:B:203:ILE:HD11	2.08	0.84
1:A:127:PRO:HA	8:A:416:HOH:O	1.79	0.82
2:B:751:MET:HE3	2:B:783:PHE:CD2	2.15	0.82
2:B:222:LEU:HD23	8:B:990:HOH:O	1.80	0.80
2:B:785:LYS:HZ3	7:B:1:ACT:H2	1.47	0.79
2:B:181:ALA:HB1	2:B:772:PHE:CD1	2.18	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:132:ILE:HG22	1:A:164:LEU:HD11	1.65	0.79
2:B:812:PRO:HG2	2:B:815:ALA:HB3	1.65	0.78
2:B:233:ILE:O	2:B:233:ILE:HD12	1.83	0.78
1:A:270:ILE:HD13	1:A:344:VAL:HG13	1.66	0.78
2:B:785:LYS:HZ1	7:B:1:ACT:H2	1.44	0.78
1:A:314:VAL:HG12	1:A:324:ILE:HD13	1.64	0.77
2:B:18:VAL:O	8:B:922:HOH:O	2.03	0.76
1:A:239:LEU:HD11	1:A:250:GLU:HG3	1.68	0.75
2:B:415:HIS:HA	2:B:584:VAL:HG13	1.70	0.73
2:B:396:ILE:HD13	2:B:410:LEU:HD21	1.71	0.71
2:B:380:GLY:HA3	2:B:579:THR:HG21	1.73	0.70
2:B:307:ILE:HD13	2:B:823:VAL:HG22	1.74	0.70
2:B:840:ILE:O	2:B:840:ILE:HD12	1.91	0.70
2:B:55:THR:HG23	2:B:61:VAL:HG22	1.74	0.70
2:B:176:LEU:HD23	2:B:186:VAL:HG11	1.71	0.69
2:B:589:GLU:O	2:B:592:THR:HG22	1.93	0.69
1:A:252:LYS:NZ	1:A:312:MET:SD	2.66	0.68
2:B:634:MET:CE	8:B:1019:HOH:O	2.42	0.68
2:B:78:ALA:O	2:B:80:LEU:HD13	1.93	0.68
2:B:71:ASP:HB2	2:B:355:LEU:HD13	1.76	0.68
2:B:863:ILE:O	2:B:863:ILE:HG22	1.93	0.68
2:B:323:LEU:HD22	2:B:454:PRO:O	1.94	0.68
2:B:680:ASP:OD1	2:B:682:ALA:HB3	1.94	0.68
1:A:126:ASN:CB	8:A:416:HOH:O	2.42	0.68
1:A:44:LEU:CD2	1:A:229:LEU:HD11	2.24	0.68
2:B:172:VAL:CG2	2:B:203:ILE:CD1	2.73	0.67
2:B:84:PRO:HA	8:B:919:HOH:O	1.95	0.66
2:B:182:ASP:O	2:B:186:VAL:HG23	1.95	0.66
2:B:143:LEU:HD11	2:B:310:LEU:HD11	1.77	0.66
2:B:729:ARG:HD2	2:B:782:ASP:OD1	1.96	0.65
1:A:152:GLN:NE2	1:A:240:VAL:CG2	2.59	0.65
2:B:71:ASP:OD1	2:B:402:LYS:HE2	1.96	0.65
2:B:470:ARG:HG2	2:B:586:ALA:HB3	1.76	0.65
1:A:93:ALA:HB1	1:A:144:CYS:SG	2.37	0.65
1:A:37:ARG:HD2	1:A:353:LEU:HB3	1.79	0.65
1:A:205:ASP:OD2	8:A:376:HOH:O	2.15	0.64
2:B:702:PRO:HG3	2:B:790:THR:CG2	2.28	0.64
2:B:43:LEU:HD12	2:B:54:TRP:HB3	1.79	0.64
1:A:154:SER:HB3	8:A:432:HOH:O	1.98	0.63
1:A:93:ALA:CB	1:A:144:CYS:SG	2.87	0.63
2:B:702:PRO:HB3	2:B:790:THR:HG21	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:840:ILE:CD1	2:B:840:ILE:C	2.65	0.62
2:B:735:GLY:HA3	2:B:738:LEU:HD11	1.82	0.61
2:B:327:PHE:CE2	2:B:701:LYS:HG2	2.35	0.61
2:B:175:ILE:O	2:B:175:ILE:HG22	2.00	0.61
1:A:253:ALA:HB1	2:B:862:PRO:HB2	1.83	0.61
2:B:172:VAL:HG23	2:B:203:ILE:CD1	2.30	0.61
2:B:435:ASP:N	2:B:435:ASP:OD1	2.34	0.61
1:A:271:LEU:HD23	1:A:273:LEU:HD11	1.82	0.61
1:A:317:ASN:O	1:A:320:SER:N	2.34	0.61
2:B:416:VAL:HG21	2:B:425:MET:CE	2.31	0.60
2:B:145:GLN:OE1	2:B:832:PRO:HD3	2.01	0.60
1:A:270:ILE:CD1	1:A:344:VAL:HG13	2.32	0.59
2:B:157:TYR:CZ	2:B:161:LYS:HD2	2.37	0.59
1:A:214:ARG:HB2	2:B:860:ILE:HD11	1.84	0.59
2:B:660:MET:CE	2:B:752:PHE:HE2	2.15	0.59
2:B:469:LYS:HE3	2:B:591:SER:O	2.03	0.58
1:A:306:ARG:HG2	1:A:328:PHE:CE1	2.37	0.58
2:B:860:ILE:HG22	8:B:981:HOH:O	2.03	0.58
1:A:271:LEU:CD2	1:A:273:LEU:HD11	2.34	0.58
2:B:672:VAL:O	2:B:672:VAL:HG12	2.04	0.58
2:B:416:VAL:HG21	2:B:425:MET:HE3	1.86	0.57
2:B:60:GLU:HB3	8:B:954:HOH:O	2.03	0.56
2:B:71:ASP:OD2	2:B:73:ARG:HG2	2.05	0.56
2:B:315:LEU:O	2:B:315:LEU:CD1	2.54	0.56
2:B:785:LYS:HG3	2:B:847:TYR:CE1	2.41	0.56
1:A:306:ARG:CG	1:A:328:PHE:CE1	2.89	0.56
2:B:701:LYS:NZ	8:B:939:HOH:O	2.36	0.56
2:B:389:LEU:HD11	2:B:393:LEU:HD11	1.87	0.56
2:B:398:GLU:HG3	2:B:399:THR:HG23	1.87	0.55
2:B:730:VAL:HG11	2:B:749:VAL:CG1	2.30	0.55
2:B:743:VAL:O	2:B:771:SER:HB3	2.05	0.55
1:A:216:TRP:O	1:A:218:HIS:N	2.39	0.55
1:A:126:ASN:CG	8:A:416:HOH:O	2.44	0.55
2:B:169:ARG:O	2:B:171:PRO:HD3	2.06	0.55
2:B:380:GLY:O	2:B:381:PHE:C	2.44	0.55
2:B:27:LYS:HE3	2:B:42:THR:HG23	1.89	0.55
2:B:341:LEU:O	2:B:384:THR:HG23	2.06	0.55
2:B:468:LYS:HB3	2:B:586:ALA:HB2	1.88	0.55
2:B:414:ASN:HD22	2:B:467:ASN:ND2	1.97	0.55
2:B:785:LYS:CE	7:B:1:ACT:H2	2.36	0.54
2:B:416:VAL:C	2:B:422:GLN:HE22	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:273:LEU:HD12	1:A:273:LEU:N	2.22	0.54
2:B:172:VAL:HG23	2:B:203:ILE:HD12	1.90	0.54
1:A:76:THR:HG22	1:A:80:TYR:CE2	2.43	0.54
2:B:597:ILE:HG23	2:B:617:MET:HG2	1.89	0.54
1:A:73:ARG:NH1	8:A:373:HOH:O	2.40	0.54
1:A:310:LEU:O	1:A:314:VAL:HG22	2.08	0.54
2:B:878:ALA:HB2	8:B:1012:HOH:O	2.08	0.54
2:B:774:PRO:HG3	8:B:1016:HOH:O	2.09	0.53
2:B:730:VAL:CG1	2:B:749:VAL:HG11	2.33	0.53
2:B:704:PHE:CZ	2:B:710:LYS:HE2	2.44	0.53
2:B:751:MET:HE3	2:B:783:PHE:CG	2.44	0.53
1:A:126:ASN:CA	8:A:416:HOH:O	2.44	0.53
2:B:224:PRO:O	2:B:227:ASP:HB2	2.08	0.52
2:B:351:ARG:HB3	2:B:399:THR:HG21	1.91	0.52
2:B:13:LEU:CD2	2:B:142:ILE:HD12	2.39	0.52
1:A:190:ILE:N	1:A:190:ILE:HD12	2.24	0.52
2:B:446:PRO:O	2:B:451:VAL:HG21	2.09	0.52
2:B:327:PHE:CZ	2:B:701:LYS:HG2	2.45	0.52
2:B:853:GLN:O	2:B:856:ALA:HB3	2.10	0.52
1:A:127:PRO:CA	8:A:416:HOH:O	2.50	0.51
1:A:223:VAL:O	1:A:267:SER:OG	2.29	0.51
2:B:344:THR:CG2	2:B:345:SER:N	2.72	0.51
2:B:728:LEU:HD11	2:B:794:LEU:HD22	1.91	0.51
2:B:439:ILE:HG22	2:B:593:LEU:CD2	2.40	0.51
2:B:307:ILE:HD13	2:B:823:VAL:CG2	2.41	0.51
2:B:863:ILE:O	2:B:863:ILE:CG2	2.58	0.51
1:A:336:ASN:HD22	1:A:337:ILE:HD13	1.76	0.51
1:A:42:LEU:HD23	1:A:42:LEU:N	2.26	0.51
1:A:117:ASP:OD1	1:A:117:ASP:C	2.49	0.51
1:A:353:LEU:HD12	1:A:354:LYS:H	1.76	0.51
2:B:463:ILE:C	2:B:464:LEU:HD22	2.30	0.51
2:B:60:GLU:CB	8:B:954:HOH:O	2.60	0.51
2:B:766:THR:HG21	2:B:801:GLU:OE2	2.10	0.51
2:B:621:VAL:HG12	2:B:624:LYS:HB2	1.93	0.50
2:B:366:TRP:CH2	2:B:380:GLY:HA2	2.47	0.50
2:B:422:GLN:HG2	8:B:913:HOH:O	2.11	0.50
1:A:44:LEU:CD2	1:A:229:LEU:CD1	2.90	0.50
2:B:293:MET:HE3	2:B:293:MET:O	2.12	0.50
2:B:198:ASN:HB3	2:B:201:GLU:HG3	1.93	0.50
1:A:55:PHE:CE1	1:A:203:MET:HE1	2.47	0.49
1:A:319:ASP:C	1:A:321:ASP:H	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:719:ILE:HG23	7:B:1:ACT:OXT	2.12	0.49
2:B:154:ARG:HG2	2:B:210:LEU:HD21	1.95	0.49
2:B:467:ASN:O	2:B:594:VAL:HG21	2.12	0.49
2:B:43:LEU:CD1	2:B:54:TRP:HB3	2.42	0.49
1:A:323:ILE:H	1:A:323:ILE:HD12	1.77	0.49
2:B:661:PRO:HG3	2:B:674:LEU:HD11	1.93	0.49
2:B:70:ARG:HA	7:B:887:ACT:H2	1.93	0.49
2:B:165:ASN:C	2:B:165:ASN:OD1	2.51	0.49
2:B:675:ASN:O	2:B:683:MET:HE3	2.12	0.49
1:A:333:ASP:C	1:A:333:ASP:OD1	2.51	0.49
2:B:634:MET:HE3	8:B:1019:HOH:O	2.08	0.49
2:B:850:ASP:N	2:B:850:ASP:OD1	2.37	0.49
1:A:93:ALA:HB3	1:A:144:CYS:SG	2.52	0.49
2:B:181:ALA:HB1	2:B:772:PHE:HD1	1.74	0.49
2:B:381:PHE:HB2	8:B:992:HOH:O	2.12	0.48
2:B:635:GLU:OE2	7:B:888:ACT:H1	2.13	0.48
2:B:71:ASP:OD2	2:B:73:ARG:NE	2.46	0.48
2:B:276:ILE:HA	2:B:291:MET:HE1	1.95	0.48
2:B:325:ALA:HB1	2:B:706:ARG:HD2	1.94	0.48
1:A:196:LEU:HD21	1:A:341:PHE:HE2	1.78	0.48
2:B:107:VAL:HG22	2:B:117:PHE:CD2	2.48	0.48
2:B:31:TRP:HE3	2:B:32:ASP:O	1.96	0.48
2:B:24:ARG:O	2:B:44:ARG:HD3	2.13	0.48
2:B:678:THR:C	2:B:679:LEU:HD12	2.34	0.48
4:A:401:ALF:F3	8:A:436:HOH:O	2.10	0.48
2:B:785:LYS:HG3	2:B:847:TYR:CZ	2.47	0.48
2:B:356:TRP:HZ3	8:B:924:HOH:O	1.96	0.48
2:B:464:LEU:N	2:B:464:LEU:CD2	2.77	0.48
2:B:337:THR:HG22	2:B:349:MET:HG2	1.96	0.48
2:B:55:THR:HG23	2:B:61:VAL:CG2	2.43	0.48
2:B:719:ILE:HA	2:B:787:VAL:HG13	1.94	0.48
2:B:122:ALA:HB2	2:B:128:ALA:HB2	1.96	0.48
2:B:188:THR:HG22	8:B:898:HOH:O	2.13	0.48
2:B:229:ILE:HG22	2:B:229:ILE:O	2.13	0.48
2:B:233:ILE:O	2:B:233:ILE:CD1	2.58	0.48
1:A:196:LEU:N	1:A:196:LEU:HD12	2.29	0.48
2:B:210:LEU:HG	2:B:214:GLU:OE2	2.14	0.48
2:B:258:ARG:HH11	2:B:726:ASN:ND2	2.12	0.48
2:B:770:ASN:C	8:B:1015:HOH:O	2.53	0.48
2:B:366:TRP:CZ2	2:B:380:GLY:HA2	2.48	0.47
2:B:660:MET:HE1	2:B:752:PHE:HE2	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:41:LYS:NZ	2:B:721:ASP:OD2	2.47	0.47
1:A:55:PHE:HE1	1:A:203:MET:HE1	1.80	0.47
2:B:655:ASP:HB2	8:B:889:HOH:O	2.14	0.47
2:B:647:ILE:HD11	2:B:669:CYS:SG	2.53	0.47
2:B:293:MET:HE3	2:B:293:MET:C	2.35	0.47
1:A:261:TYR:CE2	2:B:855:TYR:HB3	2.49	0.47
2:B:356:TRP:CH2	2:B:829:ALA:O	2.68	0.47
1:A:217:ILE:HG22	1:A:218:HIS:CD2	2.50	0.47
2:B:368:GLY:HA3	2:B:421:GLN:HE22	1.79	0.47
2:B:196:LYS:HB3	2:B:201:GLU:OE1	2.15	0.47
2:B:181:ALA:CB	2:B:772:PHE:CE1	2.98	0.47
2:B:773:ASN:N	2:B:774:PRO:CD	2.78	0.47
1:A:236:ASP:OD2	1:A:286:SER:OG	2.22	0.46
2:B:373:GLU:HB2	2:B:424:LYS:HZ3	1.80	0.46
1:A:169:ASP:OD2	1:A:171:SER:N	2.43	0.46
2:B:176:LEU:HD23	2:B:186:VAL:CG1	2.42	0.46
2:B:465:VAL:HG22	2:B:593:LEU:O	2.15	0.46
2:B:576:ASP:C	2:B:578:GLY:N	2.67	0.46
2:B:745:ILE:HG23	2:B:799:PHE:O	2.15	0.46
1:A:253:ALA:CB	2:B:862:PRO:HB2	2.45	0.46
1:A:81:GLN:HG2	1:A:118:VAL:HG12	1.96	0.46
2:B:13:LEU:HD22	2:B:142:ILE:HD12	1.97	0.46
2:B:576:ASP:C	2:B:576:ASP:OD1	2.53	0.46
2:B:715:PHE:O	2:B:716:THR:C	2.52	0.46
2:B:679:LEU:HD12	2:B:679:LEU:N	2.31	0.46
2:B:172:VAL:HG22	2:B:203:ILE:CD1	2.35	0.46
2:B:235:ALA:HB2	2:B:241:LEU:HD12	1.97	0.46
2:B:369:ARG:HD2	2:B:369:ARG:N	2.31	0.46
1:A:346:ASP:O	1:A:347:THR:C	2.54	0.46
2:B:273:ARG:O	2:B:274:LEU:C	2.54	0.46
2:B:766:THR:HG21	2:B:801:GLU:CG	2.45	0.46
1:A:149:ARG:HD2	1:A:236:ASP:HB2	1.98	0.45
1:A:177:GLN:O	1:A:181:ARG:HG2	2.16	0.45
2:B:433:PHE:HB2	2:B:437:LEU:HB2	1.99	0.45
2:B:664:PHE:HA	2:B:667:VAL:HG22	1.99	0.45
2:B:323:LEU:HD13	2:B:323:LEU:HA	1.77	0.45
2:B:771:SER:N	8:B:1015:HOH:O	2.49	0.45
2:B:783:PHE:CD1	2:B:783:PHE:N	2.84	0.45
1:A:229:LEU:HD12	1:A:229:LEU:N	2.31	0.45
2:B:157:TYR:OH	2:B:161:LYS:HD2	2.16	0.45
2:B:745:ILE:HB	8:B:1016:HOH:O	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:774:PRO:CG	8:B:1016:HOH:O	2.65	0.45
2:B:84:PRO:HA	2:B:87:ARG:HB3	1.98	0.45
2:B:410:LEU:HD12	2:B:463:ILE:CG2	2.47	0.45
2:B:406:TYR:HB3	2:B:407:PRO:HD2	1.99	0.45
2:B:454:PRO:HB2	2:B:459:LEU:HD22	1.99	0.45
2:B:416:VAL:O	2:B:584:VAL:HG21	2.17	0.44
1:A:127:PRO:C	8:A:416:HOH:O	2.55	0.44
1:A:209:GLN:O	1:A:212:GLU:HB2	2.17	0.44
1:A:148:ARG:HA	1:A:151:TYR:CE1	2.51	0.44
1:A:319:ASP:C	1:A:321:ASP:N	2.70	0.44
2:B:175:ILE:CG2	2:B:175:ILE:O	2.65	0.44
2:B:74:THR:HG23	2:B:75:GLY:N	2.32	0.44
1:A:196:LEU:HD23	1:A:345:LYS:HD2	1.98	0.44
1:A:336:ASN:O	1:A:340:VAL:HG23	2.16	0.44
2:B:58:ASN:O	2:B:59:MET:HB2	2.18	0.44
1:A:329:THR:HA	1:A:336:ASN:HD21	1.83	0.44
2:B:352:GLN:O	2:B:356:TRP:HB2	2.18	0.44
2:B:100:GLU:OE1	2:B:100:GLU:HA	2.17	0.44
2:B:75:GLY:HA2	2:B:101:GLU:HA	1.99	0.44
2:B:315:LEU:HD13	2:B:315:LEU:O	2.17	0.44
2:B:60:GLU:OE1	2:B:166:GLN:HG3	2.18	0.44
1:A:314:VAL:CG1	1:A:324:ILE:HD13	2.43	0.44
2:B:233:ILE:HD11	2:B:241:LEU:HD21	1.99	0.44
2:B:322:PRO:O	2:B:323:LEU:C	2.56	0.43
2:B:80:LEU:HD13	2:B:80:LEU:N	2.33	0.43
2:B:612:ASN:CG	2:B:612:ASN:O	2.54	0.43
2:B:633:PRO:HD2	7:B:888:ACT:CH3	2.48	0.43
2:B:641:LYS:NZ	2:B:710:LYS:O	2.51	0.43
1:A:37:ARG:HD3	1:A:353:LEU:HD23	1.99	0.43
2:B:861:ASN:C	8:B:942:HOH:O	2.56	0.43
2:B:647:ILE:HD13	2:B:664:PHE:CG	2.54	0.43
2:B:779:GLU:OE2	2:B:779:GLU:HA	2.19	0.43
2:B:876:LEU:CD1	2:B:876:LEU:N	2.81	0.43
2:B:355:LEU:HD21	2:B:402:LYS:HD3	2.00	0.43
1:A:169:ASP:OD2	1:A:171:SER:OG	2.21	0.43
1:A:325:TYR:OH	1:A:351:LEU:HD21	2.19	0.43
2:B:323:LEU:CD2	2:B:454:PRO:O	2.65	0.43
2:B:380:GLY:CA	2:B:579:THR:HG21	2.47	0.43
2:B:229:ILE:O	2:B:233:ILE:HG23	2.18	0.43
2:B:685:LEU:O	2:B:689:VAL:HG13	2.18	0.43
2:B:315:LEU:C	2:B:315:LEU:HD13	2.39	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:27:LYS:HB2	2:B:123:VAL:HG12	2.02	0.42
2:B:466:LYS:HG3	2:B:597:ILE:HG22	2.01	0.42
2:B:410:LEU:CD1	2:B:463:ILE:CG2	2.97	0.42
1:A:126:ASN:ND2	1:A:130:ASP:OD2	2.52	0.42
1:A:248:MET:O	1:A:251:SER:N	2.52	0.42
2:B:181:ALA:HB1	2:B:772:PHE:CE1	2.53	0.42
1:A:214:ARG:O	1:A:214:ARG:HG2	2.20	0.42
2:B:620:PHE:O	2:B:621:VAL:C	2.57	0.42
2:B:203:ILE:N	2:B:203:ILE:HD12	2.35	0.42
2:B:210:LEU:HA	2:B:210:LEU:HD12	1.90	0.42
2:B:273:ARG:O	2:B:276:ILE:N	2.53	0.42
2:B:396:ILE:HD13	2:B:410:LEU:CD2	2.46	0.42
2:B:762:TYR:CE2	8:B:1000:HOH:O	2.70	0.42
2:B:414:ASN:ND2	2:B:467:ASN:HD21	2.02	0.42
2:B:416:VAL:HG12	2:B:422:GLN:NE2	2.34	0.42
1:A:264:PHE:O	1:A:322:LYS:NZ	2.31	0.42
1:A:306:ARG:HD3	1:A:328:PHE:CE2	2.55	0.41
2:B:438:LEU:HD12	2:B:462:ARG:NH2	2.35	0.41
2:B:668:GLY:N	2:B:705:MET:HE1	2.35	0.41
2:B:718:VAL:HG13	7:B:1:ACT:H1	2.02	0.41
2:B:351:ARG:NE	2:B:398:GLU:OE2	2.52	0.41
2:B:143:LEU:HA	2:B:143:LEU:HD12	1.82	0.41
2:B:650:LYS:NZ	2:B:652:THR:HG21	2.34	0.41
2:B:633:PRO:HD2	7:B:888:ACT:H2	2.02	0.41
2:B:152:PHE:O	2:B:834:CYS:SG	2.77	0.41
1:A:41:LYS:C	1:A:42:LEU:HD23	2.41	0.41
2:B:13:LEU:HD21	2:B:142:ILE:HD12	2.01	0.41
2:B:790:THR:O	2:B:790:THR:HG23	2.19	0.41
1:A:40:LEU:HD22	1:A:199:VAL:HG21	2.02	0.41
2:B:650:LYS:HZ1	2:B:652:THR:HG21	1.84	0.41
2:B:662:GLN:O	2:B:666:ASN:ND2	2.53	0.41
2:B:329:ASN:HB2	2:B:690:PHE:CD1	2.54	0.41
2:B:730:VAL:HG21	2:B:794:LEU:HD21	2.01	0.41
1:A:291:TYR:CD1	1:A:291:TYR:N	2.89	0.41
2:B:439:ILE:HG22	2:B:593:LEU:HD22	2.03	0.41
2:B:416:VAL:HG12	2:B:422:GLN:HE21	1.86	0.41
2:B:750:ASP:O	2:B:794:LEU:HD12	2.21	0.41
2:B:171:PRO:HG2	2:B:174:ASN:OD1	2.20	0.41
2:B:181:ALA:CB	2:B:772:PHE:CD1	2.98	0.41
1:A:261:TYR:OH	2:B:858:ALA:HB3	2.21	0.41
1:A:92:ARG:O	1:A:93:ALA:C	2.59	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:389:LEU:HD11	2:B:393:LEU:CD1	2.50	0.41
2:B:356:TRP:HH2	2:B:829:ALA:O	2.03	0.41
2:B:13:LEU:N	2:B:13:LEU:HD23	2.36	0.40
2:B:276:ILE:HA	2:B:291:MET:CE	2.51	0.40
2:B:429:CYS:HB3	2:B:437:LEU:CD2	2.52	0.40
1:A:51:GLY:O	1:A:52:LYS:C	2.60	0.40
2:B:862:PRO:O	2:B:864:LYS:N	2.54	0.40
1:A:152:GLN:HE21	1:A:240:VAL:CG2	2.05	0.40
1:A:175:THR:O	1:A:178:ASP:HB2	2.21	0.40
2:B:639:TYR:CE1	2:B:643:GLN:HB2	2.56	0.40
2:B:660:MET:HE3	2:B:752:PHE:HE2	1.85	0.40
2:B:84:PRO:O	2:B:87:ARG:HB3	2.22	0.40
2:B:859:LEU:O	2:B:862:PRO:HD3	2.22	0.40
1:A:255:PHE:O	1:A:258:ILE:HG22	2.22	0.40
2:B:58:ASN:O	2:B:166:GLN:HG2	2.21	0.40
2:B:344:THR:HG22	2:B:345:SER:N	2.36	0.40
2:B:758:THR:HG22	2:B:759:ARG:N	2.37	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	316/327 (97%)	288 (91%)	22 (7%)	6 (2%)	9	23
2	B	753/885 (85%)	655 (87%)	85 (11%)	13 (2%)	11	27
All	All	1069/1212 (88%)	943 (88%)	107 (10%)	19 (2%)	10	25

All (19) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	217	ILE

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Mol	Chain	Res	Type
2	B	126	ASP
2	B	311	GLU
2	B	373	GLU
1	A	316	LEU
1	A	351	LEU
2	B	38	ARG
2	B	88	GLU
2	B	181	ALA
2	B	381	PHE
1	A	242	SER
1	A	353	LEU
2	B	581	SER
2	B	806	VAL
1	A	243	ASP
2	B	584	VAL
2	B	714	PRO
2	B	233	ILE
2	B	441	PRO

### 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	291/297 (98%)	272 (94%)	19 (6%)	20	44
2	B	675/777 (87%)	615 (91%)	60 (9%)	11	26
All	All	966/1074 (90%)	887 (92%)	79 (8%)	13	30

All (79) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	37	ARG
1	A	40	LEU
1	A	42	LEU
1	A	70	GLU
1	A	82	ASN

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Mol	Chain	Res	Type
1	A	156	SER
1	A	163	ASP
1	A	217	ILE
1	A	250	GLU
1	A	252	LYS
1	A	265	GLN
1	A	268	SER
1	A	294	GLU
1	A	298	PRO
1	A	311	LYS
1	A	320	SER
1	A	323	ILE
1	A	351	LEU
1	A	353	LEU
2	B	17	THR
2	B	34	GLU
2	B	35	THR
2	B	38	ARG
2	B	39	ASN
2	B	42	THR
2	B	52	LEU
2	B	55	THR
2	B	80	LEU
2	B	101	GLU
2	B	132	SER
2	B	143	LEU
2	B	145	GLN
2	B	188	THR
2	B	204	ARG
2	B	206	ASP
2	B	231	LEU
2	B	233	ILE
2	B	244	GLU
2	B	287	GLU
2	B	293	MET
2	B	307	ILE
2	B	317	THR
2	B	356	TRP
2	B	386	GLU
2	B	387	VAL
2	B	422	GLN
2	B	435	ASP

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Mol	Chain	Res	Type
2	B	439	ILE
2	B	453	LEU
2	B	457	GLN
2	B	459	LEU
2	B	462	ARG
2	B	464	LEU
2	B	469	LYS
2	B	575	THR
2	B	576	ASP
2	B	587	THR
2	B	595	ASN
2	B	623	THR
2	B	636	PHE
2	B	711	SER
2	B	716	THR
2	B	718	VAL
2	B	728	LEU
2	B	729	ARG
2	B	741	ARG
2	B	763	ARG
2	B	768	GLN
2	B	790	THR
2	B	793	SER
2	B	804	LYS
2	B	809	ARG
2	B	814	SER
2	B	826	ARG
2	B	840	ILE
2	B	842	THR
2	B	850	ASP
2	B	851	ASP
2	B	874	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	152	GLN
1	A	336	ASN
2	B	12	GLN
2	B	39	ASN
2	B	332	HIS
2	B	422	GLN

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Mol	Chain	Res	Type
2	B	467	ASN
2	B	612	ASN
2	B	726	ASN
2	B	768	GLN
2	B	865	HIS
2	B	875	GLN

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

### 5.6 Ligand geometry ⓘ

Of 7 ligands modelled in this entry, 2 are monoatomic - leaving 5 for Mogul analysis.

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$
3	GDP	A	400	5,4	25,30,30	1.16	3 (12%)	26,47,47	1.82	6 (23%)
4	ALF	A	401	8,3	0,4,4	0.00	-	0,6,6	0.00	-
7	ACT	B	1	-	1,3,3	2.18	1 (100%)	0,3,3	0.00	-
7	ACT	B	887	-	1,3,3	2.59	1 (100%)	0,3,3	0.00	-
7	ACT	B	888	-	1,3,3	2.31	1 (100%)	0,3,3	0.00	-

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
3	GDP	A	400	5,4	-	0/12/32/32	0/3/3/3
4	ALF	A	401	8,3	-	0/0/0/0	0/0/0/0
7	ACT	B	1	-	-	0/0/0/0	0/0/0/0
7	ACT	B	887	-	-	0/0/0/0	0/0/0/0
7	ACT	B	888	-	-	0/0/0/0	0/0/0/0

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	400	GDP	C4-N3	-2.16	1.32	1.35
7	B	1	ACT	CH3-C	2.18	1.51	1.48
7	B	888	ACT	CH3-C	2.31	1.51	1.48
7	B	887	ACT	CH3-C	2.59	1.52	1.48
3	A	400	GDP	C5-C4	2.59	1.46	1.40
3	A	400	GDP	PB-O3A	2.68	1.64	1.60

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	400	GDP	C6-C5-C4	-4.47	116.40	120.84
3	A	400	GDP	C5-C6-N1	-2.94	119.30	123.48
3	A	400	GDP	N3-C2-N1	-2.50	123.81	127.46
3	A	400	GDP	O3A-PB-O1B	-2.21	97.82	111.44
3	A	400	GDP	C6-N1-C2	3.04	120.43	116.06
3	A	400	GDP	C2-N3-C4	4.48	120.39	115.16

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

4 monomers are involved in 12 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	401	ALF	1	0
7	B	1	ACT	7	0
7	B	887	ACT	1	0
7	B	888	ACT	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	318/327 (97%)	-0.13	4 (1%) 77 78	49, 64, 83, 100	0
2	B	759/885 (85%)	0.03	22 (2%) 52 52	55, 81, 104, 113	0
All	All	1077/1212 (88%)	-0.02	26 (2%) 59 60	49, 74, 103, 113	0

All (26) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	354	LYS	4.0
2	B	239	PRO	3.8
1	A	353	LEU	3.6
2	B	370	PRO	3.6
2	B	610	LYS	3.6
2	B	235	ALA	3.4
2	B	240	TYR	3.3
1	A	37	ARG	3.2
2	B	236	LYS	2.8
2	B	369	ARG	2.7
2	B	371	PRO	2.7
2	B	29	ILE	2.6
2	B	372	GLU	2.5
2	B	86	ILE	2.5
2	B	38	ARG	2.5
2	B	373	GLU	2.4
2	B	82	LYS	2.4
2	B	588	GLU	2.3
2	B	237	GLY	2.2
2	B	366	TRP	2.2
2	B	575	THR	2.2
1	A	330	CYS	2.2
2	B	770	ASN	2.1
2	B	181	ALA	2.1

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Mol	Chain	Res	Type	RSRZ
2	B	471	HIS	2.1
2	B	122	ALA	2.1

## 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
7	ACT	B	1	4/4	0.89	0.22	3.90	73,74,74,75	0
7	ACT	B	887	4/4	0.89	0.22	1.51	60,61,62,62	0
5	MG	A	402	1/1	0.99	0.23	0.90	52,52,52,52	0
7	ACT	B	888	4/4	0.74	0.16	0.20	91,92,92,92	0
6	CA	B	900	1/1	0.92	0.15	-0.27	97,97,97,97	0
3	GDP	A	400	28/28	0.98	0.21	-0.32	42,50,53,54	0
4	ALF	A	401	5/5	0.98	0.16	-0.79	48,49,52,54	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.