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

Full wwPDB X-ray Structure Validation Report ⓘ

Apr 7, 2025 – 05:30 pm BST

PDB ID	:	8RVR / pdb_00008rvr
Title	:	Crystal structure of Trypanosoma congolense pyruvate kinase in complex with a single-domain antibody (TcoPYK-sdAb42) in the presence of sulfate
Authors	:	Sterckx, Y.G.-J.
Deposited on	:	2024-02-02
Resolution	:	3.19 Å(reported)

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

|		
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.42

1   Overall quality at a glance   ⓘ

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

The reported resolution of this entry is 3.19 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.
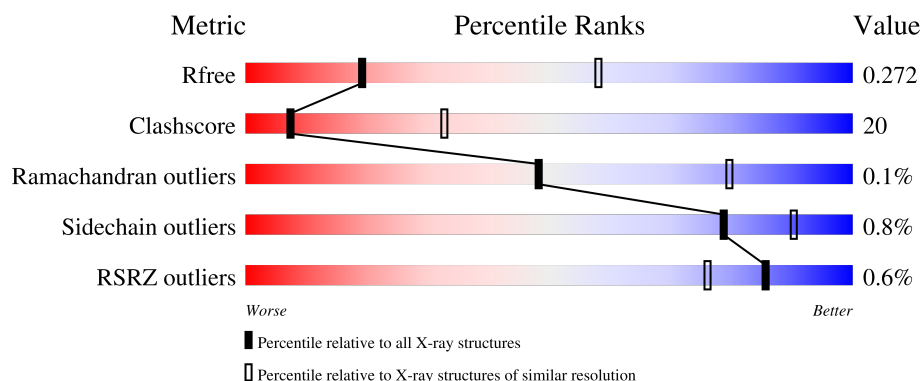
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	1370 (3.20-3.20)
Clashscore	180529	1497 (3.20-3.20)
Ramachandran outliers	177936	1479 (3.20-3.20)
Sidechain outliers	177891	1478 (3.20-3.20)
RSRZ outliers	164620	1371 (3.20-3.20)

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	514	63% 33%
1	B	514	51% 27% 21%
1	C	514	62% 34%
1	D	514	63% 33%
1	E	514	49% 28% 23%

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Mol	Chain	Length	Quality of chain
1	F	514	40% 37% 22%
2	G	149	62% 25% 13%
2	H	149	58% 29% 13%
2	I	149	55% 31% 13%
2	J	149	54% 34% 12%
2	K	149	55% 32% 13%
2	L	149	59% 28% 13%

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	J	201	-	X	-	-

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 25987 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 Pyruvate kinase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	499	Total	C	N	O	S	0	0	0
			3681	2295	647	713	26			
1	B	404	Total	C	N	O	S	0	0	0
			3002	1862	540	577	23			
1	C	498	Total	C	N	O	S	0	1	0
			3667	2284	653	704	26			
1	D	498	Total	C	N	O	S	0	1	0
			3680	2294	650	710	26			
1	E	397	Total	C	N	O	S	0	0	0
			2927	1811	524	569	23			
1	F	399	Total	C	N	O	S	0	0	0
			2904	1804	515	562	23			

There are 90 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	500	GLU	-	expression tag	UNP G0UYF4
A	501	ASN	-	expression tag	UNP G0UYF4
A	502	LEU	-	expression tag	UNP G0UYF4
A	503	TYR	-	expression tag	UNP G0UYF4
A	504	PHE	-	expression tag	UNP G0UYF4
A	505	GLN	-	expression tag	UNP G0UYF4
A	506	SER	-	expression tag	UNP G0UYF4
A	507	GLY	-	expression tag	UNP G0UYF4
A	508	GLY	-	expression tag	UNP G0UYF4
A	509	HIS	-	expression tag	UNP G0UYF4
A	510	HIS	-	expression tag	UNP G0UYF4
A	511	HIS	-	expression tag	UNP G0UYF4
A	512	HIS	-	expression tag	UNP G0UYF4
A	513	HIS	-	expression tag	UNP G0UYF4
A	514	HIS	-	expression tag	UNP G0UYF4
B	500	GLU	-	expression tag	UNP G0UYF4
B	501	ASN	-	expression tag	UNP G0UYF4

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Chain	Residue	Modelled	Actual	Comment	Reference
B	502	LEU	-	expression tag	UNP G0UYF4
B	503	TYR	-	expression tag	UNP G0UYF4
B	504	PHE	-	expression tag	UNP G0UYF4
B	505	GLN	-	expression tag	UNP G0UYF4
B	506	SER	-	expression tag	UNP G0UYF4
B	507	GLY	-	expression tag	UNP G0UYF4
B	508	GLY	-	expression tag	UNP G0UYF4
B	509	HIS	-	expression tag	UNP G0UYF4
B	510	HIS	-	expression tag	UNP G0UYF4
B	511	HIS	-	expression tag	UNP G0UYF4
B	512	HIS	-	expression tag	UNP G0UYF4
B	513	HIS	-	expression tag	UNP G0UYF4
B	514	HIS	-	expression tag	UNP G0UYF4
C	500	GLU	-	expression tag	UNP G0UYF4
C	501	ASN	-	expression tag	UNP G0UYF4
C	502	LEU	-	expression tag	UNP G0UYF4
C	503	TYR	-	expression tag	UNP G0UYF4
C	504	PHE	-	expression tag	UNP G0UYF4
C	505	GLN	-	expression tag	UNP G0UYF4
C	506	SER	-	expression tag	UNP G0UYF4
C	507	GLY	-	expression tag	UNP G0UYF4
C	508	GLY	-	expression tag	UNP G0UYF4
C	509	HIS	-	expression tag	UNP G0UYF4
C	510	HIS	-	expression tag	UNP G0UYF4
C	511	HIS	-	expression tag	UNP G0UYF4
C	512	HIS	-	expression tag	UNP G0UYF4
C	513	HIS	-	expression tag	UNP G0UYF4
C	514	HIS	-	expression tag	UNP G0UYF4
D	500	GLU	-	expression tag	UNP G0UYF4
D	501	ASN	-	expression tag	UNP G0UYF4
D	502	LEU	-	expression tag	UNP G0UYF4
D	503	TYR	-	expression tag	UNP G0UYF4
D	504	PHE	-	expression tag	UNP G0UYF4
D	505	GLN	-	expression tag	UNP G0UYF4
D	506	SER	-	expression tag	UNP G0UYF4
D	507	GLY	-	expression tag	UNP G0UYF4
D	508	GLY	-	expression tag	UNP G0UYF4
D	509	HIS	-	expression tag	UNP G0UYF4
D	510	HIS	-	expression tag	UNP G0UYF4
D	511	HIS	-	expression tag	UNP G0UYF4
D	512	HIS	-	expression tag	UNP G0UYF4
D	513	HIS	-	expression tag	UNP G0UYF4

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Chain	Residue	Modelled	Actual	Comment	Reference
D	514	HIS	-	expression tag	UNP G0UYF4
E	500	GLU	-	expression tag	UNP G0UYF4
E	501	ASN	-	expression tag	UNP G0UYF4
E	502	LEU	-	expression tag	UNP G0UYF4
E	503	TYR	-	expression tag	UNP G0UYF4
E	504	PHE	-	expression tag	UNP G0UYF4
E	505	GLN	-	expression tag	UNP G0UYF4
E	506	SER	-	expression tag	UNP G0UYF4
E	507	GLY	-	expression tag	UNP G0UYF4
E	508	GLY	-	expression tag	UNP G0UYF4
E	509	HIS	-	expression tag	UNP G0UYF4
E	510	HIS	-	expression tag	UNP G0UYF4
E	511	HIS	-	expression tag	UNP G0UYF4
E	512	HIS	-	expression tag	UNP G0UYF4
E	513	HIS	-	expression tag	UNP G0UYF4
E	514	HIS	-	expression tag	UNP G0UYF4
F	500	GLU	-	expression tag	UNP G0UYF4
F	501	ASN	-	expression tag	UNP G0UYF4
F	502	LEU	-	expression tag	UNP G0UYF4
F	503	TYR	-	expression tag	UNP G0UYF4
F	504	PHE	-	expression tag	UNP G0UYF4
F	505	GLN	-	expression tag	UNP G0UYF4
F	506	SER	-	expression tag	UNP G0UYF4
F	507	GLY	-	expression tag	UNP G0UYF4
F	508	GLY	-	expression tag	UNP G0UYF4
F	509	HIS	-	expression tag	UNP G0UYF4
F	510	HIS	-	expression tag	UNP G0UYF4
F	511	HIS	-	expression tag	UNP G0UYF4
F	512	HIS	-	expression tag	UNP G0UYF4
F	513	HIS	-	expression tag	UNP G0UYF4
F	514	HIS	-	expression tag	UNP G0UYF4

- Molecule 2 is a protein called Camelid single-domain antibody 42 (sdAb42).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	G	130	Total	C	N	O	S	0	0	0
			995	622	173	197	3			
2	H	130	Total	C	N	O	S	0	0	0
			998	623	173	199	3			
2	I	130	Total	C	N	O	S	0	0	0
			976	610	167	196	3			
2	J	131	Total	C	N	O	S	0	0	0
			1007	628	175	201	3			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	K	130	Total 967	C 603	N 165	O 196	S 3	0	0	0
2	L	130	Total 942	C 585	N 160	O 194	S 3	0	0	0

- Molecule 3 is SULFATE ION (CCD ID: SO4) (formula: O_4S).

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total 5	O 4	S 1	0	0
3	B	1	Total 5	O 4	S 1	0	0
3	C	1	Total 5	O 4	S 1	0	0
3	D	1	Total 5	O 4	S 1	0	0
3	E	1	Total 5	O 4	S 1	0	0
3	F	1	Total 5	O 4	S 1	0	0

- Molecule 4 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).

GOL

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	B	1	Total 6	C 3	O 3	0	0
4	B	1	Total 6	C 3	O 3	0	0
4	B	1	Total 6	C 3	O 3	0	0
4	C	1	Total 6	C 3	O 3	0	0
4	C	1	Total 6	C 3	O 3	0	0
4	C	1	Total 6	C 3	O 3	0	0
4	D	1	Total 6	C 3	O 3	0	0
4	D	1	Total 6	C 3	O 3	0	0
4	E	1	Total 6	C 3	O 3	0	0
4	G	1	Total 6	C 3	O 3	0	0
4	H	1	Total 6	C 3	O 3	0	0
4	I	1	Total 6	C 3	O 3	0	0
4	J	1	Total 6	C 3	O 3	0	0

- Molecule 5 is GLUTAMIC ACID (CCD ID: GLU) (formula: $C_5H_9NO_4$).

GLU

OE1

O

OH OE2

CD

CB

O

CG

O

CA(S)

C

HO

NH₂

OXT

N
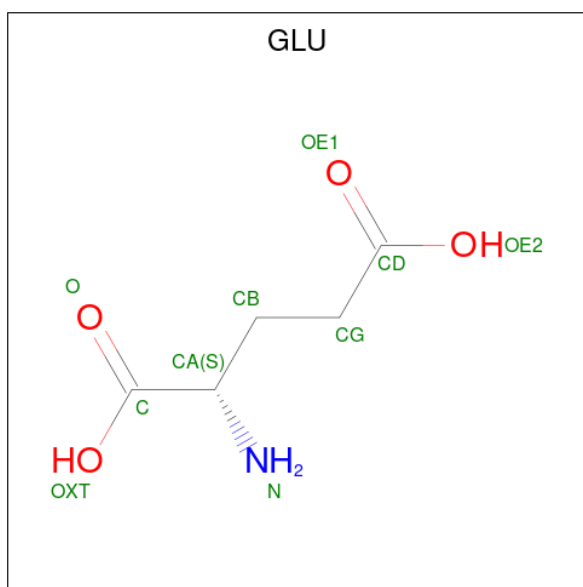
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	C	1	Total C N O				0	0
			5 3 1 1					
5	D	1	Total C N O				0	0
			5 3 1 1					

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	28	Total 28	O 28	0	0
6	B	14	Total 14	O 14	0	0
6	C	32	Total 32	O 32	0	0
6	D	17	Total 17	O 17	0	0
6	E	8	Total 8	O 8	0	0
6	F	8	Total 8	O 8	0	0
6	G	1	Total 1	O 1	0	0
6	H	3	Total 3	O 3	0	0
6	I	1	Total 1	O 1	0	0
6	J	8	Total 8	O 8	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	K	1	Total 1	O 1	0	0
6	L	2	Total 2	O 2	0	0

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of th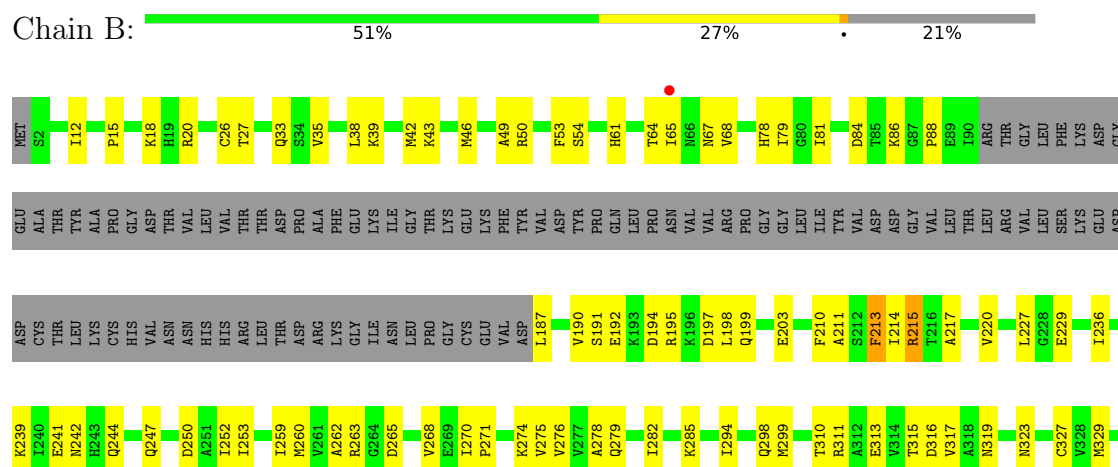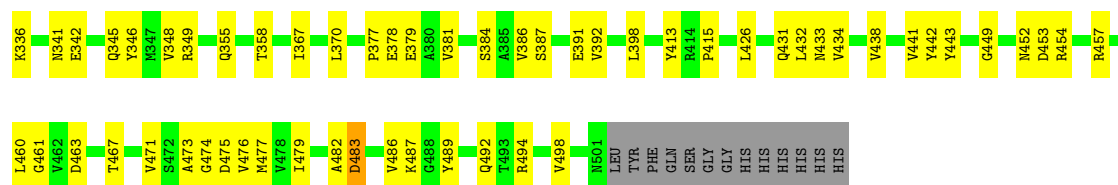e various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, 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.
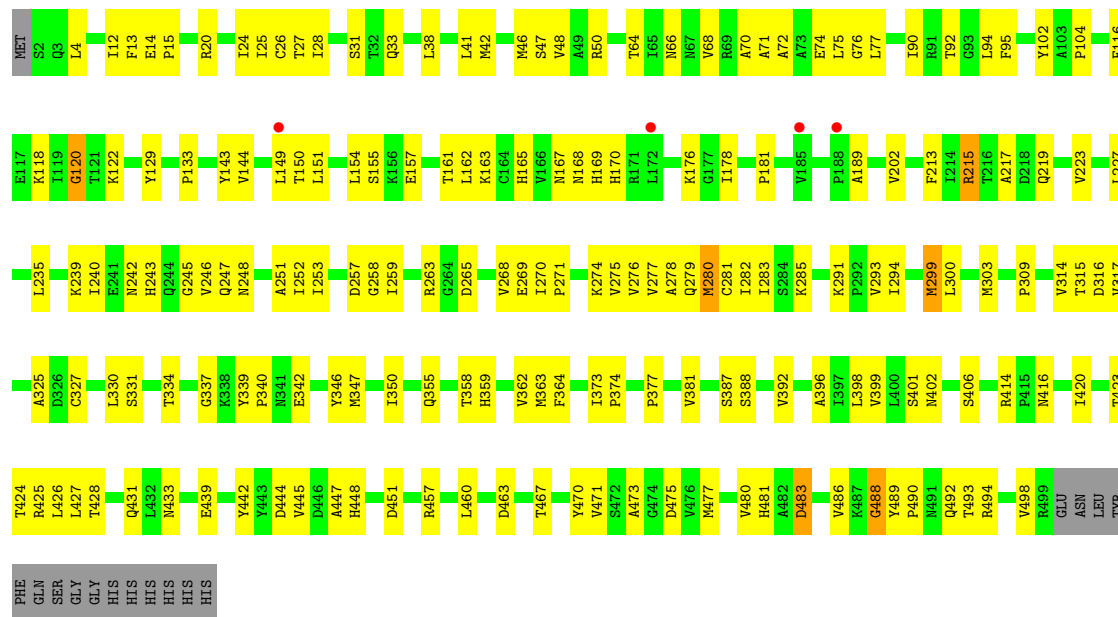
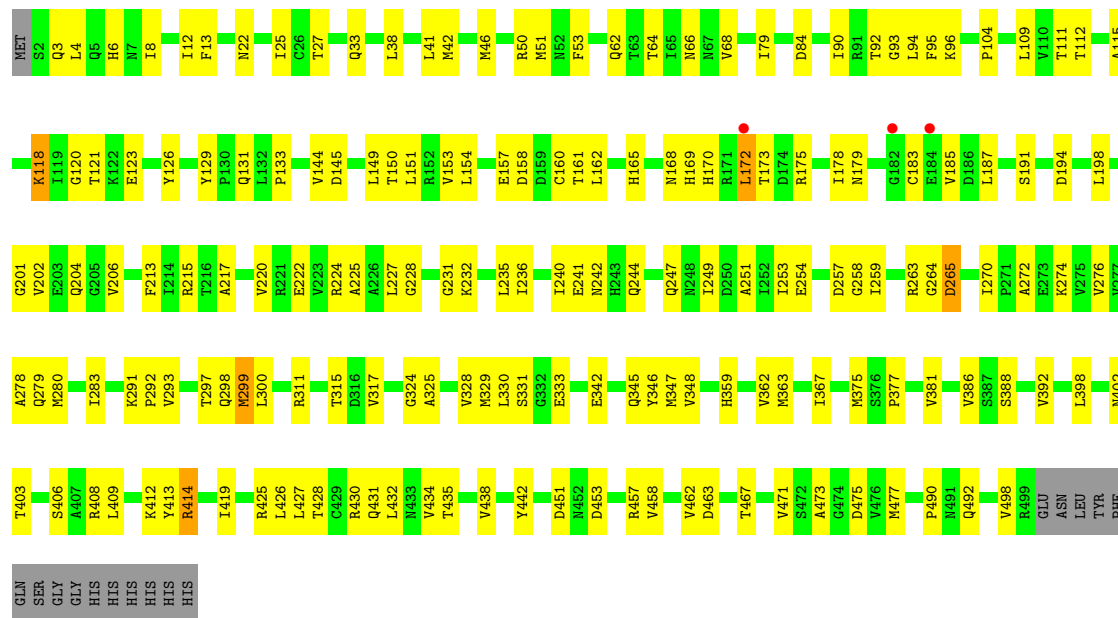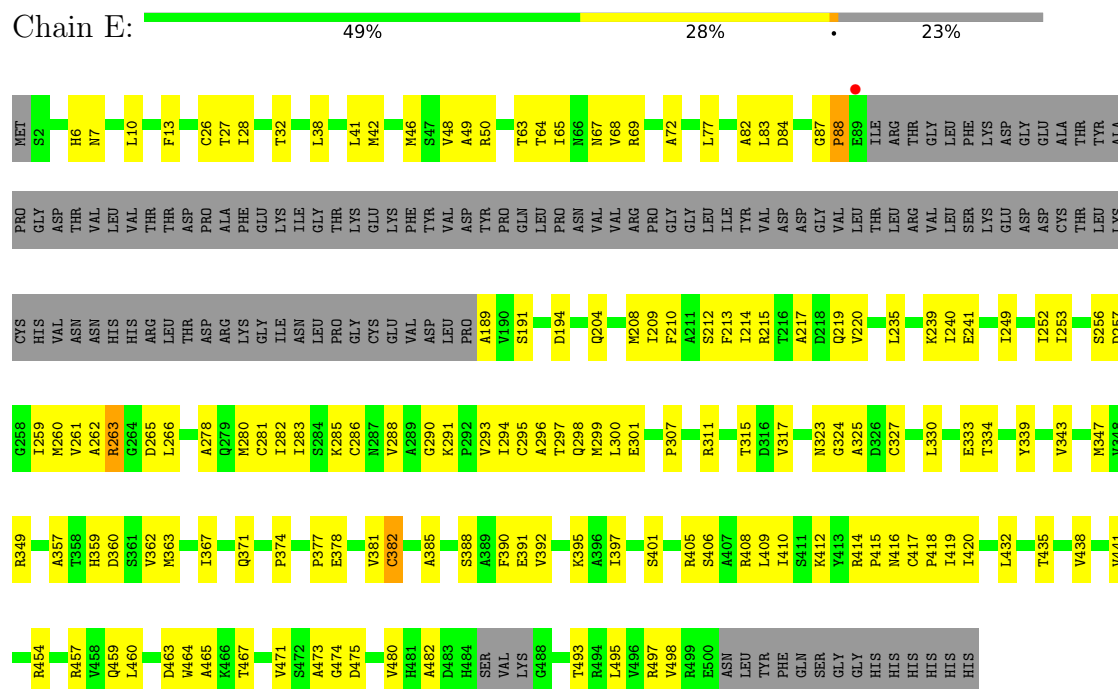• Molecule 1: Pyruvate kinase

Chain A:

• Molecule 1: Pyruvate kinase

Chain B:

K336 N341 E342 Q345 Y346 M347 V348 R349 Q355 T358 I367 L370 P377 E378 E379 A380 V381 S384 A385 V386 S387 E391 V392 L398 Y413 R414 P415 L426 Q431 L432 N433 V434 V438 V441 Y442 Y443 G449 N452 D453 R454 R457

L460 G461 V462 D463 T467 V471 S472 G474 D475 V476 M477 V478 I479 A482 D483 V486 K487 G488 Y489 Q492 T493 R494 V498 N501 LEU TYR PHE GLN SER GLY HIS HIS HIS HIS HIS

- Molecule 1: Pyruvate kinase

Chain C:

62%   34%

MET S2 Q3 L4 I12 F13 E14 P15 R20 I24 I25 C26 T27 I28 S31 T32 Q33 L38 L41 M42 M46 S47 V48 A49 R50 T64 I65 N66 N67 V68 R69 A70 A71 A72 A73 E74 L75 G76 L77 I90 R91 T92 G93 L94 F95 Y102 A103 P104 F116

E117 K118 I119 G120 T121 K122 Y129 P133 Y143 V144 L149 T150 L151 L154 S155 K156 E157 T161 L162 K163 C164 H165 V166 N167 N168 H169 H170 R171 L172 K176 G177 I178 P181 V185 P188 A189 V202 F213 I214 R215 T216 A217 D218 Q219 V223 L227

L235 K239 I240 E241 N242 H243 Q244 G245 V246 Q247 N248 A251 I252 I253 D257 G258 I259 R263 G264 D265 V268 E269 I270 P271 K274 V275 V276 V277 A278 Q279 M280 C281 I282 I283 S284 K285 K291 P292 V293 I294 M299 L300 M303 P309 V314 T315 D316 V317

A325 D326 C327 L330 S331 T334 G337 K338 Y339 P340 N341 E342 Y346 M347 I350 Q355 T358 H359 V362 M363 F364 I373 P374 P377 V381 S387 S388 V392 A396 I397 L398 V399 L400 S401 N402 S406 R414 P415 N416 I420 T423

T424 R425 L426 L427 T428 Q431 L432 N433 E439 Y442 Y443 D444 V445 D446 A447 H448 D451 R457 L460 D463 T467 Y470 V471 S472 A473 G474 D475 V476 M477 V480 H481 A482 D483 V486 K487 G488 Y489 P490 N491 Q492 T493 R494 V498 R499 GLU ASN LEU TYR

PHE GLN SER GLY HIS HIS HIS HIS HIS

- Molecule 1: Pyruvate kinase

Chain D:

63%   33%

MET S2 Q3 L4 Q5 H6 N7 I8 I12 F13 N22 I25 C26 T27 Q33 L38 L41 M42 M46 R50 M51 N52 F53 Q62 T63 T64 I65 N66 N67 V68 I79 D84 I90 R91 T92 G93 L94 F95 K96 P104 L109 V110 T111 T112 A115

K118 I119 G120 T121 K122 E123 Y126 Y129 P130 Q131 L132 P133 V144 D145 L149 T150 L151 R152 V153 L154 E157 D158 D159 C160 T161 L162 H165 N168 H169 H170 R171 L172 T173 D174 R175 I178 N179 G182 E183 V185 D186 L187 S191 D194 L198

G201 V202 E203 Q204 G205 V206 F213 I214 T216 A217 V220 R221 E222 V223 R224 A225 A226 L227 G228 G231 K232 L235 I236 I240 E241 N242 H243 Q244 Q247 N248 I249 D250 A251 I252 I253 E254 D257 G258 I259 R263 G264 D265 I270 P271 A272 E273 K274 V275 V276 V277

A278 Q279 M280 I283 K291 P292 V293 T297 Q298 M299 L300 R311 T315 D316 V317 G324 A325 V328 M329 L330 S331 G332 E333 E342 Q345 Y346 M347 V348 H359 V362 M363 I367 M375 S376 P377 V381 V386 S387 S388 V392 L398 N402

T403 S406 A407 R408 L409 K412 Y413 R414 I419 R425 L426 L427 T428 C429 R430 Q431 L432 N433 V434 V435 V438 Y442 D451 N452 D453 R457 V458 V462 D463 T467 V471 S472 A473 G474 D475 V476 M477 P490 N491 Q492 V498 R499 GLU ASN LEU TYR PHE
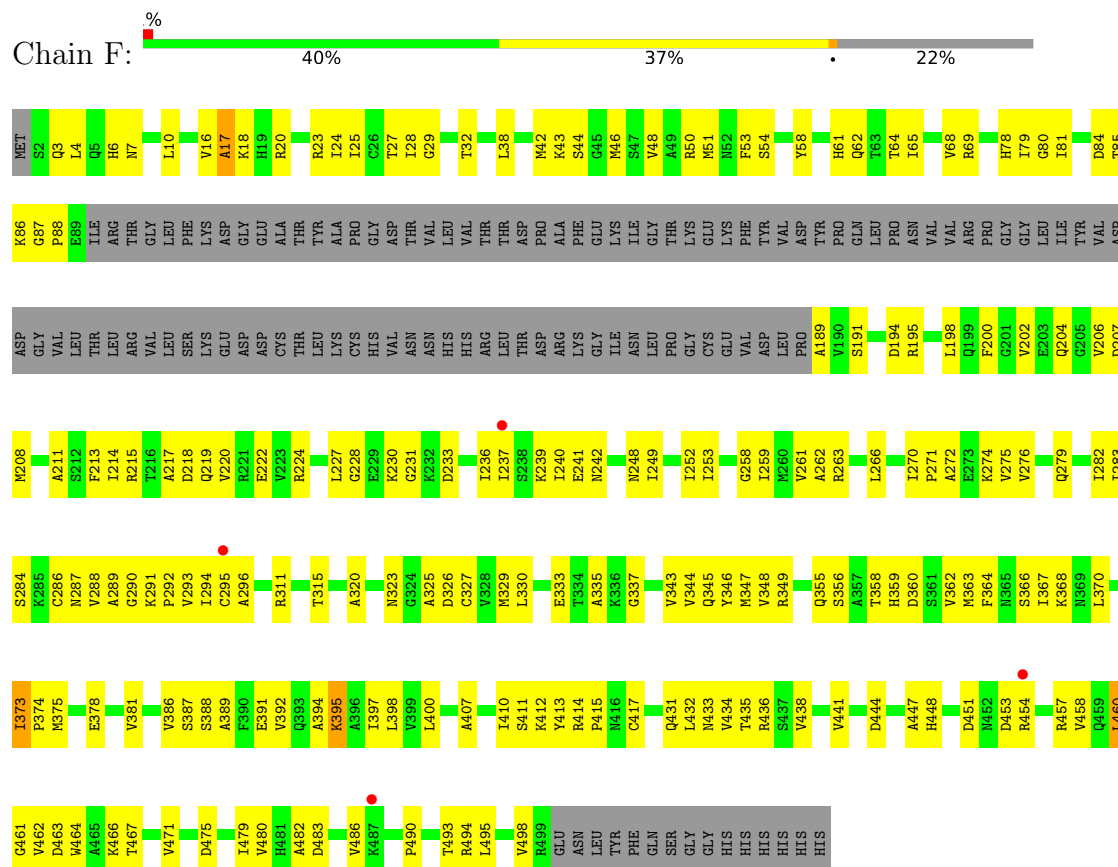
GLN SER GLY HIS HIS HIS HIS HIS HIS

• Molecule 1: Pyruvate kinase
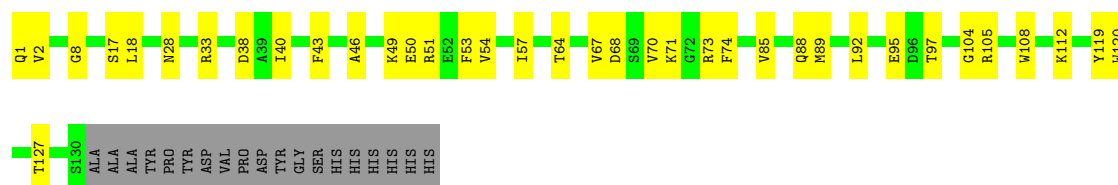
Chain E:

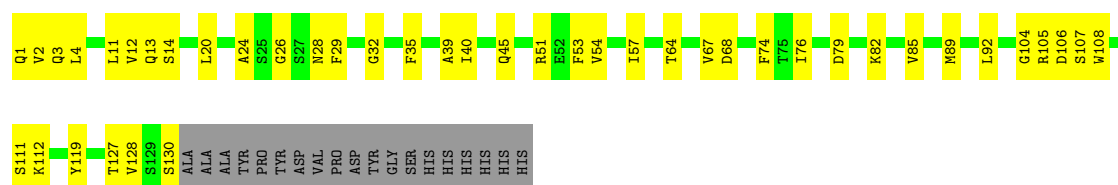• Molecule 1: Pyruvate kinase

Chain F:

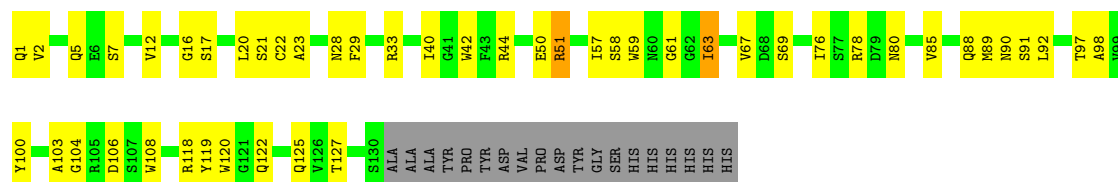• Molecule 2: Camelid single-domain antibody 42 (sdAb42)

Chain G:

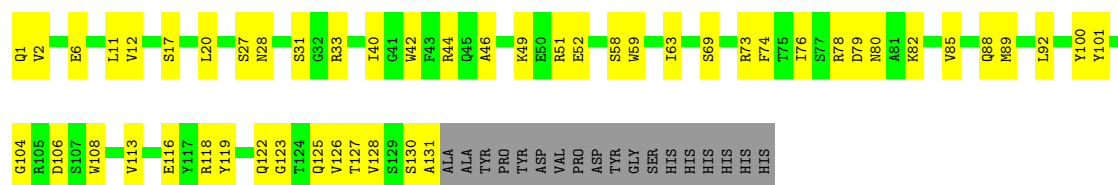• Molecule 2: Camelid single-domain antibody 42 (sdAb42)

Chain H:

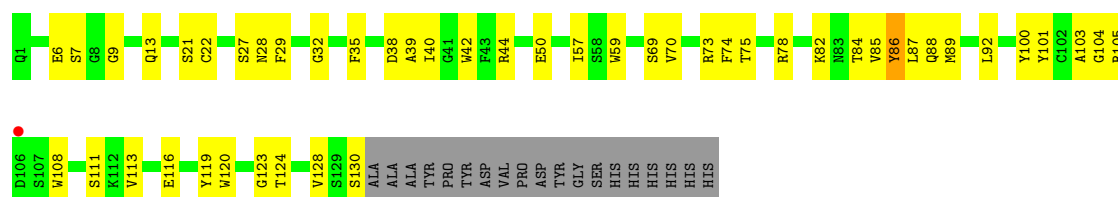• Molecule 2: Camelid single-domain antibody 42 (sdAb42)

Chain I:

• Molecule 2: Camelid single-domain antibody 42 (sdAb42)

Chain J:

• Molecule 2: Camelid single-domain antibody 42 (sdAb42)

Chain K:

• Molecule 2: Camelid single-domain antibody 42 (sdAb42)

Chain L:

59%　　　　28%　　　13%

Q1 L20 S27 N28 F29 S30 R33 T34 F35 S36 T37 D38 A39 I40 G41 R51 V54 G55 G56 I57 S58 W59 N60 G61 G62 I63 T64 V70 F74 R78 N83 T84 V85 Y86 L87 Q88 M89 N90 S91 L92 V99 A103 G104 R105 D106 S111 Y117

R118 Y119 W120 Q125 V128 S129 S130 ALA ALA ALA TYR PRO TYR ASP VAL PRO ASP TYR GLY SER HIS HIS HIS HIS HIS HIS
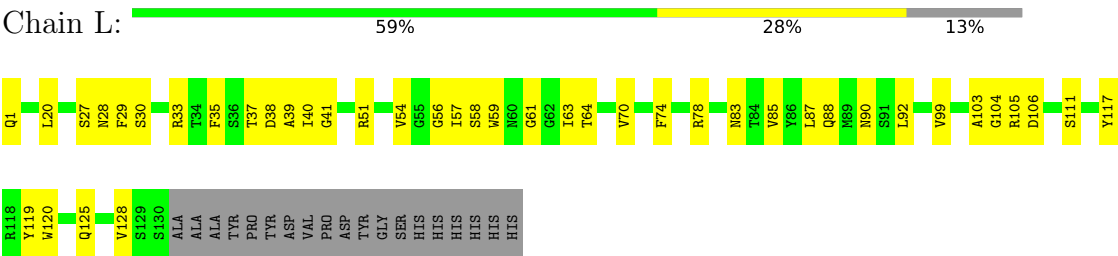
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	167.52Å 168.42Å 177.13Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.32 – 3.19 49.32 – 3.19	Depositor EDS
% Data completeness (in resolution range)	99.7 (49.32-3.19) 99.8 (49.32-3.19)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.55 (at 3.19Å)	Xtriage
Refinement program	PHENIX (1.20.1_4487: ???)	Depositor
R, R_{free}	0.221 , 0.275 0.223 , 0.272	Depositor DCC
R_{free} test set	4176 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	88.2	Xtriage
Anisotropy	0.597	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 92.6	EDS
L-test for twinning[2]	$< |L| > = 0.44, < L^2 > = 0.26$	Xtriage
Estimated twinning fraction	0.038 for k,h,-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	25987	wwPDB-VP
Average B, all atoms (Å^2)	112.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 8.24% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: SO4, 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	0.59	2/3738 (0.1%)	0.89	16/5091 (0.3%)
1	B	0.56	0/3043	0.79	2/4131 (0.0%)
1	C	0.56	1/3728 (0.0%)	0.84	6/5077 (0.1%)
1	D	0.52	0/3740	0.80	5/5093 (0.1%)
1	E	0.52	1/2965 (0.0%)	0.78	3/4026 (0.1%)
1	F	0.49	0/2943	0.82	7/4005 (0.2%)
2	G	0.63	0/1018	0.82	0/1377
2	H	0.53	0/1021	0.76	2/1381 (0.1%)
2	I	0.46	0/999	0.77	2/1356 (0.1%)
2	J	0.56	0/1030	0.78	0/1393
2	K	0.39	0/989	0.75	1/1343 (0.1%)
2	L	0.38	0/964	0.73	0/1314
All	All	0.54	4/26178 (0.0%)	0.81	44/35587 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	2
1	F	0	2
All	All	0	4

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	281	CYS	CB-SG	-6.62	1.71	1.82
1	A	351	CYS	CB-SG	-6.37	1.71	1.82
1	A	281	CYS	CB-SG	-5.58	1.72	1.81
1	E	382	CYS	CB-SG	-5.28	1.73	1.81

All (44) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	120	GLY	N-CA-C	13.22	146.16	113.10
1	A	296	ALA	N-CA-C	10.59	139.60	111.00
2	K	50	GLU	CB-CA-C	-9.36	91.68	110.40
1	A	447	ALA	CB-CA-C	9.35	124.12	110.10
1	A	331	SER	CB-CA-C	9.12	127.43	110.10
1	A	296	ALA	CB-CA-C	-8.19	97.81	110.10
1	D	172	LEU	CA-CB-CG	8.08	133.88	115.30
1	A	90	ILE	N-CA-C	-7.92	89.61	111.00
1	F	460	LEU	CB-CG-CD2	-7.62	98.05	111.00
1	A	270	ILE	CG1-CB-CG2	-7.28	95.38	111.40
1	A	331	SER	N-CA-C	-7.25	91.41	111.00
1	D	453	ASP	N-CA-C	-7.14	91.73	111.00
1	F	88	PRO	N-CA-C	-6.94	94.05	112.10
1	D	453	ASP	CB-CA-C	6.90	124.19	110.40
1	C	280	MET	CG-SD-CE	-6.53	89.75	100.20
1	F	17	ALA	N-CA-C	6.41	128.31	111.00
1	E	88	PRO	N-CA-C	-6.39	95.48	112.10
1	A	299	MET	CB-CA-C	-6.34	97.71	110.40
1	F	453	ASP	N-CA-C	-6.32	93.93	111.00
1	A	46	MET	CB-CA-C	-6.23	97.93	110.40
1	C	374	PRO	N-CA-C	-6.22	95.92	112.10
1	A	90	ILE	CB-CA-C	6.15	123.91	111.60
1	F	360	ASP	CB-CA-C	-6.10	98.20	110.40
1	A	44	SER	CB-CA-C	-6.09	98.52	110.10
1	C	374	PRO	CB-CA-C	6.09	127.22	112.00
1	A	299	MET	N-CA-C	5.99	127.18	111.00
1	E	77	LEU	CB-CG-CD2	5.78	120.82	111.00
2	I	51	ARG	CB-CA-C	5.58	121.57	110.40
1	F	495	LEU	CB-CG-CD2	-5.58	101.52	111.00
1	A	437	SER	CB-CA-C	-5.49	99.68	110.10
1	A	109	LEU	CA-CB-CG	5.48	127.90	115.30
1	B	483	ASP	CB-CA-C	5.40	121.21	110.40
2	H	106	ASP	N-CA-C	-5.40	96.43	111.00
1	B	88	PRO	N-CA-C	-5.39	98.08	112.10
1	C	488	GLY	N-CA-C	5.39	126.58	113.10
1	D	299	MET	N-CA-C	5.34	125.41	111.00
1	D	115	ALA	CB-CA-C	-5.30	102.15	110.10
1	A	296	ALA	C-N-CA	5.27	134.87	121.70
2	I	63	ILE	CG1-CB-CG2	-5.22	99.91	111.40
2	H	26	GLY	N-CA-C	5.15	125.98	113.10
1	F	395	LYS	CD-CE-NZ	5.14	123.53	111.70
1	A	336	LYS	C-N-CA	-5.09	111.61	122.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	299	MET	N-CA-C	5.03	124.57	111.00
1	E	495	LEU	CA-CB-CG	5.01	126.83	115.30

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	168	ASN	Peptide
1	C	373	ILE	Peptide
1	F	233	ASP	Peptide
1	F	373	ILE	Peptide

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3681	0	3587	142	0
1	B	3002	0	2966	127	0
1	C	3667	0	3560	154	0
1	D	3680	0	3597	152	0
1	E	2927	0	2854	120	0
1	F	2904	0	2824	153	0
2	G	995	0	932	31	0
2	H	998	0	934	41	0
2	I	976	0	891	47	0
2	J	1007	0	945	40	0
2	K	967	0	879	38	0
2	L	942	0	818	33	0
3	A	5	0	0	0	0
3	B	5	0	0	0	0
3	C	5	0	0	1	0
3	D	5	0	0	0	0
3	E	5	0	0	0	0
3	F	5	0	0	0	0
4	B	18	0	24	0	0
4	C	18	0	23	0	0
4	D	12	0	16	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	E	6	0	8	0	0
4	G	6	0	6	0	0
4	H	6	0	7	0	0
4	I	6	0	8	1	0
4	J	6	0	7	0	0
5	C	5	0	1	0	0
5	D	5	0	1	0	0
6	A	28	0	0	2	0
6	B	14	0	0	0	0
6	C	32	0	0	1	0
6	D	17	0	0	2	0
6	E	8	0	0	0	0
6	F	8	0	0	0	0
6	G	1	0	0	1	0
6	H	3	0	0	0	0
6	I	1	0	0	1	0
6	J	8	0	0	0	0
6	K	1	0	0	1	0
6	L	2	0	0	0	0
All	All	25987	0	24888	1018	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 20.

All (1018) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:1:GLN:HG3	2:H:2:VAL:H	1.09	1.10
1:A:93:GLY:HA3	1:A:175:ARG:H	1.14	1.09
1:D:158:ASP:HB2	1:D:161:THR:HG22	1.46	0.96
1:F:432:LEU:HD13	1:F:438:VAL:HG11	1.44	0.95
2:H:1:GLN:HG3	2:H:2:VAL:N	1.82	0.95
1:C:423:THR:HG22	1:C:425:ARG:H	1.29	0.95
2:K:70:VAL:HB	2:K:74:PHE:HD2	1.30	0.95
1:A:315:THR:HG22	1:B:276:VAL:HG22	1.49	0.94
2:G:1:GLN:HG3	2:G:28:ASN:HB2	1.50	0.93
1:B:54:SER:HA	1:B:86:LYS:HG3	1.53	0.91
2:H:1:GLN:OE1	2:H:28:ASN:ND2	2.03	0.91
2:L:57:ILE:HD11	2:L:61:GLY:HA2	1.51	0.90
1:E:256:SER:O	1:E:291:LYS:NZ	2.03	0.90
1:E:27:THR:HG21	1:E:50:ARG:HH11	1.38	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:290:GLY:CA	1:F:412:LYS:HD3	2.02	0.89
1:B:15:PRO:HD3	2:H:105:ARG:HH11	1.36	0.89
1:A:311:ARG:HD2	1:B:275:VAL:HG11	1.53	0.89
2:I:104:GLY:HA3	2:I:119:TYR:CE1	2.10	0.86
1:C:276:VAL:HG22	1:D:315:THR:HG22	1.56	0.86
2:L:88:GLN:NE2	2:L:90:ASN:OD1	2.10	0.85
1:C:27:THR:HG22	1:C:50:ARG:HD3	1.57	0.85
1:F:237:ILE:HD12	1:F:258:GLY:HA3	1.57	0.85
2:G:1:GLN:HG2	2:G:2:VAL:H	1.40	0.85
2:J:51:ARG:HG2	2:J:51:ARG:HH11	1.43	0.84
2:K:70:VAL:HB	2:K:74:PHE:CD2	2.11	0.84
1:B:454:ARG:HG2	1:B:457:ARG:HH21	1.41	0.83
2:G:33:ARG:NH1	2:G:38:ASP:OD1	2.11	0.83
1:C:253:ILE:O	1:C:291:LYS:NZ	2.11	0.83
1:C:154:LEU:HD11	1:C:165:HIS:HB2	1.61	0.82
2:I:33:ARG:NH2	2:I:106:ASP:O	2.12	0.82
1:E:249:ILE:HG12	1:E:282:ILE:HD12	1.60	0.82
2:K:89:MET:HB3	2:K:92:LEU:HD21	1.62	0.82
1:A:12:ILE:HG13	1:B:274:LYS:HD3	1.62	0.82
1:A:218:ASP:OD1	1:A:221:ARG:NH1	2.12	0.82
1:C:396:ALA:HB3	1:C:477:MET:HG2	1.62	0.82
1:C:423:THR:HG21	1:C:428:THR:HB	1.62	0.81
1:C:315:THR:HG22	1:D:276:VAL:HG22	1.62	0.81
1:A:274:LYS:HE3	1:B:12:ILE:HG13	1.63	0.80
2:L:58:SER:O	2:L:78:ARG:NH1	2.14	0.79
2:H:1:GLN:CG	2:H:2:VAL:H	1.88	0.78
1:D:27:THR:HG22	1:D:50:ARG:HD3	1.65	0.78
1:D:249:ILE:O	1:D:253:ILE:HD12	1.84	0.78
2:K:105:ARG:HH12	2:K:111:SER:HB2	1.49	0.78
1:C:299:MET:O	1:C:300:LEU:HD23	1.83	0.77
2:I:12:VAL:HG11	2:I:92:LEU:HD13	1.67	0.77
1:D:451:ASP:O	1:D:457:ARG:NH2	2.16	0.77
2:J:58:SER:HB3	2:J:63:ILE:HB	1.65	0.77
1:B:454:ARG:HG2	1:B:457:ARG:NH2	1.99	0.77
1:A:210:PHE:CD2	1:A:260:MET:HE1	2.20	0.76
2:H:57:ILE:HG13	2:H:64:THR:HG22	1.67	0.76
1:D:253:ILE:O	1:D:291:LYS:NZ	2.17	0.76
1:E:283:ILE:HD13	1:E:325:ALA:HB2	1.68	0.76
1:C:247:GLN:HG3	1:D:13:PHE:CE2	2.21	0.76
1:D:264:GLY:HA3	1:D:297:THR:HG21	1.67	0.75
1:F:38:LEU:O	1:F:42:MET:HG3	1.86	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:242:ASN:ND2	1:B:244:GLN:OE1	2.18	0.75
2:K:6:GLU:HA	2:K:22:CYS:HA	1.67	0.75
1:C:27:THR:HG21	1:C:50:ARG:HH11	1.49	0.75
1:B:443:TYR:OH	1:B:449:GLY:O	2.03	0.74
2:K:113:VAL:HB	2:K:116:GLU:HG3	1.69	0.74
2:G:97:THR:HG23	2:G:127:THR:HA	1.69	0.74
1:C:33:GLN:HG3	1:C:64:THR:HG22	1.69	0.74
1:F:386:VAL:HG13	1:F:415:PRO:HB3	1.69	0.74
1:E:263:ARG:HD3	1:E:297:THR:H	1.52	0.74
1:A:363:MET:HE3	1:A:414:ARG:HG3	1.69	0.73
1:D:27:THR:HG23	1:D:330:LEU:O	1.88	0.73
1:F:288:VAL:O	1:F:412:LYS:HD2	1.89	0.73
1:B:20:ARG:HD3	1:B:348:VAL:HG13	1.69	0.73
1:B:198:LEU:HD12	1:B:227:LEU:HD21	1.70	0.73
1:D:224:ARG:HE	1:D:236:ILE:HD12	1.53	0.73
1:F:214:ILE:HG22	1:F:252:ILE:HD13	1.69	0.73
1:C:243:HIS:CE1	2:I:63:ILE:HD11	2.24	0.72
1:D:217:ALA:HB2	1:D:251:ALA:HB1	1.71	0.72
1:D:299:MET:O	1:D:300:LEU:HD23	1.89	0.72
1:F:228:GLY:O	1:F:231:GLY:N	2.19	0.72
1:C:104:PRO:HD3	1:C:169:HIS:CE1	2.24	0.72
1:D:359:HIS:ND1	1:D:362:VAL:HG23	2.03	0.72
2:J:1:GLN:HE21	2:J:28:ASN:HB2	1.54	0.72
1:B:486:VAL:HG22	1:B:487:LYS:H	1.55	0.72
1:D:51:MET:HE3	1:D:53:PHE:HE1	1.56	0.71
1:A:480:VAL:HG22	1:A:493:THR:HG22	1.73	0.71
1:A:102:TYR:HE2	1:A:122:LYS:O	1.74	0.71
1:D:240:ILE:HD13	1:D:259:ILE:HG23	1.73	0.71
1:A:471:VAL:HG21	1:A:477:MET:HE2	1.72	0.70
1:F:189:ALA:HB2	1:F:219:GLN:HE21	1.55	0.70
1:F:471:VAL:HG11	1:F:498:VAL:HG11	1.73	0.70
1:C:144:VAL:HB	1:C:149:LEU:HB2	1.73	0.70
1:A:93:GLY:HA3	1:A:175:ARG:N	1.99	0.70
1:D:104:PRO:HD3	1:D:169:HIS:HB2	1.74	0.70
1:D:292:PRO:HG3	1:D:435:THR:HG22	1.73	0.69
1:E:299:MET:O	1:E:300:LEU:HD23	1.91	0.69
1:B:379:GLU:OE1	1:B:413:TYR:OH	2.09	0.69
2:G:1:GLN:HG2	2:G:2:VAL:N	2.07	0.69
1:E:249:ILE:HG12	1:E:282:ILE:CD1	2.22	0.69
1:C:247:GLN:HG3	1:D:13:PHE:HE2	1.57	0.69
1:D:299:MET:HE2	1:D:328:VAL:HB	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:95:PHE:CE1	1:C:120:GLY:O	2.46	0.69
1:E:208:MET:HB3	1:E:235:LEU:HB2	1.75	0.68
2:J:74:PHE:CZ	2:J:89:MET:HG2	2.29	0.68
2:J:40:ILE:HG21	2:J:85:VAL:HG11	1.74	0.68
1:D:377:PRO:O	1:D:381:VAL:HG23	1.93	0.68
1:E:27:THR:HG23	1:E:330:LEU:O	1.93	0.68
1:A:274:LYS:HE2	2:H:108:TRP:CD1	2.28	0.68
1:F:224:ARG:NH2	1:F:231:GLY:O	2.27	0.68
1:F:290:GLY:HA3	1:F:412:LYS:HD3	1.74	0.68
1:F:43:LYS:O	2:L:29:PHE:HB3	1.94	0.68
1:A:302:SER:OG	6:A:701:HOH:O	2.12	0.68
1:D:3:GLN:N	6:D:701:HOH:O	2.25	0.68
1:D:432:LEU:HD13	1:D:438:VAL:HG11	1.76	0.68
1:C:274:LYS:HE3	1:D:12:ILE:HB	1.77	0.67
2:I:125:GLN:OE1	2:I:127:THR:HG23	1.93	0.67
1:B:192:GLU:H	1:B:192:GLU:CD	1.97	0.67
1:A:92:THR:OG1	1:A:126:TYR:O	2.06	0.67
1:F:69:ARG:NH2	1:F:204:GLN:O	2.28	0.67
2:J:113:VAL:HB	2:J:116:GLU:HG3	1.77	0.67
1:F:65:ILE:O	1:F:69:ARG:HG3	1.95	0.67
1:A:458:VAL:O	1:A:462:VAL:HG23	1.95	0.67
2:K:69:SER:O	2:K:73:ARG:NH1	2.28	0.67
1:C:294:ILE:HG23	1:C:327:CYS:HB2	1.76	0.66
1:F:261:VAL:HG12	1:F:263:ARG:HG2	1.77	0.66
2:G:40:ILE:HG21	2:G:85:VAL:HG21	1.78	0.66
1:C:303:MET:HE3	1:C:309:PRO:HD3	1.76	0.66
1:D:471:VAL:HG23	1:D:475:ASP:HB2	1.77	0.66
1:A:90:ILE:HG23	1:A:129:TYR:HB2	1.78	0.66
1:E:214:ILE:HG22	1:E:252:ILE:HD13	1.77	0.66
1:E:454:ARG:HD3	1:E:457:ARG:NH2	2.11	0.66
1:F:16:VAL:HG23	1:F:17:ALA:H	1.59	0.66
1:F:397:ILE:HD12	1:F:417:CYS:SG	2.36	0.66
1:D:41:LEU:HB3	1:D:46:MET:HE2	1.77	0.66
2:G:1:GLN:CG	2:G:2:VAL:H	2.06	0.66
2:J:69:SER:O	2:J:73:ARG:NH1	2.26	0.66
1:B:33:GLN:HG3	1:B:64:THR:HG22	1.76	0.66
1:D:471:VAL:HG21	1:D:498:VAL:HG11	1.77	0.65
1:E:405:ARG:HG2	1:E:405:ARG:HH11	1.60	0.65
1:F:410:ILE:HD11	1:F:480:VAL:HG11	1.78	0.65
1:C:299:MET:HE3	1:C:317:VAL:HG22	1.78	0.65
1:E:65:ILE:O	1:E:69:ARG:HG3	1.96	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:276:VAL:HG22	1:B:315:THR:HG22	1.77	0.65
1:C:451:ASP:HB3	1:C:457:ARG:HH11	1.61	0.65
1:D:473:ALA:HA	1:D:498:VAL:HG23	1.79	0.65
2:I:50:GLU:O	2:I:51:ARG:C	2.35	0.65
1:B:463:ASP:O	1:B:467:THR:HG23	1.96	0.65
1:C:480:VAL:HG22	1:C:493:THR:HG22	1.77	0.65
1:A:271:PRO:HD2	1:A:274:LYS:HG3	1.77	0.65
1:C:27:THR:CG2	1:C:50:ARG:HH11	2.09	0.65
1:C:92:THR:HG23	1:C:176:LYS:O	1.97	0.65
2:G:1:GLN:HG3	2:G:28:ASN:CB	2.25	0.65
2:J:28:ASN:OD1	2:J:31:SER:OG	2.15	0.65
1:A:378:GLU:HG3	1:A:489:TYR:CD1	2.31	0.64
1:D:254:GLU:O	4:D:603:GOL:O2	2.15	0.64
1:E:87:GLY:N	1:E:194:ASP:OD1	2.25	0.64
2:K:27:SER:HB3	2:K:29:PHE:CE2	2.32	0.64
1:A:353:GLU:OE2	1:B:274:LYS:NZ	2.25	0.64
1:B:214:ILE:HG22	1:B:252:ILE:HD13	1.79	0.64
1:B:279:GLN:HG2	1:B:323:ASN:HD22	1.62	0.64
1:A:331:SER:O	1:A:333:GLU:OE1	2.15	0.64
1:D:458:VAL:O	1:D:462:VAL:HG23	1.97	0.64
2:I:1:GLN:HG2	2:I:2:VAL:H	1.63	0.64
2:J:42:TRP:HD1	2:J:76:ILE:HD13	1.63	0.64
1:A:319:ASN:OD1	1:B:319:ASN:ND2	2.28	0.64
1:D:27:THR:HG21	1:D:50:ARG:HH11	1.63	0.64
1:A:78:HIS:HD2	6:A:709:HOH:O	1.81	0.64
1:A:492:GLN:HG2	1:C:494:ARG:HB3	1.79	0.64
1:C:149:LEU:HD21	1:C:170:HIS:HB3	1.80	0.64
2:L:57:ILE:HD13	2:L:64:THR:HG22	1.79	0.64
1:A:39:LYS:O	1:A:43:LYS:HG3	1.99	0.63
1:D:249:ILE:HG13	1:D:253:ILE:HD11	1.80	0.63
2:L:58:SER:HB3	2:L:63:ILE:HG23	1.79	0.63
1:A:54:SER:O	1:A:55:HIS:ND1	2.31	0.63
1:A:227:LEU:HD13	1:A:234:THR:HG23	1.81	0.63
2:I:22:CYS:HB3	2:I:85:VAL:HG13	1.79	0.63
1:E:298:GLN:HA	1:E:301:GLU:HG3	1.78	0.63
2:H:104:GLY:HA3	2:H:119:TYR:CE1	2.33	0.63
1:A:13:PHE:CZ	1:B:247:GLN:HG3	2.33	0.63
1:A:102:TYR:CE2	1:A:122:LYS:O	2.51	0.63
1:C:12:ILE:HG22	2:J:108:TRP:HE1	1.63	0.63
1:C:451:ASP:OD2	1:C:457:ARG:HD3	1.99	0.63
1:D:213:PHE:CE2	1:D:215:ARG:HD3	2.33	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:373:ILE:HD13	1:F:375:MET:HB2	1.81	0.63
1:C:303:MET:CE	1:C:309:PRO:HD3	2.29	0.63
1:E:441:VAL:HG11	1:E:460:LEU:HG	1.80	0.62
1:F:279:GLN:OE1	1:F:323:ASN:ND2	2.25	0.62
2:H:13:GLN:HG3	2:H:14:SER:N	2.13	0.62
2:L:40:ILE:HG21	2:L:85:VAL:HG11	1.81	0.62
1:C:355:GLN:O	1:C:358:THR:HG22	1.99	0.62
1:E:471:VAL:HG11	1:E:498:VAL:HG11	1.82	0.62
1:C:102:TYR:HE1	1:C:122:LYS:O	1.83	0.62
2:K:105:ARG:NH1	2:K:111:SER:HB2	2.13	0.62
2:L:70:VAL:HB	2:L:74:PHE:CD2	2.35	0.62
1:D:283:ILE:HD13	1:D:325:ALA:HB2	1.81	0.62
1:F:54:SER:HA	1:F:86:LYS:HG3	1.81	0.62
1:B:384:SER:HA	1:B:387:SER:HB3	1.80	0.62
2:I:78:ARG:HD3	2:I:80:ASN:OD1	1.99	0.62
2:K:9:GLY:H	2:K:124:THR:HG21	1.64	0.62
1:A:90:ILE:HB	1:A:178:ILE:HB	1.82	0.61
1:A:231:GLY:O	1:A:234:THR:HG22	2.00	0.61
1:A:263:ARG:NH2	1:A:316:ASP:OD1	2.33	0.61
1:B:54:SER:HA	1:B:86:LYS:CG	2.29	0.61
1:A:215:ARG:HE	1:A:219:GLN:HE22	1.46	0.61
2:K:38:ASP:HB2	2:K:105:ARG:O	2.01	0.61
1:F:202:VAL:HG13	1:F:227:LEU:HD22	1.82	0.61
1:F:44:SER:HB3	1:F:345:GLN:HG3	1.83	0.61
1:B:260:MET:HG3	1:B:294:ILE:HB	1.83	0.61
1:A:144:VAL:HG22	1:A:178:ILE:HD12	1.82	0.60
1:F:363:MET:O	1:F:367:ILE:HG13	1.99	0.60
2:L:54:VAL:HG13	2:L:70:VAL:HG11	1.83	0.60
1:C:299:MET:CE	1:C:317:VAL:HG22	2.31	0.60
1:E:27:THR:CG2	1:E:50:ARG:HH11	2.12	0.60
1:A:229:GLU:O	1:A:232:LYS:HG2	2.01	0.60
1:C:28:ILE:HD12	1:C:38:LEU:HD21	1.83	0.60
1:A:158:ASP:OD2	1:A:161:THR:HB	2.01	0.60
1:E:349:ARG:HD2	2:K:32:GLY:O	2.01	0.60
1:A:54:SER:HA	1:A:86:LYS:HG2	1.82	0.60
1:E:28:ILE:HG21	1:E:64:THR:HG23	1.84	0.60
2:J:59:TRP:CD1	2:J:108:TRP:HB2	2.36	0.60
1:C:247:GLN:CG	1:D:13:PHE:HE2	2.14	0.60
1:D:220:VAL:HG23	1:D:236:ILE:HG21	1.83	0.60
2:H:1:GLN:OE1	2:H:28:ASN:CG	2.39	0.59
1:E:27:THR:HG22	1:E:50:ARG:HB3	1.82	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:27:THR:HG22	1:E:50:ARG:HD3	1.84	0.59
1:E:339:TYR:O	1:E:343:VAL:HG12	2.01	0.59
1:F:3:GLN:NE2	1:F:358:THR:HA	2.18	0.59
1:B:494:ARG:HG2	1:D:492:GLN:HB2	1.83	0.59
1:C:279:GLN:O	1:C:283:ILE:HG13	2.03	0.59
1:E:7:ASN:HA	1:E:10:LEU:HG	1.85	0.59
1:F:61:HIS:HA	1:F:64:THR:HG22	1.84	0.59
1:A:112:THR:OG1	1:A:160:CYS:HB2	2.03	0.59
1:D:274:LYS:NZ	6:D:702:HOH:O	2.34	0.59
1:F:363:MET:CE	1:F:367:ILE:HD11	2.31	0.59
1:F:388:SER:HA	1:F:391:GLU:HG2	1.83	0.59
1:D:297:THR:HG22	1:D:298:GLN:HG3	1.84	0.59
1:E:241:GLU:HB3	1:E:262:ALA:HB3	1.85	0.59
1:C:330:LEU:HD11	1:C:347:MET:HG3	1.84	0.59
1:D:27:THR:CG2	1:D:50:ARG:HH11	2.16	0.59
1:D:158:ASP:CB	1:D:161:THR:HG22	2.28	0.59
1:F:311:ARG:HH11	1:F:315:THR:HG21	1.67	0.59
1:F:441:VAL:HG22	1:F:464:TRP:CE3	2.38	0.59
2:G:57:ILE:HG13	2:G:64:THR:HG22	1.84	0.59
1:B:432:LEU:HD13	1:B:438:VAL:HG11	1.83	0.59
1:F:363:MET:HE2	1:F:414:ARG:HG3	1.84	0.59
1:E:41:LEU:HB3	1:E:46:MET:HE2	1.85	0.59
2:H:74:PHE:CE1	2:H:89:MET:HB3	2.38	0.59
2:K:101:TYR:CD1	2:K:123:GLY:HA3	2.38	0.59
1:C:90:ILE:HD12	1:C:129:TYR:HB2	1.85	0.59
1:D:133:PRO:HA	1:D:162:LEU:HD11	1.85	0.59
1:E:253:ILE:HD13	1:E:286:CYS:SG	2.43	0.58
2:K:75:THR:HB	2:K:88:GLN:HB3	1.85	0.58
1:C:14:GLU:HG3	1:C:15:PRO:HD2	1.86	0.58
1:D:463:ASP:O	1:D:467:THR:HG23	2.03	0.58
2:H:53:PHE:CD2	2:H:112:LYS:HA	2.38	0.58
1:A:378:GLU:CD	1:A:378:GLU:H	2.07	0.58
1:B:253:ILE:HG12	1:B:259:ILE:HG13	1.86	0.58
1:D:242:ASN:HD21	1:D:244:GLN:HB2	1.67	0.58
1:A:89:GLU:O	1:A:90:ILE:C	2.39	0.58
1:A:94:LEU:HB3	1:A:118:LYS:HG3	1.84	0.58
1:E:6:HIS:CD2	1:E:10:LEU:HD21	2.38	0.58
1:F:23:ARG:NH2	1:F:438:VAL:O	2.36	0.58
1:F:18:LYS:O	1:F:355:GLN:NE2	2.33	0.58
2:J:106:ASP:OD1	2:J:106:ASP:N	2.36	0.58
1:A:168:ASN:OD1	1:A:169:HIS:N	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:48:VAL:HG11	1:F:208:MET:HE3	1.86	0.58
1:A:249:ILE:HG12	1:A:282:ILE:HG12	1.85	0.58
1:A:459:GLN:HG3	1:A:463:ASP:OD1	2.04	0.58
1:A:463:ASP:O	1:A:467:THR:HG23	2.04	0.58
1:B:241:GLU:HB2	1:B:265:ASP:HB3	1.84	0.58
1:D:388:SER:O	1:D:392:VAL:HG22	2.05	0.57
1:E:28:ILE:HG12	1:E:49:ALA:HB1	1.85	0.57
1:F:451:ASP:OD2	1:F:457:ARG:HD2	2.04	0.57
2:L:78:ARG:HB2	2:L:85:VAL:HG23	1.86	0.57
1:B:475:ASP:O	1:B:498:VAL:HG22	2.04	0.57
1:C:143:TYR:CD1	1:C:181:PRO:HD3	2.39	0.57
1:B:398:LEU:HB3	1:B:479:ILE:HD13	1.85	0.57
1:E:26:CYS:SG	1:E:46:MET:HG3	2.44	0.57
1:F:411:SER:OG	1:F:436:ARG:O	2.18	0.57
2:L:33:ARG:HB3	2:L:38:ASP:OD1	2.04	0.57
1:D:317:VAL:HG21	1:D:347:MET:HE1	1.85	0.57
2:K:103:ALA:HB2	2:K:120:TRP:CD1	2.39	0.57
2:H:1:GLN:CG	2:H:2:VAL:N	2.54	0.57
1:C:278:ALA:HB2	1:D:12:ILE:HG21	1.86	0.57
2:H:13:GLN:NE2	2:H:130:SER:O	2.34	0.57
1:C:26:CYS:SG	1:C:46:MET:HG3	2.45	0.57
1:D:64:THR:O	1:D:68:VAL:HG13	2.04	0.57
1:F:330:LEU:HB3	1:F:333:GLU:HB2	1.85	0.57
2:I:58:SER:HB3	2:I:63:ILE:HG22	1.87	0.57
2:J:51:ARG:HG2	2:J:51:ARG:NH1	2.18	0.57
1:A:102:TYR:CD2	1:A:108:VAL:HG21	2.39	0.57
1:A:331:SER:O	1:A:333:GLU:N	2.36	0.57
2:K:104:GLY:HA3	2:K:119:TYR:CZ	2.40	0.57
1:E:395:LYS:O	1:E:418:PRO:HD2	2.04	0.57
2:L:27:SER:HB2	2:L:33:ARG:O	2.05	0.57
1:A:265:ASP:O	1:A:268:VAL:HG22	2.04	0.56
1:D:93:GLY:O	1:D:175:ARG:N	2.37	0.56
1:A:340:PRO:O	1:A:343:VAL:HG12	2.04	0.56
1:F:387:SER:O	1:F:391:GLU:HG2	2.04	0.56
1:A:102:TYR:CZ	1:A:122:LYS:HA	2.40	0.56
2:I:1:GLN:HG2	2:I:2:VAL:N	2.19	0.56
1:E:260:MET:HG3	1:E:294:ILE:HB	1.88	0.56
1:E:285:LYS:O	1:E:288:VAL:HG22	2.06	0.56
1:C:426:LEU:HG	1:C:442:TYR:CE1	2.40	0.56
1:F:483:ASP:OD1	1:F:486:VAL:HG22	2.04	0.56
1:C:402:ASN:N	3:C:605:SO4:O1	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:444:ASP:HB3	1:C:447:ALA:HB3	1.88	0.56
1:E:432:LEU:HB3	1:E:438:VAL:HG11	1.86	0.56
1:E:464:TRP:HA	1:E:467:THR:HG22	1.88	0.56
1:F:25:ILE:HB	1:F:329:MET:HG3	1.88	0.56
1:F:237:ILE:HD12	1:F:258:GLY:CA	2.32	0.56
2:I:42:TRP:CD1	2:I:76:ILE:HD12	2.40	0.56
1:B:190:VAL:HG22	1:B:195:ARG:HG2	1.88	0.56
1:C:143:TYR:HD1	1:C:181:PRO:HD3	1.71	0.56
1:D:183:CYS:O	1:D:183:CYS:SG	2.63	0.56
1:F:366:SER:O	1:F:370:LEU:HD13	2.05	0.56
1:B:473:ALA:HA	1:B:498:VAL:HG23	1.87	0.56
1:D:299:MET:HE3	1:D:317:VAL:HG22	1.87	0.56
1:F:78:HIS:O	1:F:79:ILE:HD13	2.05	0.56
2:L:104:GLY:HA3	2:L:119:TYR:CZ	2.41	0.56
1:F:262:ALA:HA	1:F:296:ALA:HB3	1.88	0.56
1:C:314:VAL:HG13	1:C:350:ILE:HG12	1.88	0.56
1:D:149:LEU:HD22	1:D:168:ASN:OD1	2.06	0.56
1:F:414:ARG:NH1	1:F:436:ARG:HD2	2.20	0.56
1:F:414:ARG:CZ	1:F:436:ARG:HD2	2.36	0.55
1:D:228:GLY:O	1:D:232:LYS:HG2	2.06	0.55
2:K:42:TRP:CD2	2:K:87:LEU:HD12	2.42	0.55
1:A:274:LYS:HE2	2:H:108:TRP:NE1	2.20	0.55
1:F:28:ILE:HD11	1:F:46:MET:HE3	1.86	0.55
1:A:41:LEU:HB3	1:A:46:MET:HE2	1.88	0.55
1:B:220:VAL:HG23	1:B:236:ILE:HG21	1.87	0.55
1:F:289:ALA:HB1	1:F:291:LYS:HE3	1.88	0.55
1:F:363:MET:HE3	1:F:367:ILE:HD11	1.88	0.55
2:H:105:ARG:NH2	2:H:111:SER:HB2	2.21	0.55
1:C:150:THR:HG23	1:C:167:ASN:HB2	1.87	0.55
1:C:414:ARG:HG3	1:C:414:ARG:HH11	1.72	0.55
2:J:6:GLU:OE2	2:J:101:TYR:HA	2.06	0.55
2:H:53:PHE:O	2:H:67:VAL:HG21	2.06	0.55
1:C:27:THR:OG1	1:C:331:SER:O	2.25	0.55
1:E:259:ILE:HB	1:E:293:VAL:HG23	1.87	0.55
1:B:355:GLN:O	1:B:358:THR:HG22	2.07	0.55
1:D:386:VAL:HG21	1:D:413:TYR:HB2	1.89	0.55
1:E:27:THR:HG21	1:E:50:ARG:NH1	2.14	0.55
1:C:27:THR:HG21	1:C:50:ARG:NH1	2.21	0.55
2:K:82:LYS:O	2:K:84:THR:HG23	2.06	0.55
2:K:84:THR:HG1	2:K:86:TYR:HH	1.55	0.55
1:B:492:GLN:HE21	1:D:492:GLN:HE21	1.54	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:92:THR:HG22	1:C:178:ILE:HD11	1.88	0.55
1:D:121:THR:HG23	1:D:123:GLU:H	1.72	0.55
1:E:432:LEU:HD13	1:E:438:VAL:HG11	1.89	0.54
1:C:471:VAL:HG13	1:C:475:ASP:HB2	1.89	0.54
1:A:311:ARG:HB3	1:B:298:GLN:HE22	1.72	0.54
1:B:271:PRO:HG2	1:B:274:LYS:HG3	1.88	0.54
1:E:239:LYS:HD2	1:E:260:MET:HE2	1.90	0.54
1:A:274:LYS:HE3	1:B:12:ILE:CG1	2.36	0.54
2:I:16:GLY:O	2:I:91:SER:N	2.41	0.54
1:F:53:PHE:HB2	1:F:84:ASP:O	2.08	0.54
1:C:20:ARG:NH1	1:C:24:ILE:HD12	2.23	0.54
1:D:249:ILE:HG13	1:D:253:ILE:CD1	2.37	0.54
1:F:6:HIS:ND1	1:F:359:HIS:HA	2.23	0.54
1:F:7:ASN:HA	1:F:10:LEU:HG	1.89	0.54
1:F:333:GLU:O	1:F:337:GLY:HA3	2.08	0.54
1:F:389:ALA:HA	1:F:394:ALA:HB3	1.90	0.54
2:I:103:ALA:HB2	2:I:120:TRP:CE3	2.43	0.54
1:B:482:ALA:HB1	1:B:486:VAL:HG11	1.88	0.54
1:D:264:GLY:H	1:D:297:THR:CB	2.21	0.54
1:A:257:ASP:O	1:A:292:PRO:HD2	2.08	0.54
1:C:401:SER:OG	1:C:406:SER:HB3	2.07	0.54
1:E:324:GLY:O	1:E:414:ARG:NH2	2.41	0.54
1:E:471:VAL:HG13	1:E:475:ASP:HB2	1.90	0.54
1:A:156:LYS:NZ	1:A:159:ASP:O	2.40	0.53
1:B:18:LYS:HD3	1:B:355:GLN:HE21	1.73	0.53
1:F:218:ASP:O	1:F:222:GLU:HG3	2.08	0.53
1:A:274:LYS:HB3	1:B:12:ILE:HD11	1.89	0.53
1:B:278:ALA:O	1:B:282:ILE:HG13	2.08	0.53
1:F:388:SER:HA	1:F:391:GLU:CG	2.37	0.53
1:B:35:VAL:HG23	1:B:67:ASN:ND2	2.23	0.53
1:F:400:LEU:HD21	1:F:457:ARG:HB2	1.89	0.53
1:A:199:GLN:O	1:A:203:GLU:HB2	2.08	0.53
1:B:452:ASN:OD1	1:B:453:ASP:N	2.41	0.53
1:D:408:ARG:HG2	1:D:435:THR:HG21	1.90	0.53
1:B:265:ASP:O	1:B:268:VAL:HG22	2.08	0.53
1:E:261:VAL:HG23	1:E:261:VAL:O	2.09	0.53
1:A:441:VAL:HG11	1:A:460:LEU:HG	1.90	0.53
1:C:271:PRO:O	1:C:275:VAL:HG23	2.09	0.53
1:C:377:PRO:O	1:C:381:VAL:HG23	2.08	0.53
2:I:58:SER:CB	2:I:63:ILE:HG22	2.39	0.53
1:A:64:THR:O	1:A:68:VAL:HG13	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:133:PRO:CA	1:D:162:LEU:HD11	2.38	0.53
1:F:213:PHE:N	1:F:241:GLU:OE2	2.20	0.53
1:A:270:ILE:HG22	2:H:108:TRP:CH2	2.44	0.53
1:F:311:ARG:O	1:F:315:THR:HG23	2.08	0.53
2:L:92:LEU:HB3	2:L:128:VAL:HG21	1.91	0.53
1:C:283:ILE:HG23	1:C:293:VAL:HG11	1.91	0.53
1:A:471:VAL:HG11	1:A:477:MET:HE1	1.90	0.53
1:D:224:ARG:NH2	1:D:257:ASP:OD2	2.42	0.53
1:C:13:PHE:CZ	1:D:247:GLN:HG3	2.43	0.52
1:C:258:GLY:O	1:C:259:ILE:HD13	2.10	0.52
1:D:149:LEU:HD23	1:D:170:HIS:HB3	1.90	0.52
1:A:330:LEU:HD22	1:A:343:VAL:HG13	1.90	0.52
1:B:26:CYS:SG	1:B:46:MET:HB2	2.49	0.52
1:D:79:ILE:O	1:D:430:ARG:HG2	2.09	0.52
1:D:263:ARG:HH11	1:D:279:GLN:HE22	1.57	0.52
1:E:388:SER:HA	1:E:391:GLU:HB2	1.91	0.52
1:A:271:PRO:HD2	1:A:274:LYS:CG	2.39	0.52
1:C:94:LEU:HD13	1:C:95:PHE:N	2.23	0.52
1:D:27:THR:HG21	1:D:50:ARG:NH1	2.24	0.52
2:K:42:TRP:CE2	2:K:87:LEU:HB2	2.44	0.52
2:K:104:GLY:HA3	2:K:119:TYR:CE1	2.44	0.52
2:L:20:LEU:HD12	2:L:87:LEU:HD23	1.90	0.52
1:A:104:PRO:HB3	1:A:167:ASN:O	2.09	0.52
1:B:46:MET:HE3	1:B:49:ALA:CA	2.39	0.52
1:B:84:ASP:HA	1:B:210:PHE:HB2	1.92	0.52
1:B:392:VAL:HG23	1:D:375:MET:O	2.09	0.52
1:E:208:MET:CB	1:E:235:LEU:HB2	2.39	0.52
1:E:261:VAL:HG22	1:E:295:CYS:HA	1.92	0.52
1:F:191:SER:O	1:F:195:ARG:HD2	2.10	0.52
1:A:386:VAL:HG21	1:A:413:TYR:HB2	1.91	0.52
1:D:25:ILE:HB	1:D:329:MET:HG3	1.90	0.52
1:D:235:LEU:HD11	1:D:431:GLN:HB3	1.91	0.52
1:B:386:VAL:HG13	1:B:415:PRO:HB3	1.91	0.52
1:C:75:LEU:HB2	1:C:77:LEU:HG	1.92	0.52
1:C:451:ASP:O	1:C:457:ARG:NH1	2.42	0.52
1:F:249:ILE:HG12	1:F:282:ILE:HG12	1.91	0.52
2:H:54:VAL:O	2:H:67:VAL:HG23	2.10	0.52
1:A:401:SER:HB2	1:A:406:SER:HB2	1.91	0.52
1:C:70:ALA:O	1:C:74:GLU:HG3	2.10	0.52
1:C:427:LEU:HD11	1:C:431:GLN:HE21	1.74	0.52
1:E:480:VAL:HG22	1:E:493:THR:HG22	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:57:ILE:HD12	2:H:76:ILE:HG22	1.91	0.52
2:K:59:TRP:CD1	2:K:108:TRP:HB2	2.45	0.52
1:B:38:LEU:O	1:B:42:MET:HG3	2.08	0.52
1:C:235:LEU:HD11	1:C:431:GLN:HB3	1.92	0.52
1:E:84:ASP:HA	1:E:210:PHE:HB2	1.92	0.52
1:E:377:PRO:O	1:E:381:VAL:HG23	2.09	0.52
1:F:290:GLY:N	1:F:412:LYS:HD3	2.24	0.52
2:G:70:VAL:HB	2:G:74:PHE:CG	2.45	0.52
1:D:96:LYS:H	1:D:120:GLY:H	1.57	0.52
1:F:292:PRO:HG3	1:F:435:THR:HG22	1.90	0.52
1:B:217:ALA:HA	1:B:220:VAL:HG12	1.91	0.52
1:D:27:THR:CG2	1:D:50:ARG:HD3	2.37	0.52
1:E:406:SER:O	1:E:410:ILE:HG12	2.09	0.52
2:J:1:GLN:HA	2:J:27:SER:O	2.10	0.51
1:A:241:GLU:HB3	1:A:262:ALA:HB3	1.92	0.51
1:C:276:VAL:HG22	1:D:315:THR:CG2	2.34	0.51
1:C:339:TYR:HB3	1:C:342:GLU:HB2	1.93	0.51
2:I:50:GLU:O	2:I:50:GLU:HG3	2.09	0.51
1:A:51:MET:HE3	1:A:53:PHE:HE1	1.75	0.51
2:I:88:GLN:OE1	2:I:90:ASN:ND2	2.43	0.51
1:B:46:MET:HE3	1:B:49:ALA:HB2	1.92	0.51
1:B:387:SER:O	1:B:391:GLU:HG3	2.10	0.51
1:C:27:THR:O	1:C:334:THR:HG23	2.09	0.51
1:D:300:LEU:HG	1:D:347:MET:CE	2.39	0.51
1:E:27:THR:O	1:E:334:THR:OG1	2.27	0.51
1:A:260:MET:SD	1:A:329:MET:HE1	2.51	0.51
1:C:27:THR:HG23	1:C:330:LEU:O	2.11	0.51
2:H:104:GLY:HA3	2:H:119:TYR:CZ	2.45	0.51
1:C:423:THR:CG2	1:C:425:ARG:H	2.14	0.51
1:E:263:ARG:HD2	1:E:296:ALA:H	1.76	0.51
1:A:278:ALA:HB2	1:B:12:ILE:HD12	1.92	0.51
1:A:311:ARG:HH22	1:B:316:ASP:CG	2.14	0.51
1:C:399:VAL:HG21	1:C:406:SER:OG	2.10	0.51
1:D:299:MET:CE	1:D:317:VAL:HG22	2.41	0.51
1:E:63:THR:HG22	1:E:67:ASN:ND2	2.25	0.51
1:F:378:GLU:O	1:F:381:VAL:HG22	2.11	0.51
2:J:33:ARG:HH11	2:J:33:ARG:HG2	1.76	0.51
1:A:143:TYR:CD1	1:A:150:THR:HG22	2.45	0.51
1:A:400:LEU:HD22	1:A:422:ALA:HB3	1.93	0.51
1:B:294:ILE:HG23	1:B:327:CYS:HB2	1.93	0.51
1:D:279:GLN:O	1:D:283:ILE:HG13	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:403:THR:HG22	1:D:425:ARG:NH2	2.26	0.51
1:E:388:SER:O	1:E:392:VAL:HG22	2.10	0.51
1:C:423:THR:HG21	1:C:428:THR:CB	2.38	0.51
1:F:364:PHE:CZ	1:F:368:LYS:HD2	2.45	0.51
2:K:35:PHE:CE1	2:K:85:VAL:HG23	2.45	0.51
1:B:199:GLN:O	1:B:203:GLU:HG3	2.09	0.51
1:F:62:GLN:HE22	1:F:204:GLN:HG3	1.76	0.51
2:I:7:SER:OG	2:I:21:SER:HB3	2.11	0.51
1:C:12:ILE:HG13	1:D:278:ALA:HB2	1.92	0.50
2:K:42:TRP:CG	2:K:87:LEU:HD12	2.47	0.50
2:K:101:TYR:HD1	2:K:123:GLY:HA3	1.75	0.50
1:C:423:THR:HG22	1:C:425:ARG:N	2.12	0.50
1:A:242:ASN:HD21	1:A:244:GLN:HB2	1.75	0.50
1:A:143:TYR:HD1	1:A:150:THR:HG22	1.77	0.50
1:F:326:ASP:OD1	1:F:436:ARG:HB2	2.11	0.50
1:D:198:LEU:HD22	1:D:227:LEU:HD21	1.93	0.50
2:H:11:LEU:HD12	2:H:127:THR:HB	1.92	0.50
2:J:12:VAL:CG1	2:J:128:VAL:HG22	2.42	0.50
1:E:38:LEU:HD13	1:E:68:VAL:HG12	1.94	0.50
1:E:240:ILE:HD11	1:E:252:ILE:HG21	1.94	0.50
1:E:294:ILE:HG23	1:E:327:CYS:HB2	1.93	0.50
1:B:426:LEU:HG	1:B:442:TYR:CE1	2.47	0.50
1:F:386:VAL:HG21	1:F:413:TYR:HB2	1.94	0.50
1:C:414:ARG:HG3	1:C:414:ARG:NH1	2.26	0.49
1:C:471:VAL:HG11	1:C:498:VAL:HG21	1.93	0.49
1:D:427:LEU:O	1:D:431:GLN:HG3	2.12	0.49
1:B:192:GLU:CD	1:B:192:GLU:N	2.64	0.49
1:B:198:LEU:HD12	1:B:227:LEU:CD2	2.40	0.49
1:F:261:VAL:HG12	1:F:263:ARG:CG	2.42	0.49
1:F:398:LEU:CD1	1:F:461:GLY:HA3	2.42	0.49
2:I:33:ARG:CZ	2:I:106:ASP:O	2.60	0.49
1:E:65:ILE:HD13	1:E:204:GLN:HG2	1.93	0.49
1:F:194:ASP:O	1:F:198:LEU:HD12	2.12	0.49
1:A:378:GLU:HG3	1:A:489:TYR:CE1	2.47	0.49
1:B:471:VAL:HG13	1:B:475:ASP:HB2	1.95	0.49
1:C:240:ILE:HG23	1:C:245:GLY:HA3	1.94	0.49
1:F:482:ALA:HB2	1:F:490:PRO:HA	1.94	0.49
1:A:26:CYS:HB2	1:A:46:MET:SD	2.52	0.49
1:B:398:LEU:HD11	1:B:461:GLY:HA3	1.94	0.49
1:D:62:GLN:HG3	1:D:66:ASN:HD21	1.78	0.49
1:D:95:PHE:HA	1:D:120:GLY:HA3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:479:ILE:O	1:F:493:THR:HA	2.12	0.49
1:C:42:MET:CE	1:C:75:LEU:HD12	2.43	0.49
1:E:42:MET:HE1	1:E:72:ALA:HA	1.93	0.49
1:A:154:LEU:HD11	1:A:165:HIS:HB2	1.95	0.49
1:C:235:LEU:HA	1:C:257:ASP:OD2	2.12	0.49
1:D:300:LEU:HG	1:D:347:MET:HE3	1.94	0.49
1:E:83:LEU:HB3	1:E:209:ILE:HD12	1.94	0.49
1:E:454:ARG:HD3	1:E:457:ARG:HH22	1.77	0.49
1:F:398:LEU:CD2	1:F:479:ILE:HG23	2.42	0.49
1:F:27:THR:HA	1:F:50:ARG:HB3	1.95	0.49
1:F:283:ILE:HA	1:F:293:VAL:HG21	1.95	0.49
2:J:74:PHE:HA	2:J:88:GLN:O	2.12	0.49
2:K:39:ALA:O	2:K:40:ILE:HD13	2.13	0.49
1:A:118:LYS:O	1:A:118:LYS:HG2	2.13	0.49
1:C:268:VAL:HG23	1:C:269:GLU:HG2	1.94	0.49
1:D:38:LEU:O	1:D:42:MET:HG3	2.13	0.49
2:L:105:ARG:HD2	2:L:111:SER:HB2	1.95	0.49
1:C:155:SER:HB3	1:C:163:LYS:CB	2.43	0.48
1:F:283:ILE:HD13	1:F:325:ALA:HB2	1.95	0.48
2:H:12:VAL:HG11	2:H:92:LEU:HD13	1.95	0.48
2:L:117:TYR:HB2	2:L:120:TRP:HE1	1.78	0.48
1:B:194:ASP:O	1:B:198:LEU:HD23	2.13	0.48
1:E:420:ILE:HD12	1:E:465:ALA:HB2	1.94	0.48
1:F:272:ALA:O	1:F:276:VAL:HG23	2.14	0.48
2:J:104:GLY:HA3	2:J:119:TYR:CZ	2.48	0.48
1:B:250:ASP:OD1	1:B:285:LYS:HE3	2.12	0.48
1:E:6:HIS:CD2	1:E:357:ALA:O	2.66	0.48
1:E:215:ARG:NE	1:E:219:GLN:HE22	2.11	0.48
1:E:473:ALA:HA	1:E:498:VAL:HG23	1.94	0.48
2:H:45:GLN:HG3	2:H:51:ARG:HG3	1.95	0.48
1:B:227:LEU:HD23	1:B:227:LEU:HA	1.59	0.48
1:C:90:ILE:CD1	1:C:129:TYR:HB2	2.43	0.48
1:C:364:PHE:CZ	1:C:387:SER:HB3	2.48	0.48
1:E:363:MET:CE	1:E:367:ILE:HD11	2.43	0.48
1:F:38:LEU:HD23	1:F:38:LEU:HA	1.59	0.48
1:F:451:ASP:OD2	1:F:454:ARG:HA	2.12	0.48
2:H:3:GLN:O	2:H:24:ALA:HA	2.13	0.48
2:L:37:THR:H	2:L:59:TRP:HE3	1.60	0.48
1:B:271:PRO:HG2	1:B:274:LYS:CG	2.43	0.48
1:F:349:ARG:NH1	2:L:37:THR:HG21	2.28	0.48
2:J:46:ALA:HB3	2:J:49:LYS:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:35:PHE:CD2	2:L:83:ASN:HA	2.49	0.48
1:D:406:SER:OG	1:D:490:PRO:HG2	2.14	0.48
1:F:214:ILE:HD12	1:F:220:VAL:HG12	1.95	0.48
2:L:51:ARG:HD2	2:L:120:TRP:CZ3	2.47	0.48
1:A:5:GLN:CG	1:B:370:LEU:HD11	2.43	0.48
1:A:102:TYR:CE2	1:A:108:VAL:HG21	2.49	0.48
1:F:479:ILE:HD12	1:F:494:ARG:O	2.14	0.48
2:G:51:ARG:HD3	2:G:120:TRP:CZ3	2.49	0.48
1:B:15:PRO:HG3	2:H:105:ARG:HE	1.78	0.48
1:C:12:ILE:HG22	2:J:108:TRP:NE1	2.28	0.48
1:D:154:LEU:HD11	1:D:165:HIS:HB2	1.94	0.48
1:D:201:GLY:O	1:D:206:VAL:HG22	2.14	0.48
1:E:397:ILE:HG13	1:E:417:CYS:SG	2.54	0.48
1:F:266:LEU:O	1:F:270:ILE:HG22	2.14	0.48
2:I:33:ARG:NH2	6:I:301:HOH:O	2.41	0.48
1:A:213:PHE:HD1	1:A:241:GLU:HG3	1.79	0.48
1:C:150:THR:O	1:C:151:LEU:HD23	2.14	0.48
1:C:359:HIS:HB3	1:C:362:VAL:HG23	1.96	0.48
1:C:427:LEU:HD11	1:C:431:GLN:NE2	2.29	0.48
1:D:402:ASN:O	1:D:428:THR:HG21	2.14	0.48
1:E:454:ARG:NH1	1:E:482:ALA:HB3	2.29	0.48
2:G:95:GLU:N	2:G:95:GLU:OE1	2.45	0.48
2:H:13:GLN:HG3	2:H:14:SER:H	1.78	0.48
1:D:240:ILE:HG12	1:D:249:ILE:CD1	2.44	0.47
1:D:331:SER:N	1:D:333:GLU:OE1	2.46	0.47
1:F:28:ILE:HD11	1:F:46:MET:CE	2.44	0.47
2:J:130:SER:O	2:J:131:ALA:HB3	2.15	0.47
1:C:363:MET:HE2	1:C:414:ARG:HD2	1.96	0.47
1:D:198:LEU:O	1:D:202:VAL:HG22	2.14	0.47
1:D:426:LEU:HG	1:D:442:TYR:CE1	2.49	0.47
1:F:61:HIS:O	1:F:65:ILE:HD12	2.14	0.47
2:J:42:TRP:CD1	2:J:76:ILE:HD13	2.48	0.47
1:B:27:THR:HA	1:B:50:ARG:HB3	1.95	0.47
1:D:276:VAL:O	1:D:280:MET:HG3	2.14	0.47
1:D:297:THR:HG22	1:D:298:GLN:N	2.29	0.47
1:D:333:GLU:H	1:D:333:GLU:CD	2.17	0.47
1:E:213:PHE:HD1	1:E:241:GLU:HG3	1.79	0.47
1:E:401:SER:HB2	1:E:406:SER:HB2	1.95	0.47
1:F:483:ASP:OD1	1:F:483:ASP:N	2.46	0.47
2:J:44:ARG:O	2:J:52:GLU:N	2.47	0.47
1:B:20:ARG:CD	1:B:348:VAL:HG13	2.42	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:42:MET:HE1	1:B:79:ILE:HG13	1.97	0.47
1:B:299:MET:HG3	1:B:329:MET:O	2.13	0.47
1:C:247:GLN:HG3	1:D:13:PHE:CZ	2.50	0.47
2:G:53:PHE:CD1	2:G:112:LYS:HA	2.50	0.47
2:L:38:ASP:O	2:L:78:ARG:NH2	2.46	0.47
1:C:263:ARG:HD2	1:C:279:GLN:OE1	2.15	0.47
1:E:32:THR:HG21	1:E:41:LEU:HD11	1.95	0.47
1:E:280:MET:HB3	1:E:323:ASN:OD1	2.15	0.47
1:F:294:ILE:HG12	1:F:327:CYS:HB2	1.97	0.47
2:H:20:LEU:HG	2:H:89:MET:CE	2.44	0.47
2:K:42:TRP:NE1	2:K:87:LEU:HB2	2.29	0.47
1:A:13:PHE:CE2	1:B:247:GLN:HG3	2.50	0.47
1:C:285:LYS:NZ	1:D:8:ILE:O	2.48	0.47
1:D:367:ILE:HD13	1:D:412:LYS:O	2.14	0.47
1:E:88:PRO:HG3	1:E:189:ALA:HA	1.97	0.47
1:F:24:ILE:HG21	1:F:344:VAL:HG23	1.95	0.47
1:F:270:ILE:HD11	1:F:274:LYS:HB3	1.96	0.47
2:I:98:ALA:HB3	2:I:100:TYR:HE1	1.80	0.47
2:K:7:SER:N	2:K:21:SER:O	2.48	0.47
1:A:311:ARG:HD2	1:B:275:VAL:CG1	2.36	0.47
1:A:426:LEU:HG	1:A:442:TYR:CE1	2.50	0.47
1:D:144:VAL:HG12	1:D:145:ASP:H	1.79	0.47
2:J:100:TYR:O	2:J:123:GLY:HA2	2.15	0.47
2:K:92:LEU:HB3	2:K:128:VAL:HG21	1.96	0.47
2:L:28:ASN:O	2:L:30:SER:N	2.42	0.47
1:A:143:TYR:HB2	1:A:179:ASN:O	2.15	0.47
1:D:270:ILE:HG22	2:J:108:TRP:CZ3	2.50	0.47
1:E:378:GLU:OE2	1:E:405:ARG:NH1	2.48	0.47
1:E:420:ILE:HD13	1:E:464:TRP:HD1	1.80	0.47
2:G:17:SER:HA	2:G:92:LEU:HD12	1.96	0.47
2:H:35:PHE:HZ	2:H:85:VAL:HG23	1.79	0.47
2:K:35:PHE:HE1	2:K:85:VAL:HG23	1.79	0.47
1:B:263:ARG:HD2	1:B:279:GLN:OE1	2.16	0.47
1:B:299:MET:SD	1:B:317:VAL:HG22	2.56	0.47
1:D:3:GLN:O	1:D:6:HIS:N	2.48	0.47
1:D:240:ILE:HG12	1:D:249:ILE:HD13	1.97	0.47
1:D:427:LEU:HD13	1:D:431:GLN:HG3	1.97	0.47
1:F:23:ARG:HG3	1:F:433:ASN:O	2.14	0.47
2:K:44:ARG:HA	2:K:100:TYR:HA	1.96	0.47
1:C:42:MET:HE1	1:C:72:ALA:N	2.30	0.46
1:C:202:VAL:CG2	1:C:227:LEU:HD23	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:33:ARG:NH2	6:G:301:HOH:O	2.47	0.46
2:G:54:VAL:O	2:G:67:VAL:HG22	2.16	0.46
2:J:44:ARG:HB3	2:J:100:TYR:CE2	2.50	0.46
2:J:78:ARG:HD3	2:J:80:ASN:OD1	2.16	0.46
1:E:38:LEU:HA	1:E:38:LEU:HD23	1.47	0.46
1:E:359:HIS:HB3	1:E:362:VAL:HG23	1.97	0.46
1:F:395:LYS:HG3	1:F:475:ASP:HB3	1.98	0.46
2:G:104:GLY:HA3	2:G:119:TYR:CE2	2.51	0.46
1:E:82:ALA:HB2	1:E:208:MET:CE	2.45	0.46
1:F:259:ILE:HB	1:F:286:CYS:SG	2.55	0.46
2:I:63:ILE:HG21	2:I:63:ILE:HD13	1.65	0.46
2:K:57:ILE:HG23	2:K:78:ARG:HH11	1.80	0.46
1:D:317:VAL:HG11	1:D:347:MET:HE2	1.98	0.46
2:G:1:GLN:CG	2:G:2:VAL:N	2.74	0.46
2:I:17:SER:HA	2:I:90:ASN:HA	1.98	0.46
2:I:103:ALA:HB2	2:I:120:TRP:CZ3	2.50	0.46
1:B:42:MET:CE	1:B:79:ILE:HG13	2.46	0.46
1:B:46:MET:HE3	1:B:49:ALA:HA	1.97	0.46
1:E:213:PHE:CD2	1:E:215:ARG:HD2	2.51	0.46
1:E:474:GLY:H	1:E:498:VAL:HG23	1.80	0.46
1:F:215:ARG:HB2	1:F:219:GLN:OE1	2.16	0.46
2:I:20:LEU:HD21	2:I:100:TYR:HD2	1.81	0.46
1:B:241:GLU:HB3	1:B:262:ALA:HB3	1.96	0.46
1:C:157:GLU:HG2	1:C:161:THR:HB	1.97	0.46
1:D:270:ILE:HD13	1:D:274:LYS:HB2	1.98	0.46
1:E:239:LYS:HD2	1:E:260:MET:CE	2.46	0.46
2:K:13:GLN:NE2	2:K:130:SER:O	2.49	0.46
1:F:458:VAL:O	1:F:462:VAL:HG23	2.16	0.46
1:D:38:LEU:HD13	1:D:68:VAL:HG12	1.98	0.46
1:E:278:ALA:O	1:E:281:CYS:HB3	2.16	0.46
1:F:3:GLN:O	1:F:7:ASN:ND2	2.49	0.46
2:G:46:ALA:HB3	2:G:49:LYS:HG3	1.96	0.46
1:C:28:ILE:HD12	1:C:38:LEU:CD2	2.46	0.45
1:C:42:MET:HE1	1:C:71:ALA:C	2.35	0.45
1:C:42:MET:HE3	1:C:75:LEU:HD12	1.97	0.45
1:C:92:THR:HG22	1:C:178:ILE:CD1	2.46	0.45
1:B:215:ARG:HG3	1:B:244:GLN:HB2	1.98	0.45
1:B:471:VAL:HG12	1:B:498:VAL:HG21	1.97	0.45
1:C:243:HIS:O	1:C:246:VAL:HG22	2.16	0.45
1:D:363:MET:HG3	1:D:367:ILE:HD12	1.97	0.45
1:E:41:LEU:HB3	1:E:46:MET:CE	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:270:ILE:HG22	2:G:108:TRP:CZ3	2.52	0.45
1:C:41:LEU:HD11	1:C:340:PRO:HB2	1.99	0.45
1:C:483:ASP:OD1	1:C:486:VAL:HG12	2.16	0.45
1:D:471:VAL:HG22	1:D:498:VAL:HG21	1.98	0.45
1:E:213:PHE:N	1:E:241:GLU:OE2	2.45	0.45
1:E:215:ARG:HE	1:E:219:GLN:HE22	1.64	0.45
2:K:40:ILE:HG13	2:K:85:VAL:HG21	1.97	0.45
1:B:349:ARG:HD3	2:H:32:GLY:O	2.16	0.45
1:E:311:ARG:O	1:E:315:THR:HG23	2.16	0.45
1:E:460:LEU:HD12	1:E:460:LEU:HA	1.78	0.45
1:A:195:ARG:O	1:A:198:LEU:N	2.40	0.45
1:A:218:ASP:O	1:A:222:GLU:HG3	2.16	0.45
1:A:330:LEU:HD22	1:A:343:VAL:CG1	2.47	0.45
2:H:4:LEU:HD23	2:H:24:ALA:HB2	1.98	0.45
2:H:57:ILE:HG13	2:H:64:THR:CG2	2.42	0.45
2:K:74:PHE:CD1	2:K:89:MET:HA	2.51	0.45
1:C:133:PRO:HA	1:C:162:LEU:HD21	1.99	0.45
1:D:93:GLY:H	1:D:175:ARG:HA	1.81	0.45
1:D:109:LEU:HD11	1:D:157:GLU:OE1	2.17	0.45
2:G:38:ASP:HB3	2:G:105:ARG:O	2.16	0.45
2:J:11:LEU:HD12	2:J:127:THR:O	2.15	0.45
2:K:28:ASN:O	6:K:201:HOH:O	2.21	0.45
2:L:99:VAL:HA	2:L:125:GLN:HA	1.99	0.45
1:A:238:SER:HB2	1:A:259:ILE:HD13	1.98	0.45
1:B:15:PRO:HD3	2:H:105:ARG:NH1	2.18	0.45
1:C:242:ASN:ND2	1:C:245:GLY:H	2.14	0.45
1:E:297:THR:C	1:E:298:GLN:HG2	2.37	0.45
1:E:363:MET:HE3	1:E:367:ILE:HD11	1.99	0.45
1:F:78:HIS:C	1:F:79:ILE:HD13	2.37	0.45
2:H:39:ALA:O	2:H:40:ILE:HD13	2.16	0.45
2:H:79:ASP:OD2	2:H:82:LYS:HD2	2.16	0.45
2:L:104:GLY:HA3	2:L:119:TYR:CE1	2.52	0.45
2:L:106:ASP:OD1	2:L:106:ASP:N	2.49	0.45
1:C:270:ILE:HD11	1:C:275:VAL:HG22	1.99	0.45
1:F:355:GLN:HG3	1:F:356:SER:N	2.31	0.45
2:I:92:LEU:HD12	2:I:92:LEU:H	1.82	0.45
1:A:270:ILE:HD12	1:B:12:ILE:HD11	1.98	0.45
1:B:342:GLU:OE1	1:B:342:GLU:N	2.46	0.45
1:C:463:ASP:O	1:C:467:THR:HG23	2.16	0.45
1:F:85:THR:HG22	1:F:87:GLY:N	2.32	0.45
1:F:359:HIS:HB3	1:F:362:VAL:HG22	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:44:ARG:HB2	2:I:100:TYR:CE1	2.52	0.45
2:I:57:ILE:CG1	2:I:61:GLY:HA2	2.47	0.45
1:A:27:THR:HA	1:A:50:ARG:HB3	1.99	0.45
1:D:131:GLN:O	1:D:131:GLN:HG2	2.16	0.45
1:E:382:CYS:O	1:E:385:ALA:HB3	2.17	0.45
1:E:497:ARG:HE	1:E:497:ARG:HB2	1.69	0.45
1:F:3:GLN:O	1:F:6:HIS:HB3	2.17	0.45
2:J:79:ASP:OD2	2:J:82:LYS:NZ	2.44	0.45
1:A:8:ILE:O	1:B:285:LYS:NZ	2.50	0.44
1:A:104:PRO:HD3	1:A:169:HIS:HB3	1.99	0.44
1:B:68:VAL:CG2	1:B:81:ILE:HD11	2.47	0.44
1:C:481:HIS:C	1:C:490:PRO:HB3	2.38	0.44
1:E:317:VAL:HG21	1:E:347:MET:HE1	1.99	0.44
1:E:360:ASP:N	1:E:360:ASP:OD1	2.49	0.44
2:G:57:ILE:HG13	2:G:64:THR:CG2	2.47	0.44
2:K:74:PHE:CE1	2:K:89:MET:HA	2.52	0.44
1:B:454:ARG:NH1	1:B:483:ASP:O	2.50	0.44
1:C:388:SER:O	1:C:392:VAL:HG22	2.17	0.44
1:E:330:LEU:HB3	1:E:333:GLU:HB2	1.99	0.44
1:F:38:LEU:HD13	1:F:68:VAL:HB	2.00	0.44
1:F:373:ILE:HG22	1:F:373:ILE:O	2.16	0.44
1:F:407:ALA:O	1:F:411:SER:HB2	2.17	0.44
1:F:444:ASP:HB3	1:F:447:ALA:HB3	1.98	0.44
1:A:159:ASP:N	1:A:159:ASP:OD1	2.50	0.44
1:D:172:LEU:HD23	1:D:173:THR:O	2.16	0.44
1:D:240:ILE:CD1	1:D:259:ILE:HD12	2.47	0.44
1:E:249:ILE:O	1:E:253:ILE:HG13	2.17	0.44
1:B:229:GLU:OE1	1:B:229:GLU:HA	2.18	0.44
1:C:143:TYR:HA	1:C:149:LEU:O	2.18	0.44
1:C:423:THR:HG22	1:C:424:THR:N	2.33	0.44
1:D:297:THR:CG2	1:D:298:GLN:HG3	2.45	0.44
1:F:240:ILE:HD11	1:F:252:ILE:HG21	2.00	0.44
1:F:463:ASP:O	1:F:467:THR:HG23	2.18	0.44
1:F:475:ASP:O	1:F:498:VAL:HG22	2.18	0.44
2:H:45:GLN:HG3	2:H:51:ARG:HA	2.00	0.44
2:J:1:GLN:NE2	2:J:28:ASN:HB2	2.28	0.44
1:A:87:GLY:O	1:A:89:GLU:HG2	2.18	0.44
1:A:271:PRO:O	1:A:275:VAL:HG23	2.18	0.44
1:D:272:ALA:O	1:D:276:VAL:HG23	2.18	0.44
1:F:287:ASN:O	1:F:412:LYS:HG3	2.17	0.44
2:G:1:GLN:HB2	2:G:28:ASN:HA	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:290:GLY:HA2	1:E:412:LYS:HB2	1.99	0.44
1:F:270:ILE:HG23	1:F:275:VAL:HG22	1.98	0.44
1:A:53:PHE:C	1:A:55:HIS:H	2.21	0.44
1:A:299:MET:HE3	1:A:317:VAL:HG22	1.99	0.44
1:C:217:ALA:HB2	1:C:251:ALA:HB1	2.00	0.44
1:D:111:THR:O	1:D:126:TYR:HA	2.18	0.44
1:F:398:LEU:HD11	1:F:461:GLY:HA3	1.99	0.44
1:F:460:LEU:HD23	1:F:461:GLY:N	2.33	0.44
2:H:12:VAL:O	2:H:128:VAL:HA	2.17	0.44
2:J:20:LEU:HA	2:J:20:LEU:HD23	1.61	0.44
2:J:125:GLN:HG3	2:J:126:VAL:N	2.33	0.44
1:A:35:VAL:HG23	1:A:67:ASN:ND2	2.33	0.44
1:A:136:VAL:HG12	1:A:153:VAL:HG21	1.99	0.44
1:E:390:PHE:CE1	1:E:416:ASN:HB2	2.53	0.44
1:B:213:PHE:N	1:B:241:GLU:OE2	2.43	0.44
1:D:241:GLU:HB2	1:D:265:ASP:HB2	2.00	0.44
1:E:300:LEU:HG	1:E:347:MET:CE	2.47	0.44
1:F:330:LEU:HG	1:F:347:MET:HE2	2.00	0.44
2:I:58:SER:OG	2:I:63:ILE:HG22	2.18	0.44
2:L:40:ILE:HA	2:L:103:ALA:O	2.18	0.44
1:A:75:LEU:HD23	1:A:75:LEU:HA	1.62	0.43
1:B:441:VAL:HG11	1:B:460:LEU:HG	2.00	0.43
1:C:488:GLY:O	1:C:489:TYR:HB3	2.18	0.43
1:D:90:ILE:HD13	1:D:129:TYR:CB	2.48	0.43
1:D:419:ILE:O	1:D:438:VAL:HA	2.18	0.43
1:F:237:ILE:CD1	1:F:258:GLY:HA3	2.40	0.43
1:A:89:GLU:O	1:A:91:ARG:N	2.51	0.43
1:B:398:LEU:HD12	1:B:477:MET:HE1	2.00	0.43
1:C:219:GLN:O	1:C:223:VAL:HG23	2.18	0.43
1:D:33:GLN:HG3	1:D:64:THR:HG22	2.01	0.43
1:A:149:LEU:HB2	1:A:170:HIS:CD2	2.54	0.43
1:A:499:ARG:H	1:A:499:ARG:HG2	1.60	0.43
1:C:317:VAL:HG21	1:C:347:MET:HE1	2.00	0.43
1:E:382:CYS:SG	1:E:409:LEU:HB3	2.59	0.43
1:F:217:ALA:HA	1:F:220:VAL:HG22	1.99	0.43
2:I:40:ILE:HG21	2:I:85:VAL:HG21	1.99	0.43
1:A:38:LEU:HD22	1:A:68:VAL:HG12	1.99	0.43
1:A:283:ILE:HG12	1:A:293:VAL:HG21	2.00	0.43
1:B:43:LYS:O	2:H:29:PHE:HB3	2.18	0.43
1:B:378:GLU:HG3	1:B:489:TYR:HD2	1.83	0.43
1:D:112:THR:OG1	1:D:160:CYS:HB2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:426:LEU:HA	1:D:426:LEU:HD23	1.70	0.43
1:F:68:VAL:HG13	1:F:81:ILE:HD11	2.00	0.43
1:F:224:ARG:NH1	1:F:236:ILE:HD11	2.33	0.43
1:F:284:SER:HA	1:F:287:ASN:HB2	2.00	0.43
1:F:330:LEU:HD21	1:F:343:VAL:HG22	2.00	0.43
1:F:386:VAL:HG21	1:F:413:TYR:CB	2.49	0.43
1:A:33:GLN:HG3	1:A:64:THR:HG22	2.00	0.43
1:C:25:ILE:HD12	1:C:294:ILE:HG21	2.01	0.43
1:F:398:LEU:O	1:F:479:ILE:HA	2.19	0.43
1:C:398:LEU:HD12	1:C:420:ILE:O	2.19	0.43
1:E:217:ALA:O	1:E:220:VAL:HG12	2.19	0.43
2:I:97:THR:HG23	2:I:127:THR:HA	2.00	0.43
2:J:17:SER:HA	2:J:89:MET:O	2.18	0.43
1:A:51:MET:CE	1:A:53:PHE:HE1	2.32	0.43
1:A:392:VAL:HG11	1:A:495:LEU:HD21	2.01	0.43
1:B:61:HIS:O	1:B:65:ILE:HD12	2.19	0.43
1:B:78:HIS:O	1:B:433:ASN:ND2	2.40	0.43
1:B:192:GLU:N	1:B:192:GLU:OE1	2.25	0.43
1:D:191:SER:N	1:D:194:ASP:HB2	2.34	0.43
1:F:248:ASN:O	1:F:252:ILE:HG13	2.19	0.43
1:A:127:VAL:HG11	1:A:132:LEU:HD22	2.00	0.43
1:B:377:PRO:O	1:B:381:VAL:HG23	2.19	0.43
1:B:479:ILE:HB	1:B:494:ARG:HB2	2.00	0.43
1:C:64:THR:O	1:C:68:VAL:HG13	2.19	0.43
1:C:277:VAL:O	1:C:280:MET:HB2	2.19	0.43
1:D:292:PRO:HB3	1:D:434:VAL:O	2.19	0.43
1:F:211:ALA:O	1:F:239:LYS:HB2	2.19	0.43
1:A:240:ILE:HD11	1:A:252:ILE:HG21	2.01	0.43
1:C:316:ASP:CG	1:D:311:ARG:HH22	2.21	0.43
1:C:460:LEU:HD12	1:C:460:LEU:HA	1.74	0.43
1:E:408:ARG:HG2	1:E:435:THR:HG21	2.01	0.43
1:F:292:PRO:HA	1:F:326:ASP:OD2	2.19	0.43
2:H:35:PHE:CZ	2:H:85:VAL:HG23	2.53	0.43
1:A:483:ASP:CB	1:A:491:ASN:HD21	2.32	0.43
1:A:492:GLN:OE1	1:C:492:GLN:NE2	2.52	0.43
1:C:27:THR:CG2	1:C:50:ARG:HD3	2.37	0.43
1:E:42:MET:HB2	1:E:42:MET:HE2	1.76	0.43
1:E:307:PRO:HB3	1:E:339:TYR:CE2	2.54	0.43
1:F:64:THR:O	1:F:68:VAL:HG12	2.19	0.43
1:C:248:ASN:O	1:C:252:ILE:HG13	2.19	0.42
1:D:50:ARG:NE	1:D:84:ASP:OD2	2.42	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:344:VAL:O	1:F:348:VAL:HG23	2.18	0.42
2:G:54:VAL:HA	2:G:67:VAL:HG22	2.01	0.42
1:A:406:SER:O	1:A:410:ILE:HG13	2.19	0.42
1:A:439:GLU:OE1	1:A:470:TYR:OH	2.28	0.42
1:E:419:ILE:O	1:E:438:VAL:HA	2.19	0.42
1:F:290:GLY:HA2	1:F:412:LYS:HD3	1.94	0.42
1:F:388:SER:O	1:F:392:VAL:HG12	2.19	0.42
2:J:12:VAL:HG11	2:J:92:LEU:HD13	2.01	0.42
1:A:53:PHE:HB2	1:A:84:ASP:O	2.19	0.42
1:D:92:THR:CG2	1:D:178:ILE:HD11	2.50	0.42
1:E:82:ALA:HB2	1:E:208:MET:HE2	2.01	0.42
2:G:68:ASP:OD1	2:G:71:LYS:NZ	2.50	0.42
1:B:38:LEU:HA	1:B:38:LEU:HD23	1.66	0.42
1:B:367:ILE:HD12	1:B:367:ILE:HG23	1.79	0.42
1:C:363:MET:SD	1:D:4:LEU:HD22	2.59	0.42
2:I:28:ASN:O	2:I:29:PHE:HB2	2.18	0.42
2:L:33:ARG:HH12	2:L:106:ASP:CA	2.32	0.42
1:B:311:ARG:O	1:B:315:THR:HG23	2.20	0.42
1:C:92:THR:HG23	1:C:176:LYS:C	2.39	0.42
1:E:459:GLN:NE2	1:E:463:ASP:OD1	2.53	0.42
1:F:293:VAL:O	1:F:326:ASP:HB2	2.19	0.42
2:I:1:GLN:CG	2:I:2:VAL:H	2.27	0.42
2:J:33:ARG:HG2	2:J:33:ARG:NH1	2.34	0.42
2:L:39:ALA:HA	2:L:78:ARG:HH12	1.84	0.42
1:A:246:VAL:HG22	1:A:282:ILE:HD11	2.01	0.42
1:B:190:VAL:O	1:B:190:VAL:HG13	2.20	0.42
1:C:481:HIS:O	1:C:490:PRO:HB3	2.19	0.42
1:D:270:ILE:HG22	2:J:108:TRP:CH2	2.54	0.42
1:D:425:ARG:HB3	1:D:428:THR:HG23	2.02	0.42
1:E:408:ARG:CG	1:E:435:THR:HG21	2.49	0.42
1:E:415:PRO:HG2	1:E:419:ILE:HD11	2.01	0.42
1:F:58:TYR:HB3	1:F:200:PHE:CE1	2.54	0.42
1:F:224:ARG:CZ	1:F:236:ILE:HD11	2.49	0.42
1:A:27:THR:OG1	1:A:50:ARG:HD3	2.20	0.42
1:A:88:PRO:HG3	1:A:188:PRO:O	2.18	0.42
1:C:116:PHE:N	1:C:116:PHE:CD1	2.87	0.42
1:C:265:ASP:O	1:C:268:VAL:HG22	2.20	0.42
1:F:290:GLY:CA	1:F:412:LYS:CD	2.89	0.42
1:A:12:ILE:HD12	1:A:12:ILE:HA	1.89	0.42
1:A:12:ILE:HG22	1:A:13:PHE:CD2	2.55	0.42
1:B:46:MET:HE3	1:B:49:ALA:CB	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:20:ARG:HD3	1:F:348:VAL:HG13	2.01	0.42
2:G:50:GLU:HB2	2:G:51:ARG:H	1.49	0.42
2:I:5:GLN:O	2:I:23:ALA:N	2.35	0.42
2:I:67:VAL:HG12	2:I:69:SER:H	1.84	0.42
2:I:118:ARG:HA	2:I:118:ARG:HD3	1.87	0.42
1:A:39:LYS:HG3	1:A:71:ALA:HB1	2.02	0.42
1:A:140:GLY:O	1:A:153:VAL:HG23	2.20	0.42
1:A:213:PHE:CD1	1:A:241:GLU:HG3	2.54	0.42
1:A:420:ILE:HD13	1:A:465:ALA:HB2	2.02	0.42
1:C:189:ALA:HB1	1:C:219:GLN:HG2	2.01	0.42
1:C:213:PHE:O	1:C:215:ARG:NH2	2.53	0.42
1:D:13:PHE:CE1	2:I:108:TRP:HZ2	2.38	0.42
1:D:94:LEU:HB2	1:D:118:LYS:HA	2.01	0.42
1:F:447:ALA:C	1:F:448:HIS:HD1	2.23	0.42
2:I:89:MET:CE	2:I:100:TYR:HE2	2.33	0.42
1:D:222:GLU:O	1:D:225:ALA:HB3	2.19	0.42
1:E:367:ILE:O	1:E:371:GLN:HG2	2.19	0.42
2:I:5:GLN:N	2:I:23:ALA:O	2.46	0.42
2:I:104:GLY:HA3	2:I:119:TYR:CZ	2.52	0.42
2:J:6:GLU:H	2:J:122:GLN:NE2	2.18	0.42
2:L:41:GLY:HA2	2:L:56:GLY:HA2	2.01	0.42
1:B:53:PHE:HB2	1:B:84:ASP:O	2.20	0.41
1:C:439:GLU:OE1	1:C:470:TYR:OH	2.34	0.41
1:F:295:CYS:SG	1:F:320:ALA:HB1	2.60	0.41
2:I:98:ALA:HB3	2:I:100:TYR:CE1	2.54	0.41
1:A:131:GLN:H	1:A:131:GLN:CD	2.23	0.41
1:A:153:VAL:CG1	1:A:162:LEU:HD23	2.50	0.41
1:C:157:GLU:HB3	1:C:161:THR:O	2.20	0.41
1:D:283:ILE:HG23	1:D:293:VAL:HG11	2.02	0.41
1:F:4:LEU:HA	1:F:7:ASN:HD22	1.85	0.41
1:F:51:MET:HE1	1:F:206:VAL:CG1	2.49	0.41
1:F:62:GLN:NE2	1:F:62:GLN:HA	2.35	0.41
1:F:249:ILE:O	1:F:253:ILE:HB	2.21	0.41
2:I:28:ASN:HB3	2:I:33:ARG:HB2	2.02	0.41
2:L:1:GLN:HG2	2:L:28:ASN:OD1	2.20	0.41
1:B:190:VAL:HG21	1:B:195:ARG:HD2	2.02	0.41
1:C:4:LEU:HD22	1:D:363:MET:SD	2.60	0.41
1:C:31:SER:OG	1:C:337:GLY:N	2.53	0.41
1:C:473:ALA:HA	1:C:498:VAL:HG12	2.02	0.41
1:D:259:ILE:HD13	1:D:259:ILE:HA	1.82	0.41
1:D:342:GLU:CD	1:D:342:GLU:H	2.23	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:43:PHE:CD2	2:G:53:PHE:HA	2.55	0.41
2:L:33:ARG:HH12	2:L:106:ASP:CB	2.33	0.41
1:A:227:LEU:HD23	1:A:227:LEU:HA	1.49	0.41
1:A:432:LEU:HD13	1:A:438:VAL:HG11	2.02	0.41
1:B:39:LYS:O	1:B:43:LYS:HG3	2.21	0.41
1:D:409:LEU:HD12	1:D:409:LEU:HA	1.96	0.41
1:E:257:ASP:O	1:E:291:LYS:HD3	2.19	0.41
1:F:271:PRO:O	1:F:274:LYS:N	2.53	0.41
1:F:441:VAL:CG1	1:F:460:LEU:HD21	2.50	0.41
1:B:38:LEU:HD12	1:B:67:ASN:HB3	2.03	0.41
1:C:38:LEU:HD22	1:C:68:VAL:HG12	2.01	0.41
1:C:303:MET:O	1:C:303:MET:HG2	2.20	0.41
1:C:416:ASN:OD1	1:C:416:ASN:C	2.58	0.41
1:D:408:ARG:CG	1:D:435:THR:HG21	2.50	0.41
2:L:92:LEU:HD22	2:L:128:VAL:HG21	2.02	0.41
1:A:392:VAL:HG11	1:A:495:LEU:CD2	2.51	0.41
1:B:213:PHE:HD1	1:B:241:GLU:HG3	1.85	0.41
1:C:47:SER:HB3	1:C:433:ASN:HB3	2.02	0.41
1:C:102:TYR:CE1	1:C:122:LYS:O	2.70	0.41
1:C:283:ILE:HD13	1:C:325:ALA:HB2	2.02	0.41
1:D:398:LEU:HD12	1:D:477:MET:HE1	2.02	0.41
1:E:48:VAL:HG11	1:E:208:MET:HE3	2.03	0.41
1:E:64:THR:O	1:E:68:VAL:HG13	2.21	0.41
2:I:29:PHE:HB2	4:I:201:GOL:O1	2.21	0.41
1:A:21:ALA:N	1:A:355:GLN:OE1	2.49	0.41
1:A:270:ILE:HG21	1:A:270:ILE:HD13	1.65	0.41
1:B:486:VAL:HG22	1:B:487:LYS:N	2.30	0.41
1:C:76:GLY:C	1:C:77:LEU:HD23	2.41	0.41
1:F:6:HIS:HE1	1:F:358:THR:O	2.04	0.41
1:B:336:LYS:HE2	1:B:336:LYS:HB2	1.93	0.41
1:C:363:MET:CE	1:C:414:ARG:HD2	2.51	0.41
1:E:212:SER:OG	1:E:239:LYS:HE2	2.21	0.41
1:F:29:GLY:HA3	1:F:335:ALA:HB1	2.03	0.41
1:A:299:MET:CE	1:A:317:VAL:HG22	2.51	0.41
1:B:474:GLY:H	1:B:498:VAL:HG23	1.85	0.41
1:B:476:VAL:HG12	1:B:477:MET:N	2.35	0.41
1:C:239:LYS:HB3	1:C:239:LYS:HE3	1.86	0.41
1:C:283:ILE:HD13	1:C:283:ILE:HG21	1.80	0.41
1:D:62:GLN:HE22	1:D:204:GLN:HG3	1.86	0.41
1:D:104:PRO:HD3	1:D:169:HIS:CB	2.48	0.41
1:D:202:VAL:CG1	1:D:231:GLY:HA3	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:258:GLY:O	1:D:259:ILE:HD13	2.20	0.41
1:D:367:ILE:HG22	1:D:413:TYR:CE1	2.56	0.41
1:D:412:LYS:HD3	1:D:413:TYR:CE2	2.55	0.41
1:E:26:CYS:HB3	1:E:334:THR:HG21	2.03	0.41
1:E:295:CYS:O	1:E:299:MET:HE2	2.21	0.41
1:E:475:ASP:O	1:E:498:VAL:HG22	2.20	0.41
1:F:252:ILE:HG22	1:F:259:ILE:HD11	2.02	0.41
1:F:398:LEU:HD23	1:F:479:ILE:HG23	2.03	0.41
1:F:457:ARG:O	1:F:460:LEU:HB3	2.21	0.41
2:G:74:PHE:CE2	2:G:89:MET:HG2	2.56	0.41
2:H:20:LEU:HG	2:H:89:MET:HE3	2.03	0.41
2:I:59:TRP:CD1	2:I:59:TRP:N	2.89	0.41
1:A:153:VAL:HG11	1:A:162:LEU:HD23	2.03	0.41
1:A:441:VAL:CG1	1:A:460:LEU:HG	2.50	0.41
1:B:53:PHE:HD2	1:B:197:ASP:OD2	2.04	0.41
1:B:187:LEU:HD12	1:B:187:LEU:HA	1.83	0.41
1:B:263:ARG:H	1:B:263:ARG:HG3	1.50	0.41
1:B:341:ASN:O	1:B:345:GLN:HG3	2.21	0.41
1:B:431:GLN:O	1:B:434:VAL:HG12	2.20	0.41
1:C:66:ASN:ND2	6:C:701:HOH:O	2.52	0.41
1:C:247:GLN:CG	1:D:13:PHE:CE2	2.94	0.41
1:D:150:THR:O	1:D:151:LEU:HD13	2.21	0.41
2:J:118:ARG:HD3	2:J:118:ARG:HA	1.74	0.41
1:A:263:ARG:NH1	1:A:299:MET:SD	2.94	0.40
1:B:211:ALA:O	1:B:239:LYS:HB2	2.21	0.40
1:B:310:THR:HG23	1:B:313:GLU:OE1	2.21	0.40
1:C:25:ILE:HG12	1:C:48:VAL:HB	2.03	0.40
1:C:94:LEU:HB3	1:C:118:LYS:HA	2.02	0.40
1:D:13:PHE:HE1	2:I:108:TRP:HZ2	1.69	0.40
1:D:345:GLN:O	1:D:348:VAL:HB	2.20	0.40
1:E:13:PHE:CD1	1:E:13:PHE:N	2.89	0.40
1:F:431:GLN:O	1:F:434:VAL:HG22	2.21	0.40
2:G:73:ARG:C	2:G:74:PHE:HD1	2.24	0.40
1:C:246:VAL:HG12	1:C:282:ILE:HD11	2.03	0.40
1:C:274:LYS:HA	1:C:274:LYS:HD2	1.84	0.40
1:E:241:GLU:HB2	1:E:265:ASP:HB3	2.02	0.40
1:F:228:GLY:O	1:F:230:LYS:N	2.54	0.40
1:B:191:SER:O	1:B:194:ASP:HB2	2.21	0.40
1:B:214:ILE:HD13	1:B:214:ILE:HA	1.94	0.40
1:D:153:VAL:HG11	1:D:162:LEU:HD23	2.01	0.40
1:E:214:ILE:HD13	1:E:214:ILE:HA	1.93	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:32:THR:O	1:F:38:LEU:HG	2.20	0.40
2:I:89:MET:HB2	2:I:89:MET:HE2	1.75	0.40
1:A:298:GLN:HB2	1:B:311:ARG:HH12	1.87	0.40
1:A:359:HIS:HB3	1:A:362:VAL:HG23	2.03	0.40
1:C:102:TYR:CE1	1:C:122:LYS:HA	2.56	0.40
1:D:297:THR:HG22	1:D:298:GLN:H	1.86	0.40
1:E:191:SER:OG	1:E:194:ASP:OD2	2.33	0.40
2:J:1:GLN:CD	2:J:2:VAL:H	2.25	0.40
1:A:260:MET:CE	1:A:329:MET:HE1	2.51	0.40
1:C:270:ILE:HG22	2:I:108:TRP:CH2	2.57	0.40
1:C:445:VAL:O	1:C:448:HIS:O	2.40	0.40
1:D:324:GLY:O	1:D:414:ARG:NH2	2.55	0.40
1:E:266:LEU:HD12	1:E:266:LEU:HA	1.73	0.40
1:F:80:GLY:HA2	1:F:207:ASP:OD2	2.21	0.40
1:F:432:LEU:HA	1:F:432:LEU:HD23	1.73	0.40
1:F:466:LYS:HA	1:F:471:VAL:O	2.22	0.40
2:G:8:GLY:O	2:G:18:LEU:HD22	2.22	0.40
2:G:74:PHE:HA	2:G:88:GLN:O	2.22	0.40
2:H:68:ASP:N	2:H:68:ASP:OD1	2.54	0.40
2:K:101:TYR:CE1	2:K:123:GLY:HA3	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	497/514 (97%)	454 (91%)	43 (9%)	0	100	100
1	B	400/514 (78%)	385 (96%)	15 (4%)	0	100	100
1	C	497/514 (97%)	464 (93%)	33 (7%)	0	100	100
1	D	497/514 (97%)	470 (95%)	27 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	E	391/514 (76%)	369 (94%)	21 (5%)	1 (0%)	37	69
1	F	395/514 (77%)	365 (92%)	29 (7%)	1 (0%)	37	69
2	G	128/149 (86%)	125 (98%)	3 (2%)	0	100	100
2	H	128/149 (86%)	126 (98%)	2 (2%)	0	100	100
2	I	128/149 (86%)	125 (98%)	3 (2%)	0	100	100
2	J	129/149 (87%)	126 (98%)	3 (2%)	0	100	100
2	K	128/149 (86%)	123 (96%)	5 (4%)	0	100	100
2	L	128/149 (86%)	124 (97%)	4 (3%)	0	100	100
All	All	3446/3978 (87%)	3256 (94%)	188 (6%)	2 (0%)	48	80

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	F	374	PRO
1	E	374	PRO

5.3.2　Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	390/435 (90%)	388 (100%)	2 (0%)	86	93
1	B	321/435 (74%)	318 (99%)	3 (1%)	75	89
1	C	385/435 (88%)	382 (99%)	3 (1%)	79	90
1	D	391/435 (90%)	383 (98%)	8 (2%)	50	75
1	E	309/435 (71%)	308 (100%)	1 (0%)	91	96
1	F	304/435 (70%)	302 (99%)	2 (1%)	81	92
2	G	104/121 (86%)	104 (100%)	0	100	100
2	H	105/121 (87%)	104 (99%)	1 (1%)	73	87
2	I	100/121 (83%)	99 (99%)	1 (1%)	73	87
2	J	106/121 (88%)	106 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	K	99/121 (82%)	98 (99%)	1 (1%)	73	87
2	L	92/121 (76%)	92 (100%)	0	100	100
All	All	2706/3336 (81%)	2684 (99%)	22 (1%)	79	90

All (22) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	346	TYR
1	A	383	SER
1	B	213	PHE
1	B	215	ARG
1	B	346	TYR
1	C	215	ARG
1	C	346	TYR
1	C	483	ASP
1	D	22	ASN
1	D	118	LYS
1	D	179	ASN
1	D	185	VAL
1	D	187	LEU
1	D	265	ASP
1	D	346	TYR
1	D	414	ARG
1	E	263	ARG
1	F	242	ASN
1	F	346	TYR
2	H	107	SER
2	I	122	GLN
2	K	86	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	67	ASN
1	B	62	GLN
1	B	323	ASN
1	C	169	HIS
1	C	323	ASN
1	D	66	ASN
1	D	492	GLN

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Mol	Chain	Res	Type
1	E	6	HIS
1	E	204	GLN
1	E	219	GLN
1	E	287	ASN
1	E	481	HIS
1	F	6	HIS
1	F	7	ASN
2	J	1	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

21 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#$|Z| > 2$	Counts	RMSZ	#$|Z| > 2$
4	GOL	D	602	-	5,5,5	1.06	0	5,5,5	0.98	0
4	GOL	G	201	-	5,5,5	1.74	1 (20%)	5,5,5	1.67	2 (40%)
4	GOL	C	604	-	5,5,5	1.29	1 (20%)	5,5,5	1.04	1 (20%)
3	SO4	D	604	-	4,4,4	0.07	0	6,6,6	0.84	0
4	GOL	B	602	-	5,5,5	1.28	0	5,5,5	1.05	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
4	GOL	D	603	-	5,5,5	0.90	0	5,5,5	0.99	0
4	GOL	B	604	-	5,5,5	1.44	2 (40%)	5,5,5	0.91	0
3	SO4	C	605	-	4,4,4	0.21	0	6,6,6	0.65	0
5	GLU	D	601	-	3,4,9	0.87	0	2,4,11	0.73	0
3	SO4	E	602	-	4,4,4	0.31	0	6,6,6	0.80	0
4	GOL	E	601	-	5,5,5	0.91	0	5,5,5	0.96	0
3	SO4	A	601	-	4,4,4	0.30	0	6,6,6	0.73	0
4	GOL	C	602	-	5,5,5	1.31	1 (20%)	5,5,5	1.22	0
4	GOL	C	603	-	5,5,5	1.67	2 (40%)	5,5,5	0.72	0
4	GOL	I	201	-	5,5,5	0.85	0	5,5,5	1.63	1 (20%)
3	SO4	F	601	-	4,4,4	0.26	0	6,6,6	0.52	0
4	GOL	J	201	-	5,5,5	1.33	1 (20%)	5,5,5	1.32	1 (20%)
5	GLU	C	601	-	3,4,9	0.66	0	2,4,11	0.90	0
3	SO4	B	601	-	4,4,4	0.44	0	6,6,6	0.68	0
4	GOL	H	201	-	5,5,5	1.30	1 (20%)	5,5,5	1.32	0
4	GOL	B	603	-	5,5,5	0.82	0	5,5,5	1.17	1 (20%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	GLU	D	601	-	-	0/0/2/9	-
4	GOL	C	603	-	-	4/4/4/4	-
4	GOL	C	602	-	-	2/4/4/4	-
4	GOL	I	201	-	-	0/4/4/4	-
4	GOL	D	602	-	-	2/4/4/4	-
4	GOL	G	201	-	-	0/4/4/4	-
4	GOL	D	603	-	-	2/4/4/4	-
4	GOL	J	201	-	-	4/4/4/4	-
5	GLU	C	601	-	-	0/0/2/9	-
4	GOL	B	604	-	-	2/4/4/4	-
4	GOL	C	604	-	-	1/4/4/4	-
4	GOL	H	201	-	-	2/4/4/4	-
4	GOL	E	601	-	-	2/4/4/4	-
4	GOL	B	602	-	-	4/4/4/4	-
4	GOL	B	603	-	-	4/4/4/4	-

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	G	201	GOL	O2-C2	-3.24	1.33	1.43
4	J	201	GOL	O2-C2	-2.75	1.35	1.43
4	C	603	GOL	C3-C2	2.54	1.62	1.51
4	H	201	GOL	O2-C2	-2.54	1.35	1.43
4	C	603	GOL	C1-C2	2.50	1.62	1.51
4	C	602	GOL	O2-C2	-2.29	1.36	1.43
4	B	604	GOL	C3-C2	2.26	1.61	1.51
4	C	604	GOL	C3-C2	2.26	1.61	1.51
4	B	604	GOL	C1-C2	2.25	1.61	1.51

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	G	201	GOL	C3-C2-C1	-2.12	103.46	111.70
4	I	201	GOL	C3-C2-C1	-2.11	103.49	111.70
4	B	603	GOL	C3-C2-C1	-2.03	103.82	111.70
4	J	201	GOL	C3-C2-C1	-2.02	103.85	111.70
4	C	604	GOL	C3-C2-C1	-2.02	103.86	111.70
4	G	201	GOL	O1-C1-C2	-2.01	100.54	110.20

There are no chirality outliers.

All (29) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	602	GOL	O1-C1-C2-C3
4	B	602	GOL	C1-C2-C3-O3
4	B	604	GOL	O1-C1-C2-C3
4	C	603	GOL	O1-C1-C2-C3
4	D	603	GOL	O1-C1-C2-C3
4	B	602	GOL	O1-C1-C2-O2
4	B	602	GOL	O2-C2-C3-O3
4	J	201	GOL	O2-C2-C3-O3
4	B	603	GOL	C1-C2-C3-O3
4	C	602	GOL	O1-C1-C2-C3
4	C	603	GOL	C1-C2-C3-O3
4	D	602	GOL	O1-C1-C2-C3
4	H	201	GOL	C1-C2-C3-O3
4	J	201	GOL	C1-C2-C3-O3
4	B	603	GOL	O2-C2-C3-O3
4	B	604	GOL	O1-C1-C2-O2
4	D	603	GOL	O1-C1-C2-O2

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Mol	Chain	Res	Type	Atoms
4	H	201	GOL	O2-C2-C3-O3
4	C	603	GOL	O1-C1-C2-O2
4	C	603	GOL	O2-C2-C3-O3
4	E	601	GOL	O2-C2-C3-O3
4	J	201	GOL	O1-C1-C2-O2
4	C	604	GOL	O2-C2-C3-O3
4	B	603	GOL	O1-C1-C2-C3
4	J	201	GOL	O1-C1-C2-C3
4	B	603	GOL	O1-C1-C2-O2
4	E	601	GOL	C1-C2-C3-O3
4	C	602	GOL	O1-C1-C2-O2
4	D	602	GOL	O1-C1-C2-O2

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	D	603	GOL	1	0
3	C	605	SO4	1	0
4	I	201	GOL	1	0

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6　Fit of model and data ⓘ

6.1　Protein, DNA and RNA chains ⓘ

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	499/514 (97%)	-0.32	6 (1%)	76	61	57, 79, 214, 272	0
1	B	404/514 (78%)	-0.46	1 (0%)	92	87	61, 85, 131, 226	0
1	C	498/514 (96%)	-0.32	4 (0%)	82	70	61, 83, 194, 247	1 (0%)
1	D	498/514 (96%)	-0.39	3 (0%)	85	76	68, 97, 169, 261	1 (0%)
1	E	397/514 (77%)	-0.30	1 (0%)	90	84	85, 115, 154, 190	0
1	F	399/514 (77%)	-0.00	4 (1%)	79	66	104, 135, 181, 258	0
2	G	130/149 (87%)	-0.52	0	100	100	68, 86, 108, 143	0
2	H	130/149 (87%)	-0.46	0	100	100	76, 95, 138, 171	0
2	I	130/149 (87%)	-0.21	0	100	100	85, 130, 188, 212	0
2	J	131/149 (87%)	-0.50	0	100	100	67, 91, 126, 158	0
2	K	130/149 (87%)	0.04	1 (0%)	82	70	120, 163, 220, 261	0
2	L	130/149 (87%)	-0.05	0	100	100	132, 167, 225, 264	0
All	All	3476/3978 (87%)	-0.30	20 (0%)	85	76	57, 104, 194, 272	2 (0%)

All (20) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	295	CYS	2.9
1	F	237	ILE	2.8
1	D	184	GLU	2.8
1	A	185	VAL	2.7
1	A	141	LEU	2.7
1	A	179	ASN	2.5
1	E	89	GLU	2.4
1	A	119	ILE	2.4
1	D	172	LEU	2.3
1	C	149	LEU	2.3
2	K	106	ASP	2.3

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Mol	Chain	Res	Type	RSRZ
1	F	454	ARG	2.3
1	A	296	ALA	2.3
1	C	172	LEU	2.3
1	D	182	GLY	2.2
1	B	65	ILE	2.1
1	A	172	LEU	2.1
1	C	188	PRO	2.1
1	C	185	VAL	2.1
1	F	487	LYS	2.0

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

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	GLU	C	601	5/10	0.38	0.20	93,100,104,104	0
5	GLU	D	601	5/10	0.51	0.21	106,107,108,111	0
4	GOL	C	603	6/6	0.56	0.21	88,100,103,103	0
4	GOL	C	602	6/6	0.63	0.12	85,89,91,100	0
4	GOL	I	201	6/6	0.68	0.10	107,109,113,115	0
4	GOL	B	604	6/6	0.75	0.14	104,112,114,114	0
4	GOL	E	601	6/6	0.76	0.09	134,137,138,138	0
4	GOL	J	201	6/6	0.80	0.12	96,105,110,110	0
4	GOL	H	201	6/6	0.84	0.08	90,98,102,107	0
4	GOL	D	603	6/6	0.85	0.11	83,86,87,89	0
4	GOL	B	603	6/6	0.88	0.09	84,88,89,89	0
3	SO4	E	602	5/5	0.90	0.13	121,124,132,140	0
3	SO4	F	601	5/5	0.90	0.07	146,148,154,168	0
4	GOL	G	201	6/6	0.90	0.10	72,77,86,90	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	SO4	B	601	5/5	0.90	0.10	102,104,114,131	0
4	GOL	C	604	6/6	0.91	0.16	67,68,71,77	0
4	GOL	B	602	6/6	0.92	0.11	76,77,87,89	0
4	GOL	D	602	6/6	0.93	0.09	79,86,89,90	0
3	SO4	C	605	5/5	0.93	0.15	85,94,108,109	0
3	SO4	D	604	5/5	0.93	0.10	110,111,114,120	0
3	SO4	A	601	5/5	0.96	0.09	89,92,105,106	0

6.5 Other polymers (i)

There are no such residues in this entry.