



Full wwPDB EM Validation Report ⓘ

May 1, 2024 – 02:20 am BST

PDB ID : 4UI9
EMDB ID : EMD-2924
Title : Atomic structure of the human Anaphase-Promoting Complex
Authors : Chang, L.; Zhang, Z.; Yang, J.; McLaughlin, S.H.; Barford, D.
Deposited on : 2015-03-27
Resolution : 3.60 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

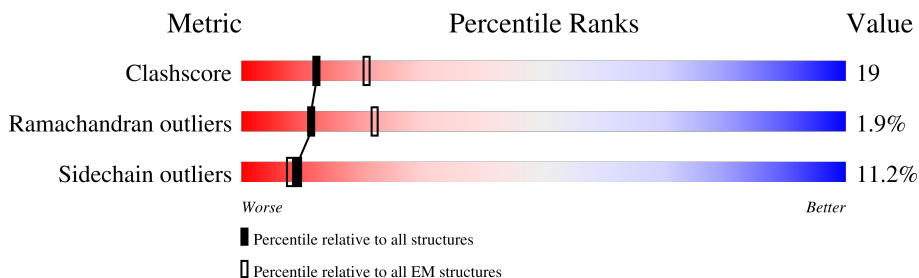
EMDB validation analysis : 0.0.1.dev92
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.60 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



| Metric | Whole archive (#Entries) | EM structures (#Entries) |
|-----------------------|--------------------------|--------------------------|
| Clashscore | 158937 | 4297 |
| Ramachandran outliers | 154571 | 4023 |
| Sidechain outliers | 154315 | 3826 |

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

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | A | 1944 | 45% 25% . 26% |
| 2 | B | 84 | 64% 25% 8% . |
| 3 | C | 591 | 61% 24% . . 11% |
| 3 | P | 591 | 58% 21% . 17% |
| 4 | D | 121 | 33% 12% . 55% |
| 5 | E | 110 | 35% 15% . 49% |
| 6 | F | 824 | 43% 15% . 40% |
| 6 | H | 824 | 42% 14% . 41% |
| 7 | G | 85 | 25% . . 71% |

Continued on next page...

Continued from previous page...

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|---|
| 8 | I | 808 |  67% 21% • 10% |
| 9 | J | 620 |  55% 21% 5% 19% |
| 10 | K | 620 |  54% 22% • 20% |
| 11 | L | 183 |  62% 32% 5% •• |
| 12 | M | 74 |  45% 28% 7% 20% |
| 13 | N | 822 |  40% 28% 7% • 23% |
| 14 | O | 756 |  60% 25% 6% 9% |
| 15 | R | 493 |  37% 32% 8% • 22% |
| 16 | S | 447 |  14% 6% • 79% |
| 17 | T | 21 |  71% 19% 10% |
| 18 | U | 24 |  75% 25% |
| 19 | W | 85 |  21% 7% • 71% |
| 20 | X | 565 |  53% 29% • 14% |
| 20 | Y | 565 |  56% 27% • 12% |

2 Entry composition [i](#)

There are 21 unique types of molecules in this entry. The entry contains 66453 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called ANAPHASE-PROMOTING COMPLEX SUBUNIT 1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 1 | A | 1441 | 10947 | 7043 | 1853 | 1977 | 74 | 0 | 0 |

There are 7 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| A | 291 | PHE | THR | conflict | UNP Q9H1A4 |
| A | 940 | ILE | THR | conflict | UNP Q9H1A4 |
| A | 1059 | GLU | ASP | conflict | UNP Q9H1A4 |
| A | 1358 | LEU | ILE | conflict | UNP Q9H1A4 |
| A | 1637 | LEU | THR | conflict | UNP Q9H1A4 |
| A | 1880 | PRO | LEU | conflict | UNP Q9H1A4 |
| A | 1881 | LEU | GLU | conflict | UNP Q9H1A4 |

- Molecule 2 is a protein called ANAPHASE-PROMOTING COMPLEX SUBUNIT 11.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 2 | B | 84 | 650 | 418 | 117 | 98 | 17 | 1 | 0 |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| B | 13 | LEU | THR | conflict | UNP Q9NYG5 |

- Molecule 3 is a protein called CELL DIVISION CYCLE PROTEIN 23 HOMOLOG.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 3 | C | 524 | 4305 | 2774 | 726 | 781 | 24 | 0 | 0 |
| 3 | P | 491 | 4042 | 2611 | 678 | 729 | 24 | 0 | 0 |

There are 2 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| C | 161 | LEU | LYS | conflict | UNP Q9UJX2 |
| P | 161 | LEU | LYS | conflict | UNP Q9UJX2 |

- Molecule 4 is a protein called ANAPHASE-PROMOTING COMPLEX SUBUNIT 15.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|-------|
| | | | Total | C | N | O | | |
| 4 | D | 55 | 437 | 277 | 73 | 87 | 0 | 0 |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| D | 5 | TYR | PHE | conflict | UNP P60006 |

- Molecule 5 is a protein called ANAPHASE-PROMOTING COMPLEX SUBUNIT 16.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 5 | E | 56 | 450 | 290 | 74 | 85 | 1 | 0 | 0 |

- Molecule 6 is a protein called CELL DIVISION CYCLE PROTEIN 27 HOMOLOG.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 6 | F | 498 | 3923 | 2514 | 664 | 719 | 26 | 0 | 0 |
| 6 | H | 483 | 3853 | 2473 | 650 | 704 | 26 | 0 | 0 |

There are 6 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| F | 403 | GLU | LYS | conflict | UNP P30260 |
| F | 475 | SER | ALA | conflict | UNP P30260 |
| F | 484 | SER | ALA | conflict | UNP P30260 |
| H | 403 | GLU | LYS | conflict | UNP P30260 |
| H | 475 | SER | ALA | conflict | UNP P30260 |
| H | 484 | SER | ALA | conflict | UNP P30260 |

- Molecule 7 is a protein called ANAPHASE-PROMOTING COMPLEX SUBUNIT CDC26.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 7 | G | 25 | Total | C | N | O | S | 0 | 0 |
| | | | 214 | 134 | 40 | 39 | 1 | | |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| G | 14 | GLU | ASP | conflict | UNP Q8NHZ8 |

- Molecule 8 is a protein called ANAPHASE-PROMOTING COMPLEX SUBUNIT 4.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|------|----|---------|-------|
| 8 | I | 730 | Total | C | N | O | S | 0 | 0 |
| | | | 5709 | 3660 | 950 | 1066 | 33 | | |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| I | 430 | ASP | GLU | conflict | UNP Q9UJX5 |

- Molecule 9 is a protein called CELL DIVISION CYCLE PROTEIN 16 HOMOLOG.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 9 | J | 504 | Total | C | N | O | S | 0 | 0 |
| | | | 4047 | 2602 | 685 | 735 | 25 | | |

There are 3 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| J | 225 | ASN | ASP | conflict | UNP Q13042 |
| J | 228 | GLU | GLN | conflict | UNP Q13042 |
| J | 229 | LYS | GLU | conflict | UNP Q13042 |

- Molecule 10 is a protein called CELL DIVISION CYCLE PROTEIN 16 HOMOLOG.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 10 | K | 493 | Total | C | N | O | S | 0 | 0 |
| | | | 3988 | 2565 | 673 | 726 | 24 | | |

There are 3 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| K | 228 | GLU | GLN | conflict | UNP Q13042 |

Continued on next page...

Continued from previous page...

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| K | 229 | LYS | GLU | conflict | UNP Q13042 |
| K | 265 | LYS | ALA | conflict | UNP Q13042 |

- Molecule 11 is a protein called ANAPHASE-PROMOTING COMPLEX SUBUNIT 10.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 11 | L | 182 | 1435 | 898 | 263 | 268 | 6 | 0 | 0 |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| L | ? | - | GLU | deletion | UNP Q9UM13 |

- Molecule 12 is a protein called ANAPHASE-PROMOTING COMPLEX SUBUNIT 13.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 12 | M | 59 | 493 | 310 | 79 | 102 | 2 | 0 | 0 |

- Molecule 13 is a protein called ANAPHASE-PROMOTING COMPLEX SUBUNIT 2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 13 | N | 631 | 4831 | 3064 | 877 | 868 | 22 | 0 | 0 |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| N | 410 | ILE | LEU | conflict | UNP Q9UJX6 |

- Molecule 14 is a protein called ANAPHASE-PROMOTING COMPLEX SUBUNIT 5.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 14 | O | 685 | 5396 | 3439 | 939 | 991 | 27 | 0 | 0 |

There are 8 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| O | 42 | SER | ASN | conflict | UNP Q9UJX4 |

Continued on next page...

Continued from previous page...

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|-----------|------------|
| O | 55 | VAL | MET | conflict | UNP Q9UJX4 |
| O | 63 | GLN | LEU | conflict | UNP Q9UJX4 |
| O | 75 | VAL | LEU | conflict | UNP Q9UJX4 |
| O | 79 | LEU | TYR | conflict | UNP Q9UJX4 |
| O | 164 | SER | ASN | conflict | UNP Q9UJX4 |
| O | 165 | ASP | GLY | conflict | UNP Q9UJX4 |
| O | 167 | ASN | - | insertion | UNP Q9UJX4 |

- Molecule 15 is a protein called FIZZY-RELATED PROTEIN HOMOLOG.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 15 | R | 387 | 3003 | 1895 | 541 | 557 | 10 | 0 | 0 |

- Molecule 16 is a protein called F-BOX ONLY PROTEIN 5.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 16 | S | 94 | 648 | 396 | 119 | 124 | 9 | 0 | 0 |

There are 2 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| S | 323 | ILE | THR | conflict | UNP Q9UKT4 |
| S | 326 | LYS | ALA | conflict | UNP Q9UKT4 |

- Molecule 17 is a protein called PEPTIDE.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---------|-------|
| | | | Total | C | N | O | | |
| 17 | T | 21 | 109 | 65 | 22 | 22 | 0 | 0 |

- Molecule 18 is a protein called PEPTIDE.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---------|-------|
| | | | Total | C | N | O | | |
| 18 | U | 24 | 120 | 72 | 24 | 24 | 0 | 0 |

- Molecule 19 is a protein called ANAPHASE-PROMOTING COMPLEX SUBUNIT CDC26.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 19 | W | 25 | 213 | 133 | 40 | 39 | 1 | 0 | 0 |

- Molecule 20 is a protein called ANAPHASE-PROMOTING COMPLEX SUBUNIT 7.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 20 | X | 484 | 3770 | 2394 | 650 | 705 | 21 | 0 | 0 |
| 20 | Y | 496 | 3865 | 2450 | 667 | 725 | 23 | 0 | 0 |

There are 10 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| X | 63 | LEU | MET | conflict | UNP Q9UJX3 |
| X | 142 | LEU | MET | conflict | UNP Q9UJX3 |
| X | 148 | VAL | MET | conflict | UNP Q9UJX3 |
| X | 466 | ASN | ASP | conflict | UNP Q9UJX3 |
| X | 472 | GLU | ARG | conflict | UNP Q9UJX3 |
| Y | 63 | LEU | MET | conflict | UNP Q9UJX3 |
| Y | 142 | LEU | MET | conflict | UNP Q9UJX3 |
| Y | 148 | VAL | MET | conflict | UNP Q9UJX3 |
| Y | 466 | ASN | ASP | conflict | UNP Q9UJX3 |
| Y | 472 | GLU | ARG | conflict | UNP Q9UJX3 |

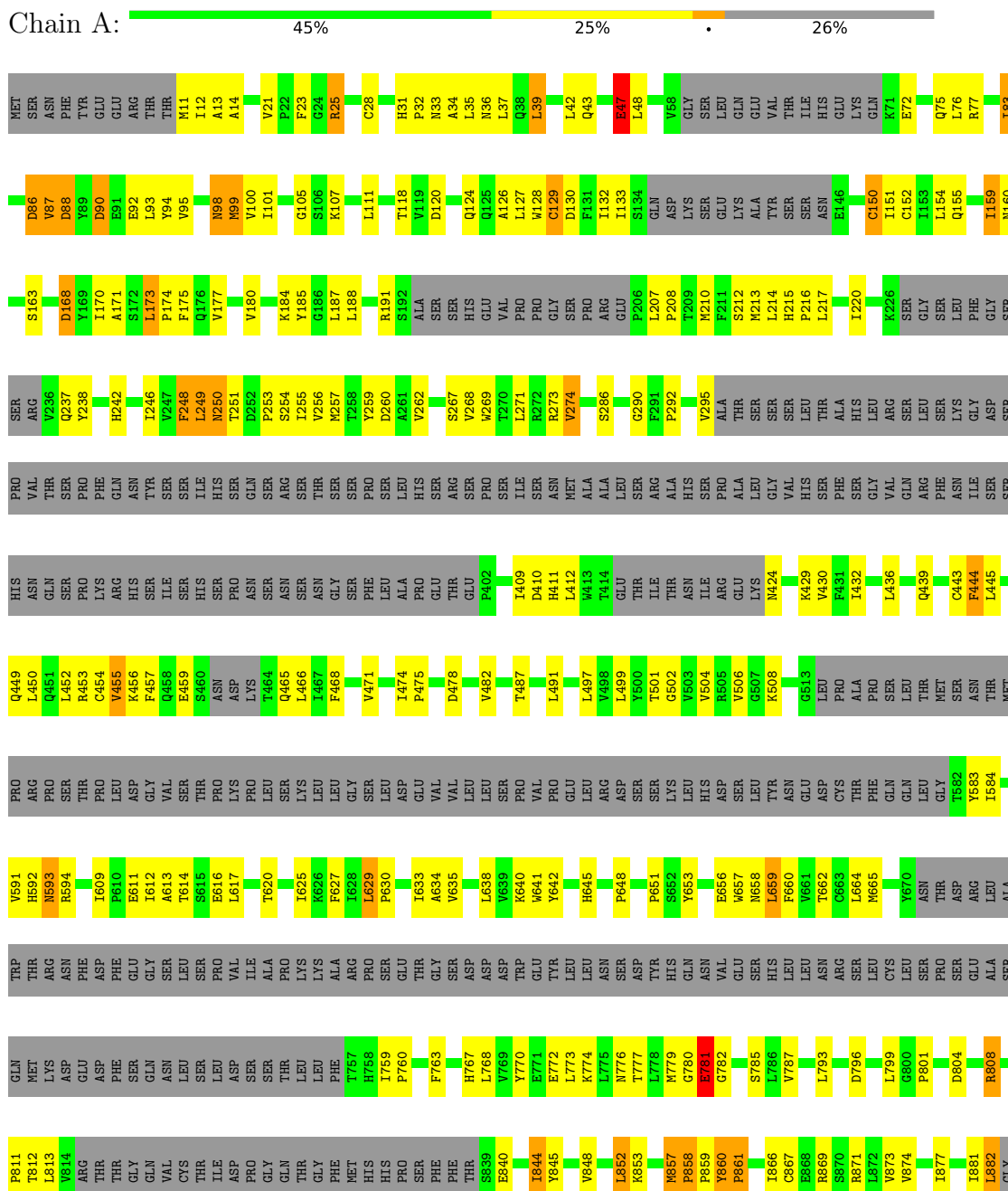
- Molecule 21 is ZINC ION (three-letter code: ZN) (formula: Zn).

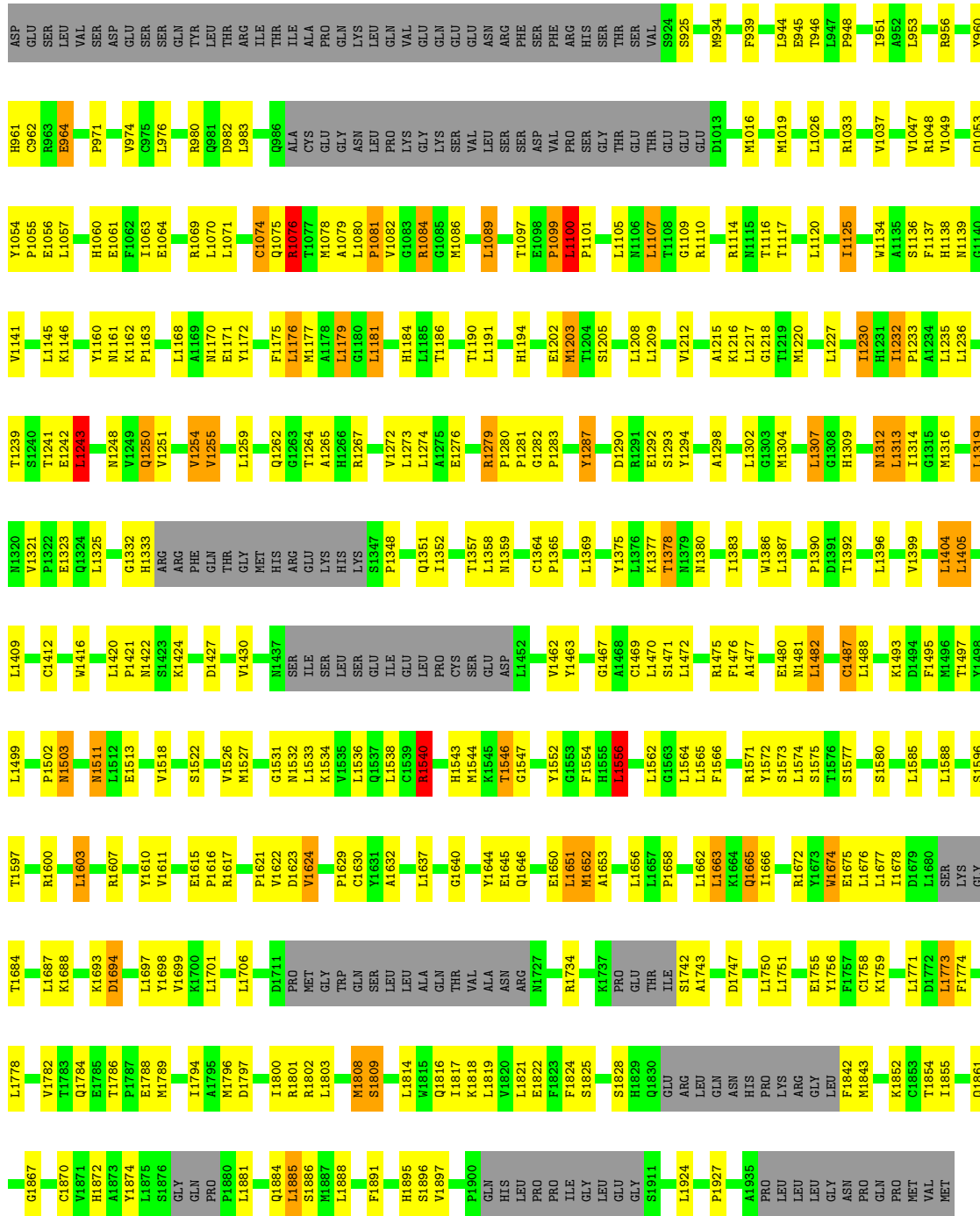
| Mol | Chain | Residues | Atoms | | AltConf |
|-----|-------|----------|-------|----|---------|
| 21 | B | 3 | Total | Zn | 0 |
| | | | 3 | 3 | |
| 21 | S | 2 | Total | Zn | 0 |
| | | | 2 | 2 | |

3 Residue-property plots [i](#)

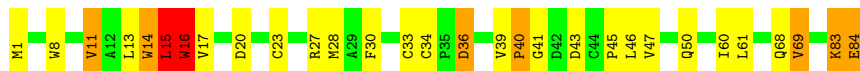
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded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

- Molecule 1: ANAPHASE-PROMOTING COMPLEX SUBUNIT 1



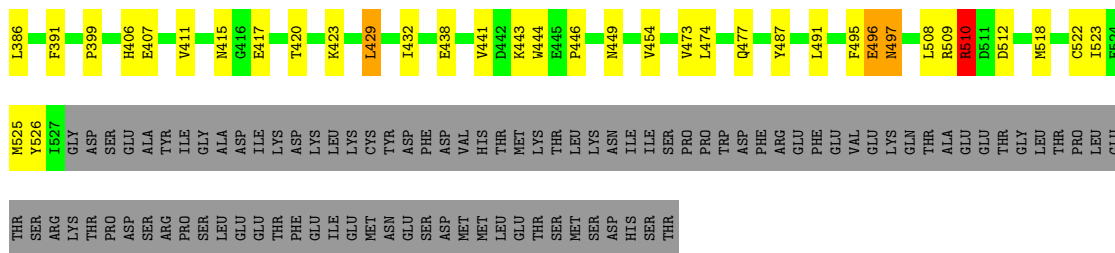


- Molecule 2: ANAPHASE-PROMOTING COMPLEX SUBUNIT 11

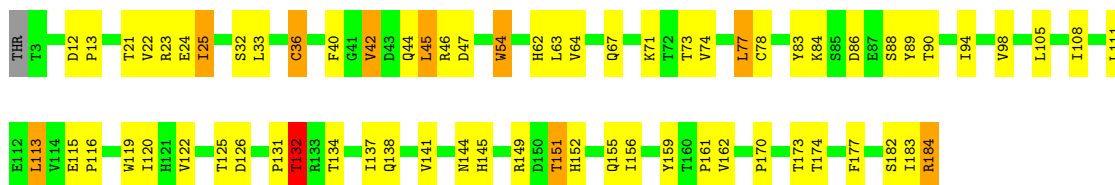


- Molecule 3: CELL DIVISION CYCLE PROTEIN 23 HOMOLOG

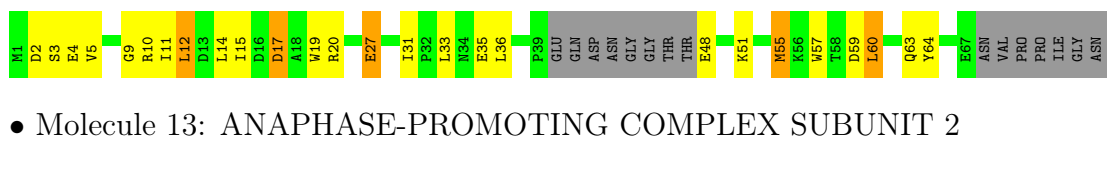




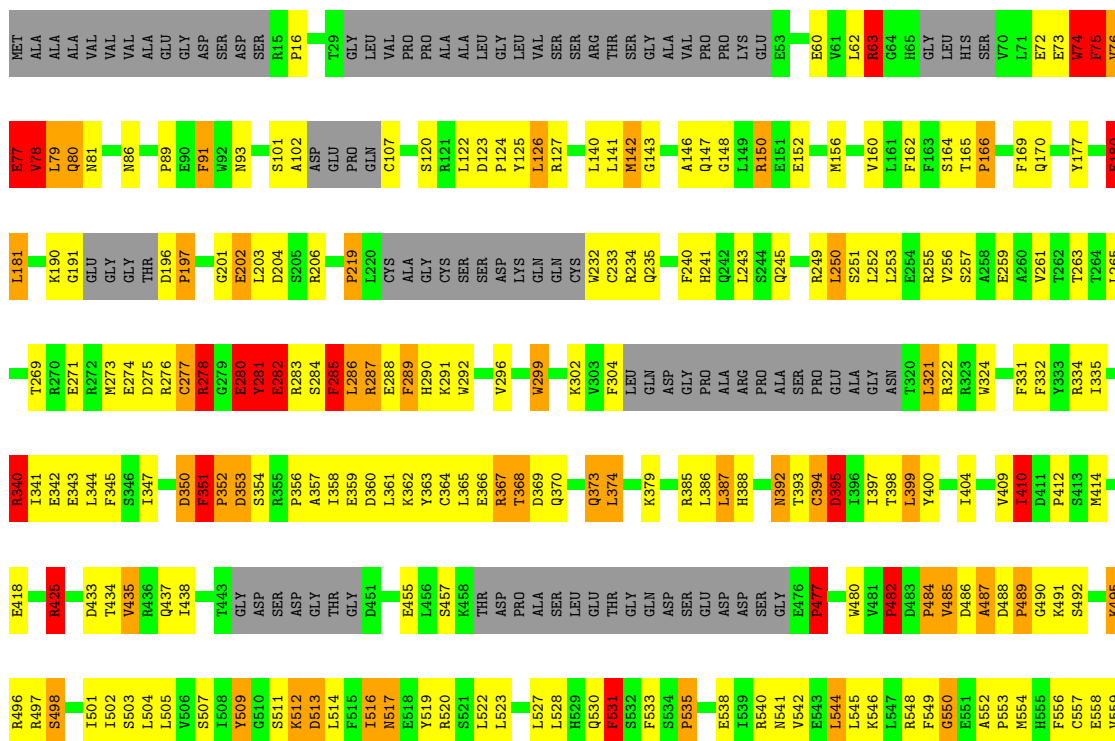
• Molecule 11: ANAPHASE-PROMOTING COMPLEX SUBUNIT 10



• Molecule 12: ANAPHASE-PROMOTING COMPLEX SUBUNIT 13

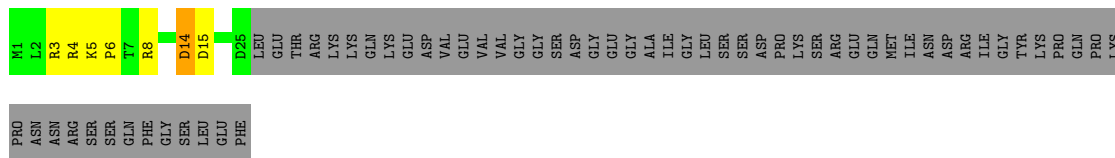


• Molecule 13: ANAPHASE-PROMOTING COMPLEX SUBUNIT 2

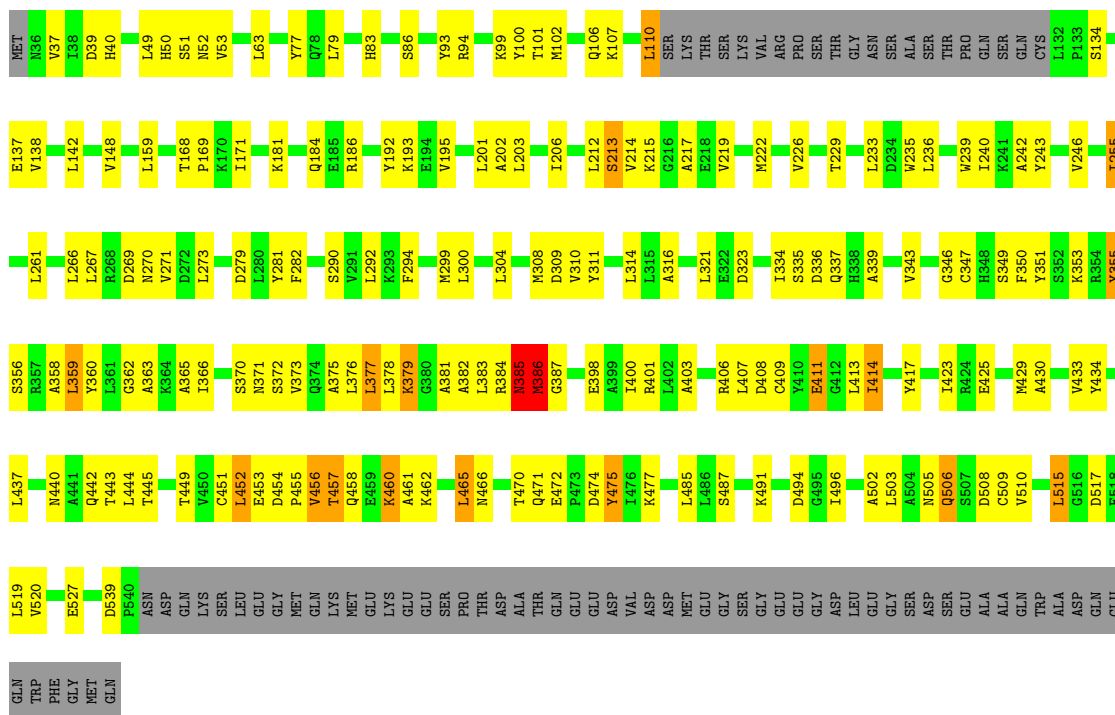




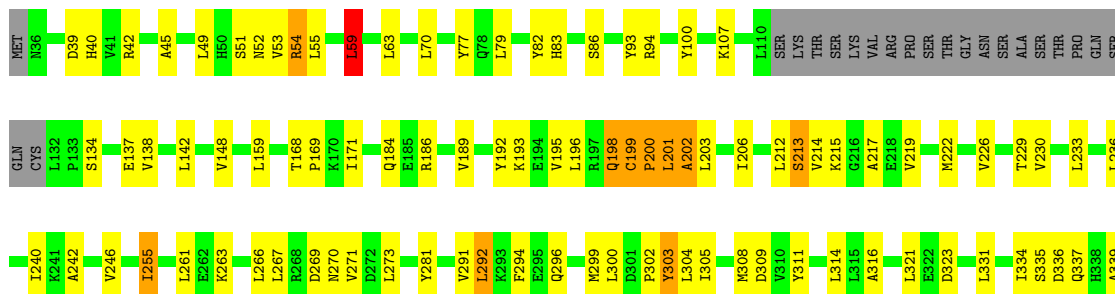
● Molecule 19: ANAPHASE-PROMOTING COMPLEX SUBUNIT CDC26



● Molecule 20: ANAPHASE-PROMOTING COMPLEX SUBUNIT 7



● Molecule 20: ANAPHASE-PROMOTING COMPLEX SUBUNIT 7



| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|
| E340 | F341 | W342 | V343 | V344 | S349 | F350 | Y351 | S352 | S356 | R357 | A358 | I366 | N371 | S372 | V373 | L376 | L377 | L378 | K379 | R384 | N385 | M386 | E398 | I399 | I400 | R401 | L402 | A403 | R406 | L407 | D408 | C409 | Y410 | E411 | I414 | E415 | C416 | Y417 | E425 | M429 | A430 | V433 | Y434 | L437 | Q442 | | | | | |
| T443 | L444 | T445 | T449 | V450 | C451 | L452 | D454 | P455 | V456 | T457 | Q458 | E459 | K460 | A461 | K462 | L465 | N466 | T470 | Q471 | E472 | F473 | D474 | Y475 | I476 | K477 | K482 | L485 | L486 | S487 | K491 | D494 | G495 | I496 | A502 | L503 | A504 | N505 | Q506 | S507 | D508 | C509 | V510 | L515 | G516 | D517 | F518 | L519 | V520 | | |
| E527 | A528 | Y532 | D539 | L546 | E547 | G548 | M549 | Q550 | K551 | M552 | GLU | LYS | GLU | GLU | SER | PRO | THR | ASP | ALA | THR | GLN | GLU | GLU | ASP | VAL | ASP | MET | GLU | GLY | SER | GLY | GLU | GLY | SER | ASP | SER | GLU | ALA | ALA | GLN | TRP | ALA | ASP | GLN | GLU | GLN | TRP | PHE | GLY | MET |
| GLN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

4 Experimental information

| Property | Value | Source |
|--------------------------------------|-------------------------|-----------|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, C1 | Depositor |
| Number of particles used | 202084 | Depositor |
| Resolution determination method | Not provided | |
| CTF correction method | Not provided | |
| Microscope | FEI TECNAI F30 | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 27 | Depositor |
| Minimum defocus (nm) | 2000 | Depositor |
| Maximum defocus (nm) | 4000 | Depositor |
| Magnification | 78000 | Depositor |
| Image detector | FEI FALCON II (4k x 4k) | Depositor |

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section:
ZN

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 | 0.75 | 0/11190 | 0.99 | 21/15238 (0.1%) |
| 2 | B | 0.52 | 0/675 | 0.86 | 1/914 (0.1%) |
| 3 | C | 0.75 | 1/4403 (0.0%) | 0.95 | 9/5945 (0.2%) |
| 3 | P | 0.70 | 1/4137 (0.0%) | 0.92 | 3/5587 (0.1%) |
| 4 | D | 0.71 | 0/447 | 0.98 | 1/612 (0.2%) |
| 5 | E | 0.65 | 0/459 | 0.86 | 0/619 |
| 6 | F | 0.70 | 3/4013 (0.1%) | 0.90 | 7/5428 (0.1%) |
| 6 | H | 0.70 | 2/3943 (0.1%) | 0.90 | 4/5329 (0.1%) |
| 7 | G | 0.62 | 0/215 | 1.03 | 1/285 (0.4%) |
| 8 | I | 0.58 | 0/5827 | 0.85 | 3/7899 (0.0%) |
| 9 | J | 0.75 | 3/4146 (0.1%) | 0.97 | 9/5615 (0.2%) |
| 10 | K | 0.89 | 3/4086 (0.1%) | 0.96 | 5/5532 (0.1%) |
| 11 | L | 0.71 | 0/1468 | 0.96 | 5/1993 (0.3%) |
| 12 | M | 0.73 | 0/502 | 1.05 | 1/680 (0.1%) |
| 13 | N | 0.63 | 1/4913 (0.0%) | 1.01 | 18/6650 (0.3%) |
| 14 | O | 0.73 | 5/5494 (0.1%) | 0.96 | 5/7425 (0.1%) |
| 15 | R | 2.23 | 11/3068 (0.4%) | 2.62 | 75/4162 (1.8%) |
| 16 | S | 0.54 | 0/654 | 0.81 | 3/880 (0.3%) |
| 17 | T | 1.02 | 0/108 | 1.11 | 0/149 |
| 18 | U | 0.91 | 0/119 | 1.10 | 3/165 (1.8%) |
| 19 | W | 0.64 | 0/214 | 1.02 | 0/284 |
| 20 | X | 0.60 | 4/3830 (0.1%) | 0.84 | 6/5187 (0.1%) |
| 20 | Y | 0.54 | 0/3925 | 0.85 | 4/5311 (0.1%) |
| All | All | 0.83 | 34/67836 (0.1%) | 1.07 | 184/91889 (0.2%) |

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 | 9 |
| 8 | I | 0 | 2 |
| 9 | J | 0 | 1 |
| 13 | N | 0 | 26 |
| 15 | R | 0 | 5 |
| 17 | T | 0 | 1 |
| 20 | X | 0 | 1 |
| All | All | 0 | 45 |

All (34) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|--------|-------------|----------|
| 15 | R | 431 | PRO | N-CD | 53.78 | 2.23 | 1.47 |
| 15 | R | 392 | PRO | N-CD | 50.89 | 2.19 | 1.47 |
| 15 | R | 302 | PRO | N-CD | 48.99 | 2.16 | 1.47 |
| 15 | R | 301 | PRO | N-CD | 47.51 | 2.14 | 1.47 |
| 10 | K | 229 | LYS | CB-CG | 33.09 | 2.42 | 1.52 |
| 15 | R | 317 | CYS | CB-SG | -23.44 | 1.42 | 1.82 |
| 15 | R | 403 | CYS | CB-SG | -23.42 | 1.42 | 1.82 |
| 15 | R | 215 | CYS | CB-SG | -23.42 | 1.42 | 1.82 |
| 15 | R | 395 | CYS | CB-SG | -23.42 | 1.42 | 1.82 |
| 15 | R | 223 | CYS | CB-SG | -23.41 | 1.42 | 1.82 |
| 15 | R | 208 | CYS | CB-SG | -23.39 | 1.42 | 1.82 |
| 15 | R | 381 | CYS | CB-SG | -23.39 | 1.42 | 1.82 |
| 20 | X | 385 | ASN | N-CA | 9.79 | 1.66 | 1.46 |
| 9 | J | 302 | TRP | CB-CG | -9.02 | 1.34 | 1.50 |
| 20 | X | 355 | TYR | CE1-CZ | 8.81 | 1.50 | 1.38 |
| 9 | J | 337 | TRP | CB-CG | -8.40 | 1.35 | 1.50 |
| 14 | O | 346 | TRP | CB-CG | -7.91 | 1.36 | 1.50 |
| 6 | F | 570 | TRP | CB-CG | -7.05 | 1.37 | 1.50 |
| 13 | N | 299 | TRP | CE3-CZ3 | -6.79 | 1.26 | 1.38 |
| 9 | J | 229 | LYS | CB-CG | -6.55 | 1.34 | 1.52 |
| 3 | P | 402 | TRP | CB-CG | -6.41 | 1.38 | 1.50 |
| 10 | K | 302 | TRP | CB-CG | -6.38 | 1.38 | 1.50 |
| 3 | C | 402 | TRP | CB-CG | -6.27 | 1.39 | 1.50 |
| 20 | X | 386 | MET | N-CA | 6.22 | 1.58 | 1.46 |
| 6 | H | 570 | TRP | CB-CG | -6.12 | 1.39 | 1.50 |
| 14 | O | 507 | TRP | CB-CG | -5.84 | 1.39 | 1.50 |
| 10 | K | 25 | TRP | CB-CG | -5.74 | 1.40 | 1.50 |
| 14 | O | 592 | TRP | CB-CG | -5.50 | 1.40 | 1.50 |
| 6 | F | 571 | CYS | CB-SG | -5.33 | 1.73 | 1.81 |
| 20 | X | 355 | TYR | CB-CG | 5.26 | 1.59 | 1.51 |
| 6 | H | 544 | TRP | CB-CG | -5.19 | 1.41 | 1.50 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 6 | F | 13 | TRP | CB-CG | -5.08 | 1.41 | 1.50 |
| 14 | O | 29 | TRP | CB-CG | -5.06 | 1.41 | 1.50 |
| 14 | O | 410 | TRP | CB-CG | -5.03 | 1.41 | 1.50 |

All (184) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 15 | R | 431 | PRO | O-C-N | -52.04 | 39.44 | 122.70 |
| 15 | R | 310 | GLN | O-C-N | -29.51 | 73.03 | 123.20 |
| 15 | R | 240 | ARG | NE-CZ-NH2 | -25.22 | 107.69 | 120.30 |
| 15 | R | 307 | ARG | NE-CZ-NH2 | -25.20 | 107.70 | 120.30 |
| 15 | R | 313 | ARG | NE-CZ-NH2 | -25.18 | 107.71 | 120.30 |
| 15 | R | 221 | ARG | NE-CZ-NH2 | -25.17 | 107.71 | 120.30 |
| 15 | R | 313 | ARG | NE-CZ-NH1 | -25.17 | 107.71 | 120.30 |
| 15 | R | 468 | ARG | NE-CZ-NH1 | -25.15 | 107.73 | 120.30 |
| 15 | R | 291 | ARG | NE-CZ-NH1 | -25.14 | 107.73 | 120.30 |
| 15 | R | 308 | ARG | NE-CZ-NH2 | -25.14 | 107.73 | 120.30 |
| 15 | R | 296 | ARG | NE-CZ-NH1 | -25.14 | 107.73 | 120.30 |
| 15 | R | 308 | ARG | NE-CZ-NH1 | -25.13 | 107.73 | 120.30 |
| 15 | R | 291 | ARG | NE-CZ-NH2 | -25.11 | 107.75 | 120.30 |
| 15 | R | 380 | ARG | NE-CZ-NH2 | -25.10 | 107.75 | 120.30 |
| 15 | R | 383 | ARG | NE-CZ-NH1 | -25.10 | 107.75 | 120.30 |
| 15 | R | 468 | ARG | NE-CZ-NH2 | -25.09 | 107.76 | 120.30 |
| 15 | R | 296 | ARG | NE-CZ-NH2 | -25.08 | 107.76 | 120.30 |
| 15 | R | 383 | ARG | NE-CZ-NH2 | -25.06 | 107.77 | 120.30 |
| 15 | R | 380 | ARG | NE-CZ-NH1 | -25.05 | 107.77 | 120.30 |
| 15 | R | 307 | ARG | NE-CZ-NH1 | -25.03 | 107.78 | 120.30 |
| 15 | R | 221 | ARG | NE-CZ-NH1 | -25.02 | 107.79 | 120.30 |
| 15 | R | 240 | ARG | NE-CZ-NH1 | -24.95 | 107.82 | 120.30 |
| 15 | R | 434 | THR | N-CA-CB | 24.09 | 156.07 | 110.30 |
| 15 | R | 313 | ARG | NH1-CZ-NH2 | 22.89 | 144.57 | 119.40 |
| 15 | R | 308 | ARG | NH1-CZ-NH2 | 22.85 | 144.54 | 119.40 |
| 15 | R | 291 | ARG | NH1-CZ-NH2 | 22.84 | 144.53 | 119.40 |
| 15 | R | 468 | ARG | NH1-CZ-NH2 | 22.83 | 144.52 | 119.40 |
| 15 | R | 307 | ARG | NH1-CZ-NH2 | 22.83 | 144.51 | 119.40 |
| 15 | R | 296 | ARG | NH1-CZ-NH2 | 22.82 | 144.51 | 119.40 |
| 15 | R | 221 | ARG | NH1-CZ-NH2 | 22.82 | 144.50 | 119.40 |
| 15 | R | 240 | ARG | NH1-CZ-NH2 | 22.81 | 144.49 | 119.40 |
| 15 | R | 380 | ARG | NH1-CZ-NH2 | 22.80 | 144.48 | 119.40 |
| 15 | R | 383 | ARG | NH1-CZ-NH2 | 22.80 | 144.48 | 119.40 |
| 1 | A | 1540 | ARG | NE-CZ-NH1 | 16.31 | 128.45 | 120.30 |
| 15 | R | 227 | VAL | CB-CA-C | -15.17 | 82.58 | 111.40 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|--------|-------------|----------|
| 15 | R | 430 | TYR | C-N-CD | -14.70 | 88.26 | 120.60 |
| 15 | R | 316 | VAL | CB-CA-C | -14.44 | 83.96 | 111.40 |
| 15 | R | 436 | VAL | N-CA-CB | 14.12 | 142.56 | 111.50 |
| 15 | R | 316 | VAL | N-CA-CB | 13.87 | 142.01 | 111.50 |
| 15 | R | 436 | VAL | CB-CA-C | -13.79 | 85.19 | 111.40 |
| 15 | R | 227 | VAL | N-CA-CB | 13.59 | 141.40 | 111.50 |
| 10 | K | 229 | LYS | CA-CB-CG | -13.30 | 84.15 | 113.40 |
| 15 | R | 434 | THR | CB-CA-C | -12.29 | 78.42 | 111.60 |
| 15 | R | 432 | SER | N-CA-CB | 11.28 | 127.42 | 110.50 |
| 15 | R | 226 | SER | N-CA-CB | 11.19 | 127.28 | 110.50 |
| 20 | X | 379 | LYS | CD-CE-NZ | 10.60 | 136.08 | 111.70 |
| 13 | N | 489 | PRO | N-CA-CB | 10.41 | 115.79 | 103.30 |
| 13 | N | 425 | ARG | NE-CZ-NH1 | 9.80 | 125.20 | 120.30 |
| 15 | R | 317 | CYS | N-CA-CB | 9.06 | 126.90 | 110.60 |
| 20 | Y | 379 | LYS | CD-CE-NZ | 8.99 | 132.39 | 111.70 |
| 10 | K | 229 | LYS | CB-CG-CD | -8.37 | 89.84 | 111.60 |
| 15 | R | 431 | PRO | N-CD-CG | -7.98 | 91.23 | 103.20 |
| 20 | Y | 59 | LEU | CA-CB-CG | 7.60 | 132.78 | 115.30 |
| 15 | R | 226 | SER | CB-CA-C | -7.57 | 95.71 | 110.10 |
| 15 | R | 432 | SER | CB-CA-C | -7.48 | 95.89 | 110.10 |
| 13 | N | 63 | ARG | N-CA-C | 7.46 | 131.15 | 111.00 |
| 15 | R | 392 | PRO | CA-N-CD | -7.46 | 101.06 | 111.50 |
| 9 | J | 61 | ARG | NE-CZ-NH1 | 7.44 | 124.02 | 120.30 |
| 15 | R | 431 | PRO | CA-N-CD | -7.34 | 101.22 | 111.50 |
| 20 | Y | 54 | ARG | NE-CZ-NH1 | 7.31 | 123.95 | 120.30 |
| 3 | C | 26 | PHE | CB-CG-CD1 | 7.28 | 125.89 | 120.80 |
| 15 | R | 301 | PRO | N-CD-CG | -7.26 | 92.32 | 103.20 |
| 11 | L | 132 | THR | CB-CA-C | -7.24 | 92.04 | 111.60 |
| 15 | R | 302 | PRO | CA-N-CD | -7.21 | 101.41 | 111.50 |
| 10 | K | 510 | ARG | NE-CZ-NH1 | 7.15 | 123.88 | 120.30 |
| 6 | F | 768 | PRO | N-CA-CB | 7.11 | 111.83 | 103.30 |
| 1 | A | 665 | MET | CG-SD-CE | 7.09 | 111.55 | 100.20 |
| 3 | C | 26 | PHE | CB-CG-CD2 | -7.09 | 115.84 | 120.80 |
| 1 | A | 1540 | ARG | NE-CZ-NH2 | -7.04 | 116.78 | 120.30 |
| 20 | X | 110 | LEU | CA-CB-CG | 7.01 | 131.41 | 115.30 |
| 15 | R | 317 | CYS | CB-CA-C | -6.97 | 96.45 | 110.40 |
| 15 | R | 435 | GLN | N-CA-CB | 6.84 | 122.91 | 110.60 |
| 20 | X | 366 | ILE | CB-CA-C | -6.82 | 97.97 | 111.60 |
| 1 | A | 292 | PRO | N-CA-CB | 6.78 | 111.44 | 103.30 |
| 20 | Y | 366 | ILE | CB-CA-C | -6.78 | 98.03 | 111.60 |
| 16 | S | 433 | PRO | N-CA-CB | 6.78 | 111.44 | 103.30 |
| 16 | S | 435 | PRO | N-CA-CB | 6.68 | 111.32 | 103.30 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 13 | N | 63 | ARG | C-N-CA | 6.65 | 136.27 | 122.30 |
| 15 | R | 392 | PRO | N-CD-CG | -6.59 | 93.31 | 103.20 |
| 9 | J | 61 | ARG | NE-CZ-NH2 | -6.58 | 117.01 | 120.30 |
| 3 | P | 344 | ARG | NE-CZ-NH2 | -6.56 | 117.02 | 120.30 |
| 13 | N | 477 | PRO | N-CA-CB | 6.54 | 111.15 | 103.30 |
| 15 | R | 314 | GLN | CB-CA-C | -6.53 | 97.35 | 110.40 |
| 15 | R | 302 | PRO | N-CA-CB | 6.52 | 111.12 | 103.30 |
| 18 | U | 16 | PRO | N-CA-CB | 6.47 | 111.06 | 103.30 |
| 9 | J | 294 | LEU | CB-CG-CD2 | 6.44 | 121.95 | 111.00 |
| 1 | A | 1019 | MET | CG-SD-CE | 6.44 | 110.50 | 100.20 |
| 3 | P | 344 | ARG | NE-CZ-NH1 | 6.42 | 123.51 | 120.30 |
| 3 | C | 516 | LEU | CA-CB-CG | 6.37 | 129.96 | 115.30 |
| 3 | C | 423 | ARG | NE-CZ-NH1 | 6.35 | 123.48 | 120.30 |
| 3 | C | 424 | ARG | NE-CZ-NH1 | 6.34 | 123.47 | 120.30 |
| 15 | R | 431 | PRO | N-CA-CB | 6.34 | 110.91 | 103.30 |
| 15 | R | 314 | GLN | N-CA-CB | 6.30 | 121.95 | 110.60 |
| 1 | A | 1084 | ARG | NE-CZ-NH2 | -6.30 | 117.15 | 120.30 |
| 8 | I | 223 | VAL | CB-CA-C | -6.18 | 99.66 | 111.40 |
| 18 | U | 9 | PRO | N-CA-CB | 6.18 | 110.71 | 103.30 |
| 6 | H | 50 | ARG | NE-CZ-NH2 | -6.16 | 117.22 | 120.30 |
| 1 | A | 1203 | MET | CG-SD-CE | -6.15 | 90.36 | 100.20 |
| 1 | A | 1927 | PRO | N-CA-CB | 6.12 | 110.64 | 103.30 |
| 15 | R | 302 | PRO | N-CD-CG | -6.11 | 94.03 | 103.20 |
| 4 | D | 23 | PRO | N-CA-CB | 6.11 | 110.63 | 103.30 |
| 14 | O | 165 | ASP | CB-CG-OD1 | -6.11 | 112.80 | 118.30 |
| 1 | A | 1074 | CYS | CA-CB-SG | -6.08 | 103.06 | 114.00 |
| 15 | R | 301 | PRO | CA-N-CD | -6.07 | 103.00 | 111.50 |
| 15 | R | 313 | ARG | CB-CA-C | -6.07 | 98.26 | 110.40 |
| 6 | H | 467 | ARG | NE-CZ-NH1 | 6.05 | 123.33 | 120.30 |
| 15 | R | 301 | PRO | N-CA-CB | 6.04 | 110.55 | 103.30 |
| 15 | R | 45 | GLY | N-CA-C | -6.03 | 98.03 | 113.10 |
| 2 | B | 40 | PRO | N-CA-CB | 6.02 | 110.53 | 103.30 |
| 6 | F | 625 | ARG | NE-CZ-NH1 | 6.02 | 123.31 | 120.30 |
| 6 | H | 494 | HIS | N-CA-CB | 5.99 | 121.37 | 110.60 |
| 6 | F | 467 | ARG | NE-CZ-NH1 | 5.97 | 123.29 | 120.30 |
| 6 | F | 625 | ARG | NE-CZ-NH2 | -5.94 | 117.33 | 120.30 |
| 1 | A | 882 | LEU | CA-CB-CG | 5.94 | 128.96 | 115.30 |
| 9 | J | 63 | ARG | NE-CZ-NH1 | 5.93 | 123.26 | 120.30 |
| 15 | R | 313 | ARG | N-CA-CB | 5.91 | 121.23 | 110.60 |
| 14 | O | 165 | ASP | CB-CG-OD2 | 5.86 | 123.58 | 118.30 |
| 16 | S | 324 | PRO | N-CA-CB | 5.85 | 110.32 | 103.30 |
| 15 | R | 435 | GLN | CB-CA-C | -5.82 | 98.76 | 110.40 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 13 | N | 496 | ARG | N-CA-C | 5.79 | 126.63 | 111.00 |
| 15 | R | 52 | ARG | CG-CD-NE | -5.79 | 99.65 | 111.80 |
| 13 | N | 16 | PRO | N-CA-CB | 5.78 | 110.24 | 103.30 |
| 15 | R | 225 | LEU | N-CA-CB | 5.76 | 121.92 | 110.40 |
| 3 | C | 358 | LEU | CA-CB-CG | 5.75 | 128.53 | 115.30 |
| 15 | R | 433 | LEU | N-CA-CB | 5.75 | 121.89 | 110.40 |
| 15 | R | 392 | PRO | N-CA-CB | 5.72 | 110.16 | 103.30 |
| 14 | O | 117 | ASP | CB-CG-OD1 | -5.62 | 113.24 | 118.30 |
| 1 | A | 1255 | VAL | CB-CA-C | -5.61 | 100.74 | 111.40 |
| 7 | G | 8 | ARG | NE-CZ-NH1 | 5.59 | 123.09 | 120.30 |
| 1 | A | 1267 | ARG | NE-CZ-NH2 | -5.59 | 117.51 | 120.30 |
| 13 | N | 180 | PHE | CB-CG-CD1 | 5.58 | 124.71 | 120.80 |
| 1 | A | 1254 | VAL | CB-CA-C | -5.57 | 100.82 | 111.40 |
| 15 | R | 312 | HIS | N-CA-CB | 5.56 | 120.61 | 110.60 |
| 1 | A | 1076 | ARG | NE-CZ-NH2 | -5.56 | 117.52 | 120.30 |
| 13 | N | 125 | TYR | C-N-CA | 5.55 | 135.58 | 121.70 |
| 13 | N | 395 | ASP | N-CA-C | 5.55 | 125.98 | 111.00 |
| 3 | C | 307 | LEU | CA-CB-CG | 5.52 | 127.99 | 115.30 |
| 13 | N | 482 | PRO | N-CA-CB | 5.48 | 109.88 | 103.30 |
| 13 | N | 219 | PRO | N-CA-CB | 5.47 | 109.86 | 103.30 |
| 9 | J | 329 | LEU | CA-CB-CG | 5.47 | 127.87 | 115.30 |
| 13 | N | 197 | PRO | N-CA-CB | 5.46 | 109.86 | 103.30 |
| 3 | P | 172 | LEU | CA-CB-CG | 5.46 | 127.85 | 115.30 |
| 13 | N | 509 | TYR | N-CA-C | 5.45 | 125.71 | 111.00 |
| 9 | J | 146 | ARG | NE-CZ-NH1 | 5.43 | 123.01 | 120.30 |
| 1 | A | 1556 | LEU | CA-CB-CG | 5.42 | 127.76 | 115.30 |
| 6 | F | 50 | ARG | NE-CZ-NH2 | -5.40 | 117.60 | 120.30 |
| 9 | J | 258 | MET | CG-SD-CE | -5.40 | 91.57 | 100.20 |
| 6 | H | 507 | ARG | NE-CZ-NH1 | 5.38 | 122.99 | 120.30 |
| 1 | A | 1526 | VAL | CB-CA-C | -5.37 | 101.20 | 111.40 |
| 12 | M | 19 | TRP | CA-CB-CG | 5.35 | 123.87 | 113.70 |
| 18 | U | 17 | PRO | N-CA-CB | 5.35 | 109.72 | 103.30 |
| 20 | X | 359 | LEU | CB-CG-CD1 | 5.35 | 120.10 | 111.00 |
| 10 | K | 274 | THR | CB-CA-C | -5.35 | 97.16 | 111.60 |
| 1 | A | 651 | PRO | N-CA-CB | 5.32 | 109.68 | 103.30 |
| 3 | C | 389 | ARG | NE-CZ-NH2 | -5.29 | 117.65 | 120.30 |
| 8 | I | 26 | LEU | CA-CB-CG | 5.29 | 127.47 | 115.30 |
| 6 | F | 130 | ARG | NE-CZ-NH1 | 5.28 | 122.94 | 120.30 |
| 6 | F | 481 | CYS | CA-CB-SG | -5.26 | 104.53 | 114.00 |
| 11 | L | 184 | ARG | NE-CZ-NH1 | 5.25 | 122.93 | 120.30 |
| 13 | N | 340 | ARG | NE-CZ-NH1 | 5.24 | 122.92 | 120.30 |
| 15 | R | 312 | HIS | CB-CA-C | -5.23 | 99.95 | 110.40 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 1 | A | 25 | ARG | NE-CZ-NH1 | 5.21 | 122.91 | 120.30 |
| 15 | R | 225 | LEU | CB-CA-C | -5.20 | 100.32 | 110.20 |
| 15 | R | 421 | SER | N-CA-CB | -5.20 | 102.70 | 110.50 |
| 1 | A | 1243 | LEU | CA-CB-CG | 5.19 | 127.23 | 115.30 |
| 15 | R | 433 | LEU | CB-CA-C | -5.17 | 100.37 | 110.20 |
| 14 | O | 502 | GLN | CB-CA-C | -5.17 | 100.05 | 110.40 |
| 20 | X | 385 | ASN | N-CA-C | 5.17 | 124.97 | 111.00 |
| 20 | X | 355 | TYR | CA-CB-CG | 5.17 | 123.22 | 113.40 |
| 13 | N | 425 | ARG | NE-CZ-NH2 | -5.16 | 117.72 | 120.30 |
| 11 | L | 42 | VAL | CB-CA-C | -5.14 | 101.63 | 111.40 |
| 1 | A | 1540 | ARG | CD-NE-CZ | 5.14 | 130.79 | 123.60 |
| 11 | L | 132 | THR | N-CA-CB | 5.13 | 120.05 | 110.30 |
| 11 | L | 170 | PRO | N-CA-CB | 5.12 | 109.44 | 103.30 |
| 14 | O | 329 | ARG | NE-CZ-NH1 | 5.08 | 122.84 | 120.30 |
| 10 | K | 320 | ARG | CB-CA-C | 5.08 | 120.56 | 110.40 |
| 15 | R | 315 | GLU | N-CA-CB | 5.08 | 119.74 | 110.60 |
| 13 | N | 285 | PHE | N-CA-CB | 5.05 | 119.69 | 110.60 |
| 8 | I | 659 | ARG | N-CA-C | 5.04 | 124.61 | 111.00 |
| 3 | C | 42 | LEU | CB-CG-CD2 | 5.04 | 119.57 | 111.00 |
| 13 | N | 63 | ARG | CA-C-N | 5.04 | 126.27 | 116.20 |
| 1 | A | 1076 | ARG | NE-CZ-NH1 | 5.02 | 122.81 | 120.30 |
| 9 | J | 362 | GLN | CB-CA-C | -5.01 | 100.37 | 110.40 |
| 9 | J | 376 | LEU | CB-CA-C | -5.00 | 100.69 | 110.20 |

There are no chirality outliers.

All (45) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|------|------|---------|
| 1 | A | 11 | MET | Peptide |
| 1 | A | 124 | GLN | Peptide |
| 1 | A | 1282 | GLY | Peptide |
| 1 | A | 14 | ALA | Peptide |
| 1 | A | 1652 | MET | Peptide |
| 1 | A | 83 | ILE | Peptide |
| 1 | A | 840 | GLU | Peptide |
| 1 | A | 859 | PRO | Peptide |
| 1 | A | 86 | ASP | Peptide |
| 8 | I | 658 | GLY | Peptide |
| 8 | I | 727 | PHE | Peptide |
| 9 | J | 220 | ILE | Peptide |
| 13 | N | 147 | GLN | Peptide |
| 13 | N | 162 | PHE | Peptide |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-------------------|
| 13 | N | 164 | SER | Peptide |
| 13 | N | 201 | GLY | Peptide |
| 13 | N | 280 | GLU | Peptide |
| 13 | N | 281 | TYR | Peptide |
| 13 | N | 282 | GLU | Peptide |
| 13 | N | 321 | LEU | Peptide |
| 13 | N | 351 | PHE | Peptide |
| 13 | N | 352 | PRO | Peptide |
| 13 | N | 353 | ASP | Peptide |
| 13 | N | 367 | ARG | Peptide |
| 13 | N | 387 | LEU | Peptide |
| 13 | N | 394 | CYS | Peptide |
| 13 | N | 395 | ASP | Peptide |
| 13 | N | 477 | PRO | Peptide |
| 13 | N | 482 | PRO | Peptide |
| 13 | N | 484 | PRO | Peptide |
| 13 | N | 485 | VAL | Peptide |
| 13 | N | 487 | ALA | Peptide |
| 13 | N | 495 | LYS | Peptide |
| 13 | N | 509 | TYR | Peptide |
| 13 | N | 62 | LEU | Peptide |
| 13 | N | 63 | ARG | Peptide |
| 13 | N | 77 | GLU | Peptide |
| 13 | N | 78 | VAL | Peptide |
| 15 | R | 131 | SER | Peptide |
| 15 | R | 310 | GLN | Mainchain |
| 15 | R | 431 | PRO | Mainchain,Peptide |
| 15 | R | 48 | PHE | Peptide |
| 17 | T | 3 | ALA | Peptide |
| 20 | X | 385 | ASN | Peptide |

5.2 Too-close contacts [i](#)

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | A | 10947 | 0 | 10690 | 367 | 0 |
| 2 | B | 650 | 0 | 600 | 33 | 0 |
| 3 | C | 4305 | 0 | 4273 | 121 | 0 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 3 | P | 4042 | 0 | 3998 | 137 | 0 |
| 4 | D | 437 | 0 | 396 | 14 | 0 |
| 5 | E | 450 | 0 | 435 | 12 | 0 |
| 6 | F | 3923 | 0 | 3813 | 95 | 0 |
| 6 | H | 3853 | 0 | 3788 | 95 | 0 |
| 7 | G | 214 | 0 | 222 | 2 | 0 |
| 8 | I | 5709 | 0 | 5597 | 124 | 0 |
| 9 | J | 4047 | 0 | 3956 | 138 | 0 |
| 10 | K | 3988 | 0 | 3917 | 126 | 0 |
| 11 | L | 1435 | 0 | 1382 | 69 | 0 |
| 12 | M | 493 | 0 | 469 | 28 | 0 |
| 13 | N | 4831 | 0 | 4527 | 292 | 0 |
| 14 | O | 5396 | 0 | 5425 | 160 | 0 |
| 15 | R | 3003 | 0 | 2951 | 432 | 0 |
| 16 | S | 648 | 0 | 543 | 31 | 0 |
| 17 | T | 109 | 0 | 107 | 9 | 0 |
| 18 | U | 120 | 0 | 80 | 1 | 0 |
| 19 | W | 213 | 0 | 220 | 8 | 0 |
| 20 | X | 3770 | 0 | 3829 | 254 | 0 |
| 20 | Y | 3865 | 0 | 3925 | 168 | 0 |
| 21 | B | 3 | 0 | 0 | 0 | 0 |
| 21 | S | 2 | 0 | 0 | 0 | 0 |
| All | All | 66453 | 0 | 65143 | 2494 | 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 19.

All (2494) 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) |
|------------------|-------------------|--------------------------|-------------------|
| 15:R:404:ASN:CB | 15:R:449:LEU:HD21 | 1.22 | 1.60 |
| 15:R:404:ASN:HB2 | 15:R:449:LEU:CD2 | 1.35 | 1.53 |
| 15:R:292:MET:CE | 15:R:309:LEU:HD21 | 1.42 | 1.47 |
| 20:X:358:ALA:HB3 | 20:X:382:ALA:CB | 1.43 | 1.46 |
| 20:X:355:TYR:CD2 | 20:X:386:MET:N | 1.83 | 1.46 |
| 15:R:189:TYR:HD1 | 15:R:316:VAL:N | 1.00 | 1.44 |
| 13:N:180:PHE:CD1 | 13:N:299:TRP:CZ3 | 2.09 | 1.41 |
| 20:X:355:TYR:CD1 | 20:X:382:ALA:O | 1.74 | 1.38 |
| 15:R:252:PHE:CE1 | 15:R:268:GLU:HG3 | 1.63 | 1.32 |
| 20:X:355:TYR:HA | 20:X:382:ALA:O | 1.30 | 1.30 |
| 15:R:223:CYS:SG | 15:R:256:TRP:CE2 | 2.25 | 1.30 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:267:LEU:HB3 | 15:R:296:ARG:NH1 | 1.45 | 1.29 |
| 15:R:317:CYS:CB | 15:R:331:GLY:O | 1.79 | 1.28 |
| 13:N:180:PHE:CE1 | 13:N:299:TRP:CZ3 | 2.20 | 1.28 |
| 20:X:355:TYR:CA | 20:X:382:ALA:O | 1.83 | 1.27 |
| 11:L:40:PHE:HZ | 15:R:176:PHE:CZ | 1.51 | 1.27 |
| 11:L:40:PHE:CZ | 15:R:176:PHE:CZ | 2.22 | 1.26 |
| 15:R:310:GLN:HB2 | 15:R:340:TRP:CZ2 | 1.71 | 1.25 |
| 11:L:40:PHE:CZ | 15:R:176:PHE:HZ | 1.55 | 1.25 |
| 20:X:355:TYR:CB | 20:X:382:ALA:O | 1.85 | 1.24 |
| 15:R:394:GLN:NE2 | 15:R:432:SER:HB2 | 1.49 | 1.24 |
| 20:X:355:TYR:CD2 | 20:X:386:MET:CA | 2.20 | 1.23 |
| 15:R:178:VAL:O | 16:S:327:SER:O | 1.57 | 1.22 |
| 15:R:189:TYR:CD1 | 15:R:316:VAL:N | 1.79 | 1.22 |
| 13:N:180:PHE:CD1 | 13:N:299:TRP:CH2 | 2.28 | 1.22 |
| 15:R:313:ARG:CB | 15:R:333:ASN:H | 1.53 | 1.21 |
| 20:X:355:TYR:CG | 20:X:382:ALA:O | 1.92 | 1.21 |
| 15:R:316:VAL:HG22 | 15:R:317:CYS:N | 1.34 | 1.21 |
| 15:R:290:ASP:O | 15:R:291:ARG:HG2 | 1.05 | 1.21 |
| 15:R:227:VAL:CG1 | 15:R:228:GLU:N | 2.00 | 1.20 |
| 15:R:252:PHE:HE1 | 15:R:268:GLU:CG | 1.52 | 1.20 |
| 20:X:355:TYR:HD1 | 20:X:382:ALA:C | 1.44 | 1.20 |
| 15:R:291:ARG:CD | 15:R:312:HIS:ND1 | 2.04 | 1.20 |
| 15:R:290:ASP:O | 15:R:291:ARG:CG | 1.89 | 1.20 |
| 15:R:230:ASP:O | 15:R:231:SER:O | 1.57 | 1.19 |
| 20:Y:305:ILE:HG22 | 20:Y:340:GLU:OE1 | 1.39 | 1.18 |
| 15:R:227:VAL:O | 15:R:230:ASP:OD1 | 1.61 | 1.18 |
| 20:X:350:PHE:CD1 | 20:X:382:ALA:N | 2.11 | 1.18 |
| 13:N:78:VAL:O | 13:N:81:ASN:N | 1.77 | 1.17 |
| 20:X:355:TYR:CD2 | 20:X:387:GLY:N | 2.12 | 1.16 |
| 15:R:404:ASN:HB3 | 15:R:449:LEU:HD21 | 1.20 | 1.15 |
| 15:R:327:LEU:HD23 | 15:R:341:ASN:HA | 1.19 | 1.15 |
| 20:X:355:TYR:CE2 | 20:X:385:ASN:C | 2.09 | 1.15 |
| 20:X:355:TYR:CG | 20:X:386:MET:N | 2.16 | 1.13 |
| 20:X:350:PHE:CE1 | 20:X:378:LEU:O | 2.02 | 1.13 |
| 15:R:189:TYR:CD2 | 15:R:315:GLU:OE1 | 2.03 | 1.12 |
| 15:R:310:GLN:CB | 15:R:340:TRP:HZ2 | 1.62 | 1.12 |
| 15:R:291:ARG:NE | 15:R:312:HIS:ND1 | 1.97 | 1.11 |
| 15:R:292:MET:SD | 15:R:309:LEU:CD2 | 1.03 | 1.11 |
| 20:X:355:TYR:HB2 | 20:X:386:MET:CB | 1.80 | 1.11 |
| 13:N:91:PHE:O | 13:N:93:ASN:N | 1.84 | 1.10 |
| 20:X:355:TYR:HB2 | 20:X:386:MET:HB3 | 1.23 | 1.10 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:312:HIS:O | 15:R:334:ASP:HB3 | 1.49 | 1.10 |
| 20:X:358:ALA:HB3 | 20:X:382:ALA:HB2 | 1.34 | 1.09 |
| 15:R:301:PRO:CD | 15:R:301:PRO:N | 2.14 | 1.09 |
| 20:X:358:ALA:HB3 | 20:X:382:ALA:HB3 | 1.12 | 1.09 |
| 15:R:313:ARG:HD3 | 15:R:332:GLY:HA2 | 1.30 | 1.09 |
| 15:R:223:CYS:SG | 15:R:256:TRP:CZ2 | 2.42 | 1.08 |
| 15:R:316:VAL:CG2 | 15:R:317:CYS:H | 1.66 | 1.08 |
| 15:R:237:TRP:CZ3 | 15:R:244:VAL:CG2 | 2.36 | 1.08 |
| 20:X:347:CYS:HA | 20:X:378:LEU:HD11 | 1.35 | 1.08 |
| 15:R:225:LEU:CD1 | 15:R:230:ASP:O | 2.01 | 1.08 |
| 20:X:355:TYR:HB3 | 20:X:383:LEU:HA | 1.31 | 1.08 |
| 15:R:291:ARG:NE | 15:R:312:HIS:CE1 | 2.23 | 1.07 |
| 13:N:180:PHE:CD1 | 13:N:299:TRP:HZ3 | 1.55 | 1.07 |
| 15:R:292:MET:SD | 15:R:309:LEU:HD21 | 0.79 | 1.07 |
| 20:X:355:TYR:HD2 | 20:X:386:MET:C | 1.59 | 1.06 |
| 15:R:302:PRO:CD | 15:R:302:PRO:N | 2.16 | 1.06 |
| 20:Y:42:ARG:HA | 20:Y:82:TYR:CE2 | 1.91 | 1.06 |
| 20:X:350:PHE:CD1 | 20:X:381:ALA:C | 2.29 | 1.05 |
| 15:R:429:LYS:O | 15:R:433:LEU:O | 1.75 | 1.05 |
| 3:C:301:ASP:OD1 | 3:C:335:CYS:SG | 2.14 | 1.05 |
| 15:R:316:VAL:CG2 | 15:R:317:CYS:N | 2.11 | 1.04 |
| 20:X:355:TYR:HD2 | 20:X:386:MET:CA | 1.62 | 1.04 |
| 15:R:317:CYS:HB2 | 15:R:331:GLY:O | 0.87 | 1.04 |
| 15:R:178:VAL:CG1 | 15:R:466:THR:HG23 | 1.87 | 1.04 |
| 15:R:227:VAL:HG12 | 15:R:228:GLU:N | 1.38 | 1.04 |
| 15:R:392:PRO:CD | 15:R:392:PRO:N | 2.19 | 1.03 |
| 15:R:404:ASN:HB2 | 15:R:449:LEU:HD23 | 1.40 | 1.03 |
| 20:X:358:ALA:CB | 20:X:382:ALA:CB | 2.36 | 1.03 |
| 20:X:350:PHE:CE1 | 20:X:382:ALA:N | 2.26 | 1.03 |
| 15:R:310:GLN:CG | 15:R:340:TRP:HZ2 | 1.72 | 1.03 |
| 20:X:400:ILE:HD13 | 20:X:413:LEU:HD13 | 1.40 | 1.03 |
| 15:R:310:GLN:CB | 15:R:340:TRP:CZ2 | 2.39 | 1.01 |
| 11:L:40:PHE:CE1 | 15:R:176:PHE:CE1 | 2.48 | 1.01 |
| 15:R:178:VAL:HG13 | 15:R:466:THR:HG23 | 1.42 | 1.01 |
| 15:R:292:MET:SD | 15:R:309:LEU:CG | 2.49 | 1.01 |
| 15:R:349:GLN:HB3 | 15:R:351:TYR:CE1 | 1.96 | 1.01 |
| 15:R:404:ASN:CB | 15:R:449:LEU:CD2 | 2.09 | 1.00 |
| 20:X:355:TYR:CD2 | 20:X:385:ASN:C | 2.26 | 1.00 |
| 20:X:355:TYR:CD1 | 20:X:382:ALA:C | 2.28 | 1.00 |
| 13:N:120:SER:O | 13:N:124:PRO:HD2 | 1.61 | 1.00 |
| 15:R:366:HIS:CE1 | 15:R:409:LYS:O | 2.14 | 1.00 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:Y:305:ILE:CG2 | 20:Y:340:GLU:OE1 | 2.10 | 1.00 |
| 20:X:343:VAL:O | 20:X:378:LEU:HD21 | 1.63 | 0.99 |
| 20:X:347:CYS:CA | 20:X:378:LEU:HD11 | 1.93 | 0.99 |
| 15:R:434:THR:OG1 | 15:R:435:GLN:N | 1.67 | 0.98 |
| 15:R:252:PHE:CE1 | 15:R:268:GLU:CG | 2.34 | 0.98 |
| 15:R:292:MET:CE | 15:R:309:LEU:CD2 | 2.18 | 0.98 |
| 20:Y:373:VAL:HG11 | 20:Y:403:ALA:HB2 | 1.46 | 0.98 |
| 14:O:222:LEU:O | 14:O:226:ASP:O | 1.81 | 0.98 |
| 15:R:338:LEU:HD23 | 15:R:340:TRP:CZ2 | 1.97 | 0.98 |
| 15:R:431:PRO:CD | 15:R:431:PRO:N | 2.23 | 0.98 |
| 20:X:355:TYR:HD2 | 20:X:387:GLY:N | 1.56 | 0.98 |
| 15:R:310:GLN:CG | 15:R:340:TRP:CZ2 | 2.41 | 0.97 |
| 15:R:313:ARG:HB2 | 15:R:333:ASN:CB | 1.94 | 0.97 |
| 15:R:313:ARG:CB | 15:R:333:ASN:N | 2.25 | 0.97 |
| 13:N:343:GLU:O | 13:N:347:ILE:N | 1.97 | 0.97 |
| 15:R:189:TYR:CE2 | 15:R:315:GLU:OE1 | 2.14 | 0.97 |
| 15:R:327:LEU:HD13 | 15:R:387:THR:HG21 | 1.47 | 0.96 |
| 20:X:363:ALA:HB2 | 20:X:379:LYS:NZ | 1.80 | 0.96 |
| 20:Y:42:ARG:HA | 20:Y:82:TYR:HE2 | 1.22 | 0.96 |
| 6:H:537:GLU:OE2 | 6:H:568:GLU:OE1 | 1.82 | 0.96 |
| 20:X:363:ALA:HB2 | 20:X:379:LYS:HZ2 | 1.27 | 0.96 |
| 15:R:252:PHE:CD1 | 15:R:268:GLU:HG3 | 2.01 | 0.95 |
| 20:X:350:PHE:CZ | 20:X:381:ALA:HB3 | 2.00 | 0.95 |
| 20:X:359:LEU:HD12 | 20:X:383:LEU:HD11 | 1.49 | 0.95 |
| 15:R:237:TRP:CE3 | 15:R:244:VAL:HG22 | 2.02 | 0.95 |
| 14:O:219:GLN:HE22 | 14:O:231:LEU:HD13 | 1.30 | 0.94 |
| 15:R:313:ARG:HB2 | 15:R:333:ASN:H | 1.29 | 0.94 |
| 15:R:229:GLY:O | 15:R:249:HIS:HB3 | 1.67 | 0.94 |
| 13:N:180:PHE:HD1 | 13:N:299:TRP:HZ3 | 1.09 | 0.94 |
| 15:R:313:ARG:CZ | 15:R:317:CYS:SG | 2.56 | 0.94 |
| 11:L:40:PHE:HE1 | 15:R:176:PHE:HE1 | 1.12 | 0.93 |
| 15:R:227:VAL:HG12 | 15:R:228:GLU:CA | 1.98 | 0.93 |
| 15:R:382:ILE:HD12 | 15:R:396:ILE:HD11 | 1.51 | 0.93 |
| 15:R:292:MET:SD | 15:R:307:ARG:NH2 | 2.41 | 0.93 |
| 8:I:349:ILE:HD11 | 14:O:407:LEU:HD13 | 1.48 | 0.93 |
| 15:R:327:LEU:CD2 | 15:R:341:ASN:HA | 1.99 | 0.92 |
| 20:Y:491:LYS:O | 20:Y:494:ASP:OD1 | 1.87 | 0.92 |
| 15:R:178:VAL:HG13 | 15:R:466:THR:CG2 | 2.00 | 0.92 |
| 15:R:237:TRP:CZ3 | 15:R:244:VAL:HG23 | 2.02 | 0.92 |
| 11:L:126:ASP:HB2 | 11:L:132:THR:CA | 1.98 | 0.92 |
| 15:R:223:CYS:SG | 15:R:256:TRP:NE1 | 2.43 | 0.91 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:313:ARG:CD | 15:R:317:CYS:HB3 | 1.97 | 0.91 |
| 11:L:40:PHE:HE1 | 15:R:176:PHE:CE1 | 1.85 | 0.91 |
| 15:R:313:ARG:HB3 | 15:R:333:ASN:N | 1.84 | 0.91 |
| 9:J:445:GLU:HG2 | 9:J:446:PRO:HD3 | 1.49 | 0.91 |
| 15:R:267:LEU:CB | 15:R:296:ARG:NH1 | 2.34 | 0.91 |
| 20:X:491:LYS:O | 20:X:494:ASP:OD1 | 1.87 | 0.91 |
| 15:R:459:VAL:CG2 | 15:R:467:LEU:HD11 | 2.01 | 0.91 |
| 20:X:355:TYR:CE2 | 20:X:387:GLY:N | 2.39 | 0.91 |
| 13:N:395:ASP:OD1 | 13:N:398:THR:N | 2.05 | 0.90 |
| 20:X:358:ALA:CB | 20:X:382:ALA:HB2 | 2.01 | 0.90 |
| 14:O:291:ASN:O | 14:O:336:ASP:HB2 | 1.70 | 0.90 |
| 15:R:327:LEU:HD13 | 15:R:387:THR:CG2 | 2.02 | 0.90 |
| 13:N:180:PHE:HD1 | 13:N:299:TRP:CZ3 | 1.82 | 0.90 |
| 20:X:350:PHE:CE2 | 20:X:381:ALA:HB3 | 2.06 | 0.90 |
| 15:R:450:ALA:O | 15:R:459:VAL:HG12 | 1.72 | 0.90 |
| 15:R:313:ARG:HB3 | 15:R:333:ASN:H | 1.34 | 0.90 |
| 15:R:252:PHE:HE1 | 15:R:268:GLU:HG2 | 1.36 | 0.90 |
| 20:X:350:PHE:HD1 | 20:X:382:ALA:N | 1.61 | 0.90 |
| 20:Y:452:LEU:CD2 | 20:Y:457:THR:O | 2.20 | 0.89 |
| 10:K:250:CYS:SG | 10:K:274:THR:CG2 | 2.60 | 0.89 |
| 15:R:429:LYS:HB3 | 15:R:433:LEU:HD23 | 1.55 | 0.89 |
| 20:X:355:TYR:HA | 20:X:382:ALA:C | 1.92 | 0.89 |
| 15:R:177:LYS:HE3 | 15:R:179:LEU:HD21 | 1.55 | 0.89 |
| 20:X:350:PHE:CZ | 20:X:378:LEU:O | 2.26 | 0.88 |
| 20:X:452:LEU:CD2 | 20:X:457:THR:O | 2.20 | 0.88 |
| 10:K:214:LYS:O | 10:K:216:SER:N | 2.07 | 0.88 |
| 13:N:511:SER:O | 13:N:512:LYS:HG3 | 1.74 | 0.88 |
| 13:N:393:THR:O | 13:N:395:ASP:HB3 | 1.73 | 0.88 |
| 15:R:310:GLN:HB2 | 15:R:340:TRP:CH2 | 2.08 | 0.88 |
| 20:Y:196:LEU:O | 20:Y:200:PRO:HA | 1.74 | 0.88 |
| 15:R:429:LYS:CB | 15:R:433:LEU:HD23 | 2.04 | 0.87 |
| 15:R:267:LEU:HB3 | 15:R:296:ARG:HH12 | 1.31 | 0.87 |
| 15:R:465:GLU:OE1 | 16:S:322:ARG:NH1 | 2.08 | 0.87 |
| 20:X:350:PHE:CE1 | 20:X:381:ALA:CA | 2.57 | 0.87 |
| 15:R:313:ARG:HB2 | 15:R:333:ASN:HB3 | 1.55 | 0.86 |
| 1:A:1097:THR:HG23 | 14:O:340:LEU:HB3 | 1.57 | 0.86 |
| 15:R:227:VAL:CG1 | 15:R:229:GLY:H | 1.88 | 0.86 |
| 15:R:351:TYR:OH | 15:R:390:GLY:CA | 2.24 | 0.86 |
| 11:L:40:PHE:CE1 | 15:R:176:PHE:CZ | 2.64 | 0.85 |
| 13:N:120:SER:O | 13:N:124:PRO:CD | 2.24 | 0.85 |
| 20:X:355:TYR:CD2 | 20:X:386:MET:C | 2.41 | 0.85 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:N:60:GLU:O | 13:N:63:ARG:CB | 2.24 | 0.85 |
| 15:R:292:MET:SD | 15:R:309:LEU:HD23 | 1.44 | 0.85 |
| 20:X:452:LEU:HD22 | 20:X:461:ALA:N | 1.90 | 0.85 |
| 20:Y:452:LEU:HD22 | 20:Y:461:ALA:N | 1.91 | 0.85 |
| 15:R:313:ARG:HB2 | 15:R:333:ASN:N | 1.91 | 0.85 |
| 13:N:538:GLU:HG2 | 13:N:561:LEU:HG | 1.58 | 0.84 |
| 9:J:445:GLU:OE1 | 9:J:475:ILE:HG21 | 1.76 | 0.84 |
| 8:I:145:LEU:HD13 | 8:I:267:LEU:HD22 | 1.57 | 0.84 |
| 13:N:289:PHE:O | 13:N:291:LYS:N | 2.11 | 0.84 |
| 20:X:343:VAL:O | 20:X:378:LEU:CD2 | 2.25 | 0.84 |
| 9:J:351:ASP:CG | 15:R:393:LEU:CD2 | 2.45 | 0.84 |
| 15:R:227:VAL:CG1 | 15:R:228:GLU:H | 1.87 | 0.84 |
| 6:H:537:GLU:CD | 6:H:568:GLU:OE1 | 2.16 | 0.84 |
| 20:X:407:LEU:HD22 | 20:X:437:LEU:HD21 | 1.60 | 0.84 |
| 15:R:313:ARG:HD3 | 15:R:317:CYS:HB3 | 1.60 | 0.83 |
| 15:R:382:ILE:HG13 | 15:R:398:THR:CG2 | 2.09 | 0.83 |
| 15:R:227:VAL:HG12 | 15:R:229:GLY:H | 1.42 | 0.83 |
| 13:N:609:LEU:HD21 | 13:N:662:VAL:HG12 | 1.58 | 0.83 |
| 15:R:437:ALA:O | 15:R:438:LYS:HG3 | 1.79 | 0.83 |
| 9:J:451:LEU:HD12 | 9:J:467:TYR:CD2 | 2.13 | 0.83 |
| 20:X:452:LEU:HD23 | 20:X:457:THR:O | 1.78 | 0.83 |
| 20:Y:503:LEU:O | 20:Y:506:GLN:NE2 | 2.12 | 0.83 |
| 6:F:130:ARG:HG2 | 20:Y:506:GLN:NE2 | 1.93 | 0.82 |
| 15:R:229:GLY:O | 15:R:249:HIS:CD2 | 2.32 | 0.82 |
| 20:X:350:PHE:CE1 | 20:X:381:ALA:C | 2.52 | 0.82 |
| 20:Y:407:LEU:HD22 | 20:Y:437:LEU:HD21 | 1.60 | 0.82 |
| 15:R:227:VAL:HG12 | 15:R:229:GLY:N | 1.94 | 0.82 |
| 20:X:359:LEU:HA | 20:X:379:LYS:HG3 | 1.61 | 0.82 |
| 15:R:437:ALA:O | 15:R:438:LYS:CB | 2.28 | 0.82 |
| 11:L:126:ASP:HB2 | 11:L:132:THR:HA | 1.59 | 0.82 |
| 9:J:254:THR:HG23 | 9:J:271:HIS:CD2 | 2.13 | 0.82 |
| 15:R:291:ARG:HD3 | 15:R:312:HIS:ND1 | 1.95 | 0.82 |
| 15:R:404:ASN:HB2 | 15:R:449:LEU:HD21 | 0.83 | 0.82 |
| 6:F:130:ARG:HG2 | 20:Y:506:GLN:HE21 | 1.43 | 0.82 |
| 13:N:202:GLU:O | 13:N:204:ASP:N | 2.12 | 0.82 |
| 15:R:225:LEU:HD13 | 15:R:230:ASP:O | 1.79 | 0.82 |
| 16:S:374:SER:HB3 | 16:S:387:TYR:HB3 | 1.61 | 0.82 |
| 1:A:1351:GLN:O | 11:L:42:VAL:HG21 | 1.79 | 0.81 |
| 15:R:313:ARG:HD3 | 15:R:332:GLY:CA | 2.10 | 0.81 |
| 20:X:347:CYS:N | 20:X:378:LEU:HD11 | 1.95 | 0.81 |
| 13:N:398:THR:HG21 | 16:S:426:LYS:CB | 2.10 | 0.81 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:Y:452:LEU:HD23 | 20:Y:457:THR:O | 1.78 | 0.81 |
| 15:R:313:ARG:CD | 15:R:332:GLY:HA2 | 2.10 | 0.81 |
| 1:A:1235:LEU:CD1 | 1:A:1272:VAL:HG21 | 2.10 | 0.81 |
| 11:L:83:TYR:CD2 | 11:L:115:GLU:HA | 2.16 | 0.81 |
| 15:R:444:TYR:HD2 | 15:R:464:ASP:HB3 | 1.44 | 0.81 |
| 12:M:17:ASP:HA | 12:M:20:ARG:HG2 | 1.61 | 0.80 |
| 13:N:180:PHE:CD1 | 13:N:299:TRP:HH2 | 1.94 | 0.80 |
| 13:N:180:PHE:CE1 | 13:N:299:TRP:CH2 | 2.63 | 0.80 |
| 20:Y:366:ILE:HD11 | 20:Y:379:LYS:HD2 | 1.63 | 0.80 |
| 20:X:359:LEU:HA | 20:X:379:LYS:CG | 2.11 | 0.80 |
| 20:X:350:PHE:HD1 | 20:X:382:ALA:CA | 1.94 | 0.80 |
| 13:N:699:TRP:HB3 | 13:N:705:LEU:HD23 | 1.63 | 0.80 |
| 15:R:229:GLY:O | 15:R:249:HIS:CB | 2.30 | 0.79 |
| 15:R:349:GLN:CB | 15:R:351:TYR:CE1 | 2.65 | 0.79 |
| 10:K:432:ILE:HD11 | 10:K:444:TRP:CD1 | 2.17 | 0.79 |
| 20:X:355:TYR:CD1 | 20:X:383:LEU:C | 2.56 | 0.79 |
| 20:X:355:TYR:CG | 20:X:383:LEU:O | 2.35 | 0.79 |
| 6:F:653:LEU:HA | 6:F:656:MET:SD | 2.21 | 0.79 |
| 20:X:355:TYR:CD2 | 20:X:383:LEU:O | 2.36 | 0.79 |
| 9:J:445:GLU:HG2 | 9:J:446:PRO:CD | 2.11 | 0.79 |
| 20:X:355:TYR:HB3 | 20:X:383:LEU:CA | 2.11 | 0.78 |
| 1:A:482:VAL:HG12 | 1:A:487:THR:O | 1.83 | 0.78 |
| 9:J:351:ASP:CB | 15:R:393:LEU:CD2 | 2.62 | 0.78 |
| 15:R:437:ALA:O | 15:R:438:LYS:CG | 2.32 | 0.78 |
| 15:R:297:ASP:O | 15:R:303:LEU:CD2 | 2.30 | 0.78 |
| 1:A:1637:LEU:HD13 | 1:A:1665:GLN:HE21 | 1.49 | 0.78 |
| 8:I:224:SER:CB | 8:I:229:SER:HA | 2.13 | 0.78 |
| 20:X:503:LEU:O | 20:X:506:GLN:NE2 | 2.17 | 0.78 |
| 20:X:350:PHE:CZ | 20:X:378:LEU:HA | 2.18 | 0.78 |
| 15:R:188:PHE:CE1 | 15:R:359:LYS:HD3 | 2.17 | 0.78 |
| 15:R:351:TYR:OH | 15:R:390:GLY:HA2 | 1.82 | 0.78 |
| 20:X:358:ALA:CB | 20:X:382:ALA:HB3 | 2.06 | 0.78 |
| 11:L:40:PHE:CE1 | 15:R:176:PHE:HE1 | 1.92 | 0.78 |
| 9:J:439:VAL:HG21 | 9:J:448:LEU:HD21 | 1.66 | 0.78 |
| 13:N:368:THR:OG1 | 13:N:369:ASP:HA | 1.84 | 0.78 |
| 20:X:349:SER:HB2 | 20:X:358:ALA:HB2 | 1.66 | 0.77 |
| 2:B:8:TRP:CD1 | 13:N:644:VAL:HG12 | 2.19 | 0.77 |
| 20:Y:366:ILE:HD11 | 20:Y:379:LYS:CD | 2.14 | 0.77 |
| 6:F:812:ILE:CB | 15:R:368:HIS:NE2 | 2.48 | 0.77 |
| 10:K:62:SER:O | 10:K:63:ARG:HG3 | 1.83 | 0.77 |
| 15:R:316:VAL:HG22 | 15:R:317:CYS:H | 0.96 | 0.77 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:336:LYS:HD3 | 15:R:350:GLN:HE21 | 1.49 | 0.77 |
| 20:X:347:CYS:HA | 20:X:378:LEU:CD1 | 2.13 | 0.77 |
| 13:N:393:THR:O | 13:N:395:ASP:CB | 2.33 | 0.77 |
| 20:X:40:HIS:HB3 | 20:Y:201:LEU:HD11 | 1.66 | 0.77 |
| 20:X:355:TYR:CG | 20:X:383:LEU:C | 2.58 | 0.77 |
| 13:N:78:VAL:O | 13:N:80:GLN:N | 2.18 | 0.77 |
| 15:R:431:PRO:HB2 | 15:R:432:SER:O | 1.85 | 0.77 |
| 1:A:1800:ILE:HG22 | 1:A:1855:ILE:HD11 | 1.66 | 0.77 |
| 10:K:254:THR:HG23 | 10:K:271:HIS:CD2 | 2.20 | 0.77 |
| 15:R:466:THR:HG22 | 15:R:468:ARG:HG3 | 1.67 | 0.76 |
| 20:X:406:ARG:HB2 | 20:X:409:CYS:SG | 2.25 | 0.76 |
| 9:J:285:PHE:HB2 | 9:J:308:TYR:CE1 | 2.20 | 0.76 |
| 3:P:233:PHE:CZ | 3:P:237:ILE:CD1 | 2.67 | 0.76 |
| 3:C:251:TYR:HB3 | 3:C:269:ILE:HD11 | 1.67 | 0.76 |
| 9:J:219:VAL:HG12 | 9:J:221:PRO:HD3 | 1.68 | 0.76 |
| 10:K:185:LEU:HD13 | 10:K:209:LEU:HD11 | 1.65 | 0.76 |
| 11:L:126:ASP:N | 11:L:132:THR:HG23 | 1.99 | 0.76 |
| 8:I:34:LEU:HD12 | 8:I:46:LEU:HD21 | 1.68 | 0.76 |
| 6:F:89:GLU:OE1 | 6:F:130:ARG:NH2 | 2.18 | 0.76 |
| 9:J:35:GLU:OE2 | 9:J:63:ARG:NE | 2.18 | 0.76 |
| 15:R:237:TRP:CZ3 | 15:R:244:VAL:HG22 | 2.15 | 0.76 |
| 3:C:358:LEU:HD21 | 3:C:368:TRP:CD2 | 2.21 | 0.76 |
| 13:N:395:ASP:HB2 | 13:N:397:ILE:H | 1.49 | 0.76 |
| 3:P:464:ASP:OD2 | 3:P:469:ALA:HB3 | 1.86 | 0.76 |
| 20:X:100:TYR:HB2 | 20:X:142:LEU:HD21 | 1.68 | 0.76 |
| 15:R:437:ALA:O | 15:R:438:LYS:HB2 | 1.86 | 0.75 |
| 13:N:670:PHE:CE1 | 13:N:715:VAL:HB | 2.21 | 0.75 |
| 20:X:452:LEU:CD2 | 20:X:461:ALA:N | 2.49 | 0.75 |
| 10:K:285:PHE:HB2 | 10:K:308:TYR:CE1 | 2.21 | 0.75 |
| 14:O:414:LEU:CD1 | 14:O:417:LEU:HB2 | 2.16 | 0.75 |
| 11:L:33:LEU:HG | 11:L:42:VAL:HG22 | 1.69 | 0.75 |
| 20:Y:406:ARG:HB2 | 20:Y:409:CYS:SG | 2.26 | 0.75 |
| 3:P:358:LEU:O | 3:P:362:PRO:HA | 1.86 | 0.75 |
| 15:R:382:ILE:HG13 | 15:R:398:THR:HG23 | 1.69 | 0.75 |
| 15:R:394:GLN:HE21 | 15:R:432:SER:HB2 | 1.46 | 0.75 |
| 13:N:414:MET:SD | 13:N:498:SER:N | 2.60 | 0.75 |
| 15:R:297:ASP:O | 15:R:303:LEU:HD23 | 1.85 | 0.75 |
| 20:Y:349:SER:HB2 | 20:Y:358:ALA:HB2 | 1.68 | 0.75 |
| 14:O:581:ILE:HD11 | 14:O:619:LEU:HB3 | 1.67 | 0.75 |
| 15:R:182:PRO:HB3 | 16:S:322:ARG:CB | 2.16 | 0.75 |
| 20:Y:294:PHE:CD1 | 20:Y:311:TYR:CD1 | 2.74 | 0.75 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:N:180:PHE:HE1 | 13:N:299:TRP:CZ3 | 2.02 | 0.74 |
| 3:P:267:SER:OG | 3:P:299:ASN:ND2 | 2.19 | 0.74 |
| 20:X:362:GLY:HA3 | 20:X:379:LYS:HB2 | 1.69 | 0.74 |
| 20:Y:452:LEU:CD2 | 20:Y:461:ALA:N | 2.49 | 0.74 |
| 20:Y:196:LEU:O | 20:Y:200:PRO:CA | 2.35 | 0.74 |
| 20:Y:452:LEU:HD21 | 20:Y:457:THR:O | 1.87 | 0.74 |
| 15:R:233:THR:HG21 | 15:R:273:ARG:HG3 | 1.69 | 0.74 |
| 15:R:291:ARG:HE | 15:R:312:HIS:CE1 | 2.05 | 0.74 |
| 1:A:1086:MET:HE1 | 1:A:1564:LEU:HD13 | 1.67 | 0.74 |
| 15:R:430:TYR:C | 15:R:431:PRO:CD | 2.56 | 0.74 |
| 11:L:126:ASP:HB2 | 11:L:132:THR:N | 2.01 | 0.74 |
| 11:L:45:LEU:O | 11:L:155:GLN:OE1 | 2.04 | 0.74 |
| 20:X:452:LEU:HD21 | 20:X:457:THR:O | 1.87 | 0.74 |
| 1:A:801:PRO:O | 1:A:804:ASP:OD1 | 2.06 | 0.74 |
| 1:A:1235:LEU:HD11 | 1:A:1272:VAL:HG21 | 1.70 | 0.74 |
| 6:H:520:ARG:NH2 | 20:X:101:THR:OG1 | 2.20 | 0.73 |
| 3:C:493:TYR:CZ | 3:C:497:ILE:HD11 | 2.23 | 0.73 |
| 14:O:539:ASN:HD22 | 14:O:542:GLU:CB | 2.02 | 0.73 |
| 1:A:1279:ARG:NH1 | 1:A:1287:TYR:OH | 2.21 | 0.73 |
| 6:F:533:VAL:O | 6:F:568:GLU:OE1 | 2.04 | 0.73 |
| 15:R:290:ASP:C | 15:R:291:ARG:HG2 | 2.06 | 0.73 |
| 6:H:655:GLU:OE2 | 6:H:684:LYS:NZ | 2.22 | 0.73 |
| 9:J:351:ASP:OD2 | 15:R:393:LEU:HD22 | 1.89 | 0.73 |
| 9:J:351:ASP:OD2 | 15:R:393:LEU:CD2 | 2.36 | 0.73 |
| 14:O:32:PRO:O | 14:O:35:ILE:HG22 | 1.87 | 0.73 |
| 20:X:350:PHE:HE1 | 20:X:382:ALA:H | 1.34 | 0.73 |
| 1:A:1274:LEU:HD11 | 1:A:1321:VAL:HG12 | 1.71 | 0.73 |
| 13:N:395:ASP:HB2 | 13:N:397:ILE:N | 2.03 | 0.73 |
| 3:P:402:TRP:CH2 | 3:P:424:ARG:HG2 | 2.23 | 0.73 |
| 8:I:279:ILE:CD1 | 8:I:337:ILE:HA | 2.19 | 0.73 |
| 1:A:1191:LEU:HD11 | 15:R:62:HIS:CB | 2.19 | 0.73 |
| 3:C:96:VAL:HG21 | 3:P:53:LYS:HD3 | 1.70 | 0.73 |
| 15:R:292:MET:SD | 15:R:309:LEU:HD22 | 1.23 | 0.73 |
| 20:X:359:LEU:CA | 20:X:379:LYS:HG3 | 2.18 | 0.73 |
| 1:A:1482:LEU:N | 17:T:7:LEU:CB | 2.52 | 0.72 |
| 1:A:1784:GLN:HB2 | 1:A:1786:THR:HG22 | 1.71 | 0.72 |
| 9:J:351:ASP:CG | 15:R:393:LEU:HD23 | 2.07 | 0.72 |
| 15:R:291:ARG:HD2 | 15:R:312:HIS:ND1 | 2.02 | 0.72 |
| 1:A:207:LEU:HD12 | 1:A:208:PRO:HD3 | 1.70 | 0.72 |
| 15:R:211:LEU:HD11 | 15:R:222:LEU:HD22 | 1.70 | 0.72 |
| 16:S:374:SER:HB3 | 16:S:387:TYR:CB | 2.19 | 0.72 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:L:125:THR:HA | 11:L:126:ASP:HB3 | 1.72 | 0.72 |
| 9:J:167:PHE:O | 9:J:170:LEU:HD23 | 1.89 | 0.72 |
| 15:R:189:TYR:CD1 | 15:R:315:GLU:C | 2.44 | 0.72 |
| 15:R:310:GLN:HG2 | 15:R:340:TRP:CZ2 | 2.25 | 0.72 |
| 13:N:528:LEU:HD11 | 13:N:641:LEU:HD13 | 1.72 | 0.72 |
| 9:J:211:LYS:O | 9:J:212:TYR:CD2 | 2.43 | 0.71 |
| 9:J:215:PRO:HG3 | 9:J:402:PRO:HG2 | 1.72 | 0.71 |
| 13:N:676:TRP:O | 13:N:713:PHE:HB2 | 1.89 | 0.71 |
| 14:O:414:LEU:HD12 | 14:O:417:LEU:HB2 | 1.73 | 0.71 |
| 3:P:233:PHE:CZ | 3:P:237:ILE:HD12 | 2.24 | 0.71 |
| 15:R:298:ILE:HA | 15:R:303:LEU:HD22 | 1.71 | 0.71 |
| 15:R:313:ARG:HB2 | 15:R:333:ASN:CA | 2.20 | 0.71 |
| 15:R:459:VAL:HG21 | 15:R:467:LEU:HD11 | 1.72 | 0.71 |
| 6:F:152:PHE:HE1 | 6:F:162:PRO:HG2 | 1.53 | 0.71 |
| 15:R:313:ARG:NE | 15:R:317:CYS:HB3 | 2.05 | 0.71 |
| 8:I:56:TRP:CE3 | 8:I:98:PRO:HB3 | 2.25 | 0.71 |
| 15:R:292:MET:HE1 | 15:R:309:LEU:HD21 | 1.65 | 0.71 |
| 20:Y:373:VAL:HG11 | 20:Y:403:ALA:CB | 2.20 | 0.71 |
| 13:N:425:ARG:CZ | 13:N:507:SER:HB2 | 2.20 | 0.71 |
| 20:X:350:PHE:CE1 | 20:X:381:ALA:N | 2.59 | 0.71 |
| 20:Y:452:LEU:HD22 | 20:Y:460:LYS:C | 2.11 | 0.71 |
| 8:I:307:LEU:HD13 | 8:I:313:ALA:HB2 | 1.71 | 0.71 |
| 10:K:210:LYS:O | 10:K:212:TYR:N | 2.23 | 0.71 |
| 14:O:539:ASN:HD22 | 14:O:542:GLU:HB2 | 1.56 | 0.71 |
| 15:R:229:GLY:O | 15:R:249:HIS:CG | 2.44 | 0.71 |
| 15:R:327:LEU:CD1 | 15:R:387:THR:HG21 | 2.20 | 0.71 |
| 15:R:351:TYR:HH | 15:R:390:GLY:CA | 2.03 | 0.71 |
| 8:I:279:ILE:HD11 | 8:I:337:ILE:HG23 | 1.72 | 0.71 |
| 9:J:441:VAL:HG21 | 9:J:444:TRP:HD1 | 1.55 | 0.71 |
| 20:X:452:LEU:HD22 | 20:X:460:LYS:C | 2.11 | 0.71 |
| 1:A:1082:VAL:HG22 | 1:A:1138:HIS:CD2 | 2.25 | 0.70 |
| 20:X:359:LEU:HB2 | 20:X:383:LEU:HD21 | 1.73 | 0.70 |
| 14:O:490:LEU:HD13 | 14:O:511:ASP:HB2 | 1.73 | 0.70 |
| 20:Y:462:LYS:HG2 | 20:Y:485:LEU:HD13 | 1.73 | 0.70 |
| 3:C:358:LEU:O | 3:C:362:PRO:HA | 1.92 | 0.70 |
| 3:P:233:PHE:CE1 | 3:P:237:ILE:HD11 | 2.26 | 0.70 |
| 1:A:1186:THR:HG23 | 1:A:1215:ALA:HB1 | 1.73 | 0.70 |
| 15:R:394:GLN:HE22 | 15:R:432:SER:HB2 | 1.54 | 0.70 |
| 20:Y:474:ASP:OD1 | 20:Y:502:ALA:HA | 1.91 | 0.70 |
| 13:N:341:ILE:O | 13:N:344:LEU:HB3 | 1.92 | 0.70 |
| 15:R:484:SER:HB3 | 15:R:485:VAL:HA | 1.73 | 0.70 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:394:GLN:NE2 | 15:R:432:SER:CB | 2.44 | 0.70 |
| 6:F:705:CYS:SG | 6:F:706:LYS:N | 2.65 | 0.70 |
| 6:F:729:LEU:HD13 | 6:F:739:VAL:HG22 | 1.74 | 0.70 |
| 9:J:351:ASP:HB3 | 15:R:393:LEU:HD21 | 1.73 | 0.70 |
| 15:R:230:ASP:C | 15:R:231:SER:O | 2.30 | 0.70 |
| 1:A:1033:ARG:NH1 | 1:A:1531:GLY:O | 2.25 | 0.69 |
| 3:C:358:LEU:HD13 | 3:C:367:ALA:HB3 | 1.74 | 0.69 |
| 8:I:144:THR:HG21 | 8:I:159:GLU:HA | 1.74 | 0.69 |
| 13:N:180:PHE:CG | 13:N:299:TRP:HH2 | 2.09 | 0.69 |
| 13:N:435:VAL:HA | 13:N:438:ILE:HD12 | 1.74 | 0.69 |
| 1:A:1470:LEU:HA | 1:A:1522:SER:OG | 1.92 | 0.69 |
| 1:A:1191:LEU:HD11 | 15:R:62:HIS:HB2 | 1.73 | 0.69 |
| 2:B:39:VAL:CB | 2:B:43:ASP:HB2 | 2.22 | 0.69 |
| 14:O:479:GLU:O | 14:O:656:ALA:O | 2.10 | 0.69 |
| 20:X:359:LEU:HG | 20:X:379:LYS:HE2 | 1.74 | 0.69 |
| 11:L:78:CYS:SG | 11:L:119:TRP:CE3 | 2.85 | 0.69 |
| 13:N:517:ASN:ND2 | 16:S:411:CYS:SG | 2.65 | 0.69 |
| 15:R:349:GLN:CB | 15:R:351:TYR:HE1 | 2.06 | 0.69 |
| 11:L:44:GLN:HA | 11:L:47:ASP:OD2 | 1.91 | 0.69 |
| 15:R:424:GLN:HG2 | 15:R:440:THR:HA | 1.74 | 0.69 |
| 3:C:352:LEU:HD21 | 3:C:356:ARG:CZ | 2.23 | 0.69 |
| 11:L:105:LEU:HD12 | 11:L:138:GLN:OE1 | 1.92 | 0.69 |
| 20:X:474:ASP:OD1 | 20:X:502:ALA:HA | 1.92 | 0.69 |
| 20:Y:294:PHE:CD1 | 20:Y:311:TYR:CE1 | 2.81 | 0.69 |
| 15:R:459:VAL:CG2 | 15:R:467:LEU:CD1 | 2.71 | 0.69 |
| 1:A:1640:GLY:N | 1:A:1645:GLU:O | 2.26 | 0.69 |
| 8:I:73:TRP:CZ2 | 8:I:80:LEU:HD22 | 2.28 | 0.69 |
| 3:P:252:GLN:O | 3:P:255:ILE:HG22 | 1.93 | 0.69 |
| 15:R:188:PHE:CE2 | 15:R:359:LYS:HB2 | 2.28 | 0.69 |
| 15:R:189:TYR:CG | 15:R:315:GLU:OE1 | 2.46 | 0.69 |
| 15:R:435:GLN:HG3 | 15:R:436:VAL:N | 2.08 | 0.68 |
| 11:L:94:ILE:HD12 | 11:L:113:LEU:HD11 | 1.75 | 0.68 |
| 20:X:400:ILE:HG21 | 20:X:413:LEU:HB2 | 1.73 | 0.68 |
| 1:A:612:ILE:O | 1:A:641:TRP:CZ3 | 2.46 | 0.68 |
| 3:P:358:LEU:CD1 | 3:P:368:TRP:CE2 | 2.76 | 0.68 |
| 15:R:188:PHE:CZ | 15:R:359:LYS:CD | 2.77 | 0.68 |
| 20:X:434:TYR:HA | 20:X:444:LEU:HD22 | 1.74 | 0.68 |
| 20:X:462:LYS:HG2 | 20:X:485:LEU:HD13 | 1.74 | 0.68 |
| 13:N:596:LEU:HD13 | 13:N:601:TRP:CE2 | 2.28 | 0.68 |
| 14:O:591:TYR:HA | 14:O:594:SER:OG | 1.94 | 0.68 |
| 15:R:188:PHE:CZ | 15:R:359:LYS:CB | 2.77 | 0.68 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:290:ASP:O | 15:R:291:ARG:CB | 2.40 | 0.68 |
| 9:J:254:THR:HG23 | 9:J:271:HIS:HD2 | 1.59 | 0.68 |
| 20:X:359:LEU:HD12 | 20:X:383:LEU:CD1 | 2.23 | 0.68 |
| 6:H:729:LEU:HD13 | 6:H:739:VAL:HG22 | 1.75 | 0.68 |
| 6:F:133:LYS:HA | 6:F:136:GLU:OE1 | 1.94 | 0.68 |
| 10:K:174:HIS:HA | 10:K:211:LYS:NZ | 2.09 | 0.67 |
| 15:R:194:ASP:O | 15:R:201:LEU:HD12 | 1.93 | 0.67 |
| 1:A:1076:ARG:HE | 1:A:1543:HIS:CD2 | 2.12 | 0.67 |
| 13:N:663:GLN:HE21 | 13:N:695:ARG:HG3 | 1.60 | 0.67 |
| 6:H:73:TYR:CD1 | 6:H:117:THR:HG22 | 2.29 | 0.67 |
| 13:N:519:TYR:CE1 | 13:N:523:LEU:HD21 | 2.30 | 0.67 |
| 15:R:201:LEU:CD2 | 15:R:467:LEU:HD21 | 2.24 | 0.67 |
| 15:R:406:ALA:C | 15:R:414:LEU:HD12 | 2.14 | 0.67 |
| 3:C:388:TYR:HB2 | 3:C:405:LEU:HD13 | 1.75 | 0.67 |
| 3:P:404:GLY:O | 3:P:408:THR:HG22 | 1.93 | 0.67 |
| 13:N:202:GLU:HB2 | 13:N:282:GLU:OE2 | 1.95 | 0.67 |
| 14:O:467:ALA:HB1 | 14:O:506:LEU:HD11 | 1.76 | 0.67 |
| 3:P:368:TRP:HB3 | 3:P:391:ALA:HB2 | 1.77 | 0.67 |
| 15:R:225:LEU:HD11 | 15:R:230:ASP:O | 1.94 | 0.67 |
| 15:R:382:ILE:CD1 | 15:R:398:THR:CG2 | 2.72 | 0.67 |
| 16:S:357:SER:O | 16:S:359:HIS:N | 2.28 | 0.67 |
| 6:F:571:CYS:SG | 6:F:606:LEU:HD12 | 2.35 | 0.67 |
| 16:S:387:TYR:CE1 | 16:S:407:THR:HG21 | 2.30 | 0.67 |
| 20:Y:445:THR:O | 20:Y:449:THR:HG23 | 1.95 | 0.67 |
| 15:R:225:LEU:CD1 | 15:R:230:ASP:C | 2.63 | 0.67 |
| 20:X:316:ALA:HB1 | 20:X:351:TYR:CE1 | 2.30 | 0.67 |
| 20:Y:434:TYR:HA | 20:Y:444:LEU:HD22 | 1.76 | 0.67 |
| 13:N:704:VAL:HG23 | 13:N:705:LEU:HD22 | 1.77 | 0.67 |
| 15:R:57:TRP:HE3 | 15:R:57:TRP:HA | 1.59 | 0.67 |
| 15:R:153:VAL:O | 15:R:157:SER:OG | 2.13 | 0.67 |
| 20:X:201:LEU:CD1 | 20:Y:40:HIS:HB3 | 2.25 | 0.67 |
| 20:Y:407:LEU:CD2 | 20:Y:437:LEU:HD21 | 2.25 | 0.67 |
| 6:F:552:LEU:HG | 6:F:576:CYS:SG | 2.35 | 0.66 |
| 13:N:123:ASP:O | 13:N:127:ARG:N | 2.28 | 0.66 |
| 20:Y:215:LYS:O | 20:Y:219:VAL:HG23 | 1.95 | 0.66 |
| 9:J:451:LEU:HD12 | 9:J:467:TYR:CE2 | 2.29 | 0.66 |
| 13:N:577:GLU:HG2 | 13:N:583:ALA:HB2 | 1.77 | 0.66 |
| 15:R:406:ALA:O | 15:R:414:LEU:HD12 | 1.95 | 0.66 |
| 20:X:229:THR:HG21 | 20:X:233:LEU:HD12 | 1.77 | 0.66 |
| 1:A:1287:TYR:CD1 | 1:A:1287:TYR:O | 2.48 | 0.66 |
| 1:A:1481:ASN:HA | 17:T:7:LEU:CB | 2.25 | 0.66 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:H:552:LEU:HG | 6:H:576:CYS:SG | 2.35 | 0.66 |
| 20:X:355:TYR:CD1 | 20:X:384:ARG:N | 2.62 | 0.66 |
| 3:C:136:ASP:O | 14:O:150:GLN:NE2 | 2.28 | 0.66 |
| 6:F:73:TYR:CD1 | 6:F:117:THR:HG22 | 2.31 | 0.66 |
| 15:R:237:TRP:CE3 | 15:R:244:VAL:CG2 | 2.68 | 0.66 |
| 6:H:571:CYS:SG | 6:H:606:LEU:HD12 | 2.35 | 0.66 |
| 8:I:177:VAL:HG12 | 8:I:208:LEU:HD13 | 1.78 | 0.66 |
| 15:R:230:ASP:O | 15:R:231:SER:C | 2.31 | 0.66 |
| 15:R:380:ARG:NH2 | 15:R:420:TYR:HD2 | 1.93 | 0.66 |
| 9:J:476:PRO:HG2 | 3:P:182:LEU:HG | 1.76 | 0.66 |
| 3:P:402:TRP:CZ3 | 3:P:424:ARG:HG2 | 2.31 | 0.66 |
| 20:X:215:LYS:O | 20:X:219:VAL:HG23 | 1.95 | 0.66 |
| 20:X:445:THR:O | 20:X:449:THR:HG23 | 1.96 | 0.66 |
| 15:R:57:TRP:HA | 15:R:57:TRP:CE3 | 2.30 | 0.66 |
| 15:R:292:MET:CG | 15:R:307:ARG:HH21 | 2.08 | 0.66 |
| 15:R:173:LYS:HG2 | 15:R:439:LEU:CD2 | 2.26 | 0.66 |
| 20:Y:226:VAL:HG22 | 20:Y:236:LEU:HD23 | 1.77 | 0.66 |
| 2:B:14:TRP:HA | 2:B:15:LEU:CG | 2.26 | 0.66 |
| 15:R:307:ARG:HH21 | 15:R:309:LEU:HD21 | 1.59 | 0.66 |
| 3:C:460:TYR:CE1 | 3:C:470:LEU:HD11 | 2.31 | 0.66 |
| 8:I:186:GLU:OE2 | 8:I:197:ARG:NH1 | 2.29 | 0.66 |
| 15:R:382:ILE:HD12 | 15:R:396:ILE:CD1 | 2.24 | 0.66 |
| 15:R:315:GLU:H | 15:R:333:ASN:CB | 2.09 | 0.65 |
| 1:A:126:ALA:HA | 1:A:152:CYS:O | 1.97 | 0.65 |
| 1:A:1405:LEU:HD13 | 1:A:1467:GLY:CA | 2.27 | 0.65 |
| 7:G:6:PRO:HB3 | 9:J:406:HIS:CD2 | 2.32 | 0.65 |
| 6:H:481:CYS:HB3 | 6:H:512:LEU:HD13 | 1.77 | 0.65 |
| 14:O:75:VAL:HG13 | 14:O:165:ASP:CB | 2.25 | 0.65 |
| 15:R:444:TYR:CD2 | 15:R:464:ASP:HB3 | 2.28 | 0.65 |
| 15:R:337:LEU:HD13 | 15:R:361:ILE:CD1 | 2.26 | 0.65 |
| 20:X:294:PHE:CE2 | 20:X:311:TYR:HB2 | 2.32 | 0.65 |
| 13:N:571:ASN:OD1 | 13:N:592:TYR:CD1 | 2.48 | 0.65 |
| 15:R:178:VAL:CG1 | 15:R:466:THR:CG2 | 2.62 | 0.65 |
| 15:R:188:PHE:CZ | 15:R:359:LYS:HB3 | 2.31 | 0.65 |
| 20:Y:229:THR:HG21 | 20:Y:233:LEU:HD12 | 1.77 | 0.65 |
| 8:I:265:ILE:HD11 | 8:I:396:PHE:CE2 | 2.32 | 0.65 |
| 20:X:294:PHE:CD1 | 20:X:311:TYR:CD1 | 2.85 | 0.65 |
| 13:N:699:TRP:CZ3 | 13:N:728:VAL:HG21 | 2.31 | 0.65 |
| 15:R:420:TYR:CE1 | 15:R:421:SER:HB3 | 2.32 | 0.65 |
| 1:A:592:HIS:O | 1:A:593:ASN:HB3 | 1.97 | 0.65 |
| 6:F:537:GLU:OE1 | 6:F:602:TYR:HB3 | 1.95 | 0.65 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:182:PRO:HB3 | 16:S:322:ARG:HB3 | 1.77 | 0.65 |
| 1:A:72:GLU:HG3 | 1:A:94:TYR:OH | 1.97 | 0.65 |
| 11:L:74:VAL:HG21 | 11:L:137:ILE:HD11 | 1.77 | 0.65 |
| 3:P:233:PHE:CZ | 3:P:237:ILE:HD11 | 2.31 | 0.65 |
| 20:X:271:VAL:CG1 | 20:X:304:LEU:HD21 | 2.27 | 0.65 |
| 1:A:1191:LEU:HD21 | 15:R:62:HIS:CG | 2.32 | 0.65 |
| 6:F:131:LEU:HD11 | 6:F:158:ILE:HG23 | 1.78 | 0.65 |
| 15:R:312:HIS:N | 15:R:334:ASP:OD2 | 2.30 | 0.65 |
| 20:X:226:VAL:HG22 | 20:X:236:LEU:HD23 | 1.78 | 0.65 |
| 20:X:353:LYS:HA | 20:X:385:ASN:HB3 | 1.79 | 0.65 |
| 20:X:363:ALA:N | 20:X:379:LYS:HD2 | 2.12 | 0.65 |
| 20:Y:271:VAL:CG1 | 20:Y:304:LEU:HD21 | 2.26 | 0.65 |
| 1:A:1175:PHE:CZ | 1:A:1179:LEU:HD21 | 2.33 | 0.64 |
| 14:O:581:ILE:HG22 | 14:O:610:LEU:HD23 | 1.78 | 0.64 |
| 15:R:382:ILE:CG1 | 15:R:398:THR:CG2 | 2.74 | 0.64 |
| 15:R:436:VAL:HG12 | 15:R:437:ALA:N | 2.12 | 0.64 |
| 3:C:148:ASN:HB3 | 3:C:151:LEU:HG | 1.79 | 0.64 |
| 15:R:225:LEU:HD13 | 15:R:230:ASP:C | 2.17 | 0.64 |
| 15:R:382:ILE:HD11 | 15:R:398:THR:CG2 | 2.28 | 0.64 |
| 1:A:1380:ASN:HD22 | 1:A:1383:ILE:HD12 | 1.61 | 0.64 |
| 6:F:537:GLU:CD | 6:F:600:TYR:OH | 2.35 | 0.64 |
| 15:R:230:ASP:HB3 | 15:R:250:LYS:CD | 2.28 | 0.64 |
| 8:I:231:VAL:HG21 | 8:I:557:TYR:CZ | 2.33 | 0.64 |
| 8:I:297:THR:O | 14:O:58:ARG:NH2 | 2.30 | 0.64 |
| 15:R:291:ARG:CZ | 15:R:312:HIS:CE1 | 2.81 | 0.64 |
| 15:R:380:ARG:NH2 | 15:R:420:TYR:CD2 | 2.66 | 0.64 |
| 3:C:327:ASP:O | 3:C:333:THR:HG21 | 1.98 | 0.64 |
| 3:C:413:LYS:O | 3:C:415:PRO:HD3 | 1.97 | 0.64 |
| 11:L:108:ILE:HB | 11:L:125:THR:O | 1.97 | 0.64 |
| 13:N:181:LEU:HD22 | 13:N:299:TRP:CE2 | 2.33 | 0.64 |
| 15:R:187:ASP:HB3 | 15:R:190:LEU:HG | 1.80 | 0.64 |
| 3:C:259:PHE:HB3 | 3:C:265:ILE:HD12 | 1.79 | 0.64 |
| 1:A:1531:GLY:HA3 | 1:A:1566:PHE:CE1 | 2.33 | 0.64 |
| 10:K:384:SER:HB2 | 10:K:415:ASN:HD21 | 1.63 | 0.64 |
| 3:C:368:TRP:HB3 | 3:C:391:ALA:HB2 | 1.80 | 0.64 |
| 15:R:297:ASP:O | 15:R:303:LEU:HD22 | 1.98 | 0.64 |
| 9:J:441:VAL:CG2 | 9:J:444:TRP:HD1 | 2.10 | 0.63 |
| 10:K:495:PHE:CZ | 10:K:525:MET:HG2 | 2.33 | 0.63 |
| 20:X:407:LEU:CD2 | 20:X:437:LEU:HD21 | 2.27 | 0.63 |
| 14:O:658:LEU:HD13 | 14:O:704:VAL:HG11 | 1.80 | 0.63 |
| 15:R:225:LEU:HD13 | 15:R:230:ASP:CG | 2.18 | 0.63 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:X:279:ASP:OD1 | 20:X:310:VAL:HG21 | 1.98 | 0.63 |
| 1:A:34:ALA:HB3 | 14:O:237:GLN:HE22 | 1.63 | 0.63 |
| 2:B:20:ASP:CB | 2:B:30:PHE:HE2 | 2.11 | 0.63 |
| 13:N:563:ASP:C | 13:N:564:MET:N | 2.52 | 0.63 |
| 13:N:611:VAL:HG11 | 13:N:637:TRP:CH2 | 2.33 | 0.63 |
| 1:A:620:THR:HG23 | 1:A:866:ILE:CD1 | 2.29 | 0.63 |
| 6:H:537:GLU:OE1 | 6:H:568:GLU:OE1 | 2.16 | 0.63 |
| 13:N:281:TYR:CZ | 13:N:357:ALA:HA | 2.34 | 0.63 |
| 1:A:445:LEU:HD21 | 1:A:478:ASP:HA | 1.80 | 0.63 |
| 1:A:1773:LEU:HD23 | 1:A:1774:PHE:N | 2.12 | 0.63 |
| 11:L:78:CYS:SG | 11:L:119:TRP:HE3 | 2.22 | 0.63 |
| 1:A:1312:ASN:O | 1:A:1312:ASN:ND2 | 2.29 | 0.63 |
| 4:D:54:ILE:HD12 | 3:P:389:ARG:NH2 | 2.14 | 0.63 |
| 15:R:280:ASN:HA | 15:R:325:HIS:CE1 | 2.34 | 0.63 |
| 2:B:14:TRP:HA | 2:B:15:LEU:CB | 2.29 | 0.63 |
| 6:F:130:ARG:CG | 20:Y:506:GLN:HB2 | 2.29 | 0.63 |
| 13:N:519:TYR:OH | 13:N:541:ASN:HB3 | 1.98 | 0.63 |
| 20:X:373:VAL:HG11 | 20:X:403:ALA:HB2 | 1.81 | 0.63 |
| 15:R:280:ASN:HD21 | 15:R:325:HIS:HB3 | 1.64 | 0.63 |
| 3:C:36:LEU:HD21 | 3:C:58:LEU:HB2 | 1.80 | 0.63 |
| 13:N:281:TYR:CE2 | 13:N:356:PRO:HB2 | 2.34 | 0.63 |
| 13:N:286:LEU:O | 13:N:288:GLU:N | 2.32 | 0.62 |
| 3:P:327:ASP:O | 3:P:333:THR:HG21 | 1.99 | 0.62 |
| 15:R:188:PHE:CZ | 15:R:359:LYS:HD3 | 2.33 | 0.62 |
| 8:I:88:LYS:O | 8:I:106:VAL:HG22 | 1.98 | 0.62 |
| 3:P:460:TYR:CE1 | 3:P:470:LEU:HD11 | 2.34 | 0.62 |
| 1:A:873:VAL:HG21 | 1:A:951:ILE:CG2 | 2.29 | 0.62 |
| 11:L:73:THR:HG22 | 11:L:131:PRO:HB2 | 1.80 | 0.62 |
| 20:Y:532:TYR:CE2 | 20:Y:548:GLY:HA3 | 2.35 | 0.62 |
| 13:N:418:GLU:OE2 | 13:N:495:LYS:O | 2.18 | 0.62 |
| 1:A:592:HIS:O | 1:A:593:ASN:CB | 2.47 | 0.62 |
| 8:I:209:CYS:SG | 8:I:584:HIS:CE1 | 2.93 | 0.62 |
| 11:L:86:ASP:HB3 | 11:L:89:TYR:HB2 | 1.80 | 0.62 |
| 14:O:219:GLN:NE2 | 14:O:231:LEU:HD13 | 2.09 | 0.62 |
| 15:R:189:TYR:HD1 | 15:R:316:VAL:CA | 2.03 | 0.62 |
| 1:A:436:LEU:HG | 1:A:501:THR:HG23 | 1.81 | 0.62 |
| 4:D:10:PRO:HG2 | 14:O:346:TRP:CZ2 | 2.34 | 0.62 |
| 8:I:142:LEU:HD13 | 8:I:264:TYR:CD2 | 2.34 | 0.62 |
| 11:L:45:LEU:HD23 | 11:L:46:ARG:N | 2.13 | 0.62 |
| 13:N:73:GLU:O | 13:N:74:TRP:HB3 | 1.98 | 0.62 |
| 13:N:386:LEU:O | 13:N:388:HIS:N | 2.33 | 0.62 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:337:LEU:CD1 | 15:R:361:ILE:HD12 | 2.29 | 0.62 |
| 1:A:617:LEU:HD11 | 1:A:782:GLY:HA2 | 1.81 | 0.62 |
| 13:N:249:ARG:HB3 | 13:N:250:LEU:HD23 | 1.82 | 0.62 |
| 1:A:1220:MET:CG | 1:A:1264:THR:HG21 | 2.30 | 0.62 |
| 6:H:537:GLU:CD | 6:H:600:TYR:OH | 2.38 | 0.62 |
| 6:H:726:LEU:HD21 | 6:H:742:LEU:HD22 | 1.81 | 0.62 |
| 3:P:286:PHE:HB3 | 3:P:303:PHE:CE2 | 2.35 | 0.62 |
| 20:X:355:TYR:HB2 | 20:X:386:MET:HB2 | 1.80 | 0.62 |
| 20:Y:294:PHE:CD1 | 20:Y:294:PHE:C | 2.73 | 0.62 |
| 20:X:430:ALA:CB | 20:X:451:CYS:SG | 2.88 | 0.62 |
| 8:I:38:ALA:HB2 | 8:I:71:LEU:HD11 | 1.80 | 0.62 |
| 8:I:289:LYS:O | 8:I:293:GLU:N | 2.32 | 0.62 |
| 15:R:484:SER:CB | 15:R:485:VAL:HA | 2.29 | 0.62 |
| 1:A:1482:LEU:H | 17:T:7:LEU:CB | 2.13 | 0.61 |
| 5:E:61:TYR:CE1 | 20:X:360:TYR:CE2 | 2.89 | 0.61 |
| 6:F:684:LYS:HG2 | 6:F:687:LYS:HB2 | 1.82 | 0.61 |
| 6:F:726:LEU:HD21 | 6:F:742:LEU:HD22 | 1.81 | 0.61 |
| 13:N:538:GLU:HG2 | 13:N:561:LEU:CG | 2.28 | 0.61 |
| 20:Y:316:ALA:HB1 | 20:Y:351:TYR:CE1 | 2.34 | 0.61 |
| 3:C:233:PHE:CZ | 3:C:237:ILE:HD12 | 2.35 | 0.61 |
| 6:H:730:LYS:HD3 | 6:H:740:TYR:HE1 | 1.65 | 0.61 |
| 9:J:281:ALA:HA | 9:J:311:MET:CE | 2.30 | 0.61 |
| 9:J:294:LEU:HD12 | 10:K:54:HIS:CD2 | 2.35 | 0.61 |
| 10:K:250:CYS:SG | 10:K:274:THR:HG22 | 2.40 | 0.61 |
| 15:R:366:HIS:HE1 | 15:R:409:LYS:O | 1.78 | 0.61 |
| 20:X:350:PHE:CZ | 20:X:378:LEU:C | 2.73 | 0.61 |
| 1:A:1191:LEU:HD21 | 15:R:62:HIS:ND1 | 2.15 | 0.61 |
| 1:A:1194:HIS:HB2 | 15:R:99:LEU:HD13 | 1.81 | 0.61 |
| 6:F:146:PRO:HG3 | 6:F:167:THR:HA | 1.82 | 0.61 |
| 15:R:227:VAL:HG13 | 15:R:228:GLU:H | 1.63 | 0.61 |
| 13:N:274:GLU:OE2 | 13:N:278:ARG:NH2 | 2.32 | 0.61 |
| 20:X:347:CYS:SG | 20:X:378:LEU:HD13 | 2.41 | 0.61 |
| 20:X:400:ILE:HD13 | 20:X:413:LEU:CD1 | 2.25 | 0.61 |
| 1:A:869:ARG:NH2 | 1:A:946:THR:OG1 | 2.33 | 0.61 |
| 14:O:233:PRO:HA | 14:O:263:ARG:HH21 | 1.66 | 0.61 |
| 15:R:188:PHE:CE1 | 15:R:359:LYS:CD | 2.84 | 0.61 |
| 15:R:233:THR:OG1 | 15:R:274:VAL:O | 2.07 | 0.61 |
| 8:I:309:LEU:HD23 | 14:O:64:LEU:HD11 | 1.82 | 0.61 |
| 15:R:291:ARG:HD2 | 15:R:312:HIS:HA | 1.82 | 0.61 |
| 20:X:94:ARG:HG3 | 20:Y:334:ILE:O | 2.00 | 0.61 |
| 15:R:291:ARG:CD | 15:R:312:HIS:CG | 2.83 | 0.61 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:X:350:PHE:CZ | 20:X:381:ALA:CB | 2.82 | 0.61 |
| 1:A:43:GLN:NE2 | 3:C:142:GLU:O | 2.34 | 0.60 |
| 1:A:1054:TYR:O | 1:A:1056:GLU:N | 2.31 | 0.60 |
| 1:A:1624:VAL:HG22 | 1:A:1698:TYR:HD2 | 1.66 | 0.60 |
| 10:K:254:THR:HG23 | 10:K:271:HIS:HD2 | 1.66 | 0.60 |
| 10:K:292:VAL:HG21 | 12:M:57:TRP:CB | 2.31 | 0.60 |
| 14:O:417:LEU:HA | 14:O:420:ILE:CG2 | 2.31 | 0.60 |
| 15:R:225:LEU:HD12 | 15:R:231:SER:C | 2.21 | 0.60 |
| 15:R:382:ILE:HD11 | 15:R:398:THR:HG21 | 1.83 | 0.60 |
| 6:H:689:LEU:HD11 | 6:H:716:ASN:HD21 | 1.66 | 0.60 |
| 9:J:281:ALA:HA | 9:J:311:MET:HE1 | 1.83 | 0.60 |
| 9:J:465:LEU:HA | 9:J:488:ILE:CD1 | 2.32 | 0.60 |
| 20:X:203:LEU:HD21 | 20:X:239:TRP:CH2 | 2.36 | 0.60 |
| 20:X:350:PHE:CZ | 20:X:378:LEU:CA | 2.84 | 0.60 |
| 1:A:1084:ARG:NH2 | 1:A:1139:ASN:OD1 | 2.31 | 0.60 |
| 6:H:130:ARG:HH12 | 10:K:473:VAL:HG22 | 1.66 | 0.60 |
| 9:J:258:MET:HE1 | 9:J:271:HIS:CG | 2.36 | 0.60 |
| 3:P:267:SER:CB | 3:P:299:ASN:HD21 | 2.14 | 0.60 |
| 15:R:337:LEU:HD13 | 15:R:361:ILE:HD12 | 1.82 | 0.60 |
| 13:N:281:TYR:CZ | 13:N:284:SER:HB3 | 2.36 | 0.60 |
| 14:O:662:ARG:HD2 | 14:O:755:LEU:HD12 | 1.81 | 0.60 |
| 3:P:475:LYS:O | 3:P:479:GLN:NE2 | 2.35 | 0.60 |
| 15:R:182:PRO:CB | 16:S:322:ARG:CB | 2.79 | 0.60 |
| 13:N:609:LEU:HD22 | 13:N:639:HIS:CD2 | 2.37 | 0.60 |
| 15:R:243:LEU:HD13 | 15:R:298:ILE:CD1 | 2.31 | 0.60 |
| 1:A:1672:ARG:O | 1:A:1701:LEU:HD12 | 2.00 | 0.60 |
| 15:R:382:ILE:CG1 | 15:R:398:THR:HG21 | 2.31 | 0.60 |
| 20:X:94:ARG:CG | 20:Y:334:ILE:O | 2.49 | 0.60 |
| 1:A:873:VAL:HG21 | 1:A:951:ILE:HG21 | 1.84 | 0.60 |
| 1:A:956:ARG:NH1 | 1:A:1788:GLU:OE1 | 2.34 | 0.60 |
| 1:A:1621:PRO:HG3 | 1:A:1653:ALA:HB3 | 1.82 | 0.60 |
| 9:J:213:ASN:OD1 | 9:J:214:LYS:N | 2.34 | 0.60 |
| 10:K:153:TYR:CE2 | 10:K:169:LEU:HD22 | 2.37 | 0.60 |
| 15:R:363:TRP:CZ3 | 15:R:387:THR:OG1 | 2.54 | 0.60 |
| 1:A:629:LEU:HD11 | 1:A:634:ALA:HB2 | 1.82 | 0.60 |
| 3:C:414:MET:CE | 14:O:300:LEU:HD13 | 2.30 | 0.60 |
| 8:I:17:LYS:NZ | 8:I:51:SER:O | 2.34 | 0.60 |
| 8:I:218:SER:OG | 8:I:584:HIS:ND1 | 2.35 | 0.60 |
| 15:R:237:TRP:CH2 | 15:R:244:VAL:CG2 | 2.85 | 0.60 |
| 15:R:291:ARG:CZ | 15:R:312:HIS:ND1 | 2.64 | 0.60 |
| 3:C:521:PHE:CD1 | 3:C:553:ILE:HG22 | 2.37 | 0.60 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:F:115:CYS:SG | 6:F:116:PHE:N | 2.75 | 0.60 |
| 13:N:75:PHE:CD1 | 13:N:79:LEU:HD23 | 2.37 | 0.60 |
| 2:B:41:GLY:O | 2:B:45:PRO:HA | 2.01 | 0.60 |
| 14:O:354:ARG:CD | 14:O:573:LYS:O | 2.50 | 0.60 |
| 3:C:120:TYR:CE2 | 3:C:124:LEU:HD11 | 2.37 | 0.59 |
| 9:J:185:LEU:HD13 | 9:J:206:GLU:OE1 | 2.02 | 0.59 |
| 13:N:77:GLU:O | 13:N:78:VAL:HG23 | 2.02 | 0.59 |
| 13:N:542:VAL:HG11 | 13:N:558:GLU:CD | 2.23 | 0.59 |
| 15:R:230:ASP:HB3 | 15:R:250:LYS:HD2 | 1.84 | 0.59 |
| 20:Y:93:TYR:CE2 | 20:Y:148:VAL:HG11 | 2.37 | 0.59 |
| 1:A:617:LEU:HD11 | 1:A:782:GLY:CA | 2.32 | 0.59 |
| 1:A:1251:VAL:HG12 | 1:A:1294:TYR:HA | 1.83 | 0.59 |
| 1:A:1800:ILE:HG22 | 1:A:1855:ILE:CD1 | 2.32 | 0.59 |
| 13:N:609:LEU:CD2 | 13:N:662:VAL:HG12 | 2.31 | 0.59 |
| 20:X:100:TYR:HB2 | 20:X:142:LEU:CD2 | 2.30 | 0.59 |
| 20:Y:339:ALA:O | 20:Y:343:VAL:HG23 | 2.02 | 0.59 |
| 15:R:188:PHE:HZ | 15:R:359:LYS:HB3 | 1.67 | 0.59 |
| 15:R:380:ARG:HG2 | 15:R:400:SER:C | 2.22 | 0.59 |
| 1:A:860:TYR:CG | 1:A:861:PRO:HD2 | 2.38 | 0.59 |
| 1:A:1750:LEU:HD23 | 1:A:1782:VAL:HG22 | 1.85 | 0.59 |
| 6:F:131:LEU:HD11 | 6:F:158:ILE:CG2 | 2.32 | 0.59 |
| 13:N:368:THR:CB | 13:N:369:ASP:HA | 2.31 | 0.59 |
| 13:N:706:ARG:HB2 | 13:N:716:ILE:HD13 | 1.84 | 0.59 |
| 3:P:355:GLN:HA | 3:P:358:LEU:HD23 | 1.84 | 0.59 |
| 15:R:316:VAL:HG22 | 15:R:317:CYS:CA | 2.27 | 0.59 |
| 15:R:317:CYS:HB3 | 15:R:332:GLY:HA2 | 1.85 | 0.59 |
| 15:R:349:GLN:HB3 | 15:R:351:TYR:CZ | 2.38 | 0.59 |
| 20:X:93:TYR:CE2 | 20:X:148:VAL:HG11 | 2.36 | 0.59 |
| 20:X:407:LEU:HD13 | 20:X:443:THR:HG21 | 1.84 | 0.59 |
| 9:J:193:LEU:O | 9:J:197:GLU:HB2 | 2.02 | 0.59 |
| 15:R:211:LEU:HD22 | 15:R:237:TRP:CZ2 | 2.38 | 0.59 |
| 20:X:339:ALA:O | 20:X:343:VAL:HG23 | 2.02 | 0.59 |
| 20:X:350:PHE:CE1 | 20:X:381:ALA:HB3 | 2.37 | 0.59 |
| 1:A:811:PRO:HG3 | 1:A:1809:SER:O | 2.03 | 0.59 |
| 1:A:1475:ARG:HG2 | 1:A:1476:PHE:CE1 | 2.38 | 0.59 |
| 2:B:14:TRP:HA | 2:B:15:LEU:HG | 1.85 | 0.59 |
| 11:L:77:LEU:HD12 | 11:L:78:CYS:N | 2.17 | 0.59 |
| 13:N:281:TYR:CE1 | 13:N:357:ALA:HA | 2.37 | 0.59 |
| 14:O:351:GLY:O | 14:O:352:GLN:HG3 | 2.02 | 0.59 |
| 3:P:385:ILE:HD11 | 3:P:412:LEU:HD11 | 1.85 | 0.59 |
| 3:C:93:TYR:OH | 3:C:101:ARG:NH2 | 2.36 | 0.59 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:N:409:VAL:O | 13:N:410:ILE:HG13 | 2.02 | 0.59 |
| 13:N:619:LEU:HG | 13:N:637:TRP:CZ2 | 2.37 | 0.59 |
| 20:X:359:LEU:HA | 20:X:379:LYS:HG2 | 1.84 | 0.59 |
| 20:Y:316:ALA:HB1 | 20:Y:351:TYR:CZ | 2.38 | 0.59 |
| 6:F:707:PHE:HB2 | 6:F:729:LEU:HD11 | 1.85 | 0.59 |
| 6:H:115:CYS:SG | 6:H:116:PHE:N | 2.75 | 0.59 |
| 14:O:105:LEU:HD11 | 14:O:151:VAL:CG1 | 2.33 | 0.59 |
| 14:O:657:ILE:HD11 | 14:O:704:VAL:HG23 | 1.83 | 0.59 |
| 3:P:120:TYR:CZ | 3:P:124:LEU:HD11 | 2.38 | 0.59 |
| 15:R:188:PHE:HE1 | 15:R:403:CYS:HG | 1.51 | 0.59 |
| 9:J:35:GLU:OE2 | 9:J:63:ARG:NH2 | 2.35 | 0.59 |
| 14:O:635:GLY:O | 14:O:637:PRO:HD3 | 2.03 | 0.59 |
| 20:X:355:TYR:H | 20:X:386:MET:HB2 | 1.68 | 0.59 |
| 20:Y:350:PHE:CZ | 20:Y:378:LEU:HD12 | 2.38 | 0.59 |
| 1:A:773:LEU:HD22 | 1:A:779:MET:HG3 | 1.85 | 0.59 |
| 9:J:406:HIS:HE1 | 9:J:450:ASN:HD22 | 1.50 | 0.59 |
| 13:N:670:PHE:CD1 | 13:N:715:VAL:HB | 2.38 | 0.59 |
| 1:A:454:CYS:O | 1:A:471:VAL:HA | 2.03 | 0.58 |
| 9:J:523:ILE:HD11 | 3:P:420:TYR:CB | 2.34 | 0.58 |
| 14:O:114:ASP:HA | 14:O:117:ASP:OD1 | 2.03 | 0.58 |
| 14:O:119:PHE:CE1 | 14:O:136:LEU:HD11 | 2.37 | 0.58 |
| 15:R:310:GLN:HB2 | 15:R:340:TRP:HZ2 | 1.18 | 0.58 |
| 16:S:374:SER:O | 16:S:375:LEU:O | 2.20 | 0.58 |
| 20:Y:462:LYS:HG2 | 20:Y:485:LEU:CD1 | 2.32 | 0.58 |
| 1:A:1230:ILE:HG13 | 15:R:94:LEU:HD22 | 1.85 | 0.58 |
| 3:C:493:TYR:CE2 | 3:C:497:ILE:HD11 | 2.38 | 0.58 |
| 6:F:128:THR:HG21 | 6:F:130:ARG:NH1 | 2.18 | 0.58 |
| 11:L:98:VAL:HB | 11:L:134:THR:HG21 | 1.84 | 0.58 |
| 13:N:273:MET:HG2 | 13:N:277:CYS:SG | 2.44 | 0.58 |
| 9:J:406:HIS:CE1 | 9:J:450:ASN:HD22 | 2.21 | 0.58 |
| 14:O:216:LEU:HD22 | 14:O:256:LEU:HD12 | 1.85 | 0.58 |
| 15:R:349:GLN:HB2 | 15:R:351:TYR:HE1 | 1.68 | 0.58 |
| 18:U:21:ALA:O | 18:U:23:ALA:N | 2.35 | 0.58 |
| 20:Y:452:LEU:HD21 | 20:Y:460:LYS:HB2 | 1.85 | 0.58 |
| 6:F:696:ILE:HG12 | 6:F:705:CYS:SG | 2.43 | 0.58 |
| 10:K:271:HIS:O | 10:K:274:THR:OG1 | 2.20 | 0.58 |
| 11:L:126:ASP:CB | 11:L:132:THR:N | 2.66 | 0.58 |
| 14:O:529:ASP:O | 14:O:532:VAL:HG12 | 2.04 | 0.58 |
| 1:A:1086:MET:CE | 1:A:1564:LEU:HD13 | 2.34 | 0.58 |
| 8:I:308:LEU:HD21 | 8:I:445:ILE:HG23 | 1.85 | 0.58 |
| 15:R:315:GLU:H | 15:R:333:ASN:HB2 | 1.68 | 0.58 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:437:ALA:C | 15:R:438:LYS:HG3 | 2.23 | 0.58 |
| 20:X:271:VAL:HG13 | 20:X:304:LEU:HD21 | 1.84 | 0.58 |
| 1:A:939:PHE:HZ | 1:A:944:LEU:HD13 | 1.69 | 0.58 |
| 3:C:259:PHE:HB3 | 3:C:265:ILE:CD1 | 2.34 | 0.58 |
| 3:P:228:TRP:O | 3:P:231:GLU:N | 2.36 | 0.58 |
| 1:A:1477:ALA:HB1 | 1:A:1574:LEU:CD1 | 2.33 | 0.58 |
| 1:A:1546:THR:OG1 | 1:A:1547:GLY:N | 2.35 | 0.58 |
| 6:H:685:SER:O | 6:H:689:LEU:HD12 | 2.04 | 0.58 |
| 13:N:556:PHE:CZ | 13:N:600:PHE:HA | 2.38 | 0.58 |
| 13:N:560:MET:CE | 13:N:560:MET:HA | 2.34 | 0.58 |
| 3:P:39:ILE:HD12 | 3:P:201:LEU:HB2 | 1.86 | 0.58 |
| 20:X:316:ALA:HB1 | 20:X:351:TYR:CZ | 2.38 | 0.58 |
| 2:B:15:LEU:HD22 | 13:N:634:THR:O | 2.03 | 0.58 |
| 3:C:93:TYR:CE1 | 3:P:53:LYS:HD2 | 2.39 | 0.58 |
| 3:P:392:ILE:CD1 | 3:P:402:TRP:CH2 | 2.86 | 0.58 |
| 15:R:202:SER:HA | 15:R:211:LEU:HD23 | 1.86 | 0.58 |
| 8:I:67:GLU:O | 8:I:85:ALA:N | 2.32 | 0.58 |
| 13:N:233:CYS:O | 13:N:235:GLN:N | 2.37 | 0.58 |
| 15:R:419:GLY:HA2 | 15:R:445:ARG:HB3 | 1.84 | 0.58 |
| 20:X:437:LEU:HB2 | 20:X:444:LEU:HD21 | 1.85 | 0.58 |
| 20:Y:219:VAL:HG22 | 20:Y:240:ILE:HG22 | 1.85 | 0.58 |
| 20:Y:271:VAL:HG13 | 20:Y:304:LEU:HD21 | 1.83 | 0.58 |
| 1:A:1293:SER:HB3 | 1:A:1600:ARG:O | 2.04 | 0.58 |
| 1:A:1364:CYS:N | 1:A:1365:PRO:HD2 | 2.19 | 0.58 |
| 5:E:89:LEU:O | 6:H:592:ARG:NH2 | 2.37 | 0.58 |
| 9:J:481:THR:O | 9:J:485:ILE:HG12 | 2.04 | 0.58 |
| 11:L:89:TYR:O | 11:L:151:THR:HG22 | 2.04 | 0.58 |
| 13:N:177:TYR:CD2 | 13:N:261:VAL:HG12 | 2.39 | 0.58 |
| 13:N:273:MET:CG | 13:N:277:CYS:SG | 2.91 | 0.58 |
| 15:R:339:VAL:HG11 | 15:R:387:THR:HG23 | 1.86 | 0.58 |
| 15:R:433:LEU:HG | 15:R:434:THR:N | 2.17 | 0.58 |
| 3:C:358:LEU:HD21 | 3:C:368:TRP:CE2 | 2.39 | 0.57 |
| 11:L:144:ASN:ND2 | 11:L:151:THR:HG23 | 2.19 | 0.57 |
| 3:P:151:LEU:HD22 | 3:P:178:VAL:HG13 | 1.85 | 0.57 |
| 3:P:392:ILE:HD11 | 3:P:402:TRP:CH2 | 2.37 | 0.57 |
| 15:R:175:PRO:HG3 | 15:R:468:ARG:NH1 | 2.18 | 0.57 |
| 8:I:168:LEU:HD22 | 8:I:192:MET:SD | 2.44 | 0.57 |
| 9:J:465:LEU:HA | 9:J:488:ILE:HD12 | 1.85 | 0.57 |
| 10:K:496:GLU:HB2 | 10:K:526:TYR:HE1 | 1.68 | 0.57 |
| 12:M:11:ILE:HG23 | 12:M:15:ILE:HD12 | 1.87 | 0.57 |
| 13:N:284:SER:OG | 13:N:285:PHE:HB2 | 2.03 | 0.57 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:N:395:ASP:OD2 | 13:N:397:ILE:HB | 2.04 | 0.57 |
| 13:N:455:GLU:CB | 13:N:501:ILE:HD11 | 2.34 | 0.57 |
| 15:R:313:ARG:NH2 | 15:R:317:CYS:SG | 2.77 | 0.57 |
| 15:R:458:ILE:CG1 | 15:R:472:VAL:HG11 | 2.34 | 0.57 |
| 20:X:219:VAL:HG22 | 20:X:240:ILE:HG22 | 1.86 | 0.57 |
| 20:X:346:GLY:C | 20:X:378:LEU:HD11 | 2.25 | 0.57 |
| 3:C:53:LYS:HD2 | 3:P:93:TYR:CE1 | 2.40 | 0.57 |
| 3:C:120:TYR:CZ | 3:C:124:LEU:HD11 | 2.39 | 0.57 |
| 13:N:393:THR:CG2 | 13:N:434:THR:HG22 | 2.34 | 0.57 |
| 15:R:201:LEU:HD23 | 15:R:467:LEU:HD21 | 1.86 | 0.57 |
| 1:A:32:PRO:CD | 14:O:264:VAL:HG11 | 2.34 | 0.57 |
| 1:A:763:PHE:CD1 | 1:A:793:LEU:HD22 | 2.39 | 0.57 |
| 1:A:1079:ALA:HB1 | 1:A:1556:LEU:HA | 1.85 | 0.57 |
| 3:C:238:TYR:HB3 | 3:C:247:ALA:HB2 | 1.86 | 0.57 |
| 6:F:168:PHE:CB | 6:F:467:ARG:HD3 | 2.35 | 0.57 |
| 6:H:478:SER:HA | 6:H:633:ARG:HH22 | 1.69 | 0.57 |
| 9:J:37:PRO:HB3 | 9:J:69:TYR:OH | 2.04 | 0.57 |
| 3:P:286:PHE:HB3 | 3:P:303:PHE:CD2 | 2.39 | 0.57 |
| 15:R:225:LEU:HD12 | 15:R:231:SER:CA | 2.34 | 0.57 |
| 2:B:1:MET:CE | 13:N:650:LEU:HD22 | 2.34 | 0.57 |
| 6:F:124:VAL:O | 6:F:128:THR:OG1 | 2.14 | 0.57 |
| 10:K:284:LEU:HD13 | 10:K:308:TYR:HB2 | 1.86 | 0.57 |
| 13:N:285:PHE:O | 13:N:289:PHE:HD2 | 1.86 | 0.57 |
| 20:X:83:HIS:O | 20:X:86:SER:OG | 2.20 | 0.57 |
| 20:X:423:ILE:HG22 | 20:X:454:ASP:OD1 | 2.05 | 0.57 |
| 20:X:462:LYS:HG2 | 20:X:485:LEU:CD1 | 2.33 | 0.57 |
| 1:A:1162:LYS:HG3 | 1:A:1163:PRO:CD | 2.35 | 0.57 |
| 3:P:36:LEU:HD21 | 3:P:58:LEU:HB2 | 1.86 | 0.57 |
| 15:R:313:ARG:NE | 15:R:317:CYS:CB | 2.68 | 0.57 |
| 1:A:1220:MET:HG2 | 1:A:1264:THR:HG21 | 1.86 | 0.57 |
| 9:J:55:ARG:HH11 | 10:K:264:HIS:HA | 1.69 | 0.57 |
| 13:N:531:PHE:O | 13:N:533:PHE:HA | 2.04 | 0.57 |
| 3:C:416:PHE:CE2 | 14:O:323:ALA:HB2 | 2.40 | 0.57 |
| 8:I:276:TRP:CH2 | 8:I:280:LEU:HD22 | 2.40 | 0.57 |
| 10:K:292:VAL:HG21 | 12:M:57:TRP:HB2 | 1.87 | 0.57 |
| 14:O:378:SER:HB2 | 14:O:408:LEU:HD11 | 1.87 | 0.57 |
| 3:P:389:ARG:O | 3:P:392:ILE:HG23 | 2.05 | 0.57 |
| 1:A:1377:LYS:HG2 | 1:A:1416:TRP:CG | 2.40 | 0.57 |
| 6:H:128:THR:HG21 | 6:H:130:ARG:NH1 | 2.20 | 0.57 |
| 6:H:761:SER:O | 6:H:765:ASP:HB2 | 2.05 | 0.57 |
| 10:K:449:ASN:HD22 | 19:W:8:ARG:NH1 | 2.02 | 0.57 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:P:120:TYR:CE2 | 3:P:124:LEU:HD11 | 2.39 | 0.57 |
| 15:R:426:LEU:HG | 15:R:438:LYS:HG2 | 1.87 | 0.57 |
| 20:X:100:TYR:HD1 | 20:X:138:VAL:HG13 | 1.69 | 0.57 |
| 9:J:351:ASP:CG | 15:R:393:LEU:HD22 | 2.25 | 0.56 |
| 9:J:351:ASP:OD2 | 15:R:393:LEU:HD23 | 2.04 | 0.56 |
| 1:A:443:CYS:HB3 | 1:A:452:LEU:HD12 | 1.87 | 0.56 |
| 3:C:151:LEU:HD22 | 3:C:178:VAL:HG13 | 1.86 | 0.56 |
| 6:F:104:ASP:OD1 | 6:F:104:ASP:N | 2.37 | 0.56 |
| 13:N:202:GLU:OE2 | 13:N:283:ARG:HB2 | 2.05 | 0.56 |
| 13:N:704:VAL:HA | 13:N:719:GLU:CD | 2.26 | 0.56 |
| 14:O:356:ASP:HA | 14:O:357:SER:HB2 | 1.86 | 0.56 |
| 20:X:365:ALA:HB3 | 20:X:375:ALA:HB1 | 1.88 | 0.56 |
| 1:A:1674:TRP:N | 1:A:1674:TRP:CD1 | 2.73 | 0.56 |
| 6:H:168:PHE:CB | 6:H:467:ARG:HD3 | 2.35 | 0.56 |
| 6:H:515:TYR:HE2 | 6:H:545:HIS:CD2 | 2.23 | 0.56 |
| 6:H:707:PHE:HB2 | 6:H:729:LEU:HD11 | 1.87 | 0.56 |
| 10:K:305:VAL:HG22 | 12:M:57:TRP:CZ3 | 2.40 | 0.56 |
| 13:N:60:GLU:C | 13:N:63:ARG:CB | 2.72 | 0.56 |
| 14:O:417:LEU:HA | 14:O:420:ILE:HG22 | 1.85 | 0.56 |
| 14:O:620:ALA:O | 14:O:624:VAL:HG23 | 2.05 | 0.56 |
| 15:R:211:LEU:HD22 | 15:R:237:TRP:HZ2 | 1.69 | 0.56 |
| 15:R:227:VAL:HG12 | 15:R:228:GLU:C | 2.26 | 0.56 |
| 20:X:294:PHE:CD1 | 20:X:294:PHE:C | 2.79 | 0.56 |
| 20:X:343:VAL:CG1 | 20:X:378:LEU:HD22 | 2.35 | 0.56 |
| 20:Y:437:LEU:HB2 | 20:Y:444:LEU:HD21 | 1.87 | 0.56 |
| 13:N:202:GLU:HB2 | 13:N:282:GLU:CD | 2.26 | 0.56 |
| 3:P:358:LEU:HD11 | 3:P:368:TRP:CZ2 | 2.40 | 0.56 |
| 15:R:363:TRP:HZ3 | 15:R:387:THR:OG1 | 1.89 | 0.56 |
| 6:F:503:CYS:SG | 6:F:535:GLY:HA3 | 2.45 | 0.56 |
| 8:I:32:ARG:HD3 | 13:N:388:HIS:CE1 | 2.41 | 0.56 |
| 13:N:395:ASP:OD1 | 13:N:398:THR:HG23 | 2.06 | 0.56 |
| 14:O:243:LEU:HD12 | 14:O:243:LEU:O | 2.05 | 0.56 |
| 1:A:1632:ALA:O | 1:A:1653:ALA:HB2 | 2.05 | 0.56 |
| 2:B:33:CYS:HB3 | 2:B:39:VAL:O | 2.06 | 0.56 |
| 6:H:145:ASN:HB2 | 6:H:146:PRO:O | 2.06 | 0.56 |
| 20:X:100:TYR:CD1 | 20:X:138:VAL:HG13 | 2.40 | 0.56 |
| 20:X:449:THR:HG21 | 20:X:465:LEU:CA | 2.36 | 0.56 |
| 10:K:487:TYR:OH | 19:W:15:ASP:O | 2.23 | 0.56 |
| 13:N:278:ARG:HB3 | 13:N:343:GLU:OE2 | 2.04 | 0.56 |
| 13:N:281:TYR:CZ | 13:N:357:ALA:N | 2.73 | 0.56 |
| 13:N:560:MET:HA | 13:N:560:MET:HE3 | 1.88 | 0.56 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:267:LEU:CD1 | 15:R:296:ARG:HD3 | 2.36 | 0.56 |
| 15:R:330:SER:O | 15:R:337:LEU:HD12 | 2.06 | 0.56 |
| 6:H:20:ALA:O | 6:H:23:ASP:OD1 | 2.24 | 0.56 |
| 10:K:441:VAL:HG13 | 10:K:474:LEU:HD22 | 1.87 | 0.56 |
| 13:N:520:ARG:HD2 | 13:N:556:PHE:CD1 | 2.40 | 0.56 |
| 20:X:452:LEU:HD21 | 20:X:460:LYS:HB2 | 1.86 | 0.56 |
| 1:A:1885:LEU:HD23 | 1:A:1886:SER:N | 2.21 | 0.56 |
| 10:K:432:ILE:CD1 | 10:K:444:TRP:CG | 2.89 | 0.56 |
| 15:R:294:LEU:HD22 | 15:R:304:GLN:NE2 | 2.21 | 0.56 |
| 15:R:429:LYS:CD | 15:R:433:LEU:HD23 | 2.36 | 0.56 |
| 1:A:213:MET:CE | 1:A:216:PRO:HA | 2.36 | 0.56 |
| 6:F:145:ASN:HB2 | 6:F:146:PRO:C | 2.26 | 0.56 |
| 15:R:154:SER:O | 15:R:158:GLN:HG2 | 2.06 | 0.56 |
| 1:A:95:VAL:HG13 | 1:A:100:VAL:HG22 | 1.88 | 0.55 |
| 6:H:639:TYR:CE2 | 11:L:183:ILE:HG22 | 2.41 | 0.55 |
| 9:J:441:VAL:O | 9:J:442:ASP:HB3 | 2.06 | 0.55 |
| 20:Y:219:VAL:HG22 | 20:Y:240:ILE:CG2 | 2.37 | 0.55 |
| 1:A:1086:MET:CE | 1:A:1564:LEU:CD1 | 2.84 | 0.55 |
| 2:B:47:VAL:HG21 | 2:B:60:ILE:HG21 | 1.88 | 0.55 |
| 9:J:351:ASP:CB | 15:R:393:LEU:HD22 | 2.37 | 0.55 |
| 9:J:476:PRO:HB3 | 3:P:182:LEU:HB3 | 1.86 | 0.55 |
| 13:N:281:TYR:CE1 | 13:N:357:ALA:CA | 2.90 | 0.55 |
| 20:Y:100:TYR:HD1 | 20:Y:138:VAL:HG13 | 1.72 | 0.55 |
| 1:A:154:LEU:HD21 | 1:A:177:VAL:HG11 | 1.88 | 0.55 |
| 1:A:620:THR:HG23 | 1:A:866:ILE:HD13 | 1.87 | 0.55 |
| 1:A:1037:VAL:HG21 | 1:A:1566:PHE:CE2 | 2.40 | 0.55 |
| 3:C:233:PHE:CZ | 3:C:237:ILE:CD1 | 2.89 | 0.55 |
| 6:F:152:PHE:CE1 | 6:F:162:PRO:HG2 | 2.38 | 0.55 |
| 3:P:233:PHE:CE1 | 3:P:237:ILE:CD1 | 2.90 | 0.55 |
| 1:A:99:MET:HB3 | 1:A:118:THR:HG22 | 1.88 | 0.55 |
| 1:A:1421:PRO:CD | 17:T:3:ALA:HB1 | 2.37 | 0.55 |
| 13:N:141:LEU:O | 13:N:143:GLY:N | 2.39 | 0.55 |
| 3:P:238:TYR:HB3 | 3:P:247:ALA:HB2 | 1.88 | 0.55 |
| 20:X:494:ASP:OD1 | 20:X:494:ASP:N | 2.40 | 0.55 |
| 8:I:56:TRP:CD2 | 8:I:98:PRO:HB3 | 2.41 | 0.55 |
| 13:N:281:TYR:OH | 13:N:357:ALA:HA | 2.07 | 0.55 |
| 20:X:350:PHE:HA | 20:X:382:ALA:HA | 1.89 | 0.55 |
| 20:Y:196:LEU:O | 20:Y:200:PRO:HB3 | 2.07 | 0.55 |
| 20:Y:294:PHE:CE2 | 20:Y:311:TYR:HB2 | 2.41 | 0.55 |
| 20:Y:449:THR:HG21 | 20:Y:465:LEU:CA | 2.37 | 0.55 |
| 8:I:262:LEU:HA | 8:I:265:ILE:HG22 | 1.89 | 0.55 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:K:153:TYR:CZ | 10:K:169:LEU:HD22 | 2.41 | 0.55 |
| 13:N:257:SER:O | 13:N:261:VAL:HG13 | 2.06 | 0.55 |
| 14:O:64:LEU:C | 14:O:64:LEU:HD12 | 2.27 | 0.55 |
| 14:O:123:GLU:N | 14:O:124:PRO:HA | 2.22 | 0.55 |
| 3:P:283:LEU:HD21 | 3:P:312:MET:HE3 | 1.88 | 0.55 |
| 15:R:351:TYR:HH | 15:R:390:GLY:HA3 | 1.70 | 0.55 |
| 20:X:359:LEU:HB2 | 20:X:383:LEU:CD2 | 2.36 | 0.55 |
| 1:A:87:VAL:HG12 | 1:A:88:ASP:N | 2.22 | 0.55 |
| 5:E:96:PHE:HB2 | 6:H:595:GLN:HE21 | 1.71 | 0.55 |
| 9:J:190:LEU:HD13 | 9:J:202:ARG:HD3 | 1.88 | 0.55 |
| 9:J:451:LEU:CD1 | 9:J:467:TYR:CE2 | 2.90 | 0.55 |
| 20:X:203:LEU:HD22 | 20:Y:55:LEU:HB3 | 1.89 | 0.55 |
| 8:I:507:LEU:HD22 | 8:I:513:LEU:HD11 | 1.89 | 0.55 |
| 13:N:74:TRP:CH2 | 13:N:77:GLU:HB2 | 2.42 | 0.55 |
| 13:N:425:ARG:HG2 | 13:N:425:ARG:HH11 | 1.72 | 0.55 |
| 16:S:374:SER:CB | 16:S:387:TYR:O | 2.55 | 0.55 |
| 20:X:350:PHE:CE1 | 20:X:381:ALA:CB | 2.90 | 0.55 |
| 20:X:423:ILE:HA | 20:X:454:ASP:OD2 | 2.07 | 0.55 |
| 1:A:1241:THR:OG1 | 1:A:1243:LEU:HD22 | 2.06 | 0.55 |
| 1:A:1624:VAL:HG22 | 1:A:1698:TYR:CD2 | 2.41 | 0.55 |
| 1:A:1870:CYS:HB3 | 1:A:1884:GLN:CD | 2.28 | 0.55 |
| 8:I:24:ILE:O | 8:I:569:LEU:HD22 | 2.06 | 0.55 |
| 8:I:115:TRP:CE3 | 8:I:176:LEU:HD22 | 2.41 | 0.55 |
| 9:J:445:GLU:HA | 9:J:474:LEU:HD23 | 1.89 | 0.55 |
| 13:N:191:GLY:O | 13:N:196:ASP:N | 2.40 | 0.55 |
| 13:N:386:LEU:HD12 | 13:N:387:LEU:N | 2.22 | 0.55 |
| 1:A:457:PHE:HB3 | 1:A:468:PHE:CD2 | 2.42 | 0.54 |
| 1:A:616:GLU:O | 1:A:620:THR:OG1 | 2.20 | 0.54 |
| 1:A:1248:ASN:O | 1:A:1251:VAL:HG22 | 2.07 | 0.54 |
| 3:C:39:ILE:HD12 | 3:C:201:LEU:HB2 | 1.88 | 0.54 |
| 6:H:762:TRP:HA | 6:H:765:ASP:HB3 | 1.89 | 0.54 |
| 8:I:56:TRP:HZ3 | 8:I:58:PHE:HB2 | 1.70 | 0.54 |
| 14:O:648:ILE:CD1 | 14:O:663:ALA:HB1 | 2.37 | 0.54 |
| 8:I:290:PHE:CE1 | 8:I:320:LEU:HD22 | 2.42 | 0.54 |
| 9:J:37:PRO:HB3 | 9:J:69:TYR:CE2 | 2.42 | 0.54 |
| 9:J:258:MET:HE2 | 9:J:271:HIS:CD2 | 2.42 | 0.54 |
| 10:K:248:LYS:N | 10:K:438:GLU:OE2 | 2.41 | 0.54 |
| 11:L:144:ASN:CG | 11:L:151:THR:HG23 | 2.28 | 0.54 |
| 13:N:190:LYS:O | 13:N:196:ASP:N | 2.41 | 0.54 |
| 15:R:227:VAL:HG11 | 15:R:229:GLY:H | 1.69 | 0.54 |
| 1:A:150:CYS:HB3 | 1:A:163:SER:HA | 1.89 | 0.54 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:1802:ARG:HD3 | 1:A:1808:MET:HB3 | 1.88 | 0.54 |
| 6:F:149:TRP:CZ3 | 6:F:152:PHE:HD2 | 2.25 | 0.54 |
| 6:H:503:CYS:SG | 6:H:535:GLY:HA3 | 2.47 | 0.54 |
| 8:I:15:GLY:O | 8:I:743:VAL:N | 2.37 | 0.54 |
| 8:I:214:LEU:O | 8:I:238:THR:OG1 | 2.26 | 0.54 |
| 13:N:347:ILE:HG21 | 13:N:358:ILE:HG23 | 1.89 | 0.54 |
| 14:O:691:ILE:HD13 | 14:O:721:TYR:CE1 | 2.41 | 0.54 |
| 1:A:1099:PRO:O | 1:A:1161:ASN:ND2 | 2.39 | 0.54 |
| 3:C:368:TRP:CB | 3:C:391:ALA:HB2 | 2.37 | 0.54 |
| 8:I:341:TYR:CE1 | 8:I:475:VAL:HG21 | 2.42 | 0.54 |
| 9:J:35:GLU:CD | 9:J:63:ARG:HE | 2.11 | 0.54 |
| 13:N:650:LEU:HD12 | 13:N:651:ALA:N | 2.22 | 0.54 |
| 14:O:114:ASP:O | 14:O:117:ASP:OD1 | 2.26 | 0.54 |
| 20:X:355:TYR:CB | 20:X:383:LEU:HA | 2.22 | 0.54 |
| 3:C:60:PHE:HA | 3:P:85:ASP:CG | 2.27 | 0.54 |
| 3:C:228:TRP:O | 3:C:231:GLU:N | 2.39 | 0.54 |
| 6:H:639:TYR:CD2 | 11:L:183:ILE:HG22 | 2.43 | 0.54 |
| 10:K:406:HIS:CE1 | 19:W:6:PRO:HB3 | 2.42 | 0.54 |
| 13:N:523:LEU:HD22 | 13:N:538:GLU:OE1 | 2.07 | 0.54 |
| 14:O:354:ARG:HD3 | 14:O:574:LEU:HA | 1.89 | 0.54 |
| 9:J:322:TYR:HE1 | 12:M:36:LEU:HD11 | 1.72 | 0.54 |
| 10:K:250:CYS:SG | 10:K:274:THR:HG21 | 2.47 | 0.54 |
| 13:N:281:TYR:CE1 | 13:N:357:ALA:HB2 | 2.42 | 0.54 |
| 13:N:350:ASP:CB | 13:N:351:PHE:HA | 2.37 | 0.54 |
| 14:O:435:SER:HB3 | 14:O:654:ASP:HB2 | 1.88 | 0.54 |
| 15:R:243:LEU:HD13 | 15:R:298:ILE:HD12 | 1.90 | 0.54 |
| 20:X:40:HIS:HB3 | 20:Y:201:LEU:CD1 | 2.36 | 0.54 |
| 20:X:192:TYR:HA | 20:X:195:VAL:HG22 | 1.89 | 0.54 |
| 20:Y:294:PHE:CE1 | 20:Y:311:TYR:CG | 2.96 | 0.54 |
| 1:A:982:ASP:OD1 | 1:A:983:LEU:N | 2.40 | 0.54 |
| 1:A:1658:PRO:HG2 | 1:A:1663:LEU:HD13 | 1.90 | 0.54 |
| 2:B:23:CYS:HA | 2:B:30:PHE:CZ | 2.43 | 0.54 |
| 15:R:182:PRO:O | 15:R:183:GLU:HB2 | 2.07 | 0.54 |
| 15:R:189:TYR:HA | 15:R:316:VAL:HB | 1.89 | 0.54 |
| 15:R:310:GLN:HG2 | 15:R:340:TRP:HZ2 | 1.58 | 0.54 |
| 6:H:621:LEU:O | 6:H:625:ARG:HG3 | 2.08 | 0.54 |
| 10:K:46:CYS:O | 10:K:50:THR:OG1 | 2.22 | 0.54 |
| 10:K:429:LEU:HA | 10:K:432:ILE:HG22 | 1.90 | 0.54 |
| 3:P:420:TYR:OH | 3:P:424:ARG:HD3 | 2.08 | 0.54 |
| 1:A:1137:PHE:O | 1:A:1141:VAL:HG23 | 2.07 | 0.54 |
| 1:A:1540:ARG:CZ | 13:N:486:ASP:O | 2.56 | 0.54 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:C:89:LEU:HD12 | 3:P:60:PHE:CG | 2.42 | 0.54 |
| 3:C:276:ILE:O | 3:C:276:ILE:HG22 | 2.08 | 0.54 |
| 6:H:146:PRO:HG3 | 6:H:167:THR:HA | 1.89 | 0.54 |
| 10:K:296:PRO:HB2 | 12:M:55:MET:HG3 | 1.89 | 0.54 |
| 10:K:432:ILE:HD11 | 10:K:444:TRP:CG | 2.43 | 0.54 |
| 3:P:402:TRP:CZ2 | 3:P:424:ARG:HG2 | 2.43 | 0.54 |
| 20:Y:192:TYR:HA | 20:Y:195:VAL:HG22 | 1.89 | 0.54 |
| 9:J:332:THR:HA | 9:J:363:LEU:HD21 | 1.90 | 0.54 |
| 13:N:180:PHE:CE1 | 13:N:299:TRP:HZ3 | 1.89 | 0.54 |
| 13:N:289:PHE:HA | 13:N:292:TRP:HB3 | 1.90 | 0.54 |
| 13:N:345:PHE:CD1 | 13:N:385:ARG:CZ | 2.91 | 0.54 |
| 13:N:513:ASP:OD1 | 13:N:514:LEU:HD22 | 2.08 | 0.54 |
| 3:P:251:TYR:OH | 3:P:268:GLN:HG3 | 2.08 | 0.54 |
| 20:X:219:VAL:HG22 | 20:X:240:ILE:CG2 | 2.37 | 0.54 |
| 1:A:129:CYS:SG | 1:A:130:ASP:N | 2.81 | 0.53 |
| 1:A:1290:ASP:OD2 | 1:A:1600:ARG:HA | 2.08 | 0.53 |
| 1:A:1677:LEU:HD12 | 1:A:1678:ILE:N | 2.24 | 0.53 |
| 3:C:550:LEU:O | 3:C:553:ILE:HG12 | 2.08 | 0.53 |
| 8:I:45:LEU:HG | 8:I:57:SER:HA | 1.89 | 0.53 |
| 9:J:19:TYR:CD1 | 9:J:49:LEU:HD13 | 2.43 | 0.53 |
| 10:K:19:TYR:CD1 | 10:K:49:LEU:HD13 | 2.42 | 0.53 |
| 10:K:369:LEU:HD21 | 19:W:3:ARG:HG2 | 1.89 | 0.53 |
| 12:M:4:GLU:HG2 | 3:P:50:HIS:CE1 | 2.44 | 0.53 |
| 13:N:165:THR:N | 13:N:166:PRO:HA | 2.23 | 0.53 |
| 15:R:351:TYR:OH | 15:R:390:GLY:HA3 | 2.06 | 0.53 |
| 1:A:860:TYR:CD2 | 1:A:861:PRO:HD2 | 2.43 | 0.53 |
| 6:H:743:ILE:CG2 | 6:H:759:ASN:HD21 | 2.21 | 0.53 |
| 9:J:46:CYS:O | 9:J:50:THR:OG1 | 2.22 | 0.53 |
| 13:N:414:MET:SD | 13:N:498:SER:CA | 2.96 | 0.53 |
| 15:R:314:GLN:N | 15:R:333:ASN:HB3 | 2.23 | 0.53 |
| 6:F:89:GLU:OE2 | 6:F:125:TYR:HE1 | 1.91 | 0.53 |
| 13:N:86:ASN:C | 13:N:89:PRO:HD2 | 2.29 | 0.53 |
| 3:P:304:SER:HB2 | 3:P:336:VAL:HG22 | 1.91 | 0.53 |
| 15:R:407:TRP:HA | 15:R:414:LEU:HD12 | 1.90 | 0.53 |
| 3:C:304:SER:HB2 | 3:C:336:VAL:HG22 | 1.89 | 0.53 |
| 10:K:176:LEU:HD12 | 10:K:181:GLU:HG2 | 1.91 | 0.53 |
| 13:N:574:ILE:HD12 | 13:N:625:LYS:HG2 | 1.89 | 0.53 |
| 14:O:348:TYR:CE1 | 14:O:361:LEU:HD11 | 2.44 | 0.53 |
| 1:A:857:MET:CB | 1:A:858:PRO:HD3 | 2.38 | 0.53 |
| 1:A:1304:MET:O | 1:A:1307:LEU:HB2 | 2.09 | 0.53 |
| 3:C:251:TYR:CB | 3:C:269:ILE:HD11 | 2.38 | 0.53 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:F:537:GLU:CD | 6:F:600:TYR:HH | 2.10 | 0.53 |
| 8:I:65:GLY:H | 8:I:84:LEU:HG | 1.74 | 0.53 |
| 8:I:142:LEU:HD13 | 8:I:264:TYR:CE2 | 2.43 | 0.53 |
| 10:K:190:LEU:O | 10:K:198:GLN:NE2 | 2.42 | 0.53 |
| 13:N:344:LEU:HA | 13:N:347:ILE:HB | 1.90 | 0.53 |
| 13:N:364:CYS:O | 13:N:367:ARG:O | 2.26 | 0.53 |
| 14:O:652:LEU:HD23 | 14:O:660:LYS:HG3 | 1.90 | 0.53 |
| 14:O:710:ILE:O | 14:O:711:ARG:C | 2.47 | 0.53 |
| 15:R:420:TYR:CZ | 15:R:421:SER:HB3 | 2.43 | 0.53 |
| 20:Y:100:TYR:CD1 | 20:Y:138:VAL:HG13 | 2.42 | 0.53 |
| 4:D:13:THR:HG22 | 14:O:255:TYR:HE2 | 1.73 | 0.53 |
| 6:F:755:LEU:HD13 | 9:J:393:GLN:HE22 | 1.74 | 0.53 |
| 8:I:26:LEU:HB3 | 8:I:37:LEU:HB3 | 1.91 | 0.53 |
| 14:O:439:LEU:HG | 14:O:476:LEU:HD13 | 1.90 | 0.53 |
| 3:P:431:ASN:HA | 3:P:462:VAL:HG21 | 1.89 | 0.53 |
| 1:A:237:GLN:HG3 | 1:A:238:TYR:N | 2.24 | 0.53 |
| 1:A:612:ILE:O | 1:A:641:TRP:CH2 | 2.62 | 0.53 |
| 1:A:1818:LYS:NZ | 1:A:1896:SER:OG | 2.29 | 0.53 |
| 14:O:431:LEU:HD12 | 14:O:431:LEU:O | 2.08 | 0.53 |
| 15:R:382:ILE:CD1 | 15:R:398:THR:HG21 | 2.38 | 0.53 |
| 20:Y:309:ASP:HB2 | 20:Y:340:GLU:HG2 | 1.90 | 0.53 |
| 9:J:211:LYS:O | 9:J:212:TYR:CG | 2.62 | 0.53 |
| 9:J:383:ASN:HB3 | 9:J:386:LEU:HD13 | 1.91 | 0.53 |
| 14:O:467:ALA:CB | 14:O:506:LEU:HD11 | 2.39 | 0.53 |
| 15:R:385:TRP:CZ3 | 15:R:392:PRO:HB3 | 2.44 | 0.53 |
| 20:Y:551:LYS:HD3 | 20:Y:552:MET:N | 2.24 | 0.53 |
| 1:A:1470:LEU:HD23 | 1:A:1470:LEU:C | 2.28 | 0.53 |
| 6:H:540:SER:OG | 6:H:575:ASN:ND2 | 2.30 | 0.53 |
| 20:X:350:PHE:CD2 | 20:X:381:ALA:HB3 | 2.43 | 0.53 |
| 1:A:269:TRP:HB3 | 1:A:409:ILE:HG23 | 1.90 | 0.53 |
| 1:A:1227:LEU:O | 1:A:1230:ILE:HG22 | 2.09 | 0.53 |
| 3:C:307:LEU:CD2 | 3:C:316:LEU:HD13 | 2.39 | 0.53 |
| 6:F:699:ASP:HB2 | 6:F:702:ASN:HD21 | 1.74 | 0.53 |
| 6:F:704:LEU:HD21 | 15:R:488:LEU:HB3 | 1.90 | 0.53 |
| 9:J:276:VAL:HA | 9:J:311:MET:SD | 2.49 | 0.53 |
| 13:N:527:LEU:HD11 | 13:N:561:LEU:HD22 | 1.90 | 0.53 |
| 15:R:182:PRO:CB | 16:S:322:ARG:HB3 | 2.38 | 0.53 |
| 15:R:313:ARG:NE | 15:R:317:CYS:SG | 2.81 | 0.53 |
| 16:S:374:SER:HB3 | 16:S:387:TYR:CA | 2.38 | 0.53 |
| 1:A:1794:ILE:HB | 14:O:598:THR:HG21 | 1.90 | 0.52 |
| 3:C:494:ILE:HA | 3:C:497:ILE:HD12 | 1.91 | 0.52 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:F:686:GLU:OE1 | 6:F:686:GLU:N | 2.42 | 0.52 |
| 13:N:501:ILE:O | 13:N:505:LEU:HG | 2.09 | 0.52 |
| 14:O:596:SER:OG | 14:O:599:ILE:HD12 | 2.08 | 0.52 |
| 15:R:189:TYR:CB | 15:R:316:VAL:H | 2.21 | 0.52 |
| 20:X:350:PHE:HB2 | 20:X:351:TYR:CD1 | 2.44 | 0.52 |
| 1:A:1064:GLU:HA | 1:A:1125:ILE:HD11 | 1.89 | 0.52 |
| 1:A:1789:MET:CE | 1:A:1789:MET:HA | 2.38 | 0.52 |
| 8:I:24:ILE:HG22 | 8:I:38:ALA:O | 2.09 | 0.52 |
| 9:J:53:TYR:O | 9:J:79:CYS:SG | 2.67 | 0.52 |
| 9:J:55:ARG:NH1 | 10:K:264:HIS:HA | 2.25 | 0.52 |
| 13:N:273:MET:HG3 | 13:N:277:CYS:SG | 2.50 | 0.52 |
| 15:R:291:ARG:HD2 | 15:R:312:HIS:CG | 2.43 | 0.52 |
| 3:C:422:TYR:OH | 15:R:52:ARG:NH2 | 2.42 | 0.52 |
| 3:C:516:LEU:HD22 | 3:C:520:TYR:CE2 | 2.45 | 0.52 |
| 9:J:37:PRO:HB3 | 9:J:69:TYR:CZ | 2.45 | 0.52 |
| 10:K:185:LEU:HD21 | 10:K:205:PHE:CB | 2.39 | 0.52 |
| 14:O:258:TYR:CE1 | 14:O:262:LEU:HD22 | 2.44 | 0.52 |
| 14:O:462:ASN:O | 14:O:463:THR:OG1 | 2.27 | 0.52 |
| 15:R:310:GLN:O | 15:R:338:LEU:HD21 | 2.09 | 0.52 |
| 20:Y:159:LEU:HD22 | 20:Y:171:ILE:HG23 | 1.91 | 0.52 |
| 1:A:1412:CYS:HB2 | 1:A:1471:SER:OG | 2.09 | 0.52 |
| 9:J:277:GLU:OE1 | 9:J:278:LEU:HD23 | 2.09 | 0.52 |
| 10:K:174:HIS:CE1 | 10:K:211:LYS:HD2 | 2.44 | 0.52 |
| 13:N:321:LEU:HD22 | 13:N:324:TRP:CD2 | 2.45 | 0.52 |
| 20:Y:350:PHE:HB2 | 20:Y:351:TYR:CD1 | 2.45 | 0.52 |
| 3:C:199:LEU:HD23 | 3:C:199:LEU:O | 2.10 | 0.52 |
| 8:I:353:GLN:HA | 8:I:353:GLN:HE21 | 1.74 | 0.52 |
| 3:P:244:ILE:C | 3:P:244:ILE:HD12 | 2.29 | 0.52 |
| 3:P:251:TYR:HB3 | 3:P:269:ILE:HD11 | 1.91 | 0.52 |
| 1:A:956:ARG:CZ | 1:A:1788:GLU:OE1 | 2.58 | 0.52 |
| 3:C:361:ASN:HB3 | 3:C:363:ARG:N | 2.25 | 0.52 |
| 9:J:397:ILE:HG22 | 9:J:398:ALA:N | 2.25 | 0.52 |
| 11:L:40:PHE:HA | 11:L:44:GLN:OE1 | 2.10 | 0.52 |
| 13:N:392:ASN:O | 13:N:395:ASP:HA | 2.10 | 0.52 |
| 13:N:394:CYS:O | 13:N:395:ASP:CG | 2.47 | 0.52 |
| 13:N:540:ARG:O | 13:N:544:LEU:HD22 | 2.09 | 0.52 |
| 15:R:230:ASP:HA | 15:R:249:HIS:HB3 | 1.91 | 0.52 |
| 15:R:458:ILE:HG12 | 15:R:472:VAL:HG21 | 1.92 | 0.52 |
| 20:Y:302:PRO:HG2 | 20:Y:303:TYR:CE2 | 2.45 | 0.52 |
| 2:B:1:MET:HE2 | 13:N:650:LEU:HD22 | 1.92 | 0.52 |
| 3:C:431:ASN:HA | 3:C:462:VAL:HG21 | 1.91 | 0.52 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:J:351:ASP:CB | 15:R:393:LEU:HD21 | 2.32 | 0.52 |
| 3:P:407:GLN:HA | 3:P:422:TYR:OH | 2.10 | 0.52 |
| 15:R:179:LEU:HD13 | 16:S:325:LEU:HB3 | 1.92 | 0.52 |
| 15:R:296:ARG:HA | 15:R:303:LEU:O | 2.10 | 0.52 |
| 20:X:282:PHE:HD1 | 20:X:314:LEU:HD21 | 1.74 | 0.52 |
| 20:Y:214:VAL:HG12 | 20:Y:217:ALA:HB3 | 1.91 | 0.52 |
| 1:A:1540:ARG:NH1 | 13:N:486:ASP:O | 2.42 | 0.52 |
| 3:C:409:TYR:HB2 | 3:C:418:CYS:HB3 | 1.92 | 0.52 |
| 9:J:35:GLU:OE2 | 9:J:63:ARG:CZ | 2.58 | 0.52 |
| 14:O:348:TYR:CZ | 14:O:361:LEU:HD11 | 2.45 | 0.52 |
| 3:P:199:LEU:O | 3:P:199:LEU:HD23 | 2.09 | 0.52 |
| 15:R:44:HIS:CG | 15:R:45:GLY:N | 2.78 | 0.52 |
| 15:R:155:ASN:O | 15:R:158:GLN:HB2 | 2.10 | 0.52 |
| 15:R:182:PRO:HB3 | 16:S:322:ARG:CG | 2.39 | 0.52 |
| 20:X:159:LEU:HD22 | 20:X:171:ILE:HG23 | 1.92 | 0.52 |
| 1:A:174:PRO:HG2 | 1:A:175:PHE:CD2 | 2.45 | 0.52 |
| 1:A:612:ILE:O | 1:A:641:TRP:HZ3 | 1.92 | 0.52 |
| 4:D:40:TRP:CZ2 | 4:D:44:ILE:HD11 | 2.44 | 0.52 |
| 6:H:486:ASN:O | 6:H:490:HIS:CD2 | 2.63 | 0.52 |
| 6:H:537:GLU:OE2 | 6:H:600:TYR:CZ | 2.62 | 0.52 |
| 13:N:368:THR:HG1 | 13:N:369:ASP:HA | 1.72 | 0.52 |
| 14:O:490:LEU:HD13 | 14:O:511:ASP:CB | 2.40 | 0.52 |
| 1:A:852:LEU:HD11 | 1:A:1822:GLU:HB3 | 1.92 | 0.51 |
| 1:A:980:ARG:NH2 | 1:A:1674:TRP:O | 2.43 | 0.51 |
| 1:A:1241:THR:HG22 | 15:R:161:LEU:HD22 | 1.90 | 0.51 |
| 6:H:689:LEU:HD11 | 6:H:716:ASN:ND2 | 2.25 | 0.51 |
| 8:I:74:ARG:HD2 | 8:I:174:ASN:HD22 | 1.75 | 0.51 |
| 10:K:62:SER:O | 10:K:63:ARG:CG | 2.56 | 0.51 |
| 1:A:77:ARG:HD3 | 1:A:128:TRP:CE3 | 2.45 | 0.51 |
| 1:A:504:VAL:HG11 | 1:A:635:VAL:HG13 | 1.90 | 0.51 |
| 1:A:848:VAL:HG22 | 1:A:877:ILE:CD1 | 2.40 | 0.51 |
| 3:C:370:LEU:HD22 | 15:R:47:ARG:CZ | 2.40 | 0.51 |
| 6:H:669:SER:HA | 6:H:698:ILE:HD11 | 1.92 | 0.51 |
| 13:N:156:MET:O | 13:N:160:VAL:HG23 | 2.10 | 0.51 |
| 13:N:180:PHE:CG | 13:N:299:TRP:CH2 | 2.85 | 0.51 |
| 13:N:281:TYR:CE1 | 13:N:284:SER:HB3 | 2.45 | 0.51 |
| 13:N:611:VAL:HG23 | 13:N:616:ARG:HG2 | 1.93 | 0.51 |
| 3:P:388:TYR:O | 3:P:392:ILE:HG22 | 2.10 | 0.51 |
| 1:A:1230:ILE:HD11 | 15:R:94:LEU:HB3 | 1.92 | 0.51 |
| 1:A:1274:LEU:HD21 | 1:A:1325:LEU:CD1 | 2.41 | 0.51 |
| 2:B:20:ASP:O | 2:B:30:PHE:CD2 | 2.63 | 0.51 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:H:492:PRO:O | 6:H:493:SER:CB | 2.59 | 0.51 |
| 6:H:653:LEU:HD22 | 10:K:523:ILE:HG21 | 1.91 | 0.51 |
| 8:I:264:TYR:O | 8:I:268:SER:OG | 2.22 | 0.51 |
| 14:O:431:LEU:HD11 | 14:O:616:LEU:HD22 | 1.92 | 0.51 |
| 15:R:458:ILE:HG12 | 15:R:472:VAL:HG11 | 1.92 | 0.51 |
| 1:A:1218:GLY:N | 1:A:1259:LEU:O | 2.44 | 0.51 |
| 11:L:40:PHE:HZ | 15:R:176:PHE:HZ | 0.76 | 0.51 |
| 11:L:89:TYR:CE1 | 11:L:152:HIS:CE1 | 2.98 | 0.51 |
| 13:N:425:ARG:NE | 13:N:507:SER:HB2 | 2.25 | 0.51 |
| 14:O:119:PHE:CZ | 14:O:136:LEU:HD11 | 2.45 | 0.51 |
| 1:A:801:PRO:C | 1:A:804:ASP:OD1 | 2.49 | 0.51 |
| 1:A:1079:ALA:HB1 | 1:A:1556:LEU:CA | 2.40 | 0.51 |
| 8:I:115:TRP:CZ3 | 8:I:176:LEU:HD22 | 2.46 | 0.51 |
| 9:J:55:ARG:NH1 | 10:K:261:ASP:OD2 | 2.44 | 0.51 |
| 10:K:250:CYS:SG | 10:K:274:THR:HG23 | 2.50 | 0.51 |
| 13:N:386:LEU:C | 13:N:388:HIS:HB3 | 2.31 | 0.51 |
| 14:O:539:ASN:HD22 | 14:O:542:GLU:HB3 | 1.74 | 0.51 |
| 3:C:296:ARG:HA | 3:P:101:ARG:NH1 | 2.26 | 0.51 |
| 9:J:355:ALA:O | 9:J:359:THR:HG23 | 2.10 | 0.51 |
| 12:M:2:ASP:OD1 | 12:M:3:SER:N | 2.42 | 0.51 |
| 13:N:75:PHE:O | 13:N:78:VAL:N | 2.43 | 0.51 |
| 13:N:574:ILE:HD13 | 13:N:622:TYR:CE1 | 2.46 | 0.51 |
| 13:N:663:GLN:HB3 | 13:N:699:TRP:CZ2 | 2.45 | 0.51 |
| 3:P:358:LEU:CD1 | 3:P:368:TRP:CD2 | 2.94 | 0.51 |
| 15:R:291:ARG:CD | 15:R:312:HIS:HA | 2.41 | 0.51 |
| 20:X:214:VAL:HG12 | 20:X:217:ALA:HB3 | 1.91 | 0.51 |
| 2:B:36:ASP:OD1 | 2:B:36:ASP:N | 2.43 | 0.51 |
| 6:F:130:ARG:HG2 | 20:Y:506:GLN:HB2 | 1.93 | 0.51 |
| 8:I:344:ILE:O | 8:I:348:VAL:HG23 | 2.11 | 0.51 |
| 11:L:33:LEU:CG | 11:L:42:VAL:HG22 | 2.41 | 0.51 |
| 13:N:662:VAL:CG2 | 13:N:695:ARG:HG2 | 2.41 | 0.51 |
| 20:Y:494:ASP:OD1 | 20:Y:494:ASP:N | 2.40 | 0.51 |
| 1:A:207:LEU:HD12 | 1:A:208:PRO:CD | 2.39 | 0.51 |
| 9:J:495:PHE:CZ | 9:J:525:MET:SD | 3.04 | 0.51 |
| 13:N:123:ASP:CB | 13:N:250:LEU:HD11 | 2.41 | 0.51 |
| 13:N:681:LEU:HD23 | 13:N:692:LEU:HD11 | 1.93 | 0.51 |
| 20:X:267:LEU:CD1 | 20:Y:59:LEU:HD13 | 2.41 | 0.51 |
| 20:X:358:ALA:O | 20:X:379:LYS:HA | 2.11 | 0.51 |
| 20:Y:196:LEU:O | 20:Y:200:PRO:CB | 2.59 | 0.51 |
| 1:A:1191:LEU:HD23 | 1:A:1191:LEU:C | 2.31 | 0.51 |
| 3:C:206:TRP:O | 3:C:209:LEU:HB2 | 2.10 | 0.51 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:H:736:GLU:OE1 | 11:L:173:THR:O | 2.28 | 0.51 |
| 8:I:674:VAL:O | 8:I:703:ARG:NH1 | 2.44 | 0.51 |
| 10:K:443:LYS:O | 10:K:446:PRO:HD2 | 2.11 | 0.51 |
| 13:N:559:VAL:HG11 | 13:N:600:PHE:CZ | 2.46 | 0.51 |
| 14:O:652:LEU:O | 14:O:660:LYS:HD2 | 2.11 | 0.51 |
| 3:P:355:GLN:HA | 3:P:358:LEU:CD2 | 2.40 | 0.51 |
| 20:Y:376:LEU:HD21 | 20:Y:398:GLU:HG3 | 1.93 | 0.51 |
| 1:A:629:LEU:C | 1:A:629:LEU:HD12 | 2.31 | 0.51 |
| 1:A:1086:MET:HE1 | 1:A:1564:LEU:CD1 | 2.37 | 0.51 |
| 1:A:1265:ALA:HB2 | 1:A:1309:HIS:CD2 | 2.46 | 0.51 |
| 3:C:126:GLY:C | 3:C:148:ASN:OD1 | 2.50 | 0.51 |
| 5:E:61:TYR:CE1 | 20:X:360:TYR:CZ | 2.98 | 0.51 |
| 8:I:414:PHE:HZ | 8:I:472:VAL:HG13 | 1.76 | 0.51 |
| 11:L:40:PHE:CZ | 15:R:176:PHE:CE1 | 2.80 | 0.51 |
| 3:P:276:ILE:HG22 | 3:P:277:ARG:H | 1.76 | 0.51 |
| 15:R:270:HIS:CE1 | 15:R:294:LEU:HG | 2.45 | 0.51 |
| 1:A:1572:TYR:CE1 | 1:A:1616:PRO:HB3 | 2.46 | 0.50 |
| 3:P:276:ILE:HG22 | 3:P:277:ARG:N | 2.25 | 0.50 |
| 20:X:355:TYR:CB | 20:X:386:MET:CB | 2.72 | 0.50 |
| 1:A:1427:ASP:O | 1:A:1430:VAL:HG12 | 2.11 | 0.50 |
| 2:B:15:LEU:HD21 | 13:N:635:LEU:HA | 1.94 | 0.50 |
| 13:N:670:PHE:CE2 | 13:N:705:LEU:HD11 | 2.46 | 0.50 |
| 3:P:303:PHE:CD1 | 3:P:303:PHE:C | 2.84 | 0.50 |
| 20:Y:509:CYS:SG | 20:Y:510:VAL:N | 2.85 | 0.50 |
| 1:A:1250:GLN:O | 1:A:1254:VAL:HG23 | 2.10 | 0.50 |
| 10:K:62:SER:C | 10:K:63:ARG:CG | 2.80 | 0.50 |
| 10:K:276:VAL:HA | 10:K:311:MET:HE1 | 1.93 | 0.50 |
| 15:R:422:GLN:O | 15:R:424:GLN:HG3 | 2.10 | 0.50 |
| 20:Y:199:CYS:HB2 | 20:Y:200:PRO:C | 2.31 | 0.50 |
| 1:A:174:PRO:HA | 1:A:295:VAL:O | 2.12 | 0.50 |
| 1:A:1405:LEU:HD13 | 1:A:1467:GLY:HA2 | 1.93 | 0.50 |
| 2:B:39:VAL:CB | 2:B:43:ASP:CB | 2.89 | 0.50 |
| 6:F:702:ASN:HB2 | 6:F:705:CYS:SG | 2.51 | 0.50 |
| 14:O:513:LYS:HG2 | 14:O:542:GLU:OE2 | 2.12 | 0.50 |
| 3:P:332:GLU:N | 3:P:332:GLU:OE1 | 2.45 | 0.50 |
| 3:P:368:TRP:CB | 3:P:391:ALA:HB2 | 2.41 | 0.50 |
| 20:X:449:THR:HG22 | 20:X:461:ALA:O | 2.12 | 0.50 |
| 1:A:1254:VAL:HG11 | 1:A:1298:ALA:HA | 1.94 | 0.50 |
| 13:N:395:ASP:CG | 13:N:398:THR:N | 2.63 | 0.50 |
| 15:R:47:ARG:O | 15:R:48:PHE:CD1 | 2.65 | 0.50 |
| 15:R:431:PRO:HB2 | 15:R:432:SER:C | 2.31 | 0.50 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:466:THR:CG2 | 15:R:468:ARG:HG3 | 2.39 | 0.50 |
| 20:Y:449:THR:HG22 | 20:Y:461:ALA:O | 2.11 | 0.50 |
| 1:A:1651:LEU:HD12 | 1:A:1651:LEU:N | 2.25 | 0.50 |
| 8:I:52:PHE:CD1 | 8:I:743:VAL:HG21 | 2.46 | 0.50 |
| 9:J:397:ILE:O | 9:J:398:ALA:C | 2.50 | 0.50 |
| 14:O:78:LEU:HD12 | 14:O:78:LEU:O | 2.11 | 0.50 |
| 15:R:252:PHE:CE1 | 15:R:268:GLU:HG2 | 2.27 | 0.50 |
| 20:X:509:CYS:SG | 20:X:510:VAL:N | 2.84 | 0.50 |
| 1:A:170:ILE:HG21 | 3:C:427:GLN:HB2 | 1.94 | 0.50 |
| 1:A:641:TRP:CZ2 | 1:A:645:HIS:HB2 | 2.47 | 0.50 |
| 1:A:1236:LEU:HD12 | 15:R:161:LEU:HD11 | 1.92 | 0.50 |
| 1:A:1891:PHE:CE2 | 1:A:1895:HIS:CD2 | 3.00 | 0.50 |
| 6:F:75:LEU:HG | 6:F:91:ILE:HD13 | 1.93 | 0.50 |
| 12:M:12:LEU:HD13 | 3:P:360:LEU:CD2 | 2.42 | 0.50 |
| 13:N:286:LEU:HG | 13:N:360:ASP:OD2 | 2.11 | 0.50 |
| 3:P:234:LEU:HD22 | 3:P:238:TYR:CE2 | 2.47 | 0.50 |
| 3:P:251:TYR:OH | 3:P:268:GLN:CG | 2.60 | 0.50 |
| 3:P:283:LEU:HD21 | 3:P:312:MET:CE | 2.42 | 0.50 |
| 15:R:57:TRP:CE3 | 15:R:57:TRP:CA | 2.95 | 0.50 |
| 1:A:42:LEU:HD23 | 3:C:142:GLU:HG2 | 1.93 | 0.50 |
| 1:A:852:LEU:C | 1:A:852:LEU:HD12 | 2.32 | 0.50 |
| 6:F:146:PRO:CG | 6:F:167:THR:HA | 2.40 | 0.50 |
| 10:K:509:ARG:HG3 | 10:K:512:ASP:HB2 | 1.93 | 0.50 |
| 11:L:63:LEU:HD22 | 11:L:138:GLN:HE21 | 1.76 | 0.50 |
| 13:N:73:GLU:O | 13:N:74:TRP:CB | 2.59 | 0.50 |
| 13:N:74:TRP:CZ2 | 13:N:77:GLU:HB2 | 2.46 | 0.50 |
| 3:P:365:LEU:HB3 | 3:P:395:ASN:HD21 | 1.77 | 0.50 |
| 15:R:280:ASN:ND2 | 15:R:325:HIS:HB3 | 2.27 | 0.50 |
| 1:A:1089:LEU:HD11 | 1:A:1611:VAL:HG23 | 1.94 | 0.50 |
| 1:A:1469:CYS:O | 1:A:1472:LEU:HB3 | 2.11 | 0.50 |
| 1:A:1615:GLU:OE2 | 1:A:1617:ARG:HD3 | 2.12 | 0.50 |
| 3:C:167:LEU:HD23 | 3:C:172:LEU:HD13 | 1.94 | 0.50 |
| 6:F:617:LEU:HD11 | 6:F:648:GLN:HG3 | 1.93 | 0.50 |
| 8:I:46:LEU:HD22 | 8:I:56:TRP:HE1 | 1.77 | 0.50 |
| 10:K:185:LEU:CD1 | 10:K:209:LEU:HD11 | 2.39 | 0.50 |
| 10:K:292:VAL:HG21 | 12:M:57:TRP:HB3 | 1.93 | 0.50 |
| 11:L:125:THR:HA | 11:L:126:ASP:O | 2.12 | 0.50 |
| 13:N:563:ASP:OD2 | 13:N:597:SER:HB3 | 2.12 | 0.50 |
| 13:N:644:VAL:HG21 | 13:N:664:ALA:CB | 2.42 | 0.50 |
| 14:O:354:ARG:HD2 | 14:O:573:LYS:O | 2.11 | 0.50 |
| 20:Y:515:LEU:HD23 | 20:Y:519:LEU:HG | 1.94 | 0.50 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:1243:LEU:O | 1:A:1243:LEU:HD23 | 2.12 | 0.49 |
| 8:I:286:ARG:NH1 | 8:I:324:GLN:HB3 | 2.27 | 0.49 |
| 13:N:304:PHE:CD1 | 13:N:324:TRP:CH2 | 3.00 | 0.49 |
| 20:X:350:PHE:HZ | 20:X:378:LEU:HA | 1.73 | 0.49 |
| 20:X:363:ALA:CB | 20:X:379:LYS:NZ | 2.66 | 0.49 |
| 20:X:515:LEU:HD23 | 20:X:519:LEU:HG | 1.94 | 0.49 |
| 20:Y:442:GLN:HG2 | 20:Y:472:GLU:HB2 | 1.94 | 0.49 |
| 1:A:1533:LEU:HD12 | 1:A:1534:LYS:N | 2.26 | 0.49 |
| 3:C:251:TYR:OH | 3:C:268:GLN:HG3 | 2.12 | 0.49 |
| 8:I:240:LEU:HD22 | 8:I:547:SER:CB | 2.42 | 0.49 |
| 9:J:334:GLY:N | 9:J:335:PRO:CD | 2.75 | 0.49 |
| 3:P:117:LEU:HD23 | 3:P:117:LEU:O | 2.12 | 0.49 |
| 15:R:310:GLN:CB | 15:R:340:TRP:CH2 | 2.83 | 0.49 |
| 1:A:260:ASP:OD1 | 1:A:262:VAL:HG22 | 2.12 | 0.49 |
| 1:A:1262:GLN:HE21 | 1:A:1307:LEU:HD22 | 1.77 | 0.49 |
| 8:I:65:GLY:HA3 | 8:I:84:LEU:HB3 | 1.94 | 0.49 |
| 9:J:393:GLN:O | 9:J:396:SER:HB3 | 2.11 | 0.49 |
| 13:N:141:LEU:O | 13:N:142:MET:C | 2.49 | 0.49 |
| 14:O:40:LEU:HD22 | 14:O:82:ILE:HD12 | 1.94 | 0.49 |
| 3:P:122:ARG:HG2 | 3:P:154:LEU:HD11 | 1.92 | 0.49 |
| 15:R:149:SER:O | 15:R:150:LEU:HG | 2.12 | 0.49 |
| 15:R:327:LEU:CD1 | 15:R:387:THR:CG2 | 2.83 | 0.49 |
| 15:R:425:ILE:HD11 | 15:R:460:THR:HG21 | 1.94 | 0.49 |
| 1:A:1470:LEU:HD12 | 1:A:1518:VAL:HG13 | 1.95 | 0.49 |
| 6:H:128:THR:HG21 | 6:H:130:ARG:HH12 | 1.77 | 0.49 |
| 13:N:597:SER:HG | 13:N:600:PHE:HB2 | 1.77 | 0.49 |
| 15:R:429:LYS:CD | 15:R:433:LEU:CD2 | 2.91 | 0.49 |
| 1:A:184:LYS:O | 1:A:185:TYR:HB2 | 2.13 | 0.49 |
| 1:A:1511:ASN:HD22 | 1:A:1511:ASN:N | 2.11 | 0.49 |
| 3:C:329:TYR:HB3 | 12:M:15:ILE:HD11 | 1.95 | 0.49 |
| 6:F:639:TYR:CD1 | 15:R:492:ILE:HG21 | 2.47 | 0.49 |
| 6:H:481:CYS:CB | 6:H:512:LEU:HD13 | 2.42 | 0.49 |
| 8:I:279:ILE:HD13 | 8:I:340:SER:HB2 | 1.95 | 0.49 |
| 14:O:621:SER:HB3 | 14:O:651:ILE:HG12 | 1.94 | 0.49 |
| 15:R:327:LEU:HD13 | 15:R:387:THR:HG22 | 1.92 | 0.49 |
| 15:R:436:VAL:CG1 | 15:R:437:ALA:N | 2.75 | 0.49 |
| 20:X:359:LEU:HB2 | 20:X:383:LEU:CG | 2.43 | 0.49 |
| 20:X:376:LEU:HD21 | 20:X:398:GLU:HG3 | 1.95 | 0.49 |
| 1:A:612:ILE:HG22 | 1:A:642:TYR:HD2 | 1.78 | 0.49 |
| 2:B:15:LEU:HD11 | 13:N:635:LEU:HD12 | 1.93 | 0.49 |
| 8:I:279:ILE:HD11 | 8:I:337:ILE:HA | 1.94 | 0.49 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:N:501:ILE:H | 13:N:501:ILE:HD12 | 1.77 | 0.49 |
| 13:N:519:TYR:HE1 | 13:N:523:LEU:HD21 | 1.76 | 0.49 |
| 20:Y:294:PHE:CG | 20:Y:311:TYR:CD1 | 3.01 | 0.49 |
| 1:A:175:PHE:CD1 | 1:A:191:ARG:HG3 | 2.48 | 0.49 |
| 1:A:659:LEU:HD12 | 1:A:660:PHE:N | 2.27 | 0.49 |
| 1:A:1469:CYS:HB2 | 1:A:1488:LEU:HD22 | 1.95 | 0.49 |
| 8:I:197:ARG:O | 8:I:545:GLY:HA3 | 2.13 | 0.49 |
| 13:N:74:TRP:CG | 13:N:75:PHE:N | 2.79 | 0.49 |
| 3:P:234:LEU:CD2 | 3:P:238:TYR:CZ | 2.96 | 0.49 |
| 15:R:188:PHE:CZ | 15:R:359:LYS:HD2 | 2.48 | 0.49 |
| 15:R:216:THR:O | 15:R:217:SER:HB2 | 2.13 | 0.49 |
| 15:R:267:LEU:HD13 | 15:R:296:ARG:HD3 | 1.95 | 0.49 |
| 9:J:77:ALA:CB | 9:J:93:LEU:HD11 | 2.43 | 0.49 |
| 11:L:62:HIS:NE2 | 11:L:149:ARG:O | 2.42 | 0.49 |
| 13:N:165:THR:O | 13:N:169:PHE:HB3 | 2.12 | 0.49 |
| 13:N:253:LEU:O | 13:N:257:SER:OG | 2.18 | 0.49 |
| 13:N:485:VAL:CB | 13:N:487:ALA:HB2 | 2.42 | 0.49 |
| 13:N:611:VAL:HG11 | 13:N:637:TRP:CZ2 | 2.47 | 0.49 |
| 14:O:264:VAL:O | 14:O:265:GLN:HB2 | 2.13 | 0.49 |
| 3:P:303:PHE:C | 3:P:303:PHE:HD1 | 2.16 | 0.49 |
| 3:P:358:LEU:HD11 | 3:P:368:TRP:CE2 | 2.47 | 0.49 |
| 15:R:225:LEU:HB3 | 15:R:230:ASP:OD2 | 2.13 | 0.49 |
| 20:X:266:LEU:HB3 | 20:Y:63:LEU:HD22 | 1.95 | 0.49 |
| 20:Y:425:GLU:O | 20:Y:429:MET:HE2 | 2.13 | 0.49 |
| 1:A:881:ILE:O | 1:A:882:LEU:HG | 2.12 | 0.49 |
| 9:J:354:MET:CE | 9:J:354:MET:HA | 2.43 | 0.49 |
| 9:J:429:LEU:HA | 9:J:432:ILE:HG22 | 1.94 | 0.49 |
| 10:K:324:SER:O | 10:K:328:THR:HG23 | 2.12 | 0.49 |
| 13:N:556:PHE:CE1 | 13:N:600:PHE:HA | 2.48 | 0.49 |
| 14:O:136:LEU:C | 14:O:136:LEU:HD12 | 2.33 | 0.49 |
| 14:O:292:GLY:HA3 | 14:O:336:ASP:CB | 2.43 | 0.49 |
| 14:O:513:LYS:CE | 14:O:542:GLU:OE2 | 2.61 | 0.49 |
| 15:R:292:MET:SD | 15:R:309:LEU:CD1 | 3.01 | 0.49 |
| 1:A:1274:LEU:CD1 | 1:A:1321:VAL:HG12 | 2.39 | 0.49 |
| 1:A:1755:GLU:HB2 | 1:A:1756:TYR:HD1 | 1.78 | 0.49 |
| 9:J:258:MET:CE | 9:J:271:HIS:CG | 2.96 | 0.49 |
| 10:K:384:SER:HB3 | 10:K:415:ASN:OD1 | 2.13 | 0.49 |
| 12:M:10:ARG:HD3 | 12:M:14:LEU:HD12 | 1.95 | 0.49 |
| 13:N:281:TYR:CZ | 13:N:357:ALA:CA | 2.96 | 0.49 |
| 13:N:669:TYR:CE1 | 13:N:684:ALA:HB1 | 2.48 | 0.49 |
| 3:P:307:LEU:HD12 | 3:P:312:MET:HG3 | 1.95 | 0.49 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:P:358:LEU:O | 3:P:362:PRO:CA | 2.58 | 0.49 |
| 15:R:189:TYR:O | 15:R:316:VAL:HB | 2.13 | 0.49 |
| 15:R:233:THR:HG21 | 15:R:273:ARG:CG | 2.40 | 0.49 |
| 1:A:268:VAL:HG12 | 1:A:412:LEU:HD21 | 1.94 | 0.48 |
| 1:A:1100:LEU:HB3 | 1:A:1101:PRO:CA | 2.43 | 0.48 |
| 1:A:1316:MET:O | 1:A:1319:LEU:O | 2.30 | 0.48 |
| 1:A:1622:VAL:HA | 1:A:1629:PRO:HA | 1.95 | 0.48 |
| 3:C:122:ARG:HG2 | 3:C:154:LEU:HD11 | 1.94 | 0.48 |
| 8:I:73:TRP:CD2 | 8:I:80:LEU:HD13 | 2.48 | 0.48 |
| 9:J:258:MET:CE | 9:J:271:HIS:CD2 | 2.96 | 0.48 |
| 12:M:31:ILE:HG22 | 12:M:33:LEU:HD22 | 1.95 | 0.48 |
| 14:O:65:LEU:HB3 | 14:O:66:PRO:HD3 | 1.95 | 0.48 |
| 3:P:494:ILE:HD13 | 3:P:516:LEU:HD13 | 1.95 | 0.48 |
| 15:R:382:ILE:HG13 | 15:R:398:THR:HG21 | 1.87 | 0.48 |
| 1:A:1803:LEU:HD11 | 1:A:1814:LEU:HD21 | 1.95 | 0.48 |
| 3:C:117:LEU:HD23 | 3:C:117:LEU:O | 2.12 | 0.48 |
| 9:J:268:LEU:N | 9:J:269:PRO:HD2 | 2.28 | 0.48 |
| 10:K:297:SER:O | 10:K:329:LEU:HD21 | 2.12 | 0.48 |
| 13:N:659:VAL:HG23 | 13:N:728:VAL:HG23 | 1.94 | 0.48 |
| 14:O:632:LEU:C | 14:O:632:LEU:HD12 | 2.33 | 0.48 |
| 15:R:435:GLN:CG | 15:R:436:VAL:N | 2.65 | 0.48 |
| 20:Y:294:PHE:HZ | 20:Y:308:MET:SD | 2.35 | 0.48 |
| 3:C:60:PHE:HA | 3:P:85:ASP:OD2 | 2.13 | 0.48 |
| 3:C:233:PHE:CE1 | 3:C:237:ILE:HD11 | 2.49 | 0.48 |
| 13:N:542:VAL:HG11 | 13:N:558:GLU:CG | 2.43 | 0.48 |
| 13:N:669:TYR:CZ | 13:N:684:ALA:HB1 | 2.48 | 0.48 |
| 14:O:631:GLN:HE22 | 14:O:643:LEU:HD13 | 1.78 | 0.48 |
| 3:P:209:LEU:O | 3:P:213:ILE:HG12 | 2.13 | 0.48 |
| 20:X:343:VAL:HG12 | 20:X:378:LEU:HD22 | 1.95 | 0.48 |
| 20:X:442:GLN:HG2 | 20:X:472:GLU:HB2 | 1.95 | 0.48 |
| 20:X:452:LEU:CD2 | 20:X:460:LYS:HB2 | 2.44 | 0.48 |
| 20:Y:384:ARG:HH22 | 20:Y:415:GLU:HB3 | 1.77 | 0.48 |
| 5:E:102:LEU:HD13 | 6:H:594:ILE:HG22 | 1.94 | 0.48 |
| 6:H:747:TYR:CZ | 6:H:755:LEU:HD23 | 2.48 | 0.48 |
| 13:N:331:PHE:CZ | 13:N:335:ILE:HD11 | 2.47 | 0.48 |
| 13:N:363:TYR:OH | 13:N:367:ARG:CZ | 2.62 | 0.48 |
| 13:N:560:MET:SD | 13:N:601:TRP:CD1 | 3.07 | 0.48 |
| 13:N:655:LEU:HD11 | 13:N:726:ASN:HB2 | 1.94 | 0.48 |
| 14:O:513:LYS:HE3 | 14:O:542:GLU:OE2 | 2.13 | 0.48 |
| 14:O:657:ILE:HA | 14:O:660:LYS:CB | 2.43 | 0.48 |
| 15:R:222:LEU:HG | 15:R:223:CYS:SG | 2.53 | 0.48 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 15:R:307:ARG:NH2 | 15:R:309:LEU:HD21 | 2.27 | 0.48 |
| 15:R:382:ILE:CD1 | 15:R:398:THR:HG22 | 2.42 | 0.48 |
| 1:A:504:VAL:HG11 | 1:A:635:VAL:CG1 | 2.43 | 0.48 |
| 1:A:776:ASN:HD22 | 1:A:779:MET:HG2 | 1.79 | 0.48 |
| 1:A:804:ASP:OD1 | 1:A:804:ASP:N | 2.46 | 0.48 |
| 1:A:808:ARG:NH2 | 1:A:1897:VAL:O | 2.46 | 0.48 |
| 8:I:46:LEU:HD22 | 8:I:56:TRP:NE1 | 2.28 | 0.48 |
| 8:I:72:ALA:O | 8:I:80:LEU:HD12 | 2.14 | 0.48 |
| 13:N:202:GLU:O | 13:N:202:GLU:OE1 | 2.30 | 0.48 |
| 20:X:350:PHE:O | 20:X:385:ASN:OD1 | 2.30 | 0.48 |
| 3:C:141:LEU:HD12 | 3:C:141:LEU:O | 2.13 | 0.48 |
| 8:I:73:TRP:CH2 | 8:I:80:LEU:HD22 | 2.48 | 0.48 |
| 8:I:207:ALA:HB3 | 8:I:220:VAL:HB | 1.95 | 0.48 |
| 8:I:209:CYS:SG | 8:I:577:ASN:HB2 | 2.54 | 0.48 |
| 8:I:679:ASP:OD1 | 8:I:703:ARG:NH2 | 2.46 | 0.48 |
| 9:J:320:ARG:HD3 | 9:J:344:PHE:CZ | 2.48 | 0.48 |
| 9:J:324:SER:O | 9:J:328:THR:HG23 | 2.13 | 0.48 |
| 13:N:281:TYR:HE2 | 13:N:356:PRO:HB2 | 1.77 | 0.48 |
| 15:R:403:CYS:O | 15:R:404:ASN:CG | 2.51 | 0.48 |
| 15:R:433:LEU:HG | 15:R:434:THR:O | 2.14 | 0.48 |
| 20:Y:452:LEU:CD2 | 20:Y:460:LYS:HB2 | 2.43 | 0.48 |
| 1:A:1172:TYR:CZ | 1:A:1176:LEU:HD23 | 2.48 | 0.48 |
| 1:A:1884:GLN:NE2 | 1:A:1888:LEU:HD12 | 2.29 | 0.48 |
| 2:B:11:VAL:HG13 | 13:N:642:GLY:HA2 | 1.96 | 0.48 |
| 5:E:87:GLU:OE1 | 5:E:87:GLU:N | 2.47 | 0.48 |
| 6:F:492:PRO:O | 6:F:493:SER:CB | 2.60 | 0.48 |
| 8:I:116:MET:HE1 | 8:I:211:SER:O | 2.13 | 0.48 |
| 8:I:209:CYS:HG | 8:I:584:HIS:CE1 | 2.31 | 0.48 |
| 14:O:669:LYS:NZ | 14:O:755:LEU:O | 2.47 | 0.48 |
| 15:R:417:THR:OG1 | 15:R:449:LEU:HD23 | 2.13 | 0.48 |
| 20:X:52:ASN:HD22 | 20:Y:202:ALA:HB1 | 1.78 | 0.48 |
| 20:X:350:PHE:HZ | 20:X:378:LEU:CA | 2.26 | 0.48 |
| 20:Y:303:TYR:O | 20:Y:304:LEU:HD23 | 2.14 | 0.48 |
| 20:Y:466:ASN:O | 20:Y:470:THR:HG23 | 2.14 | 0.48 |
| 3:C:477:HIS:HD2 | 3:C:482:GLU:OE1 | 1.96 | 0.48 |
| 8:I:56:TRP:CE3 | 8:I:98:PRO:CB | 2.96 | 0.48 |
| 8:I:231:VAL:HG11 | 8:I:556:LEU:HD12 | 1.96 | 0.48 |
| 9:J:167:PHE:O | 9:J:171:THR:HG22 | 2.14 | 0.48 |
| 9:J:351:ASP:OD1 | 9:J:351:ASP:N | 2.44 | 0.48 |
| 9:J:523:ILE:HD11 | 3:P:420:TYR:CG | 2.49 | 0.48 |
| 10:K:181:GLU:HB3 | 10:K:209:LEU:HD13 | 1.96 | 0.48 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:N:269:THR:HG23 | 13:N:292:TRP:CZ3 | 2.49 | 0.48 |
| 15:R:316:VAL:HG22 | 15:R:317:CYS:O | 2.13 | 0.48 |
| 1:A:772:GLU:HG3 | 1:A:867:CYS:HA | 1.96 | 0.48 |
| 1:A:951:ILE:HD13 | 1:A:1819:LEU:HD13 | 1.96 | 0.48 |
| 1:A:1796:MET:HA | 1:A:1817:ILE:HD11 | 1.95 | 0.48 |
| 2:B:23:CYS:HA | 2:B:30:PHE:CE1 | 2.48 | 0.48 |
| 2:B:83:LYS:O | 2:B:84:GLU:HB2 | 2.13 | 0.48 |
| 6:F:118:LEU:CD2 | 6:F:140:LYS:HB3 | 2.44 | 0.48 |
| 8:I:289:LYS:HD2 | 8:I:324:GLN:HE22 | 1.79 | 0.48 |
| 10:K:230:ASN:OD1 | 10:K:231:LEU:N | 2.46 | 0.48 |
| 13:N:520:ARG:CG | 13:N:557:CYS:SG | 3.02 | 0.48 |
| 15:R:182:PRO:HG3 | 16:S:322:ARG:HB3 | 1.95 | 0.48 |
| 15:R:201:LEU:HD21 | 15:R:467:LEU:HD21 | 1.93 | 0.48 |
| 15:R:237:TRP:CD2 | 15:R:244:VAL:HG22 | 2.47 | 0.48 |
| 20:X:452:LEU:HD23 | 20:X:461:ALA:HB2 | 1.96 | 0.48 |
| 1:A:23:PHE:HB2 | 1:A:111:LEU:HD22 | 1.96 | 0.48 |
| 1:A:72:GLU:CG | 1:A:94:TYR:OH | 2.60 | 0.48 |
| 1:A:1078:MET:HB2 | 1:A:1552:TYR:CE1 | 2.49 | 0.48 |
| 8:I:262:LEU:HD11 | 8:I:533:ILE:HG21 | 1.96 | 0.48 |
| 9:J:191:SER:O | 9:J:193:LEU:HG | 2.13 | 0.48 |
| 10:K:167:PHE:O | 10:K:171:THR:HG22 | 2.13 | 0.48 |
| 10:K:417:GLU:HB2 | 10:K:420:THR:OG1 | 2.13 | 0.48 |
| 11:L:21:THR:O | 11:L:162:VAL:HG12 | 2.14 | 0.48 |
| 13:N:275:ASP:OD1 | 13:N:276:ARG:N | 2.47 | 0.48 |
| 15:R:398:THR:HB | 15:R:418:HIS:CE1 | 2.49 | 0.48 |
| 1:A:154:LEU:HD13 | 1:A:159:ILE:HG13 | 1.95 | 0.47 |
| 1:A:1405:LEU:CD1 | 1:A:1467:GLY:HA2 | 2.44 | 0.47 |
| 3:C:266:VAL:HG12 | 3:C:289:LEU:HD23 | 1.96 | 0.47 |
| 6:F:550:VAL:HG21 | 10:K:289:HIS:CG | 2.49 | 0.47 |
| 8:I:730:VAL:HG22 | 8:I:731:SER:N | 2.29 | 0.47 |
| 13:N:662:VAL:HB | 13:N:687:MET:SD | 2.54 | 0.47 |
| 14:O:625:LEU:HD12 | 14:O:625:LEU:C | 2.35 | 0.47 |
| 3:P:331:VAL:HG11 | 3:P:364:TYR:CD2 | 2.49 | 0.47 |
| 20:X:93:TYR:CZ | 20:X:148:VAL:HG11 | 2.48 | 0.47 |
| 20:Y:255:ILE:HD11 | 20:Y:281:TYR:OH | 2.14 | 0.47 |
| 20:Y:270:ASN:HB2 | 20:Y:273:LEU:CB | 2.44 | 0.47 |
| 20:Y:407:LEU:HD13 | 20:Y:443:THR:HG21 | 1.96 | 0.47 |
| 1:A:213:MET:HE1 | 1:A:216:PRO:HA | 1.96 | 0.47 |
| 1:A:273:ARG:O | 1:A:274:VAL:HG23 | 2.14 | 0.47 |
| 1:A:501:THR:HB | 1:A:504:VAL:HG22 | 1.95 | 0.47 |
| 2:B:13:LEU:HD21 | 13:N:638:LYS:HD2 | 1.96 | 0.47 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:F:534:GLU:HA | 6:F:568:GLU:OE1 | 2.14 | 0.47 |
| 6:H:145:ASN:CB | 6:H:146:PRO:O | 2.62 | 0.47 |
| 6:H:621:LEU:HD13 | 6:H:625:ARG:HH22 | 1.79 | 0.47 |
| 3:P:424:ARG:HG3 | 3:P:424:ARG:NH1 | 2.30 | 0.47 |
| 15:R:48:PHE:O | 15:R:49:ILE:HG13 | 2.15 | 0.47 |
| 1:A:154:LEU:HD13 | 1:A:159:ILE:CG1 | 2.44 | 0.47 |
| 1:A:1621:PRO:HG2 | 1:A:1630:CYS:O | 2.15 | 0.47 |
| 1:A:1742:SER:N | 1:A:1743:ALA:HB3 | 2.28 | 0.47 |
| 3:C:238:TYR:CB | 3:C:247:ALA:HB2 | 2.44 | 0.47 |
| 6:H:629:ARG:NE | 10:K:508:LEU:HD21 | 2.30 | 0.47 |
| 9:J:441:VAL:O | 9:J:442:ASP:CB | 2.62 | 0.47 |
| 9:J:456:ARG:CG | 9:J:488:ILE:HG22 | 2.44 | 0.47 |
| 14:O:599:ILE:O | 14:O:602:PRO:HD2 | 2.14 | 0.47 |
| 3:P:234:LEU:CD2 | 3:P:238:TYR:CE2 | 2.97 | 0.47 |
| 3:P:478:GLU:CD | 3:P:490:TYR:OH | 2.53 | 0.47 |
| 20:X:365:ALA:CB | 20:X:375:ALA:HB1 | 2.44 | 0.47 |
| 20:Y:294:PHE:CE1 | 20:Y:311:TYR:CD1 | 3.03 | 0.47 |
| 1:A:250:ASN:OD1 | 1:A:432:ILE:HD12 | 2.13 | 0.47 |
| 1:A:1656:LEU:H | 1:A:1656:LEU:HD12 | 1.78 | 0.47 |
| 3:C:209:LEU:O | 3:C:213:ILE:HG12 | 2.14 | 0.47 |
| 8:I:49:LEU:HD13 | 8:I:730:VAL:HG21 | 1.95 | 0.47 |
| 12:M:5:VAL:HG13 | 12:M:5:VAL:O | 2.14 | 0.47 |
| 13:N:574:ILE:HA | 13:N:625:LYS:HE2 | 1.96 | 0.47 |
| 14:O:39:VAL:HG11 | 14:O:97:ILE:HG13 | 1.96 | 0.47 |
| 14:O:341:GLN:HB3 | 14:O:376:LEU:HD23 | 1.95 | 0.47 |
| 14:O:405:SER:O | 14:O:409:HIS:CD2 | 2.67 | 0.47 |
| 15:R:189:TYR:CA | 15:R:316:VAL:HB | 2.44 | 0.47 |
| 15:R:224:ASP:C | 15:R:224:ASP:OD1 | 2.52 | 0.47 |
| 20:X:359:LEU:CG | 20:X:379:LYS:HE2 | 2.43 | 0.47 |
| 1:A:1114:ARG:HB2 | 1:A:1116:THR:HG23 | 1.97 | 0.47 |
| 6:F:96:VAL:HG12 | 6:F:97:PHE:CD1 | 2.50 | 0.47 |
| 9:J:178:ALA:HB1 | 9:J:213:ASN:HD22 | 1.78 | 0.47 |
| 13:N:501:ILE:HD13 | 13:N:548:ARG:NH2 | 2.28 | 0.47 |
| 14:O:159:GLN:O | 14:O:163:GLN:HG2 | 2.15 | 0.47 |
| 3:P:441:GLU:HG3 | 3:P:472:LYS:NZ | 2.30 | 0.47 |
| 15:R:184:LEU:CD1 | 15:R:204:GLY:O | 2.62 | 0.47 |
| 15:R:435:GLN:NE2 | 15:R:437:ALA:HB2 | 2.30 | 0.47 |
| 15:R:459:VAL:HG22 | 15:R:467:LEU:CD1 | 2.43 | 0.47 |
| 16:S:361:GLU:O | 16:S:365:VAL:HG23 | 2.14 | 0.47 |
| 20:Y:45:ALA:HB3 | 20:Y:82:TYR:CE2 | 2.50 | 0.47 |
| 20:Y:546:LEU:HD11 | 20:Y:550:GLN:HE21 | 1.79 | 0.47 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:C:53:LYS:HD3 | 3:P:96:VAL:HG21 | 1.96 | 0.47 |
| 3:C:96:VAL:N | 3:C:97:LYS:HA | 2.29 | 0.47 |
| 6:F:723:LEU:HG | 6:F:746:VAL:HG11 | 1.97 | 0.47 |
| 8:I:349:ILE:HD12 | 14:O:407:LEU:HA | 1.96 | 0.47 |
| 14:O:624:VAL:HG11 | 14:O:647:ALA:HB2 | 1.96 | 0.47 |
| 20:X:355:TYR:CE2 | 20:X:385:ASN:O | 2.62 | 0.47 |
| 20:X:430:ALA:HB2 | 20:X:451:CYS:SG | 2.55 | 0.47 |
| 20:X:466:ASN:O | 20:X:470:THR:HG23 | 2.14 | 0.47 |
| 1:A:174:PRO:O | 1:A:295:VAL:C | 2.53 | 0.47 |
| 1:A:767:HIS:O | 1:A:770:TYR:HB3 | 2.15 | 0.47 |
| 1:A:1421:PRO:HD2 | 17:T:3:ALA:HB1 | 1.97 | 0.47 |
| 3:C:308:TYR:CE1 | 3:C:343:LEU:HG | 2.50 | 0.47 |
| 6:F:550:VAL:HG21 | 10:K:289:HIS:CB | 2.44 | 0.47 |
| 6:H:75:LEU:HG | 6:H:91:ILE:HD13 | 1.96 | 0.47 |
| 13:N:286:LEU:O | 13:N:287:ARG:C | 2.52 | 0.47 |
| 13:N:425:ARG:NH1 | 13:N:507:SER:HB2 | 2.28 | 0.47 |
| 3:P:331:VAL:CG1 | 3:P:364:TYR:CD2 | 2.97 | 0.47 |
| 15:R:99:LEU:O | 15:R:100:LEU:HD23 | 2.15 | 0.47 |
| 15:R:415:VAL:HG22 | 15:R:427:VAL:HG22 | 1.97 | 0.47 |
| 20:X:294:PHE:HZ | 20:X:308:MET:SD | 2.37 | 0.47 |
| 20:X:359:LEU:CB | 20:X:383:LEU:HD21 | 2.42 | 0.47 |
| 2:B:20:ASP:CB | 2:B:30:PHE:CE2 | 2.94 | 0.47 |
| 4:D:17:TRP:CD1 | 4:D:17:TRP:C | 2.87 | 0.47 |
| 6:F:456:LYS:CB | 6:F:460:GLU:OE2 | 2.62 | 0.47 |
| 8:I:231:VAL:HG21 | 8:I:557:TYR:CE1 | 2.49 | 0.47 |
| 10:K:277:GLU:OE1 | 10:K:277:GLU:HA | 2.15 | 0.47 |
| 13:N:150:ARG:HE | 13:N:150:ARG:N | 2.13 | 0.47 |
| 13:N:296:VAL:O | 13:N:299:TRP:HB3 | 2.14 | 0.47 |
| 13:N:666:ILE:HG12 | 13:N:681:LEU:HD21 | 1.97 | 0.47 |
| 15:R:56:ASN:N | 15:R:56:ASN:OD1 | 2.45 | 0.47 |
| 15:R:189:TYR:HA | 15:R:316:VAL:CB | 2.45 | 0.47 |
| 15:R:230:ASP:HB3 | 15:R:250:LYS:CG | 2.45 | 0.47 |
| 20:X:267:LEU:HD11 | 20:Y:59:LEU:HD13 | 1.97 | 0.47 |
| 20:X:451:CYS:O | 20:X:455:PRO:HD2 | 2.15 | 0.47 |
| 1:A:90:ASP:HB3 | 1:A:591:VAL:HG21 | 1.96 | 0.47 |
| 1:A:465:GLN:C | 1:A:466:LEU:HD12 | 2.35 | 0.47 |
| 1:A:1313:LEU:HD13 | 1:A:1316:MET:CG | 2.44 | 0.47 |
| 13:N:527:LEU:HD22 | 13:N:564:MET:HG3 | 1.96 | 0.47 |
| 14:O:619:LEU:O | 14:O:623:THR:HG22 | 2.14 | 0.47 |
| 3:P:308:TYR:CE1 | 3:P:343:LEU:HG | 2.50 | 0.47 |
| 3:P:358:LEU:HD12 | 3:P:368:TRP:CE2 | 2.50 | 0.47 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:224:ASP:OD1 | 15:R:225:LEU:O | 2.33 | 0.47 |
| 15:R:313:ARG:CD | 15:R:333:ASN:H | 2.28 | 0.47 |
| 1:A:629:LEU:HD22 | 1:A:633:ILE:HG22 | 1.97 | 0.47 |
| 1:A:1070:LEU:HD23 | 1:A:1120:LEU:HG | 1.96 | 0.47 |
| 1:A:1842:PHE:CD1 | 1:A:1843:MET:HG3 | 2.49 | 0.47 |
| 5:E:86:VAL:HG13 | 6:H:588:LYS:HD3 | 1.97 | 0.47 |
| 6:H:150:SER:O | 6:H:154:SER:OG | 2.29 | 0.47 |
| 6:H:726:LEU:HD11 | 6:H:742:LEU:HD22 | 1.97 | 0.47 |
| 9:J:497:ASN:N | 9:J:497:ASN:OD1 | 2.48 | 0.47 |
| 10:K:77:ALA:CB | 10:K:93:LEU:HD11 | 2.45 | 0.47 |
| 10:K:350:HIS:ND1 | 10:K:377:GLU:OE1 | 2.48 | 0.47 |
| 13:N:611:VAL:HG12 | 13:N:639:HIS:CE1 | 2.50 | 0.47 |
| 3:P:242:GLN:HE21 | 3:P:429:ARG:HA | 1.79 | 0.47 |
| 20:X:37:VAL:N | 20:Y:230:VAL:HG21 | 2.30 | 0.46 |
| 20:X:270:ASN:HB2 | 20:X:273:LEU:CB | 2.45 | 0.46 |
| 20:Y:400:ILE:HG13 | 20:Y:401:ARG:N | 2.30 | 0.46 |
| 1:A:184:LYS:N | 1:A:251:THR:HG22 | 2.30 | 0.46 |
| 1:A:1114:ARG:HD3 | 16:S:401:CYS:O | 2.16 | 0.46 |
| 3:C:93:TYR:CD1 | 3:P:53:LYS:HD2 | 2.50 | 0.46 |
| 6:H:481:CYS:SG | 6:H:512:LEU:HB2 | 2.55 | 0.46 |
| 6:H:594:ILE:HD11 | 6:H:604:TYR:HA | 1.96 | 0.46 |
| 10:K:268:LEU:N | 10:K:269:PRO:HD2 | 2.30 | 0.46 |
| 11:L:33:LEU:HD13 | 11:L:54:TRP:CD2 | 2.49 | 0.46 |
| 13:N:75:PHE:O | 13:N:76:VAL:C | 2.53 | 0.46 |
| 13:N:556:PHE:CG | 13:N:600:PHE:HD1 | 2.32 | 0.46 |
| 20:X:355:TYR:CA | 20:X:382:ALA:C | 2.63 | 0.46 |
| 20:X:458:GLN:O | 20:X:462:LYS:HG3 | 2.15 | 0.46 |
| 20:Y:451:CYS:O | 20:Y:455:PRO:HD2 | 2.15 | 0.46 |
| 1:A:1421:PRO:HD3 | 17:T:3:ALA:HB1 | 1.98 | 0.46 |
| 10:K:495:PHE:CE1 | 10:K:525:MET:HG2 | 2.50 | 0.46 |
| 13:N:528:LEU:CD1 | 13:N:641:LEU:HD13 | 2.45 | 0.46 |
| 14:O:126:VAL:HG13 | 14:O:132:VAL:HG12 | 1.98 | 0.46 |
| 14:O:657:ILE:CG1 | 14:O:704:VAL:HG23 | 2.45 | 0.46 |
| 3:P:68:ALA:O | 3:P:69:GLU:CB | 2.64 | 0.46 |
| 3:P:392:ILE:HD12 | 3:P:402:TRP:CH2 | 2.50 | 0.46 |
| 1:A:255:ILE:HA | 1:A:269:TRP:O | 2.16 | 0.46 |
| 1:A:1531:GLY:HA2 | 1:A:1565:LEU:HB3 | 1.98 | 0.46 |
| 2:B:15:LEU:O | 2:B:17:VAL:HG23 | 2.15 | 0.46 |
| 2:B:27:ARG:HB2 | 16:S:375:LEU:HD23 | 1.97 | 0.46 |
| 3:C:89:LEU:HD21 | 3:C:93:TYR:CE2 | 2.50 | 0.46 |
| 6:F:130:ARG:HD3 | 20:Y:506:GLN:HB2 | 1.97 | 0.46 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:H:86:ALA:HA | 10:K:473:VAL:CG1 | 2.44 | 0.46 |
| 8:I:69:THR:HG23 | 8:I:85:ALA:HB2 | 1.98 | 0.46 |
| 10:K:185:LEU:HD21 | 10:K:205:PHE:HB3 | 1.98 | 0.46 |
| 10:K:217:GLU:O | 10:K:218:THR:OG1 | 2.20 | 0.46 |
| 3:P:274:HIS:O | 3:P:276:ILE:O | 2.32 | 0.46 |
| 15:R:313:ARG:CG | 15:R:333:ASN:H | 2.24 | 0.46 |
| 20:Y:212:LEU:O | 20:Y:213:SER:CB | 2.63 | 0.46 |
| 20:Y:376:LEU:HD11 | 20:Y:398:GLU:OE2 | 2.16 | 0.46 |
| 20:Y:452:LEU:HD23 | 20:Y:461:ALA:HB2 | 1.96 | 0.46 |
| 1:A:21:VAL:HG23 | 1:A:25:ARG:NH2 | 2.30 | 0.46 |
| 1:A:269:TRP:CZ3 | 1:A:411:HIS:HB2 | 2.51 | 0.46 |
| 1:A:1078:MET:N | 1:A:1078:MET:SD | 2.88 | 0.46 |
| 1:A:1637:LEU:CD1 | 1:A:1665:GLN:HE21 | 2.21 | 0.46 |
| 2:B:20:ASP:O | 2:B:30:PHE:HD2 | 1.98 | 0.46 |
| 3:C:255:ILE:HG12 | 3:C:260:SER:HA | 1.97 | 0.46 |
| 6:H:152:PHE:CD1 | 6:H:152:PHE:C | 2.88 | 0.46 |
| 8:I:289:LYS:O | 8:I:293:GLU:CB | 2.63 | 0.46 |
| 9:J:180:GLU:O | 9:J:184:LEU:N | 2.36 | 0.46 |
| 10:K:351:ASP:OD1 | 10:K:351:ASP:N | 2.42 | 0.46 |
| 14:O:694:LEU:HD13 | 14:O:713:VAL:HG22 | 1.98 | 0.46 |
| 3:P:307:LEU:HD23 | 3:P:316:LEU:HD23 | 1.96 | 0.46 |
| 3:P:392:ILE:CD1 | 3:P:402:TRP:CZ2 | 2.99 | 0.46 |
| 15:R:316:VAL:HG22 | 15:R:317:CYS:C | 2.36 | 0.46 |
| 20:X:212:LEU:O | 20:X:213:SER:CB | 2.63 | 0.46 |
| 20:X:363:ALA:HB2 | 20:X:379:LYS:CE | 2.43 | 0.46 |
| 20:X:376:LEU:HD11 | 20:X:398:GLU:OE2 | 2.15 | 0.46 |
| 1:A:170:ILE:HG22 | 1:A:171:ALA:O | 2.15 | 0.46 |
| 1:A:845:TYR:CD1 | 1:A:951:ILE:HD11 | 2.51 | 0.46 |
| 3:C:478:GLU:CD | 3:C:490:TYR:OH | 2.54 | 0.46 |
| 4:D:10:PRO:HG2 | 14:O:346:TRP:CE2 | 2.50 | 0.46 |
| 6:F:653:LEU:O | 6:F:656:MET:HG2 | 2.16 | 0.46 |
| 8:I:219:VAL:N | 8:I:234:PHE:O | 2.47 | 0.46 |
| 13:N:400:TYR:CZ | 13:N:404:ILE:HD11 | 2.50 | 0.46 |
| 3:P:344:ARG:HB3 | 3:P:344:ARG:CZ | 2.46 | 0.46 |
| 1:A:852:LEU:HD12 | 1:A:853:LYS:N | 2.30 | 0.46 |
| 1:A:1897:VAL:O | 1:A:1897:VAL:HG23 | 2.16 | 0.46 |
| 3:C:420:TYR:CD2 | 14:O:275:LEU:HD23 | 2.51 | 0.46 |
| 4:D:12:VAL:O | 4:D:13:THR:OG1 | 2.29 | 0.46 |
| 6:F:145:ASN:N | 6:F:145:ASN:OD1 | 2.48 | 0.46 |
| 6:F:462:LEU:HD23 | 6:H:8:VAL:HG21 | 1.98 | 0.46 |
| 6:F:699:ASP:HB3 | 6:F:702:ASN:OD1 | 2.16 | 0.46 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:F:723:LEU:CD2 | 6:F:746:VAL:HG11 | 2.45 | 0.46 |
| 8:I:206:LEU:HD22 | 8:I:570:PHE:CG | 2.50 | 0.46 |
| 8:I:607:ILE:HD12 | 8:I:607:ILE:H | 1.81 | 0.46 |
| 13:N:148:GLY:HA3 | 13:N:152:GLU:OE2 | 2.15 | 0.46 |
| 13:N:400:TYR:CE1 | 13:N:404:ILE:HD11 | 2.51 | 0.46 |
| 14:O:527:LEU:HD12 | 14:O:527:LEU:O | 2.15 | 0.46 |
| 15:R:225:LEU:HD21 | 15:R:248:THR:CG2 | 2.45 | 0.46 |
| 15:R:370:LEU:HD13 | 15:R:407:TRP:CH2 | 2.50 | 0.46 |
| 15:R:458:ILE:HG12 | 15:R:472:VAL:CG2 | 2.46 | 0.46 |
| 20:X:355:TYR:CB | 20:X:383:LEU:CA | 2.88 | 0.46 |
| 20:Y:83:HIS:O | 20:Y:86:SER:OG | 2.20 | 0.46 |
| 3:C:409:TYR:CB | 3:C:418:CYS:HB3 | 2.45 | 0.46 |
| 4:D:8:LEU:HD23 | 14:O:420:ILE:HD11 | 1.97 | 0.46 |
| 6:H:492:PRO:O | 6:H:493:SER:HB3 | 2.16 | 0.46 |
| 10:K:19:TYR:CE1 | 10:K:49:LEU:HD13 | 2.51 | 0.46 |
| 13:N:619:LEU:HG | 13:N:637:TRP:CH2 | 2.50 | 0.46 |
| 14:O:75:VAL:HG13 | 14:O:165:ASP:CG | 2.36 | 0.46 |
| 3:P:441:GLU:HG3 | 3:P:472:LYS:CE | 2.45 | 0.46 |
| 15:R:230:ASP:HB3 | 15:R:250:LYS:HG3 | 1.97 | 0.46 |
| 20:Y:269:ASP:HB3 | 20:Y:300:LEU:HD21 | 1.98 | 0.46 |
| 20:Y:458:GLN:O | 20:Y:462:LYS:HG3 | 2.15 | 0.46 |
| 1:A:776:ASN:O | 1:A:777:THR:HB | 2.16 | 0.46 |
| 1:A:1057:LEU:HA | 1:A:1061:GLU:OE1 | 2.16 | 0.46 |
| 1:A:1242:GLU:HG3 | 1:A:1242:GLU:O | 2.16 | 0.46 |
| 1:A:1279:ARG:HG2 | 1:A:1280:PRO:HD2 | 1.98 | 0.46 |
| 1:A:1364:CYS:N | 1:A:1365:PRO:CD | 2.78 | 0.46 |
| 3:C:352:LEU:HD23 | 3:C:352:LEU:C | 2.35 | 0.46 |
| 6:F:65:SER:N | 20:Y:296:GLN:HE22 | 2.14 | 0.46 |
| 8:I:52:PHE:HD1 | 8:I:743:VAL:HG21 | 1.81 | 0.46 |
| 9:J:230:ASN:OD1 | 9:J:231:LEU:N | 2.48 | 0.46 |
| 9:J:247:PHE:CZ | 9:J:277:GLU:HG3 | 2.51 | 0.46 |
| 10:K:376:LEU:HG | 10:K:407:GLU:OE1 | 2.16 | 0.46 |
| 11:L:33:LEU:CD2 | 11:L:64:VAL:HG13 | 2.46 | 0.46 |
| 13:N:280:GLU:O | 13:N:354:SER:HA | 2.16 | 0.46 |
| 3:P:47:GLY:O | 3:P:49:LEU:HD12 | 2.15 | 0.46 |
| 20:X:255:ILE:HD11 | 20:X:281:TYR:OH | 2.16 | 0.46 |
| 20:X:261:LEU:HD22 | 20:X:267:LEU:HD23 | 1.97 | 0.46 |
| 1:A:1049:VAL:HG23 | 1:A:1069:ARG:HG2 | 1.97 | 0.46 |
| 1:A:1181:LEU:HB3 | 1:A:1611:VAL:HG11 | 1.97 | 0.46 |
| 6:H:730:LYS:HD3 | 6:H:740:TYR:CE1 | 2.46 | 0.46 |
| 10:K:300:VAL:HG12 | 10:K:333:TYR:OH | 2.15 | 0.46 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:N:292:TRP:CZ3 | 13:N:296:VAL:HG21 | 2.51 | 0.46 |
| 13:N:676:TRP:CZ3 | 13:N:684:ALA:HB2 | 2.51 | 0.46 |
| 15:R:225:LEU:HD12 | 15:R:230:ASP:O | 2.04 | 0.46 |
| 15:R:382:ILE:HD11 | 15:R:398:THR:HG22 | 1.98 | 0.46 |
| 20:X:517:ASP:O | 20:X:520:VAL:HG22 | 2.16 | 0.46 |
| 20:Y:222:MET:O | 20:Y:226:VAL:HG23 | 2.16 | 0.46 |
| 20:Y:496:ILE:HD13 | 20:Y:519:LEU:HD23 | 1.97 | 0.46 |
| 1:A:95:VAL:HG13 | 1:A:100:VAL:CG2 | 2.46 | 0.45 |
| 1:A:286:SER:O | 1:A:290:GLY:N | 2.42 | 0.45 |
| 3:C:180:ARG:HG3 | 3:C:212:LEU:HD21 | 1.98 | 0.45 |
| 5:E:67:LEU:HD22 | 20:Y:342:TRP:HH2 | 1.81 | 0.45 |
| 6:F:726:LEU:HD11 | 6:F:742:LEU:HD22 | 1.98 | 0.45 |
| 9:J:295:TYR:OH | 10:K:54:HIS:HB2 | 2.17 | 0.45 |
| 11:L:98:VAL:CG1 | 11:L:108:ILE:HD13 | 2.45 | 0.45 |
| 14:O:706:CYS:HB3 | 14:O:709:ARG:HB3 | 1.97 | 0.45 |
| 15:R:229:GLY:O | 15:R:249:HIS:HD2 | 1.93 | 0.45 |
| 20:X:400:ILE:HG13 | 20:X:401:ARG:N | 2.31 | 0.45 |
| 1:A:42:LEU:HD23 | 3:C:142:GLU:CG | 2.46 | 0.45 |
| 1:A:47:GLU:OE1 | 1:A:48:LEU:N | 2.39 | 0.45 |
| 1:A:259:TYR:OH | 1:A:424:ASN:O | 2.17 | 0.45 |
| 3:C:36:LEU:HD21 | 3:C:58:LEU:CB | 2.44 | 0.45 |
| 3:C:48:LEU:N | 3:C:48:LEU:HD23 | 2.31 | 0.45 |
| 3:C:526:TRP:HE1 | 3:C:556:LEU:HD23 | 1.79 | 0.45 |
| 9:J:478:ASN:OD1 | 9:J:479:ALA:N | 2.49 | 0.45 |
| 9:J:485:ILE:HD12 | 9:J:501:TYR:CE1 | 2.51 | 0.45 |
| 12:M:9:GLY:HA3 | 3:P:329:TYR:CG | 2.52 | 0.45 |
| 13:N:519:TYR:CD2 | 13:N:554:MET:SD | 3.09 | 0.45 |
| 15:R:339:VAL:CG1 | 15:R:387:THR:HG23 | 2.45 | 0.45 |
| 20:X:425:GLU:O | 20:X:429:MET:HE2 | 2.17 | 0.45 |
| 20:Y:93:TYR:CZ | 20:Y:148:VAL:HG11 | 2.50 | 0.45 |
| 6:F:674:HIS:O | 6:F:678:VAL:HG23 | 2.16 | 0.45 |
| 9:J:247:PHE:HB3 | 9:J:278:LEU:HD21 | 1.97 | 0.45 |
| 10:K:373:TYR:CE1 | 19:W:4:ARG:HG2 | 2.52 | 0.45 |
| 13:N:245:GLN:O | 13:N:249:ARG:HG3 | 2.17 | 0.45 |
| 14:O:33:TYR:CE2 | 14:O:37:VAL:HG21 | 2.51 | 0.45 |
| 14:O:105:LEU:HD11 | 14:O:151:VAL:HG12 | 1.99 | 0.45 |
| 20:X:336:ASP:OD1 | 20:X:337:GLN:N | 2.36 | 0.45 |
| 20:Y:506:GLN:HG3 | 20:Y:508:ASP:OD1 | 2.17 | 0.45 |
| 1:A:32:PRO:O | 1:A:33:ASN:HB3 | 2.16 | 0.45 |
| 1:A:658:ASN:O | 1:A:662:THR:HG23 | 2.17 | 0.45 |
| 3:C:153:GLU:O | 3:C:157:GLU:HG2 | 2.17 | 0.45 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:F:130:ARG:HH11 | 20:Y:506:GLN:HB3 | 1.81 | 0.45 |
| 9:J:271:HIS:O | 9:J:274:THR:HG22 | 2.16 | 0.45 |
| 9:J:397:ILE:HG22 | 9:J:398:ALA:H | 1.81 | 0.45 |
| 11:L:125:THR:CA | 11:L:126:ASP:HB3 | 2.44 | 0.45 |
| 3:P:119:MET:HG2 | 3:P:158:LEU:HD21 | 1.98 | 0.45 |
| 15:R:458:ILE:HG12 | 15:R:472:VAL:CG1 | 2.47 | 0.45 |
| 20:Y:294:PHE:CZ | 20:Y:311:TYR:CG | 3.05 | 0.45 |
| 1:A:1480:GLU:HA | 1:A:1527:MET:HB3 | 1.98 | 0.45 |
| 9:J:322:TYR:CE1 | 12:M:31:ILE:HD13 | 2.52 | 0.45 |
| 10:K:349:GLU:OE1 | 15:R:150:LEU:HD22 | 2.17 | 0.45 |
| 10:K:383:ASN:HB3 | 10:K:386:LEU:HD13 | 1.99 | 0.45 |
| 12:M:9:GLY:HA3 | 3:P:329:TYR:CB | 2.46 | 0.45 |
| 13:N:659:VAL:HG22 | 13:N:663:GLN:HB2 | 1.98 | 0.45 |
| 3:P:128:LYS:HA | 3:P:128:LYS:HE3 | 1.98 | 0.45 |
| 15:R:146:SER:N | 15:R:147:PRO:HD3 | 2.32 | 0.45 |
| 15:R:458:ILE:HG13 | 15:R:472:VAL:HG11 | 1.98 | 0.45 |
| 16:S:374:SER:OG | 16:S:387:TYR:O | 2.33 | 0.45 |
| 16:S:379:ILE:HG21 | 16:S:410:LEU:HB3 | 1.99 | 0.45 |
| 20:Y:517:ASP:O | 20:Y:520:VAL:HG22 | 2.16 | 0.45 |
| 20:Y:519:LEU:HD13 | 20:Y:527:GLU:CB | 2.46 | 0.45 |
| 1:A:1821:LEU:HD21 | 1:A:1852:LYS:HB2 | 1.99 | 0.45 |
| 2:B:8:TRP:HD1 | 13:N:644:VAL:HG12 | 1.72 | 0.45 |
| 3:C:30:ARG:HG3 | 3:C:30:ARG:O | 2.16 | 0.45 |
| 6:F:537:GLU:OE1 | 6:F:600:TYR:CE2 | 2.70 | 0.45 |
| 6:F:755:LEU:HD12 | 6:F:755:LEU:HA | 1.87 | 0.45 |
| 8:I:26:LEU:CB | 8:I:37:LEU:HB3 | 2.46 | 0.45 |
| 8:I:245:LEU:HB3 | 8:I:246:PRO:HD3 | 1.97 | 0.45 |
| 10:K:509:ARG:HG3 | 10:K:509:ARG:O | 2.16 | 0.45 |
| 15:R:292:MET:HG3 | 15:R:307:ARG:NH2 | 2.32 | 0.45 |
| 15:R:353:GLU:HG3 | 15:R:385:TRP:HH2 | 1.82 | 0.45 |
| 15:R:407:TRP:HA | 15:R:414:LEU:CD1 | 2.47 | 0.45 |
| 20:X:168:THR:HB | 20:X:169:PRO:HD2 | 1.98 | 0.45 |
| 20:X:294:PHE:CE1 | 20:X:311:TYR:CG | 3.05 | 0.45 |
| 20:Y:77:TYR:CE1 | 20:Y:107:LYS:HB2 | 2.51 | 0.45 |
| 20:Y:100:TYR:HB2 | 20:Y:142:LEU:HD13 | 1.99 | 0.45 |
| 1:A:1232:ILE:HD11 | 1:A:1235:LEU:HD22 | 1.98 | 0.45 |
| 1:A:1420:LEU:HG | 17:T:3:ALA:HB2 | 1.99 | 0.45 |
| 6:F:553:SER:HA | 6:F:576:CYS:SG | 2.57 | 0.45 |
| 9:J:294:LEU:HD12 | 10:K:54:HIS:NE2 | 2.31 | 0.45 |
| 13:N:285:PHE:O | 13:N:289:PHE:CD2 | 2.69 | 0.45 |
| 13:N:386:LEU:HD21 | 13:N:399:LEU:HD22 | 1.99 | 0.45 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:N:522:LEU:HD13 | 13:N:523:LEU:HD23 | 1.99 | 0.45 |
| 13:N:570:ILE:HA | 13:N:573:ASN:ND2 | 2.32 | 0.45 |
| 15:R:191:ASN:O | 15:R:234:SER:HA | 2.17 | 0.45 |
| 15:R:233:THR:HG21 | 15:R:249:HIS:HA | 1.99 | 0.45 |
| 15:R:406:ALA:C | 15:R:414:LEU:CD1 | 2.82 | 0.45 |
| 20:X:77:TYR:CE1 | 20:X:107:LYS:HB2 | 2.52 | 0.45 |
| 20:X:506:GLN:HG3 | 20:X:508:ASP:OD1 | 2.17 | 0.45 |
| 1:A:430:VAL:HG12 | 1:A:444:PHE:HA | 1.98 | 0.45 |
| 1:A:1160:TYR:OH | 14:O:337:HIS:ND1 | 2.44 | 0.45 |
| 1:A:1205:SER:O | 1:A:1209:LEU:HG | 2.17 | 0.45 |
| 1:A:1313:LEU:HD13 | 1:A:1316:MET:HB2 | 1.99 | 0.45 |
| 7:G:23:ARG:CG | 9:J:525:MET:HE1 | 2.47 | 0.45 |
| 6:H:723:LEU:CD2 | 6:H:746:VAL:HG11 | 2.45 | 0.45 |
| 8:I:70:CYS:C | 8:I:71:LEU:HD12 | 2.37 | 0.45 |
| 9:J:297:SER:O | 9:J:329:LEU:HD11 | 2.17 | 0.45 |
| 9:J:354:MET:HE1 | 9:J:374:ILE:HA | 1.97 | 0.45 |
| 13:N:560:MET:HE1 | 13:N:601:TRP:CD1 | 2.52 | 0.45 |
| 3:P:266:VAL:HG12 | 3:P:289:LEU:HD23 | 1.98 | 0.45 |
| 15:R:202:SER:HB2 | 15:R:211:LEU:CD2 | 2.47 | 0.45 |
| 15:R:251:GLY:O | 15:R:270:HIS:HB2 | 2.17 | 0.45 |
| 20:X:496:ILE:HD13 | 20:X:519:LEU:HD23 | 1.99 | 0.45 |
| 20:X:519:LEU:HD13 | 20:X:527:GLU:CB | 2.47 | 0.45 |
| 20:Y:261:LEU:HD22 | 20:Y:267:LEU:HD23 | 1.99 | 0.45 |
| 1:A:939:PHE:CZ | 1:A:944:LEU:HB2 | 2.52 | 0.45 |
| 1:A:1276:GLU:HB3 | 1:A:1294:TYR:HE1 | 1.82 | 0.45 |
| 3:C:403:TYR:CD1 | 3:C:403:TYR:C | 2.90 | 0.45 |
| 3:C:478:GLU:OE2 | 3:C:490:TYR:OH | 2.35 | 0.45 |
| 3:C:480:LEU:O | 3:C:482:GLU:N | 2.49 | 0.45 |
| 6:H:723:LEU:HG | 6:H:746:VAL:HG11 | 1.99 | 0.45 |
| 6:H:754:HIS:CE1 | 6:H:755:LEU:HD13 | 2.52 | 0.45 |
| 10:K:145:ASN:HB3 | 10:K:148:LEU:HB2 | 1.99 | 0.45 |
| 13:N:292:TRP:CH2 | 13:N:296:VAL:HG21 | 2.52 | 0.45 |
| 13:N:386:LEU:O | 13:N:388:HIS:HB3 | 2.16 | 0.45 |
| 14:O:292:GLY:HA3 | 14:O:336:ASP:HB3 | 1.99 | 0.45 |
| 14:O:532:VAL:HA | 14:O:535:ILE:HD12 | 1.98 | 0.45 |
| 14:O:631:GLN:OE1 | 14:O:640:ALA:HA | 2.17 | 0.45 |
| 14:O:699:ASN:O | 14:O:702:ALA:HB3 | 2.17 | 0.45 |
| 3:P:48:LEU:N | 3:P:48:LEU:HD23 | 2.32 | 0.45 |
| 3:P:180:ARG:HG3 | 3:P:212:LEU:HD21 | 1.99 | 0.45 |
| 3:P:238:TYR:CB | 3:P:247:ALA:HB2 | 2.47 | 0.45 |
| 3:P:251:TYR:CZ | 3:P:268:GLN:HG3 | 2.52 | 0.45 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:94:LEU:CD1 | 15:R:161:LEU:HD21 | 2.46 | 0.45 |
| 1:A:1236:LEU:HD12 | 15:R:161:LEU:CD1 | 2.47 | 0.45 |
| 4:D:54:ILE:HG12 | 9:J:506:LEU:HD23 | 1.99 | 0.45 |
| 6:F:149:TRP:CZ3 | 6:F:152:PHE:CD2 | 3.05 | 0.45 |
| 6:H:707:PHE:C | 6:H:707:PHE:CD1 | 2.91 | 0.45 |
| 8:I:13:VAL:HG22 | 8:I:744:PHE:CE2 | 2.52 | 0.45 |
| 8:I:73:TRP:CG | 8:I:80:LEU:HD13 | 2.52 | 0.45 |
| 8:I:639:LEU:HB2 | 8:I:652:VAL:HG12 | 1.98 | 0.45 |
| 9:J:376:LEU:CD2 | 9:J:407:GLU:HG2 | 2.46 | 0.45 |
| 11:L:111:LEU:HD11 | 11:L:122:VAL:HG22 | 1.99 | 0.45 |
| 13:N:501:ILE:HD12 | 13:N:501:ILE:N | 2.32 | 0.45 |
| 13:N:512:LYS:HG2 | 13:N:549:PHE:CZ | 2.52 | 0.45 |
| 13:N:552:ALA:HB3 | 13:N:553:PRO:HD3 | 1.98 | 0.45 |
| 15:R:230:ASP:HA | 15:R:250:LYS:HG3 | 1.99 | 0.45 |
| 15:R:267:LEU:HB3 | 15:R:296:ARG:HH11 | 1.65 | 0.45 |
| 20:X:235:TRP:CZ2 | 20:Y:59:LEU:HD11 | 2.53 | 0.45 |
| 20:X:350:PHE:HD1 | 20:X:382:ALA:HA | 1.79 | 0.45 |
| 1:A:1236:LEU:CB | 15:R:153:VAL:HG21 | 2.47 | 0.44 |
| 6:F:492:PRO:O | 6:F:493:SER:HB3 | 2.16 | 0.44 |
| 9:J:322:TYR:CZ | 12:M:31:ILE:HD13 | 2.52 | 0.44 |
| 9:J:413:PHE:CD1 | 9:J:454:VAL:HG12 | 2.53 | 0.44 |
| 10:K:276:VAL:HA | 10:K:311:MET:CE | 2.47 | 0.44 |
| 11:L:98:VAL:HG11 | 11:L:108:ILE:HD13 | 1.98 | 0.44 |
| 14:O:114:ASP:CA | 14:O:117:ASP:OD1 | 2.64 | 0.44 |
| 20:X:100:TYR:CB | 20:X:142:LEU:HD21 | 2.42 | 0.44 |
| 20:X:271:VAL:CG1 | 20:X:304:LEU:CD2 | 2.95 | 0.44 |
| 20:Y:349:SER:CB | 20:Y:358:ALA:HB2 | 2.45 | 0.44 |
| 20:Y:503:LEU:HD12 | 20:Y:515:LEU:HD13 | 1.98 | 0.44 |
| 1:A:93:LEU:HB2 | 1:A:128:TRP:CH2 | 2.52 | 0.44 |
| 1:A:249:LEU:HD12 | 1:A:250:ASN:N | 2.31 | 0.44 |
| 1:A:1274:LEU:HG | 1:A:1302:LEU:HD11 | 1.99 | 0.44 |
| 1:A:1469:CYS:HB2 | 1:A:1488:LEU:CD2 | 2.47 | 0.44 |
| 1:A:1675:GLU:CG | 1:A:1676:LEU:N | 2.80 | 0.44 |
| 3:C:360:LEU:HD23 | 12:M:14:LEU:HD13 | 2.00 | 0.44 |
| 8:I:360:LEU:HD21 | 8:I:390:ILE:HG23 | 1.98 | 0.44 |
| 8:I:617:ALA:O | 8:I:618:ILE:HD13 | 2.17 | 0.44 |
| 9:J:281:ALA:CA | 9:J:311:MET:CE | 2.93 | 0.44 |
| 13:N:655:LEU:HA | 13:N:724:ARG:O | 2.17 | 0.44 |
| 14:O:359:VAL:HG13 | 14:O:360:LEU:HD12 | 1.99 | 0.44 |
| 15:R:106:LYS:HA | 15:R:106:LYS:HE3 | 2.00 | 0.44 |
| 15:R:467:LEU:HD23 | 16:S:325:LEU:HD22 | 1.99 | 0.44 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:X:491:LYS:C | 20:X:494:ASP:OD1 | 2.54 | 0.44 |
| 20:Y:336:ASP:OD1 | 20:Y:337:GLN:N | 2.41 | 0.44 |
| 20:Y:474:ASP:OD2 | 20:Y:505:ASN:ND2 | 2.51 | 0.44 |
| 1:A:1191:LEU:HD12 | 15:R:59:VAL:HA | 1.99 | 0.44 |
| 1:A:1233:PRO:HA | 1:A:1236:LEU:CD2 | 2.47 | 0.44 |
| 1:A:1399:VAL:HG11 | 1:A:1404:LEU:HG | 1.99 | 0.44 |
| 6:F:540:SER:OG | 6:F:575:ASN:ND2 | 2.33 | 0.44 |
| 6:H:761:SER:O | 6:H:765:ASP:CB | 2.64 | 0.44 |
| 9:J:185:LEU:HD11 | 9:J:205:PHE:HB2 | 1.99 | 0.44 |
| 10:K:42:TRP:HA | 10:K:42:TRP:CE3 | 2.51 | 0.44 |
| 10:K:497:ASN:OD1 | 10:K:497:ASN:N | 2.51 | 0.44 |
| 12:M:11:ILE:HG23 | 12:M:15:ILE:CD1 | 2.47 | 0.44 |
| 13:N:76:VAL:O | 13:N:80:GLN:HB3 | 2.17 | 0.44 |
| 13:N:120:SER:O | 13:N:124:PRO:HD3 | 2.13 | 0.44 |
| 13:N:276:ARG:O | 13:N:277:CYS:C | 2.55 | 0.44 |
| 1:A:39:LEU:HD12 | 14:O:248:PRO:HB3 | 1.99 | 0.44 |
| 1:A:1047:VAL:O | 1:A:1109:GLY:HA2 | 2.17 | 0.44 |
| 1:A:1477:ALA:HB1 | 1:A:1574:LEU:HD12 | 2.00 | 0.44 |
| 6:F:594:ILE:HD11 | 6:F:604:TYR:HA | 1.97 | 0.44 |
| 8:I:32:ARG:CD | 13:N:388:HIS:CE1 | 3.00 | 0.44 |
| 10:K:284:LEU:HD12 | 10:K:311:MET:CE | 2.48 | 0.44 |
| 13:N:102:ALA:HA | 13:N:107:CYS:C | 2.37 | 0.44 |
| 13:N:122:LEU:O | 13:N:126:LEU:CB | 2.65 | 0.44 |
| 13:N:180:PHE:CE2 | 13:N:240:PHE:HB3 | 2.51 | 0.44 |
| 14:O:706:CYS:O | 14:O:708:GLU:N | 2.50 | 0.44 |
| 20:Y:417:TYR:CD2 | 20:Y:429:MET:CE | 3.01 | 0.44 |
| 1:A:1134:TRP:CD2 | 1:A:1203:MET:HE1 | 2.52 | 0.44 |
| 6:F:533:VAL:HB | 6:F:562:MET:HE1 | 2.00 | 0.44 |
| 6:F:726:LEU:HD11 | 6:F:742:LEU:CD2 | 2.47 | 0.44 |
| 6:H:656:MET:O | 6:H:660:LYS:HG3 | 2.18 | 0.44 |
| 13:N:520:ARG:HG3 | 13:N:557:CYS:SG | 2.58 | 0.44 |
| 13:N:681:LEU:HD22 | 13:N:713:PHE:CZ | 2.52 | 0.44 |
| 14:O:127:HIS:O | 14:O:128:LYS:HB3 | 2.17 | 0.44 |
| 14:O:652:LEU:HA | 14:O:660:LYS:HG3 | 2.00 | 0.44 |
| 1:A:793:LEU:HD23 | 1:A:793:LEU:C | 2.37 | 0.44 |
| 1:A:1276:GLU:CD | 1:A:1294:TYR:HH | 2.21 | 0.44 |
| 11:L:113:LEU:HB3 | 11:L:116:PRO:HG3 | 2.00 | 0.44 |
| 12:M:12:LEU:HD13 | 3:P:360:LEU:HD23 | 1.99 | 0.44 |
| 13:N:425:ARG:HG2 | 13:N:425:ARG:NH1 | 2.32 | 0.44 |
| 20:X:355:TYR:HD1 | 20:X:382:ALA:O | 1.26 | 0.44 |
| 1:A:759:ILE:N | 1:A:760:PRO:HD2 | 2.32 | 0.44 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:C:60:PHE:CG | 3:P:89:LEU:HD12 | 2.53 | 0.44 |
| 6:H:110:PHE:CD2 | 6:H:117:THR:HG21 | 2.52 | 0.44 |
| 6:H:486:ASN:O | 6:H:490:HIS:HD2 | 2.01 | 0.44 |
| 10:K:288:SER:HB3 | 12:M:57:TRP:CZ3 | 2.53 | 0.44 |
| 14:O:416:GLU:O | 14:O:420:ILE:HG22 | 2.18 | 0.44 |
| 14:O:643:LEU:C | 14:O:643:LEU:HD23 | 2.38 | 0.44 |
| 14:O:669:LYS:HE3 | 14:O:751:LEU:HD13 | 1.99 | 0.44 |
| 3:P:441:GLU:HG3 | 3:P:472:LYS:HZ1 | 1.81 | 0.44 |
| 15:R:429:LYS:HD3 | 15:R:433:LEU:HD23 | 2.00 | 0.44 |
| 20:X:222:MET:O | 20:X:226:VAL:HG23 | 2.18 | 0.44 |
| 20:X:474:ASP:OD2 | 20:X:505:ASN:ND2 | 2.50 | 0.44 |
| 20:Y:271:VAL:CG1 | 20:Y:304:LEU:CD2 | 2.96 | 0.44 |
| 20:Y:437:LEU:HD22 | 20:Y:444:LEU:CD2 | 2.47 | 0.44 |
| 1:A:1053:GLN:N | 1:A:1053:GLN:OE1 | 2.51 | 0.44 |
| 1:A:1623:ASP:O | 1:A:1624:VAL:HB | 2.18 | 0.44 |
| 1:A:1699:VAL:HG23 | 1:A:1699:VAL:O | 2.18 | 0.44 |
| 3:C:119:MET:HG2 | 3:C:158:LEU:HD21 | 2.00 | 0.44 |
| 4:D:8:LEU:CD2 | 14:O:420:ILE:HD11 | 2.47 | 0.44 |
| 5:E:105:PHE:HD1 | 10:K:510:ARG:HD3 | 1.83 | 0.44 |
| 6:F:758:MET:O | 6:F:762:TRP:CD1 | 2.70 | 0.44 |
| 8:I:167:LEU:HD12 | 8:I:168:LEU:N | 2.32 | 0.44 |
| 9:J:445:GLU:CG | 9:J:446:PRO:HD3 | 2.33 | 0.44 |
| 13:N:75:PHE:CG | 13:N:79:LEU:HD23 | 2.53 | 0.44 |
| 14:O:143:TYR:CD1 | 14:O:143:TYR:C | 2.91 | 0.44 |
| 14:O:467:ALA:HB1 | 14:O:506:LEU:CD1 | 2.47 | 0.44 |
| 20:X:281:TYR:HB3 | 20:X:290:SER:OG | 2.18 | 0.44 |
| 20:X:294:PHE:CD1 | 20:X:311:TYR:CE1 | 3.06 | 0.44 |
| 1:A:254:SER:OG | 1:A:271:LEU:HB2 | 2.18 | 0.44 |
| 1:A:1502:PRO:O | 1:A:1503:ASN:CB | 2.65 | 0.44 |
| 3:C:483:SER:HA | 3:C:515:TYR:OH | 2.18 | 0.44 |
| 6:F:42:PHE:HB2 | 6:F:71:CYS:SG | 2.57 | 0.44 |
| 6:H:545:HIS:HE1 | 11:L:182:SER:O | 2.01 | 0.44 |
| 6:H:726:LEU:HD11 | 6:H:742:LEU:CD2 | 2.48 | 0.44 |
| 8:I:101:LEU:HD21 | 8:I:168:LEU:HD11 | 2.00 | 0.44 |
| 9:J:281:ALA:CA | 9:J:311:MET:HE1 | 2.48 | 0.44 |
| 9:J:337:TRP:HB3 | 9:J:360:ALA:HB2 | 1.99 | 0.44 |
| 10:K:338:ILE:HG23 | 10:K:342:HIS:CE1 | 2.53 | 0.44 |
| 14:O:129:THR:O | 14:O:130:SER:CB | 2.64 | 0.44 |
| 14:O:631:GLN:HB2 | 14:O:640:ALA:HB2 | 2.00 | 0.44 |
| 15:R:316:VAL:O | 15:R:316:VAL:HG13 | 2.12 | 0.44 |
| 16:S:375:LEU:HD22 | 16:S:375:LEU:N | 2.33 | 0.44 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:X:417:TYR:CD2 | 20:X:429:MET:CE | 3.01 | 0.44 |
| 1:A:39:LEU:CD1 | 14:O:248:PRO:HB3 | 2.47 | 0.43 |
| 5:E:67:LEU:HD22 | 20:Y:342:TRP:CH2 | 2.53 | 0.43 |
| 6:F:58:TYR:OH | 6:F:87:GLU:OE1 | 2.35 | 0.43 |
| 6:H:553:SER:HA | 6:H:576:CYS:SG | 2.58 | 0.43 |
| 8:I:224:SER:HB3 | 8:I:229:SER:HA | 1.98 | 0.43 |
| 9:J:19:TYR:CE1 | 9:J:49:LEU:HD13 | 2.53 | 0.43 |
| 13:N:511:SER:O | 13:N:512:LYS:CG | 2.55 | 0.43 |
| 20:X:503:LEU:HD12 | 20:X:515:LEU:HD13 | 1.99 | 0.43 |
| 1:A:1134:TRP:CE2 | 1:A:1203:MET:HE2 | 2.53 | 0.43 |
| 6:F:67:THR:HG21 | 20:Y:263:LYS:HD3 | 2.00 | 0.43 |
| 13:N:75:PHE:O | 13:N:77:GLU:C | 2.57 | 0.43 |
| 14:O:215:PHE:CD1 | 14:O:215:PHE:C | 2.90 | 0.43 |
| 20:X:181:LYS:HE3 | 20:X:370:SER:HB2 | 2.00 | 0.43 |
| 20:X:201:LEU:O | 20:X:203:LEU:N | 2.52 | 0.43 |
| 20:X:355:TYR:CB | 20:X:382:ALA:C | 2.78 | 0.43 |
| 20:X:452:LEU:HB3 | 20:X:461:ALA:HB2 | 2.00 | 0.43 |
| 20:Y:343:VAL:HG13 | 20:Y:378:LEU:HD22 | 2.00 | 0.43 |
| 1:A:625:ILE:O | 1:A:629:LEU:HG | 2.17 | 0.43 |
| 1:A:659:LEU:HD12 | 1:A:659:LEU:C | 2.38 | 0.43 |
| 1:A:961:HIS:ND1 | 1:A:964:GLU:OE2 | 2.51 | 0.43 |
| 6:H:531:TYR:O | 6:H:562:MET:CE | 2.66 | 0.43 |
| 6:H:592:ARG:HD3 | 6:H:592:ARG:HA | 1.80 | 0.43 |
| 10:K:163:CYS:O | 10:K:163:CYS:SG | 2.77 | 0.43 |
| 10:K:509:ARG:CG | 10:K:512:ASP:HB2 | 2.48 | 0.43 |
| 11:L:108:ILE:HD12 | 11:L:125:THR:O | 2.19 | 0.43 |
| 11:L:141:VAL:HG11 | 11:L:151:THR:HG21 | 2.00 | 0.43 |
| 14:O:75:VAL:HG13 | 14:O:165:ASP:HB2 | 2.00 | 0.43 |
| 3:P:389:ARG:HA | 3:P:392:ILE:CG2 | 2.48 | 0.43 |
| 20:X:350:PHE:HE1 | 20:X:378:LEU:O | 1.86 | 0.43 |
| 20:Y:45:ALA:HB2 | 20:Y:82:TYR:CD2 | 2.52 | 0.43 |
| 1:A:256:VAL:O | 1:A:268:VAL:HA | 2.17 | 0.43 |
| 1:A:1265:ALA:HB2 | 1:A:1309:HIS:HD2 | 1.84 | 0.43 |
| 6:H:747:TYR:CE2 | 6:H:755:LEU:HD23 | 2.53 | 0.43 |
| 8:I:116:MET:SD | 8:I:210:LEU:HG | 2.58 | 0.43 |
| 13:N:655:LEU:HD12 | 13:N:724:ARG:O | 2.18 | 0.43 |
| 15:R:94:LEU:O | 15:R:98:GLU:HG2 | 2.18 | 0.43 |
| 15:R:182:PRO:CB | 16:S:322:ARG:HB2 | 2.48 | 0.43 |
| 15:R:400:SER:OG | 15:R:422:GLN:CG | 2.67 | 0.43 |
| 15:R:429:LYS:HB2 | 15:R:433:LEU:HD23 | 1.97 | 0.43 |
| 19:W:14:ASP:OD1 | 19:W:14:ASP:N | 2.52 | 0.43 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:X:437:LEU:HD22 | 20:X:444:LEU:CD2 | 2.49 | 0.43 |
| 20:Y:475:TYR:CE1 | 20:Y:477:LYS:HB2 | 2.53 | 0.43 |
| 20:Y:491:LYS:C | 20:Y:494:ASP:OD1 | 2.54 | 0.43 |
| 20:Y:549:MET:O | 20:Y:552:MET:HG3 | 2.19 | 0.43 |
| 1:A:1060:HIS:O | 1:A:1063:ILE:HG22 | 2.19 | 0.43 |
| 1:A:1239:THR:HG23 | 1:A:1241:THR:HG23 | 2.01 | 0.43 |
| 6:F:128:THR:O | 6:F:129:ASP:CB | 2.66 | 0.43 |
| 14:O:312:CYS:SG | 14:O:350:LEU:HD21 | 2.58 | 0.43 |
| 14:O:583:VAL:O | 14:O:587:VAL:HG23 | 2.19 | 0.43 |
| 3:P:36:LEU:HD21 | 3:P:58:LEU:CB | 2.48 | 0.43 |
| 3:P:297:ILE:HG21 | 3:P:330:ARG:NH1 | 2.34 | 0.43 |
| 15:R:94:LEU:HD11 | 15:R:161:LEU:HD21 | 2.00 | 0.43 |
| 15:R:146:SER:N | 15:R:147:PRO:CD | 2.81 | 0.43 |
| 15:R:160:LEU:HD12 | 15:R:160:LEU:O | 2.18 | 0.43 |
| 15:R:404:ASN:HB3 | 15:R:449:LEU:CD2 | 2.15 | 0.43 |
| 1:A:213:MET:HE2 | 1:A:216:PRO:HA | 2.00 | 0.43 |
| 1:A:1080:LEU:HB2 | 1:A:1081:PRO:HD3 | 1.99 | 0.43 |
| 1:A:1758:CYS:O | 1:A:1771:LEU:HD21 | 2.18 | 0.43 |
| 6:H:639:TYR:CZ | 6:H:643:MET:SD | 3.12 | 0.43 |
| 8:I:266:ASN:HA | 8:I:526:LYS:NZ | 2.33 | 0.43 |
| 10:K:153:TYR:CE1 | 10:K:169:LEU:HD13 | 2.53 | 0.43 |
| 13:N:589:PHE:O | 13:N:591:VAL:HG13 | 2.18 | 0.43 |
| 13:N:612:PRO:HB3 | 13:N:665:VAL:HG23 | 2.00 | 0.43 |
| 14:O:64:LEU:HD12 | 14:O:65:LEU:N | 2.33 | 0.43 |
| 15:R:48:PHE:O | 15:R:49:ILE:CG1 | 2.67 | 0.43 |
| 15:R:270:HIS:CD2 | 15:R:294:LEU:HD12 | 2.53 | 0.43 |
| 15:R:295:GLN:O | 15:R:304:GLN:HA | 2.18 | 0.43 |
| 20:X:203:LEU:HA | 20:X:206:ILE:HD12 | 1.99 | 0.43 |
| 20:X:229:THR:CG2 | 20:X:233:LEU:HD12 | 2.47 | 0.43 |
| 20:X:309:ASP:OD1 | 20:X:343:VAL:HG11 | 2.19 | 0.43 |
| 20:Y:334:ILE:HG13 | 20:Y:335:SER:N | 2.34 | 0.43 |
| 1:A:173:LEU:HA | 1:A:174:PRO:HD2 | 1.88 | 0.43 |
| 1:A:1191:LEU:HD21 | 15:R:62:HIS:CE1 | 2.53 | 0.43 |
| 6:F:118:LEU:HD21 | 6:F:140:LYS:HB3 | 2.01 | 0.43 |
| 9:J:129:LYS:O | 9:J:132:ILE:HG22 | 2.19 | 0.43 |
| 13:N:304:PHE:CD1 | 13:N:324:TRP:HH2 | 2.37 | 0.43 |
| 14:O:114:ASP:C | 14:O:117:ASP:OD1 | 2.56 | 0.43 |
| 15:R:196:SER:HB3 | 15:R:237:TRP:CD2 | 2.54 | 0.43 |
| 20:X:347:CYS:N | 20:X:378:LEU:HD21 | 2.34 | 0.43 |
| 20:X:355:TYR:HD1 | 20:X:382:ALA:CA | 2.26 | 0.43 |
| 1:A:944:LEU:HD12 | 1:A:944:LEU:O | 2.17 | 0.43 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:A:1375:TYR:HB3 | 1:A:1378:THR:CG2 | 2.49 | 0.43 |
| 1:A:1624:VAL:HG22 | 1:A:1698:TYR:HB3 | 2.01 | 0.43 |
| 3:C:416:PHE:CD2 | 14:O:323:ALA:HB2 | 2.53 | 0.43 |
| 3:C:521:PHE:HD1 | 3:C:553:ILE:HG22 | 1.82 | 0.43 |
| 5:E:60:SER:O | 5:E:63:VAL:HG12 | 2.19 | 0.43 |
| 6:F:745:LYS:NZ | 6:F:815:ALA:HB1 | 2.34 | 0.43 |
| 9:J:214:LYS:HD2 | 9:J:400:GLU:OE2 | 2.19 | 0.43 |
| 10:K:355:ALA:O | 10:K:359:THR:HG22 | 2.19 | 0.43 |
| 10:K:487:TYR:CE2 | 10:K:491:LEU:HD11 | 2.54 | 0.43 |
| 10:K:496:GLU:HB2 | 10:K:526:TYR:CE1 | 2.51 | 0.43 |
| 11:L:13:PRO:HG3 | 11:L:78:CYS:SG | 2.59 | 0.43 |
| 13:N:78:VAL:O | 13:N:80:GLN:C | 2.50 | 0.43 |
| 13:N:241:HIS:CE1 | 13:N:302:LYS:HE2 | 2.54 | 0.43 |
| 13:N:559:VAL:HG11 | 13:N:600:PHE:CE1 | 2.54 | 0.43 |
| 15:R:431:PRO:CB | 15:R:432:SER:C | 2.87 | 0.43 |
| 20:X:449:THR:HG21 | 20:X:465:LEU:HA | 2.01 | 0.43 |
| 1:A:105:GLY:O | 1:A:111:LEU:HG | 2.19 | 0.43 |
| 1:A:1074:CYS:SG | 1:A:1107:LEU:CB | 3.07 | 0.43 |
| 3:C:306:LEU:HD12 | 3:C:307:LEU:N | 2.34 | 0.43 |
| 3:C:414:MET:HG2 | 14:O:330:ILE:HD11 | 2.01 | 0.43 |
| 4:D:18:PHE:CE1 | 4:D:20:LEU:HD11 | 2.53 | 0.43 |
| 6:F:50:ARG:HE | 6:H:19:TYR:HE1 | 1.66 | 0.43 |
| 6:H:496:TYR:CE1 | 6:H:505:ILE:HD11 | 2.54 | 0.43 |
| 8:I:32:ARG:HB2 | 8:I:34:LEU:CD2 | 2.49 | 0.43 |
| 8:I:276:TRP:CE2 | 8:I:476:GLY:HA2 | 2.54 | 0.43 |
| 10:K:208:LYS:O | 10:K:211:LYS:HG2 | 2.19 | 0.43 |
| 13:N:502:ILE:HA | 13:N:505:LEU:HD12 | 2.00 | 0.43 |
| 14:O:516:PHE:HB2 | 14:O:535:ILE:HD11 | 1.99 | 0.43 |
| 14:O:534:GLY:O | 14:O:538:LEU:HD12 | 2.18 | 0.43 |
| 3:P:248:LEU:HD21 | 3:P:273:TYR:CZ | 2.53 | 0.43 |
| 20:X:99:LYS:HD3 | 20:X:102:MET:CE | 2.49 | 0.43 |
| 20:Y:168:THR:HB | 20:Y:169:PRO:HD2 | 1.99 | 0.43 |
| 1:A:455:VAL:HB | 1:A:471:VAL:HG12 | 2.00 | 0.43 |
| 1:A:844:ILE:HD11 | 1:A:873:VAL:HG13 | 2.01 | 0.43 |
| 1:A:1621:PRO:HG3 | 1:A:1653:ALA:CB | 2.49 | 0.43 |
| 1:A:1640:GLY:HA2 | 1:A:1644:TYR:CE1 | 2.54 | 0.43 |
| 6:F:98:ASN:OD1 | 6:F:98:ASN:N | 2.52 | 0.43 |
| 6:H:762:TRP:O | 6:H:766:LEU:N | 2.50 | 0.43 |
| 8:I:717:MET:HG3 | 8:I:719:ALA:HB2 | 2.00 | 0.43 |
| 9:J:177:THR:HG22 | 9:J:180:GLU:HG2 | 2.01 | 0.43 |
| 10:K:8:LYS:HA | 10:K:8:LYS:HD2 | 1.90 | 0.43 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:K:185:LEU:HD13 | 10:K:209:LEU:CD1 | 2.41 | 0.43 |
| 13:N:181:LEU:HD22 | 13:N:299:TRP:NE1 | 2.34 | 0.43 |
| 13:N:345:PHE:CD1 | 13:N:345:PHE:C | 2.91 | 0.43 |
| 14:O:216:LEU:HD22 | 14:O:256:LEU:CD1 | 2.49 | 0.43 |
| 20:X:100:TYR:CB | 20:X:142:LEU:CD2 | 2.96 | 0.43 |
| 20:X:359:LEU:HB2 | 20:X:383:LEU:HG | 2.01 | 0.43 |
| 20:X:417:TYR:CD2 | 20:X:429:MET:HE3 | 2.54 | 0.43 |
| 20:X:452:LEU:HG | 20:X:457:THR:OG1 | 2.19 | 0.43 |
| 20:Y:452:LEU:HB3 | 20:Y:461:ALA:HB2 | 2.00 | 0.43 |
| 1:A:627:PHE:CD1 | 1:A:627:PHE:C | 2.92 | 0.42 |
| 6:F:639:TYR:CD1 | 6:F:639:TYR:C | 2.93 | 0.42 |
| 9:J:445:GLU:CA | 9:J:474:LEU:HD23 | 2.48 | 0.42 |
| 10:K:222:GLU:O | 10:K:225:ASP:O | 2.36 | 0.42 |
| 11:L:22:VAL:HG12 | 11:L:161:PRO:HA | 2.01 | 0.42 |
| 13:N:76:VAL:O | 13:N:78:VAL:N | 2.52 | 0.42 |
| 13:N:265:LEU:HD23 | 13:N:265:LEU:C | 2.40 | 0.42 |
| 13:N:354:SER:O | 13:N:357:ALA:HB3 | 2.19 | 0.42 |
| 14:O:33:TYR:HA | 14:O:161:TYR:OH | 2.18 | 0.42 |
| 15:R:487:ASN:OD1 | 15:R:490:THR:HG23 | 2.17 | 0.42 |
| 20:X:242:ALA:O | 20:X:246:VAL:HG23 | 2.19 | 0.42 |
| 20:X:359:LEU:CD1 | 20:X:383:LEU:HD11 | 2.34 | 0.42 |
| 1:A:174:PRO:HD2 | 1:A:220:ILE:HD12 | 2.02 | 0.42 |
| 1:A:246:ILE:O | 1:A:246:ILE:HG23 | 2.19 | 0.42 |
| 1:A:591:VAL:O | 1:A:591:VAL:HG23 | 2.18 | 0.42 |
| 1:A:1487:CYS:SG | 1:A:1488:LEU:N | 2.92 | 0.42 |
| 3:C:407:GLN:HA | 3:C:422:TYR:OH | 2.18 | 0.42 |
| 4:D:54:ILE:HD12 | 3:P:389:ARG:CZ | 2.49 | 0.42 |
| 6:F:563:ASP:OD1 | 6:F:564:LYS:O | 2.37 | 0.42 |
| 6:H:550:VAL:HG13 | 6:H:551:ALA:N | 2.34 | 0.42 |
| 8:I:32:ARG:HB2 | 8:I:34:LEU:HD22 | 2.02 | 0.42 |
| 8:I:90:ILE:HD12 | 8:I:106:VAL:HG11 | 2.02 | 0.42 |
| 9:J:42:TRP:CE3 | 9:J:42:TRP:HA | 2.53 | 0.42 |
| 13:N:409:VAL:O | 13:N:410:ILE:CG1 | 2.66 | 0.42 |
| 13:N:434:THR:O | 13:N:437:GLN:N | 2.52 | 0.42 |
| 14:O:402:LEU:HD23 | 14:O:402:LEU:HA | 1.90 | 0.42 |
| 16:S:392:GLN:C | 16:S:407:THR:HG22 | 2.39 | 0.42 |
| 1:A:1369:LEU:HD23 | 1:A:1369:LEU:HA | 1.85 | 0.42 |
| 3:C:389:ARG:NE | 14:O:279:ASP:OD2 | 2.39 | 0.42 |
| 8:I:48:ARG:HG3 | 8:I:55:VAL:CG2 | 2.50 | 0.42 |
| 8:I:73:TRP:CZ3 | 8:I:95:VAL:HG21 | 2.54 | 0.42 |
| 11:L:24:GLU:HG2 | 11:L:159:TYR:CE1 | 2.53 | 0.42 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:L:88:SER:HA | 11:L:145:HIS:O | 2.19 | 0.42 |
| 12:M:10:ARG:HD2 | 12:M:11:ILE:HD12 | 2.00 | 0.42 |
| 13:N:414:MET:SD | 13:N:498:SER:HA | 2.58 | 0.42 |
| 14:O:751:LEU:HD12 | 14:O:752:ILE:N | 2.34 | 0.42 |
| 3:P:306:LEU:HD12 | 3:P:307:LEU:N | 2.35 | 0.42 |
| 15:R:93:ALA:O | 15:R:97:ASN:OD1 | 2.37 | 0.42 |
| 15:R:225:LEU:HD21 | 15:R:248:THR:HG21 | 2.01 | 0.42 |
| 15:R:492:ILE:HD13 | 15:R:492:ILE:HA | 1.84 | 0.42 |
| 20:X:350:PHE:HZ | 20:X:377:LEU:O | 2.01 | 0.42 |
| 20:X:359:LEU:C | 20:X:379:LYS:HG3 | 2.26 | 0.42 |
| 20:X:414:ILE:HD11 | 20:X:451:CYS:SG | 2.60 | 0.42 |
| 20:Y:373:VAL:HG12 | 20:Y:402:LEU:HB2 | 2.01 | 0.42 |
| 1:A:168:ASP:OD1 | 1:A:168:ASP:N | 2.51 | 0.42 |
| 1:A:215:HIS:CD2 | 1:A:217:LEU:H | 2.36 | 0.42 |
| 1:A:593:ASN:OD1 | 1:A:609:ILE:O | 2.37 | 0.42 |
| 2:B:16:TRP:CD1 | 2:B:46:LEU:HG | 2.54 | 0.42 |
| 10:K:406:HIS:ND1 | 19:W:6:PRO:HB3 | 2.35 | 0.42 |
| 11:L:77:LEU:HD12 | 11:L:77:LEU:C | 2.38 | 0.42 |
| 13:N:520:ARG:HD2 | 13:N:556:PHE:HD1 | 1.80 | 0.42 |
| 17:T:9:ALA:O | 17:T:10:ALA:HB3 | 2.19 | 0.42 |
| 20:X:294:PHE:CE2 | 20:X:311:TYR:CB | 3.00 | 0.42 |
| 20:Y:430:ALA:HA | 20:Y:433:VAL:HG12 | 2.01 | 0.42 |
| 20:Y:552:MET:SD | 20:Y:552:MET:C | 2.97 | 0.42 |
| 1:A:12:ILE:HD11 | 1:A:506:VAL:HG12 | 2.01 | 0.42 |
| 1:A:1495:PHE:O | 1:A:1499:LEU:HD13 | 2.19 | 0.42 |
| 1:A:1621:PRO:HA | 1:A:1697:LEU:O | 2.19 | 0.42 |
| 1:A:1803:LEU:CD1 | 1:A:1814:LEU:HD21 | 2.49 | 0.42 |
| 2:B:13:LEU:HD22 | 13:N:598:SER:HA | 2.01 | 0.42 |
| 6:F:90:GLN:OE1 | 20:Y:292:LEU:HG | 2.20 | 0.42 |
| 8:I:397:ILE:HD12 | 14:O:440:GLN:HG3 | 2.01 | 0.42 |
| 10:K:71:ALA:HA | 10:K:128:ILE:HD13 | 2.02 | 0.42 |
| 10:K:203:PHE:HE1 | 10:K:218:THR:HB | 1.85 | 0.42 |
| 10:K:220:ILE:O | 10:K:223:SER:OG | 2.32 | 0.42 |
| 13:N:386:LEU:HD12 | 13:N:387:LEU:HG | 2.01 | 0.42 |
| 1:A:28:CYS:SG | 1:A:101:ILE:HD12 | 2.60 | 0.42 |
| 1:A:1332:GLY:O | 1:A:1358:LEU:HB2 | 2.20 | 0.42 |
| 6:H:128:THR:O | 6:H:129:ASP:CB | 2.67 | 0.42 |
| 9:J:465:LEU:CA | 9:J:488:ILE:HD12 | 2.49 | 0.42 |
| 11:L:45:LEU:HD23 | 11:L:45:LEU:C | 2.39 | 0.42 |
| 13:N:393:THR:HG21 | 13:N:434:THR:HG22 | 2.01 | 0.42 |
| 13:N:571:ASN:HA | 13:N:574:ILE:HG22 | 2.01 | 0.42 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:237:TRP:CH2 | 15:R:244:VAL:HG21 | 2.54 | 0.42 |
| 1:A:1190:THR:HG23 | 1:A:1191:LEU:N | 2.35 | 0.42 |
| 1:A:1481:ASN:OD1 | 1:A:1482:LEU:N | 2.53 | 0.42 |
| 1:A:1532:ASN:O | 1:A:1533:LEU:C | 2.58 | 0.42 |
| 1:A:1552:TYR:CE2 | 1:A:1596:SER:HA | 2.55 | 0.42 |
| 2:B:11:VAL:HB | 13:N:594:VAL:CG1 | 2.50 | 0.42 |
| 3:C:358:LEU:O | 3:C:362:PRO:CA | 2.64 | 0.42 |
| 6:F:157:GLU:HA | 6:F:477:CYS:SG | 2.60 | 0.42 |
| 6:H:481:CYS:O | 6:H:485:ILE:HG12 | 2.20 | 0.42 |
| 10:K:180:GLU:O | 10:K:184:LEU:N | 2.40 | 0.42 |
| 11:L:113:LEU:HD13 | 11:L:120:ILE:CD1 | 2.50 | 0.42 |
| 13:N:340:ARG:CB | 13:N:361:LEU:HD13 | 2.49 | 0.42 |
| 13:N:395:ASP:OD1 | 13:N:398:THR:CB | 2.68 | 0.42 |
| 13:N:597:SER:OG | 13:N:600:PHE:HB2 | 2.20 | 0.42 |
| 15:R:227:VAL:CG2 | 15:R:250:LYS:NZ | 2.83 | 0.42 |
| 15:R:230:ASP:OD1 | 15:R:230:ASP:C | 2.56 | 0.42 |
| 15:R:493:ARG:HD3 | 15:R:493:ARG:C | 2.40 | 0.42 |
| 20:Y:242:ALA:O | 20:Y:246:VAL:HG23 | 2.20 | 0.42 |
| 1:A:1333:HIS:HB2 | 1:A:1357:THR:HA | 2.01 | 0.42 |
| 2:B:28:MET:CE | 16:S:375:LEU:O | 2.67 | 0.42 |
| 2:B:68:GLN:HA | 2:B:69:VAL:C | 2.39 | 0.42 |
| 3:C:53:LYS:HD2 | 3:P:93:TYR:CD1 | 2.55 | 0.42 |
| 3:C:410:GLU:OE1 | 15:R:52:ARG:NH2 | 2.50 | 0.42 |
| 9:J:477:GLN:O | 9:J:508:LEU:HD13 | 2.19 | 0.42 |
| 10:K:227:LEU:O | 10:K:230:ASN:N | 2.52 | 0.42 |
| 11:L:25:ILE:HD11 | 11:L:74:VAL:HG12 | 2.02 | 0.42 |
| 13:N:393:THR:HG23 | 13:N:434:THR:HG22 | 2.02 | 0.42 |
| 13:N:516:ILE:HD12 | 13:N:516:ILE:HA | 1.89 | 0.42 |
| 13:N:533:PHE:C | 13:N:535:PRO:HD3 | 2.40 | 0.42 |
| 13:N:556:PHE:CG | 13:N:600:PHE:CD1 | 3.08 | 0.42 |
| 14:O:127:HIS:O | 14:O:128:LYS:CB | 2.68 | 0.42 |
| 3:P:242:GLN:NE2 | 3:P:429:ARG:HA | 2.33 | 0.42 |
| 20:X:440:ASN:HA | 20:X:471:GLN:HE22 | 1.84 | 0.42 |
| 20:Y:53:VAL:HG23 | 20:Y:86:SER:HB3 | 2.02 | 0.42 |
| 20:Y:169:PRO:HG3 | 20:Y:198:GLN:OE1 | 2.20 | 0.42 |
| 20:Y:452:LEU:HG | 20:Y:457:THR:OG1 | 2.19 | 0.42 |
| 1:A:32:PRO:HD2 | 14:O:264:VAL:HG11 | 2.01 | 0.42 |
| 1:A:174:PRO:O | 1:A:295:VAL:O | 2.38 | 0.42 |
| 1:A:961:HIS:HA | 1:A:964:GLU:HG3 | 2.02 | 0.42 |
| 3:C:26:PHE:O | 3:C:27:SER:CB | 2.67 | 0.42 |
| 6:H:98:ASN:OD1 | 6:H:98:ASN:N | 2.53 | 0.42 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:I:44:VAL:C | 8:I:45:LEU:HD12 | 2.40 | 0.42 |
| 8:I:618:ILE:HG23 | 8:I:705:MET:HE2 | 2.01 | 0.42 |
| 9:J:61:ARG:NH1 | 9:J:92:VAL:HG22 | 2.35 | 0.42 |
| 10:K:167:PHE:CE2 | 10:K:171:THR:HG21 | 2.55 | 0.42 |
| 10:K:174:HIS:CE1 | 10:K:211:LYS:CD | 3.03 | 0.42 |
| 10:K:379:GLY:HA3 | 10:K:411:VAL:HG22 | 2.01 | 0.42 |
| 13:N:394:CYS:C | 13:N:395:ASP:CG | 2.76 | 0.42 |
| 14:O:394:THR:HA | 14:O:615:ARG:NH1 | 2.35 | 0.42 |
| 14:O:423:ALA:O | 14:O:426:THR:HG23 | 2.19 | 0.42 |
| 14:O:530:SER:O | 14:O:533:THR:HG22 | 2.19 | 0.42 |
| 14:O:538:LEU:HD12 | 14:O:538:LEU:H | 1.85 | 0.42 |
| 15:R:225:LEU:HD12 | 15:R:230:ASP:C | 2.41 | 0.42 |
| 15:R:310:GLN:HG2 | 15:R:338:LEU:HB2 | 1.75 | 0.42 |
| 20:X:362:GLY:C | 20:X:379:LYS:HD2 | 2.41 | 0.42 |
| 20:Y:52:ASN:OD1 | 20:Y:52:ASN:N | 2.52 | 0.42 |
| 20:Y:291:VAL:CG2 | 20:Y:314:LEU:HD13 | 2.50 | 0.42 |
| 20:Y:437:LEU:HB2 | 20:Y:444:LEU:HD11 | 2.02 | 0.42 |
| 1:A:487:THR:OG1 | 1:A:499:LEU:HD11 | 2.20 | 0.42 |
| 1:A:1208:LEU:O | 1:A:1212:VAL:HG23 | 2.20 | 0.42 |
| 1:A:1513:GLU:HB2 | 1:A:1554:PHE:CE2 | 2.55 | 0.42 |
| 1:A:1632:ALA:O | 1:A:1653:ALA:CB | 2.68 | 0.42 |
| 4:D:17:TRP:O | 4:D:18:PHE:HB3 | 2.20 | 0.42 |
| 6:H:515:TYR:CE2 | 6:H:545:HIS:CD2 | 3.06 | 0.42 |
| 10:K:185:LEU:HD21 | 10:K:205:PHE:HB2 | 2.00 | 0.42 |
| 10:K:432:ILE:CD1 | 10:K:444:TRP:CD1 | 2.95 | 0.42 |
| 11:L:44:GLN:HA | 11:L:47:ASP:CG | 2.41 | 0.42 |
| 13:N:259:GLU:O | 13:N:263:THR:HG23 | 2.20 | 0.42 |
| 13:N:359:GLU:O | 13:N:362:LYS:HB3 | 2.20 | 0.42 |
| 13:N:602:PRO:N | 13:N:603:PRO:HD2 | 2.34 | 0.42 |
| 20:X:50:HIS:HA | 20:X:53:VAL:HG22 | 2.02 | 0.42 |
| 20:X:294:PHE:CZ | 20:X:311:TYR:CG | 3.08 | 0.42 |
| 20:Y:203:LEU:HA | 20:Y:206:ILE:HD12 | 2.01 | 0.42 |
| 1:A:88:ASP:O | 1:A:594:ARG:NH2 | 2.53 | 0.41 |
| 3:C:510:SER:HB3 | 3:C:539:PHE:HB2 | 2.01 | 0.41 |
| 6:H:42:PHE:HB2 | 6:H:71:CYS:SG | 2.60 | 0.41 |
| 6:H:104:ASP:OD1 | 6:H:105:ASP:N | 2.53 | 0.41 |
| 6:H:121:LEU:HG | 6:H:125:TYR:CE1 | 2.54 | 0.41 |
| 6:H:707:PHE:CZ | 6:H:738:LEU:HD21 | 2.55 | 0.41 |
| 6:H:747:TYR:CD2 | 6:H:755:LEU:HB3 | 2.55 | 0.41 |
| 8:I:261:LEU:HD23 | 8:I:261:LEU:HA | 1.90 | 0.41 |
| 8:I:719:ALA:HA | 8:I:735:SER:HA | 2.01 | 0.41 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:J:306:GLY:HA3 | 9:J:323:LEU:HD13 | 2.02 | 0.41 |
| 13:N:273:MET:HE3 | 13:N:332:PHE:CE1 | 2.54 | 0.41 |
| 13:N:560:MET:CE | 13:N:601:TRP:CD1 | 3.03 | 0.41 |
| 13:N:619:LEU:HD13 | 13:N:619:LEU:O | 2.20 | 0.41 |
| 14:O:378:SER:OG | 14:O:409:HIS:CD2 | 2.72 | 0.41 |
| 14:O:657:ILE:HA | 14:O:660:LYS:HB2 | 2.00 | 0.41 |
| 3:P:192:PHE:CB | 3:P:209:LEU:HD13 | 2.50 | 0.41 |
| 15:R:182:PRO:CG | 16:S:322:ARG:HB3 | 2.50 | 0.41 |
| 15:R:188:PHE:HE1 | 15:R:403:CYS:SG | 2.43 | 0.41 |
| 20:X:269:ASP:HB3 | 20:X:300:LEU:HD21 | 2.01 | 0.41 |
| 20:X:334:ILE:HG13 | 20:X:335:SER:N | 2.35 | 0.41 |
| 20:Y:134:SER:N | 20:Y:137:GLU:OE1 | 2.53 | 0.41 |
| 20:Y:496:ILE:CD1 | 20:Y:519:LEU:HD23 | 2.50 | 0.41 |
| 1:A:13:ALA:HB3 | 1:A:648:PRO:HB3 | 2.01 | 0.41 |
| 1:A:98:ASN:OD1 | 1:A:98:ASN:N | 2.53 | 0.41 |
| 1:A:409:ILE:CG2 | 1:A:410:ASP:N | 2.83 | 0.41 |
| 1:A:1575:SER:O | 1:A:1580:SER:OG | 2.17 | 0.41 |
| 1:A:1888:LEU:O | 1:A:1888:LEU:HD23 | 2.19 | 0.41 |
| 3:C:115:TYR:OH | 3:C:161:LEU:CD1 | 2.68 | 0.41 |
| 3:C:413:LYS:O | 3:C:415:PRO:CD | 2.65 | 0.41 |
| 8:I:224:SER:HB2 | 8:I:229:SER:HA | 1.99 | 0.41 |
| 8:I:231:VAL:CG1 | 8:I:556:LEU:HD12 | 2.50 | 0.41 |
| 8:I:685:PHE:HA | 8:I:701:PRO:HD3 | 2.02 | 0.41 |
| 9:J:500:ASP:O | 9:J:504:THR:HG23 | 2.20 | 0.41 |
| 10:K:263:PHE:CD1 | 10:K:291:LEU:HD21 | 2.56 | 0.41 |
| 11:L:89:TYR:CD1 | 11:L:152:HIS:CE1 | 3.08 | 0.41 |
| 13:N:545:LEU:O | 13:N:549:PHE:N | 2.51 | 0.41 |
| 15:R:189:TYR:C | 15:R:316:VAL:HB | 2.41 | 0.41 |
| 20:X:294:PHE:CE1 | 20:X:311:TYR:CD1 | 3.08 | 0.41 |
| 20:Y:309:ASP:OD1 | 20:Y:343:VAL:HG11 | 2.20 | 0.41 |
| 1:A:248:PHE:CB | 1:A:430:VAL:HG22 | 2.49 | 0.41 |
| 1:A:248:PHE:CD1 | 1:A:248:PHE:C | 2.93 | 0.41 |
| 1:A:1110:ARG:HG2 | 1:A:1117:THR:HG22 | 2.02 | 0.41 |
| 1:A:1281:PRO:HB3 | 1:A:1352:ILE:HB | 2.02 | 0.41 |
| 1:A:1351:GLN:CG | 11:L:36:CYS:HB3 | 2.50 | 0.41 |
| 3:C:409:TYR:HB2 | 3:C:418:CYS:CB | 2.50 | 0.41 |
| 6:H:674:HIS:O | 6:H:678:VAL:HG23 | 2.20 | 0.41 |
| 10:K:155:GLU:O | 10:K:159:LEU:HD13 | 2.19 | 0.41 |
| 13:N:546:LYS:HA | 13:N:550:GLY:HA2 | 2.03 | 0.41 |
| 13:N:699:TRP:CB | 13:N:705:LEU:HD23 | 2.42 | 0.41 |
| 14:O:396:ASN:N | 14:O:396:ASN:OD1 | 2.53 | 0.41 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:P:96:VAL:N | 3:P:97:LYS:HA | 2.36 | 0.41 |
| 3:P:233:PHE:CE2 | 3:P:237:ILE:HD12 | 2.53 | 0.41 |
| 3:P:308:TYR:CD1 | 3:P:343:LEU:HG | 2.54 | 0.41 |
| 3:P:402:TRP:CE3 | 3:P:424:ARG:HG2 | 2.55 | 0.41 |
| 20:X:134:SER:N | 20:X:137:GLU:OE1 | 2.53 | 0.41 |
| 1:A:94:TYR:O | 1:A:100:VAL:HA | 2.19 | 0.41 |
| 1:A:1390:PRO:HG3 | 1:A:1396:LEU:HD23 | 2.02 | 0.41 |
| 12:M:60:LEU:N | 12:M:60:LEU:HD23 | 2.35 | 0.41 |
| 13:N:350:ASP:HB3 | 13:N:351:PHE:HA | 2.02 | 0.41 |
| 13:N:351:PHE:HB2 | 13:N:354:SER:OG | 2.21 | 0.41 |
| 14:O:356:ASP:HA | 14:O:357:SER:CB | 2.50 | 0.41 |
| 14:O:751:LEU:HD12 | 14:O:751:LEU:C | 2.40 | 0.41 |
| 3:P:94:PHE:O | 3:P:97:LYS:HB2 | 2.21 | 0.41 |
| 3:P:115:TYR:OH | 3:P:161:LEU:CD1 | 2.68 | 0.41 |
| 15:R:212:TRP:HB2 | 16:S:325:LEU:HD13 | 2.02 | 0.41 |
| 15:R:227:VAL:HG23 | 15:R:250:LYS:HZ2 | 1.85 | 0.41 |
| 15:R:256:TRP:CE3 | 15:R:262:LYS:C | 2.94 | 0.41 |
| 20:X:316:ALA:HB1 | 20:X:351:TYR:CD1 | 2.56 | 0.41 |
| 20:X:437:LEU:HB2 | 20:X:444:LEU:HD11 | 2.02 | 0.41 |
| 1:A:248:PHE:CG | 1:A:249:LEU:N | 2.88 | 0.41 |
| 1:A:1236:LEU:HB3 | 15:R:153:VAL:HG21 | 2.02 | 0.41 |
| 1:A:1531:GLY:HA3 | 1:A:1566:PHE:CZ | 2.54 | 0.41 |
| 3:C:161:LEU:HD23 | 3:C:166:GLU:HB2 | 2.03 | 0.41 |
| 6:F:89:GLU:CD | 6:F:130:ARG:NH2 | 2.72 | 0.41 |
| 8:I:209:CYS:SG | 8:I:584:HIS:ND1 | 2.87 | 0.41 |
| 9:J:167:PHE:HA | 9:J:170:LEU:CD2 | 2.51 | 0.41 |
| 10:K:305:VAL:HG22 | 12:M:57:TRP:CE3 | 2.56 | 0.41 |
| 13:N:342:GLU:OE1 | 13:N:342:GLU:HA | 2.20 | 0.41 |
| 14:O:68:LEU:HD23 | 14:O:131:VAL:HG12 | 2.02 | 0.41 |
| 14:O:711:ARG:HA | 14:O:740:LEU:HD12 | 2.03 | 0.41 |
| 3:P:283:LEU:HD13 | 3:P:306:LEU:HD11 | 2.02 | 0.41 |
| 3:P:352:LEU:HD23 | 3:P:352:LEU:C | 2.41 | 0.41 |
| 3:P:478:GLU:OE2 | 3:P:490:TYR:OH | 2.38 | 0.41 |
| 15:R:175:PRO:HG3 | 15:R:468:ARG:HH11 | 1.85 | 0.41 |
| 20:X:63:LEU:HD22 | 20:Y:266:LEU:HB3 | 2.02 | 0.41 |
| 20:Y:321:LEU:HD21 | 20:Y:351:TYR:CB | 2.51 | 0.41 |
| 1:A:1867:GLY:HA2 | 1:A:1870:CYS:SG | 2.60 | 0.41 |
| 3:C:85:ASP:OD2 | 3:P:33:LYS:NZ | 2.52 | 0.41 |
| 3:C:94:PHE:O | 3:C:97:LYS:HB2 | 2.21 | 0.41 |
| 3:C:151:LEU:HB3 | 3:C:182:LEU:HD11 | 2.02 | 0.41 |
| 9:J:69:TYR:O | 9:J:70:GLU:CB | 2.68 | 0.41 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 9:J:245:CYS:HA | 9:J:247:PHE:CE1 | 2.55 | 0.41 |
| 10:K:63:ARG:HB2 | 10:K:65:LEU:HD13 | 2.03 | 0.41 |
| 11:L:46:ARG:NH1 | 11:L:156:ILE:O | 2.54 | 0.41 |
| 11:L:86:ASP:HB2 | 11:L:90:THR:OG1 | 2.21 | 0.41 |
| 14:O:657:ILE:HG22 | 14:O:660:LYS:HE2 | 2.02 | 0.41 |
| 14:O:657:ILE:CD1 | 14:O:704:VAL:HG23 | 2.49 | 0.41 |
| 3:P:170:PHE:O | 3:P:173:TYR:HB3 | 2.19 | 0.41 |
| 15:R:243:LEU:CD1 | 15:R:298:ILE:CD1 | 2.99 | 0.41 |
| 20:X:52:ASN:OD1 | 20:X:52:ASN:N | 2.54 | 0.41 |
| 20:X:430:ALA:HA | 20:X:433:VAL:HG12 | 2.01 | 0.41 |
| 1:A:1276:GLU:CD | 1:A:1294:TYR:OH | 2.58 | 0.41 |
| 1:A:1571:ARG:NH1 | 1:A:1694:ASP:O | 2.54 | 0.41 |
| 3:C:60:PHE:HA | 3:P:85:ASP:OD1 | 2.21 | 0.41 |
| 3:C:305:ASN:HD22 | 15:R:47:ARG:HG3 | 1.86 | 0.41 |
| 6:F:150:SER:O | 6:F:154:SER:OG | 2.38 | 0.41 |
| 9:J:308:TYR:OH | 12:M:27:GLU:O | 2.24 | 0.41 |
| 13:N:556:PHE:CD1 | 13:N:600:PHE:HD1 | 2.39 | 0.41 |
| 13:N:630:LYS:HB3 | 13:N:633:ARG:HD2 | 2.02 | 0.41 |
| 13:N:700:LEU:HD13 | 13:N:707:GLU:HG3 | 2.02 | 0.41 |
| 15:R:420:TYR:HA | 15:R:421:SER:HA | 1.62 | 0.41 |
| 15:R:429:LYS:HD3 | 15:R:433:LEU:CD2 | 2.50 | 0.41 |
| 19:W:5:LYS:HA | 19:W:6:PRO:HD3 | 1.95 | 0.41 |
| 20:X:243:TYR:O | 20:X:246:VAL:HB | 2.21 | 0.41 |
| 20:X:408:ASP:O | 20:X:411:GLU:HG2 | 2.21 | 0.41 |
| 20:Y:294:PHE:CE1 | 20:Y:311:TYR:CD2 | 3.08 | 0.41 |
| 20:Y:349:SER:HA | 20:Y:352:SER:OG | 2.21 | 0.41 |
| 1:A:75:GLN:O | 1:A:76:LEU:HD12 | 2.21 | 0.41 |
| 1:A:86:ASP:OD2 | 14:O:563:LEU:HD13 | 2.21 | 0.41 |
| 1:A:257:MET:HA | 1:A:267:SER:O | 2.21 | 0.41 |
| 1:A:592:HIS:O | 1:A:592:HIS:CD2 | 2.74 | 0.41 |
| 1:A:1405:LEU:C | 1:A:1405:LEU:HD12 | 2.41 | 0.41 |
| 1:A:1842:PHE:CE1 | 1:A:1843:MET:HG3 | 2.55 | 0.41 |
| 3:C:304:SER:CB | 3:C:336:VAL:HG22 | 2.51 | 0.41 |
| 6:H:621:LEU:HD13 | 6:H:625:ARG:NH2 | 2.36 | 0.41 |
| 8:I:28:TRP:HZ3 | 8:I:33:ASP:O | 2.03 | 0.41 |
| 8:I:175:ILE:HG22 | 8:I:176:LEU:N | 2.35 | 0.41 |
| 8:I:272:MET:SD | 8:I:348:VAL:HG22 | 2.61 | 0.41 |
| 9:J:185:LEU:CD1 | 9:J:206:GLU:OE1 | 2.68 | 0.41 |
| 9:J:204:LEU:HD23 | 9:J:204:LEU:HA | 1.95 | 0.41 |
| 9:J:320:ARG:HD3 | 9:J:344:PHE:CE1 | 2.55 | 0.41 |
| 10:K:195:ASN:OD1 | 10:K:195:ASN:N | 2.54 | 0.41 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 10:K:258:MET:HG3 | 10:K:271:HIS:CD2 | 2.56 | 0.41 |
| 12:M:2:ASP:CG | 12:M:3:SER:N | 2.74 | 0.41 |
| 13:N:644:VAL:HG21 | 13:N:664:ALA:HB2 | 2.03 | 0.41 |
| 3:P:161:LEU:HD23 | 3:P:166:GLU:HB2 | 2.02 | 0.41 |
| 15:R:225:LEU:HD13 | 15:R:230:ASP:CB | 2.50 | 0.41 |
| 15:R:230:ASP:CB | 15:R:250:LYS:HG3 | 2.51 | 0.41 |
| 15:R:243:LEU:HD23 | 15:R:257:ASP:HA | 2.03 | 0.41 |
| 15:R:314:GLN:H | 15:R:333:ASN:HB3 | 1.84 | 0.41 |
| 16:S:422:GLY:O | 16:S:423:LYS:CB | 2.68 | 0.41 |
| 20:X:53:VAL:HG23 | 20:X:86:SER:HB3 | 2.02 | 0.41 |
| 20:Y:186:ARG:HA | 20:Y:189:VAL:HG12 | 2.03 | 0.41 |
| 20:Y:186:ARG:O | 20:Y:189:VAL:HG12 | 2.21 | 0.41 |
| 1:A:155:GLN:HE22 | 1:A:160:ASN:ND2 | 2.19 | 0.41 |
| 1:A:174:PRO:CA | 1:A:295:VAL:O | 2.67 | 0.41 |
| 1:A:768:LEU:HD23 | 1:A:768:LEU:HA | 1.98 | 0.41 |
| 1:A:971:PRO:HG2 | 1:A:974:VAL:HG23 | 2.01 | 0.41 |
| 1:A:1493:LYS:O | 1:A:1497:THR:HG23 | 2.21 | 0.41 |
| 1:A:1585:LEU:HD23 | 1:A:1585:LEU:HA | 1.93 | 0.41 |
| 3:C:68:ALA:O | 3:C:69:GLU:CB | 2.69 | 0.41 |
| 3:C:91:LYS:O | 3:C:94:PHE:HB3 | 2.21 | 0.41 |
| 3:C:200:PRO:O | 3:C:201:LEU:HB2 | 2.21 | 0.41 |
| 3:C:379:LYS:HG3 | 15:R:61:PHE:CE1 | 2.56 | 0.41 |
| 3:C:477:HIS:CD2 | 3:C:482:GLU:OE1 | 2.73 | 0.41 |
| 4:D:40:TRP:CE2 | 4:D:44:ILE:HD11 | 2.55 | 0.41 |
| 5:E:67:LEU:HD13 | 20:Y:342:TRP:CZ3 | 2.56 | 0.41 |
| 6:F:696:ILE:CG1 | 6:F:705:CYS:SG | 3.09 | 0.41 |
| 6:H:146:PRO:CG | 6:H:167:THR:HA | 2.50 | 0.41 |
| 6:H:731:GLN:HE22 | 20:X:186:ARG:HG3 | 1.85 | 0.41 |
| 8:I:238:THR:HG22 | 8:I:548:MET:SD | 2.61 | 0.41 |
| 8:I:276:TRP:CZ2 | 8:I:476:GLY:HA3 | 2.56 | 0.41 |
| 8:I:355:GLY:O | 8:I:359:LEU:HB2 | 2.20 | 0.41 |
| 8:I:359:LEU:O | 8:I:363:LEU:HG | 2.21 | 0.41 |
| 9:J:476:PRO:HB2 | 3:P:148:ASN:HD21 | 1.85 | 0.41 |
| 9:J:532:ALA:HB2 | 3:P:443:TYR:OH | 2.20 | 0.41 |
| 13:N:78:VAL:C | 13:N:80:GLN:N | 2.73 | 0.41 |
| 13:N:123:ASP:CB | 13:N:124:PRO:HD3 | 2.50 | 0.41 |
| 13:N:367:ARG:NH2 | 17:T:20:ALA:HB3 | 2.36 | 0.41 |
| 13:N:668:LEU:O | 13:N:671:GLN:HB3 | 2.21 | 0.41 |
| 3:P:209:LEU:HD12 | 3:P:209:LEU:HA | 1.96 | 0.41 |
| 15:R:178:VAL:HG11 | 15:R:466:THR:HG23 | 1.91 | 0.41 |
| 15:R:211:LEU:CD1 | 15:R:222:LEU:HD22 | 2.44 | 0.41 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:R:230:ASP:OD1 | 15:R:231:SER:N | 2.54 | 0.41 |
| 15:R:243:LEU:CD1 | 15:R:298:ILE:HD11 | 2.51 | 0.41 |
| 15:R:297:ASP:OD2 | 15:R:299:ARG:NH2 | 2.44 | 0.41 |
| 20:X:321:LEU:HD21 | 20:X:351:TYR:CB | 2.51 | 0.41 |
| 20:X:475:TYR:CE1 | 20:X:477:LYS:HB2 | 2.56 | 0.41 |
| 20:X:496:ILE:CD1 | 20:X:519:LEU:HD23 | 2.51 | 0.41 |
| 20:Y:482:LYS:O | 20:Y:486:LEU:HD13 | 2.21 | 0.41 |
| 1:A:184:LYS:O | 1:A:185:TYR:CB | 2.67 | 0.41 |
| 1:A:657:TRP:CD1 | 1:A:785:SER:OG | 2.74 | 0.41 |
| 1:A:780:GLY:O | 1:A:781:GLU:CB | 2.69 | 0.41 |
| 1:A:799:LEU:O | 1:A:801:PRO:CD | 2.69 | 0.41 |
| 1:A:948:PRO:HB3 | 1:A:1816:GLN:CD | 2.42 | 0.41 |
| 1:A:1145:LEU:HA | 1:A:1145:LEU:HD23 | 1.67 | 0.41 |
| 1:A:1274:LEU:HD23 | 1:A:1274:LEU:HA | 1.87 | 0.41 |
| 1:A:1610:TYR:CD2 | 1:A:1610:TYR:C | 2.95 | 0.41 |
| 2:B:33:CYS:CB | 2:B:39:VAL:O | 2.69 | 0.41 |
| 6:F:522:PHE:CB | 6:F:539:TYR:CD1 | 3.04 | 0.41 |
| 6:F:562:MET:HG3 | 6:F:563:ASP:N | 2.36 | 0.41 |
| 6:H:531:TYR:O | 6:H:562:MET:HE3 | 2.21 | 0.41 |
| 8:I:118:VAL:HG12 | 8:I:173:LEU:O | 2.21 | 0.41 |
| 9:J:193:LEU:O | 9:J:194:CYS:HB2 | 2.21 | 0.41 |
| 9:J:207:ASN:OD1 | 9:J:208:LYS:N | 2.54 | 0.41 |
| 9:J:465:LEU:HG | 9:J:488:ILE:HD11 | 2.01 | 0.41 |
| 10:K:19:TYR:CD1 | 10:K:49:LEU:CD1 | 3.04 | 0.41 |
| 15:R:313:ARG:NH1 | 15:R:313:ARG:HG2 | 2.36 | 0.41 |
| 15:R:370:LEU:HD11 | 15:R:430:TYR:CZ | 2.56 | 0.41 |
| 15:R:451:MET:HG3 | 15:R:458:ILE:HD13 | 2.03 | 0.41 |
| 20:X:456:VAL:O | 20:X:456:VAL:HG12 | 2.21 | 0.41 |
| 20:Y:331:LEU:HD12 | 20:Y:344:VAL:HG11 | 2.03 | 0.41 |
| 20:Y:449:THR:HG21 | 20:Y:465:LEU:HA | 2.03 | 0.41 |
| 1:A:132:ILE:HG22 | 1:A:133:ILE:N | 2.36 | 0.40 |
| 1:A:613:ALA:O | 1:A:614:THR:CB | 2.69 | 0.40 |
| 1:A:1462:VAL:HG23 | 1:A:1463:TYR:N | 2.36 | 0.40 |
| 3:C:478:GLU:OE2 | 3:C:490:TYR:CZ | 2.74 | 0.40 |
| 6:F:130:ARG:CD | 20:Y:506:GLN:HB2 | 2.50 | 0.40 |
| 6:F:486:ASN:O | 6:F:490:HIS:ND1 | 2.51 | 0.40 |
| 6:H:16:LEU:HD21 | 6:H:47:CYS:SG | 2.61 | 0.40 |
| 9:J:180:GLU:OE1 | 9:J:180:GLU:CA | 2.70 | 0.40 |
| 9:J:432:ILE:HD11 | 9:J:444:TRP:NE1 | 2.36 | 0.40 |
| 10:K:284:LEU:HD11 | 10:K:307:CYS:SG | 2.61 | 0.40 |
| 10:K:391:PHE:CE2 | 10:K:411:VAL:HG21 | 2.56 | 0.40 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:L:63:LEU:HD13 | 11:L:138:GLN:NE2 | 2.37 | 0.40 |
| 13:N:344:LEU:HD22 | 13:N:374:LEU:HD21 | 2.03 | 0.40 |
| 13:N:368:THR:CG2 | 13:N:369:ASP:HA | 2.52 | 0.40 |
| 13:N:370:GLN:HE21 | 13:N:373:GLN:HB3 | 1.86 | 0.40 |
| 14:O:233:PRO:HA | 14:O:263:ARG:NH2 | 2.34 | 0.40 |
| 3:P:89:LEU:HD21 | 3:P:93:TYR:CE2 | 2.56 | 0.40 |
| 3:P:248:LEU:HD21 | 3:P:273:TYR:CE1 | 2.56 | 0.40 |
| 20:X:203:LEU:CD2 | 20:Y:55:LEU:HD23 | 2.50 | 0.40 |
| 20:Y:377:LEU:C | 20:Y:377:LEU:HD12 | 2.41 | 0.40 |
| 1:A:133:ILE:HD12 | 1:A:133:ILE:O | 2.21 | 0.40 |
| 1:A:273:ARG:O | 1:A:274:VAL:CB | 2.69 | 0.40 |
| 1:A:466:LEU:HD12 | 1:A:466:LEU:N | 2.36 | 0.40 |
| 3:C:283:LEU:HD13 | 3:C:306:LEU:HD11 | 2.03 | 0.40 |
| 6:F:709:ARG:HD3 | 6:F:725:GLU:OE2 | 2.21 | 0.40 |
| 8:I:65:GLY:O | 8:I:84:LEU:HD12 | 2.21 | 0.40 |
| 9:J:332:THR:CA | 9:J:363:LEU:HD21 | 2.52 | 0.40 |
| 10:K:242:TYR:CD1 | 10:K:242:TYR:C | 2.94 | 0.40 |
| 10:K:327:THR:OG1 | 10:K:337:TRP:CE2 | 2.72 | 0.40 |
| 13:N:75:PHE:CE1 | 13:N:79:LEU:HD23 | 2.56 | 0.40 |
| 13:N:574:ILE:HG13 | 13:N:625:LYS:HE2 | 2.03 | 0.40 |
| 13:N:639:HIS:CD2 | 13:N:661:PRO:HB2 | 2.56 | 0.40 |
| 13:N:663:GLN:HE22 | 13:N:698:VAL:CG1 | 2.33 | 0.40 |
| 20:X:350:PHE:CE2 | 20:X:378:LEU:HD12 | 2.56 | 0.40 |
| 20:Y:309:ASP:HB2 | 20:Y:340:GLU:CG | 2.51 | 0.40 |
| 20:Y:456:VAL:HG12 | 20:Y:456:VAL:O | 2.22 | 0.40 |
| 1:A:1230:ILE:CD1 | 15:R:94:LEU:HB3 | 2.52 | 0.40 |
| 1:A:1476:PHE:CD1 | 1:A:1476:PHE:N | 2.89 | 0.40 |
| 1:A:1789:MET:HA | 1:A:1789:MET:HE2 | 2.03 | 0.40 |
| 1:A:1870:CYS:CB | 1:A:1884:GLN:CD | 2.90 | 0.40 |
| 3:C:66:PRO:HD2 | 3:C:68:ALA:O | 2.21 | 0.40 |
| 6:F:610:GLU:O | 6:F:614:THR:OG1 | 2.37 | 0.40 |
| 8:I:276:TRP:CD1 | 8:I:279:ILE:HG21 | 2.56 | 0.40 |
| 13:N:281:TYR:CE1 | 13:N:357:ALA:CB | 3.04 | 0.40 |
| 13:N:340:ARG:HB2 | 13:N:361:LEU:HD13 | 2.04 | 0.40 |
| 14:O:587:VAL:O | 14:O:590:LEU:HB2 | 2.21 | 0.40 |
| 14:O:614:TYR:CD1 | 14:O:614:TYR:N | 2.90 | 0.40 |
| 15:R:197:SER:HA | 15:R:453:PRO:HB3 | 2.03 | 0.40 |
| 20:X:214:VAL:HG12 | 20:X:217:ALA:CB | 2.51 | 0.40 |
| 1:A:1162:LYS:HG3 | 1:A:1163:PRO:HD2 | 2.04 | 0.40 |
| 6:F:473:TYR:CD1 | 6:F:473:TYR:C | 2.94 | 0.40 |
| 6:F:550:VAL:HG13 | 6:F:551:ALA:N | 2.37 | 0.40 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:I:45:LEU:CD2 | 8:I:54:ARG:NH1 | 2.84 | 0.40 |
| 8:I:574:PHE:CE2 | 8:I:576:TRP:HB2 | 2.56 | 0.40 |
| 10:K:248:LYS:HB2 | 10:K:438:GLU:OE2 | 2.20 | 0.40 |
| 13:N:457:SER:HA | 13:N:544:LEU:HD11 | 2.03 | 0.40 |
| 13:N:538:GLU:HG2 | 13:N:561:LEU:CD1 | 2.51 | 0.40 |
| 13:N:611:VAL:HG11 | 13:N:637:TRP:CZ3 | 2.56 | 0.40 |
| 13:N:666:ILE:CG2 | 13:N:681:LEU:HD21 | 2.52 | 0.40 |
| 14:O:658:LEU:HD12 | 14:O:658:LEU:HA | 1.93 | 0.40 |
| 15:R:429:LYS:HD2 | 15:R:433:LEU:HD21 | 2.04 | 0.40 |
| 20:Y:321:LEU:HD21 | 20:Y:351:TYR:HB2 | 2.03 | 0.40 |
| 1:A:1773:LEU:HD21 | 1:A:1797:ASP:OD2 | 2.21 | 0.40 |
| 6:H:656:MET:SD | 10:K:523:ILE:HD13 | 2.61 | 0.40 |
| 8:I:174:ASN:OD1 | 8:I:174:ASN:N | 2.54 | 0.40 |
| 9:J:264:HIS:HA | 10:K:55:ARG:HH11 | 1.87 | 0.40 |
| 10:K:60:LEU:HA | 10:K:60:LEU:HD23 | 1.91 | 0.40 |
| 10:K:384:SER:HB2 | 10:K:415:ASN:ND2 | 2.33 | 0.40 |
| 10:K:432:ILE:HD12 | 10:K:444:TRP:CD2 | 2.57 | 0.40 |
| 14:O:260:ASN:O | 14:O:263:ARG:HB3 | 2.21 | 0.40 |
| 3:P:239:THR:O | 3:P:275:ASN:ND2 | 2.50 | 0.40 |
| 20:X:343:VAL:HG13 | 20:X:378:LEU:HD22 | 2.02 | 0.40 |
| 20:Y:229:THR:CG2 | 20:Y:233:LEU:HD12 | 2.46 | 0.40 |
| 20:Y:270:ASN:HB2 | 20:Y:273:LEU:HB3 | 2.04 | 0.40 |
| 20:Y:528:ALA:O | 20:Y:532:TYR:HD1 | 2.05 | 0.40 |

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-----------------|------------|----------|----------|-------------|----|
| 1 | A | 1399/1944 (72%) | 1260 (90%) | 107 (8%) | 32 (2%) | 6 | 38 |
| 2 | B | 83/84 (99%) | 72 (87%) | 7 (8%) | 4 (5%) | 2 | 22 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|------------------|------------|----------|----------|-------------|-----|
| 3 | C | 520/591 (88%) | 495 (95%) | 23 (4%) | 2 (0%) | 34 | 71 |
| 3 | P | 485/591 (82%) | 460 (95%) | 24 (5%) | 1 (0%) | 47 | 79 |
| 4 | D | 53/121 (44%) | 46 (87%) | 6 (11%) | 1 (2%) | 8 | 42 |
| 5 | E | 54/110 (49%) | 54 (100%) | 0 | 0 | 100 | 100 |
| 6 | F | 494/824 (60%) | 477 (97%) | 11 (2%) | 6 (1%) | 13 | 51 |
| 6 | H | 479/824 (58%) | 462 (96%) | 12 (2%) | 5 (1%) | 15 | 55 |
| 7 | G | 23/85 (27%) | 23 (100%) | 0 | 0 | 100 | 100 |
| 8 | I | 722/808 (89%) | 690 (96%) | 28 (4%) | 4 (1%) | 25 | 64 |
| 9 | J | 500/620 (81%) | 467 (93%) | 28 (6%) | 5 (1%) | 15 | 55 |
| 10 | K | 489/620 (79%) | 458 (94%) | 26 (5%) | 5 (1%) | 15 | 55 |
| 11 | L | 180/183 (98%) | 170 (94%) | 8 (4%) | 2 (1%) | 14 | 53 |
| 12 | M | 55/74 (74%) | 46 (84%) | 9 (16%) | 0 | 100 | 100 |
| 13 | N | 609/822 (74%) | 501 (82%) | 50 (8%) | 58 (10%) | 0 | 8 |
| 14 | O | 677/756 (90%) | 644 (95%) | 25 (4%) | 8 (1%) | 13 | 51 |
| 15 | R | 375/493 (76%) | 343 (92%) | 25 (7%) | 7 (2%) | 8 | 42 |
| 16 | S | 88/447 (20%) | 68 (77%) | 15 (17%) | 5 (6%) | 1 | 18 |
| 17 | T | 19/21 (90%) | 14 (74%) | 3 (16%) | 2 (10%) | 0 | 7 |
| 18 | U | 22/24 (92%) | 19 (86%) | 2 (9%) | 1 (4%) | 2 | 23 |
| 19 | W | 23/85 (27%) | 23 (100%) | 0 | 0 | 100 | 100 |
| 20 | X | 480/565 (85%) | 462 (96%) | 15 (3%) | 3 (1%) | 25 | 64 |
| 20 | Y | 492/565 (87%) | 471 (96%) | 16 (3%) | 5 (1%) | 15 | 55 |
| All | All | 8321/11257 (74%) | 7725 (93%) | 440 (5%) | 156 (2%) | 11 | 42 |

All (156) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | A | 274 | VAL |
| 1 | A | 630 | PRO |
| 1 | A | 857 | MET |
| 1 | A | 860 | TYR |
| 1 | A | 1125 | ILE |
| 2 | B | 15 | LEU |
| 6 | F | 147 | PHE |
| 6 | F | 493 | SER |
| 6 | H | 493 | SER |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 8 | I | 489 | PRO |
| 8 | I | 503 | ASN |
| 9 | J | 221 | PRO |
| 10 | K | 211 | LYS |
| 10 | K | 215 | PRO |
| 13 | N | 63 | ARG |
| 13 | N | 74 | TRP |
| 13 | N | 75 | PHE |
| 13 | N | 78 | VAL |
| 13 | N | 79 | LEU |
| 13 | N | 101 | SER |
| 13 | N | 126 | LEU |
| 13 | N | 140 | LEU |
| 13 | N | 142 | MET |
| 13 | N | 203 | LEU |
| 13 | N | 234 | ARG |
| 13 | N | 252 | LEU |
| 13 | N | 280 | GLU |
| 13 | N | 285 | PHE |
| 13 | N | 286 | LEU |
| 13 | N | 287 | ARG |
| 13 | N | 290 | HIS |
| 13 | N | 395 | ASP |
| 13 | N | 410 | ILE |
| 13 | N | 412 | PRO |
| 13 | N | 477 | PRO |
| 13 | N | 484 | PRO |
| 13 | N | 488 | ASP |
| 13 | N | 489 | PRO |
| 13 | N | 492 | SER |
| 13 | N | 497 | ARG |
| 13 | N | 530 | GLN |
| 13 | N | 606 | ASP |
| 13 | N | 674 | ALA |
| 13 | N | 716 | ILE |
| 15 | R | 153 | VAL |
| 15 | R | 231 | SER |
| 15 | R | 431 | PRO |
| 15 | R | 438 | LYS |
| 16 | S | 328 | VAL |
| 16 | S | 423 | LYS |
| 18 | U | 22 | ALA |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 20 | X | 213 | SER |
| 20 | Y | 201 | LEU |
| 20 | Y | 213 | SER |
| 1 | A | 1099 | PRO |
| 1 | A | 1307 | LEU |
| 1 | A | 1314 | ILE |
| 1 | A | 1924 | LEU |
| 3 | C | 27 | SER |
| 6 | F | 103 | HIS |
| 6 | F | 165 | ASP |
| 6 | H | 147 | PHE |
| 9 | J | 70 | GLU |
| 10 | K | 228 | GLU |
| 13 | N | 72 | GLU |
| 13 | N | 219 | PRO |
| 13 | N | 278 | ARG |
| 13 | N | 350 | ASP |
| 13 | N | 353 | ASP |
| 13 | N | 482 | PRO |
| 13 | N | 512 | LYS |
| 13 | N | 595 | ILE |
| 13 | N | 672 | ASP |
| 16 | S | 375 | LEU |
| 20 | X | 456 | VAL |
| 20 | Y | 202 | ALA |
| 20 | Y | 456 | VAL |
| 1 | A | 87 | VAL |
| 1 | A | 1100 | LEU |
| 1 | A | 1287 | TYR |
| 1 | A | 1577 | SER |
| 1 | A | 1603 | LEU |
| 2 | B | 16 | TRP |
| 8 | I | 483 | ASP |
| 8 | I | 487 | VAL |
| 9 | J | 442 | ASP |
| 11 | L | 71 | LYS |
| 11 | L | 174 | THR |
| 13 | N | 91 | PHE |
| 13 | N | 480 | TRP |
| 13 | N | 491 | LYS |
| 13 | N | 531 | PHE |
| 13 | N | 550 | GLY |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 13 | N | 629 | LEU |
| 14 | O | 126 | VAL |
| 14 | O | 555 | ASN |
| 14 | O | 707 | LYS |
| 3 | P | 415 | PRO |
| 15 | R | 154 | SER |
| 16 | S | 327 | SER |
| 16 | S | 358 | ARG |
| 17 | T | 19 | ALA |
| 20 | X | 202 | ALA |
| 1 | A | 653 | TYR |
| 1 | A | 781 | GLU |
| 1 | A | 1055 | PRO |
| 1 | A | 1283 | PRO |
| 1 | A | 1422 | ASN |
| 1 | A | 1503 | ASN |
| 4 | D | 23 | PRO |
| 6 | F | 145 | ASN |
| 6 | H | 145 | ASN |
| 13 | N | 76 | VAL |
| 13 | N | 146 | ALA |
| 13 | N | 277 | CYS |
| 13 | N | 289 | PHE |
| 13 | N | 352 | PRO |
| 13 | N | 368 | THR |
| 13 | N | 719 | GLU |
| 14 | O | 540 | SER |
| 1 | A | 47 | GLU |
| 1 | A | 253 | PRO |
| 1 | A | 502 | GLY |
| 1 | A | 593 | ASN |
| 1 | A | 813 | LEU |
| 1 | A | 858 | PRO |
| 2 | B | 69 | VAL |
| 6 | F | 96 | VAL |
| 10 | K | 86 | HIS |
| 13 | N | 77 | GLU |
| 15 | R | 291 | ARG |
| 1 | A | 1624 | VAL |
| 1 | A | 1825 | SER |
| 3 | C | 228 | TRP |
| 6 | H | 96 | VAL |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 9 | J | 398 | ALA |
| 13 | N | 197 | PRO |
| 13 | N | 282 | GLU |
| 13 | N | 490 | GLY |
| 17 | T | 10 | ALA |
| 9 | J | 397 | ILE |
| 15 | R | 392 | PRO |
| 2 | B | 40 | PRO |
| 14 | O | 657 | ILE |
| 1 | A | 83 | ILE |
| 1 | A | 861 | PRO |
| 14 | O | 750 | PRO |
| 1 | A | 475 | PRO |
| 1 | A | 1348 | PRO |
| 10 | K | 399 | PRO |
| 13 | N | 535 | PRO |
| 14 | O | 745 | PRO |
| 6 | H | 146 | PRO |
| 20 | Y | 200 | PRO |
| 13 | N | 166 | PRO |
| 14 | O | 124 | 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 PDB entries followed by that with respect to all EM entries.

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

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-----------------|-----------|-----------|-------------|----|
| 1 | A | 1150/1720 (67%) | 988 (86%) | 162 (14%) | 3 | 21 |
| 2 | B | 65/75 (87%) | 55 (85%) | 10 (15%) | 2 | 18 |
| 3 | C | 452/516 (88%) | 399 (88%) | 53 (12%) | 5 | 29 |
| 3 | P | 422/516 (82%) | 373 (88%) | 49 (12%) | 5 | 29 |
| 4 | D | 46/115 (40%) | 42 (91%) | 4 (9%) | 10 | 41 |
| 5 | E | 47/89 (53%) | 37 (79%) | 10 (21%) | 1 | 7 |
| 6 | F | 407/729 (56%) | 367 (90%) | 40 (10%) | 8 | 36 |
| 6 | H | 408/729 (56%) | 372 (91%) | 36 (9%) | 10 | 40 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-----------------|------------|-----------|-------------|-----|
| 7 | G | 23/77 (30%) | 21 (91%) | 2 (9%) | 10 | 41 |
| 8 | I | 620/730 (85%) | 572 (92%) | 48 (8%) | 13 | 45 |
| 9 | J | 424/548 (77%) | 368 (87%) | 56 (13%) | 4 | 23 |
| 10 | K | 423/549 (77%) | 381 (90%) | 42 (10%) | 8 | 35 |
| 11 | L | 155/168 (92%) | 140 (90%) | 15 (10%) | 8 | 36 |
| 12 | M | 55/67 (82%) | 44 (80%) | 11 (20%) | 1 | 8 |
| 13 | N | 459/724 (63%) | 403 (88%) | 56 (12%) | 5 | 26 |
| 14 | O | 578/652 (89%) | 491 (85%) | 87 (15%) | 3 | 19 |
| 15 | R | 324/428 (76%) | 306 (94%) | 18 (6%) | 21 | 56 |
| 16 | S | 56/404 (14%) | 43 (77%) | 13 (23%) | 1 | 5 |
| 17 | T | 1/2 (50%) | 1 (100%) | 0 | 100 | 100 |
| 19 | W | 23/77 (30%) | 22 (96%) | 1 (4%) | 29 | 63 |
| 20 | X | 407/484 (84%) | 378 (93%) | 29 (7%) | 14 | 48 |
| 20 | Y | 418/484 (86%) | 382 (91%) | 36 (9%) | 10 | 41 |
| All | All | 6963/9883 (70%) | 6185 (89%) | 778 (11%) | 9 | 30 |

All (778) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 31 | HIS |
| 1 | A | 35 | LEU |
| 1 | A | 36 | ASN |
| 1 | A | 37 | LEU |
| 1 | A | 39 | LEU |
| 1 | A | 47 | GLU |
| 1 | A | 88 | ASP |
| 1 | A | 90 | ASP |
| 1 | A | 92 | GLU |
| 1 | A | 98 | ASN |
| 1 | A | 99 | MET |
| 1 | A | 107 | LYS |
| 1 | A | 120 | ASP |
| 1 | A | 127 | LEU |
| 1 | A | 129 | CYS |
| 1 | A | 150 | CYS |
| 1 | A | 151 | ILE |
| 1 | A | 159 | ILE |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 168 | ASP |
| 1 | A | 173 | LEU |
| 1 | A | 180 | VAL |
| 1 | A | 187 | LEU |
| 1 | A | 188 | LEU |
| 1 | A | 210 | MET |
| 1 | A | 212 | SER |
| 1 | A | 214 | LEU |
| 1 | A | 242 | HIS |
| 1 | A | 248 | PHE |
| 1 | A | 249 | LEU |
| 1 | A | 250 | ASN |
| 1 | A | 429 | LYS |
| 1 | A | 439 | GLN |
| 1 | A | 444 | PHE |
| 1 | A | 449 | GLN |
| 1 | A | 450 | LEU |
| 1 | A | 453 | ARG |
| 1 | A | 455 | VAL |
| 1 | A | 456 | LYS |
| 1 | A | 459 | GLU |
| 1 | A | 474 | ILE |
| 1 | A | 491 | LEU |
| 1 | A | 497 | LEU |
| 1 | A | 508 | LYS |
| 1 | A | 583 | TYR |
| 1 | A | 584 | ILE |
| 1 | A | 611 | GLU |
| 1 | A | 629 | LEU |
| 1 | A | 638 | LEU |
| 1 | A | 640 | LYS |
| 1 | A | 656 | GLU |
| 1 | A | 659 | LEU |
| 1 | A | 664 | LEU |
| 1 | A | 774 | LYS |
| 1 | A | 781 | GLU |
| 1 | A | 787 | VAL |
| 1 | A | 796 | ASP |
| 1 | A | 808 | ARG |
| 1 | A | 812 | THR |
| 1 | A | 844 | ILE |
| 1 | A | 852 | LEU |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 871 | ARG |
| 1 | A | 874 | VAL |
| 1 | A | 925 | SER |
| 1 | A | 934 | MET |
| 1 | A | 945 | GLU |
| 1 | A | 953 | LEU |
| 1 | A | 960 | TYR |
| 1 | A | 962 | CYS |
| 1 | A | 964 | GLU |
| 1 | A | 976 | LEU |
| 1 | A | 1016 | MET |
| 1 | A | 1026 | LEU |
| 1 | A | 1048 | ARG |
| 1 | A | 1071 | LEU |
| 1 | A | 1075 | GLN |
| 1 | A | 1076 | ARG |
| 1 | A | 1081 | PRO |
| 1 | A | 1089 | LEU |
| 1 | A | 1100 | LEU |
| 1 | A | 1105 | LEU |
| 1 | A | 1107 | LEU |
| 1 | A | 1136 | SER |
| 1 | A | 1146 | LYS |
| 1 | A | 1168 | LEU |
| 1 | A | 1170 | ASN |
| 1 | A | 1171 | GLU |
| 1 | A | 1176 | LEU |
| 1 | A | 1177 | MET |
| 1 | A | 1179 | LEU |
| 1 | A | 1181 | LEU |
| 1 | A | 1184 | HIS |
| 1 | A | 1202 | GLU |
| 1 | A | 1216 | LYS |
| 1 | A | 1217 | LEU |
| 1 | A | 1230 | ILE |
| 1 | A | 1232 | ILE |
| 1 | A | 1243 | LEU |
| 1 | A | 1250 | GLN |
| 1 | A | 1255 | VAL |
| 1 | A | 1273 | LEU |
| 1 | A | 1279 | ARG |
| 1 | A | 1292 | GLU |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 1312 | ASN |
| 1 | A | 1313 | LEU |
| 1 | A | 1319 | LEU |
| 1 | A | 1323 | GLU |
| 1 | A | 1359 | ASN |
| 1 | A | 1378 | THR |
| 1 | A | 1386 | TRP |
| 1 | A | 1387 | LEU |
| 1 | A | 1392 | THR |
| 1 | A | 1404 | LEU |
| 1 | A | 1405 | LEU |
| 1 | A | 1409 | LEU |
| 1 | A | 1424 | LYS |
| 1 | A | 1482 | LEU |
| 1 | A | 1487 | CYS |
| 1 | A | 1511 | ASN |
| 1 | A | 1536 | LEU |
| 1 | A | 1538 | LEU |
| 1 | A | 1540 | ARG |
| 1 | A | 1544 | MET |
| 1 | A | 1546 | THR |
| 1 | A | 1556 | LEU |
| 1 | A | 1562 | LEU |
| 1 | A | 1573 | SER |
| 1 | A | 1588 | LEU |
| 1 | A | 1597 | THR |
| 1 | A | 1603 | LEU |
| 1 | A | 1607 | ARG |
| 1 | A | 1646 | GLN |
| 1 | A | 1650 | GLU |
| 1 | A | 1651 | LEU |
| 1 | A | 1652 | MET |
| 1 | A | 1662 | LEU |
| 1 | A | 1663 | LEU |
| 1 | A | 1665 | GLN |
| 1 | A | 1666 | ILE |
| 1 | A | 1674 | TRP |
| 1 | A | 1684 | THR |
| 1 | A | 1687 | LEU |
| 1 | A | 1688 | LYS |
| 1 | A | 1693 | LYS |
| 1 | A | 1694 | ASP |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 1706 | LEU |
| 1 | A | 1734 | ARG |
| 1 | A | 1747 | ASP |
| 1 | A | 1751 | LEU |
| 1 | A | 1759 | LYS |
| 1 | A | 1773 | LEU |
| 1 | A | 1778 | LEU |
| 1 | A | 1801 | ARG |
| 1 | A | 1808 | MET |
| 1 | A | 1809 | SER |
| 1 | A | 1824 | PHE |
| 1 | A | 1828 | SER |
| 1 | A | 1854 | THR |
| 1 | A | 1861 | GLN |
| 1 | A | 1872 | HIS |
| 1 | A | 1874 | TYR |
| 1 | A | 1881 | LEU |
| 1 | A | 1885 | LEU |
| 2 | B | 11 | VAL |
| 2 | B | 14 | TRP |
| 2 | B | 15 | LEU |
| 2 | B | 16 | TRP |
| 2 | B | 34 | CYS |
| 2 | B | 36 | ASP |
| 2 | B | 50 | GLN |
| 2 | B | 61 | LEU |
| 2 | B | 83 | LYS |
| 2 | B | 84 | GLU |
| 3 | C | 26 | PHE |
| 3 | C | 39 | ILE |
| 3 | C | 42 | LEU |
| 3 | C | 44 | ARG |
| 3 | C | 49 | LEU |
| 3 | C | 57 | GLU |
| 3 | C | 77 | THR |
| 3 | C | 89 | LEU |
| 3 | C | 97 | LYS |
| 3 | C | 100 | ASP |
| 3 | C | 112 | LYS |
| 3 | C | 122 | ARG |
| 3 | C | 138 | LEU |
| 3 | C | 147 | LYS |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | C | 160 | LYS |
| 3 | C | 161 | LEU |
| 3 | C | 172 | LEU |
| 3 | C | 174 | LEU |
| 3 | C | 182 | LEU |
| 3 | C | 197 | HIS |
| 3 | C | 239 | THR |
| 3 | C | 244 | ILE |
| 3 | C | 268 | GLN |
| 3 | C | 280 | ASP |
| 3 | C | 289 | LEU |
| 3 | C | 300 | MET |
| 3 | C | 301 | ASP |
| 3 | C | 302 | THR |
| 3 | C | 307 | LEU |
| 3 | C | 310 | ARG |
| 3 | C | 312 | MET |
| 3 | C | 313 | LYS |
| 3 | C | 335 | CYS |
| 3 | C | 343 | LEU |
| 3 | C | 358 | LEU |
| 3 | C | 361 | ASN |
| 3 | C | 376 | MET |
| 3 | C | 377 | GLU |
| 3 | C | 389 | ARG |
| 3 | C | 397 | ARG |
| 3 | C | 408 | THR |
| 3 | C | 423 | ARG |
| 3 | C | 424 | ARG |
| 3 | C | 428 | LEU |
| 3 | C | 432 | ASP |
| 3 | C | 434 | ARG |
| 3 | C | 435 | MET |
| 3 | C | 441 | GLU |
| 3 | C | 451 | GLU |
| 3 | C | 476 | LEU |
| 3 | C | 516 | LEU |
| 3 | C | 524 | LYS |
| 3 | C | 550 | LEU |
| 4 | D | 11 | ARG |
| 4 | D | 25 | VAL |
| 4 | D | 30 | LEU |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 4 | D | 49 | ASN |
| 5 | E | 56 | GLU |
| 5 | E | 58 | VAL |
| 5 | E | 61 | TYR |
| 5 | E | 69 | GLN |
| 5 | E | 79 | MET |
| 5 | E | 85 | LEU |
| 5 | E | 87 | GLU |
| 5 | E | 88 | GLU |
| 5 | E | 90 | GLU |
| 5 | E | 99 | ILE |
| 6 | F | 22 | ARG |
| 6 | F | 27 | LEU |
| 6 | F | 43 | LEU |
| 6 | F | 59 | ARG |
| 6 | F | 66 | CYS |
| 6 | F | 74 | LEU |
| 6 | F | 82 | LEU |
| 6 | F | 90 | GLN |
| 6 | F | 98 | ASN |
| 6 | F | 104 | ASP |
| 6 | F | 121 | LEU |
| 6 | F | 135 | SER |
| 6 | F | 141 | SER |
| 6 | F | 143 | SER |
| 6 | F | 145 | ASN |
| 6 | F | 154 | SER |
| 6 | F | 165 | ASP |
| 6 | F | 476 | LEU |
| 6 | F | 480 | ASN |
| 6 | F | 492 | PRO |
| 6 | F | 494 | HIS |
| 6 | F | 507 | ARG |
| 6 | F | 527 | ARG |
| 6 | F | 530 | ASN |
| 6 | F | 536 | MET |
| 6 | F | 538 | ILE |
| 6 | F | 540 | SER |
| 6 | F | 549 | ASP |
| 6 | F | 562 | MET |
| 6 | F | 564 | LYS |
| 6 | F | 595 | GLN |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 6 | F | 614 | THR |
| 6 | F | 656 | MET |
| 6 | F | 667 | GLN |
| 6 | F | 685 | SER |
| 6 | F | 701 | LYS |
| 6 | F | 705 | CYS |
| 6 | F | 709 | ARG |
| 6 | F | 720 | LYS |
| 6 | F | 761 | SER |
| 7 | G | 5 | LYS |
| 7 | G | 23 | ARG |
| 6 | H | 22 | ARG |
| 6 | H | 27 | LEU |
| 6 | H | 43 | LEU |
| 6 | H | 59 | ARG |
| 6 | H | 61 | LEU |
| 6 | H | 66 | CYS |
| 6 | H | 74 | LEU |
| 6 | H | 82 | LEU |
| 6 | H | 90 | GLN |
| 6 | H | 98 | ASN |
| 6 | H | 141 | SER |
| 6 | H | 143 | SER |
| 6 | H | 154 | SER |
| 6 | H | 165 | ASP |
| 6 | H | 462 | LEU |
| 6 | H | 476 | LEU |
| 6 | H | 480 | ASN |
| 6 | H | 481 | CYS |
| 6 | H | 492 | PRO |
| 6 | H | 494 | HIS |
| 6 | H | 507 | ARG |
| 6 | H | 530 | ASN |
| 6 | H | 536 | MET |
| 6 | H | 540 | SER |
| 6 | H | 563 | ASP |
| 6 | H | 564 | LYS |
| 6 | H | 571 | CYS |
| 6 | H | 613 | LEU |
| 6 | H | 629 | ARG |
| 6 | H | 633 | ARG |
| 6 | H | 655 | GLU |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 6 | H | 667 | GLN |
| 6 | H | 685 | SER |
| 6 | H | 709 | ARG |
| 6 | H | 720 | LYS |
| 6 | H | 762 | TRP |
| 8 | I | 26 | LEU |
| 8 | I | 34 | LEU |
| 8 | I | 35 | ILE |
| 8 | I | 37 | LEU |
| 8 | I | 75 | PRO |
| 8 | I | 92 | LEU |
| 8 | I | 95 | VAL |
| 8 | I | 101 | LEU |
| 8 | I | 110 | VAL |
| 8 | I | 218 | SER |
| 8 | I | 224 | SER |
| 8 | I | 232 | SER |
| 8 | I | 259 | SER |
| 8 | I | 266 | ASN |
| 8 | I | 269 | LEU |
| 8 | I | 273 | CYS |
| 8 | I | 281 | MET |
| 8 | I | 287 | LEU |
| 8 | I | 308 | LEU |
| 8 | I | 322 | MET |
| 8 | I | 333 | LEU |
| 8 | I | 336 | SER |
| 8 | I | 349 | ILE |
| 8 | I | 352 | LEU |
| 8 | I | 353 | GLN |
| 8 | I | 359 | LEU |
| 8 | I | 360 | LEU |
| 8 | I | 361 | TYR |
| 8 | I | 372 | TRP |
| 8 | I | 382 | ASP |
| 8 | I | 397 | ILE |
| 8 | I | 401 | ASN |
| 8 | I | 423 | VAL |
| 8 | I | 472 | VAL |
| 8 | I | 473 | GLU |
| 8 | I | 474 | ARG |
| 8 | I | 489 | PRO |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 8 | I | 505 | SER |
| 8 | I | 522 | LEU |
| 8 | I | 536 | CYS |
| 8 | I | 553 | CYS |
| 8 | I | 564 | ASP |
| 8 | I | 571 | LYS |
| 8 | I | 632 | ARG |
| 8 | I | 688 | THR |
| 8 | I | 718 | LYS |
| 8 | I | 736 | SER |
| 8 | I | 745 | GLU |
| 9 | J | 9 | ARG |
| 9 | J | 23 | LEU |
| 9 | J | 46 | CYS |
| 9 | J | 87 | GLN |
| 9 | J | 134 | LEU |
| 9 | J | 141 | ASP |
| 9 | J | 148 | LEU |
| 9 | J | 157 | LEU |
| 9 | J | 163 | CYS |
| 9 | J | 164 | PHE |
| 9 | J | 169 | LEU |
| 9 | J | 170 | LEU |
| 9 | J | 172 | SER |
| 9 | J | 180 | GLU |
| 9 | J | 185 | LEU |
| 9 | J | 188 | LEU |
| 9 | J | 195 | ASN |
| 9 | J | 202 | ARG |
| 9 | J | 206 | GLU |
| 9 | J | 207 | ASN |
| 9 | J | 211 | LYS |
| 9 | J | 214 | LYS |
| 9 | J | 229 | LYS |
| 9 | J | 254 | THR |
| 9 | J | 258 | MET |
| 9 | J | 259 | GLU |
| 9 | J | 267 | CYS |
| 9 | J | 294 | LEU |
| 9 | J | 298 | ASN |
| 9 | J | 307 | CYS |
| 9 | J | 323 | LEU |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 9 | J | 329 | LEU |
| 9 | J | 331 | LYS |
| 9 | J | 338 | ILE |
| 9 | J | 340 | TYR |
| 9 | J | 343 | SER |
| 9 | J | 348 | SER |
| 9 | J | 351 | ASP |
| 9 | J | 354 | MET |
| 9 | J | 363 | LEU |
| 9 | J | 385 | LYS |
| 9 | J | 395 | LEU |
| 9 | J | 423 | LYS |
| 9 | J | 429 | LEU |
| 9 | J | 439 | VAL |
| 9 | J | 448 | LEU |
| 9 | J | 456 | ARG |
| 9 | J | 465 | LEU |
| 9 | J | 472 | LEU |
| 9 | J | 488 | ILE |
| 9 | J | 497 | ASN |
| 9 | J | 509 | ARG |
| 9 | J | 510 | ARG |
| 9 | J | 518 | MET |
| 9 | J | 522 | CYS |
| 9 | J | 525 | MET |
| 10 | K | 9 | ARG |
| 10 | K | 45 | GLN |
| 10 | K | 46 | CYS |
| 10 | K | 52 | GLN |
| 10 | K | 63 | ARG |
| 10 | K | 87 | GLN |
| 10 | K | 134 | LEU |
| 10 | K | 141 | ASP |
| 10 | K | 148 | LEU |
| 10 | K | 157 | LEU |
| 10 | K | 163 | CYS |
| 10 | K | 164 | PHE |
| 10 | K | 169 | LEU |
| 10 | K | 188 | LEU |
| 10 | K | 194 | CYS |
| 10 | K | 195 | ASN |
| 10 | K | 254 | THR |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 10 | K | 267 | CYS |
| 10 | K | 277 | GLU |
| 10 | K | 283 | GLU |
| 10 | K | 284 | LEU |
| 10 | K | 327 | THR |
| 10 | K | 331 | LYS |
| 10 | K | 338 | ILE |
| 10 | K | 340 | TYR |
| 10 | K | 342 | HIS |
| 10 | K | 343 | SER |
| 10 | K | 348 | SER |
| 10 | K | 351 | ASP |
| 10 | K | 359 | THR |
| 10 | K | 363 | LEU |
| 10 | K | 376 | LEU |
| 10 | K | 385 | LYS |
| 10 | K | 423 | LYS |
| 10 | K | 429 | LEU |
| 10 | K | 454 | VAL |
| 10 | K | 477 | GLN |
| 10 | K | 496 | GLU |
| 10 | K | 497 | ASN |
| 10 | K | 510 | ARG |
| 10 | K | 518 | MET |
| 10 | K | 522 | CYS |
| 11 | L | 12 | ASP |
| 11 | L | 23 | ARG |
| 11 | L | 25 | ILE |
| 11 | L | 32 | SER |
| 11 | L | 36 | CYS |
| 11 | L | 45 | LEU |
| 11 | L | 54 | TRP |
| 11 | L | 67 | GLN |
| 11 | L | 77 | LEU |
| 11 | L | 84 | LYS |
| 11 | L | 113 | LEU |
| 11 | L | 132 | THR |
| 11 | L | 151 | THR |
| 11 | L | 177 | PHE |
| 11 | L | 184 | ARG |
| 12 | M | 12 | LEU |
| 12 | M | 17 | ASP |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 12 | M | 27 | GLU |
| 12 | M | 35 | GLU |
| 12 | M | 48 | GLU |
| 12 | M | 51 | LYS |
| 12 | M | 55 | MET |
| 12 | M | 59 | ASP |
| 12 | M | 60 | LEU |
| 12 | M | 63 | GLN |
| 12 | M | 64 | TYR |
| 13 | N | 74 | TRP |
| 13 | N | 75 | PHE |
| 13 | N | 77 | GLU |
| 13 | N | 80 | GLN |
| 13 | N | 150 | ARG |
| 13 | N | 170 | GLN |
| 13 | N | 180 | PHE |
| 13 | N | 181 | LEU |
| 13 | N | 202 | GLU |
| 13 | N | 206 | ARG |
| 13 | N | 232 | TRP |
| 13 | N | 243 | LEU |
| 13 | N | 250 | LEU |
| 13 | N | 251 | SER |
| 13 | N | 255 | ARG |
| 13 | N | 256 | VAL |
| 13 | N | 271 | GLU |
| 13 | N | 278 | ARG |
| 13 | N | 281 | TYR |
| 13 | N | 285 | PHE |
| 13 | N | 322 | ARG |
| 13 | N | 334 | ARG |
| 13 | N | 340 | ARG |
| 13 | N | 351 | PHE |
| 13 | N | 365 | LEU |
| 13 | N | 366 | GLU |
| 13 | N | 373 | GLN |
| 13 | N | 374 | LEU |
| 13 | N | 379 | LYS |
| 13 | N | 392 | ASN |
| 13 | N | 399 | LEU |
| 13 | N | 410 | ILE |
| 13 | N | 425 | ARG |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 13 | N | 433 | ASP |
| 13 | N | 435 | VAL |
| 13 | N | 498 | SER |
| 13 | N | 503 | SER |
| 13 | N | 504 | LEU |
| 13 | N | 513 | ASP |
| 13 | N | 516 | ILE |
| 13 | N | 517 | ASN |
| 13 | N | 531 | PHE |
| 13 | N | 544 | LEU |
| 13 | N | 561 | LEU |
| 13 | N | 571 | ASN |
| 13 | N | 584 | GLU |
| 13 | N | 592 | TYR |
| 13 | N | 594 | VAL |
| 13 | N | 609 | LEU |
| 13 | N | 622 | TYR |
| 13 | N | 623 | CYS |
| 13 | N | 625 | LYS |
| 13 | N | 626 | TYR |
| 13 | N | 640 | THR |
| 13 | N | 670 | PHE |
| 13 | N | 699 | TRP |
| 14 | O | 29 | TRP |
| 14 | O | 38 | LEU |
| 14 | O | 40 | LEU |
| 14 | O | 43 | GLU |
| 14 | O | 62 | GLN |
| 14 | O | 64 | LEU |
| 14 | O | 78 | LEU |
| 14 | O | 98 | LYS |
| 14 | O | 99 | LEU |
| 14 | O | 104 | GLU |
| 14 | O | 106 | LYS |
| 14 | O | 129 | THR |
| 14 | O | 130 | SER |
| 14 | O | 132 | VAL |
| 14 | O | 136 | LEU |
| 14 | O | 143 | TYR |
| 14 | O | 166 | GLU |
| 14 | O | 207 | LEU |
| 14 | O | 218 | GLN |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 14 | O | 219 | GLN |
| 14 | O | 243 | LEU |
| 14 | O | 257 | SER |
| 14 | O | 266 | ASP |
| 14 | O | 274 | LEU |
| 14 | O | 280 | ARG |
| 14 | O | 299 | SER |
| 14 | O | 313 | ARG |
| 14 | O | 319 | GLN |
| 14 | O | 328 | ILE |
| 14 | O | 329 | ARG |
| 14 | O | 344 | LEU |
| 14 | O | 345 | SER |
| 14 | O | 347 | LEU |
| 14 | O | 352 | GLN |
| 14 | O | 367 | LYS |
| 14 | O | 387 | GLN |
| 14 | O | 396 | ASN |
| 14 | O | 398 | LEU |
| 14 | O | 404 | ASP |
| 14 | O | 408 | LEU |
| 14 | O | 417 | LEU |
| 14 | O | 419 | ASP |
| 14 | O | 426 | THR |
| 14 | O | 431 | LEU |
| 14 | O | 434 | ARG |
| 14 | O | 435 | SER |
| 14 | O | 510 | CYS |
| 14 | O | 511 | ASP |
| 14 | O | 517 | ASP |
| 14 | O | 533 | THR |
| 14 | O | 563 | LEU |
| 14 | O | 567 | LEU |
| 14 | O | 568 | LEU |
| 14 | O | 579 | MET |
| 14 | O | 581 | ILE |
| 14 | O | 585 | LEU |
| 14 | O | 586 | SER |
| 14 | O | 595 | SER |
| 14 | O | 598 | THR |
| 14 | O | 608 | LEU |
| 14 | O | 618 | TYR |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 14 | O | 619 | LEU |
| 14 | O | 623 | THR |
| 14 | O | 625 | LEU |
| 14 | O | 626 | ASN |
| 14 | O | 632 | LEU |
| 14 | O | 633 | ILE |
| 14 | O | 634 | LEU |
| 14 | O | 636 | ILE |
| 14 | O | 641 | LEU |
| 14 | O | 643 | LEU |
| 14 | O | 646 | MET |
| 14 | O | 649 | GLU |
| 14 | O | 654 | ASP |
| 14 | O | 657 | ILE |
| 14 | O | 669 | LYS |
| 14 | O | 685 | GLU |
| 14 | O | 691 | ILE |
| 14 | O | 693 | ASN |
| 14 | O | 694 | LEU |
| 14 | O | 706 | CYS |
| 14 | O | 713 | VAL |
| 14 | O | 717 | GLN |
| 14 | O | 723 | THR |
| 14 | O | 735 | MET |
| 14 | O | 752 | ILE |
| 14 | O | 755 | LEU |
| 3 | P | 39 | ILE |
| 3 | P | 46 | ARG |
| 3 | P | 51 | SER |
| 3 | P | 77 | THR |
| 3 | P | 89 | LEU |
| 3 | P | 97 | LYS |
| 3 | P | 98 | GLU |
| 3 | P | 100 | ASP |
| 3 | P | 107 | HIS |
| 3 | P | 122 | ARG |
| 3 | P | 128 | LYS |
| 3 | P | 147 | LYS |
| 3 | P | 157 | GLU |
| 3 | P | 160 | LYS |
| 3 | P | 161 | LEU |
| 3 | P | 174 | LEU |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | P | 182 | LEU |
| 3 | P | 209 | LEU |
| 3 | P | 234 | LEU |
| 3 | P | 239 | THR |
| 3 | P | 244 | ILE |
| 3 | P | 268 | GLN |
| 3 | P | 289 | LEU |
| 3 | P | 300 | MET |
| 3 | P | 302 | THR |
| 3 | P | 303 | PHE |
| 3 | P | 310 | ARG |
| 3 | P | 312 | MET |
| 3 | P | 313 | LYS |
| 3 | P | 321 | HIS |
| 3 | P | 335 | CYS |
| 3 | P | 343 | LEU |
| 3 | P | 344 | ARG |
| 3 | P | 352 | LEU |
| 3 | P | 358 | LEU |
| 3 | P | 365 | LEU |
| 3 | P | 373 | HIS |
| 3 | P | 392 | ILE |
| 3 | P | 395 | ASN |
| 3 | P | 408 | THR |
| 3 | P | 414 | MET |
| 3 | P | 423 | ARG |
| 3 | P | 428 | LEU |
| 3 | P | 435 | MET |
| 3 | P | 441 | GLU |
| 3 | P | 451 | GLU |
| 3 | P | 479 | GLN |
| 3 | P | 495 | GLN |
| 3 | P | 524 | LYS |
| 15 | R | 44 | HIS |
| 15 | R | 57 | TRP |
| 15 | R | 89 | LEU |
| 15 | R | 94 | LEU |
| 15 | R | 99 | LEU |
| 15 | R | 106 | LYS |
| 15 | R | 127 | LEU |
| 15 | R | 128 | PHE |
| 15 | R | 132 | LEU |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 15 | R | 148 | TYR |
| 15 | R | 150 | LEU |
| 15 | R | 157 | SER |
| 15 | R | 160 | LEU |
| 15 | R | 162 | ARG |
| 15 | R | 289 | ARG |
| 15 | R | 370 | LEU |
| 15 | R | 488 | LEU |
| 15 | R | 492 | ILE |
| 16 | S | 321 | PHE |
| 16 | S | 326 | LYS |
| 16 | S | 327 | SER |
| 16 | S | 374 | SER |
| 16 | S | 375 | LEU |
| 16 | S | 383 | SER |
| 16 | S | 388 | ASP |
| 16 | S | 390 | TYR |
| 16 | S | 395 | THR |
| 16 | S | 401 | CYS |
| 16 | S | 406 | CYS |
| 16 | S | 411 | CYS |
| 16 | S | 418 | ASP |
| 19 | W | 14 | ASP |
| 20 | X | 39 | ASP |
| 20 | X | 49 | LEU |
| 20 | X | 51 | SER |
| 20 | X | 79 | LEU |
| 20 | X | 106 | GLN |
| 20 | X | 110 | LEU |
| 20 | X | 184 | GLN |
| 20 | X | 193 | LYS |
| 20 | X | 255 | ILE |
| 20 | X | 292 | LEU |
| 20 | X | 299 | MET |
| 20 | X | 323 | ASP |
| 20 | X | 356 | SER |
| 20 | X | 371 | ASN |
| 20 | X | 372 | SER |
| 20 | X | 377 | LEU |
| 20 | X | 386 | MET |
| 20 | X | 411 | GLU |
| 20 | X | 414 | ILE |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 20 | X | 452 | LEU |
| 20 | X | 453 | GLU |
| 20 | X | 457 | THR |
| 20 | X | 460 | LYS |
| 20 | X | 465 | LEU |
| 20 | X | 475 | TYR |
| 20 | X | 487 | SER |
| 20 | X | 506 | GLN |
| 20 | X | 515 | LEU |
| 20 | X | 539 | ASP |
| 20 | Y | 39 | ASP |
| 20 | Y | 49 | LEU |
| 20 | Y | 51 | SER |
| 20 | Y | 54 | ARG |
| 20 | Y | 59 | LEU |
| 20 | Y | 70 | LEU |
| 20 | Y | 79 | LEU |
| 20 | Y | 94 | ARG |
| 20 | Y | 184 | GLN |
| 20 | Y | 193 | LYS |
| 20 | Y | 198 | GLN |
| 20 | Y | 199 | CYS |
| 20 | Y | 255 | ILE |
| 20 | Y | 292 | LEU |
| 20 | Y | 299 | MET |
| 20 | Y | 303 | TYR |
| 20 | Y | 323 | ASP |
| 20 | Y | 356 | SER |
| 20 | Y | 371 | ASN |
| 20 | Y | 377 | LEU |
| 20 | Y | 386 | MET |
| 20 | Y | 409 | CYS |
| 20 | Y | 411 | GLU |
| 20 | Y | 414 | ILE |
| 20 | Y | 452 | LEU |
| 20 | Y | 453 | GLU |
| 20 | Y | 457 | THR |
| 20 | Y | 460 | LYS |
| 20 | Y | 465 | LEU |
| 20 | Y | 475 | TYR |
| 20 | Y | 487 | SER |
| 20 | Y | 506 | GLN |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20 | Y | 515 | LEU |
| 20 | Y | 539 | ASP |
| 20 | Y | 551 | LYS |
| 20 | Y | 552 | MET |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (142) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | A | 31 | HIS |
| 1 | A | 36 | ASN |
| 1 | A | 38 | GLN |
| 1 | A | 160 | ASN |
| 1 | A | 176 | GLN |
| 1 | A | 179 | ASN |
| 1 | A | 215 | HIS |
| 1 | A | 593 | ASN |
| 1 | A | 619 | GLN |
| 1 | A | 792 | GLN |
| 1 | A | 846 | GLN |
| 1 | A | 1021 | HIS |
| 1 | A | 1060 | HIS |
| 1 | A | 1138 | HIS |
| 1 | A | 1165 | HIS |
| 1 | A | 1170 | ASN |
| 1 | A | 1309 | HIS |
| 1 | A | 1359 | ASN |
| 1 | A | 1380 | ASN |
| 1 | A | 1511 | ASN |
| 1 | A | 1543 | HIS |
| 1 | A | 1559 | HIS |
| 1 | A | 1604 | GLN |
| 1 | A | 1646 | GLN |
| 1 | A | 1665 | GLN |
| 1 | A | 1798 | GLN |
| 1 | A | 1816 | GLN |
| 1 | A | 1895 | HIS |
| 2 | B | 9 | ASN |
| 2 | B | 50 | GLN |
| 3 | C | 71 | GLN |
| 3 | C | 145 | GLN |
| 3 | C | 236 | HIS |
| 3 | C | 287 | ASN |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | C | 299 | ASN |
| 3 | C | 305 | ASN |
| 3 | C | 321 | HIS |
| 3 | C | 373 | HIS |
| 3 | C | 518 | GLN |
| 4 | D | 49 | ASN |
| 5 | E | 75 | GLN |
| 6 | F | 64 | HIS |
| 6 | F | 634 | HIS |
| 6 | F | 636 | ASN |
| 6 | H | 14 | GLN |
| 6 | H | 90 | GLN |
| 6 | H | 480 | ASN |
| 6 | H | 545 | HIS |
| 6 | H | 595 | GLN |
| 6 | H | 634 | HIS |
| 6 | H | 648 | GLN |
| 6 | H | 657 | HIS |
| 6 | H | 667 | GLN |
| 6 | H | 702 | ASN |
| 6 | H | 716 | ASN |
| 6 | H | 754 | HIS |
| 6 | H | 759 | ASN |
| 8 | I | 235 | GLN |
| 8 | I | 266 | ASN |
| 8 | I | 323 | ASN |
| 8 | I | 353 | GLN |
| 8 | I | 374 | GLN |
| 8 | I | 523 | HIS |
| 8 | I | 535 | GLN |
| 8 | I | 740 | HIS |
| 9 | J | 16 | GLN |
| 9 | J | 18 | GLN |
| 9 | J | 58 | HIS |
| 9 | J | 271 | HIS |
| 9 | J | 316 | ASN |
| 9 | J | 342 | HIS |
| 9 | J | 382 | ASN |
| 9 | J | 393 | GLN |
| 9 | J | 406 | HIS |
| 9 | J | 477 | GLN |
| 10 | K | 17 | GLN |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 10 | K | 18 | GLN |
| 10 | K | 20 | GLN |
| 10 | K | 45 | GLN |
| 10 | K | 271 | HIS |
| 10 | K | 352 | GLN |
| 10 | K | 449 | ASN |
| 11 | L | 49 | ASN |
| 11 | L | 146 | GLN |
| 11 | L | 152 | HIS |
| 13 | N | 266 | HIS |
| 13 | N | 370 | GLN |
| 13 | N | 388 | HIS |
| 13 | N | 517 | ASN |
| 13 | N | 571 | ASN |
| 13 | N | 639 | HIS |
| 13 | N | 663 | GLN |
| 13 | N | 671 | GLN |
| 14 | O | 62 | GLN |
| 14 | O | 91 | ASN |
| 14 | O | 138 | HIS |
| 14 | O | 219 | GLN |
| 14 | O | 242 | ASN |
| 14 | O | 247 | ASN |
| 14 | O | 318 | GLN |
| 14 | O | 319 | GLN |
| 14 | O | 363 | HIS |
| 14 | O | 387 | GLN |
| 14 | O | 424 | GLN |
| 14 | O | 441 | GLN |
| 14 | O | 449 | ASN |
| 14 | O | 462 | ASN |
| 14 | O | 472 | HIS |
| 14 | O | 539 | ASN |
| 14 | O | 552 | GLN |
| 14 | O | 556 | GLN |
| 14 | O | 671 | GLN |
| 14 | O | 693 | ASN |
| 14 | O | 717 | GLN |
| 3 | P | 50 | HIS |
| 3 | P | 71 | GLN |
| 3 | P | 236 | HIS |
| 3 | P | 249 | GLN |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3 | P | 287 | ASN |
| 3 | P | 299 | ASN |
| 3 | P | 305 | ASN |
| 3 | P | 321 | HIS |
| 3 | P | 339 | ASN |
| 3 | P | 355 | GLN |
| 3 | P | 361 | ASN |
| 15 | R | 60 | ASN |
| 15 | R | 249 | HIS |
| 15 | R | 350 | GLN |
| 15 | R | 366 | HIS |
| 15 | R | 435 | GLN |
| 20 | X | 106 | GLN |
| 20 | X | 151 | GLN |
| 20 | X | 337 | GLN |
| 20 | X | 371 | ASN |
| 20 | X | 471 | GLN |
| 20 | X | 506 | GLN |
| 20 | Y | 296 | GLN |
| 20 | Y | 337 | GLN |
| 20 | Y | 371 | ASN |
| 20 | Y | 432 | ASN |
| 20 | Y | 506 | GLN |
| 20 | Y | 541 | 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 5 ligands modelled in this entry, 5 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 13 | N | 2 |
| 16 | S | 1 |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1 | S | 419:CYS | C | 420:SER | N | 27.15 |
| 1 | N | 92:TRP | C | 93:ASN | N | 3.02 |
| 1 | N | 563:ASP | C | 564:MET | N | 2.52 |

6 Map visualisation

This section contains visualisations of the EMDB entry EMD-2924. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

This section was not generated.

6.2 Central slices

This section was not generated.

6.3 Largest variance slices

This section was not generated.

6.4 Orthogonal standard-deviation projections (False-color)

This section was not generated.

6.5 Orthogonal surface views

This section was not generated.

6.6 Mask visualisation

This section was not generated. No masks/segmentation were deposited.

7 Map analysis

This section contains the results of statistical analysis of the map.

7.1 Map-value distribution

This section was not generated.

7.2 Volume estimate versus contour level

This section was not generated.

7.3 Rotationally averaged power spectrum

This section was not generated. The rotationally averaged power spectrum had issues being displayed.

8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit

This section was not generated.