Full wwPDB X-ray Structure Validation Report ⓘ

Oct 14, 2023 – 06:04 PM EDT

PDB ID	:	6VY9
Title	:	Crystal structure of NotF prenyltransferase
Authors	:	Dan, Q.; Smith, J.L.
Deposited on	:	2020-02-25
Resolution	:	3.19 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

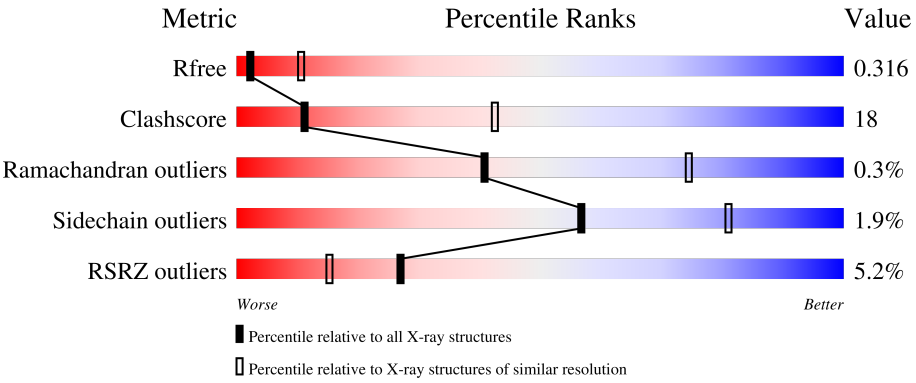
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation 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 3.19 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}	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	472	5% 54% 29% · 16%
1	B	472	4% 54% 29% · 16%
1	C	472	6% 54% 29% · 16%
1	D	472	5% 55% 28% · 16%
1	E	472	4% 55% 28% · 16%

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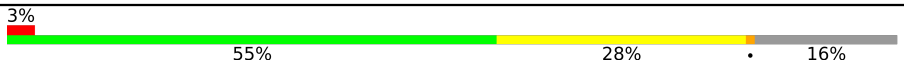
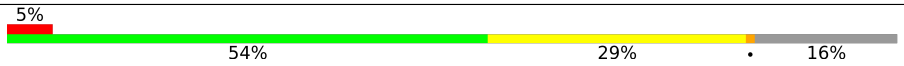
Mol	Chain	Length	Quality of chain
1	F	472	
1	G	472	
1	H	472	

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 25720 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 Deoxybrevianamide E synthase notF.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	396	Total	C	N	O	S	0	0	0
			3215	2083	541	584	7			
1	B	396	Total	C	N	O	S	0	0	0
			3215	2083	541	584	7			
1	G	396	Total	C	N	O	S	0	0	0
			3215	2083	541	584	7			
1	H	396	Total	C	N	O	S	0	0	0
			3215	2083	541	584	7			
1	F	396	Total	C	N	O	S	0	0	0
			3215	2083	541	584	7			
1	D	396	Total	C	N	O	S	0	0	0
			3215	2083	541	584	7			
1	E	396	Total	C	N	O	S	0	0	0
			3215	2083	541	584	7			
1	C	396	Total	C	N	O	S	0	0	0
			3215	2083	541	584	7			

There are 160 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-19	MET	-	initiating methionine	UNP E0Y3X1
A	-18	GLY	-	expression tag	UNP E0Y3X1
A	-17	SER	-	expression tag	UNP E0Y3X1
A	-16	SER	-	expression tag	UNP E0Y3X1
A	-15	HIS	-	expression tag	UNP E0Y3X1
A	-14	HIS	-	expression tag	UNP E0Y3X1
A	-13	HIS	-	expression tag	UNP E0Y3X1
A	-12	HIS	-	expression tag	UNP E0Y3X1
A	-11	HIS	-	expression tag	UNP E0Y3X1
A	-10	HIS	-	expression tag	UNP E0Y3X1
A	-9	SER	-	expression tag	UNP E0Y3X1
A	-8	SER	-	expression tag	UNP E0Y3X1
A	-7	GLY	-	expression tag	UNP E0Y3X1

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-6	LEU	-	expression tag	UNP E0Y3X1
A	-5	VAL	-	expression tag	UNP E0Y3X1
A	-4	PRO	-	expression tag	UNP E0Y3X1
A	-3	ARG	-	expression tag	UNP E0Y3X1
A	-2	GLY	-	expression tag	UNP E0Y3X1
A	-1	SER	-	expression tag	UNP E0Y3X1
A	0	HIS	-	expression tag	UNP E0Y3X1
B	-19	MET	-	initiating methionine	UNP E0Y3X1
B	-18	GLY	-	expression tag	UNP E0Y3X1
B	-17	SER	-	expression tag	UNP E0Y3X1
B	-16	SER	-	expression tag	UNP E0Y3X1
B	-15	HIS	-	expression tag	UNP E0Y3X1
B	-14	HIS	-	expression tag	UNP E0Y3X1
B	-13	HIS	-	expression tag	UNP E0Y3X1
B	-12	HIS	-	expression tag	UNP E0Y3X1
B	-11	HIS	-	expression tag	UNP E0Y3X1
B	-10	HIS	-	expression tag	UNP E0Y3X1
B	-9	SER	-	expression tag	UNP E0Y3X1
B	-8	SER	-	expression tag	UNP E0Y3X1
B	-7	GLY	-	expression tag	UNP E0Y3X1
B	-6	LEU	-	expression tag	UNP E0Y3X1
B	-5	VAL	-	expression tag	UNP E0Y3X1
B	-4	PRO	-	expression tag	UNP E0Y3X1
B	-3	ARG	-	expression tag	UNP E0Y3X1
B	-2	GLY	-	expression tag	UNP E0Y3X1
B	-1	SER	-	expression tag	UNP E0Y3X1
B	0	HIS	-	expression tag	UNP E0Y3X1
G	-19	MET	-	initiating methionine	UNP E0Y3X1
G	-18	GLY	-	expression tag	UNP E0Y3X1
G	-17	SER	-	expression tag	UNP E0Y3X1
G	-16	SER	-	expression tag	UNP E0Y3X1
G	-15	HIS	-	expression tag	UNP E0Y3X1
G	-14	HIS	-	expression tag	UNP E0Y3X1
G	-13	HIS	-	expression tag	UNP E0Y3X1
G	-12	HIS	-	expression tag	UNP E0Y3X1
G	-11	HIS	-	expression tag	UNP E0Y3X1
G	-10	HIS	-	expression tag	UNP E0Y3X1
G	-9	SER	-	expression tag	UNP E0Y3X1
G	-8	SER	-	expression tag	UNP E0Y3X1
G	-7	GLY	-	expression tag	UNP E0Y3X1
G	-6	LEU	-	expression tag	UNP E0Y3X1
G	-5	VAL	-	expression tag	UNP E0Y3X1

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Chain	Residue	Modelled	Actual	Comment	Reference
G	-4	PRO	-	expression tag	UNP E0Y3X1
G	-3	ARG	-	expression tag	UNP E0Y3X1
G	-2	GLY	-	expression tag	UNP E0Y3X1
G	-1	SER	-	expression tag	UNP E0Y3X1
G	0	HIS	-	expression tag	UNP E0Y3X1
H	-19	MET	-	initiating methionine	UNP E0Y3X1
H	-18	GLY	-	expression tag	UNP E0Y3X1
H	-17	SER	-	expression tag	UNP E0Y3X1
H	-16	SER	-	expression tag	UNP E0Y3X1
H	-15	HIS	-	expression tag	UNP E0Y3X1
H	-14	HIS	-	expression tag	UNP E0Y3X1
H	-13	HIS	-	expression tag	UNP E0Y3X1
H	-12	HIS	-	expression tag	UNP E0Y3X1
H	-11	HIS	-	expression tag	UNP E0Y3X1
H	-10	HIS	-	expression tag	UNP E0Y3X1
H	-9	SER	-	expression tag	UNP E0Y3X1
H	-8	SER	-	expression tag	UNP E0Y3X1
H	-7	GLY	-	expression tag	UNP E0Y3X1
H	-6	LEU	-	expression tag	UNP E0Y3X1
H	-5	VAL	-	expression tag	UNP E0Y3X1
H	-4	PRO	-	expression tag	UNP E0Y3X1
H	-3	ARG	-	expression tag	UNP E0Y3X1
H	-2	GLY	-	expression tag	UNP E0Y3X1
H	-1	SER	-	expression tag	UNP E0Y3X1
H	0	HIS	-	expression tag	UNP E0Y3X1
F	-19	MET	-	initiating methionine	UNP E0Y3X1
F	-18	GLY	-	expression tag	UNP E0Y3X1
F	-17	SER	-	expression tag	UNP E0Y3X1
F	-16	SER	-	expression tag	UNP E0Y3X1
F	-15	HIS	-	expression tag	UNP E0Y3X1
F	-14	HIS	-	expression tag	UNP E0Y3X1
F	-13	HIS	-	expression tag	UNP E0Y3X1
F	-12	HIS	-	expression tag	UNP E0Y3X1
F	-11	HIS	-	expression tag	UNP E0Y3X1
F	-10	HIS	-	expression tag	UNP E0Y3X1
F	-9	SER	-	expression tag	UNP E0Y3X1
F	-8	SER	-	expression tag	UNP E0Y3X1
F	-7	GLY	-	expression tag	UNP E0Y3X1
F	-6	LEU	-	expression tag	UNP E0Y3X1
F	-5	VAL	-	expression tag	UNP E0Y3X1
F	-4	PRO	-	expression tag	UNP E0Y3X1
F	-3	ARG	-	expression tag	UNP E0Y3X1

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Chain	Residue	Modelled	Actual	Comment	Reference
F	-2	GLY	-	expression tag	UNP E0Y3X1
F	-1	SER	-	expression tag	UNP E0Y3X1
F	0	HIS	-	expression tag	UNP E0Y3X1
D	-19	MET	-	initiating methionine	UNP E0Y3X1
D	-18	GLY	-	expression tag	UNP E0Y3X1
D	-17	SER	-	expression tag	UNP E0Y3X1
D	-16	SER	-	expression tag	UNP E0Y3X1
D	-15	HIS	-	expression tag	UNP E0Y3X1
D	-14	HIS	-	expression tag	UNP E0Y3X1
D	-13	HIS	-	expression tag	UNP E0Y3X1
D	-12	HIS	-	expression tag	UNP E0Y3X1
D	-11	HIS	-	expression tag	UNP E0Y3X1
D	-10	HIS	-	expression tag	UNP E0Y3X1
D	-9	SER	-	expression tag	UNP E0Y3X1
D	-8	SER	-	expression tag	UNP E0Y3X1
D	-7	GLY	-	expression tag	UNP E0Y3X1
D	-6	LEU	-	expression tag	UNP E0Y3X1
D	-5	VAL	-	expression tag	UNP E0Y3X1
D	-4	PRO	-	expression tag	UNP E0Y3X1
D	-3	ARG	-	expression tag	UNP E0Y3X1
D	-2	GLY	-	expression tag	UNP E0Y3X1
D	-1	SER	-	expression tag	UNP E0Y3X1
D	0	HIS	-	expression tag	UNP E0Y3X1
E	-19	MET	-	initiating methionine	UNP E0Y3X1
E	-18	GLY	-	expression tag	UNP E0Y3X1
E	-17	SER	-	expression tag	UNP E0Y3X1
E	-16	SER	-	expression tag	UNP E0Y3X1
E	-15	HIS	-	expression tag	UNP E0Y3X1
E	-14	HIS	-	expression tag	UNP E0Y3X1
E	-13	HIS	-	expression tag	UNP E0Y3X1
E	-12	HIS	-	expression tag	UNP E0Y3X1
E	-11	HIS	-	expression tag	UNP E0Y3X1
E	-10	HIS	-	expression tag	UNP E0Y3X1
E	-9	SER	-	expression tag	UNP E0Y3X1
E	-8	SER	-	expression tag	UNP E0Y3X1
E	-7	GLY	-	expression tag	UNP E0Y3X1
E	-6	LEU	-	expression tag	UNP E0Y3X1
E	-5	VAL	-	expression tag	UNP E0Y3X1
E	-4	PRO	-	expression tag	UNP E0Y3X1
E	-3	ARG	-	expression tag	UNP E0Y3X1
E	-2	GLY	-	expression tag	UNP E0Y3X1
E	-1	SER	-	expression tag	UNP E0Y3X1

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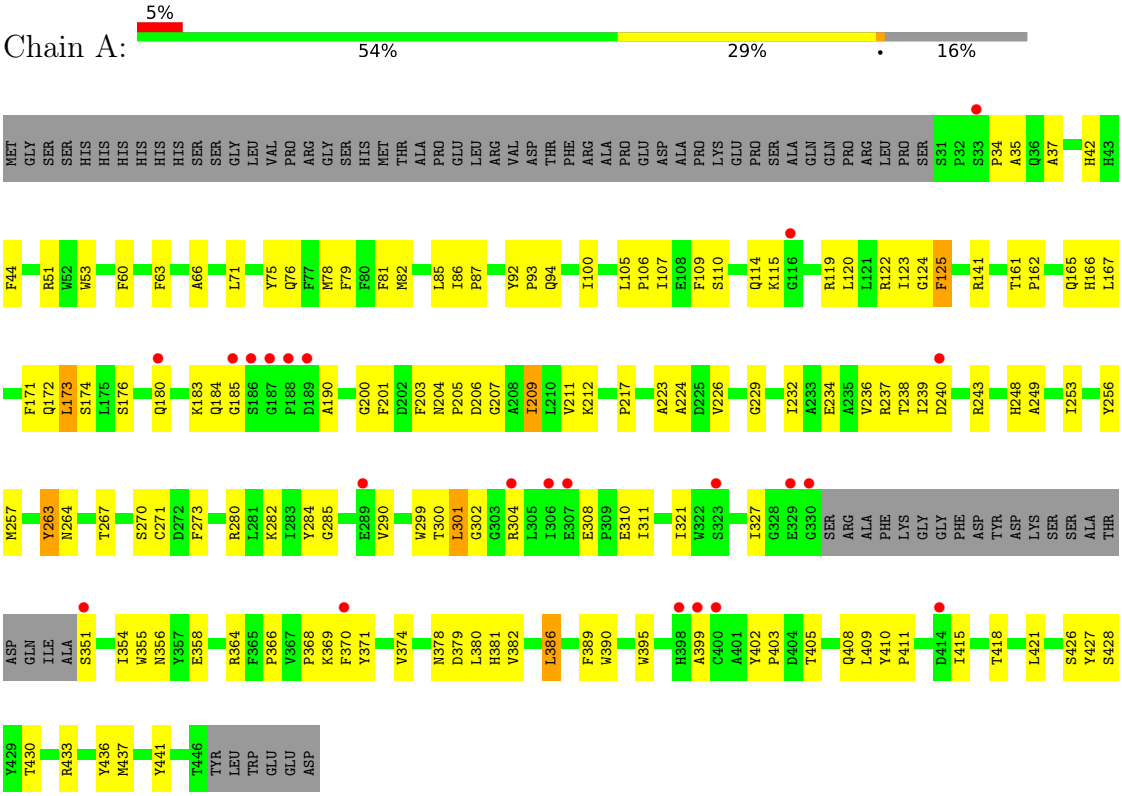
Chain	Residue	Modelled	Actual	Comment	Reference
E	0	HIS	-	expression tag	UNP E0Y3X1
C	-19	MET	-	initiating methionine	UNP E0Y3X1
C	-18	GLY	-	expression tag	UNP E0Y3X1
C	-17	SER	-	expression tag	UNP E0Y3X1
C	-16	SER	-	expression tag	UNP E0Y3X1
C	-15	HIS	-	expression tag	UNP E0Y3X1
C	-14	HIS	-	expression tag	UNP E0Y3X1
C	-13	HIS	-	expression tag	UNP E0Y3X1
C	-12	HIS	-	expression tag	UNP E0Y3X1
C	-11	HIS	-	expression tag	UNP E0Y3X1
C	-10	HIS	-	expression tag	UNP E0Y3X1
C	-9	SER	-	expression tag	UNP E0Y3X1
C	-8	SER	-	expression tag	UNP E0Y3X1
C	-7	GLY	-	expression tag	UNP E0Y3X1
C	-6	LEU	-	expression tag	UNP E0Y3X1
C	-5	VAL	-	expression tag	UNP E0Y3X1
C	-4	PRO	-	expression tag	UNP E0Y3X1
C	-3	ARG	-	expression tag	UNP E0Y3X1
C	-2	GLY	-	expression tag	UNP E0Y3X1
C	-1	SER	-	expression tag	UNP E0Y3X1
C	0	HIS	-	expression tag	UNP E0Y3X1

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.

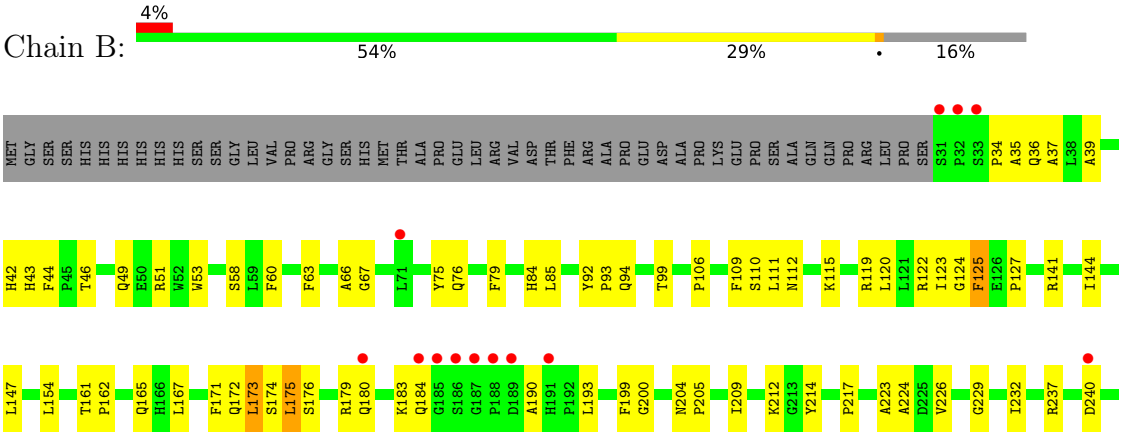
• Molecule 1: Deoxybrevianamide E synthase notF

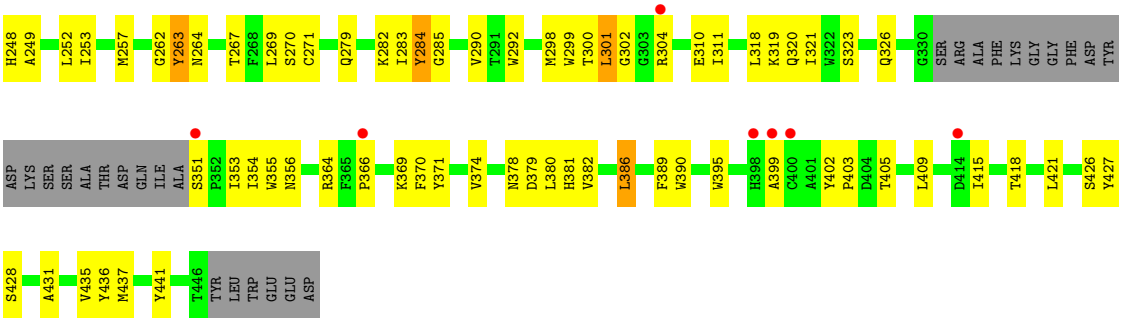
Chain A:



• Molecule 1: Deoxybrevianamide E synthase notF

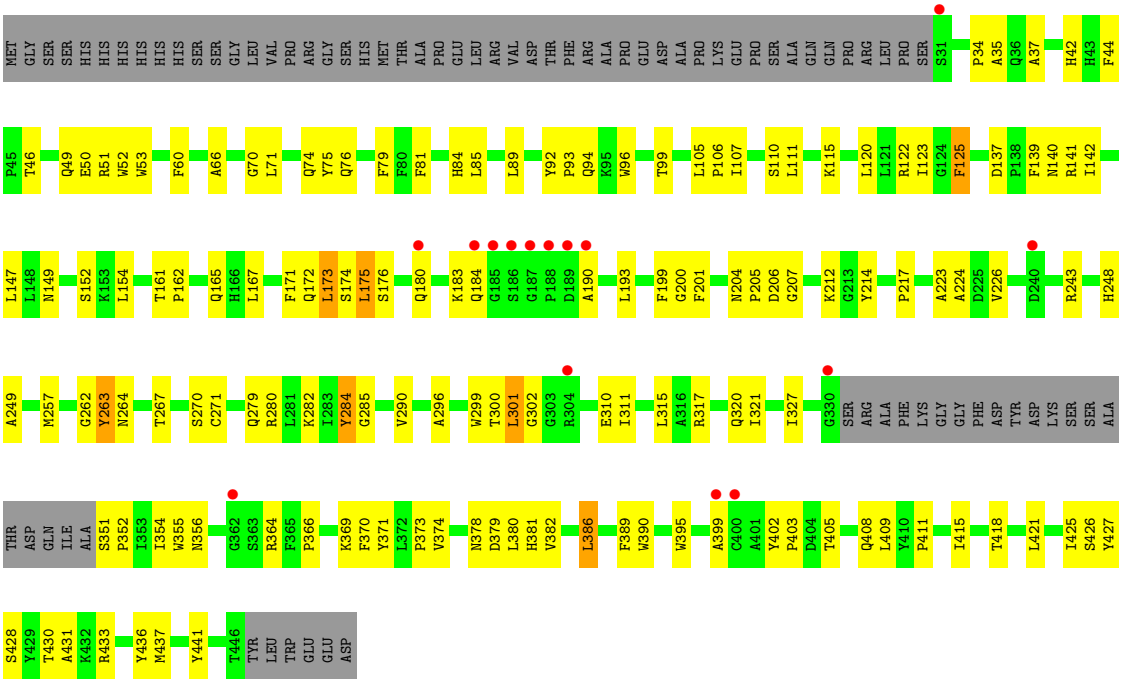
Chain B:





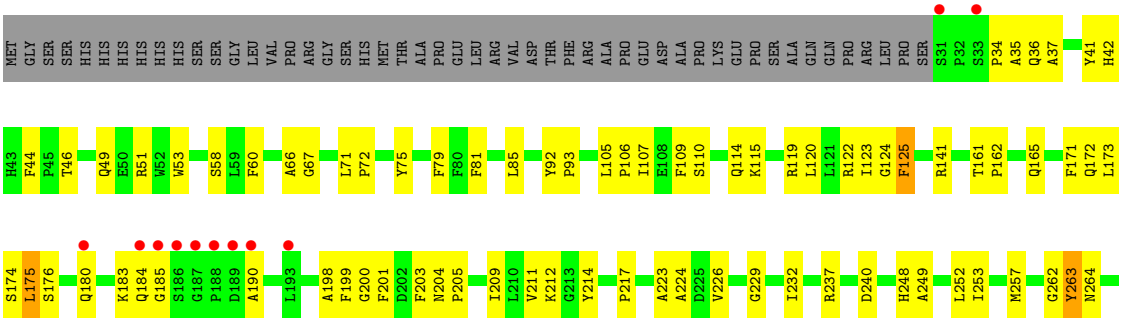
• Molecule 1: Deoxybrevianamide E synthase notF

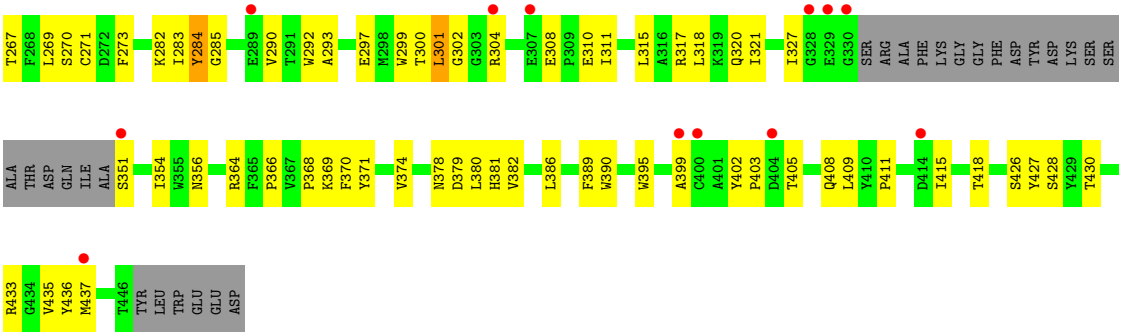
Chain G:



• Molecule 1: Deoxybrevianamide E synthase notF

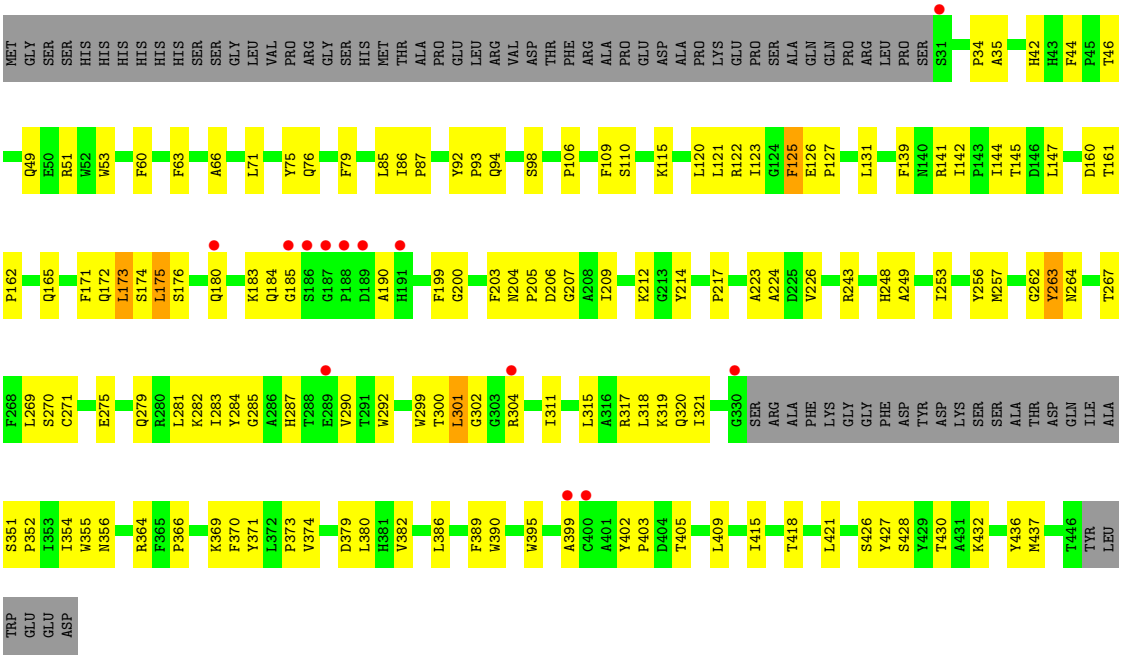
Chain H:





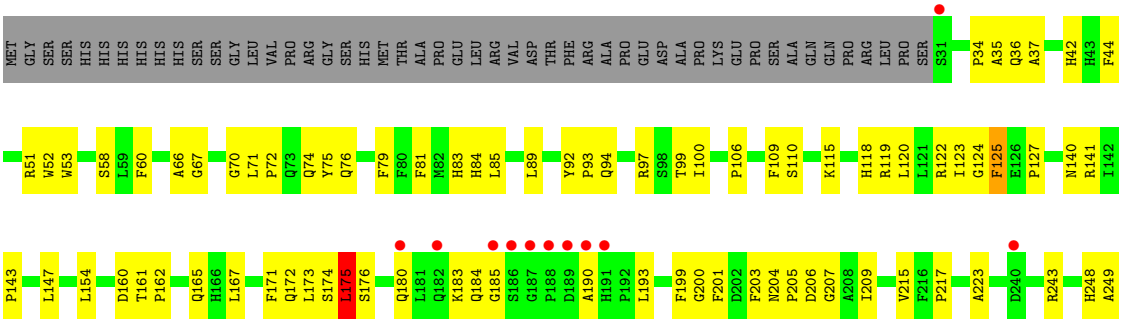
• Molecule 1: Deoxybrevianamide E synthase notF

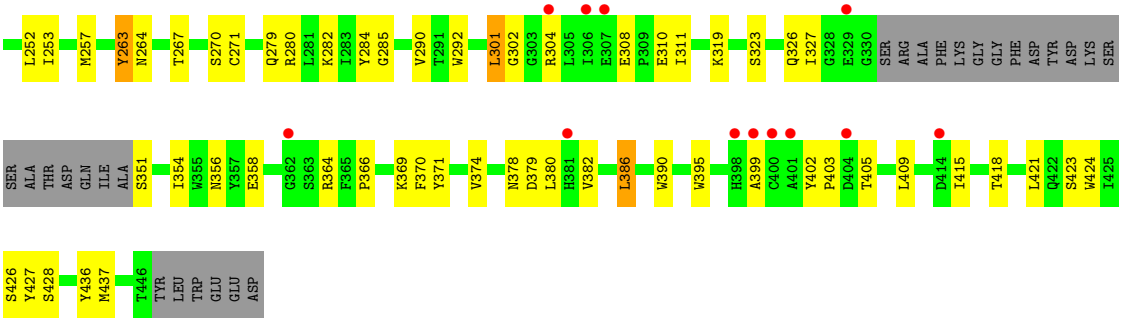
Chain F:



• Molecule 1: Deoxybrevianamide E synthase notF

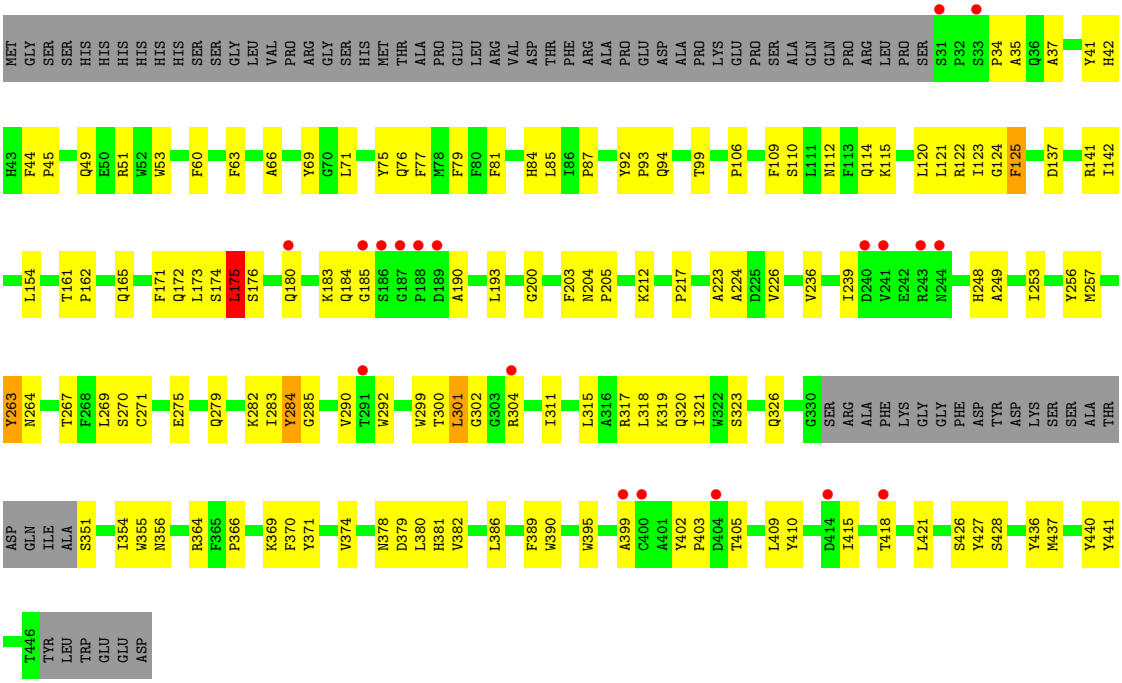
Chain D:





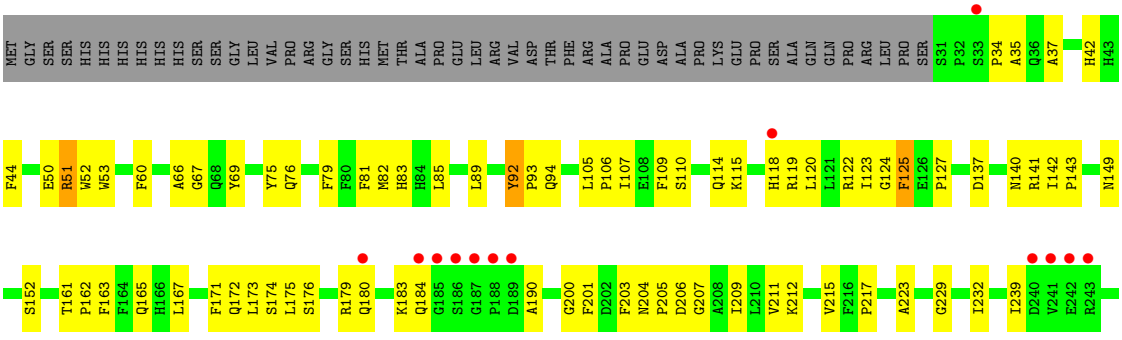
• Molecule 1: Deoxybrevianamide E synthase notF

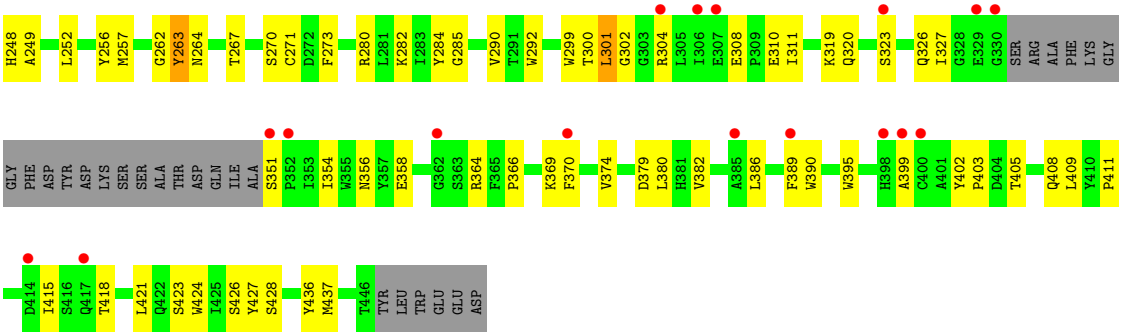
Chain E:



• Molecule 1: Deoxybrevianamide E synthase notF

Chain C:




H248 A249 L252 Y256 M257 G262 Y263 N264 T267 S270 C271 D272 F273 R280 L281 K282 I283 Y284 G285 V290 T291 W292 W299 T300 L301 G302 G303 R304 L305 I306 E307 E308 P309 E310 I311 K319 Q320 S323 Q326 I327 G328 E329 G330 SER ARG ALA PHE LYS GLY
GLY PHE ASP TYR ASP LYS SER SER ALA THR ASP GLN ILE ALA S351 P352 I353 I354 W355 N356 Y357 E358 G362 S363 R364 F365 P366 K369 F370 V374 D379 L380 H381 V382 A385 L386 F389 W390 W395 H398 A399 C400 A401 Y402 P403 D404 T405 Q408 L409 Y410 P411
D414 I415 S416 Q417 T418 L421 Q422 S423 W424 I425 S426 Y427 S428 Y436 M437 T446 TYR LEU TRP GLU GLU ASP

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 2 21 21	Depositor
Cell constants a, b, c, α, β, γ	153.59Å 208.29Å 217.37Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.32 – 3.19 49.32 – 3.19	Depositor EDS
% Data completeness (in resolution range)	93.4 (49.32-3.19) 92.5 (49.32-3.19)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.16 (at 3.19Å)	Xtriage
Refinement program	PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.307 , 0.316 0.307 , 0.316	Depositor DCC
R_{free} test set	1902 reflections (1.64%)	wwPDB-VP
Wilson B-factor (Å^2)	81.6	Xtriage
Anisotropy	0.657	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.30 , 42.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.43$, $< L^2 > = 0.26$	Xtriage
Estimated twinning fraction	0.002 for -h,l,k	Xtriage
F_o,F_c correlation	0.90	EDS
Total number of atoms	25720	wwPDB-VP
Average B, all atoms (Å^2)	102.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 35.84 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 5.4788e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

[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

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	0.43	0/3319	0.65	2/4514 (0.0%)
1	B	0.44	0/3319	0.66	3/4514 (0.1%)
1	C	0.47	2/3319 (0.1%)	0.73	4/4514 (0.1%)
1	D	0.42	0/3319	0.65	3/4514 (0.1%)
1	E	0.43	0/3319	0.64	1/4514 (0.0%)
1	F	0.45	0/3319	0.67	3/4514 (0.1%)
1	G	0.43	0/3319	0.67	2/4514 (0.0%)
1	H	0.43	0/3319	0.66	2/4514 (0.0%)
All	All	0.44	2/26552 (0.0%)	0.67	20/36112 (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	D	0	1
1	E	0	1
1	F	0	1
1	G	0	1
1	H	0	1
All	All	0	5

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	51	ARG	CA-CB	-6.24	1.40	1.53
1	C	92	TYR	CE1-CZ	5.80	1.46	1.38

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	51	ARG	NE-CZ-NH1	14.62	127.61	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	51	ARG	CB-CG-CD	9.84	137.18	111.60
1	C	51	ARG	NE-CZ-NH2	-9.53	115.53	120.30
1	E	301	LEU	CA-CB-CG	7.16	131.77	115.30
1	F	301	LEU	CA-CB-CG	6.99	131.37	115.30
1	D	301	LEU	CA-CB-CG	6.67	130.65	115.30
1	A	301	LEU	CA-CB-CG	6.65	130.60	115.30
1	B	386	LEU	CA-CB-CG	6.61	130.51	115.30
1	H	301	LEU	CA-CB-CG	6.61	130.50	115.30
1	G	386	LEU	CA-CB-CG	6.58	130.44	115.30
1	G	301	LEU	CA-CB-CG	6.53	130.33	115.30
1	H	386	LEU	CA-CB-CG	6.51	130.28	115.30
1	D	386	LEU	CA-CB-CG	6.44	130.12	115.30
1	F	386	LEU	CA-CB-CG	6.34	129.88	115.30
1	C	301	LEU	CA-CB-CG	6.26	129.69	115.30
1	B	301	LEU	CA-CB-CG	5.93	128.93	115.30
1	A	386	LEU	CA-CB-CG	5.83	128.71	115.30
1	D	97	ARG	NE-CZ-NH1	5.26	122.93	120.30
1	B	173	LEU	CB-CG-CD2	-5.07	102.38	111.00
1	F	281	LEU	CA-CB-CG	5.02	126.85	115.30

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	D	175	LEU	Peptide
1	E	175	LEU	Peptide
1	F	175	LEU	Peptide
1	G	175	LEU	Peptide
1	H	175	LEU	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3215	0	3093	128	0
1	B	3215	0	3093	131	0
1	C	3215	0	3093	123	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	3215	0	3093	121	0
1	E	3215	0	3093	122	0
1	F	3215	0	3093	116	0
1	G	3215	0	3093	126	0
1	H	3215	0	3093	117	0
All	All	25720	0	24744	903	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 18.

All (903) 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:A:162:PRO:HG2	1:G:174:SER:HB3	1.35	1.08
1:G:290:VAL:HG21	1:G:351:SER:HB2	1.45	0.98
1:H:290:VAL:HG21	1:H:351:SER:HB2	1.48	0.95
1:F:165:GLN:HG3	1:C:172:GLN:HE22	1.31	0.94
1:B:174:SER:HB3	1:H:162:PRO:HG2	1.48	0.94
1:B:290:VAL:HG21	1:B:351:SER:HB2	1.47	0.94
1:D:290:VAL:HG21	1:D:351:SER:HB2	1.51	0.93
1:A:172:GLN:HE22	1:G:165:GLN:HG3	1.34	0.92
1:D:174:SER:HB3	1:E:162:PRO:HG2	1.52	0.92
1:F:162:PRO:HG2	1:C:174:SER:HB3	1.51	0.91
1:E:290:VAL:HG21	1:E:351:SER:HB2	1.52	0.88
1:C:290:VAL:HG21	1:C:351:SER:HB2	1.56	0.88
1:E:110:SER:HB2	1:E:122:ARG:HB2	1.55	0.87
1:F:174:SER:HB3	1:C:162:PRO:HG2	1.57	0.87
1:C:301:LEU:HD12	1:C:302:GLY:H	1.41	0.85
1:B:110:SER:HB2	1:B:122:ARG:HB2	1.58	0.85
1:H:75:TYR:HD2	1:F:75:TYR:HD2	1.21	0.85
1:B:180:GLN:HE21	1:B:223:ALA:HB2	1.42	0.85
1:F:172:GLN:HE22	1:C:165:GLN:HG3	1.41	0.85
1:F:290:VAL:HG21	1:F:351:SER:HB2	1.57	0.84
1:B:270:SER:HB3	1:B:282:LYS:HB2	1.59	0.84
1:A:174:SER:HB3	1:G:162:PRO:HG2	1.58	0.84
1:B:162:PRO:HG2	1:H:174:SER:HB3	1.58	0.84
1:H:35:ALA:HA	1:H:75:TYR:HE1	1.43	0.84
1:E:44:PHE:HE2	1:E:53:TRP:HB2	1.42	0.84
1:B:165:GLN:HG3	1:H:172:GLN:HE22	1.42	0.84
1:G:44:PHE:HE2	1:G:53:TRP:HB2	1.43	0.83
1:B:75:TYR:HD2	1:C:75:TYR:HD2	1.24	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:374:VAL:HG13	1:D:382:VAL:HG21	1.58	0.83
1:A:290:VAL:HG21	1:A:351:SER:HB2	1.58	0.83
1:D:301:LEU:HD12	1:D:302:GLY:H	1.43	0.83
1:H:374:VAL:HG13	1:H:382:VAL:HG21	1.60	0.82
1:H:110:SER:HB2	1:H:122:ARG:HB2	1.62	0.82
1:A:75:TYR:HD2	1:E:75:TYR:HD2	1.26	0.81
1:D:172:GLN:HE22	1:E:165:GLN:HG3	1.42	0.81
1:F:282:LYS:HD3	1:F:356:ASN:HD21	1.45	0.81
1:A:110:SER:HB2	1:A:122:ARG:HB2	1.63	0.81
1:F:428:SER:HB3	1:F:436:TYR:HB2	1.63	0.80
1:G:428:SER:HB3	1:G:436:TYR:HB2	1.64	0.80
1:B:374:VAL:HG13	1:B:382:VAL:HG21	1.62	0.80
1:F:110:SER:HB2	1:F:122:ARG:HB2	1.63	0.80
1:F:263:TYR:HD1	1:F:263:TYR:H	1.29	0.80
1:F:249:ALA:HB1	1:F:366:PRO:HG3	1.62	0.79
1:A:301:LEU:HD12	1:A:302:GLY:H	1.48	0.79
1:D:162:PRO:HG2	1:E:174:SER:HB3	1.64	0.79
1:D:263:TYR:HD1	1:D:263:TYR:H	1.27	0.79
1:D:249:ALA:HB1	1:D:366:PRO:HG3	1.65	0.79
1:D:165:GLN:HG3	1:E:172:GLN:HE22	1.47	0.78
1:E:249:ALA:HB1	1:E:366:PRO:HG3	1.65	0.78
1:H:301:LEU:HD12	1:H:302:GLY:H	1.48	0.78
1:F:44:PHE:HE2	1:F:53:TRP:HB2	1.49	0.78
1:A:44:PHE:HE2	1:A:53:TRP:HB2	1.48	0.77
1:G:110:SER:HB2	1:G:122:ARG:HB2	1.66	0.77
1:C:374:VAL:HG13	1:C:382:VAL:HG21	1.66	0.77
1:F:301:LEU:HD12	1:F:302:GLY:H	1.50	0.77
1:B:263:TYR:HD1	1:B:263:TYR:H	1.32	0.77
1:C:263:TYR:HD1	1:C:263:TYR:H	1.29	0.77
1:A:374:VAL:HG13	1:A:382:VAL:HG21	1.67	0.77
1:H:263:TYR:HD1	1:H:263:TYR:H	1.31	0.76
1:E:428:SER:HB3	1:E:436:TYR:HB2	1.68	0.76
1:E:263:TYR:H	1:E:263:TYR:HD1	1.33	0.76
1:G:374:VAL:HG13	1:G:382:VAL:HG21	1.66	0.76
1:G:249:ALA:HB1	1:G:366:PRO:HG3	1.67	0.76
1:A:75:TYR:CD2	1:E:75:TYR:HD2	2.04	0.75
1:E:301:LEU:HD12	1:E:302:GLY:H	1.52	0.75
1:C:270:SER:HB3	1:C:282:LYS:HB2	1.69	0.75
1:B:428:SER:HB3	1:B:436:TYR:HB2	1.68	0.75
1:G:180:GLN:HE21	1:G:223:ALA:HB2	1.52	0.75
1:E:271:CYS:SG	1:E:279:GLN:NE2	2.60	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:180:GLN:HE21	1:A:223:ALA:HB2	1.52	0.74
1:H:180:GLN:HE21	1:H:223:ALA:HB2	1.52	0.74
1:D:180:GLN:HE21	1:D:223:ALA:HB2	1.52	0.74
1:C:44:PHE:HE2	1:C:53:TRP:HB2	1.50	0.74
1:E:44:PHE:CE2	1:E:53:TRP:HB2	2.21	0.74
1:E:180:GLN:HE21	1:E:223:ALA:HB2	1.51	0.74
1:F:35:ALA:HA	1:F:75:TYR:HE1	1.52	0.74
1:C:249:ALA:HB1	1:C:366:PRO:HG3	1.69	0.74
1:B:44:PHE:HE2	1:B:53:TRP:HB2	1.52	0.73
1:B:301:LEU:HD12	1:B:302:GLY:H	1.51	0.73
1:E:35:ALA:HA	1:E:75:TYR:HE1	1.52	0.73
1:D:35:ALA:HA	1:D:75:TYR:HE1	1.52	0.73
1:A:263:TYR:HD1	1:A:263:TYR:H	1.34	0.73
1:E:282:LYS:HD3	1:E:356:ASN:HD21	1.53	0.73
1:B:75:TYR:CD2	1:C:75:TYR:HD2	2.07	0.72
1:A:428:SER:HB3	1:A:436:TYR:HB2	1.72	0.72
1:C:35:ALA:HA	1:C:75:TYR:HE1	1.53	0.72
1:D:110:SER:HB2	1:D:122:ARG:HB2	1.72	0.72
1:G:75:TYR:HD2	1:D:75:TYR:HD2	1.37	0.72
1:G:263:TYR:HD1	1:G:263:TYR:H	1.36	0.72
1:B:249:ALA:HB1	1:B:366:PRO:HG3	1.71	0.72
1:G:75:TYR:CD2	1:D:75:TYR:HD2	2.08	0.71
1:D:60:PHE:HE1	1:D:123:ILE:HD11	1.53	0.71
1:H:229:GLY:HA2	1:H:232:ILE:HD12	1.73	0.71
1:D:428:SER:HB3	1:D:436:TYR:HB2	1.71	0.71
1:G:85:LEU:HD22	1:G:125:PHE:CE1	2.26	0.71
1:H:81:PHE:HD1	1:H:85:LEU:HD12	1.55	0.70
1:G:79:PHE:HE2	1:D:42:HIS:HB2	1.56	0.70
1:H:44:PHE:CE2	1:H:53:TRP:HB2	2.26	0.70
1:F:374:VAL:HG13	1:F:382:VAL:HG21	1.72	0.70
1:G:301:LEU:HD12	1:G:302:GLY:H	1.55	0.70
1:D:60:PHE:CE1	1:D:123:ILE:HD11	2.27	0.70
1:F:141:ARG:CZ	1:F:172:GLN:HE21	2.05	0.69
1:H:75:TYR:HD2	1:F:75:TYR:CD2	2.07	0.69
1:G:35:ALA:HA	1:G:75:TYR:HE1	1.57	0.69
1:A:249:ALA:HB1	1:A:366:PRO:HG3	1.74	0.69
1:B:172:GLN:HE22	1:H:165:GLN:HG3	1.58	0.69
1:D:380:LEU:HB2	1:D:415:ILE:HG22	1.75	0.69
1:E:374:VAL:HG13	1:E:382:VAL:HG21	1.75	0.69
1:G:75:TYR:HD2	1:D:75:TYR:CD2	2.10	0.68
1:H:249:ALA:HB1	1:H:366:PRO:HG3	1.74	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:183:LYS:NZ	1:G:190:ALA:O	2.25	0.68
1:C:248:HIS:CE1	1:C:364:ARG:HD2	2.29	0.68
1:A:44:PHE:CE2	1:A:53:TRP:HB2	2.28	0.68
1:C:282:LYS:HD3	1:C:356:ASN:HD21	1.59	0.68
1:C:110:SER:HB2	1:C:122:ARG:HB2	1.74	0.67
1:C:60:PHE:CE1	1:C:123:ILE:HD11	2.29	0.67
1:F:44:PHE:CE2	1:F:53:TRP:HB2	2.28	0.67
1:F:183:LYS:NZ	1:F:190:ALA:O	2.27	0.67
1:D:183:LYS:NZ	1:D:190:ALA:O	2.27	0.67
1:H:379:ASP:HB2	1:H:418:THR:HG23	1.76	0.67
1:G:37:ALA:HB1	1:D:76:GLN:HE21	1.60	0.67
1:G:44:PHE:CE2	1:G:53:TRP:HB2	2.29	0.67
1:G:271:CYS:SG	1:G:279:GLN:NE2	2.67	0.66
1:C:206:ASP:OD1	1:C:207:GLY:N	2.27	0.66
1:E:85:LEU:HD22	1:E:125:PHE:CE1	2.30	0.66
1:B:35:ALA:HA	1:B:75:TYR:HE1	1.59	0.66
1:B:264:ASN:O	1:B:267:THR:HG22	1.95	0.66
1:H:141:ARG:CZ	1:H:172:GLN:HE21	2.08	0.66
1:F:270:SER:HB3	1:F:282:LYS:HB2	1.78	0.66
1:G:76:GLN:HE21	1:D:37:ALA:HB1	1.60	0.66
1:E:379:ASP:HB2	1:E:418:THR:HG23	1.76	0.66
1:A:85:LEU:HD22	1:A:125:PHE:CE1	2.30	0.66
1:H:85:LEU:HD22	1:H:125:PHE:CE1	2.31	0.65
1:A:66:ALA:HB2	1:A:409:LEU:HD11	1.78	0.65
1:A:248:HIS:CE1	1:A:364:ARG:HD2	2.32	0.65
1:C:85:LEU:HD22	1:C:125:PHE:CE1	2.32	0.65
1:B:183:LYS:NZ	1:B:190:ALA:O	2.29	0.65
1:H:75:TYR:CD2	1:F:75:TYR:HD2	2.08	0.65
1:A:35:ALA:HA	1:A:75:TYR:CE1	2.32	0.64
1:E:120:LEU:HD21	1:E:205:PRO:HD3	1.78	0.64
1:C:141:ARG:CZ	1:C:172:GLN:HE21	2.10	0.64
1:A:35:ALA:HA	1:A:75:TYR:HE1	1.62	0.64
1:B:66:ALA:HB2	1:B:409:LEU:HD11	1.79	0.64
1:G:264:ASN:O	1:G:267:THR:HG22	1.98	0.64
1:D:35:ALA:HA	1:D:75:TYR:CE1	2.32	0.64
1:D:257:MET:HE2	1:D:263:TYR:HB3	1.77	0.64
1:A:75:TYR:HD2	1:E:75:TYR:CD2	2.13	0.64
1:B:75:TYR:HD2	1:C:75:TYR:CD2	2.11	0.64
1:D:123:ILE:O	1:D:201:PHE:N	2.23	0.64
1:E:141:ARG:CZ	1:E:172:GLN:HE21	2.11	0.64
1:B:79:PHE:HE2	1:C:42:HIS:HB2	1.62	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:115:LYS:HG2	1:E:395:TRP:HE1	1.62	0.63
1:F:35:ALA:HA	1:F:75:TYR:CE1	2.32	0.63
1:H:35:ALA:HA	1:H:75:TYR:CE1	2.30	0.63
1:H:44:PHE:HE2	1:H:53:TRP:HB2	1.62	0.63
1:F:180:GLN:HE21	1:F:223:ALA:HB2	1.63	0.63
1:H:115:LYS:HG2	1:H:395:TRP:HE1	1.64	0.63
1:C:44:PHE:CE2	1:C:53:TRP:HB2	2.33	0.63
1:C:183:LYS:NZ	1:C:190:ALA:O	2.32	0.63
1:A:60:PHE:CE1	1:A:123:ILE:HD11	2.33	0.63
1:H:354:ILE:HB	1:H:371:TYR:HB2	1.80	0.63
1:D:390:TRP:HB2	1:D:399:ALA:HB2	1.81	0.63
1:E:390:TRP:HB2	1:E:399:ALA:HB2	1.80	0.63
1:C:180:GLN:HE21	1:C:223:ALA:HB2	1.64	0.63
1:H:428:SER:HB3	1:H:436:TYR:HB2	1.80	0.62
1:G:79:PHE:CE2	1:D:42:HIS:HB2	2.33	0.62
1:F:418:THR:HG21	1:F:421:LEU:HD12	1.82	0.62
1:D:124:GLY:HA2	1:D:200:GLY:HA2	1.80	0.62
1:H:66:ALA:HB2	1:H:409:LEU:HD11	1.80	0.62
1:D:354:ILE:HB	1:D:371:TYR:HB2	1.82	0.62
1:H:380:LEU:HB2	1:H:415:ILE:HG22	1.81	0.62
1:E:35:ALA:HA	1:E:75:TYR:CE1	2.34	0.62
1:G:270:SER:HB3	1:G:282:LYS:HB2	1.82	0.61
1:D:282:LYS:HD3	1:D:356:ASN:HD21	1.64	0.61
1:E:183:LYS:NZ	1:E:190:ALA:O	2.33	0.61
1:G:171:PHE:HE1	1:G:217:PRO:HB3	1.65	0.61
1:F:390:TRP:HB2	1:F:399:ALA:HB2	1.81	0.61
1:G:35:ALA:HA	1:G:75:TYR:CE1	2.35	0.61
1:B:76:GLN:HE21	1:C:37:ALA:HB1	1.65	0.61
1:D:44:PHE:HE2	1:D:53:TRP:HB2	1.65	0.61
1:D:405:THR:O	1:D:409:LEU:HD13	2.00	0.61
1:A:123:ILE:O	1:A:201:PHE:N	2.29	0.61
1:B:380:LEU:HB2	1:B:415:ILE:HG22	1.83	0.60
1:A:60:PHE:HE1	1:A:123:ILE:HD11	1.67	0.60
1:B:115:LYS:HG2	1:B:395:TRP:HE1	1.65	0.60
1:B:415:ILE:HA	1:B:418:THR:HG22	1.84	0.60
1:E:390:TRP:HB3	1:E:395:TRP:HB2	1.84	0.60
1:C:81:PHE:HD1	1:C:85:LEU:HD12	1.67	0.60
1:D:85:LEU:HD22	1:D:125:PHE:CE1	2.37	0.60
1:F:66:ALA:HB2	1:F:409:LEU:HD11	1.84	0.60
1:E:270:SER:HB3	1:E:282:LYS:HB2	1.83	0.60
1:A:37:ALA:HB1	1:E:76:GLN:HE21	1.66	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:85:LEU:HD22	1:F:125:PHE:CE1	2.38	0.59
1:B:35:ALA:HA	1:B:75:TYR:CE1	2.36	0.59
1:B:248:HIS:CE1	1:B:364:ARG:HD2	2.38	0.59
1:B:79:PHE:CE2	1:C:42:HIS:HB2	2.37	0.59
1:H:267:THR:HA	1:H:285:GLY:HA2	1.85	0.59
1:C:35:ALA:HA	1:C:75:TYR:CE1	2.36	0.59
1:H:114:GLN:HE22	1:H:436:TYR:HE1	1.50	0.59
1:F:318:LEU:HD12	1:F:427:TYR:CD2	2.38	0.59
1:D:248:HIS:CE1	1:D:364:ARG:HD2	2.38	0.59
1:C:428:SER:HB3	1:C:436:TYR:HB2	1.83	0.59
1:A:141:ARG:CZ	1:A:172:GLN:HE21	2.16	0.59
1:H:60:PHE:CE1	1:H:123:ILE:HD11	2.38	0.59
1:D:415:ILE:HA	1:D:418:THR:HG22	1.84	0.58
1:E:66:ALA:HB2	1:E:409:LEU:HD11	1.84	0.58
1:C:418:THR:HG21	1:C:421:LEU:HD12	1.85	0.58
1:B:379:ASP:HB2	1:B:418:THR:HG23	1.85	0.58
1:F:115:LYS:HG2	1:F:395:TRP:HE1	1.68	0.58
1:B:85:LEU:HD22	1:B:125:PHE:CE1	2.38	0.58
1:B:354:ILE:HB	1:B:371:TYR:HB2	1.83	0.58
1:G:290:VAL:HG11	1:G:351:SER:N	2.18	0.58
1:G:418:THR:HG21	1:G:421:LEU:HD12	1.86	0.58
1:H:415:ILE:HA	1:H:418:THR:HG22	1.86	0.58
1:C:51:ARG:HG3	1:C:51:ARG:O	2.02	0.58
1:E:42:HIS:HD1	1:E:44:PHE:HD1	1.51	0.58
1:A:165:GLN:HG3	1:G:172:GLN:HE22	1.69	0.58
1:B:42:HIS:HD1	1:B:44:PHE:HD1	1.51	0.58
1:H:42:HIS:HD1	1:H:44:PHE:HD1	1.52	0.58
1:F:415:ILE:HA	1:F:418:THR:HG22	1.85	0.58
1:D:67:GLY:HA2	1:D:119:ARG:HG3	1.86	0.58
1:E:248:HIS:CE1	1:E:364:ARG:HD2	2.38	0.58
1:D:418:THR:HG21	1:D:421:LEU:HD12	1.84	0.57
1:B:229:GLY:HA2	1:B:232:ILE:HD12	1.85	0.57
1:B:257:MET:HE2	1:B:263:TYR:HB3	1.86	0.57
1:H:42:HIS:HB2	1:F:79:PHE:HE2	1.69	0.57
1:H:390:TRP:HB2	1:H:399:ALA:HB2	1.87	0.57
1:B:92:TYR:O	1:B:94:GLN:N	2.38	0.57
1:G:370:PHE:O	1:G:426:SER:HA	2.04	0.57
1:H:270:SER:HB3	1:H:282:LYS:HB2	1.85	0.57
1:C:390:TRP:HB2	1:C:399:ALA:HB2	1.86	0.57
1:A:81:PHE:HD1	1:A:85:LEU:HD12	1.69	0.57
1:F:200:GLY:N	1:F:212:LYS:O	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:92:TYR:HB3	1:C:93:PRO:HD3	1.86	0.57
1:C:415:ILE:HA	1:C:418:THR:HG22	1.87	0.57
1:C:379:ASP:HB2	1:C:418:THR:HG23	1.86	0.57
1:B:147:LEU:HD23	1:B:199:PHE:CD2	2.41	0.56
1:H:430:THR:HB	1:H:433:ARG:HB2	1.87	0.56
1:H:183:LYS:NZ	1:H:190:ALA:O	2.33	0.56
1:D:66:ALA:HB2	1:D:409:LEU:HD11	1.85	0.56
1:B:147:LEU:HD23	1:B:199:PHE:HD2	1.69	0.56
1:B:290:VAL:HG11	1:B:351:SER:N	2.19	0.56
1:G:66:ALA:HB2	1:G:409:LEU:HD11	1.87	0.56
1:H:369:LYS:HA	1:H:427:TYR:O	2.05	0.56
1:F:380:LEU:HB2	1:F:415:ILE:HG22	1.86	0.56
1:E:354:ILE:HB	1:E:371:TYR:HB2	1.87	0.56
1:C:257:MET:HE2	1:C:263:TYR:HB3	1.87	0.56
1:F:299:TRP:CD1	1:F:315:LEU:HD12	2.40	0.56
1:A:92:TYR:HB3	1:A:93:PRO:HD3	1.87	0.56
1:A:106:PRO:O	1:A:125:PHE:HB2	2.04	0.56
1:B:141:ARG:CZ	1:B:172:GLN:HE21	2.19	0.56
1:G:299:TRP:CD1	1:G:311:ILE:HG23	2.41	0.56
1:F:120:LEU:HD21	1:F:205:PRO:HD3	1.88	0.56
1:B:171:PHE:HE1	1:B:217:PRO:HB3	1.71	0.56
1:G:354:ILE:HB	1:G:371:TYR:HB2	1.87	0.56
1:G:42:HIS:HD1	1:G:44:PHE:HD1	1.53	0.56
1:F:390:TRP:HB3	1:F:395:TRP:HB2	1.88	0.56
1:E:415:ILE:HA	1:E:418:THR:HG22	1.87	0.56
1:B:390:TRP:HB2	1:B:399:ALA:HB2	1.88	0.55
1:G:380:LEU:HB2	1:G:415:ILE:HG22	1.88	0.55
1:F:121:LEU:HD23	1:F:203:PHE:HD2	1.71	0.55
1:D:423:SER:HG	1:D:424:TRP:HD1	1.54	0.55
1:A:183:LYS:NZ	1:A:190:ALA:O	2.36	0.55
1:A:379:ASP:HB2	1:A:418:THR:HG23	1.87	0.55
1:G:120:LEU:HD21	1:G:205:PRO:HD3	1.88	0.55
1:G:300:THR:O	1:G:301:LEU:HG	2.06	0.55
1:E:121:LEU:HD23	1:E:203:PHE:HD2	1.71	0.55
1:D:44:PHE:CE2	1:D:53:TRP:HB2	2.40	0.55
1:D:115:LYS:HG2	1:D:395:TRP:HE1	1.72	0.55
1:G:282:LYS:HD3	1:G:356:ASN:HD21	1.72	0.55
1:G:311:ILE:HD12	1:G:311:ILE:H	1.71	0.55
1:A:267:THR:HA	1:A:285:GLY:HA2	1.87	0.55
1:B:323:SER:O	1:B:326:GLN:NE2	2.39	0.55
1:D:402:TYR:HB3	1:D:403:PRO:HD3	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:248:HIS:CE1	1:H:364:ARG:HD2	2.42	0.55
1:C:51:ARG:HG2	1:C:92:TYR:CD2	2.41	0.55
1:A:173:LEU:HB2	1:A:176:SER:HB2	1.89	0.55
1:C:167:LEU:HB3	1:C:215:VAL:HG21	1.89	0.54
1:A:174:SER:C	1:A:176:SER:H	2.11	0.54
1:H:264:ASN:O	1:H:267:THR:HG22	2.08	0.54
1:D:81:PHE:HD1	1:D:85:LEU:HD12	1.72	0.54
1:C:171:PHE:HE1	1:C:217:PRO:HB3	1.71	0.54
1:E:249:ALA:HB1	1:E:366:PRO:CG	2.35	0.54
1:C:423:SER:HG	1:C:424:TRP:HD1	1.55	0.54
1:A:79:PHE:HE2	1:E:42:HIS:HB2	1.72	0.54
1:G:75:TYR:CD2	1:D:75:TYR:CD2	2.90	0.54
1:H:115:LYS:HG2	1:H:395:TRP:NE1	2.22	0.54
1:F:206:ASP:OD1	1:F:207:GLY:N	2.40	0.54
1:D:147:LEU:HD23	1:D:199:PHE:HD2	1.71	0.54
1:C:257:MET:HB3	1:C:263:TYR:CD1	2.42	0.54
1:A:51:ARG:HG3	1:A:92:TYR:CD2	2.42	0.54
1:A:124:GLY:HA2	1:A:200:GLY:HA2	1.88	0.54
1:H:92:TYR:HB3	1:H:93:PRO:HD3	1.89	0.54
1:A:270:SER:HB3	1:A:282:LYS:HB2	1.89	0.54
1:D:42:HIS:HD1	1:D:44:PHE:HE1	1.55	0.54
1:C:171:PHE:CE1	1:C:217:PRO:HB3	2.43	0.54
1:G:200:GLY:N	1:G:212:LYS:O	2.41	0.54
1:H:42:HIS:HB2	1:F:79:PHE:CE2	2.42	0.54
1:F:171:PHE:HE1	1:F:217:PRO:HB3	1.73	0.54
1:F:212:LYS:HG3	1:F:271:CYS:O	2.08	0.54
1:B:171:PHE:CE1	1:B:217:PRO:HB3	2.42	0.54
1:A:402:TYR:HB3	1:A:403:PRO:HD3	1.89	0.53
1:A:426:SER:O	1:A:437:MET:HG3	2.08	0.53
1:H:282:LYS:HD3	1:H:356:ASN:HD21	1.73	0.53
1:D:252:LEU:HD22	1:D:304:ARG:HH21	1.72	0.53
1:E:418:THR:HG21	1:E:421:LEU:HD12	1.89	0.53
1:C:120:LEU:HD21	1:C:205:PRO:HD3	1.90	0.53
1:A:253:ILE:HD11	1:A:304:ARG:HH22	1.73	0.53
1:A:282:LYS:HD3	1:A:356:ASN:HD21	1.73	0.53
1:B:405:THR:O	1:B:409:LEU:HD13	2.08	0.53
1:G:415:ILE:HA	1:G:418:THR:HG22	1.89	0.53
1:F:311:ILE:HD12	1:F:311:ILE:H	1.73	0.53
1:D:171:PHE:HE1	1:D:217:PRO:HB3	1.71	0.53
1:H:426:SER:O	1:H:437:MET:HG3	2.09	0.53
1:E:311:ILE:H	1:E:311:ILE:HD12	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:426:SER:O	1:C:437:MET:HG3	2.09	0.53
1:A:264:ASN:O	1:A:267:THR:HG22	2.09	0.53
1:F:42:HIS:HD1	1:F:44:PHE:HD1	1.51	0.53
1:C:66:ALA:HB2	1:C:409:LEU:HD11	1.90	0.53
1:C:174:SER:C	1:C:176:SER:H	2.11	0.53
1:A:370:PHE:O	1:A:426:SER:HA	2.09	0.53
1:A:390:TRP:HB2	1:A:399:ALA:HB2	1.90	0.53
1:C:109:PHE:CD1	1:C:123:ILE:HG12	2.44	0.53
1:B:299:TRP:CD1	1:B:311:ILE:HG23	2.44	0.53
1:G:141:ARG:CZ	1:G:172:GLN:HE21	2.22	0.53
1:H:106:PRO:O	1:H:125:PHE:HB2	2.08	0.53
1:H:290:VAL:HG11	1:H:351:SER:N	2.24	0.53
1:C:267:THR:HA	1:C:285:GLY:HA2	1.89	0.53
1:A:299:TRP:CD1	1:A:311:ILE:HG23	2.43	0.53
1:F:98:SER:OG	1:F:126:GLU:OE1	2.14	0.53
1:F:173:LEU:HB2	1:F:176:SER:HB2	1.89	0.53
1:F:354:ILE:HB	1:F:371:TYR:HB2	1.90	0.53
1:E:370:PHE:O	1:E:426:SER:HA	2.09	0.53
1:A:418:THR:HG21	1:A:421:LEU:HD12	1.91	0.53
1:A:79:PHE:CE2	1:E:42:HIS:HB2	2.44	0.53
1:H:180:GLN:O	1:H:183:LYS:HG2	2.09	0.53
1:G:115:LYS:HG2	1:G:395:TRP:HE1	1.74	0.53
1:G:430:THR:HB	1:G:433:ARG:HB2	1.91	0.53
1:H:224:ALA:O	1:H:226:VAL:HG23	2.08	0.53
1:F:275:GLU:OE1	1:C:175:LEU:HD23	2.09	0.53
1:D:171:PHE:CE1	1:D:217:PRO:HB3	2.44	0.53
1:B:37:ALA:HB1	1:C:76:GLN:HE21	1.75	0.52
1:G:92:TYR:HB3	1:G:93:PRO:HD3	1.91	0.52
1:E:253:ILE:HD11	1:E:304:ARG:HH22	1.73	0.52
1:C:256:TYR:CD1	1:C:301:LEU:HB2	2.44	0.52
1:B:92:TYR:HB3	1:B:93:PRO:HD3	1.91	0.52
1:H:37:ALA:HB1	1:F:76:GLN:HE21	1.73	0.52
1:C:248:HIS:HE1	1:C:364:ARG:HD2	1.75	0.52
1:B:300:THR:O	1:B:301:LEU:HG	2.08	0.52
1:G:42:HIS:CD2	1:D:79:PHE:HZ	2.27	0.52
1:D:379:ASP:HB2	1:D:418:THR:HG23	1.91	0.52
1:E:60:PHE:CE1	1:E:123:ILE:HD11	2.44	0.52
1:C:252:LEU:HD22	1:C:304:ARG:HH21	1.74	0.52
1:G:402:TYR:HB3	1:G:403:PRO:HD3	1.91	0.52
1:F:248:HIS:CE1	1:F:364:ARG:HD2	2.44	0.52
1:F:379:ASP:OD2	1:F:421:LEU:HB2	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:120:LEU:HD21	1:D:205:PRO:HD3	1.92	0.52
1:C:67:GLY:HA2	1:C:119:ARG:HG3	1.91	0.52
1:A:123:ILE:HD12	1:A:203:PHE:CZ	2.44	0.52
1:G:42:HIS:CD2	1:D:79:PHE:CZ	2.98	0.52
1:G:257:MET:O	1:G:262:GLY:HA2	2.09	0.52
1:F:162:PRO:HA	1:C:172:GLN:OE1	2.09	0.52
1:B:321:ILE:HG23	1:B:389:PHE:CD1	2.45	0.52
1:G:92:TYR:O	1:G:94:GLN:N	2.43	0.52
1:D:426:SER:O	1:D:437:MET:HG3	2.10	0.52
1:E:84:HIS:CE1	1:E:154:LEU:HD11	2.44	0.52
1:E:292:TRP:CE2	1:E:319:LYS:HD3	2.44	0.52
1:B:174:SER:C	1:B:176:SER:H	2.13	0.52
1:A:405:THR:O	1:A:409:LEU:HD13	2.09	0.52
1:D:180:GLN:O	1:D:183:LYS:HG2	2.09	0.52
1:E:200:GLY:N	1:E:212:LYS:O	2.42	0.52
1:F:317:ARG:HH11	1:F:320:GLN:HE22	1.58	0.51
1:D:92:TYR:HB3	1:D:93:PRO:HD3	1.91	0.51
1:C:311:ILE:H	1:C:311:ILE:HD12	1.74	0.51
1:B:46:THR:OG1	1:B:49:GLN:HG3	2.11	0.51
1:F:405:THR:O	1:F:409:LEU:HD13	2.10	0.51
1:H:171:PHE:CE1	1:H:217:PRO:HB3	2.45	0.51
1:H:249:ALA:HB1	1:H:366:PRO:CG	2.40	0.51
1:F:165:GLN:HG3	1:C:172:GLN:NE2	2.14	0.51
1:F:176:SER:O	1:F:180:GLN:HG2	2.11	0.51
1:D:386:LEU:HD13	1:D:390:TRP:NE1	2.26	0.51
1:B:94:GLN:OE1	1:B:106:PRO:HD3	2.11	0.51
1:B:427:TYR:HD1	1:B:437:MET:HE2	1.75	0.51
1:H:402:TYR:HB3	1:H:403:PRO:HD3	1.92	0.51
1:F:171:PHE:CE1	1:F:217:PRO:HB3	2.45	0.51
1:F:370:PHE:O	1:F:426:SER:HA	2.10	0.51
1:D:206:ASP:OD1	1:D:207:GLY:N	2.42	0.51
1:H:171:PHE:HE1	1:H:217:PRO:HB3	1.75	0.51
1:F:92:TYR:O	1:F:94:GLN:N	2.44	0.51
1:D:204:ASN:HB2	1:D:205:PRO:HD2	1.91	0.51
1:B:311:ILE:HD12	1:B:311:ILE:H	1.76	0.51
1:G:390:TRP:HB2	1:G:399:ALA:HB2	1.92	0.51
1:H:71:LEU:HD23	1:F:71:LEU:HD23	1.93	0.51
1:H:405:THR:O	1:H:409:LEU:HD13	2.10	0.51
1:C:42:HIS:HD1	1:C:44:PHE:HE1	1.56	0.51
1:B:44:PHE:CE2	1:B:53:TRP:HB2	2.40	0.51
1:H:81:PHE:CD1	1:H:85:LEU:HD12	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:430:THR:HB	1:A:433:ARG:HB2	1.93	0.51
1:G:428:SER:HB3	1:G:436:TYR:CB	2.39	0.51
1:B:282:LYS:HD3	1:B:356:ASN:HD21	1.76	0.50
1:E:299:TRP:CD1	1:E:315:LEU:HD12	2.46	0.50
1:B:180:GLN:O	1:B:183:LYS:HG2	2.10	0.50
1:H:317:ARG:HH11	1:H:320:GLN:HE22	1.59	0.50
1:D:271:CYS:SG	1:D:279:GLN:NE2	2.84	0.50
1:C:212:LYS:HG3	1:C:271:CYS:O	2.11	0.50
1:A:180:GLN:O	1:A:183:LYS:HG2	2.11	0.50
1:G:42:HIS:HB2	1:D:79:PHE:CE2	2.46	0.50
1:H:253:ILE:HD11	1:H:304:ARG:HH22	1.76	0.50
1:E:410:TYR:OH	1:E:441:TYR:HB3	2.12	0.50
1:A:369:LYS:HA	1:A:427:TYR:O	2.12	0.50
1:A:380:LEU:HB2	1:A:415:ILE:HG22	1.91	0.50
1:B:115:LYS:HA	1:B:395:TRP:CE2	2.47	0.50
1:C:292:TRP:CE2	1:C:319:LYS:HD3	2.46	0.50
1:A:248:HIS:HE1	1:A:364:ARG:HD2	1.74	0.50
1:F:379:ASP:HB2	1:F:418:THR:HG23	1.93	0.50
1:G:94:GLN:OE1	1:G:106:PRO:HD3	2.12	0.50
1:F:92:TYR:HB3	1:F:93:PRO:HD3	1.93	0.50
1:D:290:VAL:HG11	1:D:351:SER:N	2.26	0.50
1:B:257:MET:O	1:B:262:GLY:HA2	2.12	0.50
1:G:356:ASN:HB3	1:G:369:LYS:HB3	1.93	0.50
1:D:257:MET:HB3	1:D:263:TYR:CD1	2.46	0.50
1:E:402:TYR:HB3	1:E:403:PRO:HD3	1.94	0.50
1:C:60:PHE:HE1	1:C:123:ILE:HD11	1.76	0.50
1:B:180:GLN:NE2	1:B:223:ALA:HB2	2.21	0.50
1:G:369:LYS:HA	1:G:427:TYR:O	2.12	0.50
1:F:60:PHE:CE1	1:F:123:ILE:HD11	2.47	0.50
1:C:369:LYS:HA	1:C:427:TYR:O	2.12	0.50
1:B:290:VAL:CG2	1:B:351:SER:HB2	2.32	0.50
1:F:257:MET:HB3	1:F:263:TYR:CD1	2.45	0.50
1:D:174:SER:C	1:D:176:SER:H	2.14	0.50
1:C:402:TYR:HB3	1:C:403:PRO:HD3	1.93	0.50
1:G:320:GLN:HE21	1:G:389:PHE:HE1	1.59	0.49
1:B:426:SER:O	1:B:437:MET:HG3	2.12	0.49
1:H:311:ILE:H	1:H:311:ILE:HD12	1.77	0.49
1:B:378:ASN:HB3	1:B:381:HIS:HB3	1.94	0.49
1:G:204:ASN:HB2	1:G:205:PRO:HD2	1.93	0.49
1:D:270:SER:HB3	1:D:282:LYS:HB2	1.93	0.49
1:B:252:LEU:HD22	1:B:304:ARG:HH21	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:123:ILE:O	1:C:201:PHE:N	2.33	0.49
1:E:112:ASN:HB3	1:E:120:LEU:HB2	1.94	0.49
1:B:162:PRO:HA	1:H:172:GLN:OE1	2.13	0.49
1:H:318:LEU:HD12	1:H:427:TYR:CD2	2.48	0.49
1:F:253:ILE:HD11	1:F:304:ARG:HH22	1.77	0.49
1:E:174:SER:C	1:E:176:SER:H	2.16	0.49
1:B:42:HIS:CD2	1:C:79:PHE:HZ	2.31	0.49
1:B:79:PHE:HE1	1:C:83:HIS:HE1	1.61	0.49
1:G:99:THR:HG23	1:G:193:LEU:HD22	1.94	0.49
1:F:51:ARG:HG3	1:F:92:TYR:CD2	2.47	0.49
1:F:63:PHE:HE2	1:F:109:PHE:HB2	1.78	0.49
1:E:290:VAL:CG2	1:E:351:SER:HB2	2.34	0.49
1:B:43:HIS:NE2	1:F:131:LEU:HD11	2.28	0.49
1:G:248:HIS:CE1	1:G:364:ARG:HD2	2.47	0.49
1:E:405:THR:O	1:E:409:LEU:HD13	2.13	0.49
1:B:51:ARG:HG3	1:B:92:TYR:CG	2.48	0.48
1:G:180:GLN:O	1:G:183:LYS:HG2	2.12	0.48
1:H:37:ALA:HB1	1:F:76:GLN:NE2	2.28	0.48
1:E:180:GLN:O	1:E:183:LYS:HG2	2.12	0.48
1:A:206:ASP:OD1	1:A:207:GLY:N	2.43	0.48
1:B:402:TYR:HB3	1:B:403:PRO:HD3	1.95	0.48
1:E:380:LEU:HB2	1:E:415:ILE:HG22	1.95	0.48
1:B:267:THR:HA	1:B:285:GLY:HA2	1.94	0.48
1:C:69:TYR:OH	1:C:203:PHE:O	2.13	0.48
1:A:167:LEU:O	1:A:171:PHE:HD2	1.97	0.48
1:A:311:ILE:HD12	1:A:311:ILE:H	1.78	0.48
1:B:42:HIS:CD2	1:C:79:PHE:CZ	3.01	0.48
1:C:204:ASN:HB2	1:C:205:PRO:HD2	1.94	0.48
1:A:42:HIS:HD1	1:A:44:PHE:HD1	1.59	0.48
1:A:42:HIS:ND1	1:A:44:PHE:CE1	2.81	0.48
1:A:204:ASN:HB2	1:A:205:PRO:HD2	1.95	0.48
1:F:290:VAL:HG11	1:F:351:SER:N	2.28	0.48
1:D:249:ALA:HB1	1:D:366:PRO:CG	2.41	0.48
1:C:115:LYS:HG2	1:C:395:TRP:HE1	1.79	0.48
1:A:42:HIS:HB2	1:E:79:PHE:CE2	2.49	0.48
1:A:53:TRP:CH2	1:A:78:MET:HE2	2.48	0.48
1:B:418:THR:HG21	1:B:421:LEU:HD12	1.96	0.48
1:H:46:THR:OG1	1:H:49:GLN:HG3	2.14	0.48
1:F:212:LYS:HE3	1:F:214:TYR:OH	2.14	0.48
1:D:161:THR:N	1:D:162:PRO:CD	2.77	0.48
1:A:105:LEU:CD1	1:A:107:ILE:HG22	2.44	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:84:HIS:NE2	1:B:154:LEU:HD11	2.29	0.48
1:E:299:TRP:HB3	1:E:315:LEU:HD12	1.96	0.48
1:A:100:ILE:CD1	1:A:125:PHE:HA	2.44	0.48
1:G:378:ASN:HB3	1:G:381:HIS:HB3	1.96	0.48
1:F:292:TRP:CE2	1:F:319:LYS:HD3	2.48	0.48
1:A:37:ALA:HB1	1:E:76:GLN:NE2	2.28	0.48
1:A:415:ILE:HA	1:A:418:THR:HG22	1.96	0.48
1:C:124:GLY:HA2	1:C:200:GLY:HA2	1.95	0.48
1:C:327:ILE:HG21	1:C:351:SER:OG	2.13	0.48
1:A:120:LEU:HD21	1:A:205:PRO:HD3	1.96	0.48
1:A:200:GLY:N	1:A:212:LYS:O	2.44	0.48
1:H:79:PHE:CE2	1:F:42:HIS:HB2	2.48	0.48
1:D:253:ILE:HD11	1:D:304:ARG:HH22	1.79	0.48
1:C:380:LEU:HB2	1:C:415:ILE:HG22	1.96	0.48
1:C:405:THR:O	1:C:409:LEU:HD13	2.14	0.48
1:G:379:ASP:HB2	1:G:418:THR:HG23	1.96	0.47
1:E:115:LYS:HG2	1:E:395:TRP:NE1	2.27	0.47
1:E:269:LEU:CD1	1:E:283:ILE:HG13	2.44	0.47
1:E:300:THR:O	1:E:301:LEU:HG	2.14	0.47
1:E:317:ARG:HB2	1:E:427:TYR:OH	2.14	0.47
1:A:75:TYR:CD2	1:E:75:TYR:CD2	2.94	0.47
1:A:229:GLY:HA2	1:A:232:ILE:HD12	1.96	0.47
1:C:161:THR:N	1:C:162:PRO:CD	2.77	0.47
1:A:408:GLN:O	1:A:411:PRO:HD3	2.14	0.47
1:G:426:SER:O	1:G:437:MET:HG3	2.14	0.47
1:H:36:GLN:OE1	1:H:58:SER:HA	2.14	0.47
1:D:162:PRO:HA	1:E:172:GLN:OE1	2.14	0.47
1:H:204:ASN:HB2	1:H:205:PRO:HD2	1.95	0.47
1:H:269:LEU:CD1	1:H:283:ILE:HG13	2.45	0.47
1:H:282:LYS:CB	1:H:284:TYR:HE1	2.27	0.47
1:H:257:MET:HE2	1:H:263:TYR:HB3	1.96	0.47
1:F:94:GLN:OE1	1:F:106:PRO:HD3	2.14	0.47
1:F:271:CYS:SG	1:F:279:GLN:NE2	2.87	0.47
1:E:94:GLN:OE1	1:E:106:PRO:HD3	2.13	0.47
1:B:67:GLY:HA2	1:B:119:ARG:HG3	1.97	0.47
1:B:271:CYS:SG	1:B:279:GLN:NE2	2.88	0.47
1:G:115:LYS:HG2	1:G:395:TRP:NE1	2.30	0.47
1:E:63:PHE:HE2	1:E:109:PHE:HB2	1.80	0.47
1:E:171:PHE:CE1	1:E:217:PRO:HB3	2.49	0.47
1:H:60:PHE:HE1	1:H:123:ILE:HD11	1.78	0.47
1:H:105:LEU:CD1	1:H:107:ILE:HG22	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:124:GLY:HA2	1:H:200:GLY:HA2	1.97	0.47
1:F:402:TYR:HB3	1:F:403:PRO:HD3	1.96	0.47
1:D:92:TYR:O	1:D:94:GLN:N	2.48	0.47
1:D:292:TRP:CE2	1:D:319:LYS:HD3	2.50	0.47
1:E:321:ILE:HG23	1:E:389:PHE:CD1	2.49	0.47
1:C:180:GLN:O	1:C:183:LYS:HG2	2.15	0.47
1:C:229:GLY:HA2	1:C:232:ILE:HD12	1.96	0.47
1:A:42:HIS:ND1	1:A:44:PHE:CD1	2.81	0.47
1:B:39:ALA:HB2	1:B:53:TRP:CZ2	2.49	0.47
1:B:112:ASN:HB3	1:B:120:LEU:HB2	1.97	0.47
1:A:115:LYS:HG2	1:A:395:TRP:HE1	1.80	0.47
1:B:204:ASN:HB2	1:B:205:PRO:HD2	1.96	0.47
1:F:180:GLN:O	1:F:183:LYS:HG2	2.15	0.47
1:B:369:LYS:HA	1:B:427:TYR:O	2.15	0.47
1:G:290:VAL:CG2	1:G:351:SER:HB2	2.31	0.47
1:D:280:ARG:HD3	1:D:358:GLU:CD	2.36	0.47
1:G:427:TYR:HD1	1:G:437:MET:HE2	1.80	0.46
1:F:127:PRO:HD2	1:F:144:ILE:HD13	1.97	0.46
1:C:52:TRP:CE2	1:C:89:LEU:HB3	2.50	0.46
1:A:42:HIS:CD2	1:E:79:PHE:HZ	2.33	0.46
1:B:60:PHE:HD1	1:B:109:PHE:CE1	2.33	0.46
1:E:318:LEU:HD12	1:E:427:TYR:CD2	2.50	0.46
1:G:70:GLY:O	1:G:74:GLN:HG3	2.14	0.46
1:C:211:VAL:HG12	1:C:273:PHE:CD2	2.50	0.46
1:A:212:LYS:HG3	1:A:271:CYS:O	2.15	0.46
1:G:171:PHE:CE1	1:G:217:PRO:HB3	2.47	0.46
1:G:257:MET:HB3	1:G:263:TYR:CD1	2.50	0.46
1:H:284:TYR:CD1	1:H:284:TYR:N	2.84	0.46
1:C:300:THR:O	1:C:301:LEU:HG	2.15	0.46
1:A:176:SER:O	1:A:180:GLN:HG2	2.16	0.46
1:G:249:ALA:HB1	1:G:366:PRO:CG	2.40	0.46
1:F:264:ASN:O	1:F:267:THR:HG22	2.15	0.46
1:F:290:VAL:CG2	1:F:351:SER:HB2	2.36	0.46
1:D:147:LEU:HD23	1:D:199:PHE:CD2	2.50	0.46
1:E:264:ASN:O	1:E:267:THR:HG22	2.15	0.46
1:H:293:ALA:O	1:H:297:GLU:HG3	2.16	0.46
1:F:249:ALA:HB1	1:F:366:PRO:CG	2.38	0.46
1:D:428:SER:HB3	1:D:436:TYR:CB	2.42	0.46
1:E:356:ASN:HB3	1:E:369:LYS:HB3	1.96	0.46
1:H:300:THR:O	1:H:301:LEU:HG	2.15	0.46
1:E:290:VAL:HG11	1:E:351:SER:N	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:120:LEU:HD21	1:H:205:PRO:HD3	1.98	0.46
1:F:115:LYS:HA	1:F:395:TRP:CE2	2.51	0.46
1:F:174:SER:C	1:F:176:SER:H	2.19	0.46
1:F:204:ASN:HB2	1:F:205:PRO:HD2	1.97	0.46
1:D:99:THR:HG23	1:D:193:LEU:HD22	1.96	0.46
1:D:323:SER:O	1:D:326:GLN:NE2	2.49	0.46
1:E:51:ARG:HB3	1:E:92:TYR:CD2	2.51	0.46
1:E:99:THR:HG23	1:E:193:LEU:HD22	1.97	0.46
1:G:285:GLY:HA3	1:G:355:TRP:CZ2	2.51	0.46
1:H:51:ARG:HG3	1:H:92:TYR:CG	2.50	0.46
1:H:321:ILE:HG23	1:H:389:PHE:CD1	2.50	0.46
1:D:308:GLU:HB3	1:D:310:GLU:OE1	2.16	0.46
1:A:63:PHE:HE2	1:A:109:PHE:HB2	1.81	0.46
1:A:51:ARG:HG3	1:A:92:TYR:CG	2.50	0.45
1:A:321:ILE:HG23	1:A:389:PHE:CD1	2.51	0.45
1:A:356:ASN:HB3	1:A:369:LYS:HB3	1.99	0.45
1:B:292:TRP:CE2	1:B:319:LYS:HD3	2.50	0.45
1:B:370:PHE:O	1:B:426:SER:HA	2.15	0.45
1:G:224:ALA:O	1:G:226:VAL:HG23	2.15	0.45
1:D:81:PHE:CD1	1:D:85:LEU:HD12	2.52	0.45
1:C:264:ASN:O	1:C:267:THR:HG22	2.15	0.45
1:A:410:TYR:OH	1:A:441:TYR:HB3	2.16	0.45
1:D:51:ARG:HG3	1:D:92:TYR:CD2	2.51	0.45
1:E:92:TYR:HB3	1:E:93:PRO:HD3	1.99	0.45
1:E:224:ALA:O	1:E:226:VAL:HG23	2.16	0.45
1:C:60:PHE:CZ	1:C:203:PHE:HE2	2.35	0.45
1:B:115:LYS:HG2	1:B:395:TRP:NE1	2.30	0.45
1:F:145:THR:OG1	1:C:149:ASN:OD1	2.24	0.45
1:D:311:ILE:HD12	1:D:311:ILE:H	1.80	0.45
1:E:171:PHE:HE1	1:E:217:PRO:HB3	1.81	0.45
1:A:161:THR:N	1:A:162:PRO:CD	2.79	0.45
1:H:67:GLY:HA2	1:H:119:ARG:HG3	1.97	0.45
1:H:263:TYR:CD1	1:H:263:TYR:N	2.80	0.45
1:F:106:PRO:O	1:F:125:PHE:HB2	2.16	0.45
1:C:106:PRO:O	1:C:125:PHE:HB2	2.16	0.45
1:C:301:LEU:CD1	1:C:302:GLY:H	2.22	0.45
1:H:51:ARG:HG3	1:H:92:TYR:CD2	2.51	0.45
1:C:320:GLN:HE21	1:C:389:PHE:HE1	1.64	0.45
1:A:161:THR:N	1:A:162:PRO:HD3	2.31	0.45
1:F:257:MET:O	1:F:262:GLY:HA2	2.16	0.45
1:D:115:LYS:HG2	1:D:395:TRP:NE1	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:160:ASP:OD2	1:E:175:LEU:HD21	2.16	0.45
1:E:390:TRP:HD1	1:E:399:ALA:HA	1.82	0.45
1:A:280:ARG:NH1	1:A:358:GLU:OE2	2.46	0.45
1:B:66:ALA:O	1:B:119:ARG:HD2	2.17	0.45
1:B:257:MET:HB3	1:B:263:TYR:CD1	2.51	0.45
1:G:147:LEU:HD23	1:G:199:PHE:CD2	2.51	0.45
1:G:386:LEU:HD13	1:G:390:TRP:NE1	2.31	0.45
1:H:123:ILE:O	1:H:201:PHE:N	2.35	0.45
1:E:284:TYR:N	1:E:284:TYR:CD1	2.84	0.45
1:C:163:PHE:CE1	1:C:239:ILE:HG12	2.51	0.45
1:A:86:ILE:HB	1:A:87:PRO:HD3	1.99	0.45
1:G:84:HIS:NE2	1:G:154:LEU:HD11	2.32	0.45
1:G:94:GLN:HE22	1:G:105:LEU:HA	1.81	0.45
1:G:167:LEU:O	1:G:171:PHE:HD2	1.99	0.45
1:G:310:GLU:OE2	1:G:431:ALA:HB2	2.17	0.45
1:H:161:THR:N	1:H:162:PRO:HD3	2.32	0.45
1:D:36:GLN:OE1	1:D:58:SER:HA	2.17	0.45
1:C:299:TRP:CD1	1:C:311:ILE:HG23	2.52	0.45
1:A:60:PHE:HZ	1:A:203:PHE:HE2	1.64	0.45
1:G:111:LEU:HD12	1:G:441:TYR:CE2	2.52	0.45
1:D:71:LEU:HB3	1:D:72:PRO:HD3	1.98	0.45
1:E:317:ARG:HH11	1:E:320:GLN:HE22	1.65	0.45
1:A:171:PHE:CE1	1:A:217:PRO:HB3	2.52	0.45
1:G:96:TRP:CE2	1:G:140:ASN:ND2	2.84	0.45
1:G:173:LEU:HB2	1:G:176:SER:HB2	1.99	0.45
1:G:174:SER:C	1:G:176:SER:H	2.20	0.45
1:D:280:ARG:NH1	1:D:358:GLU:OE2	2.38	0.45
1:E:204:ASN:HB2	1:E:205:PRO:HD2	1.99	0.45
1:C:386:LEU:HD13	1:C:390:TRP:NE1	2.32	0.45
1:A:356:ASN:HD22	1:A:369:LYS:HD2	1.82	0.44
1:B:51:ARG:HG3	1:B:92:TYR:CD2	2.52	0.44
1:B:119:ARG:NH2	1:B:405:THR:HG21	2.33	0.44
1:F:320:GLN:HE21	1:F:389:PHE:HE1	1.65	0.44
1:D:386:LEU:HD13	1:D:390:TRP:HE1	1.82	0.44
1:B:60:PHE:CE1	1:B:123:ILE:HD11	2.53	0.44
1:B:285:GLY:HA3	1:B:355:TRP:CZ2	2.52	0.44
1:G:296:ALA:O	1:G:300:THR:OG1	2.27	0.44
1:C:390:TRP:HB3	1:C:395:TRP:HB2	1.99	0.44
1:A:257:MET:HB3	1:A:263:TYR:CD1	2.52	0.44
1:A:285:GLY:HA3	1:A:355:TRP:CZ2	2.52	0.44
1:H:174:SER:C	1:H:176:SER:H	2.20	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:161:THR:N	1:F:162:PRO:CD	2.81	0.44
1:D:175:LEU:HD23	1:E:275:GLU:OE1	2.17	0.44
1:A:66:ALA:O	1:A:119:ARG:HD2	2.18	0.44
1:A:114:GLN:NE2	1:A:436:TYR:HE1	2.15	0.44
1:B:36:GLN:OE1	1:B:58:SER:HA	2.18	0.44
1:G:42:HIS:ND1	1:G:44:PHE:CD1	2.83	0.44
1:G:279:GLN:HG3	1:G:280:ARG:N	2.32	0.44
1:G:390:TRP:HB3	1:G:395:TRP:HB2	1.99	0.44
1:E:256:TYR:CD1	1:E:301:LEU:HB2	2.52	0.44
1:A:171:PHE:HE1	1:A:217:PRO:HB3	1.82	0.44
1:A:378:ASN:HB3	1:A:381:HIS:HB3	1.98	0.44
1:B:37:ALA:HB1	1:C:76:GLN:NE2	2.32	0.44
1:G:52:TRP:CD2	1:G:89:LEU:HD13	2.52	0.44
1:G:139:PHE:CZ	1:G:180:GLN:HB3	2.53	0.44
1:G:147:LEU:HD23	1:G:199:PHE:HD2	1.83	0.44
1:H:211:VAL:HG12	1:H:273:PHE:CD2	2.51	0.44
1:H:308:GLU:HB3	1:H:310:GLU:OE1	2.18	0.44
1:D:100:ILE:HD11	1:D:125:PHE:HA	1.99	0.44
1:C:249:ALA:HB1	1:C:366:PRO:CG	2.42	0.44
1:B:269:LEU:CD1	1:B:283:ILE:HG13	2.47	0.44
1:G:81:PHE:HD1	1:G:85:LEU:HD12	1.83	0.44
1:H:370:PHE:O	1:H:426:SER:HA	2.18	0.44
1:E:137:ASP:OD2	1:E:142:ILE:HG12	2.17	0.44
1:B:161:THR:N	1:B:162:PRO:CD	2.81	0.44
1:G:212:LYS:HE3	1:G:214:TYR:OH	2.18	0.44
1:G:321:ILE:HG23	1:G:389:PHE:CD1	2.52	0.44
1:D:290:VAL:CG2	1:D:351:SER:HB2	2.33	0.44
1:E:115:LYS:HA	1:E:395:TRP:CE2	2.53	0.44
1:E:323:SER:O	1:E:326:GLN:NE2	2.49	0.44
1:A:327:ILE:HG21	1:A:351:SER:OG	2.16	0.44
1:B:99:THR:HG23	1:B:193:LEU:HD22	2.00	0.44
1:H:428:SER:HB3	1:H:436:TYR:CB	2.47	0.44
1:D:141:ARG:CZ	1:D:172:GLN:HE21	2.31	0.44
1:E:257:MET:HB3	1:E:263:TYR:CD1	2.52	0.44
1:E:378:ASN:HB3	1:E:381:HIS:HB3	1.99	0.44
1:C:105:LEU:CD1	1:C:107:ILE:HG22	2.48	0.44
1:A:172:GLN:OE1	1:G:162:PRO:HA	2.18	0.44
1:H:115:LYS:HE3	1:H:435:VAL:H	1.83	0.44
1:C:323:SER:O	1:C:326:GLN:NE2	2.50	0.44
1:B:386:LEU:HD13	1:B:390:TRP:NE1	2.33	0.43
1:G:42:HIS:ND1	1:G:44:PHE:CE1	2.86	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:147:LEU:HD23	1:F:199:PHE:HD2	1.82	0.43
1:E:45:PRO:HD2	1:E:49:GLN:OE1	2.18	0.43
1:C:257:MET:O	1:C:262:GLY:HA2	2.18	0.43
1:A:71:LEU:HD23	1:E:71:LEU:HD23	2.00	0.43
1:B:253:ILE:HD11	1:B:304:ARG:HH22	1.83	0.43
1:B:427:TYR:HD1	1:B:437:MET:CE	2.30	0.43
1:G:149:ASN:O	1:G:152:SER:OG	2.27	0.43
1:H:212:LYS:HE3	1:H:214:TYR:OH	2.18	0.43
1:F:269:LEU:CD1	1:F:283:ILE:HG13	2.48	0.43
1:F:390:TRP:HD1	1:F:399:ALA:HA	1.83	0.43
1:C:252:LEU:HD22	1:C:304:ARG:NH2	2.33	0.43
1:A:390:TRP:HB3	1:A:395:TRP:HB2	1.99	0.43
1:B:310:GLU:OE2	1:B:431:ALA:HB2	2.18	0.43
1:G:37:ALA:HB1	1:D:76:GLN:NE2	2.30	0.43
1:H:282:LYS:HB3	1:H:284:TYR:HE1	1.82	0.43
1:H:284:TYR:N	1:H:284:TYR:HD1	2.16	0.43
1:D:285:GLY:O	1:D:354:ILE:HG23	2.18	0.43
1:C:123:ILE:HD12	1:C:203:PHE:CZ	2.53	0.43
1:A:354:ILE:HB	1:A:371:TYR:HB2	1.99	0.43
1:B:124:GLY:HA2	1:B:200:GLY:HA2	2.00	0.43
1:G:79:PHE:HE1	1:D:83:HIS:HE1	1.66	0.43
1:H:114:GLN:NE2	1:H:436:TYR:HE1	2.13	0.43
1:F:300:THR:O	1:F:301:LEU:HG	2.19	0.43
1:F:356:ASN:HB3	1:F:369:LYS:HB3	1.99	0.43
1:F:426:SER:O	1:F:437:MET:HG3	2.18	0.43
1:D:252:LEU:HD22	1:D:304:ARG:NH2	2.34	0.43
1:D:370:PHE:O	1:D:426:SER:HA	2.18	0.43
1:A:42:HIS:CD2	1:E:79:PHE:CZ	3.07	0.43
1:A:94:GLN:OE1	1:A:106:PRO:HD3	2.18	0.43
1:B:176:SER:O	1:B:180:GLN:HG2	2.19	0.43
1:H:212:LYS:HG3	1:H:271:CYS:O	2.19	0.43
1:F:46:THR:OG1	1:F:49:GLN:HG3	2.18	0.43
1:E:285:GLY:HA3	1:E:355:TRP:CZ2	2.53	0.43
1:C:290:VAL:HG11	1:C:351:SER:N	2.33	0.43
1:A:114:GLN:HE22	1:A:436:TYR:HE1	1.67	0.43
1:H:252:LEU:HD22	1:H:304:ARG:HH21	1.84	0.43
1:H:299:TRP:CZ2	1:H:368:PRO:HG2	2.54	0.43
1:F:160:ASP:OD2	1:C:175:LEU:HD21	2.19	0.43
1:E:106:PRO:O	1:E:125:PHE:HB2	2.18	0.43
1:B:127:PRO:HD2	1:B:144:ILE:HD13	2.00	0.43
1:B:252:LEU:HD22	1:B:304:ARG:NH2	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:304:ARG:HG2	1:B:311:ILE:CD1	2.49	0.43
1:G:212:LYS:HG3	1:G:271:CYS:O	2.18	0.43
1:F:427:TYR:HD1	1:F:437:MET:CE	2.32	0.43
1:D:123:ILE:HD12	1:D:203:PHE:CZ	2.53	0.43
1:D:263:TYR:CD1	1:D:263:TYR:N	2.77	0.43
1:A:234:GLU:O	1:A:238:THR:HG23	2.18	0.43
1:B:42:HIS:ND1	1:B:44:PHE:CE1	2.87	0.43
1:B:200:GLY:N	1:B:212:LYS:O	2.46	0.43
1:G:161:THR:N	1:G:162:PRO:CD	2.81	0.43
1:H:327:ILE:HG21	1:H:351:SER:OG	2.18	0.43
1:C:285:GLY:O	1:C:354:ILE:HG23	2.18	0.43
1:B:75:TYR:CD2	1:C:75:TYR:CD2	2.96	0.43
1:B:165:GLN:HG3	1:H:172:GLN:NE2	2.22	0.43
1:F:430:THR:HG22	1:F:432:LYS:H	1.84	0.43
1:D:70:GLY:O	1:D:74:GLN:HG3	2.19	0.43
1:C:42:HIS:ND1	1:C:44:PHE:CE1	2.80	0.43
1:C:140:ASN:OD1	1:C:143:PRO:HG2	2.19	0.43
1:A:60:PHE:CZ	1:A:203:PHE:HE2	2.37	0.43
1:F:243:ARG:HA	1:F:243:ARG:NE	2.33	0.43
1:E:121:LEU:HD23	1:E:203:PHE:CD2	2.53	0.43
1:B:63:PHE:HE2	1:B:109:PHE:HB2	1.84	0.42
1:B:263:TYR:CD1	1:B:263:TYR:N	2.80	0.42
1:G:123:ILE:O	1:G:201:PHE:N	2.37	0.42
1:F:287:HIS:CE1	1:F:355:TRP:HE1	2.37	0.42
1:E:81:PHE:CD1	1:E:85:LEU:HD12	2.54	0.42
1:E:284:TYR:N	1:E:284:TYR:HD1	2.16	0.42
1:A:257:MET:HE2	1:A:263:TYR:HB3	2.00	0.42
1:B:167:LEU:O	1:B:171:PHE:HD2	2.02	0.42
1:G:257:MET:HE2	1:G:263:TYR:HB3	2.00	0.42
1:D:264:ASN:O	1:D:267:THR:HG22	2.18	0.42
1:G:137:ASP:OD2	1:G:142:ILE:HG12	2.19	0.42
1:D:94:GLN:OE1	1:D:106:PRO:HD3	2.19	0.42
1:A:236:VAL:O	1:A:239:ILE:HG22	2.20	0.42
1:B:179:ARG:NH2	1:B:223:ALA:O	2.53	0.42
1:G:125:PHE:CE1	1:G:201:PHE:HE2	2.37	0.42
1:H:161:THR:N	1:H:162:PRO:CD	2.83	0.42
1:H:257:MET:O	1:H:262:GLY:HA2	2.20	0.42
1:H:408:GLN:O	1:H:411:PRO:HD3	2.19	0.42
1:F:267:THR:HA	1:F:285:GLY:HA2	2.01	0.42
1:D:243:ARG:HA	1:D:243:ARG:NE	2.34	0.42
1:E:282:LYS:HB2	1:E:284:TYR:HE1	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:371:TYR:CE1	1:E:426:SER:HB3	2.55	0.42
1:E:390:TRP:CH2	1:E:437:MET:SD	3.12	0.42
1:B:282:LYS:HB3	1:B:284:TYR:HE1	1.85	0.42
1:H:257:MET:HB3	1:H:263:TYR:CD1	2.55	0.42
1:H:292:TRP:HZ2	1:H:315:LEU:HD21	1.84	0.42
1:C:60:PHE:HZ	1:C:203:PHE:HE2	1.67	0.42
1:B:320:GLN:HE21	1:B:389:PHE:HE1	1.68	0.42
1:G:51:ARG:HG3	1:G:92:TYR:CD2	2.54	0.42
1:G:408:GLN:O	1:G:411:PRO:HD3	2.20	0.42
1:H:66:ALA:O	1:H:119:ARG:HD2	2.20	0.42
1:F:183:LYS:O	1:F:185:GLY:N	2.53	0.42
1:A:209:ILE:HD12	1:E:41:TYR:HE2	1.84	0.42
1:A:243:ARG:HA	1:A:243:ARG:NE	2.34	0.42
1:B:298:MET:CE	1:B:353:ILE:HD11	2.49	0.42
1:G:60:PHE:CE1	1:G:123:ILE:HD11	2.54	0.42
1:G:243:ARG:HA	1:G:243:ARG:NE	2.35	0.42
1:F:426:SER:O	1:F:437:MET:HA	2.19	0.42
1:C:137:ASP:CG	1:C:142:ILE:HG12	2.40	0.42
1:H:237:ARG:HA	1:H:240:ASP:OD2	2.19	0.42
1:F:115:LYS:HG2	1:F:395:TRP:NE1	2.33	0.42
1:F:257:MET:CE	1:F:263:TYR:HB3	2.50	0.42
1:C:44:PHE:CD2	1:C:50:GLU:HA	2.54	0.42
1:A:237:ARG:HA	1:A:240:ASP:OD2	2.20	0.42
1:F:224:ALA:O	1:F:226:VAL:HG23	2.20	0.42
1:D:106:PRO:O	1:D:125:PHE:HB2	2.20	0.42
1:D:167:LEU:HB3	1:D:215:VAL:HG21	2.01	0.42
1:E:114:GLN:HE22	1:E:436:TYR:HE1	1.68	0.42
1:B:249:ALA:HB1	1:B:366:PRO:CG	2.45	0.41
1:H:183:LYS:O	1:H:185:GLY:N	2.53	0.41
1:H:198:ALA:O	1:H:199:PHE:HD1	2.03	0.41
1:H:304:ARG:HG2	1:H:311:ILE:CD1	2.50	0.41
1:H:378:ASN:HB3	1:H:381:HIS:HB3	2.02	0.41
1:F:256:TYR:CD1	1:F:301:LEU:HB2	2.56	0.41
1:F:263:TYR:CD1	1:F:263:TYR:N	2.78	0.41
1:A:256:TYR:CD1	1:A:301:LEU:HB2	2.55	0.41
1:A:386:LEU:HD13	1:A:390:TRP:NE1	2.35	0.41
1:B:318:LEU:HD12	1:B:427:TYR:CD2	2.55	0.41
1:H:60:PHE:HD1	1:H:109:PHE:CE1	2.38	0.41
1:D:327:ILE:HG21	1:D:351:SER:OG	2.19	0.41
1:E:292:TRP:CZ2	1:E:319:LYS:HD3	2.55	0.41
1:A:183:LYS:O	1:A:185:GLY:N	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:224:ALA:O	1:A:226:VAL:HG23	2.20	0.41
1:A:280:ARG:HH11	1:A:358:GLU:CD	2.23	0.41
1:B:44:PHE:HE2	1:B:53:TRP:CB	2.28	0.41
1:B:120:LEU:HD21	1:B:205:PRO:HD3	2.03	0.41
1:H:123:ILE:HD12	1:H:203:PHE:CZ	2.55	0.41
1:E:161:THR:N	1:E:162:PRO:CD	2.84	0.41
1:C:127:PRO:HB2	1:C:143:PRO:HB2	2.02	0.41
1:A:53:TRP:CZ3	1:A:82:MET:HG2	2.56	0.41
1:F:139:PHE:CZ	1:F:180:GLN:HB3	2.55	0.41
1:D:127:PRO:HB2	1:D:143:PRO:HB2	2.02	0.41
1:E:85:LEU:HD22	1:E:125:PHE:CZ	2.55	0.41
1:E:183:LYS:O	1:E:185:GLY:N	2.53	0.41
1:E:386:LEU:HD13	1:E:390:TRP:NE1	2.34	0.41
1:A:76:GLN:NE2	1:E:37:ALA:HB1	2.36	0.41
1:A:209:ILE:HD12	1:E:41:TYR:CE2	2.56	0.41
1:G:327:ILE:HD12	1:G:327:ILE:HG23	1.85	0.41
1:D:52:TRP:CE3	1:D:89:LEU:HD13	2.55	0.41
1:B:42:HIS:ND1	1:B:44:PHE:CD1	2.84	0.41
1:F:142:ILE:HD12	1:C:152:SER:OG	2.21	0.41
1:E:49:GLN:NE2	1:E:87:PRO:HG3	2.35	0.41
1:B:298:MET:HE1	1:B:353:ILE:HD11	2.03	0.41
1:F:147:LEU:HD23	1:F:199:PHE:CD2	2.55	0.41
1:D:140:ASN:OD1	1:D:143:PRO:HG2	2.21	0.41
1:C:179:ARG:NH2	1:C:223:ALA:O	2.53	0.41
1:C:292:TRP:CZ2	1:C:319:LYS:HD3	2.55	0.41
1:A:299:TRP:CZ2	1:A:368:PRO:HG2	2.56	0.41
1:B:111:LEU:HD12	1:B:441:TYR:CE2	2.56	0.41
1:G:285:GLY:HA3	1:G:355:TRP:CE2	2.56	0.41
1:F:352:PRO:O	1:F:373:PRO:HG3	2.21	0.41
1:A:109:PHE:CD1	1:A:123:ILE:HG12	2.56	0.41
1:A:166:HIS:NE2	1:A:238:THR:OG1	2.50	0.41
1:A:290:VAL:HG11	1:A:351:SER:N	2.35	0.41
1:A:308:GLU:HB3	1:A:310:GLU:OE1	2.21	0.41
1:B:290:VAL:HG13	1:B:290:VAL:O	2.21	0.41
1:G:105:LEU:CD1	1:G:107:ILE:HG22	2.51	0.41
1:G:374:VAL:HG21	1:G:425:ILE:HG13	2.02	0.41
1:H:41:TYR:HE2	1:F:209:ILE:HD12	1.85	0.41
1:H:42:HIS:ND1	1:H:44:PHE:CE1	2.88	0.41
1:H:301:LEU:HD12	1:H:302:GLY:N	2.26	0.41
1:F:321:ILE:HG23	1:F:389:PHE:CD1	2.55	0.41
1:D:378:ASN:O	1:D:382:VAL:HG23	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:69:TYR:OH	1:E:203:PHE:O	2.31	0.41
1:E:124:GLY:HA2	1:E:200:GLY:HA2	2.02	0.41
1:E:236:VAL:O	1:E:239:ILE:HG22	2.21	0.41
1:E:267:THR:HA	1:E:285:GLY:HA2	2.02	0.41
1:C:280:ARG:HD3	1:C:358:GLU:CD	2.41	0.41
1:C:370:PHE:O	1:C:426:SER:HA	2.20	0.41
1:B:115:LYS:HE3	1:B:435:VAL:H	1.86	0.41
1:B:212:LYS:HE3	1:B:214:TYR:OH	2.21	0.41
1:B:237:ARG:HA	1:B:240:ASP:OD2	2.21	0.41
1:B:390:TRP:HB3	1:B:395:TRP:HB2	2.02	0.41
1:G:42:HIS:HD2	1:D:79:PHE:CZ	2.38	0.41
1:F:86:ILE:HB	1:F:87:PRO:HD3	2.02	0.41
1:D:109:PHE:CD1	1:D:123:ILE:HG12	2.56	0.41
1:D:304:ARG:HG2	1:D:311:ILE:CD1	2.51	0.41
1:E:77:PHE:CD1	1:E:203:PHE:CD1	3.09	0.41
1:C:408:GLN:O	1:C:411:PRO:HD3	2.20	0.41
1:A:211:VAL:HG12	1:A:273:PHE:CD2	2.55	0.40
1:A:280:ARG:HD2	1:A:280:ARG:O	2.21	0.40
1:A:300:THR:O	1:A:301:LEU:HG	2.21	0.40
1:B:161:THR:N	1:B:162:PRO:HD3	2.35	0.40
1:G:46:THR:OG1	1:G:49:GLN:HG3	2.19	0.40
1:G:176:SER:O	1:G:180:GLN:HG2	2.21	0.40
1:C:118:HIS:NE2	1:C:205:PRO:HG3	2.36	0.40
1:A:174:SER:C	1:A:176:SER:N	2.74	0.40
1:B:224:ALA:O	1:B:226:VAL:HG23	2.21	0.40
1:G:44:PHE:HD2	1:G:50:GLU:HA	1.86	0.40
1:G:405:THR:O	1:G:409:LEU:HD13	2.22	0.40
1:E:42:HIS:ND1	1:E:44:PHE:CE1	2.89	0.40
1:C:94:GLN:OE1	1:C:106:PRO:HD3	2.20	0.40
1:D:118:HIS:NE2	1:D:205:PRO:HG3	2.37	0.40
1:D:183:LYS:O	1:D:185:GLY:N	2.55	0.40
1:D:267:THR:HA	1:D:285:GLY:HA2	2.02	0.40
1:E:440:TYR:N	1:E:440:TYR:CD1	2.89	0.40
1:C:109:PHE:HD1	1:C:123:ILE:HG12	1.84	0.40
1:C:114:GLN:NE2	1:C:436:TYR:HE1	2.19	0.40
1:B:356:ASN:HB3	1:B:369:LYS:HB3	2.02	0.40
1:G:206:ASP:OD1	1:G:207:GLY:N	2.51	0.40
1:G:282:LYS:CB	1:G:284:TYR:HE1	2.33	0.40
1:G:317:ARG:HB2	1:G:427:TYR:OH	2.22	0.40
1:H:71:LEU:HB3	1:H:72:PRO:HD3	2.04	0.40
1:F:318:LEU:HD23	1:F:318:LEU:O	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:84:HIS:CE1	1:D:154:LEU:HD21	2.56	0.40
1:D:327:ILE:HD12	1:D:327:ILE:HG23	1.88	0.40
1:D:379:ASP:OD2	1:D:421:LEU:HB2	2.22	0.40
1:C:115:LYS:HG2	1:C:395:TRP:NE1	2.36	0.40
1:C:308:GLU:HB3	1:C:310:GLU:OE1	2.22	0.40
1:G:71:LEU:HD23	1:D:71:LEU:HD23	2.04	0.40
1:G:299:TRP:CD1	1:G:315:LEU:HD12	2.56	0.40
1:G:352:PRO:O	1:G:373:PRO:HG3	2.21	0.40
1:D:167:LEU:O	1:D:171:PHE:HD2	2.04	0.40
1:D:369:LYS:HA	1:D:427:TYR:O	2.22	0.40
1:E:176:SER:O	1:E:180:GLN:HG2	2.22	0.40
1:E:282:LYS:CB	1:E:284:TYR:HE1	2.34	0.40
1:C:52:TRP:CE3	1:C:89:LEU:HD13	2.56	0.40
1:C:53:TRP:CZ3	1:C:82:MET:HG2	2.57	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	392/472 (83%)	368 (94%)	23 (6%)	1 (0%)	41	74
1	B	392/472 (83%)	368 (94%)	22 (6%)	2 (0%)	29	67
1	C	392/472 (83%)	367 (94%)	24 (6%)	1 (0%)	41	74
1	D	392/472 (83%)	370 (94%)	21 (5%)	1 (0%)	41	74
1	E	392/472 (83%)	366 (93%)	25 (6%)	1 (0%)	41	74
1	F	392/472 (83%)	365 (93%)	26 (7%)	1 (0%)	41	74
1	G	392/472 (83%)	366 (93%)	25 (6%)	1 (0%)	41	74
1	H	392/472 (83%)	366 (93%)	25 (6%)	1 (0%)	41	74
All	All	3136/3776 (83%)	2936 (94%)	191 (6%)	9 (0%)	41	74

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	F	34	PRO
1	E	34	PRO
1	C	34	PRO
1	A	34	PRO
1	G	34	PRO
1	D	34	PRO
1	B	34	PRO
1	B	175	LEU
1	H	34	PRO

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	344/408 (84%)	338 (98%)	6 (2%)	60	83
1	B	344/408 (84%)	337 (98%)	7 (2%)	55	80
1	C	344/408 (84%)	338 (98%)	6 (2%)	60	83
1	D	344/408 (84%)	337 (98%)	7 (2%)	55	80
1	E	344/408 (84%)	338 (98%)	6 (2%)	60	83
1	F	344/408 (84%)	338 (98%)	6 (2%)	60	83
1	G	344/408 (84%)	338 (98%)	6 (2%)	60	83
1	H	344/408 (84%)	337 (98%)	7 (2%)	55	80
All	All	2752/3264 (84%)	2701 (98%)	51 (2%)	57	81

All (51) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	125	PHE
1	A	173	LEU
1	A	184	GLN
1	A	209	ILE
1	A	263	TYR

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Mol	Chain	Res	Type
1	A	284	TYR
1	B	125	PHE
1	B	173	LEU
1	B	175	LEU
1	B	184	GLN
1	B	209	ILE
1	B	263	TYR
1	B	284	TYR
1	G	125	PHE
1	G	173	LEU
1	G	175	LEU
1	G	184	GLN
1	G	263	TYR
1	G	284	TYR
1	H	125	PHE
1	H	173	LEU
1	H	175	LEU
1	H	184	GLN
1	H	209	ILE
1	H	263	TYR
1	H	284	TYR
1	F	125	PHE
1	F	173	LEU
1	F	175	LEU
1	F	184	GLN
1	F	263	TYR
1	F	284	TYR
1	D	125	PHE
1	D	173	LEU
1	D	175	LEU
1	D	184	GLN
1	D	209	ILE
1	D	263	TYR
1	D	284	TYR
1	E	125	PHE
1	E	173	LEU
1	E	175	LEU
1	E	184	GLN
1	E	263	TYR
1	E	284	TYR
1	C	125	PHE
1	C	173	LEU

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Mol	Chain	Res	Type
1	C	184	GLN
1	C	209	ILE
1	C	263	TYR
1	C	284	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (45) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	172	GLN
1	A	180	GLN
1	A	248	HIS
1	A	422	GLN
1	B	76	GLN
1	B	172	GLN
1	B	180	GLN
1	B	279	GLN
1	B	320	GLN
1	B	422	GLN
1	G	76	GLN
1	G	172	GLN
1	G	180	GLN
1	G	184	GLN
1	G	279	GLN
1	H	165	GLN
1	H	172	GLN
1	H	180	GLN
1	H	248	HIS
1	H	320	GLN
1	H	422	GLN
1	F	73	GLN
1	F	76	GLN
1	F	172	GLN
1	F	180	GLN
1	F	248	HIS
1	F	279	GLN
1	F	320	GLN
1	F	422	GLN
1	D	76	GLN
1	D	165	GLN
1	D	172	GLN
1	D	180	GLN
1	D	320	GLN

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Mol	Chain	Res	Type
1	E	76	GLN
1	E	172	GLN
1	E	180	GLN
1	E	279	GLN
1	E	320	GLN
1	E	422	GLN
1	C	76	GLN
1	C	172	GLN
1	C	180	GLN
1	C	320	GLN
1	C	442	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

There are no monosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

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, 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	396/472 (83%)	0.31	22 (5%)	24	13	61, 98, 168, 261	0
1	B	396/472 (83%)	0.24	20 (5%)	28	16	58, 94, 169, 261	0
1	C	396/472 (83%)	0.42	30 (7%)	13	7	64, 101, 169, 261	0
1	D	396/472 (83%)	0.36	23 (5%)	23	13	63, 100, 169, 261	0
1	E	396/472 (83%)	0.25	19 (4%)	30	18	59, 97, 169, 261	0
1	F	396/472 (83%)	0.18	13 (3%)	46	30	60, 96, 169, 261	0
1	G	396/472 (83%)	0.25	15 (3%)	40	26	58, 94, 169, 261	0
1	H	396/472 (83%)	0.40	23 (5%)	23	13	62, 101, 170, 261	0
All	All	3168/3776 (83%)	0.30	165 (5%)	27	15	58, 97, 169, 261	0

All (165) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	H	330	GLY	11.5
1	A	399	ALA	10.8
1	A	400	CYS	10.0
1	C	188	PRO	9.9
1	C	399	ALA	9.3
1	C	400	CYS	8.8
1	C	398	HIS	8.5
1	G	188	PRO	7.8
1	D	190	ALA	7.5
1	F	189	ASP	7.3
1	D	400	CYS	7.3
1	H	187	GLY	7.2
1	D	189	ASP	7.2
1	E	186	SER	7.2
1	E	400	CYS	7.1
1	D	187	GLY	7.1

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Mol	Chain	Res	Type	RSRZ
1	D	188	PRO	7.0
1	F	330	GLY	6.9
1	G	187	GLY	6.5
1	C	187	GLY	6.3
1	B	187	GLY	6.3
1	B	186	SER	6.3
1	G	189	ASP	6.2
1	H	400	CYS	5.8
1	G	400	CYS	5.7
1	A	187	GLY	5.6
1	D	186	SER	5.6
1	A	304	ARG	5.5
1	D	240	ASP	5.4
1	A	186	SER	5.4
1	F	187	GLY	5.3
1	E	189	ASP	5.3
1	B	400	CYS	5.2
1	C	189	ASP	5.1
1	A	414	ASP	5.1
1	F	186	SER	5.1
1	H	329	GLU	5.0
1	A	330	GLY	5.0
1	C	304	ARG	5.0
1	A	398	HIS	4.9
1	E	187	GLY	4.8
1	A	188	PRO	4.8
1	D	180	GLN	4.7
1	D	398	HIS	4.6
1	H	186	SER	4.5
1	H	188	PRO	4.5
1	G	330	GLY	4.3
1	C	330	GLY	4.3
1	B	188	PRO	4.3
1	C	240	ASP	4.3
1	B	399	ALA	4.2
1	H	304	ARG	4.1
1	C	33	SER	4.1
1	H	414	ASP	4.0
1	D	399	ALA	4.0
1	H	307	GLU	3.9
1	D	182	GLN	3.9
1	H	33	SER	3.9

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Mol	Chain	Res	Type	RSRZ
1	D	304	ARG	3.9
1	A	307	GLU	3.8
1	A	351	SER	3.8
1	B	189	ASP	3.8
1	C	323	SER	3.8
1	A	33	SER	3.7
1	H	190	ALA	3.7
1	H	351	SER	3.7
1	D	381	HIS	3.7
1	B	304	ARG	3.5
1	E	241	VAL	3.5
1	C	186	SER	3.5
1	G	186	SER	3.5
1	C	243	ARG	3.5
1	C	185	GLY	3.5
1	A	306	ILE	3.5
1	H	404	ASP	3.5
1	H	180	GLN	3.4
1	G	362	GLY	3.4
1	B	31	SER	3.4
1	F	400	CYS	3.4
1	H	399	ALA	3.4
1	B	398	HIS	3.4
1	G	304	ARG	3.3
1	E	188	PRO	3.3
1	E	185	GLY	3.3
1	G	180	GLN	3.3
1	A	185	GLY	3.3
1	F	188	PRO	3.3
1	G	399	ALA	3.3
1	D	191	HIS	3.2
1	B	33	SER	3.2
1	A	289	GLU	3.2
1	C	307	GLU	3.2
1	C	351	SER	3.2
1	C	180	GLN	3.1
1	C	362	GLY	3.1
1	E	240	ASP	3.1
1	B	185	GLY	3.0
1	H	31	SER	3.0
1	F	289	GLU	3.0
1	D	306	ILE	3.0

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Mol	Chain	Res	Type	RSRZ
1	D	185	GLY	3.0
1	C	414	ASP	2.9
1	H	189	ASP	2.9
1	D	329	GLU	2.9
1	C	118	HIS	2.9
1	H	185	GLY	2.9
1	D	404	ASP	2.9
1	B	191	HIS	2.9
1	A	329	GLU	2.9
1	F	304	ARG	2.9
1	E	33	SER	2.8
1	F	180	GLN	2.8
1	F	185	GLY	2.8
1	C	329	GLU	2.8
1	E	180	GLN	2.8
1	F	31	SER	2.8
1	E	243	ARG	2.7
1	D	31	SER	2.7
1	A	240	ASP	2.7
1	F	399	ALA	2.7
1	C	184	GLN	2.7
1	G	190	ALA	2.7
1	D	401	ALA	2.7
1	B	240	ASP	2.6
1	B	414	ASP	2.6
1	G	240	ASP	2.6
1	C	385	ALA	2.6
1	D	307	GLU	2.5
1	A	189	ASP	2.5
1	H	193	LEU	2.5
1	B	71	LEU	2.5
1	C	389	PHE	2.5
1	H	328	GLY	2.5
1	H	184	GLN	2.5
1	C	241	VAL	2.4
1	C	370	PHE	2.4
1	H	437	MET	2.4
1	E	414	ASP	2.4
1	C	306	ILE	2.4
1	E	31	SER	2.4
1	B	32	PRO	2.4
1	H	289	GLU	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	351	SER	2.3
1	D	362	GLY	2.3
1	C	242	GLU	2.3
1	A	370	PHE	2.3
1	F	191	HIS	2.3
1	D	414	ASP	2.2
1	E	304	ARG	2.2
1	B	180	GLN	2.2
1	B	184	GLN	2.2
1	G	185	GLY	2.2
1	G	184	GLN	2.2
1	E	244	ASN	2.1
1	E	291	THR	2.1
1	E	404	ASP	2.1
1	A	323	SER	2.1
1	A	116	GLY	2.1
1	G	31	SER	2.1
1	C	417	GLN	2.0
1	E	399	ALA	2.0
1	C	352	PRO	2.0
1	A	180	GLN	2.0
1	B	366	PRO	2.0
1	E	418	THR	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.