



Full wwPDB X-ray Structure Validation Report ⓘ

Jan 31, 2016 – 09:12 PM GMT

PDB ID : 1NKW
Title : Crystal Structure Of The Large Ribosomal Subunit From Deinococcus Radiodurans
Authors : Harms, J.M.; Schlutzen, F.; Zarivach, R.; Bashan, A.; Gat, S.; Agmon, I.; Bartels, H.; Franceschi, F.; Yonath, A.
Deposited on : 2003-01-05
Resolution : 3.10 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

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

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

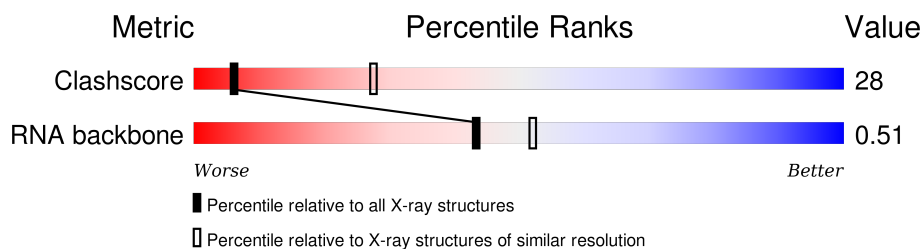
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.10 Å.

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



| Metric | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|--------------|-----------------------------|---|
| Clashscore | 102246 | 1222 (3.14-3.06) |
| RNA backbone | 2183 | 1010 (3.52-2.68) |

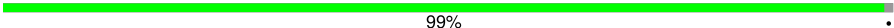





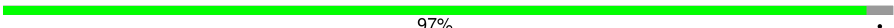

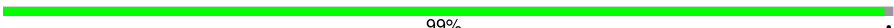
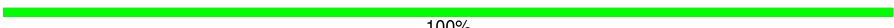




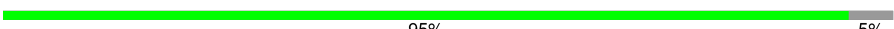
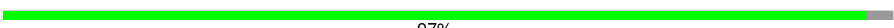
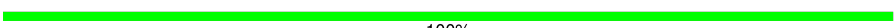
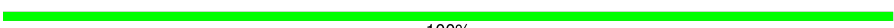
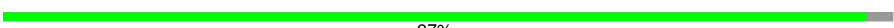

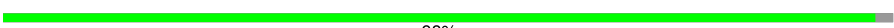


The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Note EDS was not executed.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | 0 | 2880 | |
| 2 | 9 | 124 | |
| 3 | A | 275 | |
| 4 | B | 211 | |
| 5 | C | 205 | |
| 6 | D | 180 | |
| 7 | E | 212 | |
| 8 | F | 146 | |

Continued on next page...

Continued from previous page...

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 9 | G | 144 |  99% |
| 10 | H | 174 |  82% 18% |
| 11 | I | 134 |  99% |
| 12 | J | 156 |  90% 10% |
| 13 | K | 142 |  87% 13% |
| 14 | L | 116 |  98% |
| 15 | M | 114 |  97% |
| 16 | N | 166 |  74% 25% |
| 17 | O | 118 |  99% |
| 18 | P | 100 |  100% |
| 19 | Q | 134 |  97% |
| 20 | R | 95 |  98% |
| 21 | S | 115 |  98% |
| 22 | T | 253 |  88% 12% |
| 23 | U | 91 |  95% 5% |
| 24 | W | 67 |  97% |
| 25 | X | 55 |  100% |
| 26 | Y | 73 |  100% |
| 27 | Z | 60 |  97% |
| 28 | 1 | 82 |  65% 35% |
| 29 | 2 | 47 |  98% |
| 30 | 3 | 64 |  98% |
| 31 | 4 | 36 |  97% |

2 Entry composition

There are 31 unique types of molecules in this entry. The entry contains 65300 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 23S ribosomal RNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|------|---------|---------|-------|
| 1 | 0 | 2766 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 59359 | 26479 | 10949 | 19166 | 2765 | | | |

- Molecule 2 is a RNA chain called 5S ribosomal RNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|---------|-------|
| 2 | 9 | 118 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 2519 | 1124 | 464 | 813 | 118 | | | |

- Molecule 3 is a protein called 50S ribosomal protein L2.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 3 | A | 270 | Total | C | 0 | 0 | 270 |
| | | | 270 | 270 | | | |

- Molecule 4 is a protein called 50S ribosomal protein L3.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 4 | B | 205 | Total | C | 0 | 0 | 205 |
| | | | 205 | 205 | | | |

- Molecule 5 is a protein called 50S ribosomal protein L4.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 5 | C | 197 | Total | C | 0 | 0 | 197 |
| | | | 197 | 197 | | | |

- Molecule 6 is a protein called 50S ribosomal protein L5.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 6 | D | 178 | Total | C | 0 | 0 | 178 |
| | | | 178 | 178 | | | |

- Molecule 7 is a protein called 50S ribosomal protein L6.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 7 | E | 177 | Total | C | 0 | 0 | 177 |
| | | | 177 | 177 | | | |

- Molecule 8 is a protein called 50S ribosomal protein L9.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|----|---------|---------|-------|
| 8 | F | 52 | Total | C | 0 | 0 | 52 |
| | | | 52 | 52 | | | |

- Molecule 9 is a protein called 50S ribosomal protein L11.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 9 | G | 143 | Total | C | 0 | 0 | 143 |
| | | | 143 | 143 | | | |

- Molecule 10 is a protein called 50S ribosomal protein L13.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 10 | H | 143 | Total | C | 0 | 0 | 143 |
| | | | 143 | 143 | | | |

- Molecule 11 is a protein called 50S ribosomal protein L14.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 11 | I | 132 | Total | C | 0 | 0 | 132 |
| | | | 132 | 132 | | | |

- Molecule 12 is a protein called 50S ribosomal protein L15.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 12 | J | 141 | Total | C | 0 | 0 | 141 |
| | | | 141 | 141 | | | |

- Molecule 13 is a protein called 50S ribosomal protein L16.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 13 | K | 124 | Total | C | 0 | 0 | 124 |
| | | | 124 | 124 | | | |

- Molecule 14 is a protein called 50S ribosomal protein L17.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 14 | L | 114 | Total | C | 0 | 0 | 114 |
| | | | 114 | 114 | | | |

- Molecule 15 is a protein called 50S ribosomal protein L18.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 15 | M | 111 | Total | C | 8 | 0 | 111 |
| | | | 111 | 111 | | | |

- Molecule 16 is a protein called 50S ribosomal protein L19.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 16 | N | 125 | Total | C | 0 | 0 | 125 |
| | | | 125 | 125 | | | |

- Molecule 17 is a protein called 50S ribosomal protein L20.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 17 | O | 117 | Total | C | 16 | 0 | 117 |
| | | | 117 | 117 | | | |

- Molecule 18 is a protein called 50S ribosomal protein L21.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 18 | P | 100 | Total | C | 0 | 0 | 100 |
| | | | 100 | 100 | | | |

- Molecule 19 is a protein called 50S ribosomal protein L22.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|---------|---------|-------|
| 19 | Q | 130 | Total | C | 0 | 0 | 130 |
| | | | 130 | 130 | | | |

- Molecule 20 is a protein called 50S ribosomal protein L23.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|----|---------|---------|-------|
| 20 | R | 93 | Total | C | 0 | 0 | 93 |
| | | | 93 | 93 | | | |

- Molecule 21 is a protein called 50S ribosomal protein L24.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------------|---------|---------|-------|
| 21 | S | 113 | Total C 113 113 | 0 | 0 | 113 |

- Molecule 22 is a protein called general stress protein CTC.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------------|---------|---------|-------|
| 22 | T | 223 | Total C 223 223 | 43 | 0 | 223 |

- Molecule 23 is a protein called 50S ribosomal protein L27.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 23 | U | 86 | Total C 86 86 | 0 | 0 | 86 |

- Molecule 24 is a protein called 50S ribosomal protein L29.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 24 | W | 65 | Total C 65 65 | 0 | 0 | 65 |

- Molecule 25 is a protein called 50S ribosomal protein L30.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 25 | X | 55 | Total C 55 55 | 4 | 0 | 55 |

- Molecule 26 is a protein called 50S ribosomal protein L31.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 26 | Y | 73 | Total C 73 73 | 0 | 0 | 73 |

- Molecule 27 is a protein called 50S ribosomal protein L32.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 27 | Z | 58 | Total C 58 58 | 0 | 0 | 58 |

- Molecule 28 is a protein called 50S ribosomal protein L33.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 28 | 1 | 53 | Total C 53 53 | 0 | 0 | 53 |

- Molecule 29 is a protein called 50S ribosomal protein L34.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 29 | 2 | 46 | Total C 46 46 | 0 | 0 | 46 |

- Molecule 30 is a protein called 50S ribosomal protein L35.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 30 | 3 | 63 | Total C 63 63 | 0 | 0 | 63 |

- Molecule 31 is a protein called 50S ribosomal protein L36.

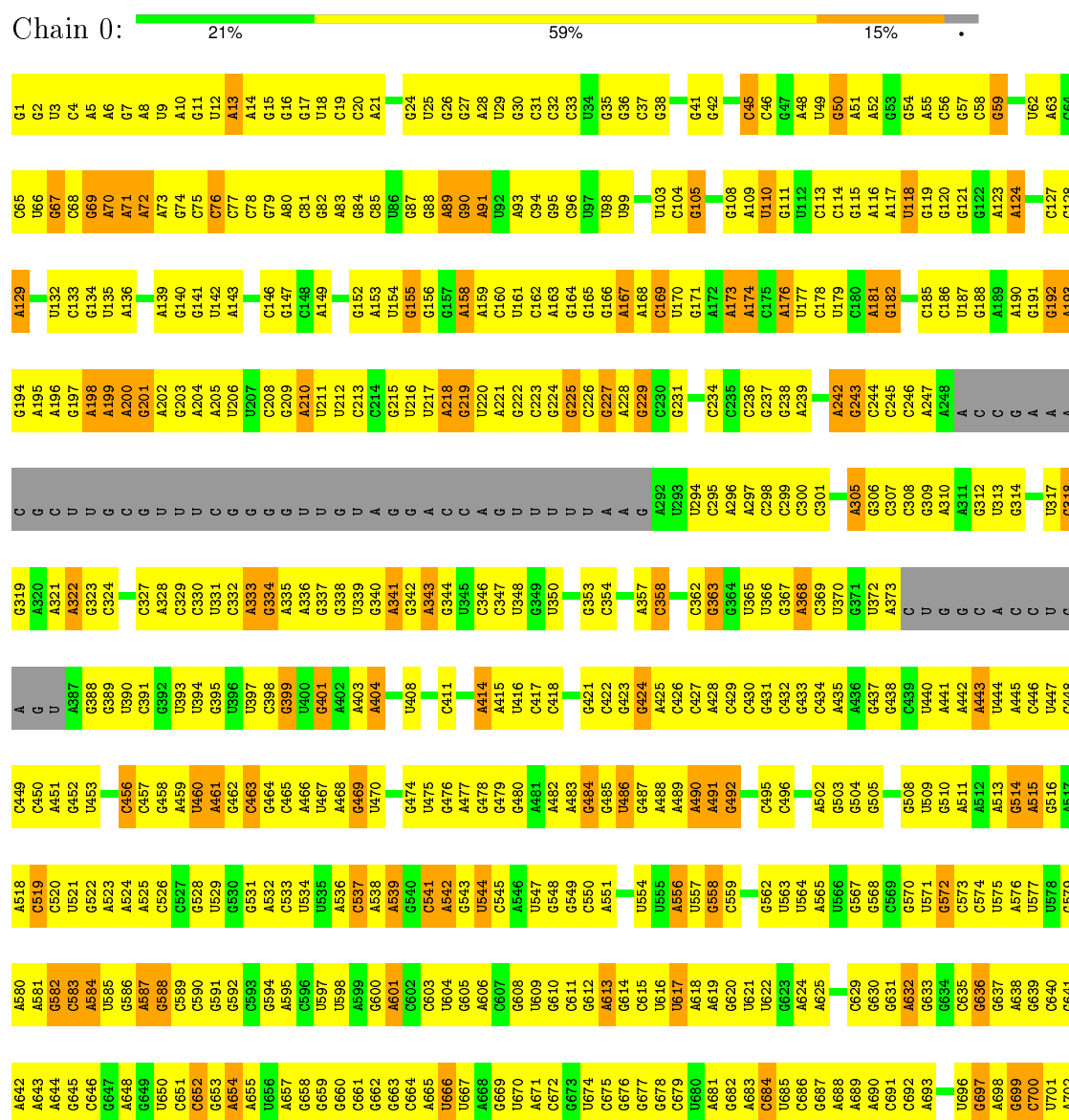
| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf | Trace |
|-----|-------|----------|------------------|---------|---------|-------|
| 31 | 4 | 35 | Total C 35 35 | 0 | 0 | 35 |

3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

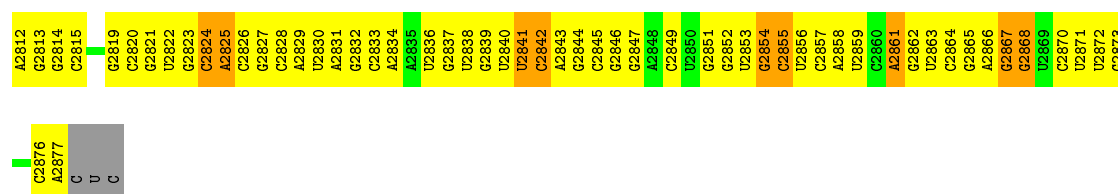
Note EDS was not executed.

• Molecule 1: 23S ribosomal RNA



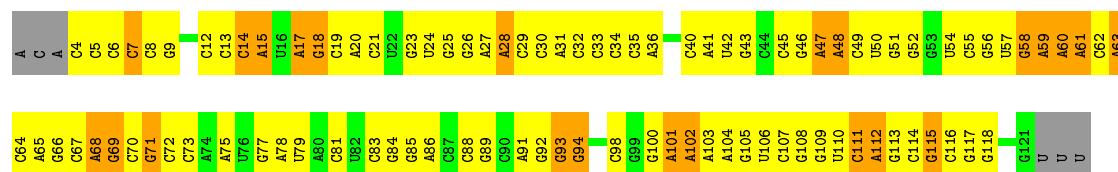






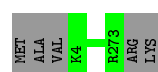
- Molecule 2: 5S ribosomal RNA

Chain 9: 18% 59% 19% 5%



- Molecule 3: 50S ribosomal protein L2

Chain A: 98%



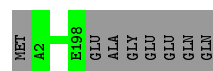
- Molecule 4: 50S ribosomal protein L3

Chain B: 97%



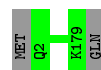
- Molecule 5: 50S ribosomal protein L4

Chain C: 96%



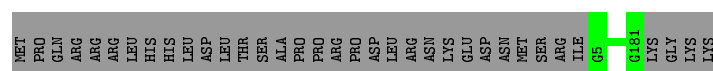
- Molecule 6: 50S ribosomal protein L5

Chain D: 99%

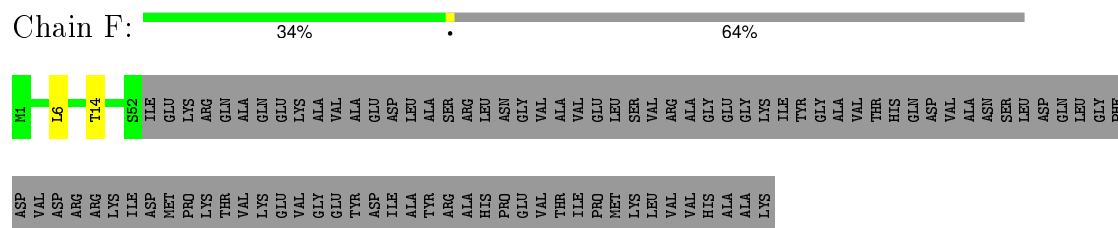


- Molecule 7: 50S ribosomal protein L6

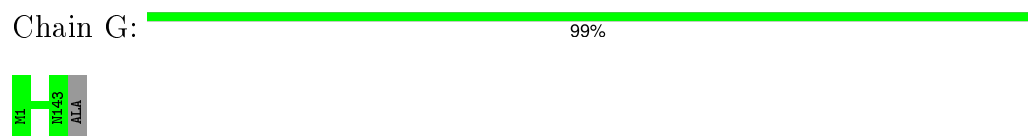
Chain E: 83% 17%



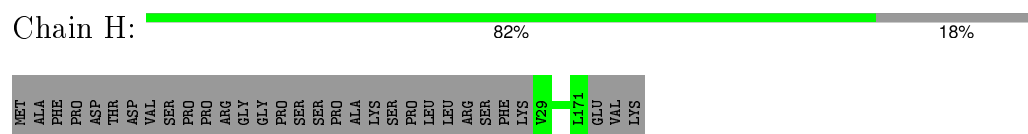
- Molecule 8: 50S ribosomal protein L9



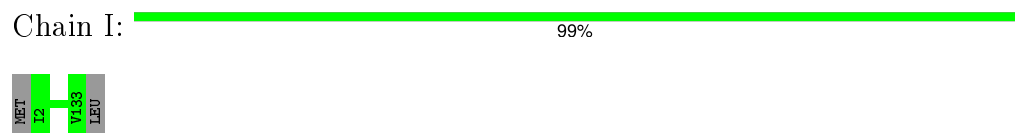
- Molecule 9: 50S ribosomal protein L11



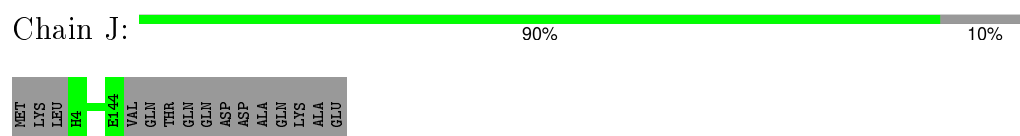
- Molecule 10: 50S ribosomal protein L13



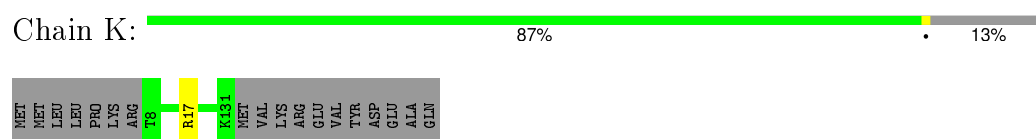
- Molecule 11: 50S ribosomal protein L14



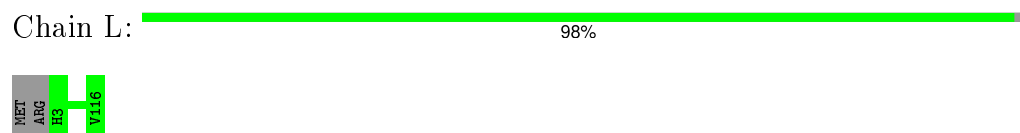
- Molecule 12: 50S ribosomal protein L15



- Molecule 13: 50S ribosomal protein L16



- Molecule 14: 50S ribosomal protein L17



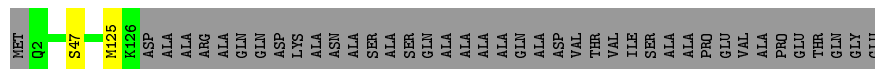
- Molecule 15: 50S ribosomal protein L18

Chain M:  97%



- Molecule 16: 50S ribosomal protein L19

Chain N:  74% 25%



- Molecule 17: 50S ribosomal protein L20

Chain O:  99%



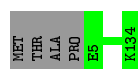
- Molecule 18: 50S ribosomal protein L21

Chain P:  100%

There are no outlier residues recorded for this chain.

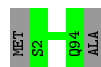
- Molecule 19: 50S ribosomal protein L22

Chain Q:  97%



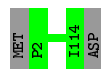
- Molecule 20: 50S ribosomal protein L23

Chain R:  98%




- Molecule 21: 50S ribosomal protein L24

Chain S:  98%



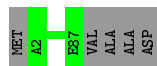
- Molecule 22: general stress protein CTC

Chain T:  88% 12%



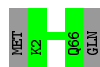
- Molecule 23: 50S ribosomal protein L27

Chain U: 95% 5%



- Molecule 24: 50S ribosomal protein L29

Chain W: 97% .



- Molecule 25: 50S ribosomal protein L30

Chain X: 100%

There are no outlier residues recorded for this chain.

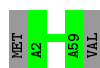
- Molecule 26: 50S ribosomal protein L31

Chain Y: 100%

There are no outlier residues recorded for this chain.

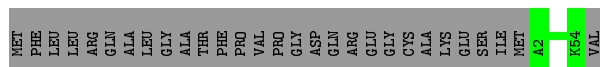
- Molecule 27: 50S ribosomal protein L32

Chain Z: 97% .



- Molecule 28: 50S ribosomal protein L33

Chain 1: 65% 35%



- Molecule 29: 50S ribosomal protein L34

Chain 2: 98% .



- Molecule 30: 50S ribosomal protein L35

Chain 3:  98% .



- Molecule 31: 50S ribosomal protein L36

Chain 4:  97% .



4 Data and refinement statistics

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

| Property | Value | Source |
|--|--|-----------|
| Space group | I 2 2 2 | Depositor |
| Cell constants a, b, c, α , β , γ | 170.00 Å 410.00 Å 697.00 Å 90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | 15.00 – 3.10 | Depositor |
| % Data completeness (in resolution range) | (Not available) (15.00-3.10) | Depositor |
| R_{merge} | (Not available) | Depositor |
| R_{sym} | (Not available) | Depositor |
| Refinement program | CNS | Depositor |
| R, R_{free} | 0.240 , 0.274 | Depositor |
| Estimated twinning fraction | No twinning to report. | Xtriage |
| Total number of atoms | 65300 | wwPDB-VP |
| Average B, all atoms (Å ²) | 47.0 | wwPDB-VP |

5 Model quality

5.1 Standard geometry

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

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|-------------|-------------|-----------------|
| | | RMSZ | $\# Z > 5$ | RMSZ | $\# Z > 5$ |
| 1 | 0 | 0.25 | 0/66467 | 0.70 | 6/103673 (0.0%) |
| 2 | 9 | 0.59 | 0/2816 | 0.81 | 1/4388 (0.0%) |
| All | All | 0.27 | 0/69283 | 0.70 | 7/108061 (0.0%) |

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 | 0 | 0 | 5 |

There are no bond length outliers.

All (7) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^{\circ}$) | Ideal($^{\circ}$) |
|-----|-------|------|------|-------------|-------|------------------------|---------------------|
| 2 | 9 | 94 | G | N9-C1'-C2' | -6.58 | 104.76 | 112.00 |
| 1 | 0 | 2428 | U | N1-C1'-C2' | 6.19 | 122.04 | 114.00 |
| 1 | 0 | 1279 | G | N9-C1'-C2' | 5.63 | 121.32 | 114.00 |
| 1 | 0 | 843 | G | C2'-C3'-O3' | 5.44 | 122.40 | 113.70 |
| 1 | 0 | 2660 | C | N1-C1'-C2' | 5.26 | 120.84 | 114.00 |
| 1 | 0 | 1264 | C | N1-C1'-C2' | 5.24 | 120.81 | 114.00 |
| 1 | 0 | 1342 | U | N1-C1'-C2' | 5.21 | 120.77 | 114.00 |

There are no chirality outliers.

All (5) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|------|------|-----------|
| 1 | 0 | 1264 | C | Sidechain |
| 1 | 0 | 1342 | U | Sidechain |
| 1 | 0 | 2251 | U | Sidechain |
| 1 | 0 | 2668 | U | Sidechain |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 1 | 0 | 788 | G | Sidechain |

5.2 Too-close contacts ⓘ

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | 0 | 59359 | 0 | 29917 | 2555 | 1 |
| 2 | 9 | 2519 | 0 | 1285 | 147 | 0 |
| 3 | A | 270 | 0 | 0 | 0 | 0 |
| 4 | B | 205 | 0 | 0 | 0 | 0 |
| 5 | C | 197 | 0 | 0 | 0 | 0 |
| 6 | D | 178 | 0 | 0 | 0 | 0 |
| 7 | E | 177 | 0 | 0 | 0 | 0 |
| 8 | F | 52 | 0 | 0 | 1 | 0 |
| 9 | G | 143 | 0 | 0 | 0 | 0 |
| 10 | H | 143 | 0 | 0 | 0 | 0 |
| 11 | I | 132 | 0 | 0 | 0 | 0 |
| 12 | J | 141 | 0 | 0 | 0 | 0 |
| 13 | K | 124 | 0 | 0 | 1 | 0 |
| 14 | L | 114 | 0 | 0 | 0 | 0 |
| 15 | M | 111 | 0 | 0 | 0 | 0 |
| 16 | N | 125 | 0 | 0 | 1 | 1 |
| 17 | O | 117 | 0 | 0 | 0 | 0 |
| 18 | P | 100 | 0 | 0 | 0 | 0 |
| 19 | Q | 130 | 0 | 0 | 0 | 0 |
| 20 | R | 93 | 0 | 0 | 0 | 0 |
| 21 | S | 113 | 0 | 0 | 0 | 0 |
| 22 | T | 223 | 0 | 0 | 0 | 0 |
| 23 | U | 86 | 0 | 0 | 0 | 0 |
| 24 | W | 65 | 0 | 0 | 0 | 0 |
| 25 | X | 55 | 0 | 0 | 0 | 0 |
| 26 | Y | 73 | 0 | 0 | 0 | 0 |
| 27 | Z | 58 | 0 | 0 | 0 | 0 |
| 28 | 1 | 53 | 0 | 0 | 0 | 0 |
| 29 | 2 | 46 | 0 | 0 | 0 | 0 |
| 30 | 3 | 63 | 0 | 0 | 0 | 0 |
| 31 | 4 | 35 | 0 | 0 | 0 | 0 |
| All | All | 65300 | 0 | 31202 | 2696 | 1 |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 28.

All (2696) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:1679:U:H2' | 1:0:1680:U:H5'' | 1.22 | 1.12 |
| 1:0:362:C:H2' | 1:0:363:G:H4' | 1.34 | 1.10 |
| 1:0:918:A:H2' | 1:0:919:U:H5'' | 1.29 | 1.10 |
| 1:0:2548:G:H2' | 1:0:2549:G:H5'' | 1.10 | 1.09 |
| 1:0:2058:U:H1' | 1:0:2576:G:H21 | 1.08 | 1.08 |
| 1:0:1908:C:H2' | 1:0:1909:U:H4' | 1.25 | 1.08 |
| 1:0:1976:U:H2' | 1:0:1977:C:H5' | 1.28 | 1.08 |
| 1:0:2014:A:H62 | 1:0:2477:C:H1' | 1.17 | 1.06 |
| 1:0:2548:G:C2' | 1:0:2549:G:H5'' | 1.85 | 1.06 |
| 1:0:940:G:H3' | 1:0:941:U:C5' | 1.86 | 1.05 |
| 1:0:940:G:H3' | 1:0:941:U:H5'' | 1.06 | 1.05 |
| 1:0:2299:A:H5' | 1:0:2300:G:C4 | 1.91 | 1.05 |
| 1:0:1900:U:O2' | 1:0:1946:U:H5' | 1.55 | 1.05 |
| 1:0:1458:A:H3' | 1:0:1459:U:C5' | 1.85 | 1.04 |
| 1:0:104:C:H2' | 1:0:105:G:H5'' | 1.35 | 1.04 |
| 1:0:716:U:H2' | 1:0:717:G:O4' | 1.55 | 1.03 |
| 1:0:2081:U:H2' | 1:0:2082:C:H5'' | 1.36 | 1.02 |
| 1:0:2266:A:N6 | 1:0:2323:U:H1' | 1.74 | 1.01 |
| 1:0:1073:G:H2' | 1:0:1074:G:H4' | 1.40 | 0.99 |
| 1:0:2038:C:H2' | 1:0:2483:U:H4' | 1.41 | 0.99 |
| 1:0:1900:U:H2' | 1:0:1901:A:O4' | 1.61 | 0.99 |
| 1:0:2414:A:H2' | 1:0:2415:G:H5'' | 1.44 | 0.99 |
| 1:0:1679:U:C2' | 1:0:1680:U:H5'' | 1.92 | 0.99 |
| 1:0:1900:U:H3' | 1:0:1901:A:H8 | 1.23 | 0.98 |
| 1:0:468:A:O2' | 1:0:469:G:H4' | 1.63 | 0.98 |
| 1:0:2059:U:H2' | 1:0:2060:A:H5'' | 1.44 | 0.98 |
| 1:0:75:C:H2' | 1:0:76:C:H5'' | 1.44 | 0.97 |
| 1:0:1458:A:H3' | 1:0:1459:U:H5'' | 1.47 | 0.96 |
| 1:0:1747:G:H4' | 1:0:1749:G:H1' | 1.46 | 0.96 |
| 1:0:2761:A:H5'' | 1:0:2762:G:H5' | 1.47 | 0.96 |
| 1:0:688:A:H62 | 1:0:816:U:H3 | 1.14 | 0.95 |
| 1:0:941:U:H2' | 1:0:942:U:O4' | 1.64 | 0.95 |
| 1:0:616:U:H2' | 1:0:617:U:H5'' | 1.46 | 0.95 |
| 1:0:2014:A:N6 | 1:0:2477:C:H1' | 1.82 | 0.94 |
| 1:0:1748:U:H3 | 1:0:1753:A:H2 | 1.11 | 0.94 |
| 1:0:1900:U:H3' | 1:0:1901:A:C8 | 2.02 | 0.94 |
| 2:9:54:U:H2' | 2:9:55:C:C6 | 2.03 | 0.94 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:2425:G:H2' | 1:0:2480:C:H5 | 1.32 | 0.94 |
| 1:0:1621:C:H4' | 1:0:1626:A:C6 | 2.03 | 0.94 |
| 1:0:2509:A:H2' | 1:0:2510:A:H5'' | 1.50 | 0.93 |
| 1:0:1656:U:H2' | 1:0:1657:A:H5'' | 1.50 | 0.93 |
| 1:0:1432:G:H21 | 1:0:1596:A:H62 | 1.07 | 0.93 |
| 1:0:1804:U:H2' | 1:0:1805:G:H8 | 1.33 | 0.93 |
| 2:9:25:G:H2' | 2:9:26:G:O4' | 1.69 | 0.92 |
| 1:0:1463:A:H1' | 1:0:1543:G:H22 | 1.34 | 0.92 |
| 2:9:84:G:H2' | 2:9:85:G:H8 | 1.34 | 0.92 |
| 1:0:1280:U:H3 | 1:0:1996:A:H62 | 1.09 | 0.92 |
| 1:0:28:A:H61 | 1:0:522:G:H4' | 1.35 | 0.92 |
| 1:0:976:C:H5' | 1:0:2252:A:H1' | 1.49 | 0.91 |
| 1:0:763:A:H2 | 1:0:765:C:H1' | 1.35 | 0.90 |
| 1:0:792:U:H2' | 1:0:793:G:H5' | 1.53 | 0.90 |
| 1:0:857:U:H2' | 1:0:858:G:H5' | 1.52 | 0.90 |
| 1:0:1438:G:H2' | 1:0:1439:G:O4' | 1.73 | 0.89 |
| 1:0:2623:A:H2' | 1:0:2624:G:O4' | 1.71 | 0.89 |
| 2:9:100:G:H2' | 2:9:101:A:O4' | 1.72 | 0.89 |
| 1:0:508:G:H1 | 1:0:516:G:H22 | 1.20 | 0.89 |
| 1:0:317:U:H2' | 1:0:318:G:H5'' | 1.54 | 0.89 |
| 1:0:2266:A:H61 | 1:0:2323:U:H1' | 1.37 | 0.89 |
| 1:0:2380:U:H2' | 1:0:2381:A:H5' | 1.53 | 0.89 |
| 1:0:1976:U:C2' | 1:0:1977:C:H5' | 2.03 | 0.88 |
| 2:9:67:C:H2' | 2:9:68:A:H5' | 1.54 | 0.88 |
| 1:0:929:A:H3' | 1:0:930:A:H5'' | 1.53 | 0.88 |
| 2:9:42:U:H2' | 2:9:45:C:H41 | 1.35 | 0.88 |
| 1:0:1088:A:H2' | 1:0:1089:C:O4' | 1.74 | 0.88 |
| 1:0:841:G:H2' | 1:0:842:A:C8 | 2.07 | 0.88 |
| 2:9:4:C:H2' | 2:9:5:C:C6 | 2.08 | 0.88 |
| 1:0:317:U:H3 | 1:0:321:A:H62 | 1.22 | 0.87 |
| 1:0:940:G:C3' | 1:0:941:U:H5'' | 2.01 | 0.87 |
| 1:0:762:A:H2' | 1:0:763:A:H8 | 1.38 | 0.87 |
| 1:0:2872:U:H2' | 1:0:2873:G:C8 | 2.10 | 0.87 |
| 1:0:1299:A:H2' | 1:0:1301:U:OP2 | 1.72 | 0.87 |
| 1:0:2096:U:H2' | 1:0:2097:A:H5'' | 1.53 | 0.87 |
| 1:0:1463:A:H1' | 1:0:1543:G:N2 | 1.88 | 0.87 |
| 1:0:2636:A:H62 | 1:0:2643:G:H21 | 1.22 | 0.87 |
| 1:0:2691:C:H3' | 1:0:2692:A:H5'' | 1.57 | 0.87 |
| 1:0:88:G:H3' | 1:0:89:A:H5'' | 1.57 | 0.87 |
| 1:0:1032:A:H2' | 1:0:1033:G:H4' | 1.56 | 0.86 |
| 1:0:2270:U:O2' | 1:0:2353:G:H1' | 1.76 | 0.86 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:1791:C:H2' | 1:0:1792:C:H5'' | 1.55 | 0.86 |
| 1:0:658:G:H4' | 1:0:2331:A:H5' | 1.57 | 0.86 |
| 1:0:847:C:H41 | 1:0:955:G:H21 | 1.19 | 0.86 |
| 1:0:58:C:H3' | 1:0:59:G:H5'' | 1.55 | 0.86 |
| 1:0:1312:G:H5' | 1:0:1314:A:H1' | 1.55 | 0.86 |
| 1:0:1459:U:H2' | 1:0:1475:U:O2' | 1.75 | 0.86 |
| 1:0:2510:A:H61 | 1:0:2641:A:H61 | 1.21 | 0.86 |
| 1:0:2198:U:H3' | 1:0:2199:C:H5'' | 1.57 | 0.85 |
| 2:9:102:A:C2' | 2:9:103:A:H5' | 2.06 | 0.85 |
| 1:0:590:C:H2' | 1:0:591:G:C8 | 2.10 | 0.85 |
| 1:0:2672:U:H2' | 1:0:2673:G:H8 | 1.40 | 0.85 |
| 1:0:2474:G:H2' | 1:0:2475:C:O4' | 1.76 | 0.85 |
| 1:0:215:G:H21 | 1:0:632:A:H8 | 1.20 | 0.85 |
| 1:0:1182:U:H2' | 1:0:1183:C:H5'' | 1.57 | 0.85 |
| 1:0:1966:C:H4' | 1:0:2585:C:H4' | 1.56 | 0.85 |
| 1:0:1252:C:C2' | 1:0:1253:C:H5'' | 2.06 | 0.85 |
| 1:0:103:U:H2' | 1:0:104:C:C6 | 2.11 | 0.85 |
| 1:0:813:A:H1' | 1:0:815:A:H4' | 1.59 | 0.84 |
| 1:0:2755:A:O2' | 1:0:2756:A:H5' | 1.75 | 0.84 |
| 1:0:2770:A:H4' | 1:0:2867:G:H22 | 1.42 | 0.84 |
| 1:0:762:A:H2' | 1:0:763:A:C8 | 2.13 | 0.84 |
| 1:0:2861:A:H2' | 1:0:2862:G:H8 | 1.43 | 0.84 |
| 1:0:2476:A:HO2' | 1:0:2477:C:H5 | 0.87 | 0.84 |
| 2:9:67:C:C2' | 2:9:68:A:H5' | 2.07 | 0.84 |
| 1:0:2674:C:H2' | 1:0:2675:U:H6 | 1.43 | 0.84 |
| 1:0:357:A:H2' | 1:0:358:C:H5' | 1.59 | 0.83 |
| 1:0:1252:C:H2' | 1:0:1253:C:H5'' | 1.61 | 0.83 |
| 1:0:2476:A:O2' | 1:0:2477:C:H5 | 1.61 | 0.83 |
| 2:9:102:A:O2' | 2:9:103:A:H5' | 1.77 | 0.83 |
| 1:0:558:G:H5'' | 1:0:559:C:C5 | 2.13 | 0.83 |
| 1:0:1976:U:H2' | 1:0:1977:C:C5' | 2.09 | 0.83 |
| 1:0:681:A:H2' | 1:0:683:A:N7 | 1.93 | 0.83 |
| 1:0:2058:U:H1' | 1:0:2576:G:N2 | 1.93 | 0.83 |
| 1:0:2318:U:H2' | 1:0:2319:G:H8 | 1.44 | 0.83 |
| 1:0:2409:A:H2' | 1:0:2410:U:H5' | 1.58 | 0.82 |
| 1:0:652:C:H42 | 1:0:657:A:H61 | 1.24 | 0.82 |
| 1:0:2499:C:H41 | 1:0:2521:A:H2 | 1.25 | 0.82 |
| 1:0:547:U:H2' | 1:0:548:G:C8 | 2.14 | 0.82 |
| 1:0:187:U:H2' | 1:0:188:G:H8 | 1.44 | 0.82 |
| 1:0:918:A:C2' | 1:0:919:U:H5'' | 2.07 | 0.82 |
| 1:0:1656:U:C2' | 1:0:1657:A:H5'' | 2.08 | 0.82 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:460:U:N3 | 1:0:592:G:H1' | 1.94 | 0.82 |
| 1:0:1242:A:H2' | 1:0:1243:G:C8 | 2.14 | 0.82 |
| 1:0:922:A:H2' | 1:0:923:A:H8 | 1.41 | 0.82 |
| 1:0:1922:U:H1' | 1:0:2570:C:O2' | 1.79 | 0.82 |
| 2:9:93:G:H2' | 2:9:94:G:H8 | 1.42 | 0.82 |
| 1:0:1295:U:H2' | 1:0:1296:G:H5' | 1.60 | 0.82 |
| 1:0:556:A:H2' | 1:0:557:U:H5' | 1.58 | 0.82 |
| 1:0:1181:C:H3' | 1:0:1182:U:H5'' | 1.59 | 0.81 |
| 1:0:367:G:H2' | 1:0:368:A:H5'' | 1.62 | 0.81 |
| 1:0:759:C:H1' | 1:0:761:G:H21 | 1.45 | 0.81 |
| 1:0:1608:U:H2' | 1:0:1609:G:H8 | 1.45 | 0.81 |
| 1:0:37:C:H2' | 1:0:38:G:H8 | 1.45 | 0.81 |
| 1:0:2861:A:H2' | 1:0:2862:G:C8 | 2.16 | 0.81 |
| 1:0:28:A:N6 | 1:0:522:G:H4' | 1.96 | 0.81 |
| 1:0:1982:C:H4' | 1:0:2703:C:O2 | 1.80 | 0.81 |
| 1:0:734:G:H2' | 1:0:735:G:H8 | 1.43 | 0.81 |
| 2:9:92:G:H2' | 2:9:93:G:H5' | 1.62 | 0.81 |
| 1:0:635:C:H2' | 1:0:636:G:H5'' | 1.60 | 0.81 |
| 1:0:641:G:H4' | 1:0:651:C:O2' | 1.80 | 0.81 |
| 1:0:1325:U:H4' | 1:0:1326:U:C6 | 2.15 | 0.81 |
| 1:0:2262:C:H2' | 1:0:2263:C:O4' | 1.81 | 0.81 |
| 2:9:12:C:H2' | 2:9:13:C:O4' | 1.81 | 0.81 |
| 1:0:1223:G:H21 | 1:0:1225:G:H21 | 1.29 | 0.81 |
| 2:9:7:C:O2' | 2:9:8:C:H5' | 1.80 | 0.81 |
| 1:0:651:C:H2' | 1:0:652:C:H5'' | 1.61 | 0.81 |
| 1:0:1055:A:C2 | 1:0:1121:G:H2' | 2.16 | 0.81 |
| 1:0:1587:A:H2' | 1:0:1588:A:C8 | 2.16 | 0.81 |
| 1:0:1040:A:H2' | 1:0:1041:G:H5' | 1.59 | 0.81 |
| 1:0:1922:U:O2 | 1:0:2571:G:H5' | 1.81 | 0.80 |
| 1:0:170:U:H2' | 1:0:171:G:H8 | 1.45 | 0.80 |
| 1:0:1348:C:H2' | 1:0:1349:A:C8 | 2.16 | 0.80 |
| 1:0:1710:U:H3 | 1:0:1821:A:H61 | 1.26 | 0.80 |
| 1:0:1267:A:H5'' | 1:0:1268:U:O5' | 1.81 | 0.80 |
| 1:0:1202:U:H2' | 1:0:1203:A:H8 | 1.45 | 0.80 |
| 1:0:2616:U:H2' | 1:0:2617:G:O4' | 1.81 | 0.80 |
| 1:0:613:A:H2' | 1:0:614:G:H8 | 1.46 | 0.80 |
| 1:0:727:U:H2' | 1:0:728:G:H5'' | 1.64 | 0.80 |
| 1:0:1774:A:H5' | 1:0:2587:G:H4' | 1.62 | 0.80 |
| 1:0:2491:C:H2' | 1:0:2492:G:O4' | 1.81 | 0.79 |
| 1:0:104:C:C2' | 1:0:105:G:H5'' | 2.13 | 0.79 |
| 1:0:1284:G:N3 | 1:0:1633:C:H5' | 1.97 | 0.79 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:930:A:H3' | 1:0:931:G:C8 | 2.17 | 0.79 |
| 1:0:37:C:H2' | 1:0:38:G:C8 | 2.16 | 0.79 |
| 1:0:75:C:C2' | 1:0:76:C:H5'' | 2.11 | 0.79 |
| 2:9:28:A:C2 | 2:9:29:C:H1' | 2.18 | 0.79 |
| 1:0:2030:U:H2' | 1:0:2031:A:H8 | 1.46 | 0.79 |
| 1:0:1479:G:H2' | 1:0:1480:G:H8 | 1.46 | 0.79 |
| 1:0:70:A:O3' | 1:0:71:A:H3' | 1.82 | 0.79 |
| 1:0:1313:U:H1' | 1:0:1642:G:N2 | 1.97 | 0.79 |
| 1:0:922:A:H2' | 1:0:923:A:C8 | 2.17 | 0.79 |
| 1:0:1445:A:H2' | 1:0:1446:U:O4' | 1.82 | 0.79 |
| 1:0:1066:G:H2' | 1:0:1067:G:H4' | 1.65 | 0.79 |
| 1:0:2038:C:H2' | 1:0:2483:U:C4' | 2.13 | 0.79 |
| 2:9:65:A:H2' | 2:9:66:G:C8 | 2.17 | 0.79 |
| 1:0:1319:C:H2' | 1:0:1320:A:H8 | 1.45 | 0.79 |
| 1:0:2081:U:C2' | 1:0:2082:C:H5'' | 2.13 | 0.79 |
| 1:0:792:U:C2' | 1:0:793:G:H5' | 2.11 | 0.79 |
| 1:0:1825:C:O2' | 1:0:1826:U:H5' | 1.83 | 0.79 |
| 1:0:930:A:H3' | 1:0:931:G:H8 | 1.45 | 0.79 |
| 1:0:2414:A:C2' | 1:0:2415:G:H5'' | 2.12 | 0.79 |
| 1:0:1463:A:C1' | 1:0:1543:G:H22 | 1.96 | 0.79 |
| 1:0:1750:A:H1' | 1:0:2690:A:C2 | 2.18 | 0.79 |
| 1:0:2034:A:H5' | 1:0:2557:G:O4' | 1.83 | 0.79 |
| 1:0:2498:U:H5'' | 1:0:2499:C:OP1 | 1.82 | 0.79 |
| 1:0:2158:C:H2' | 1:0:2159:A:H8 | 1.48 | 0.78 |
| 1:0:1974:U:H2' | 1:0:1975:G:H5'' | 1.65 | 0.78 |
| 1:0:1223:G:N2 | 1:0:1225:G:H21 | 1.80 | 0.78 |
| 1:0:2315:A:O2' | 1:0:2364:C:H5'' | 1.83 | 0.78 |
| 1:0:50:G:H2' | 1:0:117:A:C2 | 2.18 | 0.78 |
| 1:0:1608:U:H2' | 1:0:1609:G:C8 | 2.19 | 0.78 |
| 1:0:2324:G:O2' | 1:0:2325:A:H5'' | 1.83 | 0.78 |
| 1:0:1715:A:O2' | 1:0:1716:G:H3' | 1.83 | 0.78 |
| 1:0:1911:A:H2' | 1:0:1912:G:H5' | 1.66 | 0.78 |
| 1:0:1921:A:H2' | 1:0:1922:U:H5'' | 1.65 | 0.78 |
| 1:0:820:U:H2' | 1:0:821:A:H8 | 1.49 | 0.78 |
| 1:0:2652:G:H2' | 1:0:2653:A:H8 | 1.48 | 0.78 |
| 2:9:78:A:H2' | 2:9:79:U:C6 | 2.19 | 0.78 |
| 1:0:2015:G:H22 | 1:0:2038:C:H1' | 1.49 | 0.78 |
| 1:0:1789:U:H2' | 1:0:1790:G:H5' | 1.66 | 0.78 |
| 2:9:92:G:C2' | 2:9:93:G:H5' | 2.14 | 0.78 |
| 2:9:58:G:H4' | 2:9:59:A:H5' | 1.64 | 0.78 |
| 1:0:1886:G:H2' | 1:0:1887:G:H8 | 1.46 | 0.77 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:953:G:H1' | 1:0:1203:A:H2 | 1.49 | 0.77 |
| 1:0:1791:C:H1' | 1:0:1793:A:H5' | 1.67 | 0.77 |
| 1:0:331:U:H2' | 1:0:332:C:H5'' | 1.65 | 0.77 |
| 1:0:2437:G:N1 | 1:0:2469:G:H2' | 1.98 | 0.77 |
| 1:0:541:C:H42 | 1:0:572:G:H8 | 1.32 | 0.77 |
| 1:0:2510:A:N6 | 1:0:2641:A:H61 | 1.83 | 0.77 |
| 1:0:2308:A:H2' | 1:0:2309:G:C8 | 2.19 | 0.77 |
| 1:0:2736:U:O2' | 1:0:2737:A:H5' | 1.85 | 0.77 |
| 2:9:69:G:H2' | 2:9:70:C:O4' | 1.84 | 0.77 |
| 1:0:404:A:H1' | 1:0:424:G:O2' | 1.83 | 0.77 |
| 1:0:2605:C:H2' | 1:0:2606:G:O4' | 1.84 | 0.77 |
| 1:0:616:U:C2' | 1:0:617:U:H5'' | 2.14 | 0.77 |
| 1:0:509:U:H2' | 1:0:510:G:H5' | 1.66 | 0.77 |
| 2:9:65:A:H2' | 2:9:66:G:H8 | 1.50 | 0.77 |
| 1:0:612:G:O3' | 1:0:613:A:H4' | 1.85 | 0.77 |
| 1:0:19:C:H5' | 1:0:563:U:OP1 | 1.85 | 0.77 |
| 1:0:2324:G:H4' | 1:0:2326:C:H5'' | 1.67 | 0.77 |
| 1:0:1479:G:H2' | 1:0:1480:G:C8 | 2.21 | 0.76 |
| 1:0:2811:G:H2' | 1:0:2812:A:C8 | 2.20 | 0.76 |
| 1:0:1091:C:H2' | 1:0:1092:U:C6 | 2.20 | 0.76 |
| 1:0:1763:G:H2' | 1:0:1764:A:H4' | 1.66 | 0.76 |
| 1:0:2555:G:OP1 | 1:0:2555:G:H3' | 1.85 | 0.76 |
| 1:0:669:G:H2' | 1:0:670:U:C6 | 2.21 | 0.76 |
| 1:0:321:A:H2' | 1:0:323:G:N7 | 1.99 | 0.76 |
| 1:0:2633:A:H61 | 1:0:2646:C:N4 | 1.82 | 0.76 |
| 1:0:1811:A:H1' | 1:0:1813:A:C5 | 2.20 | 0.76 |
| 1:0:2329:C:H2' | 1:0:2330:G:O4' | 1.85 | 0.76 |
| 1:0:873:U:C2 | 1:0:2246:A:H5'' | 2.19 | 0.76 |
| 1:0:1474:A:N3 | 1:0:1474:A:H3' | 2.00 | 0.76 |
| 2:9:77:G:H2' | 2:9:78:A:O4' | 1.84 | 0.76 |
| 1:0:2308:A:H2' | 1:0:2309:G:H8 | 1.48 | 0.76 |
| 1:0:2836:U:H2' | 1:0:2837:G:C8 | 2.19 | 0.76 |
| 1:0:2320:G:H2' | 1:0:2321:C:O4' | 1.83 | 0.76 |
| 1:0:873:U:H1' | 1:0:2246:A:OP1 | 1.86 | 0.76 |
| 1:0:174:A:C4' | 1:0:2051:U:H2' | 2.16 | 0.76 |
| 1:0:689:A:H8 | 1:0:2052:G:H21 | 1.32 | 0.76 |
| 1:0:1697:U:H2' | 1:0:1698:C:O4' | 1.86 | 0.76 |
| 1:0:547:U:H2' | 1:0:548:G:H8 | 1.51 | 0.76 |
| 1:0:1036:G:H1' | 1:0:1145:C:C4' | 2.16 | 0.76 |
| 1:0:2447:G:H22 | 1:0:2460:G:H2' | 1.51 | 0.76 |
| 1:0:462:G:H2' | 1:0:463:C:H5'' | 1.68 | 0.75 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:734:G:H2' | 1:0:735:G:C8 | 2.20 | 0.75 |
| 1:0:1763:G:N2 | 1:0:1765:C:H5'' | 2.00 | 0.75 |
| 1:0:427:C:H2' | 1:0:428:A:H8 | 1.51 | 0.75 |
| 1:0:2836:U:H2' | 1:0:2837:G:H8 | 1.51 | 0.75 |
| 1:0:1471:G:H1 | 1:0:2682:C:H42 | 1.31 | 0.75 |
| 1:0:1280:U:H3 | 1:0:1996:A:N6 | 1.83 | 0.75 |
| 1:0:2569:A:H2' | 1:0:2570:C:C6 | 2.20 | 0.75 |
| 1:0:2829:A:H2' | 1:0:2830:U:O4' | 1.87 | 0.75 |
| 1:0:77:C:H2' | 1:0:78:C:C6 | 2.22 | 0.75 |
| 1:0:2321:C:H2' | 1:0:2322:U:O4' | 1.87 | 0.75 |
| 1:0:2268:G:H5'' | 1:0:2363:G:O2' | 1.86 | 0.75 |
| 1:0:2053:G:H2' | 1:0:2054:A:C8 | 2.22 | 0.75 |
| 1:0:2199:C:H2' | 1:0:2200:G:H8 | 1.52 | 0.75 |
| 1:0:800:U:H3' | 1:0:804:C:H41 | 1.52 | 0.75 |
| 1:0:162:C:H2' | 1:0:163:A:C8 | 2.21 | 0.75 |
| 1:0:1727:C:H4' | 1:0:2833:C:N3 | 2.02 | 0.75 |
| 1:0:2456:U:H1' | 1:0:2460:G:H22 | 1.50 | 0.75 |
| 1:0:699:G:H21 | 1:0:700:C:H5'' | 1.51 | 0.75 |
| 1:0:1055:A:H2 | 1:0:1121:G:H2' | 1.52 | 0.74 |
| 1:0:1195:U:H2' | 1:0:1196:G:C8 | 2.23 | 0.74 |
| 1:0:416:U:H5'' | 1:0:417:C:H5' | 1.68 | 0.74 |
| 1:0:1691:G:H21 | 1:0:1694:A:H61 | 1.34 | 0.74 |
| 1:0:2199:C:H2' | 1:0:2200:G:C8 | 2.21 | 0.74 |
| 1:0:1807:A:O2' | 1:0:1808:C:H4' | 1.88 | 0.74 |
| 1:0:2176:U:H2' | 1:0:2177:U:O4' | 1.88 | 0.74 |
| 1:0:705:C:H2' | 1:0:706:A:C8 | 2.22 | 0.74 |
| 1:0:763:A:C2 | 1:0:765:C:H1' | 2.22 | 0.74 |
| 1:0:1388:C:H2' | 1:0:1389:C:H6 | 1.52 | 0.74 |
| 1:0:632:A:H2' | 1:0:633:G:O4' | 1.88 | 0.74 |
| 1:0:929:A:H2' | 1:0:930:A:H4' | 1.70 | 0.74 |
| 1:0:652:C:H42 | 1:0:657:A:N6 | 1.84 | 0.74 |
| 1:0:218:A:O2' | 1:0:219:G:H4' | 1.88 | 0.74 |
| 1:0:2279:G:H2' | 1:0:2280:A:H8 | 1.52 | 0.74 |
| 1:0:118:U:H1' | 1:0:143:A:C8 | 2.23 | 0.74 |
| 1:0:1598:C:H2' | 1:0:1599:G:O4' | 1.87 | 0.74 |
| 1:0:1035:G:H21 | 1:0:1155:G:H4' | 1.52 | 0.74 |
| 1:0:870:C:H2' | 1:0:871:U:C6 | 2.23 | 0.74 |
| 1:0:1695:U:H2' | 1:0:1696:C:O4' | 1.88 | 0.74 |
| 1:0:1068:A:H2' | 1:0:1069:G:C8 | 2.23 | 0.74 |
| 1:0:813:A:O2' | 1:0:815:A:H5' | 1.86 | 0.73 |
| 1:0:1197:U:H2' | 1:0:1198:C:O4' | 1.88 | 0.73 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:441:A:H2' | 1:0:442:A:O4' | 1.88 | 0.73 |
| 1:0:1869:A:H2' | 1:0:1870:U:O4' | 1.88 | 0.73 |
| 1:0:760:U:O2 | 1:0:1997:A:H1' | 1.88 | 0.73 |
| 1:0:486:U:H4' | 1:0:520:C:H5' | 1.70 | 0.73 |
| 1:0:1654:A:H4' | 1:0:2690:A:O2' | 1.87 | 0.73 |
| 1:0:2437:G:H2' | 1:0:2469:G:N1 | 2.02 | 0.73 |
| 1:0:2469:G:H5'' | 1:0:2470:U:OP1 | 1.87 | 0.73 |
| 2:9:31:A:H2' | 2:9:32:C:O4' | 1.89 | 0.73 |
| 1:0:1036:G:H1' | 1:0:1145:C:H4' | 1.70 | 0.73 |
| 1:0:613:A:H2' | 1:0:614:G:C8 | 2.23 | 0.73 |
| 1:0:1958:G:H2' | 1:0:1959:U:C6 | 2.23 | 0.73 |
| 1:0:1225:G:H2' | 1:0:1249:G:H22 | 1.53 | 0.73 |
| 1:0:460:U:H3 | 1:0:592:G:H1' | 1.52 | 0.73 |
| 1:0:1284:G:C4 | 1:0:1633:C:H5' | 2.23 | 0.73 |
| 1:0:2158:C:H2' | 1:0:2159:A:C8 | 2.24 | 0.73 |
| 1:0:1440:G:H1' | 1:0:1588:A:N6 | 2.02 | 0.73 |
| 2:9:48:A:O2' | 2:9:49:C:H5' | 1.88 | 0.72 |
| 1:0:523:A:H4' | 1:0:1230:C:H5' | 1.72 | 0.72 |
| 1:0:190:A:H2' | 1:0:191:G:C8 | 2.24 | 0.72 |
| 1:0:815:A:H2' | 1:0:816:U:O4' | 1.88 | 0.72 |
| 1:0:208:C:H2' | 1:0:209:G:H5' | 1.70 | 0.72 |
| 1:0:2839:G:H2' | 1:0:2840:U:C6 | 2.23 | 0.72 |
| 1:0:2083:G:H2' | 1:0:2084:G:C8 | 2.24 | 0.72 |
| 1:0:2409:A:C2' | 1:0:2410:U:H5' | 2.19 | 0.72 |
| 1:0:652:C:N4 | 1:0:657:A:H61 | 1.87 | 0.72 |
| 1:0:681:A:C6 | 1:0:683:A:H2' | 2.24 | 0.72 |
| 1:0:163:A:H2' | 1:0:164:G:H8 | 1.54 | 0.72 |
| 1:0:2274:C:H2' | 1:0:2275:U:H5'' | 1.70 | 0.72 |
| 1:0:1685:A:H1' | 1:0:1686:A:C2 | 2.25 | 0.72 |
| 1:0:2781:G:H2' | 1:0:2782:G:O4' | 1.90 | 0.72 |
| 1:0:870:C:H2' | 1:0:871:U:H6 | 1.54 | 0.72 |
| 1:0:2569:A:H2' | 1:0:2570:C:H6 | 1.53 | 0.72 |
| 1:0:1698:C:O2' | 1:0:1753:A:H2' | 1.89 | 0.71 |
| 1:0:930:A:H5' | 1:0:931:G:N7 | 2.05 | 0.71 |
| 1:0:2781:G:H2' | 1:0:2782:G:C1' | 2.20 | 0.71 |
| 1:0:313:U:H2' | 1:0:314:G:C8 | 2.24 | 0.71 |
| 1:0:591:G:H2' | 1:0:592:G:H8 | 1.55 | 0.71 |
| 1:0:651:C:C2' | 1:0:652:C:H5'' | 2.20 | 0.71 |
| 1:0:890:U:H2' | 1:0:891:A:C8 | 2.25 | 0.71 |
| 1:0:459:A:H1' | 1:0:461:A:N6 | 2.05 | 0.71 |
| 1:0:1304:U:O2' | 1:0:1305:C:H5' | 1.89 | 0.71 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|----------------|--------------------------|-------------------|
| 1:0:1949:A:O2' | 1:0:2572:U:H5' | 1.90 | 0.71 |
| 2:9:61:A:O5' | 2:9:61:A:H8 | 1.73 | 0.71 |
| 1:0:109:A:H2' | 1:0:110:U:H5'' | 1.70 | 0.71 |
| 1:0:2185:U:H2' | 1:0:2186:G:C8 | 2.24 | 0.71 |
| 1:0:2674:C:H2' | 1:0:2675:U:C6 | 2.26 | 0.71 |
| 1:0:69:G:H5'' | 1:0:70:A:OP1 | 1.91 | 0.71 |
| 1:0:1851:A:H61 | 1:0:1867:A:H1' | 1.55 | 0.71 |
| 1:0:2005:U:H2' | 1:0:2595:C:O2' | 1.90 | 0.71 |
| 1:0:1789:U:O2' | 1:0:1793:A:H1' | 1.90 | 0.71 |
| 2:9:28:A:H3' | 2:9:29:C:H6 | 1.55 | 0.71 |
| 2:9:36:A:H2' | 2:9:46:G:O6 | 1.90 | 0.71 |
| 1:0:1560:A:H2' | 1:0:1561:A:O4' | 1.91 | 0.71 |
| 1:0:1690:U:H2' | 1:0:1691:G:H5' | 1.73 | 0.71 |
| 1:0:2266:A:C2 | 1:0:2268:G:H1' | 2.26 | 0.71 |
| 1:0:187:U:H2' | 1:0:188:G:C8 | 2.25 | 0.71 |
| 1:0:2390:A:H2' | 1:0:2391:A:H8 | 1.56 | 0.71 |
| 1:0:1312:G:H5'' | 1:0:1313:U:C5' | 2.20 | 0.70 |
| 1:0:1653:C:H2' | 1:0:1654:A:C8 | 2.25 | 0.70 |
| 1:0:1547:U:H2' | 1:0:1548:U:C6 | 2.26 | 0.70 |
| 1:0:1994:U:H2' | 1:0:1995:G:H5' | 1.73 | 0.70 |
| 1:0:2549:G:H2' | 1:0:2550:C:O4' | 1.91 | 0.70 |
| 1:0:490:A:O2' | 1:0:491:A:H5' | 1.90 | 0.70 |
| 1:0:2708:U:H2' | 1:0:2709:C:C6 | 2.26 | 0.70 |
| 1:0:2549:G:C2 | 1:0:2550:C:H1' | 2.26 | 0.70 |
| 1:0:939:C:H2' | 1:0:940:G:C8 | 2.27 | 0.70 |
| 1:0:1067:G:H21 | 1:0:1115:C:N4 | 1.89 | 0.70 |
| 1:0:2425:G:H2' | 1:0:2480:C:C5 | 2.22 | 0.70 |
| 1:0:1804:U:H2' | 1:0:1805:G:C8 | 2.23 | 0.70 |
| 1:0:88:G:H3' | 1:0:89:A:C5' | 2.21 | 0.70 |
| 1:0:2548:G:H2' | 1:0:2549:G:C5' | 2.05 | 0.70 |
| 1:0:951:G:C3' | 1:0:952:A:H5'' | 2.21 | 0.70 |
| 1:0:1908:C:H2' | 1:0:1909:U:C4' | 2.16 | 0.70 |
| 1:0:942:U:C2' | 1:0:943:U:H5' | 2.22 | 0.70 |
| 1:0:871:U:O2 | 1:0:2247:A:H2' | 1.92 | 0.70 |
| 1:0:2085:G:H2' | 1:0:2086:U:C6 | 2.26 | 0.70 |
| 2:9:71:G:N2 | 2:9:72:C:H1' | 2.07 | 0.70 |
| 1:0:618:A:H2' | 1:0:619:A:O4' | 1.91 | 0.70 |
| 1:0:245:C:H5' | 1:0:372:U:O2' | 1.92 | 0.70 |
| 2:9:84:G:O2' | 2:9:85:G:H5' | 1.91 | 0.70 |
| 1:0:1953:A:H1' | 1:0:1955:G:C1' | 2.20 | 0.70 |
| 1:0:2469:G:H4' | 1:0:2470:U:C5 | 2.27 | 0.70 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|----------------|--------------------------|-------------------|
| 1:0:2787:A:O2' | 1:0:2788:C:H5' | 1.92 | 0.70 |
| 1:0:76:C:H6 | 1:0:76:C:H5' | 1.56 | 0.70 |
| 1:0:1436:G:H21 | 1:0:1514:C:H1' | 1.55 | 0.70 |
| 1:0:1791:C:O2' | 1:0:1793:A:H5' | 1.92 | 0.70 |
| 1:0:1194:U:H2' | 1:0:1195:U:C6 | 2.26 | 0.70 |
| 1:0:1371:G:H1' | 1:0:1386:A:N6 | 2.07 | 0.70 |
| 1:0:462:G:H2' | 1:0:463:C:C5' | 2.22 | 0.69 |
| 1:0:1139:A:O2' | 1:0:2495:G:H4' | 1.92 | 0.69 |
| 1:0:2521:A:H5' | 1:0:2522:G:OP1 | 1.91 | 0.69 |
| 1:0:1588:A:H2' | 1:0:1589:G:H8 | 1.56 | 0.69 |
| 2:9:4:C:H2' | 2:9:5:C:H6 | 1.57 | 0.69 |
| 1:0:2609:G:H21 | 1:0:2866:A:H2 | 1.39 | 0.69 |
| 1:0:2841:U:H1' | 1:0:2843:A:H1' | 1.73 | 0.69 |
| 1:0:2273:C:H2' | 1:0:2274:C:C6 | 2.27 | 0.69 |
| 1:0:1889:G:H2' | 1:0:1890:G:C8 | 2.27 | 0.69 |
| 1:0:2466:G:H2' | 1:0:2467:A:C8 | 2.28 | 0.69 |
| 1:0:979:A:H2' | 1:0:980:G:O4' | 1.92 | 0.69 |
| 1:0:2057:U:H2' | 1:0:2058:U:C6 | 2.28 | 0.69 |
| 1:0:951:G:H2' | 1:0:952:A:H5'' | 1.73 | 0.69 |
| 1:0:141:G:H2' | 1:0:142:U:C6 | 2.28 | 0.69 |
| 1:0:663:G:H2' | 1:0:664:C:O4' | 1.92 | 0.69 |
| 1:0:487:G:H1' | 1:0:515:A:C2 | 2.27 | 0.69 |
| 1:0:2713:A:H2' | 1:0:2714:A:H8 | 1.57 | 0.69 |
| 1:0:2713:A:H2' | 1:0:2714:A:C8 | 2.28 | 0.69 |
| 2:9:6:C:H2' | 2:9:7:C:C6 | 2.26 | 0.69 |
| 1:0:1325:U:H4' | 1:0:1326:U:C5 | 2.28 | 0.69 |
| 1:0:2437:G:H2' | 1:0:2469:G:H1 | 1.58 | 0.69 |
| 1:0:964:A:H2' | 1:0:965:G:H8 | 1.57 | 0.69 |
| 1:0:2783:U:O2' | 1:0:2784:A:H4' | 1.91 | 0.69 |
| 1:0:2164:G:H2' | 1:0:2165:A:H8 | 1.58 | 0.69 |
| 1:0:1502:G:O2' | 1:0:1503:G:H5' | 1.93 | 0.69 |
| 1:0:414:A:H2' | 1:0:415:A:O4' | 1.93 | 0.69 |
| 1:0:2083:G:H2' | 1:0:2084:G:H8 | 1.58 | 0.69 |
| 1:0:2495:G:H2' | 1:0:2496:C:O4' | 1.93 | 0.69 |
| 1:0:1466:C:H2' | 1:0:1467:U:O4' | 1.92 | 0.69 |
| 1:0:2044:G:C8 | 1:0:2482:A:H1' | 2.28 | 0.69 |
| 1:0:1644:G:O2' | 1:0:1645:U:H5' | 1.93 | 0.69 |
| 1:0:2770:A:C5' | 1:0:2867:G:H1 | 2.06 | 0.69 |
| 1:0:1271:C:H2' | 1:0:1272:G:C8 | 2.27 | 0.69 |
| 1:0:487:G:H1' | 1:0:515:A:H2 | 1.56 | 0.68 |
| 1:0:2691:C:H3' | 1:0:2692:A:C5' | 2.22 | 0.68 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:1259:A:C2' | 1:0:1260:A:H5' | 2.23 | 0.68 |
| 1:0:2202:G:H2' | 1:0:2203:G:O4' | 1.93 | 0.68 |
| 1:0:1376:C:H2' | 1:0:1377:G:O4' | 1.92 | 0.68 |
| 1:0:2425:G:O2' | 1:0:2426:G:H5' | 1.93 | 0.68 |
| 2:9:84:G:H2' | 2:9:85:G:C8 | 2.22 | 0.68 |
| 1:0:792:U:H2' | 1:0:793:G:C5' | 2.22 | 0.68 |
| 1:0:824:U:H2' | 1:0:825:C:H5'' | 1.75 | 0.68 |
| 1:0:2122:G:H2' | 1:0:2123:G:C8 | 2.29 | 0.68 |
| 1:0:1975:G:N2 | 1:0:1978:U:H5 | 1.90 | 0.68 |
| 1:0:1587:A:H2' | 1:0:1588:A:H8 | 1.56 | 0.68 |
| 1:0:1838:G:H2' | 1:0:1839:A:H5' | 1.75 | 0.68 |
| 1:0:1086:C:H2' | 1:0:1087:C:H5'' | 1.74 | 0.68 |
| 1:0:1591:U:H2' | 1:0:1592:U:O4' | 1.93 | 0.68 |
| 1:0:133:C:H2' | 1:0:134:G:O4' | 1.93 | 0.68 |
| 1:0:2030:U:H2' | 1:0:2031:A:C8 | 2.28 | 0.68 |
| 1:0:239:A:H4' | 1:0:620:G:H5' | 1.75 | 0.68 |
| 1:0:1429:A:H62 | 1:0:1601:U:H5'' | 1.59 | 0.68 |
| 1:0:2510:A:H61 | 1:0:2641:A:N6 | 1.91 | 0.68 |
| 1:0:683:A:H5'' | 1:0:684:C:OP1 | 1.94 | 0.68 |
| 1:0:427:C:H2' | 1:0:428:A:C8 | 2.28 | 0.68 |
| 1:0:1467:U:H3' | 1:0:1468:A:C5' | 2.23 | 0.68 |
| 1:0:574:C:H4' | 1:0:1266:G:O6 | 1.93 | 0.68 |
| 1:0:2491:C:H2' | 1:0:2492:G:C4' | 2.23 | 0.68 |
| 1:0:2672:U:H2' | 1:0:2673:G:C8 | 2.27 | 0.68 |
| 1:0:168:A:H2' | 1:0:169:C:C6 | 2.29 | 0.68 |
| 1:0:2198:U:C3' | 1:0:2199:C:H5'' | 2.24 | 0.68 |
| 1:0:1191:G:H2' | 1:0:1192:A:H8 | 1.59 | 0.68 |
| 1:0:976:C:H5' | 1:0:2252:A:C1' | 2.23 | 0.68 |
| 1:0:1854:G:H1 | 1:0:1863:U:H3 | 1.39 | 0.68 |
| 1:0:826:U:O2' | 1:0:1238:A:H1' | 1.94 | 0.68 |
| 1:0:1073:G:H3' | 1:0:1074:G:H5'' | 1.76 | 0.67 |
| 1:0:1763:G:H21 | 1:0:1765:C:H5'' | 1.60 | 0.67 |
| 1:0:114:C:H4' | 1:0:124:A:O2' | 1.93 | 0.67 |
| 1:0:1346:C:P | 1:0:1346:C:H6 | 2.18 | 0.67 |
| 1:0:2757:G:H5' | 1:0:2761:A:H1' | 1.77 | 0.67 |
| 1:0:770:U:O2' | 1:0:771:C:H5' | 1.94 | 0.67 |
| 1:0:2299:A:H5'' | 1:0:2300:G:O5' | 1.94 | 0.67 |
| 1:0:1588:A:H2' | 1:0:1589:G:C8 | 2.30 | 0.67 |
| 1:0:1958:G:H2' | 1:0:1959:U:H6 | 1.60 | 0.67 |
| 1:0:2811:G:H2' | 1:0:2812:A:H8 | 1.58 | 0.67 |
| 1:0:1319:C:H2' | 1:0:1320:A:C8 | 2.29 | 0.67 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:2785:A:H2' | 1:0:2786:G:O4' | 1.95 | 0.67 |
| 1:0:1681:A:C2 | 1:0:2706:U:H1' | 2.30 | 0.67 |
| 1:0:1811:A:H1' | 1:0:1813:A:C4 | 2.29 | 0.67 |
| 1:0:2470:U:H2' | 1:0:2471:U:H6 | 1.59 | 0.67 |
| 1:0:2764:U:H2' | 1:0:2765:C:C6 | 2.29 | 0.67 |
| 1:0:1029:C:H3' | 1:0:1030:U:H5'' | 1.76 | 0.67 |
| 1:0:1352:G:H2' | 1:0:1353:A:C8 | 2.28 | 0.67 |
| 1:0:1204:G:H2' | 1:0:1205:G:C8 | 2.29 | 0.67 |
| 1:0:2119:A:O2' | 1:0:2120:C:H5' | 1.94 | 0.67 |
| 1:0:58:C:H3' | 1:0:59:G:C5' | 2.23 | 0.67 |
| 1:0:1826:U:O2' | 1:0:1952:A:H2' | 1.94 | 0.67 |
| 1:0:216:U:H5'' | 1:0:601:A:N6 | 2.10 | 0.67 |
| 1:0:1356:G:H5'' | 1:0:1614:C:OP2 | 1.95 | 0.67 |
| 1:0:1101:U:H3 | 1:0:1113:C:H1' | 1.59 | 0.67 |
| 1:0:1312:G:H5'' | 1:0:1313:U:H5'' | 1.77 | 0.67 |
| 1:0:1432:G:N2 | 1:0:1596:A:H62 | 1.89 | 0.67 |
| 1:0:1333:G:N7 | 1:0:1342:U:H5' | 2.09 | 0.67 |
| 1:0:953:G:H2' | 1:0:954:U:C6 | 2.30 | 0.67 |
| 1:0:942:U:O2' | 1:0:943:U:H5' | 1.95 | 0.67 |
| 1:0:2872:U:H2' | 1:0:2873:G:H8 | 1.59 | 0.67 |
| 1:0:185:C:O2' | 1:0:186:C:H5' | 1.95 | 0.67 |
| 1:0:13:A:H1' | 1:0:536:A:N6 | 2.09 | 0.67 |
| 1:0:697:G:H1 | 1:0:807:A:H2 | 1.38 | 0.67 |
| 1:0:1617:G:H2' | 1:0:1618:U:H5' | 1.76 | 0.67 |
| 1:0:1287:A:N1 | 1:0:1661:C:O2' | 2.27 | 0.67 |
| 1:0:139:A:H2' | 1:0:140:G:H8 | 1.60 | 0.67 |
| 1:0:2721:A:H2' | 1:0:2722:C:O4' | 1.95 | 0.67 |
| 1:0:2038:C:H5' | 1:0:2039:G:H5'' | 1.77 | 0.66 |
| 1:0:1302:C:O2' | 1:0:1343:C:H4' | 1.94 | 0.66 |
| 1:0:459:A:N6 | 1:0:484:G:H1' | 2.09 | 0.66 |
| 1:0:109:A:C3' | 1:0:110:U:H5'' | 2.24 | 0.66 |
| 1:0:564:U:H2' | 1:0:565:A:C8 | 2.30 | 0.66 |
| 2:9:29:C:H2' | 2:9:30:C:C6 | 2.31 | 0.66 |
| 1:0:1352:G:H2' | 1:0:1353:A:H8 | 1.59 | 0.66 |
| 1:0:2507:U:O2' | 1:0:2508:G:H3' | 1.95 | 0.66 |
| 1:0:2751:C:H2' | 1:0:2752:C:H6 | 1.60 | 0.66 |
| 1:0:357:A:H3' | 1:0:358:C:O4' | 1.96 | 0.66 |
| 1:0:109:A:C2' | 1:0:110:U:H5'' | 2.26 | 0.66 |
| 1:0:1101:U:N3 | 1:0:1113:C:H1' | 2.10 | 0.66 |
| 1:0:2532:G:C2 | 1:0:2533:U:H1' | 2.31 | 0.66 |
| 2:9:40:C:H2' | 2:9:41:A:O4' | 1.96 | 0.66 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|----------------|--------------------------|-------------------|
| 1:0:174:A:H2 | 1:0:2413:A:H62 | 1.40 | 0.66 |
| 1:0:451:A:H2' | 1:0:452:G:C8 | 2.31 | 0.66 |
| 1:0:2768:C:H1' | 1:0:2784:A:N7 | 2.11 | 0.66 |
| 1:0:2770:A:H5' | 1:0:2867:G:H1 | 1.61 | 0.66 |
| 1:0:1065:A:H2' | 1:0:1066:G:H8 | 1.59 | 0.66 |
| 1:0:2870:C:H2' | 1:0:2871:U:H6 | 1.60 | 0.66 |
| 1:0:62:U:H2' | 1:0:63:A:C8 | 2.30 | 0.66 |
| 1:0:1480:G:H2' | 1:0:1481:U:H5' | 1.78 | 0.66 |
| 1:0:9:U:H3 | 1:0:2608:A:N6 | 1.94 | 0.66 |
| 1:0:2498:U:OP1 | 1:0:2498:U:H3' | 1.95 | 0.66 |
| 1:0:657:A:H2' | 1:0:658:G:C8 | 2.31 | 0.66 |
| 1:0:2770:A:C4' | 1:0:2867:G:H22 | 2.09 | 0.66 |
| 1:0:597:U:H3 | 1:0:683:A:HO2' | 1.43 | 0.66 |
| 1:0:614:G:H2' | 1:0:615:C:H6 | 1.60 | 0.66 |
| 1:0:1196:G:C2' | 1:0:1197:U:H5' | 2.25 | 0.66 |
| 1:0:2560:G:H2' | 1:0:2560:G:N3 | 2.11 | 0.66 |
| 1:0:165:G:H4' | 1:0:1378:A:C2 | 2.31 | 0.66 |
| 1:0:2422:C:O2' | 1:0:2423:G:H5' | 1.95 | 0.66 |
| 1:0:2678:C:H2' | 1:0:2679:G:H8 | 1.60 | 0.66 |
| 2:9:62:C:N4 | 2:9:63:A:H62 | 1.93 | 0.66 |
| 1:0:37:C:H4' | 1:0:463:C:OP1 | 1.94 | 0.66 |
| 1:0:2436:U:H2' | 1:0:2437:G:O4' | 1.96 | 0.66 |
| 1:0:483:A:H2' | 1:0:484:G:H5' | 1.79 | 0.65 |
| 1:0:71:A:N6 | 1:0:110:U:H4' | 2.11 | 0.65 |
| 1:0:1911:A:C2' | 1:0:1912:G:H5' | 2.26 | 0.65 |
| 1:0:17:G:H2' | 1:0:18:U:C6 | 2.32 | 0.65 |
| 1:0:162:C:H4' | 1:0:195:A:H4' | 1.76 | 0.65 |
| 1:0:2177:U:H2' | 1:0:2178:U:C6 | 2.30 | 0.65 |
| 1:0:2375:G:H2' | 1:0:2376:G:H8 | 1.60 | 0.65 |
| 1:0:2678:C:H2' | 1:0:2679:G:C8 | 2.31 | 0.65 |
| 1:0:114:C:O2' | 1:0:124:A:H1' | 1.97 | 0.65 |
| 1:0:968:C:H41 | 1:0:970:A:H1' | 1.61 | 0.65 |
| 1:0:174:A:O4' | 1:0:2051:U:H2' | 1.97 | 0.65 |
| 1:0:1514:C:H5' | 1:0:1593:C:C5' | 2.26 | 0.65 |
| 1:0:639:G:H2' | 1:0:640:C:C6 | 2.31 | 0.65 |
| 1:0:699:G:H5' | 1:0:700:C:OP2 | 1.95 | 0.65 |
| 1:0:1727:C:H4' | 1:0:2833:C:C2 | 2.31 | 0.65 |
| 1:0:313:U:H2' | 1:0:314:G:H8 | 1.62 | 0.65 |
| 1:0:520:C:O2' | 1:0:1249:G:H5' | 1.97 | 0.65 |
| 1:0:1918:G:H1' | 1:0:1947:G:C2 | 2.31 | 0.65 |
| 1:0:820:U:H2' | 1:0:821:A:C8 | 2.30 | 0.65 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:2456:U:H1' | 1:0:2460:G:N2 | 2.11 | 0.65 |
| 1:0:2273:C:H2' | 1:0:2274:C:H6 | 1.61 | 0.65 |
| 1:0:2595:C:H2' | 1:0:2596:C:C6 | 2.32 | 0.65 |
| 1:0:837:U:H1' | 1:0:2337:A:N7 | 2.10 | 0.65 |
| 1:0:2761:A:C5' | 1:0:2762:G:H5' | 2.23 | 0.65 |
| 1:0:2053:G:H2' | 1:0:2054:A:H8 | 1.59 | 0.65 |
| 1:0:616:U:H2' | 1:0:617:U:C5' | 2.24 | 0.65 |
| 1:0:705:C:H2' | 1:0:706:A:H8 | 1.61 | 0.65 |
| 1:0:1095:A:H2' | 1:0:1096:A:O4' | 1.97 | 0.65 |
| 1:0:475:U:H2' | 1:0:476:G:O4' | 1.96 | 0.65 |
| 1:0:2463:G:O2' | 1:0:2464:G:H5' | 1.97 | 0.65 |
| 1:0:2407:G:H5' | 1:0:2408:G:C2 | 2.31 | 0.65 |
| 1:0:2866:A:H2' | 1:0:2867:G:O4' | 1.97 | 0.65 |
| 1:0:1295:U:C2' | 1:0:1296:G:H5' | 2.27 | 0.65 |
| 1:0:2546:G:H2' | 1:0:2547:C:H6 | 1.62 | 0.65 |
| 1:0:338:G:C2' | 1:0:339:U:H5' | 2.27 | 0.65 |
| 1:0:944:A:H2' | 1:0:945:G:O4' | 1.97 | 0.65 |
| 1:0:1125:G:O2' | 1:0:1126:A:H5' | 1.96 | 0.65 |
| 1:0:2800:C:H2' | 1:0:2801:A:O4' | 1.96 | 0.65 |
| 2:9:115:G:O2' | 2:9:116:C:H5' | 1.97 | 0.65 |
| 1:0:1452:U:H5'' | 1:0:1533:G:H5' | 1.79 | 0.65 |
| 1:0:2427:A:H5' | 1:0:2428:U:H5'' | 1.78 | 0.64 |
| 1:0:1181:C:C3' | 1:0:1182:U:H5'' | 2.27 | 0.64 |
| 1:0:646:C:O2 | 1:0:650:U:H4' | 1.98 | 0.64 |
| 1:0:1972:G:H2' | 1:0:1973:C:O4' | 1.97 | 0.64 |
| 1:0:1353:A:H5'' | 1:0:1354:A:N7 | 2.12 | 0.64 |
| 1:0:2503:G:H2' | 1:0:2504:G:H5'' | 1.78 | 0.64 |
| 1:0:659:G:H2' | 1:0:660:G:H8 | 1.61 | 0.64 |
| 1:0:2243:C:H2' | 1:0:2244:C:O4' | 1.97 | 0.64 |
| 1:0:958:G:H2' | 1:0:959:C:C6 | 2.32 | 0.64 |
| 1:0:1583:A:H8 | 1:0:1583:A:O5' | 1.80 | 0.64 |
| 1:0:81:C:H2' | 1:0:82:G:O4' | 1.97 | 0.64 |
| 1:0:1440:G:H1' | 1:0:1588:A:H61 | 1.61 | 0.64 |
| 1:0:1707:A:N7 | 1:0:1714:A:H2 | 1.95 | 0.64 |
| 1:0:2788:C:O2' | 1:0:2789:U:H5' | 1.98 | 0.64 |
| 1:0:659:G:H2' | 1:0:660:G:C8 | 2.33 | 0.64 |
| 1:0:777:A:H62 | 1:0:1767:G:H1' | 1.62 | 0.64 |
| 1:0:719:A:H2' | 1:0:720:A:O4' | 1.97 | 0.64 |
| 1:0:1843:U:H2' | 1:0:1844:C:H6 | 1.62 | 0.64 |
| 1:0:1680:U:O2' | 1:0:2665:G:H4' | 1.97 | 0.64 |
| 1:0:2082:C:H2' | 1:0:2083:G:O4' | 1.97 | 0.64 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:2761:A:H5'' | 1:0:2762:G:C5' | 2.26 | 0.64 |
| 2:9:42:U:C2' | 2:9:45:C:H41 | 2.08 | 0.64 |
| 1:0:236:C:H2' | 1:0:237:G:H8 | 1.63 | 0.64 |
| 1:0:2020:G:H2' | 1:0:2021:G:C8 | 2.32 | 0.64 |
| 1:0:2299:A:H5' | 1:0:2300:G:C5 | 2.32 | 0.64 |
| 1:0:689:A:C8 | 1:0:2422:C:H1' | 2.33 | 0.64 |
| 1:0:2353:G:H2' | 1:0:2354:G:C8 | 2.33 | 0.64 |
| 1:0:1055:A:OP1 | 1:0:1057:A:H5' | 1.98 | 0.64 |
| 1:0:2764:U:H2' | 1:0:2765:C:H6 | 1.62 | 0.64 |
| 1:0:146:C:H2' | 1:0:147:G:C8 | 2.33 | 0.64 |
| 1:0:103:U:H2' | 1:0:104:C:H6 | 1.57 | 0.64 |
| 1:0:2005:U:H5'' | 1:0:2006:G:OP1 | 1.97 | 0.64 |
| 1:0:2617:G:HO2' | 1:0:2618:A:H8 | 1.41 | 0.64 |
| 2:9:63:A:H2' | 2:9:64:C:H6 | 1.63 | 0.64 |
| 1:0:2307:A:H2' | 1:0:2308:A:C8 | 2.33 | 0.64 |
| 1:0:425:A:H2' | 1:0:426:C:O4' | 1.97 | 0.64 |
| 1:0:346:C:O2' | 1:0:347:C:H5' | 1.98 | 0.64 |
| 1:0:888:G:H2' | 1:0:889:C:O4' | 1.97 | 0.64 |
| 1:0:312:G:OP1 | 1:0:312:G:H4' | 1.98 | 0.64 |
| 1:0:459:A:H1' | 1:0:461:A:H62 | 1.61 | 0.64 |
| 1:0:929:A:HO2' | 2:9:101:A:H4' | 1.63 | 0.64 |
| 1:0:1991:C:H2' | 1:0:1992:G:H8 | 1.63 | 0.64 |
| 1:0:951:G:C2' | 1:0:952:A:H5'' | 2.28 | 0.64 |
| 1:0:128:C:H2' | 1:0:129:A:C4' | 2.28 | 0.64 |
| 1:0:210:A:N6 | 1:0:442:A:H61 | 1.95 | 0.64 |
| 1:0:1271:C:H2' | 1:0:1272:G:H8 | 1.63 | 0.64 |
| 1:0:1245:G:H2' | 1:0:1246:G:H8 | 1.62 | 0.64 |
| 1:0:2011:U:H2' | 1:0:2012:A:C8 | 2.33 | 0.63 |
| 1:0:2261:G:H4' | 1:0:2262:C:OP2 | 1.96 | 0.63 |
| 1:0:1747:G:H4' | 1:0:1749:G:C1' | 2.27 | 0.63 |
| 1:0:1311:C:H5' | 1:0:1315:A:N6 | 2.13 | 0.63 |
| 1:0:1680:U:O2' | 1:0:1681:A:H5'' | 1.99 | 0.63 |
| 1:0:1333:G:C5 | 1:0:1342:U:H5' | 2.34 | 0.63 |
| 1:0:1288:A:H62 | 1:0:1309:G:H4' | 1.62 | 0.63 |
| 1:0:931:G:N2 | 1:0:2247:A:H5'' | 2.13 | 0.63 |
| 1:0:1680:U:H6 | 1:0:1680:U:H5' | 1.63 | 0.63 |
| 1:0:2754:C:H2' | 1:0:2755:A:C8 | 2.33 | 0.63 |
| 1:0:174:A:H4' | 1:0:2051:U:H2' | 1.79 | 0.63 |
| 1:0:1437:A:O2' | 1:0:1438:G:H5' | 1.98 | 0.63 |
| 1:0:2642:G:O2' | 1:0:2643:G:H5' | 1.98 | 0.63 |
| 1:0:759:C:H1' | 1:0:761:G:N2 | 2.11 | 0.63 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:1040:A:C2' | 1:0:1041:G:H5' | 2.27 | 0.63 |
| 1:0:223:C:H4' | 1:0:398:C:H1' | 1.81 | 0.63 |
| 1:0:165:G:H2' | 1:0:166:G:O4' | 1.99 | 0.63 |
| 1:0:773:G:C2' | 1:0:774:A:H5' | 2.28 | 0.63 |
| 1:0:2001:G:H2' | 1:0:2002:A:C8 | 2.32 | 0.63 |
| 1:0:1558:C:C2' | 1:0:1559:G:H5' | 2.28 | 0.63 |
| 1:0:2173:G:H2' | 1:0:2174:G:O4' | 1.98 | 0.63 |
| 1:0:1500:U:H3 | 1:0:1520:G:H22 | 1.45 | 0.63 |
| 1:0:1529:C:H2' | 1:0:1530:U:O4' | 1.98 | 0.63 |
| 1:0:2691:C:C3' | 1:0:2692:A:H5'' | 2.28 | 0.63 |
| 1:0:1194:U:H2' | 1:0:1195:U:C5 | 2.33 | 0.63 |
| 1:0:213:C:H42 | 1:0:238:G:H1 | 1.46 | 0.63 |
| 1:0:2546:G:H2' | 1:0:2547:C:C6 | 2.33 | 0.63 |
| 1:0:1226:A:C2 | 1:0:1250:A:H1' | 2.34 | 0.62 |
| 1:0:840:U:H4' | 1:0:841:G:C2 | 2.34 | 0.62 |
| 1:0:2162:C:H2' | 1:0:2163:U:C6 | 2.34 | 0.62 |
| 1:0:1411:C:H2' | 1:0:1412:C:H6 | 1.64 | 0.62 |
| 1:0:644:A:H2' | 1:0:645:G:H5' | 1.80 | 0.62 |
| 1:0:575:U:H2' | 1:0:576:A:C8 | 2.34 | 0.62 |
| 1:0:215:G:N2 | 1:0:632:A:H8 | 1.96 | 0.62 |
| 1:0:932:G:H2' | 1:0:933:G:C8 | 2.34 | 0.62 |
| 1:0:843:G:O2' | 1:0:844:G:OP1 | 2.17 | 0.62 |
| 1:0:821:A:O2' | 1:0:1267:A:H4' | 1.99 | 0.62 |
| 2:9:30:C:O5' | 2:9:30:C:H6 | 1.80 | 0.62 |
| 1:0:73:A:N3 | 1:0:73:A:H5'' | 2.14 | 0.62 |
| 1:0:2686:C:H2' | 1:0:2687:G:C8 | 2.34 | 0.62 |
| 1:0:782:U:H2' | 1:0:783:G:C8 | 2.35 | 0.62 |
| 2:9:18:G:H2' | 2:9:19:C:H6 | 1.63 | 0.62 |
| 1:0:761:G:O6 | 1:0:764:A:H4' | 2.00 | 0.62 |
| 1:0:1953:A:H1' | 1:0:1955:G:H1' | 1.79 | 0.62 |
| 1:0:1267:A:H5'' | 1:0:1268:U:C5' | 2.28 | 0.62 |
| 1:0:995:A:H5'' | 1:0:996:C:H5 | 1.64 | 0.62 |
| 1:0:2475:C:H2' | 1:0:2476:A:O4' | 1.99 | 0.62 |
| 1:0:1073:G:H2' | 1:0:1074:G:C4' | 2.24 | 0.62 |
| 1:0:813:A:N3 | 1:0:813:A:H2' | 2.13 | 0.62 |
| 1:0:775:U:H4' | 1:0:776:G:C8 | 2.34 | 0.62 |
| 1:0:2437:G:H1 | 1:0:2469:G:H2' | 1.61 | 0.62 |
| 1:0:800:U:H3' | 1:0:804:C:N4 | 2.15 | 0.62 |
| 1:0:1858:C:H2' | 1:0:1859:A:H8 | 1.64 | 0.62 |
| 1:0:2779:C:H2' | 1:0:2780:A:C8 | 2.35 | 0.62 |
| 1:0:2803:C:O2' | 1:0:2804:G:H5' | 2.00 | 0.62 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:2670:C:H4' | 1:0:2846:G:O2' | 2.00 | 0.62 |
| 1:0:2105:U:H2' | 1:0:2106:G:C8 | 2.34 | 0.62 |
| 1:0:651:C:C3' | 1:0:652:C:H5'' | 2.29 | 0.62 |
| 1:0:1371:G:H1' | 1:0:1386:A:H62 | 1.65 | 0.62 |
| 1:0:1374:G:N2 | 1:0:1384:G:H1' | 2.15 | 0.62 |
| 1:0:990:A:H3' | 1:0:991:A:C5' | 2.30 | 0.62 |
| 1:0:1748:U:N3 | 1:0:1753:A:H2 | 1.92 | 0.62 |
| 1:0:1253:C:H2' | 1:0:1254:G:O4' | 1.98 | 0.62 |
| 1:0:2634:G:H2' | 1:0:2643:G:O6 | 1.99 | 0.62 |
| 1:0:2558:C:H2' | 1:0:2559:U:O4' | 1.99 | 0.62 |
| 1:0:1837:G:H2' | 1:0:1838:G:H8 | 1.63 | 0.62 |
| 1:0:1004:A:H2' | 1:0:1005:U:C5' | 2.29 | 0.62 |
| 1:0:936:A:H2' | 1:0:937:C:C6 | 2.35 | 0.62 |
| 1:0:2782:G:H3' | 1:0:2783:U:H5'' | 1.81 | 0.62 |
| 1:0:1561:A:H2' | 1:0:1562:G:O4' | 2.00 | 0.62 |
| 1:0:2195:C:H2' | 1:0:2196:U:H5' | 1.80 | 0.62 |
| 1:0:24:G:H2' | 1:0:25:U:C6 | 2.34 | 0.62 |
| 1:0:1571:G:OP2 | 1:0:1571:G:H3' | 1.99 | 0.62 |
| 1:0:2054:A:H2 | 1:0:2419:C:H41 | 1.46 | 0.62 |
| 1:0:1996:A:O2' | 1:0:1997:A:H5' | 1.99 | 0.62 |
| 1:0:1182:U:C2' | 1:0:1183:C:H5'' | 2.29 | 0.62 |
| 1:0:2274:C:H2' | 1:0:2275:U:C5' | 2.29 | 0.62 |
| 1:0:692:C:H2' | 1:0:693:A:H8 | 1.64 | 0.62 |
| 1:0:94:C:H2' | 1:0:95:G:O4' | 2.00 | 0.62 |
| 1:0:509:U:H3 | 1:0:513:A:H62 | 1.47 | 0.62 |
| 1:0:2499:C:N4 | 1:0:2521:A:H2 | 1.98 | 0.62 |
| 1:0:1301:U:H2' | 1:0:1664:G:H21 | 1.63 | 0.62 |
| 1:0:1057:A:H3' | 1:0:1058:G:C5' | 2.30 | 0.62 |
| 1:0:1196:G:H2' | 1:0:1197:U:H5' | 1.81 | 0.62 |
| 1:0:1843:U:H2' | 1:0:1844:C:C6 | 2.35 | 0.62 |
| 2:9:114:C:H6 | 2:9:114:C:O5' | 1.82 | 0.62 |
| 1:0:1816:G:O2' | 1:0:1817:U:H5' | 1.98 | 0.62 |
| 1:0:5:A:H2' | 1:0:6:A:H8 | 1.64 | 0.62 |
| 1:0:2617:G:H21 | 1:0:2758:A:H62 | 1.47 | 0.61 |
| 1:0:1621:C:H2' | 1:0:1622:G:O4' | 2.00 | 0.61 |
| 1:0:347:C:H2' | 1:0:348:U:O4' | 2.00 | 0.61 |
| 1:0:1054:C:H2' | 1:0:1055:A:H5' | 1.82 | 0.61 |
| 1:0:1540:C:H2' | 1:0:1541:G:O4' | 1.99 | 0.61 |
| 1:0:153:A:H2' | 1:0:154:U:C5 | 2.35 | 0.61 |
| 1:0:2538:C:O2' | 1:0:2539:C:H5' | 2.00 | 0.61 |
| 1:0:1974:U:C2' | 1:0:1975:G:H5'' | 2.30 | 0.61 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:2618:A:C2 | 1:0:2619:G:H1' | 2.35 | 0.61 |
| 1:0:2045:A:H62 | 1:0:2482:A:H61 | 1.46 | 0.61 |
| 1:0:1300:A:C2 | 1:0:1666:G:H4' | 2.35 | 0.61 |
| 1:0:452:G:H2' | 1:0:453:U:O4' | 2.00 | 0.61 |
| 2:9:56:G:H2' | 2:9:57:U:O4' | 1.99 | 0.61 |
| 1:0:1604:A:H2' | 1:0:1605:A:O4' | 2.00 | 0.61 |
| 1:0:317:U:C2' | 1:0:318:G:H5'' | 2.27 | 0.61 |
| 1:0:1242:A:H2' | 1:0:1243:G:H8 | 1.65 | 0.61 |
| 1:0:108:G:H2' | 1:0:109:A:C8 | 2.36 | 0.61 |
| 1:0:2194:A:C2' | 1:0:2195:C:H5'' | 2.31 | 0.61 |
| 1:0:362:C:C2' | 1:0:363:G:H4' | 2.22 | 0.61 |
| 1:0:1252:C:O2' | 1:0:1253:C:H5'' | 2.00 | 0.61 |
| 1:0:726:G:H2' | 1:0:727:U:O4' | 1.99 | 0.61 |
| 1:0:1739:G:H2' | 1:0:1740:G:H8 | 1.66 | 0.61 |
| 1:0:1517:C:H2' | 1:0:1518:C:C6 | 2.35 | 0.61 |
| 1:0:1284:G:C2 | 1:0:1633:C:H5' | 2.35 | 0.61 |
| 1:0:755:C:H2' | 1:0:756:C:H6 | 1.66 | 0.61 |
| 1:0:367:G:C2' | 1:0:368:A:H5'' | 2.31 | 0.61 |
| 1:0:764:A:H2' | 1:0:764:A:N3 | 2.16 | 0.61 |
| 1:0:541:C:N4 | 1:0:572:G:H8 | 1.98 | 0.61 |
| 1:0:208:C:C2' | 1:0:209:G:H5' | 2.30 | 0.61 |
| 1:0:2549:G:N2 | 1:0:2550:C:H1' | 2.14 | 0.61 |
| 1:0:1137:A:H5'' | 1:0:1138:A:OP1 | 2.01 | 0.61 |
| 1:0:536:A:C2 | 1:0:2605:C:H1' | 2.35 | 0.61 |
| 1:0:1937:G:N3 | 1:0:2530:C:H5' | 2.15 | 0.61 |
| 1:0:437:G:O2' | 1:0:438:G:H5' | 2.01 | 0.61 |
| 1:0:2059:U:H2' | 1:0:2060:A:C5' | 2.24 | 0.61 |
| 1:0:1336:G:H2' | 1:0:1337:G:H5' | 1.83 | 0.61 |
| 1:0:1313:U:H4' | 1:0:1314:A:O5' | 2.01 | 0.61 |
| 1:0:788:G:H2' | 1:0:807:A:C5 | 2.36 | 0.61 |
| 1:0:1994:U:C2' | 1:0:1995:G:H5' | 2.31 | 0.61 |
| 1:0:1683:G:H2' | 1:0:1684:G:H5' | 1.81 | 0.61 |
| 1:0:931:G:C2' | 1:0:932:G:H5' | 2.31 | 0.61 |
| 2:9:62:C:N4 | 2:9:63:A:N6 | 2.48 | 0.61 |
| 2:9:14:C:H4' | 2:9:17:A:H61 | 1.65 | 0.61 |
| 1:0:2363:G:H5'' | 1:0:2365:U:OP1 | 2.01 | 0.61 |
| 1:0:2618:A:C6 | 1:0:2619:G:H1' | 2.35 | 0.61 |
| 1:0:1624:A:H2' | 1:0:1625:A:H5' | 1.82 | 0.61 |
| 1:0:1227:A:H4' | 1:0:1252:C:H4' | 1.83 | 0.61 |
| 1:0:932:G:H2' | 1:0:933:G:O4' | 2.00 | 0.61 |
| 1:0:1348:C:H2' | 1:0:1349:A:H8 | 1.65 | 0.61 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|----------------|--------------------------|-------------------|
| 1:0:1217:U:H2' | 1:0:1218:C:C6 | 2.35 | 0.61 |
| 1:0:796:A:H5'' | 1:0:2568:A:OP1 | 2.01 | 0.61 |
| 1:0:79:G:H2' | 1:0:80:A:C8 | 2.35 | 0.60 |
| 1:0:170:U:H2' | 1:0:171:G:C8 | 2.31 | 0.60 |
| 2:9:58:G:H4' | 2:9:59:A:C5' | 2.29 | 0.60 |
| 1:0:612:G:H4' | 1:0:613:A:O2' | 2.01 | 0.60 |
| 1:0:2324:G:N3 | 1:0:2326:C:H5 | 1.99 | 0.60 |
| 1:0:1778:U:H4' | 1:0:2568:A:O3' | 2.01 | 0.60 |
| 1:0:759:C:C1' | 1:0:761:G:H21 | 2.12 | 0.60 |
| 1:0:1821:A:H3' | 1:0:1822:C:H6 | 1.67 | 0.60 |
| 1:0:2544:A:H2' | 1:0:2545:A:H1' | 1.83 | 0.60 |
| 1:0:1687:C:H1' | 1:0:1976:U:O2 | 2.01 | 0.60 |
| 1:0:813:A:H1' | 1:0:815:A:C4' | 2.30 | 0.60 |
| 1:0:2642:G:H2' | 1:0:2643:G:O4' | 2.00 | 0.60 |
| 1:0:1418:C:H2' | 1:0:1419:G:H8 | 1.66 | 0.60 |
| 1:0:1329:U:H5' | 1:0:1405:A:H1' | 1.82 | 0.60 |
| 1:0:1162:A:H2' | 1:0:1163:C:O4' | 2.01 | 0.60 |
| 1:0:1250:A:O2' | 1:0:1251:G:H4' | 2.01 | 0.60 |
| 1:0:1436:G:H2' | 1:0:1437:A:C8 | 2.37 | 0.60 |
| 1:0:36:G:C1' | 1:0:462:G:H21 | 2.14 | 0.60 |
| 1:0:109:A:H3' | 1:0:110:U:H5'' | 1.82 | 0.60 |
| 1:0:401:G:H2' | 1:0:403:A:N7 | 2.16 | 0.60 |
| 2:9:113:G:H2' | 2:9:114:C:C6 | 2.36 | 0.60 |
| 1:0:2276:C:O2' | 1:0:2277:A:H5' | 2.01 | 0.60 |
| 1:0:585:U:H2' | 1:0:586:G:C8 | 2.36 | 0.60 |
| 1:0:755:C:H5' | 1:0:1692:C:O2' | 2.02 | 0.60 |
| 1:0:929:A:O2' | 2:9:101:A:H4' | 2.01 | 0.60 |
| 1:0:642:A:H2' | 1:0:643:A:C8 | 2.36 | 0.60 |
| 1:0:2225:G:H2' | 1:0:2226:A:H8 | 1.66 | 0.60 |
| 1:0:1491:C:H2' | 1:0:1492:A:H8 | 1.66 | 0.60 |
| 1:0:2820:C:H2' | 1:0:2821:G:H8 | 1.66 | 0.60 |
| 1:0:2398:U:H2' | 1:0:2399:C:C6 | 2.36 | 0.60 |
| 1:0:1010:U:H2' | 1:0:1011:A:C8 | 2.36 | 0.60 |
| 1:0:1313:U:H5' | 1:0:1314:A:N3 | 2.17 | 0.60 |
| 1:0:927:C:H2' | 1:0:928:G:O4' | 2.00 | 0.60 |
| 1:0:334:G:N3 | 1:0:344:G:H1' | 2.17 | 0.60 |
| 1:0:1677:C:O2' | 1:0:1678:G:H5' | 2.01 | 0.60 |
| 2:9:42:U:H6 | 2:9:42:U:O5' | 1.83 | 0.60 |
| 1:0:1259:A:O2' | 1:0:1260:A:H5' | 2.02 | 0.60 |
| 1:0:1602:G:O3' | 1:0:1603:A:H8 | 1.84 | 0.60 |
| 1:0:1730:G:H2' | 1:0:1731:C:C6 | 2.37 | 0.60 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:2299:A:H5' | 1:0:2300:G:N9 | 2.17 | 0.60 |
| 1:0:2052:G:O2' | 1:0:2053:G:H5' | 2.01 | 0.60 |
| 1:0:2096:U:C2' | 1:0:2097:A:H5'' | 2.27 | 0.60 |
| 1:0:212:U:O2' | 1:0:213:C:H5' | 2.02 | 0.60 |
| 1:0:1001:A:H5' | 1:0:1168:G:OP1 | 2.01 | 0.60 |
| 1:0:987:G:H5' | 1:0:1167:A:N6 | 2.17 | 0.60 |
| 1:0:1861:G:O2' | 1:0:1862:C:H5' | 2.01 | 0.60 |
| 1:0:1998:A:H2' | 1:0:1999:U:H5' | 1.84 | 0.60 |
| 1:0:1825:C:C2' | 1:0:1826:U:H5' | 2.32 | 0.60 |
| 1:0:15:G:N2 | 1:0:2027:C:O2' | 2.35 | 0.60 |
| 1:0:192:G:C1' | 1:0:193:A:H4' | 2.32 | 0.60 |
| 1:0:152:G:H2' | 1:0:153:A:O4' | 2.02 | 0.60 |
| 1:0:1336:G:C2' | 1:0:1337:G:H5' | 2.32 | 0.60 |
| 1:0:2640:G:H2' | 1:0:2641:A:C8 | 2.37 | 0.60 |
| 1:0:1065:A:H2' | 1:0:1066:G:C8 | 2.37 | 0.60 |
| 1:0:153:A:H2' | 1:0:154:U:C6 | 2.37 | 0.60 |
| 1:0:176:A:H3' | 1:0:177:U:C5 | 2.37 | 0.60 |
| 1:0:871:U:H1' | 1:0:2248:A:H5'' | 1.82 | 0.59 |
| 1:0:2633:A:H4' | 1:0:2634:G:O5' | 2.02 | 0.59 |
| 1:0:597:U:H2' | 1:0:598:U:C6 | 2.36 | 0.59 |
| 1:0:681:A:N6 | 1:0:683:A:H2' | 2.17 | 0.59 |
| 2:9:102:A:H2' | 2:9:103:A:H5' | 1.84 | 0.59 |
| 1:0:1429:A:N6 | 1:0:1602:G:H5' | 2.18 | 0.59 |
| 1:0:1760:G:O2' | 1:0:1761:G:H5' | 2.02 | 0.59 |
| 1:0:2240:C:H2' | 1:0:2241:U:C5' | 2.32 | 0.59 |
| 1:0:422:C:H2' | 1:0:423:G:O4' | 2.03 | 0.59 |
| 1:0:857:U:C2' | 1:0:858:G:H5' | 2.28 | 0.59 |
| 1:0:36:G:H1' | 1:0:462:G:H21 | 1.66 | 0.59 |
| 1:0:330:C:C2' | 1:0:331:U:H5' | 2.32 | 0.59 |
| 1:0:14:A:C2 | 1:0:2604:G:O2' | 2.55 | 0.59 |
| 1:0:2756:A:N6 | 1:0:2762:G:H1' | 2.16 | 0.59 |
| 1:0:66:U:H2' | 1:0:67:G:H8 | 1.67 | 0.59 |
| 1:0:66:U:H2' | 1:0:67:G:C8 | 2.36 | 0.59 |
| 1:0:669:G:H2' | 1:0:670:U:H6 | 1.67 | 0.59 |
| 1:0:428:A:H2' | 1:0:429:C:H6 | 1.68 | 0.59 |
| 1:0:2238:G:H1' | 1:0:2406:C:C2 | 2.38 | 0.59 |
| 1:0:308:C:H2' | 1:0:309:G:O4' | 2.02 | 0.59 |
| 1:0:608:G:H2' | 1:0:609:U:C6 | 2.38 | 0.59 |
| 1:0:246:C:H42 | 1:0:247:A:H62 | 1.50 | 0.59 |
| 1:0:810:U:H2' | 1:0:811:G:H8 | 1.66 | 0.59 |
| 1:0:931:G:O2' | 1:0:932:G:H5' | 2.01 | 0.59 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:1949:A:H1' | 1:0:2572:U:H4' | 1.84 | 0.59 |
| 1:0:202:A:C2 | 1:0:203:G:H1' | 2.38 | 0.59 |
| 1:0:1962:C:C2' | 1:0:1963:G:H5' | 2.32 | 0.59 |
| 1:0:300:C:H2' | 1:0:301:C:H5' | 1.83 | 0.59 |
| 1:0:1485:U:H2' | 1:0:1486:A:C8 | 2.38 | 0.59 |
| 1:0:847:C:H2' | 1:0:848:A:C8 | 2.37 | 0.59 |
| 1:0:2240:C:H2' | 1:0:2241:U:H5' | 1.84 | 0.59 |
| 1:0:1374:G:O2' | 1:0:2193:C:H1' | 2.03 | 0.59 |
| 1:0:1936:A:O2' | 1:0:2538:C:H1' | 2.03 | 0.59 |
| 1:0:2210:C:H2' | 1:0:2211:U:O4' | 2.03 | 0.59 |
| 1:0:1683:G:C2' | 1:0:1684:G:H5' | 2.32 | 0.59 |
| 2:9:55:C:O5' | 2:9:55:C:H6 | 1.85 | 0.59 |
| 1:0:1225:G:H2' | 1:0:1249:G:N2 | 2.18 | 0.59 |
| 1:0:2380:U:C2' | 1:0:2381:A:H5' | 2.30 | 0.59 |
| 1:0:2609:G:N2 | 1:0:2866:A:H2 | 2.01 | 0.59 |
| 1:0:597:U:H2' | 1:0:598:U:H6 | 1.67 | 0.59 |
| 1:0:953:G:H2' | 1:0:954:U:H6 | 1.67 | 0.59 |
| 1:0:542:A:H2' | 1:0:543:G:H5' | 1.84 | 0.59 |
| 1:0:474:G:N2 | 1:0:476:G:H3' | 2.17 | 0.59 |
| 1:0:781:G:H2' | 1:0:782:U:O4' | 2.03 | 0.59 |
| 1:0:685:U:O2' | 1:0:686:C:H5' | 2.02 | 0.59 |
| 1:0:159:A:O2' | 1:0:160:C:H5' | 2.02 | 0.59 |
| 2:9:78:A:H2' | 2:9:79:U:C5 | 2.38 | 0.59 |
| 1:0:2177:U:H2' | 1:0:2178:U:H6 | 1.67 | 0.59 |
| 1:0:2194:A:H2' | 1:0:2195:C:H5'' | 1.85 | 0.59 |
| 1:0:1102:G:H2' | 1:0:1103:C:H6 | 1.66 | 0.59 |
| 1:0:2010:G:H2' | 1:0:2011:U:C6 | 2.37 | 0.59 |
| 1:0:1458:A:C3' | 1:0:1459:U:H5'' | 2.28 | 0.59 |
| 1:0:831:G:C2' | 1:0:832:A:H5'' | 2.33 | 0.59 |
| 1:0:2556:A:C2 | 1:0:2593:A:H2 | 2.21 | 0.59 |
| 1:0:542:A:H8 | 1:0:542:A:H5'' | 1.68 | 0.59 |
| 1:0:12:U:H2' | 1:0:13:A:O4' | 2.02 | 0.59 |
| 1:0:2390:A:H2' | 1:0:2391:A:C8 | 2.38 | 0.59 |
| 1:0:1116:U:H2' | 1:0:1117:G:C8 | 2.38 | 0.59 |
| 1:0:1323:G:H1' | 1:0:1627:C:C5' | 2.33 | 0.59 |
| 1:0:2756:A:C6 | 1:0:2762:G:H1' | 2.38 | 0.58 |
| 1:0:1710:U:H3 | 1:0:1821:A:N6 | 2.00 | 0.58 |
| 1:0:2163:U:H2' | 1:0:2164:G:C8 | 2.38 | 0.58 |
| 1:0:1999:U:H2' | 1:0:2000:U:O4' | 2.02 | 0.58 |
| 1:0:732:G:O5' | 1:0:732:G:H8 | 1.86 | 0.58 |
| 1:0:1763:G:H2' | 1:0:1764:A:C4' | 2.33 | 0.58 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:242:A:N6 | 1:0:441:A:N7 | 2.51 | 0.58 |
| 1:0:1288:A:H62 | 1:0:1309:G:C4' | 2.17 | 0.58 |
| 2:9:111:C:H5'' | 2:9:112:A:O5' | 2.03 | 0.58 |
| 1:0:445:A:O2' | 1:0:446:C:H5' | 2.03 | 0.58 |
| 1:0:1495:G:H2' | 1:0:1496:G:C8 | 2.38 | 0.58 |
| 1:0:538:A:H2' | 1:0:539:A:H5'' | 1.83 | 0.58 |
| 1:0:2470:U:H2' | 1:0:2471:U:C6 | 2.38 | 0.58 |
| 1:0:777:A:N6 | 1:0:1767:G:H1' | 2.18 | 0.58 |
| 1:0:2169:A:C2' | 1:0:2170:C:H5' | 2.33 | 0.58 |
| 1:0:612:G:O3' | 1:0:613:A:C4' | 2.52 | 0.58 |
| 1:0:831:G:H2' | 1:0:832:A:H5'' | 1.84 | 0.58 |
| 1:0:2447:G:N2 | 1:0:2460:G:H2' | 2.18 | 0.58 |
| 2:9:20:A:O2' | 2:9:21:C:H5' | 2.03 | 0.58 |
| 1:0:2012:A:C5 | 1:0:2014:A:H5' | 2.37 | 0.58 |
| 1:0:922:A:H62 | 13:K:17:ARG:CA | 2.17 | 0.58 |
| 1:0:2324:G:N2 | 1:0:2361:G:C4 | 2.72 | 0.58 |
| 1:0:1837:G:H2' | 1:0:1838:G:C8 | 2.38 | 0.58 |
| 1:0:139:A:H2' | 1:0:140:G:C8 | 2.38 | 0.58 |
| 1:0:1245:G:H2' | 1:0:1246:G:C8 | 2.38 | 0.58 |
| 2:9:18:G:H2' | 2:9:19:C:C6 | 2.38 | 0.58 |
| 1:0:982:C:H4' | 1:0:994:A:O2' | 2.03 | 0.58 |
| 1:0:1000:G:P | 1:0:1168:G:H4' | 2.44 | 0.58 |
| 1:0:1830:C:H42 | 1:0:1881:U:H3' | 1.69 | 0.58 |
| 1:0:1184:G:H2' | 1:0:1185:C:H5'' | 1.86 | 0.58 |
| 1:0:195:A:H2' | 1:0:196:A:O4' | 2.04 | 0.58 |
| 1:0:990:A:H3' | 1:0:991:A:H5'' | 1.86 | 0.58 |
| 1:0:984:A:H1' | 1:0:1202:U:C5 | 2.39 | 0.58 |
| 1:0:478:G:O2' | 1:0:479:G:H5' | 2.04 | 0.58 |
| 1:0:1004:A:H2' | 1:0:1005:U:H5'' | 1.84 | 0.58 |
| 1:0:203:G:O2' | 1:0:204:A:H5' | 2.02 | 0.58 |
| 1:0:1962:C:O2' | 1:0:1963:G:H5' | 2.04 | 0.58 |
| 1:0:1669:A:N6 | 1:0:1670:G:H21 | 2.02 | 0.58 |
| 1:0:2491:C:H3' | 1:0:2492:G:H5'' | 1.85 | 0.58 |
| 1:0:968:C:N4 | 1:0:970:A:H1' | 2.19 | 0.58 |
| 1:0:1641:C:H2' | 1:0:1642:G:O4' | 2.03 | 0.58 |
| 1:0:755:C:O2' | 1:0:756:C:H5' | 2.04 | 0.58 |
| 1:0:330:C:O2' | 1:0:331:U:H5' | 2.03 | 0.58 |
| 1:0:443:A:O2' | 1:0:444:U:H5' | 2.03 | 0.58 |
| 1:0:141:G:H2' | 1:0:142:U:H6 | 1.69 | 0.58 |
| 1:0:1257:U:H2' | 1:0:1258:G:C8 | 2.39 | 0.58 |
| 1:0:931:G:H2' | 1:0:932:G:H5' | 1.86 | 0.58 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:2318:U:H2' | 1:0:2319:G:C8 | 2.32 | 0.58 |
| 1:0:1204:G:H2' | 1:0:1205:G:H8 | 1.69 | 0.58 |
| 1:0:2557:G:H2' | 1:0:2557:G:N3 | 2.17 | 0.58 |
| 1:0:788:G:H5'' | 1:0:790:A:H1' | 1.86 | 0.58 |
| 1:0:2686:C:H2' | 1:0:2687:G:H8 | 1.69 | 0.58 |
| 1:0:1594:U:H2' | 1:0:1595:A:H8 | 1.69 | 0.58 |
| 1:0:83:A:O5' | 1:0:83:A:H8 | 1.87 | 0.58 |
| 1:0:41:G:O2' | 1:0:42:G:H5' | 2.04 | 0.58 |
| 1:0:1771:A:C8 | 1:0:1772:C:H5 | 2.22 | 0.57 |
| 1:0:1849:G:O5' | 1:0:1849:G:H8 | 1.87 | 0.57 |
| 1:0:746:G:O6 | 1:0:774:A:H2' | 2.03 | 0.57 |
| 1:0:2395:C:H2' | 1:0:2396:C:H5'' | 1.85 | 0.57 |
| 1:0:1407:G:H2' | 1:0:1408:A:C8 | 2.38 | 0.57 |
| 1:0:2717:G:H2' | 1:0:2718:A:H8 | 1.69 | 0.57 |
| 1:0:584:A:O2' | 1:0:585:U:H5' | 2.04 | 0.57 |
| 1:0:2522:G:H21 | 1:0:2625:U:H5'' | 1.69 | 0.57 |
| 1:0:604:U:H2' | 1:0:605:G:C8 | 2.39 | 0.57 |
| 1:0:1291:G:O2' | 1:0:1292:A:H5' | 2.04 | 0.57 |
| 1:0:1333:G:N2 | 1:0:1344:C:H41 | 2.03 | 0.57 |
| 1:0:1915:A:H2' | 1:0:1916:G:O4' | 2.05 | 0.57 |
| 1:0:1707:A:H2' | 1:0:1708:C:H5' | 1.86 | 0.57 |
| 1:0:2651:U:O2' | 1:0:2652:G:H5' | 2.04 | 0.57 |
| 1:0:1830:C:N4 | 1:0:1881:U:H3' | 2.19 | 0.57 |
| 1:0:225:G:C5' | 1:0:226:C:H5' | 2.34 | 0.57 |
| 1:0:616:U:C3' | 1:0:617:U:H5'' | 2.34 | 0.57 |
| 1:0:482:A:O2' | 1:0:483:A:H5' | 2.04 | 0.57 |
| 1:0:929:A:H8 | 1:0:2247:A:H61 | 1.52 | 0.57 |
| 1:0:2104:G:H2' | 1:0:2105:U:C6 | 2.40 | 0.57 |
| 1:0:2104:G:H2' | 1:0:2105:U:H6 | 1.69 | 0.57 |
| 1:0:1920:A:C4 | 1:0:1922:U:H5 | 2.21 | 0.57 |
| 1:0:369:C:H2' | 1:0:370:U:O4' | 2.05 | 0.57 |
| 1:0:1685:A:O2' | 1:0:1686:A:H3' | 2.05 | 0.57 |
| 1:0:810:U:H2' | 1:0:811:G:C8 | 2.40 | 0.57 |
| 1:0:1312:G:C5' | 1:0:1314:A:H1' | 2.32 | 0.57 |
| 1:0:328:A:O2' | 1:0:329:C:H5' | 2.03 | 0.57 |
| 1:0:1029:C:C3' | 1:0:1030:U:H5'' | 2.35 | 0.57 |
| 1:0:1856:U:H2' | 1:0:1857:G:O4' | 2.05 | 0.57 |
| 1:0:999:A:H4' | 1:0:1166:A:N1 | 2.19 | 0.57 |
| 1:0:298:C:H2' | 1:0:299:C:H6 | 1.69 | 0.57 |
| 1:0:2117:A:N6 | 1:0:2139:G:H21 | 2.03 | 0.57 |
| 1:0:702:A:N3 | 1:0:792:U:H1' | 2.18 | 0.57 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|----------------|--------------------------|-------------------|
| 1:0:1664:G:O5' | 1:0:1665:C:OP1 | 2.22 | 0.57 |
| 1:0:631:G:H5'' | 1:0:632:A:OP1 | 2.04 | 0.57 |
| 1:0:1886:G:H2' | 1:0:1887:G:C8 | 2.36 | 0.57 |
| 1:0:2733:A:O2' | 1:0:2734:U:H5' | 2.05 | 0.57 |
| 1:0:1624:A:C2' | 1:0:1625:A:H5' | 2.34 | 0.57 |
| 1:0:871:U:H1' | 1:0:2248:A:C5' | 2.35 | 0.57 |
| 1:0:852:U:O5' | 1:0:852:U:H6 | 1.87 | 0.57 |
| 1:0:202:A:H2' | 1:0:203:G:O4' | 2.05 | 0.57 |
| 1:0:868:U:H2' | 1:0:869:C:C6 | 2.40 | 0.57 |
| 1:0:2814:G:H1 | 1:0:2853:U:H3 | 1.52 | 0.57 |
| 1:0:583:C:O2' | 1:0:584:A:OP2 | 2.18 | 0.57 |
| 1:0:1440:G:H3' | 1:0:1441:A:C5' | 2.35 | 0.57 |
| 1:0:1764:A:C2' | 1:0:1765:C:H5' | 2.35 | 0.57 |
| 1:0:2461:G:H2' | 1:0:2462:C:O4' | 2.03 | 0.57 |
| 1:0:697:G:O2' | 1:0:698:A:H5' | 2.05 | 0.57 |
| 1:0:195:A:N1 | 1:0:212:U:H4' | 2.20 | 0.57 |
| 1:0:2394:G:H2' | 1:0:2395:C:C6 | 2.40 | 0.57 |
| 1:0:2759:U:H6 | 1:0:2759:U:O5' | 1.87 | 0.57 |
| 1:0:687:G:O2' | 1:0:688:A:H5' | 2.05 | 0.57 |
| 1:0:1196:G:H2' | 1:0:1197:U:C5' | 2.34 | 0.57 |
| 1:0:790:A:O2' | 1:0:791:G:H5' | 2.05 | 0.57 |
| 1:0:193:A:H2' | 1:0:194:G:O4' | 2.04 | 0.57 |
| 1:0:1579:G:H2' | 1:0:1580:C:C6 | 2.40 | 0.57 |
| 1:0:653:G:H2' | 1:0:654:A:H4' | 1.86 | 0.57 |
| 1:0:2371:A:H2' | 1:0:2372:A:O4' | 2.04 | 0.57 |
| 1:0:1531:C:H2' | 1:0:1532:A:H5' | 1.85 | 0.57 |
| 1:0:591:G:H2' | 1:0:592:G:C8 | 2.39 | 0.57 |
| 1:0:1590:C:H6 | 1:0:1590:C:O5' | 1.88 | 0.57 |
| 2:9:102:A:OP2 | 2:9:102:A:H8 | 1.88 | 0.57 |
| 1:0:1441:A:N3 | 1:0:1441:A:H2' | 2.20 | 0.57 |
| 1:0:978:U:H2' | 1:0:979:A:C8 | 2.40 | 0.57 |
| 1:0:2870:C:H2' | 1:0:2871:U:C6 | 2.40 | 0.57 |
| 1:0:2800:C:O2' | 1:0:2801:A:H5' | 2.05 | 0.57 |
| 1:0:1312:G:H4' | 1:0:1314:A:N3 | 2.20 | 0.56 |
| 1:0:482:A:C2' | 1:0:483:A:H5' | 2.35 | 0.56 |
| 1:0:2712:G:H3' | 1:0:2713:A:H5' | 1.87 | 0.56 |
| 1:0:242:A:O2' | 1:0:243:G:O4' | 2.23 | 0.56 |
| 1:0:1558:C:H2' | 1:0:1559:G:H5' | 1.85 | 0.56 |
| 1:0:2196:U:H2' | 1:0:2197:U:C6 | 2.40 | 0.56 |
| 1:0:83:A:N1 | 1:0:98:U:H1' | 2.20 | 0.56 |
| 1:0:2070:G:H2' | 1:0:2071:G:O4' | 2.04 | 0.56 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:2563:U:H2' | 1:0:2564:U:H3' | 1.87 | 0.56 |
| 1:0:1933:G:H8 | 1:0:1933:G:O5' | 1.87 | 0.56 |
| 1:0:1332:G:O2' | 1:0:1333:G:H5' | 2.05 | 0.56 |
| 1:0:843:G:H8 | 1:0:843:G:OP1 | 1.87 | 0.56 |
| 1:0:223:C:O2' | 1:0:398:C:H4' | 2.05 | 0.56 |
| 1:0:1430:G:H2' | 1:0:1431:U:C6 | 2.40 | 0.56 |
| 2:9:34:C:C2' | 2:9:35:C:H5' | 2.35 | 0.56 |
| 1:0:1540:C:O2' | 1:0:1541:G:H5' | 2.04 | 0.56 |
| 1:0:824:U:H2' | 1:0:825:C:C5' | 2.35 | 0.56 |
| 1:0:745:C:H2' | 1:0:746:G:C5' | 2.35 | 0.56 |
| 1:0:1373:G:H1 | 1:0:2192:U:H3 | 1.51 | 0.56 |
| 1:0:2058:U:H4' | 1:0:2575:U:O2 | 2.05 | 0.56 |
| 1:0:1459:U:O5' | 1:0:1459:U:H6 | 1.88 | 0.56 |
| 1:0:688:A:H1' | 1:0:2422:C:O2' | 2.05 | 0.56 |
| 1:0:2511:G:H2' | 1:0:2512:A:O4' | 2.05 | 0.56 |
| 1:0:847:C:H2' | 1:0:848:A:H8 | 1.69 | 0.56 |
| 2:9:93:G:H2' | 2:9:94:G:C8 | 2.32 | 0.56 |
| 1:0:1467:U:H3' | 1:0:1468:A:H5' | 1.86 | 0.56 |
| 1:0:718:A:O2' | 1:0:719:A:H5' | 2.04 | 0.56 |
| 1:0:1528:C:H2' | 1:0:1529:C:H5'' | 1.88 | 0.56 |
| 1:0:692:C:H2' | 1:0:693:A:C8 | 2.39 | 0.56 |
| 1:0:1779:C:H2' | 1:0:1780:A:O4' | 2.05 | 0.56 |
| 1:0:1164:C:H2' | 1:0:1165:G:O4' | 2.06 | 0.56 |
| 1:0:2662:C:H42 | 1:0:2707:G:H21 | 1.53 | 0.56 |
| 1:0:1790:G:C8 | 1:0:1811:A:N6 | 2.74 | 0.56 |
| 1:0:1057:A:H3' | 1:0:1058:G:H5'' | 1.87 | 0.56 |
| 1:0:2751:C:H2' | 1:0:2752:C:C6 | 2.39 | 0.56 |
| 1:0:1943:A:H2' | 1:0:1944:C:H5' | 1.88 | 0.56 |
| 1:0:411:C:OP1 | 1:0:2073:A:H1' | 2.05 | 0.56 |
| 1:0:2369:U:H2' | 1:0:2370:G:C8 | 2.40 | 0.56 |
| 1:0:170:U:H5' | 1:0:815:A:H2 | 1.70 | 0.56 |
| 1:0:1699:A:N6 | 1:0:1723:U:H3 | 2.04 | 0.56 |
| 1:0:931:G:H2' | 1:0:932:G:C5' | 2.36 | 0.56 |
| 1:0:2633:A:H5'' | 1:0:2634:G:OP1 | 2.05 | 0.56 |
| 1:0:1790:G:H4' | 1:0:1791:C:C5 | 2.41 | 0.56 |
| 1:0:190:A:H2' | 1:0:191:G:H8 | 1.70 | 0.56 |
| 1:0:2841:U:H1' | 1:0:2843:A:C1' | 2.35 | 0.56 |
| 2:9:34:C:H2' | 2:9:35:C:O4' | 2.05 | 0.56 |
| 1:0:745:C:H2' | 1:0:746:G:H5' | 1.87 | 0.56 |
| 1:0:1026:U:H2' | 1:0:1027:C:C6 | 2.41 | 0.56 |
| 1:0:1075:C:H2' | 1:0:1076:U:O4' | 2.06 | 0.56 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:2658:A:O2' | 1:0:2659:C:H5' | 2.05 | 0.56 |
| 1:0:294:U:H2' | 1:0:295:C:C6 | 2.41 | 0.56 |
| 1:0:20:C:O2' | 1:0:21:A:H5' | 2.05 | 0.56 |
| 1:0:1480:G:C2' | 1:0:1481:U:H5' | 2.36 | 0.56 |
| 1:0:492:G:H22 | 1:0:519:C:H42 | 1.52 | 0.56 |
| 1:0:839:U:C4 | 1:0:841:G:H1' | 2.41 | 0.56 |
| 1:0:2636:A:H62 | 1:0:2643:G:N2 | 1.97 | 0.56 |
| 1:0:629:C:C2' | 1:0:630:G:H5' | 2.35 | 0.56 |
| 1:0:1914:U:O2' | 1:0:1915:A:H5' | 2.06 | 0.56 |
| 1:0:2841:U:O2 | 1:0:2843:A:H1' | 2.05 | 0.56 |
| 1:0:2709:C:H2' | 1:0:2710:C:C6 | 2.40 | 0.56 |
| 1:0:502:A:H2' | 1:0:503:G:H5' | 1.88 | 0.56 |
| 1:0:2458:U:OP1 | 1:0:2516:U:H1' | 2.05 | 0.56 |
| 1:0:1380:C:C2' | 1:0:1381:G:H5' | 2.36 | 0.56 |
| 1:0:1719:G:O2' | 1:0:1720:G:H5' | 2.05 | 0.56 |
| 2:9:59:A:H2' | 2:9:60:A:H5' | 1.87 | 0.56 |
| 2:9:62:C:C4 | 2:9:63:A:N7 | 2.74 | 0.56 |
| 1:0:1791:C:H42 | 1:0:1809:G:H22 | 1.54 | 0.56 |
| 1:0:524:A:O2' | 1:0:525:A:H5' | 2.05 | 0.56 |
| 1:0:957:G:O2' | 1:0:958:G:H5' | 2.06 | 0.56 |
| 1:0:1456:C:O2' | 1:0:1457:A:H5' | 2.05 | 0.56 |
| 1:0:2433:G:O2' | 1:0:2434:G:H5' | 2.06 | 0.56 |
| 1:0:837:U:H2' | 1:0:838:A:O4' | 2.05 | 0.56 |
| 1:0:1730:G:H2' | 1:0:1731:C:H6 | 1.70 | 0.56 |
| 1:0:226:C:H4' | 1:0:227:G:C8 | 2.41 | 0.56 |
| 1:0:1556:A:H2' | 1:0:1557:G:H8 | 1.71 | 0.56 |
| 1:0:1790:G:HO2' | 1:0:1791:C:H5 | 1.54 | 0.56 |
| 1:0:657:A:H8 | 1:0:657:A:O5' | 1.89 | 0.56 |
| 1:0:474:G:H22 | 1:0:476:G:H3' | 1.70 | 0.56 |
| 1:0:1151:U:H5'' | 1:0:1153:A:OP1 | 2.06 | 0.56 |
| 1:0:2492:G:H2' | 1:0:2493:U:H6 | 1.70 | 0.56 |
| 2:9:101:A:H2' | 2:9:102:A:C8 | 2.41 | 0.56 |
| 1:0:1912:G:N3 | 1:0:1912:G:H3' | 2.21 | 0.56 |
| 1:0:2307:A:H2' | 1:0:2308:A:H8 | 1.71 | 0.56 |
| 1:0:2021:G:H2' | 1:0:2022:C:C6 | 2.41 | 0.56 |
| 1:0:745:C:C2' | 1:0:746:G:H5' | 2.36 | 0.56 |
| 2:9:17:A:H1' | 2:9:112:A:C8 | 2.40 | 0.56 |
| 1:0:805:G:H2' | 1:0:2419:C:N3 | 2.21 | 0.55 |
| 1:0:2407:G:H5'' | 1:0:2408:G:OP1 | 2.06 | 0.55 |
| 1:0:1672:A:C2 | 1:0:2032:G:H5'' | 2.41 | 0.55 |
| 1:0:162:C:H2' | 1:0:163:A:H8 | 1.69 | 0.55 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:191:G:O2' | 1:0:192:G:H5' | 2.07 | 0.55 |
| 1:0:1854:G:H2' | 1:0:1855:G:H8 | 1.71 | 0.55 |
| 1:0:798:G:O2' | 1:0:1770:U:H4' | 2.06 | 0.55 |
| 1:0:2544:A:H5'' | 1:0:2545:A:OP2 | 2.06 | 0.55 |
| 1:0:2377:U:H2' | 1:0:2378:G:C8 | 2.41 | 0.55 |
| 2:9:32:C:H4' | 2:9:60:A:H2 | 1.70 | 0.55 |
| 1:0:475:U:H1' | 1:0:801:A:N1 | 2.21 | 0.55 |
| 1:0:1979:C:H6 | 1:0:1979:C:OP1 | 1.89 | 0.55 |
| 1:0:1223:G:H21 | 1:0:1225:G:N2 | 2.01 | 0.55 |
| 1:0:1139:A:H1' | 1:0:2495:G:O2' | 2.05 | 0.55 |
| 1:0:840:U:H4' | 1:0:841:G:N2 | 2.20 | 0.55 |
| 1:0:1838:G:C2' | 1:0:1839:A:H5' | 2.35 | 0.55 |
| 1:0:1592:U:O5' | 1:0:1592:U:H6 | 1.89 | 0.55 |
| 1:0:1442:C:N4 | 1:0:1585:A:C8 | 2.74 | 0.55 |
| 1:0:2160:C:H2' | 1:0:2161:C:C6 | 2.42 | 0.55 |
| 1:0:2855:C:O2' | 1:0:2856:U:H5' | 2.07 | 0.55 |
| 1:0:1938:U:O2' | 1:0:1939:U:H5' | 2.07 | 0.55 |
| 1:0:1684:G:H2' | 1:0:1974:U:O4 | 2.06 | 0.55 |
| 1:0:1685:A:N6 | 1:0:1691:G:C4 | 2.75 | 0.55 |
| 1:0:2426:G:O6 | 1:0:2479:U:H2' | 2.07 | 0.55 |
| 1:0:2327:U:H2' | 1:0:2328:G:H8 | 1.71 | 0.55 |
| 1:0:2825:A:H2' | 1:0:2826:C:C6 | 2.42 | 0.55 |
| 1:0:1743:C:H41 | 16:N:125:MET:CA | 2.18 | 0.55 |
| 1:0:514:G:N3 | 1:0:514:G:H2' | 2.22 | 0.55 |
| 1:0:1514:C:H5' | 1:0:1593:C:H5'' | 1.88 | 0.55 |
| 1:0:1087:C:H2' | 1:0:1088:A:O4' | 2.06 | 0.55 |
| 1:0:1782:A:H62 | 1:0:1820:G:H2' | 1.71 | 0.55 |
| 1:0:1392:U:C2' | 1:0:1393:G:H5' | 2.36 | 0.55 |
| 1:0:1691:G:H21 | 1:0:1694:A:N6 | 2.01 | 0.55 |
| 1:0:876:A:H4' | 2:9:103:A:N3 | 2.21 | 0.55 |
| 1:0:1789:U:C2' | 1:0:1790:G:H5' | 2.35 | 0.55 |
| 1:0:10:A:H2' | 1:0:11:G:C8 | 2.42 | 0.55 |
| 1:0:581:A:C2 | 1:0:582:G:H1' | 2.42 | 0.55 |
| 1:0:1229:C:H2' | 1:0:1230:C:H6 | 1.70 | 0.55 |
| 1:0:1259:A:H2' | 1:0:1260:A:H5' | 1.88 | 0.55 |
| 1:0:2394:G:H2' | 1:0:2395:C:H6 | 1.71 | 0.55 |
| 1:0:612:G:H4' | 1:0:613:A:H4' | 1.88 | 0.55 |
| 1:0:1473:U:H4' | 1:0:1474:A:C5 | 2.41 | 0.55 |
| 1:0:706:A:H2' | 1:0:707:U:C6 | 2.42 | 0.55 |
| 1:0:216:U:H2' | 1:0:217:U:O4' | 2.05 | 0.55 |
| 1:0:604:U:H2' | 1:0:605:G:H8 | 1.71 | 0.55 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:1459:U:P | 1:0:1459:U:H6 | 2.30 | 0.55 |
| 1:0:1313:U:H4' | 1:0:1314:A:O4' | 2.06 | 0.55 |
| 1:0:2677:U:O2' | 1:0:2678:C:H5' | 2.07 | 0.55 |
| 1:0:2633:A:N6 | 1:0:2646:C:H42 | 2.04 | 0.55 |
| 1:0:781:G:H5' | 1:0:1638:G:H4' | 1.89 | 0.55 |
| 1:0:2404:A:P | 1:0:2406:C:H5' | 2.47 | 0.55 |
| 1:0:2117:A:H62 | 1:0:2139:G:H21 | 1.54 | 0.55 |
| 1:0:2810:A:H2 | 1:0:2853:U:C5 | 2.25 | 0.55 |
| 1:0:1132:C:H2' | 1:0:1133:G:O4' | 2.05 | 0.55 |
| 1:0:1226:A:H2' | 1:0:1227:A:C8 | 2.42 | 0.55 |
| 1:0:1196:G:H2' | 1:0:1197:U:O4' | 2.07 | 0.55 |
| 1:0:243:G:H2' | 1:0:244:C:O4' | 2.07 | 0.55 |
| 1:0:1020:A:H2' | 1:0:1021:A:C8 | 2.42 | 0.55 |
| 1:0:297:A:H2' | 1:0:298:C:C6 | 2.42 | 0.55 |
| 1:0:1442:C:N4 | 1:0:1585:A:H8 | 2.05 | 0.55 |
| 1:0:2230:G:C8 | 1:0:2476:A:N6 | 2.74 | 0.55 |
| 1:0:2052:G:C2' | 1:0:2053:G:H5' | 2.37 | 0.55 |
| 1:0:756:C:H2' | 1:0:757:U:C6 | 2.42 | 0.55 |
| 2:9:42:U:H2' | 2:9:45:C:N4 | 2.16 | 0.55 |
| 1:0:1791:C:H1' | 1:0:1793:A:C5' | 2.35 | 0.55 |
| 1:0:636:G:H2' | 1:0:637:G:H5' | 1.89 | 0.55 |
| 1:0:2195:C:C2' | 1:0:2196:U:H5' | 2.37 | 0.55 |
| 1:0:678:G:O2' | 1:0:679:C:H5' | 2.07 | 0.55 |
| 1:0:2535:C:H2' | 1:0:2536:G:O4' | 2.07 | 0.55 |
| 1:0:1900:U:C3' | 1:0:1901:A:H8 | 2.09 | 0.54 |
| 1:0:2633:A:N6 | 1:0:2646:C:N4 | 2.53 | 0.54 |
| 1:0:1956:G:H2' | 1:0:1957:C:C6 | 2.42 | 0.54 |
| 1:0:677:G:H4' | 1:0:952:A:P | 2.47 | 0.54 |
| 1:0:577:U:H2' | 1:0:579:G:OP2 | 2.06 | 0.54 |
| 1:0:2026:C:H2' | 1:0:2027:C:H6 | 1.71 | 0.54 |
| 1:0:1323:G:H1' | 1:0:1627:C:H5'' | 1.87 | 0.54 |
| 1:0:1534:A:O2' | 1:0:1535:C:H5' | 2.07 | 0.54 |
| 1:0:696:U:H6 | 1:0:696:U:O5' | 1.90 | 0.54 |
| 1:0:393:U:H2' | 1:0:394:U:H6 | 1.71 | 0.54 |
| 1:0:2038:C:H2' | 1:0:2483:U:C5' | 2.37 | 0.54 |
| 1:0:323:G:OP2 | 1:0:343:A:H5' | 2.06 | 0.54 |
| 1:0:1341:G:H2' | 1:0:1343:C:C5 | 2.42 | 0.54 |
| 1:0:1430:G:H22 | 1:0:1599:G:H1' | 1.72 | 0.54 |
| 1:0:1949:A:H1' | 1:0:2572:U:C4' | 2.37 | 0.54 |
| 1:0:93:A:O2' | 1:0:94:C:H5' | 2.06 | 0.54 |
| 1:0:1418:C:H2' | 1:0:1419:G:C8 | 2.42 | 0.54 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:1736:C:H2' | 1:0:1737:G:C8 | 2.41 | 0.54 |
| 1:0:736:G:H2' | 1:0:737:C:C6 | 2.42 | 0.54 |
| 1:0:1218:C:H2' | 1:0:1219:C:O4' | 2.07 | 0.54 |
| 1:0:2414:A:C3' | 1:0:2415:G:H5'' | 2.38 | 0.54 |
| 1:0:319:G:H1' | 1:0:511:A:O4' | 2.06 | 0.54 |
| 1:0:1038:U:H2' | 1:0:1039:A:H8 | 1.71 | 0.54 |
| 1:0:221:A:H2' | 1:0:222:G:H5' | 1.89 | 0.54 |
| 1:0:2448:A:H2' | 1:0:2449:G:O4' | 2.07 | 0.54 |
| 1:0:2495:G:H2' | 1:0:2496:C:C6 | 2.42 | 0.54 |
| 2:9:62:C:N3 | 2:9:63:A:N7 | 2.55 | 0.54 |
| 1:0:572:G:OP2 | 1:0:581:A:H5' | 2.07 | 0.54 |
| 1:0:1091:C:H2' | 1:0:1092:U:H6 | 1.68 | 0.54 |
| 1:0:239:A:C2 | 1:0:443:A:H1' | 2.43 | 0.54 |
| 1:0:703:A:O2' | 1:0:704:G:H5' | 2.06 | 0.54 |
| 2:9:71:G:N2 | 2:9:72:C:C1' | 2.70 | 0.54 |
| 1:0:751:G:H1' | 1:0:772:G:N2 | 2.23 | 0.54 |
| 1:0:1411:C:H2' | 1:0:1412:C:C6 | 2.43 | 0.54 |
| 1:0:1661:C:H2' | 1:0:1662:G:C8 | 2.43 | 0.54 |
| 1:0:1392:U:H2' | 1:0:1393:G:H5' | 1.90 | 0.54 |
| 1:0:1785:A:H2' | 1:0:1786:C:H6 | 1.73 | 0.54 |
| 1:0:2313:G:H2' | 1:0:2314:A:H5' | 1.89 | 0.54 |
| 1:0:1871:G:H2' | 1:0:1871:G:N3 | 2.23 | 0.54 |
| 1:0:752:G:H5' | 1:0:753:U:OP1 | 2.08 | 0.54 |
| 1:0:2433:G:H2' | 1:0:2434:G:H8 | 1.73 | 0.54 |
| 1:0:2045:A:N6 | 1:0:2482:A:H61 | 2.05 | 0.54 |
| 1:0:1280:U:H2' | 1:0:1280:U:O2 | 2.07 | 0.54 |
| 1:0:2624:G:H4' | 1:0:2712:G:O2' | 2.08 | 0.54 |
| 1:0:2585:C:H2' | 1:0:2586:G:O4' | 2.07 | 0.54 |
| 1:0:1959:U:H2' | 1:0:1960:A:C8 | 2.42 | 0.54 |
| 1:0:114:C:H2' | 1:0:115:G:C8 | 2.43 | 0.54 |
| 1:0:54:G:H2' | 1:0:55:A:H8 | 1.72 | 0.54 |
| 1:0:1162:A:O2' | 1:0:1163:C:H5' | 2.07 | 0.54 |
| 1:0:2396:C:O2' | 1:0:2397:A:H5' | 2.08 | 0.54 |
| 1:0:1787:U:H2' | 1:0:1788:C:H6 | 1.72 | 0.54 |
| 1:0:2580:C:H5'' | 1:0:2581:A:OP2 | 2.06 | 0.54 |
| 1:0:1314:A:N7 | 1:0:1316:G:C8 | 2.76 | 0.54 |
| 1:0:1251:G:H2' | 1:0:1252:C:O4' | 2.08 | 0.54 |
| 1:0:2523:G:H1' | 1:0:2625:U:H5' | 1.89 | 0.54 |
| 1:0:635:C:C2' | 1:0:636:G:H5'' | 2.34 | 0.54 |
| 1:0:2033:C:H2' | 1:0:2034:A:C1' | 2.38 | 0.54 |
| 1:0:2301:A:H2' | 1:0:2302:G:O4' | 2.08 | 0.54 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|----------------|--------------------------|-------------------|
| 1:0:1651:U:H5'' | 1:0:1652:G:OP2 | 2.07 | 0.54 |
| 1:0:1312:G:H4' | 1:0:1314:A:C4 | 2.42 | 0.54 |
| 1:0:629:C:O2' | 1:0:630:G:H5' | 2.07 | 0.54 |
| 1:0:1783:G:O6 | 1:0:1820:G:H1' | 2.08 | 0.54 |
| 1:0:786:U:H2' | 1:0:787:A:H5' | 1.90 | 0.54 |
| 1:0:456:C:H2' | 1:0:457:C:H6 | 1.73 | 0.54 |
| 1:0:1223:G:N1 | 1:0:1250:A:N7 | 2.56 | 0.54 |
| 1:0:657:A:H2' | 1:0:658:G:H8 | 1.71 | 0.54 |
| 1:0:773:G:H2' | 1:0:774:A:H5' | 1.90 | 0.54 |
| 1:0:1760:G:H1' | 1:0:1941:C:OP1 | 2.08 | 0.54 |
| 1:0:41:G:H2' | 1:0:42:G:H8 | 1.73 | 0.54 |
| 1:0:1865:C:H2' | 1:0:1866:G:O4' | 2.08 | 0.54 |
| 1:0:1399:C:H2' | 1:0:1400:A:C8 | 2.43 | 0.54 |
| 1:0:2321:C:C2' | 1:0:2322:U:H5' | 2.38 | 0.54 |
| 1:0:2830:U:H2' | 1:0:2831:A:H8 | 1.73 | 0.54 |
| 1:0:477:A:H2' | 1:0:478:G:H5' | 1.90 | 0.54 |
| 1:0:1611:U:H2' | 1:0:1612:U:O4' | 2.08 | 0.54 |
| 1:0:1009:C:O5' | 1:0:1009:C:H6 | 1.89 | 0.54 |
| 1:0:1741:G:O2' | 1:0:1742:G:H5' | 2.07 | 0.54 |
| 1:0:1083:C:H42 | 1:0:1103:C:H41 | 1.54 | 0.54 |
| 1:0:1293:A:O2' | 1:0:1294:G:H5' | 2.08 | 0.54 |
| 1:0:2040:A:H2' | 1:0:2041:A:H8 | 1.73 | 0.54 |
| 1:0:941:U:H4' | 1:0:941:U:OP1 | 2.06 | 0.53 |
| 1:0:811:G:O2' | 1:0:812:G:H5' | 2.08 | 0.53 |
| 1:0:763:A:H5'' | 1:0:1631:C:N4 | 2.23 | 0.53 |
| 1:0:2769:C:H2' | 1:0:2770:A:H5' | 1.89 | 0.53 |
| 1:0:1039:A:N3 | 1:0:2465:G:O2' | 2.37 | 0.53 |
| 1:0:2466:G:H2' | 1:0:2467:A:H8 | 1.72 | 0.53 |
| 1:0:1347:C:O2' | 1:0:1348:C:H5' | 2.06 | 0.53 |
| 1:0:1714:A:C5 | 1:0:1715:A:N6 | 2.73 | 0.53 |
| 1:0:964:A:H2' | 1:0:965:G:C8 | 2.41 | 0.53 |
| 1:0:2447:G:O5' | 1:0:2447:G:H8 | 1.91 | 0.53 |
| 1:0:338:G:H2' | 1:0:339:U:H5' | 1.89 | 0.53 |
| 1:0:225:G:H5' | 1:0:226:C:H5' | 1.90 | 0.53 |
| 1:0:1872:A:H2' | 1:0:1873:A:H8 | 1.73 | 0.53 |
| 1:0:1699:A:C5 | 1:0:1748:U:H1' | 2.43 | 0.53 |
| 1:0:2559:U:H2' | 1:0:2560:G:H5' | 1.90 | 0.53 |
| 1:0:2685:A:H4' | 1:0:2826:C:H4' | 1.90 | 0.53 |
| 1:0:2375:G:H2' | 1:0:2376:G:C8 | 2.43 | 0.53 |
| 1:0:176:A:H3' | 1:0:177:U:H5 | 1.72 | 0.53 |
| 1:0:298:C:H2' | 1:0:299:C:C6 | 2.42 | 0.53 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:1494:G:H2' | 1:0:1495:G:O4' | 2.08 | 0.53 |
| 1:0:2658:A:H2' | 1:0:2659:C:O4' | 2.08 | 0.53 |
| 1:0:1626:A:OP2 | 1:0:1626:A:C8 | 2.61 | 0.53 |
| 1:0:1436:G:N2 | 1:0:1514:C:H1' | 2.20 | 0.53 |
| 1:0:1032:A:C2' | 1:0:1033:G:H4' | 2.34 | 0.53 |
| 1:0:671:A:H2' | 1:0:672:C:C6 | 2.44 | 0.53 |
| 1:0:2261:G:H5'' | 1:0:2262:C:O5' | 2.08 | 0.53 |
| 1:0:1196:G:H2' | 1:0:1197:U:C4' | 2.38 | 0.53 |
| 1:0:1212:U:H2' | 1:0:1213:U:C6 | 2.43 | 0.53 |
| 1:0:362:C:C4 | 1:0:363:G:H1' | 2.43 | 0.53 |
| 1:0:2753:C:H2' | 1:0:2754:C:H6 | 1.73 | 0.53 |
| 1:0:357:A:C2' | 1:0:358:C:H5' | 2.35 | 0.53 |
| 1:0:186:C:H2' | 1:0:187:U:O4' | 2.09 | 0.53 |
| 1:0:2737:A:H2' | 1:0:2738:A:H5' | 1.90 | 0.53 |
| 1:0:13:A:O2' | 1:0:14:A:C2 | 2.61 | 0.53 |
| 1:0:2202:G:H3' | 1:0:2203:G:C8 | 2.44 | 0.53 |
| 1:0:2396:C:C2' | 1:0:2397:A:H5' | 2.38 | 0.53 |
| 1:0:1290:A:H2' | 1:0:1291:G:C8 | 2.43 | 0.53 |
| 1:0:1227:A:C4' | 1:0:1252:C:H4' | 2.38 | 0.53 |
| 1:0:1750:A:H4' | 1:0:2695:C:O4' | 2.09 | 0.53 |
| 1:0:2559:U:C2' | 1:0:2560:G:H5' | 2.38 | 0.53 |
| 1:0:1388:C:H2' | 1:0:1389:C:C6 | 2.40 | 0.53 |
| 1:0:1462:C:O2' | 1:0:1560:A:H1' | 2.09 | 0.53 |
| 1:0:2383:C:H2' | 1:0:2384:G:O4' | 2.08 | 0.53 |
| 1:0:837:U:H2' | 1:0:838:A:C8 | 2.44 | 0.53 |
| 1:0:1725:C:H2' | 1:0:1726:C:H6 | 1.74 | 0.53 |
| 1:0:1785:A:H2' | 1:0:1786:C:C6 | 2.44 | 0.53 |
| 1:0:1479:G:N2 | 1:0:1543:G:N2 | 2.57 | 0.53 |
| 1:0:1789:U:HO2' | 1:0:1793:A:H1' | 1.71 | 0.53 |
| 1:0:2608:A:O2' | 1:0:2609:G:H5' | 2.08 | 0.53 |
| 1:0:2727:G:C2' | 1:0:2728:A:H5'' | 2.39 | 0.53 |
| 1:0:14:A:H62 | 1:0:15:G:N2 | 2.06 | 0.53 |
| 1:0:1166:A:C3' | 1:0:1167:A:H5'' | 2.38 | 0.53 |
| 1:0:915:C:H2' | 1:0:916:U:C6 | 2.44 | 0.53 |
| 1:0:1679:U:C3' | 1:0:1680:U:H5'' | 2.39 | 0.53 |
| 1:0:813:A:O2' | 1:0:814:G:H8 | 1.90 | 0.53 |
| 1:0:66:U:C2 | 1:0:67:G:N7 | 2.77 | 0.53 |
| 1:0:953:G:H1' | 1:0:1203:A:C2 | 2.37 | 0.53 |
| 1:0:1036:G:H1' | 1:0:1145:C:O4' | 2.07 | 0.53 |
| 1:0:239:A:C5' | 1:0:620:G:H5' | 2.39 | 0.53 |
| 1:0:1272:G:H2' | 1:0:1273:G:H8 | 1.74 | 0.53 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:1356:G:H1' | 1:0:1613:G:C2 | 2.44 | 0.53 |
| 1:0:608:G:O2' | 1:0:609:U:H5' | 2.09 | 0.53 |
| 1:0:688:A:O2' | 1:0:689:A:H5' | 2.09 | 0.53 |
| 2:9:85:G:C2' | 2:9:86:A:H5' | 2.38 | 0.53 |
| 1:0:1339:U:O4 | 1:0:1664:G:H1' | 2.09 | 0.53 |
| 1:0:1342:U:H5'' | 1:0:1343:C:H5 | 1.74 | 0.53 |
| 1:0:2770:A:H4' | 1:0:2867:G:N2 | 2.17 | 0.53 |
| 1:0:733:G:O2' | 1:0:734:G:H5' | 2.09 | 0.53 |
| 1:0:775:U:O2 | 1:0:1445:A:H5'' | 2.08 | 0.53 |
| 1:0:1461:C:H2' | 1:0:1462:C:C6 | 2.44 | 0.53 |
| 1:0:639:G:H2' | 1:0:640:C:H6 | 1.73 | 0.53 |
| 1:0:2233:C:O2' | 1:0:2234:G:H5' | 2.09 | 0.53 |
| 1:0:333:A:O2' | 1:0:350:U:H2' | 2.08 | 0.53 |
| 1:0:2669:C:O2 | 1:0:2669:C:H2' | 2.08 | 0.53 |
| 1:0:1921:A:C2' | 1:0:1922:U:H5'' | 2.38 | 0.53 |
| 1:0:1940:C:H2' | 1:0:1941:C:H6 | 1.74 | 0.53 |
| 1:0:2717:G:H2' | 1:0:2718:A:C8 | 2.43 | 0.53 |
| 1:0:2076:G:H2' | 1:0:2077:G:C8 | 2.44 | 0.53 |
| 1:0:2627:G:H2' | 1:0:2628:C:O4' | 2.08 | 0.53 |
| 1:0:343:A:N6 | 1:0:346:C:C5 | 2.77 | 0.53 |
| 1:0:187:U:H1' | 1:0:1379:A:C2 | 2.43 | 0.53 |
| 1:0:1179:A:H2' | 1:0:1180:A:C8 | 2.43 | 0.53 |
| 1:0:570:G:C2' | 1:0:571:U:H5'' | 2.39 | 0.53 |
| 1:0:18:U:O2' | 1:0:563:U:H5'' | 2.09 | 0.53 |
| 1:0:2026:C:H2' | 1:0:2027:C:C6 | 2.44 | 0.53 |
| 1:0:2783:U:H2' | 1:0:2784:A:O4' | 2.09 | 0.53 |
| 1:0:2122:G:H2' | 1:0:2123:G:H8 | 1.74 | 0.53 |
| 2:9:23:G:C6 | 2:9:24:U:C4 | 2.98 | 0.52 |
| 1:0:630:G:H8 | 1:0:630:G:O5' | 1.91 | 0.52 |
| 1:0:1241:G:O2' | 1:0:1242:A:H5' | 2.09 | 0.52 |
| 1:0:1923:U:H2' | 1:0:1923:U:O2 | 2.08 | 0.52 |
| 1:0:2469:G:H4' | 1:0:2470:U:H5 | 1.73 | 0.52 |
| 1:0:1429:A:H1' | 1:0:1603:A:C6 | 2.44 | 0.52 |
| 1:0:2503:G:C2' | 1:0:2504:G:H5'' | 2.39 | 0.52 |
| 1:0:1307:U:H2' | 1:0:1308:C:O4' | 2.09 | 0.52 |
| 1:0:1086:C:C2' | 1:0:1087:C:H5'' | 2.37 | 0.52 |
| 2:9:72:C:H2' | 2:9:73:C:O4' | 2.10 | 0.52 |
| 1:0:1485:U:H2' | 1:0:1486:A:H8 | 1.73 | 0.52 |
| 1:0:2024:U:H6 | 1:0:2024:U:O5' | 1.92 | 0.52 |
| 1:0:2182:A:H2' | 1:0:2183:C:O4' | 2.10 | 0.52 |
| 1:0:2617:G:O2' | 1:0:2618:A:H8 | 1.92 | 0.52 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:1463:A:H1' | 1:0:1543:G:C2 | 2.44 | 0.52 |
| 1:0:27:G:O2' | 1:0:28:A:O4' | 2.27 | 0.52 |
| 1:0:931:G:C5' | 2:9:83:C:H1' | 2.40 | 0.52 |
| 1:0:1956:G:H2' | 1:0:1957:C:H6 | 1.73 | 0.52 |
| 1:0:365:U:H2' | 1:0:366:U:C6 | 2.44 | 0.52 |
| 1:0:2583:U:O2' | 1:0:2584:U:H5' | 2.08 | 0.52 |
| 1:0:2048:C:H2' | 1:0:2049:C:O4' | 2.09 | 0.52 |
| 1:0:1739:G:H2' | 1:0:1740:G:C8 | 2.44 | 0.52 |
| 1:0:1621:C:O2' | 1:0:1626:A:N7 | 2.41 | 0.52 |
| 1:0:2633:A:C2 | 1:0:2644:A:H5'' | 2.44 | 0.52 |
| 1:0:1195:U:H2' | 1:0:1196:G:H8 | 1.75 | 0.52 |
| 1:0:115:G:H8 | 1:0:115:G:O5' | 1.93 | 0.52 |
| 1:0:698:A:C1' | 1:0:700:C:H41 | 2.23 | 0.52 |
| 2:9:41:A:H8 | 2:9:41:A:O5' | 1.93 | 0.52 |
| 1:0:2169:A:O2' | 1:0:2170:C:H5' | 2.10 | 0.52 |
| 1:0:2739:G:H2' | 1:0:2740:C:O4' | 2.09 | 0.52 |
| 1:0:1802:A:O2' | 1:0:1803:G:H5' | 2.09 | 0.52 |
| 1:0:1537:U:H2' | 1:0:1538:A:C8 | 2.44 | 0.52 |
| 1:0:2011:U:H2' | 1:0:2012:A:H8 | 1.75 | 0.52 |
| 1:0:974:U:H2' | 1:0:975:C:O4' | 2.09 | 0.52 |
| 1:0:484:G:O2' | 1:0:485:G:H5' | 2.10 | 0.52 |
| 1:0:635:C:O2 | 1:0:670:U:H4' | 2.10 | 0.52 |
| 1:0:331:U:C2' | 1:0:332:C:H5'' | 2.38 | 0.52 |
| 1:0:699:G:N3 | 1:0:699:G:H3' | 2.25 | 0.52 |
| 1:0:886:A:H2' | 1:0:887:G:O4' | 2.10 | 0.52 |
| 1:0:2788:C:H2' | 1:0:2789:U:H6 | 1.74 | 0.52 |
| 1:0:2503:G:C3' | 1:0:2504:G:H5'' | 2.39 | 0.52 |
| 1:0:782:U:H2' | 1:0:783:G:H8 | 1.72 | 0.52 |
| 1:0:2225:G:C2 | 1:0:2405:A:H1' | 2.45 | 0.52 |
| 1:0:353:G:H2' | 1:0:354:C:C6 | 2.44 | 0.52 |
| 1:0:1038:U:N3 | 1:0:2467:A:H5' | 2.24 | 0.52 |
| 1:0:2274:C:C2' | 1:0:2275:U:H5'' | 2.39 | 0.52 |
| 1:0:824:U:H4' | 1:0:1264:C:H1' | 1.90 | 0.52 |
| 1:0:785:U:H5' | 1:0:1368:G:O2' | 2.09 | 0.52 |
| 1:0:2705:A:O2' | 1:0:2706:U:C6 | 2.53 | 0.52 |
| 1:0:859:U:H4' | 1:0:860:U:C5 | 2.45 | 0.52 |
| 1:0:1312:G:H5'' | 1:0:1313:U:H5' | 1.90 | 0.52 |
| 1:0:1301:U:H5'' | 1:0:1302:C:OP1 | 2.10 | 0.52 |
| 1:0:13:A:H1' | 1:0:536:A:H62 | 1.71 | 0.52 |
| 1:0:534:U:H4' | 1:0:564:U:H4' | 1.91 | 0.52 |
| 1:0:640:C:H5'' | 1:0:660:G:O2' | 2.09 | 0.52 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:1594:U:H2' | 1:0:1595:A:C8 | 2.45 | 0.52 |
| 1:0:84:G:O2' | 1:0:85:C:H5' | 2.09 | 0.52 |
| 1:0:228:A:C5 | 1:0:229:G:H1' | 2.44 | 0.52 |
| 1:0:1073:G:C2' | 1:0:1074:G:H4' | 2.27 | 0.52 |
| 1:0:461:A:N3 | 1:0:461:A:H2' | 2.23 | 0.52 |
| 1:0:839:U:H5'' | 1:0:2408:G:P | 2.49 | 0.52 |
| 1:0:2725:C:H2' | 1:0:2726:U:C6 | 2.45 | 0.52 |
| 1:0:1102:G:H2' | 1:0:1103:C:C6 | 2.43 | 0.52 |
| 1:0:169:C:H2' | 1:0:170:U:H5' | 1.91 | 0.52 |
| 1:0:1479:G:N2 | 1:0:1543:G:H21 | 2.08 | 0.52 |
| 1:0:1226:A:C4 | 1:0:1250:A:N3 | 2.78 | 0.52 |
| 1:0:2407:G:H4' | 1:0:2408:G:C5 | 2.45 | 0.52 |
| 1:0:2633:A:H2 | 1:0:2644:A:H5'' | 1.74 | 0.52 |
| 1:0:1920:A:N6 | 1:0:1923:U:C6 | 2.78 | 0.52 |
| 1:0:738:G:H2' | 1:0:739:G:O4' | 2.10 | 0.52 |
| 1:0:1440:G:H3' | 1:0:1441:A:H5' | 1.90 | 0.52 |
| 1:0:50:G:H2' | 1:0:117:A:N1 | 2.25 | 0.52 |
| 1:0:964:A:H1' | 1:0:2245:A:OP2 | 2.10 | 0.52 |
| 1:0:1356:G:C4' | 1:0:1613:G:H2' | 2.40 | 0.52 |
| 1:0:1970:G:O2' | 1:0:1971:C:H5' | 2.10 | 0.52 |
| 1:0:2015:G:N2 | 1:0:2038:C:H1' | 2.21 | 0.51 |
| 1:0:1253:C:C2' | 1:0:1254:G:H5' | 2.39 | 0.51 |
| 1:0:757:U:H2' | 1:0:758:G:O4' | 2.10 | 0.51 |
| 1:0:765:C:O2' | 1:0:766:A:O4' | 2.28 | 0.51 |
| 1:0:984:A:H2 | 1:0:1200:G:H1 | 1.58 | 0.51 |
| 1:0:1202:U:H2' | 1:0:1203:A:C8 | 2.35 | 0.51 |
| 1:0:69:G:H4' | 1:0:70:A:O5' | 2.11 | 0.51 |
| 1:0:115:G:C6 | 1:0:117:A:N6 | 2.78 | 0.51 |
| 1:0:1696:C:O2 | 1:0:1972:G:N2 | 2.43 | 0.51 |
| 1:0:978:U:H2' | 1:0:979:A:H8 | 1.75 | 0.51 |
| 1:0:974:U:H5' | 1:0:2476:A:OP1 | 2.11 | 0.51 |
| 1:0:1699:A:C6 | 1:0:1748:U:H1' | 2.45 | 0.51 |
| 1:0:872:G:O2' | 1:0:2247:A:C4 | 2.63 | 0.51 |
| 1:0:633:G:H8 | 1:0:633:G:O5' | 1.92 | 0.51 |
| 1:0:1058:G:H2' | 1:0:1121:G:H1 | 1.76 | 0.51 |
| 1:0:887:G:O2' | 1:0:888:G:H5' | 2.10 | 0.51 |
| 2:9:116:C:H2' | 2:9:117:G:O4' | 2.10 | 0.51 |
| 1:0:1372:A:H2' | 1:0:1373:G:H5' | 1.93 | 0.51 |
| 1:0:2402:U:H5' | 1:0:2404:A:N7 | 2.25 | 0.51 |
| 1:0:987:G:O2' | 1:0:1166:A:O2' | 2.26 | 0.51 |
| 1:0:550:C:H2' | 1:0:551:A:C8 | 2.46 | 0.51 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:1226:A:N1 | 1:0:1250:A:H1' | 2.25 | 0.51 |
| 1:0:1514:C:H2' | 1:0:1515:U:O4' | 2.10 | 0.51 |
| 1:0:670:U:O2' | 1:0:671:A:H5' | 2.10 | 0.51 |
| 1:0:147:G:O5' | 1:0:147:G:H8 | 1.92 | 0.51 |
| 1:0:446:C:H2' | 1:0:447:U:O4' | 2.10 | 0.51 |
| 1:0:1256:C:H2' | 1:0:1257:U:C6 | 2.46 | 0.51 |
| 1:0:2501:U:O2' | 1:0:2626:U:H5'' | 2.11 | 0.51 |
| 1:0:912:A:H2' | 1:0:913:A:H8 | 1.76 | 0.51 |
| 1:0:2857:C:H2' | 1:0:2858:A:O5' | 2.11 | 0.51 |
| 1:0:1040:A:H2' | 1:0:1041:G:C5' | 2.35 | 0.51 |
| 1:0:1764:A:H2' | 1:0:1765:C:H5' | 1.93 | 0.51 |
| 1:0:951:G:H3' | 1:0:952:A:H5'' | 1.91 | 0.51 |
| 1:0:15:G:H2' | 1:0:16:G:H5' | 1.93 | 0.51 |
| 1:0:2542:U:H2' | 1:0:2544:A:OP2 | 2.11 | 0.51 |
| 1:0:1943:A:C2' | 1:0:1944:C:H5' | 2.40 | 0.51 |
| 1:0:2311:U:HO2' | 1:0:2312:A:H8 | 1.58 | 0.51 |
| 1:0:2772:U:O2' | 1:0:2773:G:H5' | 2.10 | 0.51 |
| 1:0:1141:U:O5' | 1:0:1141:U:H6 | 1.94 | 0.51 |
| 1:0:2511:G:N2 | 1:0:2642:G:O2' | 2.44 | 0.51 |
| 1:0:1789:U:O2 | 1:0:1793:A:H2 | 1.93 | 0.51 |
| 2:9:78:A:H2' | 2:9:79:U:H6 | 1.73 | 0.51 |
| 1:0:1473:U:H4' | 1:0:1474:A:C8 | 2.46 | 0.51 |
| 1:0:2840:U:C6 | 1:0:2841:U:H5 | 2.28 | 0.51 |
| 1:0:1851:A:N6 | 1:0:1867:A:H1' | 2.25 | 0.51 |
| 1:0:2759:U:H4' | 1:0:2760:G:O5' | 2.11 | 0.51 |
| 1:0:2668:U:P | 1:0:2699:G:H22 | 2.34 | 0.51 |
| 1:0:2665:G:H2' | 1:0:2666:U:O4' | 2.11 | 0.51 |
| 1:0:1827:G:H1' | 1:0:1914:U:N3 | 2.26 | 0.51 |
| 1:0:2560:G:H4' | 1:0:2561:G:C8 | 2.46 | 0.51 |
| 1:0:1124:U:H2' | 1:0:1125:G:H8 | 1.76 | 0.51 |
| 1:0:5:A:H2' | 1:0:6:A:C8 | 2.44 | 0.51 |
| 1:0:1010:U:H2' | 1:0:1011:A:H8 | 1.75 | 0.51 |
| 1:0:504:G:O2' | 1:0:505:G:H5' | 2.11 | 0.51 |
| 1:0:1814:G:H2' | 1:0:1815:G:C8 | 2.46 | 0.51 |
| 1:0:975:C:O5' | 1:0:975:C:H6 | 1.94 | 0.51 |
| 1:0:1698:C:O2' | 1:0:1753:A:C2' | 2.57 | 0.51 |
| 1:0:1253:C:H2' | 1:0:1254:G:H5' | 1.92 | 0.51 |
| 1:0:515:A:C2' | 1:0:516:G:H5' | 2.41 | 0.51 |
| 2:9:42:U:C2 | 2:9:45:C:C5 | 2.99 | 0.51 |
| 1:0:2409:A:H2' | 1:0:2410:U:C5' | 2.36 | 0.51 |
| 1:0:1666:G:H2' | 1:0:1667:A:H8 | 1.75 | 0.51 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:2709:C:H2' | 1:0:2710:C:H6 | 1.76 | 0.51 |
| 1:0:1451:C:H2' | 1:0:1452:U:C6 | 2.46 | 0.51 |
| 1:0:2541:U:H2' | 1:0:2542:U:O4' | 2.10 | 0.51 |
| 1:0:2396:C:H6 | 1:0:2396:C:H5' | 1.75 | 0.51 |
| 1:0:2230:G:H8 | 1:0:2476:A:N6 | 2.09 | 0.51 |
| 1:0:1807:A:H1' | 1:0:1809:G:N7 | 2.25 | 0.51 |
| 1:0:1782:A:N6 | 1:0:1820:G:H2' | 2.26 | 0.51 |
| 1:0:416:U:C5' | 1:0:417:C:H5' | 2.38 | 0.51 |
| 1:0:525:A:H2' | 1:0:526:C:O4' | 2.10 | 0.51 |
| 1:0:1429:A:H61 | 1:0:1602:G:H5' | 1.74 | 0.51 |
| 1:0:1008:G:O2' | 1:0:1009:C:H5' | 2.10 | 0.51 |
| 1:0:1729:C:H2' | 1:0:1730:G:C8 | 2.46 | 0.51 |
| 1:0:2790:C:H2' | 1:0:2791:C:H6 | 1.75 | 0.51 |
| 1:0:1835:C:H2' | 1:0:1836:C:C6 | 2.46 | 0.51 |
| 1:0:2341:G:O2' | 1:0:2342:U:H5' | 2.11 | 0.51 |
| 1:0:76:C:H2' | 1:0:77:C:C6 | 2.45 | 0.51 |
| 2:9:26:G:N7 | 2:9:58:G:C4 | 2.78 | 0.51 |
| 2:9:6:C:H2' | 2:9:7:C:H6 | 1.72 | 0.51 |
| 1:0:843:G:H3' | 1:0:843:G:OP1 | 2.11 | 0.51 |
| 1:0:1715:A:HO2' | 1:0:1716:G:H3' | 1.76 | 0.51 |
| 1:0:580:A:N3 | 1:0:582:G:N7 | 2.58 | 0.51 |
| 2:9:71:G:C2' | 2:9:72:C:H5' | 2.41 | 0.51 |
| 1:0:95:G:H2' | 1:0:96:C:C6 | 2.46 | 0.51 |
| 1:0:2402:U:H5' | 1:0:2404:A:C5 | 2.46 | 0.51 |
| 1:0:1940:C:H2' | 1:0:1941:C:C6 | 2.46 | 0.51 |
| 1:0:1969:G:O2' | 1:0:1970:G:H5' | 2.11 | 0.51 |
| 2:9:4:C:H2' | 2:9:5:C:C5 | 2.43 | 0.51 |
| 1:0:10:A:H2' | 1:0:11:G:H8 | 1.75 | 0.51 |
| 1:0:1296:G:H2' | 1:0:1298:G:OP2 | 2.11 | 0.51 |
| 1:0:1003:C:O2' | 1:0:1004:A:H5' | 2.10 | 0.51 |
| 1:0:1424:U:H2' | 1:0:1425:G:C8 | 2.45 | 0.51 |
| 1:0:1380:C:H2' | 1:0:1381:G:H5' | 1.93 | 0.51 |
| 1:0:2044:G:N7 | 1:0:2480:C:H4' | 2.26 | 0.50 |
| 1:0:509:U:H3 | 1:0:513:A:N6 | 2.09 | 0.50 |
| 1:0:931:G:H5' | 2:9:83:C:H1' | 1.92 | 0.50 |
| 1:0:923:A:N3 | 1:0:923:A:H2' | 2.26 | 0.50 |
| 1:0:1064:C:H2' | 1:0:1065:A:C8 | 2.46 | 0.50 |
| 1:0:2324:G:HO2' | 1:0:2325:A:H5'' | 1.76 | 0.50 |
| 1:0:1472:C:HO2' | 1:0:1474:A:H8 | 1.58 | 0.50 |
| 1:0:1345:G:H5'' | 1:0:1346:C:OP1 | 2.11 | 0.50 |
| 1:0:1004:A:H2' | 1:0:1005:U:H5' | 1.93 | 0.50 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:2813:G:C2' | 1:0:2814:G:H5' | 2.41 | 0.50 |
| 1:0:1944:C:H2' | 1:0:1945:C:O4' | 2.11 | 0.50 |
| 1:0:2613:A:O2' | 1:0:2614:A:H5' | 2.12 | 0.50 |
| 1:0:29:U:H2' | 1:0:30:G:C8 | 2.46 | 0.50 |
| 1:0:2487:G:O3' | 1:0:2534:U:H5' | 2.10 | 0.50 |
| 1:0:1679:U:H2' | 1:0:1680:U:C5' | 2.16 | 0.50 |
| 1:0:1680:U:C5' | 1:0:1680:U:H6 | 2.25 | 0.50 |
| 1:0:1690:U:C2' | 1:0:1691:G:H5' | 2.41 | 0.50 |
| 1:0:2059:U:C2' | 1:0:2060:A:H5'' | 2.28 | 0.50 |
| 1:0:701:U:O2' | 1:0:702:A:H5' | 2.12 | 0.50 |
| 1:0:221:A:C2' | 1:0:222:G:H5' | 2.42 | 0.50 |
| 1:0:771:C:O2' | 1:0:772:G:H5' | 2.11 | 0.50 |
| 1:0:2504:G:O4' | 1:0:2721:A:H2 | 1.94 | 0.50 |
| 1:0:2396:C:H2' | 1:0:2397:A:H5' | 1.93 | 0.50 |
| 1:0:1001:A:C3' | 1:0:1002:C:H5'' | 2.42 | 0.50 |
| 2:9:50:U:H2' | 2:9:51:G:C8 | 2.45 | 0.50 |
| 1:0:1823:G:H2' | 1:0:1824:C:C6 | 2.46 | 0.50 |
| 1:0:2047:C:H5'' | 1:0:2047:C:H6 | 1.76 | 0.50 |
| 1:0:1226:A:H2' | 1:0:1227:A:H8 | 1.76 | 0.50 |
| 1:0:2034:A:N6 | 1:0:2593:A:N7 | 2.60 | 0.50 |
| 1:0:788:G:H5'' | 1:0:789:G:OP1 | 2.10 | 0.50 |
| 1:0:1278:A:H4' | 1:0:1279:G:O5' | 2.11 | 0.50 |
| 1:0:1429:A:N6 | 1:0:1601:U:H5'' | 2.24 | 0.50 |
| 1:0:1007:A:H2' | 1:0:1008:G:H8 | 1.75 | 0.50 |
| 1:0:1171:A:H2' | 1:0:1172:U:C6 | 2.46 | 0.50 |
| 1:0:929:A:H3' | 1:0:930:A:C5' | 2.36 | 0.50 |
| 1:0:322:A:H1' | 1:0:343:A:C5 | 2.47 | 0.50 |
| 1:0:735:G:O2' | 1:0:736:G:H5' | 2.11 | 0.50 |
| 1:0:1011:A:N6 | 1:0:1165:G:H2' | 2.27 | 0.50 |
| 1:0:365:U:H2' | 1:0:366:U:H6 | 1.76 | 0.50 |
| 1:0:2432:A:H4' | 1:0:2551:A:O2' | 2.11 | 0.50 |
| 1:0:2770:A:H5'' | 1:0:2867:G:H1 | 1.75 | 0.50 |
| 1:0:2842:C:H5'' | 1:0:2842:C:H6 | 1.77 | 0.50 |
| 1:0:1310:C:O2' | 1:0:1315:A:N1 | 2.41 | 0.50 |
| 1:0:782:U:HO2' | 1:0:1392:U:H5 | 1.60 | 0.50 |
| 2:9:111:C:H5'' | 2:9:112:A:H4' | 1.93 | 0.50 |
| 1:0:1402:G:H2' | 1:0:1403:U:O4' | 2.12 | 0.50 |
| 1:0:1141:U:OP2 | 1:0:2549:G:N2 | 2.44 | 0.50 |
| 1:0:763:A:C5' | 1:0:1631:C:H42 | 2.24 | 0.50 |
| 1:0:1920:A:C5 | 1:0:1922:U:H5 | 2.29 | 0.50 |
| 2:9:29:C:H2' | 2:9:30:C:C5 | 2.45 | 0.50 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:543:G:H2' | 1:0:544:U:C6 | 2.47 | 0.50 |
| 1:0:542:A:H62 | 1:0:570:G:H21 | 1.60 | 0.50 |
| 1:0:14:A:N6 | 1:0:15:G:C2 | 2.80 | 0.50 |
| 1:0:132:U:H2' | 1:0:133:C:C6 | 2.47 | 0.50 |
| 1:0:1685:A:N6 | 1:0:1691:G:N3 | 2.60 | 0.50 |
| 1:0:2042:A:H8 | 1:0:2042:A:H3' | 1.77 | 0.50 |
| 1:0:1439:G:N2 | 1:0:1590:C:H42 | 2.10 | 0.50 |
| 1:0:403:A:H5'' | 1:0:404:A:OP1 | 2.11 | 0.50 |
| 1:0:2555:G:O4' | 1:0:2558:C:H5 | 1.95 | 0.50 |
| 1:0:428:A:H2' | 1:0:429:C:C6 | 2.47 | 0.50 |
| 1:0:1541:G:H22 | 1:0:1561:A:N6 | 2.09 | 0.50 |
| 1:0:1000:G:OP1 | 1:0:1168:G:H4' | 2.12 | 0.50 |
| 1:0:2411:A:H8 | 1:0:2411:A:O5' | 1.93 | 0.50 |
| 1:0:520:C:H2' | 1:0:521:U:O4' | 2.12 | 0.50 |
| 1:0:2839:G:C5 | 1:0:2840:U:C4 | 3.00 | 0.50 |
| 1:0:744:C:N4 | 1:0:745:C:H41 | 2.10 | 0.50 |
| 1:0:1021:A:O5' | 1:0:1021:A:H8 | 1.95 | 0.50 |
| 1:0:1888:C:H2' | 1:0:1913:G:C5 | 2.47 | 0.50 |
| 1:0:1799:A:C8 | 1:0:1800:A:N7 | 2.80 | 0.50 |
| 1:0:2617:G:N2 | 1:0:2755:A:H2' | 2.27 | 0.50 |
| 1:0:486:U:C4' | 1:0:520:C:H5' | 2.41 | 0.50 |
| 2:9:105:G:C2 | 2:9:106:U:C4 | 2.99 | 0.50 |
| 1:0:830:C:H2' | 1:0:831:G:H8 | 1.77 | 0.50 |
| 1:0:222:G:O2' | 1:0:223:C:H5' | 2.11 | 0.50 |
| 1:0:2824:C:H1' | 1:0:2843:A:C2 | 2.46 | 0.50 |
| 1:0:26:G:O3' | 1:0:1273:G:H4' | 2.12 | 0.50 |
| 1:0:394:U:O2' | 1:0:395:G:H5' | 2.12 | 0.50 |
| 1:0:457:C:O2' | 1:0:458:G:H5' | 2.12 | 0.50 |
| 1:0:127:C:H5'' | 1:0:1615:C:O2' | 2.11 | 0.50 |
| 1:0:1756:C:H2' | 1:0:1757:C:C6 | 2.47 | 0.50 |
| 1:0:861:G:N2 | 1:0:943:U:O2' | 2.45 | 0.49 |
| 1:0:2217:G:H3' | 1:0:2217:G:N3 | 2.27 | 0.49 |
| 1:0:2754:C:H2' | 1:0:2755:A:H8 | 1.76 | 0.49 |
| 1:0:630:G:H5'' | 1:0:631:G:OP2 | 2.12 | 0.49 |
| 1:0:2034:A:H5' | 1:0:2557:G:C4' | 2.41 | 0.49 |
| 1:0:119:G:H1' | 1:0:129:A:C2 | 2.47 | 0.49 |
| 1:0:2005:U:H2' | 1:0:2595:C:HO2' | 1.75 | 0.49 |
| 1:0:333:A:HO2' | 1:0:350:U:H2' | 1.76 | 0.49 |
| 1:0:2080:U:H2' | 1:0:2081:U:C6 | 2.47 | 0.49 |
| 1:0:322:A:H2 | 1:0:342:G:OP2 | 1.95 | 0.49 |
| 1:0:1821:A:H5'' | 1:0:1822:C:C5 | 2.47 | 0.49 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|----------------|--------------------------|-------------------|
| 1:0:1717:A:H2' | 1:0:1718:A:H5' | 1.94 | 0.49 |
| 1:0:1101:U:H3 | 1:0:1113:C:C1' | 2.24 | 0.49 |
| 1:0:2507:U:HO2' | 1:0:2508:G:H8 | 1.59 | 0.49 |
| 1:0:752:G:H8 | 1:0:752:G:OP2 | 1.95 | 0.49 |
| 1:0:946:U:O2' | 1:0:947:C:H5' | 2.12 | 0.49 |
| 1:0:1457:A:O2' | 1:0:1458:A:H5' | 2.13 | 0.49 |
| 1:0:2039:G:H2' | 1:0:2039:G:N3 | 2.28 | 0.49 |
| 1:0:1622:G:H4' | 1:0:1624:A:N3 | 2.27 | 0.49 |
| 1:0:930:A:H4' | 1:0:930:A:OP1 | 2.11 | 0.49 |
| 2:9:104:A:C2 | 2:9:105:G:H1' | 2.47 | 0.49 |
| 1:0:424:G:N7 | 1:0:2385:U:N3 | 2.60 | 0.49 |
| 1:0:2162:C:H2' | 1:0:2163:U:H6 | 1.77 | 0.49 |
| 1:0:1424:U:H2' | 1:0:1425:G:H8 | 1.77 | 0.49 |
| 1:0:178:C:H2' | 1:0:179:U:C6 | 2.47 | 0.49 |
| 1:0:305:A:H2' | 1:0:306:G:H5' | 1.92 | 0.49 |
| 1:0:45:C:H2' | 1:0:46:C:C6 | 2.47 | 0.49 |
| 1:0:1685:A:C2 | 1:0:1976:U:C2 | 3.01 | 0.49 |
| 1:0:2618:A:N1 | 1:0:2619:G:H1' | 2.28 | 0.49 |
| 1:0:589:C:O2' | 1:0:590:C:H5' | 2.12 | 0.49 |
| 1:0:1090:C:O2' | 1:0:1091:C:H5' | 2.12 | 0.49 |
| 1:0:1482:U:H1' | 1:0:1562:G:N2 | 2.27 | 0.49 |
| 1:0:746:G:N7 | 1:0:774:A:C5 | 2.80 | 0.49 |
| 2:9:111:C:H5'' | 2:9:112:A:C5' | 2.42 | 0.49 |
| 1:0:1818:G:H2' | 1:0:1819:U:C6 | 2.47 | 0.49 |
| 1:0:2396:C:H2' | 1:0:2397:A:C5' | 2.42 | 0.49 |
| 1:0:202:A:O2' | 1:0:234:C:H4' | 2.12 | 0.49 |
| 1:0:1768:U:O2' | 1:0:1769:U:H5' | 2.12 | 0.49 |
| 1:0:2742:G:O2' | 1:0:2743:G:H5' | 2.13 | 0.49 |
| 1:0:1724:C:H1' | 1:0:1747:G:C4 | 2.48 | 0.49 |
| 1:0:490:A:N7 | 1:0:492:G:H1' | 2.27 | 0.49 |
| 1:0:1771:A:H8 | 1:0:1772:C:H5 | 1.60 | 0.49 |
| 1:0:1302:C:C6 | 1:0:1302:C:OP1 | 2.65 | 0.49 |
| 1:0:1182:U:H2' | 1:0:1183:C:C5' | 2.35 | 0.49 |
| 1:0:1950:C:H2' | 1:0:1951:G:O4' | 2.12 | 0.49 |
| 1:0:2587:G:O5' | 1:0:2587:G:H8 | 1.95 | 0.49 |
| 1:0:2245:A:C4 | 1:0:2251:U:O4 | 2.66 | 0.49 |
| 1:0:1354:A:H2' | 1:0:1410:U:O2 | 2.12 | 0.49 |
| 1:0:1784:C:O2' | 1:0:1785:A:H5' | 2.12 | 0.49 |
| 1:0:353:G:H2' | 1:0:354:C:H6 | 1.77 | 0.49 |
| 1:0:305:A:C2' | 1:0:306:G:H5' | 2.43 | 0.49 |
| 1:0:1023:U:H1' | 1:0:1154:A:C8 | 2.47 | 0.49 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|----------------|--------------------------|-------------------|
| 1:0:90:G:H3' | 1:0:91:A:C5' | 2.42 | 0.49 |
| 1:0:1625:A:C8 | 1:0:1632:A:H1' | 2.48 | 0.49 |
| 1:0:486:U:C2' | 1:0:487:G:H5' | 2.43 | 0.49 |
| 1:0:1715:A:HO2' | 1:0:1716:G:H8 | 1.60 | 0.49 |
| 1:0:1482:U:H2' | 1:0:1483:G:H8 | 1.77 | 0.49 |
| 1:0:338:G:O2' | 1:0:339:U:H5' | 2.13 | 0.49 |
| 1:0:1234:C:O2' | 1:0:1235:C:H5' | 2.13 | 0.49 |
| 1:0:2428:U:O2 | 1:0:2428:U:H2' | 2.12 | 0.49 |
| 1:0:450:C:H2' | 1:0:451:A:C8 | 2.48 | 0.49 |
| 1:0:1952:A:O2' | 1:0:1955:G:N2 | 2.45 | 0.49 |
| 1:0:195:A:C2' | 1:0:196:A:H5' | 2.43 | 0.49 |
| 1:0:2572:U:H2' | 1:0:2573:C:H6 | 1.77 | 0.49 |
| 1:0:644:A:C2' | 1:0:645:G:H5' | 2.41 | 0.49 |
| 1:0:246:C:N4 | 1:0:247:A:H62 | 2.09 | 0.49 |
| 1:0:1964:A:OP1 | 1:0:1965:U:OP2 | 2.30 | 0.49 |
| 1:0:2301:A:C2 | 1:0:2302:G:H1' | 2.48 | 0.49 |
| 1:0:2055:G:O2' | 1:0:2056:C:H5' | 2.12 | 0.49 |
| 1:0:389:G:H2' | 1:0:390:U:C6 | 2.48 | 0.49 |
| 1:0:968:C:C2 | 1:0:2438:A:H5' | 2.48 | 0.49 |
| 1:0:860:U:O2 | 1:0:860:U:H2' | 2.11 | 0.49 |
| 1:0:1692:C:H2' | 1:0:1693:A:H5' | 1.95 | 0.49 |
| 1:0:952:A:O2' | 1:0:1204:G:H4' | 2.13 | 0.49 |
| 2:9:28:A:OP2 | 2:9:29:C:H5 | 1.95 | 0.49 |
| 1:0:1399:C:O2' | 1:0:1400:A:H5' | 2.13 | 0.49 |
| 1:0:388:G:O2' | 1:0:389:G:H5' | 2.13 | 0.49 |
| 1:0:1147:G:O2' | 1:0:1148:G:H5' | 2.12 | 0.49 |
| 1:0:2204:A:O2' | 1:0:2205:C:OP2 | 2.28 | 0.49 |
| 1:0:2038:C:C2' | 1:0:2483:U:H4' | 2.28 | 0.49 |
| 2:9:23:G:C2 | 2:9:24:U:C2 | 3.01 | 0.49 |
| 1:0:515:A:H2' | 1:0:516:G:H5' | 1.95 | 0.49 |
| 1:0:1295:U:H2' | 1:0:1296:G:C5' | 2.39 | 0.49 |
| 2:9:28:A:H3' | 2:9:29:C:C6 | 2.43 | 0.49 |
| 1:0:2447:G:C8 | 1:0:2455:A:N6 | 2.75 | 0.49 |
| 1:0:1101:U:C2 | 1:0:1113:C:H1' | 2.48 | 0.49 |
| 1:0:661:C:O2' | 1:0:662:G:H5' | 2.12 | 0.49 |
| 1:0:482:A:H2' | 1:0:483:A:O4' | 2.13 | 0.49 |
| 1:0:321:A:H2' | 1:0:323:G:C8 | 2.48 | 0.49 |
| 1:0:657:A:H2' | 1:0:658:G:O4' | 2.12 | 0.49 |
| 1:0:984:A:O2' | 1:0:1201:G:H1' | 2.13 | 0.49 |
| 1:0:221:A:H2' | 1:0:222:G:C5' | 2.43 | 0.49 |
| 1:0:430:C:H2' | 1:0:431:G:C8 | 2.47 | 0.49 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|----------------|--------------------------|-------------------|
| 1:0:799:C:O2' | 1:0:800:U:H5' | 2.13 | 0.49 |
| 2:9:36:A:H8 | 2:9:36:A:O5' | 1.96 | 0.49 |
| 1:0:745:C:O2' | 1:0:746:G:H5' | 2.13 | 0.49 |
| 1:0:1871:G:C2' | 1:0:1871:G:N3 | 2.76 | 0.49 |
| 1:0:1787:U:H2' | 1:0:1788:C:C6 | 2.48 | 0.49 |
| 1:0:2286:G:H21 | 1:0:2290:A:H62 | 1.61 | 0.49 |
| 2:9:67:C:C3' | 2:9:68:A:H5' | 2.43 | 0.48 |
| 2:9:92:G:C3' | 2:9:93:G:H5' | 2.42 | 0.48 |
| 1:0:1039:A:H61 | 1:0:1136:G:H2' | 1.77 | 0.48 |
| 1:0:26:G:H1' | 1:0:525:A:H61 | 1.78 | 0.48 |
| 1:0:216:U:H6 | 1:0:216:U:O5' | 1.95 | 0.48 |
| 1:0:2002:A:C2 | 1:0:2003:A:H1' | 2.48 | 0.48 |
| 1:0:1021:A:H1' | 1:0:1164:C:H1' | 1.94 | 0.48 |
| 1:0:305:A:H2' | 1:0:306:G:C5' | 2.43 | 0.48 |
| 1:0:464:G:H8 | 1:0:464:G:O5' | 1.96 | 0.48 |
| 1:0:1992:G:O2' | 1:0:1993:G:H5' | 2.13 | 0.48 |
| 1:0:1917:C:H2' | 1:0:1918:G:O4' | 2.13 | 0.48 |
| 1:0:587:A:H2' | 1:0:588:G:H5'' | 1.96 | 0.48 |
| 1:0:789:G:H1' | 1:0:806:A:N7 | 2.28 | 0.48 |
| 2:9:71:G:H2' | 2:9:72:C:H5' | 1.95 | 0.48 |
| 1:0:337:G:H2' | 1:0:338:G:H8 | 1.77 | 0.48 |
| 1:0:2019:C:H5' | 1:0:2019:C:H6 | 1.78 | 0.48 |
| 1:0:2019:C:O2' | 1:0:2020:G:H5' | 2.13 | 0.48 |
| 1:0:995:A:H5'' | 1:0:996:C:C5 | 2.47 | 0.48 |
| 1:0:1373:G:H2' | 1:0:1374:G:H5' | 1.95 | 0.48 |
| 2:9:89:G:N2 | 2:9:91:A:C8 | 2.81 | 0.48 |
| 1:0:1221:C:H6 | 1:0:1221:C:O5' | 1.96 | 0.48 |
| 1:0:2012:A:C6 | 1:0:2014:A:H5' | 2.49 | 0.48 |
| 1:0:510:G:H8 | 1:0:510:G:O5' | 1.97 | 0.48 |
| 1:0:542:A:H62 | 1:0:570:G:N2 | 2.10 | 0.48 |
| 1:0:1727:C:H4' | 1:0:2833:C:O2 | 2.12 | 0.48 |
| 1:0:2177:U:O2' | 1:0:2178:U:H5' | 2.13 | 0.48 |
| 1:0:1468:A:P | 1:0:1468:A:H8 | 2.36 | 0.48 |
| 1:0:1725:C:O2' | 1:0:1726:C:H5' | 2.13 | 0.48 |
| 1:0:864:C:O2' | 1:0:865:A:H5' | 2.14 | 0.48 |
| 1:0:1550:C:H6 | 1:0:1550:C:O5' | 1.97 | 0.48 |
| 1:0:1691:G:N2 | 1:0:1694:A:H61 | 2.06 | 0.48 |
| 2:9:63:A:H2' | 2:9:64:C:C6 | 2.47 | 0.48 |
| 1:0:2700:U:H2' | 1:0:2701:A:H8 | 1.77 | 0.48 |
| 1:0:1707:A:N7 | 1:0:1714:A:C2 | 2.79 | 0.48 |
| 1:0:429:C:H2' | 1:0:430:C:O4' | 2.12 | 0.48 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|----------------|--------------------------|-------------------|
| 1:0:1541:G:N2 | 1:0:1562:G:N2 | 2.61 | 0.48 |
| 1:0:1662:G:O5' | 1:0:1662:G:H8 | 1.96 | 0.48 |
| 1:0:1519:G:O2' | 1:0:1520:G:H5' | 2.12 | 0.48 |
| 1:0:796:A:H4' | 1:0:2567:G:O3' | 2.13 | 0.48 |
| 1:0:2544:A:H2' | 1:0:2545:A:C1' | 2.43 | 0.48 |
| 1:0:457:C:C2' | 1:0:458:G:H5' | 2.44 | 0.48 |
| 1:0:1317:G:O2' | 1:0:1318:A:H5' | 2.13 | 0.48 |
| 1:0:2655:C:O2' | 1:0:2656:G:H5' | 2.12 | 0.48 |
| 1:0:2214:G:O2' | 1:0:2215:C:H5' | 2.14 | 0.48 |
| 2:9:107:C:C6 | 2:9:107:C:H3' | 2.47 | 0.48 |
| 1:0:968:C:H41 | 1:0:970:A:C1' | 2.25 | 0.48 |
| 1:0:1811:A:H2' | 1:0:1811:A:N3 | 2.28 | 0.48 |
| 1:0:2863:U:H2' | 1:0:2864:C:H6 | 1.77 | 0.48 |
| 1:0:541:C:H2' | 1:0:541:C:O2 | 2.12 | 0.48 |
| 1:0:789:G:H4' | 1:0:790:A:C8 | 2.49 | 0.48 |
| 1:0:749:C:H2' | 1:0:750:C:C6 | 2.48 | 0.48 |
| 1:0:1558:C:H2' | 1:0:1559:G:C5' | 2.44 | 0.48 |
| 1:0:2225:G:O2' | 1:0:2226:A:H5' | 2.14 | 0.48 |
| 1:0:605:G:H2' | 1:0:606:A:C8 | 2.49 | 0.48 |
| 1:0:2655:C:H2' | 1:0:2656:G:O4' | 2.14 | 0.48 |
| 1:0:974:U:H2' | 1:0:975:C:C6 | 2.48 | 0.48 |
| 2:9:85:G:O2' | 2:9:86:A:H5' | 2.13 | 0.48 |
| 1:0:2523:G:H2' | 1:0:2524:G:H8 | 1.78 | 0.48 |
| 1:0:65:C:C2' | 1:0:66:U:H5' | 2.43 | 0.48 |
| 1:0:542:A:N6 | 1:0:570:G:H21 | 2.12 | 0.48 |
| 1:0:2246:A:H2' | 1:0:2246:A:N3 | 2.29 | 0.48 |
| 1:0:788:G:N2 | 1:0:801:A:OP2 | 2.46 | 0.48 |
| 1:0:643:A:O2' | 1:0:644:A:H5' | 2.12 | 0.48 |
| 1:0:2302:G:N2 | 1:0:2314:A:H2 | 2.12 | 0.48 |
| 1:0:1316:G:OP2 | 1:0:1316:G:H8 | 1.97 | 0.48 |
| 2:9:32:C:H4' | 2:9:60:A:C2 | 2.47 | 0.48 |
| 1:0:68:C:O2 | 1:0:68:C:H2' | 2.13 | 0.48 |
| 1:0:581:A:N3 | 1:0:582:G:H1' | 2.29 | 0.48 |
| 1:0:242:A:O2' | 1:0:243:G:P | 2.71 | 0.48 |
| 1:0:1287:A:C5 | 1:0:1315:A:C2 | 3.02 | 0.48 |
| 1:0:2378:G:N2 | 1:0:2397:A:H1' | 2.29 | 0.48 |
| 1:0:2733:A:H2' | 1:0:2734:U:O4' | 2.12 | 0.48 |
| 1:0:333:A:H2' | 1:0:350:U:O2 | 2.14 | 0.48 |
| 2:9:91:A:O5' | 2:9:91:A:H8 | 1.97 | 0.48 |
| 1:0:1206:G:H2' | 1:0:1207:G:H8 | 1.79 | 0.48 |
| 1:0:1512:A:O5' | 1:0:1512:A:H8 | 1.96 | 0.48 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:2683:C:H6 | 1:0:2683:C:O5' | 1.97 | 0.48 |
| 1:0:942:U:H2' | 1:0:943:U:O4' | 2.13 | 0.48 |
| 1:0:1459:U:H3' | 1:0:1459:U:OP1 | 2.13 | 0.48 |
| 1:0:1791:C:H2' | 1:0:1792:C:C5' | 2.37 | 0.48 |
| 1:0:451:A:H2' | 1:0:452:G:H8 | 1.74 | 0.48 |
| 1:0:837:U:H2' | 1:0:838:A:H8 | 1.78 | 0.48 |
| 1:0:73:A:H4' | 1:0:74:G:C1' | 2.43 | 0.48 |
| 1:0:1491:C:H2' | 1:0:1492:A:C8 | 2.47 | 0.48 |
| 1:0:2302:G:H2' | 1:0:2303:C:H5' | 1.96 | 0.48 |
| 1:0:495:C:H2' | 1:0:496:C:C6 | 2.49 | 0.48 |
| 1:0:1333:G:N2 | 1:0:1344:C:N4 | 2.61 | 0.48 |
| 1:0:843:G:H5' | 1:0:956:A:H1' | 1.96 | 0.48 |
| 1:0:1066:G:C2' | 1:0:1067:G:H4' | 2.41 | 0.48 |
| 1:0:430:C:H2' | 1:0:431:G:O4' | 2.14 | 0.48 |
| 1:0:1663:C:O5' | 1:0:1663:C:H6 | 1.97 | 0.48 |
| 1:0:480:G:H8 | 1:0:480:G:O5' | 1.97 | 0.48 |
| 1:0:1062:G:C5 | 1:0:1063:C:H5 | 2.32 | 0.48 |
| 1:0:2795:A:H2' | 1:0:2795:A:N3 | 2.29 | 0.48 |
| 1:0:929:A:H2' | 1:0:930:A:C4' | 2.41 | 0.48 |
| 2:9:42:U:H3' | 2:9:43:G:H5'' | 1.96 | 0.48 |
| 1:0:1654:A:H4' | 1:0:2690:A:HO2' | 1.77 | 0.48 |
| 1:0:38:G:H1 | 1:0:453:U:H3 | 1.60 | 0.48 |
| 1:0:397:U:H2' | 1:0:398:C:H6 | 1.79 | 0.48 |
| 1:0:2828:C:O2' | 1:0:2829:A:H5' | 2.14 | 0.48 |
| 1:0:1401:G:HO2' | 1:0:1540:C:HO2' | 1.61 | 0.48 |
| 1:0:73:A:H4' | 1:0:74:G:O4' | 2.14 | 0.48 |
| 1:0:1425:G:H2' | 1:0:1426:U:C6 | 2.49 | 0.48 |
| 1:0:987:G:H4' | 1:0:1167:A:N7 | 2.28 | 0.48 |
| 1:0:297:A:H2' | 1:0:298:C:H6 | 1.78 | 0.48 |
| 1:0:470:U:C5 | 1:0:480:G:N2 | 2.81 | 0.48 |
| 1:0:2008:C:O5' | 1:0:2008:C:H6 | 1.95 | 0.48 |
| 1:0:1732:U:H2' | 1:0:1733:U:O5' | 2.14 | 0.48 |
| 1:0:1653:C:O2 | 1:0:1751:A:H2 | 1.97 | 0.47 |
| 1:0:1267:A:H5'' | 1:0:1268:U:H5' | 1.96 | 0.47 |
| 1:0:2484:G:C8 | 1:0:2555:G:N2 | 2.82 | 0.47 |
| 1:0:2555:G:N3 | 1:0:2555:G:H2' | 2.29 | 0.47 |
| 1:0:2446:C:H2' | 1:0:2447:G:C8 | 2.49 | 0.47 |
| 1:0:2384:G:H2' | 1:0:2390:A:H62 | 1.79 | 0.47 |
| 1:0:1453:A:H2' | 1:0:1454:U:H5' | 1.96 | 0.47 |
| 1:0:957:G:N2 | 1:0:983:G:H1' | 2.29 | 0.47 |
| 1:0:1937:G:N3 | 1:0:2530:C:C5' | 2.77 | 0.47 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:1778:U:H5' | 1:0:2568:A:O2' | 2.14 | 0.47 |
| 1:0:2397:A:H2' | 1:0:2398:U:O4' | 2.14 | 0.47 |
| 1:0:2182:A:H3' | 1:0:2183:C:C6 | 2.49 | 0.47 |
| 1:0:2166:G:O2' | 1:0:2167:A:H5' | 2.13 | 0.47 |
| 1:0:1846:A:H2' | 1:0:1847:G:O4' | 2.14 | 0.47 |
| 1:0:733:G:H2' | 1:0:734:G:H8 | 1.79 | 0.47 |
| 1:0:1781:C:H2' | 1:0:1782:A:C8 | 2.48 | 0.47 |
| 1:0:1994:U:H2' | 1:0:1995:G:C5' | 2.43 | 0.47 |
| 1:0:573:C:H2' | 1:0:574:C:O4' | 2.14 | 0.47 |
| 1:0:295:C:N4 | 1:0:296:A:N6 | 2.62 | 0.47 |
| 1:0:1416:A:O2' | 1:0:1417:C:H5' | 2.13 | 0.47 |
| 1:0:181:A:H5'' | 1:0:182:G:OP1 | 2.13 | 0.47 |
| 1:0:1976:U:H2' | 1:0:1976:U:O2 | 2.14 | 0.47 |
| 1:0:2617:G:H22 | 1:0:2755:A:H2' | 1.80 | 0.47 |
| 1:0:843:G:C8 | 1:0:843:G:OP1 | 2.66 | 0.47 |
| 1:0:70:A:P | 1:0:110:U:H2' | 2.54 | 0.47 |
| 1:0:1706:A:N6 | 1:0:1714:A:H2' | 2.29 | 0.47 |
| 1:0:544:U:H2' | 1:0:545:C:O4' | 2.14 | 0.47 |
| 1:0:222:G:H1' | 1:0:397:U:O2 | 2.14 | 0.47 |
| 1:0:1848:U:H2' | 1:0:1849:G:O4' | 2.14 | 0.47 |
| 2:9:35:C:H2' | 2:9:36:A:O4' | 2.14 | 0.47 |
| 1:0:1487:C:H2' | 1:0:1488:G:H8 | 1.79 | 0.47 |
| 1:0:2047:C:H1' | 1:0:2429:A:C2 | 2.49 | 0.47 |
| 1:0:860:U:H2' | 1:0:861:G:H5' | 1.96 | 0.47 |
| 1:0:2079:A:H2' | 1:0:2080:U:C6 | 2.49 | 0.47 |
| 1:0:486:U:H2' | 1:0:487:G:H5' | 1.97 | 0.47 |
| 1:0:2712:G:H5' | 1:0:2713:A:C8 | 2.50 | 0.47 |
| 2:9:8:C:O2' | 2:9:9:G:H5' | 2.14 | 0.47 |
| 1:0:9:U:H3 | 1:0:2608:A:H62 | 1.62 | 0.47 |
| 1:0:833:A:N3 | 1:0:954:U:O2' | 2.48 | 0.47 |
| 1:0:1066:G:H3' | 1:0:1067:G:H5'' | 1.97 | 0.47 |
| 1:0:2324:G:N7 | 1:0:2351:G:C2 | 2.82 | 0.47 |
| 1:0:2560:G:O6 | 1:0:2589:C:H5 | 1.97 | 0.47 |
| 1:0:699:G:N2 | 1:0:801:A:C2 | 2.72 | 0.47 |
| 2:9:117:G:O2' | 2:9:118:G:H5' | 2.14 | 0.47 |
| 1:0:575:U:H2' | 1:0:576:A:H8 | 1.77 | 0.47 |
| 1:0:4:C:O2' | 1:0:5:A:H5' | 2.13 | 0.47 |
| 1:0:1979:C:H2' | 1:0:1979:C:O2 | 2.13 | 0.47 |
| 1:0:1905:G:H2' | 1:0:1906:U:O4' | 2.14 | 0.47 |
| 1:0:721:C:H2' | 1:0:722:C:C6 | 2.49 | 0.47 |
| 1:0:2490:U:H2' | 1:0:2491:C:C6 | 2.49 | 0.47 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:859:U:H4' | 1:0:860:U:H5 | 1.79 | 0.47 |
| 1:0:757:U:H4' | 1:0:1675:C:H4' | 1.97 | 0.47 |
| 1:0:2671:C:O2' | 1:0:2672:U:H5' | 2.14 | 0.47 |
| 1:0:2652:G:H2' | 1:0:2653:A:C8 | 2.39 | 0.47 |
| 1:0:2651:U:H2' | 1:0:2652:G:O4' | 2.14 | 0.47 |
| 1:0:2245:A:C2' | 1:0:2246:A:OP2 | 2.61 | 0.47 |
| 1:0:2838:U:O2' | 1:0:2839:G:H5' | 2.15 | 0.47 |
| 2:9:34:C:H6 | 2:9:34:C:O5' | 1.98 | 0.47 |
| 1:0:1001:A:H3' | 1:0:1002:C:H5'' | 1.96 | 0.47 |
| 1:0:1012:A:H61 | 1:0:1165:G:H1' | 1.80 | 0.47 |
| 1:0:2212:U:H2' | 1:0:2213:G:C8 | 2.50 | 0.47 |
| 1:0:2058:U:H5' | 1:0:2576:G:H1' | 1.97 | 0.47 |
| 1:0:942:U:H2' | 1:0:943:U:C4' | 2.45 | 0.47 |
| 1:0:1947:G:O5' | 1:0:1947:G:H8 | 1.97 | 0.47 |
| 1:0:986:A:H2' | 1:0:987:G:H5' | 1.96 | 0.47 |
| 1:0:1171:A:H2' | 1:0:1172:U:H6 | 1.78 | 0.47 |
| 1:0:1671:A:O4' | 1:0:2798:A:H5' | 2.15 | 0.47 |
| 1:0:2298:U:O4 | 2:9:15:A:N6 | 2.48 | 0.47 |
| 1:0:28:A:O3' | 1:0:460:U:O4 | 2.33 | 0.47 |
| 1:0:2523:G:H2' | 1:0:2524:G:O4' | 2.14 | 0.47 |
| 1:0:1199:U:H3' | 1:0:1200:G:H5'' | 1.97 | 0.47 |
| 1:0:70:A:OP2 | 1:0:111:G:O5' | 2.33 | 0.47 |
| 1:0:118:U:H5'' | 1:0:120:G:OP2 | 2.15 | 0.47 |
| 1:0:787:A:C2' | 1:0:788:G:C8 | 2.97 | 0.47 |
| 1:0:192:G:H4' | 1:0:193:A:O5' | 2.15 | 0.47 |
| 1:0:1304:U:C2' | 1:0:1305:C:H5' | 2.44 | 0.47 |
| 2:9:108:G:H2' | 2:9:109:G:H8 | 1.79 | 0.47 |
| 1:0:750:C:H2' | 1:0:751:G:H8 | 1.79 | 0.47 |
| 1:0:1028:G:H2' | 1:0:1029:C:O4' | 2.14 | 0.47 |
| 1:0:1356:G:H4' | 1:0:1613:G:H2' | 1.96 | 0.47 |
| 1:0:1857:G:H2' | 1:0:1859:A:OP2 | 2.14 | 0.47 |
| 1:0:158:A:H2' | 1:0:159:A:O4' | 2.14 | 0.47 |
| 1:0:445:A:C2' | 1:0:446:C:H5' | 2.45 | 0.47 |
| 2:9:88:C:H2' | 2:9:89:G:O4' | 2.15 | 0.47 |
| 1:0:1989:C:O5' | 1:0:1989:C:H6 | 1.98 | 0.47 |
| 1:0:1110:G:H2' | 1:0:1111:C:C6 | 2.49 | 0.47 |
| 1:0:1449:C:O2' | 1:0:1450:G:H5' | 2.13 | 0.47 |
| 1:0:1363:C:H2' | 1:0:1364:C:O4' | 2.14 | 0.47 |
| 1:0:1359:G:H8 | 1:0:1359:G:H5' | 1.79 | 0.47 |
| 1:0:80:A:H2' | 1:0:81:C:C6 | 2.49 | 0.47 |
| 1:0:2042:A:H3' | 1:0:2042:A:C8 | 2.50 | 0.47 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:2426:G:C6 | 1:0:2479:U:H2' | 2.50 | 0.47 |
| 1:0:2426:G:O2' | 1:0:2427:A:P | 2.73 | 0.47 |
| 2:9:24:U:H2' | 2:9:25:G:O5' | 2.14 | 0.47 |
| 1:0:2713:A:O2' | 1:0:2714:A:H5' | 2.15 | 0.47 |
| 1:0:1715:A:N3 | 1:0:1717:A:O4' | 2.48 | 0.47 |
| 1:0:2660:C:O2' | 1:0:2661:G:H5' | 2.15 | 0.47 |
| 1:0:2094:C:C4 | 1:0:2103:G:H1' | 2.50 | 0.47 |
| 1:0:1930:C:C4 | 1:0:1931:G:N7 | 2.83 | 0.47 |
| 1:0:1793:A:H2' | 1:0:1794:A:C8 | 2.50 | 0.47 |
| 1:0:1783:G:C6 | 1:0:1820:G:H1' | 2.50 | 0.47 |
| 1:0:1961:A:O2' | 1:0:1962:C:H5' | 2.15 | 0.47 |
| 1:0:2169:A:H2' | 1:0:2170:C:H5' | 1.97 | 0.47 |
| 1:0:2090:U:H2' | 1:0:2091:C:H6 | 1.79 | 0.47 |
| 1:0:433:G:N2 | 1:0:434:C:H1' | 2.30 | 0.47 |
| 1:0:940:G:C3' | 1:0:941:U:C5' | 2.76 | 0.47 |
| 1:0:763:A:H5'' | 1:0:1631:C:H42 | 1.80 | 0.47 |
| 2:9:42:U:O4 | 2:9:45:C:OP2 | 2.33 | 0.47 |
| 1:0:1792:C:O5' | 1:0:1792:C:H6 | 1.97 | 0.47 |
| 1:0:612:G:C4' | 1:0:613:A:H4' | 2.46 | 0.47 |
| 1:0:1135:C:H2' | 1:0:1136:G:H8 | 1.80 | 0.47 |
| 1:0:398:C:O2' | 1:0:401:G:N2 | 2.47 | 0.47 |
| 1:0:12:U:C2' | 1:0:13:A:H5' | 2.45 | 0.47 |
| 1:0:2447:G:N2 | 1:0:2461:G:OP2 | 2.48 | 0.47 |
| 1:0:1263:G:O2' | 1:0:1264:C:P | 2.73 | 0.47 |
| 1:0:1934:U:O2 | 1:0:1936:A:H8 | 1.98 | 0.47 |
| 1:0:201:G:C2 | 1:0:202:A:C4 | 3.03 | 0.47 |
| 1:0:1323:G:H1' | 1:0:1627:C:H5' | 1.97 | 0.47 |
| 1:0:2791:C:C2 | 1:0:2806:G:N2 | 2.83 | 0.47 |
| 1:0:712:A:H2' | 1:0:713:G:O4' | 2.15 | 0.47 |
| 1:0:682:G:H4' | 1:0:816:U:OP1 | 2.15 | 0.46 |
| 1:0:1657:A:H2' | 1:0:1658:A:O4' | 2.16 | 0.46 |
| 2:9:68:A:C2 | 2:9:110:U:C4 | 3.03 | 0.46 |
| 1:0:955:G:H5' | 1:0:956:A:C5' | 2.45 | 0.46 |
| 1:0:65:C:O2' | 1:0:66:U:H5' | 2.15 | 0.46 |
| 1:0:2202:G:H3' | 1:0:2203:G:H8 | 1.80 | 0.46 |
| 1:0:1519:G:H2' | 1:0:1520:G:C8 | 2.50 | 0.46 |
| 1:0:2687:G:H2' | 1:0:2688:G:O4' | 2.16 | 0.46 |
| 1:0:2395:C:C2' | 1:0:2396:C:H5'' | 2.46 | 0.46 |
| 1:0:2209:G:H2' | 1:0:2210:C:H6 | 1.81 | 0.46 |
| 1:0:2204:A:H1' | 1:0:2205:C:C5 | 2.50 | 0.46 |
| 1:0:1552:C:H2' | 1:0:1553:G:O4' | 2.15 | 0.46 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|----------------|--------------------------|-------------------|
| 1:0:1754:G:OP1 | 1:0:1754:G:H4' | 2.14 | 0.46 |
| 1:0:2266:A:H62 | 1:0:2323:U:H1' | 1.70 | 0.46 |
| 1:0:2618:A:C5 | 1:0:2619:G:H1' | 2.50 | 0.46 |
| 1:0:167:A:H2' | 1:0:168:A:O4' | 2.14 | 0.46 |
| 2:9:45:C:H42 | 2:9:47:A:H62 | 1.63 | 0.46 |
| 1:0:2607:C:H3' | 1:0:2608:A:C5' | 2.45 | 0.46 |
| 1:0:764:A:N3 | 1:0:764:A:C2' | 2.78 | 0.46 |
| 1:0:2449:G:O6 | 1:0:2455:A:H2 | 1.98 | 0.46 |
| 1:0:192:G:C4' | 1:0:193:A:H4' | 2.44 | 0.46 |
| 1:0:889:C:O2' | 1:0:890:U:H5' | 2.16 | 0.46 |
| 1:0:2800:C:O5' | 1:0:2800:C:H6 | 1.97 | 0.46 |
| 1:0:537:C:C6 | 1:0:2759:U:H2' | 2.50 | 0.46 |
| 1:0:1801:C:H1' | 1:0:2207:G:O2' | 2.14 | 0.46 |
| 1:0:1362:A:O5' | 1:0:1362:A:H8 | 1.98 | 0.46 |
| 1:0:813:A:O2' | 1:0:815:A:C5' | 2.59 | 0.46 |
| 1:0:1543:G:H2' | 1:0:1544:A:O4' | 2.14 | 0.46 |
| 1:0:1436:G:O5' | 1:0:1436:G:H8 | 1.98 | 0.46 |
| 1:0:2319:G:H2' | 1:0:2320:G:C8 | 2.51 | 0.46 |
| 1:0:1763:G:N2 | 1:0:1765:C:C5' | 2.75 | 0.46 |
| 1:0:1783:G:H1' | 1:0:1822:C:P | 2.55 | 0.46 |
| 1:0:2560:G:C2' | 1:0:2560:G:N3 | 2.77 | 0.46 |
| 1:0:2841:U:O2' | 1:0:2842:C:H5' | 2.16 | 0.46 |
| 1:0:796:A:H2 | 1:0:1770:U:H5' | 1.80 | 0.46 |
| 1:0:514:G:C2' | 1:0:514:G:N3 | 2.78 | 0.46 |
| 1:0:1980:A:O2' | 1:0:1981:A:H5' | 2.16 | 0.46 |
| 1:0:2630:C:O2' | 1:0:2631:C:H5' | 2.16 | 0.46 |
| 1:0:1523:A:O5' | 1:0:1523:A:H8 | 1.98 | 0.46 |
| 1:0:2015:G:OP2 | 1:0:2433:G:O2' | 2.32 | 0.46 |
| 1:0:80:A:O2' | 1:0:81:C:H5' | 2.16 | 0.46 |
| 1:0:509:U:C2' | 1:0:510:G:H5' | 2.42 | 0.46 |
| 2:9:5:C:H2' | 2:9:6:C:O4' | 2.15 | 0.46 |
| 1:0:2607:C:H3' | 1:0:2608:A:H5' | 1.97 | 0.46 |
| 1:0:2770:A:C5' | 1:0:2867:G:H22 | 2.29 | 0.46 |
| 2:9:30:C:O5' | 2:9:30:C:C6 | 2.64 | 0.46 |
| 1:0:1213:U:N3 | 1:0:1260:A:C2 | 2.84 | 0.46 |
| 1:0:2504:G:C2 | 1:0:2518:C:C2 | 3.04 | 0.46 |
| 1:0:1132:C:O2' | 1:0:1133:G:H5' | 2.16 | 0.46 |
| 1:0:2055:G:H2' | 1:0:2056:C:O4' | 2.15 | 0.46 |
| 1:0:2519:C:O2 | 1:0:2720:A:H2 | 1.98 | 0.46 |
| 1:0:2335:U:H2' | 1:0:2336:G:O4' | 2.16 | 0.46 |
| 1:0:513:A:C4 | 1:0:515:A:N7 | 2.83 | 0.46 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:8:A:H2' | 1:0:9:U:C6 | 2.50 | 0.46 |
| 1:0:1982:C:H5'' | 1:0:2703:C:O2' | 2.15 | 0.46 |
| 1:0:2032:G:O2' | 1:0:2033:C:H5' | 2.15 | 0.46 |
| 1:0:117:A:H5' | 1:0:118:U:O5' | 2.16 | 0.46 |
| 1:0:431:G:H2' | 1:0:432:C:C6 | 2.50 | 0.46 |
| 1:0:163:A:H2' | 1:0:164:G:C8 | 2.42 | 0.46 |
| 1:0:161:U:H5' | 1:0:193:A:N1 | 2.31 | 0.46 |
| 1:0:774:A:H8 | 1:0:774:A:H3' | 1.80 | 0.46 |
| 1:0:1519:G:H2' | 1:0:1520:G:H8 | 1.81 | 0.46 |
| 1:0:1538:A:O2' | 1:0:1539:U:H5' | 2.16 | 0.46 |
| 1:0:2773:G:H3' | 1:0:2774:U:H5'' | 1.97 | 0.46 |
| 1:0:1630:A:H8 | 1:0:1630:A:OP2 | 1.98 | 0.46 |
| 1:0:488:A:H2' | 1:0:489:A:C8 | 2.51 | 0.46 |
| 1:0:2474:G:O5' | 1:0:2474:G:H8 | 1.99 | 0.46 |
| 1:0:174:A:H4' | 1:0:2052:G:OP2 | 2.16 | 0.46 |
| 1:0:2426:G:O2' | 1:0:2427:A:OP2 | 2.27 | 0.46 |
| 1:0:2862:G:O2' | 1:0:2863:U:H5' | 2.15 | 0.46 |
| 1:0:1039:A:N6 | 1:0:1136:G:H2' | 2.31 | 0.46 |
| 1:0:1955:G:H2' | 1:0:1956:G:H5' | 1.97 | 0.46 |
| 1:0:2327:U:H2' | 1:0:2328:G:C8 | 2.51 | 0.46 |
| 1:0:15:G:C2' | 1:0:16:G:H5' | 2.46 | 0.46 |
| 1:0:603:C:H2' | 1:0:604:U:C6 | 2.51 | 0.46 |
| 1:0:1025:A:O2' | 1:0:1026:U:H5' | 2.16 | 0.46 |
| 1:0:295:C:N4 | 1:0:296:A:H62 | 2.14 | 0.46 |
| 1:0:1363:C:H2' | 1:0:1364:C:C6 | 2.51 | 0.46 |
| 1:0:2219:U:O2' | 1:0:2220:A:H5' | 2.15 | 0.46 |
| 1:0:2345:A:H2' | 1:0:2346:G:H5' | 1.97 | 0.46 |
| 2:9:23:G:H2' | 2:9:24:U:C6 | 2.51 | 0.46 |
| 1:0:1253:C:H2' | 1:0:1254:G:C5' | 2.46 | 0.46 |
| 1:0:1664:G:H4' | 1:0:1665:C:OP1 | 2.16 | 0.46 |
| 1:0:2610:G:H5' | 1:0:2866:A:H4' | 1.97 | 0.46 |
| 1:0:2324:G:C4' | 1:0:2326:C:H5'' | 2.43 | 0.46 |
| 1:0:239:A:H4' | 1:0:620:G:C5' | 2.43 | 0.46 |
| 1:0:1004:A:C2' | 1:0:1005:U:H5'' | 2.46 | 0.46 |
| 1:0:1572:C:H2' | 1:0:1573:G:C5' | 2.46 | 0.46 |
| 1:0:2377:U:H2' | 1:0:2378:G:H8 | 1.81 | 0.46 |
| 2:9:51:G:O2' | 2:9:52:G:H5' | 2.15 | 0.46 |
| 1:0:197:G:H2' | 1:0:440:U:O4 | 2.14 | 0.46 |
| 1:0:2136:G:H2' | 1:0:2137:G:C8 | 2.51 | 0.46 |
| 1:0:814:G:H3' | 1:0:815:A:C5' | 2.46 | 0.46 |
| 1:0:763:A:C5' | 1:0:1631:C:N4 | 2.78 | 0.46 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:843:G:H5' | 1:0:956:A:C1' | 2.46 | 0.46 |
| 1:0:1750:A:C8 | 1:0:2675:U:H1' | 2.50 | 0.46 |
| 1:0:727:U:C2' | 1:0:728:G:H5'' | 2.40 | 0.46 |
| 1:0:1548:U:H2' | 1:0:1549:C:C6 | 2.50 | 0.46 |
| 1:0:2170:C:H2' | 1:0:2171:U:O4' | 2.16 | 0.46 |
| 1:0:1554:G:H2' | 1:0:1555:A:O4' | 2.16 | 0.46 |
| 1:0:1141:U:O2' | 1:0:1142:G:OP1 | 2.26 | 0.46 |
| 1:0:1645:U:O2 | 1:0:2677:U:H4' | 2.16 | 0.46 |
| 1:0:2454:C:H5'' | 1:0:2455:A:OP2 | 2.16 | 0.46 |
| 1:0:2813:G:O2' | 1:0:2814:G:H5' | 2.15 | 0.46 |
| 1:0:1801:C:H1' | 1:0:2208:U:H5' | 1.98 | 0.46 |
| 1:0:224:G:H4' | 1:0:399:G:C5 | 2.51 | 0.46 |
| 1:0:2281:C:O5' | 1:0:2281:C:H6 | 1.99 | 0.46 |
| 1:0:931:G:H8 | 1:0:931:G:O5' | 1.98 | 0.46 |
| 1:0:1666:G:H2' | 1:0:1667:A:C8 | 2.51 | 0.46 |
| 2:9:94:G:N3 | 2:9:94:G:H2' | 2.30 | 0.46 |
| 1:0:1764:A:H62 | 1:0:1821:A:H1' | 1.81 | 0.46 |
| 1:0:1278:A:O2' | 1:0:1279:G:P | 2.74 | 0.46 |
| 1:0:750:C:O2' | 1:0:751:G:H5' | 2.15 | 0.46 |
| 1:0:336:A:H2' | 1:0:337:G:O4' | 2.15 | 0.46 |
| 1:0:2803:C:C2' | 1:0:2804:G:H5' | 2.46 | 0.46 |
| 1:0:421:G:O2' | 1:0:422:C:H5' | 2.16 | 0.46 |
| 1:0:83:A:H5'' | 1:0:84:G:OP1 | 2.16 | 0.46 |
| 1:0:1872:A:H2' | 1:0:1873:A:C8 | 2.50 | 0.46 |
| 1:0:393:U:O2' | 1:0:394:U:H5' | 2.16 | 0.46 |
| 1:0:1802:A:H2' | 1:0:1803:G:O4' | 2.16 | 0.46 |
| 1:0:1350:G:H2' | 1:0:1351:G:H8 | 1.81 | 0.46 |
| 1:0:1721:G:O2' | 1:0:1722:G:H5' | 2.15 | 0.46 |
| 1:0:1239:A:O5' | 1:0:1239:A:H8 | 1.99 | 0.46 |
| 1:0:2876:C:H2' | 1:0:2877:A:O4' | 2.16 | 0.46 |
| 1:0:1683:G:H2' | 1:0:1684:G:C5' | 2.46 | 0.45 |
| 1:0:1643:A:H1' | 1:0:1657:A:C2 | 2.51 | 0.45 |
| 1:0:1672:A:N1 | 1:0:2032:G:H5'' | 2.31 | 0.45 |
| 1:0:2841:U:O2' | 1:0:2842:C:C5' | 2.64 | 0.45 |
| 1:0:2783:U:OP1 | 1:0:2783:U:O4' | 2.34 | 0.45 |
| 1:0:825:C:O2' | 1:0:826:U:H5' | 2.16 | 0.45 |
| 1:0:2814:G:O2' | 1:0:2815:C:H5' | 2.15 | 0.45 |
| 1:0:1368:G:N2 | 1:0:1390:G:H1' | 2.31 | 0.45 |
| 1:0:2015:G:O2' | 1:0:2016:A:OP1 | 2.31 | 0.45 |
| 1:0:1337:G:H1' | 1:0:1632:A:N6 | 2.31 | 0.45 |
| 1:0:1223:G:O2' | 1:0:1224:A:OP2 | 2.31 | 0.45 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|----------------|--------------------------|-------------------|
| 1:0:322:A:H2' | 1:0:322:A:N3 | 2.31 | 0.45 |
| 1:0:651:C:C3' | 1:0:652:C:C5' | 2.93 | 0.45 |
| 1:0:1038:U:H2' | 1:0:1039:A:C8 | 2.50 | 0.45 |
| 1:0:1038:U:C4 | 1:0:2467:A:H5' | 2.51 | 0.45 |
| 1:0:2455:A:C2' | 1:0:2456:U:H5' | 2.46 | 0.45 |
| 1:0:2164:G:H2' | 1:0:2165:A:C8 | 2.45 | 0.45 |
| 1:0:770:U:C2' | 1:0:771:C:H5' | 2.45 | 0.45 |
| 1:0:835:U:H2' | 1:0:836:G:C8 | 2.51 | 0.45 |
| 1:0:1452:U:O2' | 1:0:1453:A:H5' | 2.16 | 0.45 |
| 1:0:1872:A:H1' | 1:0:2070:G:H5' | 1.97 | 0.45 |
| 1:0:1721:G:H2' | 1:0:1722:G:O4' | 2.16 | 0.45 |
| 1:0:1636:G:H2' | 1:0:1637:U:C6 | 2.52 | 0.45 |
| 1:0:1685:A:H2' | 1:0:1686:A:OP2 | 2.16 | 0.45 |
| 1:0:1685:A:H2 | 1:0:1687:C:C2 | 2.33 | 0.45 |
| 2:9:92:G:H2' | 2:9:93:G:C5' | 2.39 | 0.45 |
| 1:0:218:A:H5' | 1:0:220:U:H1' | 1.99 | 0.45 |
| 1:0:1870:U:O5' | 1:0:1870:U:H6 | 1.99 | 0.45 |
| 2:9:112:A:H2' | 2:9:113:G:C8 | 2.51 | 0.45 |
| 1:0:1740:G:O2' | 1:0:1741:G:H5' | 2.16 | 0.45 |
| 1:0:2657:G:O2' | 1:0:2658:A:H5' | 2.16 | 0.45 |
| 1:0:2093:G:H2' | 1:0:2094:C:H6 | 1.81 | 0.45 |
| 1:0:2748:C:H2' | 1:0:2749:A:O4' | 2.17 | 0.45 |
| 1:0:1343:C:O2' | 1:0:1344:C:H5' | 2.16 | 0.45 |
| 1:0:674:U:H2' | 1:0:675:C:C6 | 2.52 | 0.45 |
| 1:0:1066:G:H3' | 1:0:1067:G:C5' | 2.46 | 0.45 |
| 1:0:2032:G:N2 | 1:0:2599:U:C2 | 2.84 | 0.45 |
| 1:0:2306:A:H2' | 1:0:2307:A:C8 | 2.52 | 0.45 |
| 1:0:1383:C:O2' | 1:0:1384:G:H5' | 2.16 | 0.45 |
| 1:0:2094:C:N4 | 1:0:2103:G:N3 | 2.65 | 0.45 |
| 1:0:1981:A:H4' | 1:0:2704:U:O2' | 2.16 | 0.45 |
| 1:0:2343:C:H2' | 1:0:2344:G:O4' | 2.16 | 0.45 |
| 1:0:2625:U:H6 | 1:0:2625:U:O5' | 2.00 | 0.45 |
| 1:0:2354:G:N2 | 1:0:2357:A:OP2 | 2.46 | 0.45 |
| 1:0:952:A:H2' | 1:0:953:G:O4' | 2.16 | 0.45 |
| 1:0:2392:G:H2' | 1:0:2393:G:O4' | 2.17 | 0.45 |
| 1:0:2687:G:O2' | 1:0:2688:G:H5' | 2.16 | 0.45 |
| 1:0:4:C:H2' | 1:0:5:A:C8 | 2.52 | 0.45 |
| 1:0:608:G:H2' | 1:0:609:U:H6 | 1.79 | 0.45 |
| 1:0:2515:G:H2' | 1:0:2516:U:C6 | 2.52 | 0.45 |
| 1:0:1398:G:O2' | 1:0:1399:C:H5' | 2.17 | 0.45 |
| 1:0:2790:C:H2' | 1:0:2791:C:C6 | 2.51 | 0.45 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:1884:A:O2' | 1:0:1885:C:H5' | 2.17 | 0.45 |
| 1:0:2844:G:C2' | 1:0:2845:C:H5' | 2.46 | 0.45 |
| 1:0:1927:U:H2' | 1:0:1927:U:O2 | 2.16 | 0.45 |
| 1:0:689:A:C2' | 1:0:690:A:H5' | 2.47 | 0.45 |
| 1:0:1087:C:C2' | 1:0:1088:A:H5' | 2.47 | 0.45 |
| 1:0:839:U:H5'' | 1:0:2408:G:OP2 | 2.17 | 0.45 |
| 1:0:1982:C:H5'' | 1:0:2703:C:HO2' | 1.80 | 0.45 |
| 1:0:1135:C:H2' | 1:0:1136:G:C8 | 2.52 | 0.45 |
| 1:0:1090:C:H2' | 1:0:1091:C:O4' | 2.17 | 0.45 |
| 1:0:2245:A:H2' | 1:0:2246:A:OP2 | 2.17 | 0.45 |
| 1:0:538:A:C2' | 1:0:539:A:H5'' | 2.46 | 0.45 |
| 1:0:41:G:H2' | 1:0:42:G:C8 | 2.52 | 0.45 |
| 1:0:3:U:H6 | 1:0:3:U:O5' | 1.99 | 0.45 |
| 1:0:1621:C:H4' | 1:0:1626:A:N6 | 2.29 | 0.45 |
| 1:0:2509:A:C2' | 1:0:2510:A:H5'' | 2.34 | 0.45 |
| 1:0:755:C:H2' | 1:0:756:C:C6 | 2.49 | 0.45 |
| 1:0:1672:A:C2 | 1:0:1673:C:H1' | 2.51 | 0.45 |
| 1:0:2727:G:H2' | 1:0:2728:A:H5'' | 1.98 | 0.45 |
| 1:0:1288:A:H2' | 1:0:1289:A:O4' | 2.17 | 0.45 |
| 2:9:114:C:C6 | 2:9:114:C:O5' | 2.67 | 0.45 |
| 1:0:2225:G:H2' | 1:0:2226:A:C8 | 2.48 | 0.45 |
| 1:0:305:A:H2' | 1:0:306:G:O4' | 2.16 | 0.45 |
| 1:0:768:U:H5' | 1:0:1285:A:N1 | 2.32 | 0.45 |
| 1:0:2473:G:N2 | 1:0:2474:G:C4 | 2.85 | 0.45 |
| 1:0:1622:G:H5'' | 1:0:1624:A:O4' | 2.17 | 0.45 |
| 1:0:2522:G:C4 | 1:0:2745:A:H2' | 2.52 | 0.45 |
| 1:0:929:A:C3' | 1:0:930:A:H5'' | 2.35 | 0.45 |
| 1:0:1184:G:C2' | 1:0:1185:C:H5'' | 2.46 | 0.45 |
| 1:0:1972:G:O2' | 1:0:1973:C:H5' | 2.16 | 0.45 |
| 1:0:2535:C:C2' | 1:0:2536:G:H5' | 2.46 | 0.45 |
| 1:0:456:C:O2' | 1:0:457:C:H5' | 2.15 | 0.45 |
| 1:0:1775:A:H5'' | 1:0:1776:A:OP1 | 2.17 | 0.45 |
| 2:9:104:A:C8 | 2:9:105:G:N7 | 2.85 | 0.45 |
| 1:0:1440:G:C6 | 1:0:1441:A:N7 | 2.84 | 0.45 |
| 1:0:2724:G:O2' | 1:0:2725:C:H5' | 2.17 | 0.45 |
| 1:0:2205:C:C2' | 1:0:2206:C:H5' | 2.47 | 0.45 |
| 1:0:200:A:N6 | 1:0:435:A:N1 | 2.65 | 0.45 |
| 1:0:1639:U:O2' | 1:0:1640:C:H5' | 2.17 | 0.45 |
| 1:0:1713:G:N7 | 1:0:1714:A:N7 | 2.65 | 0.45 |
| 1:0:579:G:H2' | 1:0:2013:A:N7 | 2.31 | 0.45 |
| 1:0:1662:G:H5'' | 1:0:1663:C:O4' | 2.16 | 0.45 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|----------------|--------------------------|-------------------|
| 1:0:1496:G:H1 | 1:0:1527:G:H1 | 1.65 | 0.45 |
| 1:0:2493:U:O2 | 1:0:2549:G:O6 | 2.35 | 0.44 |
| 1:0:75:C:H2' | 1:0:76:C:C5' | 2.32 | 0.44 |
| 1:0:1625:A:H3' | 1:0:1625:A:N3 | 2.32 | 0.44 |
| 1:0:2622:G:O2' | 1:0:2623:A:H5' | 2.16 | 0.44 |
| 1:0:1181:C:H6 | 1:0:1181:C:O5' | 2.00 | 0.44 |
| 1:0:587:A:H8 | 1:0:587:A:OP2 | 2.00 | 0.44 |
| 1:0:562:G:H2' | 1:0:563:U:O4' | 2.17 | 0.44 |
| 1:0:238:G:O4' | 1:0:618:A:H2 | 1.99 | 0.44 |
| 1:0:1854:G:O2' | 1:0:1855:G:H5' | 2.17 | 0.44 |
| 1:0:1756:C:H2' | 1:0:1757:C:H6 | 1.82 | 0.44 |
| 1:0:1703:C:H2' | 1:0:1704:G:O4' | 2.17 | 0.44 |
| 1:0:1300:A:H2 | 1:0:1666:G:H4' | 1.81 | 0.44 |
| 1:0:367:G:C3' | 1:0:368:A:H5'' | 2.46 | 0.44 |
| 1:0:830:C:O2' | 1:0:852:U:H5'' | 2.16 | 0.44 |
| 1:0:831:G:H5' | 1:0:852:U:OP1 | 2.17 | 0.44 |
| 1:0:580:A:C8 | 1:0:2013:A:N6 | 2.85 | 0.44 |
| 1:0:2726:U:H3' | 1:0:2727:G:H8 | 1.82 | 0.44 |
| 1:0:1540:C:H2' | 1:0:1541:G:H8 | 1.83 | 0.44 |
| 1:0:991:A:O5' | 1:0:991:A:H8 | 2.00 | 0.44 |
| 1:0:2404:A:O2' | 1:0:2405:A:OP2 | 2.27 | 0.44 |
| 1:0:2311:U:O2' | 1:0:2312:A:H8 | 2.00 | 0.44 |
| 1:0:1470:G:N2 | 1:0:2684:A:H1' | 2.33 | 0.44 |
| 1:0:1072:U:O5' | 1:0:1072:U:H6 | 1.99 | 0.44 |
| 1:0:1077:U:H6 | 1:0:1077:U:O5' | 2.00 | 0.44 |
| 1:0:967:G:N3 | 1:0:970:A:C8 | 2.86 | 0.44 |
| 1:0:81:C:H4' | 1:0:307:C:H5' | 1.99 | 0.44 |
| 1:0:689:A:H8 | 1:0:2052:G:N2 | 2.08 | 0.44 |
| 1:0:2042:A:C2 | 1:0:2482:A:N7 | 2.85 | 0.44 |
| 2:9:64:C:N4 | 2:9:65:A:C6 | 2.86 | 0.44 |
| 1:0:65:C:H2' | 1:0:66:U:O4' | 2.17 | 0.44 |
| 1:0:1714:A:H5' | 1:0:1715:A:O5' | 2.18 | 0.44 |
| 1:0:704:G:O2' | 1:0:705:C:H5' | 2.17 | 0.44 |
| 2:9:33:C:H2' | 2:9:34:C:C6 | 2.52 | 0.44 |
| 2:9:73:C:O2 | 2:9:109:G:C2 | 2.70 | 0.44 |
| 1:0:573:C:O2' | 1:0:574:C:H5' | 2.17 | 0.44 |
| 1:0:1449:C:C2' | 1:0:1450:G:H5' | 2.47 | 0.44 |
| 1:0:2638:G:H8 | 1:0:2638:G:O5' | 2.00 | 0.44 |
| 1:0:932:G:H2' | 1:0:933:G:H8 | 1.82 | 0.44 |
| 1:0:1300:A:C2 | 1:0:1301:U:C2 | 3.06 | 0.44 |
| 1:0:2585:C:O2' | 1:0:2586:G:H5' | 2.17 | 0.44 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:450:C:H2' | 1:0:451:A:H8 | 1.82 | 0.44 |
| 1:0:611:C:O2' | 1:0:614:G:H5'' | 2.18 | 0.44 |
| 1:0:2484:G:C2' | 1:0:2485:U:H5'' | 2.47 | 0.44 |
| 1:0:1346:C:P | 1:0:1346:C:C6 | 3.05 | 0.44 |
| 1:0:749:C:H2' | 1:0:750:C:H6 | 1.81 | 0.44 |
| 1:0:1558:C:H2' | 1:0:1559:G:O4' | 2.18 | 0.44 |
| 1:0:1858:C:H2' | 1:0:1859:A:C8 | 2.49 | 0.44 |
| 1:0:158:A:C2 | 1:0:447:U:H4' | 2.51 | 0.44 |
| 1:0:1322:G:H21 | 1:0:1627:C:H5' | 1.83 | 0.44 |
| 1:0:2093:G:H2' | 1:0:2094:C:C6 | 2.53 | 0.44 |
| 1:0:198:A:O2' | 1:0:199:A:P | 2.76 | 0.44 |
| 1:0:717:G:H1' | 1:0:740:A:H61 | 1.82 | 0.44 |
| 1:0:583:C:O2' | 1:0:584:A:P | 2.76 | 0.44 |
| 1:0:491:A:H2 | 1:0:509:U:O2 | 2.00 | 0.44 |
| 1:0:2496:C:C4 | 1:0:2521:A:C5 | 3.06 | 0.44 |
| 1:0:556:A:C2' | 1:0:557:U:H5' | 2.38 | 0.44 |
| 1:0:675:C:H2' | 1:0:676:G:H8 | 1.83 | 0.44 |
| 1:0:2033:C:H2' | 1:0:2034:A:O4' | 2.18 | 0.44 |
| 1:0:1388:C:O2' | 1:0:1389:C:H5' | 2.18 | 0.44 |
| 1:0:192:G:O2' | 1:0:193:A:C5' | 2.66 | 0.44 |
| 2:9:61:A:O5' | 2:9:61:A:C8 | 2.60 | 0.44 |
| 1:0:1190:C:H2' | 1:0:1191:G:C8 | 2.53 | 0.44 |
| 1:0:204:A:N1 | 1:0:2386:G:H1' | 2.33 | 0.44 |
| 1:0:1556:A:H2' | 1:0:1557:G:C8 | 2.51 | 0.44 |
| 1:0:2858:A:H3' | 1:0:2859:U:H5' | 1.99 | 0.44 |
| 1:0:181:A:H4' | 1:0:182:G:OP1 | 2.16 | 0.44 |
| 1:0:1904:G:O2' | 1:0:1905:G:H5' | 2.17 | 0.44 |
| 1:0:2594:U:H5' | 1:0:2594:U:C6 | 2.53 | 0.44 |
| 1:0:1680:U:O2' | 1:0:1681:A:C5' | 2.64 | 0.44 |
| 2:9:104:A:C4 | 2:9:105:G:C8 | 3.06 | 0.44 |
| 1:0:2702:G:C5 | 1:0:2703:C:C4 | 3.05 | 0.44 |
| 1:0:1826:U:O2 | 1:0:1953:A:N7 | 2.51 | 0.44 |
| 1:0:1714:A:H5'' | 1:0:1715:A:C8 | 2.53 | 0.44 |
| 1:0:1034:U:H2' | 1:0:1035:G:O4' | 2.17 | 0.44 |
| 1:0:1410:U:HO2' | 1:0:1411:C:P | 2.41 | 0.44 |
| 1:0:879:A:H2' | 1:0:879:A:N3 | 2.33 | 0.44 |
| 1:0:1686:A:H2' | 1:0:1687:C:H5' | 1.99 | 0.44 |
| 1:0:2264:C:H2' | 1:0:2265:A:H5' | 2.00 | 0.44 |
| 1:0:78:C:H2' | 1:0:79:G:H5' | 2.00 | 0.44 |
| 1:0:1300:A:C2 | 1:0:1666:G:C4' | 3.01 | 0.44 |
| 1:0:1947:G:H5'' | 1:0:1948:C:OP1 | 2.18 | 0.44 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:1123:G:O2' | 1:0:1124:U:H5' | 2.18 | 0.44 |
| 1:0:1937:G:H21 | 1:0:2530:C:H5'' | 1.82 | 0.44 |
| 1:0:1255:A:H2' | 1:0:1256:C:C6 | 2.53 | 0.44 |
| 1:0:1734:C:C5 | 1:0:1735:G:H1' | 2.53 | 0.44 |
| 1:0:2009:U:O5' | 1:0:2009:U:H6 | 2.00 | 0.44 |
| 1:0:483:A:H2' | 1:0:484:G:C5' | 2.46 | 0.44 |
| 1:0:701:U:H4' | 1:0:1771:A:C2 | 2.53 | 0.44 |
| 1:0:2495:G:C2' | 1:0:2496:C:O4' | 2.65 | 0.44 |
| 1:0:1920:A:N6 | 1:0:1923:U:H6 | 2.16 | 0.44 |
| 1:0:1198:C:O5' | 1:0:1199:U:H4' | 2.18 | 0.44 |
| 1:0:2680:U:H3' | 1:0:2681:A:H5' | 2.00 | 0.44 |
| 1:0:1327:C:OP1 | 1:0:1345:G:H5' | 2.18 | 0.44 |
| 1:0:1411:C:H2' | 1:0:1412:C:O4' | 2.18 | 0.44 |
| 1:0:1572:C:H2' | 1:0:1573:G:H5' | 1.99 | 0.44 |
| 1:0:204:A:C6 | 1:0:2386:G:H1' | 2.53 | 0.44 |
| 1:0:2070:G:O5' | 1:0:2070:G:H8 | 2.00 | 0.44 |
| 1:0:2064:U:H2' | 1:0:2065:A:H8 | 1.83 | 0.44 |
| 1:0:357:A:H2' | 1:0:357:A:N3 | 2.31 | 0.44 |
| 1:0:1922:U:O2' | 1:0:2571:G:H1' | 2.18 | 0.44 |
| 1:0:1827:G:C8 | 1:0:1952:A:C8 | 3.06 | 0.44 |
| 1:0:676:G:O2' | 1:0:951:G:H4' | 2.18 | 0.44 |
| 1:0:832:A:H2 | 1:0:954:U:H1' | 1.81 | 0.44 |
| 1:0:2783:U:H2' | 1:0:2784:A:C4' | 2.48 | 0.44 |
| 1:0:1112:U:H2' | 1:0:1113:C:C6 | 2.53 | 0.44 |
| 1:0:1365:U:H1' | 1:0:1586:A:H2 | 1.83 | 0.44 |
| 1:0:1437:A:C2' | 1:0:1438:G:H5' | 2.48 | 0.43 |
| 1:0:2408:G:H3' | 1:0:2409:A:C5' | 2.48 | 0.43 |
| 1:0:1440:G:C3' | 1:0:1441:A:C5' | 2.96 | 0.43 |
| 1:0:1370:U:O2' | 1:0:1371:G:H5' | 2.18 | 0.43 |
| 1:0:533:C:H2' | 1:0:534:U:O4' | 2.18 | 0.43 |
| 1:0:146:C:N4 | 1:0:152:G:H1 | 2.16 | 0.43 |
| 1:0:2241:U:H2' | 1:0:2242:C:C6 | 2.53 | 0.43 |
| 1:0:83:A:C2 | 1:0:98:U:H1' | 2.52 | 0.43 |
| 1:0:1234:C:H2' | 1:0:1235:C:H6 | 1.83 | 0.43 |
| 1:0:2438:A:N6 | 1:0:2473:G:C6 | 2.87 | 0.43 |
| 1:0:929:A:C2 | 2:9:81:C:O2 | 2.71 | 0.43 |
| 1:0:559:C:H6 | 1:0:559:C:O5' | 2.00 | 0.43 |
| 1:0:1920:A:C6 | 1:0:1922:U:C5 | 3.06 | 0.43 |
| 1:0:1707:A:C2' | 1:0:1708:C:H5' | 2.48 | 0.43 |
| 1:0:2459:C:H2' | 1:0:2460:G:H5' | 2.00 | 0.43 |
| 1:0:2279:G:H2' | 1:0:2280:A:C8 | 2.42 | 0.43 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:595:A:H62 | 1:0:1264:C:H42 | 1.65 | 0.43 |
| 1:0:1166:A:C2' | 1:0:1167:A:H5'' | 2.49 | 0.43 |
| 1:0:2171:U:H6 | 1:0:2171:U:O5' | 1.99 | 0.43 |
| 1:0:940:G:N7 | 1:0:941:U:C6 | 2.87 | 0.43 |
| 1:0:1697:U:O2 | 1:0:1755:G:H4' | 2.18 | 0.43 |
| 1:0:1226:A:C1' | 1:0:1250:A:H2 | 2.31 | 0.43 |
| 1:0:926:C:H2' | 1:0:927:C:H5' | 2.00 | 0.43 |
| 1:0:1751:A:H2' | 1:0:1752:U:O4' | 2.18 | 0.43 |
| 1:0:1947:G:P | 1:0:1947:G:H8 | 2.41 | 0.43 |
| 1:0:1268:U:H5' | 1:0:1269:G:H5'' | 1.99 | 0.43 |
| 1:0:2824:C:C2' | 1:0:2825:A:OP2 | 2.66 | 0.43 |
| 1:0:1778:U:O2' | 1:0:1779:C:H5' | 2.18 | 0.43 |
| 1:0:1010:U:C2 | 1:0:1168:G:N2 | 2.87 | 0.43 |
| 1:0:1257:U:H2' | 1:0:1258:G:H8 | 1.81 | 0.43 |
| 1:0:2302:G:C2' | 1:0:2303:C:H5' | 2.48 | 0.43 |
| 1:0:947:C:H2' | 1:0:948:C:O4' | 2.18 | 0.43 |
| 1:0:1053:G:O5' | 1:0:1053:G:H8 | 2.01 | 0.43 |
| 1:0:1781:C:H2' | 1:0:1782:A:N7 | 2.33 | 0.43 |
| 1:0:1915:A:N1 | 1:0:1956:G:H1' | 2.33 | 0.43 |
| 1:0:2033:C:C4 | 1:0:2034:A:C6 | 3.05 | 0.43 |
| 1:0:329:C:O2' | 1:0:330:C:H5' | 2.18 | 0.43 |
| 2:9:48:A:C5 | 2:9:49:C:C5 | 3.06 | 0.43 |
| 1:0:1229:C:H2' | 1:0:1230:C:C6 | 2.52 | 0.43 |
| 1:0:1859:A:H2' | 1:0:1860:A:C8 | 2.53 | 0.43 |
| 1:0:2526:U:C5 | 1:0:2545:A:N7 | 2.87 | 0.43 |
| 1:0:1001:A:N3 | 1:0:1167:A:H2 | 2.17 | 0.43 |
| 1:0:90:G:H3' | 1:0:91:A:H5' | 2.00 | 0.43 |
| 1:0:1234:C:H2' | 1:0:1235:C:C6 | 2.54 | 0.43 |
| 1:0:567:G:O2' | 1:0:568:G:H5' | 2.19 | 0.43 |
| 1:0:1457:A:H2' | 1:0:1458:A:O4' | 2.19 | 0.43 |
| 1:0:2621:G:O2' | 1:0:2622:G:H5' | 2.19 | 0.43 |
| 1:0:58:C:H1' | 1:0:72:A:C8 | 2.54 | 0.43 |
| 1:0:2769:C:O2' | 1:0:2866:A:N1 | 2.44 | 0.43 |
| 1:0:220:U:H2' | 1:0:221:A:H8 | 1.84 | 0.43 |
| 1:0:2588:U:H5' | 1:0:2589:C:OP2 | 2.19 | 0.43 |
| 1:0:337:G:H2' | 1:0:338:G:C8 | 2.54 | 0.43 |
| 1:0:1164:C:O2' | 1:0:1165:G:H5' | 2.19 | 0.43 |
| 1:0:2813:G:H2' | 1:0:2814:G:H5' | 2.00 | 0.43 |
| 2:9:88:C:H2' | 2:9:89:G:C8 | 2.53 | 0.43 |
| 1:0:31:C:H2' | 1:0:32:C:H6 | 1.83 | 0.43 |
| 2:9:59:A:H2' | 2:9:60:A:C5' | 2.48 | 0.43 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:1809:G:O5' | 1:0:1809:G:H8 | 2.01 | 0.43 |
| 1:0:1922:U:H1' | 1:0:2570:C:HO2' | 1.81 | 0.43 |
| 1:0:1920:A:C2 | 1:0:1922:U:H5 | 2.37 | 0.43 |
| 1:0:1947:G:H2' | 1:0:1950:C:OP1 | 2.18 | 0.43 |
| 1:0:994:A:N7 | 1:0:995:A:N3 | 2.66 | 0.43 |
| 1:0:1328:C:O2' | 1:0:1329:U:H5' | 2.19 | 0.43 |
| 1:0:1487:C:H6 | 1:0:1487:C:O5' | 2.02 | 0.43 |
| 1:0:1906:U:H2' | 1:0:1907:C:C6 | 2.54 | 0.43 |
| 1:0:2093:G:O5' | 1:0:2093:G:H8 | 2.02 | 0.43 |
| 1:0:2321:C:O2' | 1:0:2353:G:H5'' | 2.17 | 0.43 |
| 1:0:658:G:H4' | 1:0:2331:A:C5' | 2.37 | 0.43 |
| 1:0:1243:G:C6 | 1:0:1244:U:N3 | 2.86 | 0.43 |
| 1:0:2701:A:H2' | 1:0:2702:G:O4' | 2.18 | 0.43 |
| 1:0:874:A:H2' | 1:0:874:A:N3 | 2.34 | 0.43 |
| 1:0:1471:G:H1 | 1:0:2682:C:N4 | 2.08 | 0.43 |
| 1:0:1855:G:H4' | 1:0:2390:A:H4' | 2.00 | 0.43 |
| 1:0:1429:A:P | 1:0:1429:A:H8 | 2.41 | 0.43 |
| 1:0:1558:C:O2' | 1:0:1559:G:H5' | 2.18 | 0.43 |
| 1:0:2820:C:H6 | 1:0:2820:C:O5' | 2.01 | 0.43 |
| 1:0:2809:A:N7 | 1:0:2854:G:N7 | 2.66 | 0.43 |
| 1:0:1704:G:O5' | 1:0:1704:G:H8 | 2.01 | 0.43 |
| 1:0:1759:A:C6 | 1:0:1968:G:C6 | 3.07 | 0.43 |
| 1:0:167:A:N6 | 1:0:812:G:O2' | 2.39 | 0.43 |
| 1:0:2044:G:C8 | 1:0:2480:C:H4' | 2.53 | 0.43 |
| 1:0:28:A:H5'' | 1:0:460:U:C4 | 2.54 | 0.43 |
| 1:0:1333:G:C6 | 1:0:1342:U:H5' | 2.54 | 0.43 |
| 1:0:2770:A:H5' | 1:0:2867:G:N1 | 2.33 | 0.43 |
| 1:0:636:G:H2' | 1:0:637:G:C5' | 2.49 | 0.43 |
| 1:0:12:U:O2' | 1:0:13:A:H5' | 2.19 | 0.43 |
| 1:0:788:G:N2 | 1:0:800:U:O3' | 2.51 | 0.43 |
| 1:0:2784:A:H3' | 1:0:2785:A:H8 | 1.83 | 0.43 |
| 1:0:1005:U:O2 | 1:0:1007:A:N7 | 2.51 | 0.43 |
| 1:0:796:A:C2 | 1:0:1770:U:H5' | 2.54 | 0.43 |
| 1:0:2554:C:H6 | 1:0:2554:C:O5' | 2.02 | 0.43 |
| 1:0:1840:A:H2' | 1:0:1841:G:H5' | 2.00 | 0.43 |
| 1:0:1975:G:HO2' | 1:0:1976:U:P | 2.41 | 0.43 |
| 1:0:2619:G:C6 | 1:0:2755:A:C2 | 3.07 | 0.43 |
| 1:0:928:G:H2' | 1:0:929:A:O5' | 2.19 | 0.43 |
| 1:0:632:A:H3' | 1:0:632:A:N3 | 2.33 | 0.43 |
| 1:0:1821:A:H5'' | 1:0:1822:C:H5 | 1.82 | 0.43 |
| 1:0:2315:A:HO2' | 1:0:2364:C:H5'' | 1.83 | 0.43 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:542:A:H3' | 1:0:542:A:C8 | 2.54 | 0.43 |
| 1:0:570:G:H2' | 1:0:571:U:H5'' | 2.01 | 0.43 |
| 1:0:192:G:O2' | 1:0:193:A:OP2 | 2.34 | 0.43 |
| 1:0:2826:C:N4 | 1:0:2827:G:C6 | 2.87 | 0.43 |
| 1:0:73:A:H4' | 1:0:74:G:H1' | 2.00 | 0.43 |
| 1:0:201:G:H2' | 1:0:202:A:C8 | 2.53 | 0.43 |
| 1:0:538:A:C3' | 1:0:539:A:H5'' | 2.49 | 0.43 |
| 1:0:531:G:O2' | 1:0:532:A:H5' | 2.19 | 0.43 |
| 1:0:2124:C:O2' | 1:0:2125:C:H5' | 2.19 | 0.43 |
| 1:0:2422:C:C2 | 1:0:2423:G:C8 | 3.07 | 0.43 |
| 1:0:1226:A:O2' | 1:0:1227:A:H5' | 2.19 | 0.43 |
| 1:0:1300:A:H61 | 1:0:1992:G:N2 | 2.17 | 0.43 |
| 1:0:2097:A:H5' | 1:0:2105:U:OP1 | 2.19 | 0.43 |
| 2:9:108:G:H8 | 2:9:108:G:O5' | 2.01 | 0.43 |
| 1:0:502:A:C2' | 1:0:503:G:H5' | 2.49 | 0.43 |
| 1:0:1834:G:N2 | 1:0:1835:C:H1' | 2.33 | 0.43 |
| 1:0:1800:A:H5'' | 1:0:1801:C:OP1 | 2.18 | 0.43 |
| 1:0:2215:C:H2' | 1:0:2216:G:O4' | 2.19 | 0.43 |
| 1:0:701:U:H4' | 1:0:1771:A:H2 | 1.83 | 0.42 |
| 2:9:7:C:H2' | 2:9:8:C:C6 | 2.54 | 0.42 |
| 1:0:128:C:H2' | 1:0:129:A:C5' | 2.49 | 0.42 |
| 1:0:16:G:O2' | 1:0:17:G:H5' | 2.19 | 0.42 |
| 1:0:475:U:C4 | 1:0:476:G:C6 | 3.07 | 0.42 |
| 1:0:426:C:H6 | 1:0:426:C:O5' | 2.00 | 0.42 |
| 2:9:72:C:O2' | 2:9:73:C:H5' | 2.19 | 0.42 |
| 1:0:1385:C:H2' | 1:0:1386:A:O4' | 2.18 | 0.42 |
| 1:0:2019:C:H2' | 1:0:2020:G:O5' | 2.19 | 0.42 |
| 1:0:1105:U:O2 | 1:0:1107:A:N7 | 2.51 | 0.42 |
| 1:0:2268:G:H5'' | 1:0:2363:G:HO2' | 1.82 | 0.42 |
| 1:0:689:A:H1' | 1:0:2422:C:O4' | 2.19 | 0.42 |
| 1:0:2270:U:O5' | 1:0:2270:U:H6 | 2.02 | 0.42 |
| 1:0:1790:G:O3' | 1:0:1791:C:H6 | 2.02 | 0.42 |
| 1:0:2030:U:O2' | 1:0:2031:A:H5' | 2.19 | 0.42 |
| 1:0:697:G:O2' | 1:0:801:A:N6 | 2.53 | 0.42 |
| 1:0:161:U:H5' | 1:0:193:A:C2 | 2.54 | 0.42 |
| 1:0:2273:C:O5' | 1:0:2273:C:H6 | 2.02 | 0.42 |
| 2:9:108:G:H2' | 2:9:109:G:C8 | 2.55 | 0.42 |
| 1:0:2163:U:H2' | 1:0:2164:G:H8 | 1.83 | 0.42 |
| 1:0:1353:A:C2 | 1:0:1618:U:C4 | 3.08 | 0.42 |
| 1:0:774:A:C8 | 1:0:774:A:H3' | 2.53 | 0.42 |
| 1:0:781:G:H5' | 1:0:1638:G:C4' | 2.49 | 0.42 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:935:C:O2' | 1:0:936:A:H5' | 2.18 | 0.42 |
| 1:0:691:C:O2' | 1:0:692:C:H5' | 2.19 | 0.42 |
| 1:0:421:G:H2' | 1:0:422:C:C6 | 2.54 | 0.42 |
| 1:0:1487:C:H2' | 1:0:1488:G:C8 | 2.53 | 0.42 |
| 1:0:2856:U:H6 | 1:0:2856:U:O5' | 2.01 | 0.42 |
| 1:0:2597:G:O2' | 1:0:2598:C:H5' | 2.18 | 0.42 |
| 1:0:1447:U:H1' | 1:0:1577:G:H22 | 1.82 | 0.42 |
| 1:0:2478:C:H2' | 1:0:2479:U:H5' | 2.01 | 0.42 |
| 1:0:1625:A:O2' | 1:0:1632:A:H4' | 2.20 | 0.42 |
| 1:0:68:C:C2 | 1:0:72:A:N3 | 2.87 | 0.42 |
| 1:0:2695:C:H2' | 1:0:2696:A:H8 | 1.85 | 0.42 |
| 1:0:358:C:H6 | 1:0:358:C:O5' | 2.01 | 0.42 |
| 1:0:1820:G:H4' | 1:0:1821:A:OP1 | 2.19 | 0.42 |
| 1:0:113:C:N4 | 1:0:114:C:H41 | 2.17 | 0.42 |
| 1:0:54:G:N2 | 1:0:114:C:C2 | 2.88 | 0.42 |
| 1:0:2650:G:O2' | 1:0:2651:U:H5' | 2.18 | 0.42 |
| 1:0:2728:A:C2 | 1:0:2736:U:H1' | 2.53 | 0.42 |
| 1:0:1477:C:H1' | 1:0:2681:A:C2 | 2.54 | 0.42 |
| 1:0:1548:U:C4 | 1:0:1549:C:N4 | 2.87 | 0.42 |
| 1:0:1212:U:H2' | 1:0:1213:U:H6 | 1.83 | 0.42 |
| 1:0:999:A:HO2' | 1:0:1166:A:H2 | 1.63 | 0.42 |
| 1:0:1579:G:H2' | 1:0:1580:C:H6 | 1.83 | 0.42 |
| 1:0:448:C:H2' | 1:0:449:C:H5' | 2.00 | 0.42 |
| 1:0:2133:G:H2' | 1:0:2134:U:C6 | 2.54 | 0.42 |
| 1:0:1643:A:H2' | 1:0:1644:G:H8 | 1.84 | 0.42 |
| 1:0:1924:C:H2' | 1:0:1925:C:O4' | 2.19 | 0.42 |
| 1:0:1482:U:H2' | 1:0:1483:G:C8 | 2.54 | 0.42 |
| 1:0:1371:G:O2' | 1:0:1386:A:N6 | 2.52 | 0.42 |
| 1:0:1618:U:H2' | 1:0:1619:A:H5' | 2.01 | 0.42 |
| 1:0:1219:C:O5' | 1:0:1219:C:H6 | 2.01 | 0.42 |
| 1:0:1167:A:H5' | 1:0:1168:G:N7 | 2.34 | 0.42 |
| 1:0:1435:G:N2 | 1:0:1512:A:C2 | 2.88 | 0.42 |
| 1:0:1903:C:H2' | 1:0:1904:G:C8 | 2.54 | 0.42 |
| 1:0:1422:C:H2' | 1:0:1423:A:C8 | 2.54 | 0.42 |
| 1:0:1821:A:H3' | 1:0:1822:C:C6 | 2.50 | 0.42 |
| 1:0:873:U:N3 | 1:0:2246:A:H5'' | 2.35 | 0.42 |
| 1:0:788:G:H5' | 1:0:790:A:N3 | 2.35 | 0.42 |
| 1:0:2820:C:O2' | 1:0:2821:G:H5' | 2.18 | 0.42 |
| 1:0:160:C:O2' | 1:0:445:A:N3 | 2.49 | 0.42 |
| 1:0:1323:G:C1' | 1:0:1627:C:H5'' | 2.49 | 0.42 |
| 1:0:1933:G:O5' | 1:0:1933:G:C8 | 2.69 | 0.42 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|----------------|--------------------------|-------------------|
| 2:9:107:C:C6 | 2:9:107:C:C3' | 3.03 | 0.42 |
| 1:0:2066:G:H2' | 1:0:2067:U:O4' | 2.20 | 0.42 |
| 1:0:1017:C:O2' | 1:0:1018:C:H5' | 2.18 | 0.42 |
| 1:0:2265:A:H5'' | 1:0:2266:A:O4' | 2.20 | 0.42 |
| 1:0:1478:U:H2' | 1:0:1479:G:C8 | 2.55 | 0.42 |
| 1:0:483:A:C2' | 1:0:484:G:H5' | 2.47 | 0.42 |
| 2:9:104:A:C8 | 2:9:105:G:C8 | 3.07 | 0.42 |
| 1:0:2642:G:H2' | 1:0:2643:G:C5' | 2.49 | 0.42 |
| 1:0:587:A:H5'' | 1:0:1268:U:O3' | 2.19 | 0.42 |
| 1:0:2347:C:N4 | 1:0:2361:G:H1 | 2.18 | 0.42 |
| 1:0:2468:G:H2' | 1:0:2469:G:O4' | 2.20 | 0.42 |
| 1:0:1155:G:H2' | 1:0:1156:U:O4' | 2.20 | 0.42 |
| 8:F:6:LEU:CA | 8:F:14:THR:CA | 2.98 | 0.42 |
| 1:0:1436:G:H2' | 1:0:1437:A:H8 | 1.82 | 0.42 |
| 1:0:2714:A:H2' | 1:0:2715:C:O4' | 2.19 | 0.42 |
| 1:0:1087:C:H2' | 1:0:1088:A:H5' | 2.01 | 0.42 |
| 1:0:2106:G:H2' | 1:0:2107:G:C8 | 2.55 | 0.42 |
| 1:0:2636:A:N6 | 1:0:2643:G:H21 | 2.02 | 0.42 |
| 1:0:2695:C:H2' | 1:0:2696:A:C8 | 2.54 | 0.42 |
| 1:0:597:U:N3 | 1:0:683:A:O2' | 2.36 | 0.42 |
| 1:0:1121:G:H8 | 1:0:1121:G:O5' | 2.02 | 0.42 |
| 1:0:1957:C:O2' | 1:0:1958:G:H5' | 2.19 | 0.42 |
| 1:0:587:A:OP1 | 1:0:1268:U:O2' | 2.30 | 0.42 |
| 1:0:56:C:H6 | 1:0:56:C:O5' | 2.03 | 0.42 |
| 1:0:542:A:C2' | 1:0:543:G:H5' | 2.50 | 0.42 |
| 1:0:121:G:O3' | 1:0:1389:C:H4' | 2.20 | 0.42 |
| 1:0:2119:A:H2' | 1:0:2120:C:H6 | 1.83 | 0.42 |
| 1:0:1310:C:OP1 | 1:0:2689:C:H4' | 2.19 | 0.42 |
| 1:0:1004:A:C2' | 1:0:1005:U:C5' | 2.97 | 0.42 |
| 1:0:1322:G:N2 | 1:0:1627:C:H5' | 2.34 | 0.42 |
| 1:0:1322:G:O2' | 1:0:1323:G:H5' | 2.19 | 0.42 |
| 1:0:225:G:N7 | 1:0:227:G:N3 | 2.68 | 0.42 |
| 1:0:2007:G:H2' | 1:0:2008:C:C6 | 2.54 | 0.42 |
| 1:0:1276:U:H2' | 1:0:1277:G:O4' | 2.19 | 0.42 |
| 1:0:2429:A:H5'' | 1:0:2476:A:C6 | 2.54 | 0.42 |
| 1:0:460:U:H5' | 1:0:461:A:OP2 | 2.20 | 0.42 |
| 1:0:1806:G:C5 | 1:0:1807:A:N7 | 2.88 | 0.42 |
| 1:0:1136:G:C5 | 1:0:1137:A:N7 | 2.87 | 0.42 |
| 1:0:1764:A:C2 | 1:0:1960:A:N1 | 2.88 | 0.42 |
| 1:0:541:C:HO2' | 1:0:542:A:P | 2.42 | 0.42 |
| 1:0:2459:C:C2' | 1:0:2460:G:H5' | 2.50 | 0.42 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|----------------|--------------------------|-------------------|
| 1:0:957:G:H2' | 1:0:958:G:H8 | 1.85 | 0.42 |
| 1:0:369:C:O2' | 1:0:370:U:H5' | 2.19 | 0.42 |
| 1:0:365:U:O2' | 1:0:366:U:H5' | 2.20 | 0.42 |
| 1:0:1390:G:H8 | 1:0:1390:G:O5' | 2.02 | 0.42 |
| 1:0:2534:U:H6 | 1:0:2534:U:O5' | 2.02 | 0.42 |
| 1:0:1350:G:H2' | 1:0:1351:G:C8 | 2.55 | 0.42 |
| 1:0:1239:A:O5' | 1:0:1239:A:C8 | 2.73 | 0.42 |
| 1:0:136:A:H8 | 1:0:136:A:O5' | 2.03 | 0.42 |
| 1:0:2011:U:O5' | 1:0:2011:U:H6 | 2.02 | 0.42 |
| 1:0:2081:U:H2' | 1:0:2082:C:C5' | 2.26 | 0.42 |
| 1:0:658:G:C4' | 1:0:2331:A:H5' | 2.40 | 0.42 |
| 1:0:2769:C:H5'' | 1:0:2770:A:C8 | 2.55 | 0.42 |
| 1:0:615:C:O2' | 1:0:671:A:H4' | 2.19 | 0.42 |
| 1:0:221:A:O2' | 1:0:222:G:H5' | 2.19 | 0.42 |
| 1:0:873:U:H2' | 1:0:874:A:H5' | 2.02 | 0.42 |
| 1:0:1354:A:O2' | 1:0:1355:A:OP1 | 2.31 | 0.42 |
| 1:0:639:G:O2' | 1:0:640:C:H5' | 2.20 | 0.42 |
| 2:9:88:C:H2' | 2:9:89:G:H8 | 1.84 | 0.42 |
| 1:0:827:C:O2' | 1:0:828:C:H5' | 2.20 | 0.42 |
| 1:0:1413:U:H2' | 1:0:1414:G:C8 | 2.55 | 0.42 |
| 1:0:2296:U:H3' | 1:0:2297:G:H8 | 1.84 | 0.42 |
| 1:0:1545:G:O2' | 1:0:1546:C:H5' | 2.19 | 0.42 |
| 1:0:2298:U:H4' | 1:0:2299:A:C8 | 2.55 | 0.42 |
| 2:9:42:U:H3' | 2:9:43:G:C5' | 2.50 | 0.42 |
| 1:0:2570:C:H2' | 1:0:2571:G:C8 | 2.55 | 0.42 |
| 1:0:541:C:OP1 | 1:0:570:G:N1 | 2.53 | 0.42 |
| 1:0:1466:C:C2' | 1:0:1467:U:O4' | 2.66 | 0.42 |
| 1:0:1429:A:C6 | 1:0:1602:G:H5' | 2.54 | 0.42 |
| 1:0:2799:C:H2' | 1:0:2800:C:O4' | 2.19 | 0.42 |
| 1:0:777:A:N6 | 1:0:1766:U:N3 | 2.68 | 0.42 |
| 1:0:236:C:H2' | 1:0:237:G:C8 | 2.49 | 0.42 |
| 1:0:867:G:H2' | 1:0:868:U:C6 | 2.55 | 0.42 |
| 1:0:2069:U:H6 | 1:0:2069:U:O5' | 2.03 | 0.42 |
| 1:0:960:U:H2' | 1:0:961:G:C8 | 2.54 | 0.42 |
| 1:0:911:A:O5' | 1:0:911:A:H8 | 2.02 | 0.42 |
| 1:0:2059:U:OP2 | 1:0:2217:G:N2 | 2.41 | 0.41 |
| 1:0:2409:A:O2' | 1:0:2410:U:H5' | 2.19 | 0.41 |
| 1:0:2321:C:H2' | 1:0:2322:U:H5' | 2.01 | 0.41 |
| 1:0:1791:C:H42 | 1:0:1809:G:N2 | 2.15 | 0.41 |
| 1:0:614:G:H2' | 1:0:615:C:C6 | 2.48 | 0.41 |
| 1:0:2034:A:N6 | 1:0:2593:A:C8 | 2.88 | 0.41 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|----------------|--------------------------|-------------------|
| 1:0:1766:U:H2' | 1:0:1767:G:O4' | 2.20 | 0.41 |
| 1:0:393:U:H2' | 1:0:394:U:C6 | 2.53 | 0.41 |
| 1:0:853:C:H4' | 1:0:1206:G:H4' | 2.00 | 0.41 |
| 1:0:32:C:H2' | 1:0:33:C:C6 | 2.55 | 0.41 |
| 1:0:2832:G:N2 | 1:0:2834:A:H3' | 2.35 | 0.41 |
| 1:0:2362:G:C2' | 1:0:2363:G:O5' | 2.68 | 0.41 |
| 1:0:689:A:H2' | 1:0:690:A:H5' | 2.02 | 0.41 |
| 1:0:321:A:C4 | 1:0:341:A:C6 | 3.07 | 0.41 |
| 1:0:2407:G:H4' | 1:0:2408:G:C4 | 2.56 | 0.41 |
| 1:0:610:G:C6 | 1:0:671:A:C2 | 3.08 | 0.41 |
| 1:0:1619:A:N3 | 1:0:1619:A:O5' | 2.52 | 0.41 |
| 1:0:1168:G:H8 | 1:0:1168:G:O5' | 2.04 | 0.41 |
| 1:0:1531:C:H6 | 1:0:1531:C:O5' | 2.04 | 0.41 |
| 1:0:393:U:H2' | 1:0:394:U:O4' | 2.19 | 0.41 |
| 1:0:2214:G:C6 | 1:0:2215:C:C4 | 3.08 | 0.41 |
| 1:0:2844:G:H2' | 1:0:2845:C:H5' | 2.02 | 0.41 |
| 1:0:2068:C:H2' | 1:0:2069:U:C6 | 2.55 | 0.41 |
| 1:0:1678:G:O2' | 1:0:1679:U:H5' | 2.19 | 0.41 |
| 1:0:2705:A:C2' | 1:0:2706:U:O5' | 2.68 | 0.41 |
| 1:0:584:A:OP2 | 1:0:2038:C:C5 | 2.73 | 0.41 |
| 1:0:658:G:H1' | 1:0:2330:G:C5' | 2.51 | 0.41 |
| 1:0:548:G:O2' | 1:0:549:G:H5' | 2.20 | 0.41 |
| 1:0:1920:A:C5 | 1:0:1922:U:C5 | 3.08 | 0.41 |
| 1:0:1923:U:H5' | 1:0:1924:C:OP1 | 2.20 | 0.41 |
| 1:0:2592:U:O2' | 1:0:2593:A:OP1 | 2.35 | 0.41 |
| 1:0:594:G:C4 | 1:0:1264:C:N4 | 2.88 | 0.41 |
| 1:0:2002:A:H2' | 1:0:2003:A:O5' | 2.19 | 0.41 |
| 1:0:2173:G:O2' | 1:0:2174:G:H5' | 2.19 | 0.41 |
| 1:0:981:C:H2' | 1:0:982:C:C6 | 2.55 | 0.41 |
| 1:0:1023:U:H1' | 1:0:1154:A:N7 | 2.35 | 0.41 |
| 1:0:962:C:C4 | 1:0:963:G:N7 | 2.89 | 0.41 |
| 1:0:1174:G:H2' | 1:0:1175:A:C8 | 2.55 | 0.41 |
| 1:0:76:C:H6 | 1:0:76:C:C5' | 2.29 | 0.41 |
| 1:0:1641:C:H3' | 1:0:1642:G:H8 | 1.84 | 0.41 |
| 1:0:1543:G:H2' | 1:0:1544:A:C5' | 2.48 | 0.41 |
| 1:0:1252:C:H2' | 1:0:1253:C:C5' | 2.42 | 0.41 |
| 1:0:485:G:O6 | 1:0:520:C:N4 | 2.54 | 0.41 |
| 1:0:342:G:HO2' | 1:0:343:A:P | 2.44 | 0.41 |
| 1:0:67:G:C6 | 1:0:72:A:C2 | 3.08 | 0.41 |
| 1:0:9:U:O2' | 1:0:10:A:H5' | 2.20 | 0.41 |
| 1:0:128:C:H2' | 1:0:129:A:H5'' | 2.03 | 0.41 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:619:A:H2' | 1:0:620:G:C8 | 2.55 | 0.41 |
| 1:0:2391:A:H2' | 1:0:2392:G:O4' | 2.20 | 0.41 |
| 1:0:1256:C:H2' | 1:0:1257:U:O4' | 2.19 | 0.41 |
| 1:0:605:G:H2' | 1:0:606:A:H8 | 1.84 | 0.41 |
| 1:0:1841:G:H8 | 1:0:1841:G:O5' | 2.03 | 0.41 |
| 1:0:528:G:O2' | 1:0:529:U:H5' | 2.21 | 0.41 |
| 1:0:1678:G:H2' | 1:0:1679:U:O4' | 2.20 | 0.41 |
| 1:0:1681:A:H5' | 1:0:1681:A:H8 | 1.86 | 0.41 |
| 1:0:1312:G:H2' | 1:0:1643:A:N6 | 2.35 | 0.41 |
| 2:9:63:A:O2' | 2:9:64:C:H5' | 2.19 | 0.41 |
| 1:0:614:G:N2 | 1:0:670:U:O2' | 2.53 | 0.41 |
| 1:0:1547:U:H2' | 1:0:1548:U:H6 | 1.81 | 0.41 |
| 1:0:1612:U:H2' | 1:0:1613:G:C8 | 2.55 | 0.41 |
| 1:0:1426:U:H2' | 1:0:1427:G:O4' | 2.21 | 0.41 |
| 1:0:1166:A:H2' | 1:0:1167:A:H5'' | 2.02 | 0.41 |
| 1:0:1941:C:O2' | 1:0:1942:G:H5' | 2.21 | 0.41 |
| 1:0:203:G:H4' | 1:0:234:C:O2' | 2.20 | 0.41 |
| 1:0:828:C:H2' | 1:0:829:C:H6 | 1.84 | 0.41 |
| 1:0:224:G:H4' | 1:0:399:G:C6 | 2.56 | 0.41 |
| 1:0:2822:U:H2' | 1:0:2823:G:H5' | 2.01 | 0.41 |
| 1:0:813:A:O2' | 1:0:814:G:C8 | 2.72 | 0.41 |
| 2:9:100:G:C2' | 2:9:101:A:H5' | 2.51 | 0.41 |
| 2:9:8:C:OP1 | 2:9:63:A:H5' | 2.21 | 0.41 |
| 1:0:2633:A:H5' | 1:0:2635:U:O4' | 2.20 | 0.41 |
| 2:9:28:A:N3 | 2:9:28:A:H2' | 2.35 | 0.41 |
| 1:0:2347:C:H2' | 1:0:2348:A:C8 | 2.56 | 0.41 |
| 1:0:1849:G:N2 | 1:0:1869:A:N6 | 2.68 | 0.41 |
| 1:0:192:G:O2' | 1:0:193:A:H5'' | 2.20 | 0.41 |
| 1:0:2543:A:OP1 | 1:0:2627:G:H4' | 2.20 | 0.41 |
| 1:0:665:A:H3' | 1:0:666:U:H5'' | 2.01 | 0.41 |
| 1:0:465:C:H1' | 1:0:468:A:C5 | 2.55 | 0.41 |
| 1:0:1641:C:H3' | 1:0:1642:G:C8 | 2.55 | 0.41 |
| 2:9:75:A:N6 | 2:9:106:U:C4 | 2.88 | 0.41 |
| 2:9:6:C:C4 | 2:9:7:C:N4 | 2.88 | 0.41 |
| 1:0:2769:C:C2' | 1:0:2770:A:H5' | 2.51 | 0.41 |
| 1:0:1917:C:O2' | 1:0:1918:G:H5' | 2.19 | 0.41 |
| 1:0:57:G:N2 | 1:0:69:G:C4 | 2.89 | 0.41 |
| 1:0:128:C:H2' | 1:0:129:A:O4' | 2.20 | 0.41 |
| 1:0:1910:A:C2 | 1:0:1911:A:C2 | 3.09 | 0.41 |
| 1:0:195:A:H2' | 1:0:196:A:H5' | 2.02 | 0.41 |
| 1:0:1151:U:H5'' | 1:0:1153:A:H5' | 2.03 | 0.41 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------|--------------------------|-------------------|
| 1:0:2785:A:H62 | 1:0:2865:G:H21 | 1.69 | 0.41 |
| 1:0:1571:G:H2' | 1:0:1572:C:O4' | 2.21 | 0.41 |
| 1:0:1817:U:H2' | 1:0:1818:G:O4' | 2.21 | 0.41 |
| 1:0:2791:C:C2 | 1:0:2792:C:C5 | 3.09 | 0.41 |
| 1:0:2063:A:H2' | 1:0:2064:U:O4' | 2.21 | 0.41 |
| 1:0:2296:U:H3' | 1:0:2297:G:C8 | 2.56 | 0.41 |
| 1:0:155:G:O2' | 1:0:156:G:H5' | 2.21 | 0.41 |
| 1:0:1753:A:H8 | 1:0:1753:A:H3' | 1.85 | 0.41 |
| 1:0:490:A:N7 | 1:0:492:G:N3 | 2.67 | 0.41 |
| 1:0:516:G:H8 | 1:0:516:G:H3' | 1.85 | 0.41 |
| 1:0:792:U:O2' | 1:0:793:G:H5' | 2.20 | 0.41 |
| 1:0:2321:C:H2' | 1:0:2322:U:C5' | 2.51 | 0.41 |
| 1:0:2356:A:O2' | 1:0:2357:A:H5' | 2.21 | 0.41 |
| 1:0:1765:C:O5' | 1:0:1765:C:H6 | 2.03 | 0.41 |
| 1:0:1955:G:O2' | 1:0:1956:G:H5'' | 2.20 | 0.41 |
| 1:0:56:C:H2' | 1:0:57:G:O4' | 2.21 | 0.41 |
| 1:0:310:A:H2 | 1:0:330:C:O2 | 2.03 | 0.41 |
| 1:0:222:G:N2 | 1:0:231:G:H1' | 2.36 | 0.41 |
| 1:0:2605:C:H2' | 1:0:2606:G:C8 | 2.56 | 0.41 |
| 1:0:425:A:N7 | 1:0:2390:A:H2 | 2.19 | 0.41 |
| 1:0:1502:G:H2' | 1:0:1503:G:O4' | 2.21 | 0.41 |
| 1:0:2240:C:H2' | 1:0:2241:U:H5'' | 2.01 | 0.41 |
| 1:0:203:G:H5' | 1:0:234:C:H4' | 2.03 | 0.41 |
| 1:0:29:U:H3' | 1:0:29:U:C6 | 2.56 | 0.41 |
| 1:0:2431:C:O2' | 1:0:2432:A:H5' | 2.20 | 0.41 |
| 1:0:1:G:H2' | 1:0:2:G:O4' | 2.21 | 0.41 |
| 1:0:2851:G:H2' | 1:0:2852:G:O4' | 2.20 | 0.41 |
| 1:0:2475:C:H2' | 1:0:2476:A:C4' | 2.51 | 0.41 |
| 1:0:80:A:H2' | 1:0:81:C:O4' | 2.21 | 0.41 |
| 2:9:23:G:H2' | 2:9:24:U:O4' | 2.21 | 0.41 |
| 1:0:1252:C:O5' | 1:0:1252:C:H6 | 2.04 | 0.41 |
| 1:0:459:A:C6 | 1:0:484:G:H1' | 2.56 | 0.41 |
| 2:9:103:A:N7 | 2:9:104:A:N7 | 2.69 | 0.41 |
| 1:0:839:U:OP1 | 1:0:2408:G:OP2 | 2.38 | 0.41 |
| 1:0:2271:C:O2' | 1:0:2354:G:H4' | 2.21 | 0.41 |
| 1:0:1790:G:O2' | 1:0:1791:C:H5 | 2.03 | 0.41 |
| 1:0:843:G:O2' | 1:0:844:G:P | 2.78 | 0.41 |
| 1:0:1183:C:O2' | 1:0:1184:G:H5' | 2.21 | 0.41 |
| 1:0:635:C:O2' | 1:0:670:U:H5'' | 2.21 | 0.41 |
| 1:0:2592:U:H4' | 1:0:2593:A:OP1 | 2.21 | 0.41 |
| 1:0:211:U:O2' | 1:0:212:U:H5' | 2.21 | 0.41 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:212:U:O2 | 1:0:443:A:H2 | 2.03 | 0.41 |
| 1:0:1153:A:C2 | 1:0:1155:G:C6 | 3.09 | 0.41 |
| 1:0:2782:G:H8 | 1:0:2782:G:OP2 | 2.03 | 0.41 |
| 1:0:1990:U:H4' | 1:0:2799:C:H4' | 2.02 | 0.41 |
| 1:0:1725:C:C2 | 1:0:1742:G:N2 | 2.89 | 0.41 |
| 1:0:2404:A:OP1 | 1:0:2406:C:H5' | 2.21 | 0.41 |
| 1:0:1010:U:H5'' | 1:0:1165:G:O6 | 2.21 | 0.41 |
| 1:0:226:C:H4' | 1:0:227:G:H8 | 1.83 | 0.41 |
| 1:0:1845:A:N6 | 1:0:1872:A:N7 | 2.69 | 0.41 |
| 1:0:294:U:H2' | 1:0:295:C:H6 | 1.85 | 0.41 |
| 1:0:488:A:OP1 | 1:0:488:A:H8 | 2.04 | 0.41 |
| 1:0:1576:G:H2' | 1:0:1577:G:O4' | 2.20 | 0.41 |
| 1:0:1047:G:O2' | 1:0:1048:U:H5' | 2.21 | 0.41 |
| 1:0:2552:C:O5' | 1:0:2552:C:H6 | 2.03 | 0.41 |
| 1:0:1409:U:O5' | 1:0:1409:U:H6 | 2.03 | 0.41 |
| 1:0:2766:U:O5' | 1:0:2766:U:H6 | 2.04 | 0.41 |
| 1:0:845:U:O2' | 1:0:846:A:H5' | 2.21 | 0.41 |
| 1:0:762:A:O2' | 1:0:1633:C:H1' | 2.20 | 0.41 |
| 1:0:2523:G:H5' | 1:0:2624:G:N7 | 2.36 | 0.41 |
| 1:0:342:G:H2' | 1:0:343:A:C5' | 2.51 | 0.41 |
| 1:0:1086:C:C3' | 1:0:1087:C:H5'' | 2.51 | 0.41 |
| 1:0:1807:A:H5' | 1:0:1809:G:O4' | 2.21 | 0.41 |
| 1:0:2867:G:O3' | 1:0:2868:G:H4' | 2.21 | 0.41 |
| 1:0:7:G:O2' | 1:0:8:A:H5' | 2.20 | 0.41 |
| 1:0:610:G:H2' | 1:0:611:C:O4' | 2.20 | 0.41 |
| 1:0:119:G:N2 | 1:0:129:A:H1' | 2.36 | 0.41 |
| 1:0:1715:A:H1' | 1:0:1717:A:O4' | 2.21 | 0.41 |
| 1:0:788:G:H2' | 1:0:807:A:N7 | 2.34 | 0.41 |
| 1:0:836:G:H2' | 1:0:837:U:C6 | 2.56 | 0.41 |
| 1:0:2819:G:H2' | 1:0:2820:C:C6 | 2.56 | 0.41 |
| 1:0:2535:C:H2' | 1:0:2536:G:C5' | 2.51 | 0.41 |
| 1:0:2040:A:H2' | 1:0:2041:A:C8 | 2.53 | 0.41 |
| 1:0:459:A:C4 | 1:0:466:A:N7 | 2.89 | 0.40 |
| 1:0:2523:G:H2' | 1:0:2524:G:C8 | 2.56 | 0.40 |
| 1:0:1299:A:C6 | 1:0:1302:C:C4 | 3.09 | 0.40 |
| 1:0:984:A:H1' | 1:0:1202:U:C6 | 2.56 | 0.40 |
| 1:0:2157:C:H2' | 1:0:2158:C:C6 | 2.56 | 0.40 |
| 1:0:474:G:C6 | 1:0:478:G:O6 | 2.74 | 0.40 |
| 1:0:698:A:H1' | 1:0:700:C:H41 | 1.83 | 0.40 |
| 1:0:1849:G:H2' | 1:0:1850:G:C8 | 2.56 | 0.40 |
| 1:0:1619:A:C2 | 1:0:1620:C:C5 | 3.09 | 0.40 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|-----------------|--------------------------|-------------------|
| 1:0:1613:G:H5'' | 1:0:1614:C:H5' | 2.02 | 0.40 |
| 1:0:646:C:O2' | 1:0:650:U:H5'' | 2.22 | 0.40 |
| 1:0:1963:G:C5 | 1:0:1965:U:N3 | 2.90 | 0.40 |
| 1:0:2853:U:C2' | 1:0:2854:G:O5' | 2.70 | 0.40 |
| 1:0:179:U:H1' | 1:0:228:A:H2 | 1.86 | 0.40 |
| 1:0:2204:A:O2' | 1:0:2205:C:P | 2.79 | 0.40 |
| 1:0:2488:G:H2' | 1:0:2489:C:O4' | 2.21 | 0.40 |
| 1:0:622:U:O5' | 1:0:622:U:H6 | 2.04 | 0.40 |
| 1:0:968:C:N4 | 1:0:970:A:C1' | 2.83 | 0.40 |
| 1:0:740:A:O2' | 1:0:741:G:H5' | 2.21 | 0.40 |
| 1:0:75:C:C3' | 1:0:76:C:H5'' | 2.51 | 0.40 |
| 1:0:2618:A:C2 | 1:0:2758:A:C1' | 3.04 | 0.40 |
| 1:0:1753:A:H3' | 1:0:1753:A:C8 | 2.56 | 0.40 |
| 1:0:487:G:O3' | 1:0:511:A:N6 | 2.54 | 0.40 |
| 1:0:516:G:C8 | 1:0:516:G:H3' | 2.56 | 0.40 |
| 1:0:929:A:OP1 | 1:0:929:A:H4' | 2.20 | 0.40 |
| 1:0:1664:G:OP2 | 1:0:1664:G:H3' | 2.21 | 0.40 |
| 1:0:2095:G:H2' | 1:0:2096:U:H5'' | 2.03 | 0.40 |
| 1:0:2642:G:C2' | 1:0:2643:G:H5' | 2.51 | 0.40 |
| 1:0:1956:G:H8 | 1:0:1956:G:H5' | 1.85 | 0.40 |
| 1:0:2560:G:O6 | 1:0:2589:C:C5 | 2.74 | 0.40 |
| 1:0:787:A:H2' | 1:0:788:G:C8 | 2.56 | 0.40 |
| 1:0:958:G:H2' | 1:0:959:C:C5 | 2.56 | 0.40 |
| 1:0:1856:U:OP1 | 1:0:2389:G:O2' | 2.37 | 0.40 |
| 1:0:1486:A:H2' | 1:0:1487:C:C6 | 2.56 | 0.40 |
| 1:0:1116:U:O2' | 1:0:1117:G:H5' | 2.21 | 0.40 |
| 1:0:2579:A:H2' | 1:0:2580:C:C6 | 2.56 | 0.40 |
| 1:0:390:U:C4 | 1:0:391:C:N4 | 2.90 | 0.40 |
| 1:0:173:A:H2' | 1:0:173:A:N3 | 2.37 | 0.40 |
| 1:0:1685:A:C2' | 1:0:1686:A:OP2 | 2.68 | 0.40 |
| 1:0:1687:C:O2' | 1:0:1977:C:H4' | 2.22 | 0.40 |
| 1:0:1459:U:P | 1:0:1459:U:C6 | 3.13 | 0.40 |
| 1:0:1339:U:H5 | 1:0:1664:G:HO2' | 1.64 | 0.40 |
| 1:0:1194:U:HO2' | 1:0:1195:U:C5' | 2.34 | 0.40 |
| 1:0:1064:C:H6 | 1:0:1064:C:O5' | 2.05 | 0.40 |
| 1:0:1715:A:C2 | 1:0:1717:A:C8 | 3.09 | 0.40 |
| 1:0:2275:U:H6 | 1:0:2275:U:H3' | 1.86 | 0.40 |
| 1:0:2784:A:H3' | 1:0:2785:A:C8 | 2.57 | 0.40 |
| 1:0:1259:A:H2' | 1:0:1260:A:C5' | 2.50 | 0.40 |
| 1:0:600:G:H3' | 1:0:601:A:H5'' | 2.03 | 0.40 |
| 1:0:1310:C:P | 1:0:2689:C:H4' | 2.62 | 0.40 |

Continued on next page...

Continued from previous page...

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|----------------|--------------------------|-------------------|
| 1:0:936:A:O2' | 1:0:937:C:H5' | 2.21 | 0.40 |
| 1:0:1962:C:H2' | 1:0:1963:G:H5' | 2.04 | 0.40 |
| 1:0:299:C:H2' | 1:0:300:C:C5 | 2.56 | 0.40 |
| 1:0:2661:G:H2' | 1:0:2662:C:O4' | 2.21 | 0.40 |
| 1:0:2669:C:C2' | 1:0:2669:C:O2 | 2.70 | 0.40 |
| 1:0:1919:A:C6 | 1:0:1928:G:C4 | 3.10 | 0.40 |
| 1:0:1141:U:O2' | 1:0:1142:G:P | 2.80 | 0.40 |
| 1:0:1220:G:N2 | 1:0:1253:C:C5 | 2.90 | 0.40 |
| 1:0:1250:A:O2' | 1:0:1251:G:C4' | 2.69 | 0.40 |
| 1:0:1666:G:C6 | 1:0:1992:G:O6 | 2.74 | 0.40 |
| 1:0:1918:G:H4' | 1:0:1920:A:C2 | 2.56 | 0.40 |
| 1:0:1883:A:C2 | 1:0:1953:A:N6 | 2.90 | 0.40 |
| 1:0:327:C:O2' | 1:0:328:A:H5' | 2.21 | 0.40 |
| 1:0:620:G:H2' | 1:0:621:U:C6 | 2.57 | 0.40 |
| 1:0:539:A:C5 | 1:0:2025:A:C2 | 3.09 | 0.40 |
| 1:0:2809:A:N6 | 1:0:2854:G:C4 | 2.90 | 0.40 |
| 1:0:2343:C:O2' | 1:0:2344:G:H5' | 2.21 | 0.40 |
| 1:0:2179:C:C2 | 1:0:2180:U:H1' | 2.57 | 0.40 |
| 1:0:747:A:H2' | 1:0:748:A:O4' | 2.21 | 0.40 |
| 1:0:324:C:H6 | 1:0:324:C:O5' | 2.03 | 0.40 |
| 1:0:625:A:O5' | 1:0:625:A:H8 | 2.04 | 0.40 |
| 1:0:931:G:N2 | 1:0:2247:A:C5' | 2.83 | 0.40 |
| 1:0:2633:A:H4' | 1:0:2634:G:H4' | 2.04 | 0.40 |
| 1:0:843:G:O2' | 1:0:844:G:H5' | 2.22 | 0.40 |
| 1:0:737:C:H2' | 1:0:738:G:O4' | 2.21 | 0.40 |
| 2:9:12:C:H3' | 2:9:13:C:H6 | 1.85 | 0.40 |
| 1:0:119:G:H2' | 1:0:120:G:H8 | 1.85 | 0.40 |
| 1:0:1474:A:N3 | 1:0:1474:A:C3' | 2.78 | 0.40 |
| 1:0:2781:G:C2' | 1:0:2782:G:O4' | 2.64 | 0.40 |
| 1:0:1279:G:O2' | 1:0:1995:G:N1 | 2.54 | 0.40 |
| 1:0:2708:U:H2' | 1:0:2709:C:H6 | 1.84 | 0.40 |
| 1:0:2290:A:H2' | 1:0:2291:U:H5' | 2.03 | 0.40 |
| 1:0:829:C:C4 | 1:0:1206:G:N1 | 2.90 | 0.40 |
| 1:0:2630:C:H2' | 1:0:2631:C:H6 | 1.87 | 0.40 |
| 1:0:51:A:H2' | 1:0:52:A:C8 | 2.56 | 0.40 |

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

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------|-----------------------|--------------------------|-------------------|
| 1:0:1552:C:OP1 | 16:N:47:SER:CA[8_455] | 1.97 | 0.23 |

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains [i](#)

There are no protein residues with a non-rotameric sidechain to report in this entry.

5.3.3 RNA [i](#)

| Mol | Chain | Analysed | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 1 | 0 | 2757/2880 (95%) | 523 (18%) | 48 (1%) |
| 2 | 9 | 117/124 (94%) | 23 (19%) | 1 (0%) |
| All | All | 2874/3004 (95%) | 546 (18%) | 49 (1%) |

All (546) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | 0 | 13 | A |
| 1 | 0 | 35 | G |
| 1 | 0 | 45 | C |
| 1 | 0 | 48 | A |
| 1 | 0 | 49 | U |
| 1 | 0 | 50 | G |
| 1 | 0 | 59 | G |
| 1 | 0 | 67 | G |
| 1 | 0 | 70 | A |
| 1 | 0 | 71 | A |
| 1 | 0 | 72 | A |
| 1 | 0 | 76 | C |
| 1 | 0 | 87 | G |
| 1 | 0 | 89 | A |
| 1 | 0 | 90 | G |
| 1 | 0 | 91 | A |
| 1 | 0 | 99 | U |
| 1 | 0 | 105 | G |
| 1 | 0 | 110 | U |
| 1 | 0 | 116 | A |
| 1 | 0 | 118 | U |
| 1 | 0 | 123 | A |
| 1 | 0 | 124 | A |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | 0 | 129 | A |
| 1 | 0 | 135 | U |
| 1 | 0 | 149 | A |
| 1 | 0 | 155 | G |
| 1 | 0 | 158 | A |
| 1 | 0 | 167 | A |
| 1 | 0 | 169 | C |
| 1 | 0 | 173 | A |
| 1 | 0 | 174 | A |
| 1 | 0 | 176 | A |
| 1 | 0 | 181 | A |
| 1 | 0 | 182 | G |
| 1 | 0 | 193 | A |
| 1 | 0 | 199 | A |
| 1 | 0 | 200 | A |
| 1 | 0 | 201 | G |
| 1 | 0 | 205 | A |
| 1 | 0 | 206 | U |
| 1 | 0 | 210 | A |
| 1 | 0 | 218 | A |
| 1 | 0 | 219 | G |
| 1 | 0 | 225 | G |
| 1 | 0 | 227 | G |
| 1 | 0 | 229 | G |
| 1 | 0 | 242 | A |
| 1 | 0 | 243 | G |
| 1 | 0 | 305 | A |
| 1 | 0 | 318 | G |
| 1 | 0 | 322 | A |
| 1 | 0 | 333 | A |
| 1 | 0 | 334 | G |
| 1 | 0 | 335 | A |
| 1 | 0 | 340 | G |
| 1 | 0 | 341 | A |
| 1 | 0 | 343 | A |
| 1 | 0 | 358 | C |
| 1 | 0 | 363 | G |
| 1 | 0 | 368 | A |
| 1 | 0 | 373 | A |
| 1 | 0 | 399 | G |
| 1 | 0 | 401 | G |
| 1 | 0 | 404 | A |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | 0 | 408 | U |
| 1 | 0 | 414 | A |
| 1 | 0 | 418 | C |
| 1 | 0 | 424 | G |
| 1 | 0 | 443 | A |
| 1 | 0 | 456 | C |
| 1 | 0 | 460 | U |
| 1 | 0 | 461 | A |
| 1 | 0 | 463 | C |
| 1 | 0 | 467 | U |
| 1 | 0 | 469 | G |
| 1 | 0 | 484 | G |
| 1 | 0 | 486 | U |
| 1 | 0 | 490 | A |
| 1 | 0 | 491 | A |
| 1 | 0 | 492 | G |
| 1 | 0 | 514 | G |
| 1 | 0 | 515 | A |
| 1 | 0 | 518 | A |
| 1 | 0 | 519 | C |
| 1 | 0 | 537 | C |
| 1 | 0 | 539 | A |
| 1 | 0 | 541 | C |
| 1 | 0 | 542 | A |
| 1 | 0 | 544 | U |
| 1 | 0 | 554 | U |
| 1 | 0 | 556 | A |
| 1 | 0 | 558 | G |
| 1 | 0 | 572 | G |
| 1 | 0 | 582 | G |
| 1 | 0 | 583 | C |
| 1 | 0 | 584 | A |
| 1 | 0 | 587 | A |
| 1 | 0 | 588 | G |
| 1 | 0 | 601 | A |
| 1 | 0 | 613 | A |
| 1 | 0 | 617 | U |
| 1 | 0 | 624 | A |
| 1 | 0 | 632 | A |
| 1 | 0 | 636 | G |
| 1 | 0 | 638 | A |
| 1 | 0 | 648 | A |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | 0 | 652 | C |
| 1 | 0 | 654 | A |
| 1 | 0 | 655 | A |
| 1 | 0 | 666 | U |
| 1 | 0 | 667 | U |
| 1 | 0 | 684 | C |
| 1 | 0 | 697 | G |
| 1 | 0 | 699 | G |
| 1 | 0 | 700 | C |
| 1 | 0 | 728 | G |
| 1 | 0 | 740 | A |
| 1 | 0 | 742 | G |
| 1 | 0 | 743 | A |
| 1 | 0 | 753 | U |
| 1 | 0 | 760 | U |
| 1 | 0 | 766 | A |
| 1 | 0 | 774 | A |
| 1 | 0 | 776 | G |
| 1 | 0 | 778 | G |
| 1 | 0 | 789 | G |
| 1 | 0 | 790 | A |
| 1 | 0 | 794 | A |
| 1 | 0 | 796 | A |
| 1 | 0 | 797 | A |
| 1 | 0 | 798 | G |
| 1 | 0 | 803 | C |
| 1 | 0 | 806 | A |
| 1 | 0 | 807 | A |
| 1 | 0 | 813 | A |
| 1 | 0 | 815 | A |
| 1 | 0 | 818 | G |
| 1 | 0 | 819 | C |
| 1 | 0 | 825 | C |
| 1 | 0 | 832 | A |
| 1 | 0 | 840 | U |
| 1 | 0 | 841 | G |
| 1 | 0 | 843 | G |
| 1 | 0 | 844 | G |
| 1 | 0 | 859 | U |
| 1 | 0 | 873 | U |
| 1 | 0 | 874 | A |
| 1 | 0 | 879 | A |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | 0 | 919 | U |
| 1 | 0 | 922 | A |
| 1 | 0 | 926 | C |
| 1 | 0 | 930 | A |
| 1 | 0 | 931 | G |
| 1 | 0 | 941 | U |
| 1 | 0 | 943 | U |
| 1 | 0 | 944 | A |
| 1 | 0 | 952 | A |
| 1 | 0 | 957 | G |
| 1 | 0 | 968 | C |
| 1 | 0 | 969 | U |
| 1 | 0 | 970 | A |
| 1 | 0 | 972 | C |
| 1 | 0 | 973 | U |
| 1 | 0 | 984 | A |
| 1 | 0 | 985 | G |
| 1 | 0 | 994 | A |
| 1 | 0 | 996 | C |
| 1 | 0 | 1002 | C |
| 1 | 0 | 1005 | U |
| 1 | 0 | 1006 | C |
| 1 | 0 | 1019 | U |
| 1 | 0 | 1022 | A |
| 1 | 0 | 1023 | U |
| 1 | 0 | 1024 | G |
| 1 | 0 | 1030 | U |
| 1 | 0 | 1032 | A |
| 1 | 0 | 1033 | G |
| 1 | 0 | 1036 | G |
| 1 | 0 | 1037 | U |
| 1 | 0 | 1044 | U |
| 1 | 0 | 1045 | G |
| 1 | 0 | 1055 | A |
| 1 | 0 | 1056 | U |
| 1 | 0 | 1057 | A |
| 1 | 0 | 1067 | G |
| 1 | 0 | 1073 | G |
| 1 | 0 | 1074 | G |
| 1 | 0 | 1075 | C |
| 1 | 0 | 1081 | A |
| 1 | 0 | 1082 | G |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | 0 | 1083 | C |
| 1 | 0 | 1087 | C |
| 1 | 0 | 1090 | C |
| 1 | 0 | 1099 | A |
| 1 | 0 | 1130 | U |
| 1 | 0 | 1137 | A |
| 1 | 0 | 1138 | A |
| 1 | 0 | 1139 | A |
| 1 | 0 | 1142 | G |
| 1 | 0 | 1145 | C |
| 1 | 0 | 1146 | G |
| 1 | 0 | 1149 | G |
| 1 | 0 | 1155 | G |
| 1 | 0 | 1166 | A |
| 1 | 0 | 1167 | A |
| 1 | 0 | 1168 | G |
| 1 | 0 | 1182 | U |
| 1 | 0 | 1183 | C |
| 1 | 0 | 1185 | C |
| 1 | 0 | 1194 | U |
| 1 | 0 | 1195 | U |
| 1 | 0 | 1199 | U |
| 1 | 0 | 1200 | G |
| 1 | 0 | 1209 | G |
| 1 | 0 | 1224 | A |
| 1 | 0 | 1233 | A |
| 1 | 0 | 1234 | C |
| 1 | 0 | 1253 | C |
| 1 | 0 | 1261 | G |
| 1 | 0 | 1262 | U |
| 1 | 0 | 1264 | C |
| 1 | 0 | 1266 | G |
| 1 | 0 | 1267 | A |
| 1 | 0 | 1268 | U |
| 1 | 0 | 1269 | G |
| 1 | 0 | 1278 | A |
| 1 | 0 | 1279 | G |
| 1 | 0 | 1281 | A |
| 1 | 0 | 1284 | G |
| 1 | 0 | 1285 | A |
| 1 | 0 | 1286 | U |
| 1 | 0 | 1288 | A |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | 0 | 1289 | A |
| 1 | 0 | 1302 | C |
| 1 | 0 | 1314 | A |
| 1 | 0 | 1316 | G |
| 1 | 0 | 1324 | G |
| 1 | 0 | 1327 | C |
| 1 | 0 | 1334 | A |
| 1 | 0 | 1338 | G |
| 1 | 0 | 1339 | U |
| 1 | 0 | 1342 | U |
| 1 | 0 | 1343 | C |
| 1 | 0 | 1346 | C |
| 1 | 0 | 1354 | A |
| 1 | 0 | 1355 | A |
| 1 | 0 | 1356 | G |
| 1 | 0 | 1359 | G |
| 1 | 0 | 1381 | G |
| 1 | 0 | 1391 | A |
| 1 | 0 | 1392 | U |
| 1 | 0 | 1397 | A |
| 1 | 0 | 1398 | G |
| 1 | 0 | 1411 | C |
| 1 | 0 | 1430 | G |
| 1 | 0 | 1433 | A |
| 1 | 0 | 1439 | G |
| 1 | 0 | 1441 | A |
| 1 | 0 | 1442 | C |
| 1 | 0 | 1443 | G |
| 1 | 0 | 1459 | U |
| 1 | 0 | 1465 | G |
| 1 | 0 | 1466 | C |
| 1 | 0 | 1467 | U |
| 1 | 0 | 1468 | A |
| 1 | 0 | 1469 | U |
| 1 | 0 | 1470 | G |
| 1 | 0 | 1473 | U |
| 1 | 0 | 1474 | A |
| 1 | 0 | 1475 | U |
| 1 | 0 | 1476 | G |
| 1 | 0 | 1482 | U |
| 1 | 0 | 1489 | C |
| 1 | 0 | 1490 | U |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | 0 | 1496 | G |
| 1 | 0 | 1505 | U |
| 1 | 0 | 1509 | A |
| 1 | 0 | 1513 | U |
| 1 | 0 | 1524 | C |
| 1 | 0 | 1529 | C |
| 1 | 0 | 1532 | A |
| 1 | 0 | 1544 | A |
| 1 | 0 | 1552 | C |
| 1 | 0 | 1563 | U |
| 1 | 0 | 1571 | G |
| 1 | 0 | 1573 | G |
| 1 | 0 | 1574 | A |
| 1 | 0 | 1583 | A |
| 1 | 0 | 1585 | A |
| 1 | 0 | 1618 | U |
| 1 | 0 | 1623 | C |
| 1 | 0 | 1624 | A |
| 1 | 0 | 1625 | A |
| 1 | 0 | 1626 | A |
| 1 | 0 | 1631 | C |
| 1 | 0 | 1635 | G |
| 1 | 0 | 1648 | C |
| 1 | 0 | 1652 | G |
| 1 | 0 | 1657 | A |
| 1 | 0 | 1663 | C |
| 1 | 0 | 1664 | G |
| 1 | 0 | 1665 | C |
| 1 | 0 | 1670 | G |
| 1 | 0 | 1671 | A |
| 1 | 0 | 1680 | U |
| 1 | 0 | 1681 | A |
| 1 | 0 | 1685 | A |
| 1 | 0 | 1686 | A |
| 1 | 0 | 1691 | G |
| 1 | 0 | 1692 | C |
| 1 | 0 | 1699 | A |
| 1 | 0 | 1710 | U |
| 1 | 0 | 1711 | C |
| 1 | 0 | 1712 | G |
| 1 | 0 | 1713 | G |
| 1 | 0 | 1715 | A |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | 0 | 1717 | A |
| 1 | 0 | 1718 | A |
| 1 | 0 | 1724 | C |
| 1 | 0 | 1748 | U |
| 1 | 0 | 1749 | G |
| 1 | 0 | 1750 | A |
| 1 | 0 | 1754 | G |
| 1 | 0 | 1755 | G |
| 1 | 0 | 1764 | A |
| 1 | 0 | 1771 | A |
| 1 | 0 | 1772 | C |
| 1 | 0 | 1773 | C |
| 1 | 0 | 1775 | A |
| 1 | 0 | 1776 | A |
| 1 | 0 | 1778 | U |
| 1 | 0 | 1791 | C |
| 1 | 0 | 1792 | C |
| 1 | 0 | 1800 | A |
| 1 | 0 | 1801 | C |
| 1 | 0 | 1802 | A |
| 1 | 0 | 1807 | A |
| 1 | 0 | 1808 | C |
| 1 | 0 | 1809 | G |
| 1 | 0 | 1811 | A |
| 1 | 0 | 1813 | A |
| 1 | 0 | 1821 | A |
| 1 | 0 | 1830 | C |
| 1 | 0 | 1831 | G |
| 1 | 0 | 1840 | A |
| 1 | 0 | 1884 | A |
| 1 | 0 | 1889 | G |
| 1 | 0 | 1908 | C |
| 1 | 0 | 1909 | U |
| 1 | 0 | 1920 | A |
| 1 | 0 | 1922 | U |
| 1 | 0 | 1924 | C |
| 1 | 0 | 1926 | U |
| 1 | 0 | 1927 | U |
| 1 | 0 | 1928 | G |
| 1 | 0 | 1938 | U |
| 1 | 0 | 1939 | U |
| 1 | 0 | 1948 | C |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | 0 | 1949 | A |
| 1 | 0 | 1950 | C |
| 1 | 0 | 1953 | A |
| 1 | 0 | 1954 | A |
| 1 | 0 | 1955 | G |
| 1 | 0 | 1956 | G |
| 1 | 0 | 1964 | A |
| 1 | 0 | 1974 | U |
| 1 | 0 | 1976 | U |
| 1 | 0 | 1979 | C |
| 1 | 0 | 1980 | A |
| 1 | 0 | 2003 | A |
| 1 | 0 | 2004 | U |
| 1 | 0 | 2006 | G |
| 1 | 0 | 2014 | A |
| 1 | 0 | 2015 | G |
| 1 | 0 | 2016 | A |
| 1 | 0 | 2019 | C |
| 1 | 0 | 2034 | A |
| 1 | 0 | 2038 | C |
| 1 | 0 | 2044 | G |
| 1 | 0 | 2045 | A |
| 1 | 0 | 2051 | U |
| 1 | 0 | 2052 | G |
| 1 | 0 | 2060 | A |
| 1 | 0 | 2076 | G |
| 1 | 0 | 2082 | C |
| 1 | 0 | 2094 | C |
| 1 | 0 | 2096 | U |
| 1 | 0 | 2118 | A |
| 1 | 0 | 2119 | A |
| 1 | 0 | 2140 | G |
| 1 | 0 | 2162 | C |
| 1 | 0 | 2168 | A |
| 1 | 0 | 2181 | A |
| 1 | 0 | 2191 | A |
| 1 | 0 | 2195 | C |
| 1 | 0 | 2199 | C |
| 1 | 0 | 2205 | C |
| 1 | 0 | 2218 | G |
| 1 | 0 | 2229 | G |
| 1 | 0 | 2238 | G |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | 0 | 2241 | U |
| 1 | 0 | 2245 | A |
| 1 | 0 | 2246 | A |
| 1 | 0 | 2247 | A |
| 1 | 0 | 2255 | G |
| 1 | 0 | 2262 | C |
| 1 | 0 | 2265 | A |
| 1 | 0 | 2268 | G |
| 1 | 0 | 2285 | U |
| 1 | 0 | 2286 | G |
| 1 | 0 | 2287 | G |
| 1 | 0 | 2288 | A |
| 1 | 0 | 2298 | U |
| 1 | 0 | 2299 | A |
| 1 | 0 | 2300 | G |
| 1 | 0 | 2301 | A |
| 1 | 0 | 2313 | G |
| 1 | 0 | 2314 | A |
| 1 | 0 | 2315 | A |
| 1 | 0 | 2316 | G |
| 1 | 0 | 2325 | A |
| 1 | 0 | 2326 | C |
| 1 | 0 | 2362 | G |
| 1 | 0 | 2364 | C |
| 1 | 0 | 2369 | U |
| 1 | 0 | 2378 | G |
| 1 | 0 | 2381 | A |
| 1 | 0 | 2385 | U |
| 1 | 0 | 2389 | G |
| 1 | 0 | 2396 | C |
| 1 | 0 | 2402 | U |
| 1 | 0 | 2403 | C |
| 1 | 0 | 2405 | A |
| 1 | 0 | 2406 | C |
| 1 | 0 | 2407 | G |
| 1 | 0 | 2408 | G |
| 1 | 0 | 2409 | A |
| 1 | 0 | 2415 | G |
| 1 | 0 | 2419 | C |
| 1 | 0 | 2420 | C |
| 1 | 0 | 2427 | A |
| 1 | 0 | 2428 | U |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | 0 | 2437 | G |
| 1 | 0 | 2438 | A |
| 1 | 0 | 2448 | A |
| 1 | 0 | 2455 | A |
| 1 | 0 | 2457 | A |
| 1 | 0 | 2470 | U |
| 1 | 0 | 2473 | G |
| 1 | 0 | 2476 | A |
| 1 | 0 | 2477 | C |
| 1 | 0 | 2481 | G |
| 1 | 0 | 2482 | A |
| 1 | 0 | 2483 | U |
| 1 | 0 | 2484 | G |
| 1 | 0 | 2485 | U |
| 1 | 0 | 2492 | G |
| 1 | 0 | 2499 | C |
| 1 | 0 | 2504 | G |
| 1 | 0 | 2508 | G |
| 1 | 0 | 2521 | A |
| 1 | 0 | 2522 | G |
| 1 | 0 | 2533 | U |
| 1 | 0 | 2545 | A |
| 1 | 0 | 2546 | G |
| 1 | 0 | 2549 | G |
| 1 | 0 | 2558 | C |
| 1 | 0 | 2561 | G |
| 1 | 0 | 2565 | C |
| 1 | 0 | 2578 | G |
| 1 | 0 | 2581 | A |
| 1 | 0 | 2582 | G |
| 1 | 0 | 2588 | U |
| 1 | 0 | 2591 | C |
| 1 | 0 | 2593 | A |
| 1 | 0 | 2594 | U |
| 1 | 0 | 2608 | A |
| 1 | 0 | 2609 | G |
| 1 | 0 | 2613 | A |
| 1 | 0 | 2625 | U |
| 1 | 0 | 2633 | A |
| 1 | 0 | 2634 | G |
| 1 | 0 | 2661 | G |
| 1 | 0 | 2669 | C |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | 0 | 2670 | C |
| 1 | 0 | 2681 | A |
| 1 | 0 | 2692 | A |
| 1 | 0 | 2693 | U |
| 1 | 0 | 2707 | G |
| 1 | 0 | 2712 | G |
| 1 | 0 | 2713 | A |
| 1 | 0 | 2728 | A |
| 1 | 0 | 2730 | A |
| 1 | 0 | 2732 | C |
| 1 | 0 | 2737 | A |
| 1 | 0 | 2745 | A |
| 1 | 0 | 2756 | A |
| 1 | 0 | 2757 | G |
| 1 | 0 | 2758 | A |
| 1 | 0 | 2760 | G |
| 1 | 0 | 2770 | A |
| 1 | 0 | 2771 | C |
| 1 | 0 | 2774 | U |
| 1 | 0 | 2782 | G |
| 1 | 0 | 2783 | U |
| 1 | 0 | 2785 | A |
| 1 | 0 | 2793 | G |
| 1 | 0 | 2795 | A |
| 1 | 0 | 2807 | U |
| 1 | 0 | 2808 | U |
| 1 | 0 | 2809 | A |
| 1 | 0 | 2810 | A |
| 1 | 0 | 2825 | A |
| 1 | 0 | 2841 | U |
| 1 | 0 | 2842 | C |
| 1 | 0 | 2847 | G |
| 1 | 0 | 2849 | C |
| 1 | 0 | 2854 | G |
| 1 | 0 | 2855 | C |
| 1 | 0 | 2861 | A |
| 1 | 0 | 2867 | G |
| 1 | 0 | 2868 | G |
| 2 | 9 | 7 | C |
| 2 | 9 | 14 | C |
| 2 | 9 | 15 | A |
| 2 | 9 | 17 | A |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | 9 | 18 | G |
| 2 | 9 | 27 | A |
| 2 | 9 | 28 | A |
| 2 | 9 | 47 | A |
| 2 | 9 | 48 | A |
| 2 | 9 | 59 | A |
| 2 | 9 | 60 | A |
| 2 | 9 | 61 | A |
| 2 | 9 | 63 | A |
| 2 | 9 | 68 | A |
| 2 | 9 | 69 | G |
| 2 | 9 | 71 | G |
| 2 | 9 | 93 | G |
| 2 | 9 | 98 | C |
| 2 | 9 | 101 | A |
| 2 | 9 | 102 | A |
| 2 | 9 | 111 | C |
| 2 | 9 | 112 | A |
| 2 | 9 | 115 | G |

All (49) RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | 0 | 69 | G |
| 1 | 0 | 71 | A |
| 1 | 0 | 173 | A |
| 1 | 0 | 181 | A |
| 1 | 0 | 192 | G |
| 1 | 0 | 198 | A |
| 1 | 0 | 242 | A |
| 1 | 0 | 541 | C |
| 1 | 0 | 583 | C |
| 1 | 0 | 765 | C |
| 1 | 0 | 805 | G |
| 1 | 0 | 843 | G |
| 1 | 0 | 972 | C |
| 1 | 0 | 1141 | U |
| 1 | 0 | 1193 | G |
| 1 | 0 | 1194 | U |
| 1 | 0 | 1223 | G |
| 1 | 0 | 1263 | G |
| 1 | 0 | 1278 | A |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | 0 | 1313 | U |
| 1 | 0 | 1354 | A |
| 1 | 0 | 1410 | U |
| 1 | 0 | 1495 | G |
| 1 | 0 | 1634 | A |
| 1 | 0 | 1651 | U |
| 1 | 0 | 1664 | G |
| 1 | 0 | 1685 | A |
| 1 | 0 | 1820 | G |
| 1 | 0 | 1938 | U |
| 1 | 0 | 1975 | G |
| 1 | 0 | 2005 | U |
| 1 | 0 | 2015 | G |
| 1 | 0 | 2018 | G |
| 1 | 0 | 2093 | G |
| 1 | 0 | 2161 | C |
| 1 | 0 | 2204 | A |
| 1 | 0 | 2228 | U |
| 1 | 0 | 2245 | A |
| 1 | 0 | 2261 | G |
| 1 | 0 | 2377 | U |
| 1 | 0 | 2404 | A |
| 1 | 0 | 2426 | G |
| 1 | 0 | 2437 | G |
| 1 | 0 | 2592 | U |
| 1 | 0 | 2633 | A |
| 1 | 0 | 2660 | C |
| 1 | 0 | 2759 | U |
| 1 | 0 | 2824 | C |
| 2 | 9 | 58 | G |

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

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

5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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

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

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

6.3 Carbohydrates ⓘ

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

6.4 Ligands ⓘ

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

6.5 Other polymers ⓘ

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