



Full wwPDB X-ray Structure Validation Report ⓘ

Jul 1, 2024 – 04:19 PM JST

PDB ID : 8KA1
Title : Crystal structure of *Vibrio vulnificus* RID-dependent transforming NADase domain (RDTND)/calmodulin-binding domain of Rho inactivation domain (RID-CBD) complexed with Ca²⁺-free calmodulin
Authors : Lee, Y.; Choi, S.; Hwang, J.; Kim, M.H.
Deposited on : 2023-08-02
Resolution : 2.82 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.37.1
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

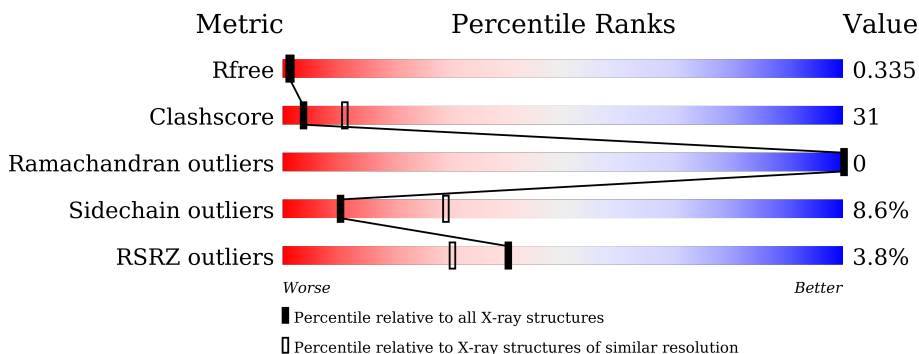
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.82 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



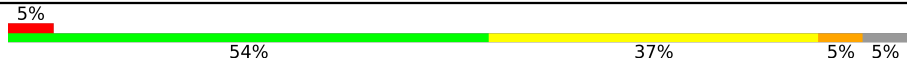

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	3617 (2.84-2.80)
Clashscore	141614	4060 (2.84-2.80)
Ramachandran outliers	138981	3978 (2.84-2.80)
Sidechain outliers	138945	3980 (2.84-2.80)
RSRZ outliers	127900	3552 (2.84-2.80)

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

Mol	Chain	Length	Quality of chain
1	A	416	
1	C	416	
1	E	416	
1	G	416	
2	B	151	
2	D	151	

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Mol	Chain	Length	Quality of chain
2	F	151	 <p>5% 54% 37% 5% 5%</p>
2	H	151	 <p>9% 48% 40% 8%</p>

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 17066 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 RDTND-RID CBD.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	Se			
1	A	404	3234	2042	551	636	5	0	0	0
1	C	384	3077	1947	523	602	5	0	0	0
1	E	404	3234	2042	551	636	5	0	0	0
1	G	384	3077	1947	523	602	5	0	0	0

- Molecule 2 is a protein called Calmodulin-2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	Se			
2	B	144	1134	696	183	246	9	0	0	0
2	D	133	1058	653	170	226	9	0	0	0
2	F	144	1134	696	183	246	9	0	0	0
2	H	139	1097	675	177	236	9	0	0	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-1	GLY	-	cloning artifact	UNP P0DP24
B	0	ALA	-	cloning artifact	UNP P0DP24
B	124	GLN	GLU	conflict	UNP P0DP24
D	-1	GLY	-	cloning artifact	UNP P0DP24
D	0	ALA	-	cloning artifact	UNP P0DP24
D	124	GLN	GLU	conflict	UNP P0DP24
F	-1	GLY	-	cloning artifact	UNP P0DP24
F	0	ALA	-	cloning artifact	UNP P0DP24

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Chain	Residue	Modelled	Actual	Comment	Reference
F	124	GLN	GLU	conflict	UNP P0DP24
H	-1	GLY	-	cloning artifact	UNP P0DP24
H	0	ALA	-	cloning artifact	UNP P0DP24
H	124	GLN	GLU	conflict	UNP P0DP24

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	F	3	Total Mg 3 3	0	0

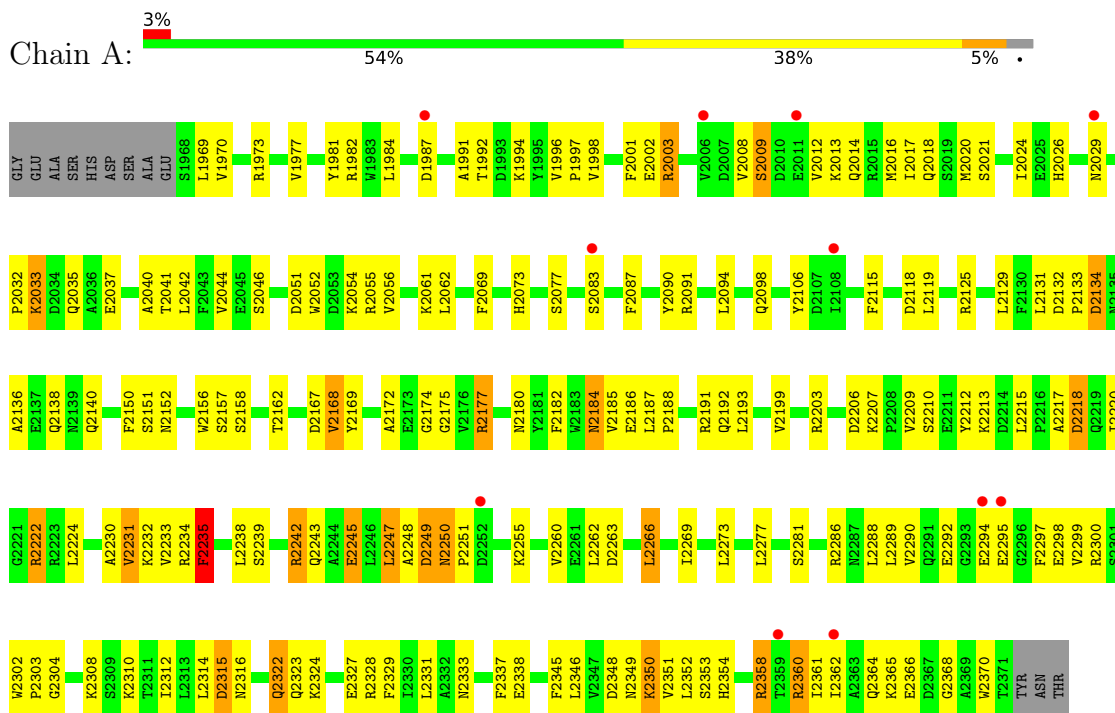
- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	3	Total O 3 3	0	0
4	B	1	Total O 1 1	0	0
4	C	1	Total O 1 1	0	0
4	E	6	Total O 6 6	0	0
4	F	2	Total O 2 2	0	0
4	G	3	Total O 3 3	0	0
4	H	2	Total O 2 2	0	0

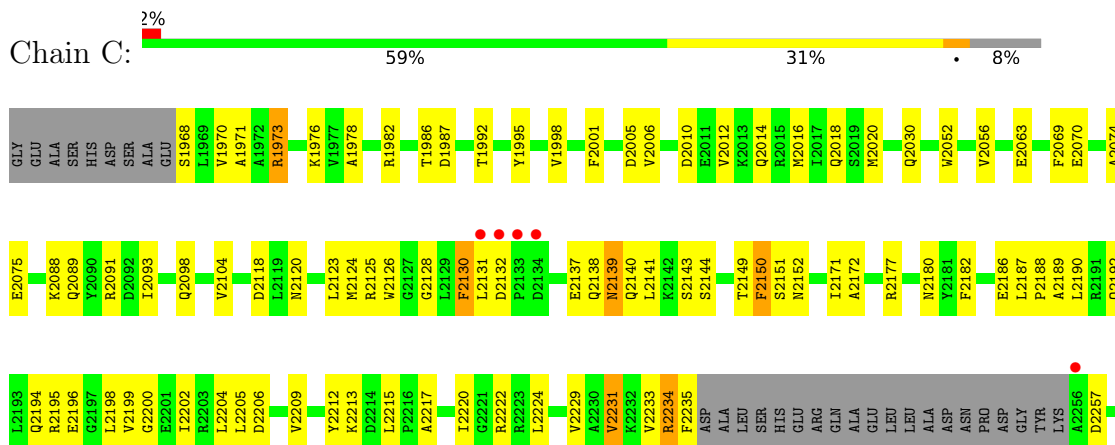
3 Residue-property plots [i](#)

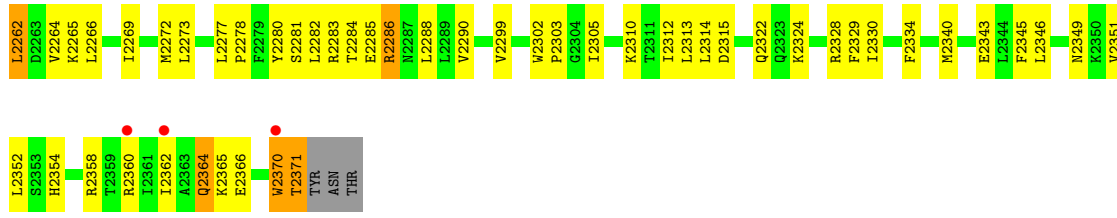
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

• Molecule 1: RDTND-RID CBD

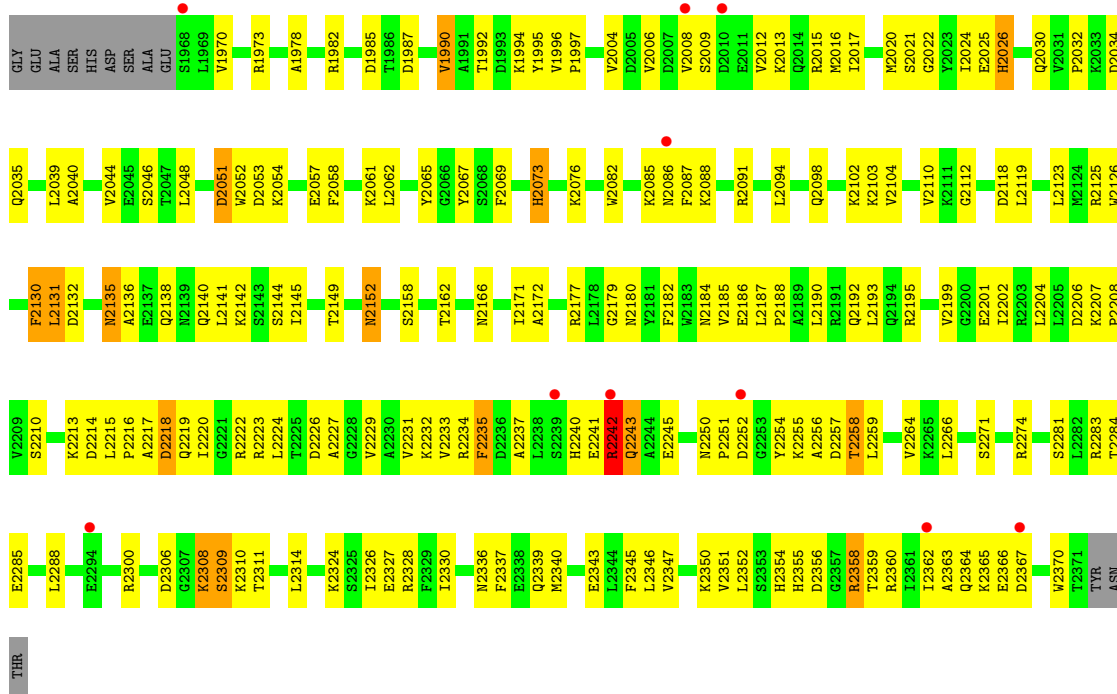


• Molecule 1: RDTND-RID CBD

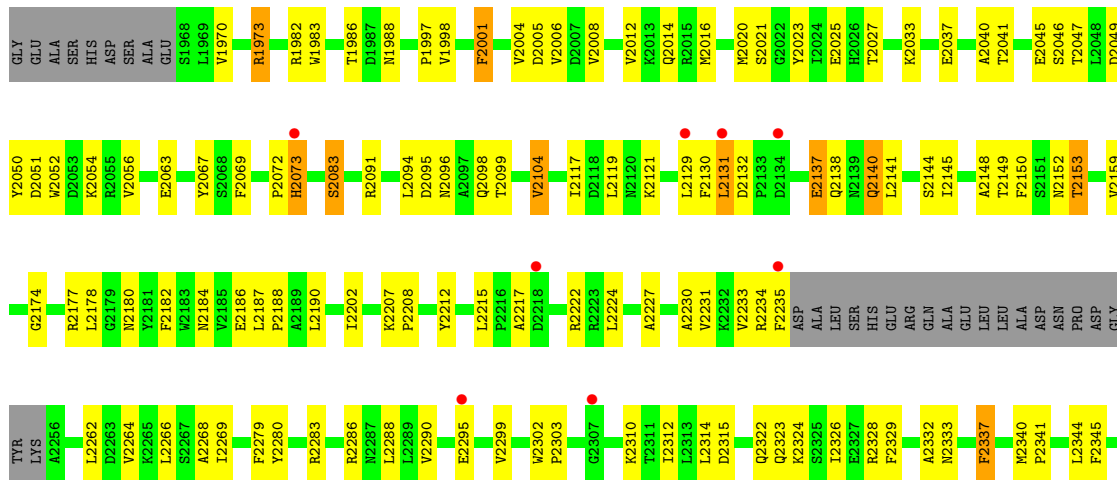




• Molecule 1: RDTND-RID CBD



• Molecule 1: RDTND-RID CBD

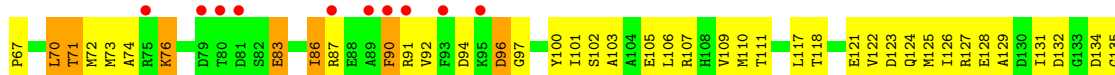
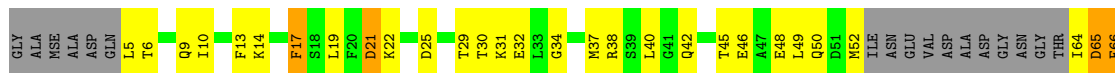




• Molecule 2: Calmodulin-2



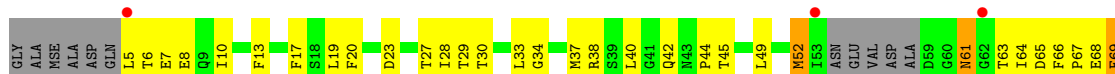
• Molecule 2: Calmodulin-2



• Molecule 2: Calmodulin-2



• Molecule 2: Calmodulin-2



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4 Data and refinement statistics i

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	106.03Å 88.08Å 136.95Å 90.00° 90.14° 90.00°	Depositor
Resolution (Å)	49.53 – 2.82 49.48 – 2.82	Depositor EDS
% Data completeness (in resolution range)	89.3 (49.53-2.82) 89.3 (49.48-2.82)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.97 (at 2.81Å)	Xtrriage
Refinement program	REFMAC 5.8.0415	Depositor
R, R_{free}	0.271 , 0.342 0.272 , 0.335	Depositor DCC
R_{free} test set	2678 reflections (4.90%)	wwPDB-VP
Wilson B-factor (Å ²)	46.5	Xtrriage
Anisotropy	0.184	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.27 , 31.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	0.004 for h,-k,-l	Xtrriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	17066	wwPDB-VP
Average B, all atoms (Å ²)	55.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 37.95 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.9676e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

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

5 Model quality i

5.1 Standard geometry i

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

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	0.55	0/3295	0.60	1/4457 (0.0%)
1	C	0.53	0/3134	0.54	0/4237
1	E	0.55	0/3295	0.58	0/4457
1	G	0.54	0/3134	0.53	0/4237
2	B	0.62	0/1137	0.63	1/1512 (0.1%)
2	D	0.57	0/1060	0.58	1/1405 (0.1%)
2	F	0.63	0/1137	0.57	0/1512
2	H	0.53	0/1099	0.53	0/1458
All	All	0.55	0/17291	0.57	3/23275 (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
1	E	0	1

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	2235	PHE	CB-CA-C	6.56	123.52	110.40
2	B	72	MSE	CB-CG-SE	-5.19	97.14	112.70
2	D	21	ASP	CB-CA-C	5.06	120.51	110.40

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	E	2242	ARG	Sidechain

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	3234	0	3130	209	0
1	C	3077	0	2986	150	0
1	E	3234	0	3130	218	0
1	G	3077	0	2986	147	0
2	B	1134	0	1065	106	0
2	D	1058	0	1000	102	0
2	F	1134	0	1065	72	0
2	H	1097	0	1034	105	0
3	F	3	0	0	0	0
4	A	3	0	0	0	0
4	B	1	0	0	1	0
4	C	1	0	0	0	0
4	E	6	0	0	3	0
4	F	2	0	0	0	0
4	G	3	0	0	3	0
4	H	2	0	0	0	0
All	All	17066	0	16396	1044	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 31.

All (1044) 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:G:2129:LEU:HD13	1:G:2129:LEU:O	1.22	1.35
1:A:2250:ASN:HB2	1:A:2251:PRO:CD	1.57	1.25
1:A:2032:PRO:HB2	1:A:2035:GLN:CG	1.67	1.23
1:E:2326:ILE:HD11	1:E:2346:LEU:CB	1.74	1.17
1:A:2250:ASN:CB	1:A:2251:PRO:HD3	1.75	1.16
1:C:2329:PHE:CD2	1:C:2362:ILE:HD11	1.81	1.14
1:A:1996:VAL:CG2	1:A:2052:TRP:CE3	2.30	1.14

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:69:PHE:CZ	2:B:73:MSE:HE3	1.83	1.12
2:B:138:ASN:HD22	2:B:141:GLU:HG3	1.09	1.12
2:D:10:ILE:HG12	2:D:70:LEU:HD11	1.31	1.11
2:H:52:MSE:HG3	2:H:72:MSE:SE	2.00	1.11
1:A:2032:PRO:CB	1:A:2035:GLN:HG3	1.79	1.11
2:B:56:VAL:HG21	2:B:68:GLU:HG2	1.27	1.11
1:E:2177:ARG:HB2	1:E:2180:ASN:ND2	1.64	1.11
1:G:2264:VAL:HG11	2:H:92:VAL:HG11	1.26	1.10
1:A:2032:PRO:HB2	1:A:2035:GLN:HG3	1.26	1.09
2:H:10:ILE:HG23	2:H:70:LEU:HD11	1.29	1.09
2:D:30:THR:HG22	2:D:64:ILE:CG1	1.84	1.07
2:B:52:MSE:HE2	2:B:72:MSE:HB3	1.37	1.06
1:A:1996:VAL:HG21	1:A:2052:TRP:CE3	1.92	1.05
1:E:2132:ASP:H	1:E:2138:GLN:NE2	1.55	1.05
1:G:2016:MSE:CE	1:G:2145:ILE:HD11	1.86	1.05
2:B:52:MSE:O	2:B:56:VAL:HG12	1.55	1.04
1:C:2264:VAL:HG11	2:D:92:VAL:HG21	1.40	1.03
1:E:2326:ILE:CD1	1:E:2346:LEU:HB2	1.88	1.03
1:A:2020:MSE:CE	1:A:2119:LEU:HB3	1.87	1.03
2:D:10:ILE:CG2	2:D:70:LEU:HD21	1.89	1.03
2:D:37:MSE:HE3	2:D:73:MSE:HE2	1.37	1.03
1:E:2365:LYS:O	1:E:2366:GLU:HG2	1.59	1.02
2:D:10:ILE:HG23	2:D:70:LEU:HD21	1.03	1.02
1:E:2032:PRO:HB2	1:E:2035:GLN:HB2	1.41	1.02
1:E:2250:ASN:HB3	1:E:2251:PRO:HD3	1.41	1.02
2:D:30:THR:HG22	2:D:64:ILE:HG12	1.43	1.01
1:G:2129:LEU:HD12	1:G:2130:PHE:CE1	1.96	1.01
1:G:2328:ARG:NH2	2:H:40:LEU:HD23	1.76	1.00
2:H:10:ILE:HG23	2:H:70:LEU:CD1	1.90	1.00
2:B:44:PRO:CG	2:B:49:LEU:HD11	1.91	0.99
1:E:2013:LYS:O	1:E:2017:ILE:HG13	1.62	0.99
1:C:2272:MSE:HE2	2:D:86:ILE:HG21	1.42	0.99
1:G:2290:VAL:HG22	1:G:2299:VAL:HG22	1.42	0.99
1:A:1996:VAL:HG22	1:A:2052:TRP:CE3	1.98	0.98
1:A:2210:SER:O	1:A:2213:LYS:HG2	1.63	0.98
1:E:2193:LEU:HB3	1:E:2199:VAL:HG23	1.45	0.98
2:H:20:PHE:HB2	2:H:28:ILE:HD13	1.46	0.97
1:A:2033:LYS:HD3	1:A:2033:LYS:H	1.28	0.97
1:E:2004:VAL:CG1	1:E:2144:SER:HA	1.95	0.96
2:H:69:PHE:CE2	2:H:73:MSE:HE3	2.00	0.96
1:A:2020:MSE:HE1	1:A:2119:LEU:HB3	1.48	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:2314:LEU:HD21	1:E:2326:ILE:HD12	1.48	0.95
2:B:37:MSE:HG2	2:B:73:MSE:CE	1.95	0.95
2:F:52:MSE:HB3	2:F:72:MSE:SE	2.16	0.95
1:C:2343:GLU:OE1	1:E:2358:ARG:HG2	1.67	0.95
1:C:2343:GLU:CD	1:E:2358:ARG:HG2	1.87	0.94
2:D:10:ILE:HG23	2:D:70:LEU:CD2	1.96	0.94
1:E:2132:ASP:H	1:E:2138:GLN:HE21	1.01	0.94
2:B:91:ARG:CG	2:B:139:TYR:HE2	1.81	0.94
1:A:2032:PRO:CG	1:A:2035:GLN:HG3	1.97	0.94
1:C:2264:VAL:HG23	1:C:2266:LEU:CD1	1.97	0.94
2:H:68:GLU:O	2:H:72:MSE:HB2	1.68	0.94
1:G:2129:LEU:O	1:G:2129:LEU:CD1	2.16	0.93
1:E:1996:VAL:HG22	1:E:2052:TRP:CE3	2.04	0.93
2:H:44:PRO:HG2	2:H:49:LEU:CD1	1.99	0.93
1:E:2135:ASN:HD21	1:E:2138:GLN:H	1.08	0.93
1:A:2020:MSE:HE1	1:A:2119:LEU:CB	1.99	0.92
1:G:2149:THR:O	1:G:2153:THR:HG22	1.68	0.92
1:A:2177:ARG:HB3	1:A:2180:ASN:ND2	1.84	0.92
1:A:2014:GLN:NE2	1:A:2018:GLN:HG3	1.85	0.92
1:C:2313:LEU:HD21	1:E:2347:VAL:HG11	1.49	0.92
1:E:2135:ASN:HD21	1:E:2138:GLN:N	1.67	0.92
1:A:1996:VAL:HG21	1:A:2052:TRP:CZ3	2.05	0.91
1:E:2326:ILE:HD11	1:E:2346:LEU:HB2	0.94	0.91
2:B:44:PRO:CG	2:B:49:LEU:CD1	2.48	0.91
1:C:2231:VAL:HG11	1:C:2266:LEU:CD2	2.01	0.91
2:H:89:ALA:O	2:H:92:VAL:HG22	1.69	0.91
2:B:91:ARG:HG3	2:B:139:TYR:HE2	1.33	0.91
1:E:2235:PHE:CD2	1:E:2241:GLU:HG2	2.06	0.91
2:D:141:GLU:O	2:D:145:MSE:HB3	1.70	0.90
1:A:2131:LEU:HD11	1:A:2138:GLN:HB3	1.52	0.90
2:H:82:SER:O	2:H:86:ILE:HG13	1.70	0.90
1:A:2362:ILE:CG2	1:A:2370:TRP:CE3	2.55	0.89
1:E:2233:VAL:HG12	1:E:2234:ARG:H	1.36	0.89
1:E:2135:ASN:ND2	1:E:2138:GLN:H	1.69	0.89
2:B:138:ASN:HB3	2:B:141:GLU:HB2	1.55	0.89
1:C:2329:PHE:HD2	1:C:2362:ILE:HD11	1.33	0.89
1:G:2269:ILE:HD13	2:H:113:LEU:CD1	2.01	0.89
1:A:2210:SER:HA	1:A:2213:LYS:HE3	1.54	0.89
1:C:2128:GLY:HA2	1:C:2131:LEU:HB3	1.56	0.88
1:E:2004:VAL:HG12	1:E:2144:SER:HB2	1.55	0.88
1:E:2004:VAL:HG12	1:E:2144:SER:HA	1.55	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:20:PHE:CD1	2:B:36:VAL:HG22	2.08	0.88
1:G:2352:LEU:HD13	1:G:2358:ARG:HD2	1.54	0.88
1:E:2358:ARG:HD3	1:E:2358:ARG:N	1.89	0.88
1:C:2264:VAL:HG11	2:D:92:VAL:CG2	2.03	0.88
2:B:73:MSE:O	2:B:77:MSE:HB2	1.74	0.88
2:B:99:GLY:O	2:B:139:TYR:CD1	2.26	0.87
1:C:2231:VAL:CG1	1:C:2266:LEU:HD22	2.03	0.87
2:F:44:PRO:HG2	2:F:49:LEU:HD11	1.57	0.87
2:B:52:MSE:HE2	2:B:72:MSE:CB	2.05	0.87
1:A:2242:ARG:HH11	1:A:2242:ARG:HB2	1.39	0.86
1:E:2358:ARG:HH21	1:E:2358:ARG:H	1.22	0.86
2:H:30:THR:HA	2:H:33:LEU:HD23	1.56	0.86
1:C:2231:VAL:HG11	1:C:2266:LEU:HD22	1.54	0.85
1:A:2362:ILE:CG2	1:A:2370:TRP:CD2	2.60	0.85
2:B:37:MSE:HG2	2:B:73:MSE:HE1	1.57	0.84
2:B:91:ARG:CG	2:B:139:TYR:CE2	2.59	0.84
1:E:2264:VAL:HG11	2:F:92:VAL:HG21	1.60	0.84
2:D:30:THR:HG22	2:D:64:ILE:HG13	1.58	0.83
1:A:2032:PRO:HB2	1:A:2035:GLN:HG2	1.57	0.83
1:E:2051:ASP:HB3	1:E:2054:LYS:HB2	1.60	0.83
2:F:44:PRO:HB2	2:F:49:LEU:HD12	1.60	0.83
1:E:2216:PRO:HD2	1:E:2219:GLN:HG3	1.59	0.83
1:A:2029:ASN:ND2	1:A:2115:PHE:HE1	1.75	0.83
1:C:2272:MSE:HE2	2:D:86:ILE:CG2	2.09	0.83
1:E:2020:MSE:HE1	1:E:2119:LEU:O	1.79	0.83
1:A:2020:MSE:HE3	1:A:2119:LEU:HG	1.61	0.83
1:A:2177:ARG:HB3	1:A:2180:ASN:HD22	1.42	0.82
2:B:56:VAL:HG21	2:B:68:GLU:CG	2.08	0.82
2:D:52:MSE:HB3	2:D:72:MSE:SE	2.30	0.82
1:E:2177:ARG:HB2	1:E:2180:ASN:HD22	1.41	0.82
1:G:2264:VAL:HG11	2:H:92:VAL:CG1	2.09	0.82
1:G:2349:ASN:HB3	1:G:2364:GLN:HB2	1.62	0.82
1:G:2016:MSE:HE2	1:G:2145:ILE:HD11	1.62	0.81
1:E:2132:ASP:N	1:E:2138:GLN:HE21	1.76	0.81
2:B:52:MSE:O	2:B:56:VAL:CG1	2.28	0.81
1:C:2006:VAL:HG21	1:C:2140:GLN:HG2	1.61	0.81
2:B:91:ARG:HG3	2:B:139:TYR:CE2	2.14	0.81
2:F:29:THR:O	2:F:30:THR:HG22	1.80	0.81
1:E:2358:ARG:HD3	1:E:2358:ARG:H	1.44	0.81
2:F:73:MSE:O	2:F:77:MSE:HG3	1.81	0.81
2:H:37:MSE:CE	2:H:44:PRO:HG3	2.11	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:69:PHE:CZ	2:B:73:MSE:CE	2.62	0.80
1:G:2129:LEU:HD13	1:G:2129:LEU:C	2.02	0.80
1:A:2014:GLN:HE21	1:A:2018:GLN:CD	1.85	0.80
1:A:2242:ARG:HB2	1:A:2242:ARG:NH1	1.96	0.80
2:B:44:PRO:HB2	2:B:49:LEU:HD13	1.63	0.80
1:A:1996:VAL:CG2	1:A:2052:TRP:CZ3	2.62	0.80
1:A:2020:MSE:CE	1:A:2119:LEU:CB	2.56	0.80
1:G:2129:LEU:HD12	1:G:2130:PHE:CZ	2.16	0.79
1:E:2314:LEU:CD2	1:E:2326:ILE:HD12	2.12	0.79
2:B:44:PRO:HG2	2:B:49:LEU:HD11	1.65	0.79
2:B:91:ARG:HG2	2:B:139:TYR:OH	1.82	0.79
1:C:2343:GLU:OE2	1:E:2358:ARG:HG2	1.82	0.79
1:A:2362:ILE:HG21	1:A:2370:TRP:CD2	2.18	0.79
2:B:44:PRO:HB2	2:B:49:LEU:CD1	2.13	0.79
1:E:2250:ASN:CB	1:E:2251:PRO:HD3	2.12	0.79
1:A:2029:ASN:HD22	1:A:2115:PHE:HE1	1.29	0.78
1:C:2010:ASP:O	1:C:2014:GLN:HG2	1.83	0.78
1:A:2131:LEU:HD12	1:A:2132:ASP:H	1.46	0.78
1:E:2360:ARG:NH1	1:E:2363:ALA:HB2	1.98	0.78
2:B:69:PHE:CE1	2:B:73:MSE:CE	2.66	0.78
1:G:2129:LEU:HD12	1:G:2130:PHE:CD1	2.19	0.78
1:A:2032:PRO:HG2	1:A:2035:GLN:HG3	1.63	0.78
2:B:44:PRO:HG3	2:B:49:LEU:HD11	1.64	0.78
1:E:2024:ILE:HD13	1:E:2039:LEU:HD23	1.66	0.78
1:C:2014:GLN:O	1:C:2018:GLN:HG2	1.85	0.77
1:G:2052:TRP:O	1:G:2056:VAL:HG23	1.84	0.77
2:D:117:LEU:HD23	2:D:122:VAL:HG22	1.66	0.77
1:E:2004:VAL:HG12	1:E:2144:SER:CB	2.14	0.77
2:H:52:MSE:CG	2:H:72:MSE:SE	2.83	0.77
2:H:44:PRO:HG2	2:H:49:LEU:HD11	1.65	0.77
2:H:10:ILE:CG2	2:H:70:LEU:HD11	2.13	0.76
2:B:37:MSE:HG2	2:B:73:MSE:HE2	1.66	0.76
1:E:2193:LEU:HB3	1:E:2199:VAL:CG2	2.14	0.76
2:B:44:PRO:HG2	2:B:49:LEU:CD1	2.14	0.76
1:E:2264:VAL:HG11	2:F:92:VAL:CG2	2.15	0.76
1:G:2268:ALA:HB1	2:H:86:ILE:HG12	1.67	0.76
2:B:91:ARG:HG2	2:B:139:TYR:CE2	2.19	0.76
2:F:33:LEU:O	2:F:37:MSE:HG3	1.86	0.76
2:B:56:VAL:CG2	2:B:68:GLU:HG2	2.14	0.76
2:B:138:ASN:ND2	2:B:141:GLU:HG3	1.94	0.76
2:D:10:ILE:CG1	2:D:70:LEU:HD11	2.14	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1970:VAL:HG11	1:G:2069:PHE:CD1	2.21	0.76
2:H:69:PHE:CE2	2:H:73:MSE:CE	2.69	0.76
1:E:2004:VAL:HG11	1:E:2144:SER:HA	1.67	0.75
1:G:2352:LEU:HD13	1:G:2358:ARG:CD	2.16	0.75
1:A:2014:GLN:NE2	1:A:2018:GLN:CG	2.49	0.75
1:C:2182:PHE:HA	1:C:2186:GLU:HB2	1.65	0.75
2:B:20:PHE:CE1	2:B:36:VAL:HG22	2.20	0.75
2:D:50:GLN:NE2	2:D:50:GLN:HA	2.02	0.75
1:A:2245:GLU:HA	1:A:2245:GLU:OE2	1.85	0.75
1:E:2250:ASN:HB3	1:E:2251:PRO:CD	2.15	0.75
1:G:2207:LYS:HB3	1:G:2208:PRO:HD2	1.66	0.75
1:G:2295:GLU:HA	1:G:2295:GLU:OE1	1.86	0.75
1:C:2313:LEU:CD2	1:E:2347:VAL:HG11	2.16	0.75
2:F:6:THR:HG22	2:F:8:GLU:HG3	1.67	0.75
2:F:81:ASP:O	2:F:85:GLU:HG3	1.86	0.75
1:E:2359:THR:HG21	4:E:2406:HOH:O	1.87	0.75
1:E:2362:ILE:CG2	1:E:2370:TRP:CE3	2.69	0.75
1:G:2269:ILE:HD13	2:H:113:LEU:HD13	1.67	0.75
1:A:2250:ASN:HB2	1:A:2251:PRO:HD3	0.78	0.74
2:H:37:MSE:HE2	2:H:44:PRO:HG3	1.68	0.74
1:G:2131:LEU:N	1:G:2131:LEU:HD13	2.02	0.74
1:A:2294:GLU:OE2	1:A:2294:GLU:HA	1.87	0.74
1:E:2213:LYS:O	1:E:2215:LEU:CD2	2.35	0.74
1:C:2196:GLU:HB2	1:C:2198:LEU:HD12	1.70	0.74
2:D:66:PHE:N	2:D:67:PRO:HD2	2.03	0.74
1:E:2004:VAL:HG12	1:E:2144:SER:CA	2.18	0.74
1:C:2290:VAL:HG22	1:C:2299:VAL:HG22	1.70	0.74
1:A:2029:ASN:ND2	1:A:2115:PHE:CE1	2.55	0.74
2:B:37:MSE:HA	2:B:73:MSE:HE1	1.70	0.74
1:A:2298:GLU:HB3	1:A:2300:ARG:NH1	2.03	0.73
1:C:2074:ALA:O	1:C:2075:GLU:HG2	1.88	0.73
2:H:96:ASP:OD1	2:H:96:ASP:N	2.15	0.73
1:E:2233:VAL:HG12	1:E:2234:ARG:N	2.02	0.73
1:G:2094:LEU:O	1:G:2098:GLN:HG2	1.88	0.73
1:G:2328:ARG:HH21	2:H:40:LEU:HD23	1.53	0.73
2:F:30:THR:HA	2:F:33:LEU:HD23	1.70	0.73
1:G:2269:ILE:HD13	2:H:113:LEU:HD12	1.70	0.73
1:E:2224:LEU:O	1:E:2229:VAL:HG11	1.89	0.73
2:F:52:MSE:CB	2:F:72:MSE:SE	2.87	0.73
2:H:88:GLU:O	2:H:92:VAL:HG13	1.89	0.72
1:A:2362:ILE:HG21	1:A:2370:TRP:CE3	2.25	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:30:THR:HB	2:H:64:ILE:HG13	1.70	0.72
1:A:2354:HIS:CD2	1:A:2358:ARG:HB2	2.23	0.72
2:B:99:GLY:O	2:B:139:TYR:CE1	2.43	0.72
1:A:2014:GLN:NE2	1:A:2018:GLN:CD	2.43	0.72
1:E:2006:VAL:HG11	1:E:2141:LEU:HD23	1.72	0.72
2:B:44:PRO:CB	2:B:49:LEU:CD1	2.66	0.72
2:B:105:GLU:O	2:B:109:VAL:HG23	1.88	0.72
1:E:2232:LYS:HE3	4:E:2402:HOH:O	1.89	0.72
1:A:2210:SER:CA	1:A:2213:LYS:HE3	2.20	0.72
1:E:2283:ARG:HG2	1:E:2288:LEU:O	1.90	0.72
2:F:88:GLU:O	2:F:92:VAL:HG23	1.90	0.72
1:A:2172:ALA:O	1:A:2206:ASP:HA	1.90	0.71
1:E:1970:VAL:HG11	1:E:2069:PHE:CD1	2.25	0.71
2:H:10:ILE:HD13	2:H:70:LEU:HD21	1.72	0.71
2:F:44:PRO:HB2	2:F:49:LEU:CD1	2.19	0.71
1:C:2224:LEU:HD12	1:C:2224:LEU:N	2.05	0.71
2:H:30:THR:HB	2:H:64:ILE:CG1	2.19	0.71
2:H:124:GLN:O	2:H:128:GLU:HG2	1.90	0.71
2:B:52:MSE:HB2	2:B:72:MSE:SE	2.40	0.71
1:G:1983:TRP:HA	1:G:1986:THR:CG2	2.21	0.71
1:E:2223:ARG:CZ	2:F:115:GLU:OE2	2.39	0.71
1:A:2365:LYS:C	1:A:2366:GLU:OE1	2.29	0.71
2:H:42:GLN:NE2	2:H:76:LYS:HG3	2.05	0.71
2:D:45:THR:HG23	2:D:48:GLU:H	1.56	0.71
2:D:6:THR:HG22	2:D:9:GLN:H	1.53	0.70
1:A:2250:ASN:O	1:E:2026:HIS:HB3	1.91	0.70
1:E:2172:ALA:O	1:E:2206:ASP:HA	1.91	0.70
1:A:2014:GLN:HE21	1:A:2018:GLN:CG	2.04	0.70
1:E:1994:LYS:HE2	1:E:2053:ASP:HB2	1.74	0.70
2:D:90:PHE:HZ	2:D:110:MSE:HE3	1.55	0.70
1:A:2033:LYS:H	1:A:2033:LYS:CD	1.93	0.70
1:E:1996:VAL:CG2	1:E:2052:TRP:CE3	2.75	0.70
2:H:30:THR:CA	2:H:33:LEU:HD23	2.21	0.70
2:B:52:MSE:CB	2:B:72:MSE:SE	2.90	0.70
2:F:44:PRO:CG	2:F:49:LEU:HD11	2.22	0.70
1:A:2020:MSE:HE1	1:A:2119:LEU:CA	2.22	0.69
1:C:2006:VAL:CG1	1:C:2144:SER:HB2	2.22	0.69
1:E:2234:ARG:HA	1:E:2258:THR:O	1.91	0.69
1:E:2308:LYS:O	1:E:2337:PHE:HZ	1.75	0.69
1:A:2329:PHE:HA	2:B:19:LEU:HD23	1.73	0.69
1:E:2235:PHE:CE1	1:E:2254:TYR:CD1	2.80	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:44:PRO:HB3	2:H:76:LYS:HE2	1.75	0.69
1:C:2205:LEU:HA	1:C:2212:TYR:OH	1.93	0.69
2:D:131:ILE:HG12	2:D:141:GLU:OE1	1.92	0.69
1:E:2032:PRO:HB2	1:E:2035:GLN:CB	2.22	0.69
1:C:2195:ARG:HH22	2:D:111:THR:HG23	1.58	0.69
1:E:2087:PHE:HE1	1:E:2088:LYS:HE2	1.57	0.69
2:B:33:LEU:HD11	2:B:69:PHE:HD1	1.58	0.68
2:H:83:GLU:O	2:H:87:ARG:HG2	1.93	0.68
2:H:20:PHE:HB2	2:H:28:ILE:CD1	2.22	0.68
1:G:2006:VAL:HG13	1:G:2144:SER:HB3	1.74	0.68
1:G:2177:ARG:HB3	1:G:2180:ASN:HD22	1.58	0.68
1:E:2141:LEU:HD13	1:E:2141:LEU:O	1.93	0.68
1:A:1996:VAL:HG22	1:A:2052:TRP:HE3	1.53	0.68
1:A:2169:TYR:CE1	1:A:2203:ARG:HD3	2.28	0.68
1:E:2087:PHE:CE1	1:E:2088:LYS:HE2	2.28	0.68
1:A:2224:LEU:H	1:A:2224:LEU:CD1	2.07	0.68
2:B:91:ARG:O	2:B:94:ASP:HB2	1.94	0.68
1:C:2120:ASN:ND2	1:C:2152:ASN:HD22	1.91	0.68
1:G:2352:LEU:HD13	1:G:2358:ARG:CG	2.24	0.68
1:C:2006:VAL:HG22	1:C:2006:VAL:O	1.93	0.68
1:A:2032:PRO:CB	1:A:2035:GLN:CG	2.50	0.67
2:B:91:ARG:HG2	2:B:139:TYR:CZ	2.29	0.67
1:A:2131:LEU:CD1	1:A:2138:GLN:HB3	2.23	0.67
1:A:2352:LEU:HD23	1:A:2360:ARG:HA	1.74	0.67
1:A:2362:ILE:HG22	1:A:2370:TRP:HA	1.75	0.67
1:E:2324:LYS:O	1:E:2328:ARG:HG3	1.95	0.67
1:A:2129:LEU:HD12	1:E:2256:ALA:HB2	1.76	0.67
2:H:66:PHE:CZ	2:H:70:LEU:HD13	2.29	0.67
2:D:37:MSE:CE	2:D:73:MSE:HE2	2.22	0.67
1:E:2016:MSE:HE1	1:E:2145:ILE:HD11	1.75	0.67
1:G:2290:VAL:HG22	1:G:2299:VAL:CG2	2.24	0.67
1:E:2004:VAL:CG1	1:E:2144:SER:CA	2.70	0.67
1:E:2016:MSE:CE	1:E:2145:ILE:CD1	2.73	0.67
1:E:2034:ASP:OD1	1:E:2035:GLN:N	2.28	0.67
1:E:2226:ASP:O	1:E:2229:VAL:HG12	1.95	0.67
2:B:132:ASP:HB2	2:B:134:ASP:OD1	1.95	0.66
1:E:2126:TRP:CD1	1:E:2130:PHE:HE1	2.13	0.66
1:A:2224:LEU:HD12	1:A:2224:LEU:N	2.10	0.66
2:F:30:THR:HB	2:F:62:GLY:HA2	1.76	0.66
2:F:105:GLU:O	2:F:109:VAL:HG23	1.96	0.66
1:A:2210:SER:HA	1:A:2213:LYS:CE	2.25	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2362:ILE:HG23	1:A:2370:TRP:CE3	2.29	0.66
2:B:69:PHE:CE1	2:B:73:MSE:HE2	2.29	0.66
1:C:2231:VAL:HG11	1:C:2266:LEU:CD1	2.25	0.66
2:H:6:THR:HG22	2:H:7:GLU:N	2.09	0.66
1:E:2177:ARG:CB	1:E:2180:ASN:ND2	2.53	0.66
1:C:2313:LEU:HD21	1:E:2347:VAL:CG1	2.25	0.66
2:D:25:ASP:HA	2:H:61:ASN:HB2	1.78	0.66
2:D:90:PHE:CZ	2:D:110:MSE:HE3	2.29	0.66
2:B:66:PHE:N	2:B:67:PRO:HD2	2.11	0.66
1:C:2224:LEU:HD12	1:C:2224:LEU:H	1.58	0.66
2:H:63:THR:HG22	2:H:63:THR:O	1.95	0.66
2:B:90:PHE:HB3	2:B:139:TYR:HD2	1.60	0.65
1:G:1983:TRP:HA	1:G:1986:THR:HG23	1.76	0.65
2:B:61:ASN:OD1	2:B:61:ASN:O	2.14	0.65
2:D:37:MSE:HE3	2:D:73:MSE:CE	2.21	0.65
1:G:1983:TRP:CA	1:G:1986:THR:HG23	2.27	0.65
1:G:2054:LYS:HE2	4:G:2402:HOH:O	1.96	0.65
1:A:2193:LEU:HB3	1:A:2199:VAL:HG23	1.79	0.65
2:B:129:ALA:HB2	2:B:142:PHE:HD1	1.62	0.65
1:E:2016:MSE:CE	1:E:2145:ILE:HD11	2.27	0.65
1:A:2210:SER:CB	1:A:2213:LYS:HE3	2.27	0.65
1:A:2217:ALA:HA	1:A:2220:ILE:HD12	1.76	0.65
1:E:2126:TRP:CD1	1:E:2130:PHE:CE1	2.85	0.65
1:E:2365:LYS:O	1:E:2366:GLU:CG	2.41	0.65
1:A:2132:ASP:OD1	1:A:2133:PRO:HD2	1.96	0.65
2:B:33:LEU:HD11	2:B:69:PHE:CD1	2.32	0.65
1:C:2264:VAL:HG23	1:C:2266:LEU:HD13	1.79	0.65
1:C:2299:VAL:HG21	1:C:2312:ILE:CD1	2.27	0.65
2:B:44:PRO:CB	2:B:49:LEU:HD13	2.26	0.64
2:H:33:LEU:C	2:H:33:LEU:HD12	2.17	0.64
1:A:2242:ARG:HH11	1:A:2242:ARG:CB	2.09	0.64
2:B:138:ASN:HD22	2:B:141:GLU:CG	1.99	0.64
2:F:122:VAL:O	2:F:126:ILE:HG12	1.98	0.64
2:B:125:MSE:HG3	2:B:126:ILE:HD13	1.79	0.64
1:C:1982:ARG:O	1:C:1986:THR:HG23	1.97	0.64
1:G:2006:VAL:CG1	1:G:2140:GLN:HE21	2.11	0.64
2:B:33:LEU:CD1	2:B:69:PHE:CD1	2.81	0.64
2:F:132:ASP:OD1	2:F:132:ASP:N	2.31	0.64
1:G:2138:GLN:N	1:G:2138:GLN:OE1	2.31	0.64
1:A:2158:SER:O	1:A:2162:THR:HG23	1.98	0.64
2:B:117:LEU:HD23	2:B:122:VAL:HG22	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:2310:LYS:NZ	1:G:2340:MSE:O	2.31	0.64
1:A:2129:LEU:CD1	1:E:2256:ALA:HB2	2.28	0.64
1:E:2016:MSE:HE1	1:E:2145:ILE:CD1	2.28	0.64
2:D:124:GLN:O	2:D:128:GLU:HG3	1.98	0.63
2:H:6:THR:HG22	2:H:8:GLU:OE1	1.97	0.63
1:A:2308:LYS:NZ	1:A:2338:GLU:OE1	2.25	0.63
1:E:2141:LEU:HD13	1:E:2141:LEU:C	2.18	0.63
2:B:100:TYR:CE2	2:B:138:ASN:HB2	2.34	0.63
2:D:101:ILE:HG12	2:D:139:TYR:HD1	1.63	0.63
1:E:2131:LEU:HD21	1:E:2141:LEU:HD12	1.79	0.63
2:B:128:GLU:HB3	2:B:145:MSE:HE1	1.81	0.63
1:C:2233:VAL:HG23	1:C:2262:LEU:CD1	2.28	0.63
1:A:2354:HIS:NE2	1:A:2358:ARG:HB2	2.13	0.63
1:E:2004:VAL:CG1	1:E:2144:SER:CB	2.77	0.63
2:B:126:ILE:HD13	2:B:126:ILE:N	2.14	0.63
1:C:2205:LEU:HG	1:C:2212:TYR:CZ	2.33	0.63
2:D:129:ALA:HB2	2:D:142:PHE:CD1	2.34	0.63
2:B:52:MSE:CE	2:B:72:MSE:HB3	2.21	0.63
1:A:2037:GLU:O	1:A:2041:THR:HG23	1.99	0.62
1:A:2040:ALA:O	1:A:2044:VAL:HG23	1.99	0.62
1:C:2120:ASN:HD21	1:C:2152:ASN:HD22	1.46	0.62
1:C:2006:VAL:HG21	1:C:2140:GLN:CG	2.29	0.62
1:E:2308:LYS:O	1:E:2337:PHE:CZ	2.52	0.62
2:H:6:THR:CG2	2:H:8:GLU:OE1	2.47	0.62
1:C:2001:PHE:HE2	1:C:2150:PHE:HD1	1.45	0.62
2:D:30:THR:CG2	2:D:64:ILE:HG12	2.23	0.62
1:E:2214:ASP:C	1:E:2215:LEU:HD22	2.20	0.62
4:E:2401:HOH:O	2:F:111:THR:HG21	1.99	0.62
2:B:100:TYR:HD2	2:B:138:ASN:N	1.97	0.62
1:E:1994:LYS:HE2	1:E:2053:ASP:CB	2.30	0.62
2:H:91:ARG:HG2	2:H:139:TYR:OH	2.00	0.61
1:C:2231:VAL:HG12	1:C:2266:LEU:HD22	1.80	0.61
1:E:1987:ASP:OD2	2:F:126:ILE:HG21	1.99	0.61
1:E:2013:LYS:O	1:E:2017:ILE:CG1	2.46	0.61
1:C:2233:VAL:HG12	1:C:2234:ARG:N	2.15	0.61
1:C:2370:TRP:NE1	2:D:22:LYS:HG2	2.15	0.61
2:F:66:PHE:N	2:F:67:PRO:HD2	2.15	0.61
1:E:2004:VAL:CG1	1:E:2144:SER:HB2	2.29	0.61
2:H:44:PRO:HB3	2:H:76:LYS:CE	2.30	0.61
2:H:83:GLU:O	2:H:87:ARG:CG	2.48	0.61
1:G:2174:GLY:O	1:G:2230:ALA:HB3	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2224:LEU:H	1:C:2224:LEU:CD1	2.13	0.61
1:E:2233:VAL:CG1	1:E:2234:ARG:H	2.09	0.61
1:E:2245:GLU:OE1	1:E:2245:GLU:HA	2.01	0.61
2:D:96:ASP:OD2	2:D:96:ASP:N	2.34	0.61
1:E:2034:ASP:OD1	1:E:2035:GLN:HG2	2.01	0.61
1:A:2002:GLU:O	1:A:2002:GLU:HG3	2.00	0.60
1:A:2020:MSE:CE	1:A:2119:LEU:HG	2.31	0.60
1:A:2098:GLN:NE2	1:A:2217:ALA:HB1	2.15	0.60
1:E:2008:VAL:HG12	1:E:2009:SER:N	2.15	0.60
1:G:1983:TRP:C	1:G:1986:THR:HG23	2.22	0.60
1:G:2006:VAL:HB	1:G:2140:GLN:NE2	2.16	0.60
1:E:2214:ASP:O	1:E:2215:LEU:HD22	2.02	0.60
1:A:2020:MSE:HE3	1:A:2119:LEU:CG	2.32	0.60
1:A:2324:LYS:O	1:A:2328:ARG:HG3	2.02	0.60
1:E:2082:TRP:HA	1:E:2171:ILE:HB	1.84	0.60
1:G:2098:GLN:HE22	1:G:2217:ALA:HB1	1.66	0.60
1:G:2315:ASP:HB3	1:G:2322:GLN:HE22	1.67	0.60
1:G:2352:LEU:HD13	1:G:2358:ARG:HG3	1.83	0.60
2:H:91:ARG:CG	2:H:139:TYR:OH	2.49	0.60
1:E:2362:ILE:HG21	1:E:2370:TRP:CE3	2.36	0.60
1:G:2345:PHE:O	1:G:2351:VAL:HA	2.01	0.60
1:G:2349:ASN:HA	1:G:2364:GLN:OE1	2.01	0.60
2:B:6:THR:OG1	2:B:9:GLN:HG3	2.01	0.60
2:H:44:PRO:CG	2:H:49:LEU:CD1	2.77	0.60
2:H:98:ASN:H	2:H:98:ASN:ND2	1.99	0.60
1:A:1984:LEU:HA	2:B:107:ARG:HD3	1.82	0.60
1:A:2224:LEU:H	1:A:2224:LEU:HD12	1.62	0.60
1:G:2299:VAL:HG21	1:G:2312:ILE:CD1	2.32	0.60
2:H:33:LEU:HD12	2:H:34:GLY:N	2.16	0.60
1:C:2016:MSE:CE	1:C:2141:LEU:HD11	2.31	0.60
1:A:2288:LEU:CD2	1:A:2337:PHE:HB2	2.32	0.60
1:E:2235:PHE:CZ	1:E:2254:TYR:CD1	2.90	0.60
2:H:27:THR:HG22	2:H:65:ASP:HB3	1.82	0.60
2:B:120:GLU:HB2	4:B:201:HOH:O	2.01	0.59
2:D:71:THR:O	2:D:74:ALA:HB3	2.02	0.59
1:G:2233:VAL:HG12	1:G:2234:ARG:N	2.17	0.59
1:E:2240:HIS:HA	1:E:2243:GLN:HG2	1.83	0.59
2:D:34:GLY:O	2:D:38:ARG:HB2	2.02	0.59
1:C:2272:MSE:CE	2:D:86:ILE:CG2	2.80	0.59
1:C:2343:GLU:OE1	1:E:2358:ARG:CG	2.46	0.59
1:E:2017:ILE:HG12	1:E:2044:VAL:HG21	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:2315:ASP:N	1:G:2322:GLN:HE22	1.99	0.59
1:G:2352:LEU:CD1	1:G:2358:ARG:HD2	2.32	0.59
1:A:2298:GLU:CB	1:A:2300:ARG:NH1	2.66	0.59
1:A:2348:ASP:O	1:A:2350:LYS:HE2	2.03	0.59
1:A:2131:LEU:HD12	1:A:2132:ASP:N	2.17	0.59
1:A:2042:LEU:HD22	1:A:2061:LYS:HE3	1.84	0.59
1:A:2269:ILE:CD1	2:B:90:PHE:CZ	2.86	0.59
2:B:129:ALA:HB2	2:B:142:PHE:CD1	2.37	0.59
1:A:2250:ASN:CB	1:A:2251:PRO:CD	2.48	0.58
1:C:1973:ARG:HH12	1:C:2070:GLU:HG2	1.67	0.58
1:C:2324:LYS:O	1:C:2328:ARG:HG3	2.02	0.58
1:E:1970:VAL:HG12	1:E:2069:PHE:HB2	1.85	0.58
1:G:2005:ASP:OD1	1:G:2050:TYR:CE2	2.55	0.58
2:H:44:PRO:HB3	2:H:76:LYS:NZ	2.18	0.58
1:E:2012:VAL:HA	1:E:2015:ARG:HD3	1.84	0.58
2:D:139:TYR:HD2	2:D:139:TYR:O	1.85	0.58
1:E:2032:PRO:CB	1:E:2035:GLN:HB2	2.27	0.58
1:E:2207:LYS:HB3	1:E:2208:PRO:HD2	1.84	0.58
1:E:2235:PHE:CZ	1:E:2254:TYR:HD1	2.21	0.58
2:B:44:PRO:CG	2:B:49:LEU:HD13	2.33	0.58
1:A:2138:GLN:HA	1:A:2138:GLN:NE2	2.18	0.58
1:E:2213:LYS:O	1:E:2215:LEU:HD22	2.02	0.58
1:C:2265:LYS:O	1:C:2266:LEU:HB2	2.03	0.58
1:C:2360:ARG:NH1	1:C:2371:THR:O	2.36	0.58
2:D:42:GLN:HE21	2:D:76:LYS:HE3	1.68	0.58
2:F:56:VAL:O	2:F:56:VAL:HG13	2.04	0.58
1:C:2314:LEU:HD13	1:C:2322:GLN:HG2	1.85	0.58
1:E:2177:ARG:CB	1:E:2180:ASN:HD22	2.16	0.58
1:A:2358:ARG:O	1:A:2358:ARG:NE	2.37	0.57
1:G:2345:PHE:HB2	1:G:2352:LEU:HG	1.85	0.57
1:A:2286:ARG:NH2	1:A:2331:LEU:O	2.36	0.57
2:B:87:ARG:HD3	2:B:140:GLU:CG	2.33	0.57
1:G:2352:LEU:CD1	1:G:2358:ARG:HG3	2.34	0.57
1:A:2014:GLN:HE21	1:A:2018:GLN:HG3	1.63	0.57
1:E:2223:ARG:NE	2:F:115:GLU:OE2	2.37	0.57
2:F:118:THR:HB	2:F:121:GLU:HB2	1.85	0.57
2:H:69:PHE:HD2	2:H:69:PHE:O	1.88	0.57
2:B:100:TYR:HD2	2:B:137:VAL:C	2.07	0.57
2:D:5:LEU:HD12	2:D:5:LEU:N	2.19	0.57
1:G:2004:VAL:O	1:G:2004:VAL:HG12	2.05	0.57
1:G:2280:TYR:O	1:G:2283:ARG:HB2	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:52:MSE:CG	2:F:72:MSE:SE	3.02	0.57
1:C:2328:ARG:NH2	2:D:40:LEU:HD23	2.19	0.57
1:E:2288:LEU:CD2	1:E:2337:PHE:HB2	2.35	0.57
1:A:2266:LEU:HG	2:B:113:LEU:HD11	1.87	0.57
1:A:2175:GLY:HA3	1:A:2230:ALA:O	2.05	0.57
1:A:2299:VAL:HG21	1:A:2312:ILE:CD1	2.34	0.57
1:C:2231:VAL:HG11	1:C:2266:LEU:HD13	1.86	0.57
2:H:42:GLN:HE21	2:H:76:LYS:HG3	1.70	0.57
1:C:2212:TYR:CD1	1:C:2220:ILE:HG23	2.39	0.57
1:C:2139:ASN:ND2	1:C:2139:ASN:H	2.01	0.56
2:F:25:ASP:N	2:F:25:ASP:OD1	2.31	0.56
1:A:2292:GLU:HG2	1:A:2297:PHE:CE1	2.40	0.56
1:C:2330:ILE:HG12	1:C:2340:MSE:HE3	1.85	0.56
1:E:2326:ILE:HG13	1:E:2346:LEU:HD22	1.86	0.56
1:E:2362:ILE:HG22	1:E:2370:TRP:HA	1.86	0.56
1:C:2177:ARG:HB3	1:C:2180:ASN:ND2	2.20	0.56
1:C:2299:VAL:CG2	1:C:2312:ILE:CD1	2.83	0.56
2:D:118:THR:OG1	2:D:121:GLU:HG3	2.05	0.56
1:E:2006:VAL:CG1	1:E:2141:LEU:HD23	2.35	0.56
1:E:2008:VAL:CG1	1:E:2012:VAL:HB	2.35	0.56
1:E:2177:ARG:HB2	1:E:2180:ASN:HD21	1.66	0.56
1:E:2237:ALA:O	1:E:2241:GLU:HG3	2.05	0.56
1:C:2234:ARG:NH2	1:C:2257:ASP:HB2	2.21	0.56
1:A:1994:LYS:O	1:A:2052:TRP:N	2.38	0.56
2:H:6:THR:HG22	2:H:8:GLU:H	1.70	0.56
2:B:33:LEU:CD1	2:B:69:PHE:HD1	2.17	0.56
2:B:69:PHE:O	2:B:72:MSE:HG3	2.05	0.56
1:G:2350:LYS:NZ	1:G:2363:ALA:HA	2.21	0.56
1:C:2196:GLU:CB	1:C:2198:LEU:HD12	2.35	0.56
2:H:107:ARG:NH2	2:H:123:ASP:HA	2.21	0.56
1:C:2089:GLN:HE21	1:C:2209:VAL:HG11	1.70	0.56
2:D:94:ASP:OD1	2:D:97:GLY:N	2.39	0.56
1:G:2329:PHE:CE1	1:G:2344:LEU:HD21	2.40	0.56
1:G:2341:PRO:HG2	1:G:2344:LEU:HD13	1.88	0.56
2:B:23:ASP:HB2	2:B:25:ASP:OD2	2.06	0.56
1:A:2362:ILE:HG22	1:A:2370:TRP:CD2	2.41	0.55
1:A:2294:GLU:O	1:A:2295:GLU:HG2	2.06	0.55
1:C:2016:MSE:HG2	1:C:2126:TRP:CH2	2.42	0.55
1:C:2269:ILE:HD12	2:D:110:MSE:HE1	1.87	0.55
1:E:2190:LEU:HB3	1:E:2202:ILE:HD11	1.88	0.55
2:F:73:MSE:O	2:F:77:MSE:CG	2.55	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2205:LEU:HG	1:C:2212:TYR:CE2	2.42	0.55
1:C:2299:VAL:HG23	1:C:2312:ILE:HD12	1.88	0.55
1:E:2182:PHE:HA	1:E:2186:GLU:HB2	1.88	0.55
1:G:2095:ASP:OD1	1:G:2104:VAL:HG13	2.07	0.55
1:C:2006:VAL:HG12	1:C:2144:SER:HB2	1.89	0.55
2:B:20:PHE:CD1	2:B:36:VAL:CG2	2.87	0.55
2:D:37:MSE:CE	2:D:76:LYS:HG2	2.36	0.55
1:G:2131:LEU:N	1:G:2131:LEU:CD1	2.70	0.55
1:A:2157:SER:OG	1:A:2185:VAL:HG21	2.06	0.55
2:B:100:TYR:HA	2:B:137:VAL:O	2.07	0.55
2:D:136:GLN:HA	2:D:136:GLN:NE2	2.22	0.55
1:E:2051:ASP:CG	1:E:2054:LYS:HG3	2.26	0.55
2:F:23:ASP:OD1	2:F:23:ASP:N	2.40	0.55
1:G:2016:MSE:HE3	1:G:2145:ILE:HD11	1.83	0.55
1:C:2172:ALA:HB3	1:C:2204:LEU:HD11	1.89	0.55
1:E:2354:HIS:CE1	1:E:2356:ASP:O	2.60	0.55
1:E:2085:LYS:O	1:E:2086:ASN:OD1	2.24	0.54
2:H:84:GLU:O	2:H:88:GLU:HG2	2.07	0.54
1:A:2329:PHE:HD2	1:A:2362:ILE:HD11	1.73	0.54
2:D:145:MSE:O	2:D:148:ALA:O	2.25	0.54
2:H:89:ALA:O	2:H:92:VAL:CG2	2.49	0.54
1:C:2273:LEU:HD13	2:D:117:LEU:HD11	1.90	0.54
1:C:2280:TYR:O	1:C:2283:ARG:HB2	2.07	0.54
2:B:90:PHE:CB	2:B:139:TYR:HD2	2.20	0.54
1:C:2233:VAL:HG23	1:C:2262:LEU:HD12	1.90	0.54
1:E:1973:ARG:NH1	1:E:2069:PHE:O	2.41	0.54
1:G:2182:PHE:HA	1:G:2186:GLU:HB2	1.88	0.54
1:A:2020:MSE:CE	1:A:2119:LEU:CG	2.85	0.54
2:B:69:PHE:HZ	2:B:73:MSE:HE3	1.62	0.54
2:B:100:TYR:CD2	2:B:138:ASN:N	2.76	0.54
1:A:2316:ASN:HB3	1:A:2322:GLN:HE21	1.73	0.54
1:C:2264:VAL:CG2	1:C:2266:LEU:CD1	2.79	0.54
1:G:2266:LEU:HD23	1:G:2266:LEU:O	2.08	0.54
2:F:125:MSE:CE	2:F:142:PHE:HZ	2.21	0.54
1:G:2021:SER:OG	1:G:2037:GLU:HA	2.07	0.54
1:A:1987:ASP:OD2	2:B:126:ILE:HG21	2.08	0.53
2:D:102:SER:HB2	2:D:105:GLU:HG3	1.90	0.53
2:B:128:GLU:OE1	2:B:145:MSE:HE1	2.07	0.53
2:F:64:ILE:HG23	2:F:64:ILE:O	2.09	0.53
2:H:6:THR:CG2	2:H:7:GLU:N	2.72	0.53
1:A:2231:VAL:HG22	1:A:2262:LEU:HB2	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2235:PHE:HB2	1:A:2260:VAL:HG21	1.89	0.53
1:E:2224:LEU:N	1:E:2224:LEU:HD12	2.24	0.53
1:G:2302:TRP:CG	1:G:2303:PRO:HA	2.43	0.53
1:E:2132:ASP:CG	1:E:2132:ASP:O	2.45	0.53
1:E:2250:ASN:CB	1:E:2251:PRO:CD	2.77	0.53
2:F:106:LEU:O	2:F:110:MSE:HG2	2.09	0.53
2:H:132:ASP:OD1	2:H:132:ASP:N	2.41	0.53
2:H:139:TYR:O	2:H:143:VAL:HG23	2.09	0.53
1:C:1973:ARG:NH1	1:C:2070:GLU:HG2	2.23	0.53
2:D:42:GLN:NE2	2:D:76:LYS:HE3	2.23	0.53
1:E:1978:ALA:O	1:E:1982:ARG:HG3	2.08	0.53
1:E:2016:MSE:CE	1:E:2145:ILE:HD13	2.37	0.53
1:E:2172:ALA:HB3	1:E:2204:LEU:HD11	1.90	0.53
2:F:50:GLN:OE1	2:F:50:GLN:HA	2.08	0.53
1:A:2333:ASN:HD21	1:A:2370:TRP:HZ3	1.55	0.53
2:B:37:MSE:CG	2:B:73:MSE:HE1	2.35	0.53
1:E:2046:SER:HB3	1:E:2054:LYS:HB3	1.90	0.53
1:C:2098:GLN:HE22	1:C:2217:ALA:HB1	1.74	0.53
2:D:141:GLU:O	2:D:145:MSE:HE3	2.09	0.53
2:F:45:THR:O	2:F:49:LEU:HD13	2.09	0.53
1:G:2212:TYR:HA	1:G:2215:LEU:HD12	1.90	0.53
2:B:13:PHE:N	2:B:13:PHE:CD1	2.77	0.53
1:C:2273:LEU:HD22	2:D:125:MSE:HE1	1.90	0.53
1:C:2299:VAL:CG2	1:C:2312:ILE:HD12	2.39	0.53
1:C:2351:VAL:HG21	1:C:2362:ILE:HD12	1.91	0.53
1:G:2006:VAL:CG1	1:G:2144:SER:HB3	2.39	0.53
1:A:2168:VAL:O	1:A:2203:ARG:HG3	2.09	0.52
1:C:2233:VAL:HG12	1:C:2234:ARG:H	1.72	0.52
1:G:2083:SER:HB3	4:G:2403:HOH:O	2.08	0.52
2:F:44:PRO:CB	2:F:49:LEU:CD1	2.88	0.52
1:E:2350:LYS:HD2	1:E:2360:ARG:CD	2.39	0.52
1:G:2020:MSE:HB3	1:G:2040:ALA:HB1	1.90	0.52
2:H:69:PHE:C	2:H:69:PHE:CD2	2.82	0.52
1:G:2129:LEU:CD1	1:G:2129:LEU:C	2.71	0.52
1:A:2014:GLN:HA	1:A:2017:ILE:HD12	1.92	0.52
1:A:2315:ASP:OD2	1:A:2322:GLN:NE2	2.42	0.52
1:C:2305:ILE:HG22	1:C:2305:ILE:O	2.08	0.52
1:C:2346:LEU:HD13	1:C:2351:VAL:HG23	1.92	0.52
1:C:2362:ILE:HD13	2:D:19:LEU:CD2	2.40	0.52
2:D:122:VAL:O	2:D:126:ILE:HG12	2.09	0.52
2:F:121:GLU:O	2:F:124:GLN:HG2	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:10:ILE:HG23	2:H:70:LEU:HD13	1.85	0.52
2:D:6:THR:HB	2:D:9:GLN:HG3	1.91	0.52
1:A:1991:ALA:HB2	1:A:1997:PRO:HD3	1.91	0.52
1:G:2006:VAL:HG11	1:G:2140:GLN:HE21	1.75	0.52
2:H:28:ILE:HG22	2:H:29:THR:N	2.25	0.52
1:C:2224:LEU:N	1:C:2224:LEU:CD1	2.71	0.52
2:D:37:MSE:HE1	2:D:76:LYS:HG2	1.91	0.52
2:F:63:THR:HG22	2:F:63:THR:O	2.10	0.52
1:E:2213:LYS:O	1:E:2215:LEU:HD23	2.08	0.52
1:G:2023:TYR:O	1:G:2027:THR:HG23	2.10	0.52
2:H:128:GLU:HB3	2:H:145:MSE:HE2	1.91	0.52
1:A:2362:ILE:HG22	1:A:2370:TRP:CG	2.44	0.52
2:D:118:THR:O	2:D:122:VAL:HG23	2.10	0.52
1:E:2138:GLN:O	1:E:2141:LEU:HB3	2.10	0.52
2:F:48:GLU:OE1	2:F:76:LYS:NZ	2.40	0.52
2:F:13:PHE:CD1	2:F:13:PHE:N	2.75	0.51
1:G:2006:VAL:HB	1:G:2140:GLN:HE22	1.75	0.51
1:C:2093:ILE:HD11	1:C:2213:LYS:HG2	1.91	0.51
1:C:2334:PHE:CD2	1:C:2340:MSE:HG2	2.45	0.51
2:B:52:MSE:HB3	2:B:72:MSE:SE	2.61	0.51
2:D:106:LEU:HD23	2:D:126:ILE:CD1	2.40	0.51
1:G:2150:PHE:O	1:G:2153:THR:HG23	2.11	0.51
1:G:2187:LEU:HB3	1:G:2188:PRO:HD3	1.91	0.51
1:A:2132:ASP:OD1	1:A:2133:PRO:CD	2.58	0.51
1:C:2137:GLU:OE2	1:C:2140:GLN:OE1	2.29	0.51
1:E:2358:ARG:H	1:E:2358:ARG:CD	2.20	0.51
1:A:2098:GLN:HE22	1:A:2217:ALA:HB1	1.75	0.51
1:C:2349:ASN:HB3	1:C:2364:GLN:HB3	1.93	0.51
2:D:107:ARG:NH2	2:D:123:ASP:OD1	2.44	0.51
1:E:1992:THR:OG1	1:E:1995:TYR:HB3	2.10	0.51
1:E:2166:ASN:O	1:E:2199:VAL:HG13	2.10	0.51
1:G:2190:LEU:HB3	1:G:2202:ILE:HD11	1.93	0.51
1:C:1968:SER:HB3	1:C:1971:ALA:HB2	1.93	0.51
1:E:2240:HIS:HA	1:E:2243:GLN:CG	2.40	0.51
1:E:2326:ILE:O	1:E:2330:ILE:HG13	2.11	0.51
2:F:44:PRO:HB3	2:F:76:LYS:HD3	1.91	0.51
1:A:2138:GLN:NE2	1:A:2138:GLN:CA	2.74	0.51
2:B:100:TYR:HE2	2:B:138:ASN:HB2	1.72	0.51
1:E:2126:TRP:CG	1:E:2130:PHE:HE1	2.29	0.51
1:A:2207:LYS:N	1:A:2212:TYR:OH	2.35	0.50
2:B:128:GLU:CB	2:B:145:MSE:HE1	2.42	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:84:GLU:HG2	2:B:87:ARG:HH12	1.75	0.50
2:F:48:GLU:CD	2:F:76:LYS:HZ3	2.15	0.50
1:A:2177:ARG:HH11	1:A:2177:ARG:CG	2.24	0.50
1:A:2233:VAL:HG12	1:A:2234:ARG:N	2.26	0.50
1:C:2273:LEU:CD2	2:D:125:MSE:HE1	2.42	0.50
2:D:103:ALA:HA	2:D:137:VAL:HG23	1.92	0.50
2:F:120:GLU:HA	2:F:123:ASP:HB2	1.93	0.50
1:G:2177:ARG:HH11	1:G:2180:ASN:HB3	1.76	0.50
1:A:2158:SER:OG	1:A:2185:VAL:HB	2.12	0.50
2:D:30:THR:CG2	2:D:64:ILE:CG1	2.75	0.50
2:H:44:PRO:HB3	2:H:76:LYS:HZ3	1.76	0.50
1:A:2345:PHE:O	1:A:2351:VAL:HA	2.10	0.50
1:C:2343:GLU:OE1	1:C:2354:HIS:NE2	2.44	0.50
1:G:2119:LEU:HD23	1:G:2119:LEU:N	2.26	0.50
2:H:37:MSE:HE1	2:H:44:PRO:HG3	1.92	0.50
1:A:2020:MSE:HE2	1:A:2119:LEU:HB3	1.84	0.50
1:E:2364:GLN:HA	1:E:2367:ASP:O	2.11	0.50
2:H:17:PHE:HD1	2:H:69:PHE:CE1	2.30	0.50
1:E:2094:LEU:HB3	1:E:2104:VAL:HG11	1.94	0.50
1:G:1970:VAL:HG13	1:G:2063:GLU:OE1	2.10	0.50
1:C:1968:SER:HB3	1:C:1971:ALA:CB	2.42	0.50
1:G:1970:VAL:CG1	1:G:2069:PHE:CD1	2.93	0.50
1:A:2051:ASP:CG	1:A:2054:LYS:HD2	2.33	0.49
1:A:2087:PHE:HB2	1:A:2106:TYR:CE1	2.47	0.49
1:E:2004:VAL:HG11	1:E:2144:SER:CA	2.39	0.49
1:E:2039:LEU:HD13	1:E:2065:TYR:CE2	2.47	0.49
1:A:2329:PHE:CD2	1:A:2362:ILE:HD11	2.47	0.49
1:A:2349:ASN:HD22	1:A:2364:GLN:NE2	2.10	0.49
1:C:2012:VAL:O	1:C:2016:MSE:HG3	2.11	0.49
2:B:44:PRO:HG2	2:B:49:LEU:HD13	1.90	0.49
1:A:2136:ALA:HB3	1:E:2136:ALA:HB2	1.94	0.49
2:B:139:TYR:HD1	2:B:139:TYR:H	1.60	0.49
1:E:2051:ASP:HB3	1:E:2054:LYS:CB	2.37	0.49
1:E:2367:ASP:O	1:E:2367:ASP:OD1	2.30	0.49
1:G:2328:ARG:NH2	2:H:40:LEU:CD2	2.64	0.49
1:C:2171:ILE:N	1:C:2171:ILE:HD12	2.27	0.49
1:C:2264:VAL:CG1	2:D:92:VAL:HG21	2.27	0.49
1:E:2057:GLU:O	1:E:2061:LYS:HB2	2.12	0.49
1:A:2021:SER:HA	1:A:2024:ILE:HD12	1.95	0.49
2:B:131:ILE:HG13	2:B:132:ASP:N	2.27	0.49
2:B:147:THR:O	2:B:147:THR:HG22	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2272:MSE:HE1	2:D:90:PHE:HE2	1.78	0.49
1:A:2290:VAL:HG22	1:A:2299:VAL:HG22	1.94	0.49
2:B:17:PHE:CE2	2:B:28:ILE:HD13	2.48	0.49
1:E:2233:VAL:O	1:E:2259:LEU:HA	2.12	0.49
1:E:2308:LYS:HD2	1:E:2308:LYS:C	2.33	0.49
2:F:94:ASP:OD2	2:F:98:ASN:O	2.30	0.49
1:G:2129:LEU:CD1	1:G:2130:PHE:CZ	2.91	0.49
2:H:137:VAL:O	2:H:137:VAL:HG12	2.12	0.49
2:F:44:PRO:HG2	2:F:49:LEU:CD1	2.38	0.49
1:G:2349:ASN:CB	1:G:2364:GLN:OE1	2.61	0.49
2:H:13:PHE:CD1	2:H:13:PHE:N	2.80	0.49
1:A:2288:LEU:HD23	1:A:2337:PHE:HB2	1.95	0.49
1:C:2006:VAL:CG2	1:C:2140:GLN:HG2	2.38	0.49
1:C:2205:LEU:HD11	1:C:2220:ILE:HG22	1.94	0.49
2:D:121:GLU:O	2:D:125:MSE:HG3	2.12	0.49
2:D:132:ASP:HB2	2:D:134:ASP:OD1	2.12	0.49
2:F:91:ARG:HG3	2:F:139:TYR:OH	2.12	0.49
1:G:1997:PRO:HA	4:G:2401:HOH:O	2.13	0.49
2:H:13:PHE:O	2:H:17:PHE:HB2	2.12	0.49
2:D:83:GLU:OE1	2:D:87:ARG:NH1	2.45	0.48
2:H:20:PHE:O	2:H:28:ILE:HG12	2.13	0.48
1:A:2136:ALA:HB3	1:E:2136:ALA:HA	1.94	0.48
1:C:2052:TRP:O	1:C:2056:VAL:HG23	2.13	0.48
1:E:2008:VAL:CG1	1:E:2009:SER:N	2.76	0.48
1:G:2224:LEU:N	1:G:2224:LEU:HD12	2.28	0.48
2:H:128:GLU:HB3	2:H:145:MSE:CE	2.43	0.48
1:A:2362:ILE:HG22	1:A:2370:TRP:CA	2.43	0.48
1:C:2195:ARG:NH2	2:D:111:THR:HG23	2.27	0.48
1:E:1996:VAL:CG2	1:E:2052:TRP:CZ3	2.96	0.48
1:G:2233:VAL:CG1	1:G:2234:ARG:N	2.75	0.48
2:H:38:ARG:HA	2:H:42:GLN:O	2.12	0.48
1:A:2037:GLU:OE1	1:A:2037:GLU:HA	2.13	0.48
1:A:2212:TYR:HA	1:A:2215:LEU:HD22	1.95	0.48
1:A:2281:SER:HB2	1:A:2327:GLU:OE2	2.13	0.48
1:C:2006:VAL:HG11	1:C:2140:GLN:O	2.12	0.48
1:C:2205:LEU:HA	1:C:2212:TYR:HH	1.79	0.48
2:D:102:SER:HB2	2:D:105:GLU:CG	2.43	0.48
2:D:129:ALA:HB2	2:D:142:PHE:CE1	2.48	0.48
1:E:1985:ASP:OD2	1:E:1990:VAL:N	2.46	0.48
1:E:2358:ARG:N	1:E:2358:ARG:HH21	2.00	0.48
1:A:2131:LEU:HD11	1:A:2138:GLN:CB	2.33	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2136:ALA:O	1:A:2140:GLN:HG2	2.13	0.48
2:D:65:ASP:HB2	2:D:67:PRO:HG2	1.96	0.48
2:F:107:ARG:NH2	2:F:123:ASP:OD1	2.46	0.48
1:A:1987:ASP:OD2	2:B:103:ALA:HB1	2.14	0.48
1:A:2014:GLN:NE2	1:A:2018:GLN:NE2	2.61	0.48
1:A:2090:TYR:CZ	1:A:2209:VAL:HG22	2.49	0.48
1:C:2233:VAL:CG1	1:C:2234:ARG:N	2.77	0.48
2:H:91:ARG:HG3	2:H:139:TYR:OH	2.13	0.48
2:D:100:TYR:CE2	2:D:138:ASN:HA	2.49	0.48
2:H:129:ALA:HB2	2:H:142:PHE:CD1	2.48	0.48
1:A:1994:LYS:O	1:A:2052:TRP:HB2	2.13	0.48
1:A:2322:GLN:OE1	1:A:2346:LEU:HG	2.14	0.48
2:F:147:THR:HG22	2:F:147:THR:O	2.13	0.48
1:E:2187:LEU:N	1:E:2188:PRO:CD	2.77	0.48
1:G:2177:ARG:HB3	1:G:2180:ASN:ND2	2.27	0.48
1:C:2137:GLU:CD	1:C:2140:GLN:OE1	2.53	0.47
1:E:2362:ILE:O	1:E:2362:ILE:HG13	2.14	0.47
1:G:2227:ALA:HB1	2:H:45:THR:HG22	1.95	0.47
1:G:2351:VAL:HB	1:G:2362:ILE:HG12	1.95	0.47
1:A:2026:HIS:O	1:E:2250:ASN:O	2.32	0.47
1:G:2051:ASP:HB3	1:G:2054:LYS:HB2	1.94	0.47
1:G:2091:ARG:HG2	1:G:2104:VAL:HG22	1.97	0.47
1:A:1994:LYS:O	1:A:2052:TRP:CB	2.62	0.47
1:A:2032:PRO:HB3	1:A:2033:LYS:HE2	1.95	0.47
2:B:6:THR:HG23	2:B:9:GLN:CD	2.35	0.47
2:B:87:ARG:HD3	2:B:140:GLU:HG2	1.94	0.47
2:F:44:PRO:CB	2:F:49:LEU:HD11	2.44	0.47
1:G:2098:GLN:NE2	1:G:2217:ALA:HB1	2.28	0.47
2:D:101:ILE:HG12	2:D:139:TYR:CD1	2.46	0.47
1:E:2020:MSE:CE	1:E:2119:LEU:O	2.56	0.47
2:F:17:PHE:CZ	2:F:28:ILE:HG23	2.49	0.47
1:A:2365:LYS:O	1:A:2366:GLU:OE1	2.32	0.47
1:G:2233:VAL:CG1	1:G:2234:ARG:H	2.28	0.47
2:H:30:THR:OG1	2:H:33:LEU:CD2	2.62	0.47
1:A:2213:LYS:O	1:A:2215:LEU:CD1	2.62	0.47
1:C:2282:LEU:N	1:C:2282:LEU:HD23	2.29	0.47
2:D:103:ALA:HA	2:D:137:VAL:CG2	2.45	0.47
1:E:2098:GLN:HE22	1:E:2217:ALA:HB1	1.78	0.47
1:G:1983:TRP:O	1:G:1986:THR:HG23	2.13	0.47
2:H:20:PHE:C	2:H:28:ILE:HG12	2.35	0.47
1:A:2248:ALA:C	1:A:2250:ASN:H	2.18	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1992:THR:HG22	1:C:1995:TYR:HB3	1.96	0.47
2:D:17:PHE:C	2:D:17:PHE:CD2	2.88	0.47
2:D:25:ASP:HA	2:H:61:ASN:CB	2.43	0.47
1:E:2326:ILE:CD1	1:E:2346:LEU:CB	2.66	0.47
2:F:118:THR:O	2:F:122:VAL:HG23	2.14	0.47
1:G:1998:VAL:HG12	1:G:2001:PHE:CD1	2.50	0.47
2:H:30:THR:CB	2:H:33:LEU:HD23	2.44	0.47
1:C:2233:VAL:CG1	1:C:2234:ARG:H	2.27	0.47
1:E:2179:GLY:HA2	1:E:2184:ASN:HD21	1.80	0.47
2:H:66:PHE:HZ	2:H:70:LEU:HD13	1.79	0.47
1:C:2365:LYS:O	1:C:2366:GLU:HB2	2.14	0.47
1:A:2032:PRO:HB2	1:A:2035:GLN:CB	2.40	0.47
1:A:2136:ALA:HB3	1:E:2136:ALA:CB	2.44	0.47
1:A:2329:PHE:CD1	1:A:2329:PHE:C	2.89	0.47
2:F:117:LEU:HD12	2:F:117:LEU:HA	1.72	0.47
2:H:99:GLY:HA2	2:H:139:TYR:CE1	2.50	0.47
1:C:2139:ASN:O	1:C:2143:SER:N	2.37	0.46
1:E:2195:ARG:HH12	2:F:111:THR:HG23	1.81	0.46
1:E:2242:ARG:HD3	1:E:2242:ARG:HA	1.66	0.46
1:G:1982:ARG:O	1:G:1986:THR:HG23	2.15	0.46
2:B:132:ASP:CB	2:B:134:ASP:OD1	2.63	0.46
1:E:2069:PHE:HA	1:E:2110:VAL:CG1	2.45	0.46
1:A:2329:PHE:CA	2:B:19:LEU:HD23	2.44	0.46
1:C:1998:VAL:HB	1:C:2001:PHE:HB2	1.97	0.46
1:G:2233:VAL:CG2	1:G:2262:LEU:HD11	2.44	0.46
1:A:2132:ASP:OD1	1:A:2134:ASP:HB2	2.15	0.46
1:A:2175:GLY:H	1:A:2206:ASP:HB2	1.81	0.46
1:C:2190:LEU:HB3	1:C:2202:ILE:HD11	1.95	0.46
1:E:2051:ASP:CB	1:E:2054:LYS:HG3	2.45	0.46
1:G:1973:ARG:CG	1:G:1973:ARG:HH21	2.29	0.46
2:H:30:THR:OG1	2:H:33:LEU:HD23	2.15	0.46
2:D:94:ASP:HA	2:D:101:ILE:HG22	1.97	0.46
1:E:2149:THR:O	1:E:2152:ASN:HB2	2.16	0.46
1:G:2150:PHE:HA	1:G:2153:THR:CG2	2.46	0.46
1:G:2233:VAL:HG12	1:G:2234:ARG:H	1.81	0.46
1:C:2302:TRP:CG	1:C:2303:PRO:HA	2.51	0.46
1:A:2046:SER:OG	1:A:2055:ARG:HG3	2.15	0.46
1:A:2218:ASP:OD2	1:A:2218:ASP:N	2.39	0.46
2:B:62:GLY:O	2:B:63:THR:OG1	2.31	0.46
1:C:2020:MSE:HE1	1:C:2123:LEU:HB2	1.98	0.46
1:E:2171:ILE:N	1:E:2171:ILE:HD12	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2314:LEU:CD2	1:A:2346:LEU:HB3	2.46	0.46
1:C:2130:PHE:O	1:C:2138:GLN:OE1	2.34	0.46
2:F:57:ASP:OD1	2:F:57:ASP:O	2.33	0.46
1:G:2073:HIS:ND1	1:G:2073:HIS:N	2.61	0.46
2:F:6:THR:HB	2:F:9:GLN:HG3	1.98	0.46
2:F:33:LEU:HD12	2:F:33:LEU:C	2.35	0.46
1:C:2352:LEU:HD12	1:C:2352:LEU:C	2.36	0.46
1:E:2044:VAL:O	1:E:2048:LEU:HG	2.15	0.46
1:E:2130:PHE:CD1	1:E:2130:PHE:N	2.81	0.46
1:G:2349:ASN:CA	1:G:2364:GLN:OE1	2.64	0.46
1:G:2370:TRP:HZ2	2:H:19:LEU:HA	1.81	0.46
2:H:69:PHE:HE2	2:H:73:MSE:CE	2.28	0.46
1:C:2229:VAL:O	1:C:2229:VAL:HG13	2.17	0.45
2:F:13:PHE:O	2:F:17:PHE:HB2	2.15	0.45
2:F:30:THR:CB	2:F:62:GLY:HA2	2.46	0.45
2:H:37:MSE:HG2	2:H:73:MSE:HE2	1.97	0.45
1:A:2352:LEU:HD23	1:A:2360:ARG:CA	2.43	0.45
1:C:2349:ASN:O	1:C:2364:GLN:HB2	2.16	0.45
2:D:66:PHE:N	2:D:67:PRO:CD	2.77	0.45
2:D:71:THR:O	2:D:74:ALA:N	2.49	0.45
1:E:2067:TYR:HB3	1:E:2112:GLY:HA2	1.99	0.45
1:E:2223:ARG:NH2	1:E:2284:THR:O	2.42	0.45
1:A:2206:ASP:OD2	1:A:2222:ARG:NH1	2.46	0.45
1:A:2294:GLU:O	1:A:2295:GLU:CG	2.63	0.45
1:A:2302:TRP:CG	1:A:2303:PRO:HA	2.51	0.45
2:D:87:ARG:O	2:D:91:ARG:HG3	2.16	0.45
2:D:100:TYR:CD2	2:D:138:ASN:HA	2.52	0.45
2:H:121:GLU:O	2:H:124:GLN:HG2	2.17	0.45
1:A:2289:LEU:HD23	1:A:2304:GLY:HA3	1.97	0.45
1:A:2353:SER:O	1:A:2354:HIS:HD2	2.00	0.45
1:C:2286:ARG:HB3	1:C:2288:LEU:CD1	2.46	0.45
1:G:1973:ARG:NH2	1:G:2159:VAL:O	2.49	0.45
1:G:2072:PRO:HG2	1:G:2073:HIS:ND1	2.31	0.45
2:H:107:ARG:NH2	2:H:123:ASP:OD1	2.49	0.45
1:E:2210:SER:HA	1:E:2213:LYS:HG3	1.97	0.45
2:F:94:ASP:OD2	2:F:139:TYR:HE1	2.00	0.45
1:G:2025:GLU:O	1:G:2033:LYS:HE3	2.16	0.45
2:B:6:THR:HG1	2:B:9:GLN:HG3	1.81	0.45
1:C:2177:ARG:HB3	1:C:2180:ASN:HD22	1.81	0.45
1:C:1992:THR:HG23	1:C:1995:TYR:H	1.82	0.45
1:E:2073:HIS:CD2	1:E:2103:LYS:HB2	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:19:LEU:N	2:H:19:LEU:HD23	2.31	0.45
2:H:107:ARG:HH22	2:H:123:ASP:HA	1.82	0.45
1:A:1969:LEU:HD23	1:A:1969:LEU:N	2.31	0.45
1:A:2008:VAL:HG11	1:A:2013:LYS:HE3	1.99	0.45
1:A:2362:ILE:HG21	1:A:2370:TRP:CE2	2.52	0.45
1:E:2231:VAL:HG11	1:E:2266:LEU:HD13	1.98	0.45
2:F:145:MSE:O	2:F:145:MSE:HG2	2.17	0.45
1:G:2005:ASP:OD1	1:G:2050:TYR:CD2	2.70	0.45
2:H:124:GLN:O	2:H:128:GLU:CG	2.60	0.45
1:A:2323:GLN:O	1:A:2327:GLU:HB2	2.17	0.45
1:C:2351:VAL:HB	1:C:2362:ILE:HG13	1.99	0.45
1:E:2330:ILE:HD13	1:E:2340:MSE:HE3	1.99	0.45
1:A:2052:TRP:O	1:A:2056:VAL:HG23	2.17	0.45
1:C:2206:ASP:OD1	1:C:2222:ARG:NH1	2.50	0.45
1:C:2310:LYS:NZ	1:C:2340:MSE:O	2.47	0.45
2:D:46:GLU:HA	2:D:49:LEU:HD12	1.99	0.45
1:G:2207:LYS:HB3	1:G:2208:PRO:CD	2.42	0.45
1:A:1991:ALA:HB2	1:A:1997:PRO:CD	2.47	0.44
1:A:2001:PHE:CE2	1:A:2150:PHE:O	2.70	0.44
1:E:2336:ASN:OD1	1:E:2339:GLN:NE2	2.50	0.44
1:G:2288:LEU:CD2	1:G:2337:PHE:HB2	2.47	0.44
1:E:2309:SER:HB3	1:G:2099:THR:HB	1.98	0.44
2:F:85:GLU:O	2:F:88:GLU:HG2	2.17	0.44
1:A:2245:GLU:O	1:A:2249:ASP:N	2.49	0.44
1:E:2008:VAL:HG12	1:E:2009:SER:H	1.81	0.44
1:E:2158:SER:OG	1:E:2185:VAL:HB	2.17	0.44
2:F:13:PHE:N	2:F:13:PHE:HD1	2.14	0.44
1:G:2132:ASP:OD1	1:G:2132:ASP:N	2.50	0.44
2:H:98:ASN:ND2	2:H:99:GLY:O	2.50	0.44
1:C:2345:PHE:CD1	1:C:2352:LEU:HD11	2.53	0.44
1:E:2218:ASP:OD1	1:E:2218:ASP:N	2.38	0.44
1:G:2279:PHE:CZ	1:G:2323:GLN:HG2	2.53	0.44
1:G:2299:VAL:CG2	1:G:2312:ILE:CD1	2.95	0.44
1:E:1990:VAL:HG12	1:E:1997:PRO:HG3	1.99	0.44
1:G:2178:LEU:HD12	1:G:2233:VAL:CG2	2.48	0.44
1:G:2314:LEU:HD11	1:G:2326:ILE:HG21	1.98	0.44
2:H:69:PHE:O	2:H:69:PHE:CD2	2.68	0.44
1:A:2187:LEU:HB3	1:A:2188:PRO:HD3	2.00	0.44
1:C:2016:MSE:HE1	1:C:2141:LEU:HD11	2.00	0.44
1:C:2016:MSE:HE2	1:C:2141:LEU:HD11	2.00	0.44
1:E:2087:PHE:CD2	1:E:2087:PHE:N	2.76	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:2046:SER:CB	1:G:2054:LYS:HB3	2.48	0.44
1:G:2351:VAL:HB	1:G:2362:ILE:CG1	2.48	0.44
1:A:2368:GLY:N	2:B:18:SER:HB3	2.33	0.44
1:E:2008:VAL:CG1	1:E:2009:SER:H	2.31	0.44
1:E:2224:LEU:N	1:E:2224:LEU:CD1	2.80	0.44
1:G:2184:ASN:HD22	1:G:2184:ASN:HA	1.64	0.44
1:E:2039:LEU:HD13	1:E:2065:TYR:HE2	1.82	0.44
1:G:2349:ASN:HB3	1:G:2364:GLN:OE1	2.17	0.44
2:B:54:ASN:O	2:B:57:ASP:OD1	2.36	0.44
2:D:139:TYR:O	2:D:139:TYR:CD2	2.69	0.44
1:G:2337:PHE:CD1	1:G:2337:PHE:C	2.90	0.44
1:E:2362:ILE:HG21	1:E:2370:TRP:CZ3	2.52	0.43
1:G:1973:ARG:CG	1:G:1973:ARG:NH2	2.81	0.43
1:G:2266:LEU:HD23	1:G:2266:LEU:C	2.38	0.43
2:H:66:PHE:HB3	2:H:67:PRO:HD3	1.99	0.43
1:C:2212:TYR:HA	1:C:2215:LEU:HD12	1.98	0.43
1:C:2234:ARG:HH21	1:C:2257:ASP:HB2	1.81	0.43
2:D:13:PHE:N	2:D:13:PHE:CD1	2.84	0.43
1:E:2234:ARG:HD2	1:E:2257:ASP:HA	2.00	0.43
1:G:2224:LEU:HD12	1:G:2224:LEU:H	1.82	0.43
1:A:2014:GLN:HA	1:A:2017:ILE:HB	1.99	0.43
1:A:2217:ALA:HA	1:A:2220:ILE:CD1	2.47	0.43
2:B:19:LEU:O	2:B:20:PHE:HB2	2.17	0.43
2:B:134:ASP:OD1	2:B:134:ASP:N	2.43	0.43
2:D:103:ALA:HB2	2:D:135:GLY:O	2.19	0.43
1:E:2040:ALA:O	1:E:2044:VAL:HG22	2.18	0.43
1:G:2016:MSE:HE1	1:G:2145:ILE:HD11	1.91	0.43
1:E:2158:SER:O	1:E:2162:THR:HG23	2.18	0.43
1:C:2345:PHE:HB2	1:C:2352:LEU:CD1	2.48	0.43
2:D:6:THR:O	2:D:10:ILE:HG13	2.17	0.43
1:E:2020:MSE:HB3	1:E:2040:ALA:HB1	2.01	0.43
1:E:2345:PHE:O	1:E:2351:VAL:HA	2.18	0.43
1:G:2001:PHE:CD1	1:G:2001:PHE:N	2.87	0.43
1:G:2351:VAL:H	1:G:2362:ILE:HB	1.82	0.43
2:H:17:PHE:C	2:H:17:PHE:CD2	2.92	0.43
1:C:2120:ASN:O	1:C:2124:MSE:HG3	2.19	0.43
1:C:2149:THR:O	1:C:2152:ASN:HB2	2.19	0.43
1:G:2023:TYR:O	1:G:2027:THR:CG2	2.67	0.43
1:A:2014:GLN:HE22	1:A:2018:GLN:HG3	1.75	0.43
1:C:2370:TRP:HE1	2:D:22:LYS:HG2	1.82	0.43
2:D:45:THR:HG22	2:D:48:GLU:HB2	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:138:ASN:HB3	2:B:141:GLU:CB	2.38	0.43
1:E:2022:GLY:O	1:E:2025:GLU:HB3	2.19	0.43
1:A:1973:ARG:O	1:A:1977:VAL:HG23	2.19	0.43
1:A:1994:LYS:HD3	1:A:2051:ASP:OD2	2.18	0.43
1:C:2128:GLY:CA	1:C:2131:LEU:HB3	2.37	0.43
1:C:2315:ASP:HB3	1:C:2322:GLN:HE22	1.83	0.43
1:A:2094:LEU:CD2	1:A:2220:ILE:HG21	2.49	0.43
1:C:2187:LEU:N	1:C:2188:PRO:CD	2.82	0.43
1:A:2167:ASP:OD2	1:A:2203:ARG:NH1	2.52	0.42
1:A:2213:LYS:O	1:A:2215:LEU:HD12	2.19	0.42
1:C:2194:GLN:HG2	1:C:2199:VAL:HG12	2.01	0.42
1:E:2354:HIS:HE1	1:E:2356:ASP:O	2.01	0.42
1:G:2047:THR:O	1:G:2148:ALA:HB1	2.19	0.42
1:A:1982:ARG:NH1	1:A:1992:THR:O	2.52	0.42
1:A:2094:LEU:HD21	1:A:2220:ILE:HG21	2.01	0.42
1:A:2182:PHE:HA	1:A:2186:GLU:HB2	2.01	0.42
1:E:2266:LEU:HG	2:F:113:LEU:HD11	2.00	0.42
1:G:2063:GLU:HA	1:G:2067:TYR:O	2.19	0.42
2:H:44:PRO:CB	2:H:76:LYS:HE2	2.47	0.42
1:A:2012:VAL:HG12	1:A:2016:MSE:HE2	2.01	0.42
1:A:2177:ARG:CG	1:A:2177:ARG:NH1	2.82	0.42
1:A:2247:LEU:HD12	1:A:2247:LEU:HA	1.83	0.42
1:C:1970:VAL:HG23	1:C:2063:GLU:OE1	2.18	0.42
1:C:1987:ASP:OD2	2:D:107:ARG:NH1	2.51	0.42
2:D:129:ALA:HA	2:D:145:MSE:HE1	2.02	0.42
1:E:2058:PHE:O	1:E:2062:LEU:HG	2.19	0.42
1:G:2131:LEU:HD13	1:G:2131:LEU:H	1.78	0.42
2:H:44:PRO:CG	2:H:49:LEU:HD12	2.50	0.42
1:A:2273:LEU:HD23	1:A:2277:LEU:HD13	2.01	0.42
1:C:2233:VAL:CG2	1:C:2262:LEU:CD1	2.96	0.42
1:G:2315:ASP:N	1:G:2322:GLN:NE2	2.68	0.42
1:G:2332:ALA:HB1	2:H:19:LEU:O	2.19	0.42
1:A:2298:GLU:HB2	1:A:2300:ARG:HH12	1.85	0.42
2:B:66:PHE:N	2:B:67:PRO:CD	2.80	0.42
1:C:2277:LEU:HA	1:C:2278:PRO:HD3	1.92	0.42
1:E:2314:LEU:HD23	1:E:2346:LEU:HB3	2.01	0.42
1:G:2129:LEU:HD12	1:G:2130:PHE:CE2	2.53	0.42
1:A:2349:ASN:HB3	1:A:2364:GLN:HB3	2.02	0.42
1:A:2051:ASP:CB	1:A:2054:LYS:HD2	2.50	0.42
1:C:2264:VAL:CG2	1:C:2266:LEU:HD11	2.48	0.42
1:C:1968:SER:OG	1:C:2063:GLU:OE2	2.38	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:110:MSE:HE2	2:F:125:MSE:HE1	2.01	0.42
2:H:17:PHE:CE1	2:H:66:PHE:HA	2.55	0.42
1:C:2194:GLN:NE2	1:C:2200:GLY:O	2.53	0.42
1:E:2281:SER:O	1:E:2285:GLU:CG	2.68	0.42
1:C:2138:GLN:O	1:C:2141:LEU:HB3	2.20	0.42
2:D:70:LEU:HD13	2:D:70:LEU:O	2.20	0.42
1:E:2082:TRP:O	1:E:2082:TRP:CG	2.72	0.42
2:F:125:MSE:HE3	2:F:142:PHE:HZ	1.85	0.42
1:G:2001:PHE:HD2	1:G:2150:PHE:HD1	1.67	0.42
2:H:28:ILE:CG2	2:H:29:THR:N	2.83	0.42
1:A:2073:HIS:HB2	1:A:2077:SER:HB3	2.02	0.41
1:C:2345:PHE:HB2	1:C:2352:LEU:HG	2.01	0.41
1:A:2033:LYS:HD3	1:A:2033:LYS:N	2.13	0.41
1:E:2020:MSE:HE3	1:E:2123:LEU:HB2	2.02	0.41
1:G:2008:VAL:HG12	1:G:2012:VAL:HB	2.02	0.41
1:G:2324:LYS:O	1:G:2328:ARG:HG3	2.20	0.41
2:D:83:GLU:OE1	2:D:87:ARG:NE	2.52	0.41
2:D:145:MSE:O	2:D:145:MSE:HG2	2.17	0.41
2:F:94:ASP:OD2	2:F:139:TYR:CE1	2.73	0.41
1:A:2184:ASN:HD22	1:A:2184:ASN:HA	1.64	0.41
1:C:2351:VAL:CG2	1:C:2362:ILE:HD12	2.49	0.41
2:D:134:ASP:OD1	2:D:134:ASP:N	2.53	0.41
1:E:2187:LEU:HB3	1:E:2188:PRO:HD3	2.02	0.41
2:F:30:THR:HB	2:F:62:GLY:CA	2.49	0.41
1:G:2302:TRP:CD2	1:G:2303:PRO:HA	2.56	0.41
1:E:1970:VAL:CG1	1:E:2069:PHE:CD1	2.99	0.41
1:E:2051:ASP:HB3	1:E:2054:LYS:HG3	2.01	0.41
1:E:2076:LYS:HD3	1:E:2102:LYS:HE3	2.03	0.41
1:E:2193:LEU:HD13	1:E:2199:VAL:CG2	2.50	0.41
2:F:123:ASP:O	2:F:127:ARG:HG3	2.20	0.41
1:A:2193:LEU:HD23	1:A:2193:LEU:HA	1.90	0.41
1:E:2233:VAL:CG1	1:E:2234:ARG:N	2.71	0.41
1:G:2117:ILE:CG2	1:G:2121:LYS:HE3	2.51	0.41
2:B:90:PHE:HB3	2:B:139:TYR:CD2	2.46	0.41
2:D:6:THR:HB	2:D:9:GLN:HB2	2.03	0.41
2:D:129:ALA:HB2	2:D:142:PHE:HD1	1.83	0.41
1:E:2251:PRO:O	1:E:2252:ASP:OD1	2.38	0.41
2:H:114:GLY:HA3	2:H:117:LEU:HD12	2.03	0.41
1:A:2001:PHE:CD2	1:A:2151:SER:HA	2.56	0.41
2:B:81:ASP:O	2:B:85:GLU:HG3	2.21	0.41
2:D:14:LYS:HA	2:D:66:PHE:CZ	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:2281:SER:OG	1:E:2327:GLU:OE2	2.39	0.41
1:E:2310:LYS:HD2	1:E:2337:PHE:CE2	2.56	0.41
1:A:1970:VAL:CG1	1:A:2069:PHE:HB2	2.50	0.41
2:D:109:VAL:HG12	2:D:110:MSE:HE2	2.03	0.41
1:E:2141:LEU:C	1:E:2141:LEU:CD1	2.88	0.41
1:E:2271:SER:HA	1:E:2274:ARG:HD3	2.03	0.41
1:E:2300:ARG:HH12	1:G:2096:ASN:ND2	2.19	0.41
1:G:2005:ASP:OD1	1:G:2050:TYR:HE2	2.04	0.41
1:G:2231:VAL:HG12	1:G:2262:LEU:HD12	2.02	0.41
1:A:1977:VAL:HG13	1:A:1981:TYR:CE1	2.56	0.41
1:E:2227:ALA:HB1	2:F:45:THR:HG22	2.03	0.41
2:F:52:MSE:HG2	2:F:72:MSE:SE	2.71	0.41
1:G:1970:VAL:HG12	1:G:2069:PHE:HB2	2.03	0.41
2:H:83:GLU:HB3	2:H:87:ARG:NH1	2.36	0.41
1:A:2314:LEU:HD23	1:A:2346:LEU:HB3	2.03	0.40
1:C:2273:LEU:HD13	2:D:117:LEU:CD1	2.51	0.40
1:C:2281:SER:O	1:C:2285:GLU:HG2	2.21	0.40
2:D:37:MSE:HG2	2:D:73:MSE:HE3	2.03	0.40
1:E:2058:PHE:CZ	1:E:2062:LEU:HD11	2.57	0.40
1:A:2174:GLY:O	1:A:2232:LYS:HE3	2.21	0.40
2:B:18:SER:O	2:B:21:ASP:HB2	2.22	0.40
1:C:1978:ALA:HB2	1:C:2052:TRP:CZ2	2.56	0.40
2:F:48:GLU:CD	2:F:76:LYS:NZ	2.75	0.40
1:G:2141:LEU:HD12	1:G:2144:SER:OG	2.21	0.40
1:G:2314:LEU:HD23	1:G:2322:GLN:HG2	2.04	0.40
2:H:5:LEU:HD21	2:H:71:THR:OG1	2.21	0.40
1:A:2055:ARG:NH1	1:A:2152:ASN:HD22	2.19	0.40
1:A:2152:ASN:HB3	1:A:2156:TRP:CH2	2.57	0.40
1:C:2189:ALA:O	1:C:2192:GLN:HB3	2.22	0.40
2:D:10:ILE:CD1	2:D:70:LEU:HD11	2.51	0.40
2:D:103:ALA:CA	2:D:137:VAL:HG23	2.51	0.40
1:E:2094:LEU:HD21	1:E:2220:ILE:HG21	2.04	0.40
2:F:61:ASN:O	2:F:61:ASN:ND2	2.55	0.40
2:H:30:THR:HB	2:H:64:ILE:HG12	2.01	0.40
1:A:2003:ARG:O	1:A:2003:ARG:HG3	2.18	0.40
1:A:2009:SER:O	1:A:2009:SER:OG	2.39	0.40
1:A:2298:GLU:HB3	1:A:2300:ARG:CZ	2.51	0.40
1:A:2310:LYS:HD2	1:A:2337:PHE:CE2	2.56	0.40
1:A:2358:ARG:HE	1:A:2358:ARG:C	2.25	0.40
1:A:2361:ILE:O	1:A:2362:ILE:HG23	2.21	0.40
1:C:1970:VAL:HG22	1:C:2069:PHE:HB2	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2016:MSE:HG2	1:C:2126:TRP:CZ3	2.56	0.40
2:D:29:THR:CG2	2:D:32:GLU:OE1	2.70	0.40
1:E:2311:THR:OG1	1:E:2343:GLU:HG3	2.22	0.40
1:G:2041:THR:O	1:G:2045:GLU:HG3	2.22	0.40
1:A:1998:VAL:HB	1:A:2001:PHE:HB2	2.02	0.40
1:A:2193:LEU:HB3	1:A:2199:VAL:CG2	2.49	0.40
1:A:2233:VAL:HG12	1:A:2234:ARG:H	1.86	0.40
1:E:2131:LEU:CD2	1:E:2141:LEU:HD12	2.48	0.40
1:E:2132:ASP:OD1	1:E:2132:ASP:C	2.60	0.40
1:E:2243:GLN:HG2	1:E:2243:GLN:H	1.66	0.40
1:G:2137:GLU:OE2	1:G:2138:GLN:NE2	2.54	0.40
1:G:2315:ASP:H	1:G:2322:GLN:HE22	1.65	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	402/416 (97%)	369 (92%)	33 (8%)	0	100	100
1	C	380/416 (91%)	356 (94%)	24 (6%)	0	100	100
1	E	402/416 (97%)	375 (93%)	27 (7%)	0	100	100
1	G	380/416 (91%)	357 (94%)	23 (6%)	0	100	100
2	B	142/151 (94%)	134 (94%)	8 (6%)	0	100	100
2	D	129/151 (85%)	124 (96%)	5 (4%)	0	100	100
2	F	142/151 (94%)	136 (96%)	6 (4%)	0	100	100
2	H	135/151 (89%)	129 (96%)	6 (4%)	0	100	100
All	All	2112/2268 (93%)	1980 (94%)	132 (6%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	347/351 (99%)	313 (90%)	34 (10%)	8	23
1	C	331/351 (94%)	307 (93%)	24 (7%)	14	37
1	E	347/351 (99%)	317 (91%)	30 (9%)	10	29
1	G	331/351 (94%)	313 (95%)	18 (5%)	22	51
2	B	123/117 (105%)	106 (86%)	17 (14%)	3	10
2	D	115/117 (98%)	100 (87%)	15 (13%)	4	12
2	F	123/117 (105%)	113 (92%)	10 (8%)	11	32
2	H	119/117 (102%)	110 (92%)	9 (8%)	13	35
All	All	1836/1872 (98%)	1679 (91%)	157 (9%)	10	29

All (157) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2003	ARG
1	A	2009	SER
1	A	2033	LYS
1	A	2062	LEU
1	A	2083	SER
1	A	2091	ARG
1	A	2118	ASP
1	A	2125	ARG
1	A	2134	ASP
1	A	2168	VAL
1	A	2177	ARG
1	A	2184	ASN
1	A	2191	ARG
1	A	2192	GLN
1	A	2218	ASP
1	A	2222	ARG
1	A	2231	VAL
1	A	2235	PHE
1	A	2238	LEU

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Mol	Chain	Res	Type
1	A	2239	SER
1	A	2242	ARG
1	A	2243	GLN
1	A	2245	GLU
1	A	2247	LEU
1	A	2249	ASP
1	A	2250	ASN
1	A	2255	LYS
1	A	2263	ASP
1	A	2266	LEU
1	A	2315	ASP
1	A	2322	GLN
1	A	2350	LYS
1	A	2358	ARG
1	A	2360	ARG
2	B	6	THR
2	B	25	ASP
2	B	28	ILE
2	B	51	ASP
2	B	52	MSE
2	B	57	ASP
2	B	72	MSE
2	B	77	MSE
2	B	87	ARG
2	B	88	GLU
2	B	95	LYS
2	B	115	GLU
2	B	121	GLU
2	B	123	ASP
2	B	126	ILE
2	B	132	ASP
2	B	139	TYR
1	C	1973	ARG
1	C	1976	LYS
1	C	2005	ASP
1	C	2030	GLN
1	C	2088	LYS
1	C	2091	ARG
1	C	2104	VAL
1	C	2118	ASP
1	C	2125	ARG
1	C	2130	PHE

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Mol	Chain	Res	Type
1	C	2132	ASP
1	C	2139	ASN
1	C	2150	PHE
1	C	2151	SER
1	C	2231	VAL
1	C	2234	ARG
1	C	2235	PHE
1	C	2262	LEU
1	C	2284	THR
1	C	2286	ARG
1	C	2358	ARG
1	C	2364	GLN
1	C	2370	TRP
1	C	2371	THR
2	D	17	PHE
2	D	21	ASP
2	D	31	LYS
2	D	65	ASP
2	D	66	PHE
2	D	70	LEU
2	D	71	THR
2	D	76	LYS
2	D	83	GLU
2	D	86	ILE
2	D	90	PHE
2	D	96	ASP
2	D	127	ARG
2	D	139	TYR
2	D	145	MSE
1	E	1990	VAL
1	E	2021	SER
1	E	2026	HIS
1	E	2030	GLN
1	E	2051	ASP
1	E	2073	HIS
1	E	2091	ARG
1	E	2118	ASP
1	E	2125	ARG
1	E	2130	PHE
1	E	2131	LEU
1	E	2135	ASN
1	E	2140	GLN

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Mol	Chain	Res	Type
1	E	2142	LYS
1	E	2152	ASN
1	E	2192	GLN
1	E	2201	GLU
1	E	2218	ASP
1	E	2222	ARG
1	E	2235	PHE
1	E	2242	ARG
1	E	2243	GLN
1	E	2255	LYS
1	E	2258	THR
1	E	2306	ASP
1	E	2308	LYS
1	E	2309	SER
1	E	2352	LEU
1	E	2355	HIS
1	E	2358	ARG
2	F	5	LEU
2	F	6	THR
2	F	8	GLU
2	F	23	ASP
2	F	25	ASP
2	F	68	GLU
2	F	76	LYS
2	F	107	ARG
2	F	132	ASP
2	F	146	MSE
1	G	1973	ARG
1	G	1988	ASN
1	G	2001	PHE
1	G	2014	GLN
1	G	2049	ASP
1	G	2073	HIS
1	G	2083	SER
1	G	2104	VAL
1	G	2131	LEU
1	G	2137	GLU
1	G	2140	GLN
1	G	2152	ASN
1	G	2153	THR
1	G	2222	ARG
1	G	2235	PHE

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Mol	Chain	Res	Type
1	G	2286	ARG
1	G	2333	ASN
1	G	2337	PHE
2	H	23	ASP
2	H	52	MSE
2	H	61	ASN
2	H	69	PHE
2	H	96	ASP
2	H	98	ASN
2	H	102	SER
2	H	111	THR
2	H	132	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (50) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	2014	GLN
1	A	2029	ASN
1	A	2089	GLN
1	A	2098	GLN
1	A	2120	ASN
1	A	2138	GLN
1	A	2139	ASN
1	A	2152	ASN
1	A	2184	ASN
1	A	2243	GLN
1	A	2354	HIS
1	A	2364	GLN
2	B	50	GLN
2	B	61	ASN
2	B	108	HIS
2	B	138	ASN
1	C	2030	GLN
1	C	2098	GLN
1	C	2120	ASN
1	C	2139	ASN
1	C	2184	ASN
1	C	2192	GLN
2	D	42	GLN
2	D	50	GLN
2	D	108	HIS
2	D	136	GLN

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Mol	Chain	Res	Type
1	E	2098	GLN
1	E	2120	ASN
1	E	2135	ASN
1	E	2138	GLN
1	E	2140	GLN
1	E	2152	ASN
1	E	2219	GLN
1	E	2243	GLN
1	E	2339	GLN
1	E	2354	HIS
2	F	54	ASN
2	F	108	HIS
1	G	2096	ASN
1	G	2098	GLN
1	G	2120	ASN
1	G	2140	GLN
1	G	2184	ASN
1	G	2287	ASN
1	G	2333	ASN
1	G	2336	ASN
1	G	2349	ASN
2	H	42	GLN
2	H	98	ASN
2	H	136	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 3 ligands modelled in this entry, 3 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	399/416 (95%)	0.08	11 (2%) 53 43	19, 51, 97, 123	0
1	C	379/416 (91%)	0.01	8 (2%) 63 54	17, 44, 86, 137	0
1	E	399/416 (95%)	-0.04	10 (2%) 57 47	19, 42, 87, 113	0
1	G	379/416 (91%)	0.04	14 (3%) 41 31	15, 45, 87, 117	0
2	B	135/151 (89%)	0.28	6 (4%) 34 24	24, 67, 113, 129	0
2	D	124/151 (82%)	0.36	10 (8%) 12 6	32, 76, 103, 122	0
2	F	135/151 (89%)	0.07	7 (5%) 27 18	22, 49, 88, 122	0
2	H	130/151 (86%)	0.54	13 (10%) 7 4	28, 78, 115, 146	0
All	All	2080/2268 (91%)	0.10	79 (3%) 40 30	15, 50, 96, 146	0

All (79) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	2132	ASP	6.2
1	C	2133	PRO	5.9
2	H	148	ALA	5.2
1	C	2362	ILE	4.9
1	C	2131	LEU	4.5
1	A	2294	GLU	4.2
1	A	2295	GLU	4.0
2	D	95	LYS	3.9
1	G	2365	LYS	3.8
1	G	2134	ASP	3.8
1	C	2370	TRP	3.7
1	C	2134	ASP	3.6
1	C	2256	ALA	3.5
1	C	2360	ARG	3.4
1	G	2360	ARG	3.3
1	G	2073	HIS	3.3

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Mol	Chain	Res	Type	RSRZ
2	D	89	ALA	3.2
1	A	2029	ASN	3.2
1	A	2362	ILE	3.2
1	E	2294	GLU	3.2
1	A	2252	ASP	3.1
2	H	83	GLU	3.1
2	H	70	LEU	3.0
2	H	71	THR	2.9
2	D	90	PHE	2.9
2	F	70	LEU	2.9
1	E	1968	SER	2.8
2	B	63	THR	2.8
1	G	2218	ASP	2.7
2	F	61	ASN	2.7
2	H	95	LYS	2.7
1	G	2362	ILE	2.6
2	F	71	THR	2.6
2	D	79	ASP	2.6
2	D	80	THR	2.6
1	G	2307	GLY	2.5
2	D	91	ARG	2.5
2	B	33	LEU	2.5
1	E	2252	ASP	2.5
2	F	57	ASP	2.5
2	H	53	ILE	2.5
1	G	2358	ARG	2.4
2	H	90	PHE	2.4
1	A	2011	GLU	2.4
1	A	1987	ASP	2.4
1	E	2010	ASP	2.4
2	H	5	LEU	2.4
1	G	2131	LEU	2.3
2	D	81	ASP	2.3
2	D	75	ARG	2.3
1	E	2367	ASP	2.3
1	E	2239	SER	2.3
2	H	141	GLU	2.3
2	B	69	PHE	2.3
1	E	2362	ILE	2.3
2	B	79	ASP	2.2
1	A	2359	THR	2.2
2	B	32	GLU	2.2

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Mol	Chain	Res	Type	RSRZ
1	G	2350	LYS	2.2
2	B	71	THR	2.2
1	A	2108	ILE	2.2
2	H	62	GLY	2.1
2	F	68	GLU	2.1
2	H	84	GLU	2.1
1	G	2295	GLU	2.1
1	G	2235	PHE	2.1
2	F	131	ILE	2.1
1	A	2006	VAL	2.1
2	D	93	PHE	2.1
2	D	87	ARG	2.1
1	A	2083	SER	2.1
1	E	2242	ARG	2.1
2	H	79	ASP	2.1
1	G	2129	LEU	2.0
2	F	58	ALA	2.0
1	E	2008	VAL	2.0
1	E	2086	ASN	2.0
2	H	93	PHE	2.0
1	G	2364	GLN	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 monosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	MG	F	202	1/1	0.88	0.10	56,56,56,56	0
3	MG	F	203	1/1	0.88	0.29	39,39,39,39	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
3	MG	F	201	1/1	0.89	0.28	27,27,27,27	0

6.5 Other polymers [i](#)

There are no such residues in this entry.