W O R L D W I D E
wwPDB
PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

May 6, 2024 – 04:09 PM EDT

PDB ID	:	8UAI
Title	:	Crystal structure of hetero hexameric hazelnut allergen Cor a 9
Authors	:	Zhang, Y.Z.; Guo, F.
Deposited on	:	2023-09-21
Resolution	:	1.92 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 (i) 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 (i)) were used in the production of this report:

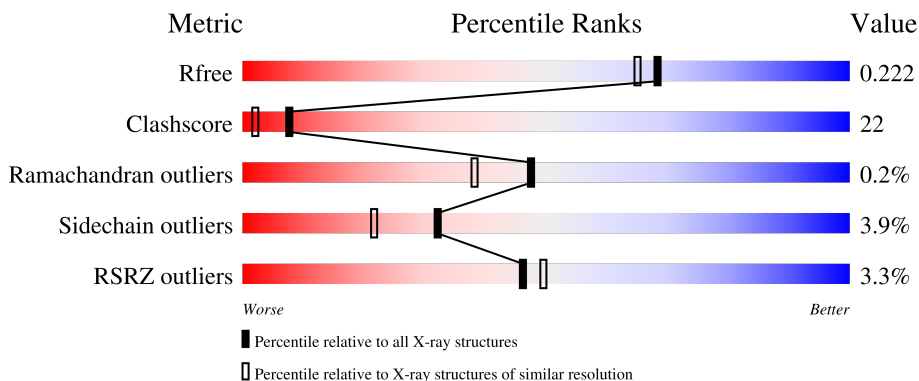|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36.2
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 1.92 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		0.222
Clashscore		22
Ramachandran outliers		0.2%
Sidechain outliers		3.9%
RSRZ outliers		3.3%

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	7937 (1.94-1.90)
Clashscore	141614	8644 (1.94-1.90)
Ramachandran outliers	138981	8530 (1.94-1.90)
Sidechain outliers	138945	8530 (1.94-1.90)
RSRZ outliers	127900	7793 (1.94-1.90)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments 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	493	3% 63% 18% • 17%
1	D	493	2% 60% 22% • 16%
2	B	494	3% 51% 25% • 22%
2	E	494	2% 54% 21% • 23%
3	C	493	3% 53% 29% • 16%

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Mol	Chain	Length	Quality of chain
3	F	493	3% / 52% / 27% / 18%

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
4	GOL	C	502	-	-	X	-
4	GOL	E	505	-	-	X	-
5	CL	B	504	-	-	X	-

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 20351 atoms, of which 96 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 11S globulin 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	407	Total 3289	C 2024	N 628	O 633	S 4	0	4	0
1	D	413	Total 3397	C 2087	N 657	O 649	S 4	0	10	0

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	2	ASP	ASN	conflict	UNP Q8W1C2
A	12	HIS	TYR	conflict	UNP Q8W1C2
A	35	GLY	CYS	conflict	UNP Q8W1C2
A	74	LYS	GLU	conflict	UNP Q8W1C2
A	144	ILE	CYS	conflict	UNP Q8W1C2
A	260	GLN	VAL	conflict	UNP Q8W1C2
A	314	GLY	CYS	conflict	UNP Q8W1C2
A	457	SER	GLU	conflict	UNP Q8W1C2
D	2	ASP	ASN	conflict	UNP Q8W1C2
D	12	HIS	TYR	conflict	UNP Q8W1C2
D	35	GLY	CYS	conflict	UNP Q8W1C2
D	74	LYS	GLU	conflict	UNP Q8W1C2
D	144	ILE	CYS	conflict	UNP Q8W1C2
D	260	GLN	VAL	conflict	UNP Q8W1C2
D	314	GLY	CYS	conflict	UNP Q8W1C2
D	457	SER	GLU	conflict	UNP Q8W1C2

- Molecule 2 is a protein called 11S globulin 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	387	Total 3146	C 1962	N 596	O 583	S 5	0	12	0
2	E	382	Total 3085	C 1926	N 576	O 578	S 5	0	10	0

• Molecule 3 is a protein called 11S globulin 3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	414	Total 3375	C 2094	N 643	O 630	S 8	0	18	0
3	F	402	Total 3248	C 2018	N 610	O 612	S 8	0	13	0

• Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).
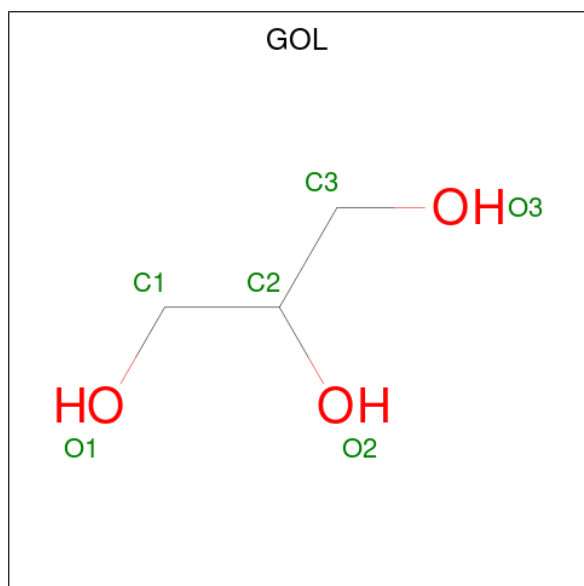
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total 6	C 3	O 3		0	0
4	A	1	Total 14	C 3	H 8	O 3	0	0
4	B	1	Total 6	C 3	O 3		0	0
4	B	1	Total 6	C 3	O 3		0	0
4	B	1	Total 14	C 3	H 8	O 3	0	0
4	C	1	Total 6	C 3	O 3		0	0
4	C	1	Total 14	C 3	H 8	O 3	0	0
4	D	1	Total 14	C 3	H 8	O 3	0	0
4	E	1	Total 14	C 3	H 8	O 3	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	E	1	Total 14	C 3	H 8	O 3	0	0
4	E	1	Total 14	C 3	H 8	O 3	0	0
4	E	1	Total 14	C 3	H 8	O 3	0	0
4	E	1	Total 14	C 3	H 8	O 3	0	0
4	F	1	Total 14	C 3	H 8	O 3	0	0
4	F	1	Total 14	C 3	H 8	O 3	0	0
4	F	1	Total 14	C 3	H 8	O 3	0	0

- Molecule 5 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	B	1	Total 1	Cl 1	0	0
5	D	1	Total 1	Cl 1	0	0

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	91	Total 91	O 91	0	0
6	B	95	Total 95	O 95	0	0
6	C	110	Total 110	O 110	0	0
6	D	125	Total 125	O 125	0	0
6	E	97	Total 97	O 97	0	0
6	F	99	Total 99	O 99	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: 11S globulin 1

- Molecule 1: 11S globulin 1

R411 E418 A421 D426 S431 P432 L433 L443 L448 K463 R466 L471 V472 R473 R476 S477 SER GLU ARG LYS ARG ARG GLU SER GLY ARG GLU ALA GLU ALA

● Molecule 2: 11S globulin 2

3%

Chain B: 51% 25% 22%

ILE ASP VAL GLY LEU ARG ARG GLN GLN Q10 R11 H12 C16 N17 L18 D19 N22 A23 L24 R29 E33 V37 E38 K39 N43 D44 Q45 Q46 V52 I55 R56 H57 R62 P67 E74 Y77 V78 I79 K80 Q85 I89 P90 E97 S98 N99

S100 N101 R102 SER GLN GLN GLN GLY GLN GLY GLN GLN ASN SER ASN GLN SER GLN ARG GLU GLU Q119 D120 Q121 K124 V125 R126 Q127 I128 R129 E130 I133 L134 A135 H142 S150 T156 L157 L158 D159 N162 D168 E169 N170 P171 Y175 P180 D181 ASP GLU HIS GLN GLY

THR GLY GLN GLN GLN PHE GLY GLN ARG ARG GLN GLN GLN HIS SER ARG GLY LYS GLU GLY GLU GLN GLU GLN GLU GLU G215 T216 Q224 D229 D236 L237 A238 R239 R240 N244 Q245 D246 K247 R248 Q249 K250 E255 Q256 R257 I260 L261 I262 P263 E264 R265 Q266

Q267 Q268 E269 TRP GLU ARG GLN GLU ARG GLN GLN GLU GLU ARG GLU SER GLU GLN GLU GLU ARG GLU ARG ARG CYS GLN GLY GLY ARG GLY ARG ASP VAL ASN G299 F300 E301 E302 T303 I304 C305 S306 L307 R308 L309 M310 E311 N312 I313 A314 N315 P316 R317 D320 I321 Q325 I329 S330 T331

L332 N333 S334 N335 I336 L337 P338 V339 L340 R341 Y342 L343 Q344 R349 Q358 Y362 N363 L364 V369 I370 R374 G375 R378 D384 Q387 N388 D391 R395 T401 I402 V408 I409 K410 R411 E415 F422 D426 R430 L431 P432 L433 A434 N437

S438 A439 I440 R441 A442 I443 Y452 R453 R461 L462 I465 R466 N467 E468 T469 T470 I471 S474 GLY ARG SER SER SER GLU ARG MET ARG ARG ARG SER GLU GLU GLY GLU GLY ARG ALA GLU ALA

● Molecule 2: 11S globulin 2

2%

Chain E: 54% 21% 23%

ILE ASP VAL GLY LEU ARG ARG GLN GLN Q10 R11 H12 F13 C16 N17 L18 L21 L24 K30 E33 A34 V37 E38 K39 K42 Q46 F47 L54 I55 R61 R62 E74 L75 I76 I79 F84 I89 P90 G91 C92 E97 S98 N99 S100 N101

R102 SER GLN GLN GLY GLN GLY GLN GLN ASN SER ASN GLN SER GLN ARG GLU GLU Q119 D120 K124 V125 R126 A135 L136 H142 D149 V155 T156 L157 L158 L167 D168 E169 N170 P171 F174 Y175 P180 D181 D182 GLU HIS GLN GLY THR GLY GLN GLN GLN PHE GLY GLN

ARG ARG ARG GLN GLN GLN HIS SER ARG GLY LYS GLU GLY GLU GLN GLU GLN GLU GLU GLY G215 T216 N217 I218 D229 V235 D236 R240 Q245 K253 V254 E255 Q256 R257 L258 Q259 I260 L261 I262 P263 E264 ARG GLN GLN GLN GLN TRP GLU ARG GLN GLN ARG GLN GLU ARG GLN GLU ARG

GLU SER GLU GLU GLU ARG ARG GLN ARG CYS GLN GLY GLY ARG GLY ARG ASP VAL ASN GLY F300 E301 E302 T303 I304 L307 R308 L309 M310 I313 A314 N315 P316 R317 D320 I321 G327 R328 I329 P338 Y342 E348 R349 G350 T351 L352 Y353 R354 E355 P360 H361

Y362 N363 S368 I373 R374 R378 I379 Q380 D384 I389 Q396 T401 V408 I409 K410 R411 S414 E415 E418 A421 F422 K423 T424 N425 Q429 R430 L431 P432 R436 R441 N450 R456 R461 I465 I471 S474 GLY ARG SER SER

SER GLU ARG MET ARG ARG SER GLU SER GLU GLY ARG ALA GLU ALA

- Molecule 3: 11S globulin 3

Chain C:

3%

53% 29% · 16%

ILE ASP VAL GLY LEU ARG ARG GLN GLN GLN R11 H12 F13 G14 E15 C16 N17 L18 D19 R20 L21 N22 V23 T27 V37 E38 K39 W40 D41 T42 N43 Q46 C49 A53 R57 T58 I59 E64 V65 Q70 P71 M74 L75 I76 K80 G81 L85 G86 V87

V88 I89 P90 E94 S100 Q103 G112 Q113 S114 Q115 R116 GLU GLU Q119 R124 R129 I136 P137 A138 G139 V140 V141 H142 W143 I144 Y145 N146 D147 Q148 D149 Q150 Q151 L152 V153 V157 V158 N159 Q160 N161 N162 K163 L167 D168 E169 E170 Y171 R172 P173 F174 G179

Q180 P181 D182 E183 HIS GLY GLN GLN GLY Q188 G189 Q190 K191 K194 Q198 A199 HIS SER HIS LYS GLY GLN LYS GLN GLN GLN GLN ALA E214 V224 E225 L226 E229 A230 Y231 N232 V235 D236 I237 R240 Q241 Q242 Q243 K246 R247 G248 N249 L250 L253 E254 Q255

Q256 Q257 R262 A263 E264 Q265 ARG ALA GLN GLU TRP GLU ARG GLN GLU ARG GLN GLU ARG SER GLU GLN GLU GLU ARG GLU GLN ARG ARG GLN GLY GLY ARG GLY ASP VAL ASN GLY PHE GLU E302 T303 I304 C305 S306 L307 R308 L309 N312 M313 T314 S317 Q325 A326

I329 P338 V339 L340 R341 Y342 A347 E348 R349 L352 Y358 V359 P360 Q364 N365 R368 Y371 V372 I373 R374 G375 N376 Q380 F390 D391 R392 E393 I394 R395 Q396 G397 N398 Q404 I409 E418 Y419 V420 S421 I422 K423 K430 A434 G435 R436

E457 Q460 R461 H464 N465 T470 L471 V472 E480 ARG LYS ARG ARG SER GLU SER GLU GLY ARG ALA GLU ALA

- Molecule 3: 11S globulin 3

Chain F:

3%

52% 27% · 18%

ILE ASP VAL GLY LEU ARG ARG GLN GLN GLN R11 E15 R20 L21 N22 V23 T27 I30 E33 G34 V37 W40 D41 T42 N43 Q44 Q45 Q46 G51 V52 A53 R57 T58 I59 E60 E64 V65 N68 Y69 Q70 P71 M74 L75 I76 R82 G83 L84

L85 G86 V87 V88 I89 P90 G91 C92 A93 E94 K105 S110 GLN GLY Q113 S114 Q115 R116 E117 GLU Q119 V125 H126 R127 I128 R129 P137 V140 V141 H142 W143 I144 Y145 N146 D147 G148 D149 Q150 A156 V157 V158 N161 N162 K163 L167 R172 P173 F174 L175 P181

D182 E183 H184 GLY GLN GLN GLY GLN GLN GLN LYS GLY GLN LYS GLN GLN GLN ALA HIS SER HIS GLY LYS GLY GLN LYS GLN ARG ARG GLN ARG GLY GLY ALA E214 S215 V224 E229 N232 V238 R239 R240 Q241 Q242 Q243 Q244 D245 K246 R247 L250 L253 E254 Q255 Q256 Q257 I258

R262 A263 E264 Q265 ARG ALA GLN GLU TRP GLU ARG GLU GLU ARG GLN GLU ARG SER GLU GLN GLU GLU ARG GLU ARG ARG GLN ARG GLY GLY ARG GLY ASP VAL ASN GLY PHE GLU E302 T303 I304 C305 S306 L307 R308 L309 R310 E311 N312 M313 T314 T315 R316 S317 Q318 I321

V322 S323 R324 Q325 A326 V332 Q335 P338 V339 Y342 R349 G350 Y358 V359 P360 H361 N365 R368 I373 R374 G375 N376 A377 Q380 I381 S382 F390 D391 R392 E393 I394 R395 Q404 F405 R411 F417 E418 Y419 V420 K423 K430 A434 G435

R436 T437 S438 R441 N465 R466 T470 L471 S479 E480 ARG LYS ARG ARG SER GLU SER GLU GLY ARG ALA GLU ALA

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	149.17Å 91.09Å 74.85Å 90.00° 90.32° 90.00°	Depositor
Resolution (Å)	45.80 – 1.92 45.80 – 1.92	Depositor EDS
% Data completeness (in resolution range)	92.6 (45.80-1.92) 92.6 (45.80-1.92)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.89 (at 1.92Å)	Xtriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.174 , 0.221 0.174 , 0.222	Depositor DCC
R_{free} test set	7119 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å^2)	31.7	Xtriage
Anisotropy	0.356	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.37 , 55.8	EDS
L-test for twinning[2]	$< |L| > = 0.51, < L^2 > = 0.35$	Xtriage
Estimated twinning fraction	0.022 for -h,-k,l	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	20351	wwPDB-VP
Average B, all atoms (Å^2)	38.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.06% 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: GOL, CL

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	0.41	0/3360	0.67	0/4550
1	D	0.42	0/3485	0.70	0/4712
2	B	0.43	0/3231	0.68	0/4355
2	E	0.40	0/3161	0.66	0/4266
3	C	0.43	0/3475	0.67	0/4690
3	F	0.44	0/3337	0.69	0/4509
All	All	0.42	0/20049	0.68	0/27082

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

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

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	E	374	ARG	Sidechain

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	3289	0	3158	90	0
1	D	3397	0	3302	138	0
2	B	3146	0	3151	189	0
2	E	3085	0	3072	144	1
3	C	3375	0	3385	205	0
3	F	3248	0	3223	193	0
4	A	12	8	16	2	0
4	B	18	8	24	1	0
4	C	12	8	16	7	0
4	D	6	8	8	1	0
4	E	30	40	40	7	0
4	F	18	24	24	0	0
5	B	1	0	0	3	0
5	D	1	0	0	0	0
6	A	91	0	0	1	0
6	B	95	0	0	9	0
6	C	110	0	0	10	0
6	D	125	0	0	8	0
6	E	97	0	0	3	0
6	F	99	0	0	5	0
All	All	20255	96	19419	856	1

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 22.

All (856) 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)
3:C:436[B]:ARG:HB3	3:C:470:THR:HG22	1.32	1.09
1:D:466:ARG:CZ	1:D:472:VAL:HG21	1.86	1.05
3:C:304:ILE:HG13	3:C:307[B]:LEU:HD11	1.43	1.01
2:B:99:ASN:HD21	1:D:473:ARG:HE	1.07	0.98
3:C:65:VAL:HG22	3:C:144:ILE:H	1.29	0.97
1:D:57[B]:ARG:HH22	1:D:74:LYS:HE3	1.29	0.96
3:C:65:VAL:HG12	3:C:250:LEU:CD2	1.98	0.93
1:A:473:ARG:HD2	2:E:101:ASN:HD21	1.32	0.93
2:B:302:GLU:HB3	2:E:302:GLU:HB3	1.49	0.92
2:E:354:ARG:HG2	2:E:414:SER:O	1.70	0.92
3:C:360:PRO:HD3	3:C:409:ILE:HD13	1.50	0.91
3:F:145:TYR:CE1	3:F:253:LEU:HD12	2.06	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:372:VAL:HG21	3:C:394:ILE:CG2	2.00	0.91
3:F:30:ILE:HG23	3:F:181:PRO:HG3	1.53	0.90
1:A:466:ARG:HD2	1:A:472:VAL:HG11	1.55	0.89
3:C:349:ARG:HD3	3:C:420[B]:VAL:HG22	1.53	0.89
3:C:65:VAL:CG2	3:C:144:ILE:H	1.85	0.88
2:E:300:PHE:HD2	2:E:302:GLU:HG3	1.37	0.88
3:F:65:VAL:HG12	3:F:144:ILE:H	1.38	0.88
2:E:39:LYS:HG3	2:E:55:ILE:CD1	2.04	0.88
3:C:307[A]:LEU:HD21	3:C:339:VAL:CG2	2.04	0.88
1:D:74:LYS:HE2	1:D:158:LEU:HD11	1.56	0.88
3:C:85:LEU:CD2	3:C:309[A]:LEU:HD11	2.04	0.87
2:E:262:ILE:HG13	2:E:263:PRO:HD2	1.56	0.87
1:A:46:GLN:HB3	1:A:401[A]:THR:HG21	1.57	0.86
3:C:304:ILE:HG13	3:C:307[B]:LEU:CD1	2.06	0.86
2:E:348:GLU:HG2	2:E:421:ALA:HB3	1.55	0.86
3:F:84:LEU:HD13	3:F:125[A]:VAL:HG11	1.58	0.86
1:D:313:ILE:HD12	1:D:349:ARG:HB2	1.58	0.85
3:F:436[A]:ARG:HB3	3:F:470:THR:HG22	1.59	0.85
2:B:39:LYS:HD3	2:B:55[A]:ILE:HD12	1.59	0.85
3:F:349:ARG:HD3	3:F:420[B]:VAL:HG22	1.59	0.85
3:C:304:ILE:CG1	3:C:307[B]:LEU:HD11	2.07	0.84
2:B:321:ILE:HD12	1:D:95:THR:HB	1.57	0.84
3:C:224:VAL:HG22	3:C:242:GLN:OE1	1.76	0.84
1:A:55:ILE:HD11	1:A:184:HIS:CE1	2.13	0.84
3:F:307:LEU:HD21	3:F:339:VAL:CG2	2.09	0.83
2:E:300:PHE:CD2	2:E:302:GLU:HG3	2.14	0.83
3:F:308:ARG:HH12	3:F:311:GLU:HG2	1.44	0.82
2:E:37:VAL:HG23	6:E:654:HOH:O	1.78	0.82
2:E:119:GLN:HG2	2:E:120:ASP:H	1.45	0.82
3:F:314:THR:HG23	3:F:317:SER:OG	1.78	0.82
2:B:431:LEU:HD13	3:C:90:PRO:HB3	1.61	0.82
1:A:29:ARG:HD2	1:A:31:GLU:OE2	1.80	0.81
2:B:150:SER:HA	4:B:502:GOL:H12	1.62	0.81
3:C:37:VAL:HG22	3:C:57[A]:ARG:HD3	1.59	0.81
3:C:372:VAL:HG21	3:C:394:ILE:HG22	1.62	0.81
3:C:460:GLN:HB3	3:F:114:SER:HB3	1.60	0.81
1:D:74:LYS:HG2	1:D:158:LEU:HD12	1.63	0.81
3:F:394:ILE:O	3:F:394:ILE:HD12	1.80	0.81
3:C:360:PRO:HD3	3:C:409:ILE:CD1	2.11	0.81
2:B:262:ILE:HG23	2:B:265:ARG:HB3	1.62	0.81
1:A:272:ARG:HG3	1:A:272:ARG:HH11	1.44	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:430:LYS:HE3	6:C:680:HOH:O	1.80	0.80
2:B:320:ASP:O	2:B:321:ILE:HD13	1.82	0.80
3:F:359:VAL:HG21	3:F:434:ALA:O	1.82	0.80
1:A:28:ASN:HB3	1:A:185:GLN:O	1.81	0.80
2:B:77:TYR:CD2	2:B:79:ILE:HD13	2.17	0.80
3:C:254:GLU:HG3	3:C:255:GLN:H	1.46	0.80
2:B:77:TYR:HD2	2:B:79:ILE:HD13	1.45	0.79
2:B:465:ILE:HG21	3:C:232:ASN:O	1.83	0.79
2:E:126:ARG:HD3	2:E:310:MET:HE3	1.64	0.79
3:F:27:THR:HG21	3:F:41:ASP:H	1.47	0.79
1:A:84:ILE:HD12	1:A:260:GLN:HE22	1.48	0.79
3:C:11:ARG:HG3	3:C:13:PHE:H	1.46	0.78
3:C:257:GLN:O	3:C:262:ARG:NH2	2.16	0.78
1:A:20:ARG:NH1	1:A:22:ASN:OD1	2.17	0.78
1:D:55[B]:ILE:HD12	1:D:158:LEU:HD21	1.66	0.78
3:F:71:PRO:HG3	3:F:167:LEU:HD12	1.66	0.78
1:D:289:ARG:HE	1:D:289:ARG:HA	1.48	0.78
3:F:224:VAL:HG22	3:F:242:GLN:OE1	1.84	0.78
3:F:30:ILE:HG23	3:F:181:PRO:CG	2.15	0.78
3:C:305:CYS:HB2	4:C:502:GOL:H11	1.66	0.77
2:B:62:ARG:HH21	2:B:257[B]:ARG:HH11	1.30	0.77
3:C:87[B]:VAL:HG13	3:C:140:VAL:HG11	1.67	0.77
3:C:37:VAL:HG23	6:C:613:HOH:O	1.83	0.77
1:D:364:LEU:HD21	6:D:666:HOH:O	1.82	0.77
2:E:39:LYS:HG3	2:E:55:ILE:HD12	1.67	0.77
1:A:301:GLU:HA	1:A:305:CYS:HB2	1.65	0.76
2:B:33:GLU:HG2	2:B:248:ARG:HB3	1.67	0.76
3:C:307[A]:LEU:HD21	3:C:339:VAL:HG23	1.66	0.76
2:B:299:GLY:HA2	2:B:342:TYR:HB3	1.66	0.76
3:C:349:ARG:HH21	3:C:373:ILE:CD1	1.98	0.76
3:C:359:VAL:HG21	3:C:434:ALA:O	1.85	0.76
2:E:355:GLU:OE2	2:E:414:SER:HA	1.83	0.76
3:F:126:HIS:NE2	3:F:309[B]:LEU:HD21	2.00	0.76
1:A:473:ARG:HD2	2:E:101:ASN:ND2	2.00	0.76
2:B:80[B]:LYS:HA	2:B:130:GLU:CG	2.15	0.76
2:B:362:TYR:CE2	2:B:364:LEU:HD23	2.20	0.76
3:F:436[B]:ARG:HB3	3:F:470:THR:HG22	1.68	0.76
3:F:76:ILE:HD13	3:F:156:ALA:CB	2.16	0.75
2:B:77:TYR:HD2	2:B:79:ILE:CD1	2.00	0.75
3:F:307:LEU:HD21	3:F:339:VAL:HG23	1.68	0.75
2:B:37:VAL:HG13	2:B:55[B]:ILE:HD11	1.70	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:465:ILE:HG21	3:F:232:ASN:O	1.86	0.74
3:F:27:THR:CG2	3:F:41:ASP:H	2.01	0.74
3:C:349:ARG:CD	3:C:420[B]:VAL:HG22	2.18	0.74
2:B:300:PHE:HB2	2:B:342:TYR:CD2	2.22	0.74
3:F:436[A]:ARG:HB3	3:F:470:THR:CG2	2.18	0.74
3:C:65:VAL:HG22	3:C:144:ILE:N	2.03	0.73
1:D:185:GLN:O	1:D:186:ARG:HB2	1.89	0.73
3:F:359:VAL:HG23	3:F:434:ALA:HB3	1.70	0.73
3:F:74:MET:SD	3:F:76:ILE:HD11	2.28	0.73
1:A:325:GLN:HE22	2:E:102:ARG:HG3	1.52	0.73
3:C:436[B]:ARG:CB	3:C:470:THR:HG22	2.15	0.73
1:A:168:ASP:HA	3:C:15:GLU:OE1	1.88	0.73
1:A:84:ILE:CD1	1:A:260:GLN:HE22	2.01	0.73
2:B:126[A]:ARG:HH11	2:B:310:MET:HE3	1.53	0.72
2:B:329[B]:ILE:HD11	2:B:471:ILE:HD11	1.71	0.72
3:F:30:ILE:HB	3:F:37[A]:VAL:CG2	2.19	0.72
2:B:362:TYR:OH	2:B:431:LEU:HD23	1.89	0.72
2:E:329[A]:ILE:HD11	2:E:471:ILE:HD11	1.70	0.72
2:B:303:THR:HB	2:B:307:LEU:HD21	1.72	0.72
2:B:462:LEU:HD13	3:C:241:GLN:HE22	1.55	0.71
3:C:312:ASN:OD1	3:C:314:THR:HG22	1.91	0.71
3:C:87[B]:VAL:HG13	3:C:140:VAL:CG1	2.19	0.71
2:B:62:ARG:NE	2:B:257[B]:ARG:HG3	2.05	0.71
2:E:181:ASP:HB2	2:E:216:THR:HG21	1.73	0.71
3:F:34:GLY:O	3:F:60:GLU:HG3	1.91	0.71
2:E:461:ARG:HE	2:E:465:ILE:HG13	1.54	0.70
2:B:320:ASP:C	2:B:321:ILE:HD13	2.11	0.70
2:E:315:ASN:HD21	2:E:317:ARG:HH21	1.39	0.70
3:C:11:ARG:HG3	3:C:13:PHE:N	2.06	0.70
3:C:85:LEU:HD21	3:C:309[A]:LEU:HD11	1.74	0.70
3:C:352:LEU:CD2	3:C:472[B]:VAL:HG13	2.21	0.70
3:F:30:ILE:HB	3:F:37[A]:VAL:HG22	1.72	0.70
1:D:319:ALA:HA	1:D:330:ASN:ND2	2.06	0.70
3:C:349:ARG:HH21	3:C:373:ILE:HD13	1.57	0.69
3:F:349:ARG:CD	3:F:420[B]:VAL:HG22	2.21	0.69
1:A:344:GLN:HA	1:A:426:ASP:HB3	1.74	0.69
3:C:182:ASP:OD1	3:C:246:LYS:NZ	2.24	0.69
1:D:334:SER:HB2	1:D:341[B]:ARG:HG2	1.74	0.69
3:F:349:ARG:HH21	3:F:373:ILE:CD1	2.05	0.69
3:F:349:ARG:HH21	3:F:373:ILE:HD11	1.58	0.69
1:D:124:LYS:HE2	1:D:126:ARG:HH22	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:49:CYS:O	4:C:501:GOL:H2	1.93	0.69
3:C:59:ILE:HD12	3:C:250:LEU:HD22	1.74	0.69
3:F:76:ILE:HD13	3:F:156:ALA:HB2	1.73	0.69
2:B:301:GLU:H	2:B:301:GLU:CD	1.96	0.69
3:F:84:LEU:HD11	3:F:262:ARG:HD2	1.74	0.69
2:E:362:TYR:OH	2:E:431:LEU:HD23	1.93	0.69
2:B:303:THR:CB	2:B:307:LEU:HD21	2.23	0.69
3:C:53:ALA:HB3	3:C:158:VAL:CG1	2.23	0.69
3:C:71:PRO:HG3	3:C:167:LEU:HD12	1.74	0.69
3:C:88:VAL:HG22	3:C:141:VAL:HB	1.75	0.69
3:F:436[B]:ARG:HH11	3:F:436[B]:ARG:HG2	1.57	0.69
2:B:461:ARG:HB3	2:B:465:ILE:HG13	1.74	0.68
2:E:320:ASP:C	2:E:321:ILE:HD12	2.14	0.68
2:E:461:ARG:HA	2:E:465:ILE:HG12	1.75	0.68
3:C:307[B]:LEU:HD23	3:F:335:GLN:HG2	1.76	0.68
3:C:461[B]:ARG:NH2	3:F:110:SER:OG	2.27	0.68
1:D:288:ARG:O	1:D:289:ARG:HG2	1.92	0.68
2:B:80[A]:LYS:HA	2:B:130:GLU:CG	2.22	0.68
2:B:99:ASN:ND2	1:D:473:ARG:HE	1.89	0.68
2:B:467:ASN:ND2	1:D:121:ARG:HH22	1.92	0.68
3:C:265:GLN:HE22	3:F:324:ARG:HE	1.39	0.68
2:E:33:GLU:HG2	2:E:253[B]:LYS:HD2	1.76	0.68
3:C:85:LEU:HD23	3:C:309[A]:LEU:HD11	1.76	0.68
2:E:84:PHE:HE2	2:E:262:ILE:CD1	2.06	0.67
3:C:65:VAL:HG21	6:C:704:HOH:O	1.92	0.67
1:D:264:GLU:OE2	1:D:268:GLN:NE2	2.27	0.67
2:E:79:ILE:CD1	2:E:155:VAL:HG23	2.23	0.67
3:F:65:VAL:HG11	6:F:696:HOH:O	1.93	0.67
2:B:170:ASN:HD22	2:B:171:PRO:HD2	1.60	0.67
3:C:15:GLU:OE1	3:C:15:GLU:HA	1.94	0.67
3:F:27:THR:HG22	3:F:44:GLN:OE1	1.94	0.67
2:B:262:ILE:CG2	2:B:265:ARG:HB3	2.24	0.67
2:B:300:PHE:HB2	2:B:342:TYR:CE2	2.29	0.67
1:D:74:LYS:HE2	1:D:158:LEU:CD1	2.25	0.67
3:F:240:ARG:HA	3:F:243:GLN:HG3	1.76	0.67
2:E:126:ARG:HH22	2:E:308:ARG:HA	1.57	0.67
2:B:129:ARG:HG3	2:B:129:ARG:HH11	1.60	0.67
3:F:302:GLU:CG	3:F:305:CYS:HB2	2.25	0.66
1:A:57:ARG:HH22	1:A:74:LYS:HE2	1.59	0.66
2:B:257[A]:ARG:CZ	1:D:288:ARG:HE	2.09	0.66
1:D:124:LYS:HE2	1:D:126:ARG:NH2	2.11	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:304:ILE:O	2:E:304:ILE:HG13	1.96	0.66
3:C:304:ILE:HG21	1:D:300:PHE:CZ	2.30	0.65
2:E:174:PHE:HB3	2:E:218[A]:ILE:HD11	1.77	0.65
3:C:65:VAL:HG12	3:C:250:LEU:HD23	1.77	0.65
1:D:46:GLN:HB3	1:D:401[B]:THR:HG21	1.77	0.65
2:E:98:SER:OG	2:E:119:GLN:HG2	1.96	0.65
3:F:59:ILE:N	3:F:59:ILE:HD12	2.12	0.65
1:D:57[B]:ARG:HH22	1:D:74:LYS:CE	2.06	0.65
3:C:65:VAL:HG12	3:C:250:LEU:HD21	1.79	0.65
3:C:145:TYR:CE1	3:C:253:LEU:HD12	2.32	0.65
3:C:460:GLN:HB3	3:F:114:SER:CB	2.26	0.65
2:E:39:LYS:HG3	2:E:55:ILE:HD11	1.77	0.65
1:A:314:GLY:O	1:A:328:ARG:NH2	2.29	0.65
2:B:302:GLU:O	2:E:302:GLU:HA	1.97	0.65
2:B:39:LYS:CD	2:B:55[A]:ILE:HD12	2.25	0.65
2:E:368:SER:OG	4:E:505:GOL:H32	1.97	0.65
3:C:103:GLN:HA	3:C:103:GLN:OE1	1.97	0.64
3:F:76:ILE:CD1	3:F:156:ALA:HB2	2.27	0.64
2:B:10:GLN:HB2	3:C:163:LYS:HB2	1.80	0.64
2:B:37:VAL:HG12	2:B:39:LYS:HE2	1.79	0.64
2:B:402:ILE:CD1	2:B:408:VAL:HG21	2.28	0.64
3:C:303:THR:HG23	4:C:502:GOL:C3	2.28	0.64
3:C:237:ILE:HG22	3:C:241:GLN:HE21	1.61	0.64
1:D:74:LYS:HG2	1:D:158:LEU:CD1	2.26	0.64
2:E:84:PHE:HE2	2:E:262:ILE:HD12	1.61	0.64
1:D:307:LEU:HD21	1:D:339:VAL:HB	1.78	0.64
3:C:304:ILE:HD12	3:C:307[B]:LEU:HD21	1.78	0.64
2:B:402:ILE:HD13	2:B:408:VAL:HG21	1.80	0.64
3:C:436[B]:ARG:HB3	3:C:470:THR:CG2	2.18	0.64
3:C:37:VAL:HG22	3:C:57[A]:ARG:CD	2.28	0.64
1:D:181:ASP:OD2	1:D:186:ARG:NH2	2.29	0.64
3:F:436[B]:ARG:HB3	3:F:470:THR:CG2	2.28	0.64
2:B:181:ASP:CB	2:B:216:THR:HG21	2.28	0.63
2:E:126:ARG:NH2	2:E:308:ARG:HA	2.14	0.63
3:C:303:THR:HG23	4:C:502:GOL:H31	1.79	0.63
2:E:461:ARG:HH21	2:E:465:ILE:HG21	1.63	0.63
2:E:315:ASN:ND2	2:E:317:ARG:HH21	1.96	0.63
3:C:349:ARG:NH2	3:C:373:ILE:HD13	2.14	0.63
3:F:312:ASN:ND2	3:F:314:THR:HG22	2.13	0.63
1:D:319:ALA:CA	1:D:330:ASN:HD21	2.12	0.63
3:C:65:VAL:CG2	3:C:144:ILE:N	2.59	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:46[B]:GLN:HG3	2:E:401[B]:THR:HB	1.80	0.62
2:B:80[B]:LYS:HA	2:B:130:GLU:HG3	1.80	0.62
2:B:378:ARG:HG3	2:B:378:ARG:HH11	1.63	0.62
1:D:240:ARG:HG2	6:D:625:HOH:O	1.99	0.62
3:F:253:LEU:HD13	3:F:257:GLN:CD	2.20	0.62
1:D:124:LYS:NZ	1:D:305:CYS:O	2.29	0.62
2:E:54:LEU:O	2:E:55:ILE:HD13	1.99	0.62
1:A:466:ARG:HD2	1:A:472:VAL:CG1	2.28	0.62
1:D:472:VAL:HG23	6:D:612:HOH:O	1.99	0.62
3:F:374[B]:ARG:NE	3:F:418:GLU:OE2	2.31	0.62
1:D:55[A]:ILE:HD13	1:D:158:LEU:HD21	1.81	0.62
2:E:79:ILE:HD11	2:E:155:VAL:CG2	2.29	0.62
2:E:303:THR:OG1	2:E:307:LEU:HD13	1.99	0.62
1:A:278:ARG:O	1:A:282:GLN:HG2	2.00	0.62
6:D:666:HOH:O	2:E:90:PRO:HG3	1.98	0.62
1:D:310:ARG:CZ	1:D:310:ARG:HB2	2.29	0.62
1:A:278:ARG:HH22	1:A:317:SER:HB3	1.63	0.61
3:C:88:VAL:O	3:C:140:VAL:HG13	2.00	0.61
3:C:100:SER:OG	3:C:103:GLN:HG2	2.00	0.61
3:C:436[A]:ARG:HB3	3:C:470:THR:HG22	1.82	0.61
3:C:161:ASN:OD1	4:C:501:GOL:H11	2.01	0.61
3:F:22:ASN:H	3:F:46:GLN:NE2	1.98	0.61
3:C:11:ARG:HD3	3:C:12:HIS:H	1.65	0.61
3:C:22:ASN:H	3:C:46:GLN:HE21	1.47	0.61
1:D:57[B]:ARG:NH2	1:D:74:LYS:HE3	2.10	0.61
3:F:350:GLY:HA3	3:F:419:TYR:CE1	2.35	0.61
1:A:46:GLN:HB3	1:A:401[A]:THR:CG2	2.31	0.61
3:C:46:GLN:HG2	6:C:679:HOH:O	2.01	0.61
3:C:87[B]:VAL:CG1	3:C:140:VAL:HG11	2.30	0.61
1:D:351:ASP:OD1	1:D:418:GLU:HG2	2.00	0.61
3:F:30:ILE:CG2	3:F:181:PRO:HG3	2.28	0.61
3:C:304:ILE:CD1	3:C:307[B]:LEU:HD11	2.31	0.61
3:F:65:VAL:HG12	3:F:144:ILE:N	2.14	0.61
3:F:377:ALA:HB3	3:F:394:ILE:HD11	1.83	0.61
2:B:395[A]:ARG:NH1	6:B:604:HOH:O	2.34	0.61
2:E:61[A]:ARG:HH11	2:E:149:ASP:HA	1.66	0.61
2:E:126:ARG:HD3	2:E:310:MET:CE	2.31	0.60
1:D:299:GLY:N	1:D:302:GLU:OE2	2.34	0.60
2:B:74:GLU:OE1	2:B:156:THR:HG21	2.01	0.60
2:B:77:TYR:CD2	2:B:79:ILE:CD1	2.80	0.60
3:F:163:LYS:HD2	3:F:163:LYS:C	2.21	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:244:GLN:HB3	3:F:246:LYS:NZ	2.15	0.60
3:C:470:THR:HG23	6:C:696:HOH:O	2.01	0.60
1:D:307:LEU:HD22	1:D:309:LEU:CD2	2.32	0.60
1:A:272:ARG:HG3	1:A:272:ARG:NH1	2.12	0.60
2:B:55[B]:ILE:HG23	2:B:156:THR:HB	1.83	0.60
2:B:395[A]:ARG:HH11	2:B:395[A]:ARG:CG	2.15	0.60
2:E:378:ARG:NH2	6:E:604:HOH:O	2.33	0.60
3:F:359:VAL:CG1	3:F:471:LEU:HA	2.32	0.60
3:C:151:GLN:NE2	6:C:602:HOH:O	2.34	0.60
1:D:253:LYS:HD2	1:D:254:VAL:N	2.16	0.60
2:B:257[A]:ARG:NH2	1:D:288:ARG:HG2	2.17	0.59
2:E:74:GLU:OE1	2:E:156:THR:HG21	2.02	0.59
3:F:41:ASP:HB3	3:F:43:ASN:OD1	2.02	0.59
3:F:214:GLU:CG	3:F:215:SER:H	2.15	0.59
3:C:304:ILE:O	3:C:307[B]:LEU:HG	2.02	0.59
1:A:55:ILE:HD11	1:A:184:HIS:HE1	1.66	0.59
2:B:315:ASN:HD21	2:B:317:ARG:HH21	1.48	0.59
3:C:368:ARG:HG2	3:C:423:LYS:HG2	1.85	0.59
1:D:79:GLU:HG2	1:D:80:ARG:HG2	1.84	0.59
3:F:438:SER:OG	3:F:441:ARG:HG3	2.02	0.59
1:A:76:ILE:HG12	1:A:156:SER:OG	2.03	0.59
3:C:145:TYR:CE1	3:C:253:LEU:CD1	2.86	0.59
1:D:334:SER:CB	1:D:341[B]:ARG:HG2	2.33	0.59
3:F:349:ARG:HD2	3:F:419:TYR:O	2.02	0.59
3:C:224:VAL:HG12	3:C:235:VAL:HG13	1.84	0.59
3:C:325:GLN:HG2	6:F:672:HOH:O	2.03	0.59
1:D:129[B]:ARG:HH22	1:D:310:ARG:HH12	1.51	0.59
1:D:214:GLU:N	1:D:244:ASN:OD1	2.36	0.59
1:D:289:ARG:HA	1:D:289:ARG:NE	2.17	0.59
2:E:321:ILE:HD12	2:E:321:ILE:N	2.18	0.59
3:F:302:GLU:HG2	3:F:305:CYS:HB2	1.82	0.59
3:F:349:ARG:NH2	3:F:373:ILE:HD13	2.18	0.59
3:F:359:VAL:HG12	3:F:471:LEU:HA	1.85	0.59
2:B:255:GLU:O	2:B:255:GLU:HG2	2.01	0.59
3:C:395[B]:ARG:NH2	3:C:398:ASN:OD1	2.36	0.59
1:A:348:GLU:HG2	1:A:421:ALA:HB3	1.84	0.59
2:B:37:VAL:HG22	2:B:57:HIS:ND1	2.17	0.59
3:F:22:ASN:HA	3:F:392:ARG:HH11	1.67	0.59
1:A:325:GLN:NE2	2:E:102:ARG:HG3	2.18	0.58
2:B:119:GLN:N	6:B:605:HOH:O	2.34	0.58
1:D:319:ALA:HA	1:D:330:ASN:HD21	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:22:ASN:HA	3:F:392:ARG:NH1	2.18	0.58
3:C:159:ASN:ND2	6:C:603:HOH:O	2.36	0.58
2:B:321:ILE:HD12	1:D:95:THR:CB	2.33	0.58
3:C:314:THR:HG23	3:C:314:THR:O	2.04	0.58
3:C:22:ASN:H	3:C:46:GLN:NE2	2.01	0.58
3:F:163:LYS:HD2	3:F:163:LYS:O	2.04	0.58
3:F:264:GLU:O	3:F:264:GLU:HG2	2.02	0.58
2:B:462:LEU:HD13	3:C:241:GLN:NE2	2.18	0.58
3:C:198:GLN:O	3:C:199:ALA:HB2	2.03	0.58
1:D:472:VAL:CG2	1:D:473:ARG:N	2.67	0.58
3:F:312:ASN:HD21	3:F:314:THR:HG22	1.69	0.58
2:B:62:ARG:NH2	2:B:257[B]:ARG:HD3	2.18	0.58
1:D:267:ARG:O	1:D:271:GLU:HG3	2.04	0.58
2:E:79:ILE:HD12	2:E:155:VAL:HG23	1.84	0.58
2:B:338:PRO:HG3	1:D:338:PRO:HG3	1.86	0.57
1:D:466:ARG:NH2	1:D:472:VAL:HG21	2.18	0.57
2:B:37:VAL:HG23	6:B:652:HOH:O	2.02	0.57
2:E:354:ARG:HG2	2:E:414:SER:C	2.24	0.57
2:E:384:ASP:CB	3:F:172:ARG:HG2	2.34	0.57
2:E:34:ALA:HB2	2:E:253[A]:LYS:HG2	1.86	0.57
1:A:278:ARG:NH2	1:A:317:SER:HB3	2.19	0.57
2:B:304:ILE:O	2:B:305:CYS:HB2	2.04	0.57
1:D:348:GLU:HG2	1:D:421:ALA:HB3	1.86	0.57
2:E:126:ARG:HB3	2:E:310:MET:CE	2.34	0.57
2:E:384:ASP:HB3	3:F:172:ARG:HG2	1.86	0.57
3:F:42:THR:HG22	3:F:53:ALA:HB2	1.87	0.57
2:E:436:ARG:NH2	6:E:602:HOH:O	2.31	0.57
2:B:384:ASP:CB	3:C:172:ARG:HG2	2.34	0.57
1:A:30:ILE:HD12	4:A:501:GOL:H12	1.85	0.57
3:C:170:GLU:HG3	3:C:170:GLU:O	2.03	0.57
2:E:411:ARG:NH1	3:F:229:GLU:OE1	2.38	0.57
3:F:314:THR:CG2	3:F:317:SER:OG	2.52	0.57
2:B:37:VAL:CG1	2:B:55[B]:ILE:HD11	2.33	0.57
1:D:55[A]:ILE:CD1	1:D:158:LEU:HD21	2.35	0.57
2:E:430[A]:ARG:NH1	4:E:505:GOL:O1	2.38	0.57
2:B:378:ARG:NH2	2:B:391:ASP:OD1	2.36	0.56
2:E:99:ASN:ND2	2:E:101:ASN:OD1	2.38	0.56
2:E:181:ASP:CB	2:E:216:THR:HG21	2.33	0.56
2:E:307:LEU:HD23	2:E:307:LEU:H	1.69	0.56
2:E:353:TYR:HB3	2:E:354:ARG:NH2	2.19	0.56
2:B:301:GLU:HA	2:B:304:ILE:HD13	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:384:ASP:HA	3:F:174:PHE:CD2	2.40	0.56
1:D:334:SER:OG	1:D:426:ASP:OD1	2.20	0.56
2:E:431:LEU:HD12	2:E:432:PRO:HD2	1.86	0.56
3:F:88:VAL:HG22	3:F:141:VAL:HB	1.88	0.56
2:B:336:ILE:HD11	6:D:653:HOH:O	2.05	0.56
3:C:115:GLN:OE1	3:C:115:GLN:HA	2.06	0.56
2:E:24:LEU:HD13	2:E:47:PHE:CE2	2.40	0.56
3:F:302:GLU:HG3	3:F:305:CYS:HB2	1.86	0.56
3:C:253:LEU:HD13	3:C:257:GLN:CD	2.26	0.56
2:E:126:ARG:HB3	2:E:310:MET:HE1	1.87	0.56
2:E:307:LEU:H	2:E:307:LEU:CD2	2.19	0.56
1:A:466:ARG:CD	1:A:472:VAL:HG11	2.33	0.56
3:C:168:ASP:OD1	3:C:172:ARG:NH2	2.39	0.56
3:F:22:ASN:H	3:F:46:GLN:HE21	1.54	0.56
3:C:11:ARG:HD3	3:C:12:HIS:N	2.21	0.56
3:C:307[A]:LEU:HD21	3:C:339:VAL:CB	2.36	0.56
1:D:55[B]:ILE:HD11	1:D:184:HIS:CE1	2.41	0.56
2:E:300:PHE:HD2	2:E:302:GLU:CG	2.14	0.56
1:A:299:GLY:C	2:E:429:GLN:HE21	2.08	0.56
2:B:175:TYR:CG	2:B:180:PRO:HG3	2.40	0.56
2:B:384:ASP:HB3	3:C:172:ARG:HG2	1.88	0.56
3:C:360:PRO:CD	3:C:409:ILE:HD13	2.29	0.56
1:A:277:GLU:O	1:A:281:GLU:HG3	2.06	0.55
1:A:413:GLU:OE2	1:A:413:GLU:HA	2.06	0.55
2:E:461:ARG:O	2:E:465:ILE:HG12	2.06	0.55
3:F:20:ARG:HG3	3:F:20:ARG:HH11	1.71	0.55
1:D:307:LEU:HD22	1:D:309:LEU:HD21	1.88	0.55
1:D:472:VAL:HG22	1:D:473:ARG:N	2.19	0.55
3:F:145:TYR:CE1	3:F:253:LEU:CD1	2.86	0.55
2:B:299:GLY:CA	2:B:342:TYR:HB3	2.35	0.55
1:D:267:ARG:NE	1:D:271:GLU:OE2	2.39	0.55
1:A:39:SER:HB3	1:A:55:ILE:CD1	2.37	0.55
3:C:464:HIS:CD2	3:F:114:SER:HA	2.42	0.55
1:A:12:HIS:CG	2:B:168:ASP:HA	2.42	0.55
3:C:304:ILE:HG21	1:D:300:PHE:CE2	2.42	0.55
3:C:349:ARG:HD2	3:C:419:TYR:O	2.07	0.55
3:C:376:ASN:HD22	3:C:395[A]:ARG:NH1	2.05	0.55
1:D:265:ARG:O	1:D:269:GLU:HG3	2.06	0.55
3:F:23:VAL:HG22	3:F:392:ARG:NH2	2.22	0.55
1:A:308:ARG:HH12	1:A:311:GLU:HG3	1.72	0.55
3:F:308:ARG:NH1	3:F:311:GLU:HG2	2.19	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:315:THR:HG23	1:A:318:ARG:HB2	1.88	0.55
2:B:85:GLN:OE1	2:B:126[A]:ARG:NH1	2.37	0.55
3:C:11:ARG:CG	3:C:13:PHE:H	2.19	0.55
2:B:303:THR:HB	2:B:307:LEU:CD2	2.37	0.54
2:B:325:GLN:HG3	1:D:99:PRO:HG2	1.87	0.54
2:E:363:ASN:HD21	4:E:505:GOL:C1	2.20	0.54
3:C:314:THR:HG23	3:C:317:SER:HB2	1.88	0.54
1:A:74:LYS:HE3	1:A:158:LEU:HD21	1.89	0.54
2:B:362:TYR:CZ	2:B:431:LEU:HD23	2.42	0.54
2:E:84:PHE:CE2	2:E:262:ILE:CD1	2.88	0.54
2:B:313:ILE:HD12	2:B:349:ARG:HB2	1.88	0.54
3:C:303:THR:HG23	4:C:502:GOL:C2	2.37	0.54
2:B:329[B]:ILE:CD1	2:B:471:ILE:HD11	2.37	0.54
2:B:37:VAL:CG1	2:B:39:LYS:HE2	2.37	0.54
2:B:89:ILE:CG2	2:B:304:ILE:HG23	2.36	0.54
1:A:265:ARG:O	1:A:265:ARG:HG3	2.06	0.54
2:B:16:CYS:O	2:B:18:LEU:HD22	2.07	0.54
2:B:126[A]:ARG:HD3	5:B:504:CL:CL	2.45	0.54
2:B:461:ARG:HA	2:B:465:ILE:HG12	1.90	0.54
2:E:119:GLN:CG	2:E:120:ASP:H	2.18	0.54
3:F:34:GLY:C	3:F:60:GLU:HG3	2.27	0.54
2:E:84:PHE:CE2	2:E:262:ILE:HD13	2.42	0.54
3:F:37[B]:VAL:HG23	6:F:603:HOH:O	2.08	0.54
3:F:253:LEU:HD13	3:F:257:GLN:NE2	2.23	0.54
1:A:20:ARG:HD2	1:A:20:ARG:C	2.28	0.54
2:B:80[A]:LYS:HA	2:B:130:GLU:HG3	1.89	0.54
3:C:338:PRO:HD3	3:F:338:PRO:HG3	1.89	0.54
2:E:76:ILE:HG12	2:E:156:THR:HG23	1.89	0.54
1:D:443:LEU:HD12	1:D:448:LEU:HD21	1.90	0.53
3:F:65:VAL:HG23	3:F:250:LEU:HD23	1.90	0.53
3:C:214:GLU:HB2	6:C:689:HOH:O	2.09	0.53
2:B:170:ASN:HD22	2:B:171:PRO:CD	2.20	0.53
3:C:64:GLU:HG2	3:C:253:LEU:HD21	1.89	0.53
1:D:264:GLU:OE1	1:D:264:GLU:HA	2.08	0.53
1:A:453:GLN:HB2	2:B:240:ARG:NH2	2.24	0.53
3:C:76:ILE:HD12	3:C:136[A]:ILE:HG12	1.91	0.53
2:E:79:ILE:CD1	2:E:155:VAL:CG2	2.86	0.53
2:E:135:ALA:O	2:E:136:LEU:HD22	2.09	0.53
3:F:323:SER:HB3	3:F:326:ALA:HB3	1.91	0.53
3:C:302:GLU:HB2	1:D:304:ILE:HD13	1.90	0.53
3:F:373:ILE:HD11	3:F:418:GLU:HB3	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:324:GLU:CG	1:A:325:GLN:HG3	2.39	0.53
3:C:307[A]:LEU:HD21	3:C:339:VAL:HB	1.91	0.53
3:C:372:VAL:HG21	3:C:394:ILE:HG21	1.89	0.53
1:D:221:GLY:HA3	3:F:382:SER:HB2	1.91	0.53
2:E:313:ILE:HD12	2:E:349:ARG:HB2	1.91	0.53
2:B:344:GLN:OE1	2:B:426:ASP:HB2	2.09	0.53
3:C:371:TYR:HB3	3:C:420[A]:VAL:CG1	2.39	0.53
3:F:390:PHE:CE1	3:F:392:ARG:HD3	2.44	0.53
1:D:212:GLN:HB2	1:D:223:ASP:HA	1.91	0.52
1:D:334:SER:CB	1:D:426:ASP:OD1	2.56	0.52
3:C:13:PHE:HA	3:C:18:LEU:HD21	1.90	0.52
3:C:58:THR:HG22	3:C:153:VAL:HG22	1.91	0.52
3:C:145:TYR:CD1	3:C:253:LEU:HD11	2.44	0.52
2:E:320:ASP:CB	2:E:321:ILE:HD12	2.40	0.52
2:B:22:ASN:O	2:B:24:LEU:HD23	2.10	0.52
2:B:24:LEU:HD12	6:B:644:HOH:O	2.08	0.52
3:F:82:ARG:NH2	3:F:149:ASP:H	2.07	0.52
2:B:11:ARG:HG2	2:B:11:ARG:HH11	1.75	0.52
2:B:311:GLU:HG2	2:B:332:LEU:HD13	1.91	0.52
2:B:74:GLU:HG2	6:B:628:HOH:O	2.09	0.52
2:B:135:ALA:HB1	2:B:343:LEU:CD1	2.40	0.52
3:C:358:TYR:O	3:C:409:ILE:HD12	2.09	0.52
3:F:64:GLU:CG	3:F:253:LEU:HD21	2.39	0.52
3:F:349:ARG:NH2	3:F:373:ILE:CD1	2.71	0.52
2:E:46[A]:GLN:HB3	2:E:401[A]:THR:OG1	2.09	0.52
2:B:329[B]:ILE:CG1	2:B:471:ILE:HD11	2.40	0.52
1:D:307:LEU:HD23	1:D:308:ARG:O	2.09	0.52
2:B:262:ILE:HG13	2:B:263:PRO:HD2	1.92	0.52
2:B:364:LEU:HD22	3:C:139:GLY:O	2.10	0.52
3:C:39:LYS:NZ	3:C:39:LYS:HB3	2.25	0.52
3:C:41:ASP:OD1	3:C:43:ASN:OD1	2.28	0.52
1:D:234:ASP:OD2	1:D:236:ASP:HB3	2.09	0.52
3:F:64:GLU:HG2	3:F:253:LEU:HD21	1.92	0.52
2:B:80[B]:LYS:HA	2:B:130:GLU:HG2	1.91	0.51
2:B:126[A]:ARG:CD	5:B:504:CL:CL	2.96	0.51
2:B:395[A]:ARG:NH1	2:B:395[A]:ARG:HG3	2.25	0.51
1:D:334:SER:HB3	1:D:426:ASP:OD1	2.10	0.51
2:B:411:ARG:HD3	3:C:226:LEU:HD21	1.90	0.51
3:C:265:GLN:NE2	3:F:324:ARG:HE	2.05	0.51
3:C:349:ARG:NH1	3:C:349:ARG:HG2	2.25	0.51
1:D:466:ARG:NH1	1:D:472:VAL:HG21	2.24	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:374:ARG:HA	1:A:396:GLN:HB2	1.91	0.51
2:B:315:ASN:ND2	2:B:317:ARG:HH21	2.08	0.51
2:B:362:TYR:HE2	2:B:364:LEU:HD23	1.74	0.51
3:F:27:THR:HG23	3:F:40:TRP:HA	1.92	0.51
2:B:300:PHE:H	2:B:342:TYR:HB3	1.74	0.51
3:C:371:TYR:HB3	3:C:420[A]:VAL:HG12	1.93	0.51
3:F:349:ARG:NH1	3:F:349:ARG:HG2	2.26	0.51
2:B:262:ILE:HG23	2:B:265:ARG:CB	2.37	0.51
2:E:431:LEU:HD13	3:F:90:PRO:HB3	1.91	0.51
3:F:76:ILE:HD13	3:F:156:ALA:HB1	1.91	0.51
3:C:457:GLU:O	3:C:461[B]:ARG:HD2	2.11	0.51
1:D:319:ALA:CA	1:D:330:ASN:ND2	2.71	0.51
3:C:76:ILE:HD12	3:C:136[B]:ILE:HG13	1.93	0.51
1:A:316:ARG:HD3	1:A:316:ARG:N	2.25	0.51
1:A:374:ARG:CG	1:A:418:GLU:HG3	2.40	0.51
2:B:302:GLU:HB3	2:E:302:GLU:CB	2.34	0.51
2:E:348:GLU:OE1	2:E:423:LYS:NZ	2.43	0.51
2:B:308:ARG:HH22	1:D:318[B]:ARG:CZ	2.24	0.51
2:B:325:GLN:HG3	1:D:99:PRO:CG	2.41	0.51
3:F:70:GLN:NE2	3:F:74:MET:HE3	2.26	0.51
2:B:129:ARG:HG3	2:B:129:ARG:NH1	2.25	0.50
3:F:68:ASN:HB3	3:F:175:LEU:HD23	1.94	0.50
1:A:324:GLU:HG2	1:A:325:GLN:HG3	1.91	0.50
3:C:253:LEU:HD13	3:C:257:GLN:NE2	2.25	0.50
1:A:37:ILE:HG21	1:A:183:GLU:HG2	1.94	0.50
2:B:16:CYS:C	2:B:18:LEU:HD22	2.30	0.50
3:F:361:HIS:CD2	3:F:430:LYS:HE2	2.46	0.50
2:B:237:LEU:O	2:B:240:ARG:HB2	2.12	0.50
2:B:262:ILE:HD11	1:D:317:SER:O	2.11	0.50
3:C:86:GLY:O	3:C:142:HIS:HA	2.11	0.50
2:E:46[B]:GLN:HG3	2:E:401[B]:THR:CB	2.42	0.50
3:F:244:GLN:HB3	3:F:246:LYS:HZ3	1.76	0.50
2:B:52:VAL:HG21	2:B:369:VAL:HG21	1.94	0.50
2:B:67:PRO:HA	2:B:142:HIS:O	2.12	0.50
3:C:254:GLU:HG3	3:C:255:GLN:N	2.23	0.50
1:D:168:ASP:HA	3:F:15:GLU:OE2	2.12	0.50
2:E:315:ASN:HD21	2:E:317:ARG:NH2	2.06	0.50
2:B:387:GLN:HB3	3:C:194:LYS:HE3	1.93	0.50
3:F:167:LEU:HD13	3:F:172:ARG:HD2	1.93	0.50
3:F:254[B]:GLU:HG2	3:F:255:GLN:H	1.76	0.50
3:F:307:LEU:HD11	3:F:339:VAL:HB	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:12:HIS:CE1	2:B:12:HIS:ND1	2.79	0.49
3:C:57[A]:ARG:HD2	3:C:250:LEU:HD21	1.94	0.49
3:F:307:LEU:HD11	6:F:615:HOH:O	2.10	0.49
3:F:380:GLN:HA	3:F:390:PHE:O	2.11	0.49
3:F:436[B]:ARG:HH11	3:F:436[B]:ARG:CG	2.22	0.49
2:B:128:ILE:HG22	2:B:310:MET:CE	2.43	0.49
2:B:303:THR:OG1	2:B:307:LEU:HD11	2.12	0.49
1:A:315:THR:HG23	1:A:318:ARG:CB	2.42	0.49
2:B:85:GLN:OE1	2:B:126[A]:ARG:NH2	2.42	0.49
2:E:55:ILE:HG12	2:E:158:LEU:CD1	2.42	0.49
2:E:256:GLN:OE1	2:E:256:GLN:HA	2.11	0.49
2:E:258:LEU:HG	2:E:260:ILE:HG13	1.94	0.49
2:E:354:ARG:CZ	2:E:354:ARG:H	2.26	0.49
3:F:214:GLU:HG3	3:F:215:SER:H	1.77	0.49
3:F:313[A]:MET:SD	3:F:332:VAL:HG21	2.53	0.49
1:A:175:TYR:CG	1:A:180:PRO:HG3	2.47	0.49
1:A:473:ARG:CD	2:E:101:ASN:HD21	2.15	0.49
3:F:37[A]:VAL:HG13	6:F:603:HOH:O	2.12	0.49
1:A:468:GLU:HB2	1:A:472:VAL:HG12	1.93	0.49
2:B:121:GLN:NE2	6:B:610:HOH:O	2.46	0.49
2:B:180:PRO:HB3	2:B:250:LYS:HG2	1.93	0.49
3:C:359:VAL:HG23	3:C:434:ALA:HB3	1.94	0.49
1:D:349:ARG:HG3	1:D:349:ARG:NH1	2.26	0.49
3:C:308:ARG:HH21	3:F:318:GLN:HE22	1.59	0.49
2:E:18:LEU:N	2:E:18:LEU:HD12	2.28	0.49
2:E:360:PRO:HA	2:E:408:VAL:O	2.12	0.49
1:A:310:ARG:HB2	1:A:310:ARG:CZ	2.41	0.49
2:B:257[A]:ARG:HH22	1:D:288:ARG:HG2	1.77	0.49
3:C:64:GLU:CG	3:C:253:LEU:HD21	2.43	0.49
3:F:149:ASP:HB2	3:F:150:GLN:NE2	2.28	0.49
1:A:431[A]:SER:OG	2:B:90:PRO:HB3	2.13	0.48
2:B:411:ARG:NH1	3:C:229:GLU:OE2	2.46	0.48
1:D:46:GLN:HB3	1:D:401[B]:THR:CG2	2.41	0.48
3:F:70:GLN:CD	3:F:74:MET:HE3	2.33	0.48
2:B:44:ASP:OD2	2:B:46:GLN:HG2	2.12	0.48
2:B:374:ARG:HG2	2:B:375:GLY:N	2.27	0.48
2:E:119:GLN:HG2	2:E:120:ASP:N	2.20	0.48
3:F:145:TYR:CD1	3:F:253:LEU:CD1	2.96	0.48
1:A:380:GLN:HA	1:A:390:PHE:O	2.13	0.48
1:D:312:ASN:OD1	1:D:315:THR:N	2.46	0.48
1:D:448:LEU:HD12	1:D:463:LYS:HD2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:134:LEU:CD2	2:B:310:MET:HE2	2.42	0.48
2:B:467:ASN:HD21	3:C:115:GLN:HE22	1.61	0.48
2:B:395[B]:ARG:HH11	2:B:395[B]:ARG:HB3	1.78	0.48
1:D:82:ARG:NH2	1:D:148:GLY:HA2	2.29	0.48
2:B:336:ILE:HG23	1:D:308:ARG:HB2	1.95	0.48
2:E:169:GLU:H	2:E:169:GLU:CD	2.16	0.48
1:A:300:PHE:CZ	3:F:304:ILE:HG12	2.49	0.48
2:E:16:CYS:C	2:E:18:LEU:HD12	2.33	0.48
3:C:255:GLN:HG3	3:C:256:GLN:N	2.29	0.47
2:B:465:ILE:CG2	3:C:232:ASN:O	2.58	0.47
1:D:319:ALA:N	1:D:330:ASN:HD21	2.12	0.47
3:F:321:ILE:N	3:F:321:ILE:HD12	2.30	0.47
3:C:70:GLN:OE1	3:C:171:TYR:HE1	1.97	0.47
1:D:128:PHE:CE2	1:D:144:ILE:HG23	2.49	0.47
3:F:65:VAL:CG1	3:F:144:ILE:HG22	2.44	0.47
1:A:90:PRO:HG3	3:C:364:GLN:OE1	2.14	0.47
2:B:388:ASN:O	3:C:194:LYS:HD3	2.15	0.47
3:C:59:ILE:HD12	3:C:250:LEU:CD2	2.44	0.47
3:C:307[A]:LEU:HD12	3:F:335:GLN:O	2.14	0.47
3:F:312:ASN:HD21	3:F:314:THR:CG2	2.26	0.47
3:F:365:ASN:HA	3:F:404:GLN:HE21	1.80	0.47
1:D:364:LEU:HD11	6:D:666:HOH:O	2.15	0.47
2:B:303:THR:OG1	2:B:307:LEU:HD21	2.15	0.47
2:B:307:LEU:HD23	1:D:335:ASN:HB3	1.97	0.47
1:D:128:PHE:HE2	1:D:144:ILE:HG23	1.79	0.47
2:E:89:ILE:CG2	2:E:92:CYS:SG	3.03	0.47
2:E:301:GLU:OE2	2:E:304:ILE:HG22	2.15	0.47
1:A:82:ARG:HH21	1:A:267:ARG:NH1	2.13	0.47
2:B:134:LEU:HD22	2:B:310:MET:HE2	1.97	0.47
3:C:57[A]:ARG:HB3	3:C:59:ILE:HD11	1.97	0.47
1:D:264:GLU:O	1:D:268:GLN:HG2	2.15	0.47
3:F:479:SER:O	3:F:480:GLU:CB	2.63	0.47
2:B:439:ALA:O	2:B:443:ILE:HG13	2.15	0.46
1:D:354:ARG:HG3	1:D:355:GLU:HG3	1.96	0.46
3:F:42:THR:CG2	3:F:53:ALA:HB2	2.45	0.46
2:B:306[A]:SER:OG	4:E:501:GOL:H12	2.15	0.46
3:C:27:THR:CG2	3:C:41:ASP:H	2.29	0.46
3:C:137:PRO:HB2	3:C:140:VAL:CG2	2.44	0.46
2:E:42:LYS:HZ2	2:E:171:PRO:HD2	1.80	0.46
2:E:450:ASN:ND2	3:F:257:GLN:OE1	2.44	0.46
1:D:129[B]:ARG:NH2	1:D:310:ARG:HH12	2.12	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:374[A]:ARG:HD2	3:F:418:GLU:OE2	2.15	0.46
3:C:113:GLN:CB	3:F:465:ASN:OD1	2.63	0.46
2:E:320:ASP:HB2	2:E:321:ILE:HD12	1.98	0.46
1:A:436:ARG:NH2	2:E:97:GLU:OE1	2.49	0.46
2:B:395[A]:ARG:NH1	2:B:395[A]:ARG:CG	2.75	0.46
2:E:431:LEU:HD12	2:E:432:PRO:CD	2.45	0.46
3:F:224:VAL:HG13	3:F:238:VAL:HG12	1.98	0.46
3:C:88:VAL:CG2	3:C:141:VAL:HB	2.43	0.46
3:C:436[A]:ARG:NH2	3:F:94:GLU:OE1	2.49	0.46
2:E:300:PHE:HB2	2:E:342:TYR:CD1	2.51	0.46
3:F:349:ARG:HG2	3:F:349:ARG:HH11	1.81	0.46
2:B:240:ARG:HD2	2:B:240:ARG:HA	1.67	0.46
1:D:411:ARG:HD2	1:D:477:SER:OG	2.16	0.46
2:E:461:ARG:HH21	2:E:465:ILE:CG2	2.26	0.46
2:B:33:GLU:HG2	2:B:248:ARG:CB	2.43	0.46
1:D:433:LEU:HD11	2:E:218[B]:ILE:HD12	1.97	0.46
1:A:84:ILE:HD12	1:A:260:GLN:NE2	2.24	0.46
3:F:137:PRO:HB3	3:F:342[A]:TYR:HE2	1.81	0.46
1:A:29:ARG:HG3	1:A:38:GLU:HG2	1.98	0.45
3:C:436[B]:ARG:HH22	2:E:441:ARG:HH21	1.62	0.45
3:F:105:LYS:HD2	3:F:105:LYS:HA	1.80	0.45
1:D:342:TRP:HA	1:D:342:TRP:CE3	2.51	0.45
2:B:431:LEU:CD1	3:C:90:PRO:HB3	2.41	0.45
3:C:157:VAL:HB	3:C:422:ILE:HG21	1.97	0.45
2:B:157:LEU:HD13	2:B:422:PHE:HB2	1.97	0.45
2:B:395[A]:ARG:HH11	2:B:395[A]:ARG:HG3	1.78	0.45
3:C:359:VAL:HG12	3:C:471:LEU:HD12	1.98	0.45
3:F:119:GLN:O	3:F:119:GLN:HG3	2.16	0.45
3:F:145:TYR:CE2	3:F:147:ASP:HB3	2.51	0.45
3:F:430:LYS:HB3	3:F:430:LYS:HE3	1.83	0.45
3:C:380:GLN:HA	3:C:390:PHE:O	2.17	0.45
1:D:342:TRP:HA	1:D:342:TRP:HE3	1.82	0.45
2:E:363:ASN:OD1	4:E:505:GOL:C1	2.65	0.45
3:F:23:VAL:HG22	3:F:392:ARG:CZ	2.47	0.45
3:C:76:ILE:CD1	3:C:136[A]:ILE:HG13	2.47	0.45
2:E:461:ARG:CA	2:E:465:ILE:HG12	2.43	0.45
3:F:308:ARG:HH12	3:F:311:GLU:CG	2.22	0.45
2:B:467:ASN:ND2	3:C:115:GLN:HE22	2.15	0.45
3:C:182:ASP:CG	3:C:246:LYS:NZ	2.70	0.45
1:D:307:LEU:CD2	1:D:309:LEU:HD23	2.47	0.45
3:F:82:ARG:HH22	3:F:149:ASP:H	1.65	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:213:GLY:HA2	1:A:244:ASN:OD1	2.17	0.45
2:B:340:LEU:HD23	2:B:343:LEU:HD12	1.99	0.45
2:B:461:ARG:HG2	2:B:465:ILE:HD11	1.99	0.45
3:C:124:ARG:HD2	6:C:687:HOH:O	2.17	0.45
3:F:51:GLY:HA3	3:F:161:ASN:ND2	2.32	0.45
1:A:28:ASN:HB2	1:A:39:SER:OG	2.17	0.45
1:A:30:ILE:HD13	1:A:30:ILE:N	2.32	0.45
3:C:80:LYS:HG2	3:C:81:GLY:N	2.32	0.45
3:C:307[B]:LEU:CD2	3:F:335:GLN:HG2	2.45	0.44
1:D:66:LEU:HD13	1:D:178:GLY:HA3	1.99	0.44
3:F:394:ILE:CD1	3:F:417:PHE:CE1	3.00	0.44
2:B:80[A]:LYS:HA	2:B:130:GLU:HG2	1.97	0.44
2:E:362:TYR:CZ	2:E:431:LEU:HD23	2.52	0.44
1:A:129:ARG:NH2	1:A:274:GLU:OE2	2.50	0.44
1:D:74:LYS:HG3	6:D:669:HOH:O	2.17	0.44
2:E:465:ILE:CG2	3:F:232:ASN:O	2.61	0.44
3:F:21:LEU:HA	3:F:46:GLN:HE21	1.82	0.44
3:C:17:ASN:ND2	6:C:606:HOH:O	2.42	0.44
2:E:175:TYR:CD2	2:E:180:PRO:HG2	2.52	0.44
3:F:76:ILE:CD1	3:F:156:ALA:CB	2.89	0.44
1:A:20:ARG:HD2	1:A:20:ARG:O	2.18	0.44
2:B:402:ILE:HD13	2:B:408:VAL:CG2	2.46	0.44
2:B:434:ALA:HB2	3:C:231:TYR:CZ	2.52	0.44
3:C:307[A]:LEU:HD11	3:C:339:VAL:HB	1.99	0.44
1:D:431[B]:SER:OG	2:E:90:PRO:HB3	2.17	0.44
2:B:334:SER:HB3	2:B:426:ASP:OD1	2.17	0.44
2:B:469:THR:O	2:B:469:THR:HG23	2.18	0.44
3:C:329:ILE:HD11	3:C:472[A]:VAL:CG1	2.48	0.44
1:A:374:ARG:HG3	1:A:418:GLU:HG3	1.99	0.44
2:B:384:ASP:HA	3:C:174:PHE:CD2	2.52	0.44
3:C:87[B]:VAL:HG13	3:C:140:VAL:HG12	1.95	0.44
1:D:334:SER:HB2	1:D:341[B]:ARG:CG	2.46	0.44
2:E:461:ARG:NH2	2:E:465:ILE:HG21	2.31	0.44
3:C:373:ILE:HG13	3:C:418:GLU:HB2	1.99	0.44
3:F:368:ARG:HG2	3:F:423:LYS:HG2	2.00	0.44
2:B:55[B]:ILE:CG2	2:B:156:THR:HB	2.46	0.44
2:B:378:ARG:NH1	2:B:391:ASP:OD1	2.46	0.44
1:D:433:LEU:HD21	2:E:218[B]:ILE:HD11	2.00	0.44
2:E:374:ARG:HD3	2:E:418:GLU:OE2	2.18	0.44
3:F:214:GLU:CG	3:F:215:SER:N	2.80	0.44
2:B:465:ILE:HG22	3:C:232:ASN:HB3	1.98	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:302:GLU:CG	1:D:304:ILE:HG12	2.48	0.43
3:F:65:VAL:HG12	3:F:144:ILE:HG22	1.99	0.43
2:B:126[A]:ARG:NH1	2:B:310:MET:HE3	2.27	0.43
1:A:31:GLU:O	1:A:249[A]:ARG:HD2	2.17	0.43
3:C:304:ILE:HD11	3:C:307[B]:LEU:HD11	2.00	0.43
2:E:351:THR:HG23	2:E:418:GLU:HG2	2.00	0.43
3:F:22:ASN:HB3	3:F:392:ARG:HH12	1.82	0.43
3:F:84:LEU:HD11	3:F:262:ARG:CD	2.44	0.43
1:A:300:PHE:CE2	3:F:304:ILE:HG12	2.54	0.43
2:B:224:GLN:HE22	2:B:239:ARG:HE	1.66	0.43
2:B:257[A]:ARG:NE	1:D:288:ARG:HE	2.15	0.43
2:B:329[B]:ILE:HD11	2:B:471:ILE:CD1	2.46	0.43
2:E:327:GLY:HA3	2:E:351:THR:O	2.18	0.43
3:F:88:VAL:CG2	3:F:141:VAL:HB	2.48	0.43
2:E:21:LEU:HD23	2:E:46[A]:GLN:HG2	2.00	0.43
2:E:262:ILE:HG13	2:E:263:PRO:CD	2.38	0.43
3:F:82:ARG:NH2	3:F:150:GLN:HE21	2.16	0.43
3:F:89:ILE:HG22	3:F:92:CYS:SG	2.58	0.43
2:B:358:GLN:OE1	2:B:410:LYS:HD2	2.18	0.43
3:C:224:VAL:CG1	3:C:235:VAL:HG13	2.49	0.43
1:D:361:HIS:CE1	1:D:408:VAL:HG13	2.53	0.43
2:E:21:LEU:HG	2:E:389:ILE:HD12	2.01	0.43
2:E:307:LEU:HD23	2:E:307:LEU:N	2.34	0.43
1:A:300:PHE:HD1	3:F:90:PRO:O	2.01	0.43
3:C:76:ILE:HD11	3:C:136[B]:ILE:HD12	1.99	0.43
3:C:182:ASP:HB3	3:C:246:LYS:NZ	2.33	0.43
3:F:33:GLU:OE1	3:F:247:ARG:HD2	2.19	0.43
1:A:181:ASP:OD2	4:A:501:GOL:H11	2.19	0.43
1:D:67:PRO:HA	1:D:142:HIS:O	2.19	0.43
1:D:301[A]:GLU:HA	1:D:305:CYS:HB2	2.00	0.43
2:E:329[A]:ILE:HD11	2:E:471:ILE:CD1	2.45	0.43
1:A:453:GLN:HB2	2:B:240:ARG:HH21	1.82	0.43
2:B:260:ILE:CA	2:B:267:GLN:HE21	2.32	0.43
1:D:31:GLU:H	1:D:186:ARG:HH12	1.67	0.43
1:D:85[A]:THR:OG1	1:D:144:ILE:HG13	2.19	0.43
1:D:282:GLN:HA	1:D:282:GLN:OE1	2.19	0.43
3:F:404:GLN:O	3:F:405:PHE:HB2	2.19	0.43
1:A:20:ARG:HD3	1:A:22:ASN:ND2	2.33	0.42
1:A:307:LEU:HD11	1:A:339:VAL:HB	2.00	0.42
1:D:29:ARG:HD2	1:D:36:GLN:CD	2.38	0.42
1:D:212:GLN:HB3	1:D:242:GLN:HE22	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:373:ILE:O	2:E:396:GLN:HG3	2.18	0.42
3:C:65:VAL:HG22	3:C:144:ILE:HB	2.00	0.42
3:C:145:TYR:CE2	3:C:147:ASP:HB3	2.54	0.42
3:C:158:VAL:HG22	3:C:160:GLN:OE1	2.20	0.42
2:E:430[B]:ARG:HD3	4:E:505:GOL:O1	2.20	0.42
3:F:258[B]:ILE:H	3:F:258[B]:ILE:HG12	1.61	0.42
2:B:99:ASN:HD21	1:D:473:ARG:NE	1.92	0.42
2:B:126[A]:ARG:HD2	5:B:504:CL:CL	2.56	0.42
3:F:65:VAL:HA	3:F:250:LEU:HD23	2.01	0.42
2:B:39:LYS:HD3	2:B:55[A]:ILE:HG23	2.02	0.42
2:B:89:ILE:HG21	2:B:304:ILE:HG23	2.02	0.42
1:D:124:LYS:HE2	1:D:126:ARG:NH1	2.33	0.42
3:F:64:GLU:HB3	3:F:253:LEU:HD11	2.01	0.42
3:F:128:ILE:C	3:F:129:ARG:HG3	2.40	0.42
1:A:411:ARG:NH1	1:A:474:SER:OG	2.51	0.42
3:C:264:GLU:HB3	3:F:316:ARG:O	2.19	0.42
1:D:349:ARG:HG3	1:D:349:ARG:HH11	1.84	0.42
2:E:329[A]:ILE:CD1	2:E:471:ILE:HD11	2.46	0.42
3:F:84:LEU:HD13	3:F:125[A]:VAL:CG1	2.40	0.42
3:F:358:TYR:CE1	3:F:471:LEU:HD11	2.54	0.42
2:B:80[B]:LYS:NZ	6:B:617:HOH:O	2.53	0.42
2:B:430:ARG:O	1:D:299:GLY:N	2.52	0.42
3:C:58:THR:C	3:C:59:ILE:HD13	2.39	0.42
3:C:461[B]:ARG:NH2	3:F:110:SER:HG	2.18	0.42
1:D:37:ILE:HG21	1:D:183:GLU:HG2	2.01	0.42
3:F:394:ILE:HD11	3:F:417:PHE:CE1	2.55	0.42
3:C:395[A]:ARG:HE	3:C:395[A]:ARG:HB3	1.36	0.42
1:D:29:ARG:HD2	1:D:36:GLN:OE1	2.19	0.42
2:E:384:ASP:HA	3:F:174:PHE:CE2	2.55	0.42
1:D:364:LEU:HD11	1:D:431[A]:SER:HB2	2.02	0.42
1:D:370:VAL:O	1:D:399:VAL:HA	2.20	0.42
2:E:380:GLN:HB2	2:E:409:ILE:HG22	2.01	0.42
2:E:425:ASN:HD21	3:F:163:LYS:NZ	2.18	0.42
3:F:436[B]:ARG:CG	3:F:436[B]:ARG:NH1	2.80	0.42
6:B:604:HOH:O	3:C:188:GLN:HG2	2.20	0.42
3:C:88:VAL:O	3:C:140:VAL:CG1	2.67	0.42
3:F:20:ARG:HG3	3:F:20:ARG:NH1	2.31	0.42
1:A:336:THR:HB	2:E:308:ARG:CD	2.50	0.42
1:A:474:SER:OG	2:B:229:ASP:OD2	2.32	0.42
2:B:329[B]:ILE:HD13	2:B:329[B]:ILE:HG21	1.84	0.42
2:E:42:LYS:HZ2	2:E:171:PRO:CD	2.33	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:79:ILE:HD11	2:E:155:VAL:HG21	2.01	0.42
3:F:30:ILE:HG23	3:F:181:PRO:CD	2.50	0.42
3:F:137:PRO:O	3:F:140:VAL:HG22	2.20	0.42
1:A:318:ARG:HG2	1:A:318:ARG:HH11	1.85	0.41
3:C:59:ILE:HD13	3:C:59:ILE:N	2.34	0.41
2:E:465:ILE:HG22	3:F:232:ASN:HB3	2.01	0.41
3:F:64:GLU:HB3	3:F:253:LEU:HD21	2.02	0.41
3:F:84:LEU:HD11	3:F:262:ARG:CG	2.50	0.41
3:F:86:GLY:HA3	3:F:143:TRP:CE2	2.55	0.41
1:D:307:LEU:HD22	1:D:309:LEU:HD23	2.02	0.41
2:E:363:ASN:OD1	4:E:505:GOL:H12	2.20	0.41
3:F:359:VAL:HG11	3:F:471:LEU:HA	2.01	0.41
1:A:161:ASN:O	1:A:161:ASN:CG	2.58	0.41
1:A:239:ARG:HD3	6:A:609:HOH:O	2.19	0.41
1:A:338:PRO:HG3	2:E:338:PRO:HG3	2.02	0.41
2:B:128:ILE:HG22	2:B:310:MET:HE2	2.03	0.41
2:B:159:ASP:OD1	2:B:162:ASN:HB2	2.20	0.41
3:C:64:GLU:HB3	3:C:253:LEU:HD21	2.03	0.41
3:C:76:ILE:HD12	3:C:136[A]:ILE:CG1	2.49	0.41
3:C:326:ALA:HB1	3:C:472[B]:VAL:HG12	2.03	0.41
3:C:349:ARG:HH21	3:C:373:ILE:HD11	1.81	0.41
1:D:124:LYS:HE2	1:D:126:ARG:CZ	2.50	0.41
3:F:376:ASN:HB3	3:F:395[A]:ARG:HD2	2.03	0.41
1:A:349:ARG:NH1	1:A:351:ASP:OD1	2.37	0.41
1:A:357:LEU:HD22	1:A:474:SER:HB2	2.03	0.41
2:B:370:ILE:HD11	2:B:402:ILE:CD1	2.51	0.41
1:D:74:LYS:HD2	6:D:672:HOH:O	2.20	0.41
1:D:124:LYS:HE2	1:D:126:ARG:HH12	1.85	0.41
1:D:411:ARG:HD2	1:D:477:SER:CB	2.51	0.41
1:D:476:ARG:HB2	2:E:229:ASP:OD1	2.21	0.41
1:A:260:GLN:OE1	1:A:262:ARG:HD3	2.20	0.41
1:A:316:ARG:HA	1:A:328:ARG:HH12	1.86	0.41
3:C:23:VAL:CG1	3:C:394:ILE:CD1	2.99	0.41
3:C:372:VAL:HG12	3:C:396:GLN:HA	2.02	0.41
1:D:166:GLN:O	4:D:502:GOL:H31	2.20	0.41
1:D:352:LEU:HD21	1:D:471:LEU:HD22	2.02	0.41
1:D:476:ARG:HB2	2:E:229:ASP:OD2	2.21	0.41
2:B:11:ARG:HG2	2:B:11:ARG:NH1	2.34	0.41
1:D:382:VAL:HA	1:D:387:ASN:O	2.21	0.41
2:E:55:ILE:HG12	2:E:158:LEU:HD11	2.02	0.41
3:F:466:ARG:HD3	3:F:466:ARG:HA	1.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:452:TYR:O	2:B:453:ARG:HB2	2.20	0.41
3:C:349:ARG:HG2	3:C:349:ARG:HH11	1.86	0.41
3:C:373:ILE:HG13	3:C:374:ARG:N	2.35	0.41
3:C:395[B]:ARG:CZ	3:C:398:ASN:OD1	2.68	0.41
1:D:124:LYS:CE	1:D:126:ARG:HH22	2.31	0.41
3:F:70:GLN:NE2	3:F:74:MET:CE	2.84	0.41
2:B:362:TYR:CE2	2:B:364:LEU:CD2	2.97	0.41
1:D:62:ASN:ND2	1:D:256:GLY:O	2.46	0.41
1:A:39:SER:CB	1:A:55:ILE:CD1	2.98	0.41
2:B:135:ALA:HB1	2:B:343:LEU:HD11	2.01	0.41
2:B:402:ILE:HD13	2:B:408:VAL:CB	2.51	0.41
3:C:191:LYS:HE2	3:C:191:LYS:HB2	1.68	0.41
3:C:365:ASN:HA	3:C:404:GLN:HE21	1.85	0.41
2:E:42:LYS:NZ	2:E:171:PRO:HD2	2.36	0.41
2:E:255:GLU:O	2:E:256:GLN:HB2	2.21	0.41
3:F:82:ARG:HH22	3:F:150:GLN:HE21	1.69	0.41
3:F:307:LEU:HA	3:F:307:LEU:HD12	1.83	0.41
3:F:436[A]:ARG:CB	3:F:470:THR:HG22	2.40	0.41
2:B:378:ARG:HH11	2:B:378:ARG:CG	2.30	0.41
2:B:441:ARG:HG2	3:C:94:GLU:OE2	2.21	0.41
3:C:137:PRO:HB2	3:C:140:VAL:HG21	2.03	0.41
3:C:161:ASN:OD1	4:C:501:GOL:C1	2.68	0.41
3:C:457:GLU:OE1	3:C:457:GLU:N	2.54	0.41
3:F:65:VAL:CG1	3:F:144:ILE:H	2.20	0.41
3:F:167:LEU:HD13	3:F:172:ARG:CD	2.50	0.41
3:F:182:ASP:C	3:F:183:GLU:HG3	2.41	0.41
1:A:20:ARG:HD3	1:A:22:ASN:CG	2.41	0.40
2:B:315:ASN:HD21	2:B:317:ARG:NH2	2.17	0.40
3:C:65:VAL:CG1	3:C:250:LEU:CD2	2.85	0.40
1:D:260:GLN:CG	1:D:262:ARG:HD3	2.51	0.40
1:D:476:ARG:HB2	2:E:229:ASP:CG	2.41	0.40
2:E:62:ARG:O	2:E:254:VAL:HG22	2.20	0.40
3:F:373:ILE:HD11	3:F:418:GLU:CB	2.50	0.40
1:A:361:HIS:CE1	1:A:408:VAL:HG13	2.56	0.40
1:A:429:GLN:HE21	2:B:90:PRO:HG2	1.85	0.40
2:B:262:ILE:HG13	2:B:263:PRO:CD	2.50	0.40
2:B:431:LEU:HD12	2:B:432:PRO:HD2	2.02	0.40
3:C:74:MET:HG2	3:C:76:ILE:HD11	2.02	0.40
3:C:347:ALA:HA	3:C:421:SER:O	2.21	0.40
1:D:301[B]:GLU:HA	1:D:305:CYS:HB2	2.03	0.40
3:F:303:THR:O	3:F:306:SER:N	2.45	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:349:ARG:HG3	1:A:349:ARG:HH11	1.87	0.40
2:B:46:GLN:HB2	2:B:401:THR:HB	2.02	0.40
2:B:331:THR:HG21	1:D:302:GLU:HB3	2.03	0.40
3:C:76:ILE:CD1	3:C:136[B]:ILE:CD1	3.00	0.40
3:C:329:ILE:HD11	3:C:472[B]:VAL:HG22	2.02	0.40
1:D:226:PHE:CE1	3:F:411[A]:ARG:HB2	2.56	0.40
2:E:236:ASP:O	2:E:240[B]:ARG:HG2	2.21	0.40
3:F:74:MET:HE2	3:F:158:VAL:HG22	2.03	0.40
2:B:133:ILE:O	2:B:310:MET:HA	2.20	0.40
3:C:20:ARG:HD2	3:C:21:LEU:O	2.21	0.40
3:C:179:GLY:O	3:C:248:GLY:HA2	2.22	0.40
1:D:411:ARG:HD2	1:D:477:SER:HB3	2.03	0.40
3:F:145:TYR:CD1	3:F:253:LEU:HD11	2.56	0.40
1:A:132:ASP:HA	1:A:312:ASN:HA	2.03	0.40
2:B:101:ASN:O	2:B:102:ARG:C	2.59	0.40
2:B:124:LYS:HE2	6:B:616:HOH:O	2.20	0.40
2:B:247:LYS:HE2	2:B:247:LYS:HB2	1.85	0.40
2:B:437:ASN:HD22	2:B:437:ASN:HA	1.71	0.40
1:D:100:GLN:HA	1:D:119:GLN:HE22	1.86	0.40
2:E:21:LEU:CD2	2:E:46[A]:GLN:HG2	2.52	0.40
2:E:126:ARG:HB3	2:E:310:MET:HE3	2.04	0.40
3:F:94:GLU:OE1	3:F:94:GLU:N	2.49	0.40

All (1) 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:E:415:GLU:OE2	2:E:456:ARG:NH2[2_655]	2.17	0.03

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	403/493 (82%)	390 (97%)	12 (3%)	1 (0%)	47	38
1	D	415/493 (84%)	402 (97%)	12 (3%)	1 (0%)	47	38
2	B	391/494 (79%)	376 (96%)	14 (4%)	1 (0%)	41	31
2	E	384/494 (78%)	369 (96%)	14 (4%)	1 (0%)	41	31
3	C	422/493 (86%)	406 (96%)	16 (4%)	0	100	100
3	F	405/493 (82%)	391 (96%)	13 (3%)	1 (0%)	47	38
All	All	2420/2960 (82%)	2334 (96%)	81 (3%)	5 (0%)	47	38

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	305	CYS
3	F	114	SER
1	A	307	LEU
1	D	307	LEU
2	E	167	LEU

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	350/422 (83%)	336 (96%)	14 (4%)	31	21
1	D	365/422 (86%)	356 (98%)	9 (2%)	47	39
2	B	338/422 (80%)	317 (94%)	21 (6%)	18	8
2	E	332/422 (79%)	319 (96%)	13 (4%)	32	22
3	C	368/420 (88%)	347 (94%)	21 (6%)	20	10
3	F	353/420 (84%)	341 (97%)	12 (3%)	37	27
All	All	2106/2528 (83%)	2016 (96%)	90 (4%)	32	18

All (90) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	20	ARG
1	A	74	LYS
1	A	80	ARG
1	A	226	PHE
1	A	240	ARG
1	A	260	GLN
1	A	265	ARG
1	A	278	ARG
1	A	324	GLU
1	A	328	ARG
1	A	341[A]	ARG
1	A	341[B]	ARG
1	A	358	TYR
1	A	376	ARG
2	B	19	ASP
2	B	24	LEU
2	B	43	ASN
2	B	97	GLU
2	B	102	ARG
2	B	124	LYS
2	B	142	HIS
2	B	157	LEU
2	B	170	ASN
2	B	236	ASP
2	B	255	GLU
2	B	257[A]	ARG
2	B	257[B]	ARG
2	B	266	GLN
2	B	300	PHE
2	B	301	GLU
2	B	304	ILE
2	B	378	ARG
2	B	395[A]	ARG
2	B	395[B]	ARG
2	B	415	GLU
3	C	17	ASN
3	C	19	ASP
3	C	20	ARG
3	C	22	ASN
3	C	129	ARG
3	C	149	ASP
3	C	163	LYS
3	C	180	GLN

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Mol	Chain	Res	Type
3	C	240[A]	ARG
3	C	240[B]	ARG
3	C	243	GLN
3	C	262	ARG
3	C	264	GLU
3	C	309[A]	LEU
3	C	309[B]	LEU
3	C	392	ARG
3	C	395[A]	ARG
3	C	395[B]	ARG
3	C	436[A]	ARG
3	C	436[B]	ARG
3	C	465	ASN
1	D	129[A]	ARG
1	D	129[B]	ARG
1	D	226	PHE
1	D	257	ARG
1	D	267	ARG
1	D	289	ARG
1	D	354	ARG
1	D	374	ARG
1	D	378	ARG
2	E	11	ARG
2	E	30	LYS
2	E	97	GLU
2	E	99	ASN
2	E	124	LYS
2	E	142	HIS
2	E	181	ASP
2	E	236	ASP
2	E	307	LEU
2	E	308	ARG
2	E	310	MET
2	E	430[A]	ARG
2	E	430[B]	ARG
3	F	20	ARG
3	F	44	GLN
3	F	57	ARG
3	F	82	ARG
3	F	163	LYS
3	F	308	ARG
3	F	313[A]	MET

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Mol	Chain	Res	Type
3	F	313[B]	MET
3	F	382	SER
3	F	430	LYS
3	F	436[A]	ARG
3	F	436[B]	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (24) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	12	HIS
1	A	260	GLN
1	A	325	GLN
1	A	344	GLN
2	B	45	GLN
2	B	99	ASN
2	B	170	ASN
2	B	224	GLN
2	B	467	ASN
3	C	115	GLN
3	C	193	GLN
3	C	241	GLN
3	C	464	HIS
1	D	325	GLN
1	D	330	ASN
2	E	119	GLN
2	E	429	GLN
3	F	46	GLN
3	F	70	GLN
3	F	150	GLN
3	F	151	GLN
3	F	312	ASN
3	F	318	GLN
3	F	378	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 18 ligands modelled in this entry, 2 are monoatomic - leaving 16 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
4	GOL	E	501	-	5,5,5	0.85	0	5,5,5	1.10	1 (20%)
4	GOL	E	505	-	5,5,5	0.91	0	5,5,5	1.17	1 (20%)
4	GOL	B	501	-	5,5,5	0.71	0	5,5,5	1.20	1 (20%)
4	GOL	A	501	-	5,5,5	0.79	0	5,5,5	1.16	0
4	GOL	E	502	-	5,5,5	0.65	0	5,5,5	0.83	0
4	GOL	F	503	-	5,5,5	0.83	0	5,5,5	1.04	0
4	GOL	D	502	-	5,5,5	0.79	0	5,5,5	0.93	0
4	GOL	E	504	-	5,5,5	1.10	0	5,5,5	1.23	1 (20%)
4	GOL	F	501	-	5,5,5	0.86	0	5,5,5	0.93	0
4	GOL	C	501	-	5,5,5	0.70	0	5,5,5	1.09	0
4	GOL	E	503	-	5,5,5	0.52	0	5,5,5	0.63	0
4	GOL	F	502	-	5,5,5	0.95	0	5,5,5	1.03	0
4	GOL	B	503	-	5,5,5	0.92	0	5,5,5	1.22	1 (20%)
4	GOL	B	502	-	5,5,5	1.11	0	5,5,5	1.00	0
4	GOL	A	502	-	5,5,5	0.94	0	5,5,5	1.26	1 (20%)
4	GOL	C	502	-	5,5,5	1.07	0	5,5,5	1.06	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	GOL	E	501	-	-	2/4/4/4	-
4	GOL	E	505	-	-	0/4/4/4	-
4	GOL	B	501	-	-	2/4/4/4	-
4	GOL	A	501	-	-	3/4/4/4	-
4	GOL	E	502	-	-	2/4/4/4	-
4	GOL	F	503	-	-	0/4/4/4	-
4	GOL	D	502	-	-	2/4/4/4	-
4	GOL	E	504	-	-	2/4/4/4	-
4	GOL	F	501	-	-	2/4/4/4	-
4	GOL	C	501	-	-	2/4/4/4	-
4	GOL	E	503	-	-	2/4/4/4	-
4	GOL	F	502	-	-	0/4/4/4	-
4	GOL	B	503	-	-	0/4/4/4	-
4	GOL	B	502	-	-	0/4/4/4	-
4	GOL	A	502	-	-	4/4/4/4	-
4	GOL	C	502	-	-	0/4/4/4	-

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	B	503	GOL	C3-C2-C1	-2.42	102.31	111.70
4	A	502	GOL	C3-C2-C1	-2.42	102.31	111.70
4	E	504	GOL	C3-C2-C1	-2.38	102.46	111.70
4	E	505	GOL	C3-C2-C1	-2.25	102.94	111.70
4	B	501	GOL	C3-C2-C1	-2.06	103.69	111.70
4	E	501	GOL	C3-C2-C1	-2.06	103.70	111.70

There are no chirality outliers.

All (23) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	501	GOL	O2-C2-C3-O3
4	A	502	GOL	O1-C1-C2-C3
4	A	502	GOL	C1-C2-C3-O3
4	B	501	GOL	C1-C2-C3-O3
4	C	501	GOL	C1-C2-C3-O3
4	C	501	GOL	O2-C2-C3-O3
4	E	501	GOL	C1-C2-C3-O3
4	E	502	GOL	C1-C2-C3-O3

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Mol	Chain	Res	Type	Atoms
4	E	502	GOL	O2-C2-C3-O3
4	E	503	GOL	C1-C2-C3-O3
4	E	504	GOL	O1-C1-C2-C3
4	B	501	GOL	O2-C2-C3-O3
4	E	503	GOL	O2-C2-C3-O3
4	A	501	GOL	C1-C2-C3-O3
4	F	501	GOL	C1-C2-C3-O3
4	A	502	GOL	O2-C2-C3-O3
4	E	501	GOL	O2-C2-C3-O3
4	E	504	GOL	O1-C1-C2-O2
4	F	501	GOL	O2-C2-C3-O3
4	A	502	GOL	O1-C1-C2-O2
4	D	502	GOL	O2-C2-C3-O3
4	A	501	GOL	O1-C1-C2-O2
4	D	502	GOL	C1-C2-C3-O3

There are no ring outliers.

7 monomers are involved in 18 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	E	501	GOL	1	0
4	E	505	GOL	6	0
4	A	501	GOL	2	0
4	D	502	GOL	1	0
4	C	501	GOL	3	0
4	B	502	GOL	1	0
4	C	502	GOL	4	0

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(Å²)	Q<0.9
1	A	407/493 (82%)	0.15	15 (3%)	41	44	26, 36, 58, 72	0
1	D	413/493 (83%)	0.08	12 (2%)	51	55	24, 35, 58, 85	0
2	B	387/494 (78%)	0.12	15 (3%)	39	42	25, 34, 55, 76	0
2	E	382/494 (77%)	0.10	12 (3%)	49	52	26, 37, 58, 77	0
3	C	414/493 (83%)	0.14	13 (3%)	49	52	25, 35, 56, 77	0
3	F	402/493 (81%)	0.12	13 (3%)	47	50	24, 34, 55, 82	0
All	All	2405/2960 (81%)	0.12	80 (3%)	46	49	24, 35, 57, 85	0

All (80) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	C	182	ASP	4.9
2	E	300	PHE	4.8
2	E	13	PHE	4.7
3	C	116	ARG	4.7
1	D	300	PHE	4.7
1	A	300	PHE	4.3
1	A	475	SER	4.2
2	E	304	ILE	4.2
2	B	299	GLY	4.1
3	F	254[A]	GLU	4.0
2	B	300	PHE	3.9
1	D	342	TRP	3.8
2	B	304	ILE	3.6
2	E	12	HIS	3.6
3	F	184	HIS	3.5
1	A	101	GLN	3.4
2	B	303	THR	3.3
3	F	116	ARG	3.2
3	C	189	GLY	3.2

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Mol	Chain	Res	Type	RSRZ
3	C	183	GLU	3.1
2	E	303	THR	3.1
1	D	272	ARG	3.1
2	E	102	ARG	3.1
1	D	289	ARG	3.0
3	C	11	ARG	3.0
1	A	13	PHE	2.9
1	A	213	GLY	2.9
3	C	112	GLY	2.8
2	B	257[A]	ARG	2.8
1	D	472	VAL	2.8
2	B	244	ASN	2.7
3	C	188	GLN	2.7
2	B	119	GLN	2.7
3	F	303	THR	2.7
3	F	183	GLU	2.6
3	F	255	GLN	2.6
2	B	29[A]	ARG	2.6
1	D	255	GLU	2.6
2	E	256	GLN	2.6
3	C	341[A]	ARG	2.6
1	A	17	ASN	2.5
3	F	256	GLN	2.5
1	D	316	ARG	2.5
2	E	181	ASP	2.5
1	D	476	ARG	2.4
2	B	10	GLN	2.4
1	A	274	GLU	2.4
1	A	12	HIS	2.4
1	A	277	GLU	2.4
3	F	394	ILE	2.4
2	B	342	TYR	2.3
2	B	255	GLU	2.3
2	B	245	GLN	2.3
1	A	14	GLY	2.3
1	D	18	LEU	2.3
3	C	18	LEU	2.3
3	C	342[A]	TYR	2.3
2	B	216	THR	2.3
3	F	302	GLU	2.3
3	F	382	SER	2.3
1	A	414	SER	2.2

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Mol	Chain	Res	Type	RSRZ
2	E	10	GLN	2.2
3	F	342[A]	TYR	2.2
2	E	182	ASP	2.2
3	F	246	LYS	2.2
2	B	102	ARG	2.2
2	B	101	ASN	2.1
1	D	287	GLN	2.1
3	F	114	SER	2.1
1	A	272	ARG	2.1
2	E	235	VAL	2.1
2	E	245	GLN	2.1
1	D	286	ARG	2.1
3	C	302	GLU	2.1
3	C	20	ARG	2.1
1	D	17	ASN	2.1
1	A	304	ILE	2.1
1	A	325	GLN	2.0
3	C	307[A]	LEU	2.0
1	A	186	ARG	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
4	GOL	E	501	6/6	0.62	0.21	60,73,86,86	0
4	GOL	B	503	6/6	0.63	0.25	59,75,86,91	0
4	GOL	F	502	6/6	0.68	0.20	73,88,97,97	0
4	GOL	C	502	6/6	0.71	0.18	54,65,72,73	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	GOL	A	501	6/6	0.73	0.24	53,58,61,74	0
4	GOL	A	502	6/6	0.74	0.21	66,80,85,85	0
4	GOL	E	503	6/6	0.76	0.15	57,69,82,82	0
4	GOL	E	504	6/6	0.77	0.28	58,69,84,84	0
4	GOL	D	502	6/6	0.77	0.23	46,58,69,69	0
4	GOL	F	503	6/6	0.78	0.17	74,89,98,100	0
4	GOL	C	501	6/6	0.82	0.23	47,50,53,57	0
4	GOL	B	502	6/6	0.83	0.25	39,45,49,52	0
4	GOL	E	502	6/6	0.83	0.13	44,57,68,71	0
4	GOL	F	501	6/6	0.90	0.12	48,60,72,72	0
4	GOL	B	501	6/6	0.90	0.17	43,47,50,53	0
4	GOL	E	505	6/6	0.90	0.19	42,51,59,62	0
5	CL	B	504	1/1	0.98	0.05	46,46,46,46	0
5	CL	D	501	1/1	0.98	0.07	37,37,37,37	0

6.5 Other polymers (i)

There are no such residues in this entry.