



# Full wwPDB X-ray Structure Validation Report ⓘ

Jan 30, 2023 – 01:22 pm GMT

PDB ID : 7QW4  
Title : Pden\_5119 protein  
Authors : Kryl, M.; Sedlacek, V.  
Deposited on : 2022-01-24  
Resolution : 3.10 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](mailto: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>.

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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 : 2.31.3  
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) : 2.31.3

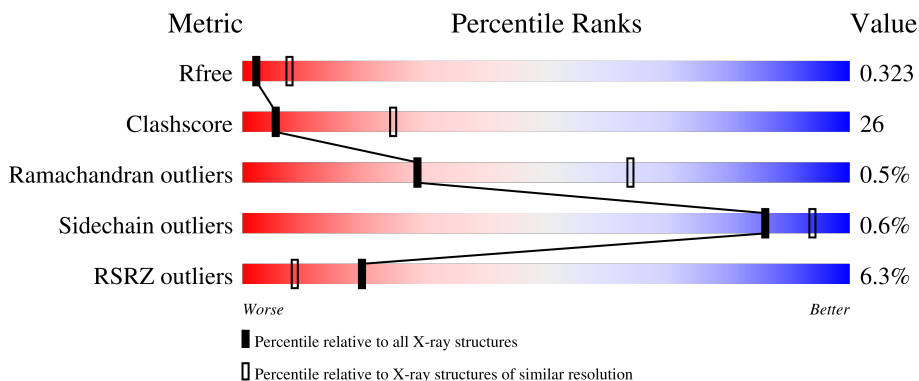
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.10 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	1094 (3.10-3.10)
Clashscore	141614	1184 (3.10-3.10)
Ramachandran outliers	138981	1141 (3.10-3.10)
Sidechain outliers	138945	1141 (3.10-3.10)
RSRZ outliers	127900	1067 (3.10-3.10)

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  $\geq 3$ , 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  $\leq 5\%$ . 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	193	<div style="display: flex; align-items: center;"> <div style="width: 5%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 60%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 31%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 10%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">60%                      31%                      10%</p>
1	B	193	<div style="display: flex; align-items: center;"> <div style="width: 5%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 53%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 34%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 13%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">53%                      34%                      13%</p>
1	C	193	<div style="display: flex; align-items: center;"> <div style="width: 4%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 64%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 28%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 8%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">64%                      28%                      8%</p>
1	D	193	<div style="display: flex; align-items: center;"> <div style="width: 5%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 63%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 31%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 6%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">63%                      31%                      6%</p>
1	E	193	<div style="display: flex; align-items: center;"> <div style="width: 3%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 71%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 21%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 7%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center;">71%                      21%                      • 7%</p>

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Mol	Chain	Length	Quality of chain
1	F	193	6% 55% 36% 8%
1	G	193	6% 72% 22% • 6%
1	H	193	4% 67% 28% 5%
1	I	193	6% 61% 34% • 5%
1	J	193	6% 61% 33% • 6%
1	K	193	12% 69% 24% • 6%
1	L	193	9% 58% 39% ••
1	M	193	6% 60% 32% • 7%
1	N	193	4% 62% 28% 10%
1	O	193	5% 75% 21% 5%
1	P	193	6% 69% 26% ••
1	Q	193	5% 56% 31% • 12%
1	R	193	5% 68% 23% 9%
1	S	193	7% 61% 32% • 6%
1	T	193	9% 62% 30% • 6%

## 2 Entry composition [i](#)

There is only 1 type of molecule in this entry. The entry contains 26343 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 NADPH-dependent FMN reductase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	174	Total 1282	C 818	N 233	O 230	S 1	0	0	0
1	B	168	Total 1262	C 811	N 231	O 219	S 1	0	0	0
1	C	178	Total 1291	C 825	N 237	O 229		0	0	0
1	D	182	Total 1334	C 848	N 244	O 241	S 1	0	0	0
1	E	180	Total 1302	C 834	N 232	O 235	S 1	0	0	0
1	F	177	Total 1296	C 825	N 240	O 231		0	0	0
1	G	181	Total 1336	C 851	N 244	O 240	S 1	0	0	0
1	H	184	Total 1342	C 855	N 243	O 243	S 1	0	0	0
1	I	184	Total 1340	C 859	N 240	O 241		0	0	0
1	J	181	Total 1336	C 859	N 244	O 233		0	0	0
1	K	181	Total 1348	C 859	N 247	O 241	S 1	0	0	0
1	L	188	Total 1346	C 850	N 251	O 245		0	0	0
1	M	179	Total 1292	C 823	N 234	O 235		0	0	0
1	N	174	Total 1283	C 820	N 229	O 233	S 1	0	0	0
1	O	184	Total 1393	C 886	N 260	O 246	S 1	0	0	0
1	P	187	Total 1402	C 891	N 263	O 247	S 1	0	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	Q	170	Total	C	N	O	S	0	0	0
			1257	803	228	225	1			
1	R	176	Total	C	N	O	S	0	0	0
			1291	825	233	232	1			
1	S	181	Total	C	N	O		0	0	0
			1304	829	238	237				
1	T	182	Total	C	N	O	S	0	0	0
			1306	830	239	236	1			

There are 160 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	188	LEU	-	expression tag	UNP A1BCD5
A	189	GLU	-	expression tag	UNP A1BCD5
A	190	HIS	-	expression tag	UNP A1BCD5
A	191	HIS	-	expression tag	UNP A1BCD5
A	192	HIS	-	expression tag	UNP A1BCD5
A	193	HIS	-	expression tag	UNP A1BCD5
A	194	HIS	-	expression tag	UNP A1BCD5
A	195	HIS	-	expression tag	UNP A1BCD5
B	379	LEU	-	expression tag	UNP A1BCD5
B	380	GLU	-	expression tag	UNP A1BCD5
B	381	HIS	-	expression tag	UNP A1BCD5
B	382	HIS	-	expression tag	UNP A1BCD5
B	383	HIS	-	expression tag	UNP A1BCD5
B	384	HIS	-	expression tag	UNP A1BCD5
B	385	HIS	-	expression tag	UNP A1BCD5
B	386	HIS	-	expression tag	UNP A1BCD5
C	572	LEU	-	expression tag	UNP A1BCD5
C	573	GLU	-	expression tag	UNP A1BCD5
C	574	HIS	-	expression tag	UNP A1BCD5
C	575	HIS	-	expression tag	UNP A1BCD5
C	576	HIS	-	expression tag	UNP A1BCD5
C	577	HIS	-	expression tag	UNP A1BCD5
C	578	HIS	-	expression tag	UNP A1BCD5
C	579	HIS	-	expression tag	UNP A1BCD5
D	766	LEU	-	expression tag	UNP A1BCD5
D	767	GLU	-	expression tag	UNP A1BCD5
D	768	HIS	-	expression tag	UNP A1BCD5
D	769	HIS	-	expression tag	UNP A1BCD5
D	770	HIS	-	expression tag	UNP A1BCD5
D	771	HIS	-	expression tag	UNP A1BCD5
D	772	HIS	-	expression tag	UNP A1BCD5

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Chain	Residue	Modelled	Actual	Comment	Reference
D	773	HIS	-	expression tag	UNP A1BCD5
E	958	LEU	-	expression tag	UNP A1BCD5
E	959	GLU	-	expression tag	UNP A1BCD5
E	960	HIS	-	expression tag	UNP A1BCD5
E	961	HIS	-	expression tag	UNP A1BCD5
E	962	HIS	-	expression tag	UNP A1BCD5
E	963	HIS	-	expression tag	UNP A1BCD5
E	964	HIS	-	expression tag	UNP A1BCD5
E	965	HIS	-	expression tag	UNP A1BCD5
F	1154	LEU	-	expression tag	UNP A1BCD5
F	1155	GLU	-	expression tag	UNP A1BCD5
F	1156	HIS	-	expression tag	UNP A1BCD5
F	1157	HIS	-	expression tag	UNP A1BCD5
F	1158	HIS	-	expression tag	UNP A1BCD5
F	1159	HIS	-	expression tag	UNP A1BCD5
F	1160	HIS	-	expression tag	UNP A1BCD5
F	1161	HIS	-	expression tag	UNP A1BCD5
G	1345	LEU	-	expression tag	UNP A1BCD5
G	1346	GLU	-	expression tag	UNP A1BCD5
G	1347	HIS	-	expression tag	UNP A1BCD5
G	1348	HIS	-	expression tag	UNP A1BCD5
G	1349	HIS	-	expression tag	UNP A1BCD5
G	1350	HIS	-	expression tag	UNP A1BCD5
G	1351	HIS	-	expression tag	UNP A1BCD5
G	1352	HIS	-	expression tag	UNP A1BCD5
H	1537	LEU	-	expression tag	UNP A1BCD5
H	1538	GLU	-	expression tag	UNP A1BCD5
H	1539	HIS	-	expression tag	UNP A1BCD5
H	1540	HIS	-	expression tag	UNP A1BCD5
H	1541	HIS	-	expression tag	UNP A1BCD5
H	1542	HIS	-	expression tag	UNP A1BCD5
H	1543	HIS	-	expression tag	UNP A1BCD5
H	1544	HIS	-	expression tag	UNP A1BCD5
I	1730	LEU	-	expression tag	UNP A1BCD5
I	1731	GLU	-	expression tag	UNP A1BCD5
I	1732	HIS	-	expression tag	UNP A1BCD5
I	1733	HIS	-	expression tag	UNP A1BCD5
I	1734	HIS	-	expression tag	UNP A1BCD5
I	1735	HIS	-	expression tag	UNP A1BCD5
I	1736	HIS	-	expression tag	UNP A1BCD5
I	1737	HIS	-	expression tag	UNP A1BCD5
J	1923	LEU	-	expression tag	UNP A1BCD5

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Chain	Residue	Modelled	Actual	Comment	Reference
J	1924	GLU	-	expression tag	UNP A1BCD5
J	1925	HIS	-	expression tag	UNP A1BCD5
J	1926	HIS	-	expression tag	UNP A1BCD5
J	1927	HIS	-	expression tag	UNP A1BCD5
J	1928	HIS	-	expression tag	UNP A1BCD5
J	1929	HIS	-	expression tag	UNP A1BCD5
J	1930	HIS	-	expression tag	UNP A1BCD5
K	2116	LEU	-	expression tag	UNP A1BCD5
K	2117	GLU	-	expression tag	UNP A1BCD5
K	2118	HIS	-	expression tag	UNP A1BCD5
K	2119	HIS	-	expression tag	UNP A1BCD5
K	2120	HIS	-	expression tag	UNP A1BCD5
K	2121	HIS	-	expression tag	UNP A1BCD5
K	2122	HIS	-	expression tag	UNP A1BCD5
K	2123	HIS	-	expression tag	UNP A1BCD5
L	2309	LEU	-	expression tag	UNP A1BCD5
L	2310	GLU	-	expression tag	UNP A1BCD5
L	2311	HIS	-	expression tag	UNP A1BCD5
L	2312	HIS	-	expression tag	UNP A1BCD5
L	2313	HIS	-	expression tag	UNP A1BCD5
L	2314	HIS	-	expression tag	UNP A1BCD5
L	2315	HIS	-	expression tag	UNP A1BCD5
L	2316	HIS	-	expression tag	UNP A1BCD5
M	2502	LEU	-	expression tag	UNP A1BCD5
M	2503	GLU	-	expression tag	UNP A1BCD5
M	2504	HIS	-	expression tag	UNP A1BCD5
M	2505	HIS	-	expression tag	UNP A1BCD5
M	2506	HIS	-	expression tag	UNP A1BCD5
M	2507	HIS	-	expression tag	UNP A1BCD5
M	2508	HIS	-	expression tag	UNP A1BCD5
M	2509	HIS	-	expression tag	UNP A1BCD5
N	2695	LEU	-	expression tag	UNP A1BCD5
N	2696	GLU	-	expression tag	UNP A1BCD5
N	2697	HIS	-	expression tag	UNP A1BCD5
N	2698	HIS	-	expression tag	UNP A1BCD5
N	2699	HIS	-	expression tag	UNP A1BCD5
N	2700	HIS	-	expression tag	UNP A1BCD5
N	2701	HIS	-	expression tag	UNP A1BCD5
N	2702	HIS	-	expression tag	UNP A1BCD5
O	2888	LEU	-	expression tag	UNP A1BCD5
O	2889	GLU	-	expression tag	UNP A1BCD5
O	2890	HIS	-	expression tag	UNP A1BCD5

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Chain	Residue	Modelled	Actual	Comment	Reference
O	2891	HIS	-	expression tag	UNP A1BCD5
O	2892	HIS	-	expression tag	UNP A1BCD5
O	2893	HIS	-	expression tag	UNP A1BCD5
O	2894	HIS	-	expression tag	UNP A1BCD5
O	2895	HIS	-	expression tag	UNP A1BCD5
P	3081	LEU	-	expression tag	UNP A1BCD5
P	3082	GLU	-	expression tag	UNP A1BCD5
P	3083	HIS	-	expression tag	UNP A1BCD5
P	3084	HIS	-	expression tag	UNP A1BCD5
P	3085	HIS	-	expression tag	UNP A1BCD5
P	3086	HIS	-	expression tag	UNP A1BCD5
P	3087	HIS	-	expression tag	UNP A1BCD5
P	3088	HIS	-	expression tag	UNP A1BCD5
Q	3275	LEU	-	expression tag	UNP A1BCD5
Q	3276	GLU	-	expression tag	UNP A1BCD5
Q	3277	HIS	-	expression tag	UNP A1BCD5
Q	3278	HIS	-	expression tag	UNP A1BCD5
Q	3279	HIS	-	expression tag	UNP A1BCD5
Q	3280	HIS	-	expression tag	UNP A1BCD5
Q	3281	HIS	-	expression tag	UNP A1BCD5
Q	3282	HIS	-	expression tag	UNP A1BCD5
R	3467	LEU	-	expression tag	UNP A1BCD5
R	3468	GLU	-	expression tag	UNP A1BCD5
R	3469	HIS	-	expression tag	UNP A1BCD5
R	3470	HIS	-	expression tag	UNP A1BCD5
R	3471	HIS	-	expression tag	UNP A1BCD5
R	3472	HIS	-	expression tag	UNP A1BCD5
R	3473	HIS	-	expression tag	UNP A1BCD5
R	3474	HIS	-	expression tag	UNP A1BCD5
S	3661	LEU	-	expression tag	UNP A1BCD5
S	3662	GLU	-	expression tag	UNP A1BCD5
S	3663	HIS	-	expression tag	UNP A1BCD5
S	3664	HIS	-	expression tag	UNP A1BCD5
S	3665	HIS	-	expression tag	UNP A1BCD5
S	3666	HIS	-	expression tag	UNP A1BCD5
S	3667	HIS	-	expression tag	UNP A1BCD5
S	3668	HIS	-	expression tag	UNP A1BCD5
T	3853	LEU	-	expression tag	UNP A1BCD5
T	3854	GLU	-	expression tag	UNP A1BCD5
T	3855	HIS	-	expression tag	UNP A1BCD5
T	3856	HIS	-	expression tag	UNP A1BCD5
T	3857	HIS	-	expression tag	UNP A1BCD5

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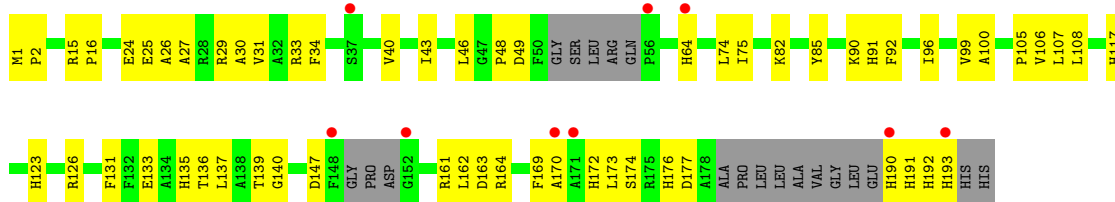
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Chain	Residue	Modelled	Actual	Comment	Reference
T	3858	HIS	-	expression tag	UNP A1BCD5
T	3859	HIS	-	expression tag	UNP A1BCD5
T	3860	HIS	-	expression tag	UNP A1BCD5

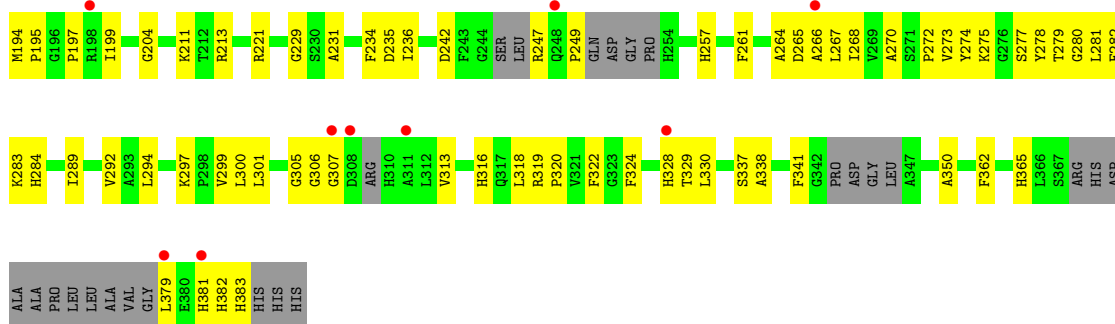
### 3 Residue-property plots [i](#)

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.

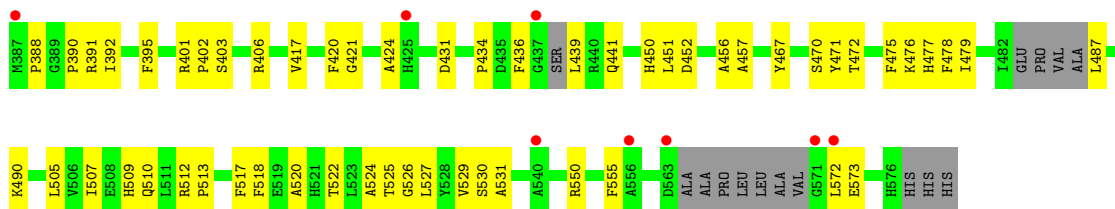
- Molecule 1: NADPH-dependent FMN reductase



- Molecule 1: NADPH-dependent FMN reductase

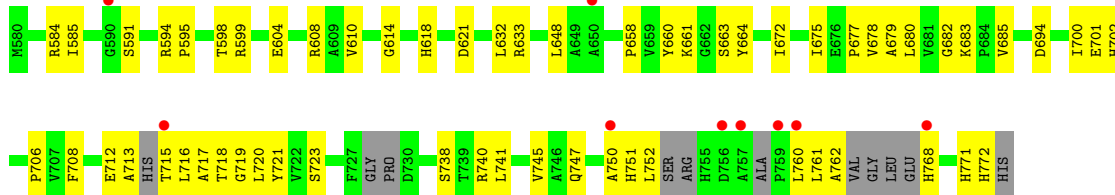


- Molecule 1: NADPH-dependent FMN reductase



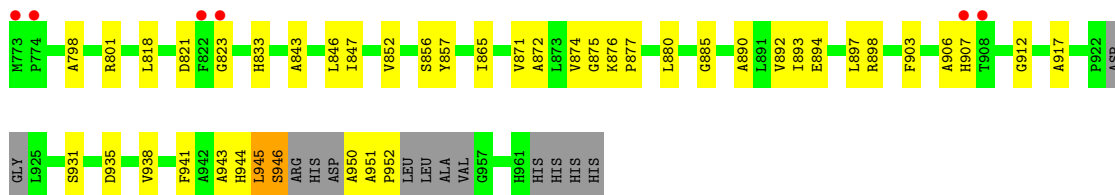
- Molecule 1: NADPH-dependent FMN reductase

Chain D: 



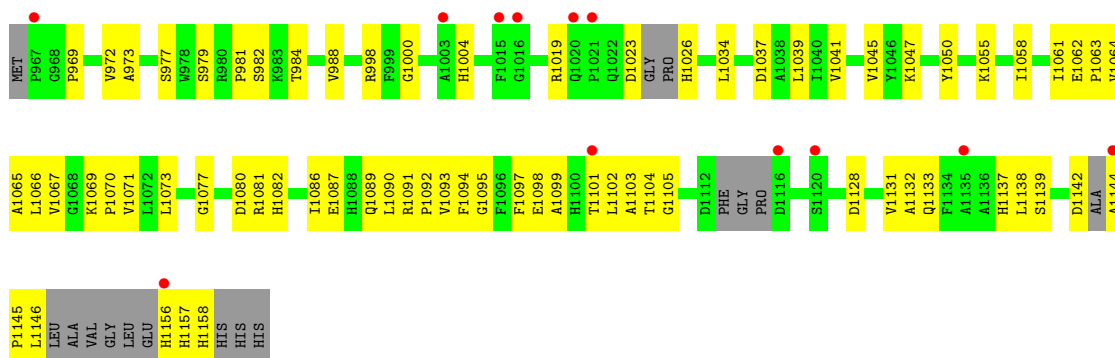
• Molecule 1: NADPH-dependent FMN reductase

Chain E: 



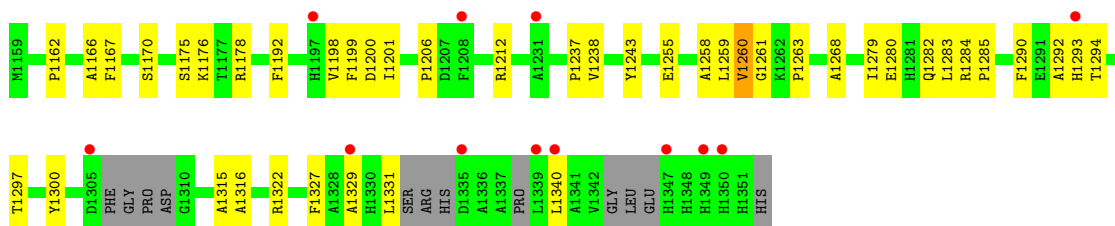
• Molecule 1: NADPH-dependent FMN reductase

Chain F: 



• Molecule 1: NADPH-dependent FMN reductase

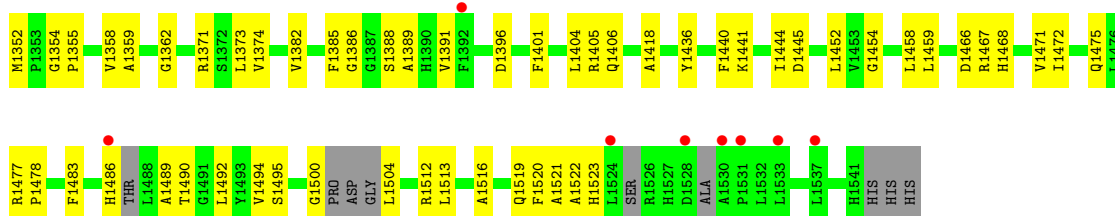
Chain G: 



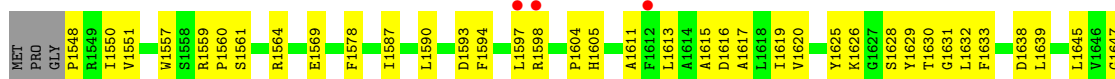
• Molecule 1: NADPH-dependent FMN reductase

Chain H: 





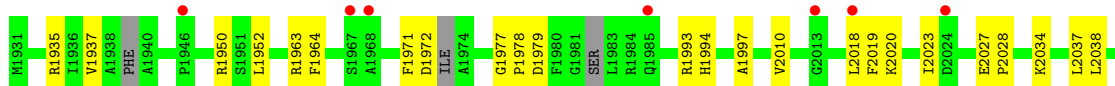
- Molecule 1: NADPH-dependent FMN reductase



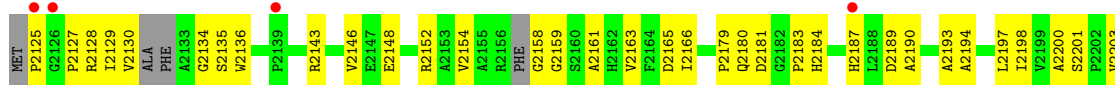
- Molecule 1: NADPH-dependent FMN reductase

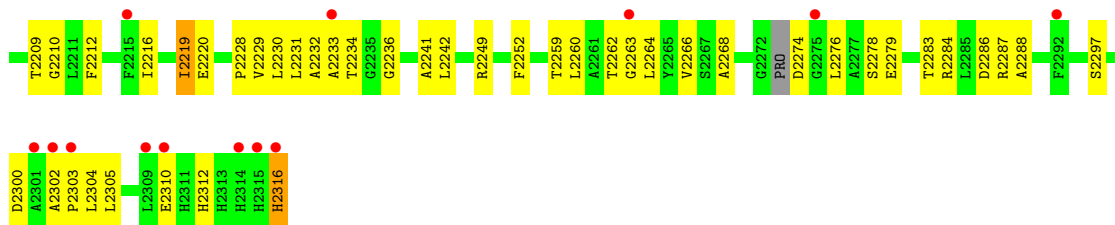


- Molecule 1: NADPH-dependent FMN reductase

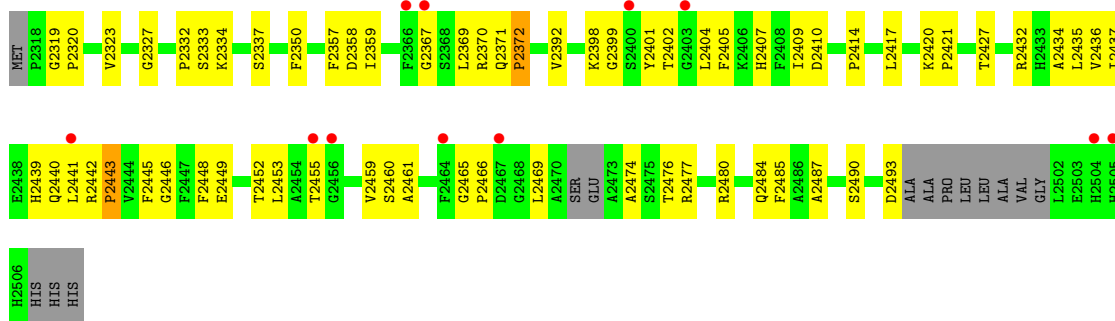


- Molecule 1: NADPH-dependent FMN reductase

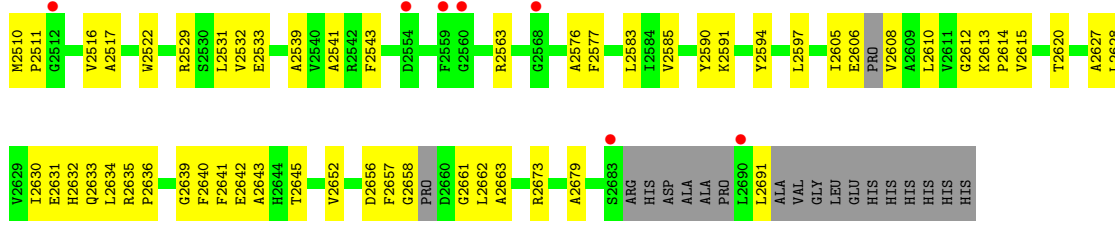




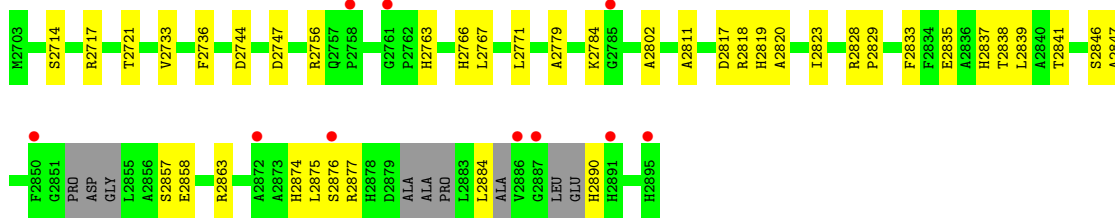
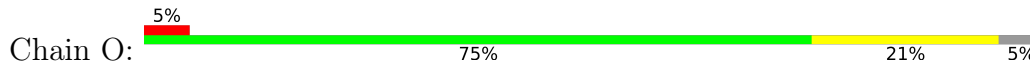
• Molecule 1: NADPH-dependent FMN reductase



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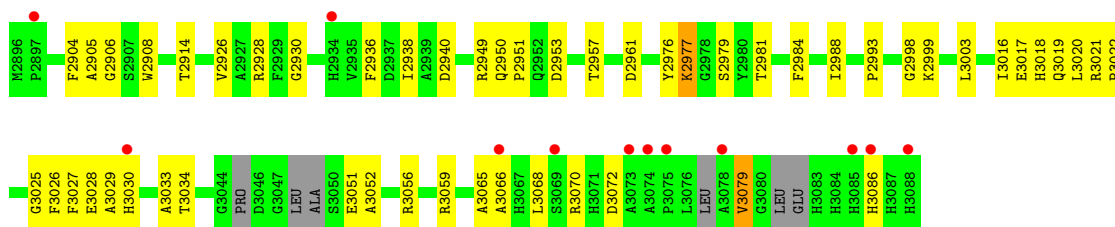


• Molecule 1: NADPH-dependent FMN reductase

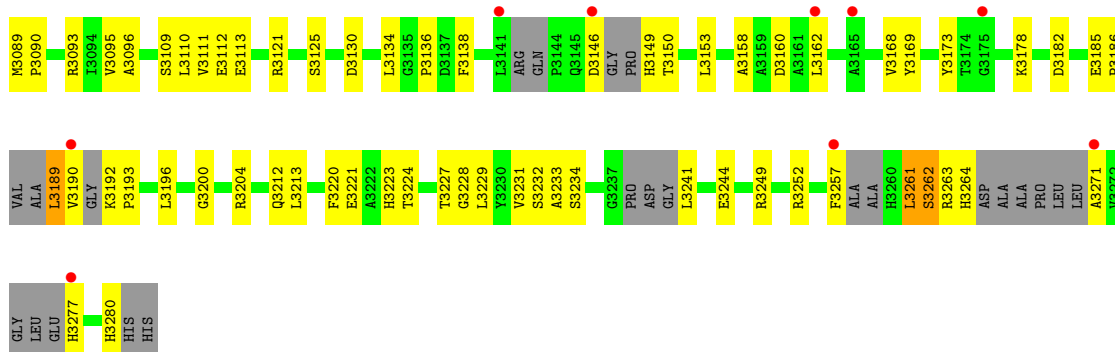


• Molecule 1: NADPH-dependent FMN reductase

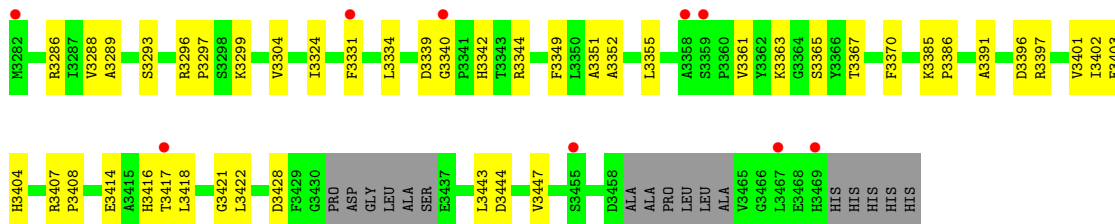




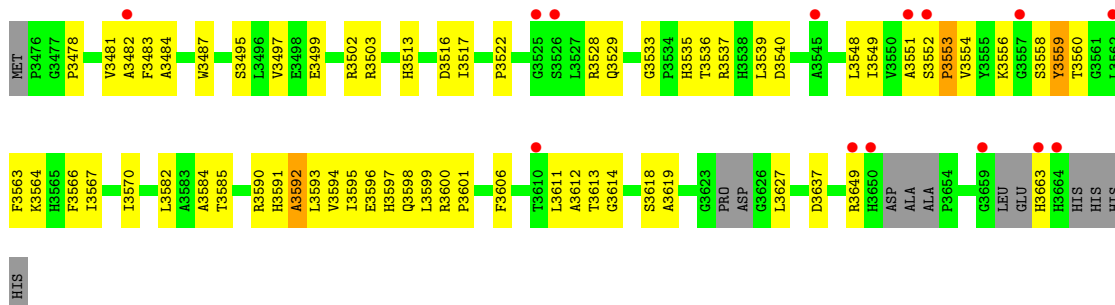
● Molecule 1: NADPH-dependent FMN reductase



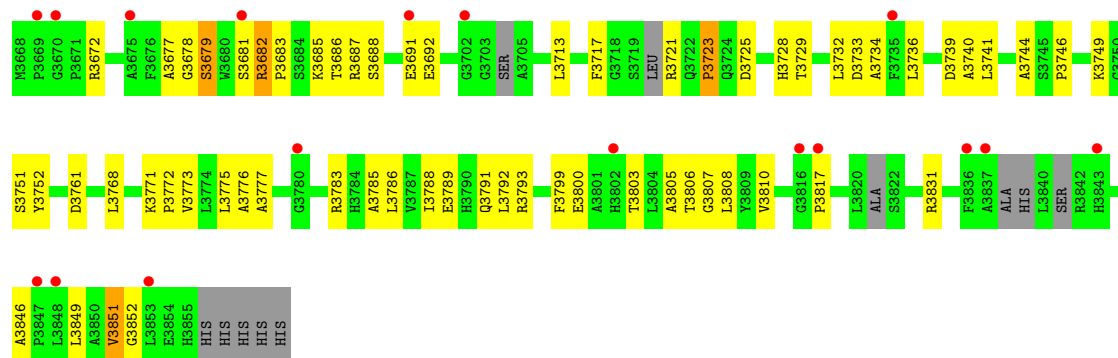
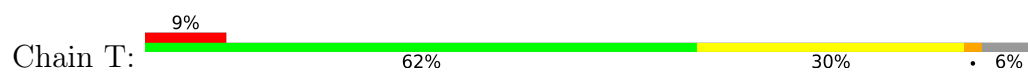
● Molecule 1: NADPH-dependent FMN reductase



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## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	134.51Å 136.38Å 212.31Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	48.75 – 3.10 48.75 – 3.10	Depositor EDS
% Data completeness (in resolution range)	90.2 (48.75-3.10) 86.7 (48.75-3.10)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.97 (at 3.12Å)	Xtrriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, $R_{free}$	0.320 , 0.321 0.319 , 0.323	Depositor DCC
$R_{free}$ test set	2005 reflections (3.11%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	81.6	Xtrriage
Anisotropy	0.447	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.28 , 38.9	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.44$ , $\langle L^2 \rangle = 0.26$	Xtrriage
Estimated twinning fraction	0.064 for k,h,-l	Xtrriage
$F_o, F_c$ correlation	0.87	EDS
Total number of atoms	26343	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	75.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 11.92% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.



## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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	0.63	0/1312	1.09	0/1781
1	B	0.67	0/1293	1.03	0/1750
1	C	0.62	0/1323	1.07	0/1798
1	D	0.65	0/1363	1.09	0/1848
1	E	0.69	0/1335	1.04	0/1817
1	F	0.69	0/1324	1.09	0/1796
1	G	0.65	0/1367	1.04	0/1856
1	H	0.64	0/1373	1.07	0/1865
1	I	0.64	0/1374	1.07	0/1868
1	J	0.62	0/1369	1.02	0/1860
1	K	0.61	0/1375	1.11	0/1858
1	L	0.62	0/1376	1.10	0/1870
1	M	0.65	0/1323	1.12	0/1799
1	N	0.63	0/1311	1.05	0/1779
1	O	0.64	0/1428	1.06	0/1933
1	P	0.61	1/1439 (0.1%)	1.05	0/1950
1	Q	0.63	0/1282	1.07	0/1731
1	R	0.61	0/1323	1.04	0/1799
1	S	0.69	0/1333	1.07	0/1811
1	T	0.66	0/1333	1.14	0/1811
All	All	0.64	1/26956 (0.0%)	1.07	0/36580

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	P	2977	LYS	C-N	-6.10	1.22	1.33

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

## 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	1282	0	1233	119	0
1	B	1262	0	1234	101	0
1	C	1291	0	1225	89	0
1	D	1334	0	1278	101	0
1	E	1302	0	1247	64	0
1	F	1296	0	1249	130	0
1	G	1336	0	1282	48	0
1	H	1342	0	1277	69	0
1	I	1340	0	1277	97	0
1	J	1336	0	1304	86	0
1	K	1348	0	1307	49	0
1	L	1346	0	1269	81	0
1	M	1292	0	1220	83	0
1	N	1283	0	1254	74	0
1	O	1393	0	1357	50	0
1	P	1402	0	1347	93	0
1	Q	1257	0	1208	92	0
1	R	1291	0	1244	33	0
1	S	1304	0	1251	80	0
1	T	1306	0	1245	93	0
All	All	26343	0	25308	1349	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 26.

All (1349) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:266:ALA:HB1	1:B:362:PHE:CE2	1.36	1.58
1:P:2998:GLY:HA2	1:P:3030:HIS:CD2	1.64	1.31
1:L:2198:ILE:HG22	1:L:2230:LEU:CB	1.64	1.27
1:D:719:GLY:O	1:D:720:LEU:HD12	1.31	1.27
1:K:2049:LEU:HD12	1:K:2049:LEU:O	1.28	1.26
1:B:266:ALA:CB	1:B:362:PHE:CD2	2.22	1.23
1:E:907:HIS:HB3	1:H:1519:GLN:NE2	1.52	1.22

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:717:ALA:HB1	1:D:747:GLN:OE1	1.39	1.22
1:B:234:PHE:CE2	1:B:257:HIS:HB3	1.74	1.21
1:S:3482:ALA:CB	1:S:3549:ILE:H	1.54	1.20
1:B:266:ALA:CB	1:B:362:PHE:CE2	2.22	1.19
1:A:191:HIS:HA	1:Q:3189:LEU:CB	1.75	1.17
1:P:2906:GLY:O	1:P:2938:ILE:HG12	1.44	1.16
1:L:2198:ILE:CG2	1:L:2230:LEU:HB2	1.75	1.15
1:Q:3089:MET:HG2	1:Q:3090:PRO:HD3	1.25	1.15
1:P:3026:PHE:CE2	1:P:3027:PHE:CE1	2.35	1.15
1:B:234:PHE:CD2	1:B:257:HIS:HB3	1.82	1.14
1:C:401:ARG:HB2	1:C:402:PRO:CD	1.77	1.14
1:C:479:ILE:CG2	1:D:661:LYS:HG3	1.79	1.12
1:L:2198:ILE:HG21	1:L:2230:LEU:HD12	1.30	1.12
1:A:193:HIS:CB	1:Q:3158:ALA:HA	1.78	1.11
1:G:1261:GLY:HA2	1:G:1293:HIS:HB2	1.26	1.11
1:T:3682:ARG:HB2	1:T:3687:ARG:HG2	1.21	1.11
1:I:1731:GLU:HG2	1:I:1732:HIS:N	1.56	1.11
1:L:2219:ILE:HG22	1:L:2220:GLU:N	1.64	1.10
1:I:1675:PHE:CE2	1:J:1819:LYS:HD3	1.84	1.10
1:P:3026:PHE:CD2	1:P:3027:PHE:CE1	2.38	1.10
1:H:1454:GLY:HA2	1:H:1486:HIS:CG	1.87	1.09
1:A:131:PHE:CE1	1:Q:3280:HIS:HB2	1.87	1.09
1:P:2906:GLY:HA3	1:P:2938:ILE:HG23	1.10	1.08
1:P:2906:GLY:HA2	1:P:2938:ILE:H	1.17	1.08
1:B:266:ALA:HB2	1:B:362:PHE:HD2	1.17	1.08
1:N:2658:GLY:O	1:N:2662:LEU:HB3	1.54	1.08
1:J:1797:PRO:HA	1:J:1800:ARG:CD	1.84	1.07
1:E:907:HIS:HB3	1:H:1519:GLN:HE22	1.03	1.07
1:H:1454:GLY:HA2	1:H:1486:HIS:ND1	1.69	1.07
1:M:2359:ILE:CG2	1:M:2404:LEU:HD13	1.83	1.06
1:M:2401:TYR:CE2	1:M:2440:GLN:NE2	2.22	1.06
1:B:199:ILE:HG22	1:B:265:ASP:HB2	1.36	1.06
1:C:479:ILE:HG22	1:D:661:LYS:HG3	1.38	1.06
1:B:381:HIS:CE1	1:M:2432:ARG:HE	1.73	1.05
1:T:3752:TYR:HE2	1:T:3791:GLN:O	1.38	1.05
1:H:1385:PHE:HE1	1:I:1598:ARG:HG2	1.21	1.04
1:T:3721:ARG:O	1:T:3723:PRO:HD3	1.57	1.04
1:I:1652:LEU:HD23	1:I:1669:LEU:HB3	1.37	1.04
1:D:594:ARG:HG3	1:D:595:PRO:HD3	1.36	1.03
1:A:15:ARG:HB3	1:A:16:PRO:HD3	1.38	1.03
1:B:266:ALA:HB1	1:B:362:PHE:CD2	1.87	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:2656:ASP:HB2	1:N:2663:ALA:HA	1.33	1.03
1:N:2662:LEU:O	1:N:2662:LEU:HD12	1.58	1.03
1:B:266:ALA:HB2	1:B:362:PHE:CD2	1.91	1.02
1:A:33:ARG:HB3	1:F:1019:ARG:HD3	1.40	1.02
1:B:199:ILE:CG2	1:B:265:ASP:CB	2.36	1.02
1:M:2359:ILE:HG21	1:M:2404:LEU:HD13	1.40	1.02
1:H:1359:ALA:HB3	1:H:1391:VAL:HG12	1.40	1.01
1:S:3556:LYS:HG3	1:T:3761:ASP:HA	1.39	1.01
1:O:2828:ARG:HB3	1:O:2829:PRO:HD3	1.41	1.01
1:C:517:PHE:CE2	1:D:661:LYS:HD3	1.94	1.01
1:L:2197:LEU:O	1:L:2229:VAL:HA	1.61	1.01
1:P:2906:GLY:CA	1:P:2938:ILE:HG23	1.91	1.00
1:S:3482:ALA:HB3	1:S:3549:ILE:H	1.24	0.99
1:I:1650:VAL:HG22	1:I:1652:LEU:HD12	1.43	0.99
1:I:1650:VAL:HG22	1:I:1652:LEU:CD1	1.93	0.98
1:I:1731:GLU:CG	1:I:1732:HIS:N	2.19	0.98
1:B:199:ILE:CG2	1:B:265:ASP:HB2	1.92	0.98
1:F:1087:GLU:HG3	1:F:1091:ARG:NH1	1.79	0.98
1:M:2474:ALA:O	1:M:2476:THR:HG23	1.64	0.98
1:M:2359:ILE:HG21	1:M:2404:LEU:CD1	1.94	0.97
1:P:2993:PRO:HA	1:P:3027:PHE:CE1	1.99	0.97
1:A:191:HIS:HA	1:Q:3189:LEU:HB3	1.45	0.97
1:P:2906:GLY:HA3	1:P:2938:ILE:CG2	1.93	0.97
1:S:3600:ARG:NH1	1:S:3611:LEU:HD12	1.79	0.97
1:H:1500:GLY:O	1:H:1504:LEU:HD23	1.64	0.97
1:L:2219:ILE:HG22	1:L:2220:GLU:H	1.20	0.96
1:M:2401:TYR:HE2	1:M:2440:GLN:NE2	1.57	0.96
1:A:192:HIS:H	1:Q:3189:LEU:HA	1.30	0.96
1:S:3552:SER:N	1:S:3553:PRO:HD3	1.80	0.96
1:L:2219:ILE:CG2	1:L:2220:GLU:H	1.76	0.96
1:C:439:LEU:HB3	1:C:441:GLN:OE1	1.66	0.96
1:C:550:ARG:HG2	1:N:2608:VAL:HG12	1.45	0.96
1:A:191:HIS:HA	1:Q:3189:LEU:HB2	1.47	0.96
1:S:3556:LYS:HE2	1:T:3761:ASP:O	1.66	0.95
1:A:174:SER:CB	1:D:752:LEU:HA	1.97	0.95
1:A:164:ARG:NH2	1:F:1063:PRO:HD2	1.81	0.95
1:N:2661:GLY:O	1:N:2662:LEU:HG	1.63	0.94
1:B:199:ILE:CG2	1:B:265:ASP:HB3	1.98	0.94
1:I:1731:GLU:HG2	1:I:1732:HIS:H	1.19	0.94
1:M:2442:ARG:H	1:M:2443:PRO:HD2	1.31	0.94
1:N:2658:GLY:H	1:N:2662:LEU:CB	1.79	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S:3482:ALA:HB1	1:S:3549:ILE:H	1.32	0.94
1:M:2401:TYR:HE2	1:M:2440:GLN:HE21	0.97	0.93
1:I:1593:ASP:HB2	1:J:1788:GLY:HA3	1.50	0.93
1:O:2875:LEU:HD12	1:O:2876:SER:N	1.83	0.93
1:J:1797:PRO:HA	1:J:1800:ARG:HD2	1.49	0.93
1:G:1170:SER:HB2	1:G:1237:PRO:HG3	1.49	0.93
1:K:2078:PHE:HB2	1:K:2083:LEU:O	1.68	0.93
1:L:2198:ILE:CG2	1:L:2230:LEU:HD12	2.00	0.92
1:T:3681:SER:C	1:T:3683:PRO:HD2	1.89	0.92
1:D:719:GLY:C	1:D:720:LEU:HD12	1.89	0.92
1:B:199:ILE:HG22	1:B:265:ASP:CB	1.97	0.92
1:H:1373:LEU:HD11	1:H:1492:LEU:HD11	1.49	0.92
1:K:2049:LEU:O	1:K:2049:LEU:CD1	2.16	0.92
1:M:2442:ARG:N	1:M:2443:PRO:HD2	1.85	0.92
1:P:2981:THR:O	1:P:2981:THR:HG22	1.70	0.92
1:L:2127:PRO:HD2	1:L:2159:GLY:HA3	1.48	0.92
1:L:2189:ASP:O	1:L:2193:ALA:HB3	1.69	0.91
1:M:2327:GLY:O	1:M:2402:THR:HG21	1.71	0.91
1:P:2904:PHE:CZ	1:P:2938:ILE:HG22	2.04	0.91
1:Q:3089:MET:CG	1:Q:3090:PRO:HD3	2.00	0.91
1:I:1548:PRO:HD2	1:I:1615:ALA:HB1	1.53	0.90
1:A:192:HIS:H	1:Q:3189:LEU:CA	1.83	0.90
1:B:197:PRO:HA	1:B:265:ASP:OD2	1.72	0.89
1:C:401:ARG:HB2	1:C:402:PRO:HD2	1.51	0.89
1:H:1500:GLY:O	1:H:1504:LEU:CD2	2.20	0.89
1:L:2200:ALA:HA	1:L:2232:ALA:HB2	1.52	0.89
1:D:761:LEU:O	1:F:1067:VAL:HG22	1.72	0.89
1:J:1800:ARG:NH2	1:J:1801:HIS:NE2	2.20	0.89
1:N:2606:GLU:O	1:N:2608:VAL:HG22	1.70	0.89
1:T:3677:ALA:HA	1:T:3744:ALA:O	1.72	0.89
1:R:3331:PHE:HD2	1:R:3334:LEU:HB2	1.37	0.89
1:M:2442:ARG:N	1:M:2443:PRO:CD	2.34	0.89
1:D:760:LEU:HD11	1:F:1069:LYS:HE2	1.52	0.89
1:D:762:ALA:HB3	1:F:1064:VAL:HA	1.52	0.88
1:S:3482:ALA:HB3	1:S:3549:ILE:N	1.86	0.88
1:J:1797:PRO:C	1:J:1800:ARG:HG2	1.93	0.88
1:T:3752:TYR:CE2	1:T:3791:GLN:O	2.27	0.88
1:M:2359:ILE:HD13	1:M:2404:LEU:HB2	1.54	0.88
1:F:1073:LEU:O	1:F:1105:GLY:HA2	1.73	0.88
1:G:1284:ARG:HB3	1:G:1285:PRO:HD3	1.55	0.88
1:C:518:PHE:HE1	1:D:661:LYS:HE3	1.36	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:T:3682:ARG:N	1:T:3683:PRO:CD	2.37	0.88
1:E:876:LYS:O	1:E:906:ALA:HB1	1.74	0.87
1:S:3482:ALA:CB	1:S:3549:ILE:N	2.37	0.87
1:B:197:PRO:HD2	1:B:229:GLY:H	1.39	0.87
1:F:1138:LEU:HD12	1:F:1144:ALA:N	1.89	0.87
1:T:3681:SER:C	1:T:3683:PRO:CD	2.44	0.86
1:E:874:VAL:HG11	1:I:1725:LEU:HB3	1.57	0.86
1:B:307:GLY:HA3	1:Q:3277:HIS:CA	2.05	0.86
1:P:2906:GLY:O	1:P:2938:ILE:CG1	2.23	0.86
1:A:172:HIS:O	1:A:173:LEU:HD12	1.74	0.86
1:C:401:ARG:HB2	1:C:402:PRO:HD3	1.55	0.86
1:I:1650:VAL:CG2	1:I:1652:LEU:CD1	2.53	0.86
1:J:1911:SER:HB2	1:K:2102:HIS:HE1	1.42	0.85
1:P:2905:ALA:O	1:P:2984:PHE:HE2	1.58	0.85
1:H:1404:LEU:HD23	1:H:1405:ARG:N	1.91	0.85
1:A:33:ARG:HB3	1:F:1019:ARG:CD	2.06	0.85
1:D:679:ALA:HA	1:F:1146:LEU:HD22	1.59	0.85
1:A:29:ARG:HD3	1:A:163:ASP:HA	1.58	0.85
1:S:3600:ARG:NH1	1:S:3611:LEU:CD1	2.40	0.85
1:O:2838:THR:O	1:O:2839:LEU:HB2	1.75	0.85
1:O:2875:LEU:HD12	1:O:2876:SER:H	1.42	0.85
1:C:439:LEU:HB3	1:C:441:GLN:CD	1.97	0.84
1:J:1911:SER:HB2	1:K:2102:HIS:CE1	2.11	0.84
1:Q:3234:SER:HB2	1:Q:3241:LEU:N	1.92	0.84
1:A:29:ARG:O	1:A:33:ARG:HG3	1.77	0.84
1:L:2198:ILE:HG22	1:L:2230:LEU:HB2	0.87	0.84
1:M:2432:ARG:HD2	1:O:2817:ASP:HB3	1.58	0.84
1:B:197:PRO:CD	1:B:229:GLY:H	1.89	0.84
1:M:2442:ARG:H	1:M:2443:PRO:CD	1.89	0.84
1:T:3682:ARG:HB2	1:T:3687:ARG:CG	2.07	0.83
1:A:193:HIS:CB	1:Q:3158:ALA:CA	2.55	0.83
1:G:1263:PRO:HB3	1:G:1294:THR:CB	2.08	0.83
1:O:2784:LYS:HE3	1:P:3027:PHE:CE2	2.13	0.83
1:P:2906:GLY:HA2	1:P:2938:ILE:N	1.94	0.83
1:H:1385:PHE:CE1	1:I:1598:ARG:HG2	2.11	0.82
1:N:2658:GLY:H	1:N:2662:LEU:HB2	1.44	0.82
1:P:3026:PHE:CE2	1:P:3027:PHE:HE1	1.95	0.82
1:I:1675:PHE:CD2	1:J:1819:LYS:HD3	2.15	0.82
1:A:43:ILE:HG13	1:A:46:LEU:HD22	1.61	0.81
1:S:3600:ARG:HH11	1:S:3611:LEU:CD1	1.92	0.81
1:C:518:PHE:CE1	1:D:661:LYS:HE3	2.13	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:871:VAL:O	1:E:871:VAL:HG22	1.80	0.81
1:S:3484:ALA:CB	1:S:3551:ALA:HA	2.11	0.81
1:A:29:ARG:NH1	1:A:163:ASP:CG	2.33	0.81
1:I:1676:PHE:CZ	1:J:1819:LYS:CE	2.64	0.81
1:P:2905:ALA:O	1:P:2984:PHE:CE2	2.34	0.80
1:H:1404:LEU:HD23	1:H:1405:ARG:H	1.43	0.80
1:T:3775:LEU:HD13	1:T:3792:LEU:HD23	1.62	0.80
1:H:1352:MET:HG2	1:I:1598:ARG:NH1	1.96	0.80
1:R:3293:SER:O	1:R:3324:ILE:HG21	1.82	0.80
1:P:2904:PHE:CE1	1:P:2938:ILE:HG22	2.17	0.79
1:D:768:HIS:NE2	1:G:1300:TYR:HB3	1.97	0.79
1:E:818:LEU:HD22	1:E:833:HIS:HB2	1.64	0.79
1:K:2049:LEU:HD13	1:K:2053:HIS:CE1	2.17	0.79
1:P:3026:PHE:HE2	1:P:3027:PHE:CE1	1.95	0.79
1:T:3681:SER:CB	1:T:3683:PRO:HD3	2.11	0.79
1:B:199:ILE:HG21	1:B:265:ASP:HB3	1.65	0.79
1:G:1280:GLU:HA	1:G:1284:ARG:HD2	1.63	0.79
1:I:1650:VAL:CG2	1:I:1652:LEU:HD12	2.13	0.79
1:A:29:ARG:HH11	1:A:163:ASP:CG	1.85	0.79
1:L:2125:PRO:O	1:L:2127:PRO:HD3	1.83	0.79
1:Q:3089:MET:HG2	1:Q:3090:PRO:CD	2.11	0.78
1:L:2198:ILE:HG22	1:L:2230:LEU:CG	2.12	0.78
1:R:3296:ARG:HG3	1:R:3297:PRO:HD3	1.66	0.78
1:C:395:PHE:HD1	1:C:450:HIS:HE2	1.28	0.78
1:E:846:LEU:CD1	1:E:876:LYS:HD3	2.14	0.78
1:E:907:HIS:CB	1:H:1519:GLN:NE2	2.41	0.78
1:A:164:ARG:CZ	1:F:1062:GLU:HB3	2.14	0.77
1:G:1243:TYR:HD2	1:G:1283:LEU:CD1	1.97	0.77
1:G:1167:PHE:CD1	1:G:1199:PHE:CE1	2.72	0.77
1:P:2998:GLY:CA	1:P:3030:HIS:CD2	2.59	0.77
1:B:267:LEU:CD1	1:B:297:LYS:HD2	2.15	0.77
1:A:192:HIS:O	1:Q:3192:LYS:HE2	1.84	0.77
1:L:2181:ASP:O	1:L:2184:HIS:CE1	2.38	0.77
1:B:261:PHE:O	1:B:267:LEU:HD21	1.85	0.77
1:C:439:LEU:CB	1:C:441:GLN:OE1	2.33	0.77
1:P:2908:TRP:CH2	1:P:2976:TYR:HE2	2.03	0.76
1:S:3482:ALA:O	1:S:3549:ILE:CB	2.33	0.76
1:C:439:LEU:HB3	1:C:441:GLN:NE2	2.00	0.76
1:C:512:ARG:HH12	1:C:525:THR:HA	1.51	0.76
1:D:648:LEU:HB2	1:F:1146:LEU:HB2	1.68	0.76
1:Q:3262:SER:OG	1:Q:3263:ARG:N	2.12	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:381:HIS:CE1	1:M:2432:ARG:NE	2.53	0.75
1:P:3018:HIS:O	1:P:3019:GLN:HB2	1.86	0.75
1:E:907:HIS:CG	1:H:1519:GLN:OE1	2.40	0.75
1:Q:3189:LEU:HD12	1:Q:3189:LEU:O	1.86	0.75
1:A:105:PRO:HB2	1:A:169:PHE:CE1	2.21	0.75
1:P:2993:PRO:HB3	1:P:3027:PHE:HE1	1.52	0.75
1:J:1897:THR:HB	1:K:2117:GLU:OE2	1.86	0.75
1:L:2130:VAL:HG21	1:L:2190:ALA:O	1.85	0.75
1:P:3079:VAL:HB	1:P:3086:HIS:HB2	1.69	0.75
1:J:1876:THR:HG21	1:K:2063:GLU:HG3	1.68	0.75
1:P:2993:PRO:CA	1:P:3027:PHE:CE1	2.70	0.75
1:G:1261:GLY:CA	1:G:1293:HIS:HB2	2.12	0.74
1:Q:3189:LEU:CD2	1:Q:3271:ALA:HB1	2.17	0.74
1:Q:3189:LEU:HD21	1:Q:3271:ALA:O	1.87	0.74
1:B:264:ALA:O	1:B:265:ASP:OD1	2.05	0.74
1:C:517:PHE:HE2	1:D:661:LYS:HD3	1.50	0.74
1:P:2908:TRP:HH2	1:P:2981:THR:HG21	1.52	0.74
1:M:2441:LEU:HG	1:M:2441:LEU:O	1.85	0.74
1:E:846:LEU:CD1	1:E:876:LYS:CD	2.64	0.74
1:T:3692:GLU:OE2	1:T:3817:PRO:HD3	1.88	0.74
1:T:3725:ASP:HB2	1:T:3728:HIS:CD2	2.22	0.74
1:F:1138:LEU:HD11	1:F:1142:ASP:C	2.08	0.74
1:G:1263:PRO:HA	1:G:1294:THR:O	1.88	0.74
1:H:1382:VAL:HA	1:H:1386:GLY:HA3	1.68	0.74
1:N:2543:PHE:HE2	1:N:2679:ALA:HB2	1.53	0.74
1:P:2926:VAL:HA	1:P:2930:GLY:HA3	1.69	0.74
1:D:717:ALA:CB	1:D:747:GLN:OE1	2.28	0.74
1:P:3026:PHE:HD2	1:P:3027:PHE:CE1	2.03	0.74
1:E:876:LYS:O	1:E:906:ALA:CB	2.35	0.73
1:E:944:HIS:O	1:E:945:LEU:HB2	1.87	0.73
1:S:3564:LYS:HE3	1:T:3751:SER:OG	1.87	0.73
1:C:476:LYS:O	1:C:479:ILE:CG1	2.36	0.73
1:D:762:ALA:HA	1:F:1067:VAL:HG13	1.69	0.73
1:I:1587:ILE:HD11	1:I:1632:LEU:HB3	1.67	0.73
1:F:1103:ALA:HB3	1:F:1133:GLN:NE2	2.03	0.73
1:A:192:HIS:O	1:Q:3192:LYS:CE	2.36	0.73
1:O:2833:PHE:CE2	1:P:2977:LYS:HD3	2.24	0.73
1:T:3682:ARG:N	1:T:3683:PRO:HD3	2.03	0.73
1:A:117:HIS:CE1	1:C:505:LEU:HD21	2.23	0.72
1:C:479:ILE:CB	1:D:661:LYS:HG3	2.19	0.72
1:M:2399:GLY:O	1:M:2401:TYR:CD2	2.41	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:164:ARG:HH21	1:F:1063:PRO:HD2	1.51	0.72
1:K:1971:PHE:CE2	1:K:1994:HIS:O	2.41	0.72
1:D:584:ARG:O	1:D:585:ILE:HD13	1.89	0.72
1:D:700:ILE:CD1	1:D:720:LEU:HG	2.18	0.72
1:S:3539:LEU:HD12	1:S:3540:ASP:N	2.05	0.72
1:A:172:HIS:CE1	1:A:173:LEU:CD1	2.73	0.72
1:I:1675:PHE:CD2	1:J:1819:LYS:CD	2.71	0.72
1:N:2658:GLY:H	1:N:2662:LEU:HB3	1.53	0.72
1:N:2662:LEU:O	1:N:2662:LEU:CD1	2.37	0.72
1:A:164:ARG:NH1	1:F:1062:GLU:HB3	2.04	0.72
1:I:1569:GLU:HG3	1:I:1694:PRO:HG3	1.71	0.72
1:Q:3189:LEU:HD21	1:Q:3271:ALA:C	2.09	0.72
1:T:3677:ALA:HB1	1:T:3686:THR:CG2	2.19	0.72
1:D:762:ALA:HB2	1:F:1066:LEU:H	1.54	0.72
1:D:772:HIS:HB3	1:G:1322:ARG:HB3	1.70	0.72
1:G:1259:LEU:HD23	1:G:1259:LEU:O	1.90	0.72
1:N:2610:LEU:HD23	1:N:2641:PHE:CG	2.24	0.72
1:R:3340:GLY:O	1:R:3344:ARG:HG3	1.90	0.72
1:T:3713:LEU:HD11	1:T:3717:PHE:HB2	1.70	0.72
1:B:307:GLY:HA3	1:Q:3277:HIS:N	2.05	0.72
1:H:1454:GLY:CA	1:H:1486:HIS:ND1	2.50	0.72
1:I:1676:PHE:CZ	1:J:1819:LYS:HE2	2.24	0.72
1:I:1684:GLY:O	1:I:1705:ARG:NH1	2.23	0.72
1:A:64:HIS:HB2	1:A:92:PHE:HE1	1.54	0.71
1:P:2998:GLY:HA2	1:P:3030:HIS:NE2	2.03	0.71
1:N:2630:ILE:O	1:N:2635:ARG:HG3	1.90	0.71
1:E:846:LEU:HD12	1:E:876:LYS:HD3	1.73	0.71
1:J:1797:PRO:O	1:J:1800:ARG:HG2	1.91	0.71
1:F:1138:LEU:HD21	1:F:1142:ASP:HA	1.71	0.71
1:P:3026:PHE:CE2	1:P:3027:PHE:CZ	2.78	0.71
1:B:194:MET:HG3	1:B:195:PRO:HD3	1.73	0.71
1:H:1454:GLY:HA2	1:H:1486:HIS:CE1	2.26	0.71
1:I:1652:LEU:CD2	1:I:1669:LEU:HB3	2.16	0.71
1:H:1359:ALA:HB1	1:H:1374:VAL:HG13	1.71	0.71
1:N:2583:LEU:HD13	1:N:2585:VAL:HG23	1.73	0.71
1:H:1359:ALA:HB3	1:H:1391:VAL:CG1	2.20	0.70
1:N:2673:ARG:NH2	1:O:2835:GLU:OE1	2.24	0.70
1:P:3003:LEU:CD2	1:P:3020:LEU:HG	2.22	0.70
1:A:105:PRO:HB2	1:A:169:PHE:HE1	1.55	0.70
1:C:417:VAL:HA	1:C:421:GLY:HA3	1.72	0.70
1:E:875:GLY:O	1:E:944:HIS:NE2	2.25	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:2049:LEU:CD1	1:K:2053:HIS:CE1	2.74	0.70
1:P:3026:PHE:CD2	1:P:3027:PHE:CD1	2.80	0.70
1:O:2784:LYS:HE3	1:P:3027:PHE:HE2	1.54	0.70
1:D:771:HIS:HB3	1:G:1297:THR:HG21	1.73	0.70
1:I:1675:PHE:HE2	1:J:1819:LYS:HD3	1.55	0.70
1:B:307:GLY:HA3	1:Q:3277:HIS:HA	1.74	0.70
1:H:1404:LEU:HD22	1:H:1406:GLN:NE2	2.05	0.70
1:I:1675:PHE:CE2	1:J:1819:LYS:CD	2.70	0.70
1:P:2908:TRP:CZ2	1:P:2976:TYR:HE2	2.09	0.70
1:P:3051:GLU:HG3	1:P:3052:ALA:H	1.56	0.69
1:A:190:HIS:O	1:Q:3189:LEU:HD22	1.92	0.69
1:A:192:HIS:H	1:Q:3189:LEU:N	1.89	0.69
1:A:117:HIS:ND1	1:C:505:LEU:HD11	2.07	0.69
1:D:585:ILE:HD12	1:D:618:HIS:HB3	1.73	0.69
1:I:1639:LEU:HG	1:I:1639:LEU:O	1.92	0.69
1:I:1691:ASP:OD1	1:I:1691:ASP:O	2.11	0.69
1:P:2908:TRP:CH2	1:P:2981:THR:HG21	2.27	0.69
1:T:3741:LEU:HD11	1:T:3773:VAL:HG22	1.75	0.69
1:F:1080:ASP:OD1	1:F:1081:ARG:N	2.25	0.69
1:D:762:ALA:CA	1:F:1067:VAL:HG13	2.23	0.69
1:E:846:LEU:HD11	1:E:876:LYS:HD2	1.74	0.69
1:B:266:ALA:HB1	1:B:362:PHE:HE2	0.90	0.69
1:T:3776:ALA:HB1	1:T:3808:LEU:CD1	2.23	0.69
1:B:328:HIS:HA	1:C:524:ALA:O	1.92	0.69
1:D:604:GLU:O	1:D:608:ARG:HG3	1.92	0.69
1:F:1058:ILE:HG23	1:F:1061:ILE:HD11	1.75	0.69
1:M:2421:PRO:HB3	1:M:2452:THR:HB	1.75	0.69
1:P:2981:THR:O	1:P:2981:THR:CG2	2.40	0.69
1:T:3776:ALA:HB1	1:T:3808:LEU:HD12	1.75	0.69
1:B:234:PHE:CD2	1:B:257:HIS:CB	2.70	0.69
1:N:2656:ASP:CB	1:N:2663:ALA:HA	2.17	0.69
1:A:164:ARG:HH22	1:F:1064:VAL:HG22	1.58	0.69
1:M:2452:THR:O	1:M:2452:THR:HG22	1.93	0.69
1:S:3590:ARG:HG3	1:S:3591:HIS:CD2	2.28	0.69
1:T:3677:ALA:HB1	1:T:3686:THR:HG22	1.75	0.68
1:A:172:HIS:ND1	1:A:173:LEU:CD1	2.56	0.68
1:E:846:LEU:HD11	1:E:876:LYS:CD	2.23	0.68
1:C:406:ARG:NH2	1:C:431:ASP:OD2	2.24	0.68
1:N:2631:GLU:HA	1:N:2635:ARG:HD2	1.76	0.68
1:N:2610:LEU:HD23	1:N:2641:PHE:CD2	2.28	0.68
1:N:2610:LEU:HB3	1:N:2641:PHE:HB3	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:517:PHE:CE2	1:D:661:LYS:CD	2.74	0.68
1:C:457:ALA:HA	1:C:490:LYS:HG2	1.76	0.68
1:E:871:VAL:O	1:I:1726:LEU:CA	2.41	0.68
1:K:2049:LEU:CD1	1:K:2053:HIS:ND1	2.57	0.68
1:T:3681:SER:O	1:T:3683:PRO:HD2	1.93	0.68
1:I:1650:VAL:CG2	1:I:1652:LEU:HD11	2.24	0.67
1:L:2197:LEU:CB	1:L:2229:VAL:HG12	2.24	0.67
1:C:550:ARG:CG	1:N:2608:VAL:HG12	2.24	0.67
1:F:1058:ILE:O	1:F:1061:ILE:HG12	1.94	0.67
1:B:267:LEU:O	1:B:299:VAL:HA	1.94	0.67
1:I:1548:PRO:HD2	1:I:1615:ALA:CB	2.24	0.67
1:J:1863:ARG:HG3	1:J:1874:LEU:HD13	1.74	0.67
1:L:2216:ILE:HG22	1:L:2216:ILE:O	1.95	0.67
1:C:476:LYS:HZ1	1:D:663:SER:HB3	1.60	0.67
1:A:15:ARG:HB3	1:A:16:PRO:CD	2.22	0.67
1:B:249:PRO:O	1:O:2877:ARG:NH2	2.27	0.67
1:C:512:ARG:NH1	1:C:525:THR:HA	2.10	0.67
1:L:2302:ALA:O	1:L:2304:LEU:N	2.25	0.67
1:C:476:LYS:NZ	1:D:664:TYR:O	2.26	0.67
1:P:2993:PRO:HA	1:P:3027:PHE:CZ	2.28	0.67
1:Q:3113:GLU:OE1	1:Q:3241:LEU:CB	2.43	0.66
1:L:2127:PRO:HD2	1:L:2159:GLY:CA	2.21	0.66
1:L:2219:ILE:CG2	1:L:2220:GLU:N	2.33	0.66
1:O:2828:ARG:HD3	1:O:2839:LEU:HD13	1.77	0.66
1:K:2100:ALA:C	1:K:2102:HIS:H	1.99	0.66
1:B:234:PHE:HB3	1:B:257:HIS:ND1	2.10	0.66
1:C:525:THR:HG22	1:C:526:GLY:N	2.11	0.66
1:I:1620:VAL:HG23	1:I:1652:LEU:HG	1.76	0.66
1:I:1676:PHE:CZ	1:J:1819:LYS:HE3	2.30	0.66
1:J:1863:ARG:CG	1:J:1874:LEU:HD13	2.25	0.66
1:N:2656:ASP:HB2	1:N:2663:ALA:CA	2.18	0.66
1:T:3729:THR:HA	1:T:3732:LEU:CD2	2.26	0.66
1:A:164:ARG:NH2	1:F:1064:VAL:HG22	2.10	0.66
1:A:99:VAL:HG23	1:Q:3158:ALA:HB2	1.78	0.66
1:A:161:ARG:HH22	1:F:1156:HIS:N	1.93	0.66
1:B:234:PHE:CE2	1:B:257:HIS:CB	2.67	0.66
1:B:280:GLY:O	1:B:283:LYS:N	2.29	0.66
1:I:1650:VAL:HG21	1:I:1652:LEU:HD11	1.77	0.66
1:C:476:LYS:O	1:C:479:ILE:HG13	1.95	0.66
1:O:2884:LEU:C	1:O:2884:LEU:HD23	2.16	0.66
1:T:3775:LEU:O	1:T:3775:LEU:HD12	1.96	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:1874:LEU:O	1:J:1874:LEU:HD12	1.95	0.66
1:I:1605:HIS:NE2	1:I:1639:LEU:CD2	2.59	0.66
1:I:1620:VAL:CG2	1:I:1652:LEU:HG	2.25	0.66
1:F:1091:ARG:HG2	1:F:1102:LEU:HD21	1.78	0.65
1:Q:3189:LEU:HD23	1:Q:3271:ALA:HB1	1.76	0.65
1:D:683:LYS:NZ	1:F:1146:LEU:HD11	2.11	0.65
1:F:979:SER:HB3	1:F:982:SER:OG	1.95	0.65
1:H:1519:GLN:HG3	1:I:1737:HIS:C	2.17	0.65
1:J:1768:VAL:HA	1:J:1772:GLY:HA3	1.78	0.65
1:M:2399:GLY:O	1:M:2401:TYR:CE2	2.49	0.65
1:N:2658:GLY:N	1:N:2662:LEU:CB	2.58	0.65
1:L:2233:ALA:O	1:L:2266:VAL:HG22	1.97	0.65
1:L:2297:SER:HB2	1:L:2300:ASP:O	1.95	0.65
1:C:439:LEU:CG	1:C:441:GLN:HE22	2.10	0.65
1:T:3729:THR:HA	1:T:3732:LEU:HD23	1.77	0.65
1:T:3768:LEU:HD22	1:T:3799:PHE:CB	2.26	0.65
1:A:192:HIS:N	1:Q:3189:LEU:HA	2.08	0.65
1:F:1073:LEU:HD11	1:F:1102:LEU:HD11	1.78	0.65
1:H:1404:LEU:HD22	1:H:1406:GLN:CD	2.17	0.65
1:A:161:ARG:NH2	1:F:1156:HIS:N	2.44	0.65
1:A:164:ARG:HD3	1:F:1063:PRO:HD2	1.78	0.65
1:B:197:PRO:HD2	1:B:229:GLY:N	2.12	0.65
1:D:599:ARG:HD2	1:D:621:ASP:OD2	1.97	0.65
1:M:2490:SER:HB2	1:M:2493:ASP:O	1.97	0.65
1:K:2049:LEU:HD13	1:K:2053:HIS:ND1	2.11	0.65
1:S:3552:SER:N	1:S:3553:PRO:CD	2.57	0.65
1:Q:3189:LEU:O	1:Q:3192:LYS:HE3	1.96	0.65
1:A:33:ARG:NE	1:F:1019:ARG:HD3	2.11	0.65
1:S:3528:ARG:O	1:S:3529:GLN:HG2	1.97	0.65
1:F:1070:PRO:HB3	1:F:1101:THR:CB	2.27	0.64
1:K:1993:ARG:HG3	1:K:1994:HIS:CD2	2.32	0.64
1:J:1822:TYR:HE1	1:J:1827:LYS:HD3	1.62	0.64
1:K:1971:PHE:HB2	1:K:1994:HIS:ND1	2.12	0.64
1:L:2197:LEU:C	1:L:2229:VAL:HG12	2.17	0.64
1:E:857:TYR:O	1:F:1055:LYS:NZ	2.30	0.64
1:I:1676:PHE:HZ	1:J:1819:LYS:HE2	1.62	0.64
1:E:871:VAL:O	1:I:1726:LEU:HA	1.97	0.64
1:F:1087:GLU:HG3	1:F:1091:ARG:HH11	1.59	0.64
1:F:1137:HIS:HB2	1:G:1329:ALA:HB1	1.78	0.64
1:J:1888:ASP:N	1:J:1892:SER:HG	1.96	0.64
1:P:3026:PHE:HE2	1:P:3027:PHE:CZ	2.13	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:267:LEU:HD12	1:B:297:LYS:HD2	1.79	0.64
1:T:3775:LEU:HD21	1:T:3793:ARG:HG3	1.80	0.64
1:D:762:ALA:HA	1:F:1067:VAL:CG1	2.28	0.64
1:G:1259:LEU:O	1:G:1260:VAL:C	2.35	0.64
1:M:2401:TYR:OH	1:M:2441:LEU:N	2.31	0.64
1:P:2993:PRO:HB3	1:P:3027:PHE:CE1	2.32	0.64
1:T:3681:SER:C	1:T:3683:PRO:HD3	2.18	0.64
1:B:234:PHE:CB	1:B:257:HIS:ND1	2.61	0.64
1:G:1243:TYR:HD2	1:G:1283:LEU:HD12	1.60	0.64
1:D:762:ALA:CB	1:F:1067:VAL:HG13	2.28	0.64
1:L:2198:ILE:CG2	1:L:2230:LEU:CD1	2.75	0.64
1:L:2231:LEU:HD11	1:L:2264:LEU:N	2.12	0.64
1:E:880:LEU:HD12	1:E:880:LEU:O	1.98	0.63
1:J:1741:PRO:HD2	1:J:1773:GLY:N	2.13	0.63
1:B:292:VAL:HG23	1:N:2691:LEU:HG	1.80	0.63
1:E:950:ALA:O	1:E:952:PRO:HD2	1.97	0.63
1:B:338:ALA:HB1	1:T:3831:ARG:NH1	2.14	0.63
1:F:1138:LEU:HD21	1:F:1142:ASP:CA	2.28	0.63
1:M:2398:LYS:HZ1	1:N:2606:GLU:HA	1.63	0.63
1:S:3552:SER:O	1:S:3585:THR:N	2.31	0.63
1:A:29:ARG:NH1	1:A:163:ASP:HB2	2.13	0.63
1:A:29:ARG:NH1	1:A:163:ASP:CB	2.62	0.63
1:N:2577:PHE:CZ	1:N:2583:LEU:HD22	2.33	0.63
1:N:2631:GLU:HG3	1:N:2635:ARG:HE	1.62	0.63
1:A:164:ARG:HD3	1:F:1063:PRO:CD	2.28	0.63
1:B:234:PHE:CZ	1:B:257:HIS:HB3	2.30	0.63
1:B:274:TYR:HB2	1:B:279:THR:HG22	1.79	0.63
1:M:2436:VAL:O	1:M:2436:VAL:HG13	1.96	0.63
1:E:871:VAL:O	1:I:1726:LEU:CB	2.46	0.63
1:E:943:ALA:HB1	1:H:1522:ALA:O	1.99	0.63
1:L:2197:LEU:O	1:L:2229:VAL:HG12	1.97	0.63
1:B:267:LEU:HD11	1:B:297:LYS:HD2	1.79	0.63
1:M:2402:THR:OG1	1:M:2405:PHE:HB2	1.98	0.63
1:D:683:LYS:HZ1	1:F:1146:LEU:HD11	1.62	0.62
1:F:1092:PRO:HB3	1:G:1280:GLU:HB3	1.80	0.62
1:J:1750:TRP:HB3	1:J:1780:ILE:HD12	1.81	0.62
1:A:192:HIS:CB	1:Q:3192:LYS:NZ	2.62	0.62
1:C:401:ARG:CB	1:C:402:PRO:CD	2.59	0.62
1:C:420:PHE:CD1	1:C:420:PHE:O	2.52	0.62
1:G:1175:SER:O	1:G:1178:ARG:N	2.31	0.62
1:C:475:PHE:O	1:C:478:PHE:CD1	2.51	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:1441:LYS:O	1:H:1444:ILE:N	2.31	0.62
1:M:2359:ILE:HG22	1:M:2404:LEU:HD13	1.79	0.62
1:P:3003:LEU:HD23	1:P:3020:LEU:HG	1.81	0.62
1:Q:3261:LEU:CD1	1:Q:3264:HIS:HA	2.29	0.62
1:L:2134:GLY:HA2	1:L:2166:ILE:H	1.64	0.62
1:S:3554:VAL:HG11	1:S:3594:VAL:HG21	1.80	0.62
1:S:3556:LYS:HE2	1:T:3761:ASP:C	2.19	0.62
1:E:821:ASP:C	1:E:823:GLY:H	2.00	0.62
1:J:1768:VAL:HG21	1:J:1775:ALA:HB2	1.80	0.62
1:J:1797:PRO:CA	1:J:1800:ARG:HG2	2.29	0.62
1:G:1259:LEU:CD2	1:G:1292:ALA:HA	2.28	0.62
1:N:2614:PRO:HA	1:N:2645:THR:HB	1.81	0.62
1:P:2904:PHE:CZ	1:P:2938:ILE:CG2	2.82	0.62
1:M:2452:THR:CG2	1:M:2484:GLN:HB3	2.29	0.62
1:O:2884:LEU:HD23	1:O:2884:LEU:O	1.98	0.62
1:I:1587:ILE:CD1	1:I:1632:LEU:HB3	2.30	0.62
1:C:450:HIS:O	1:C:450:HIS:ND1	2.33	0.62
1:J:1797:PRO:HA	1:J:1800:ARG:CG	2.30	0.62
1:D:762:ALA:O	1:F:1064:VAL:HG12	1.99	0.62
1:E:846:LEU:HD12	1:E:876:LYS:CD	2.28	0.62
1:R:3331:PHE:CD2	1:R:3334:LEU:HB2	2.28	0.62
1:B:264:ALA:O	1:B:265:ASP:CG	2.39	0.61
1:R:3422:LEU:HD21	1:R:3443:LEU:HB2	1.80	0.61
1:T:3692:GLU:HG3	1:T:3817:PRO:HG3	1.82	0.61
1:A:133:GLU:HA	1:D:718:THR:HG21	1.81	0.61
1:E:846:LEU:CD1	1:E:876:LYS:HD2	2.29	0.61
1:F:1091:ARG:HG2	1:F:1102:LEU:CD2	2.30	0.61
1:K:1935:ARG:O	1:K:1937:VAL:HG23	2.00	0.61
1:N:2605:ILE:HG23	1:N:2605:ILE:O	2.00	0.61
1:D:685:VAL:HG13	1:D:716:LEU:HD13	1.82	0.61
1:A:191:HIS:CA	1:Q:3189:LEU:HB3	2.25	0.61
1:D:761:LEU:HA	1:F:1065:ALA:HA	1.80	0.61
1:S:3558:SER:CB	1:S:3598:GLN:OE1	2.49	0.61
1:S:3484:ALA:HB2	1:S:3551:ALA:HA	1.82	0.61
1:P:2908:TRP:CZ2	1:P:2976:TYR:CE2	2.89	0.61
1:G:1243:TYR:CD2	1:G:1283:LEU:HD12	2.35	0.61
1:A:176:HIS:O	1:A:177:ASP:OD1	2.18	0.61
1:Q:3227:THR:HG21	1:T:3800:GLU:HB3	1.83	0.61
1:T:3679:SER:CB	1:T:3746:PRO:HG2	2.30	0.61
1:L:2183:PRO:HB3	1:L:2187:HIS:ND1	2.16	0.61
1:A:172:HIS:ND1	1:A:173:LEU:HD12	2.16	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S:3483:PHE:HA	1:S:3497:VAL:HG11	1.83	0.61
1:C:518:PHE:CE1	1:D:661:LYS:CE	2.84	0.60
1:H:1458:LEU:HD11	1:H:1516:ALA:HB1	1.83	0.60
1:S:3556:LYS:CG	1:T:3761:ASP:HA	2.26	0.60
1:C:476:LYS:O	1:C:479:ILE:HG12	2.00	0.60
1:E:872:ALA:HA	1:I:1726:LEU:HA	1.83	0.60
1:F:1081:ARG:HB2	1:I:1732:HIS:CB	2.31	0.60
1:I:1652:LEU:HD23	1:I:1669:LEU:CB	2.21	0.60
1:J:1797:PRO:HA	1:J:1800:ARG:HD3	1.80	0.60
1:J:1741:PRO:HD2	1:J:1773:GLY:H	1.66	0.60
1:T:3775:LEU:HD21	1:T:3793:ARG:CG	2.32	0.60
1:P:2908:TRP:CH2	1:P:2976:TYR:CE2	2.89	0.60
1:S:3600:ARG:HH11	1:S:3611:LEU:HD12	1.54	0.60
1:B:199:ILE:O	1:B:231:ALA:HB3	2.01	0.60
1:M:2487:ALA:HA	1:P:3070:ARG:HE	1.66	0.60
1:S:3556:LYS:CE	1:T:3761:ASP:O	2.47	0.60
1:S:3584:ALA:HB2	1:S:3595:ILE:HD11	1.82	0.60
1:A:82:LYS:NZ	1:B:289:ILE:O	2.34	0.60
1:D:760:LEU:HD11	1:F:1069:LYS:CE	2.27	0.60
1:F:1138:LEU:O	1:F:1139:SER:OG	2.17	0.60
1:T:3725:ASP:HB2	1:T:3728:HIS:HD2	1.65	0.60
1:S:3595:ILE:HG21	1:S:3614:GLY:HA3	1.84	0.60
1:L:2262:THR:HG21	1:L:2288:ALA:HB1	1.84	0.60
1:O:2828:ARG:HB3	1:O:2829:PRO:CD	2.25	0.60
1:R:3404:HIS:CE1	1:S:3601:PRO:HB2	2.37	0.60
1:C:470:SER:HB2	1:C:510:GLN:HE21	1.67	0.60
1:G:1238:VAL:HG23	1:G:1238:VAL:O	2.00	0.60
1:M:2452:THR:HG21	1:M:2484:GLN:HB3	1.84	0.60
1:T:3682:ARG:HA	1:T:3687:ARG:HB2	1.84	0.60
1:H:1458:LEU:CD1	1:H:1516:ALA:HB1	2.32	0.59
1:Q:3173:TYR:HE2	1:Q:3212:GLN:O	1.85	0.59
1:R:3288:VAL:HG11	1:R:3349:PHE:HA	1.84	0.59
1:A:192:HIS:CB	1:Q:3192:LYS:HZ3	2.15	0.59
1:B:289:ILE:HG21	1:B:294:LEU:HD13	1.83	0.59
1:D:678:VAL:HG21	1:D:772:HIS:HB2	1.85	0.59
1:R:3289:ALA:HB1	1:R:3304:VAL:HG22	1.83	0.59
1:N:2583:LEU:CD1	1:N:2585:VAL:HG23	2.32	0.59
1:S:3552:SER:H	1:S:3553:PRO:HD3	1.64	0.59
1:I:1593:ASP:HB2	1:J:1788:GLY:CA	2.29	0.59
1:S:3482:ALA:HB2	1:S:3548:LEU:HA	1.83	0.59
1:D:772:HIS:ND1	1:G:1322:ARG:HB2	2.17	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1200:ASP:OD1	1:G:1201:ILE:N	2.35	0.59
1:I:1680:THR:HG22	1:I:1680:THR:O	2.03	0.59
1:J:1901:ARG:HH12	1:K:2063:GLU:HB3	1.68	0.59
1:O:2784:LYS:HE3	1:P:3027:PHE:CZ	2.37	0.59
1:B:328:HIS:HB2	1:C:524:ALA:HB1	1.84	0.59
1:C:525:THR:CG2	1:C:526:GLY:H	2.16	0.59
1:G:1315:ALA:O	1:G:1316:ALA:HB3	2.03	0.59
1:N:2543:PHE:CE2	1:N:2679:ALA:HB2	2.35	0.59
1:S:3611:LEU:HD12	1:S:3611:LEU:O	2.02	0.59
1:A:164:ARG:CZ	1:F:1063:PRO:HD2	2.33	0.59
1:I:1561:SER:HB3	1:I:1564:ARG:HB3	1.84	0.59
1:Q:3095:VAL:HB	1:Q:3160:ASP:HB2	1.84	0.59
1:A:30:ALA:O	1:A:34:PHE:N	2.36	0.59
1:A:131:PHE:CZ	1:Q:3280:HIS:HB2	2.36	0.59
1:R:3293:SER:O	1:R:3324:ILE:CG2	2.51	0.59
1:T:3679:SER:HB3	1:T:3746:PRO:CD	2.33	0.59
1:I:1724:PRO:HB2	1:I:1725:LEU:HD12	1.85	0.58
1:B:266:ALA:CB	1:B:362:PHE:HE2	1.85	0.58
1:K:2100:ALA:C	1:K:2102:HIS:N	2.56	0.58
1:E:856:SER:HB3	1:F:1055:LYS:HZ1	1.68	0.58
1:L:2274:ASP:O	1:L:2276:LEU:HD12	2.03	0.58
1:T:3736:LEU:HA	1:T:3771:LYS:HE3	1.85	0.58
1:J:1898:ARG:N	1:K:2117:GLU:OE1	2.37	0.58
1:C:451:LEU:C	1:C:451:LEU:HD12	2.23	0.58
1:C:479:ILE:HB	1:D:661:LYS:HG3	1.85	0.58
1:T:3775:LEU:HD12	1:T:3775:LEU:C	2.24	0.58
1:A:100:ALA:HA	1:Q:3158:ALA:HB3	1.84	0.58
1:H:1358:VAL:HG11	1:H:1418:ALA:O	2.03	0.58
1:I:1717:LEU:HD12	1:I:1717:LEU:O	2.04	0.58
1:S:3600:ARG:HH12	1:S:3611:LEU:HD12	1.65	0.58
1:T:3793:ARG:HH12	1:T:3806:THR:HA	1.66	0.58
1:A:174:SER:CB	1:D:752:LEU:CA	2.78	0.58
1:H:1371:ARG:NH1	1:H:1396:ASP:OD2	2.36	0.58
1:J:1796:GLY:O	1:J:1800:ARG:HB3	2.04	0.58
1:E:801:ARG:NH1	1:E:935:ASP:OD1	2.36	0.58
1:D:760:LEU:CD2	1:F:1145:PRO:HB2	2.33	0.58
1:T:3777:ALA:O	1:T:3810:VAL:HG12	2.04	0.58
1:A:164:ARG:NH2	1:F:1062:GLU:HB3	2.18	0.58
1:B:307:GLY:CA	1:Q:3277:HIS:N	2.67	0.58
1:D:700:ILE:HD13	1:D:720:LEU:HA	1.84	0.58
1:S:3606:PHE:CZ	1:T:3749:LYS:HD3	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:950:ALA:C	1:E:952:PRO:HD2	2.25	0.57
1:C:439:LEU:HG	1:C:441:GLN:HE22	1.68	0.57
1:F:969:PRO:HD2	1:F:1000:GLY:O	2.03	0.57
1:G:1282:GLN:O	1:G:1283:LEU:HB2	2.03	0.57
1:C:525:THR:CG2	1:C:526:GLY:N	2.68	0.57
1:F:1041:VAL:HG11	1:F:1094:PHE:CE1	2.39	0.57
1:M:2401:TYR:CE2	1:M:2440:GLN:HB3	2.40	0.57
1:N:2583:LEU:HD13	1:N:2585:VAL:CG2	2.34	0.57
1:P:2904:PHE:HZ	1:P:2938:ILE:HG22	1.65	0.57
1:P:2993:PRO:CB	1:P:3027:PHE:CE1	2.88	0.57
1:Q:3189:LEU:HD12	1:Q:3189:LEU:C	2.24	0.57
1:A:147:ASP:OD1	1:A:147:ASP:O	2.22	0.57
1:B:197:PRO:HD3	1:B:229:GLY:H	1.68	0.57
1:Q:3178:LYS:HE2	1:R:3365:SER:OG	2.05	0.57
1:S:3570:ILE:O	1:T:3749:LYS:NZ	2.30	0.57
1:A:33:ARG:CB	1:F:1019:ARG:HD3	2.27	0.57
1:A:74:LEU:HD12	1:A:106:VAL:HG22	1.85	0.57
1:C:479:ILE:HB	1:D:661:LYS:CG	2.35	0.57
1:A:46:LEU:O	1:A:48:PRO:HD3	2.05	0.57
1:B:234:PHE:CG	1:B:257:HIS:ND1	2.73	0.57
1:J:1797:PRO:CA	1:J:1800:ARG:CD	2.72	0.57
1:B:272:PRO:HG2	1:B:279:THR:HG21	1.86	0.57
1:C:439:LEU:HB3	1:C:441:GLN:HE22	1.70	0.57
1:I:1619:ILE:HG22	1:I:1651:LEU:HB3	1.86	0.57
1:M:2474:ALA:O	1:M:2476:THR:CG2	2.49	0.57
1:T:3679:SER:HB3	1:T:3746:PRO:HG2	1.85	0.57
1:F:1023:ASP:H	1:F:1026:HIS:HE1	1.52	0.56
1:N:2517:ALA:HB1	1:N:2532:VAL:HG13	1.87	0.56
1:A:140:GLY:O	1:A:161:ARG:NH2	2.38	0.56
1:A:193:HIS:CB	1:Q:3158:ALA:CB	2.82	0.56
1:C:525:THR:HG22	1:C:526:GLY:H	1.69	0.56
1:L:2212:PHE:O	1:L:2216:ILE:HG12	2.05	0.56
1:B:316:HIS:NE2	1:C:513:PRO:HG3	2.19	0.56
1:H:1521:ALA:O	1:H:1522:ALA:HB3	2.06	0.56
1:I:1593:ASP:CB	1:J:1788:GLY:HA3	2.31	0.56
1:S:3482:ALA:CB	1:S:3548:LEU:HA	2.34	0.56
1:T:3692:GLU:CD	1:T:3817:PRO:HG3	2.26	0.56
1:B:234:PHE:HB3	1:B:257:HIS:HD1	1.69	0.56
1:L:2249:ARG:HG2	1:L:2260:LEU:HD22	1.87	0.56
1:N:2658:GLY:N	1:N:2662:LEU:HB2	2.17	0.56
1:P:3026:PHE:CD2	1:P:3027:PHE:CZ	2.92	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:2661:GLY:O	1:N:2662:LEU:CG	2.47	0.56
1:D:762:ALA:H	1:F:1064:VAL:C	2.08	0.56
1:I:1605:HIS:CE1	1:I:1639:LEU:HD21	2.41	0.56
1:L:2316:HIS:N	1:L:2316:HIS:CD2	2.74	0.56
1:N:2642:GLU:HG2	1:O:2841:THR:OG1	2.05	0.56
1:P:3025:GLY:HA2	1:P:3028:GLU:HB2	1.87	0.56
1:Q:3244:GLU:O	1:Q:3244:GLU:HG2	2.06	0.56
1:S:3539:LEU:HD12	1:S:3539:LEU:C	2.26	0.56
1:M:2334:LYS:O	1:M:2337:SER:HB2	2.05	0.56
1:Q:3221:GLU:OE1	1:T:3806:THR:HG21	2.05	0.56
1:H:1352:MET:HB3	1:I:1598:ARG:HH12	1.70	0.56
1:G:1280:GLU:HA	1:G:1284:ARG:CD	2.36	0.56
1:H:1404:LEU:CD2	1:H:1405:ARG:H	2.16	0.56
1:I:1675:PHE:HD2	1:J:1819:LYS:HD2	1.71	0.56
1:J:1842:PRO:HB2	1:J:1906:PHE:CE1	2.40	0.56
1:L:2190:ALA:O	1:L:2194:ALA:HB2	2.05	0.56
1:O:2833:PHE:HE2	1:P:2977:LYS:HD3	1.70	0.56
1:S:3522:PRO:O	1:S:3535:HIS:NE2	2.38	0.56
1:E:885:GLY:HA2	1:E:917:ALA:H	1.71	0.55
1:R:3386:PRO:HB3	1:R:3417:THR:OG1	2.07	0.55
1:E:801:ARG:HH22	1:E:931:SER:HB2	1.71	0.55
1:A:29:ARG:O	1:A:33:ARG:CG	2.53	0.55
1:M:2319:GLY:N	1:M:2350:PHE:O	2.40	0.55
1:N:2563:ARG:O	1:N:2563:ARG:HG3	2.04	0.55
1:E:865:ILE:O	1:F:1047:LYS:HE3	2.07	0.55
1:T:3692:GLU:CG	1:T:3817:PRO:HG3	2.36	0.55
1:J:1901:ARG:NH1	1:K:2063:GLU:HB3	2.21	0.55
1:K:1950:ARG:NH1	1:K:1972:ASP:OD2	2.39	0.55
1:I:1616:ASP:CB	1:I:1649:PRO:HD2	2.36	0.55
1:T:3768:LEU:HD22	1:T:3799:PHE:CG	2.42	0.55
1:B:234:PHE:CD2	1:B:257:HIS:ND1	2.74	0.55
1:C:420:PHE:O	1:C:420:PHE:HD1	1.88	0.55
1:G:1243:TYR:HD2	1:G:1283:LEU:HD11	1.68	0.55
1:I:1597:LEU:HG	1:I:1598:ARG:HG3	1.87	0.55
1:K:2052:GLU:OE2	1:K:2056:ARG:NH2	2.40	0.55
1:A:85:TYR:O	1:B:283:LYS:NZ	2.39	0.55
1:I:1675:PHE:CD2	1:J:1819:LYS:HD2	2.41	0.55
1:B:382:HIS:HB2	1:N:2640:PHE:CE1	2.42	0.55
1:K:2056:ARG:HD2	1:K:2067:LEU:HB3	1.89	0.55
1:P:2976:TYR:CD2	1:P:2981:THR:CG2	2.90	0.55
1:A:137:LEU:HD11	1:A:169:PHE:CZ	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:1454:GLY:CA	1:H:1486:HIS:CE1	2.90	0.55
1:O:2714:SER:OG	1:O:2721:THR:HG23	2.08	0.55
1:F:1041:VAL:HG21	1:F:1094:PHE:HZ	1.72	0.54
1:F:1138:LEU:CD1	1:F:1142:ASP:C	2.76	0.54
1:J:1797:PRO:O	1:J:1800:ARG:CG	2.54	0.54
1:J:1808:ALA:O	1:J:1841:LYS:NZ	2.33	0.54
1:J:1911:SER:CB	1:K:2102:HIS:HE1	2.16	0.54
1:Q:3093:ARG:HB3	1:Q:3160:ASP:HA	1.88	0.54
1:E:871:VAL:O	1:E:871:VAL:CG2	2.50	0.54
1:T:3679:SER:HB3	1:T:3746:PRO:CG	2.37	0.54
1:D:700:ILE:HD11	1:D:720:LEU:HG	1.89	0.54
1:D:682:GLY:HA3	1:D:761:LEU:HD13	1.89	0.54
1:J:1897:THR:O	1:J:1898:ARG:HB2	2.08	0.54
1:I:1665:ILE:HD12	1:I:1684:GLY:HA3	1.89	0.54
1:R:3402:ILE:HG21	1:R:3421:GLY:HA3	1.88	0.54
1:A:64:HIS:HB2	1:A:92:PHE:CE1	2.39	0.54
1:D:598:THR:HG21	1:D:658:PRO:HB3	1.88	0.54
1:Q:3182:ASP:HA	1:R:3363:LYS:HD2	1.90	0.54
1:T:3721:ARG:O	1:T:3723:PRO:CD	2.44	0.54
1:E:877:PRO:O	1:E:941:PHE:CE1	2.60	0.54
1:F:1087:GLU:CG	1:F:1091:ARG:NH1	2.63	0.54
1:I:1676:PHE:CE1	1:J:1819:LYS:HE3	2.42	0.54
1:B:213:ARG:NH1	1:B:235:ASP:OD1	2.40	0.54
1:E:880:LEU:HD12	1:E:880:LEU:C	2.28	0.54
1:G:1167:PHE:CD1	1:G:1199:PHE:HE1	2.24	0.54
1:L:2233:ALA:HB2	1:L:2264:LEU:O	2.07	0.54
1:T:3682:ARG:CB	1:T:3687:ARG:HG2	2.14	0.54
1:T:3732:LEU:HD12	1:T:3732:LEU:C	2.28	0.54
1:I:1632:LEU:HD13	1:J:1828:HIS:CD2	2.42	0.54
1:L:2197:LEU:CA	1:L:2229:VAL:HG12	2.38	0.54
1:P:3029:ALA:O	1:P:3030:HIS:ND1	2.40	0.54
1:B:278:TYR:HB3	1:B:282:PHE:HD2	1.72	0.54
1:I:1557:TRP:HB3	1:I:1587:ILE:HG23	1.89	0.54
1:O:2756:ARG:HH21	1:P:2908:TRP:HZ2	1.56	0.54
1:A:172:HIS:CE1	1:A:173:LEU:HD13	2.43	0.53
1:C:487:LEU:HB3	1:C:490:LYS:HD2	1.90	0.53
1:H:1373:LEU:HD11	1:H:1492:LEU:CD1	2.31	0.53
1:T:3677:ALA:CA	1:T:3744:ALA:O	2.52	0.53
1:C:395:PHE:HD1	1:C:450:HIS:NE2	2.01	0.53
1:F:1138:LEU:HD21	1:F:1142:ASP:C	2.28	0.53
1:F:1138:LEU:CG	1:F:1142:ASP:C	2.77	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:1550:ILE:HG13	1:I:1617:ALA:CB	2.37	0.53
1:K:2037:LEU:HD23	1:K:2099:PHE:CZ	2.42	0.53
1:L:2154:VAL:HA	1:L:2158:GLY:HA2	1.90	0.53
1:P:3026:PHE:HD2	1:P:3027:PHE:CD1	2.24	0.53
1:R:3286:ARG:NE	1:R:3351:ALA:O	2.41	0.53
1:O:2828:ARG:CD	1:O:2839:LEU:HD13	2.38	0.53
1:N:2610:LEU:CD2	1:N:2641:PHE:CD2	2.92	0.53
1:A:172:HIS:C	1:A:173:LEU:HD12	2.29	0.53
1:F:1086:ILE:HG13	1:F:1087:GLU:OE1	2.09	0.53
1:Q:3189:LEU:HD23	1:Q:3271:ALA:CB	2.39	0.53
1:L:2181:ASP:O	1:L:2184:HIS:ND1	2.41	0.53
1:L:2197:LEU:O	1:L:2229:VAL:CA	2.47	0.53
1:L:2198:ILE:CG2	1:L:2230:LEU:CG	2.85	0.53
1:L:2198:ILE:HA	1:L:2230:LEU:H	1.74	0.53
1:S:3591:HIS:O	1:S:3594:VAL:HG22	2.09	0.53
1:A:1:MET:N	1:A:2:PRO:HD3	2.23	0.53
1:B:350:ALA:HB2	1:C:573:GLU:HG3	1.90	0.53
1:D:685:VAL:HG13	1:D:716:LEU:CD1	2.38	0.53
1:F:1094:PHE:O	1:F:1098:GLU:N	2.28	0.53
1:F:1103:ALA:CB	1:F:1133:GLN:NE2	2.70	0.53
1:J:1744:VAL:HG11	1:J:1805:PHE:HA	1.89	0.53
1:J:1797:PRO:O	1:J:1801:HIS:ND1	2.42	0.53
1:L:2284:ARG:HH11	1:L:2287:ARG:HD2	1.74	0.53
1:N:2539:ALA:O	1:N:2543:PHE:HB2	2.09	0.53
1:N:2594:TYR:HE2	1:N:2633:GLN:O	1.92	0.53
1:N:2635:ARG:HB2	1:N:2636:PRO:HD3	1.90	0.53
1:R:3407:ARG:HD2	1:R:3418:LEU:HD13	1.89	0.53
1:S:3487:TRP:HE3	1:S:3517:ILE:HG21	1.74	0.53
1:T:3733:ASP:OD1	1:T:3734:ALA:N	2.42	0.53
1:B:234:PHE:HB3	1:B:257:HIS:CE1	2.43	0.53
1:C:476:LYS:NZ	1:D:663:SER:HB3	2.23	0.52
1:L:2135:SER:N	1:L:2165:ASP:OD1	2.35	0.52
1:C:475:PHE:O	1:C:478:PHE:HD1	1.91	0.52
1:I:1630:THR:O	1:I:1633:PHE:HB3	2.09	0.52
1:M:2369:LEU:HD12	1:N:2522:TRP:CE3	2.44	0.52
1:M:2436:VAL:HG22	1:M:2440:GLN:HB2	1.91	0.52
1:D:762:ALA:O	1:F:1064:VAL:CG1	2.57	0.52
1:A:24:GLU:HG2	1:A:40:VAL:HG11	1.92	0.52
1:A:135:HIS:HE1	1:A:172:HIS:CD2	2.27	0.52
1:J:1797:PRO:O	1:J:1801:HIS:CE1	2.63	0.52
1:L:2130:VAL:CG2	1:L:2190:ALA:O	2.56	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:96:ILE:O	1:B:275:LYS:NZ	2.42	0.52
1:A:107:LEU:HB2	1:A:169:PHE:CZ	2.44	0.52
1:E:944:HIS:CE1	1:E:951:ALA:O	2.63	0.52
1:H:1352:MET:HG2	1:I:1598:ARG:HH11	1.74	0.52
1:M:2439:HIS:O	1:M:2440:GLN:OE1	2.28	0.52
1:Q:3130:ASP:OD1	1:Q:3130:ASP:N	2.43	0.52
1:Q:3150:THR:HA	1:Q:3153:LEU:HD13	1.90	0.52
1:Q:3196:LEU:HD12	1:Q:3213:LEU:HG	1.91	0.52
1:B:350:ALA:HB2	1:C:573:GLU:CG	2.39	0.52
1:F:1050:TYR:OH	1:F:1093:VAL:HG21	2.09	0.52
1:I:1631:GLY:HA2	1:J:1827:LYS:HG3	1.92	0.52
1:S:3606:PHE:HZ	1:T:3749:LYS:HD3	1.74	0.52
1:D:762:ALA:HB3	1:F:1064:VAL:CA	2.34	0.52
1:M:2410:ASP:OD1	1:N:2591:LYS:HG2	2.10	0.52
1:M:2434:ALA:HB3	1:O:2818:ARG:HG3	1.92	0.52
1:P:2998:GLY:CA	1:P:3030:HIS:NE2	2.69	0.52
1:A:135:HIS:HE1	1:A:172:HIS:CG	2.28	0.52
1:C:512:ARG:N	1:C:513:PRO:HD2	2.25	0.52
1:J:1762:GLU:OE1	1:J:1766:ARG:NH2	2.43	0.52
1:Q:3262:SER:O	1:Q:3264:HIS:N	2.42	0.52
1:J:1907:ALA:O	1:J:1910:LEU:O	2.28	0.52
1:L:2136:TRP:HZ3	1:L:2209:THR:HG21	1.75	0.52
1:B:234:PHE:CG	1:B:257:HIS:HB3	2.41	0.51
1:B:319:ARG:NH1	1:B:330:LEU:O	2.39	0.51
1:K:2034:LYS:O	1:K:2066:THR:OG1	2.26	0.51
1:N:2610:LEU:CD2	1:N:2641:PHE:CG	2.91	0.51
1:S:3481:VAL:HG12	1:S:3513:HIS:N	2.25	0.51
1:T:3741:LEU:HD12	1:T:3741:LEU:O	2.11	0.51
1:J:1783:LEU:HB2	1:J:1798:HIS:ND1	2.25	0.51
1:K:2078:PHE:CB	1:K:2083:LEU:O	2.53	0.51
1:D:762:ALA:HB2	1:F:1066:LEU:N	2.22	0.51
1:B:307:GLY:HA3	1:Q:3277:HIS:CB	2.41	0.51
1:A:33:ARG:HE	1:F:1019:ARG:HD3	1.74	0.51
1:M:2319:GLY:CA	1:M:2350:PHE:O	2.59	0.51
1:O:2717:ARG:NH1	1:O:2747:ASP:OD1	2.44	0.51
1:E:818:LEU:HD22	1:E:833:HIS:CB	2.38	0.51
1:L:2316:HIS:CD2	1:L:2316:HIS:H	2.28	0.51
1:M:2359:ILE:HG21	1:M:2404:LEU:HD12	1.88	0.51
1:M:2370:ARG:O	1:M:2372:PRO:HD2	2.10	0.51
1:S:3556:LYS:CG	1:T:3761:ASP:OD1	2.59	0.51
1:B:247:ARG:HB3	1:O:2736:PHE:CZ	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:292:VAL:CG2	1:N:2691:LEU:HG	2.40	0.51
1:F:1041:VAL:HG21	1:F:1094:PHE:CZ	2.45	0.51
1:F:1073:LEU:O	1:F:1105:GLY:CA	2.53	0.51
1:G:1284:ARG:HB3	1:G:1285:PRO:CD	2.36	0.51
1:L:2127:PRO:HB2	1:L:2129:ILE:CD1	2.39	0.51
1:Q:3193:PRO:HB2	1:Q:3257:PHE:CZ	2.46	0.51
1:A:90:LYS:HE3	1:B:277:SER:HB2	1.92	0.51
1:E:893:ILE:HD12	1:E:912:GLY:HA3	1.93	0.51
1:J:1795:ASP:O	1:J:1799:THR:HB	2.11	0.51
1:J:1796:GLY:N	1:J:1797:PRO:CD	2.73	0.51
1:M:2350:PHE:CZ	1:M:2485:PHE:O	2.63	0.51
1:R:3401:VAL:HG23	1:T:3786:LEU:HD11	1.93	0.51
1:C:517:PHE:HE2	1:D:661:LYS:CD	2.21	0.51
1:D:694:ASP:HB3	1:D:723:SER:HA	1.93	0.51
1:H:1436:TYR:OH	1:H:1475:GLN:O	2.24	0.51
1:S:3600:ARG:HG2	1:S:3611:LEU:HD13	1.93	0.51
1:D:608:ARG:NH2	1:D:738:SER:OG	2.44	0.50
1:A:26:ALA:HB3	1:A:75:ILE:CD1	2.40	0.50
1:A:192:HIS:O	1:Q:3192:LYS:HE3	2.10	0.50
1:E:950:ALA:C	1:E:952:PRO:CD	2.80	0.50
1:H:1352:MET:CB	1:I:1598:ARG:HH12	2.24	0.50
1:L:2198:ILE:CB	1:L:2230:LEU:HB2	2.40	0.50
1:N:2661:GLY:C	1:N:2662:LEU:HG	2.27	0.50
1:A:164:ARG:HD3	1:F:1063:PRO:HG2	1.93	0.50
1:H:1352:MET:HG2	1:I:1598:ARG:HH12	1.71	0.50
1:L:2183:PRO:HB3	1:L:2187:HIS:CE1	2.47	0.50
1:O:2733:VAL:HG12	1:O:2733:VAL:O	2.11	0.50
1:Q:3204:ARG:O	1:S:3592:ALA:HB3	2.11	0.50
1:A:108:LEU:HD11	1:A:126:ARG:HG3	1.93	0.50
1:C:487:LEU:HB2	1:C:520:ALA:HB2	1.92	0.50
1:D:683:LYS:N	1:D:713:ALA:HB1	2.26	0.50
1:K:1963:ARG:HG2	1:K:1964:PHE:CE1	2.46	0.50
1:G:1259:LEU:HD21	1:G:1292:ALA:HA	1.93	0.50
1:M:2405:PHE:CE2	1:M:2441:LEU:HD13	2.46	0.50
1:O:2838:THR:HB	1:O:2874:HIS:NE2	2.26	0.50
1:F:1069:LYS:O	1:F:1099:ALA:HB1	2.11	0.50
1:J:1761:GLU:HG2	1:J:1777:VAL:HG21	1.92	0.50
1:M:2319:GLY:HA2	1:M:2350:PHE:O	2.11	0.50
1:M:2333:SER:OG	1:M:2333:SER:O	2.28	0.50
1:T:3686:THR:HG21	1:T:3746:PRO:HD3	1.93	0.50
1:H:1404:LEU:HD22	1:H:1406:GLN:OE1	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:1853:ARG:O	1:L:2241:ALA:HB3	2.12	0.50
1:Q:3096:ALA:HB1	1:Q:3111:VAL:HG22	1.93	0.50
1:Q:3261:LEU:HD13	1:Q:3264:HIS:HA	1.94	0.50
1:J:1771:PHE:HB3	1:J:1912:ARG:CZ	2.41	0.50
1:A:172:HIS:HD1	1:A:173:LEU:HD12	1.75	0.50
1:E:893:ILE:HG13	1:E:894:GLU:HG2	1.93	0.50
1:I:1731:GLU:OE2	1:L:2283:THR:HG21	2.12	0.50
1:M:2435:LEU:HD11	1:O:2819:HIS:ND1	2.27	0.50
1:Q:3189:LEU:HG	1:Q:3190:VAL:HG13	1.94	0.50
1:T:3678:GLY:O	1:T:3746:PRO:HD2	2.11	0.50
1:M:2405:PHE:HE2	1:M:2441:LEU:HD13	1.76	0.49
1:M:2421:PRO:CB	1:M:2452:THR:HB	2.41	0.49
1:M:2441:LEU:N	1:M:2443:PRO:HD2	2.27	0.49
1:P:2999:LYS:H	1:P:3029:ALA:HB1	1.77	0.49
1:M:2407:HIS:CE1	1:N:2597:LEU:HD11	2.48	0.49
1:M:2477:ARG:NH1	1:O:2818:ARG:HH22	2.11	0.49
1:N:2531:LEU:HD21	1:N:2620:THR:HG22	1.93	0.49
1:T:3776:ALA:CB	1:T:3808:LEU:CD1	2.90	0.49
1:C:507:ILE:O	1:C:512:ARG:HB2	2.11	0.49
1:D:762:ALA:HB1	1:F:1067:VAL:HG13	1.94	0.49
1:Q:3252:ARG:HD3	1:T:3852:GLY:HA2	1.93	0.49
1:T:3692:GLU:CD	1:T:3817:PRO:CD	2.81	0.49
1:E:941:PHE:O	1:E:944:HIS:O	2.29	0.49
1:G:1279:ILE:O	1:G:1284:ARG:HB2	2.12	0.49
1:I:1613:LEU:HD23	1:I:1645:LEU:HD23	1.93	0.49
1:M:2446:GLY:HA3	1:P:3017:GLU:OE1	2.11	0.49
1:Q:3089:MET:N	1:Q:3125:SER:HB3	2.27	0.49
1:B:350:ALA:HB1	1:C:572:LEU:HB3	1.94	0.49
1:K:2120:HIS:ND1	1:K:2120:HIS:N	2.61	0.49
1:E:935:ASP:HA	1:E:938:VAL:HG12	1.94	0.49
1:K:2071:LEU:HD21	1:K:2092:LEU:HB2	1.94	0.49
1:F:972:VAL:HG23	1:F:1004:HIS:HB3	1.94	0.49
1:G:1340:LEU:HD12	1:G:1340:LEU:O	2.13	0.49
1:I:1626:LYS:HZ3	1:I:1628:SER:HB3	1.77	0.49
1:K:2049:LEU:HD11	1:K:2053:HIS:CE1	2.48	0.49
1:L:2216:ILE:O	1:L:2216:ILE:CG2	2.60	0.49
1:A:49:ASP:HB3	1:B:242:ASP:HB2	1.95	0.49
1:A:105:PRO:HG3	1:A:172:HIS:CE1	2.48	0.49
1:P:3003:LEU:HD23	1:P:3020:LEU:CG	2.42	0.49
1:S:3663:HIS:CG	1:S:3663:HIS:O	2.64	0.49
1:G:1199:PHE:CD1	1:G:1199:PHE:C	2.86	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:1477:ARG:HD2	1:H:1490:THR:HG23	1.95	0.49
1:I:1666:GLU:HG3	1:I:1670:ARG:HE	1.78	0.49
1:S:3533:GLY:O	1:S:3536:THR:OG1	2.29	0.49
1:S:3559:TYR:HD1	1:S:3559:TYR:H	1.61	0.49
1:C:439:LEU:CB	1:C:441:GLN:HE22	2.25	0.48
1:M:2417:LEU:HA	1:M:2420:LYS:HD2	1.93	0.48
1:M:2455:THR:HG22	1:P:3028:GLU:O	2.13	0.48
1:R:3416:HIS:HB3	1:S:3612:ALA:HA	1.95	0.48
1:A:131:PHE:CE2	1:B:275:LYS:HD3	2.48	0.48
1:G:1263:PRO:CB	1:G:1294:THR:CB	2.89	0.48
1:M:2359:ILE:HD13	1:M:2404:LEU:CB	2.36	0.48
1:R:3352:ALA:O	1:R:3385:LYS:NZ	2.33	0.48
1:R:3408:PRO:HB3	1:S:3596:GLU:HB3	1.95	0.48
1:D:760:LEU:HD22	1:F:1145:PRO:HB2	1.94	0.48
1:F:1095:GLY:HA2	1:F:1098:GLU:HA	1.95	0.48
1:I:1731:GLU:HG2	1:I:1732:HIS:CA	2.39	0.48
1:L:2128:ARG:NH2	1:L:2193:ALA:HB1	2.28	0.48
1:N:2642:GLU:CG	1:O:2841:THR:OG1	2.60	0.48
1:P:2906:GLY:C	1:P:2938:ILE:HG12	2.28	0.48
1:P:2976:TYR:HD2	1:P:2981:THR:HG23	1.78	0.48
1:C:512:ARG:HB3	1:C:513:PRO:HD3	1.95	0.48
1:D:599:ARG:O	1:D:599:ARG:HG2	2.13	0.48
1:D:700:ILE:HD13	1:D:720:LEU:HG	1.96	0.48
1:E:890:ALA:O	1:E:893:ILE:HG12	2.14	0.48
1:M:2402:THR:OG1	1:M:2405:PHE:CB	2.62	0.48
1:R:3403:GLU:HB3	1:S:3601:PRO:HA	1.95	0.48
1:B:199:ILE:HG23	1:B:265:ASP:HB2	1.89	0.48
1:D:761:LEU:HG	1:F:1064:VAL:O	2.13	0.48
1:M:2323:VAL:HG13	1:M:2357:PHE:HE2	1.77	0.48
1:P:2928:ARG:HD2	1:P:2928:ARG:HA	1.73	0.48
1:T:3686:THR:OG1	1:T:3746:PRO:HG3	2.13	0.48
1:A:123:HIS:CD2	1:D:706:PRO:HG2	2.48	0.48
1:E:894:GLU:OE2	1:E:898:ARG:NH2	2.39	0.48
1:F:1086:ILE:HG13	1:F:1087:GLU:CD	2.33	0.48
1:K:2038:LEU:HD22	1:K:2055:LEU:HG	1.95	0.48
1:M:2369:LEU:HD12	1:N:2522:TRP:HE3	1.77	0.48
1:O:2771:LEU:HD11	1:O:2802:ALA:HB1	1.94	0.48
1:O:2784:LYS:HE2	1:P:2988:ILE:O	2.14	0.48
1:G:1162:PRO:HG2	1:G:1192:PHE:HB3	1.94	0.48
1:J:1762:GLU:O	1:J:1766:ARG:HD3	2.13	0.48
1:N:2642:GLU:O	1:N:2642:GLU:HG3	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Q:3189:LEU:C	1:Q:3192:LYS:HE3	2.33	0.48
1:H:1445:ASP:OD1	1:H:1445:ASP:O	2.31	0.48
1:M:2434:ALA:O	1:M:2437:ILE:HG12	2.13	0.48
1:T:3679:SER:HB2	1:T:3746:PRO:HG2	1.95	0.48
1:G:1167:PHE:CE1	1:G:1199:PHE:HE1	2.32	0.48
1:L:2197:LEU:CB	1:L:2229:VAL:CG1	2.91	0.48
1:B:383:HIS:CD2	1:O:2863:ARG:HD3	2.49	0.48
1:H:1492:LEU:HB2	1:I:1734:HIS:CE1	2.49	0.48
1:I:1569:GLU:CG	1:I:1694:PRO:HG3	2.43	0.48
1:Q:3190:VAL:HG12	1:Q:3223:HIS:CD2	2.48	0.48
1:J:1817:VAL:HG21	1:J:1879:TYR:HE1	1.80	0.47
1:L:2231:LEU:H	1:L:2231:LEU:HD23	1.79	0.47
1:N:2627:ALA:O	1:N:2628:LEU:HB2	2.14	0.47
1:O:2763:HIS:HA	1:O:2766:HIS:HB3	1.96	0.47
1:R:3367:THR:HG23	1:R:3370:PHE:HB3	1.95	0.47
1:B:235:ASP:OD1	1:B:235:ASP:N	2.44	0.47
1:C:476:LYS:O	1:C:476:LYS:HG3	2.14	0.47
1:F:1103:ALA:CB	1:F:1133:GLN:HE22	2.27	0.47
1:H:1513:LEU:HD23	1:H:1513:LEU:O	2.14	0.47
1:I:1670:ARG:HG2	1:I:1681:LEU:HD13	1.95	0.47
1:B:273:VAL:HG11	1:B:313:VAL:HG11	1.96	0.47
1:C:527:LEU:CD1	1:C:529:VAL:HG23	2.44	0.47
1:E:952:PRO:HG2	1:I:1613:LEU:HB2	1.96	0.47
1:T:3687:ARG:HH22	1:T:3691:GLU:HB2	1.79	0.47
1:A:117:HIS:ND1	1:C:505:LEU:HD21	2.28	0.47
1:F:1050:TYR:HE2	1:F:1089:GLN:O	1.96	0.47
1:G:1166:ALA:HB3	1:G:1198:VAL:HG12	1.95	0.47
1:K:1971:PHE:HB2	1:K:1994:HIS:CE1	2.50	0.47
1:L:2179:PRO:HG2	1:L:2180:GLN:NE2	2.29	0.47
1:M:2441:LEU:HD11	1:M:2445:PHE:HE1	1.79	0.47
1:M:2465:GLY:H	1:M:2469:LEU:C	2.18	0.47
1:P:2904:PHE:CE1	1:P:2938:ILE:CG2	2.96	0.47
1:B:280:GLY:O	1:B:284:HIS:N	2.46	0.47
1:F:1071:VAL:HG11	1:F:1094:PHE:CE2	2.50	0.47
1:J:1907:ALA:O	1:J:1910:LEU:N	2.47	0.47
1:O:2875:LEU:CD1	1:O:2876:SER:H	2.20	0.47
1:P:2940:ASP:OD1	1:P:2940:ASP:N	2.44	0.47
1:K:1952:LEU:HD11	1:K:2073:VAL:HG21	1.97	0.47
1:N:2612:GLY:N	1:N:2691:LEU:O	2.36	0.47
1:Q:3221:GLU:HG3	1:T:3806:THR:HB	1.97	0.47
1:Q:3234:SER:CB	1:Q:3241:LEU:N	2.72	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:137:LEU:HD11	1:A:169:PHE:CE1	2.49	0.47
1:C:388:PRO:C	1:C:390:PRO:HD3	2.34	0.47
1:F:1104:THR:OG1	1:F:1105:GLY:N	2.48	0.47
1:K:2049:LEU:HD12	1:K:2049:LEU:C	2.22	0.47
1:Q:3261:LEU:HD12	1:Q:3262:SER:H	1.79	0.47
1:T:3685:LYS:HA	1:T:3688:SER:HB3	1.96	0.47
1:F:973:ALA:HB1	1:F:988:VAL:HB	1.95	0.47
1:O:2837:HIS:HB3	1:O:2874:HIS:HE1	1.80	0.47
1:A:105:PRO:HB2	1:A:169:PHE:CD1	2.49	0.46
1:A:126:ARG:NH2	1:A:137:LEU:O	2.48	0.46
1:A:135:HIS:CE1	1:A:172:HIS:CD2	3.02	0.46
1:A:164:ARG:NH2	1:F:1063:PRO:CD	2.67	0.46
1:O:2779:ALA:HB2	1:O:2811:ALA:HB3	1.96	0.46
1:P:2906:GLY:C	1:P:2938:ILE:CG1	2.84	0.46
1:A:107:LEU:HB2	1:A:169:PHE:CE2	2.50	0.46
1:B:267:LEU:HD11	1:B:297:LYS:CD	2.43	0.46
1:D:715:THR:O	1:D:716:LEU:C	2.52	0.46
1:D:771:HIS:CG	1:F:1098:GLU:O	2.68	0.46
1:T:3692:GLU:CD	1:T:3817:PRO:CG	2.84	0.46
1:F:1023:ASP:H	1:F:1026:HIS:CE1	2.31	0.46
1:F:1034:LEU:HD22	1:F:1065:ALA:HB1	1.96	0.46
1:H:1352:MET:CG	1:I:1598:ARG:HH12	2.28	0.46
1:J:1744:VAL:HG23	1:J:1776:HIS:HB3	1.96	0.46
1:Q:3095:VAL:HG13	1:Q:3162:LEU:HD23	1.97	0.46
1:S:3582:LEU:HD12	1:S:3599:LEU:HB3	1.96	0.46
1:E:907:HIS:CD2	1:H:1519:GLN:OE1	2.68	0.46
1:H:1388:SER:OG	1:H:1389:ALA:N	2.49	0.46
1:J:1823:THR:O	1:J:1826:PHE:HB3	2.16	0.46
1:M:2427:THR:HG22	1:M:2459:VAL:HB	1.98	0.46
1:N:2531:LEU:HD22	1:N:2652:VAL:HG21	1.98	0.46
1:R:3339:ASP:HB3	1:R:3342:HIS:HB3	1.97	0.46
1:R:3414:GLU:OE1	1:S:3613:THR:CG2	2.64	0.46
1:D:683:LYS:H	1:D:713:ALA:HB1	1.80	0.46
1:G:1284:ARG:CB	1:G:1285:PRO:HD3	2.35	0.46
1:T:3846:ALA:HB1	1:T:3849:LEU:HB2	1.96	0.46
1:A:192:HIS:N	1:Q:3189:LEU:N	2.60	0.46
1:B:320:PRO:HG2	1:C:509:HIS:NE2	2.29	0.46
1:D:750:ALA:O	1:D:751:HIS:C	2.52	0.46
1:F:1081:ARG:NH1	1:H:1466:ASP:HB3	2.31	0.46
1:N:2583:LEU:HD11	1:N:2615:VAL:HG13	1.98	0.46
1:Q:3192:LYS:HZ3	1:Q:3220:PHE:HD2	1.64	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S:3554:VAL:O	1:S:3554:VAL:HG23	2.15	0.46
1:N:2635:ARG:N	1:N:2636:PRO:CD	2.79	0.46
1:P:3016:ILE:HG13	1:P:3017:GLU:HG2	1.98	0.46
1:D:680:LEU:H	1:F:1146:LEU:HD13	1.80	0.46
1:F:1045:VAL:HG12	1:F:1077:GLY:HA2	1.98	0.46
1:K:1971:PHE:CZ	1:K:1994:HIS:O	2.69	0.46
1:P:2953:ASP:O	1:P:2957:THR:OG1	2.34	0.46
1:P:2976:TYR:CE2	1:P:2981:THR:HG21	2.50	0.46
1:H:1512:ARG:HB3	1:I:1734:HIS:HB3	1.97	0.46
1:Q:3189:LEU:HG	1:Q:3271:ALA:HB1	1.98	0.46
1:Q:3229:LEU:HD12	1:Q:3249:ARG:HD3	1.97	0.46
1:R:3299:LYS:HE3	1:R:3428:ASP:O	2.16	0.46
1:M:2410:ASP:HA	1:N:2591:LYS:HE2	1.98	0.46
1:E:843:ALA:O	1:E:876:LYS:HE3	2.16	0.45
1:M:2455:THR:HG23	1:M:2484:GLN:HE22	1.82	0.45
1:D:594:ARG:CG	1:D:595:PRO:HD3	2.26	0.45
1:H:1452:LEU:HB2	1:H:1483:PHE:CD2	2.51	0.45
1:I:1559:ARG:N	1:I:1560:PRO:CD	2.80	0.45
1:J:1881:SER:OG	1:J:1882:ALA:N	2.49	0.45
1:J:1908:ALA:O	1:K:2102:HIS:O	2.33	0.45
1:P:3033:ALA:O	1:P:3034:THR:C	2.53	0.45
1:P:3056:ARG:O	1:P:3059:ARG:HG2	2.17	0.45
1:Q:3168:VAL:HG12	1:Q:3200:GLY:HA2	1.96	0.45
1:B:297:LYS:O	1:B:329:THR:OG1	2.33	0.45
1:E:877:PRO:O	1:E:941:PHE:HE1	1.98	0.45
1:F:969:PRO:HD2	1:F:1000:GLY:C	2.37	0.45
1:H:1459:LEU:HD13	1:H:1477:ARG:HG2	1.99	0.45
1:K:2019:PHE:O	1:K:2023:ILE:HG12	2.16	0.45
1:L:2304:LEU:HD12	1:L:2304:LEU:HA	1.84	0.45
1:Q:3189:LEU:CG	1:Q:3271:ALA:HB1	2.47	0.45
1:S:3478:PRO:HD3	1:S:3649:ARG:O	2.16	0.45
1:B:322:PHE:HB2	1:B:330:LEU:HD21	1.98	0.45
1:F:979:SER:OG	1:F:981:PRO:HD2	2.16	0.45
1:L:2262:THR:OG1	1:L:2263:GLY:N	2.50	0.45
1:M:2367:GLY:HA2	1:M:2371:GLN:HG2	1.97	0.45
1:Q:3232:SER:HB3	1:Q:3233:ALA:H	1.67	0.45
1:A:33:ARG:CZ	1:F:1019:ARG:HB2	2.47	0.45
1:C:401:ARG:O	1:C:403:SER:N	2.47	0.45
1:H:1472:ILE:O	1:H:1477:ARG:HG3	2.17	0.45
1:I:1550:ILE:HG13	1:I:1617:ALA:HB3	1.98	0.45
1:J:1800:ARG:HH21	1:J:1801:HIS:CE1	2.35	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:1858:ILE:HG13	1:J:1859:GLU:HG2	1.98	0.45
1:Q:3190:VAL:HG12	1:Q:3223:HIS:NE2	2.32	0.45
1:Q:3228:GLY:O	1:Q:3229:LEU:HD23	2.15	0.45
1:S:3503:ARG:NH1	1:S:3637:ASP:OD1	2.50	0.45
1:A:164:ARG:HD3	1:F:1063:PRO:CG	2.46	0.45
1:C:527:LEU:HD12	1:C:529:VAL:HG23	1.99	0.45
1:J:1770:ARG:HG2	1:J:1771:PHE:CD2	2.52	0.45
1:J:1795:ASP:HB3	1:J:1798:HIS:HB3	1.99	0.45
1:P:3051:GLU:HG3	1:P:3052:ALA:N	2.27	0.45
1:A:170:ALA:HB2	1:F:1019:ARG:CZ	2.47	0.45
1:D:741:LEU:HD23	1:D:745:VAL:HG23	1.99	0.45
1:H:1404:LEU:HD23	1:H:1405:ARG:HB3	1.98	0.45
1:S:3567:ILE:O	1:T:3749:LYS:NZ	2.47	0.45
1:C:391:ARG:NH2	1:C:456:ALA:O	2.50	0.45
1:C:471:TYR:HE2	1:C:510:GLN:O	2.00	0.45
1:D:740:ARG:NH1	1:Q:3186:PRO:HD2	2.31	0.45
1:F:1133:GLN:O	1:F:1133:GLN:CG	2.63	0.45
1:F:1138:LEU:CD2	1:F:1142:ASP:CA	2.95	0.45
1:I:1587:ILE:HD11	1:I:1632:LEU:CB	2.43	0.45
1:O:2744:ASP:N	1:O:2744:ASP:OD1	2.49	0.45
1:T:3687:ARG:HA	1:T:3687:ARG:HD2	1.71	0.45
1:D:708:PHE:O	1:D:712:GLU:HA	2.17	0.45
1:G:1243:TYR:CD2	1:G:1283:LEU:CD1	2.87	0.45
1:J:1771:PHE:HB3	1:J:1912:ARG:NH1	2.32	0.45
1:J:1796:GLY:H	1:J:1797:PRO:CD	2.30	0.45
1:J:1839:VAL:HG23	1:J:1918:LEU:HD22	1.99	0.45
1:L:2304:LEU:O	1:L:2305:LEU:C	2.56	0.45
1:O:2733:VAL:O	1:O:2733:VAL:CG1	2.65	0.45
1:D:610:VAL:HA	1:D:614:GLY:HA3	1.99	0.44
1:G:1206:PRO:HB2	1:H:1401:PHE:CD2	2.52	0.44
1:N:2510:MET:N	1:N:2511:PRO:HD2	2.32	0.44
1:Q:3138:PHE:HD2	1:Q:3146:ASP:HB2	1.82	0.44
1:S:3600:ARG:NH1	1:S:3611:LEU:HD13	2.28	0.44
1:T:3806:THR:OG1	1:T:3807:GLY:N	2.50	0.44
1:A:172:HIS:CE1	1:A:173:LEU:HD11	2.51	0.44
1:E:907:HIS:HB3	1:H:1519:GLN:CD	2.27	0.44
1:I:1720:HIS:O	1:I:1721:ASP:OD1	2.35	0.44
1:N:2631:GLU:HA	1:N:2635:ARG:CD	2.46	0.44
1:S:3484:ALA:HB1	1:S:3551:ALA:HA	1.97	0.44
1:B:234:PHE:CB	1:B:257:HIS:CE1	2.99	0.44
1:D:740:ARG:NH1	1:Q:3185:GLU:OE2	2.27	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:951:ALA:N	1:E:952:PRO:CD	2.80	0.44
1:L:2236:GLY:O	1:L:2268:ALA:N	2.49	0.44
1:M:2460:SER:OG	1:M:2461:ALA:N	2.50	0.44
1:S:3499:GLU:HA	1:S:3502:ARG:HG2	1.98	0.44
1:B:194:MET:CG	1:B:195:PRO:HD3	2.45	0.44
1:D:678:VAL:HG11	1:D:772:HIS:CD2	2.53	0.44
1:D:760:LEU:C	1:D:760:LEU:HD12	2.38	0.44
1:F:1091:ARG:HA	1:F:1102:LEU:HD21	1.98	0.44
1:G:1259:LEU:HB3	1:G:1290:PHE:O	2.17	0.44
1:L:2278:SER:OG	1:L:2279:GLU:N	2.50	0.44
1:S:3484:ALA:CA	1:S:3551:ALA:HA	2.48	0.44
1:T:3851:VAL:HG23	1:T:3851:VAL:O	2.17	0.44
1:C:550:ARG:HG2	1:N:2608:VAL:CG1	2.32	0.44
1:E:946:SER:HB2	1:E:950:ALA:HB3	1.98	0.44
1:L:2127:PRO:HB2	1:L:2129:ILE:HD12	1.98	0.44
1:N:2583:LEU:HD12	1:N:2583:LEU:O	2.18	0.44
1:O:2828:ARG:CB	1:O:2829:PRO:HD3	2.27	0.44
1:C:490:LYS:O	1:C:522:THR:OG1	2.25	0.44
1:C:530:SER:OG	1:C:531:ALA:N	2.51	0.44
1:E:871:VAL:HG22	1:I:1727:ALA:N	2.32	0.44
1:K:2100:ALA:O	1:K:2102:HIS:N	2.34	0.44
1:M:2453:LEU:HD12	1:M:2453:LEU:HA	1.78	0.44
1:O:2763:HIS:HB2	1:O:2767:LEU:HD23	1.99	0.44
1:O:2884:LEU:C	1:O:2884:LEU:CD2	2.85	0.44
1:Q:3121:ARG:HA	1:Q:3121:ARG:HD3	1.85	0.44
1:R:3404:HIS:CD2	1:S:3601:PRO:HG3	2.53	0.44
1:T:3775:LEU:CD1	1:T:3792:LEU:HD23	2.42	0.44
1:E:880:LEU:HD11	1:E:893:ILE:HB	1.99	0.44
1:J:1812:ILE:HD12	1:J:1844:LEU:HD23	1.99	0.44
1:K:2074:SER:OG	1:K:2075:ALA:N	2.49	0.44
1:L:2231:LEU:HD21	1:L:2264:LEU:H	1.83	0.44
1:M:2392:VAL:HG12	1:M:2441:LEU:HD21	1.99	0.44
1:O:2837:HIS:HB3	1:O:2874:HIS:CE1	2.52	0.44
1:A:82:LYS:HD3	1:B:324:PHE:CE2	2.52	0.44
1:B:199:ILE:HG23	1:B:265:ASP:CB	2.37	0.44
1:L:2129:ILE:O	1:L:2161:ALA:HA	2.17	0.44
1:P:2949:ARG:HH11	1:P:2951:PRO:HD2	1.82	0.44
1:B:307:GLY:O	1:B:337:SER:HA	2.18	0.44
1:B:316:HIS:HB3	1:D:702:HIS:CD2	2.53	0.44
1:C:420:PHE:HZ	1:C:555:PHE:HB3	1.83	0.44
1:D:677:PRO:HD2	1:G:1322:ARG:CD	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:1520:PHE:HD1	1:H:1520:PHE:HA	1.73	0.44
1:J:1779:ASP:N	1:J:1779:ASP:OD1	2.49	0.44
1:K:2027:GLU:HG2	1:K:2028:PRO:HD2	1.99	0.44
1:P:3003:LEU:HD23	1:P:3020:LEU:CD2	2.48	0.44
1:Q:3189:LEU:HA	1:Q:3192:LYS:HE3	2.00	0.44
1:A:176:HIS:C	1:A:177:ASP:OD1	2.56	0.43
1:B:379:LEU:HB2	1:O:2863:ARG:HH21	1.83	0.43
1:O:2846:SER:OG	1:O:2847:ALA:N	2.51	0.43
1:P:2979:SER:OG	1:P:3019:GLN:HB3	2.17	0.43
1:Q:3136:PRO:HB3	1:R:3331:PHE:CE1	2.53	0.43
1:S:3553:PRO:O	1:S:3560:THR:HG23	2.18	0.43
1:S:3618:SER:OG	1:S:3619:ALA:N	2.51	0.43
1:B:194:MET:HG3	1:B:195:PRO:CD	2.45	0.43
1:C:512:ARG:HB3	1:C:513:PRO:CD	2.48	0.43
1:L:2228:PRO:HA	1:L:2259:THR:HB	1.99	0.43
1:R:3288:VAL:HG12	1:R:3355:LEU:HD23	1.98	0.43
1:A:25:GLU:O	1:A:162:LEU:HD21	2.18	0.43
1:G:1212:ARG:H	1:G:1212:ARG:HG2	1.61	0.43
1:M:2443:PRO:O	1:M:2446:GLY:N	2.48	0.43
1:R:3444:ASP:HA	1:R:3447:VAL:HG12	2.00	0.43
1:T:3692:GLU:OE2	1:T:3817:PRO:CD	2.63	0.43
1:F:979:SER:HB3	1:F:982:SER:HG	1.82	0.43
1:F:1138:LEU:HG	1:F:1142:ASP:C	2.39	0.43
1:I:1629:TYR:CE1	1:J:1827:LYS:HE2	2.53	0.43
1:N:2516:VAL:HG21	1:N:2576:ALA:O	2.19	0.43
1:N:2630:ILE:HA	1:N:2634:LEU:HB2	1.99	0.43
1:N:2657:PHE:HA	1:N:2662:LEU:HB2	2.00	0.43
1:S:3539:LEU:HB3	1:S:3566:PHE:HE1	1.83	0.43
1:T:3739:ASP:O	1:T:3740:ALA:HB2	2.18	0.43
1:A:126:ARG:HG2	1:A:136:THR:HG21	1.99	0.43
1:A:173:LEU:HD23	1:A:177:ASP:HB3	1.99	0.43
1:C:518:PHE:CZ	1:D:661:LYS:HD2	2.53	0.43
1:D:719:GLY:C	1:D:720:LEU:CD1	2.76	0.43
1:G:1280:GLU:CA	1:G:1284:ARG:HD2	2.43	0.43
1:H:1477:ARG:NH1	1:H:1489:ALA:O	2.50	0.43
1:O:2857:SER:OG	1:O:2858:GLU:N	2.51	0.43
1:A:172:HIS:O	1:A:172:HIS:ND1	2.51	0.43
1:C:479:ILE:HG13	1:C:479:ILE:H	1.56	0.43
1:E:871:VAL:O	1:I:1727:ALA:N	2.52	0.43
1:E:897:LEU:HD12	1:E:897:LEU:HA	1.87	0.43
1:F:977:SER:HB2	1:F:984:THR:HB	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:2310:GLU:OE1	1:L:2312:HIS:N	2.38	0.43
1:P:2904:PHE:CD1	1:P:2936:PHE:CE2	3.06	0.43
1:P:3021:ARG:HH12	1:P:3034:THR:HG22	1.82	0.43
1:D:700:ILE:HG13	1:D:701:GLU:HG2	1.99	0.43
1:H:1468:HIS:O	1:H:1471:VAL:HG23	2.18	0.43
1:K:2020:LYS:HB3	1:L:2210:GLY:HA2	2.00	0.43
1:M:2414:PRO:HA	1:M:2448:PHE:HE1	1.83	0.43
1:Q:3224:THR:HA	1:T:3803:THR:HG22	2.00	0.43
1:R:3397:ARG:HG2	1:T:3785:ALA:HB3	2.00	0.43
1:D:632:LEU:HG	1:D:633:ARG:H	1.84	0.43
1:F:1058:ILE:O	1:F:1061:ILE:CG1	2.65	0.43
1:M:2432:ARG:O	1:O:2820:ALA:HB3	2.19	0.43
1:M:2452:THR:O	1:M:2452:THR:CG2	2.64	0.43
1:A:91:HIS:ND1	1:B:281:LEU:HD13	2.34	0.43
1:A:164:ARG:HH21	1:F:1063:PRO:CD	2.26	0.43
1:E:894:GLU:OE1	1:H:1478:PRO:HA	2.19	0.43
1:I:1647:GLY:HA2	1:I:1679:HIS:CD2	2.54	0.43
1:L:2233:ALA:O	1:L:2266:VAL:CG2	2.65	0.43
1:S:3551:ALA:HB2	1:S:3563:PHE:CD1	2.54	0.43
1:S:3559:TYR:N	1:S:3559:TYR:CD1	2.87	0.43
1:B:236:ILE:HD13	1:B:281:LEU:HB3	2.01	0.43
1:C:392:ILE:H	1:C:424:ALA:HB3	1.84	0.43
1:D:720:LEU:HB3	1:D:721:TYR:H	1.65	0.43
1:H:1362:GLY:HA2	1:H:1440:PHE:HD1	1.83	0.43
1:N:2635:ARG:O	1:N:2639:GLY:N	2.52	0.43
1:R:3396:ASP:O	1:T:3783:ARG:HA	2.19	0.43
1:S:3516:ASP:OD1	1:S:3516:ASP:N	2.51	0.43
1:A:15:ARG:CB	1:A:16:PRO:HD3	2.24	0.42
1:B:211:LYS:NZ	1:B:341:PHE:HB2	2.33	0.42
1:C:475:PHE:O	1:C:478:PHE:CE1	2.72	0.42
1:Q:3134:LEU:HD23	1:Q:3149:HIS:CE1	2.54	0.42
1:T:3788:ILE:HG13	1:T:3789:GLU:OE1	2.18	0.42
1:B:306:GLY:HA2	1:B:338:ALA:HB2	2.01	0.42
1:C:477:HIS:O	1:C:477:HIS:CG	2.72	0.42
1:D:772:HIS:HB3	1:G:1322:ARG:CB	2.44	0.42
1:I:1717:LEU:HB2	1:I:1721:ASP:HA	2.01	0.42
1:S:3563:PHE:CZ	1:S:3567:ILE:HD11	2.54	0.42
1:T:3768:LEU:HB2	1:T:3799:PHE:HB3	2.01	0.42
1:F:1045:VAL:HG21	1:F:1082:HIS:CD2	2.55	0.42
1:H:1362:GLY:CA	1:H:1440:PHE:CD1	3.02	0.42
1:I:1638:ASP:HB3	1:J:1818:TYR:CE1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:T:3732:LEU:HD12	1:T:3733:ASP:N	2.34	0.42
1:F:1094:PHE:HB3	1:F:1102:LEU:HD13	2.01	0.42
1:F:1133:GLN:O	1:F:1137:HIS:CE1	2.72	0.42
1:J:1750:TRP:O	1:J:1750:TRP:CE3	2.72	0.42
1:M:2320:PRO:HD2	1:M:2350:PHE:HB3	2.01	0.42
1:P:2905:ALA:HB1	1:P:2914:THR:HG22	2.01	0.42
1:P:2949:ARG:HG3	1:P:2950:GLN:H	1.83	0.42
1:P:3065:ALA:O	1:P:3066:ALA:HB3	2.19	0.42
1:S:3482:ALA:O	1:S:3549:ILE:O	2.36	0.42
1:A:34:PHE:CB	1:F:1019:ARG:HE	2.33	0.42
1:C:487:LEU:HD22	1:C:490:LYS:HE3	2.02	0.42
1:F:1041:VAL:HG11	1:F:1094:PHE:CZ	2.54	0.42
1:J:1856:LEU:HB2	1:L:2242:LEU:HB2	2.01	0.42
1:J:1907:ALA:C	1:J:1909:HIS:N	2.72	0.42
1:D:771:HIS:HB2	1:F:1097:PHE:O	2.19	0.42
1:F:998:ARG:CZ	1:F:1132:ALA:HB1	2.50	0.42
1:H:1494:VAL:HG12	1:H:1495:SER:O	2.19	0.42
1:R:3407:ARG:N	1:R:3408:PRO:HD2	2.35	0.42
1:S:3482:ALA:HB1	1:S:3549:ILE:N	2.15	0.42
1:S:3593:LEU:O	1:S:3597:HIS:HB2	2.19	0.42
1:A:29:ARG:CD	1:A:163:ASP:HA	2.41	0.42
1:B:320:PRO:HG2	1:C:509:HIS:CD2	2.55	0.42
1:D:672:ILE:O	1:D:675:ILE:HG12	2.20	0.42
1:F:1081:ARG:O	1:H:1467:ARG:HA	2.19	0.42
1:F:1133:GLN:O	1:F:1133:GLN:HG3	2.19	0.42
1:L:2283:THR:HA	1:L:2286:ASP:HB2	2.02	0.42
1:M:2449:GLU:HG2	1:P:3034:THR:OG1	2.20	0.42
1:O:2833:PHE:CE2	1:P:2977:LYS:CD	2.98	0.42
1:S:3552:SER:CB	1:S:3585:THR:HG23	2.50	0.42
1:A:161:ARG:NH1	1:F:1157:HIS:O	2.53	0.42
1:D:762:ALA:HB3	1:F:1065:ALA:N	2.35	0.42
1:I:1731:GLU:HG3	1:I:1732:HIS:N	2.27	0.42
1:L:2252:PHE:HB2	1:L:2260:LEU:HD21	2.01	0.42
1:S:3495:SER:HB2	1:S:3627:LEU:HD13	2.02	0.42
1:E:903:PHE:CD2	1:F:1047:LYS:HA	2.55	0.42
1:N:2613:LYS:CB	1:N:2614:PRO:CD	2.98	0.42
1:N:2632:HIS:O	1:N:2636:PRO:HG2	2.20	0.42
1:O:2875:LEU:HD12	1:O:2876:SER:CA	2.46	0.42
1:Q:3262:SER:C	1:Q:3264:HIS:N	2.73	0.42
1:B:204:GLY:N	1:B:270:ALA:O	2.53	0.42
1:I:1650:VAL:HG13	1:I:1681:LEU:HD23	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:2443:PRO:HB3	1:P:3017:GLU:HB3	2.02	0.42
1:T:3793:ARG:NH2	1:T:3805:ALA:O	2.52	0.42
1:N:2613:LYS:O	1:N:2643:ALA:HB1	2.20	0.41
1:P:3021:ARG:H	1:P:3022:PRO:HD2	1.85	0.41
1:Q:3110:LEU:HD11	1:Q:3231:VAL:HG11	2.01	0.41
1:S:3484:ALA:HA	1:S:3551:ALA:HA	2.01	0.41
1:B:267:LEU:HD11	1:B:297:LYS:CE	2.50	0.41
1:C:434:PRO:HD2	1:C:436:PHE:CZ	2.56	0.41
1:D:747:GLN:O	1:D:751:HIS:HE1	2.03	0.41
1:E:821:ASP:C	1:E:823:GLY:N	2.66	0.41
1:I:1629:TYR:CD1	1:J:1827:LYS:HE2	2.55	0.41
1:L:2201:SER:H	1:L:2232:ALA:HB1	1.85	0.41
1:M:2358:ASP:OD1	1:M:2358:ASP:N	2.53	0.41
1:S:3537:ARG:O	1:S:3537:ARG:NH1	2.49	0.41
1:T:3776:ALA:HB1	1:T:3808:LEU:HG	2.02	0.41
1:A:27:ALA:O	1:A:30:ALA:N	2.53	0.41
1:A:139:THR:OG1	1:F:1158:HIS:HA	2.20	0.41
1:A:164:ARG:HH22	1:F:1064:VAL:CG2	2.28	0.41
1:E:852:VAL:HG22	1:E:892:VAL:HG21	2.02	0.41
1:E:856:SER:HB3	1:F:1055:LYS:NZ	2.35	0.41
1:L:2200:ALA:CA	1:L:2232:ALA:HB2	2.37	0.41
1:S:3600:ARG:N	1:S:3601:PRO:HD2	2.35	0.41
1:A:33:ARG:NH2	1:F:1019:ARG:HB2	2.35	0.41
1:B:221:ARG:HD2	1:B:221:ARG:HA	1.97	0.41
1:B:273:VAL:HG22	1:B:305:GLY:HA3	2.03	0.41
1:B:301:LEU:HD22	1:B:318:LEU:HB3	2.02	0.41
1:F:1058:ILE:HA	1:F:1061:ILE:HG12	2.02	0.41
1:H:1492:LEU:HB2	1:I:1734:HIS:ND1	2.35	0.41
1:K:2010:VAL:HG21	1:K:2050:VAL:HG11	2.02	0.41
1:P:3021:ARG:N	1:P:3022:PRO:HD2	2.34	0.41
1:Q:3189:LEU:CD2	1:Q:3271:ALA:CB	2.95	0.41
1:S:3556:LYS:HG3	1:T:3761:ASP:OD1	2.20	0.41
1:D:621:ASP:OD1	1:D:621:ASP:N	2.53	0.41
1:D:745:VAL:HG12	1:D:745:VAL:O	2.21	0.41
1:E:885:GLY:HA2	1:E:917:ALA:N	2.35	0.41
1:N:2529:ARG:O	1:N:2533:GLU:HG2	2.20	0.41
1:N:2594:TYR:CE2	1:N:2633:GLN:O	2.72	0.41
1:T:3768:LEU:HA	1:T:3771:LYS:HE2	2.00	0.41
1:B:329:THR:HG22	1:B:365:HIS:NE2	2.36	0.41
1:C:451:LEU:HD12	1:C:452:ASP:N	2.35	0.41
1:D:591:SER:HB3	1:D:621:ASP:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:1081:ARG:HH22	1:H:1495:SER:HA	1.86	0.41
1:J:1741:PRO:HG2	1:J:1772:GLY:HA2	2.03	0.41
1:C:420:PHE:CZ	1:C:555:PHE:HB3	2.55	0.41
1:F:1128:ASP:HA	1:F:1131:VAL:HG22	2.02	0.41
1:I:1631:GLY:HA2	1:J:1827:LYS:HZ2	1.86	0.41
1:K:1937:VAL:HG21	1:K:1997:ALA:O	2.21	0.41
1:L:2152:ARG:NH1	1:L:2286:ASP:OD1	2.54	0.41
1:N:2539:ALA:O	1:N:2543:PHE:CB	2.69	0.41
1:M:2465:GLY:N	1:M:2466:PRO:HD2	2.36	0.41
1:P:2957:THR:HG22	1:P:2961:ASP:OD1	2.21	0.41
1:D:608:ARG:HH12	1:D:738:SER:HA	1.85	0.41
1:E:798:ALA:HB3	1:E:847:ILE:HD12	2.02	0.41
1:E:907:HIS:CB	1:H:1519:GLN:CD	2.89	0.41
1:G:1255:GLU:HB2	1:G:1258:ALA:HB2	2.02	0.41
1:G:1268:ALA:HB2	1:G:1279:ILE:HD11	2.01	0.41
1:G:1327:PHE:O	1:G:1331:LEU:CD1	2.69	0.41
1:I:1688:SER:OG	1:I:1689:ALA:N	2.53	0.41
1:J:1796:GLY:O	1:J:1800:ARG:CB	2.67	0.41
1:J:1907:ALA:O	1:J:1909:HIS:N	2.54	0.41
1:K:1977:GLY:HA2	1:K:1978:PRO:HD3	1.94	0.41
1:K:2109:ALA:O	1:K:2111:LEU:N	2.54	0.41
1:L:2143:ARG:HA	1:L:2146:VAL:HG22	2.02	0.41
1:L:2148:GLU:OE1	1:L:2276:LEU:HD23	2.20	0.41
1:M:2455:THR:HG21	1:M:2480:ARG:HH12	1.85	0.41
1:M:2465:GLY:N	1:M:2469:LEU:O	2.51	0.41
1:O:2784:LYS:HD2	1:P:3027:PHE:CZ	2.56	0.41
1:O:2823:ILE:O	1:O:2828:ARG:HB2	2.20	0.41
1:Q:3095:VAL:CG1	1:Q:3162:LEU:HD23	2.51	0.41
1:S:3552:SER:HA	1:S:3584:ALA:HA	2.02	0.41
1:A:27:ALA:O	1:A:31:VAL:N	2.36	0.41
1:A:193:HIS:CB	1:Q:3158:ALA:HB1	2.51	0.41
1:C:479:ILE:HB	1:D:661:LYS:HG2	2.03	0.41
1:I:1590:LEU:HA	1:I:1604:PRO:HB2	2.02	0.41
1:K:1979:ASP:HB3	1:K:2018:LEU:HD21	2.03	0.41
1:L:2203:VAL:HG23	1:L:2234:THR:OG1	2.21	0.41
1:M:2453:LEU:HD23	1:P:3021:ARG:HH11	1.86	0.41
1:N:2612:GLY:H	1:N:2691:LEU:C	2.20	0.41
1:Q:3089:MET:CG	1:Q:3090:PRO:CD	2.84	0.41
1:Q:3109:SER:HA	1:Q:3112:GLU:HB3	2.03	0.41
1:A:123:HIS:CE1	1:D:706:PRO:HB3	2.56	0.40
1:F:969:PRO:HB3	1:F:1037:ASP:OD2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:P:2999:LYS:H	1:P:3029:ALA:CB	2.33	0.40
1:T:3771:LYS:HA	1:T:3772:PRO:HD3	1.94	0.40
1:A:26:ALA:HB3	1:A:75:ILE:HD13	2.03	0.40
1:F:972:VAL:CG1	1:F:1039:LEU:HD23	2.51	0.40
1:H:1354:GLY:HA2	1:H:1355:PRO:HD3	1.92	0.40
1:H:1512:ARG:NH1	1:I:1734:HIS:O	2.53	0.40
1:O:2838:THR:HG22	1:O:2874:HIS:CE1	2.56	0.40
1:T:3776:ALA:HB1	1:T:3808:LEU:CG	2.50	0.40
1:D:762:ALA:O	1:F:1064:VAL:HB	2.21	0.40
1:H:1454:GLY:HA2	1:H:1486:HIS:CD2	2.47	0.40
1:H:1492:LEU:HD21	1:H:1513:LEU:HD12	2.04	0.40
1:I:1548:PRO:HA	1:I:1578:PHE:CE2	2.57	0.40
1:K:2049:LEU:HD11	1:K:2053:HIS:ND1	2.35	0.40
1:L:2312:HIS:O	1:L:2316:HIS:CD2	2.74	0.40
1:Q:3189:LEU:HA	1:Q:3192:LYS:HZ1	1.86	0.40
1:C:467:TYR:HD2	1:C:472:THR:HG22	1.85	0.40
1:D:599:ARG:NH2	1:D:621:ASP:OD1	2.54	0.40
1:I:1551:VAL:HG11	1:I:1611:ALA:O	2.21	0.40
1:K:1952:LEU:HD11	1:K:2073:VAL:CG2	2.52	0.40
1:L:2163:VAL:O	1:L:2163:VAL:HG13	2.21	0.40
1:L:2284:ARG:HA	1:L:2287:ARG:HG2	2.03	0.40
1:M:2469:LEU:HD12	1:M:2469:LEU:HA	1.96	0.40
1:P:3068:LEU:HD11	1:P:3072:ASP:HA	2.02	0.40
1:P:3086:HIS:CG	1:P:3086:HIS:O	2.74	0.40
1:R:3361:VAL:HG23	1:R:3391:ALA:HB1	2.03	0.40
1:B:268:ILE:HG12	1:B:300:LEU:HB3	2.03	0.40
1:F:1073:LEU:HD13	1:F:1090:LEU:HB3	2.02	0.40
1:M:2409:ILE:O	1:N:2591:LYS:HE3	2.21	0.40
1:N:2541:ALA:C	1:N:2543:PHE:H	2.25	0.40
1:Q:3263:ARG:O	1:Q:3264:HIS:C	2.60	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	166/193 (86%)	150 (90%)	16 (10%)	0	100	100
1	B	156/193 (81%)	144 (92%)	12 (8%)	0	100	100
1	C	170/193 (88%)	153 (90%)	17 (10%)	0	100	100
1	D	170/193 (88%)	142 (84%)	28 (16%)	0	100	100
1	E	172/193 (89%)	158 (92%)	13 (8%)	1 (1%)	25	59
1	F	167/193 (86%)	151 (90%)	16 (10%)	0	100	100
1	G	171/193 (89%)	148 (86%)	21 (12%)	2 (1%)	13	44
1	H	174/193 (90%)	158 (91%)	15 (9%)	1 (1%)	25	59
1	I	177/193 (92%)	161 (91%)	16 (9%)	0	100	100
1	J	175/193 (91%)	152 (87%)	21 (12%)	2 (1%)	14	46
1	K	165/193 (86%)	144 (87%)	21 (13%)	0	100	100
1	L	180/193 (93%)	148 (82%)	30 (17%)	2 (1%)	14	46
1	M	173/193 (90%)	139 (80%)	31 (18%)	3 (2%)	9	36
1	N	166/193 (86%)	147 (89%)	19 (11%)	0	100	100
1	O	174/193 (90%)	155 (89%)	19 (11%)	0	100	100
1	P	177/193 (92%)	145 (82%)	32 (18%)	0	100	100
1	Q	152/193 (79%)	141 (93%)	11 (7%)	0	100	100
1	R	170/193 (88%)	149 (88%)	21 (12%)	0	100	100
1	S	173/193 (90%)	146 (84%)	24 (14%)	3 (2%)	9	36
1	T	171/193 (89%)	134 (78%)	34 (20%)	3 (2%)	8	34
All	All	3399/3860 (88%)	2965 (87%)	417 (12%)	17 (0%)	29	64

All (17) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	T	3679	SER
1	G	1176	LYS
1	G	1260	VAL
1	J	1908	ALA
1	S	3553	PRO
1	S	3559	TYR
1	H	1523	HIS
1	S	3592	ALA

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Mol	Chain	Res	Type
1	T	3723	PRO
1	E	945	LEU
1	L	2303	PRO
1	J	1914	ASP
1	M	2372	PRO
1	M	2443	PRO
1	T	3682	ARG
1	M	2332	PRO
1	L	2219	ILE

### 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	121/145 (83%)	121 (100%)	0	100	100
1	B	123/145 (85%)	123 (100%)	0	100	100
1	C	119/145 (82%)	119 (100%)	0	100	100
1	D	127/145 (88%)	126 (99%)	1 (1%)	81	92
1	E	123/145 (85%)	122 (99%)	1 (1%)	81	92
1	F	122/145 (84%)	122 (100%)	0	100	100
1	G	127/145 (88%)	127 (100%)	0	100	100
1	H	126/145 (87%)	126 (100%)	0	100	100
1	I	126/145 (87%)	123 (98%)	3 (2%)	49	76
1	J	126/145 (87%)	126 (100%)	0	100	100
1	K	129/145 (89%)	128 (99%)	1 (1%)	81	92
1	L	123/145 (85%)	122 (99%)	1 (1%)	81	92
1	M	118/145 (81%)	118 (100%)	0	100	100
1	N	125/145 (86%)	124 (99%)	1 (1%)	81	92
1	O	138/145 (95%)	137 (99%)	1 (1%)	84	93
1	P	136/145 (94%)	135 (99%)	1 (1%)	84	93
1	Q	122/145 (84%)	118 (97%)	4 (3%)	38	69

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	R	124/145 (86%)	124 (100%)	0	100	100
1	S	121/145 (83%)	121 (100%)	0	100	100
1	T	121/145 (83%)	119 (98%)	2 (2%)	60	83
All	All	2497/2900 (86%)	2481 (99%)	16 (1%)	86	94

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	660	TYR
1	E	946	SER
1	I	1594	PHE
1	I	1625	TYR
1	I	1731	GLU
1	K	2120	HIS
1	L	2316	HIS
1	N	2590	TYR
1	O	2890	HIS
1	P	3079	VAL
1	Q	3169	TYR
1	Q	3189	LEU
1	Q	3261	LEU
1	Q	3262	SER
1	T	3672	ARG
1	T	3851	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	135	HIS
1	B	381	HIS
1	C	510	GLN
1	E	896	GLN
1	E	960	HIS
1	K	2053	HIS
1	K	2102	HIS
1	L	2316	HIS
1	M	2440	GLN
1	P	3071	HIS

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

### 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

### 5.7 Other polymers [i](#)

There are no such residues in this entry.

### 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	174/193 (90%)	0.17	9 (5%) 27 12	30, 62, 98, 135	0
1	B	168/193 (87%)	0.18	9 (5%) 25 12	30, 64, 101, 117	0
1	C	178/193 (92%)	0.22	8 (4%) 33 16	33, 65, 113, 149	0
1	D	182/193 (94%)	0.35	9 (4%) 29 14	30, 72, 105, 123	0
1	E	180/193 (93%)	0.08	6 (3%) 46 24	30, 58, 98, 148	0
1	F	177/193 (91%)	0.31	12 (6%) 17 7	30, 67, 114, 151	0
1	G	181/193 (93%)	0.29	12 (6%) 18 7	30, 70, 114, 149	0
1	H	184/193 (95%)	0.32	8 (4%) 35 17	30, 69, 117, 175	0
1	I	184/193 (95%)	0.25	12 (6%) 18 8	30, 64, 108, 133	0
1	J	181/193 (93%)	0.31	11 (6%) 21 9	30, 69, 113, 155	0
1	K	181/193 (93%)	0.62	23 (12%) 3 1	44, 86, 118, 144	0
1	L	188/193 (97%)	0.59	17 (9%) 9 3	30, 86, 135, 177	0
1	M	179/193 (92%)	0.25	11 (6%) 21 9	30, 68, 114, 151	0
1	N	174/193 (90%)	0.21	7 (4%) 38 19	42, 69, 107, 153	0
1	O	184/193 (95%)	0.34	10 (5%) 25 12	43, 71, 117, 153	0
1	P	187/193 (96%)	0.35	12 (6%) 19 8	30, 77, 115, 159	0
1	Q	170/193 (88%)	0.36	9 (5%) 26 12	30, 83, 130, 137	0
1	R	176/193 (91%)	0.31	9 (5%) 28 13	46, 76, 123, 175	0
1	S	181/193 (93%)	0.41	14 (7%) 13 5	45, 78, 116, 137	0
1	T	182/193 (94%)	0.55	17 (9%) 8 3	30, 94, 131, 169	0
All	All	3591/3860 (93%)	0.33	225 (6%) 20 8	30, 72, 119, 177	0

All (225) RSRZ outliers are listed below:



Mol	Chain	Res	Type	RSRZ
1	D	759	PRO	4.7
1	H	1524	LEU	4.6
1	D	715	THR	4.6
1	L	2303	PRO	4.5
1	R	3331	PHE	4.5
1	S	3650	HIS	4.4
1	B	308	ASP	4.4
1	J	1924	GLU	4.2
1	R	3455	SER	4.2
1	A	37	SER	4.1
1	L	2301	ALA	4.1
1	F	1016	GLY	4.0
1	I	1734	HIS	3.9
1	K	1968	ALA	3.9
1	O	2895	HIS	3.9
1	S	3552	SER	3.8
1	L	2316	HIS	3.8
1	S	3551	ALA	3.7
1	K	1967	SER	3.7
1	I	1722	ALA	3.6
1	H	1486	HIS	3.6
1	L	2126	GLY	3.6
1	G	1339	LEU	3.5
1	L	2263	GLY	3.5
1	E	908	THR	3.5
1	F	1144	ALA	3.5
1	K	2077	ASP	3.5
1	R	3359	SER	3.4
1	R	3417	THR	3.4
1	S	3525	GLY	3.4
1	P	3066	ALA	3.4
1	B	379	LEU	3.4
1	C	437	GLY	3.4
1	F	1015	PHE	3.4
1	R	3469	HIS	3.4
1	Q	3146	ASP	3.4
1	A	193	HIS	3.3
1	J	1911	SER	3.3
1	T	3681	SER	3.3
1	E	823	GLY	3.3
1	S	3482	ALA	3.3
1	K	2083	LEU	3.3
1	N	2512	GLY	3.2

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Mol	Chain	Res	Type	RSRZ
1	K	2112	LEU	3.2
1	E	773	MET	3.2
1	S	3664	HIS	3.2
1	P	3078	ALA	3.2
1	T	3670	GLY	3.2
1	O	2872	ALA	3.2
1	R	3467	LEU	3.2
1	F	967	PRO	3.2
1	K	2024	ASP	3.2
1	N	2560	GLY	3.2
1	O	2758	PRO	3.1
1	D	768	HIS	3.1
1	G	1293	HIS	3.1
1	Q	3257	PHE	3.1
1	G	1231	ALA	3.1
1	L	2314	HIS	3.1
1	Q	3162	LEU	3.1
1	P	3069	SER	3.1
1	C	571	GLY	3.1
1	B	266	ALA	3.1
1	H	1530	ALA	3.1
1	K	2108	ALA	3.1
1	I	1697	LEU	3.1
1	I	1725	LEU	3.0
1	C	387	MET	3.0
1	A	56	PRO	3.0
1	R	3340	GLY	3.0
1	M	2504	HIS	3.0
1	P	3075	PRO	3.0
1	I	1721	ASP	3.0
1	G	1340	LEU	3.0
1	I	1612	PHE	3.0
1	D	590	GLY	3.0
1	L	2215	PHE	3.0
1	O	2850	PHE	3.0
1	S	3610	THR	2.9
1	M	2505	HIS	2.9
1	P	3086	HIS	2.9
1	J	1844	LEU	2.9
1	Q	3141	LEU	2.9
1	M	2464	PHE	2.9
1	L	2125	PRO	2.9

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Mol	Chain	Res	Type	RSRZ
1	K	1985	GLN	2.9
1	N	2554	ASP	2.9
1	G	1208	PHE	2.9
1	E	822	PHE	2.8
1	N	2568	GLY	2.8
1	K	2110	PRO	2.8
1	P	3074	ALA	2.8
1	T	3816	GLY	2.8
1	L	2139	PRO	2.8
1	J	1914	ASP	2.8
1	N	2690	LEU	2.7
1	B	307	GLY	2.7
1	O	2887	GLY	2.7
1	B	198	ARG	2.7
1	A	171	ALA	2.7
1	M	2456	GLY	2.7
1	Q	3165	ALA	2.7
1	M	2367	GLY	2.7
1	F	1120	SER	2.7
1	L	2233	ALA	2.7
1	K	2116	LEU	2.7
1	Q	3190	VAL	2.7
1	P	3030	HIS	2.7
1	R	3358	ALA	2.7
1	H	1533	LEU	2.6
1	K	2081	ASP	2.6
1	H	1528	ASP	2.6
1	L	2292	PHE	2.6
1	H	1392	PHE	2.6
1	M	2400	SER	2.6
1	T	3836	PHE	2.6
1	T	3837	ALA	2.6
1	T	3780	GLY	2.6
1	G	1335	ASP	2.6
1	K	2100	ALA	2.6
1	J	1918	LEU	2.6
1	T	3848	LEU	2.6
1	T	3691	GLU	2.6
1	G	1197	HIS	2.6
1	G	1347	HIS	2.6
1	L	2302	ALA	2.6
1	I	1680	THR	2.6

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Mol	Chain	Res	Type	RSRZ
1	O	2891	HIS	2.5
1	H	1531	PRO	2.5
1	K	2121	HIS	2.5
1	I	1726	LEU	2.5
1	I	1598	ARG	2.5
1	T	3702	GLY	2.5
1	J	1923	LEU	2.5
1	T	3802	HIS	2.5
1	N	2683	SER	2.5
1	S	3562	LEU	2.5
1	S	3649	ARG	2.5
1	F	1135	ALA	2.5
1	S	3526	SER	2.5
1	Q	3271	ALA	2.5
1	D	750	ALA	2.4
1	F	1021	PRO	2.4
1	L	2315	HIS	2.4
1	A	152	GLY	2.4
1	D	757	ALA	2.4
1	G	1349	HIS	2.4
1	N	2559	PHE	2.4
1	T	3669	PRO	2.4
1	S	3663	HIS	2.4
1	C	556	ALA	2.4
1	P	3073	ALA	2.4
1	K	2107	ASP	2.4
1	A	170	ALA	2.4
1	B	311	ALA	2.4
1	B	328	HIS	2.4
1	O	2886	VAL	2.3
1	M	2366	PHE	2.3
1	S	3557	GLY	2.3
1	T	3675	ALA	2.3
1	F	1020	GLN	2.3
1	O	2876	SER	2.3
1	K	2013	GLY	2.3
1	H	1537	LEU	2.3
1	S	3659	GLY	2.3
1	D	650	ALA	2.3
1	F	1101	THR	2.3
1	I	1698	ALA	2.3
1	J	1749	SER	2.3

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	381	HIS	2.3
1	M	2455	THR	2.3
1	I	1597	LEU	2.3
1	M	2441	LEU	2.3
1	T	3735	PHE	2.3
1	C	425	HIS	2.3
1	B	248	GLN	2.2
1	J	1796	GLY	2.2
1	M	2467	ASP	2.2
1	C	572	LEU	2.2
1	P	2897	PRO	2.2
1	K	1946	PRO	2.2
1	J	1873	THR	2.2
1	K	2084	ALA	2.2
1	S	3545	ALA	2.2
1	T	3853	LEU	2.2
1	R	3282	MET	2.2
1	T	3847	PRO	2.2
1	A	64	HIS	2.2
1	G	1329	ALA	2.2
1	K	2018	LEU	2.2
1	T	3817	PRO	2.2
1	L	2187	HIS	2.2
1	T	3843	HIS	2.2
1	G	1305	ASP	2.2
1	D	760	LEU	2.1
1	L	2309	LEU	2.1
1	E	774	PRO	2.1
1	M	2403	GLY	2.1
1	K	2106	HIS	2.1
1	F	1116	ASP	2.1
1	K	2082	GLY	2.1
1	P	2934	HIS	2.1
1	F	1156	HIS	2.1
1	G	1350	HIS	2.1
1	J	1916	ALA	2.1
1	C	563	ASP	2.1
1	E	907	HIS	2.1
1	Q	3175	GLY	2.1
1	P	3085	HIS	2.1
1	Q	3277	HIS	2.1
1	L	2275	GLY	2.1

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Mol	Chain	Res	Type	RSRZ
1	L	2310	GLU	2.1
1	A	148	PHE	2.1
1	C	540	ALA	2.1
1	K	2065	HIS	2.1
1	F	1003	ALA	2.0
1	J	1915	ALA	2.0
1	O	2785	GLY	2.0
1	K	2078	PHE	2.0
1	I	1720	HIS	2.0
1	A	190	HIS	2.0
1	D	756	ASP	2.0
1	P	3088	HIS	2.0
1	K	2053	HIS	2.0
1	O	2761	GLY	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.