Full wwPDB X-ray Structure Validation Report ⓘ

Jun 24, 2024 – 04:08 PM EDT

PDB ID	:	5YBB
Title	:	Structural basis underlying complex assembly andconformational transition of the type I R-M system
Authors	:	Liu, Y.P.; Tang, Q.; Zhang, J.Z.; Tian, L.F.; Gao, P.; Yan, X.X.
Deposited on	:	2017-09-04
Resolution	:	3.20 Å(reported)

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

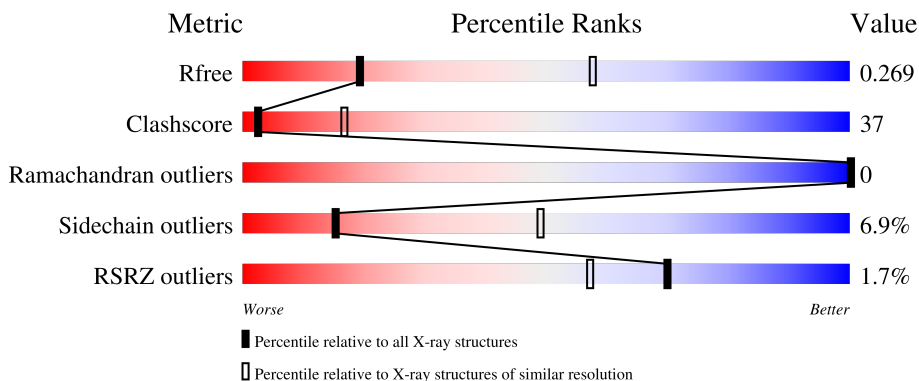|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.37.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & 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 3.20 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	Percentile Ranks	Value
Rfree		0.269
Clashscore		37
Ramachandran outliers		0
Sidechain outliers		6.9%
RSRZ outliers		1.7%

Worse ... *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1133 (3.20-3.20)
Clashscore	141614	1253 (3.20-3.20)
Ramachandran outliers	138981	1234 (3.20-3.20)
Sidechain outliers	138945	1233 (3.20-3.20)
RSRZ outliers	127900	1095 (3.20-3.20)

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 <=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	507	47% 43% 5% · ·
1	B	507	47% 42% 6% ·
1	C	507	· · 94%
1	E	507	· · 94%
2	D	398	56% 35% 5% · ·

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Mol	Chain	Length	Quality of chain
2	G	398	3% ... 60% ... 34%
3	H	22	59% ... 41%
4	I	22	5% ... 73% ... 27%

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
5	SAM	A	601	-	-	X	-

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 15456 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 Type I restriction-modification system methyltransferase subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	487	Total 3934	C 2513	N 686	O 719	S 16	0	0	0
1	C	30	Total 229	C 145	N 35	O 48	S 1	0	0	0
1	B	487	Total 3934	C 2513	N 686	O 719	S 16	0	0	0
1	E	30	Total 229	C 145	N 35	O 48	S 1	0	0	0

- Molecule 2 is a protein called Restriction endonuclease S subunits.

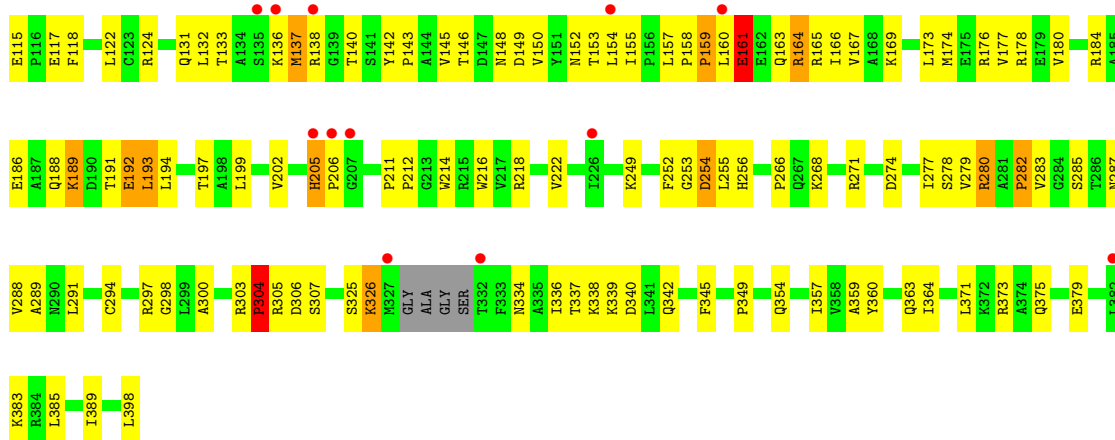| Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	D	390	Total 3090	C 1971	N 549	O 558	S 12	0	0	0
2	G	390	Total 3090	C 1971	N 549	O 558	S 12	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	1	VAL	-	expression tag	UNP Q8R9Q6
G	1	VAL	-	expression tag	UNP Q8R9Q6

- Molecule 3 is a DNA chain called DNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	H	22	Total 454	C 215	N 88	O 130	P 21	0	0	0

- Molecule 4 is a DNA chain called DNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	I	22	Total 442	C 211	N 80	O 130	P 21	0	0	0

- Molecule 5 is S-ADENOSYLMETHIONINE (three-letter code: SAM) (formula: $C_{15}H_{22}N_6O_5S$).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	A	1	Total 27	C 15	N 6	O 5	S 1	0	0
5	B	1	Total 27	C 15	N 6	O 5	S 1	0	0

3 Residue-property plots ⓘ

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: Type I restriction-modification system methyltransferase subunit

• Molecule 1: Type I restriction-modification system methyltransferase subunit

• Molecule 1: Type I restriction-modification system methyltransferase subunit

Chain B:

• Molecule 1: Type I restriction-modification system methyltransferase subunit

Chain E:

• Molecule 2: Restriction endonuclease S subunits

• Molecule 2: Restriction endonuclease S subunits

E115 P116 E117 F118 L122 C123 R124 Q131 L132 T133 A134 S135 K136 M137 R138 G139 T140 S141 Y142 P143 A144 V145 T146 D147 N148 D149 V150 Y151 N152 T153 L154 I155 P156 L157 P158 P159 L160 E161 E162 Q163 R164 R165 I166 V167 A168 K169 L173 M174 E175 R176 V177 R178 E179 V180 R184 A185

E186 A187 Q188 K189 D190 T191 E192 L193 L194 T197 A198 L199 V202 H205 P206 G207 P211 P212 G213 W214 R215 W216 V217 R218 V222 I226 K249 F252 G253 D254 L255 H256 P266 Q267 K268 R271 D274 I277 S278 V279 R280 A281 P282 V283 G284 S285 T286 N287

V288 A289 N290 L291 C294 R297 G298 L299 A300 R303 P304 R305 D306 S307 S325 K326 M327 GLY ALA GLY SER T332 F333 N334 A335 I336 T337 K338 K339 D340 L341 Q342 F345 P349 Q354 I357 V358 A359 Y360 Q363 I364 L371 K372 R373 A374 Q375 E379 L382

K383 R384 L385 I389 L398

- Molecule 3: DNA

Chain H: 59% 41%

C1 T2 G3 C4 G5 A6 G7 G8 T9 A12 G13 T20 G21 G22

- Molecule 4: DNA

Chain I: 5% 73% 27%

C1 T5 G6 A13 T16 C19 A20 G21 C22

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 41	Depositor
Cell constants a, b, c, α, β, γ	121.60Å　　121.60Å　　280.36Å 90.00°　　90.00°　　90.00°	Depositor
Resolution (Å)	47.00　–　3.20 47.00　–　3.20	Depositor EDS
% Data completeness (in resolution range)	95.3 (47.00-3.20) 95.4 (47.00-3.20)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.90 (at 3.19Å)	Xtriage
Refinement program	PHENIX 1.8.4_1496	Depositor
R, R_{free}	0.236　,　0.272 0.242　,　0.269	Depositor DCC
R_{free} test set	3039 reflections (4.77%)	wwPDB-VP
Wilson B-factor (Å^2)	96.9	Xtriage
Anisotropy	0.075	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.30 , 61.1	EDS
L-test for twinning[2]	$< |L| > = 0.50, < L^2 > = 0.33$	Xtriage
Estimated twinning fraction	0.427 for h,-k,-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	15456	wwPDB-VP
Average B, all atoms (Å^2)	104.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.66% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< |L| >$, $< L^2 >$ 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: SAM

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	0.57	3/4031 (0.1%)	0.81	12/5466 (0.2%)
1	B	0.53	4/4031 (0.1%)	0.72	6/5466 (0.1%)
1	C	0.63	0/229	0.89	2/308 (0.6%)
1	E	0.75	0/229	0.92	1/308 (0.3%)
2	D	0.61	2/3165 (0.1%)	0.89	19/4307 (0.4%)
2	G	0.47	2/3165 (0.1%)	0.74	7/4307 (0.2%)
3	H	0.55	0/510	0.81	0/787
4	I	0.59	0/494	0.88	0/759
All	All	0.55	11/15854 (0.1%)	0.80	47/21708 (0.2%)

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	A	0	2
1	B	0	2
1	E	0	1
2	D	0	4
2	G	0	3
All	All	0	12

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	158	PRO	N-CD	-19.13	1.21	1.47
1	A	106	PRO	N-CD	7.70	1.58	1.47
1	A	362	PRO	N-CD	5.38	1.55	1.47
1	B	464	PRO	N-CD	5.33	1.55	1.47
1	B	362	PRO	N-CD	5.31	1.55	1.47

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PROTEIN DATA BANK

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	282	PRO	N-CD	5.30	1.55	1.47
2	G	282	PRO	N-CD	5.26	1.55	1.47
2	G	304	PRO	N-CD	5.14	1.55	1.47
1	B	106	PRO	N-CD	5.12	1.55	1.47
1	B	466	PRO	N-CD	5.07	1.54	1.47
1	A	97	PRO	N-CD	5.04	1.54	1.47

All (47) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	141	SER	N-CA-CB	-18.16	83.27	110.50
2	D	158	PRO	N-CA-C	13.89	148.22	112.10
1	A	106	PRO	N-CA-C	13.13	146.25	112.10
1	A	107	LEU	N-CA-C	-12.56	77.09	111.00
2	D	158	PRO	CA-N-CD	12.09	128.63	111.70
1	A	268	ASN	N-CA-C	-11.94	78.76	111.00
2	D	161	GLU	CB-CA-C	-11.15	88.10	110.40
2	D	157	LEU	C-N-CD	-9.55	99.59	120.60
2	G	161	GLU	CB-CA-C	-9.24	91.92	110.40
1	A	107	LEU	CB-CA-C	8.73	126.78	110.20
2	D	159	PRO	N-CA-C	8.24	133.52	112.10
2	G	6	TYR	CB-CA-C	8.23	126.87	110.40
1	A	375	ARG	CB-CA-C	-7.93	94.54	110.40
1	A	107	LEU	N-CA-CB	7.92	126.24	110.40
2	D	158	PRO	N-CA-CB	-7.83	93.90	103.30
2	G	5	PRO	CB-CA-C	7.41	130.52	112.00
2	D	159	PRO	CB-CA-C	-7.28	93.80	112.00
2	D	160	LEU	CB-CA-C	-7.25	96.42	110.20
2	D	303	ARG	CB-CA-C	-6.67	97.06	110.40
1	A	269	VAL	N-CA-CB	-6.63	96.92	111.50
2	D	158	PRO	CB-CA-C	-6.56	95.59	112.00
1	B	283	GLY	N-CA-C	6.48	129.30	113.10
2	D	161	GLU	C-N-CA	6.29	137.43	121.70
2	D	6	TYR	CB-CA-C	6.28	122.97	110.40
1	A	280	PRO	C-N-CD	6.15	141.31	128.40
1	A	465	SER	C-N-CD	6.05	141.11	128.40
1	C	465	SER	C-N-CD	6.03	141.07	128.40
2	G	303	ARG	C-N-CD	5.96	140.91	128.40
1	E	465	SER	C-N-CD	5.94	140.87	128.40
1	B	454	ASN	C-N-CD	5.92	140.84	128.40
1	B	105	ASP	C-N-CD	5.86	140.70	128.40
1	B	465	SER	C-N-CD	5.83	140.65	128.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	G	291	LEU	CA-CB-CG	5.77	128.57	115.30
2	G	5	PRO	C-N-CA	5.73	136.03	121.70
1	A	96	ILE	C-N-CD	5.71	140.40	128.40
1	B	463	LEU	C-N-CD	5.52	140.00	128.40
2	D	291	LEU	CA-CB-CG	5.41	127.73	115.30
1	A	230	PHE	N-CA-C	-5.40	96.42	111.00
2	D	304	PRO	CA-N-CD	-5.34	104.02	111.50
2	D	159	PRO	CA-N-CD	-5.26	104.14	111.50
1	B	230	PHE	N-CA-C	-5.17	97.05	111.00
2	D	140	THR	CB-CA-C	-5.11	97.81	111.60
2	D	157	LEU	CB-CA-C	-5.10	100.52	110.20
2	D	136	LYS	CA-CB-CG	5.07	124.55	113.40
2	G	193	LEU	CA-CB-CG	5.06	126.94	115.30
1	A	105	ASP	C-N-CD	5.05	139.00	128.40
1	C	491	LEU	CA-CB-CG	-5.03	103.74	115.30

There are no chirality outliers.

All (12) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	107	LEU	Peptide
1	A	375	ARG	Peptide
1	B	268	ASN	Peptide
1	B	282	PHE	Peptide
2	D	158	PRO	Peptide
2	D	159	PRO	Peptide
2	D	160	LEU	Peptide
2	D	161	GLU	Peptide
1	E	491	LEU	Peptide
2	G	159	PRO	Peptide
2	G	161	GLU	Peptide
2	G	5	PRO	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	3934	0	3858	358	0
1	B	3934	0	3857	305	1
1	C	229	0	233	27	0
1	E	229	0	233	24	0
2	D	3090	0	3103	263	1
2	G	3090	0	3106	159	2
3	H	454	0	248	5	1
4	I	442	0	248	4	1
5	A	27	0	22	9	0
5	B	27	0	22	8	0
All	All	15456	0	14930	1117	3

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 37.

All (1117) 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:B:50:GLU:CG	1:B:67:ILE:HD11	1.19	1.64
2:D:37:PHE:CD2	2:D:99:ILE:HD11	1.30	1.63
1:B:50:GLU:HG3	1:B:67:ILE:CD1	1.10	1.54
1:A:68:ILE:HG21	1:A:98:TYR:CE1	1.47	1.49
2:D:37:PHE:CE2	2:D:99:ILE:HD11	1.51	1.45
1:A:68:ILE:HG22	1:A:98:TYR:CZ	1.50	1.43
2:D:391:ASP:CG	2:D:395:ARG:HH22	1.18	1.42
1:A:68:ILE:CG2	1:A:98:TYR:CE1	2.04	1.41
2:D:137:MET:CG	2:D:140:THR:OG1	1.67	1.40
1:A:68:ILE:CG2	1:A:98:TYR:OH	1.69	1.40
2:D:37:PHE:CD2	2:D:99:ILE:CD1	2.06	1.36
1:A:68:ILE:CG2	1:A:98:TYR:CZ	2.09	1.36
2:D:157:LEU:O	2:D:157:LEU:CD2	1.81	1.27
1:A:100:ARG:O	1:A:112:ARG:HD3	1.33	1.26
2:D:391:ASP:CG	2:D:395:ARG:NH2	1.89	1.25
1:A:50:GLU:HG3	1:A:67:ILE:CD1	1.69	1.22
2:G:161:GLU:CD	2:G:161:GLU:O	1.79	1.21
2:D:38:VAL:HG22	2:D:98:GLN:OE1	1.36	1.20
1:A:409:GLU:OE2	1:A:434:ARG:NH1	1.77	1.17
1:B:409:GLU:OE2	1:B:434:ARG:NH1	1.76	1.16
2:D:38:VAL:CG2	2:D:98:GLN:OE1	1.95	1.15
2:D:163:GLN:O	2:D:166:ILE:N	1.77	1.15
2:D:160:LEU:HA	2:D:161:GLU:HB2	1.19	1.15
2:D:162:GLU:O	2:D:165:ARG:HB2	1.41	1.15

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:160:LEU:CA	2:D:161:GLU:HB2	1.77	1.14
1:A:107:LEU:CA	1:A:110:THR:HG23	1.75	1.14
2:D:157:LEU:O	2:D:157:LEU:HD23	0.97	1.14
1:B:193:VAL:O	1:B:230:PHE:O	1.65	1.14
2:D:163:GLN:CA	2:D:166:ILE:HG23	1.77	1.13
1:A:266:ILE:HD11	1:A:295:PRO:CD	1.79	1.12
1:A:191:GLU:HB3	1:A:274:ASP:HB2	1.32	1.12
1:A:107:LEU:HA	1:A:110:THR:CG2	1.80	1.12
2:D:71:ILE:HG12	2:D:98:GLN:O	1.50	1.12
1:A:7:ARG:HG3	1:A:149:THR:HG23	1.28	1.12
1:A:100:ARG:O	1:A:112:ARG:CD	1.97	1.11
1:A:169:GLY:HA2	1:A:363:TYR:HB2	1.22	1.10
1:A:7:ARG:HG2	1:A:11:ALA:HB2	1.24	1.10
2:D:391:ASP:OD1	2:D:395:ARG:NH2	1.82	1.10
1:A:50:GLU:HG3	1:A:67:ILE:HD12	1.16	1.09
1:A:7:ARG:HG2	1:A:11:ALA:CB	1.80	1.09
1:A:107:LEU:O	1:A:110:THR:HG23	1.52	1.09
1:B:50:GLU:HG3	1:B:67:ILE:CG1	1.82	1.09
2:D:137:MET:HG2	2:D:140:THR:CB	1.83	1.09
1:A:102:LEU:HD22	1:A:108:ARG:HB3	1.32	1.08
1:B:271:GLU:HB3	1:B:272:ARG:HA	1.34	1.08
1:A:266:ILE:HD11	1:A:295:PRO:HD2	1.35	1.07
1:B:432:SER:N	1:B:435:SER:OG	1.88	1.07
1:B:433:GLU:OE1	1:B:433:GLU:N	1.88	1.06
2:D:163:GLN:HA	2:D:166:ILE:CG2	1.84	1.06
2:D:157:LEU:HG	2:D:164:ARG:NH1	1.71	1.05
1:A:433:GLU:N	1:A:433:GLU:OE1	1.88	1.05
1:A:72:TYR:HE2	1:A:98:TYR:HB2	1.21	1.05
1:B:99:LEU:HA	1:B:102:LEU:CD2	1.87	1.04
1:B:68:ILE:CD1	1:B:73:ARG:HG2	1.87	1.03
1:A:193:VAL:O	1:A:230:PHE:O	1.75	1.03
1:C:466:PRO:HG3	2:D:201:GLU:OE2	1.54	1.03
2:D:37:PHE:CE2	2:D:99:ILE:CD1	2.34	1.03
1:A:68:ILE:HG22	1:A:98:TYR:OH	0.86	1.03
1:A:107:LEU:C	1:A:110:THR:HG23	1.78	1.03
2:D:162:GLU:O	2:D:165:ARG:CB	2.06	1.03
1:B:218:ILE:H	1:B:218:ILE:HD12	1.19	1.02
1:A:72:TYR:CD2	1:A:98:TYR:CG	2.48	1.01
1:A:191:GLU:HB3	1:A:274:ASP:CB	1.89	1.01
2:D:163:GLN:HA	2:D:166:ILE:HG23	1.02	1.01
1:A:216:ARG:CG	1:A:217:THR:HG23	1.89	1.01

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:215:GLU:OE1	1:B:216:ARG:N	1.92	1.01
2:D:137:MET:HG2	2:D:140:THR:OG1	0.83	1.00
2:G:6:TYR:HB3	2:G:14:TRP:HZ2	1.21	1.00
1:A:107:LEU:CA	1:A:110:THR:CG2	2.38	1.00
2:D:161:GLU:O	2:D:161:GLU:OE1	1.77	1.00
2:D:114:ALA:HA	2:D:164:ARG:HH22	1.24	1.00
1:A:7:ARG:HA	1:A:149:THR:HG21	1.44	1.00
1:B:5:GLN:NE2	1:B:7:ARG:HB2	1.77	1.00
1:A:107:LEU:HA	1:A:110:THR:HG21	1.39	0.99
2:D:69:LYS:O	2:D:99:ILE:HA	1.60	0.99
2:D:391:ASP:OD2	2:D:395:ARG:NH2	1.94	0.99
1:A:104:GLY:C	1:A:106:PRO:HD2	1.83	0.99
1:A:7:ARG:CG	1:A:11:ALA:HB2	1.91	0.99
2:D:160:LEU:HB3	2:D:161:GLU:C	1.81	0.99
1:B:348:ASN:O	1:B:374:GLU:N	1.94	0.98
1:A:169:GLY:HA2	1:A:363:TYR:CB	1.93	0.97
1:A:7:ARG:HA	1:A:149:THR:CG2	1.95	0.96
2:D:97:GLY:O	2:D:98:GLN:HG2	1.63	0.96
1:A:216:ARG:HG3	1:A:217:THR:HG23	1.47	0.96
1:A:267:ARG:HH11	1:A:267:ARG:HG2	1.31	0.96
1:A:68:ILE:CG2	1:A:98:TYR:HE1	1.61	0.95
1:B:102:LEU:HB2	1:B:112:ARG:HG2	1.48	0.95
1:B:105:ASP:OD1	1:B:108:ARG:HG3	1.64	0.94
1:A:67:ILE:HD13	1:A:67:ILE:H	1.28	0.94
1:B:191:GLU:HB3	1:B:274:ASP:CB	1.97	0.94
2:G:67:ALA:O	2:G:68:ARG:NH1	2.01	0.94
1:B:169:GLY:HA2	1:B:363:TYR:HB2	1.49	0.94
2:D:114:ALA:HA	2:D:164:ARG:NH2	1.81	0.93
1:B:432:SER:O	1:B:435:SER:N	1.99	0.93
1:A:217:THR:OG1	1:A:220:ASP:OD1	1.85	0.93
2:D:136:LYS:HD2	2:D:137:MET:H	1.30	0.93
1:B:432:SER:OG	1:B:433:GLU:OE1	1.85	0.93
1:A:6:THR:HA	1:A:8:GLU:HG3	1.50	0.93
1:B:5:GLN:NE2	1:B:7:ARG:CB	2.31	0.93
1:A:268:ASN:C	1:A:268:ASN:OD1	2.06	0.92
2:D:140:THR:HG22	2:D:141:SER:N	1.83	0.92
1:B:271:GLU:HB3	1:B:272:ARG:CA	1.98	0.92
2:G:6:TYR:CB	2:G:14:TRP:HZ2	1.82	0.92
2:D:67:ALA:O	2:D:68:ARG:NH1	2.02	0.92
1:A:268:ASN:OD1	1:A:268:ASN:O	1.88	0.91
2:G:6:TYR:HB3	2:G:14:TRP:CZ2	2.04	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:464:PRO:HG2	1:A:469:ILE:HD11	1.52	0.91
2:D:157:LEU:HG	2:D:164:ARG:HH11	1.25	0.91
2:D:164:ARG:HG2	2:D:164:ARG:HH21	1.34	0.91
2:D:160:LEU:HB3	2:D:161:GLU:HB3	1.53	0.91
1:B:50:GLU:CD	1:B:67:ILE:HD11	1.90	0.91
2:D:160:LEU:HB3	2:D:161:GLU:CB	2.01	0.90
2:D:68:ARG:HH11	2:D:68:ARG:HG2	1.37	0.90
1:A:269:VAL:HG23	1:A:270:SER:H	1.35	0.90
1:A:13:GLU:O	1:A:16:ARG:N	2.05	0.90
2:D:160:LEU:O	2:D:163:GLN:HG2	1.70	0.89
1:A:169:GLY:CA	1:A:363:TYR:HB2	2.01	0.89
1:A:102:LEU:HD12	1:A:102:LEU:H	1.36	0.89
2:G:161:GLU:O	2:G:161:GLU:OE1	1.90	0.89
2:D:37:PHE:HD2	2:D:99:ILE:HD11	1.38	0.88
2:D:160:LEU:CA	2:D:161:GLU:CB	2.49	0.88
2:D:162:GLU:O	2:D:165:ARG:N	2.06	0.88
1:A:72:TYR:CD2	1:A:98:TYR:CD2	2.62	0.88
1:C:466:PRO:O	1:C:469:ILE:HG22	1.74	0.88
2:D:140:THR:HG22	2:D:141:SER:H	1.38	0.88
2:D:184:ARG:HH21	2:D:375:GLN:HB3	1.39	0.88
2:D:160:LEU:HB3	2:D:162:GLU:N	1.89	0.88
1:A:67:ILE:C	1:A:68:ILE:HD13	1.94	0.88
1:A:72:TYR:CE2	1:A:98:TYR:HB2	2.08	0.87
2:D:224:ASP:HB3	2:D:305:ARG:NH2	1.90	0.87
1:A:72:TYR:CE2	1:A:98:TYR:CD2	2.62	0.87
1:A:266:ILE:HD11	1:A:295:PRO:HD3	1.55	0.87
1:A:68:ILE:HG22	1:A:98:TYR:HH	1.07	0.87
2:D:137:MET:CB	2:D:140:THR:OG1	2.21	0.87
1:A:50:GLU:CG	1:A:67:ILE:HD12	2.03	0.86
2:D:222:VAL:O	2:D:305:ARG:HB2	1.75	0.86
1:A:216:ARG:HG2	1:A:217:THR:N	1.88	0.86
1:A:67:ILE:HG12	1:A:68:ILE:H	1.37	0.86
1:A:6:THR:CA	1:A:8:GLU:HG3	2.05	0.85
1:A:117:GLU:OE1	1:A:118:ARG:NH1	2.09	0.85
1:A:106:PRO:HG2	1:A:108:ARG:HG3	1.56	0.85
1:B:68:ILE:HD11	1:B:73:ARG:HG2	1.56	0.85
2:G:6:TYR:CB	2:G:14:TRP:CZ2	2.58	0.85
2:D:165:ARG:HH11	2:D:165:ARG:HG3	1.41	0.85
1:E:466:PRO:O	1:E:469:ILE:HG22	1.75	0.84
1:A:7:ARG:HG3	1:A:149:THR:CG2	2.07	0.84
1:B:219:GLU:N	1:B:219:GLU:OE2	2.09	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:35:GLU:HG3	1:B:121:ILE:HG13	1.57	0.84
2:G:159:PRO:HA	2:G:161:GLU:N	1.92	0.84
1:A:72:TYR:CE2	1:A:98:TYR:CB	2.60	0.84
1:A:72:TYR:HD2	1:A:98:TYR:CG	1.92	0.84
1:A:216:ARG:HD3	1:A:220:ASP:OD2	1.76	0.84
1:B:170:GLU:HG2	1:B:363:TYR:CE1	2.11	0.84
2:D:160:LEU:CB	2:D:161:GLU:CB	2.55	0.84
2:D:131:GLN:NE2	2:D:154:LEU:O	2.11	0.84
2:G:131:GLN:NE2	2:G:154:LEU:O	2.11	0.84
1:A:102:LEU:HD22	1:A:108:ARG:CB	2.06	0.84
1:B:217:THR:HG23	1:B:220:ASP:CG	1.98	0.83
1:A:68:ILE:HG21	1:A:98:TYR:HE1	0.94	0.83
1:A:218:ILE:HD12	1:A:218:ILE:H	1.43	0.83
2:D:37:PHE:CD2	2:D:99:ILE:HD13	2.13	0.83
2:G:7:LYS:O	2:G:8:LEU:HD23	1.79	0.82
2:G:6:TYR:CD2	2:G:8:LEU:HD21	2.13	0.82
2:G:136:LYS:HG3	2:G:137:MET:N	1.93	0.82
1:B:106:PRO:O	1:B:109:GLU:HB2	1.79	0.82
1:B:235:LYS:HD2	1:B:236:PRO:HD2	1.60	0.82
2:G:69:LYS:O	2:G:99:ILE:HA	1.80	0.82
2:D:67:ALA:O	2:D:68:ARG:HG2	1.80	0.81
1:B:68:ILE:HD12	1:B:68:ILE:O	1.80	0.81
1:A:72:TYR:HE2	1:A:98:TYR:CB	1.92	0.81
1:B:110:THR:O	1:B:113:SER:OG	1.98	0.81
1:A:102:LEU:CD1	1:A:103:GLY:H	1.94	0.81
1:A:201:CYS:SG	1:A:202:GLY:N	2.54	0.81
1:B:102:LEU:HB2	1:B:112:ARG:CG	2.11	0.81
1:A:67:ILE:HG12	1:A:68:ILE:N	1.94	0.81
1:A:432:SER:OG	1:A:433:GLU:OE1	1.97	0.81
1:B:50:GLU:CG	1:B:67:ILE:CD1	2.05	0.81
2:D:162:GLU:O	2:D:165:ARG:CA	2.29	0.80
1:A:5:GLN:NE2	1:A:7:ARG:H	1.79	0.80
2:D:137:MET:HG3	2:D:140:THR:H	1.45	0.80
1:A:260:ASN:OD1	5:A:601:SAM:N6	2.14	0.80
1:B:191:GLU:HB3	1:B:274:ASP:CG	2.01	0.80
2:D:164:ARG:O	2:D:167:VAL:HG12	1.80	0.80
1:B:375:ARG:HG2	1:B:375:ARG:O	1.80	0.79
1:A:216:ARG:HG2	1:A:217:THR:HG23	1.62	0.79
2:D:162:GLU:OE2	2:D:165:ARG:NH1	2.15	0.79
1:B:10:LEU:HD12	1:B:10:LEU:O	1.82	0.79
1:B:272:ARG:HH11	1:B:272:ARG:HG2	1.46	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:201:CYS:SG	1:B:202:GLY:N	2.54	0.79
1:B:218:ILE:HB	1:B:219:GLU:OE2	1.83	0.79
2:D:71:ILE:N	2:D:98:GLN:O	2.13	0.79
2:D:136:LYS:CD	2:D:137:MET:H	1.95	0.79
2:G:184:ARG:HH21	2:G:375:GLN:HB3	1.46	0.79
1:A:107:LEU:O	1:A:110:THR:CG2	2.31	0.79
2:G:192:GLU:OE1	2:G:193:LEU:N	2.16	0.78
2:G:280:ARG:HH22	2:G:297:ARG:NH1	1.80	0.78
2:G:280:ARG:NH2	2:G:297:ARG:NH1	2.31	0.78
1:B:217:THR:HG23	1:B:220:ASP:OD1	1.83	0.78
1:B:270:SER:O	1:B:272:ARG:HG3	1.83	0.78
2:D:72:ARG:HG2	2:D:72:ARG:HH11	1.46	0.78
1:B:199:GLY:H	5:B:601:SAM:HA	1.47	0.78
2:G:132:LEU:O	2:G:136:LYS:HG2	1.84	0.78
1:A:67:ILE:HA	1:A:108:ARG:NH1	1.99	0.77
2:D:66:ARG:O	2:D:102:THR:HG23	1.84	0.77
2:D:17:LEU:HD13	2:D:155:ILE:HD13	1.66	0.77
1:B:272:ARG:HG2	1:B:272:ARG:NH1	2.00	0.77
1:A:72:TYR:CE2	1:A:98:TYR:CG	2.72	0.77
1:B:199:GLY:N	5:B:601:SAM:HA	2.00	0.77
1:A:199:GLY:H	5:A:601:SAM:HA	1.50	0.77
1:B:457:ARG:HG2	1:B:458:SER:N	2.00	0.77
1:A:272:ARG:HG2	1:A:272:ARG:HH11	1.49	0.77
2:D:157:LEU:CG	2:D:164:ARG:NH1	2.48	0.77
1:B:99:LEU:HA	1:B:102:LEU:HD21	1.66	0.77
1:A:71:GLU:HB3	1:A:72:TYR:CD1	2.19	0.76
1:A:183:GLU:OE2	1:A:415:ARG:NH2	2.18	0.76
2:G:249:LYS:HD3	2:G:282:PRO:HG3	1.67	0.76
2:D:137:MET:CG	2:D:140:THR:CB	2.53	0.76
1:B:442:GLU:HA	1:B:445:LYS:HG3	1.68	0.76
1:A:10:LEU:HD12	1:A:10:LEU:O	1.84	0.75
1:A:347:PHE:HE1	1:A:375:ARG:HD2	1.50	0.75
2:G:71:ILE:HG12	2:G:98:GLN:O	1.87	0.75
2:G:16:ARG:O	2:G:19:GLU:HG3	1.87	0.75
1:A:35:GLU:HG3	1:A:121:ILE:HG13	1.68	0.75
1:B:170:GLU:HG2	1:B:363:TYR:HE1	1.51	0.75
1:A:5:GLN:HE21	1:A:7:ARG:H	1.31	0.75
2:D:157:LEU:O	2:D:157:LEU:CG	2.32	0.75
1:B:166:ARG:HA	1:B:362:PRO:HG2	1.69	0.75
1:A:267:ARG:HG2	1:A:267:ARG:NH1	1.99	0.74
2:D:114:ALA:CA	2:D:164:ARG:HH22	1.99	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:68:ARG:NH1	2:G:68:ARG:HG2	2.02	0.74
2:D:12:TRP:HE3	2:D:12:TRP:N	1.85	0.74
2:D:166:ILE:O	2:D:169:LYS:N	2.19	0.74
1:A:68:ILE:HD13	1:A:68:ILE:N	2.03	0.74
2:D:68:ARG:NH1	2:D:68:ARG:HG2	2.00	0.74
2:D:72:ARG:HG2	2:D:72:ARG:NH1	2.01	0.74
1:A:265:ASN:HD21	1:A:267:ARG:HD2	1.50	0.74
2:G:6:TYR:HD2	2:G:8:LEU:HD21	1.50	0.74
1:A:67:ILE:CD1	1:A:67:ILE:H	2.01	0.74
1:A:364:SER:OG	1:A:366:VAL:HG23	1.88	0.74
2:D:271:ARG:HG2	2:D:274:ASP:OD2	1.88	0.74
1:A:347:PHE:CE1	1:A:375:ARG:HD2	2.22	0.74
2:D:160:LEU:HD13	2:D:161:GLU:HB3	1.71	0.73
1:B:50:GLU:CG	1:B:67:ILE:CG1	2.54	0.73
1:A:484:MET:HE3	2:D:371:LEU:HD11	1.69	0.73
1:A:53:TRP:HD1	1:A:56:GLN:HE21	1.33	0.73
1:A:94:ARG:O	1:A:97:PRO:HG2	1.88	0.73
1:C:467:VAL:O	1:C:470:VAL:HG12	1.88	0.73
1:B:53:TRP:HA	1:B:56:GLN:HG3	1.71	0.73
1:B:191:GLU:CB	1:B:274:ASP:HB2	2.18	0.73
2:G:68:ARG:HG2	2:G:68:ARG:HH11	1.54	0.73
2:D:160:LEU:CB	2:D:162:GLU:H	2.01	0.72
2:D:162:GLU:HA	2:D:165:ARG:HG2	1.71	0.72
2:D:339:LYS:O	2:D:343:ASN:ND2	2.21	0.72
2:G:379:GLU:OE2	2:G:383:LYS:NZ	2.19	0.72
1:A:100:ARG:O	1:A:112:ARG:HD2	1.89	0.72
2:D:11:GLY:O	2:D:159:PRO:CD	2.38	0.72
2:D:137:MET:HG3	2:D:140:THR:N	2.04	0.72
1:B:112:ARG:O	1:B:116:SER:HB2	1.88	0.72
2:G:6:TYR:HD2	2:G:8:LEU:CD2	2.01	0.72
1:A:218:ILE:HD12	1:A:218:ILE:N	2.03	0.72
1:A:106:PRO:CG	1:A:108:ARG:HG3	2.20	0.72
1:A:230:PHE:CB	1:A:273:PHE:HE2	2.03	0.72
1:B:68:ILE:HD11	1:B:73:ARG:CG	2.20	0.72
2:D:140:THR:CG2	2:D:141:SER:N	2.53	0.72
2:D:160:LEU:CB	2:D:161:GLU:HB3	2.19	0.72
1:A:272:ARG:HG2	1:A:272:ARG:NH1	2.01	0.72
1:A:112:ARG:O	1:A:113:SER:C	2.27	0.72
1:E:465:SER:HA	1:E:468:GLU:OE2	1.89	0.72
2:G:115:GLU:O	2:G:164:ARG:NH1	2.22	0.72
1:A:199:GLY:N	5:A:601:SAM:HA	2.04	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:102:LEU:HD12	1:A:102:LEU:N	2.04	0.71
1:A:386:GLU:OE1	1:A:457:ARG:NH1	2.23	0.71
2:G:71:ILE:N	2:G:98:GLN:O	2.22	0.71
1:A:169:GLY:HA2	1:A:363:TYR:CG	2.26	0.71
1:B:349:LEU:HA	1:B:373:PHE:HA	1.72	0.71
1:B:183:GLU:OE2	1:B:415:ARG:NH2	2.23	0.71
1:A:67:ILE:HD13	1:A:67:ILE:N	2.04	0.71
2:D:111:ARG:NH1	2:D:115:GLU:OE2	2.23	0.70
2:G:161:GLU:O	2:G:161:GLU:CG	2.35	0.70
2:D:12:TRP:HA	2:D:159:PRO:HD3	1.74	0.70
1:B:139:ILE:HD13	1:B:150:VAL:HG21	1.73	0.70
2:G:283:VAL:CG2	2:G:325:SER:HA	2.20	0.70
1:A:381:GLU:HG3	1:A:439:PRO:HA	1.71	0.70
1:A:186:ASP:OD1	1:A:188:GLN:NE2	2.25	0.70
2:G:280:ARG:HG3	2:G:298:GLY:HA2	1.71	0.70
2:D:163:GLN:C	2:D:166:ILE:H	1.95	0.70
2:G:26:ARG:HB2	2:G:68:ARG:O	1.92	0.70
2:G:326:LYS:HG3	2:G:334:ASN:HD21	1.57	0.69
1:A:107:LEU:O	1:A:109:GLU:N	2.24	0.69
1:A:269:VAL:HG23	1:A:270:SER:N	2.06	0.69
1:B:266:ILE:HD13	1:B:311:LYS:HD3	1.74	0.69
2:G:280:ARG:HH22	2:G:297:ARG:HH12	1.38	0.69
2:D:140:THR:CG2	2:D:141:SER:H	2.05	0.69
1:B:260:ASN:O	1:B:263:GLU:HB2	1.92	0.69
1:A:441:GLU:O	1:A:445:LYS:HD2	1.93	0.69
2:D:16:ARG:O	2:D:19:GLU:HG3	1.92	0.69
1:A:113:SER:O	1:A:258:ARG:NH2	2.26	0.69
2:D:271:ARG:N	2:D:274:ASP:OD2	2.26	0.69
1:A:102:LEU:HD13	1:A:103:GLY:H	1.58	0.69
1:B:220:ASP:OD1	1:B:220:ASP:N	2.25	0.69
2:G:214:TRP:CE2	2:G:349:PRO:HB3	2.28	0.69
1:A:102:LEU:HD21	1:A:108:ARG:O	1.92	0.69
1:B:271:GLU:HG2	1:B:273:PHE:HE1	1.58	0.69
1:B:457:ARG:HG3	1:B:457:ARG:HH21	1.57	0.69
1:A:6:THR:O	1:A:8:GLU:HB2	1.92	0.68
1:A:348:ASN:O	1:A:374:GLU:N	2.23	0.68
2:D:5:PRO:HG2	2:D:14:TRP:CE2	2.28	0.68
1:A:191:GLU:CB	1:A:274:ASP:HB2	2.19	0.68
1:B:5:GLN:HE21	1:B:7:ARG:N	1.91	0.68
2:D:28:ASP:OD1	2:D:30:THR:OG1	2.11	0.68
1:A:72:TYR:OH	1:A:94:ARG:NH1	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:107:LEU:HD12	1:A:108:ARG:N	2.09	0.68
1:A:216:ARG:NH1	1:A:220:ASP:OD2	2.18	0.68
1:A:265:ASN:ND2	1:A:267:ARG:HD2	2.08	0.68
1:A:7:ARG:CG	1:A:149:THR:HG23	2.15	0.68
1:B:5:GLN:HE22	1:B:7:ARG:CB	2.06	0.68
2:D:214:TRP:CE2	2:D:349:PRO:HB3	2.28	0.67
1:B:260:ASN:OD1	5:B:601:SAM:N6	2.26	0.67
1:A:338:GLU:OE1	2:D:373:ARG:NH1	2.27	0.67
1:A:347:PHE:O	1:A:379:THR:OG1	2.11	0.67
1:B:117:GLU:HA	1:B:117:GLU:OE1	1.94	0.67
1:E:468:GLU:O	1:E:471:ALA:HB3	1.95	0.67
1:B:118:ARG:HG2	1:B:118:ARG:HH11	1.59	0.67
1:A:7:ARG:HA	1:A:149:THR:HG23	1.76	0.67
1:B:191:GLU:HB3	1:B:274:ASP:HB2	1.72	0.67
2:D:38:VAL:HG23	2:D:98:GLN:OE1	1.92	0.67
2:D:306:ASP:OD1	2:D:306:ASP:N	2.28	0.67
1:B:107:LEU:C	1:B:107:LEU:HD12	2.15	0.67
2:D:12:TRP:N	2:D:12:TRP:CE3	2.62	0.67
2:G:70:VAL:HA	2:G:98:GLN:O	1.93	0.67
1:A:112:ARG:O	1:A:114:LEU:N	2.28	0.66
1:A:349:LEU:C	1:A:349:LEU:HD12	2.15	0.66
2:D:136:LYS:HD2	2:D:137:MET:N	2.07	0.66
1:A:433:GLU:O	1:A:456:ASN:OD1	2.13	0.66
1:B:461:GLU:HB3	1:B:463:LEU:CD1	2.26	0.66
1:E:487:LEU:HD21	2:G:177:VAL:HG22	1.76	0.66
2:D:160:LEU:HB3	2:D:162:GLU:H	1.56	0.66
1:A:230:PHE:HB2	1:A:273:PHE:CE2	2.31	0.66
1:B:349:LEU:HD12	1:B:349:LEU:C	2.15	0.66
2:G:283:VAL:HG23	2:G:325:SER:HA	1.78	0.66
2:D:157:LEU:CG	2:D:164:ARG:HH11	2.05	0.66
1:A:201:CYS:HB3	1:A:245:ASN:HD22	1.60	0.65
1:A:367:LYS:NZ	1:A:462:GLU:HG3	2.10	0.65
1:A:102:LEU:HD12	1:A:103:GLY:H	1.61	0.65
2:D:174:MET:O	2:D:178:ARG:HG2	1.97	0.65
1:B:50:GLU:CB	1:B:67:ILE:HD11	2.19	0.65
1:B:347:PHE:O	1:B:379:THR:OG1	2.14	0.65
1:A:221:HIS:CE1	1:A:225:GLN:NE2	2.65	0.65
1:A:6:THR:C	1:A:8:GLU:HG3	2.16	0.65
2:G:160:LEU:O	2:G:161:GLU:HB3	1.95	0.65
2:G:279:VAL:HG21	2:G:300:ALA:HB2	1.79	0.65
1:A:230:PHE:HB2	1:A:273:PHE:HE2	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:166:ILE:HD12	2:D:166:ILE:C	2.17	0.65
2:D:25:GLU:HG3	2:D:70:VAL:HB	1.79	0.65
2:D:163:GLN:O	2:D:164:ARG:C	2.33	0.65
1:B:270:SER:OG	1:B:271:GLU:N	2.29	0.65
1:A:216:ARG:HD3	1:A:220:ASP:CG	2.17	0.65
1:A:139:ILE:HD13	1:A:150:VAL:HG21	1.78	0.65
1:A:104:GLY:C	1:A:106:PRO:CD	2.61	0.64
1:A:118:ARG:HG3	1:A:119:ASN:H	1.60	0.64
1:C:491:LEU:HD21	2:D:173:LEU:HD11	1.78	0.64
2:G:205:HIS:C	2:G:205:HIS:CD2	2.71	0.64
1:C:480:ILE:HG23	2:D:180:VAL:HG13	1.79	0.64
1:B:348:ASN:N	1:B:374:GLU:O	2.30	0.64
1:B:347:PHE:CD1	1:B:375:ARG:HB2	2.33	0.64
1:B:5:GLN:HE21	1:B:7:ARG:H	1.44	0.64
1:B:186:ASP:OD1	1:B:188:GLN:NE2	2.31	0.64
1:B:218:ILE:HD12	1:B:218:ILE:N	2.03	0.64
2:G:188:GLN:O	2:G:191:THR:HG22	1.98	0.64
1:A:106:PRO:HG2	1:A:108:ARG:CG	2.28	0.64
2:D:164:ARG:NH2	2:D:164:ARG:HG2	2.02	0.64
1:B:183:GLU:HG3	1:B:210:TRP:CH2	2.33	0.63
1:B:243:LEU:O	1:B:247:MET:HG3	1.98	0.63
2:D:158:PRO:O	2:D:160:LEU:O	2.16	0.63
2:G:47:SER:OG	2:G:85:LEU:O	2.16	0.63
1:A:194:TYR:HA	1:A:230:PHE:O	1.99	0.63
1:B:118:ARG:HH11	1:B:118:ARG:CG	2.12	0.63
1:B:201:CYS:HB3	1:B:245:ASN:HD22	1.63	0.63
2:D:188:GLN:O	2:D:191:THR:HG22	1.98	0.63
3:H:12:DA:H2"	3:H:13:DG:H5"	1.80	0.63
1:A:93:GLY:O	1:A:97:PRO:HG3	1.99	0.63
2:D:166:ILE:HD12	2:D:167:VAL:N	2.14	0.63
1:B:217:THR:HG23	1:B:220:ASP:OD2	1.98	0.63
2:G:47:SER:O	2:G:124:ARG:NH2	2.31	0.63
2:D:97:GLY:C	2:D:98:GLN:HG2	2.20	0.63
2:D:160:LEU:CD1	2:D:161:GLU:HB3	2.29	0.63
1:B:457:ARG:HG3	1:B:457:ARG:NH2	2.12	0.63
2:D:135:SER:OG	2:D:136:LYS:N	2.32	0.63
1:E:480:ILE:HG23	2:G:180:VAL:HG13	1.79	0.63
2:D:165:ARG:HG3	2:D:165:ARG:NH1	2.14	0.62
2:D:165:ARG:O	2:D:168:ALA:HB3	1.98	0.62
1:B:5:GLN:NE2	1:B:7:ARG:CA	2.62	0.62
1:B:68:ILE:HD12	1:B:68:ILE:C	2.18	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:271:GLU:CB	1:B:272:ARG:HA	2.20	0.62
2:D:280:ARG:C	2:D:283:VAL:HG12	2.19	0.62
1:B:118:ARG:HB3	1:B:118:ARG:NH1	2.14	0.62
1:E:467:VAL:O	1:E:470:VAL:HG12	2.00	0.62
1:A:267:ARG:HA	1:A:311:LYS:NZ	2.14	0.62
2:D:11:GLY:C	2:D:159:PRO:HD2	2.20	0.62
2:D:71:ILE:CG1	2:D:98:GLN:O	2.38	0.62
1:E:479:GLU:O	1:E:483:ILE:HG12	1.98	0.62
2:G:118:PHE:CZ	2:G:158:PRO:HG3	2.34	0.62
2:D:67:ALA:C	2:D:68:ARG:HG2	2.19	0.62
1:A:484:MET:SD	1:C:477:GLU:HG3	2.39	0.62
2:D:202:VAL:HG21	2:D:357:ILE:HG21	1.82	0.62
2:G:157:LEU:HG	2:G:159:PRO:HD3	1.80	0.62
1:B:230:PHE:HB2	1:B:273:PHE:CE2	2.34	0.62
2:G:249:LYS:HD3	2:G:282:PRO:CG	2.30	0.61
1:C:465:SER:HB3	1:C:468:GLU:OE2	1.99	0.61
2:G:115:GLU:OE2	2:G:117:GLU:HG3	2.00	0.61
1:B:338:GLU:OE1	2:G:373:ARG:NH1	2.32	0.61
2:D:146:THR:HG22	2:D:149:ASP:OD2	2.01	0.61
2:D:160:LEU:HB3	2:D:161:GLU:CA	2.29	0.61
1:B:484:MET:SD	1:E:477:GLU:HG3	2.40	0.61
1:B:107:LEU:O	1:B:110:THR:N	2.32	0.61
2:G:17:LEU:HD23	2:G:150:VAL:O	1.99	0.61
1:C:492:GLU:HA	1:C:493:ASN:HB2	1.82	0.61
1:B:100:ARG:O	1:B:112:ARG:NH1	2.33	0.61
2:G:271:ARG:N	2:G:274:ASP:OD2	2.34	0.61
2:D:249:LYS:HD3	2:D:282:PRO:HG3	1.82	0.61
1:E:470:VAL:HG13	1:E:471:ALA:N	2.15	0.61
1:A:72:TYR:CD2	1:A:98:TYR:CB	2.83	0.60
1:B:464:PRO:HG2	1:B:469:ILE:HD11	1.83	0.60
1:A:243:LEU:O	1:A:247:MET:HG2	2.00	0.60
2:D:279:VAL:HG22	2:D:279:VAL:O	2.00	0.60
1:B:279:ASN:O	5:B:601:SAM:HG1	2.01	0.60
1:B:350:HIS:HD2	1:B:374:GLU:HB2	1.66	0.60
2:G:280:ARG:NH2	2:G:297:ARG:HH12	1.97	0.60
2:G:28:ASP:OD1	2:G:30:THR:OG1	2.12	0.60
1:A:216:ARG:HG2	1:A:217:THR:H	1.64	0.60
1:B:222:ARG:NH2	1:B:227:ARG:HH22	1.99	0.60
1:A:272:ARG:HH11	1:A:272:ARG:CG	2.14	0.60
2:D:137:MET:CB	2:D:140:THR:CB	2.79	0.60
2:D:175:GLU:HA	2:D:178:ARG:HE	1.67	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:7:ARG:CB	1:A:11:ALA:HB2	2.32	0.60
1:A:141:PHE:HA	1:A:147:ILE:HD11	1.82	0.60
1:A:340:LYS:NZ	1:A:448:TYR:O	2.23	0.60
1:B:230:PHE:CD2	1:B:273:PHE:HE2	2.20	0.60
2:G:186:GLU:HA	2:G:189:LYS:HE3	1.84	0.60
2:D:47:SER:OG	2:D:85:LEU:O	2.20	0.60
1:B:439:PRO:HB2	1:B:441:GLU:OE1	2.02	0.60
2:D:47:SER:O	2:D:124:ARG:NH2	2.34	0.59
2:D:66:ARG:NH2	3:H:7:DG:O6	2.36	0.59
2:G:6:TYR:CD2	2:G:8:LEU:CD2	2.81	0.59
1:A:233:GLU:OE1	5:A:601:SAM:H1'	2.02	0.59
1:A:266:ILE:CD1	1:A:295:PRO:HD2	2.22	0.59
1:A:271:GLU:HG2	1:A:273:PHE:HE1	1.68	0.59
1:B:351:THR:HG21	1:B:414:TRP:HE1	1.67	0.59
1:A:6:THR:O	1:A:6:THR:HG22	2.01	0.59
1:A:186:ASP:HA	1:A:210:TRP:CZ3	2.37	0.59
1:A:405:GLU:O	1:A:408:GLU:HG2	2.02	0.59
1:B:99:LEU:HA	1:B:102:LEU:HD23	1.79	0.59
1:B:418:ASP:OD1	1:B:421:ARG:NH2	2.35	0.59
2:D:167:VAL:O	2:D:168:ALA:C	2.39	0.59
1:A:71:GLU:HB3	1:A:72:TYR:HD1	1.63	0.59
1:A:418:ASP:OD1	1:A:421:ARG:NH2	2.36	0.59
1:C:465:SER:HA	1:C:468:GLU:OE2	2.02	0.59
2:D:15:VAL:HG21	2:D:157:LEU:HD13	1.84	0.59
2:D:26:ARG:HB2	2:D:68:ARG:O	2.03	0.59
1:B:141:PHE:HA	1:B:147:ILE:HD11	1.85	0.59
1:B:432:SER:N	1:B:435:SER:HG	1.98	0.59
1:B:407:PHE:O	1:B:411:ARG:HG3	2.03	0.59
1:A:112:ARG:O	1:A:115:PHE:N	2.36	0.58
1:C:490:LEU:O	1:C:493:ASN:ND2	2.36	0.58
1:B:5:GLN:NE2	1:B:7:ARG:N	2.50	0.58
1:B:71:GLU:HG2	1:B:72:TYR:CE1	2.37	0.58
2:G:279:VAL:HG12	2:G:279:VAL:O	2.04	0.58
1:B:271:GLU:HG2	1:B:273:PHE:CE1	2.38	0.58
1:B:484:MET:HE3	2:G:371:LEU:HD11	1.85	0.58
2:G:71:ILE:O	2:G:97:GLY:N	2.36	0.58
2:G:115:GLU:H	2:G:164:ARG:HH11	1.49	0.58
1:B:46:LEU:HD11	1:B:111:ILE:CD1	2.34	0.58
2:G:122:LEU:HD21	2:G:155:ILE:HB	1.85	0.58
2:D:162:GLU:HA	2:D:165:ARG:CG	2.33	0.58
1:B:197:ALA:HB1	5:B:601:SAM:O4'	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:176:ARG:HG3	2:G:176:ARG:HH11	1.69	0.58
1:A:102:LEU:HD22	1:A:108:ARG:CA	2.33	0.58
1:A:350:HIS:O	1:A:351:THR:CG2	2.51	0.58
2:D:69:LYS:HD2	2:D:102:THR:HA	1.86	0.58
2:D:136:LYS:CG	2:D:137:MET:H	2.17	0.58
1:A:102:LEU:HD11	1:A:108:ARG:O	2.03	0.58
1:C:479:GLU:O	1:C:483:ILE:HG12	2.03	0.58
2:D:72:ARG:NH1	2:D:97:GLY:CA	2.67	0.58
1:B:485:GLU:O	1:B:489:GLU:HG3	2.04	0.58
2:G:115:GLU:N	2:G:164:ARG:HH11	2.01	0.58
2:D:122:LEU:HD21	2:D:155:ILE:HB	1.86	0.57
1:B:272:ARG:HH11	1:B:272:ARG:CG	2.17	0.57
1:B:340:LYS:NZ	1:B:448:TYR:O	2.25	0.57
1:B:375:ARG:O	1:B:375:ARG:CG	2.50	0.57
2:G:66:ARG:NH2	4:I:6:DG:O6	2.36	0.57
1:B:175:ARG:NH2	1:B:201:CYS:SG	2.75	0.57
1:B:269:VAL:O	1:B:270:SER:HB3	2.03	0.57
1:B:470:VAL:O	1:B:474:LEU:HG	2.04	0.57
1:A:440:VAL:O	1:A:443:VAL:HG12	2.04	0.57
2:D:146:THR:OG1	4:I:13:DA:OP1	2.18	0.57
1:B:343:LEU:HD23	1:B:347:PHE:HB2	1.87	0.57
1:A:433:GLU:H	1:A:433:GLU:CD	1.98	0.57
1:B:455:PRO:HB2	1:B:456:ASN:ND2	2.19	0.57
1:B:99:LEU:CA	1:B:102:LEU:CD2	2.73	0.57
2:D:371:LEU:O	2:D:375:GLN:HG2	2.05	0.57
1:B:225:GLN:HE22	1:B:251:VAL:HA	1.69	0.57
1:B:461:GLU:HB3	1:B:463:LEU:HD11	1.86	0.57
1:A:5:GLN:NE2	1:A:7:ARG:HB2	2.19	0.57
1:B:350:HIS:ND1	1:B:351:THR:HG23	2.20	0.57
2:G:161:GLU:HA	2:G:164:ARG:HG3	1.86	0.57
1:A:191:GLU:HB3	1:A:274:ASP:CG	2.26	0.57
1:A:405:GLU:O	1:A:408:GLU:N	2.38	0.57
1:B:222:ARG:HH21	1:B:227:ARG:HH22	1.51	0.57
2:D:5:PRO:HG2	2:D:14:TRP:CZ2	2.39	0.56
2:D:149:ASP:O	2:D:153:THR:HG23	2.04	0.56
2:D:349:PRO:HG2	2:D:354:GLN:HG2	1.87	0.56
1:B:383:TRP:HB2	1:B:417:TRP:CE2	2.40	0.56
1:B:440:VAL:O	1:B:443:VAL:HG12	2.04	0.56
2:G:371:LEU:O	2:G:375:GLN:HG2	2.05	0.56
1:A:7:ARG:HG2	1:A:11:ALA:HB1	1.78	0.56
2:D:165:ARG:HH11	2:D:165:ARG:CG	2.15	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:277:ILE:O	2:D:277:ILE:HG23	2.03	0.56
1:B:70:SER:O	1:B:73:ARG:HG3	2.05	0.56
1:B:474:LEU:HD22	1:E:485:GLU:OE2	2.05	0.56
1:A:36:HIS:ND1	1:A:121:ILE:O	2.34	0.56
2:D:37:PHE:CG	2:D:99:ILE:CD1	2.83	0.56
1:A:72:TYR:HD1	1:A:72:TYR:N	2.03	0.56
1:B:273:PHE:CD1	1:B:273:PHE:N	2.73	0.56
2:D:137:MET:HB2	2:D:140:THR:OG1	2.06	0.56
2:G:50:GLY:N	2:G:124:ARG:HH21	2.04	0.56
1:A:72:TYR:CD1	1:A:72:TYR:N	2.72	0.56
1:A:104:GLY:O	1:A:106:PRO:HD2	2.06	0.56
2:D:280:ARG:CA	2:D:283:VAL:HG12	2.35	0.56
2:G:137:MET:HB2	2:G:140:THR:OG1	2.06	0.56
1:A:5:GLN:NE2	1:A:7:ARG:N	2.52	0.56
1:B:71:GLU:HG2	1:B:72:TYR:CD1	2.40	0.56
1:B:191:GLU:HB2	1:B:274:ASP:HB2	1.86	0.56
1:B:347:PHE:CE1	1:B:375:ARG:HB2	2.40	0.56
1:A:102:LEU:CD2	1:A:108:ARG:O	2.53	0.56
1:A:467:VAL:HA	1:A:470:VAL:HG22	1.87	0.56
1:B:218:ILE:H	1:B:218:ILE:CD1	1.96	0.56
1:B:266:ILE:HD11	1:B:295:PRO:HD3	1.87	0.56
2:G:161:GLU:OE1	2:G:161:GLU:C	2.44	0.56
2:G:278:SER:OG	2:G:282:PRO:O	2.20	0.56
1:A:102:LEU:CD1	1:A:103:GLY:N	2.66	0.55
1:A:207:ALA:O	1:A:211:MET:HG3	2.05	0.55
2:G:68:ARG:HH11	2:G:68:ARG:CG	2.17	0.55
1:C:487:LEU:HD21	2:D:177:VAL:HG22	1.87	0.55
2:G:136:LYS:CG	2:G:137:MET:N	2.64	0.55
1:B:192:ALA:N	1:B:274:ASP:OD1	2.40	0.55
1:A:175:ARG:NH2	1:A:201:CYS:SG	2.78	0.55
1:C:466:PRO:CG	2:D:201:GLU:OE2	2.44	0.55
2:D:137:MET:HG2	2:D:140:THR:CA	2.36	0.55
2:G:288:VAL:HG12	2:G:289:ALA:N	2.21	0.55
1:A:118:ARG:CG	1:A:119:ASN:H	2.18	0.55
1:A:173:THR:HB	5:A:601:SAM:O	2.06	0.55
1:A:407:PHE:O	1:A:411:ARG:HG3	2.06	0.55
1:A:273:PHE:N	1:A:273:PHE:CD1	2.73	0.55
1:A:288:ARG:O	1:A:291:GLN:HB2	2.06	0.55
1:A:351:THR:HG21	1:A:414:TRP:HE1	1.71	0.55
2:G:133:THR:HA	2:G:136:LYS:HE2	1.89	0.55
1:B:72:TYR:CD1	1:B:72:TYR:N	2.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:233:GLU:OE1	5:B:601:SAM:H1'	2.06	0.55
3:H:2:DT:H2"	3:H:3:DG:C8	2.42	0.55
1:A:102:LEU:HD13	1:A:103:GLY:N	2.22	0.55
2:D:204:PRO:HG3	2:D:210:LEU:HD22	1.88	0.54
2:G:159:PRO:HA	2:G:161:GLU:H	1.69	0.54
2:G:202:VAL:HG21	2:G:357:ILE:HG21	1.88	0.54
1:A:5:GLN:HE22	1:A:7:ARG:CB	2.21	0.54
2:D:282:PRO:O	2:D:282:PRO:HG2	2.07	0.54
1:B:167:LEU:HD12	1:B:170:GLU:HG3	1.87	0.54
2:G:174:MET:O	2:G:178:ARG:HG3	2.07	0.54
1:B:123:CYS:HB2	1:B:129:LEU:HB2	1.89	0.54
1:A:44:ARG:HE	1:A:137:ASN:HA	1.73	0.54
1:B:200:THR:OG1	1:B:201:CYS:N	2.40	0.54
2:G:148:ASN:O	2:G:152:ASN:ND2	2.35	0.54
1:A:466:PRO:O	1:A:469:ILE:HB	2.08	0.54
2:D:11:GLY:C	2:D:159:PRO:CD	2.76	0.54
2:D:224:ASP:HB3	2:D:305:ARG:HH21	1.71	0.54
1:B:5:GLN:HE22	1:B:7:ARG:CG	2.20	0.54
1:B:68:ILE:HD13	1:B:73:ARG:HG2	1.86	0.54
1:E:487:LEU:O	1:E:491:LEU:HD13	2.08	0.54
2:G:277:ILE:HG23	2:G:277:ILE:O	2.08	0.54
2:G:349:PRO:HG2	2:G:354:GLN:HG2	1.89	0.54
1:A:186:ASP:CG	1:A:210:TRP:HH2	2.11	0.54
2:D:360:TYR:CZ	2:D:364:ILE:HD11	2.43	0.54
1:A:71:GLU:HB3	1:A:72:TYR:CE1	2.44	0.54
2:D:20:VAL:O	2:D:21:CYS:SG	2.65	0.54
1:B:192:ALA:CB	1:B:273:PHE:HD2	2.21	0.54
1:B:208:TYR:HA	1:B:229:PHE:HZ	1.74	0.54
1:B:268:ASN:OD1	1:B:268:ASN:N	2.41	0.54
2:G:360:TYR:CZ	2:G:364:ILE:HD11	2.42	0.54
1:A:13:GLU:OE2	1:A:16:ARG:NH1	2.41	0.53
2:G:205:HIS:CD2	2:G:206:PRO:O	2.61	0.53
1:A:457:ARG:CG	1:A:458:SER:H	2.21	0.53
1:A:473:LEU:HB3	1:C:484:MET:HE1	1.89	0.53
1:B:473:LEU:HB3	1:E:484:MET:SD	2.48	0.53
1:E:492:GLU:HA	1:E:493:ASN:C	2.28	0.53
1:A:200:THR:OG1	1:A:201:CYS:N	2.42	0.53
2:D:228:GLY:H	2:D:268:LYS:HD3	1.73	0.53
1:A:112:ARG:C	1:A:114:LEU:N	2.59	0.53
1:B:191:GLU:CB	1:B:274:ASP:CB	2.74	0.53
2:G:165:ARG:HA	2:G:167:VAL:HG12	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:137:MET:CG	2:D:140:THR:N	2.71	0.53
1:B:223:ILE:HG22	1:B:228:THR:HG23	1.91	0.53
2:D:13:ARG:HH21	2:D:14:TRP:H	1.57	0.53
1:B:5:GLN:NE2	1:B:7:ARG:CG	2.72	0.53
1:B:7:ARG:HG2	1:B:11:ALA:HB2	1.89	0.53
1:B:319:ALA:HB3	1:B:375:ARG:HB3	1.89	0.53
1:A:5:GLN:O	1:A:6:THR:HB	2.09	0.53
1:A:68:ILE:HG23	1:A:98:TYR:OH	1.93	0.53
1:A:364:SER:HG	1:A:366:VAL:HG23	1.74	0.53
1:A:390:PRO:HB2	1:A:393:LEU:HD12	1.91	0.53
2:D:15:VAL:CG2	2:D:157:LEU:HB3	2.38	0.53
2:D:50:GLY:N	2:D:124:ARG:HH21	2.07	0.53
2:D:163:GLN:C	2:D:165:ARG:N	2.61	0.53
2:G:17:LEU:HD13	2:G:155:ILE:HD13	1.90	0.53
2:G:282:PRO:O	2:G:282:PRO:HG2	2.08	0.53
1:A:73:ARG:HH11	1:A:75:ARG:NH2	2.07	0.53
2:D:160:LEU:HB2	2:D:162:GLU:H	1.74	0.53
2:D:188:GLN:NE2	2:D:379:GLU:OE1	2.34	0.53
1:B:46:LEU:HD11	1:B:111:ILE:HD11	1.91	0.53
1:E:481:LEU:O	1:E:485:GLU:HG2	2.08	0.53
1:A:260:ASN:O	1:A:263:GLU:HG2	2.08	0.53
2:D:160:LEU:O	2:D:163:GLN:NE2	2.41	0.53
1:B:230:PHE:CB	1:B:273:PHE:CE2	2.92	0.53
2:G:20:VAL:HG11	2:G:114:ALA:CB	2.39	0.53
1:A:68:ILE:HG23	1:A:98:TYR:CE1	2.32	0.52
1:B:72:TYR:N	1:B:72:TYR:HD1	2.07	0.52
1:A:105:ASP:N	1:A:106:PRO:CD	2.73	0.52
1:A:279:ASN:O	5:A:601:SAM:HG1	2.10	0.52
2:D:391:ASP:OD1	2:D:395:ARG:CZ	2.55	0.52
1:B:5:GLN:HE22	1:B:7:ARG:CA	2.23	0.52
1:B:351:THR:HG21	1:B:414:TRP:NE1	2.25	0.52
2:G:146:THR:HG22	2:G:149:ASP:OD2	2.10	0.52
1:A:181:VAL:O	1:A:185:VAL:HG23	2.10	0.52
1:A:465:SER:HB3	1:A:468:GLU:OE1	2.09	0.52
1:B:194:TYR:HA	1:B:230:PHE:O	2.10	0.52
2:G:20:VAL:O	2:G:21:CYS:SG	2.67	0.52
2:G:161:GLU:CD	2:G:161:GLU:C	2.66	0.52
1:A:4:PRO:HB3	1:A:145:ASP:HA	1.91	0.52
1:A:343:LEU:HD23	1:A:347:PHE:HB2	1.90	0.52
2:D:163:GLN:C	2:D:166:ILE:HG23	2.29	0.52
1:A:5:GLN:OE1	1:A:7:ARG:HD2	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:476:LYS:O	1:A:480:ILE:HG13	2.08	0.52
1:B:457:ARG:HG2	1:B:458:SER:H	1.73	0.52
2:G:199:LEU:HA	2:G:202:VAL:HG12	1.92	0.52
1:A:347:PHE:CE1	1:A:375:ARG:CD	2.92	0.52
2:D:176:ARG:HG3	2:D:176:ARG:HH11	1.74	0.52
1:B:36:HIS:ND1	1:B:121:ILE:O	2.38	0.51
2:D:37:PHE:CG	2:D:99:ILE:HD13	2.44	0.51
1:B:169:GLY:HA2	1:B:363:TYR:CB	2.33	0.51
1:A:5:GLN:NE2	1:A:5:GLN:CA	2.73	0.51
1:A:271:GLU:C	1:A:272:ARG:HG3	2.29	0.51
1:C:470:VAL:HG13	1:C:471:ALA:N	2.24	0.51
2:G:306:ASP:OD1	2:G:307:SER:N	2.43	0.51
1:A:467:VAL:O	1:A:470:VAL:HG22	2.10	0.51
1:A:102:LEU:CD1	1:A:108:ARG:O	2.58	0.51
1:B:5:GLN:NE2	1:B:7:ARG:HG3	2.25	0.51
1:B:98:TYR:O	1:B:102:LEU:HD22	2.10	0.51
2:D:16:ARG:HB2	2:D:19:GLU:CG	2.40	0.51
1:B:275:VAL:HG22	1:B:320:ARG:NH1	2.24	0.51
1:B:461:GLU:HA	1:B:462:GLU:OE2	2.10	0.51
2:G:37:PHE:CE2	2:G:99:ILE:HD11	2.46	0.51
1:A:473:LEU:HB3	1:C:484:MET:CE	2.41	0.51
1:B:106:PRO:O	1:B:109:GLU:CB	2.57	0.51
1:B:106:PRO:O	1:B:109:GLU:N	2.44	0.51
1:A:457:ARG:CG	1:A:458:SER:N	2.73	0.51
1:A:485:GLU:O	1:A:489:GLU:HG3	2.10	0.51
1:B:207:ALA:O	1:B:211:MET:HG3	2.10	0.51
1:A:383:TRP:HB2	1:A:417:TRP:CE2	2.45	0.51
1:B:341:ARG:HG3	1:B:448:TYR:OH	2.11	0.51
2:G:66:ARG:O	2:G:102:THR:HG23	2.11	0.51
1:A:192:ALA:HB1	1:A:273:PHE:HD2	1.76	0.51
1:A:230:PHE:CB	1:A:273:PHE:CE2	2.89	0.51
2:D:162:GLU:C	2:D:165:ARG:H	2.14	0.51
2:D:229:GLN:HA	2:D:297:ARG:HG2	1.93	0.51
2:D:163:GLN:O	2:D:165:ARG:N	2.44	0.50
2:G:266:PRO:HB3	2:G:294:CYS:HB2	1.92	0.50
1:A:223:ILE:HG22	1:A:228:THR:HG23	1.94	0.50
1:A:225:GLN:HG2	1:A:251:VAL:HG12	1.92	0.50
1:A:265:ASN:HD21	1:A:267:ARG:CD	2.21	0.50
1:B:272:ARG:HB3	1:B:312:LYS:O	2.10	0.50
1:B:303:LEU:HD12	1:B:336:PHE:CD1	2.47	0.50
1:B:476:LYS:O	1:B:480:ILE:HG13	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:115:GLU:H	2:G:164:ARG:NH1	2.09	0.50
1:E:465:SER:N	1:E:466:PRO:CD	2.73	0.50
2:G:280:ARG:NH2	2:G:297:ARG:HH11	2.09	0.50
1:A:46:LEU:HD11	1:A:111:ILE:HD11	1.94	0.50
2:D:13:ARG:NH2	2:D:14:TRP:O	2.44	0.50
2:D:385:LEU:O	2:D:389:ILE:HG12	2.11	0.50
1:B:191:GLU:HA	1:B:274:ASP:OD1	2.11	0.50
1:B:230:PHE:CB	1:B:273:PHE:HE2	2.23	0.50
2:D:164:ARG:H	2:D:164:ARG:HD2	1.75	0.50
1:A:229:PHE:C	1:A:230:PHE:HD1	2.15	0.50
1:A:272:ARG:C	1:A:273:PHE:CD1	2.85	0.50
1:A:72:TYR:HD2	1:A:98:TYR:CD1	2.29	0.50
2:D:173:LEU:HD13	2:D:389:ILE:HD12	1.93	0.50
2:G:191:THR:HA	2:G:194:LEU:HD13	1.94	0.50
2:G:326:LYS:CG	2:G:334:ASN:HD21	2.24	0.50
1:C:465:SER:CB	1:C:468:GLU:HG3	2.42	0.50
2:D:11:GLY:O	2:D:159:PRO:HD3	2.10	0.50
1:A:457:ARG:HG2	1:A:458:SER:N	2.26	0.49
1:A:467:VAL:O	1:A:468:GLU:C	2.48	0.49
2:D:161:GLU:H	2:D:164:ARG:HD3	1.77	0.49
2:G:385:LEU:O	2:G:389:ILE:HG12	2.12	0.49
1:A:13:GLU:O	1:A:14:ILE:C	2.50	0.49
2:D:163:GLN:NE2	2:D:163:GLN:N	2.60	0.49
2:D:249:LYS:HD3	2:D:282:PRO:CG	2.41	0.49
1:B:464:PRO:CG	1:B:469:ILE:HD11	2.42	0.49
1:B:30:ILE:HA	1:B:33:TYR:CD2	2.46	0.49
2:G:72:ARG:HA	2:G:97:GLY:H	1.77	0.49
1:A:98:TYR:CD1	1:A:98:TYR:C	2.85	0.49
1:A:123:CYS:HB2	1:A:129:LEU:HB2	1.93	0.49
1:A:341:ARG:HG3	1:A:448:TYR:OH	2.11	0.49
1:B:16:ARG:O	1:B:20:ILE:HG13	2.13	0.49
1:B:242:GLY:O	1:B:246:MET:HG3	2.11	0.49
2:D:160:LEU:CB	2:D:161:GLU:HB2	2.27	0.49
2:G:13:ARG:HH21	2:G:13:ARG:HG3	1.76	0.49
1:A:199:GLY:H	5:A:601:SAM:HG2	1.77	0.49
1:A:267:ARG:HA	1:A:311:LYS:HZ2	1.76	0.49
1:A:481:LEU:HD11	1:C:481:LEU:HD13	1.94	0.49
1:B:265:ASN:HD21	1:B:267:ARG:HH11	1.61	0.49
1:B:465:SER:OG	1:B:467:VAL:HG22	2.12	0.49
2:G:6:TYR:HB2	2:G:14:TRP:CZ2	2.44	0.49
2:G:6:TYR:CG	2:G:14:TRP:HZ2	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:67:ILE:HA	1:A:108:ARG:HH12	1.77	0.49
2:D:160:LEU:O	2:D:163:GLN:CG	2.54	0.49
2:D:166:ILE:HD12	2:D:167:VAL:CA	2.43	0.49
2:G:253:GLY:O	2:G:287:ASN:ND2	2.45	0.49
1:A:208:TYR:HA	1:A:229:PHE:HZ	1.78	0.49
1:B:5:GLN:HE21	1:B:7:ARG:HB2	1.71	0.49
1:B:72:TYR:HE2	1:B:94:ARG:O	1.96	0.49
1:B:5:GLN:HE22	1:B:7:ARG:HG3	1.77	0.48
2:G:158:PRO:HG2	2:G:164:ARG:HD2	1.94	0.48
2:G:222:VAL:O	2:G:305:ARG:CB	2.61	0.48
2:G:254:ASP:OD1	2:G:254:ASP:N	2.36	0.48
1:A:44:ARG:NE	1:A:137:ASN:HA	2.28	0.48
2:D:191:THR:HA	2:D:194:LEU:HD13	1.95	0.48
2:G:66:ARG:NH2	4:I:5:DT:C7	2.76	0.48
2:D:15:VAL:HG22	2:D:157:LEU:HB3	1.95	0.48
1:B:31:MET:O	1:B:35:GLU:HG2	2.13	0.48
2:G:115:GLU:N	2:G:164:ARG:NH1	2.61	0.48
1:A:13:GLU:O	1:A:16:ARG:HB3	2.13	0.48
2:D:166:ILE:HD12	2:D:167:VAL:HA	1.96	0.48
1:B:463:LEU:HD12	1:B:463:LEU:N	2.29	0.48
1:A:102:LEU:H	1:A:102:LEU:CD1	2.10	0.48
1:A:186:ASP:HA	1:A:210:TRP:CH2	2.48	0.48
1:A:351:THR:HG21	1:A:414:TRP:NE1	2.28	0.48
1:B:183:GLU:HG3	1:B:210:TRP:HH2	1.76	0.48
1:A:7:ARG:CG	1:A:149:THR:CG2	2.84	0.48
1:A:175:ARG:NH1	1:A:201:CYS:SG	2.87	0.48
2:G:304:PRO:O	2:G:304:PRO:HG2	2.12	0.48
2:G:338:LYS:O	2:G:342:GLN:HG3	2.13	0.48
1:A:32:GLU:N	1:A:32:GLU:OE1	2.44	0.48
1:A:107:LEU:HD12	1:A:108:ARG:CA	2.43	0.48
1:A:350:HIS:ND1	1:A:351:THR:HG23	2.28	0.48
1:A:357:PRO:HD3	1:A:367:LYS:HD3	1.95	0.48
2:D:72:ARG:HG2	2:D:97:GLY:H	1.79	0.48
1:B:117:GLU:CD	1:B:118:ARG:H	2.17	0.48
1:B:200:THR:HA	1:B:238:PRO:O	2.13	0.48
2:D:190:ASP:HA	2:D:193:LEU:HD13	1.96	0.48
1:B:7:ARG:HA	1:B:149:THR:CG2	2.44	0.48
1:B:118:ARG:HB3	1:B:118:ARG:CZ	2.44	0.48
1:B:321:CYS:HB3	1:B:373:PHE:CZ	2.49	0.48
1:B:456:ASN:ND2	1:B:456:ASN:N	2.60	0.48
2:G:149:ASP:O	2:G:153:THR:HG23	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:192:ALA:HB1	1:B:273:PHE:HD2	1.79	0.48
2:D:184:ARG:NH2	2:D:375:GLN:HB3	2.16	0.47
2:D:307:SER:O	2:D:348:LEU:HD11	2.14	0.47
1:B:5:GLN:HE21	1:B:5:GLN:C	2.18	0.47
1:B:148:PHE:O	1:B:151:SER:OG	2.23	0.47
1:E:465:SER:O	1:E:468:GLU:HG2	2.14	0.47
1:A:44:ARG:HG2	1:A:44:ARG:HH11	1.79	0.47
1:A:51:GLU:O	1:A:54:GLU:HG2	2.14	0.47
1:B:32:GLU:OE1	1:B:32:GLU:N	2.45	0.47
1:B:350:HIS:CD2	1:B:374:GLU:HB2	2.49	0.47
1:A:271:GLU:HG2	1:A:273:PHE:CE1	2.47	0.47
1:A:303:LEU:HD12	1:A:336:PHE:CD1	2.49	0.47
2:D:158:PRO:O	2:D:163:GLN:HG2	2.15	0.47
1:B:72:TYR:OH	1:B:94:ARG:NH1	2.47	0.47
2:G:279:VAL:HG13	2:G:336:ILE:HB	1.96	0.47
1:A:275:VAL:HG22	1:A:320:ARG:NH1	2.30	0.47
2:D:68:ARG:NH1	2:D:68:ARG:CG	2.72	0.47
1:B:102:LEU:CB	1:B:112:ARG:CG	2.89	0.47
1:B:169:GLY:CA	1:B:363:TYR:HB2	2.34	0.47
1:B:364:SER:OG	1:B:366:VAL:HG23	2.15	0.47
2:G:25:GLU:HG3	2:G:70:VAL:HB	1.96	0.47
1:B:7:ARG:HA	1:B:149:THR:HG23	1.96	0.47
1:B:219:GLU:O	1:B:223:ILE:HG13	2.14	0.47
2:G:9:PRO:HB2	2:G:12:TRP:CE3	2.50	0.47
1:A:267:ARG:NH1	1:A:267:ARG:CG	2.73	0.47
1:C:468:GLU:H	1:C:468:GLU:HG2	1.51	0.47
1:B:44:ARG:HH11	1:B:44:ARG:HG2	1.79	0.47
1:B:235:LYS:CD	1:B:236:PRO:HD2	2.39	0.47
1:B:457:ARG:HD3	1:B:458:SER:O	2.14	0.47
2:G:222:VAL:O	2:G:305:ARG:HB2	2.14	0.47
2:D:218:ARG:HG3	2:D:345:PHE:CE1	2.50	0.47
1:B:294:PHE:CE1	1:B:304:LEU:HD13	2.50	0.47
2:G:6:TYR:CG	2:G:14:TRP:CZ2	3.03	0.47
2:G:349:PRO:HG2	2:G:354:GLN:CG	2.45	0.47
1:A:7:ARG:CG	1:A:11:ALA:CB	2.65	0.47
2:D:163:GLN:NE2	2:D:163:GLN:H	2.13	0.47
1:A:396:PHE:CE2	1:A:402:ILE:HD12	2.49	0.47
1:A:432:SER:O	1:A:435:SER:N	2.43	0.47
1:A:197:ALA:HB1	5:A:601:SAM:O4'	2.14	0.47
1:C:466:PRO:HG2	1:C:467:VAL:H	1.80	0.47
2:D:173:LEU:O	2:D:177:VAL:HG23	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:296:ILE:HG23	2:G:373:ARG:NH1	2.30	0.47
2:G:193:LEU:O	2:G:197:THR:HG23	2.15	0.47
1:A:350:HIS:CD2	1:A:374:GLU:HB2	2.50	0.46
2:D:165:ARG:NH1	2:D:165:ARG:CG	2.73	0.46
2:D:224:ASP:OD1	2:D:224:ASP:N	2.48	0.46
1:B:191:GLU:CA	1:B:274:ASP:OD1	2.63	0.46
1:B:489:GLU:O	1:B:493:ASN:HB2	2.15	0.46
2:G:205:HIS:C	2:G:205:HIS:HD2	2.18	0.46
1:A:375:ARG:CG	1:A:375:ARG:O	2.62	0.46
1:B:72:TYR:CD2	1:B:98:TYR:CG	3.03	0.46
1:B:181:VAL:O	1:B:185:VAL:HG23	2.15	0.46
1:B:199:GLY:CA	5:B:601:SAM:HA	2.44	0.46
1:B:274:ASP:OD2	1:B:314:LYS:HE3	2.15	0.46
1:B:396:PHE:CE2	1:B:402:ILE:HD12	2.49	0.46
1:E:470:VAL:CG1	1:E:471:ALA:N	2.79	0.46
2:G:218:ARG:HG3	2:G:345:PHE:CE1	2.51	0.46
1:B:230:PHE:CG	1:B:273:PHE:HE2	2.33	0.46
1:B:348:ASN:O	1:B:374:GLU:O	2.34	0.46
2:G:136:LYS:HG3	2:G:137:MET:O	2.15	0.46
1:A:71:GLU:C	1:A:72:TYR:HD1	2.19	0.46
1:A:189:ILE:HA	1:A:190:GLY:HA2	1.64	0.46
1:A:367:LYS:HB2	1:A:367:LYS:HE2	1.57	0.46
1:B:275:VAL:HG22	1:B:320:ARG:HH11	1.80	0.46
1:A:278:THR:OG1	1:A:280:PRO:HD3	2.15	0.46
1:C:491:LEU:HD23	1:C:491:LEU:HA	1.55	0.46
1:B:364:SER:O	1:B:365:ASP:HB2	2.16	0.46
2:G:71:ILE:O	2:G:98:GLN:N	2.46	0.46
2:G:206:PRO:HA	2:G:216:TRP:CH2	2.51	0.46
2:D:167:VAL:CG1	2:D:168:ALA:N	2.78	0.46
1:B:17:ALA:O	1:B:21:MET:HG3	2.16	0.46
1:E:473:LEU:HA	1:E:476:LYS:HG3	1.98	0.46
2:G:136:LYS:HG3	2:G:137:MET:H	1.78	0.46
4:I:19:DC:H2"	4:I:20:DA:C8	2.50	0.46
2:D:157:LEU:HA	2:D:158:PRO:HD2	1.22	0.46
1:B:52:GLU:O	1:B:55:ALA:HB3	2.16	0.46
1:B:168:ALA:HA	1:B:169:GLY:C	2.36	0.46
3:H:20:DT:H2"	3:H:21:DG:C8	2.51	0.46
1:A:104:GLY:CA	1:A:106:PRO:HD2	2.44	0.46
2:D:160:LEU:N	2:D:160:LEU:HD23	2.31	0.46
1:B:175:ARG:NH1	1:B:201:CYS:SG	2.88	0.46
1:B:229:PHE:C	1:B:230:PHE:HD1	2.19	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:463:LEU:CD1	1:B:463:LEU:N	2.78	0.46
1:A:96:ILE:N	1:A:97:PRO:HD2	2.31	0.45
2:D:137:MET:HB3	2:D:140:THR:HB	1.98	0.45
1:B:118:ARG:CG	1:B:118:ARG:NH1	2.73	0.45
1:B:474:LEU:CD2	1:E:484:MET:HG2	2.46	0.45
2:D:22:LEU:HG	2:D:110:ASN:HB3	1.96	0.45
1:B:99:LEU:HD23	1:B:102:LEU:HD21	1.98	0.45
1:B:442:GLU:O	1:B:446:ARG:HG3	2.16	0.45
2:G:136:LYS:HD3	2:G:145:VAL:CG1	2.46	0.45
1:A:266:ILE:O	1:A:268:ASN:O	2.34	0.45
1:A:348:ASN:O	1:A:374:GLU:O	2.35	0.45
1:A:350:HIS:O	1:A:351:THR:HG22	2.16	0.45
1:A:350:HIS:HD2	1:A:374:GLU:HB2	1.81	0.45
1:B:99:LEU:O	1:B:102:LEU:HD23	2.16	0.45
1:B:353:VAL:HB	1:B:370:LEU:HB2	1.97	0.45
2:G:288:VAL:CG1	2:G:289:ALA:N	2.79	0.45
1:A:440:VAL:O	1:A:444:LYS:HG3	2.17	0.45
2:D:71:ILE:O	2:D:72:ARG:HG3	2.16	0.45
2:D:164:ARG:H	2:D:164:ARG:CD	2.30	0.45
1:B:46:LEU:HD11	1:B:111:ILE:HD13	1.99	0.45
1:E:469:ILE:HG23	1:E:470:VAL:N	2.31	0.45
1:A:200:THR:HA	1:A:238:PRO:O	2.16	0.45
1:A:465:SER:CB	1:A:468:GLU:OE1	2.65	0.45
2:D:137:MET:CB	2:D:140:THR:HB	2.47	0.45
2:G:184:ARG:O	2:G:188:GLN:HG3	2.17	0.45
1:A:5:GLN:HE21	1:A:5:GLN:C	2.20	0.45
1:A:235:LYS:HD3	1:A:236:PRO:HD2	1.99	0.45
2:D:236:TYR:HB3	2:D:261:ILE:HD11	1.97	0.45
2:G:72:ARG:NH1	2:G:96:ASP:OD1	2.49	0.45
1:A:476:LYS:HE3	1:A:476:LYS:HB2	1.78	0.45
2:D:142:TYR:CE2	2:D:144:ALA:HB3	2.52	0.45
1:B:68:ILE:CD1	1:B:68:ILE:C	2.86	0.45
1:B:215:GLU:CD	1:B:215:GLU:H	2.19	0.45
1:B:287:GLY:HA2	1:B:291:GLN:OE1	2.15	0.45
1:B:364:SER:OG	1:B:366:VAL:HB	2.16	0.45
1:A:215:GLU:OE2	1:A:221:HIS:CD2	2.70	0.45
1:A:463:LEU:HD22	1:A:464:PRO:HD3	1.99	0.45
1:A:478:ARG:HG2	1:C:481:LEU:HD11	1.99	0.45
2:D:164:ARG:HD2	2:D:164:ARG:N	2.32	0.45
1:B:51:GLU:O	1:B:54:GLU:HG2	2.17	0.45
1:A:221:HIS:HE1	1:A:225:GLN:NE2	2.14	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:338:LYS:O	2:D:342:GLN:HG3	2.17	0.45
1:B:117:GLU:HG3	1:B:236:PRO:HG2	1.99	0.45
1:A:13:GLU:HG3	1:A:138:GLU:OE2	2.17	0.44
1:A:215:GLU:OE2	1:A:221:HIS:HD2	1.99	0.44
1:A:294:PHE:CE1	1:A:304:LEU:HD13	2.52	0.44
1:A:321:CYS:HB3	1:A:373:PHE:CZ	2.52	0.44
1:A:395:LYS:HG3	1:A:396:PHE:O	2.17	0.44
1:A:439:PRO:HB2	1:A:441:GLU:OE2	2.16	0.44
2:D:162:GLU:O	2:D:163:GLN:C	2.51	0.44
2:D:166:ILE:O	2:D:169:LYS:HB3	2.17	0.44
2:G:118:PHE:CD1	2:G:164:ARG:NH2	2.85	0.44
2:G:186:GLU:HA	2:G:189:LYS:HG3	1.99	0.44
1:A:13:GLU:O	1:A:16:ARG:CB	2.65	0.44
1:B:265:ASN:O	1:B:268:ASN:OD1	2.35	0.44
1:A:30:ILE:HA	1:A:33:TYR:CD2	2.52	0.44
2:G:137:MET:HA	2:G:140:THR:HG23	1.98	0.44
1:A:31:MET:O	1:A:35:GLU:HG2	2.17	0.44
1:A:67:ILE:CB	1:A:68:ILE:HD13	2.47	0.44
1:B:476:LYS:HE2	1:B:476:LYS:HB2	1.78	0.44
2:G:22:LEU:HG	2:G:110:ASN:HB3	1.98	0.44
1:A:348:ASN:N	1:A:374:GLU:O	2.48	0.44
1:C:487:LEU:HD12	1:C:487:LEU:HA	1.82	0.44
2:D:71:ILE:O	2:D:97:GLY:N	2.51	0.44
1:B:112:ARG:HB3	1:B:112:ARG:CZ	2.48	0.44
1:C:480:ILE:O	1:C:484:MET:HG2	2.18	0.44
1:B:118:ARG:NH1	1:B:118:ARG:CB	2.81	0.44
2:G:136:LYS:HD3	2:G:145:VAL:HG11	2.00	0.44
2:G:337:THR:H	2:G:340:ASP:HB2	1.82	0.44
1:A:218:ILE:H	1:A:218:ILE:CD1	2.09	0.44
1:B:71:GLU:CG	1:B:72:TYR:CE1	3.00	0.44
1:B:225:GLN:NE2	1:B:251:VAL:HA	2.32	0.44
1:B:467:VAL:O	1:B:470:VAL:HG22	2.16	0.44
2:G:26:ARG:CB	2:G:68:ARG:O	2.65	0.44
2:G:142:TYR:HA	2:G:143:PRO:HD3	1.86	0.44
1:B:107:LEU:HD12	1:B:107:LEU:O	2.18	0.44
1:B:266:ILE:CD1	1:B:295:PRO:HD3	2.48	0.44
1:A:375:ARG:O	1:A:375:ARG:HG2	2.18	0.43
2:D:16:ARG:O	2:D:19:GLU:CG	2.64	0.43
1:B:396:PHE:HE2	1:B:402:ILE:HD12	1.83	0.43
1:B:440:VAL:O	1:B:444:LYS:HG3	2.18	0.43
1:A:74:TRP:HZ2	1:A:137:ASN:HB3	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:266:ILE:C	1:A:268:ASN:O	2.56	0.43
2:D:70:VAL:O	2:D:108:ARG:NH2	2.51	0.43
2:D:80:THR:HG21	2:D:147:ASP:OD1	2.18	0.43
2:D:164:ARG:NH2	2:D:164:ARG:CG	2.73	0.43
2:D:191:THR:HG21	2:D:375:GLN:NE2	2.33	0.43
1:B:71:GLU:OE1	1:B:72:TYR:CE1	2.70	0.43
1:B:244:VAL:O	1:B:248:LEU:HB2	2.18	0.43
1:B:411:ARG:O	1:B:415:ARG:HG2	2.17	0.43
1:B:481:LEU:HD11	1:E:481:LEU:HD13	1.99	0.43
1:A:6:THR:O	1:A:7:ARG:C	2.55	0.43
2:D:14:TRP:CZ3	2:D:156:PRO:HB3	2.53	0.43
2:D:101:SER:O	2:D:104:PHE:HD1	2.00	0.43
1:A:36:HIS:HA	1:A:39:TRP:CD1	2.54	0.43
1:B:195:ASP:HB3	1:B:198:CYS:HB3	2.00	0.43
1:B:350:HIS:O	1:B:351:THR:CG2	2.67	0.43
2:G:146:THR:HG22	2:G:149:ASP:CG	2.39	0.43
2:G:326:LYS:O	2:G:334:ASN:ND2	2.51	0.43
1:A:31:MET:O	1:A:34:VAL:HG12	2.18	0.43
1:A:31:MET:HB3	1:A:32:GLU:OE1	2.17	0.43
1:A:146:ASP:O	1:A:150:VAL:HG23	2.19	0.43
1:A:325:VAL:HB	1:A:329:THR:OG1	2.17	0.43
2:D:184:ARG:HE	2:D:375:GLN:CB	2.31	0.43
1:B:93:GLY:O	1:B:97:PRO:HG3	2.18	0.43
1:B:348:ASN:HB3	1:B:376:PRO:HD2	2.00	0.43
2:G:20:VAL:HG11	2:G:114:ALA:HB2	1.98	0.43
2:G:176:ARG:O	2:G:180:VAL:HG23	2.18	0.43
1:A:6:THR:C	1:A:8:GLU:CG	2.86	0.43
1:A:240:PHE:O	1:A:244:VAL:HG23	2.18	0.43
2:D:140:THR:HG22	2:D:141:SER:OG	2.18	0.43
2:D:279:VAL:CG2	2:D:336:ILE:O	2.66	0.43
2:D:341:LEU:O	2:D:344:VAL:HG22	2.19	0.43
1:A:201:CYS:HB3	1:A:245:ASN:ND2	2.31	0.43
2:D:159:PRO:HA	2:D:160:LEU:C	2.39	0.43
2:D:217:VAL:HG13	2:D:346:ILE:HG23	2.01	0.43
2:D:255:LEU:HG	2:D:256:HIS:ND1	2.34	0.43
2:G:136:LYS:CG	2:G:137:MET:H	2.29	0.43
2:G:279:VAL:CG1	2:G:336:ILE:O	2.66	0.43
1:A:68:ILE:N	1:A:68:ILE:CD1	2.73	0.43
1:A:223:ILE:O	1:A:228:THR:HG23	2.18	0.43
2:D:16:ARG:NE	2:D:152:ASN:OD1	2.52	0.43
2:D:184:ARG:O	2:D:188:GLN:HG3	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:303:ARG:HE	2:D:303:ARG:HB2	1.57	0.43
1:B:325:VAL:HB	1:B:329:THR:OG1	2.19	0.43
1:B:408:GLU:O	1:B:411:ARG:HB2	2.19	0.43
1:B:481:LEU:O	1:B:485:GLU:HG3	2.19	0.43
1:A:168:ALA:HA	1:A:169:GLY:C	2.38	0.43
1:A:266:ILE:HG13	1:A:311:LYS:HZ1	1.83	0.43
2:D:158:PRO:O	2:D:160:LEU:C	2.57	0.43
1:B:349:LEU:HA	1:B:373:PHE:CA	2.43	0.43
1:A:107:LEU:HD12	1:A:108:ARG:HA	2.01	0.43
1:A:167:LEU:HD23	1:A:167:LEU:HA	1.77	0.43
2:D:255:LEU:HG	2:D:256:HIS:CE1	2.54	0.43
1:B:102:LEU:N	1:B:112:ARG:HD2	2.33	0.43
1:B:191:GLU:OE2	1:B:320:ARG:NH1	2.44	0.43
2:G:189:LYS:O	2:G:192:GLU:OE1	2.37	0.43
1:A:47:ASP:OD1	1:A:75:ARG:NE	2.52	0.42
1:A:319:ALA:HB3	1:A:375:ARG:HB3	2.01	0.42
1:A:463:LEU:HD23	1:A:463:LEU:HA	1.87	0.42
1:B:240:PHE:O	1:B:244:VAL:HG23	2.18	0.42
1:A:5:GLN:HB3	1:A:6:THR:H	1.61	0.42
1:A:387:LEU:HG	1:A:388:PRO:HD2	2.02	0.42
2:D:149:ASP:O	2:D:152:ASN:N	2.48	0.42
1:A:195:ASP:HB3	1:A:198:CYS:HB3	2.02	0.42
1:A:269:VAL:CG2	1:A:270:SER:N	2.75	0.42
2:D:243:LEU:HB3	2:D:293:CYS:HA	2.01	0.42
1:B:31:MET:HB3	1:B:32:GLU:OE1	2.20	0.42
1:B:196:PRO:HD2	1:B:278:THR:OG1	2.20	0.42
1:A:10:LEU:O	1:A:14:ILE:HG12	2.20	0.42
1:A:118:ARG:CG	1:A:119:ASN:N	2.83	0.42
2:D:136:LYS:CG	2:D:137:MET:N	2.80	0.42
1:B:5:GLN:NE2	1:B:5:GLN:C	2.73	0.42
2:G:118:PHE:HB3	2:G:164:ARG:NH1	2.35	0.42
1:A:53:TRP:HD1	1:A:56:GLN:NE2	2.07	0.42
1:A:149:THR:O	1:A:153:VAL:HG23	2.19	0.42
1:A:360:PHE:CE2	1:A:368:THR:HG21	2.54	0.42
1:A:431:LEU:HA	1:A:435:SER:OG	2.20	0.42
2:D:189:LYS:HE3	2:D:189:LYS:HB2	1.76	0.42
2:D:349:PRO:HG2	2:D:354:GLN:CG	2.49	0.42
1:B:236:PRO:HG3	1:B:258:ARG:CZ	2.49	0.42
1:A:36:HIS:CE1	1:A:122:VAL:HA	2.54	0.42
2:D:37:PHE:HE1	2:D:60:GLY:HA2	1.85	0.42
1:A:244:VAL:O	1:A:248:LEU:HB2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:265:ASN:O	1:A:268:ASN:O	2.38	0.42
2:D:5:PRO:HG2	2:D:14:TRP:NE1	2.34	0.42
1:A:199:GLY:O	5:A:601:SAM:OXT	2.37	0.42
1:A:262:LEU:HD11	1:A:301:THR:HG23	2.01	0.42
1:A:327:GLU:HG3	1:A:367:LYS:O	2.19	0.42
1:B:4:PRO:HB3	1:B:145:ASP:HA	2.01	0.42
1:B:7:ARG:O	1:B:11:ALA:N	2.37	0.42
1:B:215:GLU:CD	1:B:215:GLU:N	2.73	0.42
1:A:102:LEU:CD2	1:A:108:ARG:CA	2.98	0.42
1:C:465:SER:O	1:C:468:GLU:HG3	2.18	0.42
2:D:52:ILE:CG2	2:D:55:PRO:HG3	2.50	0.42
2:D:80:THR:HG23	2:D:103:GLY:O	2.20	0.42
2:D:224:ASP:OD1	2:D:303:ARG:O	2.37	0.42
1:B:387:LEU:HG	1:B:388:PRO:HD2	2.02	0.42
1:B:474:LEU:HD23	1:E:484:MET:HG2	2.01	0.42
5:B:601:SAM:H8	5:B:601:SAM:H2'	1.91	0.42
2:G:359:ALA:O	2:G:363:GLN:HG3	2.19	0.42
1:A:21:MET:SD	1:A:33:TYR:HA	2.60	0.42
1:A:208:TYR:HB2	1:A:229:PHE:CZ	2.55	0.42
2:D:167:VAL:O	2:D:170:VAL:N	2.52	0.42
2:G:20:VAL:HG11	2:G:114:ALA:HB3	2.01	0.42
1:A:487:LEU:O	1:A:491:LEU:HG	2.19	0.41
2:D:6:TYR:CD1	2:D:7:LYS:O	2.73	0.41
1:B:118:ARG:CZ	1:B:118:ARG:CB	2.98	0.41
1:B:236:PRO:HG3	1:B:258:ARG:NH1	2.34	0.41
1:B:252:THR:HG22	1:B:253:VAL:HG23	2.02	0.41
1:B:262:LEU:HD12	1:B:286:GLU:HG3	2.02	0.41
2:G:160:LEU:O	2:G:161:GLU:CB	2.67	0.41
2:G:163:GLN:O	2:G:166:ILE:HG23	2.19	0.41
1:A:102:LEU:HD21	1:A:111:ILE:HB	2.03	0.41
1:C:476:LYS:O	1:C:480:ILE:HG13	2.20	0.41
2:D:137:MET:CG	2:D:140:THR:H	2.20	0.41
1:B:13:GLU:O	1:B:16:ARG:N	2.54	0.41
1:E:466:PRO:HG2	1:E:467:VAL:H	1.85	0.41
2:G:252:PHE:HB3	2:G:287:ASN:HD22	1.85	0.41
1:A:349:LEU:HA	1:A:373:PHE:HA	2.02	0.41
2:D:37:PHE:HD2	2:D:99:ILE:CD1	2.07	0.41
2:D:154:LEU:HA	2:D:154:LEU:HD23	1.83	0.41
1:B:189:ILE:HA	1:B:190:GLY:HA2	1.65	0.41
1:B:311:LYS:HE2	1:B:311:LYS:HB3	1.82	0.41
1:A:275:VAL:HG22	1:A:320:ARG:HH11	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:321:GLU:N	2:D:322:PRO:HD2	2.36	0.41
1:A:5:GLN:NE2	1:A:7:ARG:CB	2.81	0.41
1:A:457:ARG:HG2	1:A:458:SER:H	1.84	0.41
2:D:79:ALA:O	2:D:83:PRO:HB3	2.21	0.41
1:B:278:THR:HG23	1:B:280:PRO:HD3	2.03	0.41
2:G:111:ARG:NH1	2:G:115:GLU:HG2	2.34	0.41
1:A:39:TRP:HA	1:A:240:PHE:HZ	1.85	0.41
1:A:83:PRO:HG2	1:A:86:GLU:HB2	2.01	0.41
2:D:199:LEU:HA	2:D:202:VAL:HG12	2.01	0.41
2:D:224:ASP:HB3	2:D:305:ARG:HH22	1.78	0.41
2:D:291:LEU:HD23	2:D:292:ALA:N	2.36	0.41
2:D:359:ALA:O	2:D:363:GLN:HG3	2.20	0.41
1:B:39:TRP:HA	1:B:240:PHE:HZ	1.85	0.41
1:B:45:PHE:HE2	1:B:248:LEU:HD13	1.85	0.41
2:G:255:LEU:HG	2:G:256:HIS:ND1	2.34	0.41
1:A:6:THR:HA	1:A:8:GLU:CG	2.34	0.41
1:B:266:ILE:CG1	1:B:295:PRO:HD3	2.51	0.41
1:B:282:PHE:N	1:B:282:PHE:CD1	2.89	0.41
1:A:102:LEU:HD12	1:A:103:GLY:N	2.33	0.41
1:A:348:ASN:HB3	1:A:376:PRO:HD2	2.01	0.41
2:D:66:ARG:O	2:D:102:THR:CG2	2.63	0.41
2:D:375:GLN:HG2	2:D:375:GLN:H	1.71	0.41
1:B:47:ASP:OD2	1:B:74:TRP:N	2.52	0.41
1:B:130:LYS:O	1:B:134:GLN:HG2	2.21	0.41
2:G:75:ASP:OD2	2:G:108:ARG:NH2	2.43	0.41
2:G:169:LYS:HD3	2:G:398:LEU:HG	2.03	0.41
2:G:211:PRO:HA	2:G:212:PRO:HD3	1.94	0.41
1:A:67:ILE:HB	1:A:68:ILE:HD13	2.03	0.41
1:A:352:VAL:HG11	1:A:384:TYR:CZ	2.56	0.41
2:D:28:ASP:HA	2:D:29:PRO:HD2	1.92	0.41
2:D:72:ARG:CZ	2:D:97:GLY:HA2	2.51	0.41
2:D:166:ILE:C	2:D:166:ILE:CD1	2.85	0.41
2:D:176:ARG:O	2:D:180:VAL:HG23	2.21	0.41
2:D:337:THR:H	2:D:340:ASP:HB2	1.85	0.41
1:B:31:MET:HG3	1:B:35:GLU:OE1	2.21	0.41
1:B:189:ILE:CG2	1:B:211:MET:HE3	2.51	0.41
1:B:210:TRP:O	1:B:213:GLN:N	2.53	0.41
1:B:383:TRP:CH2	1:B:385:TYR:HB2	2.56	0.41
2:G:173:LEU:O	2:G:177:VAL:HG23	2.21	0.41
2:G:184:ARG:NH2	2:G:375:GLN:HB3	2.24	0.41
1:A:38:ALA:HB1	1:A:244:VAL:HG21	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:470:VAL:CG1	1:C:471:ALA:N	2.84	0.41
1:B:6:THR:O	1:B:6:THR:OG1	2.37	0.41
1:B:348:ASN:O	1:B:374:GLU:CA	2.68	0.41
1:A:242:GLY:O	1:A:246:MET:HG3	2.21	0.40
2:G:96:ASP:O	2:G:98:GLN:HG2	2.21	0.40
1:A:306:LEU:O	1:A:310:MET:HG3	2.22	0.40
2:D:75:ASP:OD1	2:D:108:ARG:HG3	2.21	0.40
2:D:288:VAL:HG12	2:D:289:ALA:N	2.35	0.40
1:B:358:GLY:HA2	1:B:365:ASP:HA	2.02	0.40
1:A:5:GLN:NE2	1:A:5:GLN:HA	2.35	0.40
2:D:42:ILE:HB	3:H:5:DG:H3'	2.04	0.40
2:D:163:GLN:N	2:D:163:GLN:CD	2.73	0.40
2:D:165:ARG:HD3	2:D:165:ARG:HA	1.85	0.40
1:B:31:MET:O	1:B:34:VAL:HG12	2.21	0.40
1:B:37:LEU:HD12	1:B:37:LEU:HA	1.84	0.40
1:B:68:ILE:HD11	1:B:73:ARG:CB	2.51	0.40
1:B:108:ARG:O	1:B:112:ARG:HG3	2.21	0.40
1:B:149:THR:O	1:B:153:VAL:HG23	2.21	0.40
1:A:233:GLU:O	1:A:258:ARG:HA	2.21	0.40
1:A:396:PHE:HE2	1:A:402:ILE:HD12	1.85	0.40
1:A:470:VAL:O	1:A:474:LEU:HG	2.22	0.40
1:B:96:ILE:N	1:B:97:PRO:HD2	2.36	0.40
1:B:223:ILE:O	1:B:228:THR:HG23	2.21	0.40
1:A:5:GLN:HE21	1:A:6:THR:N	2.18	0.40
1:A:96:ILE:N	1:A:97:PRO:CD	2.84	0.40
1:B:235:LYS:HG3	1:B:238:PRO:HD2	2.03	0.40
1:B:466:PRO:HB2	1:E:491:LEU:HD23	2.04	0.40

All (3) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:271:ARG:NH1	1:B:85:ASP:OD2[2_764]	1.87	0.33
2:G:339:LYS:NZ	3:H:9:DT:OP1[3_645]	2.06	0.14
2:G:268:LYS:NZ	4:I:16:DT:OP2[3_645]	2.19	0.01

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	483/507 (95%)	460 (95%)	23 (5%)	0	100	100
1	B	483/507 (95%)	465 (96%)	18 (4%)	0	100	100
1	C	28/507 (6%)	26 (93%)	2 (7%)	0	100	100
1	E	28/507 (6%)	27 (96%)	1 (4%)	0	100	100
2	D	386/398 (97%)	368 (95%)	18 (5%)	0	100	100
2	G	386/398 (97%)	372 (96%)	14 (4%)	0	100	100
All	All	1794/2824 (64%)	1718 (96%)	76 (4%)	0	100	100

There are no Ramachandran outliers to report.

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	420/445 (94%)	390 (93%)	30 (7%)	14	47
1	B	420/445 (94%)	386 (92%)	34 (8%)	11	42
1	C	26/445 (6%)	23 (88%)	3 (12%)	5	24
1	E	26/445 (6%)	23 (88%)	3 (12%)	5	24
2	D	333/340 (98%)	309 (93%)	24 (7%)	14	47
2	G	333/340 (98%)	319 (96%)	14 (4%)	30	65
All	All	1558/2460 (63%)	1450 (93%)	108 (7%)	15	49

All (108) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	GLN
1	A	7	ARG
1	A	9	SER
1	A	56	GLN
1	A	67	ILE
1	A	68	ILE
1	A	71	GLU
1	A	73	ARG
1	A	94	ARG
1	A	101	SER
1	A	102	LEU
1	A	106	PRO
1	A	107	LEU
1	A	213	GLN
1	A	214	LYS
1	A	216	ARG
1	A	218	ILE
1	A	219	GLU
1	A	237	VAL
1	A	261	THR
1	A	267	ARG
1	A	272	ARG
1	A	346	GLN
1	A	349	LEU
1	A	362	PRO
1	A	393	LEU
1	A	394	LYS
1	A	396	PHE
1	A	441	GLU
1	A	446	ARG
1	C	465	SER
1	C	468	GLU
1	C	478	ARG
2	D	6	TYR
2	D	12	TRP
2	D	15	VAL
2	D	19	GLU
2	D	57	GLU
2	D	68	ARG
2	D	99	ILE
2	D	152	ASN
2	D	157	LEU

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Mol	Chain	Res	Type
2	D	160	LEU
2	D	161	GLU
2	D	162	GLU
2	D	164	ARG
2	D	166	ILE
2	D	169	LYS
2	D	179	GLU
2	D	190	ASP
2	D	209	ASP
2	D	271	ARG
2	D	278	SER
2	D	285	SER
2	D	305	ARG
2	D	306	ASP
2	D	307	SER
1	B	6	THR
1	B	7	ARG
1	B	8	GLU
1	B	9	SER
1	B	56	GLN
1	B	67	ILE
1	B	72	TYR
1	B	101	SER
1	B	107	LEU
1	B	110	THR
1	B	114	LEU
1	B	117	GLU
1	B	118	ARG
1	B	191	GLU
1	B	215	GLU
1	B	216	ARG
1	B	217	THR
1	B	218	ILE
1	B	219	GLU
1	B	220	ASP
1	B	230	PHE
1	B	256	VAL
1	B	271	GLU
1	B	272	ARG
1	B	274	ASP
1	B	289	HIS
1	B	349	LEU

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Mol	Chain	Res	Type
1	B	362	PRO
1	B	365	ASP
1	B	394	LYS
1	B	456	ASN
1	B	457	ARG
1	B	461	GLU
1	B	491	LEU
1	E	465	SER
1	E	468	GLU
1	E	478	ARG
2	G	16	ARG
2	G	68	ARG
2	G	69	LYS
2	G	137	MET
2	G	138	ARG
2	G	164	ARG
2	G	189	LYS
2	G	192	GLU
2	G	205	HIS
2	G	254	ASP
2	G	280	ARG
2	G	285	SER
2	G	304	PRO
2	G	326	LYS

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

Mol	Chain	Res	Type
1	A	5	GLN
1	A	12	ASN
1	A	221	HIS
1	A	225	GLN
1	A	456	ASN
1	B	5	GLN
1	B	56	GLN
1	B	221	HIS
1	B	225	GLN
1	B	456	ASN
2	G	121	HIS
2	G	205	HIS
2	G	334	ASN

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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

2 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
5	SAM	B	601	-	24,29,29	1.15	3 (12%)	23,42,42	1.49	5 (21%)
5	SAM	A	601	-	24,29,29	1.11	2 (8%)	23,42,42	1.54	6 (26%)

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
5	SAM	B	601	-	-	5/12/33/33	0/3/3/3
5	SAM	A	601	-	-	7/12/33/33	0/3/3/3

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	601	SAM	C2'-C1'	-2.27	1.50	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	601	SAM	CE-SD	-2.11	1.65	1.78
5	A	601	SAM	C2'-C1'	-2.08	1.50	1.53
5	B	601	SAM	OXT-C	-2.05	1.23	1.30
5	A	601	SAM	CE-SD	-2.02	1.66	1.78

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	B	601	SAM	N3-C2-N1	-3.29	123.53	128.68
5	A	601	SAM	N3-C2-N1	-3.17	123.72	128.68
5	A	601	SAM	C4-C5-N7	-2.77	106.52	109.40
5	B	601	SAM	CG-SD-C5'	2.56	109.94	103.40
5	B	601	SAM	C4-C5-N7	-2.51	106.78	109.40
5	B	601	SAM	C3'-C2'-C1'	2.41	104.61	100.98
5	A	601	SAM	C3'-C2'-C1'	2.31	104.46	100.98
5	B	601	SAM	O4'-C1'-C2'	-2.26	103.63	106.93
5	A	601	SAM	O4'-C1'-C2'	-2.21	103.69	106.93
5	A	601	SAM	CG-SD-C5'	2.11	108.80	103.40
5	A	601	SAM	OXT-C-CA	2.09	120.51	113.38

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	601	SAM	O-C-CA-N
5	A	601	SAM	O4'-C4'-C5'-SD
5	A	601	SAM	C3'-C4'-C5'-SD
5	B	601	SAM	CA-CB-CG-SD
5	A	601	SAM	OXT-C-CA-N
5	B	601	SAM	OXT-C-CA-CB
5	B	601	SAM	O4'-C4'-C5'-SD
5	A	601	SAM	CA-CB-CG-SD
5	B	601	SAM	C3'-C4'-C5'-SD
5	A	601	SAM	OXT-C-CA-CB
5	B	601	SAM	O-C-CA-CB
5	A	601	SAM	O-C-CA-CB

There are no ring outliers.

2 monomers are involved in 17 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	601	SAM	8	0
5	A	601	SAM	9	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand SAM B 601

Bond lengths

Bond angles

Torsions

Rings

Ligand SAM A 601

Bond lengths

Bond angles

Torsions

Rings
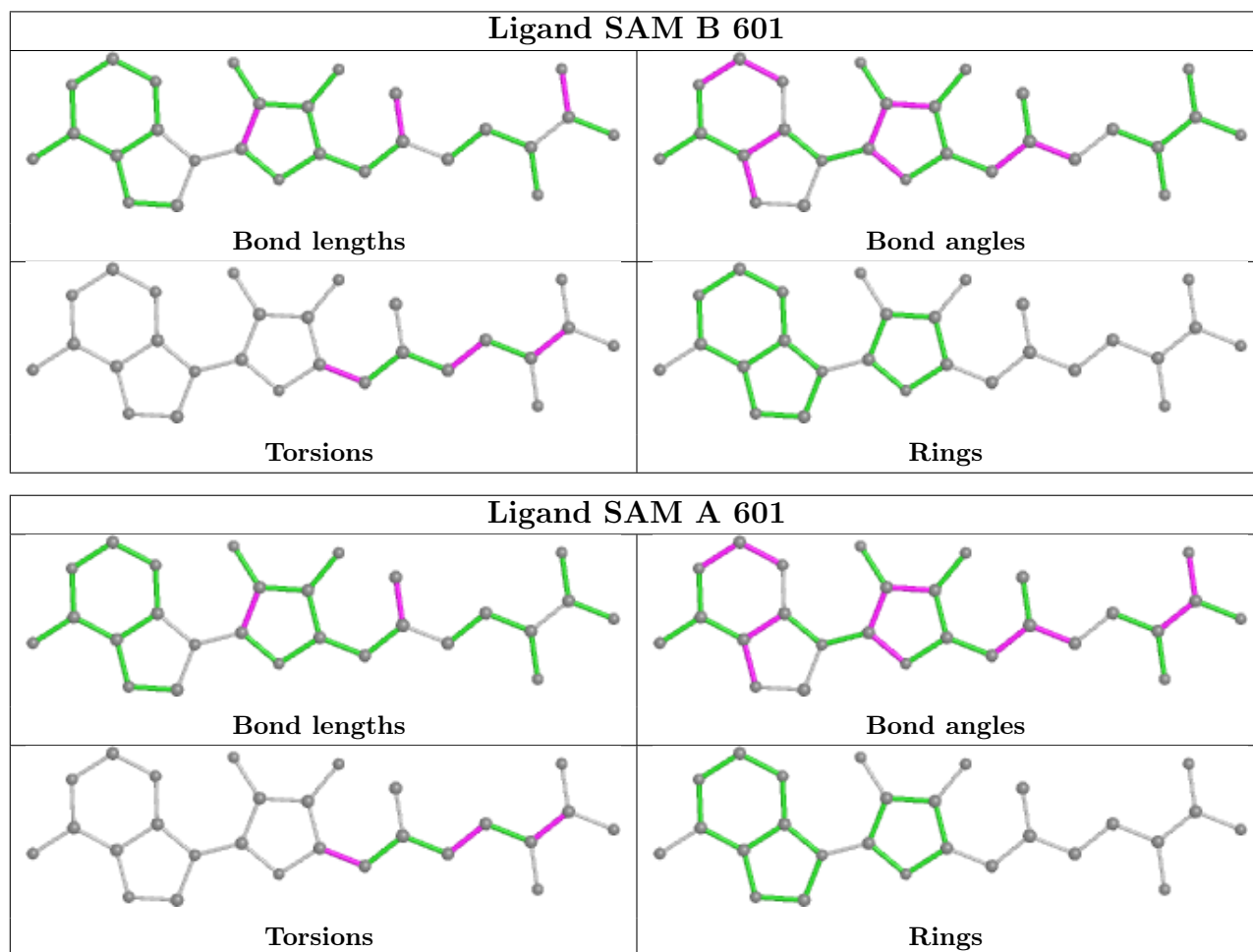
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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	487/507 (96%)	0.16	3 (0%)	89	83	42, 94, 167, 229	0
1	B	487/507 (96%)	0.17	6 (1%)	79	67	45, 97, 167, 238	0
1	C	30/507 (5%)	0.09	1 (3%)	46	30	87, 117, 154, 217	0
1	E	30/507 (5%)	0.28	3 (10%)	7	4	90, 117, 169, 233	0
2	D	390/398 (97%)	0.20	5 (1%)	77	65	63, 94, 164, 235	0
2	G	390/398 (97%)	0.27	12 (3%)	49	32	59, 95, 154, 218	0
3	H	22/22 (100%)	-0.09	0	100	100	84, 100, 183, 220	0
4	I	22/22 (100%)	-0.15	1 (4%)	33	21	78, 92, 170, 237	0
All	All	1858/2868 (64%)	0.19	31 (1%)	70	57	42, 96, 167, 238	0

All (31) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	496	GLY	8.1
2	G	160	LEU	5.7
2	G	138	ARG	3.7
1	A	496	GLY	3.7
2	G	135	SER	3.7
2	D	139	GLY	3.6
2	G	205	HIS	3.4
2	G	207	GLY	3.2
1	B	229	PHE	3.2
1	E	485	GLU	3.1
4	I	22	DC	2.8
2	G	327	MET	2.6
2	G	154	LEU	2.5
2	D	159	PRO	2.5
2	D	206	PRO	2.5
1	B	103	GLY	2.5

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Mol	Chain	Res	Type	RSRZ
2	G	136	LYS	2.5
2	G	332	THR	2.4
2	G	226	ILE	2.4
1	E	491	LEU	2.4
1	B	7	ARG	2.3
1	B	459	GLY	2.3
2	G	206	PRO	2.3
1	E	481	LEU	2.3
2	D	156	PRO	2.2
1	A	229	PHE	2.2
1	A	37	LEU	2.1
2	G	382	LEU	2.1
1	B	391	GLU	2.1
1	C	487	LEU	2.1
2	D	136	LYS	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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
5	SAM	A	601	27/27	0.78	0.39	106,142,155,271	0
5	SAM	B	601	27/27	0.82	0.33	93,137,149,189	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around SAM A 601:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
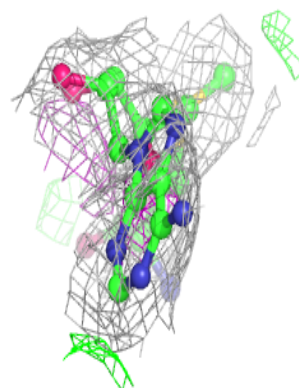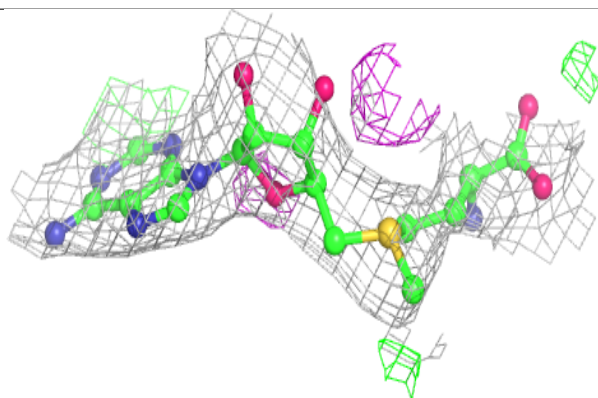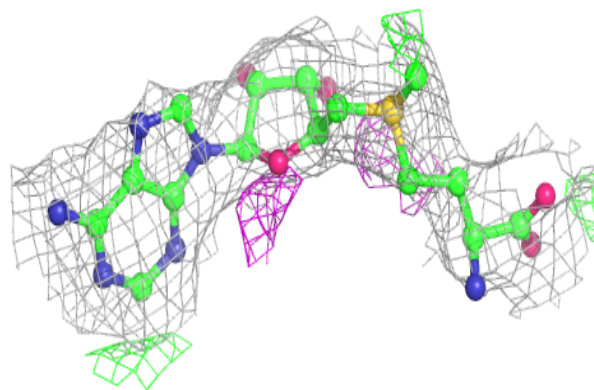
Electron density around SAM B 601:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
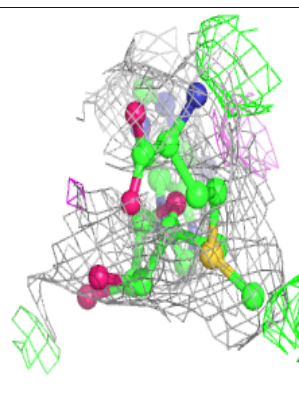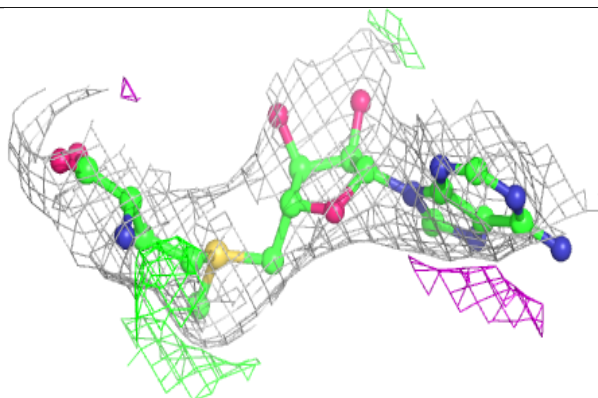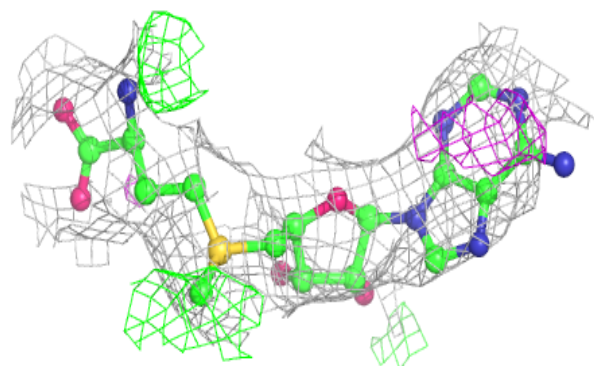
6.5 Other polymers (i)

There are no such residues in this entry.