



Full wwPDB X-ray Structure Validation Report ⓘ

Nov 6, 2023 – 11:47 AM JST

PDB ID : 8IGU
Title : Hexameric Ring Complex of Engineered V1-ATPase: A3(De)3_empty
Authors : Kosugi, T.; Tanabe, M.; Koga, N.
Deposited on : 2023-02-21
Resolution : 2.77 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

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

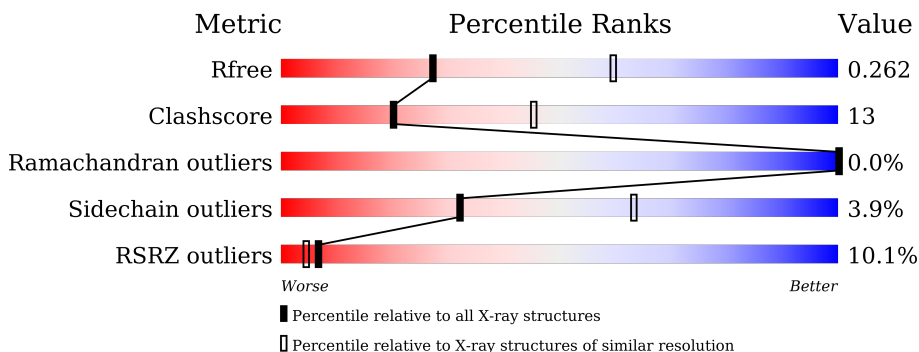
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.77 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	4107 (2.80-2.76)
Clashscore	141614	4575 (2.80-2.76)
Ramachandran outliers	138981	4487 (2.80-2.76)
Sidechain outliers	138945	4489 (2.80-2.76)
RSRZ outliers	127900	4027 (2.80-2.76)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	596	 3% 81% 17%
1	B	596	 7% 68% 29%
1	C	596	 8% 64% 30%
2	D	458	 11% 66% 27% 6%
2	E	458	 15% 68% 27%
2	F	458	 18% 69% 26%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 24292 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 V-type sodium ATPase catalytic subunit A.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	586	Total	C	N	O	S	0	0	0
			4562	2866	766	904	26			
1	B	586	Total	C	N	O	S	0	0	0
			4562	2866	766	904	26			
1	C	584	Total	C	N	O	S	0	1	0
			4560	2864	768	902	26			

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	SER	-	expression tag	UNP Q08636
A	-1	SER	-	expression tag	UNP Q08636
A	0	GLY	-	expression tag	UNP Q08636
B	-2	SER	-	expression tag	UNP Q08636
B	-1	SER	-	expression tag	UNP Q08636
B	0	GLY	-	expression tag	UNP Q08636
C	-2	SER	-	expression tag	UNP Q08636
C	-1	SER	-	expression tag	UNP Q08636
C	0	GLY	-	expression tag	UNP Q08636

- Molecule 2 is a protein called V-type sodium ATPase subunit B.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	D	432	Total	C	N	O	S	0	0	0
			3369	2134	576	646	13			
2	E	449	Total	C	N	O	S	0	0	0
			3509	2224	601	670	14			
2	F	445	Total	C	N	O	S	0	0	0
			3477	2204	597	662	14			

There are 30 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	151	GLY	SER	engineered mutation	UNP Q08637
D	152	PRO	GLY	engineered mutation	UNP Q08637
D	153	PRO	SER	engineered mutation	UNP Q08637
D	155	ALA	LEU	engineered mutation	UNP Q08637
D	156	GLY	PRO	engineered mutation	UNP Q08637
D	157	LYS	HIS	engineered mutation	UNP Q08637
D	158	SER	LYS	engineered mutation	UNP Q08637
D	159	ALA	GLU	engineered mutation	UNP Q08637
D	248	GLU	THR	engineered mutation	UNP Q08637
D	339	SER	GLN	engineered mutation	UNP Q08637
E	151	GLY	SER	engineered mutation	UNP Q08637
E	152	PRO	GLY	engineered mutation	UNP Q08637
E	153	PRO	SER	engineered mutation	UNP Q08637
E	155	ALA	LEU	engineered mutation	UNP Q08637
E	156	GLY	PRO	engineered mutation	UNP Q08637
E	157	LYS	HIS	engineered mutation	UNP Q08637
E	158	SER	LYS	engineered mutation	UNP Q08637
E	159	ALA	GLU	engineered mutation	UNP Q08637
E	248	GLU	THR	engineered mutation	UNP Q08637
E	339	SER	GLN	engineered mutation	UNP Q08637
F	151	GLY	SER	engineered mutation	UNP Q08637
F	152	PRO	GLY	engineered mutation	UNP Q08637
F	153	PRO	SER	engineered mutation	UNP Q08637
F	155	ALA	LEU	engineered mutation	UNP Q08637
F	156	GLY	PRO	engineered mutation	UNP Q08637
F	157	LYS	HIS	engineered mutation	UNP Q08637
F	158	SER	LYS	engineered mutation	UNP Q08637
F	159	ALA	GLU	engineered mutation	UNP Q08637
F	248	GLU	THR	engineered mutation	UNP Q08637
F	339	SER	GLN	engineered mutation	UNP Q08637

- Molecule 3 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	99	Total O 99 99	0	0
3	B	35	Total O 35 35	0	0
3	C	47	Total O 47 47	0	0
3	D	22	Total O 22 22	0	0
3	E	30	Total O 30 30	0	0

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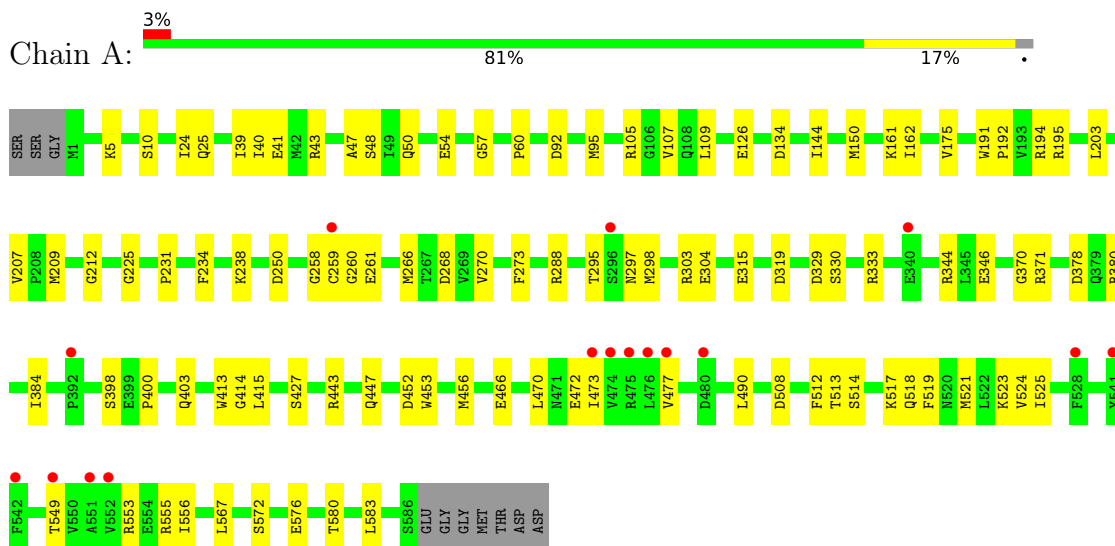
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	F	20	Total	O	0	0
			20	20		

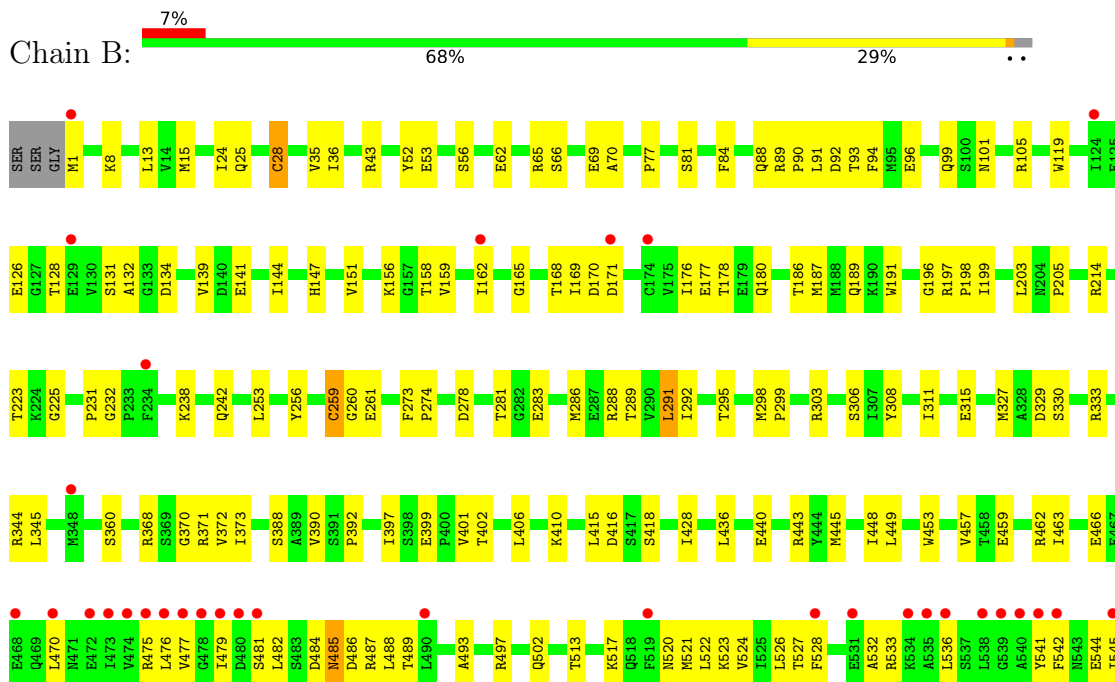
3 Residue-property plots

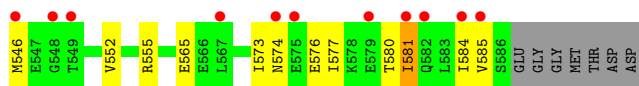
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: V-type sodium ATPase catalytic subunit A

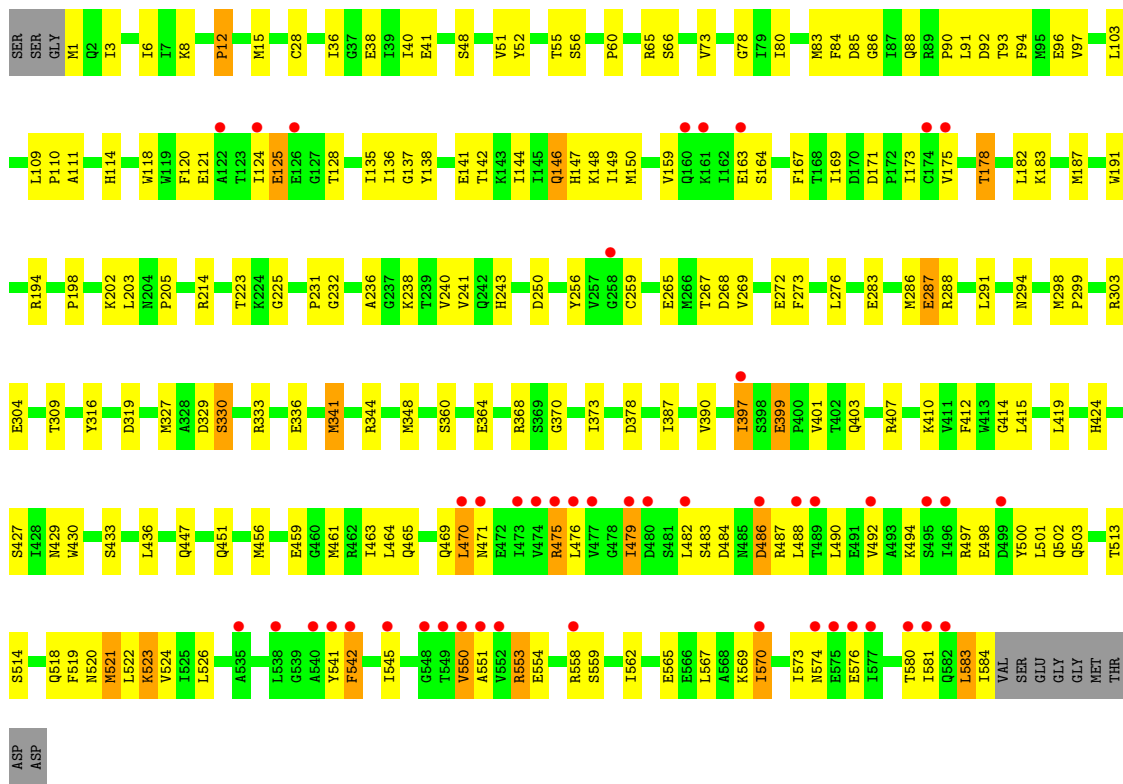


- Molecule 1: V-type sodium ATPase catalytic subunit A

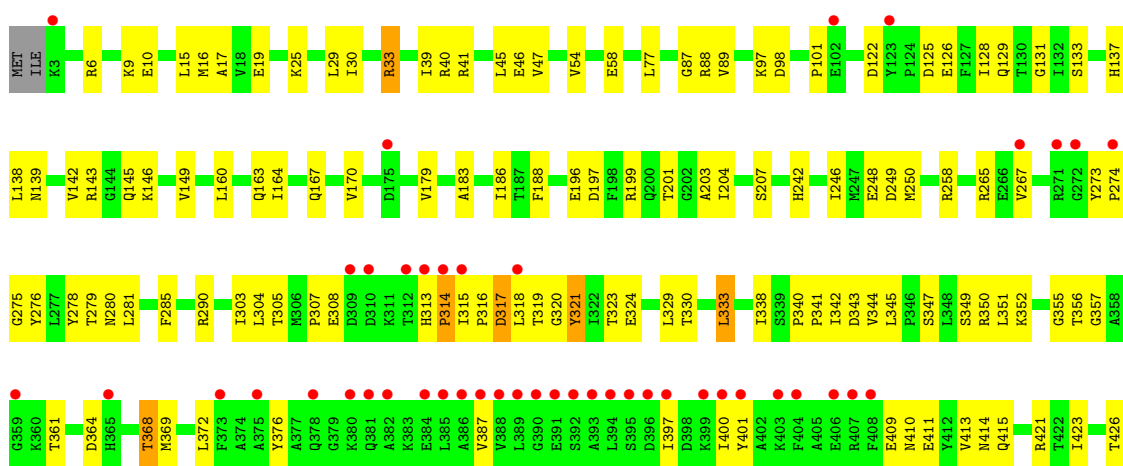




• Molecule 1: V-type sodium ATPase catalytic subunit A



• Molecule 2: V-type sodium ATPase subunit B



4 Data and refinement statistics i

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	122.45Å 122.65Å 128.70Å 90.00° 90.74° 90.00°	Depositor
Resolution (Å)	44.64 – 2.77 44.64 – 2.77	Depositor EDS
% Data completeness (in resolution range)	100.0 (44.64-2.77) 100.0 (44.64-2.77)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.17 (at 2.77Å)	Xtriage
Refinement program	PHENIX 1.18_3845	Depositor
R, R_{free}	0.216 , 0.262 0.216 , 0.262	Depositor DCC
R_{free} test set	4712 reflections (4.87%)	wwPDB-VP
Wilson B-factor (Å ²)	64.5	Xtriage
Anisotropy	0.147	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 59.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	0.000 for -h,l,k 0.007 for -h,-l,-k 0.000 for -l,k,h 0.000 for -k,-h,-l 0.000 for k,h,-l 0.000 for k,l,h 0.000 for l,h,k 0.000 for l,-h,-k 0.000 for -k,-l,h 0.015 for h,-k,-l 0.011 for l,-k,h	Xtriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	24292	wwPDB-VP
Average B, all atoms (Å ²)	74.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.73% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical 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	0.33	0/4638	0.53	1/6275 (0.0%)
1	B	0.30	0/4638	0.52	0/6275
1	C	0.35	0/4636	0.59	7/6271 (0.1%)
2	D	0.31	0/3429	0.59	2/4637 (0.0%)
2	E	0.36	0/3570	0.65	4/4826 (0.1%)
2	F	0.35	0/3538	0.66	5/4782 (0.1%)
All	All	0.33	0/24449	0.59	19/33066 (0.1%)

There are no bond length outliers.

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	388	VAL	CB-CA-C	-13.66	85.45	111.40
2	F	389	LEU	N-CA-CB	9.69	129.77	110.40
2	E	439	ARG	CB-CA-C	8.70	127.81	110.40
1	C	553	ARG	NE-CZ-NH1	-7.27	116.67	120.30
2	D	314	PRO	N-CA-C	-6.68	94.72	112.10
1	C	550	VAL	CA-CB-CG1	-6.62	100.97	110.90
1	C	287	GLU	CB-CA-C	6.60	123.60	110.40
1	C	523	LYS	CA-CB-CG	6.22	127.08	113.40
2	F	318	LEU	CA-CB-CG	-6.07	101.35	115.30
2	D	433	LEU	CA-CB-CG	6.05	129.22	115.30
2	F	394	LEU	CA-CB-CG	5.88	128.82	115.30
2	F	389	LEU	N-CA-C	-5.62	95.83	111.00
1	C	288	ARG	N-CA-CB	-5.42	100.84	110.60
1	C	567	LEU	CA-CB-CG	5.35	127.59	115.30
2	E	433	LEU	CB-CG-CD2	-5.33	101.94	111.00
2	E	440	THR	N-CA-C	5.13	124.86	111.00
2	E	450	LEU	CA-CB-CG	5.13	127.10	115.30
1	A	583	LEU	CA-CB-CG	5.11	127.05	115.30
1	C	553	ARG	CB-CG-CD	-5.06	98.45	111.60

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4562	0	4528	63	1
1	B	4562	0	4528	117	0
1	C	4560	0	4526	137	0
2	D	3369	0	3377	103	0
2	E	3509	0	3535	99	0
2	F	3477	0	3507	99	0
3	A	99	0	0	1	0
3	B	35	0	0	3	0
3	C	47	0	0	3	0
3	D	22	0	0	1	0
3	E	30	0	0	1	0
3	F	20	0	0	2	0
All	All	24292	0	24001	602	1

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 13.

All (602) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:333:LEU:HB3	2:E:338:ILE:HG21	1.43	0.99
2:F:388:VAL:HG12	2:F:388:VAL:O	1.63	0.94
2:E:434:LEU:HA	2:E:437:LEU:HD23	1.47	0.94
2:F:128:ILE:HD12	2:F:141:LEU:HG	1.52	0.91
1:C:570:ILE:O	1:C:573:ILE:HG12	1.71	0.90
1:C:232:GLY:HA3	1:C:238:LYS:HE2	1.54	0.89
2:F:388:VAL:O	2:F:389:LEU:HD23	1.75	0.86
1:C:203:LEU:HD11	1:C:373:ILE:HG13	1.55	0.86
1:B:555:ARG:NH2	1:B:576:GLU:OE1	2.11	0.83
2:E:333:LEU:CB	2:E:338:ILE:HG21	2.01	0.83
1:C:173:ILE:HD13	1:C:187:MET:HG3	1.61	0.83
1:B:56:SER:O	1:B:105:ARG:NH2	2.11	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:313:HIS:HB3	2:D:314:PRO:HD2	1.61	0.80
2:E:166:ARG:HD3	2:E:201:THR:HG21	1.63	0.80
1:C:461:MET:HG3	1:C:465:GLN:HE21	1.46	0.80
2:F:130:THR:OG1	2:F:136:ASP:OD1	1.99	0.79
1:B:62:GLU:OE2	3:B:601:HOH:O	2.01	0.78
1:B:573:ILE:O	1:B:577:ILE:HG13	1.84	0.78
1:C:503:GLN:NE2	3:C:601:HOH:O	2.11	0.76
1:B:281:THR:HG23	1:B:283:GLU:H	1.51	0.76
2:E:338:ILE:HG23	2:E:341:PRO:HB3	1.66	0.76
2:E:422:THR:HG22	2:E:425:GLU:HG3	1.69	0.75
2:F:323:THR:OG1	3:F:501:HOH:O	2.05	0.74
2:E:337:GLY:O	2:E:414:ASN:ND2	2.20	0.74
1:C:124:ILE:HD11	1:C:159:VAL:HG11	1.68	0.74
1:B:485:ASN:HD21	1:B:533:ARG:HG3	1.53	0.73
2:D:25:LYS:NZ	3:D:501:HOH:O	2.21	0.73
2:E:404:PHE:CE1	2:E:433:LEU:HD21	2.23	0.73
1:B:43:ARG:HG2	2:F:10:GLU:HG3	1.70	0.73
1:C:429:ASN:O	1:C:433:SER:OG	2.07	0.73
1:C:52:TYR:O	1:C:299:PRO:HB3	1.88	0.72
1:A:107:VAL:HG12	1:A:109:LEU:CD1	2.20	0.72
1:A:10:SER:HB2	2:D:46:GLU:HG3	1.70	0.72
2:F:314:PRO:O	2:F:318:LEU:HB2	1.90	0.72
2:F:277:LEU:O	2:F:277:LEU:HD12	1.88	0.72
2:E:361:THR:HG21	2:E:365:HIS:ND1	2.05	0.71
2:E:258:ARG:HG2	2:E:274:PRO:HD3	1.71	0.71
1:C:298:MET:O	1:C:303:ARG:NH1	2.24	0.71
1:B:486:ASP:O	1:B:489:THR:OG1	2.09	0.70
2:E:106:GLU:OE1	2:E:234:TYR:OH	2.09	0.70
1:A:261:GLU:OE2	1:A:330:SER:N	2.24	0.70
1:C:520:ASN:O	1:C:523:LYS:HB3	1.92	0.70
1:C:573:ILE:HG13	1:C:574:ASN:N	2.06	0.69
2:E:107:LYS:HE2	2:E:109:LEU:HD21	1.75	0.69
1:A:298:MET:O	1:A:303:ARG:NH1	2.26	0.68
2:D:276:TYR:HB2	2:D:279:THR:OG1	1.92	0.68
2:F:312:THR:OG1	2:F:316:PRO:HG2	1.94	0.68
2:E:3:LYS:NZ	2:E:22:SER:O	2.26	0.68
1:A:555:ARG:NH2	1:A:572:SER:OG	2.26	0.68
1:C:461:MET:O	1:C:465:GLN:HG3	1.92	0.68
2:E:11:VAL:HG22	2:E:16:MET:HG2	1.76	0.67
1:B:482:LEU:O	1:B:487:ARG:NH1	2.26	0.67
1:C:86:GLY:N	1:C:294:ASN:HD21	1.92	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:169:ILE:O	1:B:186:THR:OG1	2.13	0.67
1:B:482:LEU:HD23	1:B:487:ARG:HH11	1.60	0.67
2:E:130:THR:OG1	2:E:136:ASP:OD1	2.10	0.67
1:C:51:VAL:HG11	1:C:55:THR:HG23	1.76	0.66
1:B:231:PRO:HA	1:B:390:VAL:HG23	1.77	0.66
2:D:278:TYR:HA	2:D:318:LEU:HD21	1.77	0.66
1:C:80:ILE:HG22	1:C:287:GLU:O	1.96	0.66
2:D:307:PRO:HA	2:D:313:HIS:CE1	2.31	0.66
1:A:24:ILE:HG22	1:A:25:GLN:HG2	1.77	0.65
1:C:148:LYS:NZ	3:C:602:HOH:O	2.30	0.65
2:E:385:LEU:O	2:E:389:LEU:HB2	1.96	0.65
2:E:138:LEU:HD11	2:E:373:PHE:HD2	1.61	0.65
1:A:346:GLU:HG2	2:D:267:VAL:HG21	1.80	0.64
1:A:517:LYS:O	1:A:521:MET:HG3	1.97	0.64
2:F:439:ARG:HA	2:F:442:LEU:HD21	1.79	0.64
2:D:357:GLY:H	2:D:361:THR:HG22	1.61	0.64
2:F:329:LEU:HD22	2:F:341:PRO:HD2	1.78	0.64
1:B:462:ARG:NH1	1:B:466:GLU:OE1	2.30	0.64
1:C:514:SER:O	1:C:518:GLN:HG3	1.96	0.64
2:F:388:VAL:O	2:F:388:VAL:CG1	2.20	0.64
1:A:194:ARG:NH1	1:A:304:GLU:OE2	2.31	0.64
1:C:3:ILE:CD1	1:C:65:ARG:HD3	2.28	0.64
1:C:80:ILE:CG2	1:C:287:GLU:O	2.46	0.63
2:E:138:LEU:HG	2:E:369:MET:HG3	1.80	0.63
2:F:141:LEU:HD11	2:F:299:THR:HG21	1.79	0.63
1:B:144:ILE:HG21	1:B:288:ARG:HD3	1.81	0.63
2:F:129:GLN:O	2:F:168:ALA:HA	1.97	0.63
2:F:128:ILE:HG22	2:F:129:GLN:N	2.13	0.63
2:D:250:MET:HB2	2:D:304:LEU:HD13	1.79	0.63
1:C:256:TYR:HB3	1:C:291:LEU:HD12	1.80	0.63
1:C:550:VAL:HG13	1:C:551:ALA:N	2.14	0.63
1:B:523:LYS:O	1:B:527:THR:HG23	1.99	0.63
1:C:231:PRO:HA	1:C:390:VAL:O	1.99	0.62
1:B:580:THR:O	1:B:584:ILE:HG13	1.99	0.62
2:D:364:ASP:O	2:D:368:THR:HG22	2.00	0.62
2:F:131:GLY:O	2:F:415:GLN:NE2	2.32	0.62
1:B:139:VAL:HG21	1:B:187:MET:HE3	1.80	0.62
1:C:333:ARG:NH2	1:C:336:GLU:OE2	2.33	0.62
2:E:265:ARG:NH2	3:E:503:HOH:O	2.33	0.61
2:D:249:ASP:OD2	2:D:305:THR:OG1	2.18	0.61
2:F:172:ASP:O	2:F:174:SER:N	2.32	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:119:TRP:O	3:B:602:HOH:O	2.16	0.61
1:B:397:ILE:HB	1:B:402:THR:HG21	1.83	0.61
2:E:258:ARG:HG2	2:E:273:TYR:HA	1.81	0.61
2:D:356:THR:OG1	2:D:361:THR:HG21	2.00	0.61
2:E:397:ILE:HD12	2:E:400:ILE:HD11	1.82	0.61
2:D:368:THR:O	2:D:372:LEU:HB2	2.01	0.61
2:D:146:LYS:HD2	2:D:285:PHE:O	2.02	0.60
1:A:231:PRO:HG2	1:A:414:GLY:HA2	1.84	0.60
1:C:486:ASP:OD2	1:C:486:ASP:N	2.34	0.60
2:D:143:ARG:HH21	2:D:170:VAL:HG11	1.65	0.60
1:C:497:ARG:O	1:C:502:GLN:HG3	2.00	0.60
2:D:315:ILE:HG22	2:D:317:ASP:OD1	2.01	0.60
1:C:142:THR:HG22	1:C:144:ILE:H	1.67	0.60
1:C:430:TRP:HE3	1:C:430:TRP:H	1.47	0.60
1:C:399:GLU:OE1	1:C:401:VAL:HB	2.00	0.60
1:B:273:PHE:HE2	1:B:289:THR:HG21	1.67	0.60
1:C:135:ILE:HD13	1:C:148:LYS:HD3	1.84	0.60
2:F:127:PHE:HE1	2:F:140:THR:HG23	1.66	0.60
2:E:428:ASP:O	2:E:432:GLU:HG2	2.01	0.59
1:A:43:ARG:HG3	2:E:10:GLU:HG3	1.84	0.59
1:C:341:MET:SD	3:C:644:HOH:O	2.57	0.59
2:F:249:ASP:OD1	2:F:305:THR:OG1	2.19	0.59
1:B:541:TYR:H	1:B:544:GLU:HG3	1.67	0.59
1:C:573:ILE:HG13	1:C:574:ASN:H	1.66	0.59
1:C:558:ARG:HH21	1:C:558:ARG:HG3	1.68	0.59
1:C:36:ILE:HG23	1:C:52:TYR:HB2	1.84	0.59
1:B:298:MET:O	1:B:303:ARG:NH1	2.34	0.58
1:B:203:LEU:HB2	1:B:371:ARG:HD3	1.85	0.58
2:D:258:ARG:HA	2:D:274:PRO:HD3	1.84	0.58
2:E:368:THR:HG22	2:E:372:LEU:HD11	1.84	0.58
1:B:477:VAL:HG13	1:B:481:SER:HB3	1.85	0.58
1:C:124:ILE:CD1	1:C:159:VAL:HG11	2.33	0.58
2:F:320:GLY:O	3:F:501:HOH:O	2.17	0.58
1:C:167:PHE:HB3	1:C:171:ASP:HB2	1.86	0.58
1:A:443:ARG:O	1:A:447:GLN:HG3	2.04	0.58
2:F:387:VAL:HG22	2:F:388:VAL:HG23	1.86	0.58
1:B:532:ALA:O	1:B:536:LEU:HB2	2.03	0.58
1:C:482:LEU:HD12	1:C:483:SER:H	1.69	0.57
1:C:550:VAL:HA	1:C:553:ARG:HH22	1.68	0.57
2:F:122:ASP:HB3	2:F:290:ARG:HB2	1.87	0.57
1:B:126:GLU:HG2	1:B:162:ILE:HG22	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:348:MET:SD	2:D:265:ARG:HA	2.45	0.57
1:C:475:ARG:HG2	1:C:476:LEU:HD22	1.85	0.57
2:D:364:ASP:OD1	2:D:364:ASP:N	2.31	0.57
1:B:440:GLU:OE1	1:B:443:ARG:NH1	2.37	0.57
1:B:274:PRO:HA	1:B:286:MET:HG2	1.87	0.57
2:E:146:LYS:HE3	2:E:285:PHE:HB3	1.87	0.57
2:F:45:LEU:HD11	2:F:55:GLN:HB2	1.87	0.57
2:F:182:ALA:HB3	2:F:247:MET:HG2	1.86	0.57
2:D:146:LYS:CD	2:D:285:PHE:O	2.52	0.56
1:B:168:THR:HG23	1:B:170:ASP:H	1.69	0.56
1:A:107:VAL:HG12	1:A:109:LEU:HD13	1.85	0.56
2:D:197:ASP:O	2:D:201:THR:HG22	2.05	0.56
1:A:231:PRO:HD2	1:A:413:TRP:O	2.05	0.56
2:D:196:GLU:HG2	2:D:199:ARG:NH2	2.20	0.56
2:F:127:PHE:CE1	2:F:140:THR:HG23	2.39	0.56
1:A:50:GLN:NE2	1:A:344:ARG:HH21	2.03	0.56
1:A:576:GLU:O	1:A:580:THR:HG23	2.06	0.56
1:C:225:GLY:O	1:C:370:GLY:HA2	2.05	0.56
1:A:266:MET:O	1:A:270:VAL:HG13	2.06	0.56
1:C:470:LEU:HB3	1:C:490:LEU:HD11	1.87	0.56
2:D:276:TYR:HD2	2:D:280:ASN:ND2	2.03	0.56
1:B:416:ASP:OD1	1:B:418:SER:OG	2.24	0.56
2:D:343:ASP:O	2:D:347:SER:OG	2.22	0.56
2:E:249:ASP:OD1	2:E:251:THR:OG1	2.23	0.56
2:E:364:ASP:OD1	2:E:364:ASP:N	2.36	0.55
1:C:83:MET:HG2	1:C:291:LEU:HD23	1.88	0.55
1:C:419:LEU:HG	1:C:424:HIS:HB3	1.87	0.55
1:C:125:GLU:O	1:C:128:THR:HG22	2.05	0.55
2:D:122:ASP:HB3	2:D:290:ARG:HB2	1.87	0.55
2:D:352:LYS:O	2:D:356:THR:HG22	2.07	0.55
1:B:189:GLN:NE2	1:B:197:ARG:HH12	2.04	0.55
2:E:310:ASP:OD2	2:E:310:ASP:N	2.38	0.55
2:F:319:THR:O	2:F:323:THR:HG23	2.06	0.55
1:C:378:ASP:OD1	1:C:378:ASP:N	2.36	0.55
2:D:10:GLU:HB2	2:D:17:ALA:HB3	1.89	0.55
2:E:129:GLN:NE2	2:E:136:ASP:OD2	2.39	0.55
1:A:60:PRO:HD3	2:D:47:VAL:HG13	1.88	0.55
1:C:327:MET:HA	1:C:387:ILE:O	2.07	0.55
2:D:40:ARG:HD3	2:D:58:GLU:HB2	1.89	0.55
2:D:183:ALA:HB1	2:D:186:ILE:HG12	1.89	0.55
1:C:93:THR:HA	1:C:96:GLU:HG2	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:368:THR:O	2:D:372:LEU:CB	2.56	0.54
2:F:342:ILE:O	2:F:342:ILE:HG23	2.07	0.54
1:C:550:VAL:HA	1:C:553:ARG:NH2	2.22	0.54
2:D:88:ARG:NH2	2:D:101:PRO:O	2.41	0.54
2:D:307:PRO:HA	2:D:313:HIS:ND1	2.23	0.54
1:A:40:ILE:HD13	1:A:50:GLN:HG2	1.89	0.54
1:B:517:LYS:O	1:B:521:MET:HG3	2.07	0.54
2:E:383:LYS:HD3	2:E:402:ALA:HB1	1.88	0.54
2:D:315:ILE:CG2	2:D:317:ASP:OD1	2.55	0.54
1:A:50:GLN:HE21	1:A:344:ARG:HH21	1.55	0.54
2:F:11:VAL:HG22	2:F:16:MET:HG2	1.90	0.54
2:F:342:ILE:CG2	2:F:413:VAL:HG13	2.38	0.53
1:B:214:ARG:HH11	1:B:513:THR:HG21	1.74	0.53
1:B:242:GLN:HB3	1:B:327:MET:HE1	1.90	0.53
1:C:519:PHE:O	1:C:523:LYS:HB2	2.08	0.53
2:D:281:LEU:HD12	2:D:318:LEU:HD22	1.91	0.53
2:D:317:ASP:O	2:D:321:TYR:HB2	2.07	0.53
1:B:119:TRP:O	1:B:139:VAL:HG22	2.08	0.53
2:F:324:GLU:OE1	2:F:351:LEU:HD11	2.08	0.53
1:B:52:TYR:O	1:B:299:PRO:HB3	2.09	0.53
2:E:375:ALA:HB3	2:E:404:PHE:CE2	2.44	0.53
2:E:137:HIS:O	2:E:365:HIS:NE2	2.40	0.53
2:F:442:LEU:HD23	2:F:442:LEU:H	1.74	0.53
2:F:437:LEU:HD13	2:F:441:GLU:HB2	1.89	0.53
1:C:41:GLU:HB2	1:C:48:SER:HB2	1.91	0.52
2:D:160:LEU:O	2:D:164:ILE:HD12	2.08	0.52
2:D:276:TYR:O	2:D:279:THR:OG1	2.23	0.52
2:E:334:TYR:HA	2:E:338:ILE:CG2	2.39	0.52
1:A:473:ILE:O	1:A:477:VAL:HG22	2.09	0.52
1:C:236:ALA:HB1	1:C:415:LEU:HD22	1.89	0.52
1:B:141:GLU:OE2	1:B:147:HIS:ND1	2.41	0.52
1:B:273:PHE:CE2	1:B:289:THR:HG21	2.44	0.52
1:B:459:GLU:O	1:B:463:ILE:HG13	2.10	0.52
2:E:10:GLU:HB3	2:E:17:ALA:HB3	1.90	0.52
2:D:316:PRO:HA	2:D:319:THR:OG1	2.08	0.52
2:F:278:TYR:CD2	2:F:278:TYR:N	2.71	0.52
1:A:513:THR:HG23	1:A:517:LYS:HD3	1.90	0.52
1:B:203:LEU:HD11	1:B:373:ILE:HG13	1.91	0.52
1:C:78:GLY:N	1:C:141:GLU:OE2	2.36	0.52
2:E:264:ARG:O	2:E:265:ARG:HD3	2.10	0.52
2:E:356:THR:HG22	2:E:365:HIS:CE1	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:133:SER:OG	2:E:426:THR:HB	2.10	0.52
1:C:265:GLU:O	1:C:269:VAL:HG23	2.09	0.52
1:C:28:CYS:HB3	1:C:66:SER:HA	1.91	0.51
1:C:3:ILE:HD13	1:C:65:ARG:HD3	1.92	0.51
2:F:307:PRO:HG3	2:F:316:PRO:HG3	1.91	0.51
1:B:92:ASP:OD1	1:B:93:THR:N	2.44	0.51
2:D:423:ILE:O	2:D:427:LEU:HD22	2.10	0.51
2:F:412:TYR:O	2:F:421:ARG:NH2	2.43	0.51
1:A:453:TRP:HZ3	1:A:519:PHE:HA	1.75	0.51
1:B:256:TYR:HB3	1:B:291:LEU:HD12	1.92	0.51
2:D:133:SER:OG	2:D:426:THR:OG1	2.20	0.51
2:F:128:ILE:CG2	2:F:129:GLN:N	2.72	0.51
2:F:437:LEU:HD12	2:F:438:PRO:O	2.11	0.51
1:A:549:THR:HG23	1:A:553:ARG:HH11	1.75	0.51
1:B:131:SER:OG	1:B:132:ALA:N	2.44	0.51
2:E:125:ASP:HA	2:E:354:LYS:HB3	1.93	0.51
1:A:456:MET:HE1	1:A:523:LYS:HB2	1.92	0.51
2:F:3:LYS:O	2:F:71:ARG:HA	2.11	0.51
2:D:313:HIS:HB3	2:D:314:PRO:CD	2.37	0.51
2:F:28:GLU:O	2:F:44:VAL:HG13	2.11	0.51
1:B:475:ARG:HG3	1:B:476:LEU:HD23	1.92	0.50
2:E:29:LEU:HD21	2:E:77:LEU:HG	1.93	0.50
2:E:375:ALA:HB3	2:E:404:PHE:HE2	1.76	0.50
2:F:364:ASP:O	2:F:368:THR:HG22	2.12	0.50
2:D:276:TYR:HD2	2:D:280:ASN:HD22	1.59	0.50
2:E:139:ASN:OD1	2:E:347:SER:OG	2.27	0.50
2:D:137:HIS:NE2	2:D:368:THR:HG23	2.27	0.50
1:C:92:ASP:OD1	1:C:93:THR:N	2.42	0.50
2:E:429:LEU:HA	2:E:432:GLU:CG	2.42	0.50
1:B:36:ILE:HG23	1:B:52:TYR:HB2	1.94	0.50
1:B:479:ILE:HD12	1:B:482:LEU:HD21	1.93	0.50
2:D:340:PRO:HD2	2:D:413:VAL:O	2.12	0.50
2:E:384:GLU:O	2:E:388:VAL:HG12	2.11	0.50
1:B:84:PHE:HB2	1:B:292:ILE:HD13	1.94	0.50
2:E:148:PRO:HG3	2:E:323:THR:HG21	1.94	0.50
2:D:29:LEU:HD21	2:D:77:LEU:HG	1.93	0.49
2:E:315:ILE:HG22	2:E:318:LEU:H	1.77	0.49
2:E:404:PHE:HE1	2:E:433:LEU:HD21	1.72	0.49
1:C:118:TRP:CH2	1:C:141:GLU:HG3	2.47	0.49
2:E:81:VAL:HB	2:E:234:TYR:CD2	2.48	0.49
1:B:238:LYS:O	1:B:242:GLN:HG3	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:500:TYR:OH	1:C:518:GLN:HB3	2.12	0.49
2:E:385:LEU:HA	2:E:388:VAL:CG1	2.43	0.49
1:C:93:THR:O	1:C:97:VAL:HG23	2.12	0.49
1:C:522:LEU:HG	1:C:526:LEU:HD12	1.94	0.49
2:D:143:ARG:NH2	2:D:170:VAL:HG11	2.27	0.49
1:A:161:LYS:HE2	1:A:175:VAL:HG23	1.95	0.49
1:C:150:MET:HE1	1:C:319:ASP:O	2.12	0.49
2:E:271:ARG:C	2:E:273:TYR:H	2.15	0.49
2:E:327:ILE:HG23	2:E:342:ILE:HG21	1.93	0.49
1:A:400:PRO:HA	1:A:403:GLN:HE21	1.78	0.49
1:B:199:ILE:HD12	1:B:372:VAL:HG23	1.94	0.49
1:C:73:VAL:HG11	1:C:309:THR:HG23	1.94	0.49
1:C:412:PHE:HD2	1:C:433:SER:HA	1.78	0.49
2:E:329:LEU:HD12	2:E:342:ILE:HG23	1.95	0.49
2:F:226:ARG:NH2	2:F:253:TYR:OH	2.45	0.49
2:F:197:ASP:O	2:F:201:THR:HG22	2.12	0.48
2:F:338:ILE:HD11	2:F:409:GLU:O	2.13	0.48
2:D:400:ILE:HG22	2:D:400:ILE:O	2.12	0.48
2:E:157:LYS:NZ	2:E:305:THR:HG22	2.28	0.48
1:C:8:LYS:HD2	2:F:48:GLN:HG3	1.94	0.48
2:F:130:THR:HG22	2:F:164:ILE:HG23	1.96	0.48
1:B:205:PRO:HB2	1:B:223:THR:OG1	2.13	0.48
2:D:89:VAL:HB	2:D:98:ASP:HB3	1.95	0.48
1:A:126:GLU:HG2	1:A:162:ILE:HG22	1.96	0.48
2:D:16:MET:HB3	2:D:54:VAL:HG22	1.95	0.48
2:E:142:VAL:HG21	2:E:351:LEU:O	2.13	0.48
1:A:319:ASP:O	1:A:380:ARG:NH1	2.47	0.48
2:F:82:SER:O	2:F:85:MET:HG3	2.13	0.48
2:F:362:ARG:HG2	2:F:364:ASP:CG	2.34	0.48
1:A:41:GLU:HB2	1:A:48:SER:HB2	1.95	0.48
1:B:485:ASN:ND2	1:B:533:ARG:HG3	2.25	0.48
2:F:141:LEU:HD11	2:F:299:THR:CG2	2.43	0.48
1:A:203:LEU:HB2	1:A:371:ARG:HG2	1.94	0.48
1:C:38:GLU:OE1	1:C:52:TYR:OH	2.27	0.48
1:C:484:ASP:OD1	1:C:542:PHE:HB3	2.13	0.48
1:B:134:ASP:O	1:B:151:VAL:HG23	2.14	0.48
1:B:259:CYS:HB3	1:B:306:SER:OG	2.13	0.48
1:C:84:PHE:HB3	1:C:88:GLN:HA	1.94	0.48
2:F:379:GLY:O	2:F:383:LYS:HG3	2.14	0.48
1:B:119:TRP:CZ3	1:B:165:GLY:HA2	2.49	0.48
1:B:225:GLY:O	1:B:370:GLY:HA2	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:191:TRP:CZ2	1:C:198:PRO:HD3	2.49	0.48
1:C:414:GLY:H	1:C:433:SER:HB3	1.79	0.48
1:C:498:GLU:HA	1:C:502:GLN:NE2	2.29	0.48
1:C:581:ILE:O	1:C:584:ILE:HG23	2.13	0.48
1:C:259:CYS:O	1:C:333:ARG:HB2	2.14	0.47
2:D:142:VAL:HG23	2:D:145:GLN:HB2	1.96	0.47
1:B:440:GLU:CD	1:B:443:ARG:HH12	2.18	0.47
2:E:146:LYS:HE2	2:E:322:ILE:O	2.14	0.47
1:A:212:GLY:HA3	1:A:512:PHE:CD1	2.49	0.47
1:A:333:ARG:NH1	2:D:321:TYR:O	2.47	0.47
1:B:35:VAL:HG13	1:B:53:GLU:HG3	1.97	0.47
1:C:214:ARG:NH2	1:C:503:GLN:HG2	2.29	0.47
2:E:253:TYR:OH	2:E:280:ASN:OD1	2.31	0.47
1:A:144:ILE:HG21	1:A:288:ARG:HD3	1.95	0.47
1:A:466:GLU:O	1:A:470:LEU:HG	2.14	0.47
1:B:189:GLN:HE22	1:B:197:ARG:HH22	1.62	0.47
2:E:265:ARG:O	2:E:265:ARG:HG2	2.14	0.47
2:E:403:LYS:HB3	2:E:403:LYS:HE3	1.62	0.47
1:B:156:LYS:O	1:B:178:THR:HG22	2.15	0.47
1:B:197:ARG:HD3	1:B:315:GLU:HB3	1.97	0.47
1:C:268:ASP:O	1:C:272:GLU:HG3	2.14	0.47
1:C:479:ILE:HG12	1:C:487:ARG:HD2	1.97	0.47
2:D:196:GLU:HG2	2:D:199:ARG:HH21	1.80	0.47
2:E:385:LEU:HA	2:E:388:VAL:HG12	1.96	0.47
2:F:386:ALA:HA	2:F:389:LEU:O	2.14	0.47
1:A:521:MET:O	1:A:525:ILE:HG12	2.15	0.47
1:B:176:ILE:HG22	1:B:178:THR:HG23	1.97	0.47
2:D:33:ARG:HG2	2:D:39:ILE:HG12	1.95	0.47
2:D:415:GLN:HG2	2:D:421:ARG:NH1	2.29	0.47
2:E:57:PHE:CD1	2:E:219:ILE:HD12	2.49	0.47
2:E:334:TYR:HA	2:E:338:ILE:HG22	1.94	0.47
2:E:395:SER:O	2:E:399:LYS:N	2.46	0.47
2:F:155:ALA:O	2:F:341:PRO:HG2	2.14	0.47
1:A:258:GLY:HA2	1:A:329:ASP:O	2.15	0.47
1:C:461:MET:CG	1:C:465:GLN:HE21	2.24	0.47
2:D:87:GLY:HA2	2:D:204:ILE:O	2.15	0.47
2:E:135:ILE:HG12	2:E:327:ILE:HD13	1.97	0.47
2:F:385:LEU:HD21	2:F:394:LEU:HD23	1.97	0.47
1:A:315:GLU:HA	1:A:384:ILE:HD11	1.97	0.47
1:C:144:ILE:HD11	1:C:283:GLU:HB2	1.97	0.47
2:D:344:VAL:HG23	2:D:345:LEU:HD23	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:54:GLU:HB2	1:A:105:ARG:HD3	1.97	0.46
2:E:28:GLU:OE1	2:E:72:PHE:HB3	2.14	0.46
2:E:148:PRO:HD3	2:E:323:THR:HB	1.97	0.46
1:B:308:TYR:HA	1:B:311:ILE:HG22	1.97	0.46
2:E:319:THR:O	2:E:323:THR:HG23	2.15	0.46
2:F:186:ILE:HB	2:F:190:GLU:HG3	1.96	0.46
2:D:329:LEU:HD22	2:D:342:ILE:HG13	1.97	0.46
2:E:338:ILE:HG23	2:E:338:ILE:O	2.15	0.46
1:A:107:VAL:CG1	1:A:109:LEU:CD1	2.91	0.46
1:B:333:ARG:HA	1:B:333:ARG:HD3	1.61	0.46
2:D:313:HIS:CB	2:D:314:PRO:HD2	2.39	0.46
1:C:214:ARG:HD3	1:C:513:THR:HG21	1.98	0.46
2:D:131:GLY:HA3	2:D:167:GLN:HE21	1.79	0.46
2:E:360:LYS:HB2	2:E:360:LYS:HE3	1.56	0.46
2:F:397:ILE:HA	2:F:400:ILE:HG12	1.98	0.46
1:B:24:ILE:HG22	1:B:25:GLN:NE2	2.31	0.46
2:D:316:PRO:O	2:D:319:THR:OG1	2.24	0.46
2:E:229:LEU:HD13	2:E:287:ARG:HD3	1.97	0.46
1:B:8:LYS:HB3	1:B:15:MET:HB2	1.98	0.46
1:B:96:GLU:O	1:B:99:GLN:NE2	2.48	0.46
2:E:334:TYR:HD1	2:E:341:PRO:HG3	1.81	0.46
1:B:84:PHE:HB3	1:B:88:GLN:HA	1.98	0.46
2:E:362:ARG:HB2	2:E:427:LEU:HD13	1.98	0.46
2:F:361:THR:OG1	2:F:362:ARG:N	2.49	0.46
1:C:399:GLU:O	1:C:403:GLN:HG3	2.16	0.46
1:C:412:PHE:CD2	1:C:433:SER:HA	2.51	0.46
1:C:93:THR:HG22	1:C:109:LEU:HD21	1.98	0.46
2:F:87:GLY:HA2	2:F:204:ILE:O	2.15	0.45
2:F:362:ARG:HG2	2:F:364:ASP:OD1	2.17	0.45
1:B:410:LYS:HB3	1:B:436:LEU:HB2	1.98	0.45
2:E:126:GLU:O	2:E:143:ARG:HG3	2.16	0.45
2:F:160:LEU:O	2:F:164:ILE:HG13	2.16	0.45
1:C:147:HIS:CE1	1:C:316:TYR:HE2	2.35	0.45
1:C:521:MET:O	1:C:524:VAL:HG22	2.17	0.45
2:D:129:GLN:NE2	2:D:423:ILE:H	2.15	0.45
2:D:142:VAL:CG1	2:D:355:GLY:HA3	2.46	0.45
2:E:348:LEU:HD21	2:E:350:ARG:HE	1.80	0.45
2:F:125:ASP:HA	2:F:354:LYS:HB3	1.98	0.45
2:F:137:HIS:CD2	2:F:369:MET:HB2	2.51	0.45
2:F:273:TYR:OH	2:F:315:ILE:HD11	2.17	0.45
2:F:277:LEU:HD12	2:F:277:LEU:C	2.35	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:415:LEU:HD23	1:B:428:ILE:HD13	1.98	0.45
1:C:520:ASN:O	1:C:524:VAL:HG13	2.16	0.45
2:D:320:GLY:HA2	2:D:323:THR:OG1	2.16	0.45
2:D:338:ILE:HD12	2:D:414:ASN:HB2	1.99	0.45
2:F:168:ALA:O	2:F:206:ARG:NH2	2.48	0.45
1:B:329:ASP:HA	1:B:330:SER:HA	1.60	0.45
1:B:488:LEU:HD11	1:B:532:ALA:HB1	1.97	0.45
1:C:91:LEU:HD13	2:F:118:PRO:HD2	1.98	0.45
1:C:488:LEU:O	1:C:492:VAL:HG13	2.17	0.45
2:F:44:VAL:HA	2:F:54:VAL:HG12	1.98	0.45
1:B:128:THR:O	1:B:159:VAL:HG23	2.17	0.45
1:B:453:TRP:O	1:B:457:VAL:HG23	2.17	0.45
2:E:138:LEU:HD13	2:E:344:VAL:CG1	2.47	0.45
1:B:168:THR:HG22	1:B:171:ASP:CG	2.37	0.45
1:B:191:TRP:CZ2	1:B:198:PRO:HD3	2.51	0.45
1:C:85:ASP:HB3	1:C:91:LEU:HD21	1.99	0.45
1:A:207:VAL:HG23	1:A:207:VAL:O	2.16	0.45
2:E:334:TYR:CA	2:E:338:ILE:HG22	2.46	0.45
1:C:175:VAL:HG12	1:C:182:LEU:HD11	1.99	0.45
2:D:128:ILE:HD11	2:D:143:ARG:HG2	1.98	0.45
2:D:163:GLN:O	2:D:167:GLN:HG2	2.17	0.45
1:A:191:TRP:CD2	1:A:192:PRO:HD2	2.52	0.45
1:B:360:SER:OG	2:F:259:GLU:OE1	2.32	0.45
1:B:528:PHE:HA	1:B:577:ILE:HG21	1.99	0.44
2:D:179:VAL:O	2:D:207:SER:HA	2.17	0.44
2:D:201:THR:HG23	2:D:203:ALA:H	1.82	0.44
1:A:453:TRP:CZ3	1:A:519:PHE:HA	2.51	0.44
1:B:344:ARG:HG2	3:B:634:HOH:O	2.17	0.44
1:B:69:GLU:HG3	1:B:70:ALA:O	2.18	0.44
1:B:445:MET:HA	1:B:448:ILE:HG22	1.99	0.44
1:A:234:PHE:CE1	2:D:350:ARG:HG3	2.53	0.44
2:F:333:LEU:HA	2:F:336:SER:HB3	1.99	0.44
1:A:524:VAL:CG1	1:A:556:ILE:HG12	2.48	0.44
2:E:87:GLY:HA2	2:E:204:ILE:O	2.18	0.44
1:B:399:GLU:OE2	1:B:401:VAL:HB	2.18	0.44
1:B:522:LEU:HG	1:B:526:LEU:HD11	1.99	0.44
1:C:28:CYS:CB	1:C:66:SER:HA	2.48	0.44
1:C:545:ILE:HG13	1:C:583:LEU:HD22	1.99	0.44
2:D:376:TYR:OH	2:D:409:GLU:OE2	2.29	0.44
2:D:409:GLU:HA	2:D:413:VAL:HG22	2.00	0.44
2:F:279:THR:O	2:F:283:THR:HG23	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:379:GLY:HA3	2:F:405:ALA:HB2	2.00	0.44
1:A:415:LEU:HA	1:A:427:SER:O	2.17	0.44
1:B:520:ASN:O	1:B:524:VAL:HG13	2.18	0.44
2:E:358:ALA:HA	2:E:361:THR:O	2.18	0.44
2:E:430:GLY:O	2:E:434:LEU:HD12	2.18	0.44
2:F:168:ALA:O	2:F:206:ARG:NH1	2.49	0.44
1:A:378:ASP:OD1	1:A:378:ASP:N	2.51	0.43
1:B:101:ASN:O	2:E:116:ILE:HD12	2.18	0.43
1:A:514:SER:O	1:A:518:GLN:HG3	2.18	0.43
1:B:169:ILE:HD13	1:B:169:ILE:HA	1.80	0.43
1:C:8:LYS:HB3	1:C:15:MET:HB2	1.99	0.43
1:C:463:ILE:CD1	1:C:492:VAL:HG23	2.48	0.43
2:D:410:ASN:O	2:D:414:ASN:HB3	2.19	0.43
2:E:138:LEU:HD13	2:E:344:VAL:HG12	1.99	0.43
1:C:6:ILE:HG22	1:C:60:PRO:HA	2.00	0.43
1:C:286:MET:O	1:C:287:GLU:C	2.55	0.43
2:D:126:GLU:HG2	2:D:143:ARG:NH2	2.34	0.43
2:D:149:VAL:HG13	2:D:303:ILE:HG13	1.99	0.43
2:D:316:PRO:O	2:D:320:GLY:N	2.38	0.43
1:A:329:ASP:HA	1:A:330:SER:HA	1.65	0.43
1:C:90:PRO:HD3	1:C:111:ALA:HA	2.00	0.43
2:F:343:ASP:O	2:F:347:SER:OG	2.37	0.43
2:F:383:LYS:HB2	2:F:383:LYS:HE2	1.87	0.43
1:A:57:GLY:O	2:D:25:LYS:HD2	2.19	0.43
1:B:448:ILE:HG23	1:B:449:LEU:HD23	2.00	0.43
1:C:121:GLU:HA	1:C:164:SER:OG	2.18	0.43
2:E:368:THR:C	2:E:372:LEU:HD12	2.39	0.43
2:E:443:LYS:HA	2:E:443:LYS:HD3	1.63	0.43
1:B:28:CYS:HB3	1:B:66:SER:HA	2.00	0.43
1:B:91:LEU:HD23	1:B:91:LEU:HA	1.78	0.43
1:B:278:ASP:HB3	1:B:281:THR:HG22	2.01	0.43
1:B:392:PRO:HG2	1:B:397:ILE:HG22	2.01	0.43
2:D:143:ARG:NH1	2:D:242:HIS:CE1	2.87	0.43
2:E:429:LEU:HA	2:E:432:GLU:HG2	2.00	0.43
1:A:39:ILE:HG12	1:A:47:ALA:HB1	2.00	0.43
1:C:136:ILE:HG22	1:C:149:ILE:O	2.19	0.43
1:C:205:PRO:HB2	1:C:223:THR:OG1	2.18	0.43
1:A:260:GLY:CA	1:A:303:ARG:HD2	2.49	0.43
1:B:565:GLU:N	1:B:565:GLU:OE1	2.52	0.43
1:C:120:PHE:CE1	1:C:137:GLY:HA3	2.53	0.43
1:C:178:THR:HG21	1:C:183:LYS:HE3	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:146:LYS:HD3	2:D:285:PHE:O	2.19	0.43
1:A:238:LYS:HE2	1:A:238:LYS:HB3	1.90	0.43
1:A:472:GLU:OE2	1:A:472:GLU:HA	2.19	0.43
1:B:415:LEU:HD23	1:B:415:LEU:HA	1.80	0.43
2:D:137:HIS:CD2	2:D:369:MET:HB2	2.54	0.43
2:E:324:GLU:HB3	2:E:351:LEU:HD13	1.99	0.43
2:F:111:ILE:HG21	2:F:227:MET:HG3	2.00	0.43
1:B:232:GLY:HA3	1:B:238:LYS:HD3	2.01	0.42
1:B:238:LYS:HE3	1:B:238:LYS:HB3	1.79	0.42
1:B:260:GLY:HA2	1:B:303:ARG:HD2	2.00	0.42
1:B:497:ARG:O	1:B:502:GLN:HG3	2.19	0.42
1:B:585:VAL:O	1:B:585:VAL:HG12	2.19	0.42
1:C:329:ASP:HA	1:C:330:SER:HA	1.64	0.42
2:D:333:LEU:HD13	2:D:341:PRO:O	2.18	0.42
1:C:142:THR:HG23	1:C:287:GLU:OE1	2.19	0.42
2:D:324:GLU:HG2	2:D:351:LEU:HD13	2.01	0.42
2:F:281:LEU:HD12	2:F:318:LEU:HB3	2.01	0.42
1:B:90:PRO:HB2	1:B:93:THR:HB	2.00	0.42
1:C:94:PHE:CE1	1:C:103:LEU:HA	2.53	0.42
1:C:483:SER:HB2	1:C:486:ASP:OD2	2.19	0.42
2:D:149:VAL:CG1	2:D:303:ILE:HG13	2.50	0.42
2:D:248:GLU:HA	2:D:249:ASP:HA	1.76	0.42
2:F:249:ASP:N	2:F:303:ILE:O	2.53	0.42
1:C:554:GLU:O	1:C:558:ARG:HG2	2.19	0.42
2:E:14:PRO:HA	2:E:60:THR:HG23	2.01	0.42
1:C:12:PRO:HD3	1:C:344:ARG:NH1	2.34	0.42
1:C:459:GLU:O	1:C:463:ILE:HG23	2.19	0.42
1:C:576:GLU:O	1:C:580:THR:HG23	2.19	0.42
2:D:329:LEU:CD2	2:D:342:ILE:HG13	2.49	0.42
1:C:451:GLN:HG2	1:C:519:PHE:CE1	2.55	0.42
2:D:400:ILE:O	2:D:400:ILE:CG2	2.66	0.42
2:E:361:THR:HG22	2:E:362:ARG:O	2.20	0.42
2:E:410:ASN:O	2:E:414:ASN:HB3	2.19	0.42
1:A:126:GLU:HG3	3:A:608:HOH:O	2.20	0.42
1:A:567:LEU:HD23	1:A:567:LEU:HA	1.87	0.42
1:C:109:LEU:HD12	1:C:110:PRO:HD2	2.02	0.42
1:C:214:ARG:HG3	1:C:503:GLN:OE1	2.20	0.42
1:C:410:LYS:HB3	1:C:436:LEU:HB2	2.01	0.42
1:C:497:ARG:HA	1:C:501:LEU:HB2	2.02	0.42
1:C:565:GLU:OE2	1:C:565:GLU:N	2.44	0.42
2:D:30:ILE:HD13	2:D:54:VAL:HG21	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:364:ASP:O	2:E:368:THR:OG1	2.17	0.42
2:F:30:ILE:HG22	2:F:42:GLY:C	2.40	0.42
2:F:437:LEU:HD12	2:F:437:LEU:C	2.40	0.42
1:B:214:ARG:NH1	1:B:513:THR:HG21	2.35	0.42
2:D:15:LEU:HD22	2:D:45:LEU:HD21	2.01	0.42
2:D:246:ILE:HG23	2:D:303:ILE:CD1	2.50	0.42
2:F:236:ALA:HA	2:F:241:MET:O	2.20	0.42
2:F:382:ALA:HB2	2:F:398:ASP:OD1	2.20	0.42
1:B:158:THR:HG22	1:B:177:GLU:HB3	2.01	0.42
1:B:581:ILE:HA	1:B:584:ILE:HD12	2.01	0.42
1:C:541:TYR:O	1:C:545:ILE:HD12	2.20	0.42
2:E:276:TYR:HA	2:E:279:THR:HG23	2.00	0.42
2:F:30:ILE:HD11	2:F:70:VAL:HG13	2.01	0.42
2:F:344:VAL:HA	2:F:347:SER:OG	2.20	0.42
2:F:381:GLN:HA	2:F:384:GLU:HG3	2.01	0.42
1:A:209:MET:HG3	1:A:250:ASP:OD1	2.20	0.42
1:B:196:GLY:HA2	1:B:368:ARG:HH21	1.84	0.42
1:B:406:LEU:HD23	1:B:406:LEU:HA	1.85	0.42
1:C:114:HIS:HA	1:C:169:ILE:HG12	2.02	0.42
1:C:521:MET:HE2	1:C:521:MET:HB2	1.76	0.42
2:D:139:ASN:HA	2:D:349:SER:HB2	2.01	0.42
2:D:273:TYR:O	2:D:275:GLY:N	2.53	0.42
2:F:140:THR:HB	2:F:352:LYS:CB	2.49	0.42
2:F:333:LEU:HB3	2:F:338:ILE:HB	2.01	0.42
2:E:128:ILE:HG22	2:E:141:LEU:O	2.20	0.41
2:E:163:GLN:HE21	2:E:167:GLN:HE22	1.67	0.41
2:E:256:ALA:O	2:E:260:ILE:HG12	2.20	0.41
1:C:40:ILE:HG13	1:C:41:GLU:HG3	2.01	0.41
1:C:397:ILE:H	1:C:397:ILE:HG13	1.30	0.41
2:F:89:VAL:HG22	2:F:209:MET:HB2	2.02	0.41
2:F:160:LEU:HD22	2:F:329:LEU:HD21	2.02	0.41
2:F:329:LEU:HA	2:F:341:PRO:O	2.19	0.41
1:C:138:TYR:CZ	1:C:146:GLN:HB3	2.55	0.41
2:F:318:LEU:HA	2:F:318:LEU:HD13	1.29	0.41
1:B:295:THR:OG1	1:B:298:MET:HG3	2.20	0.41
1:B:523:LYS:HD3	1:B:574:ASN:ND2	2.35	0.41
2:D:281:LEU:HD23	2:D:281:LEU:HA	1.90	0.41
2:E:45:LEU:HD21	2:E:264:ARG:CZ	2.50	0.41
1:A:134:ASP:O	1:A:150:MET:HA	2.21	0.41
1:B:573:ILE:H	1:B:573:ILE:HG13	1.69	0.41
1:C:272:GLU:O	1:C:276:LEU:HD13	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:314:PRO:O	2:D:314:PRO:CG	2.69	0.41
2:E:137:HIS:CD2	2:E:427:LEU:HD23	2.56	0.41
2:F:167:GLN:HB3	2:F:420:ASN:ND2	2.34	0.41
1:A:191:TRP:CG	1:A:192:PRO:HD2	2.55	0.41
1:B:89:ARG:HA	1:B:90:PRO:HD3	1.93	0.41
1:C:194:ARG:NH1	1:C:304:GLU:OE1	2.53	0.41
1:C:482:LEU:HG	1:C:486:ASP:HB2	2.01	0.41
1:C:559:SER:HA	1:C:562:ILE:CD1	2.51	0.41
2:D:397:ILE:HD12	2:D:397:ILE:HA	1.89	0.41
2:E:429:LEU:HA	2:E:432:GLU:HG3	2.01	0.41
1:B:77:PRO:HG2	1:B:187:MET:CE	2.51	0.41
1:C:202:LYS:HG2	2:D:188:PHE:CE2	2.55	0.41
1:C:250:ASP:OD1	1:C:250:ASP:N	2.48	0.41
2:D:316:PRO:O	2:D:319:THR:N	2.54	0.41
1:B:199:ILE:HG21	1:B:372:VAL:HG21	2.01	0.41
1:B:261:GLU:O	1:B:295:THR:HA	2.21	0.41
1:C:364:GLU:O	1:C:368:ARG:HG3	2.21	0.41
1:C:456:MET:HE1	1:C:523:LYS:HA	2.03	0.41
2:D:138:LEU:HD13	2:D:369:MET:HG2	2.03	0.41
2:D:246:ILE:HG23	2:D:303:ILE:HD13	2.01	0.41
2:E:146:LYS:CD	2:E:285:PHE:HB3	2.51	0.41
2:E:280:ASN:O	2:E:283:THR:HB	2.21	0.41
1:B:493:ALA:O	1:B:497:ARG:HG3	2.21	0.41
1:C:463:ILE:HG13	1:C:464:LEU:N	2.35	0.41
2:F:44:VAL:HG12	2:F:54:VAL:HG12	2.03	0.41
2:F:81:VAL:HG11	2:F:109:LEU:HD12	2.03	0.41
1:A:225:GLY:O	1:A:370:GLY:HA2	2.22	0.40
1:A:261:GLU:O	1:A:295:THR:HA	2.20	0.40
1:C:360:SER:O	1:C:364:GLU:HG3	2.20	0.40
2:D:248:GLU:HG3	2:D:249:ASP:HB2	2.03	0.40
2:F:381:GLN:HA	2:F:384:GLU:CG	2.51	0.40
1:A:297:ASN:OD1	1:A:297:ASN:N	2.51	0.40
1:B:542:PHE:O	1:B:546:MET:HG2	2.21	0.40
1:C:202:LYS:HG2	2:D:188:PHE:CZ	2.56	0.40
1:C:243:HIS:HB3	1:C:276:LEU:HD21	2.03	0.40
2:D:30:ILE:O	2:D:41:ARG:HD3	2.22	0.40
2:F:137:HIS:NE2	2:F:368:THR:HG23	2.36	0.40
2:F:140:THR:HB	2:F:352:LYS:HB2	2.03	0.40
1:C:238:LYS:O	1:C:241:VAL:HG22	2.21	0.40
1:C:419:LEU:HD23	1:C:427:SER:HA	2.03	0.40
2:E:331:ARG:O	2:E:335:LYS:HG2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:333:LEU:HB3	2:E:338:ILE:CG2	2.32	0.40
2:F:445:ILE:HD13	2:F:445:ILE:HA	1.68	0.40
1:A:490:LEU:HD23	1:A:490:LEU:HA	1.82	0.40
1:B:13:LEU:HD21	1:B:345:LEU:HD21	2.04	0.40
1:B:528:PHE:CD2	1:B:528:PHE:C	2.94	0.40
1:C:267:THR:HG21	2:F:121:ARG:HB3	2.03	0.40
1:C:494:LYS:HA	1:C:497:ARG:NH2	2.37	0.40
2:D:9:LYS:HG3	2:D:19:GLU:CD	2.41	0.40
2:D:133:SER:N	2:D:415:GLN:HE22	2.19	0.40
2:E:397:ILE:HG23	2:E:398:ASP:OD1	2.20	0.40
1:B:77:PRO:HG2	1:B:187:MET:HE2	2.04	0.40
1:B:253:LEU:HD23	1:B:288:ARG:O	2.21	0.40
1:B:299:PRO:O	1:B:303:ARG:HG3	2.21	0.40
2:F:187:THR:OG1	2:F:190:GLU:HG2	2.22	0.40
2:F:361:THR:HG21	2:F:365:HIS:ND1	2.36	0.40
2:F:377:ALA:O	2:F:381:GLN:HG2	2.21	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:5:LYS:NZ	1:A:508:ASP:OD2[2_656]	2.10	0.10

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	584/596 (98%)	574 (98%)	10 (2%)	0	100	100
1	B	584/596 (98%)	567 (97%)	17 (3%)	0	100	100
1	C	583/596 (98%)	567 (97%)	16 (3%)	0	100	100
2	D	430/458 (94%)	408 (95%)	22 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	E	447/458 (98%)	422 (94%)	25 (6%)	0	100	100
2	F	443/458 (97%)	412 (93%)	30 (7%)	1 (0%)	47	76
All	All	3071/3162 (97%)	2950 (96%)	120 (4%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	F	173	SER

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	502/509 (99%)	494 (98%)	8 (2%)	62	86
1	B	502/509 (99%)	487 (97%)	15 (3%)	41	72
1	C	501/509 (98%)	475 (95%)	26 (5%)	23	52
2	D	356/380 (94%)	343 (96%)	13 (4%)	34	65
2	E	372/380 (98%)	346 (93%)	26 (7%)	15	37
2	F	368/380 (97%)	354 (96%)	14 (4%)	33	64
All	All	2601/2667 (98%)	2499 (96%)	102 (4%)	32	63

All (102) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	92	ASP
1	A	95	MET
1	A	195	ARG
1	A	259	CYS
1	A	268	ASP
1	A	273	PHE
1	A	398	SER
1	A	452	ASP
1	B	1	MET

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Mol	Chain	Res	Type
1	B	28	CYS
1	B	65	ARG
1	B	81	SER
1	B	94	PHE
1	B	180	GLN
1	B	259	CYS
1	B	291	LEU
1	B	388	SER
1	B	470	LEU
1	B	484	ASP
1	B	485	ASN
1	B	545	ILE
1	B	552	VAL
1	B	581	ILE
1	C	1	MET
1	C	12	PRO
1	C	56	SER
1	C	125	GLU
1	C	146	GLN
1	C	163	GLU
1	C	178	THR
1	C	240	VAL
1	C	273	PHE
1	C	330	SER
1	C	341	MET
1	C	397	ILE
1	C	399	GLU
1	C	407	ARG
1	C	447	GLN
1	C	469	GLN
1	C	470	LEU
1	C	471	ASN
1	C	475	ARG
1	C	479	ILE
1	C	486	ASP
1	C	521	MET
1	C	542	PHE
1	C	569	LYS
1	C	570	ILE
1	C	583	LEU
2	D	6	ARG
2	D	33	ARG

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Mol	Chain	Res	Type
2	D	97	LYS
2	D	125	ASP
2	D	308	GLU
2	D	317	ASP
2	D	321	TYR
2	D	330	THR
2	D	333	LEU
2	D	368	THR
2	D	387	VAL
2	D	401	TYR
2	D	411	GLU
2	E	6	ARG
2	E	83	GLU
2	E	102	GLU
2	E	103	ILE
2	E	249	ASP
2	E	265	ARG
2	E	271	ARG
2	E	279	THR
2	E	297	SER
2	E	313	HIS
2	E	318	LEU
2	E	319	THR
2	E	322	ILE
2	E	339	SER
2	E	342	ILE
2	E	352	LYS
2	E	360	LYS
2	E	368	THR
2	E	389	LEU
2	E	403	LYS
2	E	407	ARG
2	E	426	THR
2	E	433	LEU
2	E	434	LEU
2	E	436	MET
2	E	439	ARG
2	F	44	VAL
2	F	129	GLN
2	F	146	LYS
2	F	248	GLU
2	F	276	TYR

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Mol	Chain	Res	Type
2	F	278	TYR
2	F	305	THR
2	F	318	LEU
2	F	362	ARG
2	F	389	LEU
2	F	429	LEU
2	F	433	LEU
2	F	442	LEU
2	F	445	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (22) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	50	GLN
1	A	99	GLN
1	A	403	GLN
1	A	447	GLN
1	B	25	GLN
1	B	108	GLN
1	B	180	GLN
1	B	189	GLN
1	B	485	ASN
1	C	294	ASN
1	C	421	GLN
1	C	465	GLN
1	C	469	GLN
1	C	502	GLN
1	C	582	GLN
2	D	129	GLN
2	D	167	GLN
2	D	280	ASN
2	E	163	GLN
2	E	415	GLN
2	F	378	GLN
2	F	410	ASN

5.3.3 RNA

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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	586/596 (98%)	0.25	16 (2%) 54 49	32, 49, 82, 119	0
1	B	586/596 (98%)	0.43	44 (7%) 14 10	39, 69, 129, 145	0
1	C	584/596 (97%)	0.53	47 (8%) 12 8	40, 71, 122, 142	0
2	D	432/458 (94%)	0.65	50 (11%) 4 3	37, 65, 141, 166	0
2	E	449/458 (98%)	0.93	70 (15%) 2 1	33, 71, 142, 167	0
2	F	445/458 (97%)	1.00	84 (18%) 1 1	41, 79, 157, 179	0
All	All	3082/3162 (97%)	0.60	311 (10%) 7 4	32, 66, 133, 179	0

All (311) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	F	397	ILE	11.0
2	F	319	THR	9.0
2	F	387	VAL	8.2
2	E	405	ALA	7.8
2	F	404	PHE	7.7
2	E	272	GLY	7.7
2	D	400	ILE	7.3
2	E	434	LEU	7.0
2	F	437	LEU	7.0
2	F	393	ALA	6.9
2	D	385	LEU	6.8
2	F	392	SER	6.7
2	E	397	ILE	6.7
1	B	542	PHE	6.7
2	D	384	GLU	6.6
2	E	391	GLU	6.5
2	F	270	ARG	6.3
2	D	388	VAL	6.1
2	D	391	GLU	6.1

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Mol	Chain	Res	Type	RSRZ
2	E	312	THR	6.1
2	F	433	LEU	6.0
2	E	389	LEU	5.9
2	F	432	GLU	5.8
2	E	444	ARG	5.7
2	F	443	LYS	5.7
2	E	273	TYR	5.6
2	F	400	ILE	5.5
2	F	401	TYR	5.5
2	F	398	ASP	5.5
2	F	386	ALA	5.4
2	D	387	VAL	5.4
2	E	387	VAL	5.3
2	F	396	ASP	5.3
2	D	428	ASP	5.3
2	F	439	ARG	5.3
2	E	436	MET	5.2
1	C	475	ARG	5.2
2	E	437	LEU	5.1
2	F	359	GLY	5.1
2	E	392	SER	5.1
2	F	434	LEU	5.1
2	E	321	TYR	5.0
1	B	538	LEU	4.9
2	F	436	MET	4.9
1	B	477	VAL	4.9
2	E	313	HIS	4.9
2	F	391	GLU	4.8
1	B	539	GLY	4.8
2	F	403	LYS	4.8
2	F	431	TRP	4.8
2	E	401	TYR	4.8
2	E	382	ALA	4.8
2	E	316	PRO	4.7
2	F	444	ARG	4.7
1	A	549	THR	4.7
2	F	390	GLY	4.7
2	E	311	LYS	4.7
2	F	312	THR	4.7
2	F	435	ALA	4.7
2	F	388	VAL	4.7
2	D	272	GLY	4.6

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Mol	Chain	Res	Type	RSRZ
1	C	492	VAL	4.5
2	E	398	ASP	4.5
1	C	550	VAL	4.5
2	D	310	ASP	4.4
2	D	433	LEU	4.4
2	F	399	LYS	4.4
2	F	310	ASP	4.3
2	F	427	LEU	4.3
2	F	385	LEU	4.2
1	B	476	LEU	4.2
1	B	478	GLY	4.2
2	D	390	GLY	4.2
2	E	309	ASP	4.2
2	F	423	ILE	4.1
1	C	175	VAL	4.1
1	B	585	VAL	4.1
2	E	435	ALA	4.1
2	F	405	ALA	4.1
2	F	438	PRO	4.1
2	F	175	ASP	4.1
2	D	380	LYS	4.1
2	D	394	LEU	4.0
1	B	582	GLN	4.0
2	F	412	TYR	4.0
1	B	480	ASP	4.0
1	B	549	THR	4.0
2	D	397	ILE	4.0
1	A	473	ILE	3.9
2	E	393	ALA	3.9
2	F	376	TYR	3.9
1	B	470	LEU	3.9
2	F	389	LEU	3.9
1	B	540	ALA	3.8
2	D	396	ASP	3.8
1	C	474	VAL	3.8
2	E	385	LEU	3.8
1	B	579	GLU	3.8
1	C	476	LEU	3.8
2	E	276	TYR	3.8
1	B	473	ILE	3.8
1	C	124	ILE	3.8
2	D	389	LEU	3.8

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Mol	Chain	Res	Type	RSRZ
2	F	172	ASP	3.8
2	E	361	THR	3.8
2	D	392	SER	3.8
1	B	534	LYS	3.7
2	F	374	ALA	3.7
1	B	162	ILE	3.7
1	C	541	TYR	3.7
2	D	315	ILE	3.7
2	F	360	LYS	3.7
1	B	490	LEU	3.6
1	C	163	GLU	3.6
1	B	581	ILE	3.6
2	D	314	PRO	3.6
2	E	381	GLN	3.6
2	D	271	ARG	3.6
1	C	582	GLN	3.6
1	B	1	MET	3.6
2	F	311	LYS	3.6
2	F	318	LEU	3.6
1	C	551	ALA	3.5
2	E	386	ALA	3.5
2	F	362	ARG	3.5
1	C	488	LEU	3.5
2	F	373	PHE	3.5
2	E	314	PRO	3.5
1	C	577	ILE	3.5
2	F	428	ASP	3.5
2	E	404	PHE	3.4
1	A	541	TYR	3.4
2	F	174	SER	3.4
2	E	440	THR	3.4
2	E	271	ARG	3.4
2	E	268	PRO	3.4
2	F	361	THR	3.4
2	F	313	HIS	3.4
1	A	475	ARG	3.4
1	B	474	VAL	3.4
1	C	470	LEU	3.4
2	F	342	ILE	3.4
2	E	449	LEU	3.4
1	C	549	THR	3.3
2	D	393	ALA	3.3

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Mol	Chain	Res	Type	RSRZ
1	C	542	PHE	3.3
2	F	375	ALA	3.3
2	F	442	LEU	3.3
1	C	581	ILE	3.3
2	E	388	VAL	3.3
2	F	321	TYR	3.3
1	A	477	VAL	3.2
2	F	170	VAL	3.2
2	D	102	GLU	3.2
2	D	386	ALA	3.2
1	C	479	ILE	3.2
1	C	471	ASN	3.2
1	C	576	GLU	3.1
2	D	407	ARG	3.1
1	B	535	ALA	3.1
1	B	479	ILE	3.1
2	E	267	VAL	3.1
2	E	430	GLY	3.1
2	D	395	SER	3.1
1	C	473	ILE	3.1
2	F	328	ILE	3.1
2	E	376	TYR	3.0
2	E	442	LEU	3.0
2	E	438	PRO	3.0
1	C	552	VAL	3.0
2	D	375	ALA	3.0
2	D	399	LYS	3.0
2	E	395	SER	3.0
2	E	380	LYS	2.9
1	A	259	CYS	2.9
2	F	395	SER	2.9
2	D	401	TYR	2.9
2	E	278	TYR	2.9
2	D	404	PHE	2.9
1	A	476	LEU	2.9
1	A	474	VAL	2.9
1	B	475	ARG	2.9
2	F	128	ILE	2.9
2	F	406	GLU	2.9
1	B	536	LEU	2.9
2	E	390	GLY	2.8
1	B	468	GLU	2.8

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Mol	Chain	Res	Type	RSRZ
2	E	408	PHE	2.8
1	A	340	GLU	2.8
2	F	424	THR	2.8
1	C	540	ALA	2.8
2	D	381	GLN	2.8
2	D	406	GLU	2.8
2	F	363	GLU	2.8
2	E	359	GLY	2.8
1	B	481	SER	2.8
2	E	137	HIS	2.8
1	C	122	ALA	2.7
1	C	575	GLU	2.7
1	B	548	GLY	2.7
2	D	312	THR	2.7
1	B	129	GLU	2.7
1	C	126	GLU	2.7
2	F	315	ILE	2.7
1	C	482	LEU	2.7
2	F	358	ALA	2.7
2	E	396	ASP	2.7
1	C	538	LEU	2.7
2	D	431	TRP	2.7
1	C	496	ILE	2.7
2	E	322	ILE	2.7
2	F	327	ILE	2.7
2	F	445	ILE	2.7
2	D	365	HIS	2.7
1	B	528	PHE	2.7
2	D	318	LEU	2.7
1	B	531	GLU	2.7
1	C	489	THR	2.7
2	D	274	PRO	2.6
1	A	552	VAL	2.6
1	B	567	LEU	2.6
2	D	403	LYS	2.6
2	D	432	GLU	2.6
2	D	267	VAL	2.6
2	E	429	LEU	2.6
1	B	348	MET	2.6
2	D	429	LEU	2.6
1	C	545	ILE	2.5
1	C	480	ASP	2.5

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Mol	Chain	Res	Type	RSRZ
2	F	345	LEU	2.5
2	F	408	PHE	2.5
1	B	584	ILE	2.5
2	E	269	GLY	2.5
2	E	363	GLU	2.5
2	E	310	ASP	2.5
2	F	344	VAL	2.5
2	D	378	GLN	2.5
1	A	551	ALA	2.5
2	F	402	ALA	2.5
1	B	519	PHE	2.5
1	C	558	ARG	2.5
2	E	383	LYS	2.4
2	E	102	GLU	2.4
2	F	384	GLU	2.4
2	F	371	GLN	2.4
1	C	174	CYS	2.4
2	F	152	PRO	2.4
1	B	472	GLU	2.4
2	D	408	PHE	2.4
2	F	339	SER	2.4
1	C	397	ILE	2.4
2	E	374	ALA	2.4
1	B	234	PHE	2.4
2	E	307	PRO	2.4
2	F	440	THR	2.4
1	B	174	CYS	2.4
2	E	360	LYS	2.4
2	E	431	TRP	2.3
1	B	545	ILE	2.3
2	E	373	PHE	2.3
2	E	295	LYS	2.3
2	D	313	HIS	2.3
1	C	548	GLY	2.3
2	F	441	GLU	2.3
1	B	541	TYR	2.3
2	F	103	ILE	2.3
2	D	373	PHE	2.3
2	E	101	PRO	2.3
2	F	372	LEU	2.3
2	F	429	LEU	2.3
1	C	161	LYS	2.3

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Mol	Chain	Res	Type	RSRZ
2	F	378	GLN	2.2
2	D	309	ASP	2.2
1	C	499	ASP	2.2
1	C	477	VAL	2.2
2	E	274	PRO	2.2
2	D	359	GLY	2.2
1	C	574	ASN	2.2
2	F	314	PRO	2.2
2	E	409	GLU	2.2
2	E	445	ILE	2.1
1	C	486	ASP	2.1
1	C	258	GLY	2.1
1	B	546	MET	2.1
1	C	495	SER	2.1
1	A	480	ASP	2.1
2	D	123	TYR	2.1
2	D	382	ALA	2.1
1	A	392	PRO	2.1
1	B	574	ASN	2.1
2	F	407	ARG	2.1
2	D	175	ASP	2.1
1	C	160	GLN	2.1
2	E	399	LYS	2.1
1	C	535	ALA	2.1
1	A	542	PHE	2.1
2	D	3	LYS	2.0
2	E	318	LEU	2.0
2	F	104	LEU	2.0
1	B	171	ASP	2.0
2	E	175	ASP	2.0
2	F	173	SER	2.0
2	F	394	LEU	2.0
1	B	124	ILE	2.0
1	C	570	ILE	2.0
1	A	296	SER	2.0
1	C	580	THR	2.0
2	E	266	GLU	2.0
1	A	528	PHE	2.0
1	B	575	GLU	2.0
2	E	427	LEU	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.