



Full wwPDB EM Validation Report ⓘ

Aug 14, 2021 – 12:36 PM EDT

PDB ID : 7L5W
EMDB ID : EMD-23191
Title : p97-R155H mutant dodecamer I
Authors : Nandi, P.; Li, S.; Coulmbres, R.C.A.; Wang, F.; Williams, D.R.; Malyutin, A.G.; Poh, Y.-P.; Chou, T.-F.; Chiu, P.-L.
Deposited on : 2020-12-23
Resolution : 3.34 Å (reported)
Based on initial model : 5FTK

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

EMDB validation analysis : **FAILED**
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.23.1

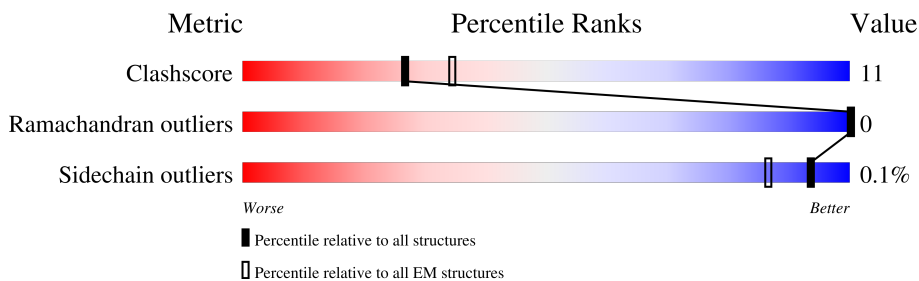
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.34 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)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	A	806	
1	B	806	
1	C	806	
1	D	806	
1	E	806	
1	F	806	
1	G	806	
1	H	806	
1	I	806	

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Mol	Chain	Length	Quality of chain			
1	J	806		50%	18%	31%
1	K	806		51%	17%	31%
1	L	806		51%	17%	31%

2 Entry composition i

There is only 1 type of molecule in this entry. The entry contains 51828 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, 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 Transitional endoplasmic reticulum ATPase.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	553	4319	2718	771	808	22	0	0
1	B	553	4319	2718	771	808	22	0	0
1	C	553	4319	2718	771	808	22	0	0
1	D	553	4319	2718	771	808	22	0	0
1	E	553	4319	2718	771	808	22	0	0
1	F	553	4319	2718	771	808	22	0	0
1	G	553	4319	2718	771	808	22	0	0
1	H	553	4319	2718	771	808	22	0	0
1	I	553	4319	2718	771	808	22	0	0
1	J	553	4319	2718	771	808	22	0	0
1	K	553	4319	2718	771	808	22	0	0
1	L	553	4319	2718	771	808	22	0	0

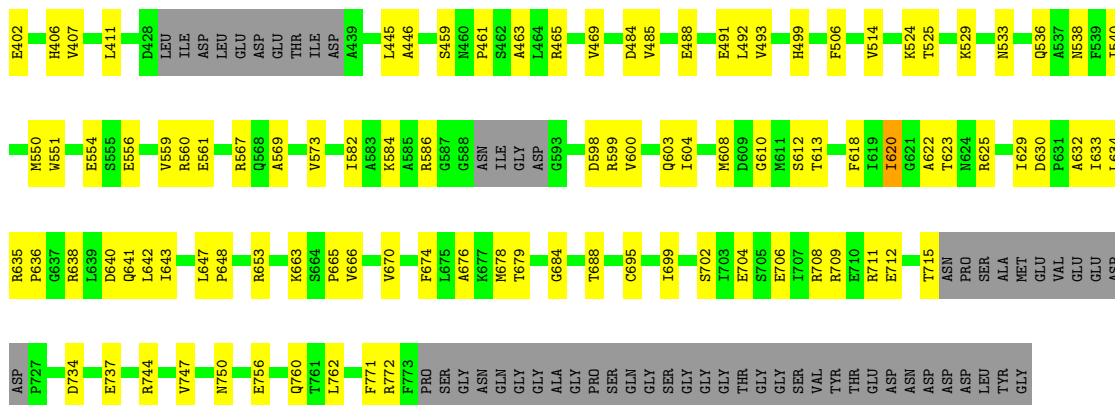
There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	155	HIS	ARG	engineered mutation	UNP P55072
B	155	HIS	ARG	engineered mutation	UNP P55072
C	155	HIS	ARG	engineered mutation	UNP P55072
D	155	HIS	ARG	engineered mutation	UNP P55072
E	155	HIS	ARG	engineered mutation	UNP P55072
F	155	HIS	ARG	engineered mutation	UNP P55072

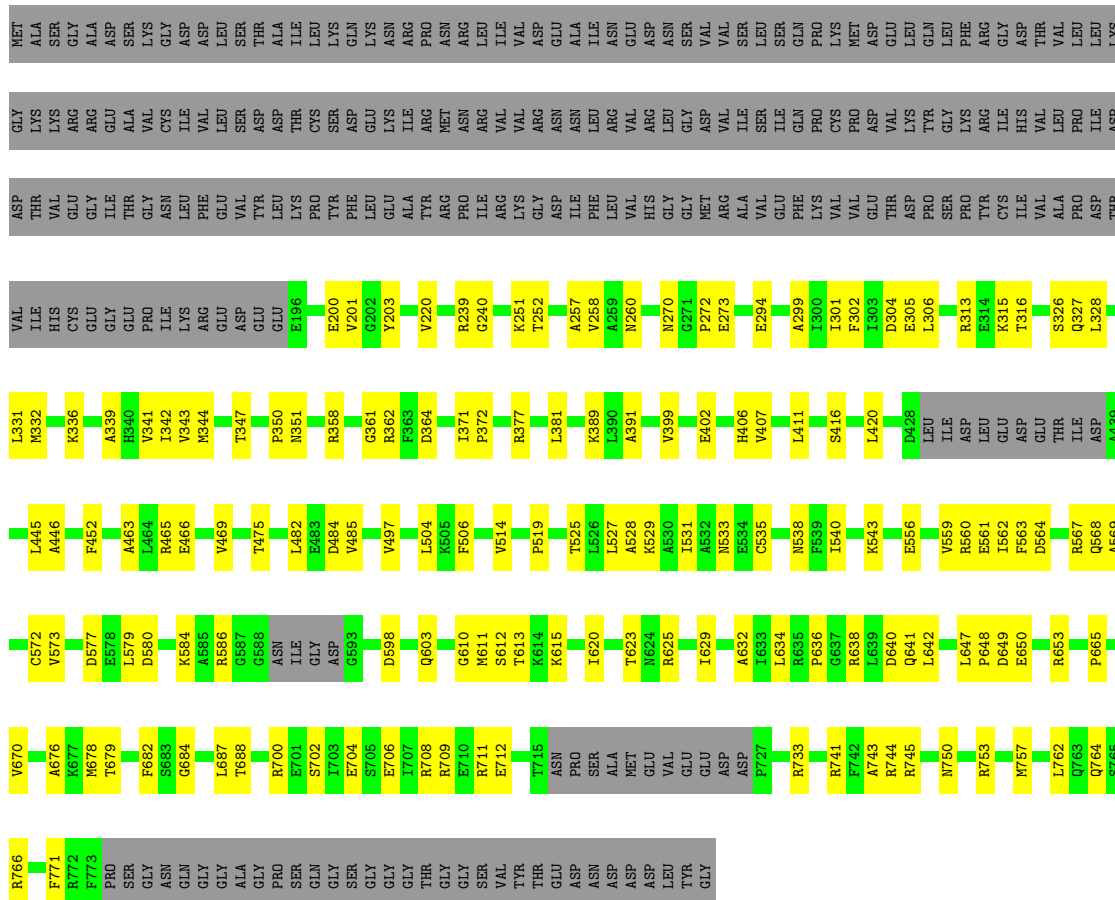
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Chain	Residue	Modelled	Actual	Comment	Reference
G	155	HIS	ARG	engineered mutation	UNP P55072
H	155	HIS	ARG	engineered mutation	UNP P55072
I	155	HIS	ARG	engineered mutation	UNP P55072
J	155	HIS	ARG	engineered mutation	UNP P55072
K	155	HIS	ARG	engineered mutation	UNP P55072
L	155	HIS	ARG	engineered mutation	UNP P55072

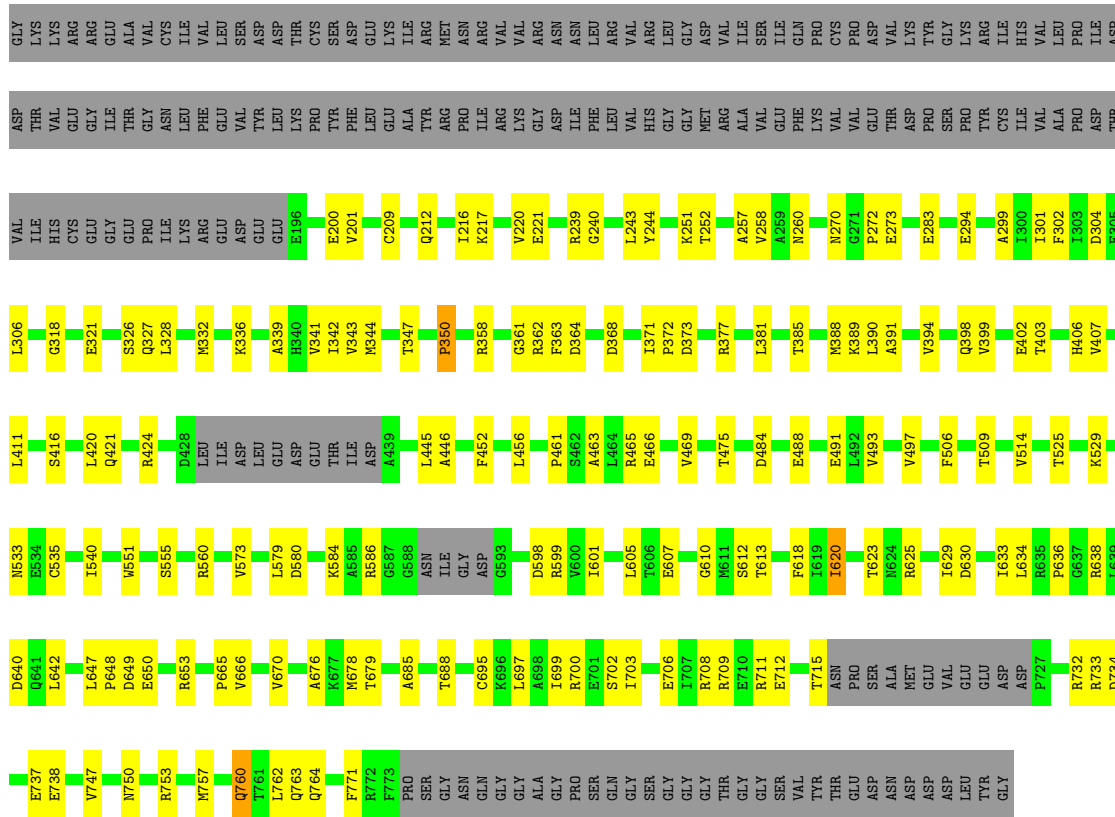


● Molecule 1: Transitional endoplasmic reticulum ATPase

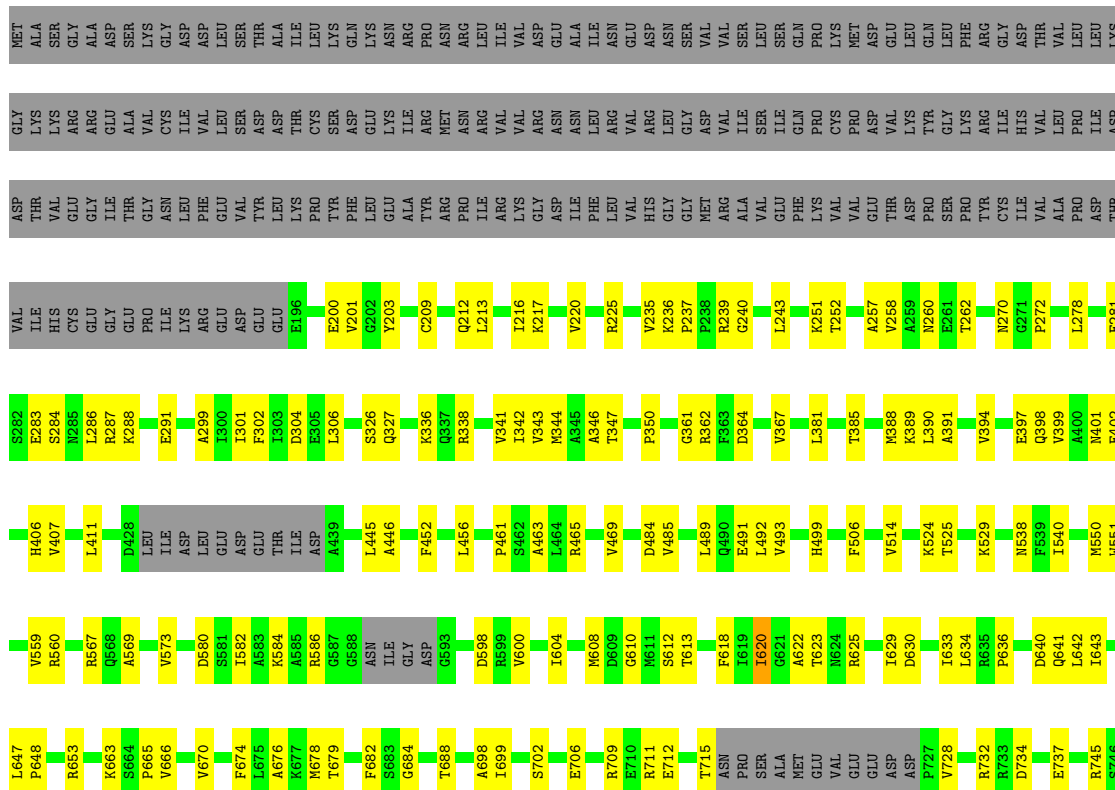
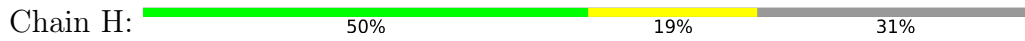


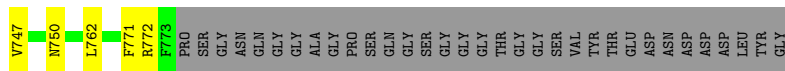
● Molecule 1: Transitional endoplasmic reticulum ATPase



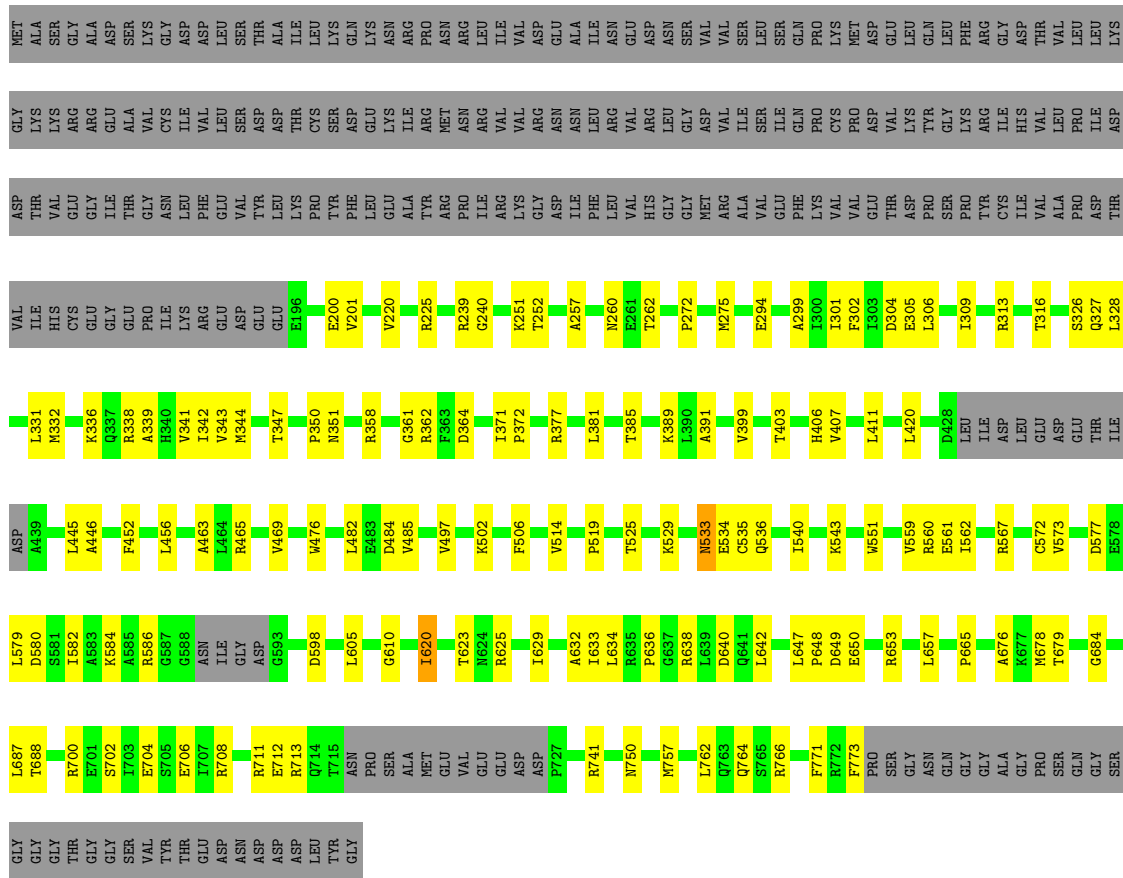


● Molecule 1: Transitional endoplasmic reticulum ATPase

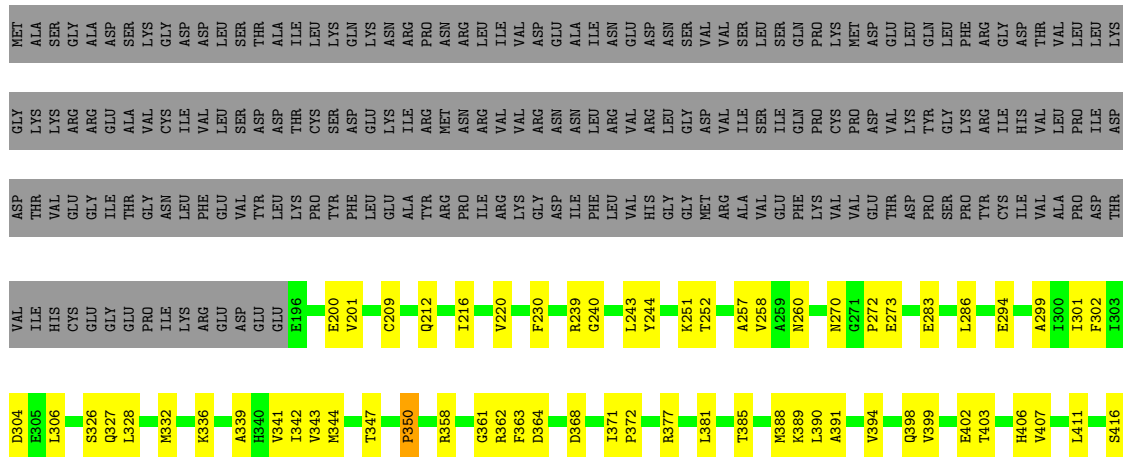


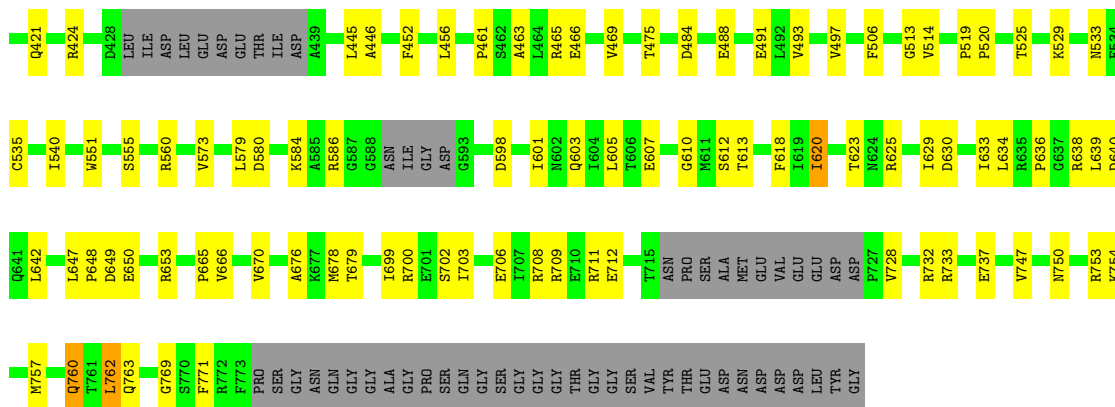


• Molecule 1: Transitional endoplasmic reticulum ATPase

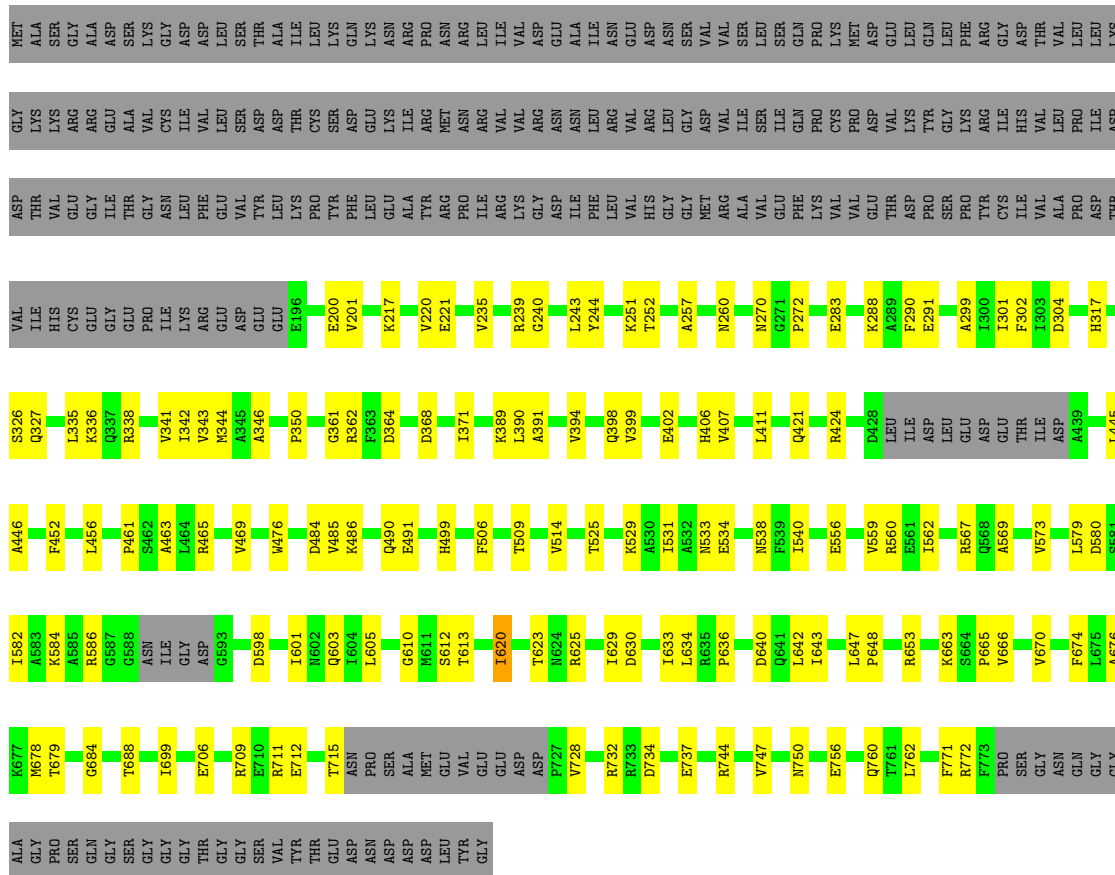


• Molecule 1: Transitional endoplasmic reticulum ATPase

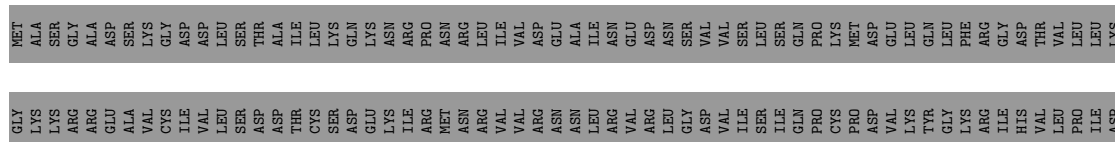




● Molecule 1: Transitional endoplasmic reticulum ATPase



● Molecule 1: Transitional endoplasmic reticulum ATPase



ASP	THR	VAL	ILE	HIS	CYS	GLY	GLY	ILE	THR	GLY	ASN	LYS	PHE	GLU	VAL	TYR	LEU	LYS	TYR	PHE	LEU	GLU	ALA	TYR	ARG	PRO	ILE	ARG	LYS	GLY	ILE	PHE	LEU	VAL	HIS	GLY	GLY	MET	ARG	ALA	VAL	GLU	THR	ASP	ASP	PRO	SER	PRO	TYR	CYS	ILE	VAL	ALA	PRO	ASP	THR
VAL	ILE	HIS	CYS	GLY	GLY	ILE	THR	GLY	ASN	LYS	PHE	GLU	VAL	TYR	LEU	LYS	TYR	PHE	LEU	GLU	ALA	TYR	ARG	PRO	ILE	ARG	LYS	GLY	ILE	PHE	LEU	VAL	HIS	GLY	GLY	MET	ARG	ALA	VAL	GLU	THR	ASP	ASP	PRO	SER	PRO	TYR	CYS	ILE	VAL	ALA	PRO	ASP	THR		
M332	K336	A339	H340	V341	I342	L343	M344	T347	P350	N351	R358	G361	R362	F363	D364	V367	I371	P372	R377	L381	T385	K389	L390	A391	V399	H406	V407	L411	Q421	E505	R424	D528	LEU	ILE	ASP	LEU	GLU	ASP	GLU	THR	ILE	S526	Q327	L328												
ASP	A439	L445	A446	F452	A463	L464	R465	V469	L482	E483	D484	V485	V497	K502	F505	F506	P519	T525	L526	L527	A528	K529	A530	C535	N538	F539	I540	K543	E556	R560	E561	R567	Q568	A569	C572	V573	D577	E578	L579	D580																
K584	A585	R586	G587	G588	ASN	ILE	GLY	D598	Q603	G610	I620	T623	N624	R625	I629	A632	I633	L634	R635	P636	G637	R638	L639	D640	Q641	L642	L647	P648	D649	E650	R653	P665	V666	A667	K668	D669	V670	A676	R677	M678	T679	F682	S683	G684												
T688	R700	E701	S702	E706	I707	R708	R709	E710	R711	E712	R713	Q714	T715	ASN	PRO	SER	ALA	MET	GLU	VAL	GLU	GLU	ASP	P727	V728	R732	R733	A743	R744	K754	L762	Q763	Q764	S765	R766	F771	R772	F773	PRO	SER	GLY	ASN	GLN	GLY	GLY	ALA	GLY	PRO	SER	GLN						
GLY	SER	GLY	GLY	THR	GLY	GLY	SER	VAL	TYR	THR	GLU	ASP	ASN	ASP	ASP	ASP	LEU	TYR	GLY																																					

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, D6	Depositor
Number of particles used	64252	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	44.4	Depositor
Minimum defocus (nm)	-800	Depositor
Maximum defocus (nm)	-2500	Depositor
Magnification	48077	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor

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	0.31	0/4389	0.56	2/5911 (0.0%)
1	B	0.32	0/4389	0.57	2/5911 (0.0%)
1	C	0.31	0/4389	0.54	0/5911
1	D	0.32	0/4389	0.56	2/5911 (0.0%)
1	E	0.31	0/4389	0.57	2/5911 (0.0%)
1	F	0.31	0/4389	0.55	0/5911
1	G	0.32	0/4389	0.57	2/5911 (0.0%)
1	H	0.32	0/4389	0.57	2/5911 (0.0%)
1	I	0.31	0/4389	0.54	1/5911 (0.0%)
1	J	0.32	0/4389	0.56	3/5911 (0.1%)
1	K	0.32	0/4389	0.57	2/5911 (0.0%)
1	L	0.31	0/4389	0.55	1/5911 (0.0%)
All	All	0.32	0/52668	0.56	19/70932 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	G	0	1
1	J	0	1
All	All	0	2

There are no bond length outliers.

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	350	PRO	CA-N-CD	-8.90	99.04	111.50
1	B	350	PRO	CA-N-CD	-8.80	99.18	111.50
1	H	350	PRO	CA-N-CD	-8.80	99.19	111.50
1	K	350	PRO	CA-N-CD	-8.79	99.19	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	J	350	PRO	CA-N-CD	-8.77	99.22	111.50
1	A	350	PRO	CA-N-CD	-8.73	99.28	111.50
1	G	350	PRO	CA-N-CD	-8.73	99.28	111.50
1	D	350	PRO	CA-N-CD	-8.72	99.29	111.50
1	B	620	ILE	CG1-CB-CG2	-5.67	98.92	111.40
1	H	620	ILE	CG1-CB-CG2	-5.64	98.99	111.40
1	K	620	ILE	CG1-CB-CG2	-5.18	100.01	111.40
1	J	762	LEU	CB-CG-CD2	-5.16	102.23	111.00
1	G	620	ILE	CG1-CB-CG2	-5.13	100.11	111.40
1	E	620	ILE	CG1-CB-CG2	-5.11	100.15	111.40
1	A	620	ILE	CG1-CB-CG2	-5.11	100.15	111.40
1	J	620	ILE	CG1-CB-CG2	-5.10	100.19	111.40
1	D	620	ILE	CG1-CB-CG2	-5.09	100.19	111.40
1	L	620	ILE	CG1-CB-CG2	-5.02	100.35	111.40
1	I	620	ILE	CG1-CB-CG2	-5.01	100.38	111.40

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	G	760	GLN	Peptide
1	J	760	GLN	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4319	0	4367	105	0
1	B	4319	0	4367	113	0
1	C	4319	0	4367	109	0
1	D	4319	0	4367	100	0
1	E	4319	0	4367	120	0
1	F	4319	0	4367	107	0
1	G	4319	0	4367	113	0
1	H	4319	0	4367	110	0
1	I	4319	0	4367	101	0
1	J	4319	0	4367	106	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	K	4319	0	4367	104	0
1	L	4319	0	4367	100	0
All	All	51828	0	52404	1143	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 11.

All (1143) 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:J:678:MET:HG3	1:K:771:PHE:HE1	1.46	0.81
1:A:678:MET:HG3	1:B:771:PHE:HE1	1.46	0.80
1:D:678:MET:HG3	1:E:771:PHE:HE1	1.46	0.80
1:C:465:ARG:HH12	1:D:610:GLY:HA3	1.47	0.78
1:A:610:GLY:HA3	1:F:465:ARG:HH12	1.47	0.78
1:G:678:MET:HG3	1:H:771:PHE:HE1	1.48	0.77
1:A:573:VAL:HG13	1:A:620:ILE:HD12	1.67	0.76
1:G:573:VAL:HG13	1:G:620:ILE:HD12	1.67	0.76
1:H:573:VAL:HG13	1:H:620:ILE:HD12	1.67	0.76
1:E:573:VAL:HG13	1:E:620:ILE:HD12	1.67	0.76
1:D:573:VAL:HG13	1:D:620:ILE:HD12	1.68	0.76
1:J:573:VAL:HG13	1:J:620:ILE:HD12	1.68	0.76
1:K:573:VAL:HG13	1:K:620:ILE:HD12	1.67	0.76
1:J:220:VAL:HG23	1:J:342:ILE:HD13	1.69	0.75
1:G:220:VAL:HG23	1:G:342:ILE:HD13	1.68	0.74
1:B:573:VAL:HG13	1:B:620:ILE:HD12	1.68	0.74
1:C:220:VAL:HG23	1:C:342:ILE:HD13	1.70	0.74
1:D:220:VAL:HG23	1:D:342:ILE:HD13	1.71	0.73
1:A:220:VAL:HG23	1:A:342:ILE:HD13	1.70	0.73
1:I:220:VAL:HG23	1:I:342:ILE:HD13	1.71	0.73
1:E:750:ASN:HD22	1:H:750:ASN:HD22	1.37	0.72
1:F:220:VAL:HG23	1:F:342:ILE:HD13	1.71	0.72
1:H:220:VAL:HG23	1:H:342:ILE:HD13	1.71	0.72
1:K:465:ARG:HH12	1:L:610:GLY:HA3	1.54	0.72
1:B:750:ASN:HD22	1:K:750:ASN:HD22	1.37	0.72
1:F:270:ASN:HB3	1:F:273:GLU:HG2	1.71	0.71
1:D:750:ASN:HD22	1:I:750:ASN:HD22	1.38	0.71
1:F:750:ASN:HD22	1:G:750:ASN:HD22	1.38	0.71
1:D:371:ILE:HD12	1:D:463:ALA:HB1	1.74	0.69
1:C:750:ASN:HD22	1:J:750:ASN:HD22	1.38	0.69
1:H:397:GLU:O	1:H:401:ASN:ND2	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:465:ARG:HH22	1:J:610:GLY:HA3	1.57	0.68
1:E:397:GLU:O	1:E:401:ASN:ND2	2.26	0.68
1:H:465:ARG:HH12	1:I:610:GLY:HA3	1.59	0.68
1:C:573:VAL:HG13	1:C:620:ILE:HD12	1.75	0.68
1:D:465:ARG:HG3	1:E:560:ARG:HH12	1.58	0.68
1:F:573:VAL:HG13	1:F:620:ILE:HD12	1.75	0.68
1:G:465:ARG:HG3	1:H:560:ARG:HH12	1.58	0.68
1:L:220:VAL:HG23	1:L:342:ILE:HD13	1.74	0.67
1:B:220:VAL:HG23	1:B:342:ILE:HD13	1.77	0.67
1:J:201:VAL:HG12	1:J:257:ALA:HB2	1.75	0.67
1:E:220:VAL:HG23	1:E:342:ILE:HD13	1.76	0.67
1:E:283:GLU:HG3	1:E:327:GLN:HG2	1.77	0.67
1:H:283:GLU:HG3	1:H:327:GLN:HG2	1.77	0.67
1:G:697:LEU:HD21	1:G:738:GLU:HG3	1.77	0.66
1:I:573:VAL:HG13	1:I:620:ILE:HD12	1.78	0.66
1:G:371:ILE:HD12	1:G:463:ALA:HB1	1.78	0.66
1:L:371:ILE:HD12	1:L:463:ALA:HB1	1.77	0.66
1:B:283:GLU:HG3	1:B:327:GLN:HG2	1.78	0.66
1:D:733:ARG:HH22	1:E:772:ARG:HH22	1.44	0.66
1:J:371:ILE:HD12	1:J:463:ALA:HB1	1.77	0.65
1:B:711:ARG:HG3	1:B:712:GLU:HG2	1.79	0.65
1:H:711:ARG:HG3	1:H:712:GLU:HG2	1.79	0.65
1:K:711:ARG:HG3	1:K:712:GLU:HG2	1.79	0.65
1:L:573:VAL:HG13	1:L:620:ILE:HD12	1.77	0.65
1:E:711:ARG:HG3	1:E:712:GLU:HG2	1.79	0.65
1:A:371:ILE:HD12	1:A:463:ALA:HB1	1.77	0.65
1:A:711:ARG:HG3	1:A:712:GLU:HG2	1.79	0.65
1:E:459:SER:O	1:F:615:LYS:NZ	2.24	0.65
1:J:711:ARG:HG3	1:J:712:GLU:HG2	1.79	0.65
1:F:371:ILE:HD12	1:F:463:ALA:HB1	1.79	0.65
1:B:465:ARG:HH22	1:C:610:GLY:HA3	1.63	0.64
1:E:636:PRO:HA	1:E:640:ASP:HB3	1.79	0.64
1:D:605:LEU:HD22	1:D:638:ARG:HD3	1.80	0.64
1:K:220:VAL:HG23	1:K:342:ILE:HD13	1.80	0.64
1:K:476:TRP:NE1	1:K:534:GLU:OE2	2.31	0.64
1:K:283:GLU:HG3	1:K:327:GLN:HG2	1.80	0.63
1:L:299:ALA:HB3	1:L:341:VAL:HG23	1.80	0.63
1:C:371:ILE:HD12	1:C:463:ALA:HB1	1.79	0.63
1:J:605:LEU:HD22	1:J:638:ARG:HD3	1.79	0.63
1:E:465:ARG:HH22	1:F:610:GLY:HA3	1.63	0.63
1:D:711:ARG:HG3	1:D:712:GLU:HG2	1.79	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:711:ARG:HG3	1:G:712:GLU:HG2	1.79	0.62
1:A:469:VAL:HG12	1:A:540:ILE:HG12	1.82	0.62
1:J:209:CYS:HB2	1:J:212:GLN:HB2	1.82	0.62
1:J:385:THR:HG23	1:J:388:MET:HB2	1.82	0.62
1:J:403:THR:HG22	1:J:456:LEU:HD21	1.82	0.62
1:A:385:THR:HG23	1:A:388:MET:HB2	1.82	0.62
1:B:648:PRO:O	1:B:653:ARG:NH1	2.33	0.62
1:C:299:ALA:HB3	1:C:341:VAL:HG23	1.82	0.62
1:D:403:THR:HG22	1:D:456:LEU:HD21	1.82	0.62
1:G:403:THR:HG22	1:G:456:LEU:HD21	1.82	0.62
1:H:648:PRO:O	1:H:653:ARG:NH1	2.33	0.61
1:J:469:VAL:HG12	1:J:540:ILE:HG12	1.82	0.61
1:A:326:SER:OG	1:F:272:PRO:O	2.18	0.61
1:D:385:THR:HG23	1:D:388:MET:HB2	1.82	0.61
1:F:299:ALA:HB3	1:F:341:VAL:HG23	1.81	0.61
1:G:209:CYS:HB2	1:G:212:GLN:HB2	1.82	0.61
1:A:605:LEU:HD22	1:A:638:ARG:HD3	1.81	0.61
1:I:350:PRO:O	1:I:358:ARG:NH1	2.34	0.61
1:K:648:PRO:O	1:K:653:ARG:NH1	2.33	0.61
1:G:385:THR:HG23	1:G:388:MET:HB2	1.82	0.61
1:F:350:PRO:O	1:F:358:ARG:NH1	2.34	0.61
1:J:465:ARG:HH22	1:K:610:GLY:HA3	1.65	0.61
1:L:519:PRO:HG3	1:L:647:LEU:HD22	1.83	0.61
1:D:634:LEU:HD22	1:D:642:LEU:HD11	1.83	0.61
1:D:272:PRO:O	1:E:326:SER:OG	2.19	0.61
1:I:299:ALA:HB3	1:I:341:VAL:HG23	1.81	0.61
1:C:350:PRO:O	1:C:358:ARG:NH1	2.34	0.61
1:C:564:ASP:O	1:C:568:GLN:NE2	2.34	0.61
1:A:272:PRO:O	1:B:326:SER:OG	2.19	0.60
1:D:598:ASP:HB2	1:D:601:ILE:HB	1.84	0.60
1:E:301:ILE:HD13	1:E:343:VAL:HG22	1.83	0.60
1:G:605:LEU:HD22	1:G:638:ARG:HD3	1.82	0.60
1:E:648:PRO:O	1:E:653:ARG:NH1	2.34	0.60
1:G:469:VAL:HG12	1:G:540:ILE:HG12	1.82	0.60
1:K:469:VAL:HG12	1:K:540:ILE:HG12	1.83	0.60
1:C:757:MET:SD	1:K:760:GLN:NE2	2.75	0.60
1:D:270:ASN:HB3	1:D:273:GLU:HB3	1.84	0.60
1:B:301:ILE:HD13	1:B:343:VAL:HG22	1.83	0.60
1:G:634:LEU:HD22	1:G:642:LEU:HD11	1.84	0.60
1:K:706:GLU:OE2	1:K:709:ARG:NH2	2.34	0.60
1:E:469:VAL:HG12	1:E:540:ILE:HG12	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:469:VAL:HG12	1:H:540:ILE:HG12	1.83	0.60
1:J:270:ASN:HB3	1:J:273:GLU:HB3	1.84	0.60
1:K:556:GLU:HB2	1:K:603:GLN:HG3	1.83	0.60
1:A:270:ASN:HB3	1:A:273:GLU:HB3	1.84	0.60
1:B:556:GLU:HB2	1:B:603:GLN:HG3	1.82	0.60
1:C:519:PRO:HG3	1:C:647:LEU:HD22	1.84	0.60
1:D:469:VAL:HG12	1:D:540:ILE:HG12	1.83	0.60
1:H:301:ILE:HD13	1:H:343:VAL:HG22	1.84	0.60
1:B:476:TRP:HD1	1:B:534:GLU:HG3	1.67	0.59
1:J:272:PRO:O	1:K:326:SER:OG	2.19	0.59
1:F:519:PRO:HG3	1:F:647:LEU:HD22	1.83	0.59
1:F:564:ASP:O	1:F:568:GLN:NE2	2.34	0.59
1:G:272:PRO:O	1:H:326:SER:OG	2.21	0.59
1:A:465:ARG:HH12	1:B:610:GLY:HA3	1.67	0.59
1:H:465:ARG:HG3	1:I:560:ARG:HH12	1.66	0.59
1:E:760:GLN:NE2	1:I:757:MET:SD	2.76	0.59
1:A:634:LEU:HD22	1:A:642:LEU:HD11	1.83	0.59
1:F:648:PRO:O	1:F:653:ARG:NH1	2.36	0.59
1:I:519:PRO:HG3	1:I:647:LEU:HD22	1.84	0.59
1:I:648:PRO:O	1:I:653:ARG:NH1	2.36	0.59
1:H:538:ASN:ND2	1:H:569:ALA:O	2.32	0.59
1:C:306:LEU:HB3	1:C:347:THR:HG22	1.84	0.59
1:H:728:VAL:HG22	1:H:732:ARG:HH21	1.68	0.59
1:C:305:GLU:OE2	1:D:362:ARG:NH2	2.34	0.58
1:K:301:ILE:HD13	1:K:343:VAL:HG22	1.85	0.58
1:A:598:ASP:HB2	1:A:601:ILE:HB	1.83	0.58
1:B:469:VAL:HG12	1:B:540:ILE:HG12	1.83	0.58
1:B:538:ASN:ND2	1:B:569:ALA:O	2.31	0.58
1:C:586:ARG:NE	1:C:598:ASP:OD1	2.30	0.58
1:E:461:PRO:HD2	1:F:567:ARG:HH12	1.68	0.58
1:I:305:GLU:OE2	1:J:362:ARG:NH2	2.35	0.58
1:J:598:ASP:HB2	1:J:601:ILE:HB	1.84	0.58
1:C:648:PRO:O	1:C:653:ARG:NH1	2.36	0.58
1:D:465:ARG:HH12	1:E:610:GLY:HA3	1.68	0.58
1:J:239:ARG:HG3	1:J:336:LYS:HA	1.85	0.58
1:G:598:ASP:HB2	1:G:601:ILE:HB	1.86	0.58
1:A:322:ARG:HH12	1:F:315:LYS:HE3	1.69	0.58
1:C:711:ARG:HG3	1:C:712:GLU:HG2	1.86	0.58
1:L:648:PRO:O	1:L:653:ARG:NH1	2.36	0.58
1:L:711:ARG:HG3	1:L:712:GLU:HG2	1.86	0.58
1:A:239:ARG:HG3	1:A:336:LYS:HA	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:362:ARG:NH2	1:L:305:GLU:OE2	2.35	0.58
1:B:728:VAL:HG22	1:B:732:ARG:HH21	1.68	0.57
1:K:389:LYS:NZ	1:K:445:LEU:O	2.37	0.57
1:H:272:PRO:O	1:I:326:SER:OG	2.23	0.57
1:J:733:ARG:HH22	1:K:772:ARG:HH22	1.52	0.57
1:C:556:GLU:HB2	1:C:603:GLN:HG3	1.87	0.57
1:K:272:PRO:O	1:L:326:SER:OG	2.22	0.57
1:L:381:LEU:O	1:L:385:THR:OG1	2.17	0.57
1:A:648:PRO:O	1:A:653:ARG:NH1	2.38	0.57
1:G:318:GLY:H	1:G:321:GLU:HG3	1.70	0.57
1:F:201:VAL:HG12	1:F:257:ALA:HB2	1.86	0.57
1:E:556:GLU:HB2	1:E:603:GLN:HG3	1.86	0.57
1:G:648:PRO:O	1:G:653:ARG:NH1	2.38	0.57
1:J:648:PRO:O	1:J:653:ARG:NH1	2.38	0.57
1:L:201:VAL:HG12	1:L:257:ALA:HB2	1.86	0.57
1:K:636:PRO:HA	1:K:640:ASP:HB3	1.86	0.57
1:B:272:PRO:O	1:C:326:SER:OG	2.22	0.57
1:D:239:ARG:HG3	1:D:336:LYS:HA	1.85	0.57
1:E:302:PHE:HD1	1:E:344:MET:HG3	1.70	0.57
1:G:270:ASN:HB3	1:G:273:GLU:HB3	1.86	0.57
1:E:272:PRO:O	1:F:326:SER:OG	2.23	0.56
1:I:306:LEU:HB3	1:I:347:THR:HG22	1.86	0.56
1:I:351:ASN:ND2	1:I:561:GLU:OE2	2.32	0.56
1:C:200:GLU:OE1	1:C:260:ASN:ND2	2.38	0.56
1:C:272:PRO:O	1:D:326:SER:OG	2.23	0.56
1:I:200:GLU:OE1	1:I:260:ASN:ND2	2.38	0.56
1:A:406:HIS:HB3	1:A:411:LEU:HD22	1.88	0.56
1:D:648:PRO:O	1:D:653:ARG:NH1	2.38	0.56
1:F:711:ARG:HG3	1:F:712:GLU:HG2	1.86	0.56
1:G:239:ARG:HG3	1:G:336:LYS:HA	1.86	0.56
1:I:711:ARG:HG3	1:I:712:GLU:HG2	1.86	0.56
1:J:406:HIS:HB3	1:J:411:LEU:HD22	1.88	0.56
1:K:299:ALA:HB3	1:K:341:VAL:HG23	1.85	0.56
1:L:350:PRO:O	1:L:358:ARG:NH1	2.38	0.56
1:L:642:LEU:HD22	1:L:762:LEU:HD21	1.86	0.56
1:C:636:PRO:HA	1:C:640:ASP:HB3	1.86	0.56
1:E:389:LYS:NZ	1:E:445:LEU:O	2.37	0.56
1:H:389:LYS:NZ	1:H:445:LEU:O	2.38	0.56
1:H:634:LEU:HD22	1:H:642:LEU:HD11	1.87	0.56
1:A:465:ARG:HG3	1:B:560:ARG:HH12	1.70	0.56
1:D:649:ASP:OD2	1:D:650:GLU:N	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:200:GLU:OE1	1:D:260:ASN:ND2	2.38	0.56
1:F:306:LEU:HB3	1:F:347:THR:HG22	1.88	0.56
1:L:351:ASN:ND2	1:L:561:GLU:OE2	2.31	0.56
1:K:538:ASN:ND2	1:K:569:ALA:O	2.32	0.56
1:B:299:ALA:HB3	1:B:341:VAL:HG23	1.86	0.55
1:E:538:ASN:ND2	1:E:569:ALA:O	2.32	0.55
1:B:389:LYS:NZ	1:B:445:LEU:O	2.39	0.55
1:G:647:LEU:HD21	1:G:747:VAL:HG11	1.88	0.55
1:H:584:LYS:HE3	1:H:625:ARG:HG3	1.88	0.55
1:H:706:GLU:OE2	1:H:709:ARG:NH2	2.37	0.55
1:A:647:LEU:HD21	1:A:747:VAL:HG11	1.88	0.55
1:H:461:PRO:HD2	1:I:567:ARG:HH12	1.72	0.55
1:I:272:PRO:O	1:J:326:SER:OG	2.24	0.55
1:I:381:LEU:O	1:I:385:THR:OG1	2.18	0.55
1:C:381:LEU:O	1:C:385:THR:OG1	2.18	0.55
1:C:399:VAL:HG21	1:C:452:PHE:HD2	1.72	0.55
1:D:647:LEU:HD21	1:D:747:VAL:HG11	1.88	0.55
1:E:584:LYS:HE3	1:E:625:ARG:HG3	1.88	0.55
1:H:302:PHE:HD1	1:H:344:MET:HG3	1.72	0.55
1:E:397:GLU:OE2	1:E:401:ASN:ND2	2.31	0.55
1:H:397:GLU:OE2	1:H:401:ASN:ND2	2.32	0.55
1:I:371:ILE:HD12	1:I:463:ALA:HB1	1.89	0.55
1:A:649:ASP:OD2	1:A:650:GLU:N	2.38	0.55
1:E:642:LEU:HD22	1:E:762:LEU:HD21	1.88	0.55
1:J:649:ASP:OD2	1:J:650:GLU:N	2.38	0.55
1:G:406:HIS:HB3	1:G:411:LEU:HD22	1.88	0.55
1:I:636:PRO:HA	1:I:640:ASP:HB3	1.88	0.55
1:J:642:LEU:HD22	1:J:762:LEU:HD21	1.89	0.55
1:K:390:LEU:HD13	1:K:394:VAL:HB	1.88	0.55
1:D:406:HIS:HB3	1:D:411:LEU:HD22	1.88	0.54
1:E:371:ILE:HD12	1:E:463:ALA:HB1	1.88	0.54
1:H:702:SER:HB3	1:I:502:LYS:NZ	2.22	0.54
1:I:634:LEU:HD22	1:I:642:LEU:HD11	1.89	0.54
1:J:647:LEU:HD21	1:J:747:VAL:HG11	1.88	0.54
1:L:586:ARG:NE	1:L:598:ASP:OD1	2.30	0.54
1:A:201:VAL:HG12	1:A:257:ALA:HB2	1.90	0.54
1:G:326:SER:OG	1:L:272:PRO:O	2.26	0.54
1:H:390:LEU:HD13	1:H:394:VAL:HB	1.90	0.54
1:I:648:PRO:HB2	1:I:653:ARG:HB3	1.89	0.54
1:K:371:ILE:HD12	1:K:463:ALA:HB1	1.89	0.54
1:K:728:VAL:HG22	1:K:732:ARG:HH21	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:315:LYS:HE3	1:D:322:ARG:HH12	1.72	0.54
1:A:700:ARG:NH1	1:B:491:GLU:OE1	2.40	0.54
1:B:406:HIS:HB3	1:B:411:LEU:HD22	1.90	0.54
1:E:756:GLU:OE2	1:I:766:ARG:NH2	2.41	0.54
1:I:313:ARG:O	1:I:316:THR:OG1	2.24	0.54
1:F:648:PRO:HB2	1:F:653:ARG:HB3	1.90	0.54
1:D:336:LYS:HE2	1:D:361:GLY:HA3	1.90	0.54
1:E:514:VAL:HG12	1:E:620:ILE:HG12	1.90	0.54
1:F:362:ARG:O	1:F:364:ASP:N	2.41	0.54
1:G:336:LYS:HE2	1:G:361:GLY:HA3	1.90	0.54
1:B:371:ILE:HD12	1:B:463:ALA:HB1	1.89	0.54
1:I:406:HIS:HB3	1:I:411:LEU:HD22	1.90	0.54
1:A:336:LYS:HE2	1:A:361:GLY:HA3	1.90	0.54
1:B:706:GLU:OE2	1:B:709:ARG:NH2	2.36	0.54
1:C:351:ASN:ND2	1:C:561:GLU:OE2	2.31	0.54
1:C:642:LEU:HD22	1:C:762:LEU:HD21	1.90	0.54
1:F:572:CYS:SG	1:F:573:VAL:N	2.81	0.54
1:K:302:PHE:HD1	1:K:344:MET:HG3	1.71	0.54
1:B:642:LEU:HD22	1:B:762:LEU:HD21	1.90	0.54
1:C:766:ARG:NH2	1:K:756:GLU:OE2	2.41	0.54
1:E:550:MET:HE2	1:E:600:VAL:HG21	1.89	0.54
1:E:634:LEU:HD22	1:E:642:LEU:HD11	1.89	0.54
1:A:584:LYS:HE3	1:A:625:ARG:HG3	1.89	0.53
1:B:200:GLU:OE1	1:B:260:ASN:ND2	2.41	0.53
1:C:362:ARG:O	1:C:364:ASP:N	2.41	0.53
1:C:406:HIS:HB3	1:C:411:LEU:HD22	1.90	0.53
1:G:390:LEU:HD13	1:G:394:VAL:HB	1.90	0.53
1:H:406:HIS:HB3	1:H:411:LEU:HD22	1.90	0.53
1:K:406:HIS:HB3	1:K:411:LEU:HD22	1.90	0.53
1:C:572:CYS:SG	1:C:573:VAL:N	2.81	0.53
1:G:610:GLY:HA3	1:L:465:ARG:HH22	1.73	0.53
1:J:634:LEU:HD22	1:J:642:LEU:HD11	1.91	0.53
1:B:390:LEU:HD13	1:B:394:VAL:HB	1.90	0.53
1:B:465:ARG:HG3	1:C:560:ARG:HH22	1.73	0.53
1:B:756:GLU:OE1	1:L:766:ARG:NH2	2.40	0.53
1:F:586:ARG:NE	1:F:598:ASP:OD1	2.30	0.53
1:G:201:VAL:HG12	1:G:257:ALA:HB2	1.91	0.53
1:G:642:LEU:HD13	1:G:762:LEU:HD21	1.90	0.53
1:G:706:GLU:OE2	1:G:709:ARG:NH2	2.35	0.53
1:J:336:LYS:HE2	1:J:361:GLY:HA3	1.90	0.53
1:K:514:VAL:HG12	1:K:620:ILE:HG12	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:642:LEU:HD22	1:K:762:LEU:HD21	1.90	0.53
1:L:200:GLU:OE1	1:L:260:ASN:ND2	2.41	0.53
1:L:572:CYS:SG	1:L:573:VAL:N	2.82	0.53
1:L:634:LEU:HD22	1:L:642:LEU:HD11	1.90	0.53
1:F:406:HIS:HB3	1:F:411:LEU:HD22	1.91	0.53
1:I:201:VAL:HG12	1:I:257:ALA:HB2	1.91	0.53
1:L:406:HIS:HB3	1:L:411:LEU:HD22	1.91	0.53
1:C:469:VAL:HG12	1:C:540:ILE:HG12	1.90	0.53
1:E:200:GLU:OE1	1:E:260:ASN:ND2	2.42	0.53
1:F:200:GLU:OE1	1:F:260:ASN:ND2	2.41	0.53
1:G:584:LYS:HE3	1:G:625:ARG:HG3	1.90	0.53
1:H:299:ALA:HB3	1:H:341:VAL:HG23	1.90	0.53
1:I:572:CYS:SG	1:I:573:VAL:N	2.82	0.53
1:B:302:PHE:HD1	1:B:344:MET:HG3	1.73	0.53
1:E:299:ALA:HB3	1:E:341:VAL:HG23	1.90	0.53
1:L:469:VAL:HG12	1:L:540:ILE:HG12	1.90	0.53
1:A:390:LEU:HD13	1:A:394:VAL:HB	1.90	0.53
1:A:636:PRO:HA	1:A:640:ASP:HB3	1.90	0.53
1:D:706:GLU:OE2	1:D:709:ARG:NH2	2.36	0.53
1:A:461:PRO:HD2	1:B:567:ARG:HH12	1.74	0.53
1:D:390:LEU:HD13	1:D:394:VAL:HB	1.91	0.53
1:C:648:PRO:HB2	1:C:653:ARG:HB3	1.90	0.53
1:E:390:LEU:HD13	1:E:394:VAL:HB	1.91	0.53
1:J:390:LEU:HD13	1:J:394:VAL:HB	1.91	0.53
1:L:648:PRO:HB2	1:L:653:ARG:HB3	1.90	0.53
1:B:634:LEU:HD22	1:B:642:LEU:HD11	1.91	0.53
1:G:636:PRO:HA	1:G:640:ASP:HB3	1.90	0.53
1:H:200:GLU:OE1	1:H:260:ASN:ND2	2.42	0.53
1:I:362:ARG:O	1:I:364:ASP:N	2.42	0.53
1:I:399:VAL:HG23	1:I:456:LEU:HD11	1.90	0.53
1:C:634:LEU:HD22	1:C:642:LEU:HD11	1.91	0.52
1:F:389:LYS:NZ	1:F:445:LEU:O	2.42	0.52
1:D:299:ALA:HB3	1:D:341:VAL:HG23	1.91	0.52
1:J:636:PRO:HA	1:J:640:ASP:HB3	1.90	0.52
1:K:461:PRO:HD2	1:L:567:ARG:HH12	1.74	0.52
1:K:653:ARG:NE	1:K:679:THR:O	2.42	0.52
1:F:634:LEU:HD22	1:F:642:LEU:HD11	1.91	0.52
1:A:209:CYS:HB2	1:A:212:GLN:HB2	1.91	0.52
1:A:362:ARG:O	1:A:364:ASP:N	2.42	0.52
1:H:653:ARG:NE	1:H:679:THR:O	2.42	0.52
1:J:302:PHE:HD1	1:J:344:MET:HG3	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:653:ARG:HG3	1:A:676:ALA:HB1	1.91	0.52
1:D:302:PHE:HD1	1:D:344:MET:HG3	1.74	0.52
1:D:653:ARG:HG3	1:D:676:ALA:HB1	1.92	0.52
1:A:299:ALA:HB3	1:A:341:VAL:HG23	1.90	0.52
1:D:362:ARG:O	1:D:364:ASP:N	2.43	0.52
1:G:703:ILE:HD13	1:H:499:HIS:HD2	1.75	0.52
1:E:406:HIS:HB3	1:E:411:LEU:HD22	1.92	0.52
1:D:493:VAL:HG22	1:D:618:PHE:CD1	2.45	0.52
1:G:302:PHE:HD1	1:G:344:MET:HG3	1.75	0.52
1:D:584:LYS:HE3	1:D:625:ARG:HG3	1.91	0.52
1:G:362:ARG:O	1:G:364:ASP:N	2.43	0.52
1:H:225:ARG:HG3	1:H:262:THR:HG23	1.92	0.52
1:E:465:ARG:HG3	1:F:560:ARG:HH22	1.75	0.52
1:E:663:LYS:NZ	1:F:504:LEU:O	2.39	0.52
1:L:502:LYS:HG3	1:L:505:LYS:HE2	1.91	0.52
1:A:642:LEU:HD13	1:A:762:LEU:HD21	1.91	0.51
1:C:653:ARG:NE	1:C:679:THR:O	2.43	0.51
1:E:525:THR:HG22	1:E:529:LYS:HE2	1.92	0.51
1:G:299:ALA:HB3	1:G:341:VAL:HG23	1.91	0.51
1:A:200:GLU:OE1	1:A:260:ASN:ND2	2.43	0.51
1:I:389:LYS:NZ	1:I:445:LEU:O	2.43	0.51
1:I:525:THR:HG22	1:I:529:LYS:HE2	1.93	0.51
1:K:634:LEU:HD22	1:K:642:LEU:HD11	1.92	0.51
1:L:525:THR:HG22	1:L:529:LYS:HE2	1.93	0.51
1:A:706:GLU:OE2	1:A:709:ARG:NH2	2.34	0.51
1:A:750:ASN:HD22	1:A:753:ARG:HE	1.58	0.51
1:D:350:PRO:O	1:D:358:ARG:NH1	2.43	0.51
1:D:461:PRO:HD2	1:E:567:ARG:HH12	1.75	0.51
1:E:653:ARG:NE	1:E:679:THR:O	2.43	0.51
1:F:642:LEU:HD22	1:F:762:LEU:HD21	1.90	0.51
1:G:493:VAL:HG22	1:G:618:PHE:CD1	2.45	0.51
1:G:666:VAL:HG22	1:G:670:VAL:HG11	1.91	0.51
1:I:642:LEU:HD22	1:I:762:LEU:HD21	1.91	0.51
1:J:299:ALA:HB3	1:J:341:VAL:HG23	1.91	0.51
1:J:493:VAL:HG22	1:J:618:PHE:CD1	2.45	0.51
1:C:764:GLN:HA	1:C:766:ARG:NH1	2.25	0.51
1:E:214:ALA:HA	1:E:217:LYS:HE2	1.93	0.51
1:F:351:ASN:ND2	1:F:561:GLU:OE2	2.31	0.51
1:I:584:LYS:HE3	1:I:625:ARG:HG3	1.92	0.51
1:K:584:LYS:HE3	1:K:625:ARG:HG3	1.92	0.51
1:G:389:LYS:NZ	1:G:445:LEU:O	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:525:THR:HG22	1:H:529:LYS:HE2	1.93	0.51
1:L:362:ARG:O	1:L:364:ASP:N	2.44	0.51
1:L:584:LYS:HE3	1:L:625:ARG:HG3	1.92	0.51
1:C:201:VAL:HG12	1:C:257:ALA:HB2	1.91	0.51
1:D:636:PRO:HA	1:D:640:ASP:HB3	1.91	0.51
1:F:469:VAL:HG12	1:F:540:ILE:HG12	1.90	0.51
1:J:706:GLU:OE2	1:J:709:ARG:NH2	2.36	0.51
1:L:381:LEU:HD21	1:L:411:LEU:HD12	1.91	0.51
1:B:653:ARG:NE	1:B:679:THR:O	2.44	0.51
1:D:389:LYS:NZ	1:D:445:LEU:O	2.44	0.51
1:G:560:ARG:HH21	1:L:465:ARG:HG3	1.75	0.51
1:I:741:ARG:HG2	1:J:769:GLY:HA2	1.92	0.51
1:I:764:GLN:HA	1:I:766:ARG:NH1	2.25	0.51
1:K:678:MET:HG3	1:L:771:PHE:HE1	1.75	0.51
1:A:389:LYS:NZ	1:A:445:LEU:O	2.44	0.51
1:A:493:VAL:HG22	1:A:618:PHE:CD1	2.45	0.51
1:B:584:LYS:HE3	1:B:625:ARG:HG3	1.93	0.51
1:C:407:VAL:HG13	1:C:463:ALA:HB2	1.93	0.51
1:E:315:LYS:HZ1	1:F:313:ARG:HG3	1.76	0.51
1:E:647:LEU:HD21	1:E:747:VAL:HG11	1.92	0.51
1:G:605:LEU:HD21	1:G:633:ILE:HG12	1.92	0.51
1:J:389:LYS:NZ	1:J:445:LEU:O	2.44	0.51
1:L:653:ARG:NE	1:L:679:THR:O	2.44	0.51
1:D:364:ASP:N	1:D:364:ASP:OD1	2.43	0.51
1:H:364:ASP:N	1:H:364:ASP:OD1	2.44	0.51
1:J:666:VAL:HG22	1:J:670:VAL:HG11	1.93	0.51
1:J:703:ILE:HD13	1:K:499:HIS:HD2	1.76	0.51
1:L:636:PRO:HA	1:L:640:ASP:HB3	1.93	0.51
1:A:399:VAL:HG23	1:A:456:LEU:HD11	1.92	0.51
1:A:605:LEU:HD21	1:A:633:ILE:HG12	1.93	0.51
1:B:252:THR:HG22	1:B:302:PHE:HE2	1.76	0.51
1:B:678:MET:HE1	1:K:678:MET:HE1	1.92	0.51
1:F:636:PRO:HA	1:F:640:ASP:HB3	1.93	0.51
1:J:760:GLN:HG2	1:J:763:GLN:HB2	1.93	0.51
1:A:302:PHE:HD1	1:A:344:MET:HG3	1.76	0.50
1:A:699:ILE:HD13	1:B:506:PHE:HD2	1.76	0.50
1:B:315:LYS:NZ	1:C:313:ARG:HG3	2.26	0.50
1:C:294:GLU:HB2	1:C:339:ALA:HB1	1.93	0.50
1:F:304:ASP:OD1	1:F:304:ASP:N	2.43	0.50
1:I:469:VAL:HG12	1:I:540:ILE:HG12	1.91	0.50
1:I:579:LEU:HB3	1:I:623:THR:HG22	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:666:VAL:HG22	1:D:670:VAL:HG11	1.91	0.50
1:D:703:ILE:HD13	1:E:499:HIS:HD2	1.77	0.50
1:E:364:ASP:OD1	1:E:364:ASP:N	2.44	0.50
1:I:399:VAL:HG21	1:I:452:PHE:HD2	1.75	0.50
1:I:653:ARG:NE	1:I:679:THR:O	2.44	0.50
1:C:381:LEU:HD21	1:C:411:LEU:HD12	1.94	0.50
1:C:525:THR:HG22	1:C:529:LYS:HE2	1.94	0.50
1:D:605:LEU:HD21	1:D:633:ILE:HG12	1.93	0.50
1:F:579:LEU:HB3	1:F:623:THR:HG22	1.93	0.50
1:G:364:ASP:N	1:G:364:ASP:OD1	2.43	0.50
1:H:698:ALA:O	1:H:702:SER:OG	2.22	0.50
1:K:623:THR:HG21	1:K:629:ILE:HG21	1.94	0.50
1:F:653:ARG:NE	1:F:679:THR:O	2.45	0.50
1:J:461:PRO:HD2	1:K:567:ARG:HH12	1.77	0.50
1:K:525:THR:HG22	1:K:529:LYS:HE2	1.94	0.50
1:A:703:ILE:HD13	1:B:499:HIS:HD2	1.76	0.50
1:C:389:LYS:NZ	1:C:445:LEU:O	2.44	0.50
1:C:584:LYS:HE3	1:C:625:ARG:HG3	1.94	0.50
1:E:315:LYS:NZ	1:F:313:ARG:HG3	2.27	0.50
1:C:304:ASP:N	1:C:304:ASP:OD1	2.44	0.50
1:C:315:LYS:NZ	1:D:313:ARG:HG3	2.26	0.50
1:E:252:THR:HG22	1:E:302:PHE:HE2	1.77	0.50
1:G:653:ARG:HG3	1:G:676:ALA:HB1	1.94	0.50
1:H:391:ALA:HB2	1:H:446:ALA:HB1	1.94	0.50
1:I:372:PRO:O	1:I:377:ARG:NH1	2.45	0.50
1:I:559:VAL:HA	1:I:562:ILE:HD12	1.94	0.50
1:L:399:VAL:HG21	1:L:452:PHE:HD2	1.76	0.50
1:L:389:LYS:NZ	1:L:445:LEU:O	2.44	0.50
1:A:350:PRO:O	1:A:358:ARG:NH1	2.45	0.50
1:A:407:VAL:HG13	1:A:463:ALA:HB2	1.93	0.50
1:C:302:PHE:HA	1:C:344:MET:O	2.12	0.50
1:H:647:LEU:HD21	1:H:747:VAL:HG11	1.94	0.50
1:J:362:ARG:O	1:J:364:ASP:N	2.45	0.50
1:L:302:PHE:HA	1:L:344:MET:O	2.12	0.50
1:E:391:ALA:HB2	1:E:446:ALA:HB1	1.94	0.50
1:E:706:GLU:OE2	1:E:709:ARG:NH2	2.36	0.50
1:G:350:PRO:O	1:G:358:ARG:NH1	2.45	0.50
1:G:649:ASP:OD2	1:G:650:GLU:N	2.38	0.50
1:J:584:LYS:HE3	1:J:625:ARG:HG3	1.93	0.50
1:A:666:VAL:HG22	1:A:670:VAL:HG11	1.93	0.49
1:B:623:THR:HG21	1:B:629:ILE:HG21	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:525:THR:HG22	1:F:529:LYS:HE2	1.93	0.49
1:F:556:GLU:HB2	1:F:603:GLN:HG3	1.94	0.49
1:J:699:ILE:HD13	1:K:506:PHE:HD2	1.77	0.49
1:L:764:GLN:HA	1:L:766:ARG:NH1	2.27	0.49
1:F:584:LYS:HE3	1:F:625:ARG:HG3	1.94	0.49
1:I:465:ARG:HG3	1:J:560:ARG:HH21	1.76	0.49
1:L:304:ASP:N	1:L:304:ASP:OD1	2.45	0.49
1:B:636:PRO:HA	1:B:640:ASP:HB3	1.95	0.49
1:C:678:MET:HG3	1:D:771:PHE:HE1	1.76	0.49
1:F:764:GLN:HA	1:F:766:ARG:NH1	2.26	0.49
1:G:760:GLN:HA	1:G:763:GLN:HB2	1.94	0.49
1:J:728:VAL:HG22	1:J:732:ARG:HH21	1.76	0.49
1:K:653:ARG:HG3	1:K:676:ALA:HB1	1.94	0.49
1:A:579:LEU:HB3	1:A:623:THR:HG22	1.94	0.49
1:D:209:CYS:HB2	1:D:212:GLN:HB2	1.94	0.49
1:D:328:LEU:O	1:D:332:MET:HG3	2.13	0.49
1:G:461:PRO:HD2	1:H:567:ARG:HH12	1.77	0.49
1:G:771:PHE:HE1	1:L:678:MET:HG3	1.77	0.49
1:B:580:ASP:HB3	1:B:629:ILE:HG22	1.95	0.49
1:G:328:LEU:O	1:G:332:MET:HG3	2.13	0.49
1:G:733:ARG:HH22	1:H:772:ARG:HH22	1.60	0.49
1:I:302:PHE:HA	1:I:344:MET:O	2.12	0.49
1:J:579:LEU:HB3	1:J:623:THR:HG22	1.94	0.49
1:H:663:LYS:HD2	1:H:663:LYS:O	2.13	0.49
1:A:648:PRO:HB2	1:A:653:ARG:HB3	1.95	0.49
1:H:281:GLU:HA	1:H:284:SER:HB3	1.94	0.49
1:A:771:PHE:HE1	1:F:678:MET:HG3	1.78	0.49
1:E:586:ARG:NH1	1:E:598:ASP:OD1	2.45	0.49
1:G:200:GLU:OE1	1:G:260:ASN:ND2	2.45	0.49
1:G:579:LEU:HB3	1:G:623:THR:HG22	1.94	0.49
1:A:403:THR:HG22	1:A:456:LEU:HD21	1.93	0.49
1:B:399:VAL:HG21	1:B:452:PHE:HD2	1.78	0.49
1:E:663:LYS:HD2	1:E:663:LYS:O	2.13	0.49
1:A:623:THR:HG21	1:A:629:ILE:HG21	1.95	0.49
1:C:579:LEU:HB3	1:C:623:THR:HG22	1.93	0.49
1:G:465:ARG:HH12	1:H:610:GLY:HA3	1.77	0.49
1:I:304:ASP:OD1	1:I:304:ASP:N	2.44	0.49
1:K:399:VAL:HG21	1:K:452:PHE:HD2	1.78	0.49
1:K:580:ASP:HB3	1:K:629:ILE:HG22	1.95	0.49
1:L:313:ARG:O	1:L:316:THR:OG1	2.25	0.49
1:D:642:LEU:HD13	1:D:762:LEU:HD21	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:252:THR:HG22	1:I:302:PHE:HE2	1.77	0.48
1:J:648:PRO:HB2	1:J:653:ARG:HB3	1.95	0.48
1:A:665:PRO:HD2	1:B:506:PHE:HA	1.95	0.48
1:F:407:VAL:HG13	1:F:463:ALA:HB2	1.94	0.48
1:J:665:PRO:HD2	1:K:506:PHE:HA	1.95	0.48
1:K:663:LYS:HD2	1:K:663:LYS:O	2.13	0.48
1:B:663:LYS:HD2	1:B:663:LYS:O	2.13	0.48
1:C:252:THR:HG22	1:C:302:PHE:HE2	1.77	0.48
1:F:302:PHE:HA	1:F:344:MET:O	2.13	0.48
1:H:252:THR:HG22	1:H:302:PHE:HE2	1.79	0.48
1:H:623:THR:HG21	1:H:629:ILE:HG21	1.95	0.48
1:J:623:THR:HG21	1:J:629:ILE:HG21	1.95	0.48
1:K:252:THR:HG22	1:K:302:PHE:HE2	1.78	0.48
1:A:328:LEU:O	1:A:332:MET:HG3	2.13	0.48
1:D:407:VAL:HG13	1:D:463:ALA:HB2	1.93	0.48
1:D:579:LEU:HB3	1:D:623:THR:HG22	1.95	0.48
1:E:623:THR:HG21	1:E:629:ILE:HG21	1.95	0.48
1:G:623:THR:HG21	1:G:629:ILE:HG21	1.95	0.48
1:H:398:GLN:O	1:H:402:GLU:HG2	2.14	0.48
1:D:648:PRO:HB2	1:D:653:ARG:HB3	1.95	0.48
1:H:636:PRO:HA	1:H:640:ASP:HB3	1.95	0.48
1:I:381:LEU:HD21	1:I:411:LEU:HD12	1.95	0.48
1:I:476:TRP:HD1	1:I:534:GLU:HG3	1.78	0.48
1:J:653:ARG:HG3	1:J:676:ALA:HB1	1.96	0.48
1:F:649:ASP:OD1	1:F:650:GLU:N	2.41	0.48
1:G:678:MET:HG3	1:H:771:PHE:CE1	2.38	0.48
1:J:391:ALA:HB2	1:J:446:ALA:HB1	1.95	0.48
1:L:556:GLU:HB2	1:L:603:GLN:HG3	1.96	0.48
1:I:294:GLU:HB2	1:I:339:ALA:HB1	1.95	0.48
1:I:678:MET:HG3	1:J:771:PHE:HE1	1.79	0.48
1:J:350:PRO:O	1:J:358:ARG:NH1	2.47	0.48
1:J:605:LEU:HD21	1:J:633:ILE:HG12	1.95	0.48
1:B:475:THR:H	1:B:533:ASN:HD22	1.62	0.48
1:D:623:THR:HG21	1:D:629:ILE:HG21	1.95	0.48
1:D:699:ILE:HD13	1:E:506:PHE:HD2	1.77	0.48
1:E:640:ASP:OD1	1:E:641:GLN:N	2.47	0.48
1:I:364:ASP:N	1:I:364:ASP:OD1	2.46	0.48
1:J:328:LEU:O	1:J:332:MET:HG3	2.13	0.48
1:A:391:ALA:HB2	1:A:446:ALA:HB1	1.95	0.48
1:E:398:GLN:O	1:E:402:GLU:HG2	2.14	0.48
1:G:648:PRO:HB2	1:G:653:ARG:HB3	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:579:LEU:HB3	1:L:623:THR:HG22	1.94	0.48
1:A:653:ARG:NE	1:A:679:THR:O	2.47	0.47
1:F:580:ASP:OD2	1:F:584:LYS:NZ	2.38	0.47
1:G:509:THR:HB	1:G:613:THR:HG21	1.96	0.47
1:I:391:ALA:HB2	1:I:446:ALA:HB1	1.96	0.47
1:L:364:ASP:N	1:L:364:ASP:OD1	2.46	0.47
1:A:525:THR:HG22	1:A:529:LYS:HE2	1.96	0.47
1:A:769:GLY:HA2	1:F:741:ARG:HG2	1.96	0.47
1:B:315:LYS:HZ1	1:C:313:ARG:HG3	1.79	0.47
1:D:372:PRO:O	1:D:377:ARG:NH1	2.47	0.47
1:E:702:SER:O	1:E:706:GLU:HG2	2.14	0.47
1:I:407:VAL:HG13	1:I:463:ALA:HB2	1.95	0.47
1:I:764:GLN:HG3	1:I:766:ARG:HD2	1.96	0.47
1:K:407:VAL:HG13	1:K:463:ALA:HB2	1.96	0.47
1:B:362:ARG:O	1:B:364:ASP:N	2.47	0.47
1:B:407:VAL:HG13	1:B:463:ALA:HB2	1.96	0.47
1:B:647:LEU:HD21	1:B:747:VAL:HG11	1.95	0.47
1:G:407:VAL:HG13	1:G:463:ALA:HB2	1.94	0.47
1:C:764:GLN:HG3	1:C:766:ARG:HD2	1.96	0.47
1:F:399:VAL:HG21	1:F:452:PHE:HD2	1.80	0.47
1:J:407:VAL:HG13	1:J:463:ALA:HB2	1.95	0.47
1:J:525:THR:HG22	1:J:529:LYS:HE2	1.96	0.47
1:K:391:ALA:HB2	1:K:446:ALA:HB1	1.94	0.47
1:B:653:ARG:HG3	1:B:676:ALA:HB1	1.97	0.47
1:D:653:ARG:NE	1:D:679:THR:O	2.48	0.47
1:E:666:VAL:HG22	1:E:670:VAL:HG11	1.97	0.47
1:F:364:ASP:N	1:F:364:ASP:OD1	2.47	0.47
1:D:465:ARG:HH22	1:E:610:GLY:HA3	1.78	0.47
1:D:665:PRO:HD2	1:E:506:PHE:HA	1.96	0.47
1:H:302:PHE:CE2	1:H:304:ASP:HB3	2.50	0.47
1:J:200:GLU:OE1	1:J:260:ASN:ND2	2.48	0.47
1:L:482:LEU:HB3	1:L:485:VAL:HB	1.96	0.47
1:C:364:ASP:N	1:C:364:ASP:OD1	2.47	0.47
1:D:509:THR:HB	1:D:613:THR:HG21	1.97	0.47
1:E:630:ASP:HB3	1:E:633:ILE:HG13	1.97	0.47
1:H:239:ARG:HA	1:H:239:ARG:HD3	1.76	0.47
1:H:336:LYS:HE2	1:H:361:GLY:HA3	1.97	0.47
1:I:533:ASN:O	1:I:536:GLN:NE2	2.47	0.47
1:L:252:THR:HG22	1:L:302:PHE:HE2	1.78	0.47
1:A:362:ARG:NH2	1:F:305:GLU:OE2	2.32	0.47
1:B:663:LYS:NZ	1:C:504:LEU:O	2.38	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:623:THR:HG21	1:C:629:ILE:HG21	1.97	0.47
1:H:653:ARG:HG3	1:H:676:ALA:HB1	1.97	0.47
1:L:728:VAL:HG22	1:L:732:ARG:HH21	1.80	0.47
1:B:702:SER:O	1:B:706:GLU:HG2	2.15	0.47
1:D:484:ASP:OD1	1:D:484:ASP:N	2.48	0.47
1:E:362:ARG:O	1:E:364:ASP:N	2.48	0.47
1:G:391:ALA:HB2	1:G:446:ALA:HB1	1.95	0.47
1:L:623:THR:HG21	1:L:629:ILE:HG21	1.97	0.47
1:A:313:ARG:HG3	1:F:315:LYS:NZ	2.30	0.46
1:B:391:ALA:HB2	1:B:446:ALA:HB1	1.96	0.46
1:F:702:SER:O	1:F:706:GLU:HG2	2.15	0.46
1:G:665:PRO:HD2	1:H:506:PHE:HA	1.96	0.46
1:H:586:ARG:NH1	1:H:598:ASP:OD1	2.47	0.46
1:K:336:LYS:HE2	1:K:361:GLY:HA3	1.96	0.46
1:K:398:GLN:O	1:K:402:GLU:HG2	2.14	0.46
1:B:398:GLN:O	1:B:402:GLU:HG2	2.14	0.46
1:B:640:ASP:OD1	1:B:641:GLN:N	2.48	0.46
1:C:372:PRO:O	1:C:377:ARG:NH1	2.48	0.46
1:E:239:ARG:HA	1:E:239:ARG:HD3	1.75	0.46
1:E:302:PHE:CE2	1:E:304:ASP:HB3	2.51	0.46
1:E:336:LYS:HE2	1:E:361:GLY:HA3	1.98	0.46
1:E:389:LYS:HE2	1:E:389:LYS:HB2	1.81	0.46
1:F:252:THR:HG22	1:F:302:PHE:HE2	1.79	0.46
1:H:524:LYS:HD2	1:H:622:ALA:HB1	1.97	0.46
1:A:252:THR:HG22	1:A:302:PHE:HE2	1.80	0.46
1:F:640:ASP:OD1	1:F:641:GLN:N	2.47	0.46
1:G:491:GLU:OE2	1:L:700:ARG:HB2	2.16	0.46
1:G:551:TRP:HD1	1:G:599:ARG:HB2	1.79	0.46
1:K:362:ARG:O	1:K:364:ASP:N	2.48	0.46
1:C:700:ARG:HB2	1:D:491:GLU:OE2	2.16	0.46
1:D:391:ALA:HB2	1:D:446:ALA:HB1	1.95	0.46
1:F:653:ARG:HG3	1:F:676:ALA:HB1	1.98	0.46
1:H:362:ARG:O	1:H:364:ASP:N	2.49	0.46
1:J:603:GLN:O	1:J:607:GLU:HG2	2.15	0.46
1:B:364:ASP:N	1:B:364:ASP:OD1	2.44	0.46
1:C:653:ARG:HG3	1:C:676:ALA:HB1	1.97	0.46
1:I:251:LYS:HB2	1:I:251:LYS:HE3	1.78	0.46
1:I:649:ASP:OD2	1:I:650:GLU:N	2.41	0.46
1:J:216:ILE:HG21	1:J:258:VAL:HG21	1.96	0.46
1:J:465:ARG:HG3	1:K:560:ARG:HH12	1.81	0.46
1:B:509:THR:HB	1:B:613:THR:HG21	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:525:THR:HG22	1:D:529:LYS:HE2	1.97	0.46
1:D:702:SER:O	1:D:706:GLU:HG2	2.16	0.46
1:E:524:LYS:HD2	1:E:622:ALA:HB1	1.98	0.46
1:G:586:ARG:HD3	1:G:598:ASP:OD1	2.16	0.46
1:H:216:ILE:HG21	1:H:258:VAL:HG21	1.97	0.46
1:H:666:VAL:HG22	1:H:670:VAL:HG11	1.98	0.46
1:I:580:ASP:OD2	1:I:584:LYS:NZ	2.41	0.46
1:I:702:SER:O	1:I:706:GLU:HG2	2.16	0.46
1:K:302:PHE:CE2	1:K:304:ASP:HB3	2.50	0.46
1:A:364:ASP:N	1:A:364:ASP:OD1	2.43	0.46
1:A:702:SER:O	1:A:706:GLU:HG2	2.15	0.46
1:C:706:GLU:OE2	1:C:709:ARG:NH2	2.36	0.46
1:G:525:THR:HG22	1:G:529:LYS:HE2	1.96	0.46
1:I:586:ARG:NH1	1:I:598:ASP:OD1	2.49	0.46
1:K:251:LYS:HD2	1:K:346:ALA:HB1	1.98	0.46
1:K:364:ASP:N	1:K:364:ASP:OD1	2.44	0.46
1:C:482:LEU:HB3	1:C:485:VAL:HB	1.97	0.46
1:F:251:LYS:HE3	1:F:251:LYS:HB2	1.78	0.46
1:G:465:ARG:HH22	1:H:610:GLY:HA3	1.80	0.46
1:G:612:SER:OG	1:G:613:THR:N	2.49	0.46
1:G:702:SER:O	1:G:706:GLU:HG2	2.16	0.46
1:I:336:LYS:HE2	1:I:361:GLY:HA3	1.98	0.46
1:I:704:GLU:O	1:I:708:ARG:HG3	2.16	0.46
1:K:674:PHE:CZ	1:L:773:PHE:HB3	2.51	0.46
1:K:732:ARG:NH1	1:K:734:ASP:OD2	2.48	0.46
1:L:640:ASP:OD1	1:L:641:GLN:N	2.49	0.46
1:L:649:ASP:OD1	1:L:650:GLU:N	2.44	0.46
1:L:653:ARG:HG3	1:L:676:ALA:HB1	1.97	0.46
1:D:586:ARG:HD3	1:D:598:ASP:OD1	2.16	0.46
1:H:338:ARG:HA	1:H:338:ARG:HD2	1.72	0.46
1:L:294:GLU:HB2	1:L:339:ALA:HB1	1.98	0.46
1:L:706:GLU:OE2	1:L:709:ARG:NH2	2.36	0.46
1:C:702:SER:O	1:C:706:GLU:HG2	2.16	0.46
1:F:336:LYS:HE2	1:F:361:GLY:HA3	1.98	0.46
1:G:252:THR:HG22	1:G:302:PHE:HE2	1.81	0.46
1:H:201:VAL:HG12	1:H:257:ALA:HB2	1.98	0.46
1:H:640:ASP:OD1	1:H:641:GLN:N	2.49	0.46
1:I:653:ARG:HG3	1:I:676:ALA:HB1	1.98	0.46
1:I:657:LEU:HD21	1:I:687:LEU:HD22	1.96	0.46
1:J:653:ARG:NE	1:J:679:THR:O	2.49	0.46
1:J:702:SER:O	1:J:706:GLU:HG2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:239:ARG:HA	1:K:239:ARG:HD3	1.76	0.46
1:B:225:ARG:HG2	1:B:262:THR:HG23	1.98	0.45
1:B:461:PRO:HD2	1:C:567:ARG:HH12	1.81	0.45
1:A:491:GLU:OE2	1:F:700:ARG:HB2	2.16	0.45
1:B:336:LYS:HE2	1:B:361:GLY:HA3	1.97	0.45
1:B:525:THR:HG22	1:B:529:LYS:HE2	1.98	0.45
1:B:586:ARG:NH1	1:B:598:ASP:OD1	2.49	0.45
1:C:371:ILE:HD11	1:C:466:GLU:HG2	1.98	0.45
1:C:657:LEU:HD21	1:C:687:LEU:HD22	1.98	0.45
1:H:251:LYS:HE3	1:H:251:LYS:HB2	1.79	0.45
1:H:702:SER:O	1:H:706:GLU:HG2	2.17	0.45
1:I:482:LEU:HB3	1:I:485:VAL:HB	1.98	0.45
1:A:580:ASP:HB3	1:A:629:ILE:HG22	1.99	0.45
1:E:221:GLU:OE2	1:E:225:ARG:HD2	2.16	0.45
1:E:484:ASP:N	1:E:484:ASP:OD1	2.50	0.45
1:F:371:ILE:HD11	1:F:466:GLU:HG2	1.98	0.45
1:F:381:LEU:HD23	1:F:381:LEU:HA	1.77	0.45
1:G:371:ILE:HD11	1:G:466:GLU:HG2	1.97	0.45
1:G:484:ASP:N	1:G:484:ASP:OD1	2.49	0.45
1:G:653:ARG:NE	1:G:679:THR:O	2.50	0.45
1:H:399:VAL:HG21	1:H:452:PHE:HD2	1.81	0.45
1:J:364:ASP:N	1:J:364:ASP:OD1	2.43	0.45
1:L:239:ARG:HA	1:L:239:ARG:HD3	1.73	0.45
1:L:702:SER:O	1:L:706:GLU:HG2	2.16	0.45
1:B:484:ASP:N	1:B:484:ASP:OD1	2.50	0.45
1:C:484:ASP:OD1	1:C:484:ASP:N	2.49	0.45
1:D:421:GLN:HA	1:D:424:ARG:HG2	1.98	0.45
1:E:550:MET:HE1	1:E:559:VAL:N	2.31	0.45
1:G:421:GLN:HA	1:G:424:ARG:HG2	1.98	0.45
1:H:674:PHE:CZ	1:H:678:MET:HE3	2.52	0.45
1:I:700:ARG:HB2	1:J:491:GLU:OE2	2.16	0.45
1:K:647:LEU:HD21	1:K:747:VAL:HG11	1.98	0.45
1:L:336:LYS:HE2	1:L:361:GLY:HA3	1.98	0.45
1:D:252:THR:HG22	1:D:302:PHE:HE2	1.81	0.45
1:F:239:ARG:HG3	1:F:336:LYS:HA	1.98	0.45
1:F:399:VAL:HA	1:F:402:GLU:HG2	1.97	0.45
1:F:484:ASP:OD1	1:F:484:ASP:N	2.49	0.45
1:G:580:ASP:HB3	1:G:629:ILE:HG22	1.99	0.45
1:H:484:ASP:OD1	1:H:484:ASP:N	2.50	0.45
1:H:734:ASP:HA	1:H:737:GLU:OE1	2.17	0.45
1:L:484:ASP:N	1:L:484:ASP:OD1	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:678:MET:HG3	1:F:771:PHE:HE1	1.80	0.45
1:F:623:THR:HG21	1:F:629:ILE:HG21	1.97	0.45
1:I:484:ASP:OD1	1:I:484:ASP:N	2.49	0.45
1:I:623:THR:HG21	1:I:629:ILE:HG21	1.97	0.45
1:K:200:GLU:OE1	1:K:260:ASN:ND2	2.50	0.45
1:K:484:ASP:OD1	1:K:484:ASP:N	2.50	0.45
1:E:338:ARG:HA	1:E:338:ARG:HD2	1.72	0.45
1:E:653:ARG:HG3	1:E:676:ALA:HB1	1.99	0.45
1:F:294:GLU:HB2	1:F:339:ALA:HB1	1.98	0.45
1:F:391:ALA:HB2	1:F:446:ALA:HB1	1.97	0.45
1:K:465:ARG:HG3	1:L:560:ARG:NH2	2.32	0.45
1:L:407:VAL:HG13	1:L:463:ALA:HB2	1.97	0.45
1:B:580:ASP:OD1	1:B:584:LYS:NZ	2.50	0.45
1:C:336:LYS:HE2	1:C:361:GLY:HA3	1.98	0.45
1:D:580:ASP:HB3	1:D:629:ILE:HG22	1.99	0.45
1:E:251:LYS:HE3	1:E:251:LYS:HB2	1.79	0.45
1:G:506:PHE:HA	1:L:665:PRO:HD2	1.98	0.45
1:I:240:GLY:HA2	1:I:343:VAL:O	2.17	0.45
1:J:371:ILE:HD11	1:J:466:GLU:HG2	1.98	0.45
1:J:421:GLN:HA	1:J:424:ARG:HG2	1.98	0.45
1:J:586:ARG:HD3	1:J:598:ASP:OD1	2.16	0.45
1:B:239:ARG:HA	1:B:239:ARG:HD3	1.76	0.45
1:C:239:ARG:HG3	1:C:336:LYS:HA	1.98	0.45
1:F:528:ALA:HA	1:F:531:ILE:HG22	1.99	0.45
1:H:550:MET:HE1	1:H:559:VAL:N	2.32	0.45
1:K:421:GLN:HA	1:K:424:ARG:HG2	1.99	0.45
1:A:586:ARG:HD3	1:A:598:ASP:OD1	2.16	0.45
1:C:240:GLY:HA2	1:C:343:VAL:O	2.17	0.45
1:E:665:PRO:HD2	1:F:506:PHE:HA	1.98	0.45
1:H:612:SER:OG	1:H:613:THR:N	2.51	0.45
1:H:674:PHE:CZ	1:I:773:PHE:HB3	2.52	0.45
1:B:244:TYR:CZ	1:B:368:ASP:HB3	2.52	0.44
1:A:514:VAL:HG12	1:A:620:ILE:HG12	1.99	0.44
1:B:402:GLU:HG3	1:B:456:LEU:HD11	1.99	0.44
1:C:649:ASP:OD1	1:C:650:GLU:N	2.44	0.44
1:E:243:LEU:HD12	1:E:302:PHE:HE1	1.82	0.44
1:F:706:GLU:OE2	1:F:709:ARG:NH2	2.36	0.44
1:A:506:PHE:HA	1:F:665:PRO:HD2	1.98	0.44
1:B:630:ASP:HB3	1:B:633:ILE:HG13	2.00	0.44
1:D:475:THR:H	1:D:533:ASN:HD22	1.66	0.44
1:G:244:TYR:CZ	1:G:368:ASP:HB3	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:239:ARG:HG3	1:I:336:LYS:HA	1.99	0.44
1:K:317:HIS:HD2	1:L:317:HIS:O	2.01	0.44
1:K:509:THR:HB	1:K:613:THR:HG21	2.00	0.44
1:K:580:ASP:OD1	1:K:584:LYS:NZ	2.51	0.44
1:K:666:VAL:HG22	1:K:670:VAL:HG11	2.00	0.44
1:A:294:GLU:HB2	1:A:339:ALA:HB1	1.99	0.44
1:B:243:LEU:HD12	1:B:302:PHE:HE1	1.82	0.44
1:B:315:LYS:HD2	1:B:315:LYS:O	2.18	0.44
1:B:612:SER:OG	1:B:613:THR:N	2.50	0.44
1:C:528:ALA:HA	1:C:531:ILE:HG22	1.99	0.44
1:D:551:TRP:HD1	1:D:599:ARG:HB2	1.82	0.44
1:E:612:SER:OG	1:E:613:THR:N	2.51	0.44
1:E:674:PHE:CZ	1:E:678:MET:HE3	2.53	0.44
1:F:240:GLY:HA2	1:F:343:VAL:O	2.18	0.44
1:G:475:THR:H	1:G:533:ASN:HD22	1.66	0.44
1:G:551:TRP:CZ2	1:G:586:ARG:HD2	2.53	0.44
1:K:338:ARG:HA	1:K:338:ARG:HD2	1.72	0.44
1:A:371:ILE:HD11	1:A:466:GLU:HG2	1.99	0.44
1:E:485:VAL:HG13	1:E:643:ILE:HG21	2.00	0.44
1:F:313:ARG:O	1:F:316:THR:OG1	2.32	0.44
1:H:381:LEU:HD23	1:H:381:LEU:HA	1.85	0.44
1:I:764:GLN:HA	1:I:766:ARG:HH11	1.83	0.44
1:K:744:ARG:HG3	1:L:764:GLN:HB3	2.00	0.44
1:A:421:GLN:HA	1:A:424:ARG:HG2	1.98	0.44
1:E:407:VAL:HG13	1:E:463:ALA:HB2	1.98	0.44
1:H:550:MET:HE2	1:H:600:VAL:HG21	1.98	0.44
1:I:420:LEU:HD11	1:J:230:PHE:HE1	1.83	0.44
1:A:475:THR:H	1:A:533:ASN:HD22	1.65	0.44
1:A:638:ARG:O	1:A:640:ASP:N	2.51	0.44
1:A:700:ARG:HB2	1:B:491:GLU:OE2	2.17	0.44
1:C:538:ASN:ND2	1:C:569:ALA:O	2.36	0.44
1:E:315:LYS:HD2	1:E:315:LYS:O	2.18	0.44
1:I:665:PRO:HD2	1:J:506:PHE:HA	1.99	0.44
1:J:475:THR:H	1:J:533:ASN:HD22	1.66	0.44
1:J:514:VAL:HG12	1:J:620:ILE:HG12	2.00	0.44
1:J:753:ARG:O	1:J:757:MET:HG2	2.18	0.44
1:K:612:SER:OG	1:K:613:THR:N	2.50	0.44
1:K:734:ASP:HA	1:K:737:GLU:OE1	2.18	0.44
1:B:213:LEU:O	1:B:217:LYS:HG2	2.18	0.44
1:B:251:LYS:HB2	1:B:251:LYS:HE3	1.79	0.44
1:B:648:PRO:HB2	1:B:653:ARG:HB3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:381:LEU:HD23	1:E:381:LEU:HA	1.86	0.44
1:I:632:ALA:HB1	1:I:638:ARG:HH12	1.83	0.44
1:K:201:VAL:HG12	1:K:257:ALA:HB2	1.98	0.44
1:C:632:ALA:HB1	1:C:638:ARG:HH12	1.82	0.44
1:E:244:TYR:CZ	1:E:368:ASP:HB3	2.52	0.44
1:G:216:ILE:HG21	1:G:258:VAL:HG21	1.99	0.44
1:J:580:ASP:HB3	1:J:629:ILE:HG22	2.00	0.44
1:J:638:ARG:O	1:J:640:ASP:N	2.51	0.44
1:K:630:ASP:HB3	1:K:633:ILE:HG13	2.00	0.44
1:A:244:TYR:CZ	1:A:368:ASP:HB3	2.53	0.43
1:A:685:ALA:O	1:A:688:THR:OG1	2.28	0.43
1:B:678:MET:HG3	1:C:771:PHE:HE1	1.82	0.43
1:D:612:SER:OG	1:D:613:THR:N	2.51	0.43
1:K:605:LEU:HD21	1:K:633:ILE:HG12	2.00	0.43
1:L:240:GLY:HA2	1:L:343:VAL:O	2.18	0.43
1:L:528:ALA:HA	1:L:531:ILE:HG22	2.00	0.43
1:A:327:GLN:HE21	1:A:331:LEU:HG	1.83	0.43
1:B:514:VAL:HG12	1:B:620:ILE:HG12	2.00	0.43
1:B:734:ASP:HA	1:B:737:GLU:OE1	2.18	0.43
1:C:389:LYS:HE2	1:C:389:LYS:HB2	1.84	0.43
1:D:514:VAL:HG12	1:D:620:ILE:HG12	1.99	0.43
1:E:734:ASP:HA	1:E:737:GLU:OE1	2.18	0.43
1:F:753:ARG:O	1:F:757:MET:HG2	2.18	0.43
1:H:251:LYS:HD2	1:H:346:ALA:HB1	2.00	0.43
1:L:389:LYS:HE2	1:L:389:LYS:HB2	1.84	0.43
1:A:399:VAL:HG21	1:A:452:PHE:HD2	1.82	0.43
1:B:485:VAL:HG13	1:B:643:ILE:HG21	2.00	0.43
1:F:632:ALA:HB1	1:F:638:ARG:HH12	1.83	0.43
1:G:372:PRO:O	1:G:377:ARG:NH1	2.51	0.43
1:H:682:PHE:CE1	1:H:745:ARG:HB2	2.54	0.43
1:I:497:VAL:HG21	1:I:535:CYS:SG	2.58	0.43
1:B:711:ARG:O	1:B:715:THR:OG1	2.36	0.43
1:D:319:GLU:O	1:D:323:ARG:N	2.51	0.43
1:F:563:PHE:HD1	1:F:611:MET:HE1	1.83	0.43
1:J:513:GLY:HA3	1:J:639:LEU:HD23	2.01	0.43
1:K:485:VAL:HG13	1:K:643:ILE:HG21	2.01	0.43
1:L:667:ALA:HB3	1:L:670:VAL:HG13	2.00	0.43
1:A:484:ASP:OD1	1:A:484:ASP:N	2.49	0.43
1:C:475:THR:H	1:C:533:ASN:HD22	1.65	0.43
1:C:612:SER:HB3	1:C:614:LYS:HG2	1.99	0.43
1:C:665:PRO:HD2	1:D:506:PHE:HA	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:332:MET:HE1	1:D:363:PHE:CE1	2.53	0.43
1:D:399:VAL:HG21	1:D:452:PHE:HD2	1.84	0.43
1:F:687:LEU:HD23	1:F:687:LEU:HA	1.73	0.43
1:G:638:ARG:O	1:G:640:ASP:N	2.51	0.43
1:I:708:ARG:HD3	1:I:713:ARG:HH22	1.84	0.43
1:J:294:GLU:HB2	1:J:339:ALA:HB1	2.00	0.43
1:J:484:ASP:N	1:J:484:ASP:OD1	2.49	0.43
1:A:509:THR:HB	1:A:613:THR:HG21	2.01	0.43
1:B:288:LYS:HA	1:B:291:GLU:HG2	2.01	0.43
1:B:290:PHE:HD1	1:B:335:LEU:HG	1.84	0.43
1:B:302:PHE:CE2	1:B:304:ASP:HB3	2.52	0.43
1:B:582:ILE:O	1:B:586:ARG:HG2	2.19	0.43
1:B:682:PHE:CE1	1:B:745:ARG:HB2	2.53	0.43
1:C:391:ALA:HB2	1:C:446:ALA:HB1	2.01	0.43
1:E:551:TRP:CZ2	1:E:586:ARG:HD2	2.53	0.43
1:E:632:ALA:HB1	1:E:638:ARG:HH12	1.84	0.43
1:G:251:LYS:HE3	1:G:251:LYS:HB2	1.75	0.43
1:H:240:GLY:HA2	1:H:343:VAL:O	2.18	0.43
1:H:648:PRO:HB2	1:H:653:ARG:HB3	2.00	0.43
1:K:243:LEU:HD12	1:K:302:PHE:HE1	1.84	0.43
1:K:251:LYS:HE3	1:K:251:LYS:HB2	1.80	0.43
1:K:711:ARG:O	1:K:715:THR:OG1	2.36	0.43
1:L:243:LEU:HD23	1:L:367:VAL:HB	2.01	0.43
1:B:216:ILE:HG21	1:B:258:VAL:HG21	2.01	0.43
1:C:328:LEU:O	1:C:332:MET:HG3	2.19	0.43
1:C:764:GLN:HA	1:C:766:ARG:HH11	1.83	0.43
1:D:685:ALA:O	1:D:688:THR:OG1	2.28	0.43
1:E:216:ILE:HG21	1:E:258:VAL:HG21	2.01	0.43
1:F:612:SER:OG	1:F:613:THR:N	2.51	0.43
1:G:514:VAL:HG12	1:G:620:ILE:HG12	2.00	0.43
1:G:700:ARG:HB2	1:H:491:GLU:OE1	2.19	0.43
1:G:733:ARG:NH1	1:G:737:GLU:OE1	2.52	0.43
1:H:514:VAL:HG12	1:H:620:ILE:HG12	2.00	0.43
1:J:244:TYR:CZ	1:J:368:ASP:HB3	2.53	0.43
1:J:372:PRO:O	1:J:377:ARG:NH1	2.52	0.43
1:B:338:ARG:HA	1:B:338:ARG:HD2	1.72	0.43
1:B:421:GLN:HA	1:B:424:ARG:HG2	2.01	0.43
1:F:302:PHE:CE2	1:F:304:ASP:HB3	2.53	0.43
1:G:685:ALA:O	1:G:688:THR:OG1	2.28	0.43
1:J:612:SER:OG	1:J:613:THR:N	2.52	0.43
1:K:582:ILE:O	1:K:586:ARG:HG2	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:538:ASN:ND2	1:L:569:ALA:O	2.37	0.43
1:A:372:PRO:O	1:A:377:ARG:NH1	2.52	0.43
1:C:559:VAL:HA	1:C:562:ILE:HD12	2.00	0.43
1:D:251:LYS:HE3	1:D:251:LYS:HB2	1.75	0.43
1:D:638:ARG:O	1:D:640:ASP:N	2.51	0.43
1:E:648:PRO:HB2	1:E:653:ARG:HB3	2.01	0.43
1:G:240:GLY:HA2	1:G:343:VAL:O	2.19	0.43
1:H:278:LEU:HB2	1:H:281:GLU:OE1	2.19	0.43
1:J:252:THR:HG22	1:J:302:PHE:HE2	1.83	0.43
1:B:385:THR:HG23	1:B:388:MET:HB2	2.00	0.43
1:D:240:GLY:HA2	1:D:343:VAL:O	2.19	0.43
1:G:332:MET:HE1	1:G:363:PHE:CE1	2.54	0.43
1:H:699:ILE:HD13	1:I:506:PHE:HD2	1.84	0.43
1:I:580:ASP:HB3	1:I:629:ILE:HG22	2.00	0.43
1:B:281:GLU:HA	1:B:284:SER:HB3	2.00	0.42
1:F:514:VAL:HG12	1:F:620:ILE:HG12	2.01	0.42
1:H:630:ASP:HB3	1:H:633:ILE:HG13	2.01	0.42
1:K:389:LYS:HB2	1:K:389:LYS:HE2	1.80	0.42
1:A:251:LYS:HB2	1:A:251:LYS:HE3	1.74	0.42
1:A:332:MET:HE1	1:A:363:PHE:CE1	2.54	0.42
1:A:416:SER:HA	1:B:235:VAL:HG23	2.01	0.42
1:A:612:SER:OG	1:A:613:THR:N	2.52	0.42
1:F:203:TYR:HE1	1:F:258:VAL:HA	1.84	0.42
1:G:399:VAL:HG21	1:G:452:PHE:HD2	1.84	0.42
1:H:306:LEU:HB3	1:H:347:THR:HG22	2.01	0.42
1:J:754:LYS:HB2	1:J:754:LYS:HE2	1.87	0.42
1:L:328:LEU:O	1:L:332:MET:HG3	2.19	0.42
1:A:230:PHE:CE1	1:F:420:LEU:HD21	2.54	0.42
1:E:711:ARG:O	1:E:715:THR:OG1	2.36	0.42
1:G:217:LYS:O	1:G:221:GLU:HB3	2.19	0.42
1:J:630:ASP:HB3	1:J:633:ILE:HG13	2.01	0.42
1:J:733:ARG:NH1	1:J:737:GLU:OE1	2.52	0.42
1:L:239:ARG:HG3	1:L:336:LYS:HA	2.00	0.42
1:L:275:MET:HG2	1:L:309:ILE:HG22	2.01	0.42
1:L:306:LEU:HB3	1:L:347:THR:HG22	2.02	0.42
1:B:699:ILE:HD13	1:C:506:PHE:HD2	1.84	0.42
1:D:373:ASP:OD1	1:D:373:ASP:N	2.49	0.42
1:D:753:ARG:O	1:D:757:MET:HG2	2.19	0.42
1:G:373:ASP:OD1	1:G:373:ASP:N	2.49	0.42
1:H:407:VAL:HG13	1:H:463:ALA:HB2	2.01	0.42
1:H:665:PRO:HD2	1:I:506:PHE:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:582:ILE:O	1:I:586:ARG:HG2	2.19	0.42
1:B:240:GLY:HA2	1:B:343:VAL:O	2.20	0.42
1:B:251:LYS:HD2	1:B:346:ALA:HB1	2.02	0.42
1:F:372:PRO:O	1:F:377:ARG:NH1	2.53	0.42
1:F:684:GLY:O	1:F:688:THR:HG23	2.19	0.42
1:G:306:LEU:HB3	1:G:347:THR:HG22	2.01	0.42
1:H:551:TRP:CZ2	1:H:586:ARG:HD2	2.54	0.42
1:H:711:ARG:O	1:H:715:THR:OG1	2.36	0.42
1:A:240:GLY:HA2	1:A:343:VAL:O	2.19	0.42
1:A:301:ILE:HD12	1:A:343:VAL:HG22	2.01	0.42
1:A:484:ASP:O	1:A:488:GLU:HG3	2.20	0.42
1:A:611:MET:HE2	1:A:611:MET:HB3	1.97	0.42
1:A:753:ARG:O	1:A:757:MET:HG2	2.20	0.42
1:B:605:LEU:HD21	1:B:633:ILE:HG12	2.02	0.42
1:E:385:THR:HG23	1:E:388:MET:HB2	2.00	0.42
1:G:243:LEU:HD12	1:G:302:PHE:HE1	1.84	0.42
1:H:385:THR:HG23	1:H:388:MET:HB2	2.00	0.42
1:J:301:ILE:HD12	1:J:343:VAL:HG22	2.01	0.42
1:J:484:ASP:O	1:J:488:GLU:HG3	2.20	0.42
1:K:402:GLU:HG3	1:K:456:LEU:HD11	2.01	0.42
1:K:579:LEU:HB3	1:K:623:THR:HG22	2.02	0.42
1:L:391:ALA:HB2	1:L:446:ALA:HB1	2.02	0.42
1:A:381:LEU:HD21	1:A:411:LEU:HD12	2.02	0.42
1:C:251:LYS:HB2	1:C:251:LYS:HE3	1.78	0.42
1:C:302:PHE:CE2	1:C:304:ASP:HB3	2.54	0.42
1:E:240:GLY:HA2	1:E:343:VAL:O	2.19	0.42
1:G:695:CYS:O	1:G:699:ILE:HG12	2.20	0.42
1:H:485:VAL:HG13	1:H:643:ILE:HG21	2.02	0.42
1:E:288:LYS:HA	1:E:291:GLU:HG2	2.01	0.42
1:E:684:GLY:O	1:E:688:THR:HG23	2.18	0.42
1:F:328:LEU:O	1:F:332:MET:HG3	2.19	0.42
1:H:489:LEU:HD23	1:H:489:LEU:HA	1.92	0.42
1:H:580:ASP:HB3	1:H:629:ILE:HG22	2.01	0.42
1:I:301:ILE:HD12	1:I:343:VAL:HG22	2.02	0.42
1:I:328:LEU:O	1:I:332:MET:HG3	2.19	0.42
1:J:332:MET:HE1	1:J:363:PHE:CE1	2.54	0.42
1:J:398:GLN:O	1:J:402:GLU:HG2	2.20	0.42
1:J:399:VAL:HG21	1:J:452:PHE:HD2	1.84	0.42
1:J:416:SER:HA	1:K:235:VAL:HG23	2.02	0.42
1:K:684:GLY:O	1:K:688:THR:HG23	2.20	0.42
1:L:251:LYS:HB2	1:L:251:LYS:HE3	1.78	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:217:LYS:HE2	1:B:217:LYS:HB3	1.80	0.42
1:D:551:TRP:CZ2	1:D:586:ARG:HD2	2.55	0.42
1:E:203:TYR:HE1	1:E:258:VAL:HA	1.85	0.42
1:E:554:GLU:HG2	1:E:599:ARG:HH22	1.85	0.42
1:G:732:ARG:NH2	1:G:734:ASP:OD1	2.52	0.42
1:H:213:LEU:O	1:H:217:LYS:HG2	2.19	0.42
1:J:286:LEU:HD23	1:J:286:LEU:HA	1.93	0.42
1:J:497:VAL:HG21	1:J:535:CYS:SG	2.60	0.42
1:K:217:LYS:HD2	1:K:221:GLU:OE1	2.19	0.42
1:L:302:PHE:CE2	1:L:304:ASP:HB3	2.54	0.42
1:L:684:GLY:O	1:L:688:THR:HG23	2.19	0.42
1:A:497:VAL:HG21	1:A:535:CYS:SG	2.60	0.42
1:A:733:ARG:HH22	1:B:772:ARG:HH22	1.68	0.42
1:A:764:GLN:HB2	1:F:744:ARG:HH11	1.84	0.42
1:B:493:VAL:HG22	1:B:618:PHE:CD1	2.55	0.42
1:C:580:ASP:HB3	1:C:629:ILE:HG22	2.02	0.42
1:C:757:MET:HA	1:K:760:GLN:NE2	2.35	0.42
1:D:700:ARG:HB2	1:E:491:GLU:OE2	2.20	0.42
1:E:635:ARG:HH21	1:E:638:ARG:CZ	2.32	0.42
1:F:559:VAL:HA	1:F:562:ILE:HD12	2.02	0.42
1:F:670:VAL:HG12	1:F:733:ARG:HB3	2.01	0.42
1:G:294:GLU:HB2	1:G:339:ALA:HB1	2.00	0.42
1:J:240:GLY:HA2	1:J:343:VAL:O	2.20	0.42
1:J:251:LYS:HB2	1:J:251:LYS:HE3	1.75	0.42
1:B:579:LEU:HB3	1:B:623:THR:HG22	2.02	0.41
1:C:269:ILE:HD12	1:C:303:ILE:HG12	2.02	0.41
1:D:381:LEU:HD21	1:D:411:LEU:HD12	2.02	0.41
1:F:301:ILE:HD12	1:F:343:VAL:HG22	2.02	0.41
1:G:381:LEU:HD21	1:G:411:LEU:HD12	2.02	0.41
1:I:302:PHE:CE2	1:I:304:ASP:HB3	2.54	0.41
1:I:476:TRP:CD1	1:I:534:GLU:HG3	2.55	0.41
1:J:381:LEU:HD21	1:J:411:LEU:HD12	2.02	0.41
1:K:244:TYR:CZ	1:K:368:ASP:HB3	2.55	0.41
1:K:270:ASN:HA	1:K:304:ASP:OD1	2.20	0.41
1:K:586:ARG:NH1	1:K:598:ASP:OD1	2.53	0.41
1:K:598:ASP:HB2	1:K:601:ILE:HB	2.02	0.41
1:B:203:TYR:HE1	1:B:258:VAL:HA	1.84	0.41
1:C:239:ARG:HD3	1:C:239:ARG:HA	1.85	0.41
1:D:294:GLU:HB2	1:D:339:ALA:HB1	2.00	0.41
1:D:732:ARG:NH2	1:D:734:ASP:OD1	2.52	0.41
1:E:251:LYS:HD2	1:E:346:ALA:HB1	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:484:ASP:O	1:G:488:GLU:HG3	2.20	0.41
1:G:497:VAL:HG21	1:G:535:CYS:SG	2.60	0.41
1:H:203:TYR:HE1	1:H:258:VAL:HA	1.85	0.41
1:H:492:LEU:HB3	1:H:618:PHE:CZ	2.55	0.41
1:I:338:ARG:HA	1:I:338:ARG:HD2	1.77	0.41
1:A:629:ILE:HD11	1:A:634:LEU:HD11	2.02	0.41
1:B:665:PRO:HD2	1:C:506:PHE:HA	2.01	0.41
1:B:684:GLY:O	1:B:688:THR:HG23	2.20	0.41
1:D:555:SER:O	1:D:555:SER:OG	2.38	0.41
1:E:270:ASN:HA	1:E:304:ASP:OD1	2.20	0.41
1:E:582:ILE:O	1:E:586:ARG:HG2	2.20	0.41
1:F:475:THR:H	1:F:533:ASN:HD22	1.67	0.41
1:F:482:LEU:HB3	1:F:485:VAL:HB	2.02	0.41
1:G:630:ASP:HB3	1:G:633:ILE:HG13	2.02	0.41
1:K:699:ILE:HD13	1:L:506:PHE:HD2	1.85	0.41
1:L:670:VAL:HG12	1:L:733:ARG:HB3	2.03	0.41
1:A:754:LYS:HB2	1:A:754:LYS:HE2	1.87	0.41
1:B:772:ARG:HD2	1:B:772:ARG:HA	1.82	0.41
1:C:670:VAL:HG12	1:C:733:ARG:HB3	2.02	0.41
1:D:239:ARG:HD3	1:D:239:ARG:HA	1.80	0.41
1:D:629:ILE:HD11	1:D:634:LEU:HD11	2.01	0.41
1:E:484:ASP:O	1:E:488:GLU:HG3	2.21	0.41
1:E:704:GLU:O	1:E:708:ARG:HG3	2.21	0.41
1:G:270:ASN:HA	1:G:304:ASP:OD1	2.19	0.41
1:G:629:ILE:HD11	1:G:634:LEU:HD11	2.02	0.41
1:H:288:LYS:HA	1:H:291:GLU:HG2	2.01	0.41
1:J:700:ARG:HB2	1:K:491:GLU:OE2	2.20	0.41
1:K:240:GLY:HA2	1:K:343:VAL:O	2.21	0.41
1:L:632:ALA:HB1	1:L:638:ARG:HH12	1.85	0.41
1:B:704:GLU:O	1:B:708:ARG:HG3	2.20	0.41
1:C:243:LEU:HD12	1:C:302:PHE:HE1	1.85	0.41
1:C:338:ARG:HD2	1:C:338:ARG:HA	1.77	0.41
1:C:684:GLY:O	1:C:688:THR:HG23	2.21	0.41
1:D:497:VAL:HG21	1:D:535:CYS:SG	2.60	0.41
1:E:492:LEU:HB3	1:E:618:PHE:CZ	2.55	0.41
1:E:533:ASN:O	1:E:536:GLN:NE2	2.50	0.41
1:G:301:ILE:HD12	1:G:343:VAL:HG22	2.01	0.41
1:H:582:ILE:O	1:H:586:ARG:HG2	2.20	0.41
1:I:225:ARG:HG2	1:I:262:THR:HG23	2.02	0.41
1:I:605:LEU:HD21	1:I:633:ILE:HG12	2.02	0.41
1:K:290:PHE:HD1	1:K:335:LEU:HG	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:559:VAL:HA	1:K:562:ILE:HD12	2.01	0.41
1:B:484:ASP:O	1:B:488:GLU:HG3	2.20	0.41
1:B:551:TRP:CZ2	1:B:586:ARG:HD2	2.56	0.41
1:C:485:VAL:HG11	1:C:527:LEU:HD21	2.01	0.41
1:C:514:VAL:HG12	1:C:620:ILE:HG12	2.02	0.41
1:D:371:ILE:HD11	1:D:466:GLU:HG2	2.03	0.41
1:E:493:VAL:HG22	1:E:618:PHE:CD1	2.56	0.41
1:E:629:ILE:HD11	1:E:634:LEU:HD11	2.02	0.41
1:E:760:GLN:NE2	1:I:757:MET:HA	2.35	0.41
1:F:497:VAL:HG21	1:F:535:CYS:SG	2.61	0.41
1:F:538:ASN:ND2	1:F:569:ALA:O	2.36	0.41
1:G:217:LYS:HB2	1:G:217:LYS:HE2	1.88	0.41
1:G:555:SER:OG	1:G:555:SER:O	2.38	0.41
1:G:711:ARG:O	1:G:715:THR:OG1	2.37	0.41
1:H:243:LEU:HD23	1:H:367:VAL:HB	2.02	0.41
1:H:493:VAL:HG22	1:H:618:PHE:CD1	2.56	0.41
1:I:327:GLN:HE21	1:I:331:LEU:HG	1.86	0.41
1:J:270:ASN:HA	1:J:304:ASP:OD1	2.21	0.41
1:L:543:LYS:HA	1:L:577:ASP:HB3	2.02	0.41
1:D:243:LEU:HD12	1:D:302:PHE:HE1	1.86	0.41
1:G:764:GLN:HB2	1:L:744:ARG:HH11	1.86	0.41
1:I:377:ARG:NE	1:I:403:THR:O	2.53	0.41
1:I:514:VAL:HG12	1:I:620:ILE:HG12	2.03	0.41
1:J:601:ILE:HD13	1:J:601:ILE:HA	1.88	0.41
1:K:647:LEU:HD23	1:K:647:LEU:HA	1.92	0.41
1:L:244:TYR:OH	1:L:568:GLN:OE1	2.39	0.41
1:L:682:PHE:CZ	1:L:743:ALA:HB1	2.56	0.41
1:L:754:LYS:HB2	1:L:754:LYS:HE2	1.88	0.41
1:A:398:GLN:O	1:A:402:GLU:HG2	2.21	0.41
1:A:519:PRO:HA	1:A:520:PRO:HD3	1.96	0.41
1:C:225:ARG:HG2	1:C:262:THR:HG23	2.02	0.41
1:C:563:PHE:HD1	1:C:611:MET:HE1	1.85	0.41
1:E:290:PHE:HD1	1:E:335:LEU:HG	1.84	0.41
1:F:389:LYS:HB2	1:F:389:LYS:HE2	1.85	0.41
1:G:607:GLU:HA	1:L:465:ARG:NH2	2.36	0.41
1:H:684:GLY:O	1:H:688:THR:HG23	2.20	0.41
1:I:239:ARG:HA	1:I:239:ARG:HD3	1.85	0.41
1:I:543:LYS:HA	1:I:577:ASP:HB3	2.03	0.41
1:I:551:TRP:CZ2	1:I:586:ARG:HD2	2.56	0.41
1:A:235:VAL:HG23	1:F:416:SER:HA	2.03	0.41
1:A:665:PRO:HD2	1:B:506:PHE:HD1	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:760:GLN:NE2	1:K:756:GLU:HB3	2.36	0.41
1:D:465:ARG:HH11	1:D:465:ARG:HD3	1.75	0.41
1:D:630:ASP:HB3	1:D:633:ILE:HG13	2.03	0.41
1:D:665:PRO:HD2	1:E:506:PHE:HD1	1.86	0.41
1:D:711:ARG:O	1:D:715:THR:OG1	2.37	0.41
1:E:281:GLU:HA	1:E:284:SER:HB3	2.01	0.41
1:E:354:ASP:HB3	1:E:357:LEU:HD12	2.03	0.41
1:E:699:ILE:HD13	1:F:506:PHE:HD2	1.85	0.41
1:E:744:ARG:HH11	1:E:744:ARG:HG3	1.85	0.41
1:F:682:PHE:CZ	1:F:743:ALA:HB1	2.56	0.41
1:H:209:CYS:HB2	1:H:212:GLN:HB2	2.02	0.41
1:H:270:ASN:HA	1:H:304:ASP:OD1	2.20	0.41
1:H:286:LEU:HD23	1:H:286:LEU:HA	1.88	0.41
1:H:642:LEU:HD13	1:H:762:LEU:HD21	2.02	0.41
1:I:389:LYS:HB2	1:I:389:LYS:HE2	1.84	0.41
1:J:283:GLU:HG3	1:J:327:GLN:HE21	1.85	0.41
1:J:465:ARG:HH12	1:K:610:GLY:HA3	1.85	0.41
1:K:486:LYS:O	1:K:490:GLN:HG3	2.21	0.41
1:L:301:ILE:HD12	1:L:343:VAL:HG22	2.02	0.41
1:L:485:VAL:HG11	1:L:527:LEU:HD21	2.02	0.41
1:L:580:ASP:HB3	1:L:629:ILE:HG22	2.03	0.41
1:B:201:VAL:HG12	1:B:257:ALA:HB2	2.02	0.41
1:C:421:GLN:HA	1:C:424:ARG:HG2	2.02	0.41
1:D:398:GLN:O	1:D:402:GLU:HG2	2.20	0.41
1:E:284:SER:HA	1:E:287:ARG:HG2	2.03	0.41
1:F:543:LYS:HA	1:F:577:ASP:HB3	2.03	0.41
1:G:416:SER:HA	1:H:235:VAL:HG23	2.02	0.41
1:G:753:ARG:O	1:G:757:MET:HG2	2.20	0.41
1:H:217:LYS:HB3	1:H:217:LYS:HE2	1.78	0.41
1:H:604:ILE:O	1:H:608:MET:HB2	2.20	0.41
1:J:243:LEU:HD12	1:J:302:PHE:HE1	1.86	0.41
1:J:306:LEU:HB3	1:J:347:THR:HG22	2.03	0.41
1:J:519:PRO:HA	1:J:520:PRO:HD3	1.95	0.41
1:C:275:MET:HE3	1:C:309:ILE:HG22	2.03	0.40
1:C:580:ASP:OD2	1:C:584:LYS:NZ	2.38	0.40
1:F:485:VAL:HG11	1:F:527:LEU:HD21	2.02	0.40
1:F:580:ASP:HB3	1:F:629:ILE:HG22	2.02	0.40
1:F:632:ALA:O	1:F:638:ARG:NH1	2.48	0.40
1:F:682:PHE:CE1	1:F:745:ARG:HB2	2.56	0.40
1:G:283:GLU:HG3	1:G:327:GLN:HE21	1.86	0.40
1:G:420:LEU:HA	1:G:420:LEU:HD23	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:402:GLU:HG3	1:H:456:LEU:HD11	2.03	0.40
1:I:275:MET:HG2	1:I:309:ILE:HG22	2.03	0.40
1:A:555:SER:O	1:A:555:SER:OG	2.38	0.40
1:A:711:ARG:O	1:A:715:THR:OG1	2.37	0.40
1:B:598:ASP:HB2	1:B:601:ILE:HB	2.04	0.40
1:E:236:LYS:HA	1:E:237:PRO:HD3	1.93	0.40
1:F:327:GLN:HE21	1:F:331:LEU:HG	1.87	0.40
1:F:704:GLU:O	1:F:708:ARG:HG3	2.22	0.40
1:H:678:MET:HG3	1:I:771:PHE:HE1	1.86	0.40
1:K:465:ARG:NH1	1:L:610:GLY:HA3	2.30	0.40
1:K:531:ILE:HD12	1:K:531:ILE:HA	1.95	0.40
1:K:665:PRO:HD2	1:L:506:PHE:HA	2.02	0.40
1:L:421:GLN:HA	1:L:424:ARG:HG2	2.02	0.40
1:A:270:ASN:HA	1:A:304:ASP:OD1	2.21	0.40
1:A:732:ARG:NH2	1:A:734:ASP:OD1	2.53	0.40
1:C:301:ILE:HD12	1:C:343:VAL:HG22	2.02	0.40
1:C:543:LYS:HA	1:C:577:ASP:HB3	2.03	0.40
1:C:612:SER:OG	1:C:613:THR:N	2.54	0.40
1:C:754:LYS:HB2	1:C:754:LYS:HE2	1.89	0.40
1:E:212:GLN:O	1:E:216:ILE:HG12	2.21	0.40
1:G:699:ILE:HD13	1:H:506:PHE:HD2	1.86	0.40
1:H:236:LYS:HA	1:H:237:PRO:HD3	1.94	0.40
1:H:284:SER:HA	1:H:287:ARG:HG2	2.03	0.40
1:J:551:TRP:CZ2	1:J:586:ARG:HD2	2.55	0.40
1:L:372:PRO:O	1:L:377:ARG:NH1	2.54	0.40
1:L:708:ARG:HH21	1:L:713:ARG:NH2	2.19	0.40
1:B:465:ARG:HH12	1:C:610:GLY:HA3	1.86	0.40
1:B:539:PHE:CE2	1:B:541:SER:HB2	2.56	0.40
1:C:708:ARG:HH21	1:C:713:ARG:NH2	2.19	0.40
1:E:604:ILE:O	1:E:608:MET:HB2	2.20	0.40
1:K:288:LYS:HA	1:K:291:GLU:HG2	2.03	0.40
1:L:711:ARG:O	1:L:715:THR:OG1	2.38	0.40
1:B:492:LEU:HB3	1:B:618:PHE:CZ	2.56	0.40
1:C:497:VAL:HG21	1:C:535:CYS:SG	2.62	0.40
1:C:555:SER:O	1:C:555:SER:OG	2.38	0.40
1:D:270:ASN:HA	1:D:304:ASP:OD1	2.21	0.40
1:D:416:SER:HA	1:E:235:VAL:HG23	2.02	0.40
1:E:351:ASN:ND2	1:E:561:GLU:OE2	2.36	0.40
1:E:695:CYS:O	1:E:699:ILE:HG12	2.22	0.40
1:F:239:ARG:HA	1:F:239:ARG:HD3	1.85	0.40
1:G:398:GLN:O	1:G:402:GLU:HG2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:684:GLY:O	1:I:688:THR:HG23	2.21	0.40
1:J:555:SER:O	1:J:555:SER:OG	2.39	0.40
1:L:381:LEU:HA	1:L:381:LEU:HD23	1.74	0.40
1:L:497:VAL:HG21	1:L:535:CYS:SG	2.62	0.40
1:L:668:LYS:HE3	1:L:668:LYS:HB3	1.87	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 PDB entries followed by that with respect to all EM entries.

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	543/806 (67%)	511 (94%)	32 (6%)	0	100	100
1	B	543/806 (67%)	506 (93%)	37 (7%)	0	100	100
1	C	543/806 (67%)	506 (93%)	37 (7%)	0	100	100
1	D	543/806 (67%)	510 (94%)	33 (6%)	0	100	100
1	E	543/806 (67%)	502 (92%)	41 (8%)	0	100	100
1	F	543/806 (67%)	506 (93%)	37 (7%)	0	100	100
1	G	543/806 (67%)	509 (94%)	34 (6%)	0	100	100
1	H	543/806 (67%)	504 (93%)	39 (7%)	0	100	100
1	I	543/806 (67%)	507 (93%)	36 (7%)	0	100	100
1	J	543/806 (67%)	509 (94%)	34 (6%)	0	100	100
1	K	543/806 (67%)	503 (93%)	40 (7%)	0	100	100
1	L	543/806 (67%)	503 (93%)	40 (7%)	0	100	100
All	All	6516/9672 (67%)	6076 (93%)	440 (7%)	0	100	100

There are no Ramachandran outliers to report.

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 PDB entries followed by that with respect to all EM entries.

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	459/678 (68%)	458 (100%)	1 (0%)	93	97
1	B	459/678 (68%)	459 (100%)	0	100	100
1	C	459/678 (68%)	459 (100%)	0	100	100
1	D	459/678 (68%)	458 (100%)	1 (0%)	93	97
1	E	459/678 (68%)	459 (100%)	0	100	100
1	F	459/678 (68%)	459 (100%)	0	100	100
1	G	459/678 (68%)	458 (100%)	1 (0%)	93	97
1	H	459/678 (68%)	459 (100%)	0	100	100
1	I	459/678 (68%)	458 (100%)	1 (0%)	93	97
1	J	459/678 (68%)	458 (100%)	1 (0%)	93	97
1	K	459/678 (68%)	458 (100%)	1 (0%)	93	97
1	L	459/678 (68%)	459 (100%)	0	100	100
All	All	5508/8136 (68%)	5502 (100%)	6 (0%)	93	97

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	708	ARG
1	D	708	ARG
1	G	708	ARG
1	I	533	ASN
1	J	708	ARG
1	K	533	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (19) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	327	GLN
1	A	750	ASN
1	B	750	ASN

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Mol	Chain	Res	Type
1	C	750	ASN
1	E	317	HIS
1	E	460	ASN
1	E	750	ASN
1	F	317	HIS
1	F	533	ASN
1	F	558	ASN
1	F	568	GLN
1	F	750	ASN
1	H	317	HIS
1	I	317	HIS
1	I	533	ASN
1	I	750	ASN
1	K	317	HIS
1	L	317	HIS
1	L	750	ASN

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

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	K	1
1	H	1
1	C	1
1	I	1
1	B	1
1	G	1
1	E	1
1	F	1
1	J	1
1	A	1
1	L	1
1	D	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	K	199:ASN	C	200:GLU	N	4.58
1	H	199:ASN	C	200:GLU	N	4.54
1	C	199:ASN	C	200:GLU	N	4.53
1	I	199:ASN	C	200:GLU	N	4.53
1	B	199:ASN	C	200:GLU	N	4.52
1	G	199:ASN	C	200:GLU	N	4.52
1	E	199:ASN	C	200:GLU	N	4.51
1	F	199:ASN	C	200:GLU	N	4.51
1	J	199:ASN	C	200:GLU	N	4.51
1	A	199:ASN	C	200:GLU	N	4.50
1	L	199:ASN	C	200:GLU	N	4.50
1	D	199:ASN	C	200:GLU	N	4.35