**Supplementary Table S4. Barcoded Oligos for V6-V9**

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| **Barcoded oligos for V9->V6 directional sequencing.****Added the R specific primer sequence at 3' end of barcode on "A" adapter sequence****Added the F specific primer sequence at the 3' end of the "B" adapter sequence** |
|  |  |  |
|  |  | **"B" adapter oligo sequence + U968F (AACGCGAAGAACCTTAC)** |
|  |  | CCTATCCCCTGTGTGCCTTGGCAGTCTCAGAACGCGAAGAACCTTAC  |
|  |  |  |
| **Oligo name**  | **Barcode**  | **"A" adapter oligo seq. + barcode + 1492R (TACGGYTACCTTGTTAYGACTT)** |
| XLR\_1492R\_v2bBar8L  | CACGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCACGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar23L  | CGCAAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCGCAACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar174L  | TGAAGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTGAAGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar602L  | ACTTGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACTTGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar212L  | TCACAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTCACACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar25L  | CGTGAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCGTGACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar622L  | ACGCGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACGCGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar72L  | CCTCTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCCTCTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar600L  | ACTCAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACTCACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar559L  | AGACAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAGACACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar31L  | CGACTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCGACTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar551L  | AGCTTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAGCTTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1149L  | AAGCCGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAAGCCGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar15L  | CAAGAAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCAAGAACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar556L  | AGTTGGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAGTTGGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar144L  | TATCAAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTATCAACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar575L  | AGGCGGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAGGCGGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar48L  | CGGTATC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCGGTATCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar166L  | TGACGAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTGACGACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar613L  | ACAAGGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACAAGGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar560L  | AGACCTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAGACCTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar741L  | ATACCAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGATACCACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar228L  | TCGCGGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTCGCGGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar807L  | ATCTTAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGATCTTACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1273L  | AACCAGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAACCAGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar441L  | TTCGAGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTCGAGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1174L  | AAGGTGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAAGGTGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar209L  | TCTTGGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTCTTGGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar153L  | TAATCTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTAATCTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar213L  | TCACCTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTCACCTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar298L  | TCCGCTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTCCGCTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar146L  | TATTGAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTATTGACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar554L  | AGTCGAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAGTCGACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar646L  | ACGGCTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACGGCTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar158L  | TGCGTTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTGCGTTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar207L  | TCTCGAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTCTCGACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar77L  | CCAGGAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCCAGGACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar601L  | ACTCCTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACTCCTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar481L  | TTCCTGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTCCTGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar419L  | TTCATAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTCATACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar26L  | CGTCGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCGTCGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1172L  | AAGGCAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAAGGCACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1210L  | AACAACTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAACAACTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar606L  | ACACGGAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACACGGACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar159L  | TGCCGAAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTGCCGAACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar147L  | TATTCGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTATTCGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar141L | TAGGAATC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTAGGAATCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar119L  | CCGGCCAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCCGGCCACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1379L  | AATGGTAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAATGGTACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar208L  | TCTCCGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTCTCCGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1267L  | AACCTGGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAACCTGGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar637L  | ACGAAGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACGAAGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar435L  | TTCGTGGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTCGTGGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1202L  | AACACAAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAACACAACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar413L  | TTCTTGAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTCTTGACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar289L  | TCCAAGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTCCAAGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar433L  | TTCGCGAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTCGCGACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar121L  | CCGGTCGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCCGGTCGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar669L  | ACCTGAAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACCTGAACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1156L  | AAGAGTTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAAGAGTTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar370L  | TTGACAAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTGACAACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar281L  | TCCAGAAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTCCAGAACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar49L  | CGGTCTTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCGGTCTTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1173L  | AAGGCCTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAAGGCCTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar599L  | ACTAATTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACTAATTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar167L  | TGACCGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTGACCGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar161L  | TGTCGGAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTGTCGGACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar580L  | AGGTTGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAGGTTGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar629L  | ACGAGAAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACGAGAACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar184L  | TGGTGAAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTGGTGAACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar233L  | TCGTTGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTCGTTGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar364L  | TTGTGTTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTGTGTTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar78L  | CCACGGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCCACGGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar393L  | TTGGAGGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTGGAGGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar350L  | TTATCGGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTATCGGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1164L  | AAGAAGAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAAGAAGACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1196L  | AACTGTTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAACTGTTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar411L  | TTCTCAAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTCTCAACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar6L  | CTTCCTTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCTTCCTTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1031L  | ATTCGTAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGATTCGTACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar76L  | CCTTCCGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCCTTCCGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar555L  | AGTCCGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAGTCCGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar378L  | TTGAACTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTGAACTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1225L  | AACGAGGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAACGAGGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar99L  | CCGTTCAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGCCGTTCACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar236L  | TCGAGGAAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTCGAGGAACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar731L  | ACCGGAAGC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACCGGAAGCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar628L  | ACGTTCCAC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACGTTCCACTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1250L  | AACGGAGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAACGGAGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar438L  | TTCGTTATC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTCGTTATCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar693L  | ACCGTAATC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACCGTAATCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar672L  | ACCTTGGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGACCTTGGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar355L  | TTAAGATTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTTAAGATTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar187L  | TGGTTGGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTGGTTGGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar162L  | TGTCCGGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGTGTCCGGTCTACGGYTACCTTGTTAYGACTT  |
| XLR\_1492R\_v2bBar1292L  | AACCGTGTC  | CCATCTCATCCCTGCGTGTCTCCGACTCAGAACCGTGTCTACGGYTACCTTGTTAYGACTT  |