Full wwPDB X-ray Structure Validation Report ⓘ

Jan 31, 2016 – 11:08 PM GMT

PDB ID	:	1WIP
Title	:	STRUCTURE OF T-CELL SURFACE GLYCOPROTEIN CD4, MONOCLINIC CRYSTAL FORM
Authors	:	Wu, H.; Kwong, P.D.; Hendrickson, W.A.
Deposited on	:	1996-12-18
Resolution	:	4.00 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
http://wwpdb.org/validation/2016/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:

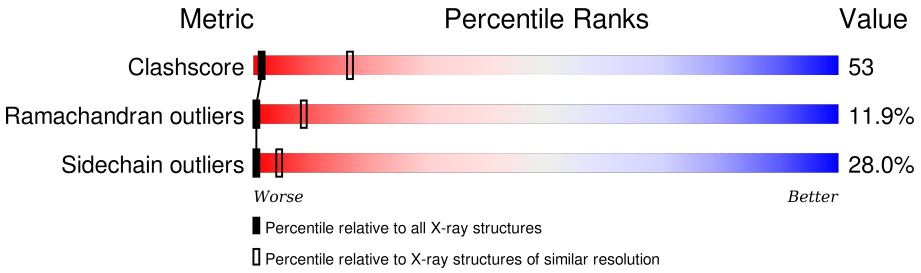
MolProbity	:	4.02b-467
Mogul	:	1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Percentile statistics	:	20151230.v01 (using entries in the PDB archive December 30th 2015)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	trunk26865

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 4.00 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	102246	1052 (4.40-3.60)
Ramachandran outliers	100387	1005 (4.40-3.60)
Sidechain outliers	100360	1013 (4.42-3.58)

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 on the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	363	23% 51% 22% ·
1	B	363	25% 50% 22% ·

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 5624 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 T-CELL SURFACE GLYCOPROTEIN CD4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	363	Total	C	N	O	S	0	0	0
			2812	1784	479	539	10			
1	B	363	Total	C	N	O	S	0	0	0
			2812	1784	479	539	10			

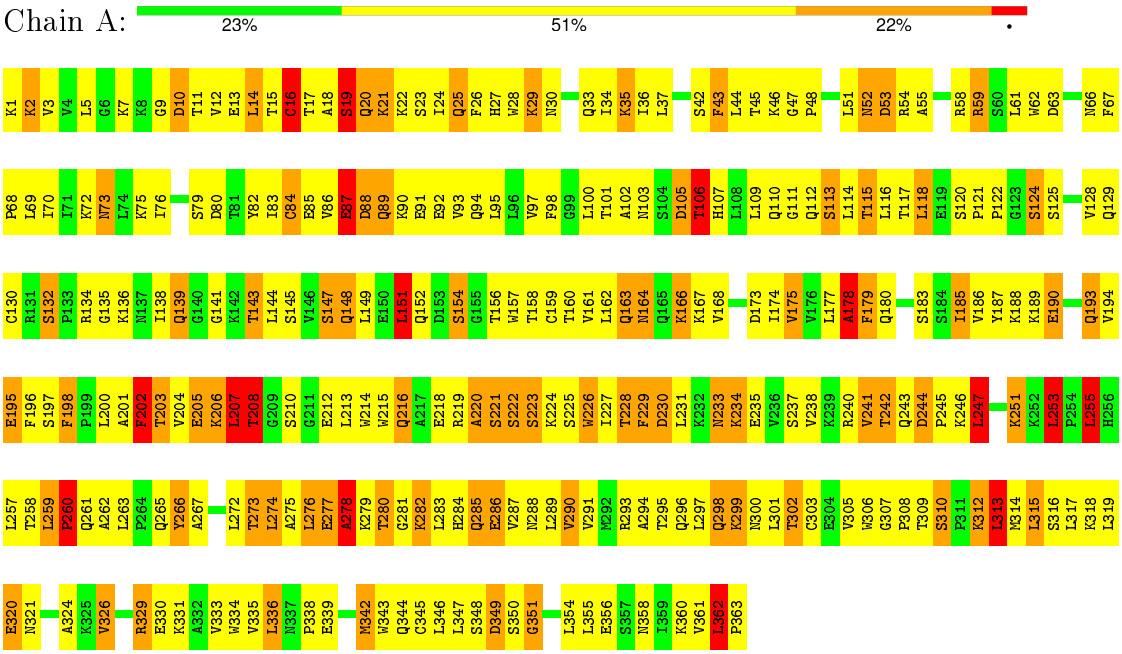
3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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.

Note EDS was not executed.

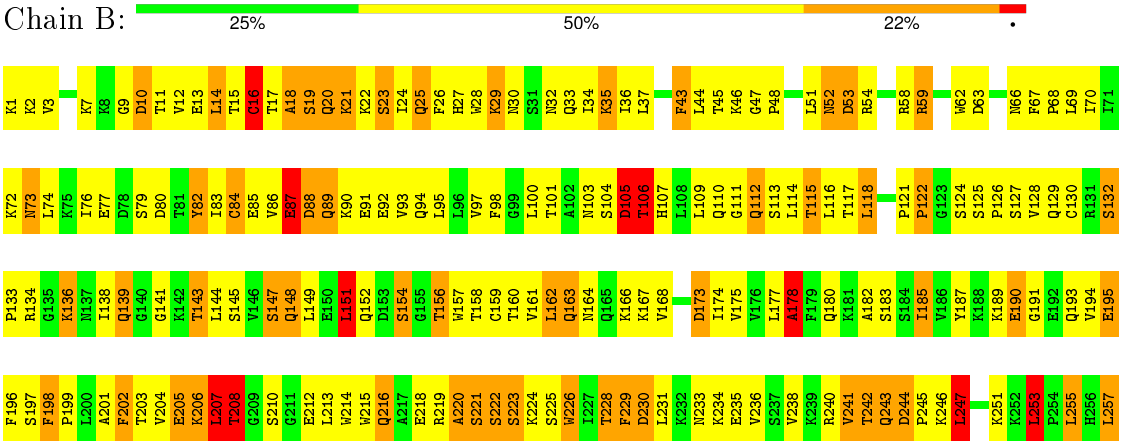
- Molecule 1: T-CELL SURFACE GLYCOPROTEIN CD4

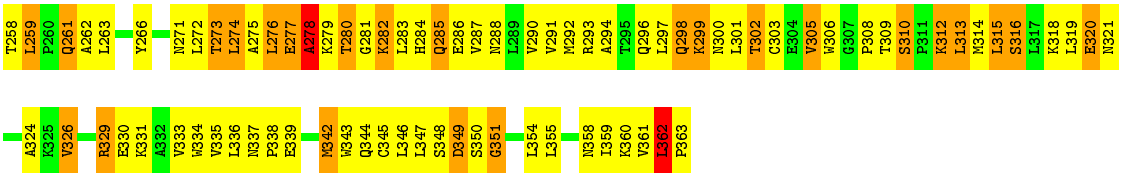
Chain A:



- Molecule 1: T-CELL SURFACE GLYCOPROTEIN CD4

Chain B:




T258
L259
P260
Q261
A262
L263
Y266
N271
L272
T273
L274
A275
L276
E277
A278
K279
T280
G281
K282
L283
H284
Q285
E286
V287
N288
L289
V290
V291
M292
R293
A294
T295
Q296
L297
Q298
K299
N300
L301
T302
C303
E304
V305
W306
G307
P308
T309
S310
P311
K312
L313
M314
L315
S316
L317
K318
L319
E320
N321
A324
K325
V326
R329
E330
K331
A332
V333
W334
V335
L336
N337
P338
E339
M342
W343
Q344
C345
L346
L347
S348
D349
S350
G351
L354
L355
N358
I359
K360
V361
L362
P363

4 Data and refinement statistics (i)

Xtriage (Phenix) and EDS were not executed - this section will therefore be incomplete.

Property	Value	Source
Space group	P 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	100.50Å 123.40Å 100.60Å 90.00° 103.40° 90.00°	Depositor
Resolution (Å)	8.00 – 4.00	Depositor
% Data completeness (in resolution range)	76.0 (8.00-4.00)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	X-PLOR	Depositor
R, R_{free}	0.452 , 0.427	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	5624	wwPDB-VP
Average B, all atoms (Å^2)	20.0	wwPDB-VP

5 Model quality

5.1 Standard geometry

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	A	0.73	2/2861 (0.1%)	1.11	14/3871 (0.4%)
1	B	0.68	1/2861 (0.0%)	1.02	10/3871 (0.3%)
All	All	0.71	3/5722 (0.1%)	1.07	24/7742 (0.3%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	1
All	All	0	2

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	178	ALA	C-N	10.32	1.57	1.34
1	A	202	PHE	C-O	-5.16	1.13	1.23
1	A	290	VAL	CB-CG1	5.07	1.63	1.52

All (24) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	178	ALA	O-C-N	-23.02	85.88	122.70
1	B	178	ALA	O-C-N	-9.52	107.47	122.70
1	B	208	THR	N-CA-C	8.38	133.62	111.00
1	A	208	THR	N-CA-C	7.53	131.33	111.00
1	A	277	GLU	O-C-N	7.00	133.91	122.70
1	B	277	GLU	O-C-N	6.93	133.78	122.70
1	B	247	LEU	CA-CB-CG	6.90	131.16	115.30
1	A	87	GLU	N-CA-C	6.82	129.40	111.00
1	B	87	GLU	N-CA-C	6.69	129.07	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	247	LEU	CA-CB-CG	6.57	130.40	115.30
1	B	362	LEU	N-CA-C	6.07	127.39	111.00
1	A	313	LEU	CA-CB-CG	6.06	129.23	115.30
1	A	202	PHE	N-CA-C	5.79	126.64	111.00
1	B	106	THR	N-CA-C	5.61	126.15	111.00
1	B	105	ASP	N-CA-C	5.56	126.02	111.00
1	A	106	THR	N-CA-C	5.52	125.89	111.00
1	A	255	LEU	CA-CB-CG	5.48	127.90	115.30
1	A	277	GLU	CA-C-N	-5.47	105.16	117.20
1	B	277	GLU	CA-C-N	-5.47	105.17	117.20
1	A	278	ALA	O-C-N	5.33	131.23	122.70
1	B	278	ALA	O-C-N	5.29	131.17	122.70
1	A	105	ASP	N-CA-C	5.22	125.08	111.00
1	A	231	LEU	CA-CB-CG	5.18	127.20	115.30
1	A	242	THR	N-CA-C	-5.14	97.13	111.00

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	178	ALA	Mainchain
1	B	178	ALA	Mainchain

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	2812	0	2873	296	19
1	B	2812	0	2873	316	19
All	All	5624	0	5746	602	19

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 53.

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)
1:B:112:GLN:OE1	1:B:281:GLY:CA	1.68	1.41
1:A:109:LEU:HD23	1:A:283:LEU:CD2	1.67	1.22
1:B:112:GLN:OE1	1:B:281:GLY:HA3	1.44	1.14
1:B:276:LEU:HD23	1:B:276:LEU:N	1.63	1.11
1:A:276:LEU:CD2	1:A:276:LEU:H	1.63	1.09
1:B:112:GLN:OE1	1:B:281:GLY:HA2	1.32	1.08
1:A:245:PRO:HB3	1:A:266:TYR:HE2	1.09	1.08
1:B:276:LEU:CD2	1:B:276:LEU:H	1.63	1.08
1:B:104:SER:HA	1:B:279:LYS:NZ	1.67	1.08
1:A:276:LEU:N	1:A:276:LEU:HD23	1.63	1.07
1:B:178:ALA:HA	1:B:283:LEU:HD22	1.20	1.07
1:A:234:LYS:HA	1:A:253:LEU:HG	1.35	1.05
1:B:314:MET:SD	1:B:329:ARG:HG3	1.96	1.05
1:A:318:LYS:HE3	1:A:320:GLU:HA	1.41	1.02
1:B:234:LYS:HA	1:B:253:LEU:HG	1.39	1.02
1:B:318:LYS:HE3	1:B:320:GLU:HA	1.39	1.02
1:B:276:LEU:HD23	1:B:276:LEU:H	0.84	1.00
1:A:276:LEU:H	1:A:276:LEU:HD23	0.84	1.00
1:B:177:LEU:HD22	1:B:283:LEU:HD11	1.41	0.98
1:A:245:PRO:HB3	1:A:266:TYR:CE2	1.99	0.98
1:A:276:LEU:CD2	1:A:276:LEU:N	2.19	0.98
1:A:109:LEU:HD23	1:A:283:LEU:HD21	1.45	0.96
1:A:314:MET:SD	1:A:329:ARG:HG3	2.05	0.96
1:B:276:LEU:CD2	1:B:276:LEU:N	2.19	0.94
1:A:309:THR:HB	1:A:313:LEU:HD11	1.46	0.94
1:B:104:SER:HA	1:B:279:LYS:HZ2	1.32	0.93
1:A:178:ALA:C	1:A:179:PHE:O	2.06	0.93
1:B:178:ALA:HA	1:B:283:LEU:CD2	1.98	0.93
1:A:218:GLU:HG2	1:A:219:ARG:HD2	1.51	0.92
1:A:344:GLN:HE22	1:B:344:GLN:HE22	1.19	0.89
1:B:178:ALA:CA	1:B:283:LEU:HD22	2.03	0.89
1:B:245:PRO:HG3	1:B:266:TYR:HE2	1.39	0.86
1:A:54:ARG:HD3	1:A:73:ASN:HB2	1.56	0.85
1:B:263:LEU:HB2	1:B:266:TYR:CE1	2.11	0.85
1:A:37:LEU:HA	1:A:46:LYS:HA	1.58	0.85
1:A:245:PRO:CB	1:A:266:TYR:HE2	1.89	0.85
1:B:124:SER:HB3	1:B:163:GLN:HE22	1.42	0.84
1:B:109:LEU:HD21	1:B:276:LEU:HD23	1.58	0.83
1:B:218:GLU:HG2	1:B:219:ARG:HD2	1.59	0.83
1:B:109:LEU:HD21	1:B:276:LEU:CD2	2.09	0.83
1:B:303:CYS:HG	1:B:345:CYS:HG	1.25	0.83
1:B:37:LEU:HA	1:B:46:LYS:HA	1.59	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:178:ALA:O	1:A:179:PHE:O	1.94	0.82
1:B:313:LEU:HB3	1:B:348:SER:O	1.79	0.82
1:B:319:LEU:CD1	1:B:321:ASN:HB2	2.10	0.81
1:B:107:HIS:CE1	1:B:205:GLU:OE1	2.34	0.81
1:A:111:GLY:O	1:A:148:GLN:HA	1.80	0.81
1:A:315:LEU:HD21	1:A:345:CYS:SG	2.21	0.81
1:A:213:LEU:HB2	1:A:272:LEU:HD12	1.63	0.81
1:A:244:ASP:HB3	1:A:245:PRO:CD	2.12	0.80
1:A:2:LYS:HB2	1:A:93:VAL:HG13	1.62	0.80
1:A:224:LYS:HA	1:A:226:TRP:CH2	2.17	0.79
1:A:59:ARG:O	1:A:62:TRP:HB2	1.82	0.79
1:B:130:CYS:SG	1:B:144:LEU:HD11	2.23	0.79
1:A:110:GLN:HE22	1:A:178:ALA:HB1	1.47	0.79
1:B:309:THR:HB	1:B:313:LEU:HD11	1.64	0.79
1:A:245:PRO:HG2	1:A:247:LEU:HD21	1.63	0.79
1:B:33:GLN:OE1	1:B:33:GLN:HA	1.82	0.79
1:B:54:ARG:HD3	1:B:73:ASN:HB2	1.64	0.78
1:A:244:ASP:HB3	1:A:245:PRO:HD2	1.66	0.78
1:A:109:LEU:HD23	1:A:283:LEU:CG	2.12	0.78
1:A:109:LEU:HD23	1:A:283:LEU:HD23	1.62	0.77
1:A:344:GLN:HE22	1:B:344:GLN:NE2	1.82	0.77
1:B:244:ASP:HB3	1:B:245:PRO:HD3	1.66	0.77
1:B:160:THR:HG21	1:B:167:LYS:HE3	1.67	0.77
1:B:245:PRO:HG3	1:B:266:TYR:CE2	2.20	0.77
1:B:59:ARG:O	1:B:62:TRP:HB2	1.86	0.76
1:A:76:ILE:H	1:A:76:ILE:HD12	1.49	0.76
1:A:29:LYS:HD3	1:A:33:GLN:OE1	1.87	0.75
1:B:245:PRO:HG2	1:B:247:LEU:HD21	1.67	0.75
1:A:162:LEU:HD23	1:A:163:GLN:N	2.02	0.75
1:B:76:ILE:H	1:B:76:ILE:HD12	1.50	0.75
1:B:277:GLU:HG3	1:B:278:ALA:N	2.02	0.74
1:B:213:LEU:HB2	1:B:272:LEU:HD12	1.66	0.74
1:A:277:GLU:HG3	1:A:278:ALA:N	2.02	0.74
1:B:162:LEU:HD23	1:B:163:GLN:N	2.01	0.74
1:A:185:ILE:HG12	1:A:288:ASN:HB2	1.70	0.74
1:A:344:GLN:NE2	1:B:344:GLN:HE22	1.86	0.74
1:A:160:THR:HG21	1:A:167:LYS:HE3	1.68	0.74
1:B:224:LYS:HA	1:B:226:TRP:CH2	2.23	0.74
1:B:314:MET:SD	1:B:329:ARG:CG	2.75	0.73
1:B:214:TRP:CE3	1:B:226:TRP:CZ3	2.76	0.73
1:A:124:SER:HB2	1:A:163:GLN:HE22	1.52	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:110:GLN:NE2	1:A:178:ALA:HB1	2.03	0.73
1:B:112:GLN:NE2	1:B:280:THR:O	2.22	0.71
1:B:109:LEU:CD2	1:B:276:LEU:CD2	2.68	0.71
1:B:299:LYS:HD3	1:B:299:LYS:H	1.55	0.71
1:A:36:ILE:O	1:A:46:LYS:HG3	1.91	0.71
1:B:315:LEU:HD21	1:B:345:CYS:SG	2.30	0.71
1:A:294:ALA:HA	1:A:303:CYS:SG	2.31	0.71
1:B:204:VAL:HG12	1:B:205:GLU:H	1.54	0.70
1:B:89:GLN:HG2	1:B:90:LYS:N	2.05	0.70
1:A:178:ALA:O	1:A:179:PHE:C	2.21	0.70
1:B:245:PRO:CG	1:B:266:TYR:HE2	2.05	0.70
1:A:310:SER:OG	1:A:312:LYS:HB2	1.92	0.70
1:B:107:HIS:HE1	1:B:205:GLU:OE1	1.72	0.70
1:B:245:PRO:HB3	1:B:266:TYR:CE2	2.26	0.70
1:B:1:LYS:HD2	1:B:92:GLU:HB2	1.74	0.69
1:B:107:HIS:ND1	1:B:278:ALA:CB	2.55	0.69
1:A:187:TYR:CE2	1:A:354:LEU:HD22	2.27	0.69
1:B:261:GLN:HE21	1:B:263:LEU:HD11	1.56	0.69
1:B:213:LEU:HD12	1:B:271:ASN:O	1.92	0.69
1:A:214:TRP:CE3	1:A:226:TRP:CZ3	2.80	0.69
1:A:193:GLN:HA	1:A:260:PRO:O	1.91	0.69
1:B:263:LEU:HB2	1:B:266:TYR:CD1	2.28	0.69
1:A:130:CYS:HA	1:A:159:CYS:HA	1.75	0.69
1:B:187:TYR:CE2	1:B:354:LEU:HD22	2.28	0.68
1:A:313:LEU:HB3	1:A:348:SER:O	1.94	0.68
1:B:290:VAL:HG13	1:B:306:TRP:O	1.92	0.68
1:A:177:LEU:HD23	1:A:178:ALA:N	2.09	0.68
1:A:210:SER:HB3	1:A:230:ASP:HA	1.73	0.68
1:A:85:GLU:HG2	1:A:90:LYS:HG2	1.74	0.68
1:A:17:THR:HG22	1:A:18:ALA:H	1.59	0.68
1:B:104:SER:HA	1:B:279:LYS:HZ3	1.54	0.68
1:A:224:LYS:HA	1:A:226:TRP:CZ2	2.29	0.68
1:A:89:GLN:HG2	1:A:90:LYS:N	2.09	0.68
1:A:110:GLN:NE2	1:A:178:ALA:CB	2.57	0.67
1:B:35:LYS:O	1:B:47:GLY:HA3	1.94	0.67
1:B:79:SER:HA	1:B:95:LEU:O	1.95	0.67
1:A:177:LEU:HD23	1:A:178:ALA:H	1.59	0.67
1:B:319:LEU:HD12	1:B:321:ASN:HB2	1.77	0.67
1:A:344:GLN:NE2	1:B:344:GLN:NE2	2.42	0.67
1:B:205:GLU:CG	1:B:208:THR:HG21	2.25	0.67
1:A:1:LYS:HD2	1:A:92:GLU:HB2	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:113:SER:HA	1:B:147:SER:O	1.95	0.66
1:B:111:GLY:O	1:B:148:GLN:HA	1.95	0.66
1:B:205:GLU:HG2	1:B:208:THR:HG21	1.76	0.66
1:B:130:CYS:HG	1:B:159:CYS:HG	1.36	0.66
1:A:223:SER:O	1:A:224:LYS:HB2	1.95	0.66
1:A:27:HIS:CD2	1:A:85:GLU:HB2	2.31	0.66
1:A:109:LEU:CD2	1:A:283:LEU:CD2	2.62	0.66
1:A:294:ALA:CA	1:A:303:CYS:SG	2.84	0.66
1:A:245:PRO:HG2	1:A:247:LEU:CD2	2.26	0.65
1:A:309:THR:HB	1:A:313:LEU:CD1	2.24	0.65
1:B:109:LEU:HD23	1:B:276:LEU:HD21	1.78	0.65
1:A:204:VAL:HG12	1:A:205:GLU:H	1.61	0.65
1:A:130:CYS:HG	1:A:159:CYS:HG	0.68	0.65
1:A:2:LYS:HG3	1:A:92:GLU:O	1.98	0.64
1:B:109:LEU:CD2	1:B:276:LEU:HD21	2.27	0.64
1:B:43:PHE:CD1	1:B:43:PHE:N	2.64	0.64
1:B:21:LYS:HG2	1:B:21:LYS:O	1.97	0.64
1:A:116:LEU:HB2	1:A:144:LEU:O	1.97	0.64
1:A:208:THR:O	1:A:276:LEU:CB	2.46	0.63
1:B:185:ILE:HG13	1:B:288:ASN:HB2	1.78	0.63
1:A:286:GLU:HG3	1:A:287:VAL:N	2.13	0.63
1:A:305:VAL:O	1:A:331:LYS:HE3	1.97	0.63
1:A:318:LYS:HG3	1:A:320:GLU:H	1.62	0.63
1:A:314:MET:SD	1:A:329:ARG:HD2	2.39	0.63
1:A:319:LEU:CD1	1:A:321:ASN:HB2	2.29	0.63
1:A:43:PHE:CD1	1:A:43:PHE:N	2.63	0.63
1:A:261:GLN:HE21	1:A:263:LEU:HD11	1.63	0.63
1:B:245:PRO:HB3	1:B:266:TYR:HE2	1.64	0.62
1:A:229:PHE:HE2	1:A:255:LEU:HD21	1.63	0.62
1:B:208:THR:O	1:B:276:LEU:CB	2.48	0.62
1:A:98:PHE:HZ	1:A:163:GLN:HE21	1.46	0.62
1:B:310:SER:OG	1:B:312:LYS:HB2	1.99	0.62
1:B:83:ILE:HA	1:B:91:GLU:O	1.99	0.62
1:B:210:SER:HB3	1:B:230:ASP:HA	1.82	0.62
1:B:362:LEU:HB2	1:B:363:PRO:HD3	1.82	0.62
1:A:130:CYS:HG	1:A:159:CYS:CB	2.12	0.62
1:B:305:VAL:O	1:B:331:LYS:HE3	2.00	0.62
1:A:59:ARG:HG2	1:A:62:TRP:CZ3	2.34	0.62
1:A:113:SER:HA	1:A:147:SER:O	1.99	0.62
1:A:305:VAL:CG1	1:A:309:THR:HG21	2.30	0.62
1:A:314:MET:SD	1:A:329:ARG:CG	2.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:318:LYS:HG3	1:B:320:GLU:H	1.64	0.61
1:B:224:LYS:HA	1:B:226:TRP:CZ2	2.35	0.61
1:A:196:PHE:HE2	1:A:259:LEU:HD12	1.63	0.61
1:A:265:GLN:HG2	1:A:266:TYR:CE1	2.35	0.61
1:A:303:CYS:HG	1:A:345:CYS:HG	1.48	0.61
1:B:263:LEU:HB2	1:B:266:TYR:HE1	1.65	0.61
1:A:338:PRO:HB2	1:A:361:VAL:HG21	1.81	0.61
1:A:347:LEU:HB3	1:A:355:LEU:HB2	1.81	0.61
1:B:106:THR:HG22	1:B:107:HIS:ND1	2.16	0.61
1:B:223:SER:O	1:B:224:LYS:HB2	2.01	0.61
1:B:36:ILE:O	1:B:46:LYS:HG3	2.00	0.61
1:A:28:TRP:NE1	1:A:69:LEU:HB2	2.16	0.60
1:B:244:ASP:CB	1:B:245:PRO:HD3	2.31	0.60
1:B:124:SER:HB3	1:B:163:GLN:NE2	2.15	0.60
1:B:121:PRO:HG2	1:B:124:SER:HB2	1.81	0.60
1:A:265:GLN:HG2	1:A:266:TYR:CD1	2.36	0.60
1:A:177:LEU:O	1:A:178:ALA:HB2	2.00	0.60
1:B:314:MET:SD	1:B:329:ARG:HD2	2.41	0.60
1:B:43:PHE:HD1	1:B:43:PHE:N	2.00	0.60
1:A:43:PHE:HD1	1:A:43:PHE:N	1.98	0.60
1:A:83:ILE:HA	1:A:91:GLU:O	2.01	0.60
1:B:24:ILE:HD12	1:B:87:GLU:HB2	1.83	0.60
1:A:114:LEU:O	1:A:145:SER:HB3	2.02	0.60
1:B:130:CYS:HA	1:B:159:CYS:HA	1.82	0.59
1:A:106:THR:HG22	1:A:107:HIS:ND1	2.16	0.59
1:B:177:LEU:CD1	1:B:276:LEU:HD11	2.31	0.59
1:B:286:GLU:HG3	1:B:287:VAL:N	2.16	0.59
1:A:180:GLN:HG3	1:A:180:GLN:O	2.01	0.59
1:A:21:LYS:O	1:A:21:LYS:HG2	2.02	0.59
1:A:234:LYS:HA	1:A:253:LEU:CG	2.22	0.59
1:A:28:TRP:CE2	1:A:69:LEU:HB2	2.37	0.59
1:B:180:GLN:HB3	1:B:199:PRO:HG2	1.85	0.59
1:A:194:VAL:HB	1:A:259:LEU:HB3	1.83	0.59
1:A:229:PHE:CE2	1:A:255:LEU:HD21	2.38	0.59
1:B:245:PRO:CB	1:B:266:TYR:HE2	2.16	0.59
1:A:111:GLY:HA2	1:A:148:GLN:CB	2.33	0.59
1:B:347:LEU:O	1:B:354:LEU:HB2	2.03	0.58
1:B:245:PRO:HG2	1:B:247:LEU:CD2	2.32	0.58
1:A:162:LEU:HD23	1:A:162:LEU:C	2.24	0.58
1:A:7:LYS:HB2	1:A:10:ASP:HB2	1.84	0.58
1:A:244:ASP:CB	1:A:245:PRO:HD2	2.34	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:LEU:HB2	1:A:45:THR:O	2.01	0.58
1:B:109:LEU:HD13	1:B:281:GLY:N	2.18	0.58
1:A:109:LEU:HD23	1:A:283:LEU:HG	1.84	0.58
1:B:2:LYS:HD3	1:B:93:VAL:HG22	1.84	0.58
1:B:85:GLU:HG2	1:B:90:LYS:HG2	1.85	0.58
1:B:229:PHE:HE2	1:B:255:LEU:HD21	1.67	0.58
1:B:17:THR:HG22	1:B:18:ALA:H	1.68	0.58
1:A:319:LEU:HB3	1:A:343:TRP:CE2	2.38	0.58
1:B:347:LEU:HB3	1:B:355:LEU:HB2	1.86	0.58
1:B:7:LYS:HB2	1:B:10:ASP:HB2	1.85	0.58
1:A:358:ASN:HD21	1:B:358:ASN:HD21	1.52	0.58
1:B:109:LEU:CD2	1:B:276:LEU:HD23	2.30	0.57
1:A:89:GLN:HG2	1:A:90:LYS:H	1.69	0.57
1:A:315:LEU:HA	1:A:346:LEU:O	2.04	0.57
1:B:116:LEU:HB2	1:B:144:LEU:O	2.03	0.57
1:A:342:MET:SD	1:A:360:LYS:HG2	2.45	0.57
1:B:194:VAL:HB	1:B:259:LEU:HB3	1.84	0.57
1:B:204:VAL:O	1:B:205:GLU:HB3	2.04	0.57
1:B:305:VAL:HG12	1:B:309:THR:HG21	1.85	0.57
1:B:231:LEU:HG	1:B:236:VAL:HG13	1.86	0.57
1:B:241:VAL:HG12	1:B:242:THR:H	1.68	0.57
1:B:296:GLN:HG2	1:B:298:GLN:O	2.05	0.57
1:A:14:LEU:HB2	1:A:69:LEU:HB3	1.87	0.56
1:B:28:TRP:NE1	1:B:69:LEU:HB2	2.20	0.56
1:A:79:SER:HA	1:A:95:LEU:O	2.05	0.56
1:A:273:THR:HG23	1:A:284:HIS:CD2	2.40	0.56
1:B:104:SER:CA	1:B:279:LYS:NZ	2.57	0.56
1:B:204:VAL:O	1:B:205:GLU:CB	2.54	0.56
1:B:109:LEU:HD13	1:B:281:GLY:CA	2.35	0.56
1:A:319:LEU:HD13	1:A:321:ASN:HB2	1.88	0.56
1:B:205:GLU:HG3	1:B:208:THR:CG2	2.35	0.56
1:A:109:LEU:CD2	1:A:283:LEU:HD21	2.29	0.56
1:A:62:TRP:HA	1:A:66:ASN:O	2.05	0.56
1:B:279:LYS:O	1:B:280:THR:O	2.24	0.56
1:A:266:TYR:CD1	1:A:266:TYR:N	2.74	0.56
1:B:29:LYS:HA	1:B:34:ILE:O	2.06	0.56
1:B:109:LEU:HD13	1:B:280:THR:C	2.27	0.55
1:A:196:PHE:CE2	1:A:259:LEU:HD12	2.41	0.55
1:B:294:ALA:HA	1:B:303:CYS:SG	2.47	0.55
1:A:279:LYS:O	1:A:280:THR:O	2.24	0.55
1:B:17:THR:O	1:B:18:ALA:HB2	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:177:LEU:HD23	1:B:178:ALA:N	2.21	0.55
1:B:273:THR:HG23	1:B:284:HIS:CD2	2.41	0.55
1:B:111:GLY:HA2	1:B:148:GLN:HB3	1.89	0.55
1:B:86:VAL:HG12	1:B:87:GLU:N	2.22	0.55
1:B:212:GLU:HB3	1:B:228:THR:HG23	1.88	0.55
1:A:251:LYS:NZ	1:A:251:LYS:HB2	2.21	0.55
1:A:296:GLN:HG2	1:A:298:GLN:O	2.06	0.55
1:A:157:TRP:CD1	1:A:174:ILE:HD12	2.43	0.54
1:A:274:LEU:O	1:A:283:LEU:N	2.39	0.54
1:B:177:LEU:HD13	1:B:276:LEU:HD11	1.89	0.54
1:B:315:LEU:HA	1:B:346:LEU:O	2.06	0.54
1:A:124:SER:CB	1:A:163:GLN:HE22	2.19	0.54
1:B:37:LEU:HB2	1:B:45:THR:O	2.06	0.54
1:B:274:LEU:O	1:B:283:LEU:N	2.41	0.54
1:B:277:GLU:CG	1:B:278:ALA:N	2.59	0.54
1:A:27:HIS:HD2	1:A:85:GLU:HB2	1.73	0.54
1:A:259:LEU:O	1:A:260:PRO:O	2.26	0.54
1:B:233:ASN:O	1:B:253:LEU:HD21	2.07	0.54
1:A:305:VAL:HG12	1:A:309:THR:HG21	1.89	0.54
1:A:298:GLN:OE1	1:A:299:LYS:HG2	2.08	0.54
1:A:244:ASP:CB	1:A:245:PRO:CD	2.84	0.53
1:B:98:PHE:HZ	1:B:163:GLN:HE21	1.54	0.53
1:B:185:ILE:CG1	1:B:288:ASN:HB2	2.38	0.53
1:B:110:GLN:NE2	1:B:178:ALA:CB	2.71	0.53
1:B:220:ALA:C	1:B:222:SER:H	2.12	0.53
1:B:305:VAL:CG1	1:B:309:THR:HG21	2.37	0.53
1:B:62:TRP:HA	1:B:66:ASN:O	2.07	0.53
1:B:100:LEU:HA	1:B:118:LEU:HD12	1.91	0.53
1:B:109:LEU:HD22	1:B:281:GLY:O	2.08	0.53
1:A:246:LYS:HB3	1:A:260:PRO:HG2	1.91	0.53
1:A:326:VAL:O	1:A:326:VAL:HG13	2.09	0.53
1:A:16:CYS:SG	1:A:84:CYS:SG	3.02	0.53
1:B:177:LEU:O	1:B:178:ALA:HB2	2.09	0.52
1:B:28:TRP:CE2	1:B:69:LEU:HB2	2.43	0.52
1:A:299:LYS:HD3	1:A:299:LYS:H	1.72	0.52
1:A:194:VAL:HB	1:A:259:LEU:CB	2.39	0.52
1:A:5:LEU:HD11	1:A:166:LYS:HB3	1.91	0.52
1:B:157:TRP:CD1	1:B:174:ILE:HD12	2.45	0.52
1:A:212:GLU:HB3	1:A:228:THR:HG23	1.92	0.52
1:A:121:PRO:HG2	1:A:124:SER:OG	2.09	0.52
1:A:358:ASN:ND2	1:B:358:ASN:ND2	2.58	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:52:ASN:OD1	1:A:53:ASP:N	2.43	0.52
1:B:177:LEU:HD23	1:B:178:ALA:H	1.75	0.52
1:B:276:LEU:HD22	1:B:276:LEU:N	2.21	0.52
1:B:2:LYS:HB2	1:B:93:VAL:HG13	1.91	0.52
1:B:130:CYS:CB	1:B:159:CYS:HG	2.22	0.52
1:B:13:GLU:OE1	1:B:58:ARG:NH2	2.43	0.52
1:A:80:ASP:O	1:A:94:GLN:HA	2.10	0.52
1:B:109:LEU:HD22	1:B:281:GLY:C	2.31	0.51
1:A:29:LYS:HA	1:A:34:ILE:O	2.11	0.51
1:B:110:GLN:NE2	1:B:178:ALA:HB1	2.25	0.51
1:B:114:LEU:O	1:B:145:SER:HB3	2.11	0.51
1:B:59:ARG:HH11	1:B:59:ARG:HB2	1.75	0.51
1:A:233:ASN:O	1:A:253:LEU:HD21	2.11	0.51
1:A:161:VAL:HB	1:A:168:VAL:HG13	1.92	0.51
1:B:27:HIS:CD2	1:B:85:GLU:HB2	2.46	0.51
1:B:206:LYS:HB3	1:B:207:LEU:HG	1.93	0.51
1:B:244:ASP:CB	1:B:245:PRO:CD	2.88	0.51
1:A:33:GLN:HA	1:A:33:GLN:OE1	2.09	0.51
1:A:266:TYR:O	1:A:289:LEU:HD23	2.11	0.51
1:A:291:VAL:O	1:A:305:VAL:HA	2.10	0.51
1:A:310:SER:O	1:A:313:LEU:HG	2.11	0.51
1:B:109:LEU:HD13	1:B:281:GLY:HA3	1.92	0.51
1:A:59:ARG:HA	1:A:62:TRP:CD2	2.45	0.51
1:A:109:LEU:CD2	1:A:283:LEU:HD23	2.37	0.51
1:A:315:LEU:HD13	1:A:333:VAL:HB	1.93	0.51
1:B:229:PHE:CE2	1:B:255:LEU:HD21	2.46	0.51
1:B:129:GLN:HA	1:B:139:GLN:HB3	1.93	0.51
1:A:204:VAL:O	1:A:205:GLU:CB	2.58	0.51
1:B:161:VAL:HB	1:B:168:VAL:HG13	1.92	0.51
1:A:212:GLU:HG3	1:A:214:TRP:HE1	1.76	0.50
1:A:342:MET:SD	1:A:360:LYS:HD2	2.50	0.50
1:A:132:SER:OG	1:A:135:GLY:O	2.28	0.50
1:A:206:LYS:O	1:A:208:THR:N	2.44	0.50
1:A:100:LEU:HD12	1:A:118:LEU:HD12	1.92	0.50
1:B:319:LEU:HB3	1:B:343:TRP:CE2	2.46	0.50
1:A:86:VAL:HG12	1:A:87:GLU:N	2.26	0.50
1:A:26:PHE:CD2	1:A:67:PHE:HB3	2.46	0.50
1:A:219:ARG:NH1	1:A:306:TRP:HZ3	2.09	0.50
1:A:290:VAL:HG13	1:A:306:TRP:O	2.11	0.50
1:B:182:ALA:O	1:B:286:GLU:HB3	2.12	0.50
1:A:141:GLY:C	1:A:143:THR:H	2.15	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:151:LEU:O	1:B:154:SER:HB2	2.10	0.50
1:B:89:GLN:HG2	1:B:90:LYS:H	1.76	0.50
1:A:208:THR:HG22	1:A:277:GLU:H	1.77	0.50
1:B:106:THR:O	1:B:279:LYS:HB2	2.12	0.50
1:A:221:SER:O	1:A:223:SER:N	2.44	0.50
1:B:112:GLN:HE22	1:B:280:THR:C	2.16	0.50
1:A:100:LEU:HD21	1:A:159:CYS:SG	2.52	0.50
1:A:35:LYS:O	1:A:47:GLY:HA3	2.10	0.50
1:A:24:ILE:HD12	1:A:87:GLU:HB2	1.93	0.49
1:A:130:CYS:N	1:A:138:ILE:O	2.45	0.49
1:B:294:ALA:CA	1:B:303:CYS:SG	3.00	0.49
1:A:12:VAL:HG21	1:A:95:LEU:HD11	1.94	0.49
1:A:326:VAL:HG11	1:A:335:VAL:HG22	1.93	0.49
1:B:14:LEU:HB2	1:B:69:LEU:HB3	1.95	0.49
1:A:109:LEU:HB3	1:A:283:LEU:HD23	1.93	0.49
1:A:54:ARG:HG2	1:A:72:LYS:HB2	1.94	0.49
1:A:46:LYS:HD2	1:A:55:ALA:HB3	1.94	0.49
1:A:44:LEU:HD13	1:A:62:TRP:HZ2	1.77	0.49
1:A:204:VAL:O	1:A:205:GLU:HB3	2.11	0.49
1:A:19:SER:O	1:A:21:LYS:N	2.38	0.49
1:B:314:MET:SD	1:B:329:ARG:CD	3.00	0.49
1:B:114:LEU:HD21	1:B:174:ILE:HD13	1.94	0.49
1:B:44:LEU:HD13	1:B:62:TRP:HZ2	1.78	0.49
1:B:221:SER:O	1:B:223:SER:N	2.45	0.48
1:B:128:VAL:HA	1:B:160:THR:O	2.13	0.48
1:A:336:LEU:HD23	1:A:336:LEU:O	2.13	0.48
1:A:314:MET:SD	1:A:329:ARG:CD	3.01	0.48
1:B:25:GLN:HG3	1:B:26:PHE:N	2.28	0.48
1:A:164:ASN:C	1:A:166:LYS:H	2.16	0.48
1:A:26:PHE:CG	1:A:67:PHE:HB3	2.48	0.48
1:B:104:SER:CA	1:B:279:LYS:HZ3	2.24	0.48
1:B:183:SER:OG	1:B:286:GLU:HG2	2.13	0.48
1:A:19:SER:C	1:A:21:LYS:H	2.16	0.48
1:B:190:GLU:HA	1:B:262:ALA:O	2.13	0.48
1:B:80:ASP:O	1:B:94:GLN:HA	2.13	0.48
1:B:132:SER:OG	1:B:136:LYS:HB3	2.13	0.48
1:B:19:SER:O	1:B:21:LYS:N	2.43	0.48
1:B:342:MET:SD	1:B:360:LYS:HD2	2.53	0.48
1:A:362:LEU:HB2	1:A:363:PRO:HD3	1.96	0.48
1:B:198:PHE:HB3	1:B:285:GLN:OE1	2.14	0.48
1:B:288:ASN:HB3	1:B:308:PRO:HG3	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:275:ALA:HB2	1:B:282:LYS:HB3	1.96	0.48
1:B:59:ARG:HG2	1:B:62:TRP:CZ3	2.49	0.48
1:A:342:MET:CG	1:A:360:LYS:HG2	2.44	0.48
1:A:275:ALA:HB2	1:A:282:LYS:HB3	1.96	0.48
1:B:208:THR:O	1:B:276:LEU:HB3	2.14	0.47
1:B:206:LYS:HB3	1:B:207:LEU:H	1.49	0.47
1:B:333:VAL:HG13	1:B:334:TRP:N	2.29	0.47
1:A:302:THR:HG23	1:A:303:CYS:N	2.29	0.47
1:B:215:TRP:CD1	1:B:216:GLN:N	2.83	0.47
1:B:114:LEU:CD2	1:B:174:ILE:HD13	2.45	0.47
1:B:310:SER:C	1:B:312:LYS:H	2.18	0.47
1:A:358:ASN:ND2	1:B:358:ASN:HD21	2.13	0.47
1:A:87:GLU:O	1:A:88:ASP:CG	2.53	0.47
1:A:109:LEU:H	1:A:109:LEU:HD12	1.79	0.47
1:B:290:VAL:CG1	1:B:306:TRP:O	2.62	0.47
1:B:345:CYS:C	1:B:346:LEU:HD12	2.35	0.47
1:A:161:VAL:O	1:A:161:VAL:HG12	2.14	0.47
1:B:100:LEU:HD12	1:B:118:LEU:CD1	2.44	0.47
1:B:205:GLU:HG3	1:B:208:THR:HG21	1.93	0.47
1:B:107:HIS:ND1	1:B:278:ALA:HB3	2.28	0.47
1:B:234:LYS:HA	1:B:253:LEU:CG	2.29	0.47
1:A:177:LEU:HD21	1:A:200:LEU:HD22	1.97	0.47
1:A:46:LYS:HD2	1:A:52:ASN:O	2.13	0.47
1:A:183:SER:OG	1:A:286:GLU:HG2	2.15	0.47
1:A:102:ALA:HA	1:A:115:THR:O	2.14	0.47
1:B:189:LYS:HA	1:B:292:MET:H	1.79	0.47
1:A:13:GLU:OE1	1:A:58:ARG:NH2	2.48	0.47
1:A:111:GLY:HA2	1:A:148:GLN:HB3	1.97	0.47
1:A:220:ALA:C	1:A:222:SER:H	2.17	0.47
1:B:19:SER:C	1:B:21:LYS:H	2.16	0.47
1:B:220:ALA:C	1:B:222:SER:N	2.68	0.47
1:B:82:TYR:CD1	1:B:82:TYR:N	2.83	0.47
1:A:276:LEU:N	1:A:276:LEU:HD22	2.21	0.47
1:B:305:VAL:O	1:B:331:LYS:HB2	2.15	0.47
1:B:194:VAL:HG23	1:B:262:ALA:HB2	1.97	0.47
1:A:293:ARG:O	1:A:303:CYS:HA	2.14	0.46
1:A:195:GLU:HG2	1:A:258:THR:HG22	1.97	0.46
1:A:190:GLU:HA	1:A:262:ALA:O	2.15	0.46
1:A:213:LEU:O	1:A:226:TRP:HB3	2.16	0.46
1:B:130:CYS:N	1:B:138:ILE:O	2.47	0.46
1:B:115:THR:HA	1:B:145:SER:CB	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:205:GLU:HG2	1:A:208:THR:HG21	1.98	0.46
1:B:29:LYS:HD3	1:B:33:GLN:OE1	2.16	0.46
1:A:290:VAL:HG22	1:A:308:PRO:HG2	1.97	0.46
1:B:98:PHE:CG	1:B:161:VAL:HG11	2.51	0.46
1:B:294:ALA:HB2	1:B:303:CYS:SG	2.56	0.46
1:A:333:VAL:HG13	1:A:334:TRP:N	2.30	0.46
1:A:59:ARG:HB2	1:A:59:ARG:HH11	1.80	0.46
1:A:59:ARG:HA	1:A:62:TRP:CG	2.50	0.46
1:B:194:VAL:CG2	1:B:262:ALA:HB2	2.46	0.46
1:A:86:VAL:O	1:A:88:ASP:N	2.43	0.46
1:A:202:PHE:O	1:A:203:THR:O	2.33	0.46
1:A:294:ALA:HB2	1:A:303:CYS:SG	2.56	0.46
1:A:29:LYS:HB3	1:A:29:LYS:HE3	1.77	0.46
1:A:109:LEU:HD13	1:A:281:GLY:HA3	1.97	0.46
1:A:198:PHE:HB3	1:A:285:GLN:OE1	2.15	0.46
1:B:338:PRO:HB2	1:B:361:VAL:HG21	1.97	0.46
1:A:202:PHE:HE2	1:A:234:LYS:NZ	2.14	0.46
1:B:27:HIS:HD2	1:B:85:GLU:HB2	1.81	0.46
1:A:310:SER:C	1:A:312:LYS:H	2.19	0.45
1:A:305:VAL:HG21	1:A:347:LEU:HG	1.96	0.45
1:A:345:CYS:C	1:A:346:LEU:HD12	2.36	0.45
1:B:117:THR:HA	1:B:143:THR:OG1	2.15	0.45
1:A:115:THR:HA	1:A:145:SER:CB	2.46	0.45
1:A:117:THR:HA	1:A:143:THR:OG1	2.16	0.45
1:B:107:HIS:ND1	1:B:278:ALA:HB2	2.32	0.45
1:B:187:TYR:HB3	1:B:355:LEU:HG	1.98	0.45
1:B:110:GLN:HB3	1:B:110:GLN:HE21	1.58	0.45
1:B:219:ARG:O	1:B:221:SER:N	2.49	0.45
1:B:36:ILE:O	1:B:47:GLY:N	2.49	0.45
1:A:212:GLU:HG3	1:A:214:TRP:NE1	2.30	0.45
1:A:161:VAL:HB	1:A:168:VAL:CG1	2.46	0.45
1:B:196:PHE:HE2	1:B:259:LEU:HD12	1.81	0.45
1:A:129:GLN:HA	1:A:139:GLN:HB3	1.98	0.45
1:A:118:LEU:HD23	1:A:120:SER:OG	2.16	0.45
1:B:251:LYS:NZ	1:B:251:LYS:HB2	2.31	0.45
1:B:178:ALA:CB	1:B:283:LEU:HD22	2.46	0.45
1:A:109:LEU:N	1:A:109:LEU:HD12	2.31	0.45
1:B:107:HIS:HB2	1:B:278:ALA:HB3	1.99	0.45
1:A:46:LYS:HB2	1:A:46:LYS:HE2	1.66	0.45
1:A:14:LEU:HD22	1:A:69:LEU:HD23	1.99	0.45
1:B:195:GLU:HG2	1:B:258:THR:HG22	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:121:PRO:HA	1:B:122:PRO:HD3	1.84	0.45
1:B:213:LEU:O	1:B:226:TRP:HB3	2.16	0.45
1:A:342:MET:HG2	1:A:360:LYS:HG2	1.98	0.45
1:A:198:PHE:CD2	1:A:272:LEU:HD22	2.52	0.45
1:A:151:LEU:O	1:A:154:SER:HB2	2.17	0.45
1:B:177:LEU:HD11	1:B:276:LEU:HD11	1.98	0.45
1:A:358:ASN:HD21	1:B:358:ASN:ND2	2.14	0.45
1:B:72:LYS:O	1:B:74:LEU:N	2.51	0.44
1:B:130:CYS:HB2	1:B:138:ILE:HG23	1.98	0.44
1:A:296:GLN:HA	1:A:301:LEU:HA	1.98	0.44
1:A:20:GLN:O	1:A:22:LYS:N	2.49	0.44
1:B:30:ASN:O	1:B:32:ASN:N	2.50	0.44
1:A:100:LEU:HD12	1:A:118:LEU:CD1	2.48	0.44
1:B:44:LEU:HD13	1:B:62:TRP:CZ2	2.52	0.44
1:B:315:LEU:HD22	1:B:316:SER:H	1.82	0.44
1:B:52:ASN:OD1	1:B:53:ASP:N	2.50	0.44
1:B:77:GLU:HG2	1:B:77:GLU:H	1.63	0.44
1:A:267:ALA:HB1	1:A:307:GLY:CA	2.46	0.44
1:A:30:ASN:HA	1:A:82:TYR:HA	2.00	0.44
1:A:259:LEU:HD13	1:A:289:LEU:HD22	1.99	0.44
1:B:116:LEU:O	1:B:143:THR:HA	2.18	0.44
1:A:163:GLN:O	1:A:163:GLN:HG3	2.16	0.44
1:B:298:GLN:HB2	1:B:299:LYS:HD3	2.00	0.44
1:A:13:GLU:CD	1:A:58:ARG:HH21	2.21	0.44
1:B:326:VAL:HG11	1:B:335:VAL:HG22	2.00	0.44
1:A:214:TRP:CE3	1:A:226:TRP:HZ3	2.34	0.44
1:A:114:LEU:HD21	1:A:174:ILE:HD13	1.99	0.44
1:B:28:TRP:CE2	1:B:84:CYS:SG	3.03	0.44
1:A:128:VAL:HA	1:A:160:THR:O	2.18	0.44
1:A:26:PHE:CD1	1:A:67:PHE:CD1	3.06	0.44
1:A:82:TYR:N	1:A:82:TYR:CD1	2.86	0.44
1:A:189:LYS:O	1:A:190:GLU:C	2.56	0.43
1:A:187:TYR:HB3	1:A:355:LEU:HG	2.00	0.43
1:B:303:CYS:HG	1:B:345:CYS:CB	2.29	0.43
1:B:309:THR:HB	1:B:313:LEU:CD1	2.40	0.43
1:B:89:GLN:HB3	1:B:89:GLN:HE21	1.65	0.43
1:A:28:TRP:CE2	1:A:84:CYS:SG	2.98	0.43
1:B:333:VAL:CG1	1:B:334:TRP:N	2.81	0.43
1:B:263:LEU:O	1:B:266:TYR:HD1	2.00	0.43
1:B:162:LEU:C	1:B:162:LEU:CD2	2.87	0.43
1:B:36:ILE:HD12	1:B:51:LEU:HD23	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:177:LEU:CD2	1:B:283:LEU:HD11	2.29	0.43
1:A:109:LEU:HB3	1:A:283:LEU:CD2	2.48	0.43
1:B:130:CYS:O	1:B:138:ILE:HG22	2.18	0.43
1:B:162:LEU:CD2	1:B:163:GLN:N	2.78	0.43
1:B:198:PHE:CD2	1:B:272:LEU:HD22	2.54	0.43
1:B:37:LEU:C	1:B:37:LEU:HD12	2.39	0.43
1:A:215:TRP:CD1	1:A:216:GLN:N	2.87	0.43
1:A:72:LYS:O	1:A:73:ASN:C	2.56	0.43
1:A:128:VAL:HB	1:A:144:LEU:HD23	2.00	0.43
1:B:51:LEU:HD12	1:B:51:LEU:HA	1.77	0.43
1:A:44:LEU:HD13	1:A:62:TRP:CZ2	2.53	0.43
1:A:121:PRO:HA	1:A:122:PRO:HD3	1.93	0.43
1:B:319:LEU:HA	1:B:343:TRP:HA	2.00	0.43
1:B:72:LYS:O	1:B:73:ASN:C	2.56	0.43
1:A:98:PHE:CG	1:A:161:VAL:HG11	2.54	0.43
1:B:26:PHE:CD2	1:B:67:PHE:HB3	2.54	0.43
1:B:212:GLU:HG3	1:B:214:TRP:NE1	2.34	0.43
1:A:212:GLU:HB2	1:A:227:ILE:O	2.19	0.43
1:A:59:ARG:HG2	1:A:62:TRP:CE3	2.54	0.43
1:B:17:THR:HG22	1:B:18:ALA:N	2.33	0.43
1:A:206:LYS:HB3	1:A:207:LEU:HG	2.01	0.43
1:A:277:GLU:CG	1:A:278:ALA:N	2.59	0.42
1:A:288:ASN:HB3	1:A:308:PRO:HG3	2.01	0.42
1:B:219:ARG:NH1	1:B:306:TRP:HZ3	2.16	0.42
1:B:296:GLN:HA	1:B:301:LEU:HA	2.01	0.42
1:B:189:LYS:O	1:B:191:GLY:N	2.52	0.42
1:B:161:VAL:HB	1:B:168:VAL:CG1	2.49	0.42
1:A:226:TRP:HD1	1:A:241:VAL:HG11	1.84	0.42
1:A:220:ALA:C	1:A:222:SER:N	2.72	0.42
1:A:214:TRP:CD1	1:A:214:TRP:N	2.87	0.42
1:B:130:CYS:SG	1:B:144:LEU:HD21	2.59	0.42
1:A:114:LEU:HB2	1:A:149:LEU:HD11	2.01	0.42
1:A:317:LEU:HB2	1:A:326:VAL:HG12	2.02	0.42
1:B:297:LEU:N	1:B:300:ASN:O	2.53	0.42
1:B:315:LEU:HD23	1:B:346:LEU:O	2.18	0.42
1:B:29:LYS:HB3	1:B:29:LYS:HE3	1.97	0.42
1:B:296:GLN:HG3	1:B:301:LEU:HB3	2.02	0.42
1:B:111:GLY:HA2	1:B:148:GLN:CB	2.49	0.42
1:B:112:GLN:O	1:B:149:LEU:HD12	2.19	0.42
1:A:128:VAL:HB	1:A:144:LEU:CD2	2.50	0.42
1:A:342:MET:SD	1:A:360:LYS:CG	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:207:LEU:HG	1:B:207:LEU:H	1.41	0.42
1:B:109:LEU:HD12	1:B:109:LEU:H	1.85	0.42
1:A:253:LEU:HA	1:A:253:LEU:HD22	1.86	0.42
1:B:104:SER:O	1:B:279:LYS:HD2	2.20	0.42
1:B:214:TRP:CE3	1:B:226:TRP:HZ3	2.34	0.42
1:B:362:LEU:CB	1:B:363:PRO:HD3	2.49	0.42
1:A:20:GLN:HG3	1:A:24:ILE:HD13	2.02	0.42
1:A:110:GLN:NE2	1:A:178:ALA:HB2	2.33	0.42
1:A:294:ALA:N	1:A:303:CYS:SG	2.93	0.42
1:B:54:ARG:HG2	1:B:72:LYS:HB2	2.01	0.42
1:B:133:PRO:HG3	1:B:156:THR:O	2.19	0.42
1:B:247:LEU:HD23	1:B:247:LEU:H	1.85	0.41
1:A:51:LEU:HD12	1:A:51:LEU:HA	1.73	0.41
1:A:130:CYS:SG	1:A:144:LEU:HD11	2.61	0.41
1:A:141:GLY:C	1:A:143:THR:N	2.73	0.41
1:A:267:ALA:HB1	1:A:307:GLY:HA3	2.01	0.41
1:B:20:GLN:O	1:B:22:LYS:N	2.54	0.41
1:B:196:PHE:HD2	1:B:257:LEU:O	2.03	0.41
1:A:296:GLN:HA	1:A:301:LEU:CB	2.51	0.41
1:B:30:ASN:C	1:B:32:ASN:N	2.74	0.41
1:A:194:VAL:HG23	1:A:262:ALA:HB2	2.02	0.41
1:A:315:LEU:HD23	1:A:346:LEU:O	2.20	0.41
1:B:141:GLY:C	1:B:143:THR:H	2.22	0.41
1:B:299:LYS:HD3	1:B:299:LYS:N	2.29	0.41
1:A:14:LEU:CD2	1:A:69:LEU:HD23	2.50	0.41
1:B:16:CYS:SG	1:B:67:PHE:HB2	2.60	0.41
1:B:7:LYS:HB2	1:B:10:ASP:CB	2.50	0.41
1:B:189:LYS:O	1:B:190:GLU:C	2.58	0.41
1:A:100:LEU:HA	1:A:118:LEU:HD12	2.03	0.41
1:B:46:LYS:HE2	1:B:46:LYS:HB2	1.72	0.41
1:B:349:ASP:O	1:B:351:GLY:N	2.51	0.41
1:A:263:LEU:HB2	1:A:266:TYR:CE1	2.56	0.41
1:B:293:ARG:O	1:B:303:CYS:HA	2.20	0.41
1:A:302:THR:CG2	1:A:303:CYS:N	2.84	0.41
1:B:128:VAL:HB	1:B:144:LEU:CD2	2.51	0.41
1:A:42:SER:HG	1:A:43:PHE:HD1	1.66	0.41
1:B:87:GLU:O	1:B:88:ASP:CB	2.69	0.41
1:B:87:GLU:O	1:B:88:ASP:CG	2.59	0.41
1:A:100:LEU:HD22	1:A:159:CYS:HB2	2.03	0.41
1:B:302:THR:HG23	1:B:303:CYS:N	2.35	0.41
1:A:208:THR:O	1:A:276:LEU:HB2	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:136:LYS:HD2	1:B:138:ILE:HB	2.02	0.41
1:A:162:LEU:C	1:A:162:LEU:CD2	2.89	0.41
1:A:300:ASN:HA	1:A:338:PRO:HD3	2.03	0.41
1:B:180:GLN:O	1:B:180:GLN:HG3	2.20	0.41
1:A:175:VAL:O	1:A:175:VAL:HG12	2.20	0.41
1:A:349:ASP:O	1:A:351:GLY:N	2.53	0.41
1:A:186:VAL:HG12	1:A:188:LYS:HG2	2.02	0.41
1:B:114:LEU:HB2	1:B:149:LEU:HD11	2.03	0.41
1:B:205:GLU:CG	1:B:208:THR:CG2	2.93	0.41
1:B:86:VAL:HG12	1:B:87:GLU:H	1.86	0.41
1:A:58:ARG:NE	1:A:61:LEU:HD12	2.36	0.41
1:B:300:ASN:OD1	1:B:337:ASN:N	2.54	0.40
1:B:343:TRP:N	1:B:359:ILE:O	2.53	0.40
1:B:2:LYS:HG3	1:B:2:LYS:H	1.72	0.40
1:B:291:VAL:HG12	1:B:292:MET:N	2.36	0.40
1:B:246:LYS:HG3	1:B:246:LYS:O	2.21	0.40
1:A:315:LEU:CD1	1:A:333:VAL:HB	2.51	0.40
1:A:319:LEU:HB3	1:A:343:TRP:NE1	2.36	0.40
1:B:241:VAL:O	1:B:242:THR:OG1	2.34	0.40
1:B:208:THR:O	1:B:276:LEU:HB2	2.21	0.40
1:B:202:PHE:HE2	1:B:234:LYS:NZ	2.20	0.40
1:A:347:LEU:O	1:A:354:LEU:HB2	2.20	0.40
1:A:344:GLN:HE22	1:B:344:GLN:CD	2.25	0.40
1:A:356:GLU:OE2	1:B:344:GLN:OE1	2.39	0.40
1:B:59:ARG:HA	1:B:62:TRP:CD2	2.57	0.40
1:B:296:GLN:HA	1:B:301:LEU:CB	2.52	0.40
1:B:100:LEU:HD12	1:B:118:LEU:HD12	2.02	0.40

All (19) 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:9:GLY:O	1:B:73:ASN:OD1[2_867]	0.59	1.61
1:A:73:ASN:ND2	1:B:73:ASN:CA[2_867]	0.99	1.21
1:A:73:ASN:OD1	1:B:9:GLY:O[2_867]	1.06	1.14
1:A:73:ASN:OD1	1:B:9:GLY:C[2_867]	1.27	0.93
1:A:9:GLY:C	1:B:73:ASN:OD1[2_867]	1.58	0.62
1:A:73:ASN:CA	1:B:73:ASN:ND2[2_867]	1.59	0.61
1:A:73:ASN:OD1	1:B:9:GLY:CA[2_867]	1.61	0.59
1:A:9:GLY:O	1:B:73:ASN:CG[2_867]	1.70	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:204:VAL:CG2	1:B:25:GLN:OE1[2_867]	1.72	0.48
1:A:44:LEU:O	1:B:173:ASP:OD2[2_867]	1.76	0.44
1:A:73:ASN:N	1:B:73:ASN:ND2[2_867]	1.78	0.42
1:A:73:ASN:ND2	1:B:73:ASN:N[2_867]	1.84	0.36
1:A:25:GLN:OE1	1:B:204:VAL:N[2_867]	1.86	0.34
1:A:73:ASN:ND2	1:B:73:ASN:CB[2_867]	1.97	0.23
1:A:73:ASN:CG	1:B:9:GLY:O[2_867]	1.98	0.22
1:A:106:THR:OG1	1:B:48:PRO:CD[2_867]	2.08	0.12
1:A:35:LYS:CE	1:B:205:GLU:OE1[2_867]	2.10	0.10
1:A:73:ASN:CG	1:B:73:ASN:CA[2_867]	2.13	0.07
1:A:48:PRO:CA	1:B:105:ASP:OD1[2_867]	2.19	0.01

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	361/363 (99%)	259 (72%)	58 (16%)	44 (12%)	0	8
1	B	361/363 (99%)	260 (72%)	59 (16%)	42 (12%)	0	9
All	All	722/726 (99%)	519 (72%)	117 (16%)	86 (12%)	0	8

All (86) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	21	LYS
1	A	52	ASN
1	A	73	ASN
1	A	87	GLU
1	A	88	ASP
1	A	105	ASP
1	A	136	LYS
1	A	147	SER
1	A	151	LEU

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Mol	Chain	Res	Type
1	A	178	ALA
1	A	179	PHE
1	A	190	GLU
1	A	202	PHE
1	A	203	THR
1	A	205	GLU
1	A	207	LEU
1	A	222	SER
1	A	241	VAL
1	A	242	THR
1	A	244	ASP
1	A	255	LEU
1	A	260	PRO
1	A	280	THR
1	A	349	ASP
1	B	18	ALA
1	B	21	LYS
1	B	52	ASN
1	B	73	ASN
1	B	87	GLU
1	B	88	ASP
1	B	105	ASP
1	B	147	SER
1	B	151	LEU
1	B	190	GLU
1	B	202	PHE
1	B	205	GLU
1	B	241	VAL
1	B	242	THR
1	B	244	ASP
1	B	255	LEU
1	B	261	GLN
1	B	280	THR
1	B	349	ASP
1	A	53	ASP
1	A	106	THR
1	A	112	GLN
1	A	278	ALA
1	B	10	ASP
1	B	106	THR
1	B	136	LYS
1	B	178	ALA

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Mol	Chain	Res	Type
1	B	206	LYS
1	B	207	LEU
1	B	222	SER
1	B	243	GLN
1	B	278	ALA
1	A	10	ASP
1	A	19	SER
1	A	20	GLN
1	A	233	ASN
1	A	253	LEU
1	A	297	LEU
1	A	324	ALA
1	B	20	GLN
1	B	53	ASP
1	B	112	GLN
1	B	220	ALA
1	B	240	ARG
1	B	253	LEU
1	B	324	ALA
1	B	351	GLY
1	A	16	CYS
1	A	201	ALA
1	A	206	LYS
1	A	240	ARG
1	A	351	GLY
1	B	16	CYS
1	B	23	SER
1	B	201	ALA
1	B	326	VAL
1	A	113	SER
1	A	220	ALA
1	A	326	VAL
1	B	126	PRO
1	A	362	LEU
1	B	122	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	318/324 (98%)	227 (71%)	91 (29%)	0 4
1	B	318/324 (98%)	231 (73%)	87 (27%)	0 5
All	All	636/648 (98%)	458 (72%)	178 (28%)	0 4

All (178) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	LYS
1	A	3	VAL
1	A	11	THR
1	A	14	LEU
1	A	15	THR
1	A	16	CYS
1	A	19	SER
1	A	23	SER
1	A	25	GLN
1	A	29	LYS
1	A	35	LYS
1	A	43	PHE
1	A	59	ARG
1	A	63	ASP
1	A	68	PRO
1	A	70	ILE
1	A	75	LYS
1	A	84	CYS
1	A	89	GLN
1	A	97	VAL
1	A	101	THR
1	A	103	ASN
1	A	115	THR
1	A	118	LEU
1	A	124	SER
1	A	125	SER
1	A	132	SER
1	A	134	ARG
1	A	139	GLN
1	A	143	THR
1	A	148	GLN
1	A	151	LEU
1	A	152	GLN
1	A	154	SER

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Mol	Chain	Res	Type
1	A	156	THR
1	A	158	THR
1	A	163	GLN
1	A	164	ASN
1	A	166	LYS
1	A	173	ASP
1	A	175	VAL
1	A	185	ILE
1	A	193	GLN
1	A	195	GLU
1	A	197	SER
1	A	198	PHE
1	A	207	LEU
1	A	208	THR
1	A	216	GLN
1	A	221	SER
1	A	223	SER
1	A	225	SER
1	A	226	TRP
1	A	228	THR
1	A	229	PHE
1	A	230	ASP
1	A	234	LYS
1	A	235	GLU
1	A	237	SER
1	A	238	VAL
1	A	243	GLN
1	A	247	LEU
1	A	251	LYS
1	A	253	LEU
1	A	257	LEU
1	A	259	LEU
1	A	260	PRO
1	A	266	TYR
1	A	273	THR
1	A	274	LEU
1	A	276	LEU
1	A	282	LYS
1	A	285	GLN
1	A	286	GLU
1	A	295	THR
1	A	298	GLN

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Mol	Chain	Res	Type
1	A	299	LYS
1	A	302	THR
1	A	310	SER
1	A	312	LYS
1	A	313	LEU
1	A	315	LEU
1	A	316	SER
1	A	320	GLU
1	A	329	ARG
1	A	330	GLU
1	A	336	LEU
1	A	339	GLU
1	A	342	MET
1	A	350	SER
1	A	362	LEU
1	B	3	VAL
1	B	11	THR
1	B	12	VAL
1	B	14	LEU
1	B	15	THR
1	B	16	CYS
1	B	19	SER
1	B	23	SER
1	B	25	GLN
1	B	29	LYS
1	B	35	LYS
1	B	43	PHE
1	B	59	ARG
1	B	63	ASP
1	B	68	PRO
1	B	70	ILE
1	B	82	TYR
1	B	84	CYS
1	B	89	GLN
1	B	97	VAL
1	B	101	THR
1	B	103	ASN
1	B	115	THR
1	B	118	LEU
1	B	125	SER
1	B	127	SER
1	B	132	SER

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Mol	Chain	Res	Type
1	B	134	ARG
1	B	139	GLN
1	B	143	THR
1	B	148	GLN
1	B	151	LEU
1	B	152	GLN
1	B	154	SER
1	B	156	THR
1	B	158	THR
1	B	162	LEU
1	B	163	GLN
1	B	164	ASN
1	B	166	LYS
1	B	173	ASP
1	B	175	VAL
1	B	185	ILE
1	B	193	GLN
1	B	195	GLU
1	B	197	SER
1	B	198	PHE
1	B	203	THR
1	B	207	LEU
1	B	208	THR
1	B	216	GLN
1	B	221	SER
1	B	223	SER
1	B	225	SER
1	B	226	TRP
1	B	228	THR
1	B	229	PHE
1	B	230	ASP
1	B	235	GLU
1	B	238	VAL
1	B	243	GLN
1	B	247	LEU
1	B	253	LEU
1	B	257	LEU
1	B	259	LEU
1	B	273	THR
1	B	274	LEU
1	B	276	LEU
1	B	282	LYS

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Mol	Chain	Res	Type
1	B	285	GLN
1	B	298	GLN
1	B	299	LYS
1	B	302	THR
1	B	305	VAL
1	B	310	SER
1	B	312	LYS
1	B	313	LEU
1	B	315	LEU
1	B	316	SER
1	B	320	GLU
1	B	329	ARG
1	B	330	GLU
1	B	336	LEU
1	B	339	GLU
1	B	342	MET
1	B	350	SER
1	B	362	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	20	GLN
1	A	89	GLN
1	A	103	ASN
1	A	110	GLN
1	A	163	GLN
1	A	180	GLN
1	A	193	GLN
1	A	261	GLN
1	A	284	HIS
1	A	288	ASN
1	A	344	GLN
1	A	358	ASN
1	B	20	GLN
1	B	66	ASN
1	B	89	GLN
1	B	103	ASN
1	B	110	GLN
1	B	163	GLN
1	B	261	GLN
1	B	284	HIS

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Mol	Chain	Res	Type
1	B	288	ASN
1	B	344	GLN
1	B	358	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

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

5.5 Carbohydrates

There are no carbohydrates in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section will therefore be empty.

6.2 Non-standard residues in protein, DNA, RNA chains

EDS was not executed - this section will therefore be empty.

6.3 Carbohydrates

EDS was not executed - this section will therefore be empty.

6.4 Ligands

EDS was not executed - this section will therefore be empty.

6.5 Other polymers

EDS was not executed - this section will therefore be empty.