Full wwPDB X-ray Structure Validation Report (i)

Nov 22, 2023 – 06:16 PM JST

PDB ID	:	7XCM
Title	:	Crystal structure of sulfite MttB structure at 3.2 A resolution
Authors	:	Li, J.; Chan, M.K.
Deposited on	:	2022-03-24
Resolution	:	3.20 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:

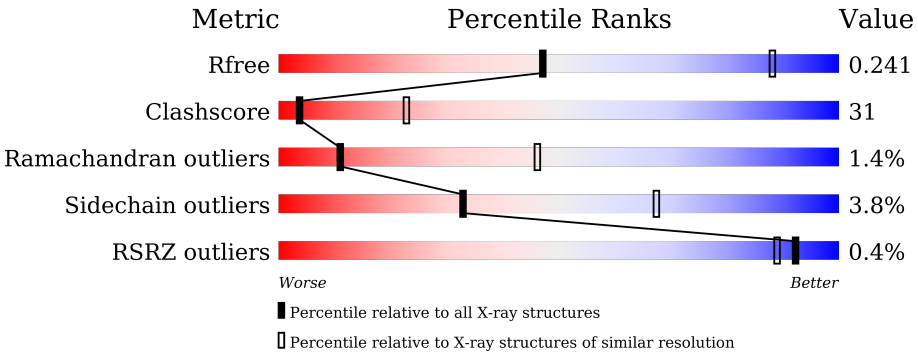
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

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	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	503	51% 44%
1	B	503	49% 48%
1	C	503	43% 50%
1	D	503	% 49% 47%
1	E	503	% 44% 51%
1	F	503	45% 50%

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	603	-	-	X	-
4	GOL	D	604	-	-	X	-
4	GOL	F	603	-	-	X	-

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 22891 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 Trimethylamine methyltransferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	494	Total	C	N	O	S	0	0	0
			3765	2394	629	720	22			
1	B	494	Total	C	N	O	S	0	0	0
			3765	2394	629	720	22			
1	C	493	Total	C	N	O	S	0	0	0
			3757	2389	628	719	21			
1	D	494	Total	C	N	O	S	0	0	0
			3765	2394	629	720	22			
1	E	494	Total	C	N	O	S	0	0	0
			3765	2394	629	720	22			
1	F	494	Total	C	N	O	S	0	0	0
			3765	2394	629	720	22			

There are 54 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	334	LYS	PYL	conflict	UNP A0A0E3QRM4
A	496	GLY	-	expression tag	UNP A0A0E3QRM4
A	497	GLY	-	expression tag	UNP A0A0E3QRM4
A	498	HIS	-	expression tag	UNP A0A0E3QRM4
A	499	HIS	-	expression tag	UNP A0A0E3QRM4
A	500	HIS	-	expression tag	UNP A0A0E3QRM4
A	501	HIS	-	expression tag	UNP A0A0E3QRM4
A	502	HIS	-	expression tag	UNP A0A0E3QRM4
A	503	HIS	-	expression tag	UNP A0A0E3QRM4
B	334	LYS	PYL	conflict	UNP A0A0E3QRM4
B	496	GLY	-	expression tag	UNP A0A0E3QRM4
B	497	GLY	-	expression tag	UNP A0A0E3QRM4
B	498	HIS	-	expression tag	UNP A0A0E3QRM4
B	499	HIS	-	expression tag	UNP A0A0E3QRM4
B	500	HIS	-	expression tag	UNP A0A0E3QRM4
B	501	HIS	-	expression tag	UNP A0A0E3QRM4
B	502	HIS	-	expression tag	UNP A0A0E3QRM4

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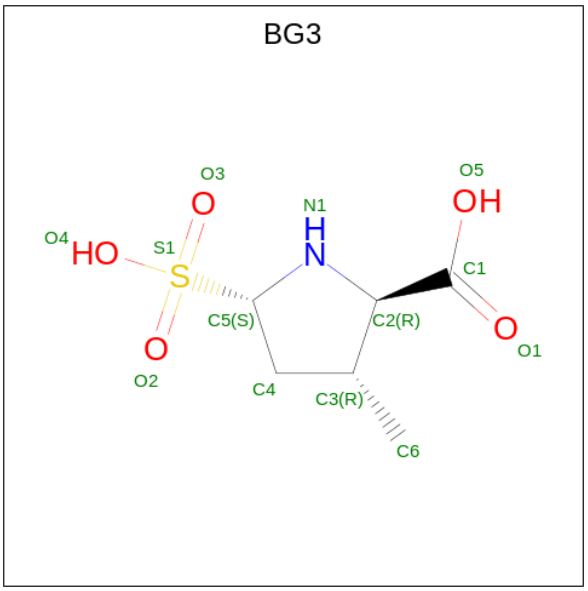
Chain	Residue	Modelled	Actual	Comment	Reference
B	503	HIS	-	expression tag	UNP A0A0E3QRM4
C	334	LYS	PYL	conflict	UNP A0A0E3QRM4
C	496	GLY	-	expression tag	UNP A0A0E3QRM4
C	497	GLY	-	expression tag	UNP A0A0E3QRM4
C	498	HIS	-	expression tag	UNP A0A0E3QRM4
C	499	HIS	-	expression tag	UNP A0A0E3QRM4
C	500	HIS	-	expression tag	UNP A0A0E3QRM4
C	501	HIS	-	expression tag	UNP A0A0E3QRM4
C	502	HIS	-	expression tag	UNP A0A0E3QRM4
C	503	HIS	-	expression tag	UNP A0A0E3QRM4
D	334	LYS	PYL	conflict	UNP A0A0E3QRM4
D	496	GLY	-	expression tag	UNP A0A0E3QRM4
D	497	GLY	-	expression tag	UNP A0A0E3QRM4
D	498	HIS	-	expression tag	UNP A0A0E3QRM4
D	499	HIS	-	expression tag	UNP A0A0E3QRM4
D	500	HIS	-	expression tag	UNP A0A0E3QRM4
D	501	HIS	-	expression tag	UNP A0A0E3QRM4
D	502	HIS	-	expression tag	UNP A0A0E3QRM4
D	503	HIS	-	expression tag	UNP A0A0E3QRM4
E	334	LYS	PYL	conflict	UNP A0A0E3QRM4
E	496	GLY	-	expression tag	UNP A0A0E3QRM4
E	497	GLY	-	expression tag	UNP A0A0E3QRM4
E	498	HIS	-	expression tag	UNP A0A0E3QRM4
E	499	HIS	-	expression tag	UNP A0A0E3QRM4
E	500	HIS	-	expression tag	UNP A0A0E3QRM4
E	501	HIS	-	expression tag	UNP A0A0E3QRM4
E	502	HIS	-	expression tag	UNP A0A0E3QRM4
E	503	HIS	-	expression tag	UNP A0A0E3QRM4
F	334	LYS	PYL	conflict	UNP A0A0E3QRM4
F	496	GLY	-	expression tag	UNP A0A0E3QRM4
F	497	GLY	-	expression tag	UNP A0A0E3QRM4
F	498	HIS	-	expression tag	UNP A0A0E3QRM4
F	499	HIS	-	expression tag	UNP A0A0E3QRM4
F	500	HIS	-	expression tag	UNP A0A0E3QRM4
F	501	HIS	-	expression tag	UNP A0A0E3QRM4
F	502	HIS	-	expression tag	UNP A0A0E3QRM4
F	503	HIS	-	expression tag	UNP A0A0E3QRM4

- Molecule 2 is 3-METHYL-5-SULFO-PYRROLIDINE-2-CARBOXYLIC ACID (three-letter code: BG3) (formula: $C_6H_{11}NO_5S$) (labeled as "Ligand of Interest" by depositor).

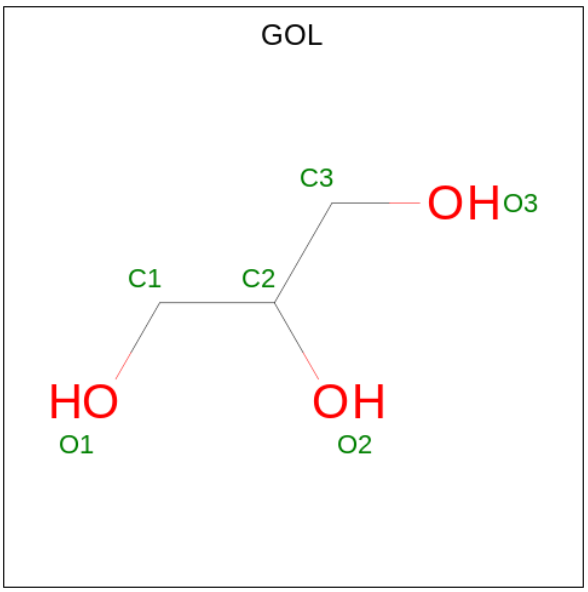


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C N O S 12 6 1 4 1	0	0
2	B	1	Total C N O S 12 6 1 4 1	0	0
2	C	1	Total C N O S 12 6 1 4 1	0	0
2	D	1	Total C N O S 12 6 1 4 1	0	0
2	E	1	Total C N O S 12 6 1 4 1	0	0
2	F	1	Total C N O S 12 6 1 4 1	0	0

- Molecule 3 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total Na 1 1	0	0
3	B	1	Total Na 1 1	0	0
3	C	1	Total Na 1 1	0	0
3	D	1	Total Na 1 1	0	0
3	E	1	Total Na 1 1	0	0
3	F	1	Total Na 1 1	0	0

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



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

- Molecule 5 is water.

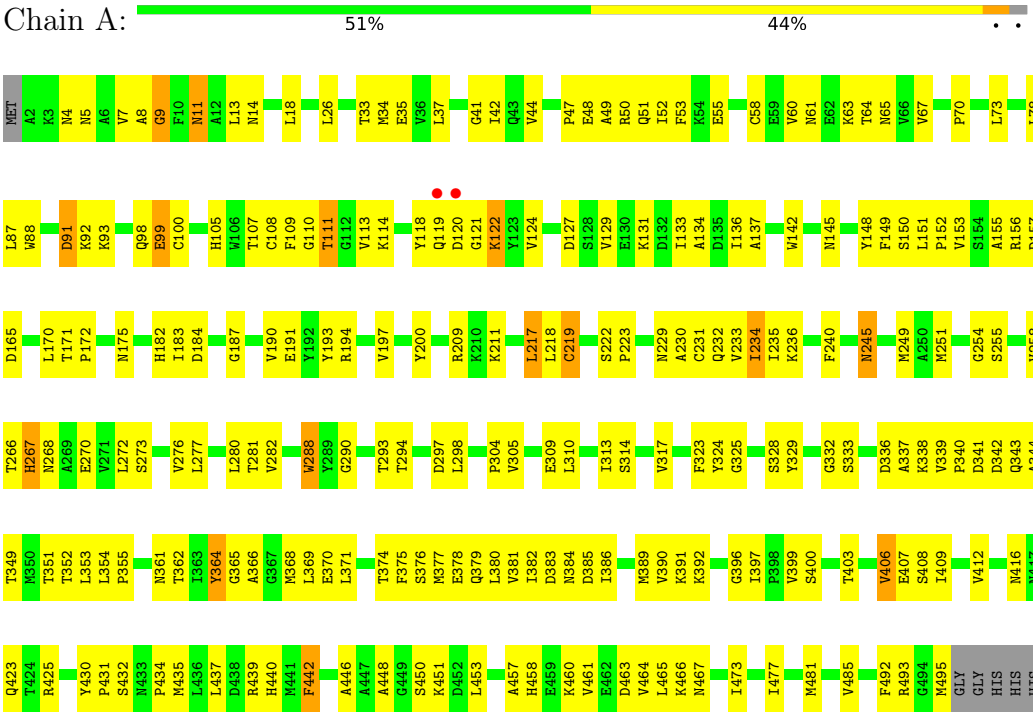
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	30	Total O 30 30	0	0
5	B	28	Total O 28 28	0	0
5	C	23	Total O 23 23	0	0
5	D	29	Total O 29 29	0	0
5	E	25	Total O 25 25	0	0
5	F	30	Total O 30 30	0	0

3 Residue-property plots (i)

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

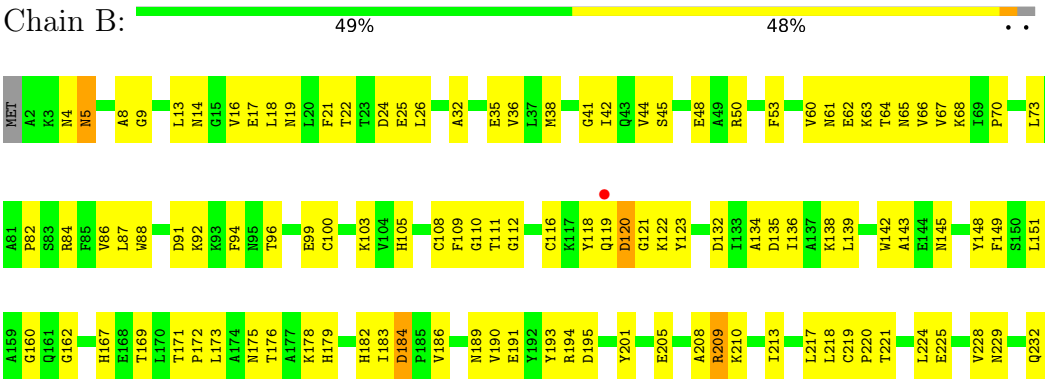
• Molecule 1: Trimethylamine methyltransferase

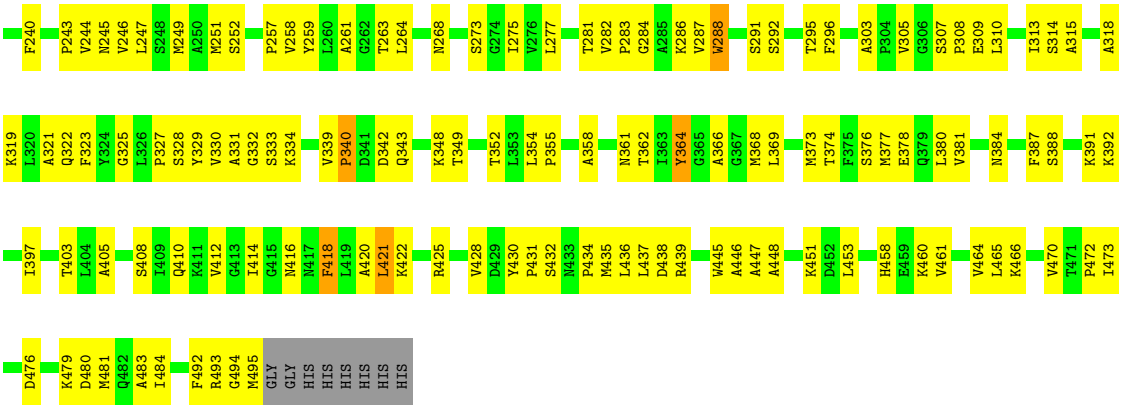
Chain A:



• Molecule 1: Trimethylamine methyltransferase

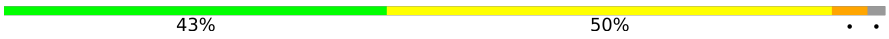
Chain B:

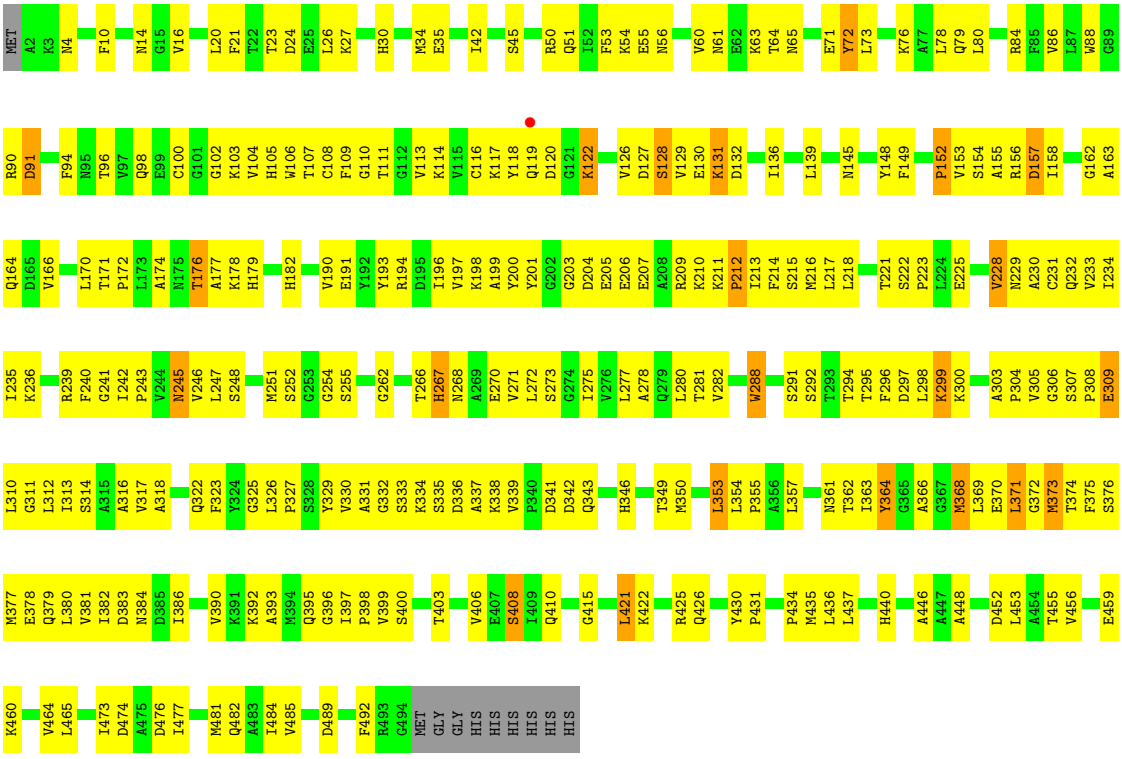




• Molecule 1: Trimethylamine methyltransferase

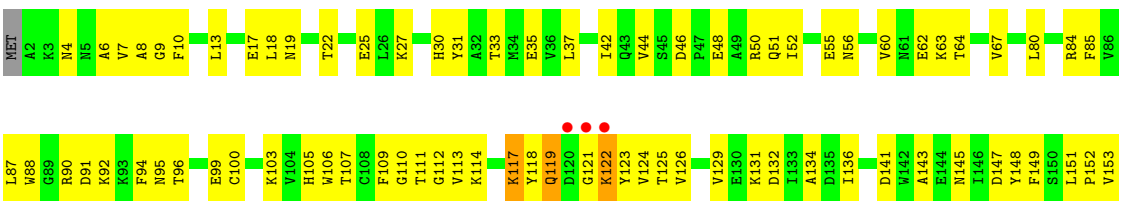
Chain C:

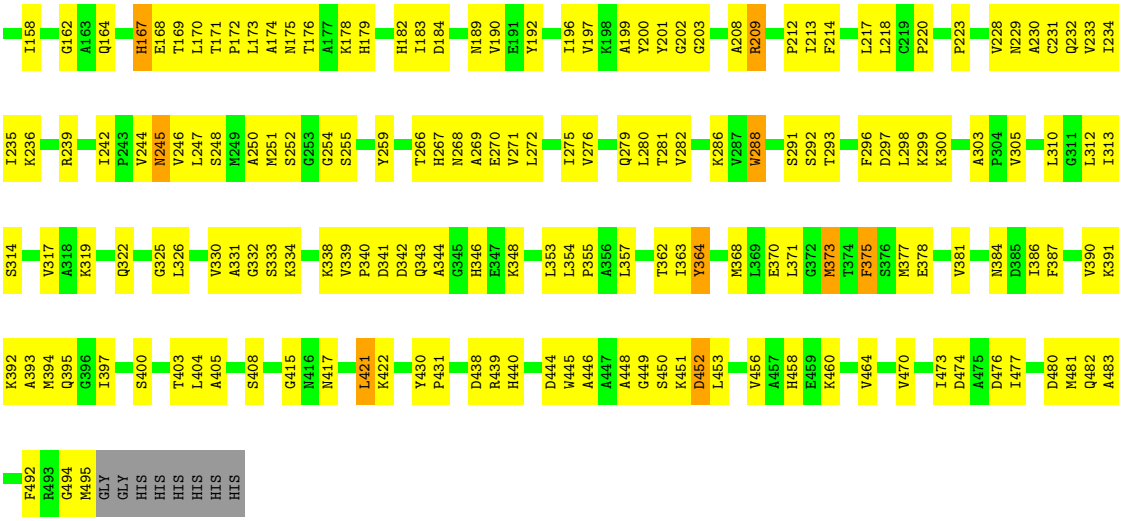




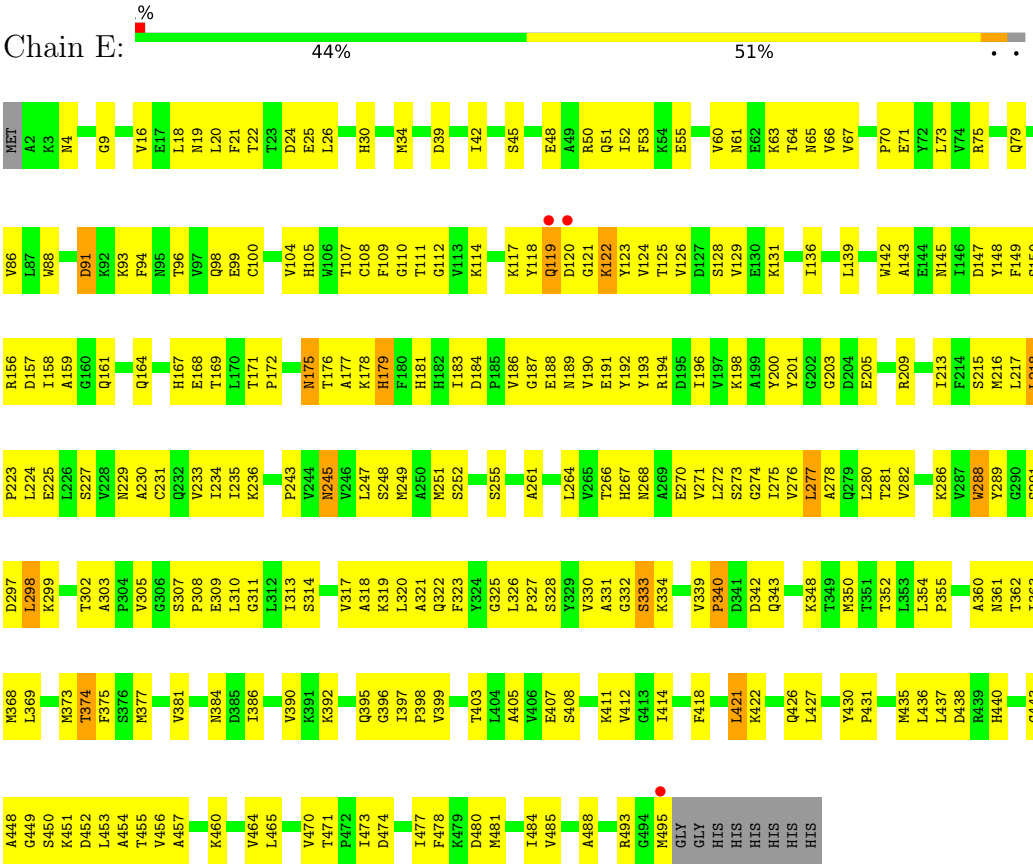
• Molecule 1: Trimethylamine methyltransferase

Chain D:

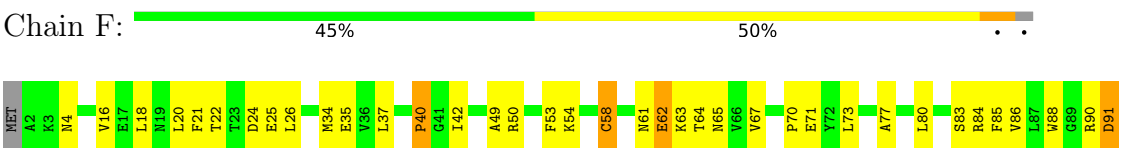


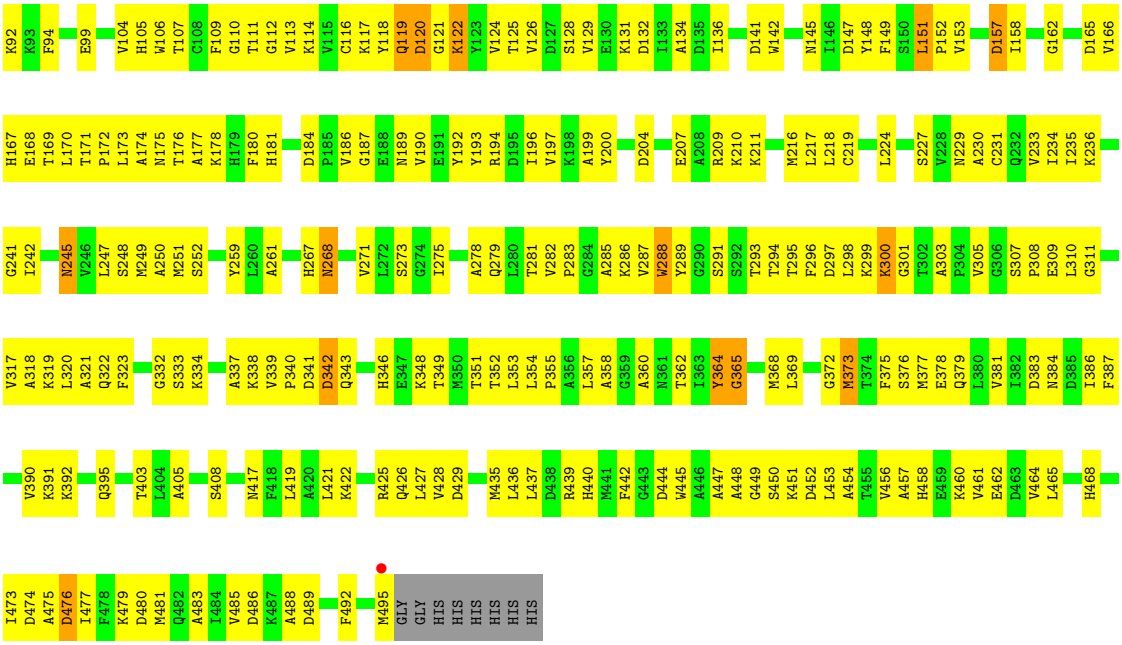


• Molecule 1: Trimethylamine methyltransferase



• Molecule 1: Trimethylamine methyltransferase




K92 K93 F94 E99 V104 H105 W106 T107 C108 F109 G110 T111 G112 V113 K114 V115 C116 K117 Y118 Q119 D120 G121 K122 Y123 V124 T125 V126 D127 S128 V129 E130 K131 D132 I133 A134 D135 I136 D141 W142 N145 I146 D147 Y148 F149 S150 L151 P152 V153 D157 I158 G162 D165 V166
H167 E168 T169 L170 T171 P172 L173 A174 N175 T176 A177 K178 H179 F180 H181 D184 P185 V186 G187 E188 N189 V190 E191 Y192 Y193 R194 D195 I196 V197 K198 A199 Y200 D204 E207 A208 R209 K210 K211 M216 L217 L218 C219 L224 S227 V228 N229 A230 C231 Q232 V233 I234 I235 K236
G241 I242 M245 V246 L247 S248 M249 A250 M251 S252 Y259 L260 A261 H267 N268 V271 L272 S273 G274 I275 A278 Q279 L280 T281 V282 P283 G284 A285 K286 V287 W288 Y289 G290 S291 S292 T293 T294 T295 F296 D297 L298 K299 K300 G301 T302 A303 P304 V305 G306 S307 P308 E309 L310 G311
V317 A318 K319 L320 A321 Q322 F323 G332 S333 K334 A337 K338 V339 P340 D341 D342 Q343 H346 E347 K348 T349 M350 T351 T352 L353 L354 P355 A356 L357 A358 G359 A360 N361 T362 I363 Y364 G365 M368 L369 G372 M373 T374 F375 S376 M377 E378 Q379 L380 V381 I382 D383 N384 D385 I386 F387
V390 K391 K392 Q395 T403 L404 A405 S408 N417 F418 L419 A420 L421 K422 R425 Q426 L427 V428 D429 M435 L436 L437 D438 R439 H440 M441 F442 G443 D444 W445 A446 A447 A448 G449 S450 K451 D452 L453 A454 T455 V456 A457 H458 E459 K460 V461 E462 D463 V464 L465 H468
I473 D474 A475 D476 I477 F478 K479 D480 M481 Q482 A483 I484 V485 D486 K487 A488 D489 F492 M495 GLY GLY HIS HIS HIS HIS HIS HIS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 32 2 1	Depositor
Cell constants a, b, c, α, β, γ	174.84Å 174.84Å 300.12Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	20.00 – 3.20 19.95 – 3.20	Depositor EDS
% Data completeness (in resolution range)	84.5 (20.00-3.20) 84.5 (19.95-3.20)	Depositor EDS
R_{merge}	0.20	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.24 (at 3.22Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.167 , 0.243 0.166 , 0.241	Depositor DCC
R_{free} test set	7479 reflections (10.10%)	wwPDB-VP
Wilson B-factor (Å^2)	55.4	Xtriage
Anisotropy	0.517	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 77.0	EDS
L-test for twinning[2]	$< \|L\| > = 0.47$, $< L^2 > = 0.30$	Xtriage
Estimated twinning fraction	0.029 for -h,-k,l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	22891	wwPDB-VP
Average B, all atoms (Å^2)	53.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.10% of the height of the origin peak. No significant pseudotranslation is detected.*

[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: BG3, NA, GOL

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	0.34	0/3840	0.61	0/5209
1	B	0.35	0/3840	0.63	0/5209
1	C	0.33	0/3832	0.60	0/5199
1	D	0.34	0/3840	0.62	0/5209
1	E	0.34	0/3840	0.62	0/5209
1	F	0.35	0/3840	0.60	0/5209
All	All	0.34	0/23032	0.61	0/31244

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3765	0	3762	256	0
1	B	3765	0	3762	227	0
1	C	3757	0	3753	274	0
1	D	3765	0	3762	242	0
1	E	3765	0	3762	243	0
1	F	3765	0	3762	288	0
2	A	12	0	10	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	12	0	9	2	0
2	C	12	0	10	1	0
2	D	12	0	10	0	0
2	E	12	0	10	0	0
2	F	12	0	10	0	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
3	E	1	0	0	0	0
3	F	1	0	0	0	0
4	A	12	0	16	3	0
4	B	12	0	16	3	0
4	C	6	0	8	5	0
4	D	18	0	24	9	0
4	E	12	0	16	0	0
4	F	6	0	8	7	0
5	A	30	0	0	3	0
5	B	28	0	0	1	0
5	C	23	0	0	3	0
5	D	29	0	0	4	0
5	E	25	0	0	3	0
5	F	30	0	0	3	0
All	All	22891	0	22710	1416	0

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

All (1416) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:368:MET:HG2	1:C:369:LEU:H	1.22	1.05
1:F:209:ARG:HH12	1:F:241:GLY:HA3	1.21	1.05
1:D:118:TYR:H	4:D:604:GOL:H12	1.23	1.03
1:B:377:MET:HE1	1:B:465:LEU:HD11	1.40	1.00
1:F:136:ILE:HG21	1:F:152:PRO:HG3	1.42	0.98
1:A:63:LYS:HG3	1:A:64:THR:HG23	1.45	0.98
1:B:430:TYR:HB3	1:B:431:PRO:HD3	1.48	0.95
1:F:209:ARG:NH1	1:F:241:GLY:HA3	1.82	0.93
1:B:217:LEU:HD11	1:B:247:LEU:HD22	1.50	0.92
1:D:218:LEU:HD21	1:D:246:VAL:HG22	1.52	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:473:ILE:HG21	1:E:481:MET:HE1	1.51	0.88
1:C:368:MET:HG2	1:C:369:LEU:N	1.88	0.88
1:F:209:ARG:HH12	1:F:241:GLY:CA	1.86	0.87
1:E:334:LYS:HB3	1:E:368:MET:HE1	1.57	0.87
1:A:342:ASP:HB3	1:F:453:LEU:HD23	1.53	0.87
1:C:174:ALA:HA	1:C:473:ILE:HD11	1.54	0.86
1:C:217:LEU:HD23	1:C:218:LEU:N	1.90	0.85
1:A:122:LYS:H	1:A:122:LYS:HD3	1.41	0.85
1:C:61:ASN:HD21	1:C:63:LYS:HE2	1.41	0.84
1:D:421:LEU:HD12	1:D:422:LYS:H	1.43	0.83
1:C:229:ASN:O	1:C:233:VAL:HG23	1.77	0.83
1:D:354:LEU:HB2	1:D:355:PRO:HD3	1.60	0.83
1:D:209:ARG:HB3	1:D:209:ARG:HH11	1.44	0.82
1:D:392:LYS:O	1:D:395:GLN:HB3	1.79	0.81
1:B:251:MET:HE2	1:B:296:PHE:HB2	1.59	0.81
1:E:339:VAL:HG23	1:E:340:PRO:HD2	1.62	0.81
1:C:145:ASN:H	1:C:384:ASN:HD21	1.27	0.81
1:C:210:LYS:O	1:C:211:LYS:HG3	1.81	0.80
1:A:61:ASN:OD1	1:A:63:LYS:HG2	1.82	0.79
1:F:171:THR:HB	1:F:172:PRO:HD3	1.64	0.79
1:A:111:THR:HB	1:A:151:LEU:O	1.83	0.79
1:A:437:LEU:HD22	1:F:343:GLN:HG3	1.64	0.79
1:B:50:ARG:HH21	1:B:65:ASN:ND2	1.79	0.79
1:F:377:MET:HE3	1:F:465:LEU:HD11	1.65	0.79
1:D:473:ILE:HD13	1:D:481:MET:HE1	1.65	0.78
1:C:117:LYS:HB2	4:C:603:GOL:H12	1.64	0.78
1:D:171:THR:HB	1:D:172:PRO:HD3	1.65	0.78
1:F:118:TYR:H	4:F:603:GOL:H31	1.48	0.78
1:C:337:ALA:HB2	1:C:343:GLN:HE21	1.48	0.78
1:E:61:ASN:OD1	1:E:63:LYS:HG2	1.83	0.78
1:B:369:LEU:HD12	1:B:376:SER:HB2	1.66	0.78
1:E:430:TYR:HB3	1:E:431:PRO:HD3	1.65	0.78
1:D:332:GLY:HA3	1:D:363:ILE:CG2	2.13	0.77
1:F:473:ILE:HG21	1:F:481:MET:HE3	1.65	0.77
1:D:218:LEU:HD22	1:D:234:ILE:HG12	1.65	0.77
1:A:309:GLU:O	1:A:313:ILE:HG13	1.84	0.77
1:B:218:LEU:HD22	1:B:234:ILE:HG12	1.67	0.76
1:A:113:VAL:HG23	1:A:114:LYS:HG3	1.67	0.76
1:A:118:TYR:H	4:A:604:GOL:H12	1.50	0.76
1:E:171:THR:HB	1:E:172:PRO:HD3	1.68	0.76
1:E:245:ASN:HA	1:E:288:TRP:HB2	1.67	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:218:LEU:HD11	1:E:234:ILE:HD11	1.66	0.76
1:B:493:ARG:C	1:B:495:MET:H	1.89	0.76
1:C:136:ILE:HG21	1:C:152:PRO:HB3	1.66	0.76
1:B:50:ARG:HH21	1:B:65:ASN:HD21	1.33	0.76
1:F:422:LYS:HA	1:F:425:ARG:NH1	2.01	0.76
1:C:297:ASP:HB2	1:C:304:PRO:HD3	1.66	0.75
1:F:26:LEU:HD13	1:F:323:PHE:CD1	2.21	0.75
1:A:218:LEU:HD12	1:A:230:ALA:HB1	1.67	0.75
1:A:343:GLN:HG3	1:F:437:LEU:HD22	1.68	0.75
1:E:421:LEU:HD12	1:E:422:LYS:N	2.01	0.75
1:E:205:GLU:HG3	1:E:209:ARG:HD2	1.67	0.75
1:F:377:MET:HE2	4:F:603:GOL:H11	1.68	0.75
1:E:318:ALA:O	1:E:322:GLN:HG3	1.87	0.75
1:B:453:LEU:HD22	1:E:343:GLN:HB2	1.68	0.74
1:D:229:ASN:O	1:D:233:VAL:HG23	1.87	0.74
1:F:245:ASN:HA	1:F:288:TRP:HB2	1.69	0.74
1:B:245:ASN:HA	1:B:288:TRP:HB2	1.69	0.74
1:B:4:ASN:HD22	1:C:105:HIS:CE1	2.05	0.74
1:C:453:LEU:HD23	1:D:342:ASP:HB3	1.70	0.74
1:A:4:ASN:HD22	1:D:105:HIS:CE1	2.05	0.73
1:D:63:LYS:HG3	1:D:64:THR:HG23	1.68	0.73
1:A:298:LEU:HD12	1:F:428:VAL:HA	1.70	0.73
1:B:162:GLY:HA2	1:B:492:PHE:HD2	1.53	0.73
1:F:251:MET:CE	1:F:303:ALA:HB2	2.18	0.73
1:B:331:ALA:HB1	1:B:334:LYS:HE3	1.71	0.73
1:C:91:ASP:HB2	1:C:177:ALA:HB1	1.70	0.73
1:F:492:PHE:O	1:F:495:MET:HG2	1.89	0.73
1:B:118:TYR:OH	1:B:121:GLY:HA2	1.88	0.72
1:B:318:ALA:O	1:B:322:GLN:HG3	1.89	0.72
1:C:251:MET:HE2	1:C:296:PHE:HB2	1.70	0.72
1:A:35:GLU:HB2	1:E:84:ARG:CZ	2.18	0.72
1:A:11:ASN:HD22	1:A:11:ASN:H	1.35	0.72
1:C:171:THR:HB	1:C:172:PRO:HD3	1.72	0.72
1:E:339:VAL:CG2	1:E:340:PRO:HD2	2.20	0.72
1:F:251:MET:HE3	1:F:303:ALA:HB2	1.72	0.71
1:A:84:ARG:CB	1:A:99:GLU:HB2	2.21	0.70
1:F:229:ASN:O	1:F:233:VAL:HG23	1.89	0.70
1:B:435:MET:HG2	1:B:436:LEU:CD1	2.21	0.70
1:D:245:ASN:HA	1:D:288:TRP:HB2	1.73	0.70
1:F:250:ALA:HB3	1:F:293:THR:HG23	1.73	0.70
1:B:209:ARG:HH11	1:B:209:ARG:HB3	1.56	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:422:LYS:HG3	1:B:425:ARG:HH22	1.56	0.70
1:F:117:LYS:HB3	4:F:603:GOL:H12	1.73	0.70
1:F:145:ASN:HB2	1:F:384:ASN:ND2	2.06	0.70
1:A:44:VAL:HB	1:A:50:ARG:HG3	1.73	0.70
1:A:108:CYS:HA	1:A:366:ALA:HB3	1.73	0.70
1:F:53:PHE:O	1:F:58:CYS:HB2	1.92	0.70
1:B:171:THR:HB	1:B:172:PRO:HD3	1.74	0.70
1:D:37:LEU:HD23	1:D:42:ILE:HD11	1.73	0.69
1:A:171:THR:HB	1:A:172:PRO:HD3	1.75	0.69
1:F:174:ALA:HA	1:F:473:ILE:HD11	1.73	0.69
1:F:218:LEU:C	1:F:218:LEU:HD12	2.13	0.69
1:E:251:MET:CE	1:E:303:ALA:HB2	2.22	0.69
1:F:145:ASN:H	1:F:384:ASN:HD21	1.40	0.69
1:D:111:THR:HG21	1:D:184:ASP:OD2	1.92	0.69
1:A:439:ARG:HB2	1:F:300:LYS:HE2	1.74	0.69
1:A:453:LEU:HD23	1:F:342:ASP:HB3	1.75	0.69
1:F:334:LYS:HD3	1:F:368:MET:HE1	1.75	0.69
1:A:386:ILE:O	1:A:390:VAL:HG23	1.92	0.69
1:B:218:LEU:HD12	1:B:219:CYS:N	2.07	0.69
1:D:122:LYS:HD3	1:D:122:LYS:H	1.57	0.69
1:C:311:GLY:HA3	1:C:354:LEU:HD12	1.75	0.69
1:C:406:VAL:HG11	1:D:35:GLU:OE1	1.93	0.69
1:D:421:LEU:HD12	1:D:422:LYS:N	2.08	0.68
1:D:148:TYR:OH	1:D:362:THR:HG21	1.93	0.68
1:D:281:THR:HG22	1:D:282:VAL:HG23	1.75	0.68
1:E:145:ASN:H	1:E:384:ASN:HD21	1.41	0.68
1:E:231:CYS:O	1:E:235:ILE:HG13	1.92	0.68
1:A:148:TYR:OH	1:A:362:THR:HG21	1.92	0.68
1:E:354:LEU:HB2	1:E:355:PRO:HD3	1.73	0.68
1:F:118:TYR:OH	1:F:121:GLY:HA2	1.92	0.68
1:A:473:ILE:HG21	1:A:481:MET:CE	2.23	0.68
1:B:41:GLY:O	1:E:414:ILE:HD11	1.94	0.68
1:D:473:ILE:HG21	1:D:481:MET:HE2	1.76	0.68
1:F:136:ILE:HD12	1:F:375:PHE:CE1	2.29	0.68
1:B:281:THR:HG22	1:B:282:VAL:HG23	1.75	0.68
1:C:430:TYR:HB3	1:C:431:PRO:HD3	1.75	0.68
1:D:117:LYS:HA	4:D:604:GOL:H31	1.76	0.68
1:A:346:HIS:CE1	1:F:386:ILE:HG23	2.28	0.68
1:B:422:LYS:HA	1:B:425:ARG:NH1	2.09	0.68
1:E:186:VAL:HB	1:E:189:ASN:HD22	1.58	0.68
1:A:281:THR:HG22	1:A:282:VAL:HG23	1.76	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4:ASN:ND2	1:D:103:LYS:HB3	2.09	0.67
1:F:354:LEU:HB2	1:F:355:PRO:HD3	1.74	0.67
1:B:435:MET:HG2	1:B:436:LEU:HD13	1.77	0.67
1:D:113:VAL:HG23	1:D:114:LYS:HG3	1.75	0.67
1:D:174:ALA:HA	1:D:473:ILE:HD11	1.75	0.67
1:A:421:LEU:HD12	1:A:422:LYS:N	2.10	0.67
1:F:332:GLY:O	1:F:333:SER:HB3	1.94	0.67
1:B:331:ALA:HB2	1:B:364:TYR:CE1	2.29	0.67
1:D:218:LEU:HD22	1:D:234:ILE:CG1	2.25	0.67
1:F:435:MET:HG2	1:F:436:LEU:HD12	1.76	0.67
1:B:84:ARG:HG2	5:D:717:HOH:O	1.93	0.67
1:E:51:GLN:O	1:E:55:GLU:HG3	1.95	0.67
1:F:136:ILE:CG2	1:F:152:PRO:HG3	2.21	0.67
1:A:349:THR:HA	1:A:352:THR:HG22	1.75	0.67
1:B:61:ASN:OD1	1:B:63:LYS:HG2	1.95	0.67
1:B:21:PHE:HE1	1:E:397:ILE:HG21	1.60	0.67
1:C:190:VAL:HA	1:C:193:TYR:CD2	2.30	0.67
1:A:105:HIS:NE2	1:D:4:ASN:HB2	2.10	0.66
1:A:460:LYS:O	1:A:464:VAL:HG23	1.95	0.66
1:A:477:ILE:HG22	1:A:481:MET:HE2	1.75	0.66
1:C:231:CYS:O	1:C:235:ILE:HG13	1.95	0.66
1:A:354:LEU:HB2	1:A:355:PRO:HD3	1.77	0.66
1:E:108:CYS:HA	1:E:366:ALA:HB3	1.78	0.66
1:C:298:LEU:O	1:C:299:LYS:HG3	1.95	0.66
1:C:304:PRO:HB3	1:D:439:ARG:HD3	1.77	0.66
1:F:460:LYS:O	1:F:464:VAL:HG23	1.94	0.66
1:E:50:ARG:HG2	1:E:60:VAL:HG11	1.77	0.66
1:E:332:GLY:HA3	1:E:363:ILE:HG23	1.77	0.66
1:D:313:ILE:O	1:D:317:VAL:HG23	1.95	0.66
1:F:377:MET:CE	1:F:465:LEU:HD11	2.26	0.66
1:F:189:ASN:HB3	1:F:192:TYR:HD2	1.61	0.66
1:F:190:VAL:HA	1:F:193:TYR:CD2	2.30	0.66
1:C:129:VAL:HG22	1:C:132:ASP:OD2	1.95	0.65
1:F:458:HIS:O	1:F:462:GLU:HG2	1.96	0.65
1:A:134:ALA:HA	1:A:175:ASN:ND2	2.11	0.65
1:E:421:LEU:HD12	1:E:422:LYS:H	1.60	0.65
1:A:148:TYR:HH	1:A:362:THR:HG21	1.61	0.65
1:C:247:LEU:HD21	1:C:292:SER:HB2	1.79	0.65
1:C:354:LEU:HB2	1:C:355:PRO:HD3	1.77	0.65
1:D:473:ILE:HG21	1:D:481:MET:CE	2.26	0.65
1:E:234:ILE:CG2	1:E:278:ALA:HB2	2.27	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:162:GLY:HA2	1:B:492:PHE:CD2	2.32	0.65
1:C:136:ILE:HG21	1:C:152:PRO:CB	2.26	0.65
1:C:474:ASP:HB3	1:C:477:ILE:HB	1.78	0.65
1:A:222:SER:HA	1:A:270:GLU:OE2	1.97	0.65
1:B:369:LEU:HD12	1:B:376:SER:CB	2.28	0.65
1:C:267:HIS:CE1	1:C:271:VAL:HG21	2.32	0.65
1:D:94:PHE:CE1	1:D:178:LYS:HE2	2.32	0.65
1:F:473:ILE:HG21	1:F:481:MET:CE	2.26	0.65
1:F:477:ILE:HG22	1:F:481:MET:HE2	1.79	0.65
1:A:430:TYR:HB3	1:A:431:PRO:HD3	1.79	0.64
1:B:422:LYS:HG3	1:B:425:ARG:NH2	2.11	0.64
1:C:245:ASN:HA	1:C:288:TRP:HB2	1.79	0.64
1:E:251:MET:HE2	1:E:303:ALA:HB2	1.79	0.64
1:B:190:VAL:HA	1:B:193:TYR:CD2	2.33	0.64
1:B:252:SER:OG	1:B:295:THR:HA	1.96	0.64
1:E:63:LYS:HG3	1:E:64:THR:HG23	1.79	0.64
1:E:63:LYS:HG3	1:E:64:THR:N	2.11	0.64
1:C:331:ALA:HB1	1:C:334:LYS:HE3	1.79	0.64
1:C:369:LEU:HD12	1:C:376:SER:HB2	1.78	0.64
1:D:452:ASP:O	1:D:456:VAL:HG23	1.97	0.64
1:F:348:LYS:HD2	1:F:383:ASP:OD1	1.98	0.64
1:A:309:GLU:OE2	1:F:392:LYS:HE2	1.98	0.64
1:B:42:ILE:HD12	1:B:273:SER:HB3	1.79	0.64
1:C:373:MET:HA	1:C:373:MET:HE2	1.78	0.64
1:D:84:ARG:NH2	1:F:35:GLU:HG3	2.13	0.64
1:C:61:ASN:ND2	1:C:63:LYS:HE2	2.12	0.64
1:D:286:LYS:HE2	5:D:718:HOH:O	1.97	0.64
1:A:473:ILE:HD13	1:A:481:MET:HE3	1.80	0.64
1:E:4:ASN:HD22	1:F:105:HIS:CE1	2.15	0.64
1:F:368:MET:HG2	1:F:369:LEU:N	2.13	0.64
1:B:343:GLN:HG3	1:E:437:LEU:HD22	1.79	0.63
1:C:350:MET:HE2	1:C:354:LEU:HD11	1.78	0.63
1:D:117:LYS:HD2	1:D:126:VAL:HG21	1.79	0.63
1:F:421:LEU:HD12	1:F:422:LYS:H	1.62	0.63
1:C:61:ASN:OD1	1:C:63:LYS:HG2	1.97	0.63
1:C:247:LEU:HD21	1:C:292:SER:CB	2.29	0.63
1:B:434:PRO:HB3	1:B:437:LEU:HD12	1.80	0.63
1:E:247:LEU:HD23	1:E:248:SER:O	1.99	0.63
1:A:170:LEU:HD22	1:A:485:VAL:HG21	1.80	0.63
1:C:53:PHE:CZ	1:C:277:LEU:HB2	2.33	0.63
1:B:119:GLN:HG3	1:B:120:ASP:OD1	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:339:VAL:CG2	1:B:340:PRO:HD2	2.29	0.63
1:C:162:GLY:HA2	1:C:492:PHE:CD2	2.33	0.63
1:A:42:ILE:HD12	1:A:273:SER:HB3	1.79	0.63
1:A:353:LEU:HD23	1:F:353:LEU:HD23	1.80	0.63
1:B:332:GLY:O	1:B:333:SER:HB3	1.99	0.63
1:D:114:LYS:NZ	1:D:125:THR:HG21	2.14	0.63
1:E:221:THR:HB	1:E:225:GLU:HB2	1.80	0.63
1:D:114:LYS:HZ1	1:D:125:THR:HG21	1.63	0.63
1:B:14:ASN:HD22	1:C:10:PHE:HD2	1.46	0.62
1:C:400:SER:OG	1:C:403:THR:HG23	1.98	0.62
1:E:198:LYS:HE3	1:E:203:GLY:O	1.99	0.62
1:E:381:VAL:CG2	1:E:457:ALA:HB1	2.29	0.62
1:E:348:LYS:O	1:E:352:THR:HG22	1.98	0.62
1:F:136:ILE:HG21	1:F:152:PRO:CG	2.25	0.62
1:C:64:THR:O	1:C:65:ASN:HB2	1.98	0.62
1:C:148:TYR:HB2	1:C:179:HIS:HB3	1.80	0.62
1:E:332:GLY:O	1:E:333:SER:HB3	1.99	0.62
1:C:305:VAL:HG22	1:C:310:LEU:HD22	1.80	0.62
1:C:337:ALA:CB	1:C:343:GLN:HE21	2.12	0.62
1:C:422:LYS:O	1:C:426:GLN:HG3	2.00	0.62
1:A:98:GLN:HG3	1:A:288:TRP:HZ2	1.65	0.62
1:D:105:HIS:O	1:D:362:THR:HA	1.99	0.62
1:A:190:VAL:HA	1:A:193:TYR:CD2	2.34	0.62
1:B:349:THR:HA	1:B:352:THR:HG22	1.82	0.62
1:E:477:ILE:HA	1:E:480:ASP:OD2	2.00	0.62
1:C:460:LYS:O	1:C:464:VAL:HG23	1.99	0.62
1:F:217:LEU:HD23	1:F:218:LEU:N	2.14	0.62
1:A:473:ILE:HD13	1:A:481:MET:CE	2.30	0.62
1:B:251:MET:HE1	1:B:296:PHE:HD1	1.65	0.62
1:D:440:HIS:HB3	1:D:444:ASP:HB2	1.82	0.61
1:A:217:LEU:O	1:A:217:LEU:HD23	2.00	0.61
1:C:435:MET:HG2	1:C:436:LEU:HD12	1.81	0.61
1:F:172:PRO:O	1:F:176:THR:HG22	1.99	0.61
1:B:145:ASN:H	1:B:384:ASN:HD21	1.46	0.61
1:A:191:GLU:HG3	1:A:240:PHE:CZ	2.35	0.61
1:B:319:LYS:HE2	1:B:358:ALA:HB1	1.82	0.61
1:F:42:ILE:CD1	1:F:273:SER:HB3	2.30	0.61
1:F:217:LEU:HD11	1:F:247:LEU:HD13	1.81	0.61
1:A:120:ASP:HB2	1:A:122:LYS:HE2	1.83	0.61
1:E:96:THR:HG23	1:E:105:HIS:CD2	2.36	0.61
1:C:86:VAL:HG13	1:C:88:TRP:HE1	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:96:THR:HG23	1:D:105:HIS:CD2	2.35	0.61
1:D:109:PHE:HB2	1:D:368:MET:HB2	1.82	0.61
1:B:428:VAL:HG23	1:E:298:LEU:HB3	1.83	0.61
1:E:332:GLY:HA3	1:E:363:ILE:CG2	2.31	0.61
1:F:190:VAL:HG11	1:F:236:LYS:HB3	1.81	0.61
1:F:250:ALA:HB3	1:F:293:THR:CG2	2.30	0.61
1:F:305:VAL:CG2	1:F:334:LYS:HD2	2.31	0.61
1:D:460:LYS:O	1:D:464:VAL:HG23	2.01	0.61
1:A:11:ASN:HD22	1:A:11:ASN:N	1.98	0.61
1:A:235:ILE:HG12	1:A:277:LEU:HD21	1.82	0.61
1:B:305:VAL:O	1:B:310:LEU:HD22	2.00	0.61
1:B:414:ILE:HG23	1:E:224:LEU:O	2.00	0.61
1:C:116:CYS:HB2	1:C:374:THR:HG21	1.83	0.61
1:C:309:GLU:CD	1:D:392:LYS:HE2	2.21	0.61
1:A:313:ILE:O	1:A:317:VAL:HG23	2.01	0.60
1:C:45:SER:HB2	1:C:228:VAL:HG22	1.83	0.60
1:C:122:LYS:H	1:C:122:LYS:HD3	1.65	0.60
1:F:157:ASP:O	1:F:158:ILE:HD13	2.00	0.60
1:F:218:LEU:HD13	1:F:230:ALA:HB1	1.82	0.60
1:B:249:MET:HE1	2:B:601:BG3:H42	1.82	0.60
1:B:309:GLU:O	1:B:313:ILE:HG13	2.01	0.60
1:E:109:PHE:CB	1:E:368:MET:HB2	2.31	0.60
1:D:251:MET:HE2	1:D:296:PHE:HB2	1.82	0.60
1:F:193:TYR:O	1:F:197:VAL:HG23	2.01	0.60
1:A:61:ASN:HD21	1:A:63:LYS:HE2	1.67	0.60
1:D:37:LEU:CD2	1:D:42:ILE:HD11	2.31	0.60
1:B:377:MET:CE	4:B:603:GOL:H32	2.31	0.60
1:D:297:ASP:C	1:D:299:LYS:H	2.05	0.60
1:A:84:ARG:HB3	1:A:99:GLU:HB2	1.81	0.60
1:A:218:LEU:HD23	1:A:218:LEU:H	1.66	0.60
1:B:249:MET:HG2	1:B:292:SER:HB3	1.83	0.60
1:D:339:VAL:HG23	1:D:340:PRO:HD2	1.83	0.60
1:F:118:TYR:N	4:F:603:GOL:H31	2.17	0.60
1:B:75:ARG:NH2	1:F:83:SER:HB3	2.16	0.60
1:F:186:VAL:HB	1:F:189:ASN:ND2	2.16	0.60
1:B:132:ASP:O	1:B:136:ILE:HG12	2.02	0.60
1:E:217:LEU:HD23	1:E:218:LEU:N	2.16	0.60
1:F:70:PRO:HD2	1:F:73:LEU:HD12	1.83	0.60
1:F:107:THR:HG23	1:F:364:TYR:HB2	1.84	0.60
1:F:281:THR:HG22	1:F:282:VAL:HG23	1.84	0.60
1:C:118:TYR:H	4:C:603:GOL:C1	2.14	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:231:CYS:O	1:D:235:ILE:HG13	2.01	0.60
1:A:70:PRO:HG2	1:A:73:LEU:HG	1.84	0.59
1:B:259:TYR:CD2	1:E:403:THR:HA	2.37	0.59
1:E:289:TYR:HE1	1:E:317:VAL:HG13	1.67	0.59
1:C:305:VAL:HG21	2:C:601:BG3:H62	1.83	0.59
1:F:377:MET:CE	4:F:603:GOL:H11	2.31	0.59
1:B:50:ARG:HG2	1:B:60:VAL:HG11	1.85	0.59
1:D:239:ARG:HA	1:D:282:VAL:HG21	1.84	0.59
1:A:245:ASN:C	1:A:245:ASN:HD22	2.04	0.59
1:A:466:LYS:O	1:A:466:LYS:HG2	2.01	0.59
1:B:70:PRO:HD2	1:B:73:LEU:HD12	1.85	0.59
1:B:305:VAL:HG22	1:B:310:LEU:HD22	1.84	0.59
1:B:473:ILE:HD13	1:B:481:MET:CE	2.33	0.59
1:D:218:LEU:CD2	1:D:234:ILE:HG12	2.33	0.59
1:D:266:THR:O	1:D:270:GLU:HG3	2.02	0.59
1:E:114:LYS:HD2	1:E:125:THR:HG22	1.84	0.59
1:A:391:LYS:HG2	1:D:6:ALA:HB2	1.84	0.59
1:D:162:GLY:HA2	1:D:492:PHE:CD2	2.37	0.59
1:A:11:ASN:N	1:A:11:ASN:ND2	2.50	0.59
1:A:386:ILE:HG23	1:F:346:HIS:CE1	2.37	0.59
1:B:84:ARG:CZ	1:D:35:GLU:HB2	2.32	0.59
1:B:194:ARG:HG2	1:B:194:ARG:HH11	1.66	0.59
1:C:199:ALA:HB3	1:C:481:MET:HG2	1.84	0.59
1:A:266:THR:O	1:A:270:GLU:HG3	2.03	0.59
1:B:44:VAL:HG21	1:B:53:PHE:CE2	2.37	0.59
1:C:73:LEU:HD22	1:C:280:LEU:HD11	1.84	0.59
1:D:158:ILE:HB	1:D:164:GLN:HG3	1.84	0.59
1:E:377:MET:SD	1:E:465:LEU:HD11	2.42	0.59
1:F:234:ILE:HG23	1:F:278:ALA:HB2	1.84	0.59
1:B:473:ILE:HD13	1:B:481:MET:HE2	1.85	0.59
1:C:129:VAL:HG23	1:C:131:LYS:H	1.67	0.59
1:D:136:ILE:HD12	1:D:375:PHE:CE1	2.38	0.59
1:F:320:LEU:O	1:F:323:PHE:HB3	2.03	0.59
1:D:338:LYS:HG3	1:D:370:GLU:HG3	1.85	0.59
1:D:162:GLY:HA2	1:D:492:PHE:HD2	1.67	0.58
1:C:247:LEU:HD23	1:C:248:SER:O	2.03	0.58
1:E:314:SER:HB3	1:E:330:VAL:CG2	2.32	0.58
1:F:170:LEU:HD22	1:F:485:VAL:HG21	1.85	0.58
1:F:421:LEU:HD12	1:F:422:LYS:N	2.18	0.58
1:A:339:VAL:HG23	1:A:340:PRO:HD2	1.86	0.58
1:C:489:ASP:O	1:C:492:PHE:HB3	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:230:ALA:O	1:D:234:ILE:HG13	2.03	0.58
1:E:105:HIS:CE1	1:F:4:ASN:HD22	2.21	0.58
1:F:192:TYR:O	1:F:196:ILE:HG13	2.03	0.58
1:A:344:ALA:HB3	1:F:342:ASP:OD1	2.03	0.58
1:E:128:SER:O	1:E:156:ARG:HG3	2.03	0.58
1:D:92:LYS:HA	1:D:95:ASN:OD1	2.04	0.58
1:D:217:LEU:C	1:D:217:LEU:HD23	2.24	0.58
1:B:354:LEU:HB2	1:B:355:PRO:HD3	1.84	0.58
1:F:297:ASP:OD1	1:F:299:LYS:HB2	2.04	0.58
1:A:118:TYR:OH	1:A:121:GLY:HA2	2.04	0.58
1:A:392:LYS:HE2	1:F:309:GLU:OE2	2.04	0.58
1:B:148:TYR:OH	1:B:362:THR:HG21	2.03	0.58
1:F:305:VAL:HG22	1:F:334:LYS:HD2	1.85	0.58
1:A:9:GLY:HA3	1:D:17:GLU:HG3	1.86	0.58
1:E:448:ALA:O	1:E:451:LYS:HE3	2.03	0.58
1:F:448:ALA:O	1:F:451:LYS:HE3	2.04	0.58
1:B:460:LYS:O	1:B:464:VAL:HG23	2.03	0.58
1:C:437:LEU:HD22	1:D:343:GLN:HG3	1.85	0.58
1:C:318:ALA:O	1:C:322:GLN:HG3	2.04	0.57
1:F:22:THR:OG1	1:F:25:GLU:HG3	2.03	0.57
1:B:218:LEU:HD22	1:B:234:ILE:CG1	2.33	0.57
1:B:437:LEU:HD22	1:E:343:GLN:HG3	1.84	0.57
1:C:271:VAL:O	1:C:275:ILE:HG13	2.04	0.57
1:D:117:LYS:HB3	4:D:604:GOL:H31	1.86	0.57
1:E:60:VAL:HG22	1:E:67:VAL:HG13	1.86	0.57
1:E:187:GLY:O	1:E:190:VAL:HG23	2.03	0.57
1:A:339:VAL:CG2	1:A:340:PRO:HD2	2.34	0.57
1:E:119:GLN:HB3	1:E:122:LYS:HE3	1.87	0.57
1:E:148:TYR:OH	1:E:362:THR:HG21	2.05	0.57
1:F:94:PHE:HE2	1:F:177:ALA:HB3	1.68	0.57
1:A:245:ASN:HA	1:A:288:TRP:HB2	1.87	0.57
1:C:346:HIS:CE1	1:D:386:ILE:HG23	2.40	0.57
1:A:84:ARG:HB2	1:A:99:GLU:HB2	1.86	0.57
1:B:309:GLU:OE2	1:E:392:LYS:HE2	2.05	0.57
1:C:373:MET:HA	1:C:373:MET:CE	2.35	0.57
1:F:104:VAL:HG22	1:F:360:ALA:O	2.05	0.57
1:A:51:GLN:O	1:A:55:GLU:HG3	2.04	0.57
1:B:80:LEU:HD13	1:B:283:PRO:HB3	1.86	0.57
1:B:314:SER:O	1:B:330:VAL:HG11	2.05	0.57
1:D:109:PHE:CD1	1:D:110:GLY:N	2.73	0.57
1:A:232:GLN:NE2	1:A:236:LYS:HE3	2.20	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:458:HIS:HE1	4:F:603:GOL:H32	1.70	0.56
1:B:448:ALA:O	1:B:451:LYS:HE3	2.05	0.56
1:A:98:GLN:HG3	1:A:288:TRP:CZ2	2.40	0.56
1:A:421:LEU:HD12	1:A:422:LYS:H	1.70	0.56
1:B:307:SER:HB2	1:B:308:PRO:HD2	1.87	0.56
1:C:453:LEU:HD22	1:D:343:GLN:HB2	1.86	0.56
1:D:218:LEU:HD13	1:D:230:ALA:HB1	1.87	0.56
1:E:307:SER:HB2	1:E:308:PRO:HD2	1.87	0.56
1:F:111:THR:HG23	1:F:111:THR:O	2.05	0.56
1:B:21:PHE:HE1	1:E:397:ILE:CG2	2.18	0.56
1:C:118:TYR:H	4:C:603:GOL:H12	1.69	0.56
1:A:122:LYS:H	1:A:122:LYS:CD	2.16	0.56
1:D:118:TYR:OH	1:D:121:GLY:HA2	2.06	0.56
1:D:118:TYR:N	4:D:604:GOL:H12	2.07	0.56
1:F:305:VAL:HG23	1:F:310:LEU:HD13	1.87	0.56
1:B:13:LEU:HD23	1:E:20:LEU:C	2.26	0.56
1:E:42:ILE:HD12	1:E:273:SER:HB3	1.88	0.56
1:E:112:GLY:O	1:E:153:VAL:HA	2.06	0.56
1:A:223:PRO:HB3	1:A:255:SER:O	2.06	0.56
1:A:290:GLY:HA2	1:A:329:TYR:O	2.06	0.56
1:E:473:ILE:HD13	1:E:481:MET:CE	2.36	0.56
1:B:173:LEU:HD22	1:B:213:ILE:HD12	1.88	0.56
1:C:216:MET:HE2	1:C:242:ILE:HG21	1.87	0.56
1:F:151:LEU:H	1:F:180:PHE:HE1	1.54	0.56
1:A:8:ALA:HA	5:A:705:HOH:O	2.05	0.56
1:B:251:MET:HE1	1:B:303:ALA:HB2	1.88	0.56
1:B:392:LYS:HG2	1:B:432:SER:HB3	1.87	0.56
1:B:258:VAL:HB	1:E:427:LEU:HD12	1.87	0.55
1:C:245:ASN:C	1:C:245:ASN:HD22	2.10	0.55
1:B:186:VAL:HB	1:B:189:ASN:HD22	1.71	0.55
1:B:342:ASP:HB3	1:E:453:LEU:HD23	1.89	0.55
1:C:473:ILE:HG21	1:C:481:MET:CE	2.36	0.55
1:D:51:GLN:HE21	1:D:55:GLU:HG3	1.71	0.55
1:E:94:PHE:HB3	1:E:178:LYS:HG2	1.89	0.55
1:E:100:CYS:SG	1:E:325:GLY:HA2	2.46	0.55
1:E:190:VAL:HA	1:E:193:TYR:CD2	2.41	0.55
1:E:310:LEU:HD11	1:E:331:ALA:HB3	1.87	0.55
1:F:429:ASP:HB2	5:F:703:HOH:O	2.07	0.55
1:B:387:PHE:O	1:B:391:LYS:HG3	2.06	0.55
1:C:148:TYR:HH	1:C:329:TYR:HE2	1.53	0.55
1:C:201:TYR:OH	1:C:213:ILE:HG23	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:380:LEU:HD13	1:C:380:LEU:C	2.27	0.55
1:A:111:THR:HG22	1:A:183:ILE:HB	1.88	0.55
1:C:370:GLU:O	1:C:372:GLY:N	2.39	0.55
1:E:143:ALA:HB1	1:E:384:ASN:ND2	2.21	0.55
1:E:368:MET:SD	1:E:369:LEU:N	2.80	0.55
1:F:70:PRO:HG2	1:F:73:LEU:HG	1.87	0.55
1:B:339:VAL:HG23	1:B:340:PRO:HD2	1.88	0.55
1:C:474:ASP:OD2	1:C:477:ILE:HG12	2.06	0.55
1:E:158:ILE:HG22	1:E:158:ILE:O	2.07	0.55
1:E:309:GLU:O	1:E:313:ILE:HG13	2.07	0.55
1:F:210:LYS:HG2	1:F:211:LYS:HG3	1.87	0.55
1:B:64:THR:OG1	1:B:66:VAL:HG23	2.05	0.55
1:E:50:ARG:HG2	1:E:60:VAL:CG1	2.37	0.55
1:F:118:TYR:CZ	1:F:121:GLY:HA2	2.41	0.55
1:C:221:THR:O	1:C:225:GLU:HB2	2.07	0.55
1:D:94:PHE:CD1	1:D:178:LYS:HG2	2.41	0.55
1:D:446:ALA:HA	1:D:450:SER:OG	2.06	0.55
1:E:45:SER:HA	1:E:65:ASN:HD22	1.71	0.55
1:E:136:ILE:HD12	1:E:375:PHE:CE1	2.42	0.55
1:F:142:TRP:HB2	1:F:468:HIS:CD2	2.41	0.55
1:F:339:VAL:HG23	1:F:340:PRO:HD2	1.88	0.55
1:F:435:MET:HG2	1:F:436:LEU:CD1	2.37	0.55
1:D:149:PHE:CZ	1:D:152:PRO:HD3	2.42	0.55
1:E:109:PHE:HB2	1:E:368:MET:HB2	1.88	0.55
1:A:218:LEU:HD13	1:A:234:ILE:HG13	1.89	0.55
1:D:109:PHE:CG	1:D:368:MET:HB2	2.41	0.55
1:A:187:GLY:O	1:A:190:VAL:HG23	2.06	0.55
1:B:18:LEU:HD21	1:E:16:VAL:HG13	1.89	0.55
1:B:158:ILE:HG21	1:B:167:HIS:CD2	2.41	0.55
1:E:407:GLU:HA	5:E:702:HOH:O	2.07	0.55
1:B:305:VAL:HG21	2:B:601:BG3:H62	1.89	0.54
1:C:107:THR:HG23	1:C:364:TYR:HB2	1.90	0.54
1:C:215:SER:HB2	1:C:243:PRO:HB2	1.88	0.54
1:F:85:PHE:CD2	1:F:286:LYS:HB3	2.42	0.54
1:A:118:TYR:HB3	4:A:604:GOL:O1	2.07	0.54
1:B:377:MET:CE	1:B:465:LEU:HD11	2.27	0.54
1:C:236:LYS:HB3	1:C:240:PHE:CE2	2.43	0.54
1:D:190:VAL:HB	1:D:236:LYS:HD3	1.89	0.54
1:E:98:GLN:HG3	1:E:288:TRP:CZ2	2.42	0.54
1:A:258:VAL:HB	1:F:427:LEU:HD13	1.88	0.54
1:A:369:LEU:HD12	1:A:376:SER:HB2	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:26:LEU:HD13	1:B:323:PHE:CD1	2.42	0.54
1:C:182:HIS:HB2	1:C:214:PHE:CE2	2.42	0.54
1:D:167:HIS:C	1:D:169:THR:H	2.11	0.54
1:A:251:MET:HA	1:A:294:THR:O	2.08	0.54
1:C:148:TYR:OH	1:C:362:THR:HG21	2.08	0.54
1:D:109:PHE:CB	1:D:368:MET:HB2	2.37	0.54
1:E:34:MET:SD	1:E:71:GLU:HG3	2.48	0.54
1:E:252:SER:HB2	1:E:295:THR:OG1	2.07	0.54
1:E:305:VAL:HG22	1:E:310:LEU:HD22	1.90	0.54
1:C:114:LYS:O	1:C:374:THR:HA	2.08	0.54
1:C:266:THR:O	1:C:270:GLU:HG3	2.08	0.54
1:C:406:VAL:HG23	5:C:712:HOH:O	2.08	0.54
1:D:42:ILE:N	1:D:42:ILE:HD12	2.22	0.54
1:B:418:PHE:HD1	1:B:418:PHE:H	1.54	0.54
1:C:201:TYR:HH	1:C:213:ILE:HG23	1.73	0.54
1:F:134:ALA:HA	1:F:175:ASN:ND2	2.22	0.54
1:A:100:CYS:SG	1:A:325:GLY:HA2	2.46	0.54
1:C:23:THR:HG22	1:C:27:LYS:HE3	1.89	0.54
1:E:217:LEU:HD11	1:E:247:LEU:HD13	1.89	0.54
1:D:305:VAL:HG22	1:D:310:LEU:HD22	1.89	0.54
1:C:209:ARG:NH1	1:C:241:GLY:HA3	2.22	0.53
1:C:309:GLU:OE2	1:D:392:LYS:HE2	2.08	0.53
1:D:114:LYS:HD2	1:D:125:THR:CG2	2.38	0.53
1:F:217:LEU:HD12	1:F:245:ASN:OD1	2.08	0.53
1:A:149:PHE:CZ	1:A:152:PRO:HD3	2.43	0.53
1:B:221:THR:O	1:B:225:GLU:HB2	2.08	0.53
1:C:312:LEU:HD11	1:D:393:ALA:HA	1.90	0.53
1:D:91:ASP:HB2	1:D:94:PHE:HD2	1.73	0.53
1:F:85:PHE:HB2	1:F:286:LYS:HD3	1.90	0.53
1:F:271:VAL:O	1:F:275:ILE:HG13	2.09	0.53
1:A:109:PHE:HB2	1:A:365:GLY:HA2	1.91	0.53
1:B:380:LEU:C	1:B:380:LEU:HD13	2.28	0.53
1:C:353:LEU:CD1	1:C:357:LEU:HG	2.39	0.53
1:D:94:PHE:CG	1:D:178:LYS:HG2	2.44	0.53
1:E:150:SER:O	1:E:152:PRO:HD3	2.08	0.53
1:F:480:ASP:O	1:F:483:ALA:HB3	2.07	0.53
1:B:494:GLY:O	1:B:495:MET:O	2.26	0.53
1:D:370:GLU:C	1:D:371:LEU:HD12	2.28	0.53
1:E:218:LEU:CD2	1:E:234:ILE:HG12	2.39	0.53
1:A:58:CYS:O	1:A:60:VAL:HG23	2.09	0.53
1:A:137:ALA:HB3	1:A:175:ASN:HB2	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:100:CYS:SG	1:B:325:GLY:HA2	2.48	0.53
1:C:292:SER:HA	1:C:331:ALA:HB2	1.90	0.53
1:D:292:SER:HA	1:D:331:ALA:HB2	1.89	0.53
1:E:201:TYR:OH	1:E:213:ILE:HG23	2.08	0.53
1:E:223:PRO:HB3	1:E:255:SER:O	2.09	0.53
1:E:110:GLY:HA3	1:E:183:ILE:HG13	1.91	0.53
1:B:32:ALA:O	1:B:36:VAL:HG23	2.09	0.53
1:B:446:ALA:C	1:B:448:ALA:H	2.12	0.53
1:C:88:TRP:O	1:C:213:ILE:HA	2.08	0.53
1:C:440:HIS:NE2	1:D:300:LYS:HD2	2.23	0.53
1:D:250:ALA:O	1:D:293:THR:HG23	2.08	0.53
1:E:186:VAL:HB	1:E:189:ASN:ND2	2.22	0.53
1:E:411:LYS:NZ	1:E:421:LEU:HD13	2.23	0.53
1:F:109:PHE:CG	1:F:368:MET:HB2	2.44	0.53
1:F:305:VAL:O	1:F:310:LEU:HD22	2.08	0.53
1:B:218:LEU:HD23	1:B:244:VAL:CG1	2.39	0.53
1:C:90:ARG:N	1:C:177:ALA:O	2.41	0.53
1:C:156:ARG:C	1:C:158:ILE:H	2.13	0.53
1:C:422:LYS:HA	1:C:425:ARG:NH1	2.24	0.53
1:E:386:ILE:O	1:E:390:VAL:HG23	2.08	0.53
1:F:209:ARG:NH1	1:F:209:ARG:HG2	2.23	0.53
1:A:263:THR:CG2	1:A:293:THR:HG21	2.38	0.53
1:D:114:LYS:HE2	1:D:373:MET:CG	2.39	0.53
1:D:214:PHE:O	1:D:242:ILE:HG23	2.09	0.53
1:D:332:GLY:HA3	1:D:363:ILE:HG23	1.91	0.53
1:F:392:LYS:O	1:F:395:GLN:HB3	2.09	0.53
1:A:171:THR:HG23	1:A:175:ASN:HD21	1.74	0.53
1:B:4:ASN:ND2	1:C:103:LYS:HB3	2.23	0.53
1:B:48:GLU:HG2	1:B:235:ILE:HD13	1.91	0.53
1:E:26:LEU:HD13	1:E:323:PHE:CD1	2.43	0.53
1:E:84:ARG:HG3	1:E:84:ARG:HH11	1.73	0.53
1:A:217:LEU:HB2	1:A:245:ASN:HB3	1.90	0.52
1:A:463:ASP:O	1:A:467:ASN:HB2	2.09	0.52
1:E:128:SER:O	1:E:129:VAL:HG13	2.09	0.52
1:F:194:ARG:HG2	1:F:194:ARG:HH11	1.73	0.52
1:E:243:PRO:HG3	1:E:286:LYS:HD2	1.91	0.52
1:E:412:VAL:HG11	1:E:418:PHE:CE1	2.45	0.52
1:F:477:ILE:HG22	1:F:481:MET:CE	2.39	0.52
1:A:403:THR:HB	1:F:261:ALA:HB3	1.91	0.52
1:C:223:PRO:HB3	1:C:255:SER:O	2.10	0.52
1:D:85:PHE:HB2	1:D:286:LYS:HD3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:305:VAL:CG2	1:D:310:LEU:HD22	2.40	0.52
1:A:377:MET:HE3	1:A:465:LEU:HD11	1.90	0.52
1:C:368:MET:O	1:C:369:LEU:HG	2.10	0.52
1:D:91:ASP:HB2	1:D:94:PHE:CD2	2.43	0.52
1:A:162:GLY:HA2	1:A:492:PHE:CD2	2.45	0.52
1:A:385:ASP:OD1	1:A:435:MET:HB3	2.09	0.52
1:A:78:LEU:HD22	1:A:324:TYR:HB3	1.92	0.52
1:A:107:THR:HG23	1:A:364:TYR:HB2	1.92	0.52
1:A:142:TRP:HZ2	1:A:435:MET:HE1	1.75	0.52
1:B:145:ASN:HB2	1:B:384:ASN:ND2	2.25	0.52
1:B:473:ILE:HG21	1:B:481:MET:HE2	1.92	0.52
1:C:313:ILE:O	1:C:317:VAL:HG23	2.10	0.52
1:F:454:ALA:O	1:F:457:ALA:HB3	2.10	0.52
1:C:299:LYS:O	1:C:300:LYS:HD3	2.10	0.52
1:D:158:ILE:O	1:D:158:ILE:HG22	2.10	0.52
1:F:476:ASP:O	1:F:479:LYS:HB2	2.09	0.52
1:B:167:HIS:C	1:B:169:THR:H	2.13	0.52
1:B:305:VAL:HG23	1:B:310:LEU:HD13	1.92	0.52
1:C:106:TRP:HB2	1:C:145:ASN:O	2.10	0.52
1:D:114:LYS:HE2	1:D:373:MET:HG3	1.91	0.51
1:E:105:HIS:HB3	1:E:147:ASP:OD2	2.11	0.51
1:F:50:ARG:NH2	1:F:65:ASN:ND2	2.58	0.51
1:F:114:LYS:HD2	1:F:125:THR:HG22	1.91	0.51
1:A:217:LEU:HD12	1:A:245:ASN:OD1	2.09	0.51
1:B:377:MET:HE3	4:B:603:GOL:H32	1.92	0.51
1:D:197:VAL:HG12	1:D:208:ALA:HB1	1.91	0.51
1:E:98:GLN:HG3	1:E:288:TRP:HZ2	1.75	0.51
1:A:37:LEU:O	1:A:41:GLY:HA2	2.10	0.51
1:A:406:VAL:HG11	1:F:35:GLU:OE1	2.10	0.51
1:C:245:ASN:C	1:C:245:ASN:ND2	2.64	0.51
1:D:446:ALA:C	1:D:448:ALA:H	2.14	0.51
1:F:267:HIS:CE1	1:F:271:VAL:HG21	2.45	0.51
1:F:299:LYS:O	1:F:301:GLY:N	2.43	0.51
1:B:152:PRO:HG2	1:B:153:VAL:H	1.76	0.51
1:F:77:ALA:O	1:F:279:GLN:HG3	2.10	0.51
1:F:166:VAL:HG12	1:F:485:VAL:HG13	1.92	0.51
1:A:171:THR:HG23	1:A:175:ASN:ND2	2.25	0.51
1:A:442:PHE:CD1	1:A:442:PHE:C	2.84	0.51
1:B:17:GLU:HB3	1:E:19:ASN:HB2	1.93	0.51
1:B:453:LEU:HD23	1:E:342:ASP:HB3	1.93	0.51
1:C:382:ILE:O	1:C:386:ILE:HG13	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:96:THR:OG1	1:D:147:ASP:HB3	2.10	0.51
1:E:109:PHE:CG	1:E:368:MET:HB2	2.45	0.51
1:A:61:ASN:CG	1:A:63:LYS:HG2	2.31	0.51
1:C:371:LEU:N	1:C:371:LEU:HD12	2.25	0.51
1:E:456:VAL:HG21	5:E:722:HOH:O	2.11	0.51
1:F:151:LEU:HD13	1:F:168:GLU:HB3	1.92	0.51
1:A:48:GLU:HG2	1:A:235:ILE:HD13	1.93	0.51
1:A:51:GLN:NE2	1:A:55:GLU:HG2	2.25	0.51
1:B:418:PHE:N	1:B:418:PHE:CD1	2.79	0.51
1:E:30:HIS:O	1:E:34:MET:HG2	2.11	0.51
1:E:334:LYS:HB3	1:E:368:MET:CE	2.36	0.51
1:B:173:LEU:O	1:B:473:ILE:HD11	2.11	0.51
1:E:446:ALA:HA	1:E:450:SER:OG	2.11	0.51
1:F:310:LEU:HD23	1:F:351:THR:CG2	2.41	0.51
1:F:349:THR:HA	1:F:352:THR:HG22	1.92	0.51
1:A:343:GLN:HG3	1:F:437:LEU:CD2	2.38	0.51
1:B:183:ILE:O	1:B:183:ILE:HG22	2.11	0.51
1:C:369:LEU:HD12	1:C:376:SER:CB	2.41	0.51
1:C:440:HIS:CE1	1:D:300:LYS:HD2	2.45	0.51
1:D:51:GLN:NE2	1:D:55:GLU:HG3	2.26	0.51
1:E:105:HIS:O	1:E:362:THR:HA	2.11	0.51
1:B:22:THR:OG1	1:B:25:GLU:HG3	2.10	0.51
1:C:109:PHE:CD1	1:C:110:GLY:N	2.79	0.51
1:C:338:LYS:NZ	1:D:438:ASP:OD1	2.39	0.51
1:F:118:TYR:HB2	1:F:458:HIS:CE1	2.46	0.51
1:B:275:ILE:HG23	1:B:287:VAL:HG21	1.93	0.50
1:B:327:PRO:HA	1:B:361:ASN:OD1	2.10	0.50
1:C:393:ALA:HA	1:D:312:LEU:HD11	1.93	0.50
1:D:209:ARG:HB3	1:D:209:ARG:NH1	2.19	0.50
1:E:118:TYR:HB2	1:E:123:TYR:CE1	2.46	0.50
1:E:430:TYR:HB3	1:E:431:PRO:CD	2.38	0.50
1:A:354:LEU:CB	1:A:355:PRO:HD3	2.41	0.50
1:A:493:ARG:C	1:A:495:MET:H	2.14	0.50
1:B:205:GLU:HG3	1:B:209:ARG:HD2	1.91	0.50
1:E:118:TYR:HE1	1:E:121:GLY:C	2.15	0.50
1:F:158:ILE:HG21	1:F:167:HIS:HD2	1.75	0.50
1:F:334:LYS:HD3	1:F:368:MET:CE	2.41	0.50
1:A:79:GLN:HG3	1:A:79:GLN:O	2.11	0.50
1:A:131:LYS:O	1:A:134:ALA:HB3	2.11	0.50
1:B:252:SER:HB3	1:B:263:THR:OG1	2.12	0.50
1:F:61:ASN:OD1	1:F:63:LYS:CG	2.60	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:80:LEU:HD13	1:F:283:PRO:HB3	1.93	0.50
1:F:119:GLN:HB2	1:F:124:VAL:CG2	2.40	0.50
1:F:248:SER:HB3	1:F:271:VAL:HG23	1.94	0.50
1:A:473:ILE:HG21	1:A:481:MET:HE1	1.91	0.50
1:D:119:GLN:HB2	1:D:124:VAL:HG23	1.93	0.50
1:F:18:LEU:HD13	1:F:357:LEU:HB2	1.93	0.50
1:F:71:GLU:HB2	5:F:705:HOH:O	2.12	0.50
1:A:34:MET:HA	1:A:34:MET:HE2	1.94	0.50
1:C:26:LEU:HD13	1:C:323:PHE:CD1	2.46	0.50
1:D:109:PHE:CG	1:D:110:GLY:N	2.79	0.50
1:F:113:VAL:HG22	1:F:373:MET:CE	2.41	0.50
1:F:422:LYS:O	1:F:426:GLN:HG3	2.11	0.50
1:C:56:ASN:CG	1:C:280:LEU:HD22	2.31	0.50
1:D:271:VAL:O	1:D:275:ILE:HG13	2.11	0.50
1:F:196:ILE:O	1:F:199:ALA:HB3	2.12	0.50
1:F:251:MET:HE1	1:F:303:ALA:HB2	1.92	0.50
1:B:96:THR:HG23	1:B:105:HIS:CD2	2.47	0.50
1:C:117:LYS:CB	4:C:603:GOL:H12	2.38	0.50
1:D:217:LEU:HD23	1:D:218:LEU:N	2.27	0.50
1:E:114:LYS:CB	1:E:374:THR:HG23	2.41	0.50
1:F:90:ARG:HB3	1:F:200:TYR:OH	2.12	0.50
1:A:87:LEU:HD21	1:A:288:TRP:CH2	2.47	0.50
1:A:332:GLY:O	1:A:333:SER:HB3	2.11	0.50
1:A:457:ALA:O	1:A:461:VAL:HG23	2.11	0.50
1:D:131:LYS:O	1:D:131:LYS:HD3	2.12	0.50
1:E:311:GLY:HA3	1:E:354:LEU:HD12	1.93	0.50
1:F:209:ARG:HG2	1:F:209:ARG:HH11	1.77	0.50
1:F:305:VAL:HG11	1:F:368:MET:HE1	1.94	0.50
1:A:13:LEU:HD23	1:F:20:LEU:C	2.32	0.50
1:A:84:ARG:CZ	1:C:35:GLU:HB2	2.42	0.50
1:A:397:ILE:HG22	1:A:399:VAL:HG23	1.93	0.50
1:B:232:GLN:HE21	1:B:236:LYS:HE3	1.76	0.50
1:D:151:LEU:HD22	1:D:182:HIS:CD2	2.47	0.50
1:E:19:ASN:HA	5:E:716:HOH:O	2.11	0.50
1:F:109:PHE:HB2	1:F:365:GLY:HA2	1.93	0.50
1:A:328:SER:H	1:A:361:ASN:HB2	1.77	0.49
1:B:109:PHE:CB	1:B:368:MET:HB2	2.42	0.49
1:C:278:ALA:O	1:C:281:THR:HB	2.12	0.49
1:A:127:ASP:OD1	1:A:156:ARG:NH1	2.45	0.49
1:B:50:ARG:NH2	1:B:65:ASN:HD21	2.08	0.49
1:B:228:VAL:HG23	5:B:708:HOH:O	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:437:LEU:HA	1:D:343:GLN:OE1	2.12	0.49
1:D:405:ALA:HB1	1:D:408:SER:HB3	1.94	0.49
1:A:170:LEU:CD2	1:A:485:VAL:HG21	2.42	0.49
1:C:395:GLN:O	1:C:395:GLN:HG2	2.12	0.49
1:D:251:MET:HE2	1:D:296:PHE:HA	1.93	0.49
1:F:218:LEU:HD12	1:F:219:CYS:N	2.26	0.49
1:F:368:MET:HG2	1:F:369:LEU:H	1.76	0.49
1:A:84:ARG:NH1	1:C:35:GLU:HB2	2.27	0.49
1:C:201:TYR:OH	1:C:213:ILE:CG2	2.61	0.49
1:C:272:LEU:O	1:C:275:ILE:N	2.46	0.49
1:C:337:ALA:CA	1:C:343:GLN:HE21	2.25	0.49
1:D:143:ALA:O	1:D:178:LYS:NZ	2.46	0.49
1:D:480:ASP:O	1:D:483:ALA:HB3	2.11	0.49
1:E:136:ILE:HG21	1:E:152:PRO:HG3	1.94	0.49
1:A:136:ILE:HD12	1:A:375:PHE:CE1	2.48	0.49
1:A:348:LYS:HE3	1:A:379:GLN:CG	2.41	0.49
1:B:148:TYR:HH	1:B:329:TYR:HE2	1.58	0.49
1:D:117:LYS:HB3	4:D:604:GOL:C3	2.42	0.49
1:D:305:VAL:HG11	1:D:368:MET:HE1	1.94	0.49
1:A:51:GLN:HG3	1:A:55:GLU:OE1	2.13	0.49
1:A:245:ASN:C	1:A:245:ASN:ND2	2.66	0.49
1:B:139:LEU:O	1:B:142:TRP:HB3	2.12	0.49
1:B:430:TYR:HB3	1:B:431:PRO:CD	2.32	0.49
1:B:493:ARG:C	1:B:495:MET:N	2.60	0.49
1:F:169:THR:O	1:F:173:LEU:HD12	2.12	0.49
1:F:305:VAL:HG22	1:F:310:LEU:HD22	1.95	0.49
1:F:368:MET:HE2	1:F:372:GLY:HA2	1.95	0.49
1:A:119:GLN:HG3	1:A:120:ASP:OD1	2.12	0.49
1:A:158:ILE:HG22	1:A:158:ILE:O	2.12	0.49
1:A:435:MET:CE	1:A:460:LYS:HE2	2.42	0.49
1:B:16:VAL:HG22	1:E:20:LEU:CD2	2.42	0.49
1:B:328:SER:O	1:B:361:ASN:HB2	2.12	0.49
1:C:316:ALA:HB2	1:D:397:ILE:CD1	2.43	0.49
1:E:217:LEU:HA	1:E:245:ASN:HB3	1.95	0.49
1:E:478:PHE:HA	1:E:481:MET:HE2	1.95	0.49
1:A:439:ARG:HB2	1:F:300:LYS:HG3	1.94	0.49
1:C:61:ASN:OD1	1:C:64:THR:N	2.46	0.49
1:D:27:LYS:O	1:D:30:HIS:HB3	2.13	0.49
1:D:353:LEU:O	1:D:357:LEU:HG	2.13	0.49
1:D:377:MET:CE	4:D:604:GOL:H32	2.42	0.49
1:E:276:VAL:O	1:E:280:LEU:HG	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:105:HIS:HE2	1:D:4:ASN:HB2	1.76	0.49
1:A:338:LYS:HG3	1:A:370:GLU:HG3	1.93	0.49
1:B:194:ARG:NH1	1:B:195:ASP:OD1	2.46	0.49
1:C:295:THR:O	1:C:304:PRO:HD2	2.13	0.49
1:E:53:PHE:CZ	1:E:277:LEU:HB2	2.47	0.49
1:F:34:MET:CE	1:F:37:LEU:HD12	2.43	0.49
1:F:119:GLN:HB2	1:F:124:VAL:HG23	1.94	0.49
1:A:148:TYR:HH	1:A:329:TYR:HE2	1.59	0.49
1:A:305:VAL:HG22	1:A:310:LEU:HD22	1.94	0.49
1:B:88:TRP:O	1:B:179:HIS:HB2	2.12	0.49
1:B:405:ALA:HB1	1:B:408:SER:HB3	1.95	0.49
1:F:166:VAL:HG13	1:F:196:ILE:HD11	1.95	0.49
1:A:340:PRO:HD3	1:A:369:LEU:HD11	1.94	0.48
1:B:5:ASN:CG	1:B:5:ASN:O	2.51	0.48
1:B:190:VAL:HG12	1:B:240:PHE:HD2	1.78	0.48
1:B:408:SER:O	1:B:412:VAL:HG23	2.12	0.48
1:B:432:SER:O	1:B:439:ARG:NH1	2.45	0.48
1:C:116:CYS:HB2	1:C:374:THR:CG2	2.43	0.48
1:C:403:THR:HA	1:D:259:TYR:CD2	2.48	0.48
1:C:477:ILE:HG22	1:C:481:MET:HE2	1.95	0.48
1:D:220:PRO:HD2	1:D:247:LEU:O	2.13	0.48
1:E:122:LYS:H	1:E:122:LYS:HD3	1.78	0.48
1:F:42:ILE:HD12	1:F:273:SER:HB3	1.94	0.48
1:A:231:CYS:O	1:A:235:ILE:HG13	2.13	0.48
1:A:493:ARG:C	1:A:495:MET:N	2.64	0.48
1:B:217:LEU:HD23	1:B:217:LEU:C	2.32	0.48
1:B:331:ALA:HB2	1:B:364:TYR:HE1	1.74	0.48
1:C:337:ALA:HB2	1:C:343:GLN:NE2	2.24	0.48
1:E:64:THR:HB	1:E:66:VAL:HG23	1.94	0.48
1:E:94:PHE:CB	1:E:178:LYS:HG2	2.42	0.48
1:E:198:LYS:HG2	1:E:203:GLY:HA2	1.95	0.48
1:F:190:VAL:HB	1:F:236:LYS:HD3	1.94	0.48
1:F:252:SER:O	1:F:296:PHE:HB3	2.13	0.48
1:F:405:ALA:HB1	1:F:408:SER:HB3	1.95	0.48
1:A:442:PHE:C	1:A:442:PHE:HD1	2.16	0.48
1:B:229:ASN:O	1:B:233:VAL:HG23	2.14	0.48
1:C:191:GLU:HG3	1:C:240:PHE:CZ	2.47	0.48
1:D:247:LEU:HD21	1:D:292:SER:HB3	1.96	0.48
1:E:266:THR:HG22	1:E:270:GLU:OE2	2.14	0.48
1:E:350:MET:CE	1:E:354:LEU:HD11	2.43	0.48
1:A:338:LYS:O	1:A:339:VAL:HB	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:60:VAL:HG22	1:B:67:VAL:HG13	1.95	0.48
1:C:16:VAL:HG13	1:D:18:LEU:HD21	1.96	0.48
1:C:408:SER:OG	1:C:421:LEU:HD21	2.14	0.48
1:D:22:THR:HG23	1:D:25:GLU:OE1	2.13	0.48
1:E:118:TYR:HB2	1:E:123:TYR:HE1	1.78	0.48
1:F:113:VAL:HG22	1:F:373:MET:HE2	1.95	0.48
1:A:435:MET:HE2	1:A:460:LYS:HE2	1.95	0.48
1:B:392:LYS:HE2	1:E:309:GLU:OE2	2.12	0.48
1:C:109:PHE:CG	1:C:110:GLY:N	2.81	0.48
1:C:207:GLU:O	1:C:211:LYS:HB2	2.14	0.48
1:E:104:VAL:O	1:F:4:ASN:ND2	2.47	0.48
1:E:167:HIS:C	1:E:169:THR:H	2.15	0.48
1:F:422:LYS:CA	1:F:425:ARG:NH1	2.75	0.48
1:A:47:PRO:HA	1:A:50:ARG:CZ	2.44	0.48
1:A:458:HIS:HD2	1:A:458:HIS:O	1.97	0.48
1:B:332:GLY:O	1:B:333:SER:CB	2.62	0.48
1:B:377:MET:HE2	4:B:603:GOL:H32	1.95	0.48
1:C:98:GLN:OE1	1:C:362:THR:OG1	2.29	0.48
1:E:234:ILE:HG23	1:E:278:ALA:HB2	1.94	0.48
1:F:291:SER:HB3	1:F:317:VAL:HG11	1.96	0.48
1:B:218:LEU:CD2	1:B:234:ILE:HG12	2.42	0.48
1:C:96:THR:HG23	1:C:105:HIS:CD2	2.49	0.48
1:C:157:ASP:O	1:C:158:ILE:HD13	2.14	0.48
1:C:281:THR:HG22	1:C:282:VAL:HG23	1.96	0.48
1:D:84:ARG:HG3	1:D:84:ARG:HH11	1.78	0.48
1:D:88:TRP:HB2	1:D:212:PRO:O	2.13	0.48
1:E:392:LYS:O	1:E:395:GLN:HB3	2.14	0.48
1:F:339:VAL:CG2	1:F:340:PRO:HD2	2.44	0.48
1:A:453:LEU:HD23	1:F:342:ASP:CB	2.43	0.48
1:B:38:MET:O	1:B:68:LYS:HD3	2.14	0.48
1:B:191:GLU:HG3	1:B:240:PHE:CZ	2.49	0.48
1:C:396:GLY:C	1:C:397:ILE:HD12	2.33	0.48
1:D:90:ARG:HD2	1:D:200:TYR:CE1	2.48	0.48
1:D:174:ALA:CA	1:D:473:ILE:HD11	2.44	0.48
1:D:297:ASP:O	1:D:299:LYS:N	2.41	0.48
1:E:267:HIS:CE1	1:E:291:SER:HB2	2.48	0.48
1:E:289:TYR:CE1	1:E:317:VAL:HG13	2.47	0.48
1:F:333:SER:HG	1:F:387:PHE:HZ	1.58	0.48
1:B:8:ALA:O	1:B:9:GLY:C	2.53	0.48
1:C:305:VAL:CG2	1:C:310:LEU:HD22	2.44	0.48
1:D:107:THR:HG23	1:D:364:TYR:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:442:PHE:CD1	1:F:442:PHE:C	2.87	0.48
1:A:33:THR:O	1:A:37:LEU:HG	2.14	0.47
1:A:194:ARG:HG2	1:A:194:ARG:HH11	1.78	0.47
1:A:380:LEU:HD13	1:A:380:LEU:C	2.35	0.47
1:B:194:ARG:HD2	1:B:205:GLU:OE2	2.13	0.47
1:D:85:PHE:CB	1:D:286:LYS:HD3	2.44	0.47
1:D:173:LEU:HD22	1:D:213:ILE:HD12	1.96	0.47
1:D:319:LYS:HD3	1:D:322:GLN:HE22	1.79	0.47
1:C:45:SER:CB	1:C:228:VAL:HG22	2.43	0.47
1:C:434:PRO:HB3	1:C:437:LEU:HD12	1.96	0.47
1:D:123:TYR:OH	1:D:458:HIS:HB2	2.14	0.47
1:D:251:MET:HE2	1:D:296:PHE:CB	2.44	0.47
1:A:294:THR:HA	1:A:313:ILE:HD12	1.96	0.47
1:B:314:SER:HB2	1:B:355:PRO:HG3	1.96	0.47
1:E:70:PRO:HG2	1:E:73:LEU:HG	1.94	0.47
1:E:94:PHE:CG	1:E:178:LYS:HG2	2.49	0.47
1:F:285:ALA:O	1:F:287:VAL:HG13	2.14	0.47
1:F:311:GLY:HA3	1:F:354:LEU:HD12	1.96	0.47
1:F:319:LYS:HE2	1:F:358:ALA:HB1	1.97	0.47
1:F:353:LEU:O	1:F:357:LEU:HG	2.14	0.47
1:B:109:PHE:CD1	1:B:110:GLY:N	2.82	0.47
1:B:438:ASP:OD2	1:B:445:TRP:HD1	1.97	0.47
1:C:94:PHE:CE1	1:C:178:LYS:HE2	2.49	0.47
1:D:267:HIS:CE1	1:D:271:VAL:HG21	2.49	0.47
1:E:334:LYS:HA	1:E:348:LYS:NZ	2.29	0.47
1:F:296:PHE:CE2	1:F:298:LEU:HD23	2.49	0.47
1:F:297:ASP:C	1:F:299:LYS:N	2.67	0.47
1:B:435:MET:HG2	1:B:436:LEU:HD12	1.96	0.47
1:C:377:MET:CE	1:C:465:LEU:HD11	2.45	0.47
1:D:134:ALA:HA	1:D:175:ASN:ND2	2.30	0.47
1:E:110:GLY:HA2	1:E:111:THR:HA	1.56	0.47
1:F:94:PHE:CE2	1:F:177:ALA:HB3	2.49	0.47
1:F:106:TRP:CZ3	1:F:391:LYS:HE3	2.49	0.47
1:A:378:GLU:O	1:A:381:VAL:HG22	2.14	0.47
1:B:160:GLY:O	1:B:492:PHE:HE2	1.96	0.47
1:D:44:VAL:HG12	1:D:50:ARG:HG3	1.97	0.47
1:D:48:GLU:O	1:D:51:GLN:HB3	2.15	0.47
1:F:483:ALA:O	1:F:486:ASP:HB2	2.14	0.47
1:A:48:GLU:O	1:A:52:ILE:HG13	2.15	0.47
1:A:88:TRP:CD1	1:A:211:LYS:HA	2.50	0.47
1:A:155:ALA:HB1	1:A:158:ILE:HG12	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:493:ARG:O	1:A:495:MET:HG2	2.15	0.47
1:C:245:ASN:HD22	1:C:246:VAL:N	2.12	0.47
1:F:129:VAL:HG23	1:F:131:LYS:H	1.80	0.47
1:F:234:ILE:CG2	1:F:278:ALA:HB2	2.44	0.47
1:F:318:ALA:O	1:F:322:GLN:HG3	2.14	0.47
1:A:61:ASN:ND2	1:A:63:LYS:HG2	2.29	0.47
1:A:396:GLY:C	1:A:397:ILE:HD12	2.35	0.47
1:C:51:GLN:NE2	1:C:55:GLU:HG3	2.29	0.47
1:C:232:GLN:HE21	1:C:236:LYS:HE3	1.80	0.47
1:C:392:LYS:O	1:C:395:GLN:HB3	2.15	0.47
1:D:46:ASP:HB2	1:D:228:VAL:HG13	1.97	0.47
1:D:310:LEU:HD11	1:D:331:ALA:HB3	1.96	0.47
1:E:117:LYS:HD2	1:E:126:VAL:HG21	1.95	0.47
1:E:230:ALA:O	1:E:234:ILE:HG13	2.15	0.47
1:F:247:LEU:HD23	1:F:247:LEU:C	2.35	0.47
1:A:297:ASP:HB2	1:A:304:PRO:HD3	1.97	0.47
1:A:305:VAL:O	1:A:310:LEU:HD22	2.15	0.47
1:B:315:ALA:O	1:B:318:ALA:HB3	2.14	0.47
1:C:158:ILE:HG22	1:C:158:ILE:O	2.15	0.47
1:C:234:ILE:HG21	1:C:277:LEU:HD12	1.96	0.47
1:C:251:MET:HE2	1:C:296:PHE:CB	2.42	0.47
1:D:373:MET:HE2	1:D:373:MET:HA	1.96	0.47
1:B:18:LEU:HD23	1:B:19:ASN:N	2.30	0.47
1:C:91:ASP:HB2	1:C:177:ALA:CB	2.44	0.47
1:C:107:THR:HG23	1:C:364:TYR:CB	2.44	0.47
1:D:141:ASP:HA	1:D:178:LYS:HE3	1.97	0.47
1:E:470:VAL:HG12	1:E:471:THR:N	2.30	0.47
1:F:475:ALA:O	1:F:479:LYS:HG3	2.15	0.47
1:A:91:ASP:O	1:A:93:LYS:N	2.48	0.46
1:D:162:GLY:CA	1:D:492:PHE:CD2	2.98	0.46
1:D:189:ASN:O	1:D:192:TYR:HB2	2.14	0.46
1:E:297:ASP:C	1:E:299:LYS:H	2.19	0.46
1:F:112:GLY:O	1:F:153:VAL:HA	2.15	0.46
1:F:119:GLN:HG3	1:F:120:ASP:OD1	2.15	0.46
1:B:99:GLU:OE2	1:D:31:TYR:HB3	2.15	0.46
1:B:412:VAL:O	1:B:416:ASN:HB2	2.15	0.46
1:C:20:LEU:C	1:D:13:LEU:HD23	2.36	0.46
1:C:34:MET:SD	1:C:71:GLU:HG3	2.56	0.46
1:D:113:VAL:HG22	1:D:373:MET:HE2	1.96	0.46
1:E:281:THR:HG22	1:E:282:VAL:HG23	1.98	0.46
1:A:259:TYR:CD2	1:F:403:THR:HA	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:383:ASP:O	1:A:386:ILE:HB	2.15	0.46
1:C:355:PRO:HB2	1:C:363:ILE:CD1	2.46	0.46
1:E:94:PHE:CD2	1:E:178:LYS:HG2	2.50	0.46
1:E:122:LYS:HE3	1:E:124:VAL:HG23	1.96	0.46
1:E:229:ASN:O	1:E:233:VAL:HG23	2.15	0.46
1:B:103:LYS:HB3	1:C:4:ASN:ND2	2.30	0.46
1:B:110:GLY:HA2	1:B:111:THR:HA	1.56	0.46
1:C:72:TYR:CD1	1:C:72:TYR:C	2.89	0.46
1:D:56:ASN:CG	1:D:280:LEU:HD22	2.35	0.46
1:D:332:GLY:O	1:D:333:SER:HB3	2.14	0.46
1:E:158:ILE:HG21	1:E:167:HIS:CD2	2.50	0.46
1:E:188:GLU:HA	1:E:236:LYS:HZ2	1.81	0.46
1:F:151:LEU:N	1:F:180:PHE:HE1	2.12	0.46
1:F:231:CYS:O	1:F:235:ILE:HG13	2.15	0.46
1:F:440:HIS:HB3	1:F:444:ASP:HB2	1.98	0.46
1:A:337:ALA:HB2	1:A:343:GLN:CD	2.36	0.46
1:A:371:LEU:N	1:A:371:LEU:HD12	2.31	0.46
1:B:480:ASP:O	1:B:483:ALA:HB3	2.14	0.46
1:D:251:MET:HE2	1:D:296:PHE:CA	2.46	0.46
1:D:297:ASP:OD1	1:D:300:LYS:N	2.47	0.46
1:F:457:ALA:O	1:F:461:VAL:HG23	2.15	0.46
1:A:118:TYR:N	4:A:604:GOL:H12	2.23	0.46
1:A:304:PRO:HB3	1:F:439:ARG:HD3	1.98	0.46
1:C:223:PRO:HG2	1:D:415:GLY:H	1.80	0.46
1:A:119:GLN:CB	1:A:124:VAL:HG21	2.46	0.46
1:A:162:GLY:HA2	1:A:492:PHE:HD2	1.81	0.46
1:B:94:PHE:CE1	1:B:178:LYS:HE2	2.51	0.46
1:C:194:ARG:HD3	1:C:240:PHE:CD1	2.50	0.46
1:C:218:LEU:HD21	1:C:234:ILE:HG12	1.97	0.46
1:D:19:ASN:HA	5:D:711:HOH:O	2.14	0.46
1:E:181:HIS:HA	1:E:215:SER:O	2.16	0.46
1:E:308:PRO:HG2	1:E:309:GLU:OE1	2.16	0.46
1:F:94:PHE:CG	1:F:178:LYS:HG2	2.51	0.46
1:A:61:ASN:ND2	1:A:63:LYS:HE2	2.29	0.46
1:C:209:ARG:HH12	1:C:241:GLY:HA3	1.80	0.46
1:F:40:PRO:HG2	1:F:224:LEU:HD13	1.97	0.46
1:F:141:ASP:O	1:F:178:LYS:HE3	2.16	0.46
1:A:170:LEU:HD22	1:A:485:VAL:CG2	2.45	0.46
1:B:397:ILE:HG21	1:E:21:PHE:HE1	1.81	0.46
1:B:437:LEU:CD2	1:E:343:GLN:HG3	2.46	0.46
1:C:129:VAL:HG22	1:C:132:ASP:CG	2.36	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:215:SER:CB	1:C:243:PRO:HB2	2.45	0.46
1:E:22:THR:OG1	1:E:25:GLU:HG3	2.16	0.46
1:E:131:LYS:O	1:E:131:LYS:HD3	2.16	0.46
1:E:438:ASP:OD1	1:E:440:HIS:HB2	2.16	0.46
1:F:84:ARG:HB3	1:F:99:GLU:HG3	1.98	0.46
1:A:49:ALA:HB2	1:A:235:ILE:HD11	1.98	0.46
1:C:90:ARG:NH1	1:C:473:ILE:HG12	2.31	0.46
1:E:131:LYS:HD3	1:E:131:LYS:C	2.37	0.46
1:E:192:TYR:O	1:E:196:ILE:HG13	2.15	0.46
1:F:305:VAL:HG13	1:F:334:LYS:HB3	1.98	0.46
1:F:369:LEU:HD12	1:F:376:SER:HB2	1.98	0.46
1:F:447:ALA:C	1:F:449:GLY:H	2.19	0.46
1:A:309:GLU:CD	1:F:392:LYS:HE2	2.37	0.45
1:A:343:GLN:HB2	1:F:453:LEU:HD22	1.97	0.45
1:C:50:ARG:HH21	1:C:65:ASN:ND2	2.14	0.45
1:D:145:ASN:HD22	1:D:387:PHE:HB2	1.81	0.45
1:D:390:VAL:O	1:D:394:MET:HG3	2.16	0.45
1:E:50:ARG:HD3	1:E:65:ASN:HA	1.97	0.45
1:E:218:LEU:HD21	1:E:234:ILE:HG12	1.98	0.45
1:E:328:SER:O	1:E:361:ASN:HB2	2.16	0.45
1:E:422:LYS:O	1:E:426:GLN:HG3	2.17	0.45
1:C:339:VAL:O	1:C:341:ASP:N	2.49	0.45
1:D:107:THR:HG23	1:D:364:TYR:CB	2.47	0.45
1:F:49:ALA:HB2	1:F:235:ILE:HD11	1.97	0.45
1:F:170:LEU:CD2	1:F:485:VAL:HG21	2.45	0.45
1:F:218:LEU:HD21	1:F:234:ILE:HG12	1.98	0.45
1:A:118:TYR:CZ	1:A:121:GLY:HA2	2.51	0.45
1:B:403:THR:HB	1:E:261:ALA:HB3	1.99	0.45
1:D:117:LYS:CA	4:D:604:GOL:H31	2.45	0.45
1:D:190:VAL:HB	1:D:236:LYS:CD	2.46	0.45
1:E:473:ILE:HD13	1:E:481:MET:HE3	1.99	0.45
1:A:145:ASN:ND2	1:A:384:ASN:O	2.48	0.45
1:A:440:HIS:O	1:F:338:LYS:NZ	2.39	0.45
1:B:18:LEU:HD21	1:E:16:VAL:CG1	2.46	0.45
1:C:53:PHE:HZ	1:C:277:LEU:HB2	1.80	0.45
1:C:222:SER:HA	1:C:270:GLU:OE2	2.16	0.45
1:D:303:ALA:HB3	5:D:709:HOH:O	2.16	0.45
1:D:319:LYS:HD3	1:D:322:GLN:NE2	2.31	0.45
1:E:350:MET:HE1	1:E:354:LEU:HD11	1.97	0.45
1:A:60:VAL:HG13	1:A:67:VAL:HG22	1.97	0.45
1:B:118:TYR:HD1	1:B:123:TYR:CE1	2.34	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:108:CYS:HA	1:C:366:ALA:HB3	1.99	0.45
1:E:91:ASP:HB2	1:E:177:ALA:HB1	1.99	0.45
1:B:112:GLY:O	1:B:153:VAL:HA	2.17	0.45
1:C:332:GLY:HA3	1:C:363:ILE:HG23	1.99	0.45
1:C:375:PHE:CD1	1:C:375:PHE:C	2.89	0.45
1:D:197:VAL:C	1:D:199:ALA:N	2.70	0.45
1:E:42:ILE:HD12	1:E:273:SER:CB	2.46	0.45
1:E:381:VAL:HG23	1:E:457:ALA:HB1	1.97	0.45
1:E:473:ILE:O	1:E:474:ASP:C	2.55	0.45
1:E:493:ARG:C	1:E:495:MET:H	2.20	0.45
1:F:112:GLY:N	1:F:152:PRO:O	2.50	0.45
1:F:296:PHE:CD2	1:F:298:LEU:HD23	2.52	0.45
1:B:428:VAL:HG23	1:E:298:LEU:CB	2.45	0.45
1:B:470:VAL:O	1:B:472:PRO:HD3	2.16	0.45
1:C:79:GLN:HA	1:E:75:ARG:HH11	1.82	0.45
1:C:305:VAL:HG12	1:C:336:ASP:OD1	2.17	0.45
1:F:337:ALA:N	1:F:343:GLN:HE21	2.14	0.45
1:A:412:VAL:HG12	1:A:416:ASN:HB2	1.99	0.45
1:C:247:LEU:HG	1:C:291:SER:CA	2.47	0.45
1:F:190:VAL:HA	1:F:193:TYR:HD2	1.80	0.45
1:A:44:VAL:CB	1:A:50:ARG:HG3	2.45	0.45
1:A:382:ILE:O	1:A:386:ILE:HG13	2.16	0.45
1:B:172:PRO:O	1:B:176:THR:HG22	2.17	0.45
1:B:428:VAL:O	1:E:299:LYS:HE3	2.17	0.45
1:C:111:THR:HG23	1:C:111:THR:O	2.17	0.45
1:C:200:TYR:HA	1:C:477:ILE:CG2	2.47	0.45
1:C:234:ILE:HG21	1:C:277:LEU:CD1	2.47	0.45
1:F:61:ASN:O	1:F:63:LYS:N	2.50	0.45
1:F:110:GLY:HA2	1:F:111:THR:HA	1.61	0.45
1:F:117:LYS:HD2	1:F:126:VAL:HG21	1.99	0.45
1:A:229:ASN:O	1:A:233:VAL:HG23	2.17	0.45
1:B:45:SER:HA	1:B:65:ASN:HD22	1.82	0.45
1:C:128:SER:O	1:C:156:ARG:HG3	2.17	0.45
1:C:262:GLY:HA2	1:D:404:LEU:O	2.17	0.45
1:C:342:ASP:HA	1:D:341:ASP:O	2.17	0.45
1:D:449:GLY:O	1:D:450:SER:C	2.56	0.45
1:E:93:LYS:HE3	1:E:94:PHE:CZ	2.51	0.45
1:E:109:PHE:O	1:E:152:PRO:HA	2.17	0.45
1:E:171:THR:O	1:E:175:ASN:ND2	2.50	0.45
1:E:327:PRO:HA	1:E:361:ASN:OD1	2.17	0.45
1:F:341:ASP:OD1	1:F:343:GLN:HB3	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:376:SER:HB3	1:F:379:GLN:HB3	1.98	0.45
1:A:84:ARG:HB3	1:A:99:GLU:HG3	1.99	0.44
1:B:412:VAL:HG21	1:B:418:PHE:CE2	2.52	0.44
1:C:110:GLY:HA2	1:C:111:THR:HA	1.60	0.44
1:C:216:MET:CE	1:C:242:ILE:HG21	2.47	0.44
1:C:336:ASP:HB3	1:C:371:LEU:HG	1.98	0.44
1:D:172:PRO:O	1:D:176:THR:HG22	2.17	0.44
1:D:183:ILE:HG23	1:D:217:LEU:HD13	1.98	0.44
1:D:400:SER:OG	1:D:403:THR:HG23	2.17	0.44
1:E:114:LYS:HB3	1:E:125:THR:CG2	2.47	0.44
1:F:122:LYS:H	1:F:122:LYS:HD3	1.82	0.44
1:A:61:ASN:HD21	1:A:63:LYS:HG2	1.83	0.44
1:B:50:ARG:NH2	1:B:65:ASN:ND2	2.56	0.44
1:B:50:ARG:NH1	1:B:62:GLU:OE2	2.50	0.44
1:C:113:VAL:HG23	1:C:114:LYS:HG3	1.99	0.44
1:C:204:ASP:OD1	1:C:206:GLU:HB2	2.17	0.44
1:C:334:LYS:HD3	1:C:368:MET:HE1	1.98	0.44
1:C:343:GLN:HB2	1:D:453:LEU:HD22	1.98	0.44
1:C:370:GLU:C	1:C:372:GLY:H	2.21	0.44
1:D:430:TYR:HB3	1:D:431:PRO:HD3	1.97	0.44
1:F:421:LEU:O	1:F:425:ARG:HG3	2.16	0.44
1:A:44:VAL:HG21	1:A:67:VAL:HG21	1.99	0.44
1:A:110:GLY:HA2	1:A:111:THR:HA	1.71	0.44
1:B:35:GLU:OE2	1:F:84:ARG:NH1	2.50	0.44
1:B:217:LEU:HA	1:B:245:ASN:HB3	1.99	0.44
1:C:379:GLN:NE2	1:C:383:ASP:OD1	2.48	0.44
1:E:104:VAL:HA	1:E:360:ALA:O	2.16	0.44
1:F:90:ARG:CZ	1:F:473:ILE:HG12	2.48	0.44
1:F:149:PHE:CE1	1:F:152:PRO:HD3	2.52	0.44
1:F:378:GLU:O	1:F:381:VAL:HG22	2.16	0.44
1:A:267:HIS:CD2	1:A:268:ASN:N	2.86	0.44
1:B:190:VAL:HG12	1:B:240:PHE:CD2	2.53	0.44
1:B:251:MET:HE2	1:B:296:PHE:CB	2.39	0.44
1:C:155:ALA:O	1:C:164:GLN:HG3	2.18	0.44
1:D:90:ARG:HH11	1:D:90:ARG:HB3	1.82	0.44
1:D:141:ASP:OD2	1:D:470:VAL:HG22	2.17	0.44
1:E:63:LYS:CG	1:E:64:THR:N	2.78	0.44
1:E:451:LYS:HB3	1:E:455:THR:OG1	2.18	0.44
1:F:305:VAL:HG21	1:F:334:LYS:HD2	1.98	0.44
1:B:84:ARG:NH2	1:D:35:GLU:CD	2.70	0.44
1:C:21:PHE:HE1	1:D:397:ILE:HG21	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:337:ALA:HA	1:C:343:GLN:NE2	2.32	0.44
1:C:474:ASP:HB3	1:C:477:ILE:CG1	2.48	0.44
1:D:112:GLY:O	1:D:153:VAL:HA	2.18	0.44
1:D:196:ILE:O	1:D:199:ALA:HB3	2.17	0.44
1:E:247:LEU:HG	1:E:291:SER:N	2.32	0.44
1:F:86:VAL:HG13	1:F:88:TRP:HE1	1.83	0.44
1:F:109:PHE:CG	1:F:110:GLY:N	2.86	0.44
1:F:218:LEU:HA	5:F:707:HOH:O	2.17	0.44
1:A:91:ASP:C	1:A:93:LYS:N	2.71	0.44
1:A:197:VAL:O	1:A:200:TYR:HB3	2.17	0.44
1:A:305:VAL:HG12	1:A:336:ASP:OD1	2.18	0.44
1:B:88:TRP:HZ3	1:B:92:LYS:HE2	1.82	0.44
1:C:24:ASP:HB3	1:D:10:PHE:CE1	2.53	0.44
1:C:176:THR:HG23	1:C:176:THR:O	2.17	0.44
1:D:84:ARG:HG3	1:D:84:ARG:NH1	2.33	0.44
1:E:272:LEU:O	1:E:275:ILE:N	2.51	0.44
1:F:109:PHE:CD1	1:F:110:GLY:N	2.86	0.44
1:F:189:ASN:O	1:F:192:TYR:N	2.48	0.44
1:F:485:VAL:O	1:F:488:ALA:HB3	2.17	0.44
1:A:7:VAL:HG12	1:A:8:ALA:O	2.17	0.44
1:B:348:LYS:O	1:B:352:THR:HG22	2.18	0.44
1:C:251:MET:HA	1:C:294:THR:O	2.17	0.44
1:E:220:PRO:CD	1:E:247:LEU:O	2.66	0.44
1:F:90:ARG:NE	1:F:173:LEU:O	2.44	0.44
1:A:408:SER:O	1:A:412:VAL:HG23	2.18	0.44
1:B:458:HIS:O	1:B:461:VAL:HB	2.17	0.44
1:C:100:CYS:SG	1:C:325:GLY:HA2	2.58	0.44
1:C:163:ALA:HB1	1:C:166:VAL:HG23	1.99	0.44
1:C:196:ILE:HG12	1:C:484:ILE:HB	2.00	0.44
1:E:88:TRP:O	1:E:179:HIS:HB2	2.18	0.44
1:E:397:ILE:HG22	1:E:399:VAL:CG2	2.46	0.44
1:F:107:THR:O	1:F:364:TYR:HA	2.17	0.44
1:B:434:PRO:CB	1:B:437:LEU:HD12	2.46	0.44
1:C:246:VAL:O	1:C:271:VAL:HG13	2.17	0.44
1:C:386:ILE:HG23	1:D:346:HIS:CE1	2.53	0.44
1:C:474:ASP:HB3	1:C:477:ILE:CB	2.47	0.44
1:D:119:GLN:HB2	1:D:124:VAL:CG2	2.48	0.44
1:E:48:GLU:O	1:E:52:ILE:HG13	2.18	0.44
1:E:205:GLU:CG	1:E:209:ARG:HD2	2.42	0.44
1:E:321:ALA:HB1	1:E:326:LEU:O	2.18	0.44
1:F:281:THR:HG22	1:F:282:VAL:CG2	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:452:ASP:O	1:F:456:VAL:HG23	2.18	0.44
1:B:42:ILE:HG12	1:B:224:LEU:HB3	1.99	0.43
1:C:145:ASN:N	1:C:384:ASN:HD21	2.05	0.43
1:C:218:LEU:HD13	1:C:230:ALA:HB1	1.99	0.43
1:C:307:SER:HB2	1:C:308:PRO:HD2	2.00	0.43
1:D:100:CYS:SG	1:D:325:GLY:HA2	2.58	0.43
1:D:129:VAL:HG22	1:D:132:ASP:OD2	2.18	0.43
1:F:61:ASN:OD1	1:F:63:LYS:HG2	2.18	0.43
1:F:104:VAL:HA	1:F:360:ALA:O	2.18	0.43
1:A:305:VAL:HG21	2:A:601:BG3:H62	1.99	0.43
1:C:349:THR:O	1:C:353:LEU:HB2	2.18	0.43
1:E:397:ILE:HG22	1:E:399:VAL:HG23	2.00	0.43
1:A:110:GLY:HA3	1:A:183:ILE:HG13	2.00	0.43
1:A:191:GLU:HG3	1:A:240:PHE:HZ	1.82	0.43
1:A:425:ARG:HG3	1:A:425:ARG:HH11	1.83	0.43
1:B:314:SER:HB3	1:B:330:VAL:HB	1.99	0.43
1:C:152:PRO:HG2	1:C:153:VAL:H	1.82	0.43
1:C:390:VAL:O	1:C:393:ALA:HB3	2.17	0.43
1:D:370:GLU:HB3	1:D:373:MET:HB3	1.99	0.43
1:E:396:GLY:O	1:E:398:PRO:HD3	2.18	0.43
1:E:473:ILE:HG21	1:E:481:MET:CE	2.35	0.43
1:F:181:HIS:NE2	1:F:217:LEU:HB2	2.33	0.43
1:F:216:MET:CE	1:F:242:ILE:HG21	2.48	0.43
1:F:353:LEU:HD13	1:F:390:VAL:HG22	1.99	0.43
1:F:445:TRP:CE2	1:F:450:SER:HA	2.53	0.43
1:A:219:CYS:SG	1:A:249:MET:HG3	2.58	0.43
1:A:434:PRO:HB2	1:A:437:LEU:HB2	2.00	0.43
1:C:154:SER:HB3	1:C:164:GLN:NE2	2.34	0.43
1:D:80:LEU:HD12	1:D:279:GLN:HB3	2.00	0.43
1:E:200:TYR:HA	1:E:477:ILE:HG21	2.00	0.43
1:E:411:LYS:HZ3	1:E:421:LEU:HD13	1.82	0.43
1:E:452:ASP:OD1	1:E:455:THR:HG23	2.18	0.43
1:B:151:LEU:HA	1:B:152:PRO:HD2	1.91	0.43
1:B:210:LYS:O	1:B:210:LYS:HG2	2.18	0.43
1:D:248:SER:H	1:D:291:SER:HA	1.83	0.43
1:E:136:ILE:HG22	1:E:149:PHE:HE1	1.83	0.43
1:E:172:PRO:O	1:E:176:THR:HG22	2.18	0.43
1:E:334:LYS:HA	1:E:348:LYS:HZ3	1.83	0.43
1:F:216:MET:HE3	1:F:242:ILE:CG2	2.49	0.43
1:F:305:VAL:HG21	1:F:334:LYS:CD	2.48	0.43
1:F:364:TYR:O	1:F:364:TYR:CD1	2.72	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:272:LEU:O	1:A:276:VAL:HG23	2.19	0.43
1:A:276:VAL:O	1:A:280:LEU:HG	2.19	0.43
1:B:135:ASP:O	1:B:138:LYS:HB3	2.19	0.43
1:B:243:PRO:HG3	1:B:286:LYS:HD2	2.00	0.43
1:C:336:ASP:HA	1:C:371:LEU:H	1.84	0.43
1:D:87:LEU:HD21	1:D:288:TRP:CH2	2.54	0.43
1:D:272:LEU:O	1:D:276:VAL:HG23	2.18	0.43
1:D:297:ASP:C	1:D:299:LYS:N	2.71	0.43
1:D:473:ILE:HG21	1:D:481:MET:HE1	2.00	0.43
1:E:139:LEU:O	1:E:142:TRP:HB3	2.18	0.43
1:E:252:SER:CB	1:E:295:THR:HA	2.48	0.43
1:B:110:GLY:HA3	1:B:183:ILE:HG13	1.99	0.43
1:B:412:VAL:HG21	1:B:418:PHE:CD2	2.53	0.43
1:C:26:LEU:HD13	1:C:323:PHE:CG	2.54	0.43
1:C:88:TRP:CE3	1:C:211:LYS:HG2	2.53	0.43
1:C:129:VAL:HG23	1:C:132:ASP:H	1.84	0.43
1:C:205:GLU:O	1:C:205:GLU:HG3	2.18	0.43
1:A:14:ASN:HA	5:A:717:HOH:O	2.19	0.43
1:B:162:GLY:CA	1:B:492:PHE:CD2	3.00	0.43
1:B:321:ALA:CB	1:B:328:SER:HB3	2.48	0.43
1:C:247:LEU:HG	1:C:291:SER:N	2.33	0.43
1:C:477:ILE:HG22	1:C:481:MET:CE	2.48	0.43
1:D:232:GLN:HE21	1:D:236:LYS:HE3	1.82	0.43
1:D:332:GLY:HA3	1:D:363:ILE:HG22	1.94	0.43
1:E:249:MET:HG2	1:E:292:SER:HB3	2.01	0.43
1:E:473:ILE:HD13	1:E:481:MET:HE1	1.99	0.43
1:F:297:ASP:C	1:F:299:LYS:H	2.22	0.43
1:A:50:ARG:NE	1:A:65:ASN:OD1	2.52	0.43
1:A:91:ASP:C	1:A:93:LYS:H	2.20	0.43
1:A:437:LEU:HA	1:F:343:GLN:OE1	2.19	0.43
1:C:199:ALA:CB	1:C:481:MET:HG2	2.49	0.43
1:C:446:ALA:C	1:C:448:ALA:H	2.22	0.43
1:D:171:THR:HG23	1:D:175:ASN:HD21	1.84	0.43
1:D:179:HIS:HD1	1:D:213:ILE:HA	1.84	0.43
1:D:223:PRO:HB3	1:D:255:SER:O	2.19	0.43
1:D:305:VAL:HG22	1:D:305:VAL:O	2.18	0.43
1:F:54:LYS:HA	1:F:58:CYS:O	2.19	0.43
1:F:85:PHE:CB	1:F:286:LYS:HD3	2.48	0.43
1:F:158:ILE:HG21	1:F:167:HIS:CD2	2.52	0.43
1:F:337:ALA:CA	1:F:343:GLN:NE2	2.82	0.43
1:A:314:SER:HB2	1:A:355:PRO:HG3	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:348:LYS:NZ	1:A:368:MET:H	2.17	0.43
1:A:446:ALA:HA	1:A:450:SER:OG	2.19	0.43
1:B:476:ASP:O	1:B:479:LYS:HB2	2.19	0.43
1:C:254:GLY:O	1:D:417:ASN:HA	2.19	0.43
1:C:452:ASP:O	1:C:456:VAL:HG23	2.19	0.43
1:F:53:PHE:C	1:F:58:CYS:HB2	2.38	0.43
1:F:111:THR:HG21	1:F:184:ASP:OD2	2.19	0.43
1:F:128:SER:HA	1:F:132:ASP:OD2	2.19	0.43
1:A:150:SER:HB3	1:A:183:ILE:HD11	2.01	0.42
1:A:389:MET:CE	1:A:432:SER:HB2	2.49	0.42
1:B:21:PHE:CE1	1:E:397:ILE:HG21	2.48	0.42
1:B:420:ALA:O	1:B:421:LEU:C	2.58	0.42
1:C:54:LYS:HB2	1:C:60:VAL:HG21	2.00	0.42
1:C:126:VAL:HG23	1:C:127:ASP:N	2.33	0.42
1:E:247:LEU:HD21	1:E:292:SER:HB3	2.01	0.42
1:F:105:HIS:HB3	1:F:147:ASP:OD2	2.19	0.42
1:F:379:GLN:HG3	1:F:383:ASP:OD2	2.19	0.42
1:A:84:ARG:HH11	1:A:84:ARG:HG3	1.84	0.42
1:A:111:THR:CG2	1:A:183:ILE:HB	2.50	0.42
1:D:8:ALA:O	1:D:9:GLY:C	2.58	0.42
1:D:245:ASN:C	1:D:245:ASN:HD22	2.20	0.42
1:E:84:ARG:HB3	1:E:99:GLU:HG3	2.01	0.42
1:E:111:THR:HG23	1:E:111:THR:O	2.20	0.42
1:F:417:ASN:OD1	1:F:419:LEU:HB2	2.18	0.42
1:F:435:MET:C	1:F:436:LEU:HD12	2.39	0.42
1:A:42:ILE:HD12	1:A:273:SER:CB	2.49	0.42
1:A:44:VAL:HG21	1:A:53:PHE:CD2	2.53	0.42
1:A:194:ARG:HG2	1:A:194:ARG:NH1	2.34	0.42
1:B:194:ARG:HG2	1:B:194:ARG:NH1	2.34	0.42
1:C:251:MET:HE1	1:C:303:ALA:HB2	2.02	0.42
1:C:473:ILE:HG21	1:C:481:MET:HE3	2.00	0.42
1:A:107:THR:HG23	1:A:364:TYR:CB	2.48	0.42
1:A:409:ILE:HA	1:A:418:PHE:HZ	1.84	0.42
1:C:145:ASN:HB2	1:C:384:ASN:ND2	2.34	0.42
1:C:306:GLY:HA3	1:C:335:SER:HA	2.01	0.42
1:E:114:LYS:HB2	1:E:374:THR:HG23	2.00	0.42
1:E:332:GLY:O	1:E:333:SER:CB	2.66	0.42
1:F:189:ASN:O	1:F:190:VAL:C	2.58	0.42
1:A:133:ILE:HG13	1:A:153:VAL:HG23	2.01	0.42
1:A:137:ALA:CB	1:A:175:ASN:HB2	2.48	0.42
1:C:26:LEU:HD23	1:C:26:LEU:HA	1.88	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:170:LEU:CD2	1:C:482:GLN:HA	2.49	0.42
1:C:314:SER:HB3	1:C:330:VAL:HB	2.01	0.42
1:D:18:LEU:C	1:D:18:LEU:HD23	2.40	0.42
1:D:90:ARG:HD2	1:D:200:TYR:CZ	2.55	0.42
1:D:111:THR:O	1:D:111:THR:HG23	2.20	0.42
1:E:191:GLU:HG3	1:E:194:ARG:HH21	1.84	0.42
1:E:480:ASP:O	1:E:484:ILE:HG12	2.19	0.42
1:F:107:THR:HG23	1:F:364:TYR:CB	2.48	0.42
1:B:219:CYS:O	1:B:220:PRO:C	2.58	0.42
1:B:422:LYS:HA	1:B:425:ARG:HH12	1.80	0.42
1:C:102:GLY:O	1:C:104:VAL:HG23	2.19	0.42
1:D:445:TRP:CE2	1:D:450:SER:HA	2.54	0.42
1:E:157:ASP:OD1	1:E:157:ASP:N	2.52	0.42
1:E:267:HIS:CE1	1:E:271:VAL:HG21	2.54	0.42
1:F:216:MET:HE3	1:F:242:ILE:HG21	2.01	0.42
1:A:119:GLN:HB3	1:A:124:VAL:HG21	2.01	0.42
1:A:151:LEU:HD22	1:A:182:HIS:CD2	2.54	0.42
1:A:218:LEU:HD11	1:A:234:ILE:HD11	2.00	0.42
1:B:75:ARG:HH22	1:F:83:SER:HB3	1.82	0.42
1:C:397:ILE:HD12	1:C:397:ILE:N	2.35	0.42
1:C:481:MET:HA	1:C:484:ILE:HG12	2.02	0.42
1:E:158:ILE:HG21	1:E:164:GLN:HA	2.00	0.42
1:E:314:SER:HB3	1:E:330:VAL:HG21	2.01	0.42
1:A:109:PHE:CD1	1:A:110:GLY:N	2.88	0.42
1:A:254:GLY:O	1:F:417:ASN:HB2	2.20	0.42
1:A:351:THR:O	1:A:355:PRO:HG2	2.20	0.42
1:B:145:ASN:N	1:B:384:ASN:HD21	2.16	0.42
1:B:195:ASP:HB3	1:B:484:ILE:HD12	2.01	0.42
1:C:42:ILE:HD12	1:C:273:SER:HB3	2.01	0.42
1:D:33:THR:HG23	1:D:269:ALA:HB2	2.01	0.42
1:D:182:HIS:CD2	1:D:184:ASP:H	2.37	0.42
1:D:375:PHE:C	1:D:375:PHE:CD1	2.93	0.42
1:F:53:PHE:CG	1:F:67:VAL:HG11	2.55	0.42
1:F:151:LEU:HD11	1:F:168:GLU:HG2	2.00	0.42
1:F:332:GLY:O	1:F:333:SER:CB	2.61	0.42
1:B:261:ALA:HA	1:B:264:LEU:HD12	2.01	0.42
1:C:139:LEU:HD12	1:C:464:VAL:HG11	2.02	0.42
1:C:337:ALA:O	1:C:369:LEU:HD22	2.20	0.42
1:D:60:VAL:HG22	1:D:67:VAL:HG13	2.02	0.42
1:D:122:LYS:HD3	1:D:122:LYS:N	2.28	0.42
1:D:371:LEU:HD12	1:D:371:LEU:N	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:248:SER:HB3	1:F:271:VAL:CG2	2.49	0.42
1:F:387:PHE:O	1:F:391:LYS:HG3	2.19	0.42
1:A:26:LEU:HD13	1:A:323:PHE:CD1	2.54	0.42
1:A:182:HIS:CD2	1:A:184:ASP:H	2.38	0.42
1:A:336:ASP:HA	1:A:371:LEU:H	1.85	0.42
1:A:397:ILE:HG21	1:F:21:PHE:HE1	1.85	0.42
1:B:118:TYR:CZ	1:B:121:GLY:HA2	2.54	0.42
1:B:182:HIS:CD2	1:B:184:ASP:H	2.38	0.42
1:B:466:LYS:HG2	1:B:466:LYS:O	2.20	0.42
1:C:455:THR:O	1:C:459:GLU:HG3	2.19	0.42
1:E:107:THR:HG23	1:E:364:TYR:HB2	2.01	0.42
1:E:118:TYR:CE1	1:E:121:GLY:N	2.87	0.42
1:E:460:LYS:O	1:E:464:VAL:HG23	2.20	0.42
1:F:34:MET:HE2	1:F:37:LEU:HD12	2.02	0.42
1:F:90:ARG:HD2	1:F:200:TYR:CE1	2.55	0.42
1:A:209:ARG:CZ	1:A:240:PHE:O	2.68	0.41
1:A:222:SER:HA	1:A:223:PRO:HA	1.80	0.41
1:C:212:PRO:HA	5:C:711:HOH:O	2.19	0.41
1:C:305:VAL:HG22	1:C:334:LYS:HD2	2.02	0.41
1:C:327:PRO:HA	1:C:361:ASN:OD1	2.20	0.41
1:D:171:THR:CB	1:D:172:PRO:HD3	2.44	0.41
1:D:223:PRO:HA	1:D:270:GLU:OE2	2.19	0.41
1:E:109:PHE:CG	1:E:110:GLY:N	2.87	0.41
1:E:218:LEU:HD22	1:E:234:ILE:HG12	2.02	0.41
1:A:122:LYS:HD3	1:A:122:LYS:N	2.20	0.41
1:A:377:MET:CE	1:A:465:LEU:HD11	2.50	0.41
1:B:116:CYS:HB2	1:B:374:THR:HG21	2.02	0.41
1:B:218:LEU:HD21	1:B:246:VAL:HG22	2.02	0.41
1:C:346:HIS:ND1	1:D:386:ILE:HG23	2.35	0.41
1:D:50:ARG:NH1	1:D:62:GLU:OE2	2.53	0.41
1:E:42:ILE:CD1	1:E:273:SER:HB3	2.49	0.41
1:E:435:MET:C	1:E:436:LEU:HD12	2.39	0.41
1:A:129:VAL:HA	1:A:157:ASP:OD1	2.20	0.41
1:A:453:LEU:HD22	1:F:343:GLN:HB2	2.02	0.41
1:A:477:ILE:HD13	1:A:477:ILE:HA	1.91	0.41
1:B:108:CYS:HA	1:B:366:ALA:HB3	2.02	0.41
1:C:76:LYS:HE2	1:C:80:LEU:HD11	2.03	0.41
1:C:235:ILE:O	1:C:239:ARG:HG3	2.20	0.41
1:D:378:GLU:O	1:D:381:VAL:HG22	2.20	0.41
1:E:189:ASN:HB3	1:E:192:TYR:HD2	1.85	0.41
1:E:221:THR:O	1:E:225:GLU:HB2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:292:SER:HA	1:E:331:ALA:HB2	2.01	0.41
1:F:187:GLY:N	1:F:229:ASN:OD1	2.45	0.41
1:F:294:THR:HG23	1:F:295:THR:O	2.21	0.41
1:A:99:GLU:O	1:A:100:CYS:C	2.57	0.41
1:A:109:PHE:O	1:A:152:PRO:HA	2.21	0.41
1:A:493:ARG:O	1:A:495:MET:N	2.54	0.41
1:B:87:LEU:HD21	1:B:288:TRP:CH2	2.55	0.41
1:B:134:ALA:HA	1:B:175:ASN:ND2	2.35	0.41
1:B:145:ASN:ND2	1:B:384:ASN:O	2.53	0.41
1:C:27:LYS:O	1:C:30:HIS:HB3	2.20	0.41
1:C:106:TRP:CD1	1:C:363:ILE:HB	2.55	0.41
1:D:377:MET:HE1	4:D:604:GOL:H32	2.01	0.41
1:E:274:GLY:O	1:E:277:LEU:HB3	2.20	0.41
1:F:50:ARG:NH1	1:F:62:GLU:OE2	2.53	0.41
1:F:109:PHE:CB	1:F:368:MET:HB2	2.51	0.41
1:F:174:ALA:HA	1:F:473:ILE:CD1	2.46	0.41
1:F:209:ARG:HH11	1:F:209:ARG:CG	2.34	0.41
1:F:267:HIS:CE1	1:F:291:SER:HB2	2.55	0.41
1:A:407:GLU:HG3	5:A:725:HOH:O	2.20	0.41
1:A:448:ALA:O	1:A:451:LYS:HE3	2.20	0.41
1:B:201:TYR:OH	1:B:213:ILE:HG23	2.20	0.41
1:C:78:LEU:CD2	1:C:326:LEU:HD11	2.50	0.41
1:C:170:LEU:CD2	1:C:485:VAL:HG21	2.51	0.41
1:D:201:TYR:HD2	1:D:208:ALA:HB2	1.85	0.41
1:D:344:ALA:O	1:D:348:LYS:HG2	2.20	0.41
1:D:494:GLY:O	1:D:495:MET:C	2.58	0.41
1:A:18:LEU:C	1:A:18:LEU:HD23	2.41	0.41
1:A:343:GLN:CA	1:F:453:LEU:HD22	2.51	0.41
1:B:378:GLU:O	1:B:381:VAL:HG22	2.20	0.41
1:C:311:GLY:CA	1:C:354:LEU:HD12	2.45	0.41
1:D:106:TRP:HZ3	1:D:391:LYS:HE2	1.85	0.41
1:D:110:GLY:HA2	1:D:111:THR:HA	1.58	0.41
1:D:305:VAL:HG21	1:D:334:LYS:HD3	2.03	0.41
1:E:18:LEU:O	1:E:319:LYS:HE3	2.21	0.41
1:F:64:THR:O	1:F:65:ASN:HB2	2.21	0.41
1:A:217:LEU:HD23	1:A:217:LEU:C	2.41	0.41
1:C:90:ARG:HB3	1:C:200:TYR:OH	2.20	0.41
1:C:118:TYR:HB2	4:C:603:GOL:H11	2.02	0.41
1:C:209:ARG:C	1:C:211:LYS:H	2.24	0.41
1:C:332:GLY:O	1:C:333:SER:HB3	2.20	0.41
1:C:410:GLN:HE21	1:C:410:GLN:HB2	1.67	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:91:ASP:HB2	1:F:177:ALA:HB1	2.03	0.41
1:F:204:ASP:HB3	1:F:207:GLU:HB2	2.01	0.41
1:A:348:LYS:HE3	1:A:379:GLN:HG3	2.02	0.41
1:B:247:LEU:HD12	1:B:291:SER:N	2.36	0.41
1:B:410:GLN:HG2	1:E:39:ASP:OD1	2.20	0.41
1:B:434:PRO:HB2	1:B:437:LEU:HB2	2.01	0.41
1:C:84:ARG:HG3	1:C:84:ARG:HH11	1.85	0.41
1:C:197:VAL:C	1:C:199:ALA:N	2.73	0.41
1:E:9:GLY:N	1:F:16:VAL:O	2.53	0.41
1:E:264:LEU:O	1:E:268:ASN:HB2	2.21	0.41
1:F:92:LYS:HE3	1:F:92:LYS:HB2	1.86	0.41
1:A:44:VAL:HB	1:A:50:ARG:CG	2.46	0.41
1:A:165:ASP:OD2	1:A:193:TYR:OH	2.30	0.41
1:A:370:GLU:OE2	1:F:442:PHE:HB2	2.21	0.41
1:A:437:LEU:HD22	1:F:343:GLN:CG	2.44	0.41
1:B:209:ARG:HH11	1:B:209:ARG:CB	2.30	0.41
1:B:224:LEU:H	1:B:224:LEU:HD23	1.86	0.41
1:B:251:MET:CE	1:B:303:ALA:HB2	2.48	0.41
1:B:328:SER:H	1:B:361:ASN:HB2	1.86	0.41
1:C:14:ASN:HA	5:C:715:HOH:O	2.20	0.41
1:C:105:HIS:O	1:C:362:THR:HA	2.19	0.41
1:C:191:GLU:HG3	1:C:240:PHE:HZ	1.86	0.41
1:C:337:ALA:CA	1:C:343:GLN:NE2	2.84	0.41
1:D:119:GLN:HA	1:D:119:GLN:HE21	1.85	0.41
1:D:247:LEU:HD23	1:D:248:SER:N	2.36	0.41
1:D:252:SER:C	1:D:254:GLY:H	2.24	0.41
1:E:159:ALA:O	1:E:161:GLN:HG2	2.21	0.41
1:E:220:PRO:HB2	1:E:270:GLU:HB3	2.02	0.41
1:E:297:ASP:N	1:E:302:THR:O	2.50	0.41
1:E:305:VAL:HG11	1:E:368:MET:CE	2.51	0.41
1:E:449:GLY:O	1:E:450:SER:HB2	2.21	0.41
1:E:485:VAL:O	1:E:488:ALA:HB3	2.21	0.41
1:F:165:ASP:HA	1:F:168:GLU:OE2	2.21	0.41
1:F:268:ASN:ND2	1:F:289:TYR:OH	2.54	0.41
1:F:318:ALA:O	1:F:321:ALA:HB3	2.21	0.41
1:A:63:LYS:HG3	1:A:64:THR:N	2.35	0.41
1:B:42:ILE:HD12	1:B:273:SER:CB	2.49	0.41
1:C:198:LYS:HG2	1:C:203:GLY:HA2	2.03	0.41
1:C:296:PHE:HD2	1:C:298:LEU:HD23	1.86	0.41
1:D:52:ILE:HA	1:D:55:GLU:OE2	2.21	0.41
1:D:84:ARG:HB3	1:D:99:GLU:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:477:ILE:O	1:D:480:ASP:HB2	2.20	0.41
1:E:82:PRO:C	1:E:84:ARG:H	2.23	0.41
1:E:320:LEU:O	1:E:323:PHE:HB3	2.21	0.41
1:E:477:ILE:HG22	1:E:481:MET:HE2	2.02	0.41
1:F:118:TYR:H	4:F:603:GOL:C3	2.26	0.41
1:F:162:GLY:HA2	1:F:492:PHE:HD2	1.86	0.41
1:F:473:ILE:O	1:F:474:ASP:C	2.58	0.41
1:A:51:GLN:HE21	1:A:55:GLU:HG2	1.83	0.40
1:A:84:ARG:NH2	1:C:35:GLU:OE2	2.54	0.40
1:B:167:HIS:C	1:B:169:THR:N	2.75	0.40
1:C:45:SER:HA	1:C:65:ASN:HD22	1.86	0.40
1:C:378:GLU:O	1:C:381:VAL:HG22	2.20	0.40
1:C:397:ILE:HA	1:C:398:PRO:HD3	1.82	0.40
1:D:7:VAL:HG12	1:D:8:ALA:N	2.35	0.40
1:D:474:ASP:HB3	1:D:477:ILE:HB	2.03	0.40
1:A:473:ILE:HD13	1:A:481:MET:HE1	2.03	0.40
1:B:149:PHE:CZ	1:B:152:PRO:HD3	2.56	0.40
1:B:201:TYR:CE2	1:B:208:ALA:HA	2.56	0.40
1:C:149:PHE:CZ	1:C:152:PRO:HD3	2.56	0.40
1:C:205:GLU:OE1	1:C:205:GLU:HA	2.21	0.40
1:D:117:LYS:HE2	4:D:604:GOL:O3	2.20	0.40
1:D:242:ILE:O	1:D:244:VAL:HG23	2.20	0.40
1:D:275:ILE:HD13	1:D:326:LEU:HD13	2.02	0.40
1:E:452:ASP:OD2	1:E:454:ALA:HB3	2.20	0.40
1:E:481:MET:O	1:E:485:VAL:HG23	2.21	0.40
1:A:84:ARG:HB3	1:A:99:GLU:CB	2.49	0.40
1:A:423:GLN:NE2	1:F:259:TYR:HE2	2.19	0.40
1:A:442:PHE:HE2	1:F:125:THR:OG1	2.03	0.40
1:C:294:THR:HB	1:C:310:LEU:HD13	2.03	0.40
1:C:415:GLY:H	1:D:223:PRO:HG2	1.85	0.40
1:D:343:GLN:O	1:D:344:ALA:C	2.58	0.40
1:E:272:LEU:HD23	1:E:272:LEU:HA	1.96	0.40
1:F:37:LEU:HD23	1:F:37:LEU:HA	1.80	0.40
1:F:148:TYR:OH	1:F:362:THR:HG21	2.20	0.40
1:F:194:ARG:HG2	1:F:194:ARG:NH1	2.36	0.40
1:F:489:ASP:O	1:F:492:PHE:HB3	2.21	0.40
1:A:341:ASP:O	1:F:342:ASP:HA	2.21	0.40
1:A:400:SER:H	1:A:403:THR:HG1	1.66	0.40
1:B:26:LEU:HD13	1:B:323:PHE:CG	2.57	0.40
1:B:73:LEU:HD23	1:B:73:LEU:HA	1.97	0.40
1:B:82:PRO:HD3	1:B:284:GLY:O	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:94:PHE:CG	1:B:178:LYS:HG2	2.56	0.40
1:C:130:GLU:HB2	1:C:155:ALA:HB1	2.04	0.40
1:D:314:SER:HB3	1:D:330:VAL:CG2	2.52	0.40
1:E:405:ALA:O	1:E:408:SER:HB3	2.21	0.40
1:F:199:ALA:HB3	1:F:481:MET:HG2	2.03	0.40
1:F:307:SER:HB2	1:F:308:PRO:HD2	2.03	0.40
1:C:84:ARG:HG3	1:C:84:ARG:NH1	2.36	0.40
1:C:94:PHE:CD1	1:C:178:LYS:HE2	2.57	0.40
1:C:209:ARG:O	1:C:212:PRO:HD3	2.22	0.40
1:C:397:ILE:HG22	1:C:399:VAL:HG23	2.03	0.40
1:D:170:LEU:HD22	1:D:482:GLN:HA	2.02	0.40
1:D:448:ALA:O	1:D:451:LYS:HE3	2.20	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	492/503 (98%)	434 (88%)	55 (11%)	3 (1%)	25	64
1	B	492/503 (98%)	435 (88%)	52 (11%)	5 (1%)	15	54
1	C	491/503 (98%)	424 (86%)	57 (12%)	10 (2%)	7	38
1	D	492/503 (98%)	424 (86%)	63 (13%)	5 (1%)	15	54
1	E	492/503 (98%)	417 (85%)	64 (13%)	11 (2%)	6	35
1	F	492/503 (98%)	433 (88%)	51 (10%)	8 (2%)	9	43
All	All	2951/3018 (98%)	2567 (87%)	342 (12%)	42 (1%)	11	46

All (42) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	371	LEU

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Mol	Chain	Res	Type
1	E	421	LEU
1	F	62	GLU
1	C	421	LEU
1	D	202	GLY
1	D	298	LEU
1	E	227	SER
1	E	298	LEU
1	F	119	GLN
1	F	227	SER
1	F	300	LYS
1	A	9	GLY
1	A	92	LYS
1	B	340	PRO
1	B	421	LEU
1	C	157	ASP
1	C	176	THR
1	C	299	LYS
1	D	421	LEU
1	E	168	GLU
1	E	340	PRO
1	C	119	GLN
1	D	168	GLU
1	E	119	GLN
1	E	175	ASN
1	B	257	PRO
1	C	128	SER
1	E	179	HIS
1	E	333	SER
1	F	157	ASP
1	A	234	ILE
1	B	143	ALA
1	B	447	ALA
1	C	368	MET
1	C	152	PRO
1	F	151	LEU
1	F	365	GLY
1	D	203	GLY
1	E	443	GLY
1	C	212	PRO
1	F	40	PRO
1	E	365	GLY

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	405/412 (98%)	388 (96%)	17 (4%)	30	65
1	B	405/412 (98%)	390 (96%)	15 (4%)	34	68
1	C	404/412 (98%)	387 (96%)	17 (4%)	30	65
1	D	405/412 (98%)	391 (96%)	14 (4%)	36	69
1	E	405/412 (98%)	389 (96%)	16 (4%)	31	66
1	F	405/412 (98%)	391 (96%)	14 (4%)	36	69
All	All	2429/2472 (98%)	2336 (96%)	93 (4%)	33	67

All (93) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	ASN
1	A	11	ASN
1	A	79	GLN
1	A	91	ASP
1	A	99	GLU
1	A	111	THR
1	A	122	LYS
1	A	217	LEU
1	A	219	CYS
1	A	245	ASN
1	A	267	HIS
1	A	288	TRP
1	A	364	TYR
1	A	374	THR
1	A	406	VAL
1	A	421	LEU
1	A	442	PHE
1	B	5	ASN
1	B	24	ASP
1	B	86	VAL
1	B	91	ASP
1	B	120	ASP

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Mol	Chain	Res	Type
1	B	122	LYS
1	B	184	ASP
1	B	209	ARG
1	B	268	ASN
1	B	277	LEU
1	B	288	TRP
1	B	364	TYR
1	B	373	MET
1	B	388	SER
1	B	418	PHE
1	C	72	TYR
1	C	91	ASP
1	C	120	ASP
1	C	122	LYS
1	C	131	LYS
1	C	228	VAL
1	C	245	ASN
1	C	252	SER
1	C	267	HIS
1	C	268	ASN
1	C	288	TRP
1	C	309	GLU
1	C	353	LEU
1	C	364	TYR
1	C	373	MET
1	C	408	SER
1	C	476	ASP
1	D	117	LYS
1	D	119	GLN
1	D	122	LYS
1	D	167	HIS
1	D	209	ARG
1	D	245	ASN
1	D	268	ASN
1	D	288	TRP
1	D	364	TYR
1	D	373	MET
1	D	375	PHE
1	D	384	ASN
1	D	452	ASP
1	D	476	ASP
1	E	24	ASP

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Mol	Chain	Res	Type
1	E	79	GLN
1	E	86	VAL
1	E	91	ASP
1	E	120	ASP
1	E	122	LYS
1	E	184	ASP
1	E	216	MET
1	E	218	LEU
1	E	245	ASN
1	E	277	LEU
1	E	288	TRP
1	E	364	TYR
1	E	373	MET
1	E	374	THR
1	E	444	ASP
1	F	24	ASP
1	F	58	CYS
1	F	91	ASP
1	F	116	CYS
1	F	120	ASP
1	F	122	LYS
1	F	245	ASN
1	F	249	MET
1	F	268	ASN
1	F	288	TRP
1	F	342	ASP
1	F	364	TYR
1	F	373	MET
1	F	476	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (83) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	11	ASN
1	A	51	GLN
1	A	79	GLN
1	A	175	ASN
1	A	182	HIS
1	A	232	GLN
1	A	245	ASN
1	A	268	ASN
1	A	322	GLN

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Mol	Chain	Res	Type
1	A	384	ASN
1	A	395	GLN
1	A	410	GLN
1	A	423	GLN
1	A	458	HIS
1	B	14	ASN
1	B	65	ASN
1	B	79	GLN
1	B	105	HIS
1	B	161	GLN
1	B	167	HIS
1	B	175	ASN
1	B	182	HIS
1	B	189	ASN
1	B	232	GLN
1	B	245	ASN
1	B	268	ASN
1	B	322	GLN
1	B	384	ASN
1	B	410	GLN
1	C	51	GLN
1	C	65	ASN
1	C	79	GLN
1	C	105	HIS
1	C	175	ASN
1	C	232	GLN
1	C	245	ASN
1	C	268	ASN
1	C	322	GLN
1	C	379	GLN
1	C	384	ASN
1	C	410	GLN
1	D	11	ASN
1	D	51	GLN
1	D	56	ASN
1	D	79	GLN
1	D	105	HIS
1	D	119	GLN
1	D	161	GLN
1	D	175	ASN
1	D	182	HIS
1	D	232	GLN

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Mol	Chain	Res	Type
1	D	245	ASN
1	D	268	ASN
1	D	322	GLN
1	D	384	ASN
1	D	410	GLN
1	D	458	HIS
1	E	65	ASN
1	E	79	GLN
1	E	105	HIS
1	E	175	ASN
1	E	182	HIS
1	E	189	ASN
1	E	245	ASN
1	E	268	ASN
1	E	322	GLN
1	E	384	ASN
1	E	410	GLN
1	F	65	ASN
1	F	79	GLN
1	F	105	HIS
1	F	175	ASN
1	F	182	HIS
1	F	232	GLN
1	F	245	ASN
1	F	268	ASN
1	F	322	GLN
1	F	384	ASN
1	F	395	GLN
1	F	410	GLN
1	F	426	GLN
1	F	440	HIS
1	F	458	HIS

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 (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 23 ligands modelled in this entry, 6 are monoatomic - leaving 17 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	C	603	-	5,5,5	0.31	0	5,5,5	0.81	0
4	GOL	D	605	-	5,5,5	0.33	0	5,5,5	0.50	0
4	GOL	E	604	-	5,5,5	0.33	0	5,5,5	0.95	0
4	GOL	D	603	-	5,5,5	0.29	0	5,5,5	0.49	0
4	GOL	B	603	-	5,5,5	0.27	0	5,5,5	0.80	0
2	BG3	D	601	1	8,12,13	1.06	0	11,18,20	1.54	4 (36%)
4	GOL	A	603	-	5,5,5	0.34	0	5,5,5	0.34	0
4	GOL	B	604	-	5,5,5	0.36	0	5,5,5	0.72	0
2	BG3	E	601	1	8,12,13	1.19	0	11,18,20	1.47	4 (36%)
4	GOL	D	604	-	5,5,5	0.30	0	5,5,5	0.78	0
2	BG3	C	601	1	8,12,13	1.39	1 (12%)	11,18,20	1.42	3 (27%)
4	GOL	F	603	-	5,5,5	0.30	0	5,5,5	1.28	1 (20%)
2	BG3	F	601	1	8,12,13	1.09	0	11,18,20	1.35	3 (27%)
4	GOL	E	603	-	5,5,5	0.32	0	5,5,5	0.48	0
2	BG3	B	601	1	8,12,13	1.59	1 (12%)	11,18,20	1.46	3 (27%)
2	BG3	A	601	1	8,12,13	1.37	1 (12%)	11,18,20	1.51	2 (18%)
4	GOL	A	604	-	5,5,5	0.28	0	5,5,5	0.48	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	C	603	-	-	4/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	GOL	D	605	-	-	4/4/4/4	-
4	GOL	E	604	-	-	0/4/4/4	-
4	GOL	D	603	-	-	2/4/4/4	-
4	GOL	B	603	-	-	3/4/4/4	-
2	BG3	D	601	1	-	1/1/20/22	0/1/1/1
4	GOL	A	603	-	-	4/4/4/4	-
4	GOL	B	604	-	-	4/4/4/4	-
2	BG3	E	601	1	-	1/1/20/22	0/1/1/1
4	GOL	D	604	-	-	2/4/4/4	-
2	BG3	C	601	1	-	0/1/20/22	0/1/1/1
4	GOL	F	603	-	-	1/4/4/4	-
2	BG3	F	601	1	-	1/1/20/22	0/1/1/1
4	GOL	E	603	-	-	2/4/4/4	-
2	BG3	B	601	1	-	1/1/20/22	0/1/1/1
2	BG3	A	601	1	-	1/1/20/22	0/1/1/1
4	GOL	A	604	-	-	4/4/4/4	-

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	601	BG3	C3-C2	-3.28	1.51	1.55
2	C	601	BG3	C3-C2	-2.51	1.52	1.55
2	A	601	BG3	C3-C2	-2.37	1.52	1.55

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	F	601	BG3	C2-N1-C5	-2.66	97.98	106.43
2	D	601	BG3	C6-C3-C4	-2.61	108.21	113.05
2	A	601	BG3	C2-N1-C5	-2.52	98.42	106.43
2	C	601	BG3	C2-N1-C5	-2.50	98.47	106.43
2	E	601	BG3	C2-N1-C5	-2.47	98.57	106.43
2	B	601	BG3	C2-N1-C5	-2.46	98.61	106.43
2	A	601	BG3	C6-C3-C4	-2.42	108.56	113.05
2	E	601	BG3	O3-S1-O2	-2.32	107.37	116.52
2	F	601	BG3	C3-C2-N1	2.30	110.00	104.03
2	B	601	BG3	C6-C3-C4	-2.29	108.80	113.05
2	E	601	BG3	C6-C3-C4	-2.26	108.87	113.05
2	D	601	BG3	C2-N1-C5	-2.24	99.29	106.43
2	C	601	BG3	C6-C3-C4	-2.24	108.91	113.05

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	601	BG3	O3-S1-O2	-2.19	107.88	116.52
2	D	601	BG3	C3-C2-N1	2.16	109.62	104.03
2	C	601	BG3	O3-S1-O2	-2.13	108.10	116.52
2	F	601	BG3	C6-C3-C4	-2.12	109.12	113.05
2	B	601	BG3	C3-C2-N1	2.11	109.49	104.03
2	E	601	BG3	C3-C2-N1	2.10	109.48	104.03
4	F	603	GOL	C3-C2-C1	-2.09	103.57	111.70

There are no chirality outliers.

All (35) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	601	BG3	O1-C1-C2-C3
2	D	601	BG3	O1-C1-C2-C3
2	E	601	BG3	O1-C1-C2-C3
4	A	603	GOL	O1-C1-C2-C3
4	A	603	GOL	C1-C2-C3-O3
4	A	603	GOL	O2-C2-C3-O3
4	A	604	GOL	O1-C1-C2-C3
4	B	603	GOL	O1-C1-C2-C3
4	B	604	GOL	O1-C1-C2-C3
4	B	604	GOL	C1-C2-C3-O3
4	D	603	GOL	O1-C1-C2-C3
4	D	605	GOL	O1-C1-C2-C3
4	D	605	GOL	C1-C2-C3-O3
4	D	605	GOL	O1-C1-C2-O2
4	D	605	GOL	O2-C2-C3-O3
4	E	603	GOL	O1-C1-C2-O2
4	A	604	GOL	C1-C2-C3-O3
4	C	603	GOL	O1-C1-C2-C3
4	C	603	GOL	C1-C2-C3-O3
4	D	603	GOL	C1-C2-C3-O3
4	E	603	GOL	O1-C1-C2-C3
4	A	603	GOL	O1-C1-C2-O2
4	A	604	GOL	O1-C1-C2-O2
4	A	604	GOL	O2-C2-C3-O3
4	B	603	GOL	O1-C1-C2-O2
4	C	603	GOL	O2-C2-C3-O3
4	C	603	GOL	O1-C1-C2-O2
4	B	604	GOL	O1-C1-C2-O2
4	B	604	GOL	O2-C2-C3-O3
4	F	603	GOL	O1-C1-C2-O2

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Mol	Chain	Res	Type	Atoms
2	F	601	BG3	O1-C1-C2-C3
4	D	604	GOL	O2-C2-C3-O3
4	B	603	GOL	C1-C2-C3-O3
4	D	604	GOL	C1-C2-C3-O3
2	B	601	BG3	O1-C1-C2-C3

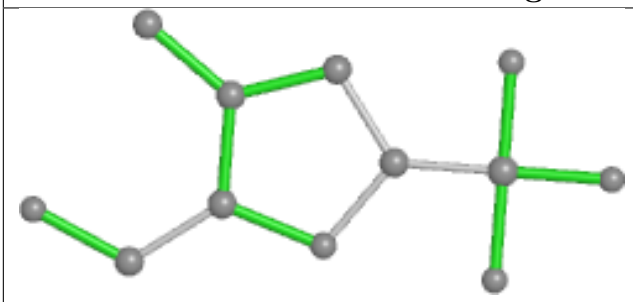
There are no ring outliers.

8 monomers are involved in 31 short contacts:

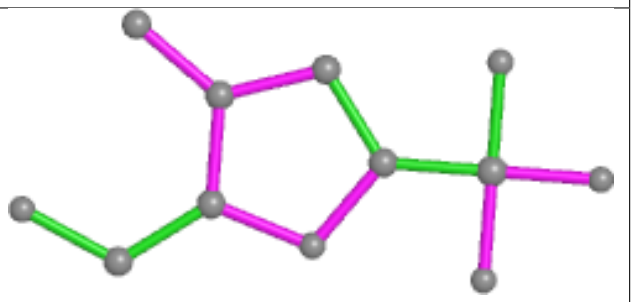
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	C	603	GOL	5	0
4	B	603	GOL	3	0
4	D	604	GOL	9	0
2	C	601	BG3	1	0
4	F	603	GOL	7	0
2	B	601	BG3	2	0
2	A	601	BG3	1	0
4	A	604	GOL	3	0

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.

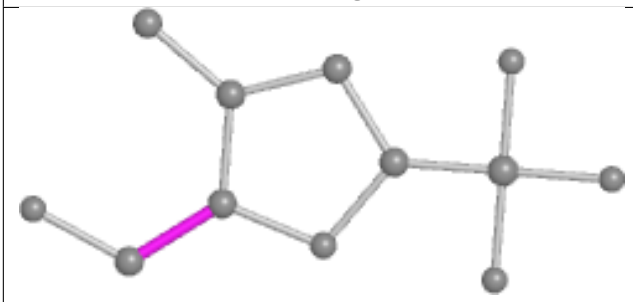
Ligand BG3 D 601



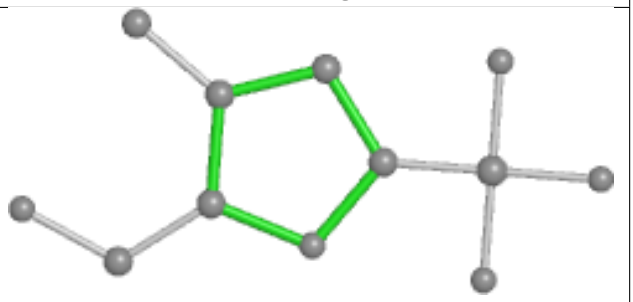
Bond lengths



Bond angles

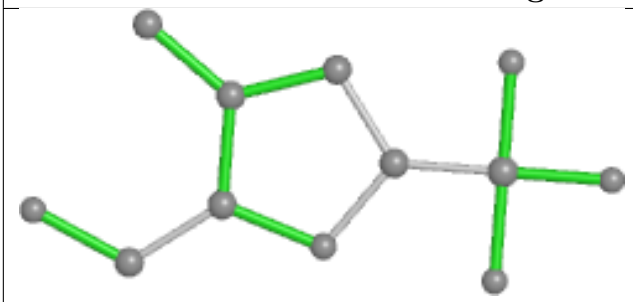


Torsions



Rings

Ligand BG3 E 601



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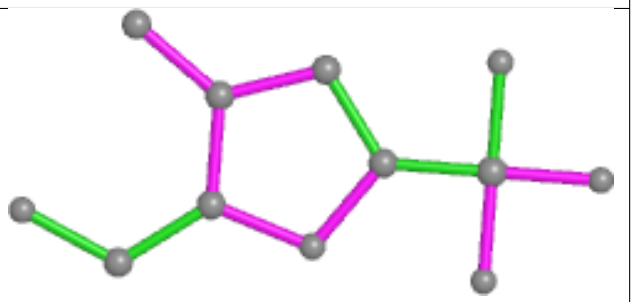
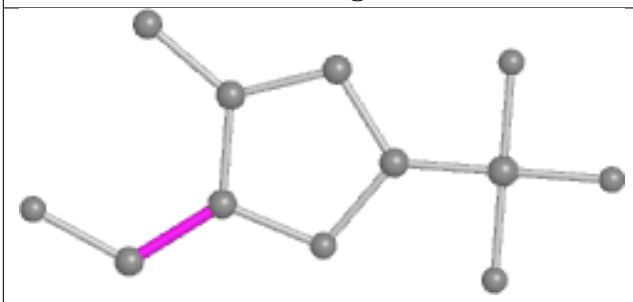
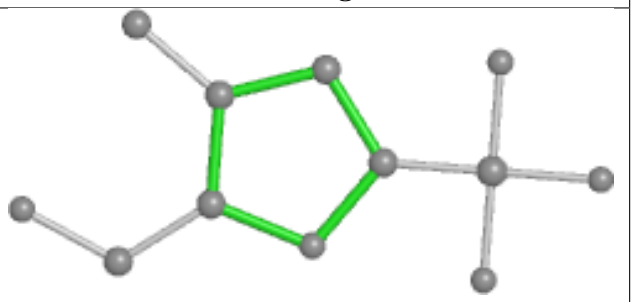


Bond angles

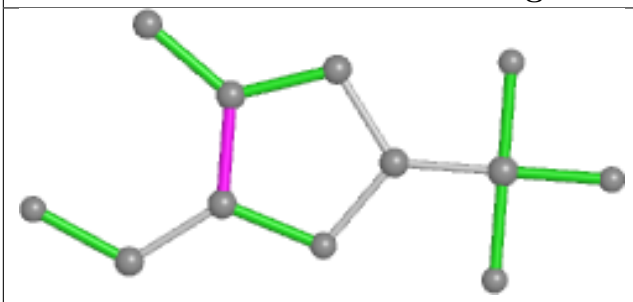


Torsions

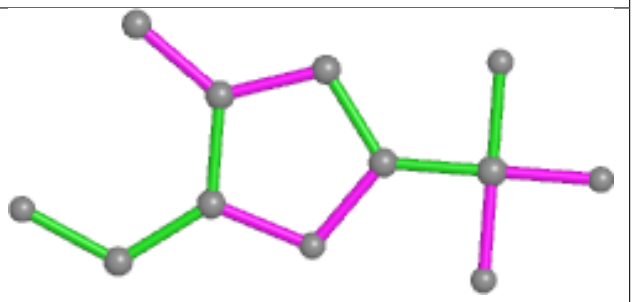


Rings

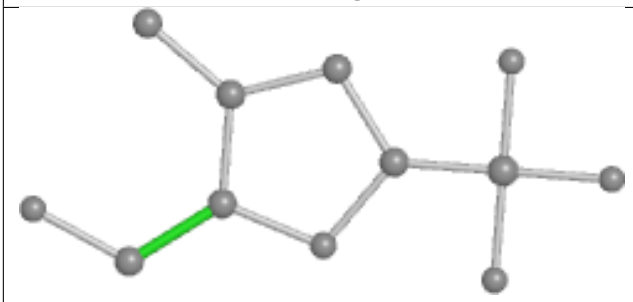
Ligand BG3 C 601



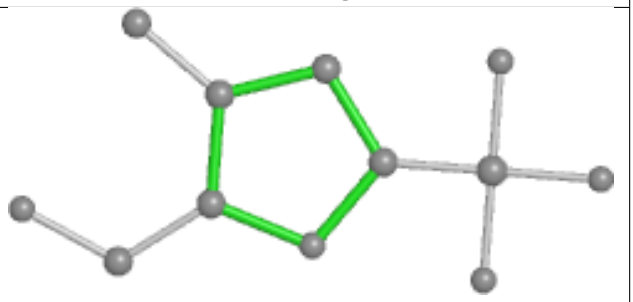
Bond lengths



Bond angles

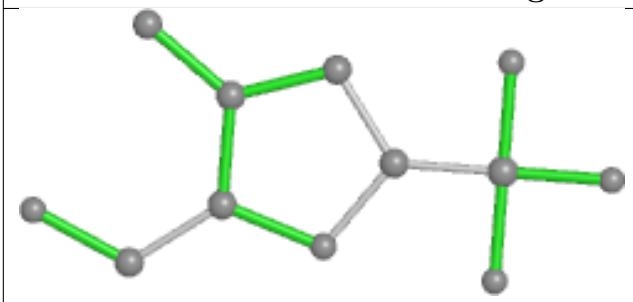


Torsions

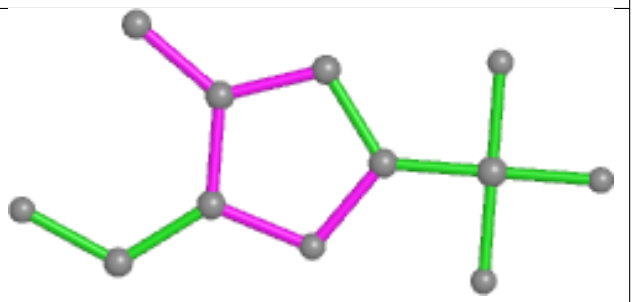


Rings

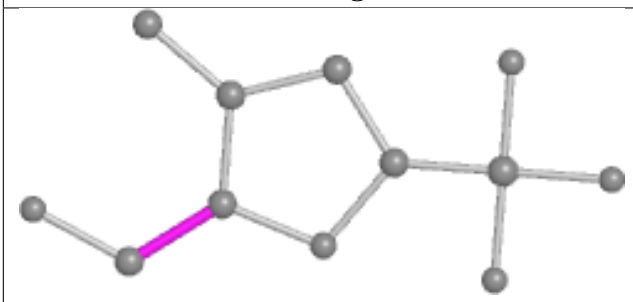
Ligand BG3 F 601



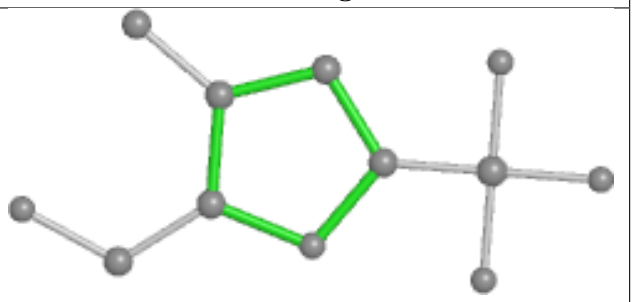
Bond lengths



Bond angles

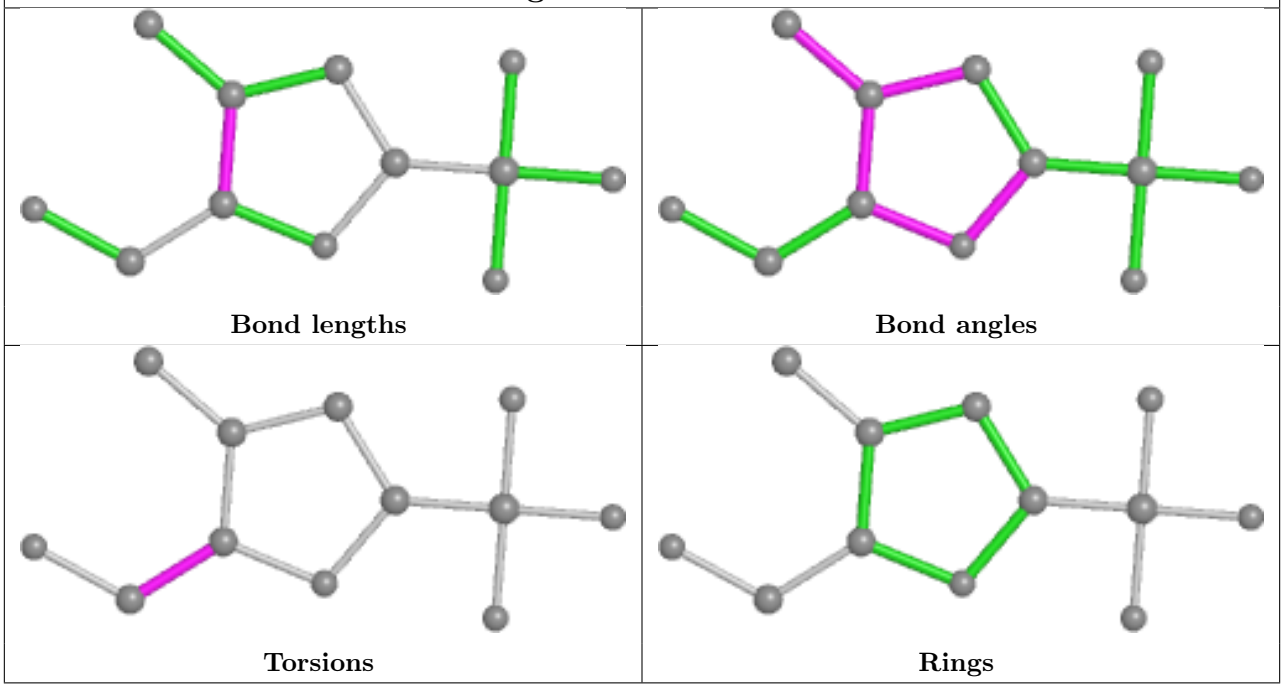


Torsions

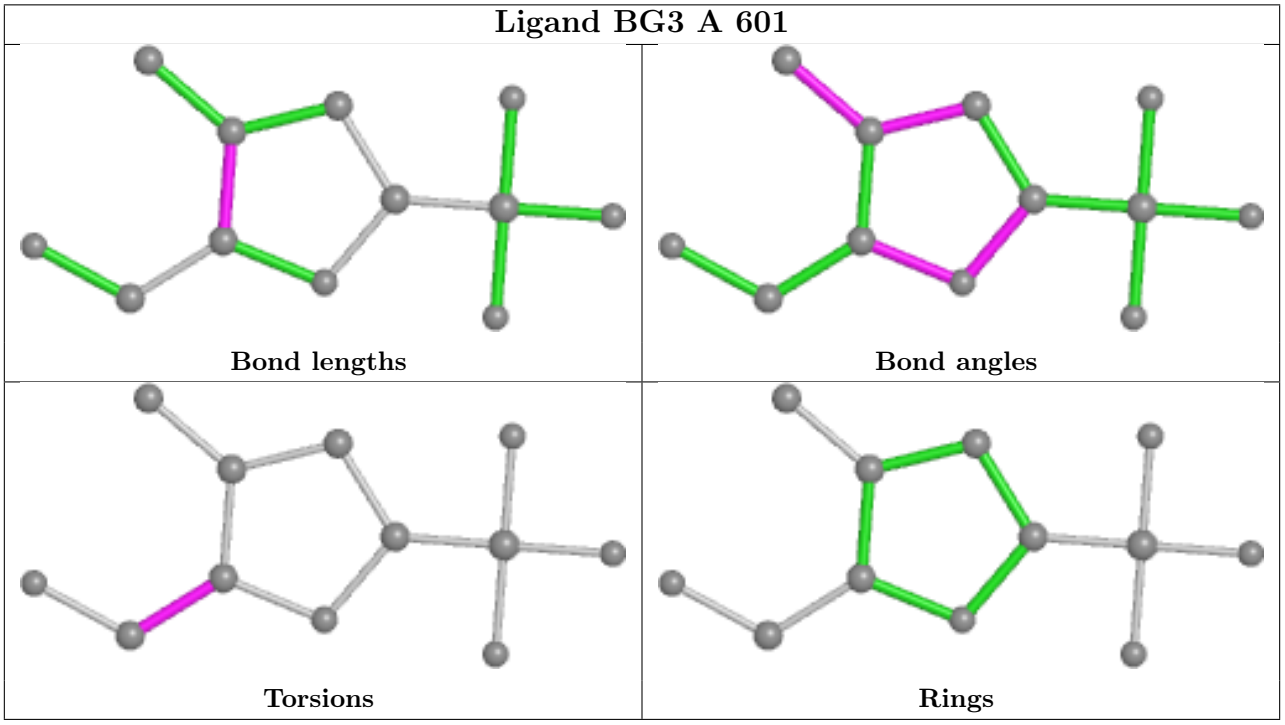


Rings

Ligand BG3 B 601



Ligand BG3 A 601



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} 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	494/503 (98%)	-0.79	2 (0%)	92	89	22, 47, 74, 132	0
1	B	494/503 (98%)	-0.85	1 (0%)	95	94	19, 44, 70, 132	0
1	C	493/503 (98%)	-0.62	1 (0%)	95	94	27, 61, 96, 134	0
1	D	494/503 (98%)	-0.76	3 (0%)	89	83	19, 50, 80, 123	0
1	E	494/503 (98%)	-0.77	3 (0%)	89	83	18, 48, 80, 132	0
1	F	494/503 (98%)	-0.73	1 (0%)	95	94	22, 52, 87, 115	0
All	All	2963/3018 (98%)	-0.75	11 (0%)	92	89	18, 50, 85, 134	0

All (11) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	120	ASP	3.2
1	E	119	GLN	2.7
1	E	120	ASP	2.6
1	F	495	MET	2.5
1	E	495	MET	2.5
1	D	121	GLY	2.5
1	D	120	ASP	2.4
1	B	119	GLN	2.3
1	A	119	GLN	2.2
1	C	119	GLN	2.2
1	D	122	LYS	2.2

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 (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

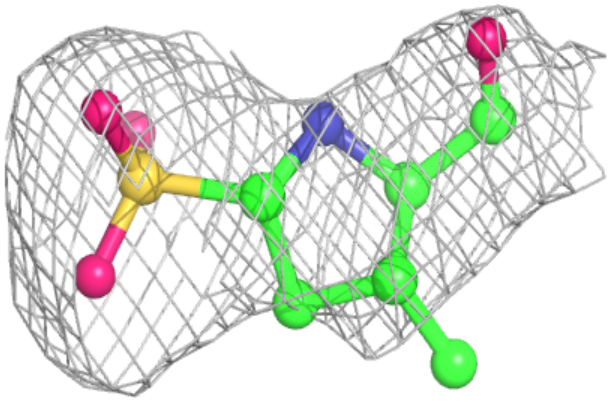
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

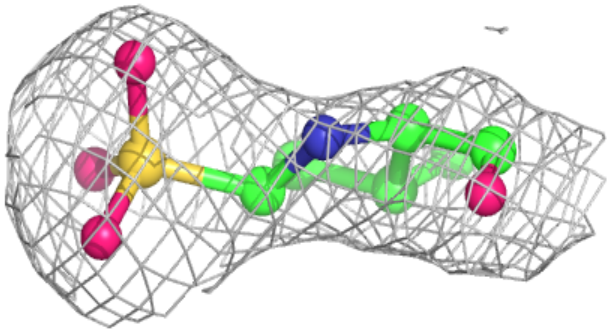
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	GOL	D	605	6/6	0.88	0.26	53,76,80,86	0
4	GOL	B	604	6/6	0.89	0.36	28,57,64,65	0
4	GOL	A	603	6/6	0.91	0.30	38,68,70,71	0
4	GOL	F	603	6/6	0.91	0.17	46,53,64,65	0
3	NA	B	602	1/1	0.92	0.07	44,44,44,44	0
4	GOL	D	604	6/6	0.92	0.18	43,63,69,70	0
4	GOL	D	603	6/6	0.93	0.36	29,74,81,92	0
4	GOL	A	604	6/6	0.93	0.12	42,64,72,80	0
3	NA	F	602	1/1	0.93	0.08	50,50,50,50	0
4	GOL	C	603	6/6	0.93	0.19	63,67,74,76	0
4	GOL	E	604	6/6	0.94	0.14	50,62,71,73	0
3	NA	C	602	1/1	0.94	0.07	56,56,56,56	0
2	BG3	C	601	12/13	0.95	0.24	68,99,106,108	0
2	BG3	D	601	12/13	0.95	0.19	37,70,83,91	0
4	GOL	B	603	6/6	0.95	0.14	30,60,65,72	0
3	NA	D	602	1/1	0.95	0.08	73,73,73,73	0
3	NA	A	602	1/1	0.95	0.06	63,63,63,63	0
3	NA	E	602	1/1	0.96	0.09	62,62,62,62	0
2	BG3	E	601	12/13	0.96	0.19	44,69,77,80	0
2	BG3	F	601	12/13	0.96	0.15	48,72,80,82	0
2	BG3	A	601	12/13	0.96	0.19	58,75,85,91	0
4	GOL	E	603	6/6	0.97	0.27	43,51,59,66	0
2	BG3	B	601	12/13	0.98	0.14	32,65,72,85	0

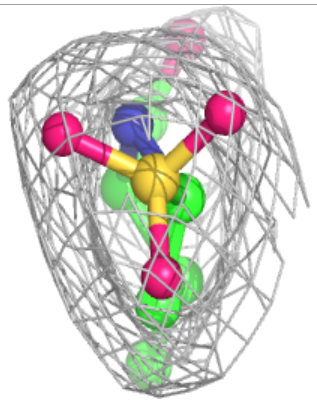
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around BG3 C 601:

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

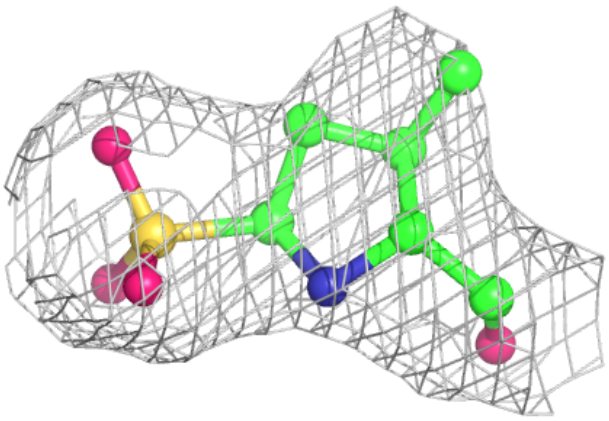


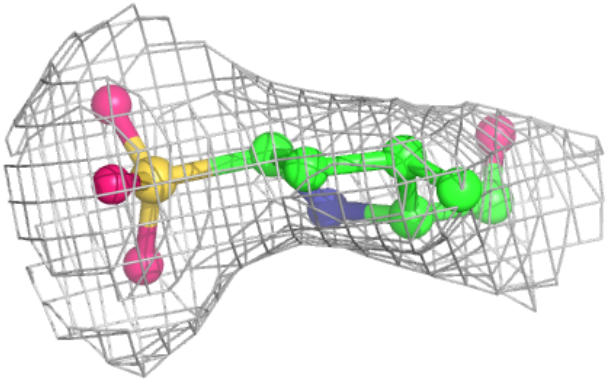


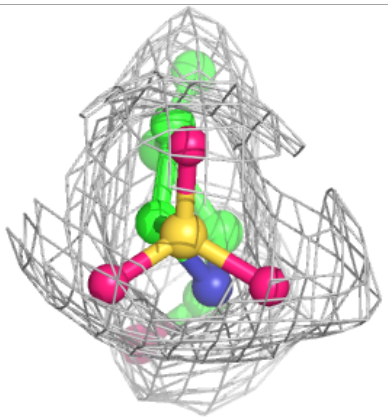


Electron density around BG3 D 601:

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

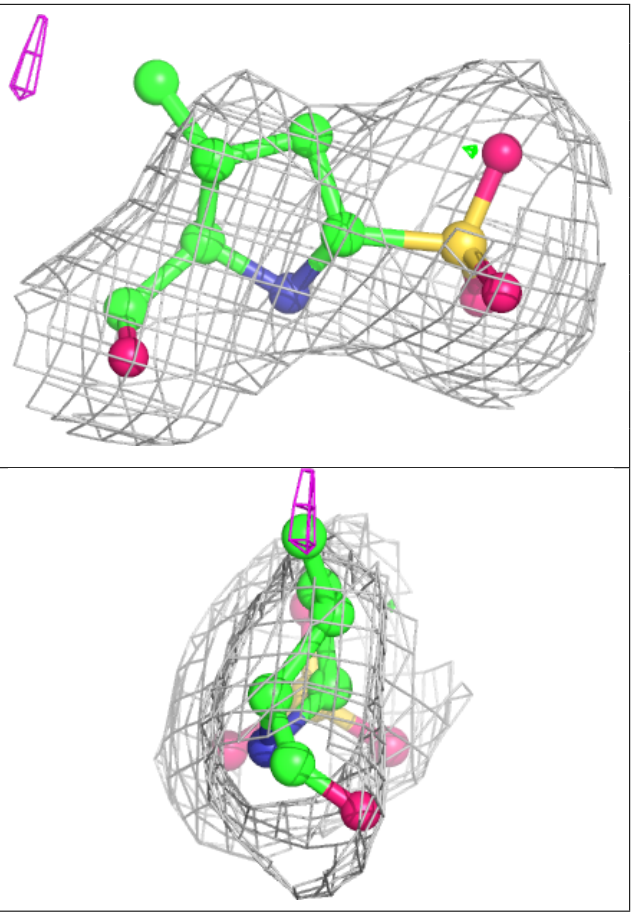






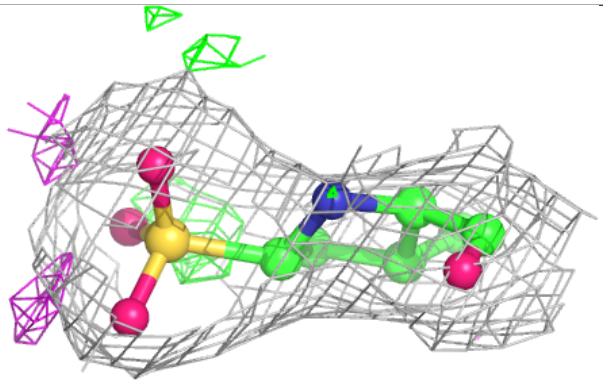
Electron density around BG3 E 601:

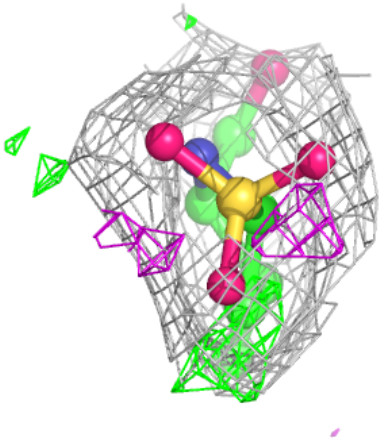
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around BG3 F 601:

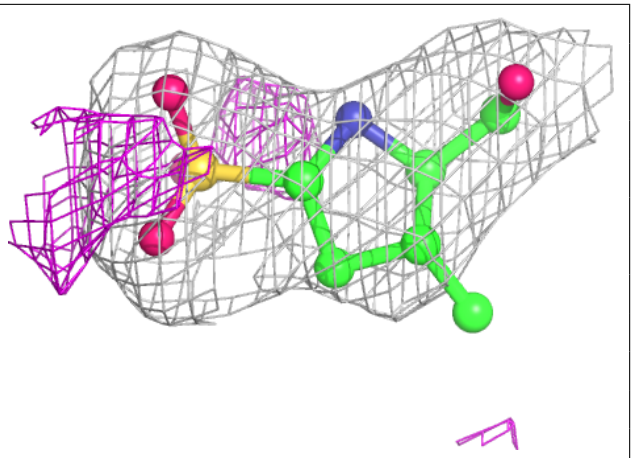
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

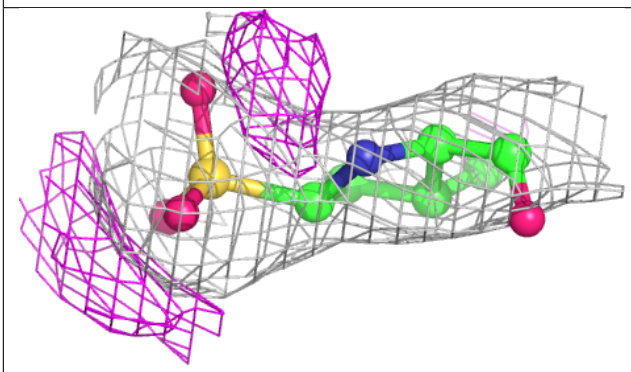


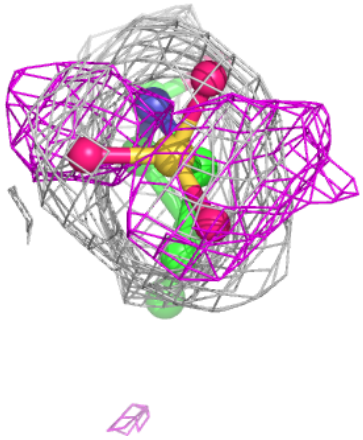


Electron density around BG3 A 601:

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

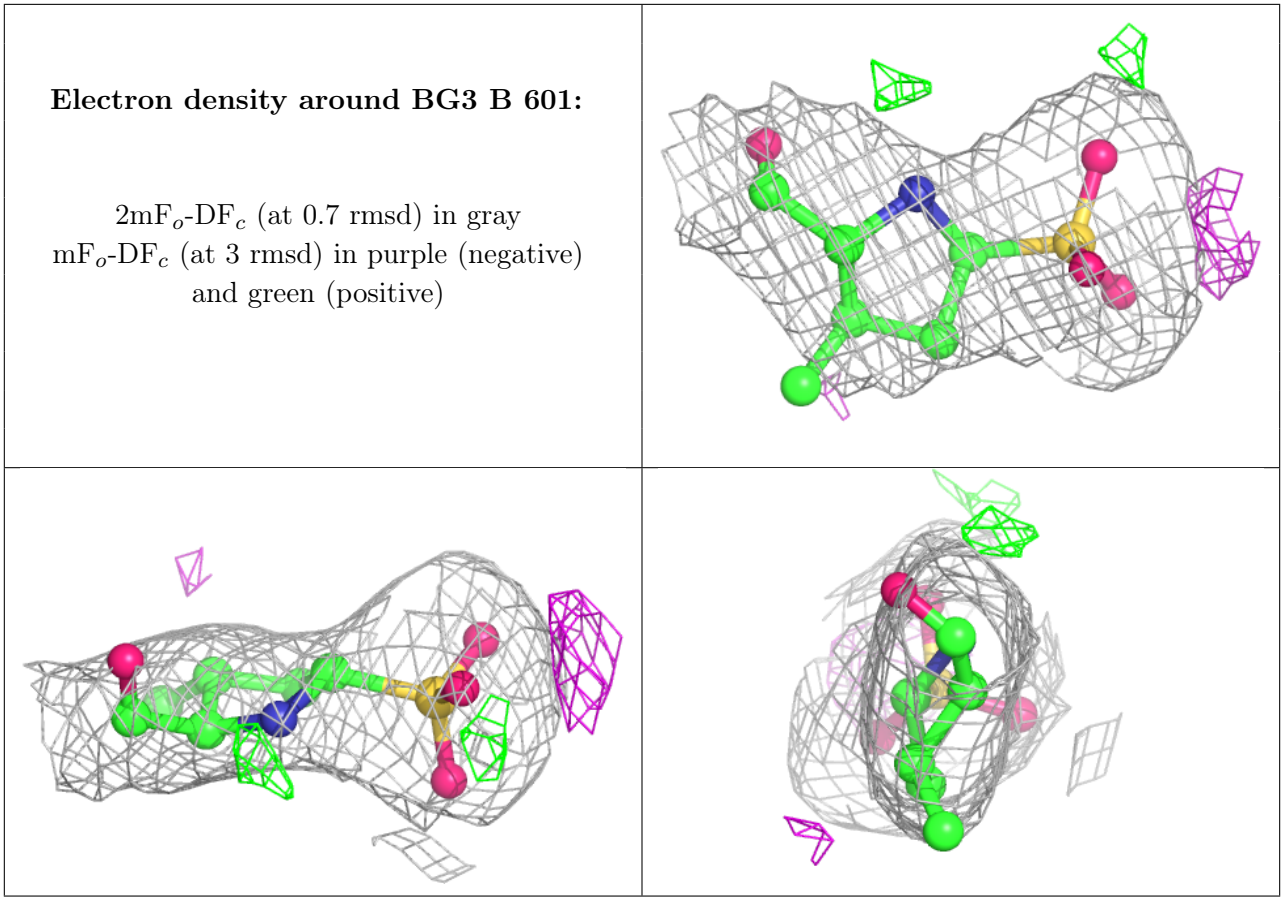






Electron density around BG3 B 601:

$2mF_o$-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

There are no such residues in this entry.