Full wwPDB X-ray Structure Validation Report ⓘ

Oct 12, 2021 – 08:50 AM EDT

PDB ID	:	1XF1
Title	:	Structure of C5a peptidase- a key virulence factor from Streptococcus
Authors	:	Brown, C.K.; Gu, Z.Y.; Cleary, P.P.; Matsuka, Y.; Olmstead, S.; Ohlendorf, D.H.; Earhart, C.A.
Deposited on	:	2004-09-13
Resolution	:	1.90 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:

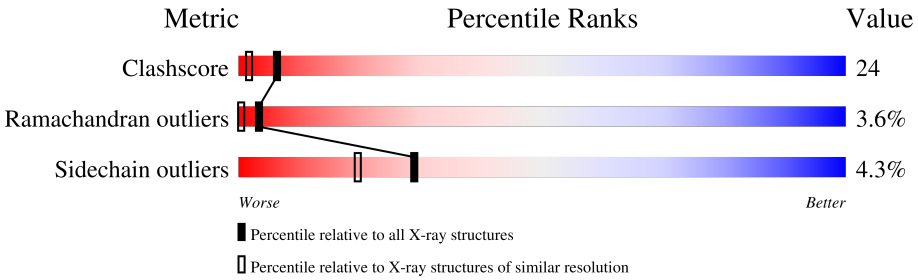
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.23.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 1.90 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	6847 (1.90-1.90)
Ramachandran outliers	138981	6760 (1.90-1.90)
Sidechain outliers	138945	6760 (1.90-1.90)

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 <=5%

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	926	68% 27%
1	B	926	60% 35% 5%

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 15509 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 C5a peptidase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	926	Total	C	N	O	Se	0	0	0
			7182	4510	1211	1445	16			
1	B	926	Total	C	N	O	Se	4	0	0
			7182	4510	1211	1445	16			

There are 38 discrepancies between the modelled and reference sequences:

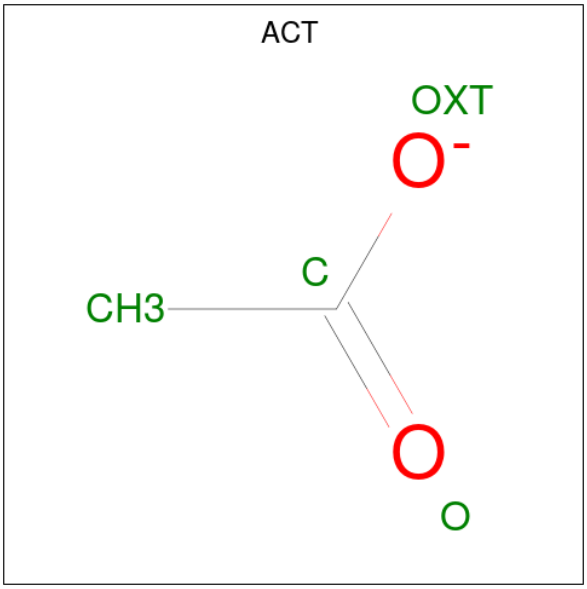
Chain	Residue	Modelled	Actual	Comment	Reference
A	219	MSE	MET	modified residue	UNP P15926
A	227	MSE	MET	modified residue	UNP P15926
A	259	MSE	MET	modified residue	UNP P15926
A	353	MSE	MET	modified residue	UNP P15926
A	433	MSE	MET	modified residue	UNP P15926
A	513	MSE	MET	modified residue	UNP P15926
A	522	MSE	MET	modified residue	UNP P15926
A	536	MSE	MET	modified residue	UNP P15926
A	550	MSE	MET	modified residue	UNP P15926
A	585	MSE	MET	modified residue	UNP P15926
A	648	THR	ALA	SEE REMARK 999	UNP P15926
A	680	MSE	MET	modified residue	UNP P15926
A	697	THR	LYS	SEE REMARK 999	UNP P15926
A	702	MSE	MET	modified residue	UNP P15926
A	794	PHE	LEU	SEE REMARK 999	UNP P15926
A	969	MSE	MET	modified residue	UNP P15926
A	996	MSE	THR	engineered mutation	UNP P15926
A	1005	MSE	MET	modified residue	UNP P15926
A	1015	MSE	MET	modified residue	UNP P15926
B	219	MSE	MET	modified residue	UNP P15926
B	227	MSE	MET	modified residue	UNP P15926
B	259	MSE	MET	modified residue	UNP P15926
B	353	MSE	MET	modified residue	UNP P15926
B	433	MSE	MET	modified residue	UNP P15926
B	513	MSE	MET	modified residue	UNP P15926

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
B	522	MSE	MET	modified residue	UNP P15926
B	536	MSE	MET	modified residue	UNP P15926
B	550	MSE	MET	modified residue	UNP P15926
B	585	MSE	MET	modified residue	UNP P15926
B	648	THR	ALA	SEE REMARK 999	UNP P15926
B	680	MSE	MET	modified residue	UNP P15926
B	697	THR	LYS	SEE REMARK 999	UNP P15926
B	702	MSE	MET	modified residue	UNP P15926
B	794	PHE	LEU	SEE REMARK 999	UNP P15926
B	969	MSE	MET	modified residue	UNP P15926
B	996	MSE	THR	engineered mutation	UNP P15926
B	1005	MSE	MET	modified residue	UNP P15926
B	1015	MSE	MET	modified residue	UNP P15926

- Molecule 2 is ACETATE ION (three-letter code: ACT) (formula: $C_2H_3O_2$).

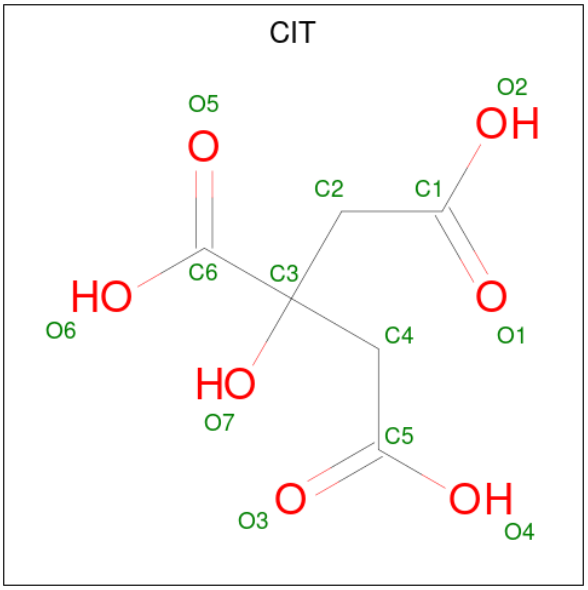


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C O 4 2 2	0	0
2	B	1	Total C O 4 2 2	0	0

- Molecule 3 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total Ca 1 1	0	0
3	B	1	Total Ca 1 1	0	0

- Molecule 4 is CITRIC ACID (three-letter code: CIT) (formula: $C_6H_8O_7$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C O 13 6 7	0	0
4	A	1	Total C O 13 6 7	0	0
4	A	1	Total C O 13 6 7	0	0
4	B	1	Total C O 13 6 7	0	0
4	B	1	Total C O 13 6 7	0	0
4	B	1	Total C O 13 6 7	0	0

- Molecule 5 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	544	Total O 544 544	0	0
5	B	513	Total O 513 513	0	0

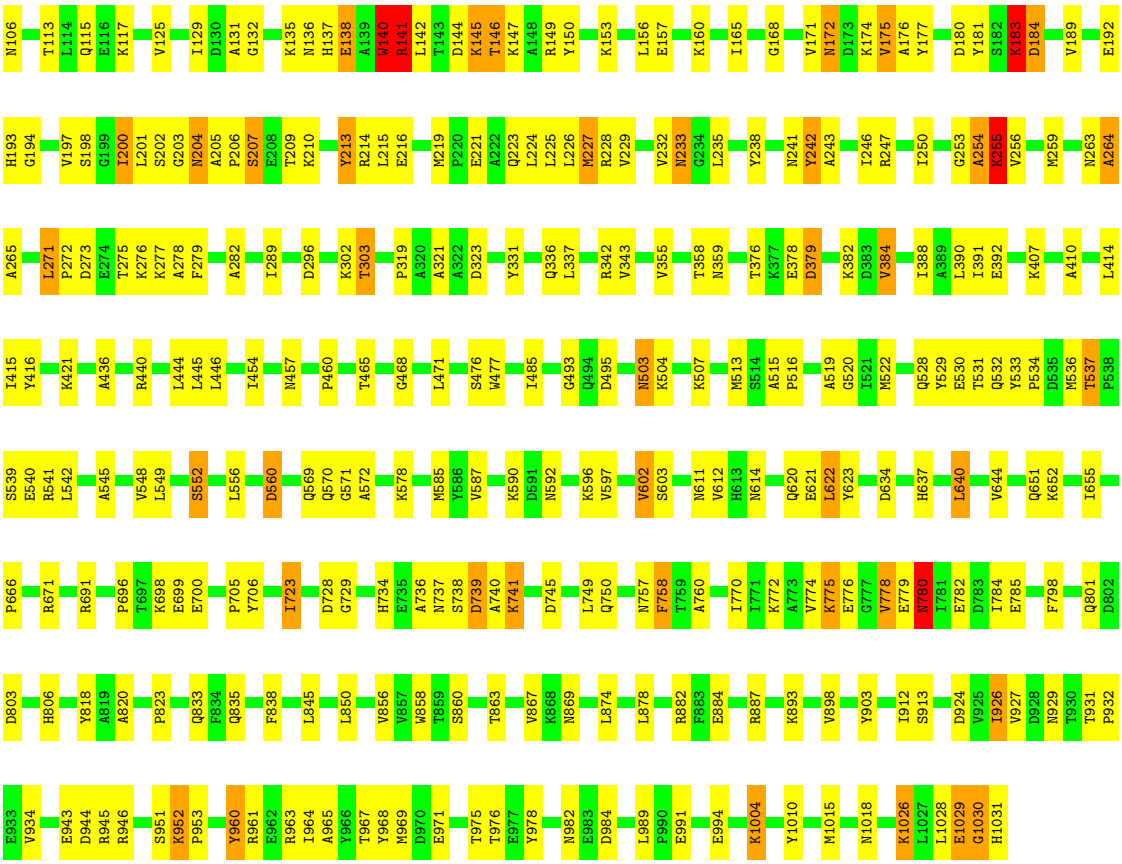
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. 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.

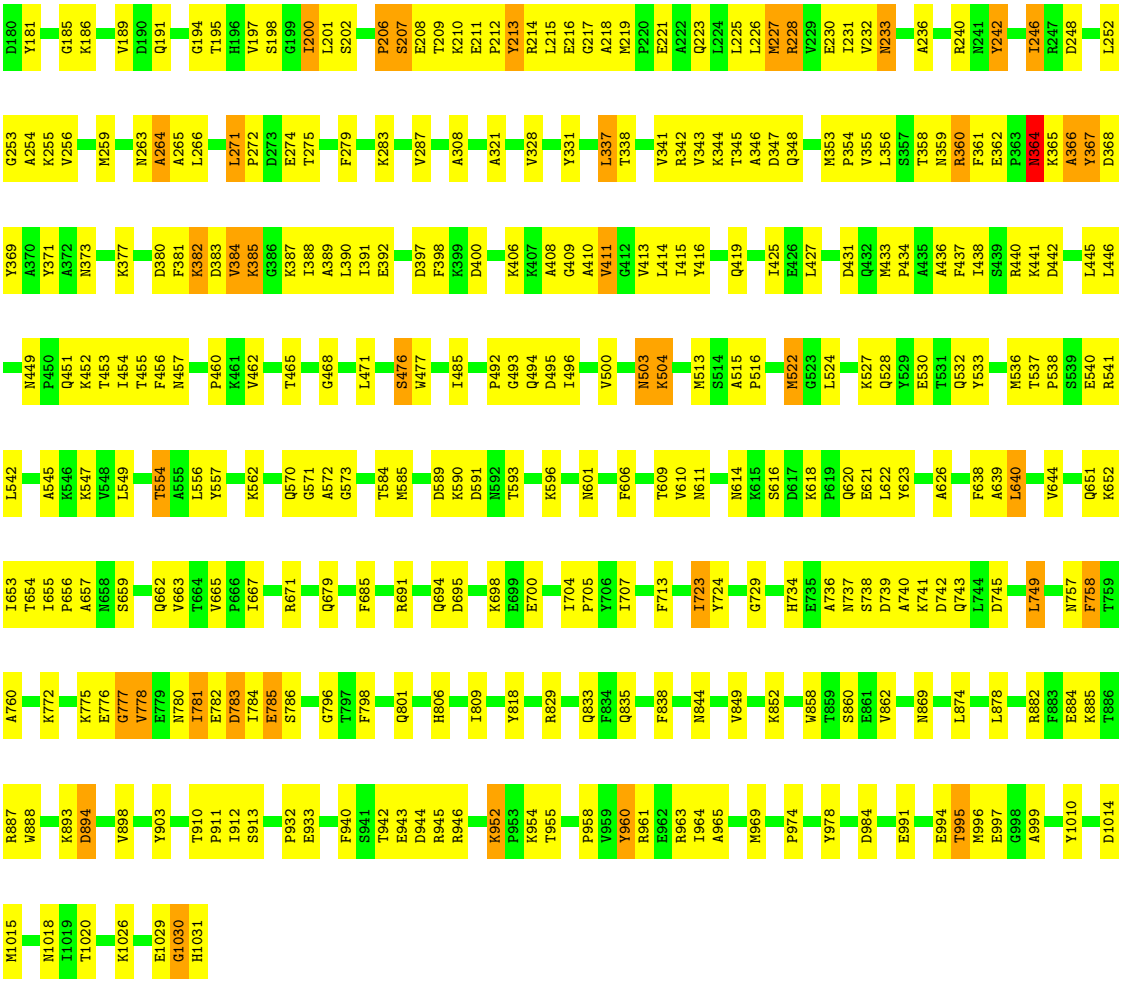
• Molecule 1: C5a peptidase

Chain A:



• Molecule 1: C5a peptidase

Chain B:


D180 Y181 G185 K186 V189 D190 Q191 G194 T195 H196 V197 S198 G199 I200 L201 S202 P206 S207 E208 T209 K210 E211 P212 Y213 R214 L215 E216 G217 A218 M219 P220 E221 A222 Q223 L224 L225 L226 M227 R228 V229 E230 I231 V232 N233 A236 R240 N241 Y242 I246 R247 D248 L252
G253 A254 K255 V256 M259 N263 A264 A265 L266 L271 P272 D273 E274 T275 F279 K283 V287 A308 A321 V328 Y331 L337 T338 V341 R342 V343 K344 T345 A346 D347 Q348 M353 P354 V355 L356 S357 T358 N359 R360 F361 E362 P363 N364 K365 A366 Y367 D368
Y369 A370 Y371 A372 N373 K377 D380 F381 K382 D383 V384 K385 G386 K387 I388 A389 L390 I391 E392 D397 F398 K399 D400 K406 K407 A408 G409 A410 V411 G412 V413 L414 I415 Y416 Q419 I425 E426 L427 D431 Q432 M433 P434 A435 A436 F437 I438 S439 R440 K441 D442 L445 L446
N449 P450 Q451 K452 T453 I454 T455 F456 N457 P460 K461 V462 T465 G468 L471 S476 W477 I485 P492 G493 Q494 D495 I496 V500 N503 K504 M513 S514 A515 P516 M522 G523 L524 K527 Q528 Y529 E530 T531 Q532 Y533 M536 T537 P538 S539 E540 R541
L542 A545 K546 K547 V548 L549 T554 A555 L556 Y557 K562 Q570 G571 A572 G573 T584 M585 D589 K590 D591 N592 T593 K596 N601 F606 T609 V610 N611 N614 K615 S616 D617 K618 P619 Q620 E621 L622 Y623 A626 F638 A639 L640 V644 Q651 K652
I653 T654 I655 P656 A657 N658 S659 Q662 V663 T664 V665 P666 I667 R671 Q679 F685 R691 Q694 D695 K698 E699 E700 I704 P705 Y706 I707 F713 I723 Y724 G729 H734 E735 A736 N737 S738 D739 A740 K741 D742 Q743 L744 D745 L749 N757 F758 T759
A760 K772 K775 E776 G777 V778 E779 N780 I781 E782 D783 I784 E785 S786 G796 T797 F798 Q801 H806 I809 Y818 R829 Q833 F834 Q835 F838 N844 V849 K852 W858 T859 S860 E861 V862 N869 L874 L878 R882 F883 E884 K885 T886
R887 W888 K893 D894 V898 Y903 T910 P911 I912 S913 P932 E933 F940 S941 T942 E943 D944 R945 R946 K952 P953 K954 T955 P958 V959 Y960 R961 E962 R963 I964 A965 M969 P974 Y978 D984 E991 E994 T995 M996 E997 G998 A999 Y1010 D1014
M1015 N1018 I1019 T1020 K1026 E1029 G1030 H1031

4 Data and refinement statistics (i)

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

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	114.70Å 75.11Å 132.39Å 90.00° 104.95° 90.00°	Depositor
Resolution (Å)	50.00 – 1.90	Depositor
% Data completeness (in resolution range)	(Not available) (50.00-1.90)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	CNS	Depositor
R, R_{free}	0.229 , 0.269	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	15509	wwPDB-VP
Average B, all atoms (Å^2)	51.0	wwPDB-VP

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: CIT, CA, ACT

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	0.34	0/7312	0.63	0/9884
1	B	0.33	0/7312	0.61	0/9884
All	All	0.33	0/14624	0.62	0/19768

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	7182	0	7004	319	0
1	B	7182	0	7005	384	0
2	A	4	0	3	0	0
2	B	4	0	3	0	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
4	A	39	0	15	0	0
4	B	39	0	15	2	0
5	A	544	0	0	34	0
5	B	513	0	0	23	0
All	All	15509	0	14045	688	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 24.

All (688) 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:A:778:VAL:HG21	1:A:784:ILE:HD11	1.40	1.03
1:A:210:LYS:HA	1:A:337:LEU:HD12	1.40	1.03
1:B:343:VAL:HG12	1:B:454:ILE:HG22	1.41	1.02
1:A:465:THR:HG23	1:A:468:GLY:H	1.23	1.01
1:B:465:THR:HG23	1:B:468:GLY:H	1.25	1.00
1:A:271:LEU:HD23	1:A:271:LEU:H	1.26	1.00
1:B:271:LEU:HD23	1:B:271:LEU:H	1.27	1.00
1:A:952:LYS:HB3	1:A:953:PRO:HA	1.43	1.00
1:A:343:VAL:HG12	1:A:454:ILE:HG22	1.41	0.99
1:B:536:MSE:HE2	1:B:540:GLU:HB3	1.41	0.99
1:B:958:PRO:HG2	1:B:1015:MSE:HG3	1.43	0.99
1:A:440:ARG:NH1	1:A:444:LEU:HD11	1.78	0.99
1:A:219:MSE:HE2	1:A:520:GLY:HA2	1.44	0.98
1:A:246:ILE:HD11	1:A:278:ALA:HB1	1.48	0.96
1:B:995:THR:HG23	1:B:997:GLU:H	1.31	0.95
1:B:360:ARG:HH11	1:B:360:ARG:HB3	1.31	0.95
1:B:556:LEU:H	1:B:570:GLN:HE22	1.05	0.93
1:A:556:LEU:H	1:A:570:GLN:HE22	1.04	0.93
1:A:216:GLU:HG2	1:A:224:LEU:HD21	1.51	0.92
1:A:141:ARG:HE	1:A:141:ARG:HA	1.37	0.90
1:B:835:GLN:HE21	1:B:882:ARG:HE	1.20	0.89
1:B:522:MSE:HG3	1:B:549:LEU:HD22	1.54	0.89
1:B:749:LEU:HD23	1:B:749:LEU:H	1.37	0.89
1:A:160:LYS:HB2	1:A:165:ILE:HB	1.54	0.88
1:B:528:GLN:HE21	1:B:532:GLN:HE22	1.23	0.87
1:A:960:TYR:HA	1:A:1015:MSE:HE3	1.56	0.87
1:B:139:ALA:HB1	1:B:206:PRO:HA	1.56	0.87
1:B:838:PHE:H	1:B:869:ASN:HD22	1.19	0.87
1:B:944:ASP:OD2	1:B:946:ARG:HD3	1.76	0.86
1:B:611:ASN:ND2	1:B:662:GLN:HG2	1.91	0.85
1:A:522:MSE:HG3	1:A:549:LEU:HD22	1.57	0.85
1:A:622:LEU:HD21	1:A:655:ILE:HD13	1.60	0.84
1:B:749:LEU:H	1:B:749:LEU:CD2	1.90	0.84
1:A:835:GLN:NE2	1:A:882:ARG:HE	1.76	0.82
1:A:991:GLU:OE2	1:B:263:ASN:HB3	1.80	0.82
1:A:536:MSE:O	1:A:537:THR:HB	1.79	0.81
1:A:150:TYR:H	1:A:223:GLN:HE22	1.29	0.81

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:522:MSE:HE1	1:B:542:LEU:HD12	1.63	0.81
1:B:200:ILE:HG22	1:B:201:LEU:HG	1.63	0.81
1:B:585:MSE:HG2	1:B:614:ASN:HA	1.64	0.80
1:A:835:GLN:HE21	1:A:882:ARG:HE	1.26	0.79
1:A:421:LYS:HG3	1:A:560:ASP:OD2	1.82	0.79
1:B:160:LYS:HE3	1:B:168:GLY:H	1.47	0.79
1:A:644:VAL:HG12	5:A:1124:HOH:O	1.83	0.79
1:B:835:GLN:NE2	1:B:882:ARG:HE	1.80	0.79
1:B:145:LYS:N	1:B:145:LYS:HD2	2.00	0.77
1:B:139:ALA:HB2	1:B:208:GLU:HG3	1.66	0.77
1:B:209:THR:HG22	1:B:210:LYS:HG3	1.67	0.77
1:B:219:MSE:HE3	1:B:527:LYS:HZ1	1.48	0.77
1:B:780:ASN:ND2	1:B:783:ASP:H	1.83	0.77
1:B:621:GLU:HG2	1:B:654:THR:HG22	1.65	0.77
1:A:644:VAL:HG23	5:A:1332:HOH:O	1.83	0.77
1:B:353:MSE:HE1	1:B:446:LEU:HD11	1.66	0.76
1:A:823:PRO:HG2	1:A:929:ASN:HD21	1.50	0.76
1:B:271:LEU:HD21	1:B:321:ALA:HB3	1.67	0.76
1:B:656:PRO:HG2	1:B:659:SER:OG	1.86	0.75
1:B:137:HIS:HD1	1:B:513:MSE:HE3	1.52	0.75
1:A:698:LYS:HG2	1:A:699:GLU:H	1.50	0.75
1:B:995:THR:HG22	1:B:999:ALA:H	1.51	0.75
1:A:838:PHE:H	1:A:869:ASN:HD22	1.31	0.75
1:B:124:THR:HG21	1:B:219:MSE:HE1	1.69	0.75
1:A:226:LEU:C	1:A:227:MSE:HE3	2.06	0.75
1:A:952:LYS:CB	1:A:953:PRO:HA	2.16	0.75
1:A:952:LYS:HB3	1:A:953:PRO:CA	2.17	0.75
1:B:337:LEU:HD21	1:B:460:PRO:HB2	1.65	0.75
1:B:503:ASN:HD22	1:B:504:LYS:HD2	1.52	0.74
1:A:898:VAL:HG12	1:A:903:TYR:OH	1.86	0.74
1:A:343:VAL:CG1	1:A:454:ILE:HG22	2.15	0.74
1:A:271:LEU:H	1:A:271:LEU:CD2	1.99	0.74
1:B:781:ILE:HA	1:B:784:ILE:HG23	1.69	0.74
1:B:147:LYS:HB2	1:B:147:LYS:NZ	2.03	0.74
1:B:271:LEU:HB2	1:B:272:PRO:HD2	1.69	0.74
1:B:838:PHE:H	1:B:869:ASN:ND2	1.85	0.74
1:B:691:ARG:HD2	1:B:700:GLU:OE2	1.88	0.73
1:A:246:ILE:HD11	1:A:278:ALA:CB	2.19	0.73
1:A:378:GLU:O	1:A:379:ASP:HB2	1.88	0.72
1:A:780:ASN:HD21	1:A:782:GLU:HG3	1.54	0.72
1:A:379:ASP:HA	1:A:382:LYS:HG3	1.70	0.71

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:355:VAL:HG12	1:B:438:ILE:HG22	1.71	0.71
1:B:171:VAL:O	1:B:172:ASN:HB3	1.90	0.71
1:A:303:THR:HB	5:A:1144:HOH:O	1.90	0.71
1:A:536:MSE:O	1:A:540:GLU:HB2	1.89	0.71
1:A:967:THR:HG23	5:A:1535:HOH:O	1.91	0.71
1:B:742:ASP:HB3	1:B:809:ILE:HB	1.73	0.71
1:B:167:TYR:HB2	1:B:179:HIS:CD2	2.26	0.70
1:A:388:ILE:HD12	1:A:454:ILE:HD11	1.73	0.70
1:A:254:ALA:O	1:A:255:LYS:HB2	1.91	0.70
1:B:671:ARG:HG2	5:B:1162:HOH:O	1.90	0.70
5:A:1173:HOH:O	1:B:996:MSE:HE3	1.91	0.70
1:A:168:GLY:HA3	1:A:177:TYR:CE1	2.27	0.69
1:B:342:ARG:HG3	1:B:457:ASN:HD21	1.58	0.69
1:A:440:ARG:HH12	1:A:444:LEU:HD11	1.54	0.69
1:A:465:THR:HG23	1:A:468:GLY:N	2.03	0.69
1:B:337:LEU:CD2	1:B:460:PRO:HB2	2.22	0.69
1:A:384:VAL:HG13	1:A:410:ALA:HB2	1.75	0.68
1:B:123:GLY:HA2	1:B:148:ALA:HB3	1.75	0.68
1:B:528:GLN:HE21	1:B:532:GLN:NE2	1.91	0.68
1:B:932:PRO:HD2	1:B:1020:THR:HG23	1.76	0.68
1:A:622:LEU:HD23	1:A:622:LEU:N	2.09	0.68
1:B:242:TYR:O	1:B:246:ILE:HG23	1.93	0.68
1:A:150:TYR:H	1:A:223:GLN:NE2	1.90	0.68
1:A:205:ALA:N	1:A:206:PRO:HD3	2.09	0.68
1:A:838:PHE:H	1:A:869:ASN:ND2	1.91	0.68
1:B:522:MSE:CE	1:B:542:LEU:HD12	2.23	0.68
1:B:264:ALA:HB1	5:B:1395:HOH:O	1.93	0.67
1:B:271:LEU:H	1:B:271:LEU:CD2	2.04	0.67
1:B:610:VAL:C	1:B:611:ASN:HD22	1.97	0.67
1:A:440:ARG:HH11	1:A:444:LEU:HD11	1.55	0.67
1:B:644:VAL:HG12	5:B:1128:HOH:O	1.95	0.67
1:B:1020:THR:HG22	5:B:1251:HOH:O	1.95	0.66
1:A:172:ASN:HB2	1:A:174:LYS:O	1.96	0.66
1:B:173:ASP:O	1:B:175:VAL:N	2.28	0.66
1:B:522:MSE:HG3	1:B:549:LEU:CD2	2.25	0.66
1:B:556:LEU:H	1:B:570:GLN:NE2	1.88	0.66
1:B:745:ASP:OD2	1:B:806:HIS:HD2	1.78	0.66
1:A:140:TRP:O	1:A:141:ARG:HB2	1.95	0.66
1:B:433:MSE:HA	1:B:433:MSE:HE2	1.77	0.66
1:A:960:TYR:CA	1:A:1015:MSE:HE3	2.24	0.66
1:B:232:VAL:O	1:B:233:ASN:HB2	1.96	0.65

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:958:PRO:HG2	1:B:1015:MSE:CG	2.21	0.65
1:A:749:LEU:HD12	1:B:749:LEU:HG	1.77	0.65
1:A:931:THR:HG22	5:A:1249:HOH:O	1.95	0.65
1:B:515:ALA:HB3	1:B:516:PRO:HD3	1.77	0.65
1:B:844:ASN:HB3	5:B:1610:HOH:O	1.96	0.65
1:A:200:ILE:HG22	1:A:201:LEU:HG	1.77	0.65
1:A:503:ASN:HD22	1:A:503:ASN:H	1.45	0.65
1:B:590:LYS:HD3	1:B:609:THR:HG21	1.77	0.65
1:B:644:VAL:HG23	5:B:1347:HOH:O	1.97	0.65
1:A:209:THR:HG22	1:A:210:LYS:HG3	1.78	0.64
1:B:384:VAL:C	1:B:409:GLY:HA3	2.17	0.64
1:B:213:TYR:HA	5:B:1416:HOH:O	1.96	0.64
1:B:360:ARG:HB3	1:B:360:ARG:NH1	2.09	0.64
1:A:556:LEU:H	1:A:570:GLN:NE2	1.87	0.64
1:B:153:LYS:O	1:B:157:GLU:HG2	1.97	0.64
1:B:671:ARG:HG2	1:B:671:ARG:HH11	1.63	0.64
1:B:137:HIS:ND1	1:B:513:MSE:HE3	2.13	0.64
1:B:601:ASN:HD21	1:B:713:PHE:H	1.45	0.64
1:A:140:TRP:HA	1:A:174:LYS:HD2	1.79	0.64
1:A:528:GLN:HE21	1:A:532:GLN:NE2	1.95	0.63
1:B:562:LYS:HE2	1:B:562:LYS:HA	1.80	0.63
1:A:135:LYS:HB2	1:B:943:GLU:OE1	1.99	0.63
1:B:384:VAL:O	1:B:409:GLY:HA3	1.98	0.63
1:B:124:THR:HG22	1:B:125:VAL:N	2.14	0.63
1:B:359:ASN:HB2	1:B:434:PRO:HA	1.80	0.63
1:A:174:LYS:O	1:A:175:VAL:HB	1.99	0.63
1:B:389:ALA:HB3	1:B:413:VAL:HG12	1.81	0.63
1:A:149:ARG:HH12	1:A:253:GLY:HA3	1.63	0.63
1:B:427:LEU:CD2	1:B:437:PHE:HB2	2.29	0.62
1:B:995:THR:HG21	5:B:1345:HOH:O	1.99	0.62
1:A:485:ILE:HD12	1:A:571:GLY:HA2	1.82	0.62
1:B:219:MSE:HE3	1:B:527:LYS:NZ	2.13	0.62
1:B:898:VAL:HG22	1:B:903:TYR:OH	2.00	0.62
1:B:144:ASP:C	1:B:145:LYS:HD2	2.19	0.62
1:B:112:LYS:O	1:B:116:GLU:HG3	1.99	0.62
1:B:749:LEU:HD23	1:B:749:LEU:N	2.12	0.62
1:B:829:ARG:NH1	5:B:1173:HOH:O	2.31	0.62
1:A:530:GLU:HA	1:A:541:ARG:HE	1.65	0.62
1:B:433:MSE:HE2	1:B:434:PRO:HD2	1.82	0.62
1:A:193:HIS:HB2	1:A:197:VAL:HA	1.82	0.61
1:A:522:MSE:HE3	1:A:545:ALA:HB3	1.82	0.61

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:462:VAL:HG23	1:B:462:VAL:O	2.00	0.61
1:A:515:ALA:HB3	1:A:516:PRO:HD3	1.83	0.61
1:B:485:ILE:CG1	1:B:596:LYS:HD2	2.30	0.61
1:A:738:SER:O	1:A:739:ASP:HB2	1.99	0.61
1:A:964:ILE:HD13	1:A:1010:TYR:HA	1.81	0.61
1:B:365:LYS:H	1:B:455:THR:HG23	1.65	0.61
1:B:737:ASN:HD22	1:B:743:GLN:NE2	1.99	0.61
1:A:343:VAL:HG11	1:A:446:LEU:CD2	2.30	0.61
1:A:548:VAL:O	1:A:552:SER:HB2	2.00	0.61
1:A:271:LEU:CD2	1:A:321:ALA:HB3	2.31	0.61
1:A:216:GLU:CG	1:A:224:LEU:HD21	2.28	0.60
1:A:507:LYS:HD3	5:A:1436:HOH:O	2.01	0.60
1:B:215:LEU:O	1:B:216:GLU:HG3	2.01	0.60
1:A:882:ARG:NH1	1:B:996:MSE:HE1	2.17	0.60
1:B:343:VAL:CG1	1:B:454:ILE:HG22	2.26	0.60
1:A:331:TYR:HB2	1:A:471:LEU:HD22	1.83	0.60
1:A:867:VAL:HG13	5:A:1115:HOH:O	2.02	0.60
1:B:522:MSE:HE3	1:B:545:ALA:HB3	1.82	0.60
1:B:780:ASN:HD21	1:B:783:ASP:H	1.50	0.60
1:B:958:PRO:O	1:B:1015:MSE:HG2	2.02	0.60
1:A:144:ASP:O	1:A:145:LYS:HB2	2.02	0.60
1:B:136:ASN:O	1:B:137:HIS:HB3	2.02	0.59
1:B:780:ASN:C	1:B:782:GLU:H	2.04	0.59
1:B:893:LYS:O	1:B:894:ASP:C	2.40	0.59
1:A:384:VAL:CG1	1:A:410:ALA:HB2	2.31	0.59
1:A:379:ASP:OD2	1:A:382:LYS:HE3	2.01	0.59
1:B:852:LYS:HE3	5:B:1324:HOH:O	2.00	0.59
1:B:126:VAL:HG22	1:B:256:VAL:HG11	1.84	0.59
1:A:180:ASP:O	1:A:183:LYS:HD2	2.03	0.59
1:B:124:THR:HG21	1:B:219:MSE:CE	2.32	0.59
1:B:465:THR:HG23	1:B:468:GLY:N	2.08	0.59
1:A:214:ARG:HG2	5:A:1578:HOH:O	2.03	0.59
1:A:536:MSE:HE2	1:A:540:GLU:HB3	1.85	0.59
1:B:414:LEU:HD23	1:B:436:ALA:HB3	1.86	0.58
1:B:952:LYS:HD2	1:B:952:LYS:C	2.22	0.58
1:A:723:ILE:HD11	1:A:760:ALA:HB2	1.86	0.58
1:B:107:ASP:OD2	1:B:110:GLN:HA	2.02	0.58
1:B:338:THR:HG21	1:B:354:PRO:HB3	1.85	0.58
1:B:454:ILE:O	1:B:454:ILE:HD12	2.02	0.58
1:B:838:PHE:N	1:B:869:ASN:HD22	1.96	0.58
1:A:960:TYR:CB	1:A:1015:MSE:HE3	2.33	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:533:TYR:N	1:A:534:PRO:HD3	2.18	0.58
1:B:655:ILE:N	1:B:655:ILE:HD12	2.18	0.58
1:A:585:MSE:HG3	5:A:1620:HOH:O	2.04	0.58
1:A:602:VAL:HG13	1:A:603:SER:O	2.03	0.58
1:B:590:LYS:HD3	1:B:609:THR:CG2	2.34	0.58
1:B:557:TYR:OH	1:B:562:LYS:HE2	2.03	0.58
1:B:995:THR:HG23	1:B:997:GLU:N	2.11	0.58
1:A:273:ASP:HA	1:A:276:LYS:NZ	2.19	0.57
1:A:379:ASP:CG	1:A:382:LYS:HE3	2.25	0.57
1:B:171:VAL:O	1:B:172:ASN:CB	2.51	0.57
1:A:183:LYS:HD3	1:A:183:LYS:H	1.69	0.57
1:B:367:TYR:HB2	1:B:454:ILE:CD1	2.34	0.57
1:A:355:VAL:CG2	1:A:436:ALA:HB1	2.33	0.57
1:B:932:PRO:HB3	1:B:955:THR:HG22	1.86	0.57
1:B:228:ARG:HG3	1:B:228:ARG:HH11	1.69	0.57
1:B:148:ALA:O	1:B:149:ARG:O	2.22	0.57
1:B:440:ARG:HG3	1:B:440:ARG:HH11	1.69	0.57
1:A:536:MSE:O	1:A:537:THR:CB	2.52	0.57
1:A:729:GLY:C	1:A:736:ALA:HB2	2.24	0.57
1:B:723:ILE:HD11	1:B:760:ALA:HB2	1.85	0.57
1:A:775:LYS:HE3	1:A:775:LYS:N	2.19	0.57
1:A:833:GLN:HE22	1:A:887:ARG:HH21	1.52	0.57
1:B:427:LEU:HD21	1:B:437:PHE:HB2	1.87	0.57
1:A:376:THR:HG22	5:A:1342:HOH:O	2.04	0.57
1:A:302:LYS:NZ	1:A:302:LYS:HB3	2.20	0.57
1:B:945:ARG:CZ	1:B:991:GLU:HG2	2.35	0.57
1:A:691:ARG:HD2	1:A:700:GLU:OE2	2.05	0.56
1:A:850:LEU:CD2	1:A:856:VAL:HG22	2.36	0.56
1:B:150:TYR:HB2	1:B:223:GLN:HE22	1.70	0.56
1:B:153:LYS:HB2	5:B:1253:HOH:O	2.03	0.56
1:B:272:PRO:HB2	1:B:274:GLU:OE1	2.05	0.56
1:B:160:LYS:CE	1:B:168:GLY:H	2.18	0.56
1:B:388:ILE:HD12	1:B:454:ILE:HD11	1.88	0.56
1:B:738:SER:O	1:B:739:ASP:HB2	2.06	0.56
1:B:933:GLU:OE2	1:B:954:LYS:HE3	2.06	0.56
1:A:146:THR:O	1:A:146:THR:HG22	2.06	0.56
1:B:137:HIS:HD1	1:B:513:MSE:CE	2.18	0.56
1:B:168:GLY:HA2	1:B:177:TYR:CE1	2.40	0.56
1:A:254:ALA:O	1:A:255:LYS:CB	2.54	0.56
1:B:410:ALA:O	1:B:411:VAL:HB	2.06	0.56
1:B:621:GLU:HG2	1:B:654:THR:CG2	2.35	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:271:LEU:HD21	1:A:321:ALA:HB3	1.87	0.56
1:A:634:ASP:HB2	5:A:1583:HOH:O	2.05	0.56
1:A:734:HIS:HD2	5:A:1116:HOH:O	1.88	0.56
1:A:912:ILE:HD12	1:A:913:SER:N	2.21	0.56
1:A:177:TYR:CD2	1:A:227:MSE:HE2	2.41	0.56
1:B:893:LYS:HD2	5:B:1550:HOH:O	2.06	0.56
1:A:637:HIS:HD2	5:A:1250:HOH:O	1.88	0.55
1:B:137:HIS:NE2	1:B:211:GLU:HG2	2.21	0.55
1:A:264:ALA:O	1:A:265:ALA:HB3	2.07	0.55
1:A:171:VAL:O	1:A:172:ASN:O	2.23	0.55
1:B:611:ASN:HD22	1:B:611:ASN:N	2.03	0.55
1:A:738:SER:O	1:A:739:ASP:CB	2.54	0.55
1:A:343:VAL:HG11	1:A:446:LEU:HD21	1.88	0.55
1:B:206:PRO:O	1:B:207:SER:HB3	2.07	0.55
1:A:210:LYS:HA	1:A:337:LEU:CD1	2.26	0.55
1:A:263:ASN:HB2	1:B:991:GLU:OE1	2.06	0.55
1:A:503:ASN:H	1:A:503:ASN:ND2	2.04	0.55
1:B:353:MSE:SE	1:B:442:ASP:HB3	2.57	0.55
1:A:132:GLY:HA3	1:B:942:THR:HG23	1.88	0.54
1:A:944:ASP:OD1	1:A:946:ARG:HD2	2.08	0.54
1:B:454:ILE:HD13	1:B:456:PHE:HE1	1.72	0.54
1:A:113:THR:HG21	1:A:578:LYS:HG3	1.89	0.54
1:A:141:ARG:HE	1:A:141:ARG:CA	2.14	0.54
1:A:181:TYR:O	1:A:241:ASN:ND2	2.41	0.54
1:A:602:VAL:HG22	5:A:1453:HOH:O	2.06	0.54
1:A:912:ILE:HD12	1:A:912:ILE:C	2.27	0.54
1:A:587:VAL:HG22	1:A:612:VAL:HG22	1.90	0.54
1:A:171:VAL:HG12	1:A:172:ASN:OD1	2.08	0.54
1:A:737:ASN:ND2	1:A:740:ALA:HB3	2.23	0.54
1:A:772:LYS:O	1:A:776:GLU:HG3	2.07	0.54
1:A:838:PHE:N	1:A:869:ASN:HD22	2.03	0.54
1:A:926:ILE:HD12	1:A:927:VAL:N	2.22	0.54
1:A:537:THR:HG22	1:A:539:SER:H	1.71	0.54
1:B:216:GLU:O	1:B:218:ALA:N	2.39	0.54
1:B:537:THR:HG23	1:B:540:GLU:H	1.72	0.54
1:A:833:GLN:NE2	1:A:887:ARG:HH21	2.06	0.54
1:A:932:PRO:HD3	1:A:1018:ASN:HB3	1.88	0.54
1:A:655:ILE:HD12	1:A:655:ILE:N	2.23	0.53
1:A:296:ASP:OD2	1:A:302:LYS:HG3	2.07	0.53
1:B:213:TYR:CD1	1:B:513:MSE:HB3	2.43	0.53
1:A:823:PRO:HG2	1:A:929:ASN:ND2	2.22	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:926:ILE:HD12	1:A:926:ILE:C	2.29	0.53
1:A:952:LYS:CB	1:A:953:PRO:CA	2.81	0.53
1:B:213:TYR:C	1:B:214:ARG:HD2	2.28	0.53
1:B:785:GLU:HG3	1:B:969:MSE:CE	2.39	0.53
1:B:158:LYS:O	1:B:162:GLU:HG3	2.09	0.53
1:B:362:GLU:OE1	1:B:365:LYS:HE3	2.08	0.53
1:B:178:TYR:HA	1:B:226:LEU:O	2.08	0.53
1:B:749:LEU:CD2	1:B:749:LEU:N	2.67	0.53
1:A:271:LEU:CD2	1:A:319:PRO:HB2	2.39	0.53
1:A:150:TYR:N	1:A:223:GLN:HE22	2.03	0.53
1:A:798:PHE:HB3	1:A:960:TYR:CE1	2.44	0.53
1:A:882:ARG:CZ	1:B:996:MSE:HE1	2.38	0.53
1:A:585:MSE:HG2	1:A:614:ASN:HA	1.91	0.53
1:B:360:ARG:HH11	1:B:360:ARG:CB	2.15	0.53
1:A:503:ASN:HD22	1:A:503:ASN:N	2.05	0.53
1:A:698:LYS:HG2	1:A:699:GLU:N	2.22	0.53
1:A:779:GLU:O	1:A:780:ASN:HB3	2.07	0.53
1:A:801:GLN:NE2	1:A:963:ARG:HG2	2.23	0.53
1:B:231:ILE:HD11	1:B:266:LEU:HD21	1.89	0.53
1:B:775:LYS:HE3	5:B:1431:HOH:O	2.07	0.53
1:B:652:LYS:NZ	1:B:654:THR:HG23	2.23	0.53
1:B:801:GLN:NE2	1:B:963:ARG:HG2	2.24	0.53
1:A:273:ASP:HA	1:A:276:LYS:HZ3	1.73	0.52
1:B:912:ILE:HD12	1:B:913:SER:N	2.23	0.52
1:A:738:SER:HA	1:A:741:LYS:HE3	1.90	0.52
1:A:440:ARG:CZ	5:A:1614:HOH:O	2.57	0.52
1:B:358:THR:O	1:B:359:ASN:HB2	2.10	0.52
1:A:145:LYS:CD	1:A:147:LYS:HB2	2.40	0.52
1:A:168:GLY:HA3	1:A:177:TYR:HE1	1.74	0.52
1:A:867:VAL:HG12	5:A:1229:HOH:O	2.08	0.52
1:B:530:GLU:HA	1:B:541:ARG:NE	2.25	0.52
1:B:801:GLN:HE22	1:B:963:ARG:HG2	1.74	0.52
1:A:129:ILE:HG21	1:A:242:TYR:CE2	2.45	0.52
1:A:597:VAL:O	1:A:706:TYR:HA	2.08	0.52
1:B:995:THR:CG2	1:B:999:ALA:H	2.21	0.52
1:A:858:TRP:CH2	1:A:860:SER:HB3	2.45	0.52
1:B:123:GLY:CA	1:B:148:ALA:HB3	2.38	0.52
1:A:140:TRP:HZ2	1:A:205:ALA:HB3	1.75	0.52
1:B:223:GLN:HG3	5:B:1314:HOH:O	2.09	0.52
1:A:414:LEU:HD11	1:A:454:ILE:HD13	1.92	0.51
1:A:271:LEU:HB2	1:A:272:PRO:HD2	1.92	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:271:LEU:HG	1:A:321:ALA:HB3	1.92	0.51
1:B:123:GLY:HA2	1:B:148:ALA:CB	2.40	0.51
1:B:383:ASP:C	1:B:385:LYS:H	2.11	0.51
1:B:414:LEU:CD2	1:B:436:ALA:HB3	2.40	0.51
1:A:943:GLU:OE2	1:B:135:LYS:HB2	2.10	0.51
1:B:781:ILE:HA	1:B:784:ILE:CG2	2.38	0.51
1:B:419:GLN:HE22	4:B:1104:CIT:H41	1.75	0.51
1:B:964:ILE:HD13	1:B:1010:TYR:HA	1.93	0.51
1:A:246:ILE:CD1	1:A:278:ALA:HB1	2.31	0.51
1:A:666:PRO:HG2	5:A:1324:HOH:O	2.11	0.51
1:B:242:TYR:OH	1:B:259:MSE:HB3	2.10	0.51
1:B:618:LYS:NZ	1:B:620:GLN:HE22	2.09	0.51
1:B:125:VAL:HB	1:B:253:GLY:O	2.11	0.51
1:B:368:ASP:CB	1:B:387:LYS:HD3	2.41	0.51
1:A:503:ASN:ND2	1:A:504:LYS:HD3	2.26	0.51
1:A:145:LYS:C	1:A:147:LYS:H	2.15	0.50
1:B:371:TYR:HD1	1:B:390:LEU:HD22	1.76	0.50
1:B:1026:LYS:O	1:B:1029:GLU:HG2	2.12	0.50
1:B:653:ILE:HD13	1:B:663:VAL:HG22	1.93	0.50
5:A:1173:HOH:O	1:B:996:MSE:HG2	2.10	0.50
1:B:361:PHE:CE1	1:B:434:PRO:HB2	2.46	0.50
1:B:112:LYS:HG2	1:B:116:GLU:OE2	2.10	0.50
1:B:138:GLU:C	1:B:140:TRP:H	2.13	0.50
1:B:181:TYR:HE2	1:B:227:MSE:HG2	1.76	0.50
1:B:271:LEU:HD11	1:B:275:THR:HG21	1.94	0.50
1:B:345:THR:HG22	1:B:346:ALA:N	2.26	0.50
1:B:860:SER:HB2	1:B:885:LYS:O	2.12	0.50
1:A:528:GLN:HE21	1:A:532:GLN:HE22	1.56	0.50
1:B:213:TYR:H	1:B:213:TYR:HD2	1.58	0.50
1:B:367:TYR:HB2	1:B:454:ILE:HD11	1.93	0.50
1:B:371:TYR:CZ	1:B:373:ASN:HA	2.46	0.50
1:B:147:LYS:HB2	1:B:147:LYS:HZ2	1.74	0.50
1:A:271:LEU:HD22	1:A:319:PRO:HB2	1.94	0.50
1:A:358:THR:O	1:A:359:ASN:HB2	2.12	0.50
1:A:590:LYS:HA	1:A:611:ASN:OD1	2.12	0.50
1:B:584:THR:OG1	1:B:616:SER:HB3	2.11	0.50
1:B:213:TYR:N	1:B:213:TYR:CD2	2.79	0.49
1:B:849:VAL:HG23	1:B:858:TRP:HE3	1.77	0.49
1:B:178:TYR:CG	1:B:178:TYR:O	2.65	0.49
1:B:440:ARG:HG3	1:B:440:ARG:NH1	2.27	0.49
1:A:532:GLN:O	1:A:533:TYR:HB2	2.13	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:893:LYS:HE2	5:A:1334:HOH:O	2.12	0.49
1:A:945:ARG:HG3	1:A:989:LEU:O	2.12	0.49
1:B:210:LYS:O	1:B:212:PRO:HD3	2.12	0.49
1:B:331:TYR:HB2	1:B:471:LEU:HD22	1.94	0.49
1:B:496:ILE:HD11	5:B:1350:HOH:O	2.13	0.49
1:B:639:ALA:O	1:B:640:LEU:HB2	2.12	0.49
1:A:770:ILE:O	1:A:774:VAL:HG23	2.13	0.49
1:B:147:LYS:HB2	1:B:147:LYS:HZ3	1.76	0.49
1:A:250:ILE:HD11	1:A:282:ALA:HB2	1.95	0.49
1:A:671:ARG:HB2	5:A:1514:HOH:O	2.13	0.49
1:B:141:ARG:HH12	1:B:216:GLU:CD	2.16	0.49
1:B:606:PHE:CE1	1:B:667:ILE:HD12	2.48	0.49
1:B:149:ARG:O	1:B:223:GLN:NE2	2.46	0.49
1:B:283:LYS:NZ	1:B:283:LYS:HB2	2.28	0.49
1:A:542:LEU:HD23	1:A:542:LEU:C	2.34	0.49
1:A:924:ASP:HB3	5:A:1407:HOH:O	2.12	0.49
1:B:833:GLN:HE21	1:B:887:ARG:HB2	1.78	0.49
1:A:125:VAL:O	1:A:254:ALA:O	2.30	0.49
1:A:141:ARG:HA	1:A:172:ASN:HD22	1.77	0.49
1:A:203:GLY:O	1:A:204:ASN:HB2	2.13	0.49
1:A:898:VAL:HG11	1:A:903:TYR:CE2	2.48	0.49
1:B:128:VAL:HB	1:B:226:LEU:HD23	1.94	0.49
1:A:414:LEU:HD11	1:A:454:ILE:CD1	2.43	0.48
1:A:414:LEU:HD23	1:A:436:ALA:HB3	1.95	0.48
1:B:345:THR:HB	1:B:347:ASP:OD1	2.12	0.48
1:B:887:ARG:HG2	1:B:887:ARG:HH11	1.77	0.48
1:A:213:TYR:CE1	1:A:493:GLY:HA2	2.48	0.48
1:B:391:ILE:O	1:B:415:ILE:HA	2.13	0.48
1:A:215:LEU:O	1:A:216:GLU:CB	2.62	0.48
1:A:623:TYR:CD2	1:A:696:PRO:HD3	2.49	0.48
1:A:745:ASP:OD2	1:A:806:HIS:HD2	1.97	0.48
1:A:129:ILE:CD1	1:A:246:ILE:HG22	2.44	0.48
1:B:124:THR:CG2	1:B:125:VAL:N	2.76	0.48
1:B:503:ASN:ND2	1:B:504:LYS:HD2	2.24	0.48
1:A:1029:GLU:O	1:A:1030:GLY:C	2.52	0.48
1:B:782:GLU:HG3	1:B:783:ASP:OD1	2.13	0.48
1:A:174:LYS:O	1:A:175:VAL:CB	2.61	0.48
1:A:757:ASN:ND2	5:A:1129:HOH:O	2.47	0.48
1:A:845:LEU:HB3	1:A:863:THR:HB	1.96	0.48
1:B:346:ALA:C	1:B:348:GLN:H	2.16	0.48
1:A:898:VAL:CG1	1:A:903:TYR:OH	2.61	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1004:LYS:NZ	1:A:1004:LYS:HB3	2.29	0.48
1:B:695:ASP:HB3	1:B:698:LYS:HD2	1.96	0.48
1:A:171:VAL:O	1:A:175:VAL:O	2.31	0.48
1:A:1015:MSE:HA	1:A:1015:MSE:HE2	1.94	0.48
1:B:171:VAL:O	1:B:171:VAL:HG12	2.13	0.48
1:A:533:TYR:H	1:A:534:PRO:HD3	1.79	0.48
5:A:1129:HOH:O	1:B:996:MSE:HE3	2.14	0.48
1:A:485:ILE:HG12	1:A:596:LYS:HE3	1.96	0.47
1:B:397:ASP:HB2	4:B:1106:CIT:O3	2.14	0.47
1:B:528:GLN:NE2	1:B:532:GLN:HE22	2.03	0.47
1:B:729:GLY:C	1:B:736:ALA:HB2	2.35	0.47
1:A:115:GLN:C	1:A:117:LYS:H	2.18	0.47
1:A:213:TYR:HE1	1:A:493:GLY:HA2	1.79	0.47
1:B:198:SER:HB2	1:B:202:SER:OG	2.14	0.47
1:B:849:VAL:HG23	1:B:858:TRP:CE3	2.49	0.47
1:B:946:ARG:NH2	1:B:984:ASP:OD2	2.47	0.47
1:A:391:ILE:O	1:A:415:ILE:HA	2.14	0.47
1:B:197:VAL:HG12	1:B:197:VAL:O	2.13	0.47
1:B:213:TYR:CE1	1:B:513:MSE:HB3	2.49	0.47
1:A:882:ARG:CZ	1:B:996:MSE:CE	2.92	0.47
1:B:591:ASP:OD1	1:B:593:THR:N	2.33	0.47
1:B:142:LEU:HD13	1:B:143:THR:H	1.79	0.47
1:B:912:ILE:HD12	1:B:912:ILE:C	2.35	0.47
1:A:180:ASP:OD2	1:A:228:ARG:HD3	2.14	0.47
1:A:445:LEU:C	1:A:445:LEU:HD23	2.35	0.47
1:B:141:ARG:O	1:B:142:LEU:O	2.32	0.47
1:A:226:LEU:O	1:A:227:MSE:HE3	2.14	0.47
1:A:750:GLN:HA	5:A:1616:HOH:O	2.14	0.47
1:B:213:TYR:CE1	1:B:493:GLY:HA2	2.50	0.47
1:B:833:GLN:NE2	1:B:884:GLU:HA	2.30	0.47
1:A:255:LYS:HZ2	1:A:255:LYS:HB3	1.80	0.47
1:B:874:LEU:HD23	1:B:878:LEU:HD21	1.97	0.47
1:A:265:ALA:HB3	5:A:1533:HOH:O	2.14	0.47
1:A:833:GLN:HE21	1:A:887:ARG:HE	1.62	0.47
1:B:398:PHE:CE1	1:B:425:ILE:HG21	2.50	0.47
1:A:198:SER:HB3	1:A:202:SER:OG	2.15	0.47
1:A:778:VAL:O	1:A:778:VAL:CG2	2.62	0.47
1:A:177:TYR:HB3	1:A:225:LEU:HD22	1.97	0.46
1:A:200:ILE:O	1:A:201:LEU:HB2	2.15	0.46
1:A:342:ARG:CD	1:A:457:ASN:HD21	2.28	0.46
1:A:820:ALA:CB	1:A:926:ILE:HG13	2.45	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:611:ASN:HD21	1:B:662:GLN:HG2	1.72	0.46
1:A:149:ARG:HG2	1:A:149:ARG:HH11	1.80	0.46
1:B:200:ILE:O	1:B:201:LEU:HB2	2.16	0.46
1:B:111:VAL:HG11	1:B:218:ALA:HB1	1.98	0.46
1:A:145:LYS:O	1:A:147:LYS:N	2.49	0.46
1:A:392:GLU:HB2	1:A:416:TYR:CZ	2.50	0.46
1:B:337:LEU:HA	1:B:462:VAL:HA	1.97	0.46
1:B:341:VAL:HA	1:B:455:THR:O	2.16	0.46
1:B:228:ARG:HG3	1:B:228:ARG:NH1	2.31	0.46
1:A:183:LYS:HB2	1:A:183:LYS:NZ	2.31	0.46
1:B:141:ARG:HG2	1:B:141:ARG:HH11	1.80	0.46
1:A:137:HIS:O	1:A:138:GLU:O	2.34	0.46
1:A:263:ASN:ND2	1:B:945:ARG:HG2	2.30	0.46
1:A:723:ILE:HG12	1:A:758:PHE:CD2	2.51	0.46
1:B:367:TYR:HB2	1:B:454:ILE:HD12	1.98	0.46
1:A:215:LEU:O	1:A:216:GLU:HB2	2.16	0.45
1:A:529:TYR:O	1:A:532:GLN:O	2.33	0.45
1:A:960:TYR:CD1	1:A:961:ARG:HG3	2.52	0.45
1:A:1026:LYS:HA	1:A:1029:GLU:HG2	1.97	0.45
1:B:139:ALA:C	1:B:141:ARG:N	2.70	0.45
1:B:384:VAL:O	1:B:385:LYS:C	2.55	0.45
1:B:780:ASN:HD21	1:B:783:ASP:N	2.12	0.45
1:B:898:VAL:HG21	1:B:903:TYR:CE2	2.51	0.45
1:A:153:LYS:HE3	5:A:1622:HOH:O	2.17	0.45
1:B:777:GLY:O	1:B:778:VAL:C	2.54	0.45
1:B:780:ASN:HD21	1:B:783:ASP:HB2	1.81	0.45
1:A:213:TYR:CE1	1:A:513:MSE:HB2	2.52	0.45
1:A:728:ASP:O	1:A:741:LYS:HG3	2.17	0.45
1:A:729:GLY:O	1:A:736:ALA:HB2	2.17	0.45
1:A:960:TYR:HB2	1:A:1015:MSE:HE3	1.98	0.45
1:B:125:VAL:CG1	1:B:225:LEU:HG	2.46	0.45
1:B:454:ILE:HD13	1:B:456:PHE:CE1	2.50	0.45
1:B:734:HIS:HE1	5:B:1328:HOH:O	1.98	0.45
1:A:528:GLN:HG2	1:A:532:GLN:NE2	2.32	0.45
1:A:775:LYS:NZ	5:A:1322:HOH:O	2.49	0.45
1:B:368:ASP:HB3	1:B:387:LYS:HD3	1.96	0.45
1:B:601:ASN:ND2	1:B:713:PHE:H	2.13	0.45
1:B:671:ARG:HG2	1:B:671:ARG:NH1	2.29	0.45
1:B:1029:GLU:O	1:B:1030:GLY:C	2.55	0.45
1:A:271:LEU:HD23	1:A:271:LEU:N	2.09	0.45
1:A:302:LYS:HB3	1:A:302:LYS:HZ3	1.80	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:337:LEU:CD1	1:A:460:PRO:HB2	2.46	0.45
1:B:173:ASP:O	1:B:174:LYS:C	2.55	0.45
1:B:254:ALA:C	1:B:256:VAL:H	2.20	0.45
1:A:476:SER:O	1:A:477:TRP:C	2.55	0.45
1:A:803:ASP:HB2	5:A:1141:HOH:O	2.17	0.45
1:A:157:GLU:CD	1:A:160:LYS:HE3	2.37	0.45
1:B:364:ASN:C	1:B:364:ASN:HD22	2.20	0.45
1:A:242:TYR:OH	1:A:259:MSE:HB3	2.17	0.45
1:A:850:LEU:HD21	1:A:856:VAL:HG22	1.99	0.45
1:B:228:ARG:HH21	1:B:230:GLU:CD	2.20	0.45
1:B:626:ALA:CB	1:B:665:VAL:HG11	2.47	0.45
1:A:271:LEU:CG	1:A:321:ALA:HB3	2.46	0.44
1:A:149:ARG:HG2	1:A:149:ARG:NH1	2.33	0.44
1:B:263:ASN:O	1:B:264:ALA:O	2.35	0.44
1:B:265:ALA:HB2	5:B:1597:HOH:O	2.17	0.44
1:A:556:LEU:N	1:A:570:GLN:HE22	1.89	0.44
1:B:108:PRO:HB2	1:B:492:PRO:HG2	1.99	0.44
1:B:111:VAL:HG11	1:B:218:ALA:CB	2.47	0.44
1:B:172:ASN:OD1	1:B:173:ASP:N	2.50	0.44
1:B:965:ALA:HB2	1:B:978:TYR:CE1	2.52	0.44
1:B:138:GLU:C	1:B:140:TRP:N	2.70	0.44
1:B:308:ALA:HA	1:B:638:PHE:CE1	2.53	0.44
1:B:969:MSE:HE1	1:B:974:PRO:HB3	2.00	0.44
1:A:378:GLU:HG2	1:A:379:ASP:N	2.33	0.44
1:A:471:LEU:HD21	1:A:556:LEU:HD13	1.99	0.44
1:A:528:GLN:NE2	1:A:532:GLN:NE2	2.65	0.44
1:B:786:SER:HB2	5:B:1581:HOH:O	2.18	0.44
1:A:125:VAL:CG1	1:A:225:LEU:HG	2.48	0.44
1:B:406:LYS:NZ	1:B:431:ASP:HB3	2.32	0.44
1:B:532:GLN:HG2	1:B:533:TYR:CE1	2.52	0.44
1:B:960:TYR:CD1	1:B:961:ARG:HG3	2.53	0.44
1:A:536:MSE:O	1:A:540:GLU:OE2	2.36	0.44
1:A:898:VAL:CG1	1:A:903:TYR:CZ	3.00	0.44
1:B:136:ASN:C	1:B:138:GLU:H	2.21	0.44
1:B:264:ALA:O	1:B:265:ALA:HB3	2.17	0.44
1:B:377:LYS:HB2	1:B:380:ASP:OD2	2.18	0.44
1:A:131:ALA:HA	1:A:229:VAL:O	2.18	0.44
1:A:378:GLU:O	1:A:379:ASP:CB	2.61	0.44
1:A:476:SER:HB2	1:A:569:GLN:HA	1.98	0.44
1:A:850:LEU:HD22	1:A:856:VAL:HA	2.00	0.44
1:A:982:ASN:ND2	5:A:1191:HOH:O	2.50	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:137:HIS:CE1	1:B:513:MSE:HE3	2.53	0.44
1:B:356:LEU:O	1:B:436:ALA:HA	2.17	0.44
1:B:849:VAL:HG21	1:B:888:TRP:CD2	2.53	0.44
1:A:264:ALA:HB3	5:A:1500:HOH:O	2.17	0.44
1:A:623:TYR:CE1	1:A:652:LYS:HG2	2.53	0.44
1:A:723:ILE:HG12	1:A:758:PHE:CE2	2.53	0.44
1:A:965:ALA:HB2	1:A:978:TYR:CE1	2.53	0.44
1:B:126:VAL:HA	1:B:256:VAL:HG13	2.00	0.44
1:B:734:HIS:HD2	5:B:1138:HOH:O	2.00	0.44
1:B:1014:ASP:OD1	1:B:1014:ASP:C	2.57	0.44
1:A:585:MSE:HE2	1:A:620:GLN:NE2	2.33	0.43
1:A:622:LEU:HD21	1:A:655:ILE:CD1	2.40	0.43
1:A:801:GLN:HE22	1:A:963:ARG:HG2	1.83	0.43
1:A:874:LEU:HD23	1:A:878:LEU:HD21	1.99	0.43
1:B:126:VAL:HG22	1:B:256:VAL:CG1	2.48	0.43
1:A:256:VAL:CG1	1:A:519:ALA:HB1	2.48	0.43
1:A:528:GLN:HG2	1:A:532:GLN:HE21	1.82	0.43
1:B:142:LEU:HD13	1:B:143:THR:O	2.18	0.43
1:B:409:GLY:O	1:B:410:ALA:HB3	2.18	0.43
1:B:570:GLN:HE21	1:B:573:GLY:HA2	1.83	0.43
1:B:618:LYS:CE	1:B:620:GLN:HE22	2.31	0.43
1:A:242:TYR:CE2	1:A:259:MSE:SE	3.21	0.43
1:A:337:LEU:HD11	1:A:460:PRO:HB2	2.00	0.43
1:A:946:ARG:NH2	1:A:984:ASP:OD2	2.51	0.43
1:B:344:LYS:HB2	1:B:451:GLN:CD	2.39	0.43
1:B:589:ASP:OD1	1:B:591:ASP:OD1	2.36	0.43
1:A:835:GLN:HE21	1:A:882:ARG:NE	2.04	0.43
1:A:898:VAL:HG11	1:A:903:TYR:CZ	2.54	0.43
1:B:145:LYS:HE3	1:B:221:GLU:OE1	2.17	0.43
1:A:206:PRO:O	1:A:207:SER:HB3	2.19	0.43
1:A:235:LEU:HD22	1:A:235:LEU:N	2.33	0.43
1:A:528:GLN:NE2	1:A:532:GLN:HE22	2.16	0.43
1:A:749:LEU:CD1	1:B:749:LEU:HG	2.46	0.43
1:B:111:VAL:HG12	1:B:111:VAL:O	2.18	0.43
1:B:410:ALA:O	1:B:411:VAL:CB	2.67	0.43
1:B:142:LEU:HD13	1:B:143:THR:N	2.33	0.43
1:B:214:ARG:HD2	1:B:214:ARG:N	2.34	0.43
1:A:485:ILE:CG1	1:A:596:LYS:HE3	2.48	0.43
1:A:728:ASP:HB2	5:A:1636:HOH:O	2.19	0.43
1:A:785:GLU:HG3	1:A:969:MSE:HE1	2.00	0.43
1:A:967:THR:HG22	1:A:976:THR:HA	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1031:HIS:O	1:B:191:GLN:HG2	2.19	0.43
1:B:172:ASN:C	1:B:173:ASP:O	2.57	0.43
1:B:353:MSE:CE	1:B:446:LEU:HD11	2.44	0.43
1:B:392:GLU:HB2	1:B:416:TYR:CZ	2.53	0.43
1:B:623:TYR:HA	1:B:651:GLN:O	2.18	0.43
1:B:796:GLY:HA2	1:B:818:TYR:O	2.18	0.43
1:B:723:ILE:HG12	1:B:758:PHE:CD2	2.53	0.43
1:B:1014:ASP:OD2	1:B:1018:ASN:HB2	2.18	0.43
1:A:197:VAL:O	1:A:197:VAL:HG12	2.18	0.43
1:A:232:VAL:O	1:A:233:ASN:HB3	2.19	0.43
1:B:275:THR:O	1:B:279:PHE:HD1	2.01	0.43
1:A:209:THR:HG22	1:A:210:LYS:N	2.33	0.42
1:A:968:TYR:O	1:A:975:THR:HG22	2.19	0.42
1:B:476:SER:O	1:B:477:TRP:C	2.57	0.42
1:A:621:GLU:C	1:A:622:LEU:HD23	2.40	0.42
1:B:194:GLY:O	1:B:198:SER:HA	2.19	0.42
1:B:383:ASP:CG	1:B:384:VAL:H	2.23	0.42
1:B:485:ILE:HD12	1:B:571:GLY:HA2	2.00	0.42
1:B:556:LEU:N	1:B:570:GLN:HE22	1.90	0.42
1:B:610:VAL:HG11	1:B:704:ILE:HG21	2.01	0.42
1:A:205:ALA:N	1:A:206:PRO:CD	2.79	0.42
1:A:934:VAL:C	1:A:952:LYS:HG3	2.39	0.42
1:A:944:ASP:OD2	1:B:135:LYS:HE3	2.19	0.42
1:B:341:VAL:CG1	1:B:454:ILE:HB	2.49	0.42
1:B:384:VAL:O	1:B:384:VAL:HG12	2.19	0.42
1:B:451:GLN:O	1:B:453:THR:N	2.52	0.42
1:A:138:GLU:HG3	1:A:215:LEU:HD12	2.01	0.42
1:A:741:LYS:HE2	1:A:741:LYS:N	2.33	0.42
1:B:494:GLN:O	1:B:496:ILE:HD12	2.18	0.42
1:B:585:MSE:HE1	1:B:622:LEU:HD21	2.00	0.42
1:A:210:LYS:HD2	5:A:1303:HOH:O	2.19	0.42
1:B:369:TYR:CE1	1:B:452:LYS:HD2	2.55	0.42
1:B:554:THR:HA	1:B:700:GLU:OE1	2.19	0.42
1:A:215:LEU:C	1:A:216:GLU:HG3	2.40	0.42
1:A:388:ILE:CD1	1:A:454:ILE:HD11	2.46	0.42
1:A:537:THR:HG22	1:A:539:SER:N	2.35	0.42
1:B:780:ASN:O	1:B:782:GLU:N	2.52	0.42
1:B:858:TRP:CH2	1:B:860:SER:HB3	2.55	0.42
1:B:364:ASN:C	1:B:364:ASN:ND2	2.73	0.42
1:B:369:TYR:O	1:B:452:LYS:HB3	2.18	0.42
1:B:503:ASN:ND2	1:B:503:ASN:H	2.17	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:572:ALA:HA	1:A:705:PRO:HD3	2.00	0.42
1:B:441:LYS:HE2	5:B:1498:HOH:O	2.19	0.42
1:B:932:PRO:HD3	1:B:1018:ASN:HB3	2.02	0.42
1:A:192:GLU:C	1:A:194:GLY:H	2.23	0.42
1:A:229:VAL:HG12	1:A:238:TYR:CE1	2.55	0.42
1:B:137:HIS:CD2	1:B:211:GLU:HG2	2.55	0.42
1:B:218:ALA:O	1:B:524:LEU:HD11	2.20	0.41
1:B:584:THR:HG22	5:B:1386:HOH:O	2.20	0.41
1:A:175:VAL:O	1:A:175:VAL:HG12	2.21	0.41
1:A:1028:LEU:O	1:A:1029:GLU:C	2.58	0.41
1:B:537:THR:HG22	1:B:540:GLU:CG	2.49	0.41
1:B:611:ASN:ND2	1:B:611:ASN:N	2.68	0.41
1:B:740:ALA:HB1	1:B:743:GLN:HE21	1.85	0.41
1:A:833:GLN:NE2	1:A:884:GLU:HA	2.36	0.41
1:B:218:ALA:HB1	1:B:524:LEU:HD12	2.02	0.41
1:B:345:THR:HA	1:B:449:ASN:OD1	2.20	0.41
1:B:738:SER:O	1:B:739:ASP:CB	2.69	0.41
1:B:757:ASN:ND2	5:B:1122:HOH:O	2.53	0.41
1:B:135:LYS:O	1:B:137:HIS:N	2.53	0.41
1:B:331:TYR:HB3	1:B:471:LEU:HD13	2.03	0.41
1:B:398:PHE:HE1	1:B:425:ILE:HG21	1.84	0.41
1:A:833:GLN:NE2	1:A:887:ARG:HE	2.18	0.41
1:A:951:SER:OG	1:A:952:LYS:HG2	2.21	0.41
1:B:390:LEU:C	1:B:390:LEU:HD23	2.41	0.41
1:B:940:PHE:CZ	1:B:945:ARG:HA	2.55	0.41
1:A:156:LEU:HD13	1:A:156:LEU:C	2.41	0.41
1:A:275:THR:O	1:A:279:PHE:HD1	2.02	0.41
1:A:440:ARG:HD3	5:A:1624:HOH:O	2.20	0.41
1:B:780:ASN:C	1:B:782:GLU:N	2.71	0.41
1:B:141:ARG:HA	1:B:141:ARG:HD2	1.83	0.41
1:B:178:TYR:O	1:B:178:TYR:CD2	2.73	0.41
1:B:614:ASN:ND2	1:B:657:ALA:HA	2.36	0.41
1:B:679:GLN:HE21	1:B:679:GLN:HB2	1.67	0.41
1:A:232:VAL:O	1:A:233:ASN:CB	2.69	0.41
1:B:139:ALA:HB1	1:B:206:PRO:CA	2.38	0.41
1:B:255:LYS:HA	1:B:287:VAL:HG22	2.03	0.41
1:B:537:THR:OG1	1:B:538:PRO:HD2	2.21	0.41
1:B:801:GLN:HE22	1:B:963:ARG:CG	2.33	0.41
1:A:174:LYS:NZ	1:A:216:GLU:OE1	2.53	0.41
1:A:221:GLU:OE2	1:A:221:GLU:HA	2.20	0.41
1:A:503:ASN:ND2	1:A:503:ASN:N	2.64	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:248:ASP:O	1:B:252:LEU:HG	2.21	0.41
1:B:685:PHE:CD2	1:B:707:ILE:HD11	2.54	0.41
1:A:259:MSE:HG3	1:A:289:ILE:HG23	2.02	0.41
1:A:640:LEU:HD12	1:A:640:LEU:HA	1.89	0.41
1:A:1028:LEU:O	1:A:1030:GLY:N	2.54	0.41
1:B:133:PHE:CD1	1:B:133:PHE:N	2.89	0.41
1:B:383:ASP:C	1:B:385:LYS:N	2.74	0.41
1:B:416:TYR:HA	1:B:438:ILE:O	2.21	0.41
1:B:442:ASP:O	1:B:445:LEU:HB3	2.21	0.41
1:B:547:LYS:NZ	1:B:593:THR:O	2.54	0.41
1:A:243:ALA:O	1:A:246:ILE:HG12	2.20	0.40
1:A:946:ARG:HH21	1:B:500:VAL:HB	1.86	0.40
1:B:236:ALA:O	1:B:240:ARG:HG3	2.21	0.40
1:B:355:VAL:HG12	1:B:438:ILE:CG2	2.47	0.40
1:B:365:LYS:HB3	1:B:366:ALA:H	1.60	0.40
1:B:1029:GLU:O	1:B:1031:HIS:N	2.53	0.40
1:A:247:ARG:NH2	1:A:277:LYS:NZ	2.69	0.40
1:B:171:VAL:O	1:B:172:ASN:ND2	2.53	0.40
1:B:206:PRO:O	1:B:207:SER:CB	2.68	0.40
1:B:369:TYR:CZ	1:B:452:LYS:HA	2.57	0.40
1:B:527:LYS:HE3	1:B:527:LYS:HB2	1.94	0.40
1:B:772:LYS:O	1:B:776:GLU:HG3	2.21	0.40
1:B:910:THR:HA	1:B:911:PRO:HD3	1.98	0.40
1:A:944:ASP:O	1:A:945:ARG:CB	2.68	0.40
1:A:946:ARG:NH2	1:B:500:VAL:HB	2.36	0.40
1:B:381:PHE:O	1:B:382:LYS:C	2.59	0.40
1:B:572:ALA:HA	1:B:705:PRO:HD3	2.03	0.40
1:B:626:ALA:HB3	1:B:665:VAL:HG11	2.03	0.40
1:B:723:ILE:HD12	1:B:724:TYR:H	1.86	0.40
1:B:737:ASN:ND2	1:B:743:GLN:HE22	2.20	0.40
1:B:798:PHE:HB3	1:B:960:TYR:CE1	2.56	0.40
1:A:156:LEU:HG	1:A:176:ALA:O	2.21	0.40
1:A:850:LEU:HD22	1:A:856:VAL:HG22	2.03	0.40
1:B:264:ALA:HB3	5:B:1406:HOH:O	2.20	0.40
1:B:346:ALA:C	1:B:348:GLN:N	2.74	0.40
1:B:368:ASP:HB2	1:B:387:LYS:HD3	2.03	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	924/926 (100%)	830 (90%)	64 (7%)	30 (3%)	4	0
1	B	924/926 (100%)	818 (88%)	70 (8%)	36 (4%)	3	0
All	All	1848/1852 (100%)	1648 (89%)	134 (7%)	66 (4%)	3	0

All (66) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	138	GLU
1	A	140	TRP
1	A	145	LYS
1	A	172	ASN
1	A	184	ASP
1	A	207	SER
1	A	254	ALA
1	A	264	ALA
1	A	592	ASN
1	A	952	LYS
1	A	1029	GLU
1	A	1030	GLY
1	B	141	ARG
1	B	142	LEU
1	B	146	THR
1	B	149	ARG
1	B	172	ASN
1	B	174	LYS
1	B	189	VAL
1	B	217	GLY
1	B	264	ALA
1	B	384	VAL
1	B	741	LYS
1	B	778	VAL
1	B	781	ILE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	1030	GLY
1	A	146	THR
1	A	183	LYS
1	A	233	ASN
1	A	255	LYS
1	A	323	ASP
1	B	136	ASN
1	B	173	ASP
1	B	200	ILE
1	B	364	ASN
1	B	366	ALA
1	B	408	ALA
1	B	894	ASP
1	A	141	ARG
1	A	204	ASN
1	B	144	ASP
1	B	170	TRP
1	B	185	GLY
1	B	186	LYS
1	B	233	ASN
1	B	382	LYS
1	B	385	LYS
1	B	777	GLY
1	A	200	ILE
1	A	531	THR
1	A	739	ASP
1	A	971	GLU
1	B	207	SER
1	B	367	TYR
1	B	476	SER
1	A	136	ASN
1	A	495	ASP
1	A	780	ASN
1	B	206	PRO
1	A	175	VAL
1	A	379	ASP
1	B	195	THR
1	B	495	ASP
1	A	189	VAL
1	A	537	THR
1	B	411	VAL

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	771/760 (101%)	736 (96%)	35 (4%)	27	18
1	B	771/760 (101%)	739 (96%)	32 (4%)	30	20
All	All	1542/1520 (101%)	1475 (96%)	67 (4%)	29	19

All (67) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	106	ASN
1	A	140	TRP
1	A	141	ARG
1	A	142	LEU
1	A	183	LYS
1	A	184	ASP
1	A	213	TYR
1	A	227	MSE
1	A	242	TYR
1	A	255	LYS
1	A	271	LEU
1	A	303	THR
1	A	336	GLN
1	A	384	VAL
1	A	390	LEU
1	A	407	LYS
1	A	503	ASN
1	A	552	SER
1	A	560	ASP
1	A	602	VAL
1	A	622	LEU
1	A	640	LEU
1	A	651	GLN
1	A	723	ILE
1	A	741	LYS
1	A	758	PHE
1	A	775	LYS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	778	VAL
1	A	780	ASN
1	A	818	TYR
1	A	926	ILE
1	A	960	TYR
1	A	994	GLU
1	A	1004	LYS
1	A	1026	LYS
1	B	106	ASN
1	B	142	LEU
1	B	145	LYS
1	B	155	ASP
1	B	167	TYR
1	B	213	TYR
1	B	227	MSE
1	B	228	ARG
1	B	242	TYR
1	B	246	ILE
1	B	271	LEU
1	B	328	VAL
1	B	337	LEU
1	B	360	ARG
1	B	364	ASN
1	B	400	ASP
1	B	503	ASN
1	B	504	LYS
1	B	522	MSE
1	B	554	THR
1	B	640	LEU
1	B	694	GLN
1	B	723	ILE
1	B	749	LEU
1	B	758	PHE
1	B	783	ASP
1	B	785	GLU
1	B	862	VAL
1	B	952	LYS
1	B	960	TYR
1	B	994	GLU
1	B	995	THR

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	115	GLN
1	A	223	GLN
1	A	233	ASN
1	A	244	GLN
1	A	263	ASN
1	A	336	GLN
1	A	451	GLN
1	A	457	ASN
1	A	484	ASN
1	A	503	ASN
1	A	526	GLN
1	A	532	GLN
1	A	569	GLN
1	A	570	GLN
1	A	651	GLN
1	A	694	GLN
1	A	734	HIS
1	A	756	ASN
1	A	757	ASN
1	A	780	ASN
1	A	806	HIS
1	A	833	GLN
1	A	835	GLN
1	A	844	ASN
1	A	855	ASN
1	A	869	ASN
1	A	929	ASN
1	A	982	ASN
1	A	1018	ASN
1	B	115	GLN
1	B	136	ASN
1	B	204	ASN
1	B	223	GLN
1	B	241	ASN
1	B	263	ASN
1	B	349	GLN
1	B	364	ASN
1	B	419	GLN
1	B	494	GLN
1	B	503	ASN
1	B	526	GLN
1	B	532	GLN
1	B	569	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	570	GLN
1	B	601	ASN
1	B	611	ASN
1	B	620	GLN
1	B	658	ASN
1	B	679	GLN
1	B	743	GLN
1	B	756	ASN
1	B	780	ASN
1	B	801	GLN
1	B	806	HIS
1	B	833	GLN
1	B	835	GLN
1	B	844	ASN
1	B	869	ASN
1	B	982	ASN
1	B	1018	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 10 ligands modelled in this entry, 2 are monoatomic - leaving 8 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
4	CIT	B	1102	-	3,12,12	1.61	1 (33%)	3,17,17	4.52	3 (100%)
4	CIT	B	1106	-	3,12,12	1.69	0	3,17,17	4.33	3 (100%)
2	ACT	A	1107	-	1,3,3	0.31	0	0,3,3	-	-
4	CIT	A	1103	-	3,12,12	1.88	1 (33%)	3,17,17	3.73	2 (66%)
2	ACT	B	1108	-	1,3,3	0.56	0	0,3,3	-	-
4	CIT	A	1105	-	3,12,12	1.73	1 (33%)	3,17,17	4.04	2 (66%)
4	CIT	B	1104	-	3,12,12	1.81	1 (33%)	3,17,17	3.80	2 (66%)
4	CIT	A	1101	-	3,12,12	1.85	1 (33%)	3,17,17	4.85	3 (100%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	CIT	B	1102	-	-	4/6/16/16	-
4	CIT	B	1106	-	-	4/6/16/16	-
4	CIT	A	1103	-	-	4/6/16/16	-
4	CIT	A	1105	-	-	3/6/16/16	-
4	CIT	B	1104	-	-	4/6/16/16	-
4	CIT	A	1101	-	-	4/6/16/16	-

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	1103	CIT	C4-C3	-2.55	1.51	1.54
4	B	1104	CIT	C4-C3	-2.40	1.51	1.54
4	A	1101	CIT	O7-C3	2.37	1.46	1.43
4	A	1105	CIT	C4-C3	-2.17	1.51	1.54
4	B	1102	CIT	O7-C3	2.08	1.46	1.43

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	B	1106	CIT	C4-C3-C2	6.13	125.72	109.33
4	A	1105	CIT	C4-C3-C2	6.05	125.52	109.33
4	B	1102	CIT	C4-C3-C2	5.62	124.37	109.33
4	A	1101	CIT	C4-C3-C2	5.59	124.29	109.33
4	B	1104	CIT	C4-C3-C2	5.53	124.11	109.33

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	A	1103	CIT	C4-C3-C2	5.09	122.93	109.33
4	A	1101	CIT	C3-C4-C5	4.56	122.29	114.98
4	A	1101	CIT	C3-C2-C1	4.31	121.89	114.98
4	A	1103	CIT	C3-C2-C1	3.97	121.34	114.98
4	B	1102	CIT	C3-C2-C1	3.96	121.33	114.98
4	B	1102	CIT	C3-C4-C5	3.74	120.97	114.98
4	B	1104	CIT	C3-C2-C1	3.33	120.31	114.98
4	B	1106	CIT	C3-C2-C1	3.26	120.20	114.98
4	A	1105	CIT	C3-C2-C1	3.14	120.02	114.98
4	B	1106	CIT	C3-C4-C5	2.82	119.50	114.98

There are no chirality outliers.

All (23) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	1101	CIT	C1-C2-C3-O7
4	A	1101	CIT	C1-C2-C3-C6
4	A	1101	CIT	O7-C3-C4-C5
4	A	1103	CIT	C1-C2-C3-O7
4	A	1103	CIT	C1-C2-C3-C6
4	A	1103	CIT	O7-C3-C4-C5
4	A	1105	CIT	C1-C2-C3-O7
4	A	1105	CIT	C1-C2-C3-C6
4	A	1105	CIT	C2-C3-C4-C5
4	B	1102	CIT	C1-C2-C3-O7
4	B	1102	CIT	C1-C2-C3-C6
4	B	1102	CIT	O7-C3-C4-C5
4	B	1104	CIT	C1-C2-C3-O7
4	B	1104	CIT	C1-C2-C3-C6
4	B	1104	CIT	C2-C3-C4-C5
4	B	1106	CIT	C1-C2-C3-O7
4	B	1106	CIT	C1-C2-C3-C6
4	B	1106	CIT	C2-C3-C4-C5
4	B	1104	CIT	O7-C3-C4-C5
4	A	1101	CIT	C6-C3-C4-C5
4	B	1102	CIT	C6-C3-C4-C5
4	B	1106	CIT	C6-C3-C4-C5
4	A	1103	CIT	C2-C3-C4-C5

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	B	1106	CIT	1	0
4	B	1104	CIT	1	0

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.