



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 23, 2021 – 10:53 AM EDT

PDB ID : 2TMG
Title : THERMOTOGA MARITIMA GLUTAMATE DEHYDROGENASE MUTANT S128R, T158E, N117R, S160E
Authors : Knapp, S.; Lebbink, J.H.G.; van der Oost, J.; de Vos, W.M.; Rice, D.; Ladenstein, R.
Deposited on : 1998-12-04
Resolution : 2.90 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 following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
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) : 2.23.2

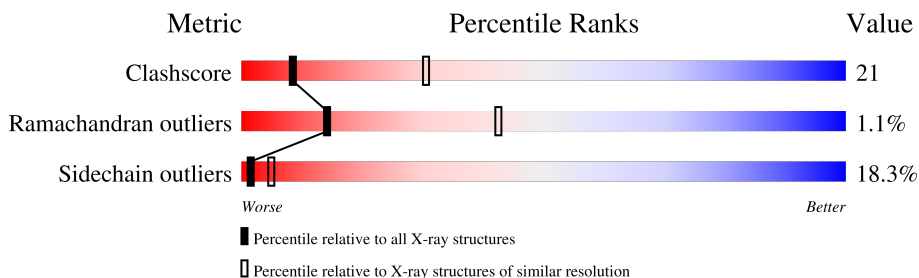
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.90 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))
Clashscore	141614	2172 (2.90-2.90)
Ramachandran outliers	138981	2115 (2.90-2.90)
Sidechain outliers	138945	2117 (2.90-2.90)

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 $\leq 5\%$

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	415	
1	B	415	
1	C	415	
1	D	415	
1	E	415	
1	F	415	

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 19032 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 PROTEIN (GLUTAMATE DEHYDROGENASE).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	408	3172	2013	556	590	13	0	0	0
1	B	408	3172	2013	556	590	13	0	0	0
1	C	408	3172	2013	556	590	13	0	0	0
1	D	408	3172	2013	556	590	13	0	0	0
1	E	408	3172	2013	556	590	13	0	0	0
1	F	408	3172	2013	556	590	13	0	0	0

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	117	ARG	ASN	engineered mutation	UNP P96110
A	128	ARG	SER	engineered mutation	UNP P96110
A	158	GLU	THR	engineered mutation	UNP P96110
A	160	GLU	SER	engineered mutation	UNP P96110
B	117	ARG	ASN	engineered mutation	UNP P96110
B	128	ARG	SER	engineered mutation	UNP P96110
B	158	GLU	THR	engineered mutation	UNP P96110
B	160	GLU	SER	engineered mutation	UNP P96110
C	117	ARG	ASN	engineered mutation	UNP P96110
C	128	ARG	SER	engineered mutation	UNP P96110
C	158	GLU	THR	engineered mutation	UNP P96110
C	160	GLU	SER	engineered mutation	UNP P96110
D	117	ARG	ASN	engineered mutation	UNP P96110
D	128	ARG	SER	engineered mutation	UNP P96110
D	158	GLU	THR	engineered mutation	UNP P96110
D	160	GLU	SER	engineered mutation	UNP P96110
E	117	ARG	ASN	engineered mutation	UNP P96110

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Chain	Residue	Modelled	Actual	Comment	Reference
E	128	ARG	SER	engineered mutation	UNP P96110
E	158	GLU	THR	engineered mutation	UNP P96110
E	160	GLU	SER	engineered mutation	UNP P96110
F	117	ARG	ASN	engineered mutation	UNP P96110
F	128	ARG	SER	engineered mutation	UNP P96110
F	158	GLU	THR	engineered mutation	UNP P96110
F	160	GLU	SER	engineered mutation	UNP P96110

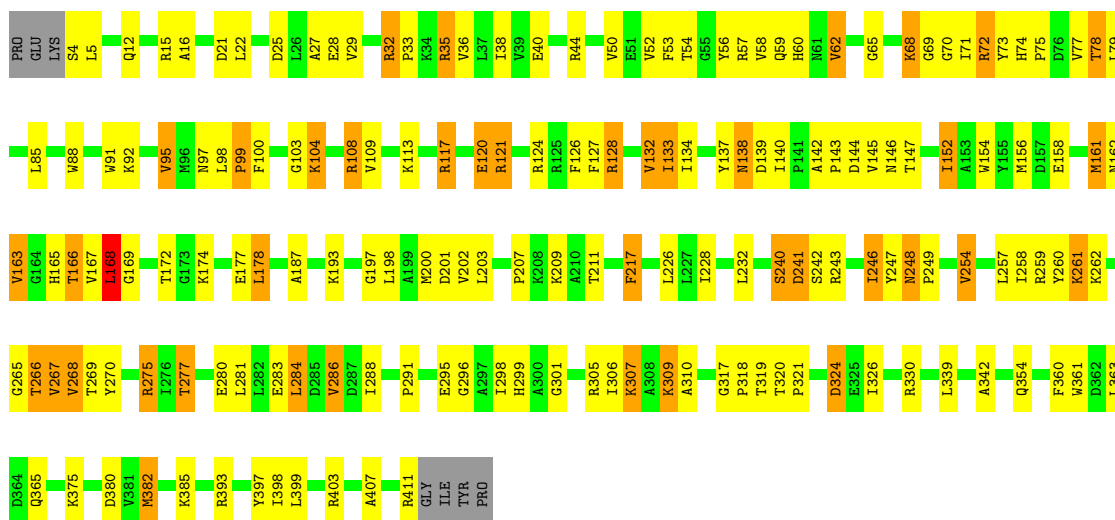
3 Residue-property plots

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. 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. 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.

Note EDS was not executed.

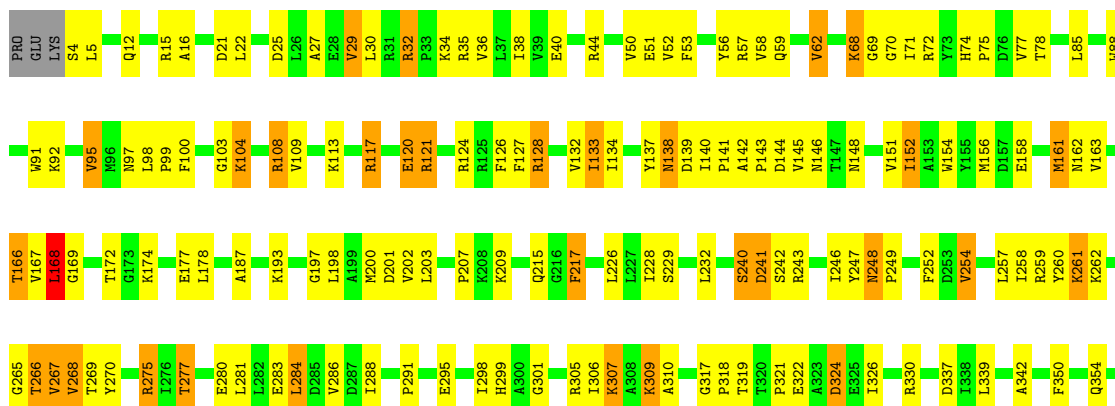
- Molecule 1: PROTEIN (GLUTAMATE DEHYDROGENASE)

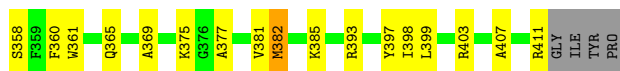
Chain A: 



- Molecule 1: PROTEIN (GLUTAMATE DEHYDROGENASE)

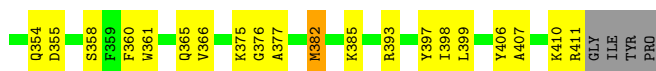
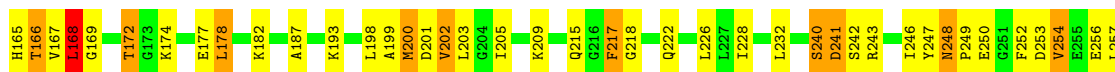
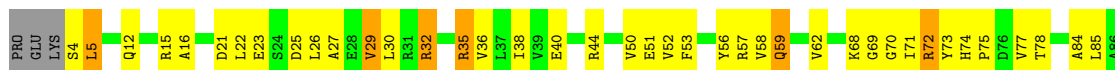
Chain B: 





• Molecule 1: PROTEIN (GLUTAMATE DEHYDROGENASE)

Chain C: 55% 34% 9%



• Molecule 1: PROTEIN (GLUTAMATE DEHYDROGENASE)

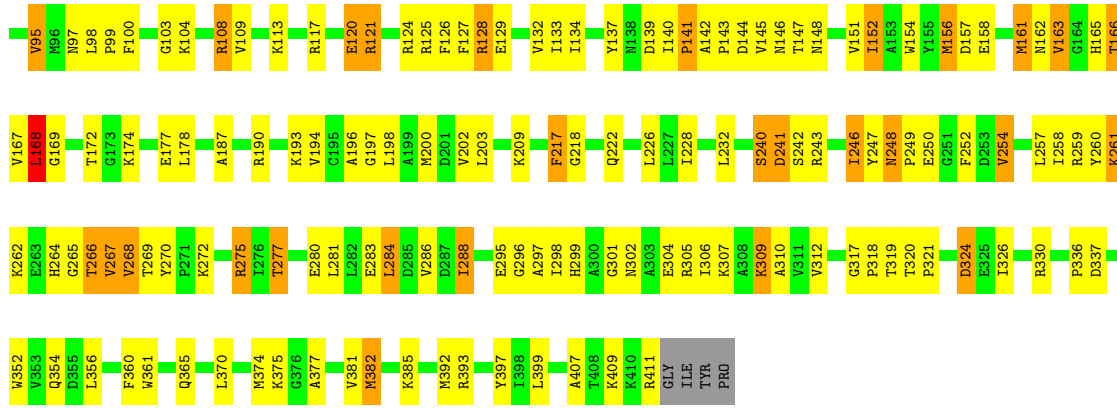
Chain D: 55% 34% 9%



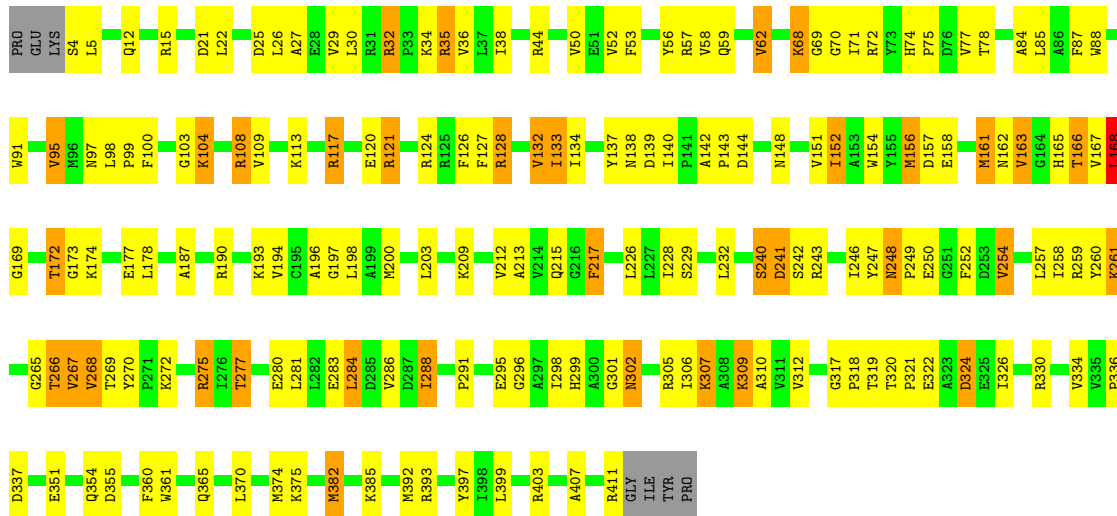
• Molecule 1: PROTEIN (GLUTAMATE DEHYDROGENASE)

Chain E: 53% 36% 8%





● Molecule 1: PROTEIN (GLUTAMATE DEHYDROGENASE)



4 Data and refinement statistics

Xtrriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	P 31 2 1	Depositor
Cell constants a, b, c, α , β , γ	145.10Å 145.10Å 272.50Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	8.00 – 2.90	Depositor
% Data completeness (in resolution range)	98.0 (8.00-2.90)	Depositor
R_{merge}	0.07	Depositor
R_{sym}	0.04	Depositor
Refinement program	X-PLOR 3.8	Depositor
R, R_{free}	0.211 , 0.274	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	19032	wwPDB-VP
Average B, all atoms (Å ²)	52.0	wwPDB-VP

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	0.42	0/3231	0.60	1/4371 (0.0%)
1	B	0.37	0/3231	0.58	1/4371 (0.0%)
1	C	0.39	0/3231	0.60	2/4371 (0.0%)
1	D	0.37	0/3231	0.58	1/4371 (0.0%)
1	E	0.41	0/3231	0.60	1/4371 (0.0%)
1	F	0.41	0/3231	0.59	1/4371 (0.0%)
All	All	0.39	0/19386	0.59	7/26226 (0.0%)

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	168	LEU	CA-CB-CG	6.39	130.00	115.30
1	A	168	LEU	CA-CB-CG	6.31	129.81	115.30
1	E	168	LEU	CA-CB-CG	6.26	129.70	115.30
1	D	168	LEU	CA-CB-CG	6.17	129.50	115.30
1	F	168	LEU	CA-CB-CG	6.14	129.42	115.30
1	C	168	LEU	CA-CB-CG	6.12	129.37	115.30
1	C	200	MET	CG-SD-CE	5.76	109.42	100.20

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3172	0	3196	133	0
1	B	3172	0	3196	125	0
1	C	3172	0	3196	135	0
1	D	3172	0	3196	140	0
1	E	3172	0	3196	148	0
1	F	3172	0	3196	136	0
All	All	19032	0	19176	793	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 21.

All (793) 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:D:243:ARG:HD3	1:D:266:THR:HG21	1.24	1.16
1:A:243:ARG:HD3	1:A:266:THR:HG21	1.29	1.13
1:B:243:ARG:HD3	1:B:266:THR:HG21	1.29	1.12
1:C:243:ARG:HD3	1:C:266:THR:HG21	1.25	1.09
1:F:243:ARG:HD3	1:F:266:THR:HG21	1.32	1.08
1:E:243:ARG:HD3	1:E:266:THR:HG21	1.33	1.08
1:F:36:VAL:HG22	1:F:58:VAL:HG22	1.49	0.93
1:C:36:VAL:HG22	1:C:58:VAL:HG22	1.52	0.91
1:E:36:VAL:HG22	1:E:58:VAL:HG22	1.53	0.91
1:E:200:MET:HG3	1:E:288:ILE:HD11	1.55	0.88
1:D:36:VAL:HG22	1:D:58:VAL:HG22	1.55	0.87
1:A:36:VAL:HG22	1:A:58:VAL:HG22	1.55	0.87
1:C:88:TRP:HZ3	1:C:397:TYR:CE1	1.92	0.86
1:B:36:VAL:HG22	1:B:58:VAL:HG22	1.54	0.86
1:A:88:TRP:HZ3	1:A:397:TYR:CE1	1.95	0.84
1:E:91:TRP:O	1:E:95:VAL:HG12	1.78	0.84
1:E:200:MET:HG3	1:E:288:ILE:CD1	2.10	0.82
1:D:277:THR:HG23	1:D:280:GLU:HB2	1.61	0.81
1:A:277:THR:HG23	1:A:280:GLU:HB2	1.60	0.81
1:A:88:TRP:HZ3	1:A:397:TYR:HE1	1.27	0.81
1:B:277:THR:HG23	1:B:280:GLU:HB2	1.62	0.80
1:F:200:MET:HG3	1:F:288:ILE:CD1	2.11	0.80
1:F:277:THR:HG23	1:F:280:GLU:HB2	1.62	0.80
1:D:200:MET:HG3	1:D:288:ILE:CD1	2.13	0.79
1:E:277:THR:HG23	1:E:280:GLU:HB2	1.63	0.79
1:C:88:TRP:HZ3	1:C:397:TYR:HE1	1.28	0.78
1:D:243:ARG:CD	1:D:266:THR:HG21	2.11	0.78
1:B:91:TRP:O	1:B:95:VAL:HG12	1.84	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:200:MET:HG3	1:F:288:ILE:HD11	1.67	0.77
1:C:243:ARG:CD	1:C:266:THR:HG21	2.10	0.77
1:D:91:TRP:O	1:D:95:VAL:HG12	1.85	0.76
1:E:124:ARG:HH11	1:E:158:GLU:HG2	1.50	0.76
1:C:277:THR:HG23	1:C:280:GLU:HB2	1.68	0.75
1:C:91:TRP:O	1:C:95:VAL:HG12	1.86	0.75
1:D:200:MET:HG3	1:D:288:ILE:HD11	1.69	0.75
1:D:124:ARG:HH11	1:D:158:GLU:HG2	1.54	0.72
1:E:243:ARG:CD	1:E:266:THR:HG21	2.17	0.72
1:E:166:THR:HG23	1:F:137:TYR:O	1.89	0.72
1:A:128:ARG:HH11	1:E:161:MET:HB3	1.55	0.72
1:C:124:ARG:HH11	1:C:158:GLU:HG2	1.55	0.72
1:B:124:ARG:HH11	1:B:158:GLU:HG2	1.55	0.71
1:A:91:TRP:O	1:A:95:VAL:HG12	1.91	0.71
1:F:326:ILE:O	1:F:330:ARG:HG3	1.91	0.70
1:E:59:GLN:HE22	1:E:133:ILE:CG2	2.05	0.70
1:C:88:TRP:CZ3	1:C:397:TYR:HE1	2.10	0.69
1:A:243:ARG:CD	1:A:266:THR:HG21	2.16	0.69
1:A:137:TYR:O	1:C:166:THR:HG23	1.93	0.69
1:A:166:THR:HG23	1:B:137:TYR:O	1.92	0.69
1:C:198:LEU:O	1:C:202:VAL:HG13	1.92	0.69
1:E:75:PRO:O	1:E:108:ARG:HD3	1.93	0.69
1:F:243:ARG:CD	1:F:266:THR:HG21	2.19	0.69
1:D:247:TYR:CE2	1:D:249:PRO:HD3	2.28	0.69
1:F:247:TYR:CE2	1:F:249:PRO:HD3	2.28	0.68
1:A:120:GLU:HA	1:A:154:TRP:CE3	2.29	0.68
1:D:240:SER:HB3	1:D:281:LEU:HD13	1.75	0.68
1:A:88:TRP:CZ3	1:A:397:TYR:HE1	2.10	0.68
1:C:240:SER:HB3	1:C:281:LEU:HD13	1.74	0.67
1:D:393:ARG:HG2	1:D:397:TYR:HE2	1.59	0.67
1:E:32:ARG:HG2	1:E:32:ARG:HH11	1.59	0.67
1:B:88:TRP:HZ3	1:B:397:TYR:CE1	2.13	0.67
1:A:393:ARG:HG2	1:A:397:TYR:HE2	1.60	0.67
1:F:75:PRO:O	1:F:108:ARG:HD3	1.95	0.67
1:A:75:PRO:O	1:A:108:ARG:HD3	1.93	0.67
1:C:317:GLY:N	1:C:318:PRO:HD3	2.10	0.67
1:D:137:TYR:O	1:F:166:THR:HG23	1.95	0.67
1:C:247:TYR:CE2	1:C:249:PRO:HD3	2.30	0.67
1:A:124:ARG:HH11	1:A:158:GLU:HG2	1.60	0.66
1:E:88:TRP:HZ3	1:E:397:TYR:HE1	1.44	0.66
1:A:240:SER:HB3	1:A:281:LEU:HD13	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:32:ARG:HG2	1:E:32:ARG:NH1	2.10	0.66
1:A:317:GLY:N	1:A:318:PRO:HD3	2.10	0.66
1:B:59:GLN:HE22	1:B:133:ILE:CG2	2.08	0.66
1:C:22:LEU:HD23	1:C:27:ALA:HB2	1.76	0.66
1:E:22:LEU:HD23	1:E:27:ALA:HB2	1.78	0.65
1:A:217:PHE:HD2	1:A:261:LYS:HG3	1.62	0.65
1:C:88:TRP:CZ3	1:C:397:TYR:CE1	2.81	0.65
1:F:91:TRP:O	1:F:95:VAL:HG12	1.97	0.65
1:A:382:MET:O	1:A:385:LYS:HB3	1.97	0.65
1:B:393:ARG:HG2	1:B:397:TYR:HE2	1.60	0.65
1:C:217:PHE:HD2	1:C:261:LYS:HG3	1.62	0.65
1:A:88:TRP:CZ3	1:A:397:TYR:CE1	2.83	0.64
1:F:22:LEU:HD23	1:F:27:ALA:HB2	1.79	0.64
1:B:240:SER:HB3	1:B:281:LEU:HD13	1.77	0.64
1:B:243:ARG:CD	1:B:266:THR:HG21	2.16	0.64
1:E:326:ILE:O	1:E:330:ARG:HG3	1.97	0.64
1:B:88:TRP:HZ3	1:B:397:TYR:HE1	1.46	0.64
1:B:317:GLY:N	1:B:318:PRO:HD3	2.13	0.64
1:C:393:ARG:HG2	1:C:397:TYR:HE2	1.63	0.63
1:E:71:ILE:HD13	1:E:126:PHE:HE2	1.64	0.63
1:E:196:ALA:HA	1:E:312:VAL:HG21	1.79	0.63
1:B:268:VAL:O	1:B:269:THR:HB	1.98	0.63
1:F:240:SER:HB3	1:F:281:LEU:HD13	1.78	0.63
1:A:120:GLU:HG3	1:A:154:TRP:CE2	2.34	0.63
1:E:228:ILE:O	1:E:232:LEU:HB2	1.99	0.63
1:E:268:VAL:O	1:E:269:THR:HB	1.98	0.62
1:F:217:PHE:HD2	1:F:261:LYS:HG3	1.62	0.62
1:D:228:ILE:O	1:D:232:LEU:HB2	1.99	0.62
1:D:22:LEU:HD23	1:D:27:ALA:HB2	1.80	0.62
1:C:161:MET:HB3	1:F:128:ARG:HH11	1.64	0.62
1:C:120:GLU:HG3	1:C:154:TRP:CE2	2.35	0.62
1:B:228:ILE:O	1:B:232:LEU:HB2	1.99	0.62
1:E:247:TYR:CE2	1:E:249:PRO:HD3	2.35	0.62
1:F:196:ALA:HA	1:F:312:VAL:HG21	1.81	0.62
1:F:120:GLU:HG3	1:F:154:TRP:CE2	2.35	0.62
1:B:32:ARG:HG2	1:B:32:ARG:HH11	1.65	0.61
1:B:75:PRO:O	1:B:108:ARG:HD3	1.99	0.61
1:C:354:GLN:HG2	1:C:360:PHE:HA	1.81	0.61
1:B:120:GLU:HG3	1:B:154:TRP:CE2	2.34	0.61
1:B:247:TYR:CE2	1:B:249:PRO:HD3	2.35	0.61
1:B:266:THR:OG1	1:B:268:VAL:HG23	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:240:SER:HB3	1:E:281:LEU:HD13	1.81	0.61
1:F:317:GLY:N	1:F:318:PRO:HD3	2.15	0.61
1:B:124:ARG:HB3	1:B:158:GLU:HG3	1.82	0.61
1:A:247:TYR:CE2	1:A:249:PRO:HD3	2.35	0.61
1:D:166:THR:HG23	1:E:137:TYR:O	2.00	0.61
1:E:317:GLY:N	1:E:318:PRO:HD3	2.15	0.61
1:E:120:GLU:HG3	1:E:154:TRP:CE2	2.36	0.61
1:C:228:ILE:O	1:C:232:LEU:HB2	2.01	0.61
1:C:268:VAL:O	1:C:269:THR:HB	2.01	0.61
1:A:22:LEU:HD23	1:A:27:ALA:HB2	1.83	0.61
1:D:266:THR:OG1	1:D:268:VAL:HG23	1.99	0.61
1:A:268:VAL:O	1:A:269:THR:HB	2.00	0.61
1:E:53:PHE:HE2	1:E:109:VAL:HG23	1.66	0.61
1:A:120:GLU:O	1:A:124:ARG:HG3	2.01	0.60
1:A:354:GLN:HG2	1:A:360:PHE:HA	1.82	0.60
1:D:217:PHE:HD2	1:D:261:LYS:HG3	1.65	0.60
1:D:196:ALA:HA	1:D:312:VAL:HG21	1.84	0.60
1:C:53:PHE:HE2	1:C:109:VAL:HG23	1.66	0.60
1:D:120:GLU:HG3	1:D:154:TRP:CE2	2.36	0.60
1:B:124:ARG:NH1	1:B:158:GLU:HG2	2.15	0.60
1:D:71:ILE:HD13	1:D:126:PHE:HE2	1.66	0.60
1:B:354:GLN:HG2	1:B:360:PHE:HA	1.82	0.60
1:E:277:THR:HG22	1:E:280:GLU:OE1	2.02	0.60
1:C:16:ALA:HB1	1:C:398:ILE:HG13	1.84	0.60
1:C:71:ILE:HD13	1:C:126:PHE:HE2	1.67	0.60
1:B:32:ARG:HG2	1:B:32:ARG:NH1	2.15	0.59
1:C:266:THR:OG1	1:C:268:VAL:HG23	2.01	0.59
1:D:317:GLY:N	1:D:318:PRO:HD3	2.17	0.59
1:E:217:PHE:HD2	1:E:261:LYS:HG3	1.67	0.59
1:D:134:ILE:HG22	1:D:139:ASP:HB3	1.83	0.59
1:D:268:VAL:O	1:D:269:THR:HB	2.02	0.59
1:D:59:GLN:HE22	1:D:133:ILE:CG2	2.15	0.59
1:D:88:TRP:HZ3	1:D:397:TYR:HE1	1.49	0.59
1:B:68:LYS:NZ	1:B:140:ILE:O	2.35	0.59
1:B:407:ALA:O	1:B:411:ARG:HG3	2.03	0.59
1:D:74:HIS:ND1	1:D:75:PRO:HD2	2.18	0.59
1:F:38:ILE:HG23	1:F:56:TYR:CD2	2.37	0.59
1:F:120:GLU:HA	1:F:154:TRP:CE3	2.38	0.59
1:A:198:LEU:HD11	1:A:375:LYS:HA	1.85	0.59
1:B:283:GLU:O	1:B:307:LYS:HD2	2.02	0.59
1:C:72:ARG:HG3	1:C:144:ASP:OD1	2.03	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:59:GLN:HE22	1:E:133:ILE:HG23	1.68	0.59
1:F:268:VAL:O	1:F:269:THR:HB	2.02	0.59
1:A:59:GLN:HE21	1:A:139:ASP:HB2	1.65	0.59
1:D:53:PHE:HE2	1:D:109:VAL:HG23	1.66	0.59
1:B:22:LEU:HD23	1:B:27:ALA:HB2	1.84	0.59
1:C:361:TRP:HB3	1:C:365:GLN:NE2	2.17	0.59
1:F:354:GLN:HG2	1:F:360:PHE:HA	1.84	0.59
1:B:59:GLN:HE22	1:B:133:ILE:HG23	1.67	0.59
1:F:200:MET:HG3	1:F:288:ILE:HD13	1.85	0.59
1:B:326:ILE:O	1:B:330:ARG:HG3	2.03	0.58
1:C:156:MET:HE3	1:C:174:LYS:HD2	1.85	0.58
1:D:407:ALA:O	1:D:411:ARG:HG3	2.03	0.58
1:E:134:ILE:HG22	1:E:139:ASP:HB3	1.84	0.58
1:F:283:GLU:O	1:F:307:LYS:HD2	2.03	0.58
1:C:326:ILE:O	1:C:330:ARG:HG3	2.03	0.58
1:D:75:PRO:O	1:D:108:ARG:HD3	2.04	0.58
1:F:393:ARG:HG2	1:F:397:TYR:HE2	1.68	0.58
1:B:156:MET:HE3	1:B:174:LYS:HD2	1.86	0.58
1:C:124:ARG:NH1	1:C:158:GLU:HG2	2.17	0.58
1:F:53:PHE:HE2	1:F:109:VAL:HG23	1.69	0.58
1:F:298:ILE:HG23	1:F:306:ILE:HD11	1.86	0.58
1:A:59:GLN:NE2	1:A:139:ASP:HB2	2.18	0.58
1:C:283:GLU:O	1:C:307:LYS:HD2	2.03	0.58
1:E:69:GLY:HA3	1:E:103:GLY:O	2.03	0.58
1:E:283:GLU:O	1:E:307:LYS:HD2	2.04	0.57
1:C:199:ALA:O	1:C:202:VAL:HG22	2.04	0.57
1:E:68:LYS:NZ	1:E:140:ILE:O	2.36	0.57
1:B:53:PHE:HE2	1:B:109:VAL:HG23	1.68	0.57
1:E:298:ILE:HG23	1:E:306:ILE:HD11	1.86	0.57
1:C:32:ARG:NH1	1:C:32:ARG:HG2	2.19	0.57
1:E:254:VAL:O	1:E:258:ILE:HG13	2.04	0.57
1:F:59:GLN:NE2	1:F:139:ASP:HB2	2.20	0.57
1:F:71:ILE:HD13	1:F:126:PHE:HE2	1.70	0.57
1:A:132:VAL:HG12	1:F:132:VAL:HG12	1.87	0.57
1:D:326:ILE:O	1:D:330:ARG:HG3	2.03	0.57
1:C:198:LEU:O	1:C:201:ASP:HB2	2.04	0.57
1:D:68:LYS:NZ	1:D:140:ILE:O	2.36	0.57
1:E:277:THR:CG2	1:E:280:GLU:HB2	2.34	0.57
1:F:59:GLN:HE21	1:F:139:ASP:HB2	1.69	0.57
1:F:120:GLU:O	1:F:124:ARG:HG3	2.05	0.57
1:D:124:ARG:NH1	1:D:158:GLU:HG2	2.19	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:228:ILE:O	1:F:232:LEU:HB2	2.05	0.57
1:D:200:MET:HG3	1:D:288:ILE:HD13	1.87	0.56
1:F:74:HIS:ND1	1:F:75:PRO:HD2	2.20	0.56
1:A:53:PHE:HE2	1:A:109:VAL:HG23	1.70	0.56
1:B:74:HIS:ND1	1:B:75:PRO:HD2	2.20	0.56
1:B:217:PHE:HD2	1:B:261:LYS:HG3	1.69	0.56
1:B:393:ARG:HG2	1:B:397:TYR:CE2	2.40	0.56
1:F:85:LEU:HB3	1:F:104:LYS:HE2	1.88	0.56
1:A:69:GLY:HA3	1:A:103:GLY:O	2.05	0.56
1:A:266:THR:OG1	1:A:268:VAL:HG23	2.04	0.56
1:C:59:GLN:HE22	1:C:133:ILE:CG2	2.18	0.56
1:E:124:ARG:NH1	1:E:158:GLU:HG2	2.18	0.56
1:E:266:THR:OG1	1:E:268:VAL:HG23	2.06	0.56
1:F:168:LEU:HD12	1:F:355:ASP:HB3	1.86	0.56
1:A:16:ALA:HB1	1:A:398:ILE:HG13	1.87	0.56
1:B:299:HIS:HD2	1:B:301:GLY:H	1.54	0.56
1:C:142:ALA:HB1	1:C:143:PRO:HD2	1.88	0.56
1:C:200:MET:HG2	1:C:205:ILE:HB	1.87	0.56
1:C:321:PRO:O	1:C:324:ASP:HB2	2.06	0.56
1:D:156:MET:HE3	1:D:174:LYS:HD2	1.88	0.56
1:C:32:ARG:HG2	1:C:32:ARG:HH11	1.70	0.56
1:E:321:PRO:O	1:E:324:ASP:HB2	2.05	0.56
1:E:393:ARG:HG2	1:E:397:TYR:HE2	1.69	0.56
1:B:36:VAL:HG22	1:B:58:VAL:CG2	2.33	0.56
1:E:88:TRP:HZ3	1:E:397:TYR:CE1	2.23	0.56
1:E:120:GLU:HA	1:E:154:TRP:CE3	2.41	0.56
1:C:120:GLU:HA	1:C:154:TRP:CE3	2.40	0.56
1:C:134:ILE:HG22	1:C:139:ASP:HB3	1.87	0.56
1:F:382:MET:O	1:F:385:LYS:HB3	2.06	0.56
1:D:393:ARG:HG2	1:D:397:TYR:CE2	2.39	0.56
1:E:36:VAL:HG22	1:E:58:VAL:CG2	2.33	0.56
1:E:124:ARG:HB3	1:E:158:GLU:HG3	1.88	0.56
1:E:382:MET:O	1:E:385:LYS:HB3	2.05	0.56
1:F:254:VAL:O	1:F:258:ILE:HG13	2.05	0.56
1:A:74:HIS:ND1	1:A:75:PRO:HD2	2.22	0.55
1:A:393:ARG:HG2	1:A:397:TYR:CE2	2.41	0.55
1:C:59:GLN:HE22	1:C:133:ILE:HG23	1.71	0.55
1:D:382:MET:O	1:D:385:LYS:HB3	2.06	0.55
1:E:120:GLU:O	1:E:124:ARG:HG3	2.05	0.55
1:F:32:ARG:NH1	1:F:32:ARG:HG2	2.20	0.55
1:C:69:GLY:HA3	1:C:103:GLY:O	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:32:ARG:NH1	1:D:32:ARG:HG2	2.21	0.55
1:B:38:ILE:HG23	1:B:56:TYR:CD2	2.42	0.55
1:C:124:ARG:HB3	1:C:158:GLU:HG3	1.87	0.55
1:D:59:GLN:HE22	1:D:133:ILE:HG23	1.71	0.55
1:D:354:GLN:HG2	1:D:360:PHE:HA	1.89	0.55
1:E:128:ARG:HD3	1:E:162:ASN:HD21	1.70	0.55
1:E:74:HIS:ND1	1:E:75:PRO:HD2	2.22	0.55
1:E:156:MET:HE3	1:E:174:LYS:HD2	1.88	0.55
1:A:326:ILE:O	1:A:330:ARG:HG3	2.06	0.55
1:C:382:MET:O	1:C:385:LYS:HB3	2.07	0.55
1:C:68:LYS:NZ	1:C:140:ILE:O	2.40	0.55
1:D:280:GLU:O	1:D:284:LEU:HD23	2.06	0.55
1:E:361:TRP:HB3	1:E:365:GLN:NE2	2.22	0.55
1:F:399:LEU:O	1:F:399:LEU:HD12	2.06	0.55
1:A:198:LEU:O	1:A:201:ASP:HB2	2.06	0.55
1:B:71:ILE:HD13	1:B:126:PHE:HE2	1.72	0.55
1:C:75:PRO:O	1:C:108:ARG:HD3	2.06	0.54
1:B:128:ARG:HH11	1:D:161:MET:HB3	1.72	0.54
1:D:124:ARG:HB3	1:D:158:GLU:HG3	1.88	0.54
1:C:393:ARG:HG2	1:C:397:TYR:CE2	2.42	0.54
1:E:354:GLN:HG2	1:E:360:PHE:HA	1.90	0.54
1:B:120:GLU:HA	1:B:154:TRP:CE3	2.43	0.54
1:B:167:VAL:HG12	1:B:169:GLY:H	1.72	0.54
1:B:277:THR:HG22	1:B:280:GLU:OE1	2.07	0.54
1:A:277:THR:HG22	1:A:280:GLU:OE1	2.08	0.54
1:D:59:GLN:HE21	1:D:139:ASP:HB2	1.73	0.54
1:A:167:VAL:O	1:A:168:LEU:HG	2.06	0.54
1:B:382:MET:O	1:B:385:LYS:HB3	2.08	0.54
1:E:246:ILE:HD11	1:E:257:LEU:HD21	1.90	0.54
1:F:32:ARG:HG2	1:F:32:ARG:HH11	1.73	0.54
1:D:88:TRP:HZ3	1:D:397:TYR:CE1	2.25	0.54
1:D:277:THR:HG22	1:D:280:GLU:OE1	2.08	0.54
1:E:59:GLN:HE21	1:E:139:ASP:CG	2.09	0.54
1:C:59:GLN:HE21	1:C:139:ASP:CG	2.11	0.54
1:C:74:HIS:ND1	1:C:75:PRO:HD2	2.22	0.54
1:D:32:ARG:HG2	1:D:32:ARG:HH11	1.73	0.54
1:A:197:GLY:HA2	1:A:200:MET:HE3	1.90	0.53
1:B:120:GLU:O	1:B:124:ARG:HG3	2.08	0.53
1:D:120:GLU:HA	1:D:154:TRP:CE3	2.43	0.53
1:C:59:GLN:NE2	1:C:139:ASP:HB2	2.23	0.53
1:C:120:GLU:O	1:C:124:ARG:HG3	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:59:GLN:NE2	1:D:139:ASP:HB2	2.24	0.53
1:B:277:THR:CG2	1:B:280:GLU:HB2	2.36	0.53
1:E:156:MET:CE	1:E:174:LYS:HD2	2.39	0.53
1:F:246:ILE:HD11	1:F:257:LEU:HD21	1.91	0.53
1:F:407:ALA:O	1:F:411:ARG:HG3	2.08	0.53
1:A:59:GLN:HE21	1:A:139:ASP:CB	2.21	0.53
1:C:254:VAL:O	1:C:258:ILE:HG13	2.08	0.53
1:F:266:THR:OG1	1:F:268:VAL:HG23	2.08	0.53
1:C:198:LEU:HD11	1:C:375:LYS:HA	1.91	0.53
1:D:246:ILE:HD11	1:D:257:LEU:HD21	1.90	0.53
1:A:277:THR:CG2	1:A:280:GLU:HB2	2.35	0.53
1:D:241:ASP:OD2	1:D:267:VAL:HG22	2.09	0.53
1:D:361:TRP:HB3	1:D:365:GLN:NE2	2.23	0.53
1:A:361:TRP:HB3	1:A:365:GLN:NE2	2.24	0.53
1:B:177:GLU:CD	1:B:177:GLU:H	2.12	0.53
1:D:120:GLU:O	1:D:124:ARG:HG3	2.09	0.53
1:F:361:TRP:HB3	1:F:365:GLN:NE2	2.24	0.53
1:F:142:ALA:HB1	1:F:143:PRO:HD2	1.91	0.52
1:B:268:VAL:O	1:B:269:THR:CB	2.56	0.52
1:D:283:GLU:O	1:D:307:LYS:HD2	2.10	0.52
1:A:228:ILE:O	1:A:232:LEU:HB2	2.09	0.52
1:C:59:GLN:HE21	1:C:139:ASP:HB2	1.73	0.52
1:A:321:PRO:O	1:A:324:ASP:HB2	2.08	0.52
1:F:36:VAL:HG22	1:F:58:VAL:CG2	2.31	0.52
1:F:124:ARG:HH11	1:F:158:GLU:HG2	1.75	0.52
1:F:152:ILE:HG23	1:F:174:LYS:HG2	1.91	0.52
1:A:177:GLU:CD	1:A:177:GLU:H	2.13	0.52
1:A:280:GLU:O	1:A:284:LEU:HD23	2.10	0.52
1:D:254:VAL:O	1:D:258:ILE:HG13	2.09	0.52
1:F:277:THR:HG22	1:F:280:GLU:OE1	2.10	0.52
1:A:317:GLY:N	1:A:318:PRO:CD	2.72	0.52
1:B:198:LEU:O	1:B:201:ASP:HB2	2.09	0.52
1:B:198:LEU:HD11	1:B:375:LYS:HA	1.91	0.52
1:C:246:ILE:HD11	1:C:257:LEU:HD21	1.90	0.52
1:E:268:VAL:O	1:E:269:THR:CB	2.56	0.52
1:C:36:VAL:HG22	1:C:58:VAL:CG2	2.34	0.52
1:C:156:MET:CE	1:C:174:LYS:HD2	2.39	0.52
1:C:268:VAL:O	1:C:269:THR:CB	2.58	0.52
1:E:142:ALA:HB1	1:E:143:PRO:HD2	1.91	0.52
1:F:59:GLN:HE22	1:F:133:ILE:HG23	1.75	0.52
1:D:298:ILE:HG23	1:D:306:ILE:HD11	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:268:VAL:O	1:F:269:THR:CB	2.57	0.52
1:A:98:LEU:O	1:A:100:PHE:N	2.41	0.52
1:B:62:VAL:CG1	1:B:62:VAL:O	2.58	0.52
1:D:98:LEU:O	1:D:100:PHE:N	2.36	0.52
1:E:59:GLN:OE1	1:E:133:ILE:HG23	2.09	0.52
1:E:194:VAL:HG11	1:E:374:MET:HB3	1.92	0.52
1:A:32:ARG:NH1	1:A:32:ARG:HG2	2.26	0.51
1:B:62:VAL:O	1:B:62:VAL:HG13	2.11	0.51
1:B:167:VAL:O	1:B:168:LEU:HG	2.10	0.51
1:D:277:THR:CG2	1:D:280:GLU:HB2	2.37	0.51
1:B:361:TRP:HB3	1:B:365:GLN:NE2	2.26	0.51
1:E:59:GLN:NE2	1:E:133:ILE:CG2	2.72	0.51
1:E:241:ASP:OD2	1:E:267:VAL:HG22	2.11	0.51
1:A:85:LEU:HB3	1:A:104:LYS:HE2	1.91	0.51
1:D:36:VAL:HG22	1:D:58:VAL:CG2	2.36	0.51
1:B:134:ILE:HG22	1:B:139:ASP:HB3	1.91	0.51
1:A:124:ARG:NH1	1:A:158:GLU:HG2	2.25	0.51
1:C:298:ILE:HG23	1:C:306:ILE:HD11	1.93	0.51
1:D:321:PRO:O	1:D:324:ASP:HB2	2.10	0.51
1:A:59:GLN:HE22	1:A:133:ILE:HG23	1.76	0.51
1:D:268:VAL:O	1:D:269:THR:CB	2.58	0.51
1:B:241:ASP:CG	1:B:266:THR:HB	2.31	0.51
1:C:128:ARG:HD3	1:C:162:ASN:HD21	1.76	0.51
1:C:241:ASP:OD2	1:C:267:VAL:HG22	2.11	0.51
1:B:254:VAL:O	1:B:258:ILE:HG13	2.11	0.51
1:A:68:LYS:NZ	1:A:140:ILE:O	2.44	0.51
1:A:156:MET:CE	1:A:174:LYS:HD2	2.41	0.51
1:B:59:GLN:NE2	1:B:133:ILE:CG2	2.73	0.51
1:A:299:HIS:HD2	1:A:301:GLY:H	1.59	0.50
1:B:166:THR:HG23	1:C:137:TYR:O	2.11	0.50
1:F:268:VAL:CG1	1:F:275:ARG:HD3	2.41	0.50
1:A:124:ARG:HB3	1:A:158:GLU:HG3	1.94	0.50
1:F:88:TRP:HZ3	1:F:397:TYR:HE1	1.59	0.50
1:E:59:GLN:NE2	1:E:139:ASP:HB2	2.27	0.50
1:E:167:VAL:HG12	1:E:169:GLY:H	1.76	0.50
1:E:393:ARG:HG2	1:E:397:TYR:CE2	2.46	0.50
1:E:59:GLN:NE2	1:E:133:ILE:HG23	2.26	0.50
1:E:163:VAL:HG12	1:E:165:HIS:H	1.76	0.50
1:B:59:GLN:NE2	1:B:133:ILE:HG23	2.26	0.50
1:C:277:THR:CG2	1:C:280:GLU:HB2	2.40	0.50
1:F:35:ARG:NH1	1:F:59:GLN:OE1	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:268:VAL:CG1	1:A:275:ARG:HD3	2.42	0.50
1:A:298:ILE:HG23	1:A:306:ILE:HD11	1.94	0.50
1:B:246:ILE:HD11	1:B:257:LEU:HD21	1.92	0.50
1:E:59:GLN:HE22	1:E:133:ILE:HG22	1.76	0.50
1:F:38:ILE:HG23	1:F:56:TYR:CE2	2.47	0.50
1:F:167:VAL:O	1:F:168:LEU:HG	2.11	0.50
1:A:254:VAL:O	1:A:258:ILE:HG13	2.12	0.49
1:E:98:LEU:O	1:E:100:PHE:N	2.39	0.49
1:F:134:ILE:HG22	1:F:139:ASP:HB3	1.93	0.49
1:C:71:ILE:O	1:C:144:ASP:HB3	2.12	0.49
1:F:69:GLY:HA3	1:F:103:GLY:O	2.11	0.49
1:F:124:ARG:HB3	1:F:158:GLU:HG3	1.94	0.49
1:B:85:LEU:HB3	1:B:104:LYS:HE2	1.93	0.49
1:B:247:TYR:O	1:B:248:ASN:HB2	2.13	0.49
1:C:128:ARG:HH11	1:F:161:MET:HB3	1.76	0.49
1:C:277:THR:HG22	1:C:280:GLU:OE1	2.13	0.49
1:C:280:GLU:O	1:C:284:LEU:HD23	2.12	0.49
1:D:241:ASP:CG	1:D:266:THR:HB	2.32	0.49
1:B:161:MET:HB3	1:D:128:ARG:HH11	1.76	0.49
1:F:128:ARG:HD3	1:F:162:ASN:HD21	1.77	0.49
1:F:197:GLY:O	1:F:200:MET:HB2	2.11	0.49
1:A:38:ILE:HG23	1:A:56:TYR:CD2	2.48	0.49
1:B:298:ILE:HG23	1:B:306:ILE:HD11	1.94	0.49
1:D:35:ARG:NH1	1:D:59:GLN:OE1	2.46	0.49
1:D:148:ASN:OD1	1:D:151:VAL:HG23	2.13	0.49
1:F:59:GLN:HE21	1:F:139:ASP:CB	2.25	0.49
1:F:68:LYS:NZ	1:F:140:ILE:O	2.45	0.49
1:F:280:GLU:O	1:F:284:LEU:HD23	2.11	0.49
1:B:92:LYS:HE2	1:B:342:ALA:HA	1.94	0.49
1:B:280:GLU:O	1:B:284:LEU:HD23	2.13	0.49
1:D:59:GLN:HE21	1:D:139:ASP:CB	2.25	0.49
1:A:407:ALA:O	1:A:411:ARG:HG3	2.13	0.49
1:C:317:GLY:N	1:C:318:PRO:CD	2.76	0.49
1:D:62:VAL:O	1:D:62:VAL:CG1	2.60	0.49
1:D:411:ARG:HB3	1:F:157:ASP:OD1	2.12	0.49
1:E:393:ARG:O	1:E:397:TYR:HD2	1.95	0.49
1:F:393:ARG:HG2	1:F:397:TYR:CE2	2.47	0.49
1:A:35:ARG:NH1	1:A:59:GLN:OE1	2.46	0.49
1:B:25:ASP:OD1	1:B:25:ASP:N	2.45	0.49
1:E:177:GLU:H	1:E:177:GLU:CD	2.15	0.49
1:F:321:PRO:O	1:F:324:ASP:HB2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:134:ILE:HG22	1:A:139:ASP:HB3	1.95	0.49
1:B:200:MET:SD	1:B:207:PRO:HA	2.53	0.48
1:C:59:GLN:HE21	1:C:139:ASP:CB	2.26	0.48
1:D:85:LEU:HB3	1:D:104:LYS:HE2	1.93	0.48
1:B:298:ILE:HD12	1:B:319:THR:HG22	1.95	0.48
1:C:167:VAL:O	1:C:168:LEU:HG	2.13	0.48
1:D:152:ILE:HG23	1:D:174:LYS:HG2	1.95	0.48
1:D:247:TYR:O	1:D:248:ASN:HB2	2.13	0.48
1:F:277:THR:CG2	1:F:280:GLU:HB2	2.37	0.48
1:A:241:ASP:OD2	1:A:267:VAL:HG22	2.13	0.48
1:C:177:GLU:H	1:C:177:GLU:CD	2.16	0.48
1:F:167:VAL:HG12	1:F:169:GLY:H	1.77	0.48
1:A:71:ILE:O	1:A:144:ASP:HB3	2.13	0.48
1:A:156:MET:HE3	1:A:174:LYS:HD2	1.94	0.48
1:C:152:ILE:HG23	1:C:174:LYS:HG2	1.96	0.48
1:E:268:VAL:CG1	1:E:275:ARG:HD3	2.43	0.48
1:B:59:GLN:HE21	1:B:139:ASP:CG	2.16	0.48
1:C:217:PHE:CD2	1:C:261:LYS:HG3	2.48	0.48
1:D:168:LEU:HD12	1:D:355:ASP:HB3	1.95	0.48
1:E:73:TYR:CD1	1:E:147:THR:HG22	2.48	0.48
1:F:98:LEU:O	1:F:100:PHE:N	2.39	0.48
1:B:40:GLU:HA	1:B:53:PHE:O	2.13	0.48
1:C:172:THR:HA	1:C:351:GLU:OE1	2.14	0.48
1:E:88:TRP:CZ3	1:E:397:TYR:HE1	2.26	0.48
1:B:32:ARG:HH11	1:B:32:ARG:CG	2.26	0.48
1:B:98:LEU:O	1:B:100:PHE:N	2.41	0.48
1:C:168:LEU:HD12	1:C:355:ASP:CG	2.34	0.48
1:D:156:MET:CE	1:D:174:LYS:HD2	2.44	0.48
1:B:241:ASP:OD2	1:B:267:VAL:HG22	2.14	0.48
1:C:218:GLY:O	1:C:222:GLN:HG3	2.14	0.48
1:D:69:GLY:HA3	1:D:103:GLY:O	2.13	0.48
1:F:298:ILE:HD12	1:F:319:THR:HG22	1.95	0.48
1:F:299:HIS:HD2	1:F:301:GLY:H	1.62	0.48
1:A:32:ARG:HG2	1:A:32:ARG:HH11	1.78	0.47
1:D:98:LEU:C	1:D:100:PHE:H	2.15	0.47
1:A:128:ARG:HD3	1:A:162:ASN:HD21	1.79	0.47
1:B:32:ARG:HD3	1:E:52:VAL:HG11	1.96	0.47
1:B:152:ILE:HG23	1:B:174:LYS:HG2	1.96	0.47
1:F:59:GLN:HE22	1:F:133:ILE:CG2	2.28	0.47
1:F:168:LEU:HD12	1:F:168:LEU:O	2.13	0.47
1:B:268:VAL:CG1	1:B:275:ARG:HD3	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:298:ILE:HD12	1:D:319:THR:HG22	1.97	0.47
1:F:194:VAL:HG11	1:F:374:MET:HB3	1.97	0.47
1:A:283:GLU:O	1:A:307:LYS:HD2	2.15	0.47
1:B:321:PRO:O	1:B:324:ASP:HB2	2.14	0.47
1:D:73:TYR:CD1	1:D:147:THR:HG22	2.48	0.47
1:B:361:TRP:CD1	1:B:361:TRP:N	2.82	0.47
1:F:241:ASP:CG	1:F:266:THR:HB	2.35	0.47
1:A:32:ARG:HD3	1:F:52:VAL:HG11	1.95	0.47
1:D:59:GLN:HE21	1:D:139:ASP:CG	2.17	0.47
1:A:25:ASP:N	1:A:25:ASP:OD1	2.47	0.47
1:A:71:ILE:HD13	1:A:126:PHE:HE2	1.79	0.47
1:C:168:LEU:HD12	1:C:168:LEU:O	2.15	0.47
1:C:182:LYS:O	1:C:366:VAL:HG11	2.15	0.47
1:C:258:ILE:O	1:C:262:LYS:HG3	2.15	0.47
1:F:241:ASP:OD2	1:F:267:VAL:HG22	2.15	0.47
1:C:337:ASP:OD2	1:C:337:ASP:N	2.45	0.47
1:A:98:LEU:C	1:A:100:PHE:H	2.18	0.47
1:A:243:ARG:HD3	1:A:266:THR:CG2	2.22	0.47
1:B:52:VAL:HG11	1:E:32:ARG:HD3	1.97	0.47
1:D:157:ASP:OD1	1:E:411:ARG:HB3	2.15	0.47
1:E:337:ASP:N	1:E:337:ASP:OD2	2.47	0.47
1:D:59:GLN:NE2	1:D:133:ILE:HG23	2.30	0.47
1:E:32:ARG:HH11	1:E:32:ARG:CG	2.24	0.47
1:E:98:LEU:C	1:E:100:PHE:H	2.17	0.47
1:F:173:GLY:H	1:F:351:GLU:CD	2.19	0.47
1:D:217:PHE:CD2	1:D:261:LYS:HG3	2.48	0.46
1:D:399:LEU:O	1:D:403:ARG:HG3	2.15	0.46
1:D:167:VAL:O	1:D:168:LEU:HG	2.14	0.46
1:E:299:HIS:HD2	1:E:301:GLY:H	1.63	0.46
1:F:291:PRO:HB2	1:F:318:PRO:HB3	1.97	0.46
1:C:84:ALA:O	1:C:87:PHE:HB3	2.16	0.46
1:D:268:VAL:CG1	1:D:275:ARG:HD3	2.45	0.46
1:D:299:HIS:HD2	1:D:301:GLY:H	1.64	0.46
1:C:268:VAL:CG1	1:C:275:ARG:HD3	2.44	0.46
1:D:258:ILE:O	1:D:262:LYS:HG3	2.15	0.46
1:D:288:ILE:HG13	1:D:310:ALA:HB3	1.97	0.46
1:D:337:ASP:OD2	1:D:337:ASP:N	2.47	0.46
1:D:393:ARG:CG	1:D:397:TYR:HE2	2.27	0.46
1:A:142:ALA:HB1	1:A:143:PRO:HD2	1.97	0.46
1:A:277:THR:HG23	1:A:280:GLU:CB	2.38	0.46
1:F:399:LEU:O	1:F:403:ARG:HG3	2.14	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:59:GLN:HE21	1:A:139:ASP:CG	2.17	0.46
1:A:70:GLY:HA2	1:A:142:ALA:O	2.16	0.46
1:A:163:VAL:HG12	1:A:165:HIS:H	1.81	0.46
1:C:203:LEU:HD23	1:C:309:LYS:HB2	1.98	0.46
1:C:299:HIS:HD2	1:C:301:GLY:H	1.64	0.46
1:D:197:GLY:O	1:D:200:MET:HB2	2.16	0.46
1:F:177:GLU:CD	1:F:177:GLU:H	2.19	0.46
1:F:288:ILE:HG13	1:F:310:ALA:HB3	1.97	0.46
1:C:241:ASP:CG	1:C:266:THR:HB	2.36	0.46
1:D:59:GLN:NE2	1:D:133:ILE:CG2	2.79	0.46
1:D:167:VAL:HG12	1:D:169:GLY:H	1.80	0.46
1:D:252:PHE:HB3	1:D:257:LEU:HD12	1.98	0.46
1:E:320:THR:HB	1:E:321:PRO:HD2	1.98	0.46
1:E:393:ARG:CG	1:E:397:TYR:HE2	2.28	0.46
1:A:62:VAL:O	1:A:62:VAL:CG1	2.64	0.46
1:B:317:GLY:N	1:B:318:PRO:CD	2.79	0.46
1:C:52:VAL:HG11	1:D:32:ARG:HD3	1.98	0.46
1:D:142:ALA:HB1	1:D:143:PRO:HD2	1.97	0.46
1:A:268:VAL:O	1:A:269:THR:CB	2.60	0.46
1:B:35:ARG:NH1	1:B:59:GLN:OE1	2.49	0.46
1:B:124:ARG:HB3	1:B:158:GLU:CG	2.46	0.46
1:C:252:PHE:HB3	1:C:257:LEU:HD12	1.98	0.46
1:D:393:ARG:O	1:D:397:TYR:HD2	1.99	0.46
1:E:59:GLN:HE21	1:E:139:ASP:CB	2.29	0.46
1:E:247:TYR:O	1:E:248:ASN:HB2	2.15	0.46
1:B:377:ALA:O	1:B:381:VAL:HG23	2.16	0.46
1:E:168:LEU:HD12	1:E:168:LEU:O	2.16	0.46
1:E:248:ASN:OD1	1:E:250:GLU:HB2	2.16	0.46
1:E:407:ALA:O	1:E:411:ARG:HG3	2.16	0.46
1:D:44:ARG:NH1	1:D:44:ARG:HG3	2.30	0.45
1:E:71:ILE:O	1:E:144:ASP:HB3	2.16	0.45
1:E:148:ASN:OD1	1:E:151:VAL:HG23	2.16	0.45
1:E:352:TRP:CZ2	1:E:356:LEU:HD11	2.51	0.45
1:F:361:TRP:CD1	1:F:361:TRP:N	2.83	0.45
1:C:163:VAL:HG12	1:C:165:HIS:H	1.80	0.45
1:D:62:VAL:O	1:D:62:VAL:HG13	2.16	0.45
1:F:25:ASP:N	1:F:25:ASP:OD1	2.49	0.45
1:C:247:TYR:O	1:C:248:ASN:HB2	2.15	0.45
1:D:177:GLU:CD	1:D:177:GLU:H	2.19	0.45
1:D:399:LEU:O	1:D:399:LEU:HD12	2.16	0.45
1:F:98:LEU:C	1:F:100:PHE:H	2.19	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:317:GLY:N	1:F:318:PRO:CD	2.79	0.45
1:A:59:GLN:HE22	1:A:133:ILE:CG2	2.29	0.45
1:A:197:GLY:O	1:A:200:MET:HB2	2.15	0.45
1:B:124:ARG:CB	1:B:158:GLU:HG3	2.45	0.45
1:E:44:ARG:NH1	1:E:44:ARG:HG3	2.31	0.45
1:E:59:GLN:HE21	1:E:139:ASP:HB2	1.81	0.45
1:F:217:PHE:CD2	1:F:261:LYS:HG3	2.47	0.45
1:A:121:ARG:HE	1:A:121:ARG:HB2	1.62	0.45
1:A:152:ILE:HG23	1:A:174:LYS:HG2	1.98	0.45
1:A:399:LEU:O	1:A:403:ARG:HG3	2.17	0.45
1:D:194:VAL:HG11	1:D:374:MET:HB3	1.98	0.45
1:E:152:ILE:HG23	1:E:174:LYS:HG2	1.97	0.45
1:F:121:ARG:HE	1:F:121:ARG:HB2	1.64	0.45
1:F:173:GLY:N	1:F:351:GLU:OE1	2.50	0.45
1:A:52:VAL:HG11	1:F:32:ARG:HD3	1.99	0.45
1:A:167:VAL:HG12	1:A:169:GLY:H	1.81	0.45
1:A:241:ASP:CG	1:A:266:THR:HB	2.37	0.45
1:B:71:ILE:O	1:B:144:ASP:HB3	2.16	0.45
1:B:128:ARG:HD3	1:B:162:ASN:HD21	1.82	0.45
1:B:337:ASP:OD2	1:B:337:ASP:N	2.50	0.45
1:E:26:LEU:HD22	1:E:409:LYS:HE2	1.98	0.45
1:E:51:GLU:HB3	1:E:53:PHE:HE1	1.80	0.45
1:A:44:ARG:NH1	1:A:44:ARG:HG3	2.31	0.45
1:A:73:TYR:CD1	1:A:147:THR:HG22	2.52	0.45
1:C:406:TYR:OH	1:C:410:LYS:HE2	2.16	0.45
1:E:198:LEU:HD11	1:E:375:LYS:HA	1.98	0.45
1:F:156:MET:HE3	1:F:174:LYS:HD2	1.99	0.45
1:B:44:ARG:NH1	1:B:44:ARG:HG3	2.32	0.45
1:B:98:LEU:C	1:B:100:PHE:H	2.19	0.45
1:E:124:ARG:HB3	1:E:158:GLU:CG	2.47	0.45
1:F:59:GLN:HE21	1:F:139:ASP:CG	2.18	0.45
1:A:92:LYS:HE2	1:A:342:ALA:HA	1.99	0.45
1:B:148:ASN:OD1	1:B:151:VAL:HG23	2.16	0.45
1:C:35:ARG:NH1	1:C:59:GLN:OE1	2.50	0.45
1:D:74:HIS:O	1:D:108:ARG:HA	2.17	0.45
1:D:350:PHE:CZ	1:D:369:ALA:HB1	2.52	0.45
1:A:74:HIS:O	1:A:108:ARG:HA	2.16	0.45
1:B:203:LEU:HD23	1:B:309:LYS:HB2	1.99	0.45
1:F:62:VAL:HG13	1:F:62:VAL:O	2.17	0.45
1:B:393:ARG:CG	1:B:397:TYR:HE2	2.29	0.44
1:D:71:ILE:O	1:D:144:ASP:HB3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:121:ARG:HE	1:E:121:ARG:HB2	1.64	0.44
1:E:217:PHE:CD2	1:E:261:LYS:HG3	2.51	0.44
1:F:163:VAL:HG12	1:F:165:HIS:H	1.82	0.44
1:C:59:GLN:NE2	1:C:133:ILE:HG23	2.32	0.44
1:C:247:TYR:CZ	1:C:249:PRO:HD3	2.52	0.44
1:D:40:GLU:HA	1:D:53:PHE:O	2.18	0.44
1:A:36:VAL:HG22	1:A:58:VAL:CG2	2.37	0.44
1:C:98:LEU:C	1:C:100:PHE:H	2.19	0.44
1:F:117:ARG:HA	1:F:117:ARG:HD3	1.73	0.44
1:A:260:TYR:CZ	1:A:270:TYR:HA	2.52	0.44
1:B:258:ILE:O	1:B:262:LYS:HG3	2.17	0.44
1:C:85:LEU:HB3	1:C:104:LYS:HE2	2.00	0.44
1:E:399:LEU:HD12	1:E:399:LEU:O	2.16	0.44
1:A:361:TRP:N	1:A:361:TRP:CD1	2.85	0.44
1:B:34:LYS:HD3	1:B:35:ARG:HG3	1.99	0.44
1:C:98:LEU:O	1:C:100:PHE:N	2.40	0.44
1:B:59:GLN:NE2	1:B:139:ASP:HB2	2.32	0.44
1:B:142:ALA:HB1	1:B:143:PRO:HD2	2.00	0.44
1:D:203:LEU:HD23	1:D:309:LYS:HB2	2.00	0.44
1:E:35:ARG:NH1	1:E:59:GLN:OE1	2.50	0.44
1:F:57:ARG:HD2	1:F:57:ARG:HA	1.83	0.44
1:F:59:GLN:NE2	1:F:133:ILE:HG23	2.33	0.44
1:A:28:GLU:OE2	1:A:28:GLU:HA	2.18	0.44
1:A:57:ARG:HD2	1:A:104:LYS:O	2.18	0.44
1:C:167:VAL:HG12	1:C:169:GLY:H	1.82	0.44
1:E:25:ASP:OD1	1:E:25:ASP:N	2.49	0.44
1:E:317:GLY:N	1:E:318:PRO:CD	2.80	0.44
1:F:26:LEU:O	1:F:29:VAL:HG22	2.18	0.44
1:F:148:ASN:OD1	1:F:151:VAL:HG23	2.17	0.44
1:C:407:ALA:O	1:C:411:ARG:HG3	2.17	0.44
1:F:124:ARG:HB3	1:F:158:GLU:CG	2.48	0.44
1:D:277:THR:HG23	1:D:280:GLU:CB	2.42	0.44
1:E:28:GLU:HA	1:E:28:GLU:OE2	2.18	0.44
1:E:190:ARG:HD2	1:E:370:LEU:HD23	2.00	0.44
1:F:29:VAL:HG23	1:F:30:LEU:HD23	2.00	0.44
1:F:336:PRO:HD3	1:F:392:MET:HB3	2.00	0.44
1:A:40:GLU:OE1	1:A:54:THR:OG1	2.25	0.43
1:A:124:ARG:HB3	1:A:158:GLU:CG	2.47	0.43
1:B:57:ARG:HD2	1:B:57:ARG:HA	1.77	0.43
1:B:59:GLN:OE1	1:B:133:ILE:HG23	2.18	0.43
1:B:74:HIS:O	1:B:108:ARG:HA	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:57:ARG:HD2	1:C:57:ARG:HA	1.76	0.43
1:C:260:TYR:CD1	1:C:270:TYR:HD1	2.36	0.43
1:D:124:ARG:HB3	1:D:158:GLU:CG	2.48	0.43
1:E:57:ARG:HD2	1:E:57:ARG:HA	1.76	0.43
1:A:168:LEU:HD12	1:A:168:LEU:O	2.18	0.43
1:B:38:ILE:HG23	1:B:56:TYR:CE2	2.52	0.43
1:B:156:MET:CE	1:B:174:LYS:HD2	2.48	0.43
1:B:197:GLY:HA2	1:B:200:MET:HE3	2.00	0.43
1:C:40:GLU:HG3	1:D:32:ARG:HB3	1.99	0.43
1:D:25:ASP:OD1	1:D:25:ASP:N	2.51	0.43
1:D:84:ALA:O	1:D:87:PHE:HB3	2.18	0.43
1:D:163:VAL:HG12	1:D:165:HIS:H	1.83	0.43
1:D:178:LEU:HD12	1:D:178:LEU:HA	1.82	0.43
1:E:298:ILE:HD12	1:E:319:THR:HG22	2.01	0.43
1:D:121:ARG:HE	1:D:121:ARG:HB2	1.58	0.43
1:F:275:ARG:HE	1:F:275:ARG:HB2	1.49	0.43
1:A:117:ARG:HA	1:A:117:ARG:HD3	1.76	0.43
1:C:291:PRO:HB2	1:C:318:PRO:HB3	2.00	0.43
1:A:33:PRO:HA	1:A:60:HIS:CD2	2.54	0.43
1:A:246:ILE:HD11	1:A:257:LEU:HD21	1.99	0.43
1:B:291:PRO:HB2	1:B:318:PRO:HB3	2.01	0.43
1:D:29:VAL:HG23	1:D:30:LEU:HD23	1.99	0.43
1:D:57:ARG:HA	1:D:57:ARG:HD2	1.78	0.43
1:A:268:VAL:C	1:A:270:TYR:H	2.21	0.43
1:C:70:GLY:HA2	1:C:142:ALA:O	2.19	0.43
1:D:128:ARG:HD3	1:D:162:ASN:HD21	1.82	0.43
1:E:38:ILE:HG23	1:E:56:TYR:CD2	2.53	0.43
1:E:275:ARG:HE	1:E:275:ARG:HB2	1.50	0.43
1:F:156:MET:CE	1:F:174:LYS:HD2	2.49	0.43
1:F:298:ILE:HG23	1:F:306:ILE:CD1	2.49	0.43
1:A:72:ARG:HG3	1:A:144:ASP:OD1	2.19	0.43
1:A:217:PHE:CD2	1:A:261:LYS:HG3	2.47	0.43
1:C:145:VAL:O	1:C:146:ASN:HB2	2.17	0.43
1:D:88:TRP:CZ3	1:D:397:TYR:HE1	2.34	0.43
1:F:172:THR:HA	1:F:351:GLU:OE1	2.19	0.43
1:A:161:MET:HB3	1:E:128:ARG:HH11	1.84	0.43
1:A:178:LEU:HD12	1:A:178:LEU:HA	1.84	0.43
1:C:38:ILE:HG23	1:C:56:TYR:CD2	2.53	0.43
1:C:51:GLU:HB3	1:C:53:PHE:HE1	1.83	0.43
1:F:247:TYR:O	1:F:248:ASN:HB2	2.18	0.43
1:A:200:MET:SD	1:A:207:PRO:HA	2.59	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:393:ARG:O	1:B:397:TYR:HD2	2.02	0.43
1:C:92:LYS:HE2	1:C:342:ALA:HA	2.01	0.43
1:D:190:ARG:HD2	1:D:370:LEU:HD23	2.01	0.43
1:D:275:ARG:HE	1:D:275:ARG:HB2	1.51	0.43
1:E:243:ARG:HD3	1:E:266:THR:CG2	2.25	0.43
1:F:168:LEU:HD12	1:F:355:ASP:CB	2.48	0.43
1:F:296:GLY:HA2	1:F:320:THR:HG23	2.01	0.43
1:C:22:LEU:O	1:C:23:GLU:C	2.55	0.43
1:D:32:ARG:HH11	1:D:32:ARG:CG	2.32	0.43
1:D:268:VAL:C	1:D:270:TYR:H	2.21	0.43
1:E:125:ARG:O	1:E:129:GLU:HG2	2.19	0.43
1:E:145:VAL:O	1:E:146:ASN:HB2	2.19	0.43
1:F:44:ARG:NH1	1:F:44:ARG:HG3	2.33	0.43
1:F:302:ASN:OD1	1:F:302:ASN:N	2.50	0.43
1:A:288:ILE:HG13	1:A:310:ALA:HB3	2.01	0.42
1:C:260:TYR:CZ	1:C:270:TYR:HA	2.53	0.42
1:E:70:GLY:HA2	1:E:142:ALA:O	2.19	0.42
1:E:74:HIS:O	1:E:108:ARG:HA	2.19	0.42
1:A:62:VAL:O	1:A:62:VAL:HG13	2.20	0.42
1:C:73:TYR:CD1	1:C:147:THR:HG22	2.54	0.42
1:C:178:LEU:HD12	1:C:178:LEU:HA	1.73	0.42
1:D:361:TRP:CD1	1:D:361:TRP:N	2.86	0.42
1:F:70:GLY:HA2	1:F:142:ALA:O	2.18	0.42
1:A:59:GLN:NE2	1:A:133:ILE:HG23	2.33	0.42
1:B:69:GLY:HA3	1:B:103:GLY:O	2.18	0.42
1:E:51:GLU:HB3	1:E:53:PHE:CE1	2.54	0.42
1:F:268:VAL:C	1:F:270:TYR:H	2.21	0.42
1:C:44:ARG:NH1	1:C:44:ARG:HG3	2.35	0.42
1:D:38:ILE:HG23	1:D:56:TYR:CD2	2.54	0.42
1:B:88:TRP:CZ3	1:B:397:TYR:HE1	2.31	0.42
1:C:124:ARG:HB3	1:C:158:GLU:CG	2.50	0.42
1:C:399:LEU:O	1:C:399:LEU:HD12	2.19	0.42
1:D:327:LEU:CD2	1:D:332:ILE:HD12	2.50	0.42
1:E:72:ARG:HG3	1:E:144:ASP:OD1	2.19	0.42
1:F:34:LYS:HD3	1:F:35:ARG:HG3	2.01	0.42
1:A:298:ILE:HD12	1:A:319:THR:HG22	2.00	0.42
1:A:247:TYR:O	1:A:248:ASN:HB2	2.20	0.42
1:B:138:ASN:N	1:B:138:ASN:HD22	2.18	0.42
1:C:261:LYS:HD3	1:C:261:LYS:O	2.19	0.42
1:E:34:LYS:HD3	1:E:35:ARG:HG3	2.02	0.42
1:E:197:GLY:O	1:E:200:MET:HB2	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:200:MET:HG3	1:E:288:ILE:HD13	1.96	0.42
1:E:258:ILE:O	1:E:262:LYS:HG3	2.19	0.42
1:F:248:ASN:OD1	1:F:250:GLU:HB2	2.19	0.42
1:A:38:ILE:HG23	1:A:56:TYR:CE2	2.55	0.42
1:A:65:GLY:HA3	1:A:99:PRO:O	2.20	0.42
1:B:260:TYR:CZ	1:B:270:TYR:HA	2.54	0.42
1:B:350:PHE:CZ	1:B:369:ALA:HB1	2.55	0.42
1:D:145:VAL:O	1:D:146:ASN:HB2	2.20	0.42
1:E:246:ILE:HG13	1:E:252:PHE:CZ	2.55	0.42
1:E:260:TYR:CZ	1:E:270:TYR:HA	2.54	0.42
1:B:260:TYR:CD1	1:B:270:TYR:HD1	2.38	0.42
1:B:117:ARG:HA	1:B:117:ARG:HD3	1.80	0.42
1:B:268:VAL:C	1:B:270:TYR:H	2.23	0.42
1:C:5:LEU:HD13	1:C:5:LEU:HA	1.85	0.42
1:C:361:TRP:CD1	1:C:361:TRP:N	2.88	0.42
1:F:62:VAL:O	1:F:62:VAL:CG1	2.67	0.42
1:A:203:LEU:HD23	1:A:309:LYS:HB2	2.00	0.41
1:A:260:TYR:CD1	1:A:270:TYR:HD1	2.37	0.41
1:D:327:LEU:HD23	1:D:332:ILE:HD12	2.00	0.41
1:F:203:LEU:HD23	1:F:309:LYS:HB2	2.01	0.41
1:A:145:VAL:O	1:A:146:ASN:HB2	2.20	0.41
1:A:363:LEU:HD12	1:A:363:LEU:HA	1.86	0.41
1:D:70:GLY:HA2	1:D:142:ALA:O	2.20	0.41
1:E:377:ALA:O	1:E:381:VAL:HG23	2.19	0.41
1:F:152:ILE:CG2	1:F:174:LYS:HG2	2.50	0.41
1:B:121:ARG:HE	1:B:121:ARG:HB2	1.64	0.41
1:B:252:PHE:HB3	1:B:257:LEU:HD12	2.01	0.41
1:C:25:ASP:N	1:C:25:ASP:OD1	2.53	0.41
1:C:248:ASN:OD1	1:C:250:GLU:HB2	2.20	0.41
1:E:167:VAL:O	1:E:168:LEU:HG	2.20	0.41
1:F:190:ARG:HD2	1:F:370:LEU:HD23	2.00	0.41
1:F:248:ASN:ND2	1:F:272:LYS:HD3	2.35	0.41
1:A:211:THR:OG1	1:A:286:VAL:HG12	2.20	0.41
1:A:296:GLY:HA2	1:A:320:THR:HG23	2.03	0.41
1:B:70:GLY:HA2	1:B:142:ALA:O	2.20	0.41
1:C:59:GLN:OE1	1:C:133:ILE:HG23	2.20	0.41
1:E:124:ARG:CB	1:E:158:GLU:HG3	2.50	0.41
1:E:288:ILE:HG13	1:E:310:ALA:HB3	2.03	0.41
1:B:298:ILE:HB	1:B:319:THR:HG22	2.02	0.41
1:C:32:ARG:HD3	1:D:52:VAL:HG11	2.03	0.41
1:C:253:ASP:OD2	1:C:256:GLU:HB2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:26:LEU:O	1:E:29:VAL:HG22	2.20	0.41
1:E:62:VAL:O	1:E:62:VAL:CG1	2.65	0.41
1:E:62:VAL:O	1:E:62:VAL:HG13	2.19	0.41
1:E:268:VAL:C	1:E:270:TYR:H	2.23	0.41
1:F:212:VAL:HG12	1:F:213:ALA:N	2.35	0.41
1:F:252:PHE:HB3	1:F:257:LEU:HD12	2.01	0.41
1:F:334:VAL:O	1:F:334:VAL:HG12	2.20	0.41
1:B:288:ILE:HG13	1:B:310:ALA:HB3	2.01	0.41
1:D:66:PRO:HD2	1:D:99:PRO:O	2.20	0.41
1:D:296:GLY:HA2	1:D:320:THR:HG23	2.01	0.41
1:F:260:TYR:CZ	1:F:270:TYR:HA	2.55	0.41
1:A:78:THR:O	1:A:79:LEU:C	2.59	0.41
1:A:291:PRO:HB2	1:A:318:PRO:HB3	2.03	0.41
1:E:29:VAL:HG23	1:E:30:LEU:HD23	2.01	0.41
1:E:84:ALA:O	1:E:87:PHE:HB3	2.20	0.41
1:E:218:GLY:O	1:E:222:GLN:HG3	2.20	0.41
1:F:198:LEU:HD11	1:F:375:LYS:HA	2.02	0.41
1:B:399:LEU:O	1:B:403:ARG:HG3	2.21	0.41
1:D:59:GLN:OE1	1:D:133:ILE:HG23	2.21	0.41
1:D:260:TYR:CZ	1:D:270:TYR:HA	2.55	0.41
1:D:317:GLY:N	1:D:318:PRO:CD	2.83	0.41
1:E:252:PHE:HB3	1:E:257:LEU:HD12	2.03	0.41
1:A:138:ASN:HD22	1:A:138:ASN:N	2.19	0.41
1:C:26:LEU:O	1:C:29:VAL:HG22	2.21	0.41
1:C:203:LEU:CD2	1:C:309:LYS:HB2	2.51	0.41
1:C:248:ASN:ND2	1:C:272:LYS:HD3	2.36	0.41
1:C:268:VAL:C	1:C:270:TYR:H	2.24	0.41
1:D:261:LYS:HE3	1:D:266:THR:HA	2.03	0.41
1:E:248:ASN:ND2	1:E:272:LYS:HD3	2.35	0.41
1:E:260:TYR:CD1	1:E:270:TYR:HD1	2.39	0.41
1:E:336:PRO:HD3	1:E:392:MET:HB3	2.02	0.41
1:F:84:ALA:O	1:F:87:PHE:HB3	2.21	0.41
1:F:337:ASP:OD2	1:F:337:ASP:N	2.53	0.41
1:A:44:ARG:HG3	1:A:44:ARG:HH11	1.85	0.41
1:A:138:ASN:N	1:A:138:ASN:ND2	2.69	0.41
1:B:29:VAL:HG23	1:B:30:LEU:HD23	2.01	0.41
1:C:29:VAL:HG23	1:C:30:LEU:HD23	2.02	0.41
1:E:139:ASP:O	1:E:141:PRO:HD3	2.21	0.41
1:E:157:ASP:OD1	1:F:411:ARG:HB3	2.21	0.41
1:E:203:LEU:HD23	1:E:309:LYS:HB2	2.01	0.41
1:E:232:LEU:HA	1:E:232:LEU:HD23	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:257:LEU:HD22	1:E:267:VAL:HG12	2.02	0.41
1:A:380:ASP:HB3	1:A:399:LEU:HD21	2.03	0.40
1:D:197:GLY:HA2	1:D:200:MET:HE3	2.03	0.40
1:E:298:ILE:HG23	1:E:306:ILE:CD1	2.49	0.40
1:C:92:LYS:O	1:C:95:VAL:HG13	2.21	0.40
1:C:376:GLY:O	1:C:377:ALA:C	2.59	0.40
1:D:97:ASN:HD22	1:D:97:ASN:HA	1.68	0.40
1:E:280:GLU:O	1:E:284:LEU:HD23	2.21	0.40
1:E:296:GLY:O	1:E:297:ALA:C	2.59	0.40
1:E:302:ASN:OD1	1:E:302:ASN:N	2.51	0.40
1:F:71:ILE:CD1	1:F:126:PHE:HE2	2.34	0.40
1:A:258:ILE:O	1:A:262:LYS:HG3	2.22	0.40
1:C:53:PHE:HE2	1:C:109:VAL:CG2	2.34	0.40
1:D:125:ARG:O	1:D:129:GLU:HG2	2.21	0.40
1:F:71:ILE:O	1:F:144:ASP:HB3	2.21	0.40
1:B:145:VAL:O	1:B:146:ASN:HB2	2.21	0.40
1:C:32:ARG:HH11	1:C:32:ARG:CG	2.30	0.40
1:D:218:GLY:O	1:D:222:GLN:HG3	2.21	0.40
1:F:32:ARG:HH11	1:F:32:ARG:CG	2.31	0.40
1:A:36:VAL:CG1	1:F:38:ILE:HD12	2.51	0.40
1:B:16:ALA:HB1	1:B:398:ILE:HG13	2.04	0.40
1:B:51:GLU:HB3	1:B:53:PHE:HE1	1.87	0.40
1:B:138:ASN:N	1:B:138:ASN:ND2	2.69	0.40
1:C:59:GLN:NE2	1:C:133:ILE:CG2	2.83	0.40
1:D:232:LEU:HD23	1:D:232:LEU:HA	1.96	0.40
1:D:393:ARG:O	1:D:397:TYR:CD2	2.74	0.40
1:E:44:ARG:HG3	1:E:44:ARG:HH11	1.86	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	406/415 (98%)	363 (89%)	39 (10%)	4 (1%)	15	45
1	B	406/415 (98%)	364 (90%)	36 (9%)	6 (2%)	10	34
1	C	406/415 (98%)	362 (89%)	40 (10%)	4 (1%)	15	45
1	D	406/415 (98%)	371 (91%)	30 (7%)	5 (1%)	13	40
1	E	406/415 (98%)	366 (90%)	35 (9%)	5 (1%)	13	40
1	F	406/415 (98%)	369 (91%)	33 (8%)	4 (1%)	15	45
All	All	2436/2490 (98%)	2195 (90%)	213 (9%)	28 (1%)	14	42

All (28) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	187	ALA
1	A	265	GLY
1	B	187	ALA
1	B	265	GLY
1	C	187	ALA
1	C	265	GLY
1	D	187	ALA
1	D	265	GLY
1	E	187	ALA
1	E	265	GLY
1	F	187	ALA
1	F	265	GLY
1	B	358	SER
1	B	248	ASN
1	D	248	ASN
1	D	358	SER
1	E	248	ASN
1	B	141	PRO
1	C	248	ASN
1	D	99	PRO
1	E	99	PRO
1	F	248	ASN
1	A	248	ASN
1	C	99	PRO
1	E	141	PRO
1	F	99	PRO
1	B	99	PRO
1	A	99	PRO

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	332/338 (98%)	272 (82%)	60 (18%)	1	5
1	B	332/338 (98%)	271 (82%)	61 (18%)	1	5
1	C	332/338 (98%)	271 (82%)	61 (18%)	1	5
1	D	332/338 (98%)	271 (82%)	61 (18%)	1	5
1	E	332/338 (98%)	271 (82%)	61 (18%)	1	5
1	F	332/338 (98%)	271 (82%)	61 (18%)	1	5
All	All	1992/2028 (98%)	1627 (82%)	365 (18%)	1	5

All (365) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	4	SER
1	A	5	LEU
1	A	12	GLN
1	A	15	ARG
1	A	21	ASP
1	A	29	VAL
1	A	32	ARG
1	A	35	ARG
1	A	50	VAL
1	A	62	VAL
1	A	68	LYS
1	A	72	ARG
1	A	77	VAL
1	A	78	THR
1	A	95	VAL
1	A	97	ASN
1	A	104	LYS
1	A	108	ARG
1	A	113	LYS
1	A	117	ARG
1	A	120	GLU
1	A	121	ARG

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Mol	Chain	Res	Type
1	A	127	PHE
1	A	128	ARG
1	A	132	VAL
1	A	133	ILE
1	A	138	ASN
1	A	152	ILE
1	A	161	MET
1	A	163	VAL
1	A	166	THR
1	A	168	LEU
1	A	172	THR
1	A	178	LEU
1	A	193	LYS
1	A	202	VAL
1	A	209	LYS
1	A	217	PHE
1	A	226	LEU
1	A	240	SER
1	A	241	ASP
1	A	242	SER
1	A	246	ILE
1	A	254	VAL
1	A	259	ARG
1	A	261	LYS
1	A	266	THR
1	A	267	VAL
1	A	268	VAL
1	A	275	ARG
1	A	277	THR
1	A	284	LEU
1	A	286	VAL
1	A	295	GLU
1	A	305	ARG
1	A	307	LYS
1	A	309	LYS
1	A	324	ASP
1	A	339	LEU
1	A	382	MET
1	B	4	SER
1	B	5	LEU
1	B	12	GLN
1	B	15	ARG

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Mol	Chain	Res	Type
1	B	21	ASP
1	B	29	VAL
1	B	32	ARG
1	B	50	VAL
1	B	62	VAL
1	B	68	LYS
1	B	72	ARG
1	B	77	VAL
1	B	78	THR
1	B	95	VAL
1	B	97	ASN
1	B	104	LYS
1	B	108	ARG
1	B	113	LYS
1	B	117	ARG
1	B	120	GLU
1	B	121	ARG
1	B	127	PHE
1	B	128	ARG
1	B	132	VAL
1	B	133	ILE
1	B	138	ASN
1	B	152	ILE
1	B	161	MET
1	B	163	VAL
1	B	166	THR
1	B	168	LEU
1	B	172	THR
1	B	178	LEU
1	B	193	LYS
1	B	202	VAL
1	B	209	LYS
1	B	215	GLN
1	B	217	PHE
1	B	226	LEU
1	B	229	SER
1	B	240	SER
1	B	241	ASP
1	B	242	SER
1	B	254	VAL
1	B	259	ARG
1	B	261	LYS

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Mol	Chain	Res	Type
1	B	266	THR
1	B	267	VAL
1	B	268	VAL
1	B	275	ARG
1	B	277	THR
1	B	284	LEU
1	B	286	VAL
1	B	295	GLU
1	B	305	ARG
1	B	307	LYS
1	B	309	LYS
1	B	322	GLU
1	B	324	ASP
1	B	339	LEU
1	B	382	MET
1	C	4	SER
1	C	5	LEU
1	C	12	GLN
1	C	15	ARG
1	C	21	ASP
1	C	29	VAL
1	C	32	ARG
1	C	35	ARG
1	C	50	VAL
1	C	59	GLN
1	C	62	VAL
1	C	72	ARG
1	C	77	VAL
1	C	78	THR
1	C	95	VAL
1	C	97	ASN
1	C	104	LYS
1	C	108	ARG
1	C	113	LYS
1	C	117	ARG
1	C	120	GLU
1	C	121	ARG
1	C	127	PHE
1	C	128	ARG
1	C	132	VAL
1	C	152	ILE
1	C	156	MET

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Mol	Chain	Res	Type
1	C	161	MET
1	C	163	VAL
1	C	166	THR
1	C	168	LEU
1	C	172	THR
1	C	178	LEU
1	C	193	LYS
1	C	202	VAL
1	C	209	LYS
1	C	215	GLN
1	C	217	PHE
1	C	226	LEU
1	C	240	SER
1	C	241	ASP
1	C	242	SER
1	C	254	VAL
1	C	259	ARG
1	C	261	LYS
1	C	266	THR
1	C	267	VAL
1	C	268	VAL
1	C	275	ARG
1	C	277	THR
1	C	284	LEU
1	C	286	VAL
1	C	295	GLU
1	C	302	ASN
1	C	305	ARG
1	C	307	LYS
1	C	309	LYS
1	C	322	GLU
1	C	324	ASP
1	C	358	SER
1	C	382	MET
1	D	4	SER
1	D	5	LEU
1	D	12	GLN
1	D	15	ARG
1	D	21	ASP
1	D	29	VAL
1	D	32	ARG
1	D	35	ARG

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Mol	Chain	Res	Type
1	D	50	VAL
1	D	59	GLN
1	D	62	VAL
1	D	68	LYS
1	D	72	ARG
1	D	77	VAL
1	D	78	THR
1	D	95	VAL
1	D	97	ASN
1	D	104	LYS
1	D	108	ARG
1	D	113	LYS
1	D	117	ARG
1	D	120	GLU
1	D	121	ARG
1	D	127	PHE
1	D	128	ARG
1	D	132	VAL
1	D	133	ILE
1	D	152	ILE
1	D	156	MET
1	D	161	MET
1	D	163	VAL
1	D	166	THR
1	D	168	LEU
1	D	172	THR
1	D	178	LEU
1	D	193	LYS
1	D	209	LYS
1	D	215	GLN
1	D	217	PHE
1	D	226	LEU
1	D	229	SER
1	D	240	SER
1	D	241	ASP
1	D	242	SER
1	D	254	VAL
1	D	259	ARG
1	D	261	LYS
1	D	266	THR
1	D	267	VAL
1	D	268	VAL

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Mol	Chain	Res	Type
1	D	275	ARG
1	D	277	THR
1	D	284	LEU
1	D	286	VAL
1	D	288	ILE
1	D	295	GLU
1	D	305	ARG
1	D	307	LYS
1	D	322	GLU
1	D	324	ASP
1	D	382	MET
1	E	4	SER
1	E	5	LEU
1	E	12	GLN
1	E	15	ARG
1	E	21	ASP
1	E	29	VAL
1	E	32	ARG
1	E	35	ARG
1	E	50	VAL
1	E	59	GLN
1	E	62	VAL
1	E	68	LYS
1	E	72	ARG
1	E	77	VAL
1	E	78	THR
1	E	95	VAL
1	E	97	ASN
1	E	104	LYS
1	E	108	ARG
1	E	113	LYS
1	E	117	ARG
1	E	120	GLU
1	E	121	ARG
1	E	127	PHE
1	E	128	ARG
1	E	132	VAL
1	E	152	ILE
1	E	156	MET
1	E	161	MET
1	E	163	VAL
1	E	166	THR

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Mol	Chain	Res	Type
1	E	168	LEU
1	E	172	THR
1	E	178	LEU
1	E	193	LYS
1	E	202	VAL
1	E	209	LYS
1	E	217	PHE
1	E	226	LEU
1	E	240	SER
1	E	241	ASP
1	E	242	SER
1	E	246	ILE
1	E	254	VAL
1	E	259	ARG
1	E	261	LYS
1	E	264	HIS
1	E	266	THR
1	E	267	VAL
1	E	268	VAL
1	E	275	ARG
1	E	277	THR
1	E	284	LEU
1	E	286	VAL
1	E	288	ILE
1	E	295	GLU
1	E	304	GLU
1	E	305	ARG
1	E	309	LYS
1	E	324	ASP
1	E	382	MET
1	F	4	SER
1	F	5	LEU
1	F	12	GLN
1	F	15	ARG
1	F	21	ASP
1	F	32	ARG
1	F	35	ARG
1	F	50	VAL
1	F	62	VAL
1	F	68	LYS
1	F	72	ARG
1	F	77	VAL

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Mol	Chain	Res	Type
1	F	78	THR
1	F	95	VAL
1	F	97	ASN
1	F	104	LYS
1	F	108	ARG
1	F	113	LYS
1	F	117	ARG
1	F	121	ARG
1	F	127	PHE
1	F	128	ARG
1	F	132	VAL
1	F	133	ILE
1	F	138	ASN
1	F	152	ILE
1	F	156	MET
1	F	161	MET
1	F	163	VAL
1	F	166	THR
1	F	168	LEU
1	F	172	THR
1	F	178	LEU
1	F	193	LYS
1	F	209	LYS
1	F	215	GLN
1	F	217	PHE
1	F	226	LEU
1	F	229	SER
1	F	240	SER
1	F	241	ASP
1	F	242	SER
1	F	254	VAL
1	F	259	ARG
1	F	261	LYS
1	F	266	THR
1	F	267	VAL
1	F	268	VAL
1	F	275	ARG
1	F	277	THR
1	F	284	LEU
1	F	286	VAL
1	F	288	ILE
1	F	295	GLU

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Mol	Chain	Res	Type
1	F	302	ASN
1	F	305	ARG
1	F	307	LYS
1	F	309	LYS
1	F	322	GLU
1	F	324	ASP
1	F	382	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (60) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	12	GLN
1	A	61	ASN
1	A	97	ASN
1	A	131	GLN
1	A	138	ASN
1	A	162	ASN
1	A	165	HIS
1	A	278	ASN
1	A	299	HIS
1	A	365	GLN
1	B	12	GLN
1	B	61	ASN
1	B	97	ASN
1	B	131	GLN
1	B	138	ASN
1	B	162	ASN
1	B	165	HIS
1	B	278	ASN
1	B	299	HIS
1	B	365	GLN
1	C	12	GLN
1	C	61	ASN
1	C	97	ASN
1	C	131	GLN
1	C	138	ASN
1	C	162	ASN
1	C	165	HIS
1	C	278	ASN
1	C	299	HIS
1	C	365	GLN
1	D	12	GLN

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Mol	Chain	Res	Type
1	D	61	ASN
1	D	97	ASN
1	D	131	GLN
1	D	138	ASN
1	D	162	ASN
1	D	165	HIS
1	D	278	ASN
1	D	299	HIS
1	D	365	GLN
1	E	12	GLN
1	E	61	ASN
1	E	97	ASN
1	E	131	GLN
1	E	138	ASN
1	E	162	ASN
1	E	165	HIS
1	E	278	ASN
1	E	299	HIS
1	E	365	GLN
1	F	12	GLN
1	F	61	ASN
1	F	97	ASN
1	F	131	GLN
1	F	138	ASN
1	F	162	ASN
1	F	165	HIS
1	F	278	ASN
1	F	299	HIS
1	F	365	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates [i](#)

EDS was not executed - this section is therefore empty.

6.4 Ligands [i](#)

EDS was not executed - this section is therefore empty.

6.5 Other polymers [i](#)

EDS was not executed - this section is therefore empty.