

## Additional File 1.

**Table S1. Synthetic oligonucleotide sequences**

| Figure #  | Name                   | Sequence                                |
|-----------|------------------------|-----------------------------------------|
| Figure S1 | S-rC 14-1-15           | CTCGTGAGGTGATG <b>c</b> AGGAGATGGGAGGCG |
|           | AS-dC                  | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
| Figure 2  | S-rC 14-1-15           | CTCGTGAGGTGATG <b>c</b> AGGAGATGGGAGGCG |
|           | AS-dC                  | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
| Figure S2 | S-rC 14-1-15           | CTCGTGAGGTGATG <b>c</b> AGGAGATGGGAGGCG |
|           | AS-dC                  | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
| Figure 3  | S1RC Sense             | CTCGTGAGGTGATG <b>c</b> AGGAGATGGGAGGCG |
|           | S-rC 14-1-15 antisense | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | S-rG 14-1-15 antisense | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | S-rA 14-1-15 antisense | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | S-rU 14-1-15 antisense | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -1 T    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -1 A    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -1 G    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -2 G    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -2 C    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -2 T    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -3 G    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -3 A    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -3 C    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -4 T    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -4 A    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -4 G    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -5 T    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -5 G    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch -5 C    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch +1 C    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch +1 A    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch +1 G    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch +2 A    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |
|           | rC AS mismatch +2 T    | CGCCTCCCATCTCCTGCATCACCTCACGAG          |

|                  |                      |                                                                                                                                                                                                                                                                    |
|------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  | rC AS mismatch +2 G  | CGCCTCCCATCTC <u>G</u> TGCATCACCTCACGAG                                                                                                                                                                                                                            |
|                  | rC AS mismatch +3 G  | CGCCTCCCATCTG <u>C</u> TGCATCACCTCACGAG                                                                                                                                                                                                                            |
|                  | rC AS mismatch +3 T  | CGCCTCCCATCTT <u>T</u> TGCATCACCTCACGAG                                                                                                                                                                                                                            |
|                  | rC AS mismatch +3 A  | CGCCTCCCATCTA <u>T</u> TGCATCACCTCACGAG                                                                                                                                                                                                                            |
|                  | rC AS mismatch +4 C  | CGCCTCCCATCC <u>C</u> TGCATCACCTCACGAG                                                                                                                                                                                                                             |
|                  | rC AS mismatch +4 A  | CGCCTCCCATC <u>A</u> CTGCATCACCTCACGAG                                                                                                                                                                                                                             |
|                  | rC AS mismatch +4 G  | CGCCTCCCATCG <u>C</u> TGCATCACCTCACGAG                                                                                                                                                                                                                             |
|                  | rC AS mismatch +5 A  | CGCCTCCCATATC <u>T</u> TGCATCACCTCACGAG                                                                                                                                                                                                                            |
|                  | rC AS mismatch +5 T  | CGCCTCCCATTT <u>T</u> CCTGCATCACCTCACGAG                                                                                                                                                                                                                           |
|                  | rC AS mismatch +5 G  | CGCCTCCCATGT <u>C</u> TGCATCACCTCACGAG                                                                                                                                                                                                                             |
| <b>Figure S3</b> | SynRev 6DrU ddC      | CTGAGCTTCATGCCTTTACTGT <u>u</u> CCCCGA/ddC/                                                                                                                                                                                                                        |
|                  | SynRev 5DrU ddC      | CTGAGCTTCATGCCTTTACTGT <u>u</u> CCCCG/ddC/                                                                                                                                                                                                                         |
|                  | SynRev 4DrU ddC      | CTGAGCTTCATGCCTTTACTGT <u>u</u> CCCC/ddC/                                                                                                                                                                                                                          |
|                  | SynRev 3DrU ddC      | CTGAGCTTCATGCCTTTACTGT <u>u</u> CCC/ddC/                                                                                                                                                                                                                           |
|                  | SynRev 3DrU ddC      | CTGAGCTTCATGCCTTTACTGT <u>u</u> CC/ddC/                                                                                                                                                                                                                            |
|                  | SynTemp AAG          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCTCGGGGAACAGTAAAGGCATGAAGCTCAG                                                                                                                                                      |
|                  | SynFor unblocked     | AGCTCTGCCCAAAGATTACCCTG                                                                                                                                                                                                                                            |
|                  | SynRev non-discrimin | CTGAGCTTCATGCCTTTACTGT                                                                                                                                                                                                                                             |
|                  | SynAmp Probe         | FAM-TTCTGAGGCCAACTTCCACTGCCACTTA-IBFQ                                                                                                                                                                                                                              |
| <b>Figure 4</b>  | SynFor rA C3 blocked | AGCTCTGCCCAAAGATTACCCTG <u>a</u> CAGC-x                                                                                                                                                                                                                            |
|                  | SynRev 4DrU C3       | CTGAGCTTCATGCCTTTACTGT <u>u</u> CCCC-x                                                                                                                                                                                                                             |
|                  | SynTemp AAG          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCTCGGGGAACAGTAAAGGCATGAAGCTCAG                                                                                                                                                      |
|                  | SynFor unblocked     | AGCTCTGCCCAAAGATTACCCTG                                                                                                                                                                                                                                            |
|                  | SynRev non-discrimin | CTGAGCTTCATGCCTTTACTGT                                                                                                                                                                                                                                             |
|                  | SynAmp Probe         | FAM-TTCTGAGGCCAACTTCCACTGCCACTTA-IBFQ                                                                                                                                                                                                                              |
| <b>Figure 5</b>  | Control HCV For      | GCAGAAAGCGTCTAGCCATGGCGTTA                                                                                                                                                                                                                                         |
|                  | Control HCV Rev      | GCAAGCACCCATATCAGGCAGTACCACAA                                                                                                                                                                                                                                      |
|                  | HCV 4DrG For         | GCAGAAAGCGTCTAGCCATGGCGTTA <u>g</u> TATG-x                                                                                                                                                                                                                         |
|                  | HCV 4DrG Rev         | GCAAGCACCCATATCAGGCAGTACCACAA <u>g</u> GCCT-x                                                                                                                                                                                                                      |
|                  | HCV Amplicon         | GCAGAAAGCGTCTAGCCATGGCGTTAGTATGAGTGTCTGTCAGCCTCCAGGA<br>CCCCCCTCCCGGGAGAGCCATAGTGGTCTGCGGAACCGGTGAGTACACCGG<br>AATTGCCAGGACGACCGGGTCCTTTCTTTGGACTAAACCCGCTCAATGCCTGG<br>AGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTGCGGA<br>AAGGCCTTGTGGTACTGCCTGATAGGGTGCTTGC |
| <b>Figure 6</b>  | Control HRAS For     | ACCTCGGCCAAGACCC                                                                                                                                                                                                                                                   |

|                  |                      |                                                                                                                        |
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|                  | Control HRAS Rev     | CCTTCCTTCCTTCCTTGCTTCC                                                                                                 |
|                  | HRAS 4D rG For       | ACCTCGGCCAAGACCC <u>g</u> GCAG-x                                                                                       |
|                  | HRAS 4D rG Rev       | CCTTCCTTCCTTCCTTGCTTCC <u>g</u> TCCCT-x                                                                                |
| <b>Figure 7</b>  | SynRev 4DrU C3       | CTGAGCTTCATGCCTTTACTGT <u>u</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4DrA C3       | CTGAGCTTCATGCCTTTACTGT <u>a</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4DrC C3       | CTGAGCTTCATGCCTTTACTGT <u>c</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4DrG C3       | CTGAGCTTCATGCCTTTACTGT <u>g</u> CCCC/3SpC3/                                                                            |
|                  | SynRev -T unblocked  | CTGAGCTTCATGCCTTTACTGT <u>T</u>                                                                                        |
|                  | SynRev -A unblocked  | CTGAGCTTCATGCCTTTACTGT <u>A</u>                                                                                        |
|                  | SynRev -C unblocked  | CTGAGCTTCATGCCTTTACTGT <u>C</u>                                                                                        |
|                  | SynRev -G unblocked  | CTGAGCTTCATGCCTTTACTGT <u>G</u>                                                                                        |
|                  | SynFor unblocked     | AGCTCTGCCCAAAGATTACCCTG                                                                                                |
|                  | SynRev non-discrimin | CTGAGCTTCATGCCTTTACTGT                                                                                                 |
|                  | SynTemp AAG          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCTCGGGG <u>A</u> CAGTAAAGGCATGAAGCTCAG  |
|                  | SynTemp ATG          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCTCGGGG <u>T</u> ACAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp AGG          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCTCGGGG <u>G</u> ACAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp ACG          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCTCGGGG <u>C</u> ACAGTAAAGGCATGAAGCTCAG |
| <b>Figure S4</b> | SynRev 4DrU C3       | CTGAGCTTCATGCCTTTACTGT <u>u</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4D CrU C3     | CTGAGCTTCATGCCTTTACTGT <u>u</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4D GrU C3     | CTGAGCTTCATGCCTTTACTGG <u>u</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4D ArU C3     | CTGAGCTTCATGCCTTTACTGA <u>u</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4DrA C3       | CTGAGCTTCATGCCTTTACTGT <u>a</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4D CrA C3     | CTGAGCTTCATGCCTTTACTGT <u>a</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4D GrA C3     | CTGAGCTTCATGCCTTTACTGG <u>a</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4D ArA C3     | CTGAGCTTCATGCCTTTACTGA <u>a</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4DrC C3       | CTGAGCTTCATGCCTTTACTGT <u>c</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4D CrC C3     | CTGAGCTTCATGCCTTTACTGT <u>c</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4D GrC C3     | CTGAGCTTCATGCCTTTACTGG <u>c</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4D ArC C3     | CTGAGCTTCATGCCTTTACTGA <u>c</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4DrG C3       | CTGAGCTTCATGCCTTTACTGT <u>g</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4D CrG C3     | CTGAGCTTCATGCCTTTACTGT <u>g</u> CCCC/3SpC3/                                                                            |
|                  | SynRev 4D GrG C3     | CTGAGCTTCATGCCTTTACTGG <u>g</u> CCCC/3SpC3/                                                                            |

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|                  | SynRev 4D ArG C3 | CTGAGCTTCATGCCTTTACTGA <u>g</u> CCCC/3SpC3/                                                                           |
|                  | SynRev Short     | CTGAGCTTCATGCCTTTACTG                                                                                                 |
|                  | SynFor unblocked | AGCTCTGCCCCAAAGATTACCCTG                                                                                              |
|                  | SynTemp AAG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGA <u>AC</u> AGTAAAGGCATGAAGCTCAG |
|                  | SynTemp TAG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGAT <u>C</u> AGTAAAGGCATGAAGCTCAG |
|                  | SynTemp CAG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGAC <u>C</u> AGTAAAGGCATGAAGCTCAG |
|                  | SynTemp GAG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGAG <u>C</u> AGTAAAGGCATGAAGCTCAG |
|                  | SynTemp ATG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGT <u>A</u> CAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp TTG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGT <u>T</u> CAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp CTG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGT <u>C</u> CAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp GTG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGT <u>G</u> CAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp AGG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGG <u>A</u> CAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp TGG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGG <u>T</u> CAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp CGG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGG <u>C</u> CAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp GGG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGG <u>G</u> CAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp ACG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGC <u>A</u> CAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp TCG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGC <u>T</u> CAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp CCG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGC <u>C</u> CAGTAAAGGCATGAAGCTCAG |
|                  | SynTemp GCG      | AGCTCTGCCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGGC <u>G</u> CAGTAAAGGCATGAAGCTCAG |
| <b>Figure S5</b> | SynRev 4DrU C3   | CTGAGCTTCATGCCTTTACTGT <u>u</u> CCCC/3SpC3/                                                                           |
|                  | SynRev 4D rUA C3 | CTGAGCTTCATGCCTTTACTGT <u>u</u> ACCC/3SpC3/                                                                           |
|                  | SynRev 4D rUT C3 | CTGAGCTTCATGCCTTTACTGT <u>u</u> TCCC/3SpC3/                                                                           |
|                  | SynRev 4D rUG C3 | CTGAGCTTCATGCCTTTACTGT <u>u</u> GCCC/3SpC3/                                                                           |
|                  | SynRev 4DrA C3   | CTGAGCTTCATGCCTTTACTGT <u>a</u> CCCC/3SpC3/                                                                           |
|                  | SynRev 4D rAA C3 | CTGAGCTTCATGCCTTTACTGT <u>a</u> ACCC/3SpC3/                                                                           |

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|  | SynRev 4D rAT C3     | CTGAGCTTCATGCCTTTACTGT <u>a</u> TCCC/3SpC3/                                                                          |
|  | SynRev 4D rAG C3     | CTGAGCTTCATGCCTTTACTGT <u>a</u> GCCC/3SpC3/                                                                          |
|  | SynRev 4DrC C3       | CTGAGCTTCATGCCTTTACTGT <u>c</u> CCC/3SpC3/                                                                           |
|  | SynRev 4D rCA C3     | CTGAGCTTCATGCCTTTACTGT <u>c</u> ACCC/3SpC3/                                                                          |
|  | SynRev 4D rCT C3     | CTGAGCTTCATGCCTTTACTGT <u>c</u> TCCC/3SpC3/                                                                          |
|  | SynRev 4D rCG C3     | CTGAGCTTCATGCCTTTACTGT <u>c</u> GCCC/3SpC3/                                                                          |
|  | SynRev 4DrG C3       | CTGAGCTTCATGCCTTTACTGT <u>g</u> CCC/3SpC3/                                                                           |
|  | SynRev 4D rGA C3     | CTGAGCTTCATGCCTTTACTGT <u>g</u> ACCC/3SpC3/                                                                          |
|  | SynRev 4D rGT C3     | CTGAGCTTCATGCCTTTACTGT <u>g</u> TCCC/3SpC3/                                                                          |
|  | SynRev 4D rGG C3     | CTGAGCTTCATGCCTTTACTGT <u>g</u> GCCC/3SpC3/                                                                          |
|  | SynFor unblocked     | AGCTCTGCCCAAAGATTACCCTG                                                                                              |
|  | SynRev non-discrimin | CTGAGCTTCATGCCTTTACTGT                                                                                               |
|  | SynTemp AAG          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGG <u>A</u> ACAGTAAAGGCATGAAGCTCAG  |
|  | SynTemp AAT          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGG <u>T</u> AACAGTAAAGGCATGAAGCTCAG |
|  | SynTemp AAA          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGG <u>A</u> ACAGTAAAGGCATGAAGCTCAG  |
|  | SynTemp AAC          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGG <u>C</u> AACAGTAAAGGCATGAAGCTCAG |
|  | SynTemp ATG          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGG <u>G</u> TACAGTAAAGGCATGAAGCTCAG |
|  | SynTemp ATT          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGG <u>T</u> TACAGTAAAGGCATGAAGCTCAG |
|  | SynTemp ATA          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGG <u>A</u> TACAGTAAAGGCATGAAGCTCAG |
|  | SynTemp ATC          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGG <u>C</u> TACAGTAAAGGCATGAAGCTCAG |
|  | SynTemp AGG          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGG <u>G</u> ACAGTAAAGGCATGAAGCTCAG |
|  | SynTemp AGT          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGG <u>T</u> GACAGTAAAGGCATGAAGCTCAG |
|  | SynTemp AGA          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGG <u>A</u> GACAGTAAAGGCATGAAGCTCAG |
|  | SynTemp AGC          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGG <u>C</u> GACAGTAAAGGCATGAAGCTCAG |
|  | SynTemp ACG          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGGG <u>C</u> ACAGTAAAGGCATGAAGCTCAG |
|  | SynTemp ACT          | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCGGG <u>T</u> CACAGTAAAGGCATGAAGCTCAG |

|                 |                         |                                                                                                                        |
|-----------------|-------------------------|------------------------------------------------------------------------------------------------------------------------|
|                 | SynTemp ACA             | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCTCGGG <u>AC</u> ACAGTAAAGGCATGAAGCTCAG |
|                 | SynTemp ACC             | AGCTCTGCCCAAAGATTACCCTGACAGCTAAGTGGCAGTGGAAGTTGGCCTC<br>AGAAGTAGTGGCCAGCTGTGTGTCTCGGG <u>CC</u> ACAGTAAAGGCATGAAGCTCAG |
| <b>Table 2</b>  | rs4939827 Rev unblocked | CTCACTCTAAACCCCAGCATT                                                                                                  |
|                 | rs4939827 For non-discr | CAGCCTCATCCAAAAGAGGAAA                                                                                                 |
|                 | rs4939827 For T         | CAGCCTCATCCAAAAGAGGAA <u>AT</u>                                                                                        |
|                 | rs4939827 For C         | CAGCCTCATCCAAAAGAGGAA <u>AC</u>                                                                                        |
|                 | rs4939827 4DrC C3       | CAGCCTCATCCAAAAGAGGAAA <u>c</u> AGGA/3SpC3/                                                                            |
|                 | rs4939827 4DrU C3       | CAGCCTCATCCAAAAGAGGAAA <u>u</u> AGGA/3SpC3/                                                                            |
|                 | rs4939827 For TA        | CAGCCTCATCCAAAAGAGGAA <u>ATA</u>                                                                                       |
|                 | rs4939827 For CA        | CAGCCTCATCCAAAAGAGGAA <u>ACA</u>                                                                                       |
|                 | rs4939827 4DrAC C3      | CAGCCTCATCCAAAAGAGGAA <u>a</u> <u>C</u> AGG/3SpC3/                                                                     |
|                 | rs4939827 4DrAT C3      | CAGCCTCATCCAAAAGAGGAA <u>a</u> <u>T</u> AGG/3SpC3/                                                                     |
|                 | rs4939827 4DCrA C3      | CAGCCTCATCCAAAAGAGGAA <u>AC</u> <u>a</u> GGAC/3SpC3/                                                                   |
|                 | rs4939827 4DTrA C3      | CAGCCTCATCCAAAAGAGGAA <u>AT</u> <u>a</u> GGAC/3SpC3/                                                                   |
| <b>Table S2</b> | rs4939827 Rev unblocked | CTCACTCTAAACCCCAGCATT                                                                                                  |
|                 | rs4939827 For non-discr | CAGCCTCATCCAAAAGAGGAAA                                                                                                 |
|                 | rs4939827 4DrC C3       | CAGCCTCATCCAAAAGAGGAAA <u>c</u> AGGA/3SpC3/                                                                            |
|                 | rs4939827 4DrU C3       | CAGCCTCATCCAAAAGAGGAAA <u>u</u> AGGA/3SpC3/                                                                            |
| <b>Figure 8</b> | rs4939827 Rev unblocked | CTCACTCTAAACCCCAGCATT                                                                                                  |
|                 | rs4939827 For non-discr | CAGCCTCATCCAAAAGAGGAAA                                                                                                 |
|                 | rs4939827 4DrC C3       | CAGCCTCATCCAAAAGAGGAAA <u>c</u> AGGA/3SpC3/                                                                            |
|                 | rs4939827 4DrU C3       | CAGCCTCATCCAAAAGAGGAAA <u>u</u> AGGA/3SpC3/                                                                            |

DNA bases are black uppercase. RNA bases are red lowercase. IBFQ is Iowa Black<sup>TM</sup>-FQ dark quencher. FAM is 6-carboxyfluorescein. ddC is dideoxycytosine. SpC3 is a C3 propanediol spacer. Locations of mismatched bases relative to the target nucleic acid are underlined. Sequences are shown 5N to 3N.